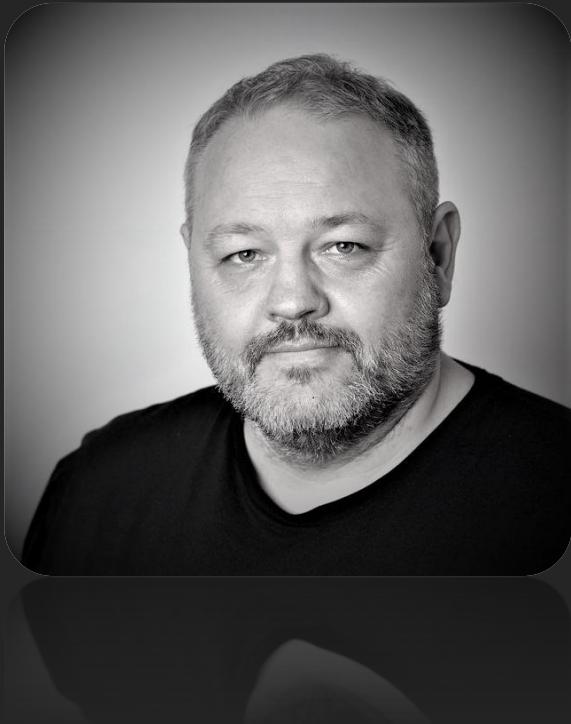


Streamlining Your Update Experience with Windows Update for Business

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- MVP / MCT
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NORDIC

– VIRTUAL SUMMIT –



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Agenda

- Introduction
- Configuration
- Reporting
- Troubleshooting
- BIOS /Firmware

Introduction

Windows Update for Business

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 (Safeguard Hold)
 - Included driver updates
- Cons
 - Limited Control
 - Maximum 1 year postpone
 - Limited Reporting (it’s getting better)
 - Included driver updates



Types of updates

- Feature Updates
- Quality Updates
- Driver Updates
- Microsoft Product Updates
 - Other Microsoft products
 - Office that are installed by using Windows Installer (MSI) etc.
 - Office installed by using Click-to-Run can't be updated by using Windows Update for Business.
 - Product updates are off by default.

Requirements Expedite/Feature updates



- License requirements:
 - Intune + Windows Enterprise E3, VDA or Business Premium
 - Windows 10/11 that remains in support
 - Hybrid AD joined or Azure AD joined
 - Enrolled in Intune MDM
 - Telemetry turned on
-
- *Windows 10/11 Enterprise LTSC/LTSB is **not** supported*

<https://docs.microsoft.com/en-us/mem/intune/protect/windows-10-feature-updates>



Pre-Requisite & Configuration

Windows Update for Business

Generally Available

Feature Updates and quality updates (expedited updates), are (finally) out of preview and now generally available ☺

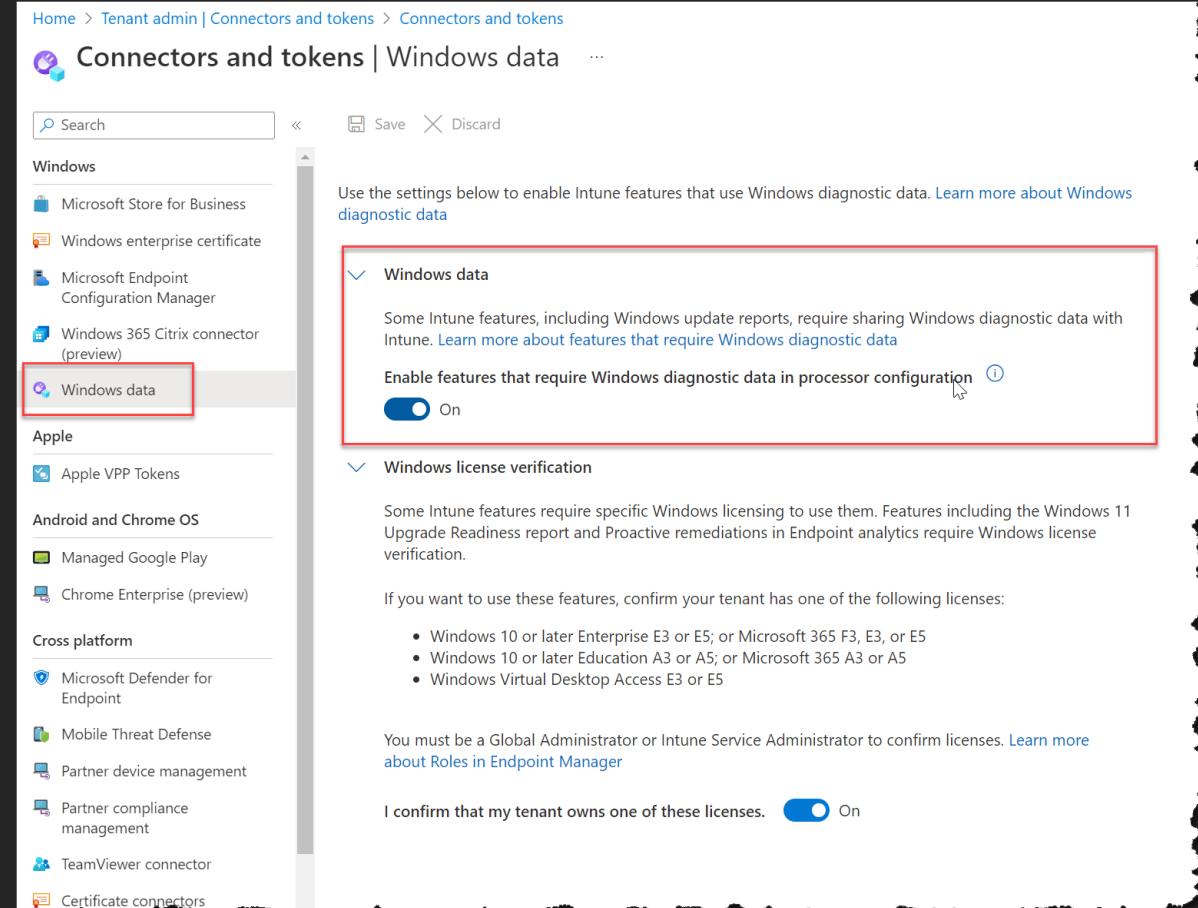
- Service Release 2212 (December 12th, 2022).
- The UI still says “Preview”



Enable use of Windows diagnostic data

Configure your tenant

- Windows Diagnostic Data
- License Attestation
- The following features require you to enable this support:
 - Windows feature update device readiness report
 - Windows feature update compatibility risks report



Policy - Data Collection

- Diagnostic Data (Device Name)
- WUfB Processing

System Remove category

25 of 31 settings in this category are not configured

Allow device name to be sent in Windows diagnostic data ⓘ	<input checked="" type="checkbox"/> Allowed.
Allow Telemetry ⓘ	Full
Allow Update Compliance Processing ⓘ	<input checked="" type="checkbox"/> Enabled
Allow WUfB Cloud Processing ⓘ	<input checked="" type="checkbox"/> Enabled
Configure Telemetry Opt In Change Notification	<input checked="" type="checkbox"/> Disable telemetry change notifications.
Configure Telemetry Opt In Settings Ux	<input checked="" type="checkbox"/> Disable Telemetry opt-in Settings.

Configuration settings Review + save

Windows Autopatch Remove category

24 of 31 settings in this category are not configured

Allow Microsoft Managed Desktop Processing ⓘ	<input checked="" type="checkbox"/> Allowed
Allow Telemetry ⓘ	Full
Configure Telemetry Opt In Change Notification	<input checked="" type="checkbox"/> Disable telemetry change notifications.
Configure Telemetry Opt In Settings Ux	<input checked="" type="checkbox"/> Disable Telemetry opt-in Settings.
Limit Diagnostic Log Collection ⓘ	<input checked="" type="checkbox"/> Enabled.
Limit Dump Collection ⓘ	<input checked="" type="checkbox"/> Enabled.
Limit Enhanced Diagnostic Data Windows Analytics ⓘ	<input checked="" type="checkbox"/> Enabled.

Policy - Control Policy Conflict

- MDM Wins Over GPO

1 Configuration settings 2 Review + save

+ Add settings ⓘ

Control Policy Conflict Remove category

MDM Wins Over GP ⓘ The MDM policy is used and the GP policy is blocked. ⏺ ⊖



Policy – Update Rings

1 Update ring settings

2 Review + save

Update settings

Microsoft product updates * ⓘ

Allow Block

Windows drivers * ⓘ

Allow Block

Quality update deferral period (days) * ⓘ

0

Feature update deferral period (days) *

0

Upgrade Windows 10 devices to Latest Windows 11 release

Yes No

User experience settings

Automatic update behavior ⓘ

Auto install and restart at maintenance time

Active hours start * ⓘ

8 AM

Active hours end * ⓘ

5 PM

Restart checks ⓘ

Allow Skip

Option to pause Windows updates ⓘ

Disable Enable

Option to check for Windows updates ⓘ

Enable Disable

Change notification update level ⓘ

Use the default Windows Update notifications

Use deadline settings ⓘ

Allow Not configured

Deadline for feature updates ⓘ

2

Deadline for quality updates ⓘ

2

Grace period ⓘ

1

Auto reboot before deadline ⓘ

Yes No

Feature Update Deployment

Rollout Options

- First group availability
- Final group availability
- Days between groups

Example:

- Clients: 400
- First day: 1/3-2023
- Last day: 10/3-2023
- Days between groups: 3
- Result: **4 Rings** x 100 Clients
 - (1/3, 4/3, 7/3, 10/3)

1 Deployment settings 2 Review + save

Enable Windows health monitoring and select Windows Update scope to get detailed device states and errors. [Learn more](#)

Name * Windows 11

Description

Feature deployment settings

Feature update to deploy ⓘ Windows 11, version 22H2

By selecting this Feature update to deploy you are agreeing that when applying this operating system to a device either (1) the applicable Windows license was purchased through volume licensing, or (2) that you are authorized to bind your organization and are accepting on its behalf the relevant Microsoft Software License Terms to be found here <https://go.microsoft.com/fwlink/?linkid=2171206>.

Rollout options *

Make update available as soon as possible

Make update available on a specific date

Make update available gradually

When would you like to make the update available in Windows Update?

First group availability * 03/01/2023

Final group availability * 03/10/2023

Days between groups 3

Quality Updates / Expedited Updates



Pros

- Expediting software updates can help decrease the time to get to compliant when necessary!

Cons

- It has a larger impact on end-user productivity.
- The chances that they will experience a restart during business hours is significantly increased!

A screenshot of the Windows Update Settings interface. At the top, there are two tabs: "Settings" (which is selected) and "Review + save". Below the tabs, there is a note: "Enable Windows health monitoring and select Windows Update scope to get detailed device states and errors. [Learn more](#)".

Name *: 2023.02 - All CPC - 0 Days

Description: (Empty text area)

Information: "The only dedicated quality update control currently available other than the existing update rings policy for Windows 10 and later is the ability to expedite quality updates for devices that fall behind a specified patch level. Additional controls will be available in the future."

Warning: "While expediting software updates can help decrease the time to get to compliance when necessary, it has a larger impact on end-user productivity. The chances that they will experience a restart during business hours is significantly increased."

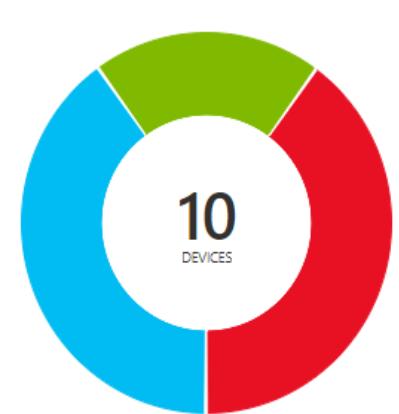
Expedite installation of quality updates if device OS version less than: 02/14/2023 - 2023.02 B Security Updates for Windows 10 and later

Number of days to wait before restart is enforced: 0 days (selected), 1 day, 2 days

Columns
Export

ⓘ Enable Windows health monitoring and select Windows Update scope to get detailed device states and errors. [Learn more](#).

Report generated on: 2/16/2023, 10:15:26 AM



Expedited update policy 2023.02 - All CPC - 0 Days

[Select an expedited update profile](#)

[Unselect filter](#)

Update aggregated status
All

Ownership
All

[Generate again](#)

[Cancel](#)

Status:
12 hours

🔍 Search by device name, primary UPN, Intune device ID or Azure AD device ID

Showing 1 to 10 of 10 records

[◀ Previous](#) [Page 1](#) [of 1](#) [Next >](#)

Devices ↑↓	UPN ↑↓	Intune Device ID ↑↓	AAD Device ID ↑↓	Last Event Time ↑↓	Update State	Update Substate	Update Aggregated State	Alert Type	Last Scan Time ↑↓
CPC-hca-L7NP1FN	hca@apento.com	1499ee07-8485-4151-9bd...	ef4d4f76-140e-4af2-a5ed...	2/15/2023, 9:06:09 PM	Pending	Scheduled	In progress	Not applicable	Not scanned yet
CPC-jfb-0F3GA4E	jfb@apento.com	4e944d7d-817a-4295-b66...	31cab691-7358-49b5-b2d...	2/15/2023, 9:03:59 PM	Needs attention	Needs attention	Error	Expedite client missing	Not scanned yet
CPC-jok-YMMIM9T	jok@apento.com	2505394d-eac9-4ce9-958...	7e7544d7-3e0b-4d71-ab9...	2/16/2023, 12:52:09 AM	Offering	Offer ready	In progress	Not applicable	Not scanned yet
CPC-mat-K51PVH9	mat@apento.com	2850618d-0cd4-4510-958...	310f9e15-cef1-473f-86c3...	2/15/2023, 9:06:09 PM	Needs attention	Needs attention	Error	Expedite client missing	Not scanned yet
CPC-mba-47OYEDS	mba@apento.com	404665e5-4ed1-4a9b-bd2...	4406cf29-f7a3-485d-b7c8...	2/15/2023, 9:01:17 PM	Offering	Offer ready	In progress	Not applicable	Not scanned yet
CPC-mth-CJCKPTK	mth@apento.com	51909c6a-d71a-405d-af89...	a1640001-e49f-4096-81c5...	2/15/2023, 9:06:10 PM	Needs attention	Needs attention	Error	Expedite client missing	Not scanned yet
CPC-mum-V4PBYLJ	mum@apento.com	faa56789-dffc-4687-b923...	313a3732-f129-4df9-acfe...	2/16/2023, 12:39:02 AM	Installed	Update installed	Success	Not applicable	2/16/2023, 12:39:02 AM
CPC-psd-5MS9LYD	psd@apento.com	82252f31-04d5-4883-9fb...	26c2c485-c82c-4c9b-a78e...	2/15/2023, 9:26:22 PM	Offering	Offer ready	In progress	Not applicable	Not scanned yet
CPC-rcn-CKW05MD	rcn@apento.com	98fb28cf-39d8-4ab1-aff6...	61393c59-5a39-4531-919...	2/15/2023, 9:04:56 PM	Needs attention	Needs attention	Error	Expedite client missing	Not scanned yet
CPC-rop-I4Q18VL	rop@apento.com	c05260f2-8c78-4ed1-819f...	f814e6f7-6a6c-462f-9e6f...	1/25/2023, 7:51:31 PM	Installed	Update installed	Success	Not applicable	1/25/2023, 7:51:31 PM

Update for Windows Update Service components (KB4023057)

- All builds of Windows 10 and Windows 11 require this update!

