

November 13-15, Oslo Spektrum

Marcel Meurer

Unleash the power of Intune and Azure Virtual Desktop



About me

Focus on:

- Azure Virtual Desktop
- Community tools

From:

- Germany

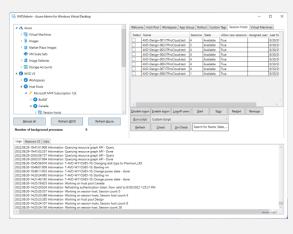
Business:

- Consulting
- Development
- Community

Connect:

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- <u>blog.ITProCloud.de</u>













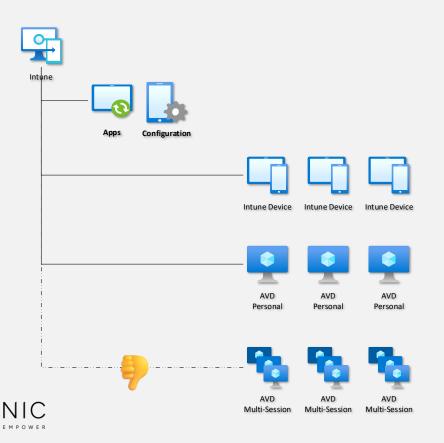


Agenda

- Intune and Azure Virtual Desktop
- Limitations
- Using Intune to prepare an image
- Capturing and deployment
- Do it more easily



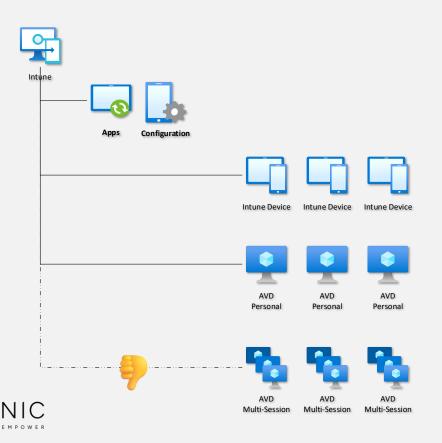
Intune and Azure Virtual Desktop



Intune for deploying apps and configurations

- **6** Normal endpoints
- Personal hosts
- Pooled hosts

Intune and Azure Virtual Desktop



Pooled hosts

- Deployment takes long
- Files are in use
- Unpredictable of Intune actions

Intune Timing

Platform	Refresh cycle
iOS/iPadOS	About every 8 hours
macOS	About every 8 hours
Android	About every 8 hours
Windows 10/11 PCs enrolled as devices	About every 8 hours
Windows 8.1	About every 8 hours

round every 8 hours

macOS	Every 15 minutes for 1 hour, and then around every 8 hours				
Android	Every 3 minutes for 15 minutes, then every 15 minutes for 2 hours, and then around every 8 hours				
Windows 10/11 PCs enrolled as devices	Every 3 minutes for 15 minutes, then every 15 minutes for 2 hours, and then around every 8 hours				
Windows 8.1	Every 5 minutes for 15 minutes, then every 15 minutes for 2 hours, and then around every 8 hours				



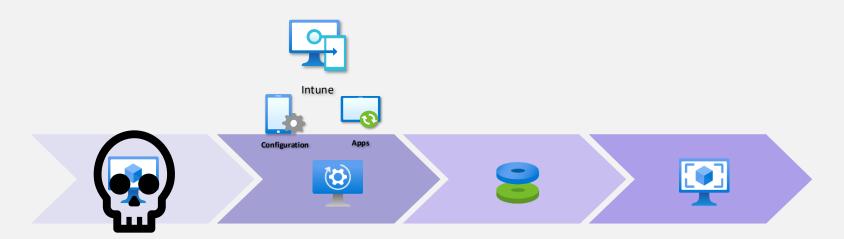
Golden Master approach

Build the Golden Master with Intune

- Deploy applications with Intune
- Deploy configuration with Intune
- Capture the Golden Master into an image
- Use the images to deploy ready-to-use session hosts