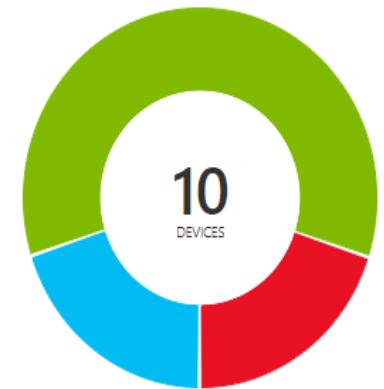


<https://support.microsoft.com/en-us/topic/kb4023057-update-for-windows-update-service-components-fccad0ca-dc10-2e46-9ed1-7e392450fb3a>

[Columns](#) [Export](#)

[i](#) Enable Windows health monitoring and select Windows Update scope to get detailed device states and errors. [Learn more.](#)

Report generated on: 2/16/2023, 6:48:20 PM



Expedited update policy 2023.02 - All CPC - 0 Days

[Select an expedited update profile](#)

[Unselect filter](#)

Update aggregated status
All

Ownership
All

[Generate again](#)

[Cancel](#)

*Status:
24 hours*

[🔍](#) Search by device name, primary UPN, Intune device ID or Azure AD device ID

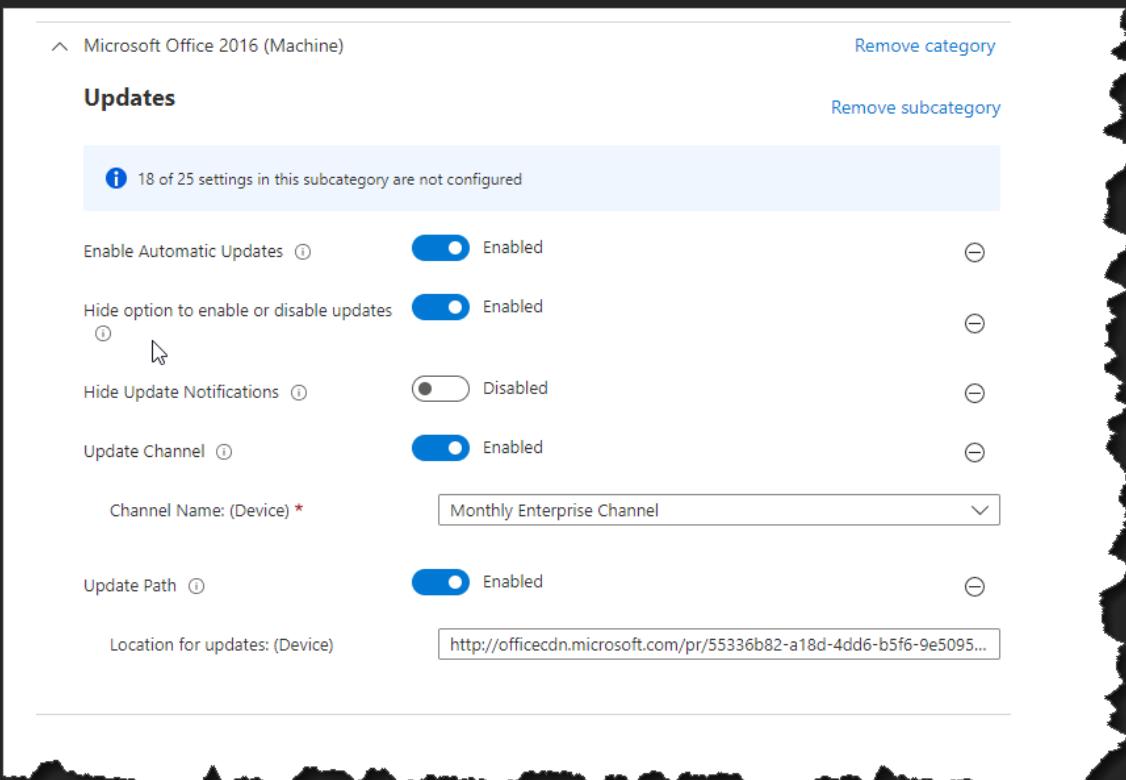
Showing 1 to 10 of 10 records

[◀ Previous](#) [Page 1](#) [of 1](#) [Next ▶](#)

Devices ↑↓	UPN ↑↓	Intune Device ID ↑↓	AAD Device ID ↑↓	Last Event Time ↑↓	Update State	Update Substate	Update Aggregated State	Alert Type	Last Scan Time ↑↓
CPC-hca-L7NP1FN	hca@apento.com	1499ee07-8485-4151-9bd3-...	ef4d4f76-140e-4af2-a5ed-3e...	2/16/2023, 7:20:40 AM	Installed	Update installed	Success	Not applicable	2/16/2023, 7:20:40 AM
CPC-jfb-0F3GA4E	jfb@apento.com	4e944d7d-817a-4295-b667-...	31cab691-7358-49b5-b2d8-...	2/16/2023, 11:35:05 AM	Installed	Update installed	Success	Not applicable	2/16/2023, 11:35:05 AM
CPC-jok-YMMIM9T	jok@apento.com	2505394d-eac9-4ce9-9584-...	7e7544d7-3e0b-4d71-ab99-...	2/16/2023, 6:21:51 AM	Installed	Update installed	Success	Not applicable	2/16/2023, 6:21:51 AM
CPC-mat-K51PVH9	mat@apento.com	2850618d-0cd4-4510-958a-...	310f9e15-cef1-473f-86c3-4d...	2/15/2023, 9:06:09 PM	Needs attention	Needs attention	Error	Expedite client missing	2/16/2023, 11:42:05 AM
CPC-mba-47OYESD	mba@apento.com	404665e5-4ed1-4a9b-bd24-...	4406cf29-f7a3-485d-b7c8-c...	2/16/2023, 1:16:46 AM	Installed	Update installed	Success	Not applicable	2/16/2023, 1:16:46 AM
CPC-mth-CJCKPTK	mth@apento.com	51909c6a-d71a-405d-af89-3...	a1640001-e49f-4096-81c5-6...	2/16/2023, 12:55:03 PM	Offering	Offer ready	In progress	Not applicable	Not scanned yet
CPC-mum-V4PBYLJ	mum@apento.com	faa56789-dffc-4687-b923-cd...	313a3732-f129-4df9-acfe-c1...	2/16/2023, 12:39:02 AM	Installed	Update installed	Success	Not applicable	2/16/2023, 12:39:02 AM
CPC-psd-5MS9LYD	psd@apento.com	82252f31-04d5-4883-9fbc-e...	26c2c485-c82c-4c9b-a78e-f...	2/16/2023, 5:08:30 AM	Installed	Update installed	Success	Not applicable	2/16/2023, 5:08:30 AM
CPC-rcn-CKW05MD	rcn@apento.com	98fb28cf-39d8-4ab1-aff6-fe...	61393c59-5a39-4531-9198-...	2/15/2023, 9:04:56 PM	Needs attention	Needs attention	Error	Expedite client missing	Not scanned yet
CPC-rop-I4Q18VL	rop@apento.com	c05260f2-8c78-4ed1-819f-6...	f814e6f7-6a6c-462f-9e6f-ab...	2/16/2023, 12:55:02 PM	Offering	Offer ready	In progress	Not applicable	1/25/2023, 7:51:31 PM

Office Updates

- Office Configuration (All)



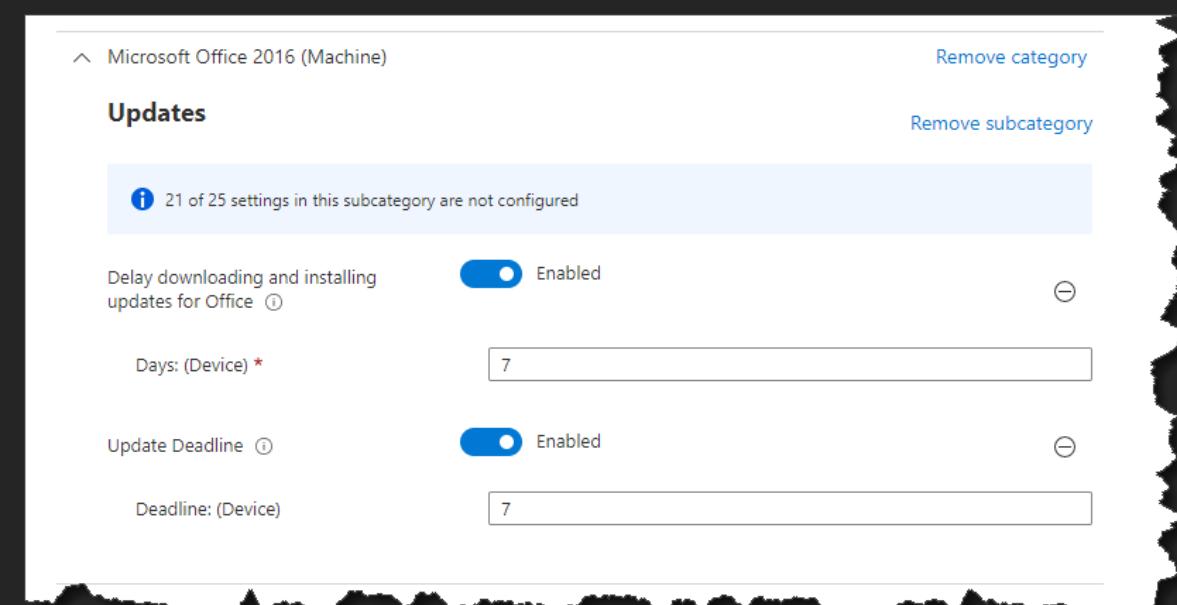
Microsoft Office 2016 (Machine) Remove category

Updates Remove subcategory

18 of 25 settings in this subcategory are not configured

Enable Automatic Updates Enabled
Hide option to enable or disable updates Enabled
Hide Update Notifications Disabled
Update Channel Enabled
Channel Name: (Device) * Monthly Enterprise Channel
Update Path Enabled
Location for updates: (Device) http://officecdn.microsoft.com/pr/55336b82-a18d-4dd6-b5f6-9e5095...

- Deployment Rings



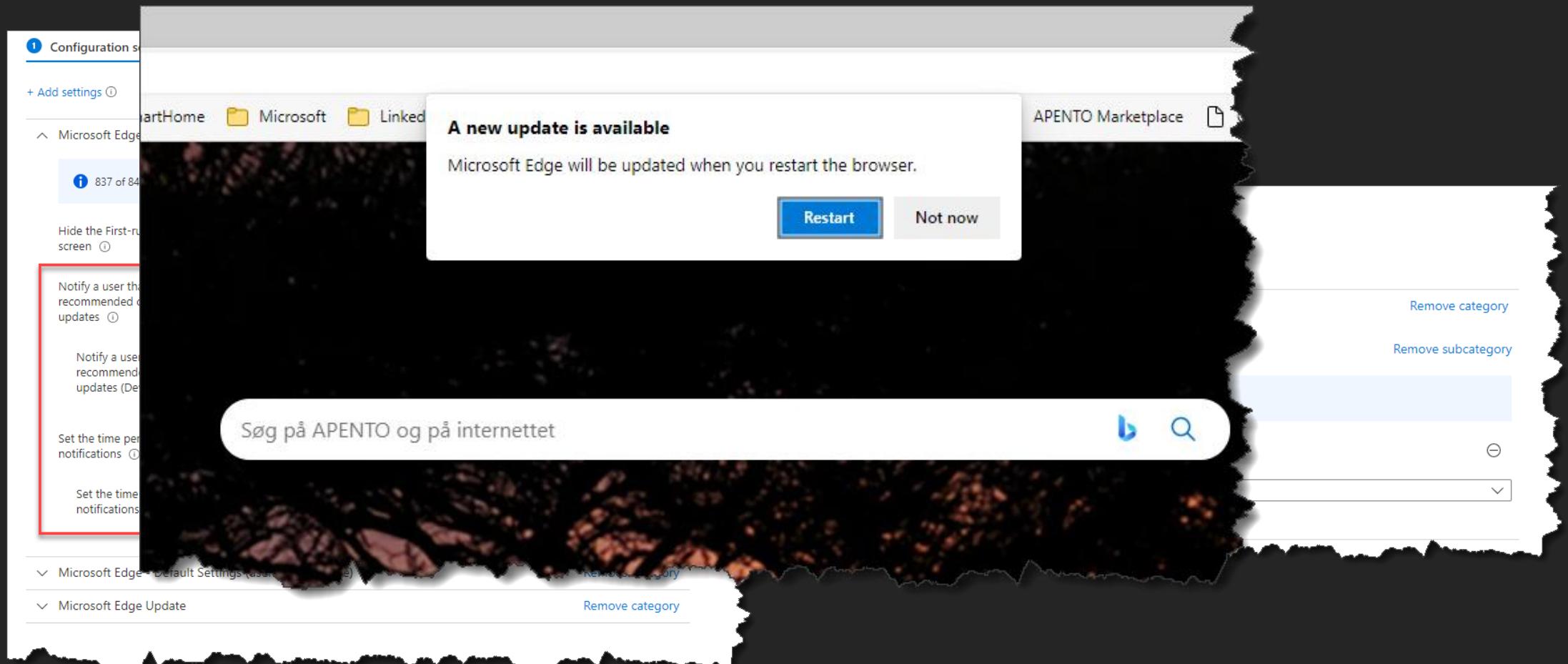
Microsoft Office 2016 (Machine) Remove category

Updates Remove subcategory

21 of 25 settings in this subcategory are not configured

Delay downloading and installing updates for Office Enabled
Days: (Device) * 7
Update Deadline Enabled
Deadline: (Device) 7

Microsoft Edge



Reporting

Windows Update for Business

Reports: Windows updates



Home > Reports

Reports | Windows updates (preview)

Search < Summary Reports

Overview

Device management

- Device compliance
- Device configuration (preview)
- Group policy analytics (preview)
- Windows updates (preview)**

Endpoint security

- Microsoft Defender Antivirus
- Firewall

Analytics

- Endpoint analytics

Intune data warehouse

- Data warehouse

Last refreshed on: 12/02/2023, 14:28:01

Windows Feature updates

In progress	Success	Error	Rollback initiated or comp...	Cancelled	On hold	Total
0 devices	15 devices	0 devices	0 devices	0 devices	0 devices	9 devices

Profile Versions Success Error In progress Rollback initiated... Cancelled On hold

Moden Moden Moden Moden Moden Moden

Last refreshed on: 12/02/2023, 14:28:15

Windows Expedited Quality updates

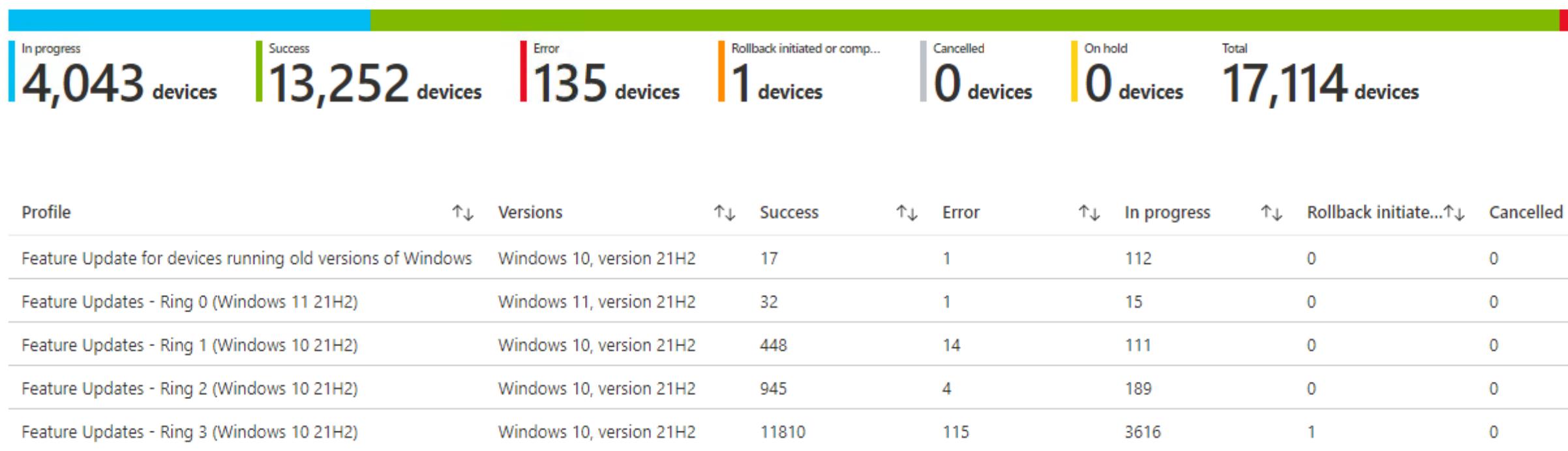
In progress	Success	Error	Cancelled	Total
0 devices	14 devices	3 devices	0 devices	17 devices

Profile Versions Success Error In progress Cancelled

High Priority patching September 2022 2022-09-13T00:00:00Z 14 3 0 0

Customer after 60 days (gradually roll-out)

Windows Feature updates



Update Compliance is retired

- Update Compliance is retiring on March 31st, 2023, enroll in WUfB reports by February 14th.
- No CommercialID needed anymore

More information: <https://aka.ms/wufbreportsGA>

Windows Update for Business Reports



- Microsoft 365 admin center
- The “Gap” challenge
- Requires Azure Subscription

<https://aka.ms/wufbreports>

Software updates

Microsoft 365 apps (Microsoft 365) Windows

Learn how to manage your updates through the cloud with Windows Update for Business. Find information about known issues for currently supported versions of the Windows operating system on [Windows release health](#).

[Go to Windows Update for Business reports](#) [Configure settings](#)

Windows update status

8% of devices are running unsupported operating systems

Devices that are not up to date are missing the latest security updates and therefore aren't eligible for Microsoft Support.

Devices by update status

12 AAD Enrolled devices

■ Up To Date ■ Missing Security Updates ■ Unsupported Operating Systems

End of servicing

Zero devices are reaching end of servicing

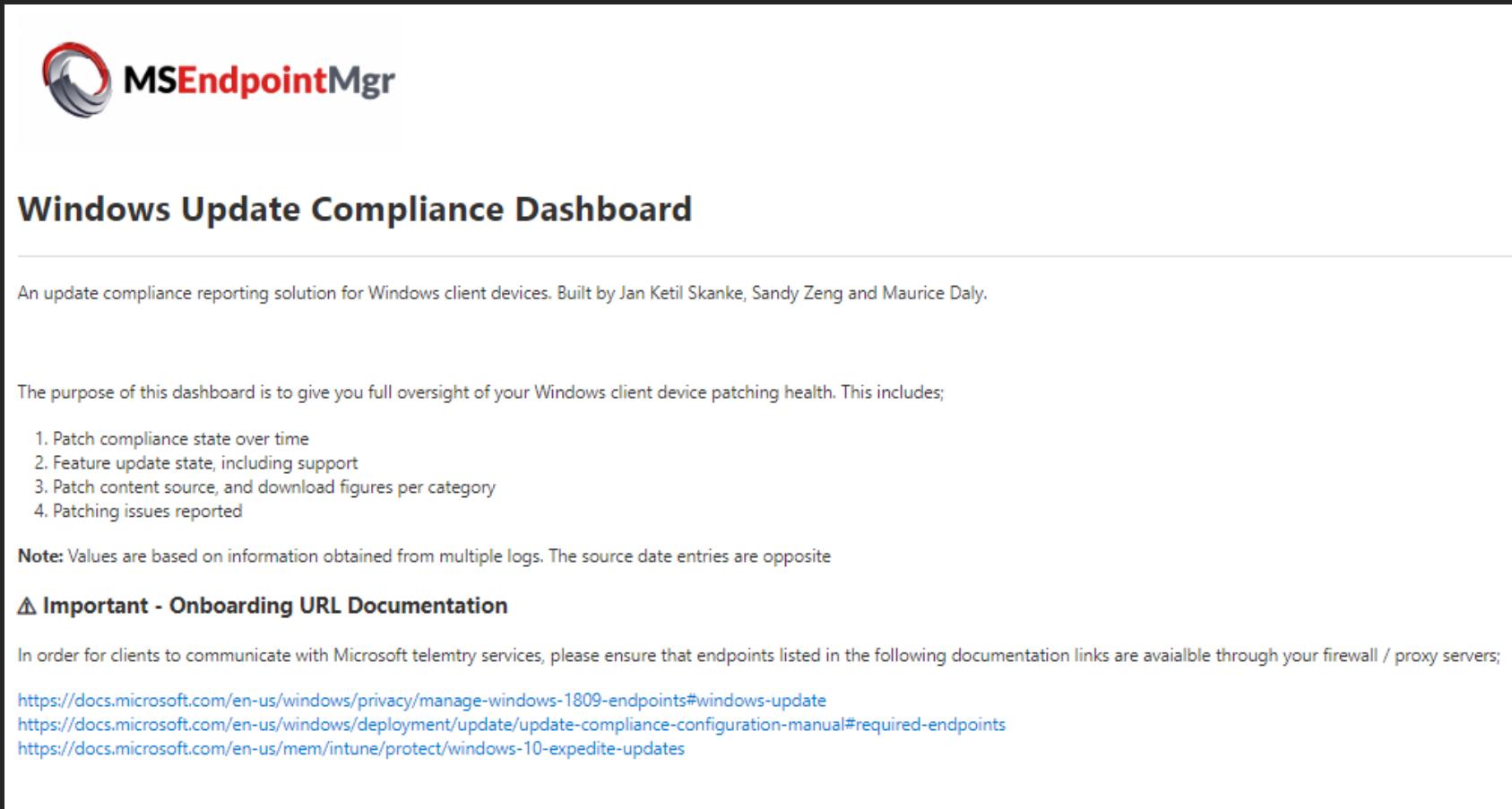
Some Windows versions are reaching end of servicing. Microsoft recommends that you update your devices to the latest version of Windows 10 or upgrade eligible devices to Windows 11 to take advantage of new features and advanced protections from the latest security threats.

Version	Status	Number of devices

MSEndpointMgr – Windows Update compliance Dashboard



- Downloadable Workbook
- More details



The screenshot shows the homepage of the MSEndpointMgr Windows Update Compliance Dashboard. At the top left is the MSEndpointMgr logo, which consists of a stylized red and grey circular icon followed by the text "MSEndpointMgr". The main title "Windows Update Compliance Dashboard" is centered above a horizontal line. Below the line, a subtitle reads: "An update compliance reporting solution for Windows client devices. Built by Jan Ketil Skanke, Sandy Zeng and Maurice Daly." A descriptive paragraph explains the purpose of the dashboard: "The purpose of this dashboard is to give you full oversight of your Windows client device patching health. This includes; 1. Patch compliance state over time 2. Feature update state, including support 3. Patch content source, and download figures per category 4. Patching issues reported". A note below states: "Note: Values are based on information obtained from multiple logs. The source date entries are opposite". A section titled "⚠ Important - Onboarding URL Documentation" provides links to Microsoft documentation: "<https://docs.microsoft.com/en-us/windows/privacy/manage-windows-1809-endpoints#windows-update>", "<https://docs.microsoft.com/en-us/windows/deployment/update/update-compliance-configuration-manual#required-endpoints>", and "<https://docs.microsoft.com/en-us/mem/intune/protect/windows-10-expedite-updates>".

Time Range: Last 90 days ▾

[Update Summary](#) [Quality Update History](#) [Details by Device](#) [Details by Update](#) [Update Issues](#) [Delivery Optimization](#) [Feature Updates](#) [Windows 11 Readiness](#) [Microsoft Office, Edge & Third Party](#)

✓ Update Compliance Health

Update compliance is operational on your devices.

⌚ Active Device Count

14

Intune managed devices (> ago(90d))

ℹ Windows Update for Business

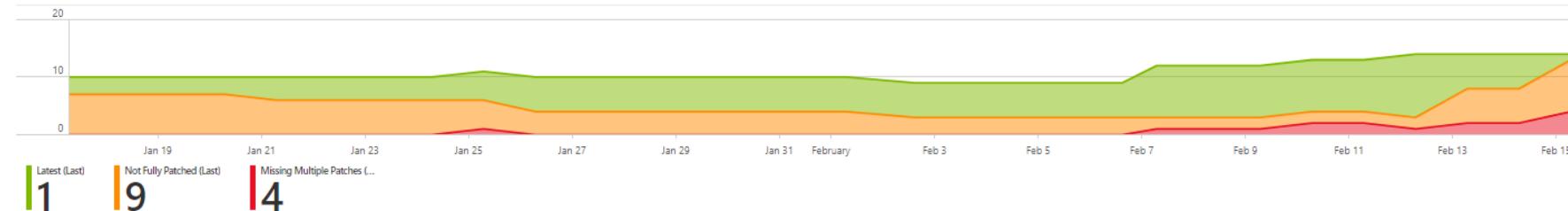
Windows Update for Business is reporting that not all of your devices are registered. This can be due to your update workload configuration, and/or retired devices in your environment.

☁ WUfB Devices

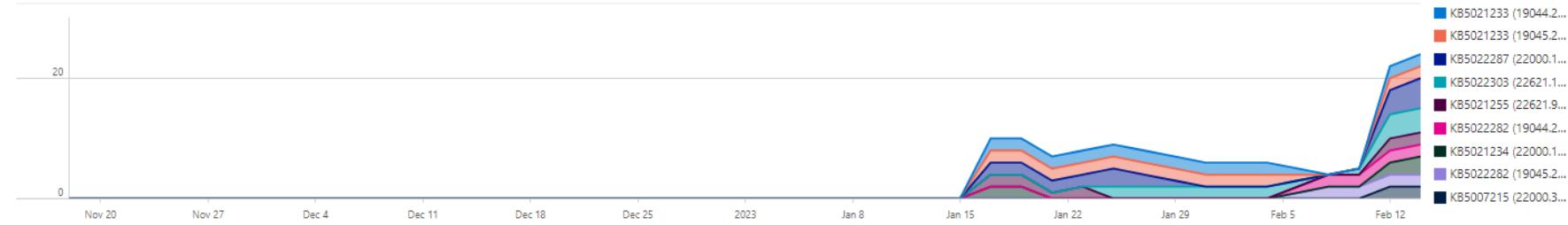
15

Registered devices (> ago(90d))

Quality Update Patch Trend



Successful Quality Update Installs - Per Day



Patch Installation State

ℹ The query returned no results.

Defender for Endpoint

- This is what your security department will use.
- GAP challenge

Security recommendations > Windows 11

Windows 11

Overview	Security recommendations (69)	Discovered vulnerabilities (267)	Installed devices (17)	Version distribution (9)	Missing KBs (11)	Event time
----------	-------------------------------	----------------------------------	------------------------	--------------------------	------------------	------------

Entity summary

Software details

Vendor	Microsoft	OS platform	Windows
Installed on	17	Exposed devices	15

Threat context

Exploits available
Yes

Recommendations

Impact
▼ 39.50

Top events (7 days)

Date (UTC)	Event	Originally impacted device...
Feb 14, 2023 ...	Microsoft Windows 11 has 33 new vulnerabilities, impacting 13 devices	13 (72%)
Feb 14, 2023 ...	Microsoft Windows 10 has 35 new vulnerabilities, impacting 3 devices	3 (17%)

Entity summary

Software details

Discovered weaknesses

267 vulnerabilities and 68 ...

Total vulnerabilities

Total misconfigurations

Exposed devices

15 exposed devices out of 17 installed devices

See all installed devices

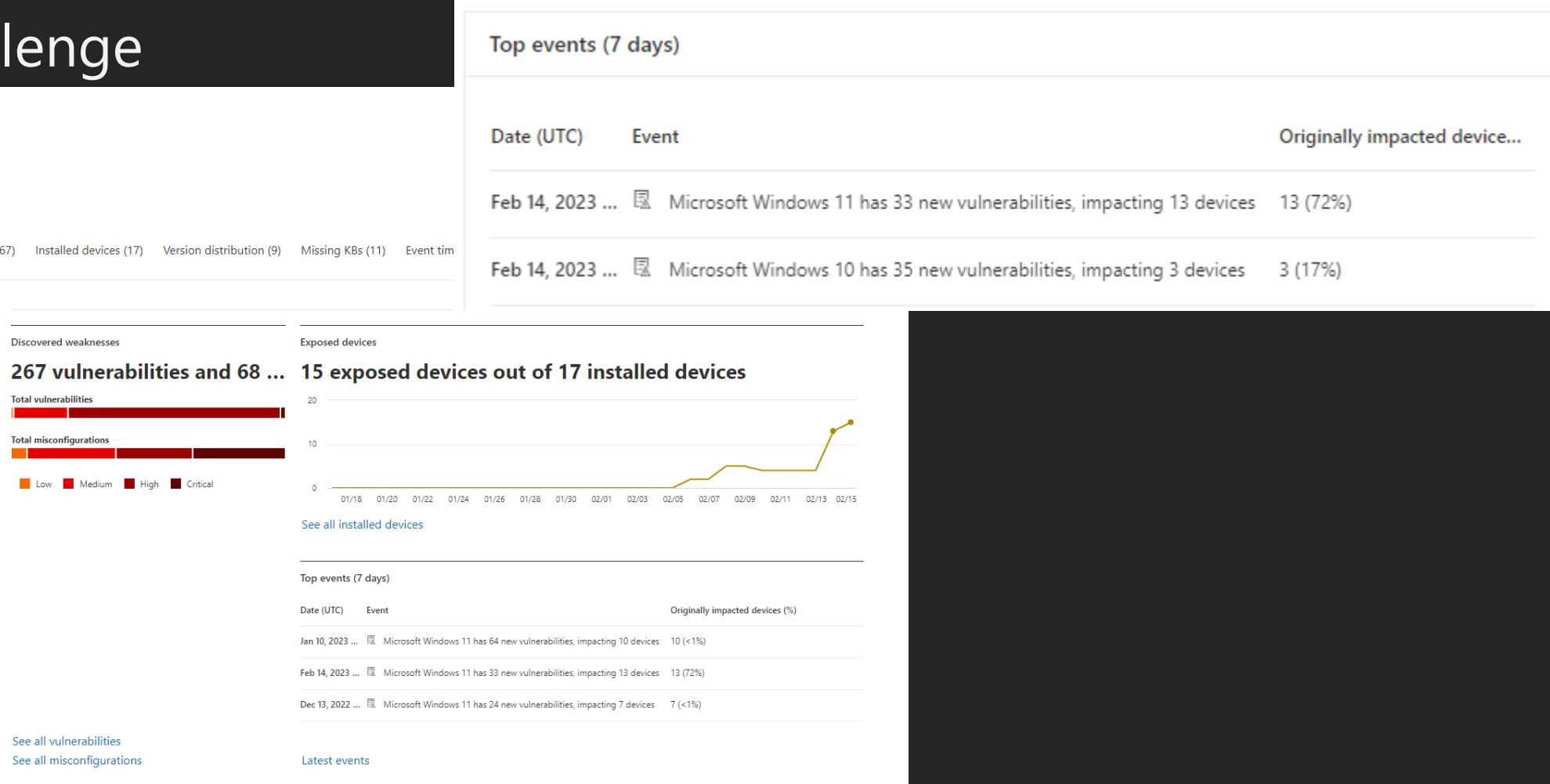
Top events (7 days)

Date (UTC)	Event	Originally Impacted devices (%)
Jan 10, 2023 ...	Microsoft Windows 11 has 64 new vulnerabilities, impacting 10 devices	10 (<1%)
Feb 14, 2023 ...	Microsoft Windows 11 has 33 new vulnerabilities, impacting 13 devices	13 (72%)
Dec 13, 2022 ...	Microsoft Windows 11 has 24 new vulnerabilities, impacting 7 devices	7 (<1%)