Golden Master approach



Master VM

Windows 11

Preparation

Installation and configuration with Intune

Sysprep + Generalize

Generalize Windows, often more difficult than expected

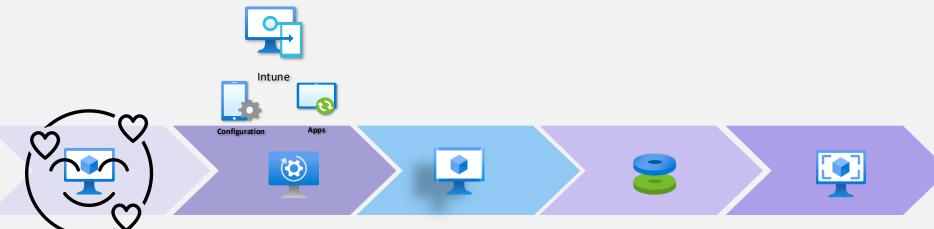
Image

Generate an image



Golden Master approach

with PowerShell, WVDAdmin, Hydra



Master VM

Windows 11, domain-joined or not

Preparation

Installation and configuration with Intune

Temporary VM

Exact copy of the Golden Master

Sysprep + Generalize

Generalize Windows, often more difficult than expected

Image

Generate an image

- Makes a copy from the Golden Master
- Works with the copy (temporary VM)
 - Sysprep

EMPOWER

M | © Generalization & grab the image

- Remove temporary VM
- The Golden Master can be reused

Using Intune to prepare a Golden Master

Pitfalls



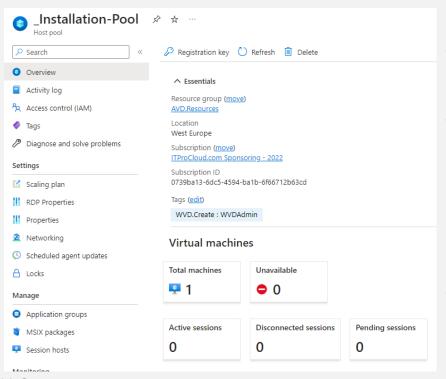
Windows 10 / 11 Multi-Session

- Cannot directly join to Intune - Strange error messages
- You need an "Installation" host pool
 => You can use an installation host pool for easy access
 => You must use it for multi-session otherwise, the VM is not joined to Entra/Intune correctly (if you use Entra only) ->No longer true (Installation host pool is optional)
- Remove orphan devices
- Onboard to Intune with extension: "AADLoginForWindows" V2 with MDM parameter
- Applications must be assigned to a group of hosts (devices) no per-user assignments
- Do some preparations before running sysprep and capturing the image
- Not every setting in configuration policies is supported

Let's get started



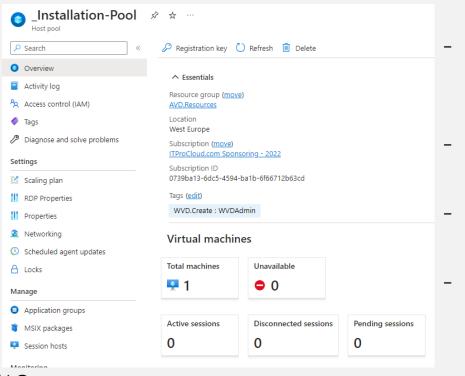
Create an installation host pool (and production pool)



Multi-User (pooled)

- AAD authentication
 - targetisaadjoined:i:1
 - enablerdsaadauth:i:1
 - enablecredsspsupport:i:1
- Configure the role "Virtual
 Machine Administrator Login"
 for your admin account on the
 resource group for your VM