See all vulnerabilities

See all misconfigurations

Latest events



Challenges with patching/reporting

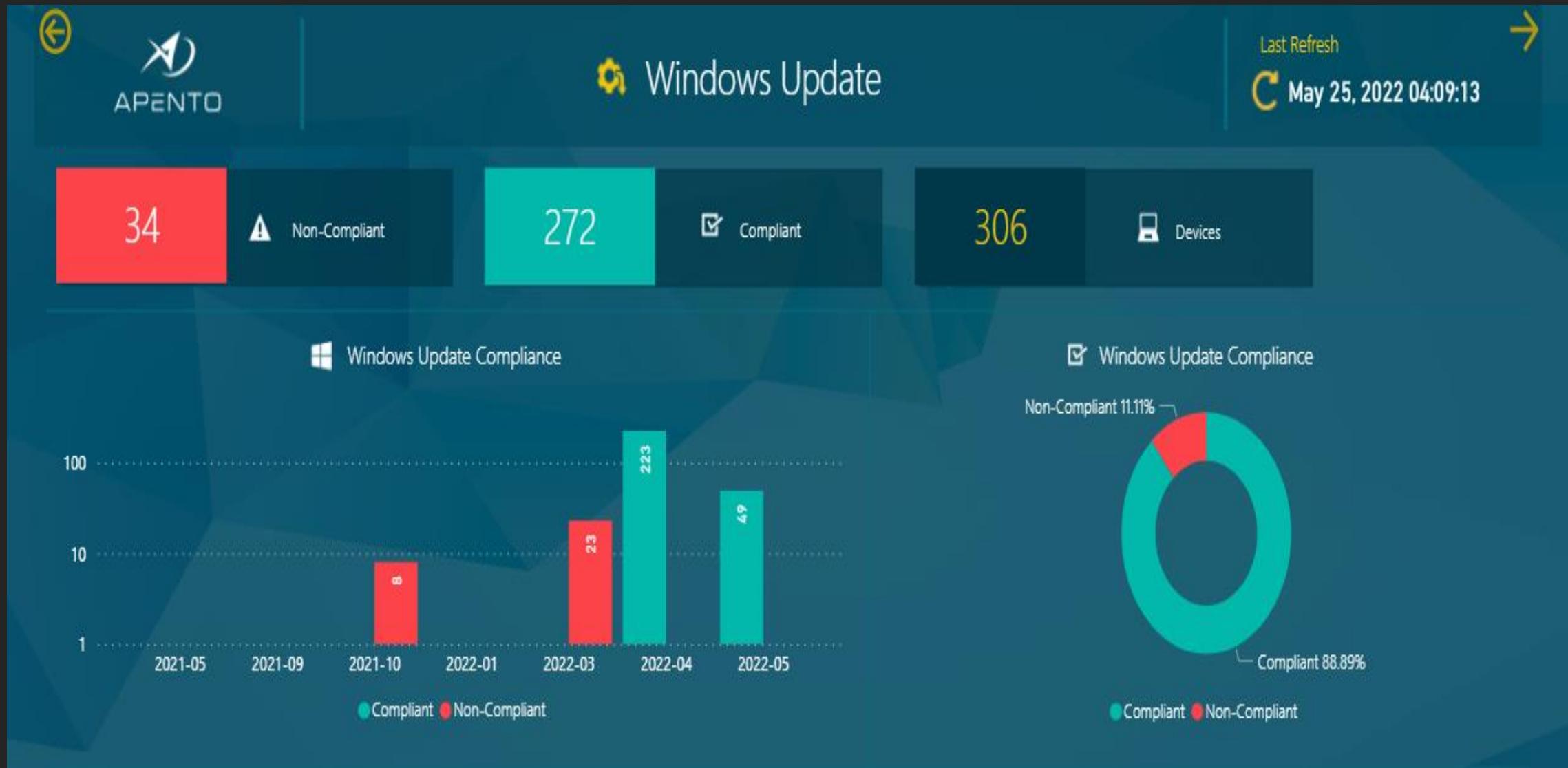


- You will never reach 100%

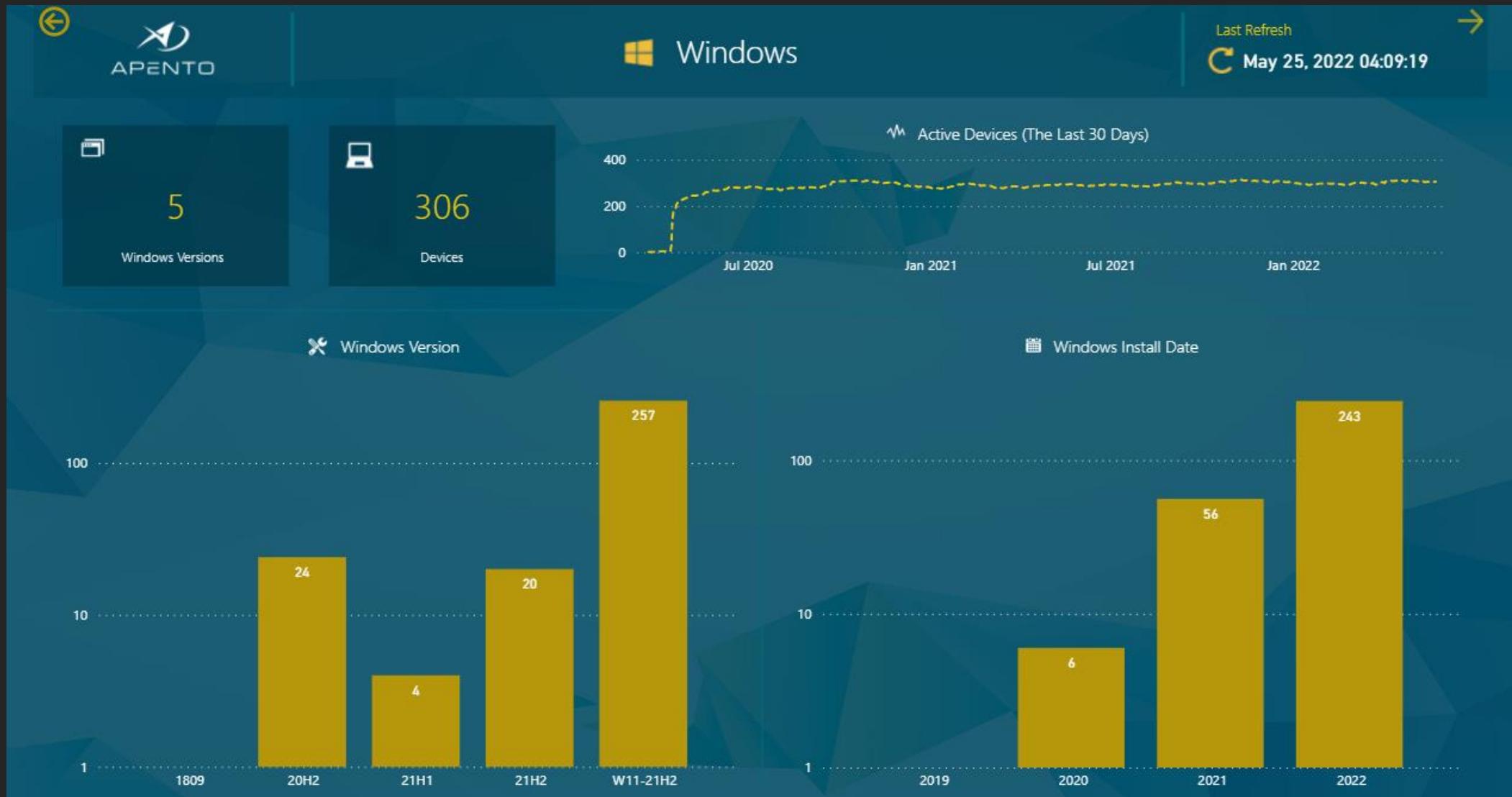
A photograph of a yellow "MIND THE GAP" sign painted on a dark, textured surface, likely a train platform edge. The sign is divided into two sections by a vertical line. The left section contains the word "MIND" and the right section contains "THE GAP". The background shows a dark, patterned floor.

Who owns the GAP?

Custom Power BI Reports is key



Monitoring Feature Upgrades



Windows 11 Readiness- Endpoint Analytics

- Easy to start using (Tenant attach, Intune, Co-Management)
 - Requires Windows Enterprise E3 (Microsoft 365 E3, EMS E3 or better).

Search by device name, manufacturer, model or OS version							Device scope: All Devices				
Showing 1 to 11 of 11 records							< Previous	Page	1	of 1	Next >
+ Add filter											
Device name ↑↓	Managed by ↑↓	Manufacturer ↑↓	Model ↑↓	OS version ↑↓	Windows 11 readiness status ↑↓	Windows 11 readiness reason					
W10TEST126	Co-managed	Microsoft Corporation	Virtual Machine	10.0.19043.1889	Capable	--					
W10TEST122	Co-managed	Microsoft Corporation	Virtual Machine	10.0.19045.2486	Capable	--					
DESKTOP-VPOM6H2	Intune	Microsoft Corporation	Virtual Machine	10.0.19044.2486	Not capable	RAM					
W10AAD10	Intune	Microsoft Corporation	Virtual Machine	10.0.22621.1105	Upgraded	--					

Troubleshooting

Windows Update for Business

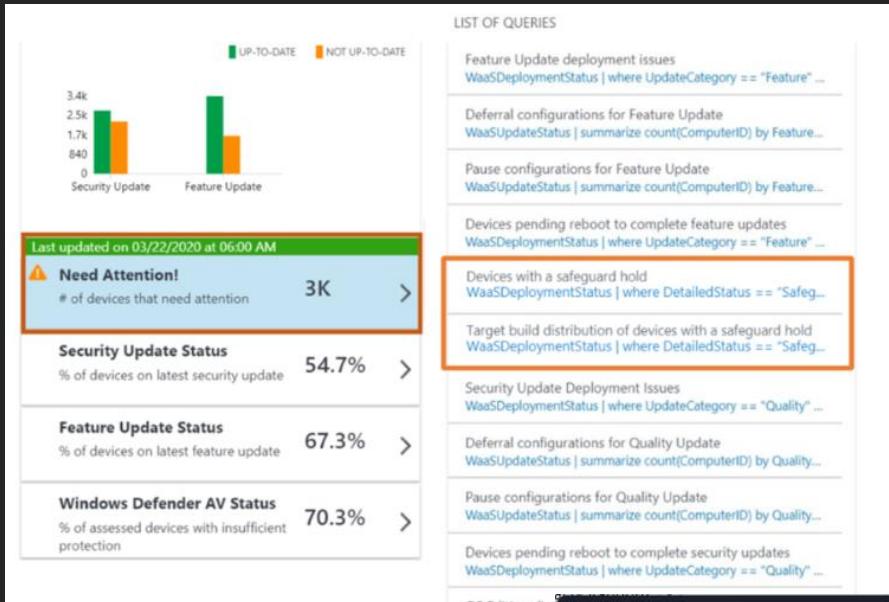
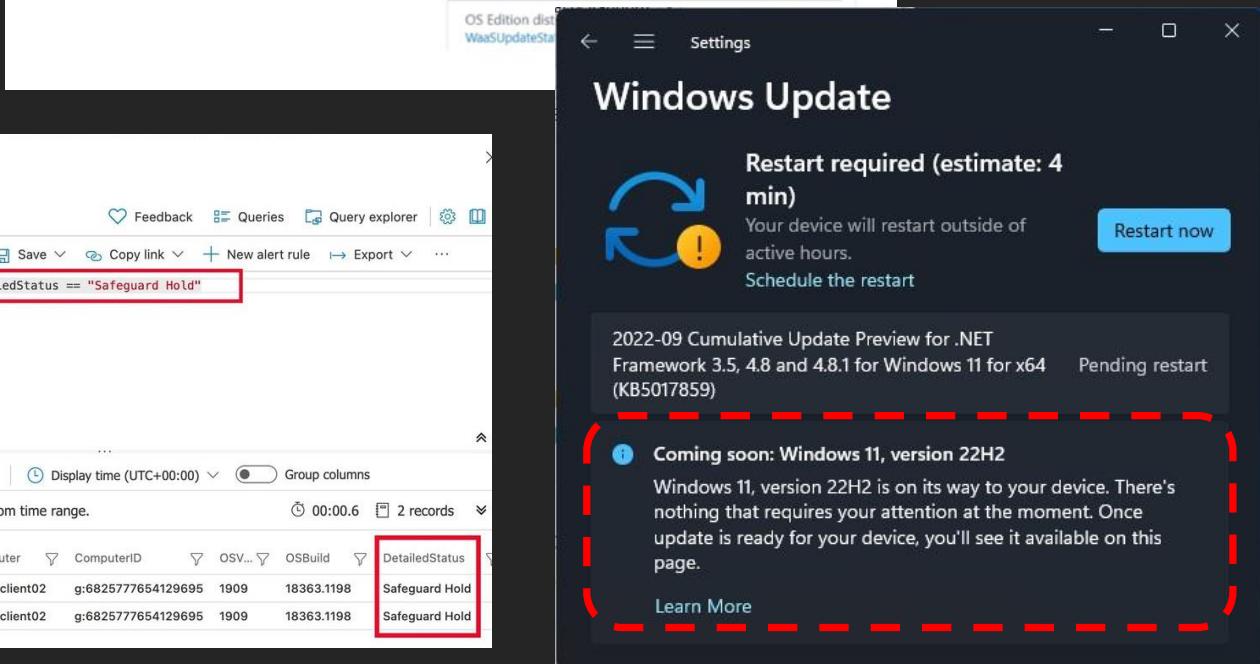
Safeguard Holds

What is a Safeguard hold?

- Microsoft uses quality and compatibility data to identify issues that might cause a Windows client feature update to fail or roll back.
- When we find such an issue, we might apply safeguard holds to the updating service to prevent affected devices from installing the update in order to safeguard them from these experiences.
- Source: <https://learn.microsoft.com/en-us/windows/deployment/update/safeguard-holds>

Safeguard Holds

- Diagnostic Data is used to determine whether a devices are ready for a feature update...
- Goal: To ensure a smooth experience!

Windows Update

Restart required (estimate: 4 min)

Your device will restart outside of active hours.

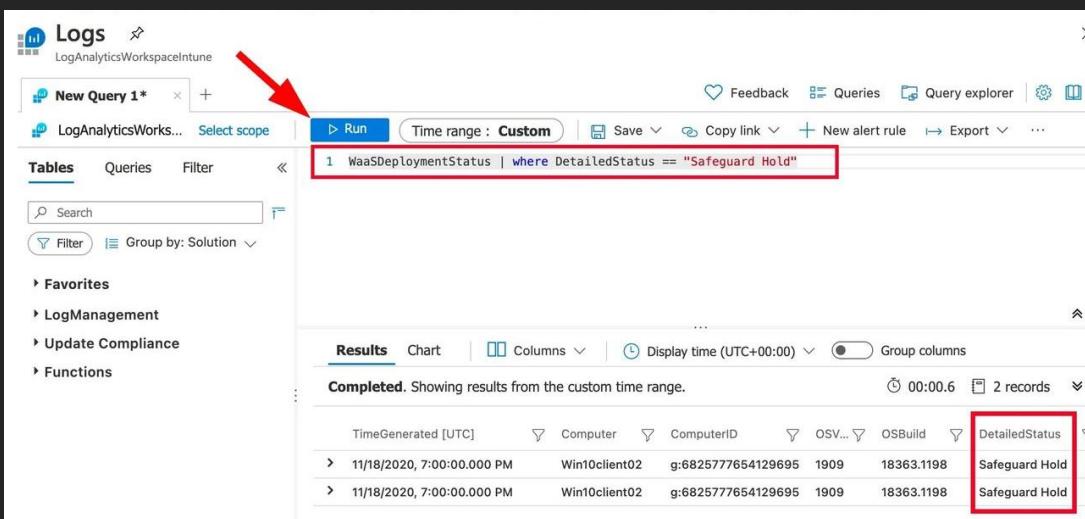
Schedule the restart

2022-09 Cumulative Update Preview for .NET Framework 3.5, 4.8 and 4.8.1 for Windows 11 for x64 Pending restart (KB5017859)

Coming soon: Windows 11, version 22H2

Windows 11, version 22H2 is on its way to your device. There's nothing that requires your attention at the moment. Once update is ready for your device, you'll see it available on this page.

Learn More



New Query 1*

LogAnalyticsWorkspacelntune

Select scope

Run

Time range : Custom

Feedback Queries Query explorer Settings

Tables Queries Filter

Search

Filter Group by: Solution

Favorites

LogManagement

Update Compliance

Functions

Results Chart Columns Display time (UTC+00:00) Group columns

Completed. Showing results from the custom time range.

TimeGenerated [UTC]	Computer	ComputerID	OSV...	OSBuild	DetailedStatus
11/18/2020, 7:00:00.000 PM	Win10client02	g:6825777654129695	1909	18363.1198	Safeguard Hold
11/18/2020, 7:00:00.000 PM	Win10client02	g:6825777654129695	1909	18363.1198	Safeguard Hold

Get the Blocker ID (Local)

Command:

```
reg query "HKLM\SOFTWARE\Microsoft\Windows  
NT\CurrentVersion\AppCompatFlags\TargetVersionUpgradeExperienceIndicators\NI22H2"
```

Output:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows  
NT\CurrentVersion\AppCompatFlags\TargetVersionUpgradeExperienceIndicators\NI22H2
```

```
DX12    REG_SZ    0  
DestBuildNum    REG_SZ    22621  
DestBuildNumList    REG_SZ    22621,22622,22623  
GStatus    REG_SZ    0  
GatedBlockId    REG_MULTI_SZ    41928397\041332279  
GatedBlockReason    REG_MULTI_SZ    Other\0Other  
GatedFeature    REG_MULTI_SZ    None"
```

SafeGuardHoldLookupSample.ps1



- Author: Gary Blok
- Blog: <https://garytown.com/>

Script:

- <https://github.com/gwblok/garytown/blob/master/Feature-Updates/SafeGuardHolds/SafeGuardHoldLookupSample.ps1>

Output (Example)

```
APP_NAME      : Devices with Integrated 4-Channel Mic and have used Voice Recorder app
SafeguardId   : 41928397
EXE_ID        : {8b5f77d7-26d2-4221-8ab0-059f56532d5b}
PICK_ONE      :
AppName       : Devices with Integrated 4-Channel Mic and have used Voice Recorder app
VENDOR        : Microsoft
NAME          :
BlockType     : GatedBlock
```

Fix: Update driver and/or firmware

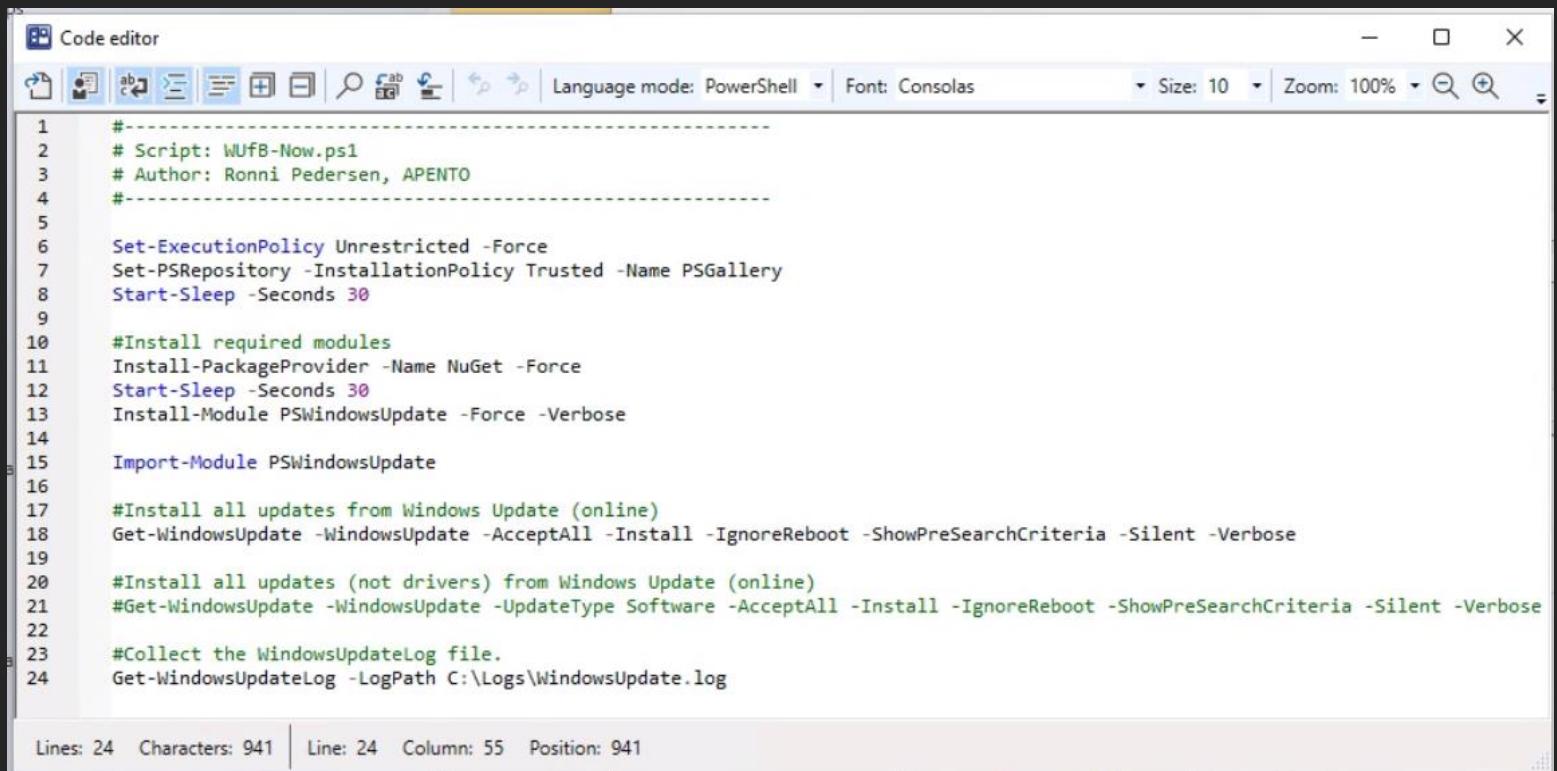
```
APP_NAME      : Devices with printer using Microsoft IPP Class Driver (Wu Offer Block)
SafeguardId   : 41332279
EXE_ID        : {cce5bc0a-4441-4c83-9633-a4c1ec4731ff}
PICK_ONE      :
AppName       : Devices with printer using Microsoft IPP Class Driver (Wu Offer Block)
VENDOR        : Microsoft
NAME          :
BlockType     : GatedBlock
```

Fix: Update or remove the printer driver

WUfB-Now.ps1 / PSWindowsUpdate

- Total Devices: 23.000
- Devices with older Feature Update: 1.272
- After Script: 307

- Script deployed from
 - SCCM
 - Intune



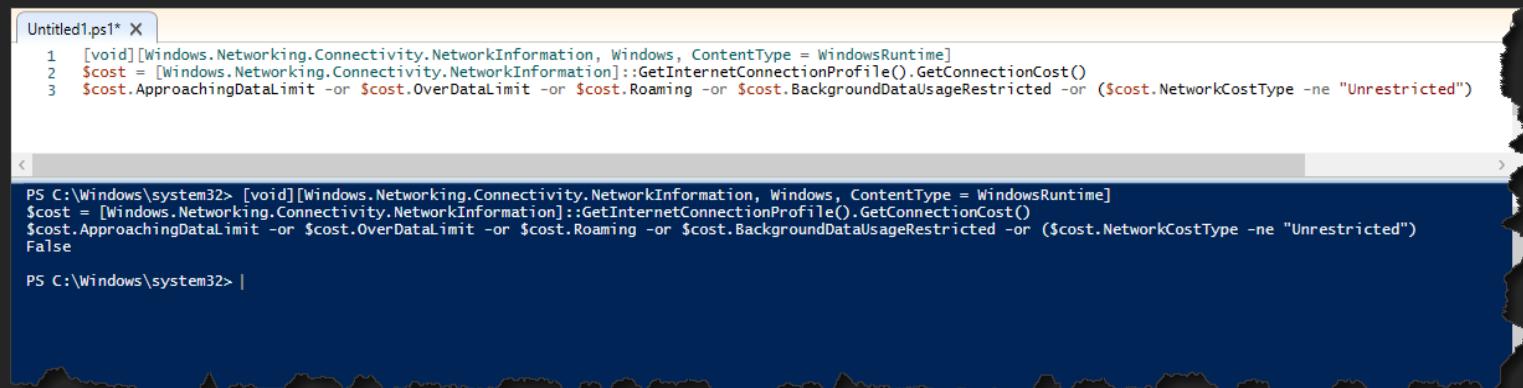
The screenshot shows a PowerShell code editor window with the following script content:

```
1  #-----
2  # Script: WUfB-Now.ps1
3  # Author: Ronni Pedersen, APENTO
4  #-----
5
6  Set-ExecutionPolicy Unrestricted -Force
7  Set-PSRepository -InstallationPolicy Trusted -Name PSGallery
8  Start-Sleep -Seconds 30
9
10 #Install required modules
11 Install-PackageProvider -Name NuGet -Force
12 Start-Sleep -Seconds 30
13 Install-Module PSWindowsUpdate -Force -Verbose
14
15 Import-Module PSWindowsUpdate
16
17 #Install all updates from Windows Update (online)
18 Get-WindowsUpdate -WindowsUpdate -AcceptAll -Install -IgnoreReboot -ShowPreSearchCriteria -Silent -Verbose
19
20 #Install all updates (not drivers) from Windows Update (online)
21 #Get-WindowsUpdate -WindowsUpdate -UpdateType Software -AcceptAll -Install -IgnoreReboot -ShowPreSearchCriteria -Silent -Verbose
22
23 #Collect the WindowsUpdateLog file.
24 Get-WindowsUpdateLog -LogPath C:\Logs\WindowsUpdate.log
```

At the bottom of the editor, the status bar displays: Lines: 24 Characters: 941 Line: 24 Column: 55 Position: 941

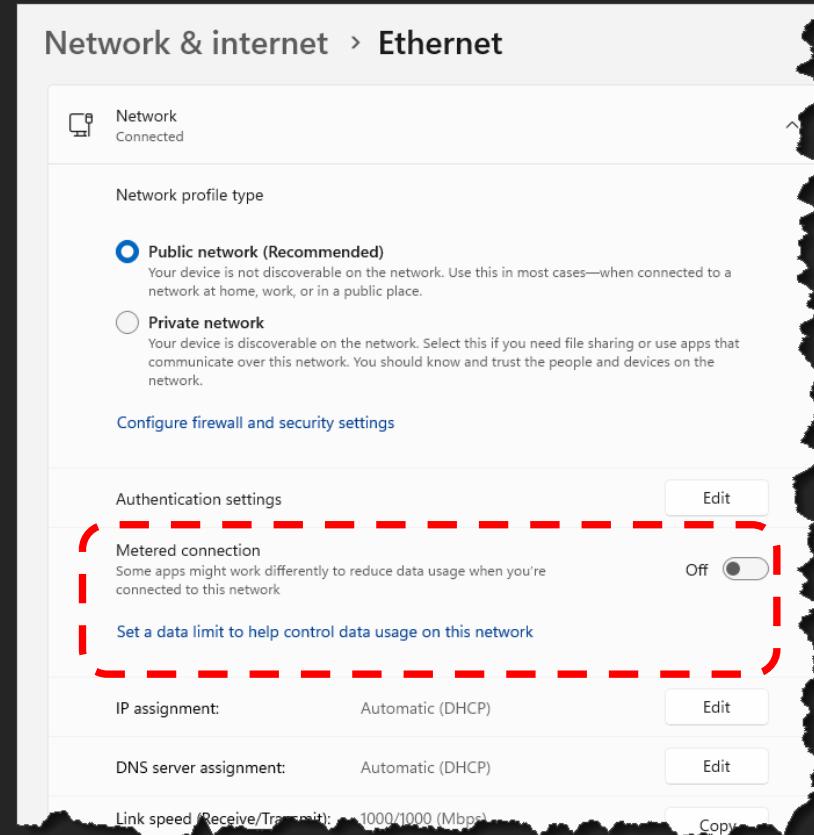
Metered Network Issue

- “Metered network” = Enabled
- Result = Not downloading updates
- Impacted Clients: 60-70
- Solution
 - Check if metered network is enabled
 - Run script remotely using PowerShell Remoting



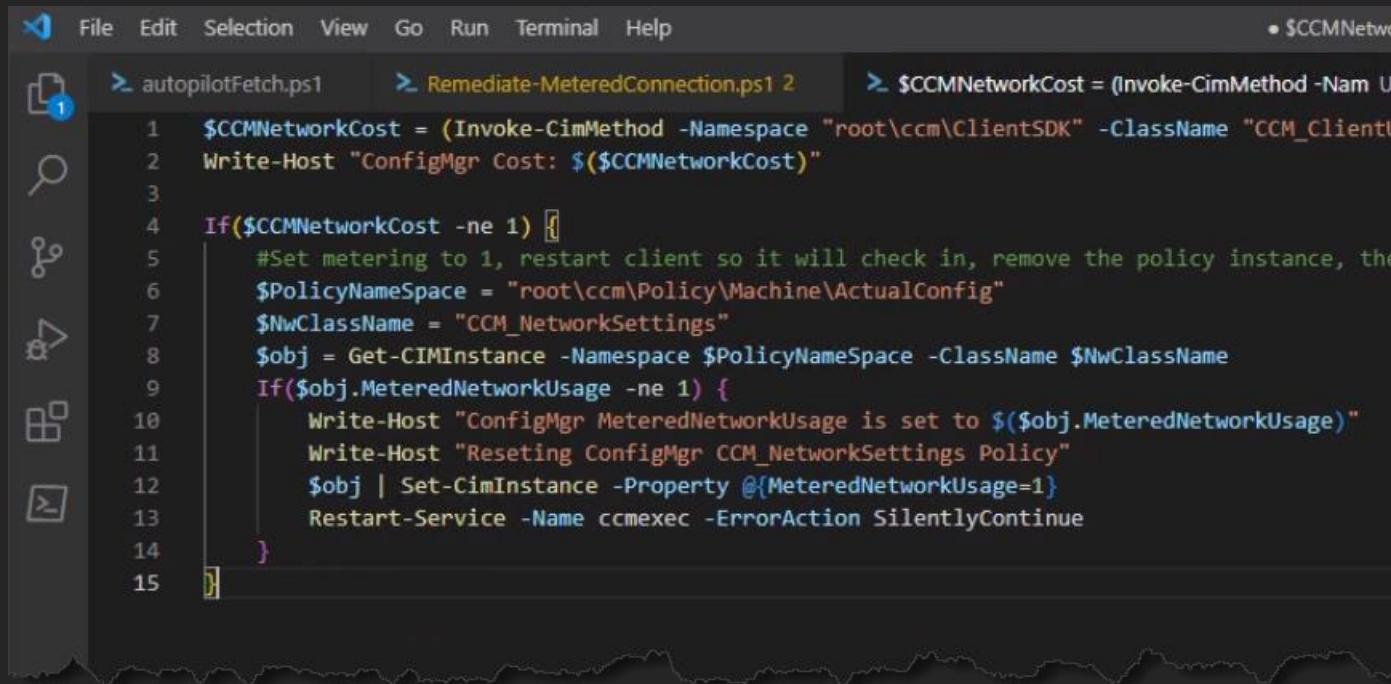
```
Untitled1.ps1* X
1 [void][Windows.Networking.Connectivity.NetworkInformation, Windows, ContentType = WindowsRuntime]
2 $cost = [Windows.Networking.Connectivity.NetworkInformation]::GetInternetConnectionProfile().GetConnectionCost()
3 $cost.ApproachingDataLimit -or $cost.OverDataLimit -or $cost.Roaming -or $cost.BackgroundDataUsageRestricted -or ($cost.NetworkCostType -ne "Unrestricted")
```

```
PS C:\Windows\system32> [void][Windows.Networking.Connectivity.NetworkInformation, Windows, ContentType = WindowsRuntime]
$cost = [Windows.Networking.Connectivity.NetworkInformation]::GetInternetConnectionProfile().GetConnectionCost()
$cost.ApproachingDataLimit -or $cost.OverDataLimit -or $cost.Roaming -or $cost.BackgroundDataUsageRestricted -or ($cost.NetworkCostType -ne "Unrestricted")
False
PS C:\Windows\system32>
```



SCCM Clients / Metered Connections

- Solution/Fix: SCCM (Script), GPO, Intune Policy



The screenshot shows a Visual Studio Code window with two files open:

- `Remediate-MeteredConnection.ps1`: A PowerShell script that checks the network cost and configures the client if it's not set to 1.
- `$CCMNetworkCost = (Invoke-CimMethod -Namespace "root\ccm\ClientSDK" -ClassName "CCM_ClientUtilities" -MethodName GetNetworkCost).Value`: A snippet of PowerShell code demonstrating how to get the current network cost.

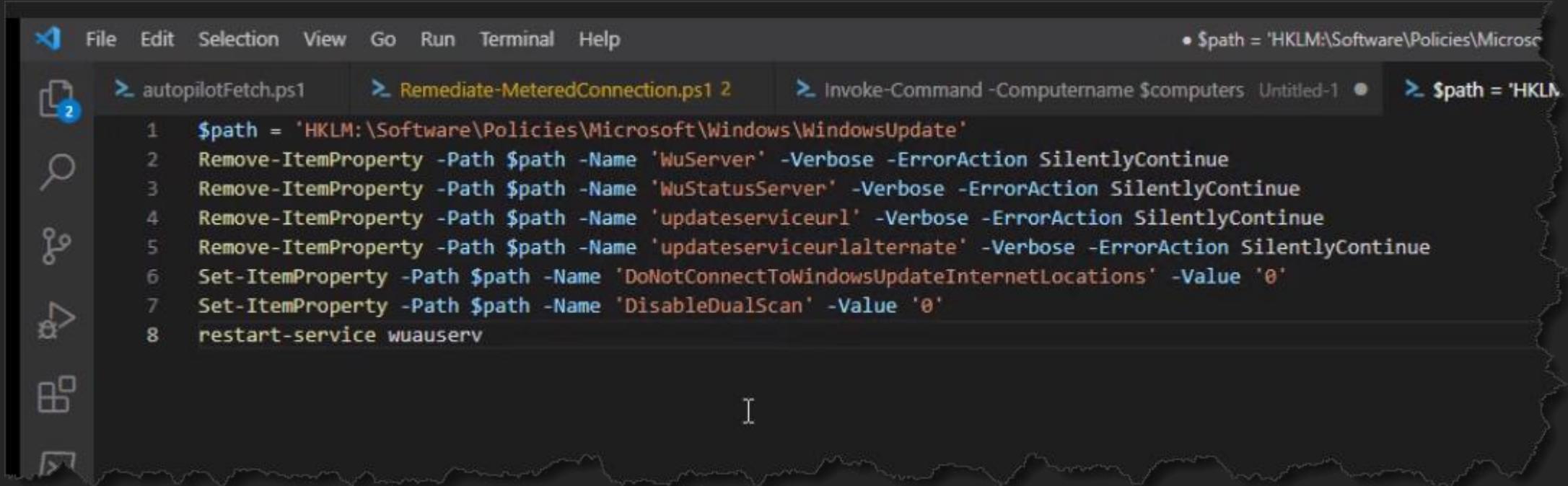
On the right, there is a screenshot of the Microsoft Intune Settings Catalog interface, specifically the "Edit profile - Allow windows updates over metered networks" page. It shows the configuration settings for Windows Update For Business, with the setting "Allow Auto Windows Update Download Over Metered Network" set to "Allowed". This setting is highlighted with a red border.

Script:

<https://github.com/AdamGrossTX/Toolbox/blob/master/ConfigMgr/Troubleshooting/Remove-NetworkMetering.ps1>

Remove legacy policies (GPO)

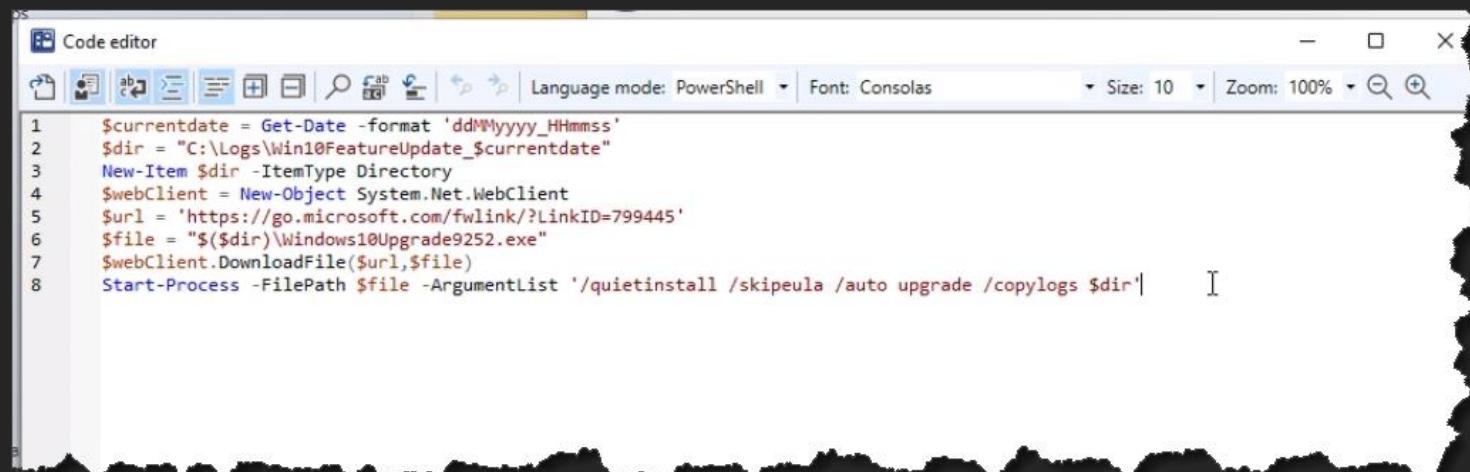
- Quick Fix: A simple script to clean up the registry



```
File Edit Selection View Go Run Terminal Help
autopiilotFetch.ps1 Remediate-MeteredConnection.ps1 2 Invoke-Command -Computername $computers Untitled-1
$path = 'HKLM:\Software\Policies\Microsoft\Windows\WindowsUpdate'
Remove-ItemProperty -Path $path -Name 'WuServer' -Verbose -ErrorAction SilentlyContinue
Remove-ItemProperty -Path $path -Name 'WuStatusServer' -Verbose -ErrorAction SilentlyContinue
Remove-ItemProperty -Path $path -Name 'updateserviceurl' -Verbose -ErrorAction SilentlyContinue
Remove-ItemProperty -Path $path -Name 'updateserviceurlalternate' -Verbose -ErrorAction SilentlyContinue
Set-ItemProperty -Path $path -Name 'DoNotConnectToWindowsUpdateInternetLocations' -Value '0'
Set-ItemProperty -Path $path -Name 'DisableDualScan' -Value '0'
restart-service wuauserv
```

Windows Update Assistant

- Custom Script based on Update Assistant
- Runs 100% silent (System Context)
- Automatic Reboot: 30 mins. Warning (pop-up)



```
Code editor
Language mode: PowerShell | Font: Consolas
Size: 10 | Zoom: 100% | + - ? | Help

1 $currentdate = Get-Date -format 'ddMMyyyy_HHmmss'
2 $dir = "C:\Logs\Win10FeatureUpdate_$currentdate"
3 New-Item $dir -ItemType Directory
4 $webClient = New-Object System.Net.WebClient
5 $url = 'https://go.microsoft.com/fwlink/?LinkId=799445'
6 $file = "$($dir)\Windows10Upgrade9252.exe"
7 $webClient.DownloadFile($url,$file)
8 Start-Process -FilePath $file -ArgumentList '/quietinstall /skipeula /auto upgrade /copylogs $dir'
```



Last Resort Fix

Disclaimer:

- This method is **not** supported
- I've reconnected multiple devices using this script and it worked great!
- So, if you are at the dead end, it may serve you well! ☺
- Source:
<https://universecitiz3n.tech/powershell/Reenroll/>

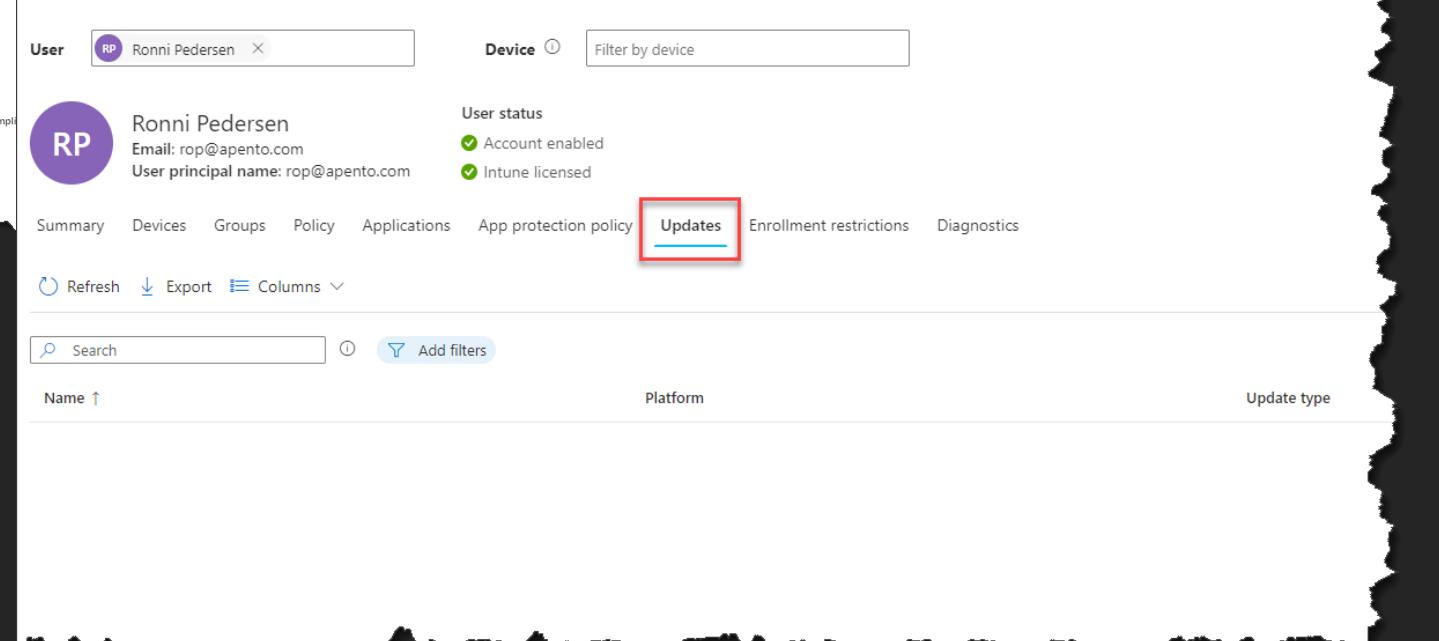
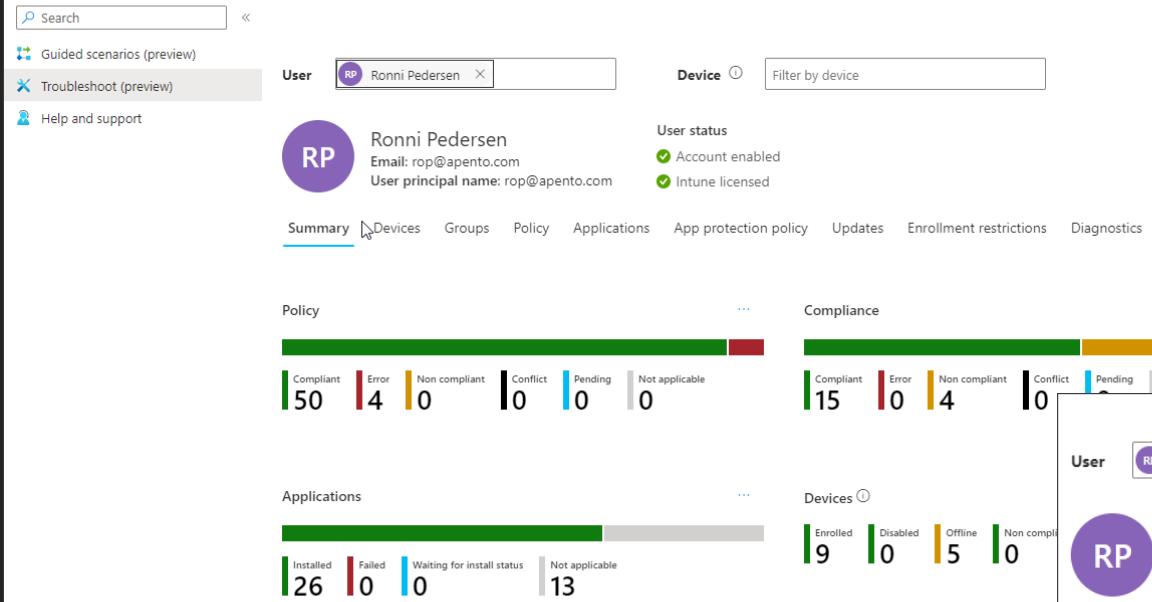
```
$Global:ErrorActionPreference = 'Stop'
Write-Host "Stopping Intune Service" -ForegroundColor Yellow
Get-Service *intune* | Stop-Service
Write-Host "Check if device is AAD Joined" -ForegroundColor Yellow
$DSREGCMD = dsregcmd /status
$AADJoinCheck = $null
$AADJoinCheck = $DSREGCMD | Select-String -Pattern 'AzureAdJoined : YES'
if ($null -eq $AADJoinCheck) {
    Write-Host "Device is not AAD Joined!!! Stopping!" -ForegroundColor Red
    Break
} else {
    Write-Host "Device is AAD Joined - OK" -ForegroundColor Green
}
Write-Host "Searching for enrollment ID"
$Tasks = Get-ScheduledTask | Where-Object { $psitem.TaskPath -like "\Microsoft\Windows\EnterpriseMgmt\Enrollment\$($env:COMPUTERNAME)" }
$EnrollID = $Tasks[0].TaskPath.Split('\\')[-2]
if ($EnrollID -match '\w{8}-\w{4}-\w{4}-\w{4}-\w{12}') {
    Write-Host "Found EnrollID - $EnrollID" -ForegroundColor Green
} else {
    Write-Host "Error parsing Enrollment ID. Stopping" -ForegroundColor Red
    Break
}
Write-Host "Removing scheduledTasks" -ForegroundColor Yellow
Try {
    $Tasks | ForEach-Object { Unregister-ScheduledTask -InputObject $psitem -Verbose -Confirm:$false }
} catch {
    Throw $_.Exception.Message
}
Write-Host "Done" -ForegroundColor Green
Write-Host "Trying to remove tasks folder" -ForegroundColor Yellow
$TaskFolder = Test-Path "C:\windows\System32\Tasks\Microsoft\Windows\EnterpriseMgmt\$EnrollID"
if ($TaskFolder) { Remove-Item "C:\windows\System32\Tasks\Microsoft\Windows\EnterpriseMgmt\$EnrollID" -Force }
```

Troubleshooting Preview

NORDIC
– VIRTUAL SUMMIT –

Home > Troubleshooting + support

 Troubleshooting + support | Troubleshoot (preview) ...



User  Ronni Pedersen

Device  Filter by device

Ronni Pedersen
Email: rop@apento.com
User principal name: rop@apento.com

User status
✓ Account enabled
✓ Intune licensed

Summary Devices Groups Policy Applications App protection policy **Updates** Enrollment restrictions Diagnostics

Refresh Export Columns

Search Add filters

Name ↑	Platform	Update type

Collect Diagnostics

NORDIC
— VIRTUAL SUMMIT —

The image shows two screenshots illustrating the process of collecting diagnostics and troubleshooting.

Left Screenshot: The Microsoft Intune Device Overview page for device `CPC-mp-X7EQQ-Y0`. The "Collect diagnostics" button is highlighted with a red arrow. The status is shown as "Completed".

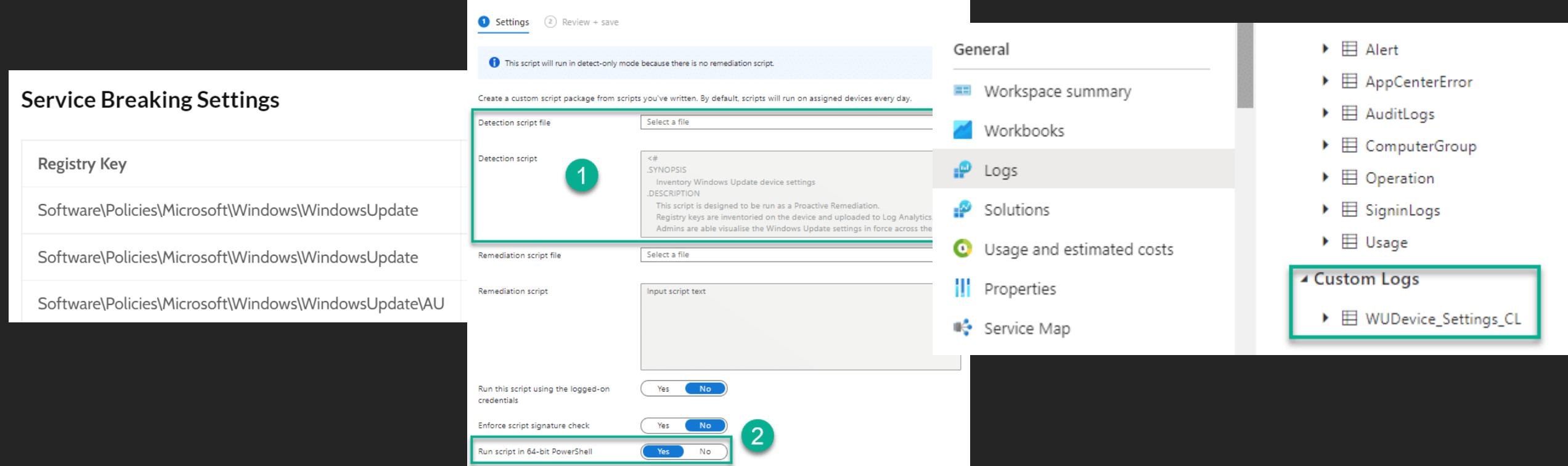
Right Screenshot: The "Troubleshooting + support | Troubleshoot (preview)" dashboard. It shows a user profile for `Ronni Pedersen` and a table of collected diagnostics. A red box highlights the "Diagnostics" tab in the top navigation bar, and another red box highlights the "DESKTOP-82F4Q3D" device entry in the table.

Bottom Section: A grid of 43 diagnostic items, each with a file icon and a numbered label. The labels range from (1) to (46), indicating the type of diagnostic item collected.

File Type	Description
(7) RegistryKey	HKLM_Software_Microsoft_TerminalServices
(8) RegistryKey	HKLM_SOFTWARE_Microsoft_Wi...
(9) RegistryKey	HKLM_Software_Microsoft_Wind...
results.xml	Microsoft Edge HTML Document
(5) RegistryKey	HKLM_SOFTWARE_Microsoft_Sys...
(6) RegistryKey	HKLM_SOFTWARE_Microsoft_Tea...
(46) No Results - Error [0x80070002]	FoldersFiles windir_Temp_ScriptL...
(3) RegistryKey	HKLM_Software_Microsoft_RDInfr...
(4) RegistryKey	HKLM_Software_Microsoft_RDMo...
(20) RegistryKey	HKLM_SOFTWARE_WOW6432No...
(21) RegistryKey	HKLM_SYSTEM_CurrentControlSe...
(22) RegistryKey	HKLM_SYSTEM_CurrentControlSe...
(23) RegistryKey	HKLM_SYSTEM_CurrentControlSe...
(24) RegistryKey	HKLM_SYSTEM_CurrentControlSe...
(25) RegistryKey	HKLM_SYSTEM_CurrentControlSe...
(26) RegistryKey	HKLM_SYSTEM_CurrentControlSe...
(27) RegistryKey	HKLM_SYSTEM_CurrentControlSe...
(28) RegistryKey	HKLM_SYSTEM_CurrentControlSe...
(29) RegistryKey	HKLM_SYSTEM_CurrentControlSe...
(30) RegistryKey	HKLM_SYSTEM_CurrentControlSe...
(31) RegistryKey	HKLM_SYSTEM_CurrentControlSe...
(32) No Results - Error [0x80070001]	RegistryKey HKLM_SYSTEM_Curre...
(33) No Results - Error [0x80070001]	RegistryKey HKLM_SYSTEM_Curre...
(34) Command	programfiles_windows_defender...
(35) Command	windir_system32_Dsregcmd.exe...
(36) Command	windir_system32_ipconfig.exe_all...
(37) Command	windir_system32_mdmdiagnostic...
(38) Command	windir_system32_msinfo32_exe_r...
(39) Command	windir_system32_netshell.exe_winh...
(1) No Results - Error [0x80070001]	RegistryKey HKLM_SOFTWARE_M...
(2) RegistryKey	HKLM_Software_Microsoft_RDAg...
(10) RegistryKey	HKLM_SOFTWARE_Microsoft_Wi...
(11) RegistryKey	HKLM_SOFTWARE_Microsoft_Wi...
(12) RegistryKey	HKLM_Software_Microsoft_Wind...
(13) No Results - Error [0x80070001]	RegistryKey HKLM_Software_Mic...
(14) RegistryKey	HKLM_Software_Policies_Micro...
(15) RegistryKey	HKLM_Software_Policies_Micro...
(16) RegistryKey	HKLM_SOFTWARE_Policies_Micro...
(17) RegistryKey	HKLM_SOFTWARE_Policies_Micro...
(18) RegistryKey	HKLM_Software_Policies_Micro...
(19) No Results - Error [0x80070001]	RegistryKey HKLM_Software_Poli...
(45) FoldersFiles	windir_system32_winevt_logs
(44) FoldersFiles	windir_Logs_WindowsUpdate_etc
(40) FoldersFiles	ProgramFiles_Microsoft_RDIInfr...
(41) FoldersFiles	temp_MMDiagnostics_mdmlog...
(42) FoldersFiles	temp_MMDiagnostics_msinfo32...
(43) FoldersFiles	windir_debug_NetSetup_log

Migrating from other solutions

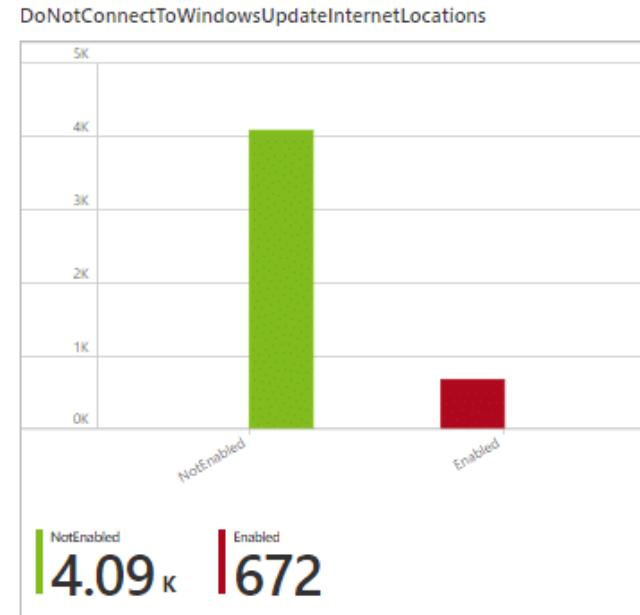
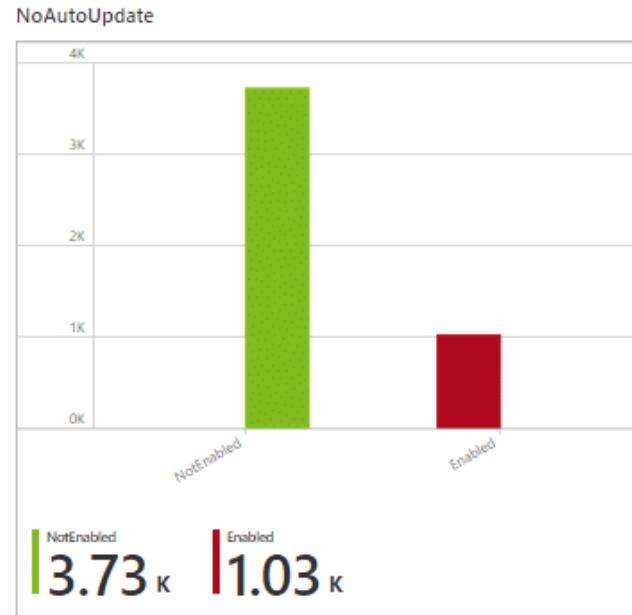
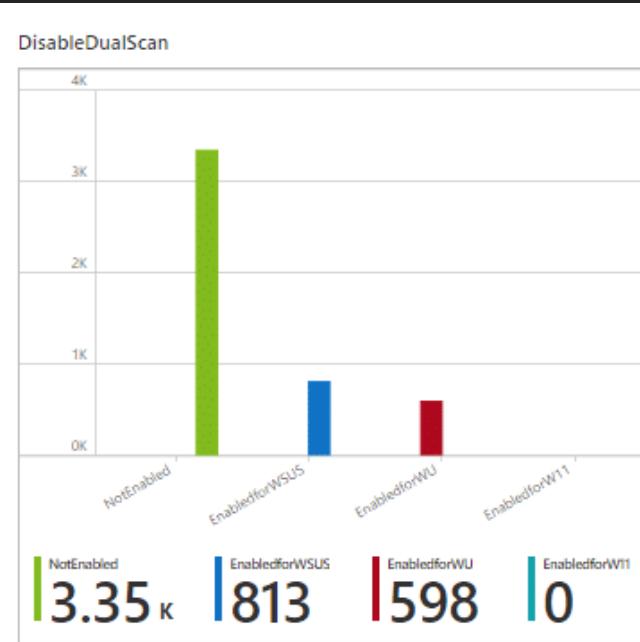
- Using Proactive Remediations and Log Analytics
- Ensure Windows Update Settings are Optimal and Compliant.



The screenshot shows the Microsoft Endpoint Manager interface. On the left, there's a sidebar titled "Service Breaking Settings" listing registry keys under "Software\Policies\Microsoft\Windows\WindowsUpdate". The main area is titled "Edit - WU Device Settings Inventory" and shows a "Settings" tab. It contains sections for "Detection script" (with a preview window labeled 1) and "Remediation script" (with a preview window labeled 2). Below these are options for running scripts with credentials, performing signature checks, and running in 64-bit PowerShell. To the right is a navigation pane with sections like General, Workspace summary, Workbooks, Logs, Solutions, Usage and estimated costs, Properties, Service Map, and Custom Logs. The "Custom Logs" section is expanded, showing a log entry for "WUDevice_Settings_CL".

<https://msendpointmgr.com/2022/05/13/windows-update-settings-compliance/>

Service Break Settings



DisableDualScan

Setting	↑↓	Devices↑↓
NotEnabled		3346
Enabled (WU)		598
Enabled (WSUS)		813

NoAutoUpdate

Setting	↑↓	Devices↑↓
NotEnabled		3729
Enabled		1028

DoNotConnectToWindowsUpdateInternetLocations

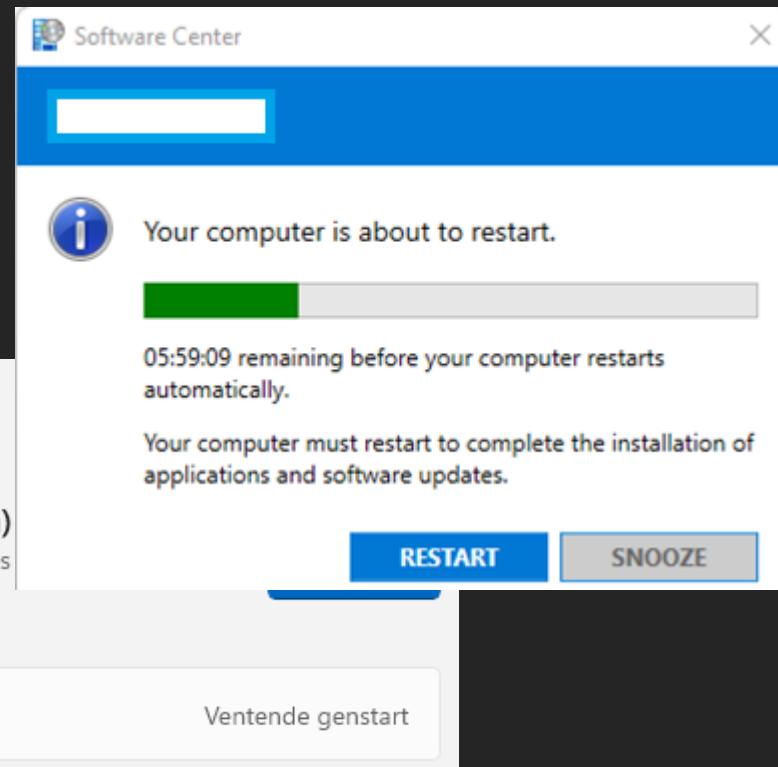
Setting	↑↓	Devices↑↓
NotEnabled		4085
Enabled		672

Drivers and Firmware

Windows Update for Business

Driver Updates using WUfB

- Drivers updates comes from the vendor
- Can cause many annoying reboots
- “Wrong firmware/drivers” coming down



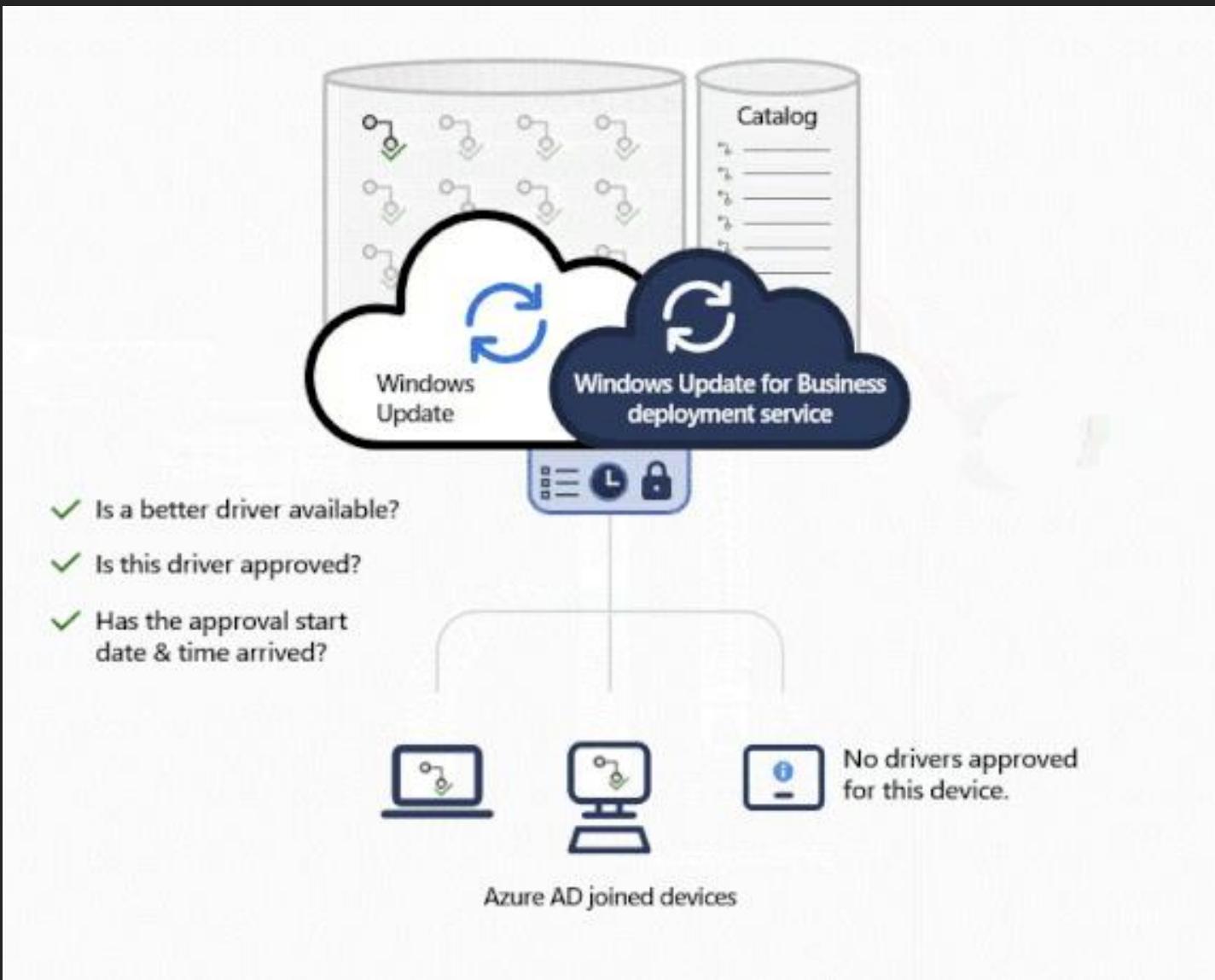
Driveropdateringer (50)	
Intel - net - 22.110.1.1	Installationen blev fuldført d. 25-05-2022
HP Inc. - Firmware - 1.9.0.0	Installationen blev fuldført d. 24-05-2022
Intel Corporation - Display - 30.0.101.1404	Installationen blev fuldført d. 23-05-2022
Intel - SoftwareComponent - 2130.1.16.40	Installationen blev fuldført d. 23-05-2022
Intel - SoftwareComponent - 2143.64.70.0	Installationen blev fuldført d. 18-05-2022

Commercial driver and firmware servicing is publicly available!



- Public Preview of commercial controls for driver and firmware servicing in the Windows Update for Business (WUfB) deployment service!
- This platform allows for control of driver deployment from Windows Update (WU) to eligible cloud-attached commercial devices.
 - Which drivers/firmware to install
 - Scheduling
 - Targeting
- License requirements:
 - Windows E3/E5/A3/A5 (no F??)
 - Microsoft 365 Business Premium
- Intune integration to come later..
- Details at the Windows IT Pro blog: [Commercial driver and firmware servicing is publicly available! - Microsoft Community Hub](#)

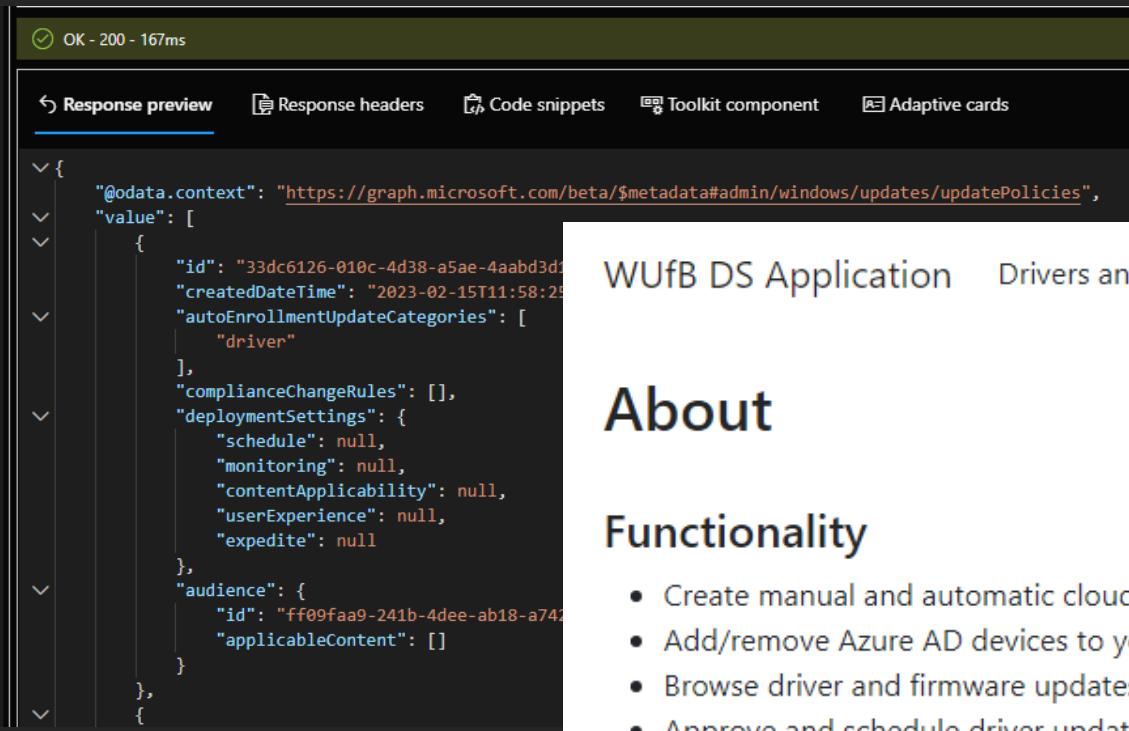
Why are we excited?



How to test it out

- Sample Webapp
- Graph

<code>POST</code>	update deployment audience for driver update (add members)
<code>POST</code>	update deployment audience for driver update (add exclusions)
<code>POST</code>	update deployment audience for driver update (remove members)
<code>POST</code>	update deployment audience for driver update (remove exclusions)
<code>POST</code>	create update policy (drivers)
<code>GET</code>	get update policy (drivers)
<code>GET</code>	list update policies (drivers)
<code>DELETE</code>	delete update policy (drivers)
<code>GET</code>	inventory of driver updates
<code>POST</code>	create driver approval
<code>GET</code>	get compliance change
<code>GET</code>	list compliance changes
<code>DELETE</code>	delete compliance changes



OK - 200 - 167ms

Response preview Response headers Code snippets Toolkit component Adaptive cards

```
{ "@odata.context": "https://graph.microsoft.com/beta/$metadata#admin/windows/updates/updatePolicies", "value": [ { "id": "33dc6126-010c-4d38-a5ae-4aab3d1", "createdDateTime": "2023-02-15T11:58:23Z", "autoEnrollmentUpdateCategories": [ "driver" ], "complianceChangeRules": [], "deploymentSettings": { "schedule": null, "monitoring": null, "contentApplicability": null, "userExperience": null, "expedite": null }, "audience": { "id": "ff09faa9-241b-4dee-ab18-a742", "applicableContent": [] } } ] }
```

WUFB DS Application Drivers and Firmware About Authenticated

About

Functionality

- Create manual and automatic cloud-managed driver update policies
- Add/remove Azure AD devices to your policies
- Browse driver and firmware updates that are available for your devices
- Approve and schedule driver updates
- Suspensions of approvals
- Unenroll devices from driver management

[Deploy a driver update using the Windows Update for Business deployment service - Microsoft Graph | Microsoft Learn](#)

Policies

New Refresh Export

Policy Name	Device Count	Type of Policy	Action
HP Ring 1 (Pilot)	2	Manual	Edit View Delete
Dell Ring 1 (Pilot)	1	Manual	Edit View Delete

Rows per page: 10 ▾ 1-2 of 2 < >

Updates

[Back](#)[Recommended Updates](#)[Other Updates](#)[View Metadata](#) [Approve](#) [Suspend](#)

Select	Update Name	Release Date	Applicable Devices	Driver Class	Approval Start Date	Suspension Date
<input type="radio"/>	INTEL - System - 1/1/1970 12:00:00 AM - 10.1.1.42	Fri Aug 24 2018	1	OtherHardware	-	-
<input type="radio"/>	Intel - Other hardware - Intel(R) Xeon(R) E3 - 1200 v6/7th Gen Intel(R) Core(TM) Host Bridge/DRAM Registers - 5904	Sun Aug 26 2018	1	OtherHardware	-	-
<input type="radio"/>	INTEL - System - 10/3/2016 12:00:00 AM - 10.1.1.38	Thu Mar 15 2018	1	OtherHardware	-	-
<input type="radio"/>	INTEL - System - 7/12/2016 12:00:00 AM - 10.1.1.33	Fri Aug 24 2018	1	OtherHardware	-	-
<input type="radio"/>	INTEL driver update for Mobile 6th Generation Intel(R) Processor Family I/O PCI Express Root Port #9 - 9D18	Tue Aug 28 2018	1	OtherHardware	-	-

Updates

Back

Recommended Updates

Other Updates

INTEL - System - 1/1/1970 12:00:00 AM - 10.1.1.42

View Metadata

Approve

Suspend

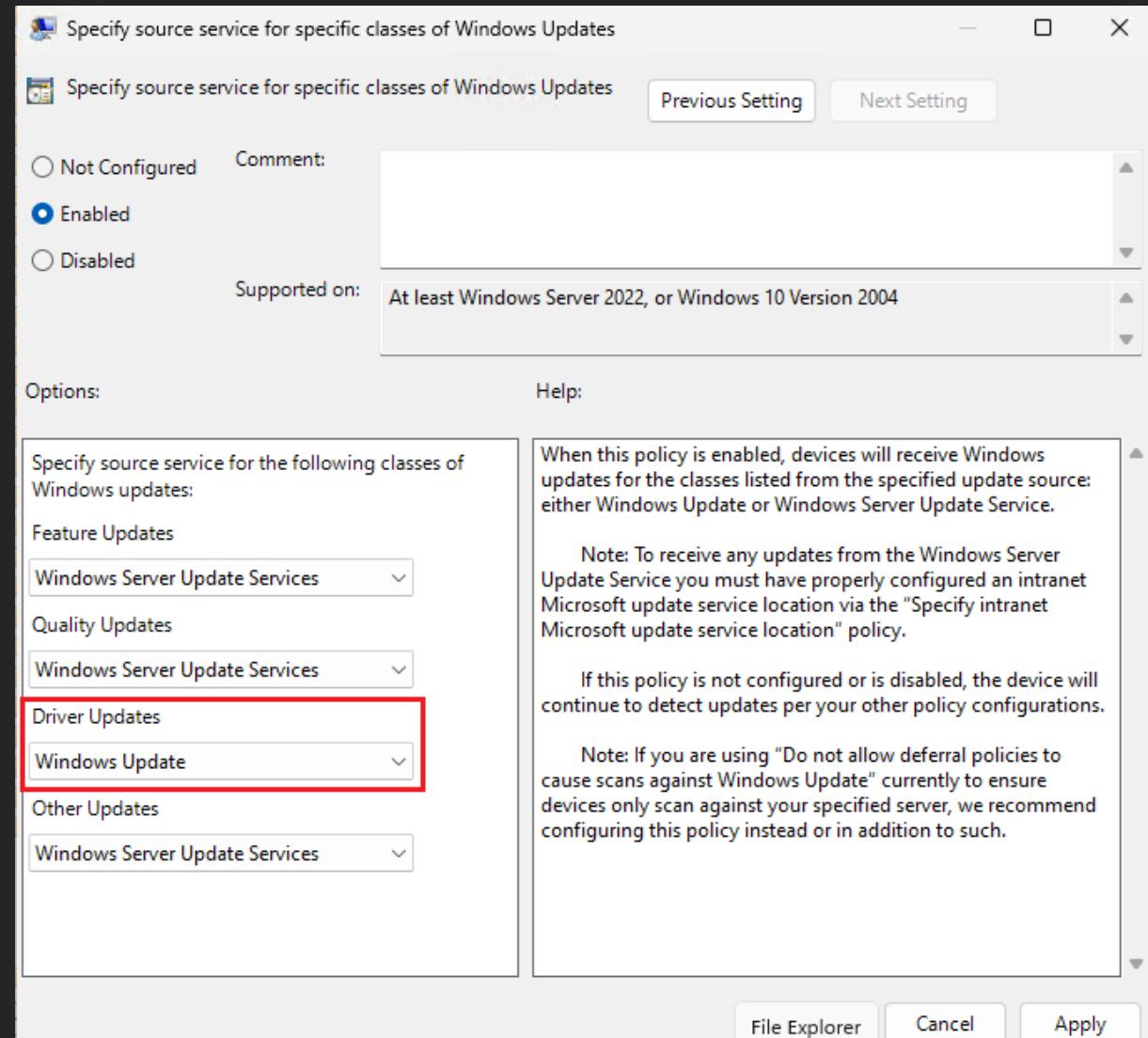
Select	Update Name	Release Date	Applicable Devices	Driver Class	Approval Start Date	Suspension Date
<input checked="" type="radio"/>	INTEL - System - 1/1/1970 12:00:00 AM - 10.1.1.42	Fri Aug 24 2018	1	OtherHardware	-	-
<input type="radio"/>	Intel - Other ha - Intel(R) Xeon 1200 v6/7th Ge Intel(R) Core(T Bridge/DRAM Registers - 590					
<input type="radio"/>	INTEL - System 10/3/2016 12:0 - 10.1.1.38					
<input type="radio"/>	INTEL - System - 7/12/2016 12:00:00 AM - 10.1.1.33	Fri Aug 24 2018	1	OtherHardware		

Approval Settings

**Update :** INTEL - System - 1/1/1970 12:00:00 AM - 10.1.1.42**Start Date :** 02/15/2023**Submit Approval**

What about Hybrid/Co-managed devices?

- WufB policies can be configured to allow updates from different sources for updates
- Makes it possible to “cherry-pick”



HP Connect for Microsoft Endpoint Manager

- Firmware Update & Config
- Uses Proactive remediation to execute script (content from WU)
- Free to use

The screenshot shows the HP Connect for Microsoft Endpoint Manager web interface. On the left, a vertical navigation bar includes Home, Policies, Groups, Secrets, and Settings. The main area features four cards: 'Create a Policy' (with a 'New Policy' button), 'Create an Authentication Secret' (with a 'New Secret' button), 'Policy Overview' (showing 1 Policy Created), and 'Secret Overview' (showing 1 Secret Created). To the right, two bar charts provide a summary of device group configurations: one for Policies (BIOS Settings: 2, BIOS Update: 1, BIOS Authentication: 0) and one for Secrets (Password: 1, SPM: 0, LAK: 0).

HP Connect for Microsoft Endpoint Manager

Use one of the cards below to create a new policy or authentication secret for your device groups.

Policy Overview

1 Policies Created

Secret Overview

1 Secrets Created

HP Connect for Microsoft Endpoint Manager

Use one of the cards below to create a new policy or authentication secret for your device groups.

Policies

Secrets

BIOS Settings 2

BIOS Update 1

BIOS Authentication 0

Secrets

SPM 0

LAK 0

Password 1

New Policy

New Secret

Home

Policies

Groups

Secrets

Settings

Thank you!