Create an installation host pool

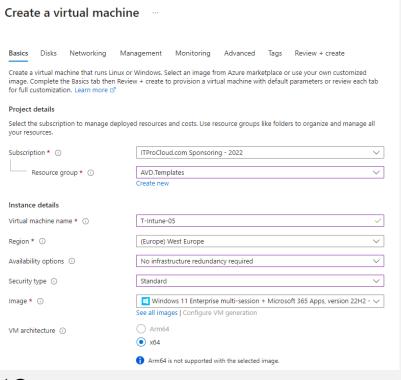


- Create a desktop application group (DAG)

- Assign your admin to the DAG

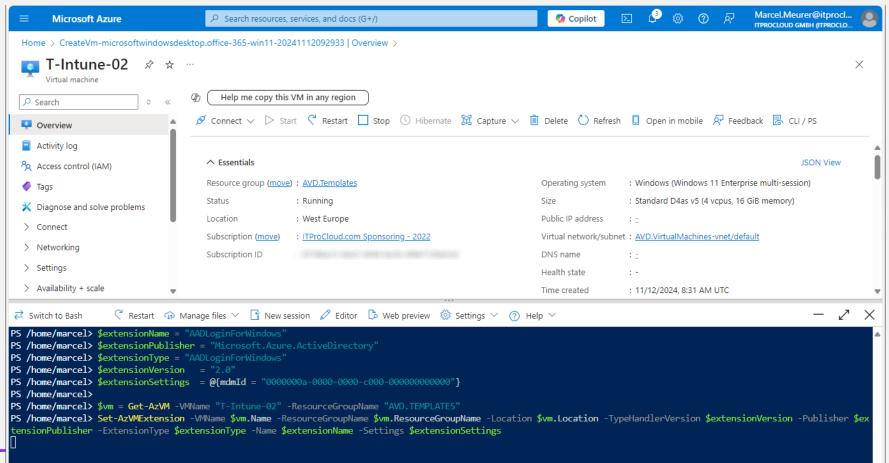
Link DAG to a workspace

 Opt.: Configure diagnostic settings of the pool and store data to log analytics



- Security type: Standard
- Identity: On
- Login with Azure AD
- Install extension:
 "AADLoginForWindowsWithIntune" or
 "AADLoginForWindows" V2 with MDM parameter

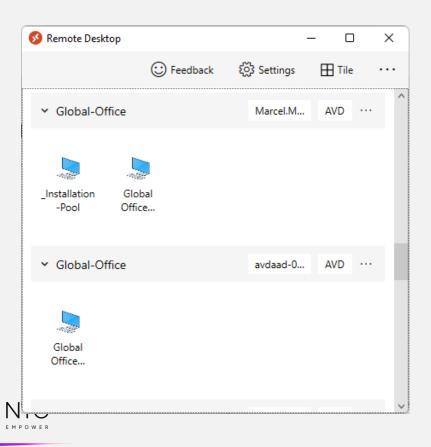




✓ Search (i) ▼ Add filter						
Device name ↑	Managed by	Ownership	Compliance	OS	OS version Primary us	
PC-W11-01	Intune	Corporate	✓ Compliant	Windows	10.0.22000.1936 None	
PC-W11-02	Intune	Corporate	✓ Compliant	Windows	10.0.22000.1936 None	
PC-W11-03	Intune	Corporate	✓ Compliant	Windows	10.0.22000.1936 None	
T-Intune-01	Intune	Corporate	✓ Compliant	Windows	10.0.22621.1702 None	
T-Intune-11	Intune	Corporate	✓ Compliant	Windows	10.0.22621.1702 None	
T-Intune-21	Intune	Corporate	✓ Compliant	Windows	10.0.22621.1702 None	
T-Intune-80	Intune	Corporate	⊘ Compliant	Windows	10.0.22621.1702 None	







- Login to VM with RDP and local admin
- Install AVD Agent on VM with registration token of the pool
 - https://query.prod.cms.rt.microsoft.c om/cms/api/am/binary/RWrmXv
 - https://query.prod.cms.rt.microsoft.c om/cms/api/am/binary/RWrxrH
- Reboot & Logon with AAD Account via Remote Desktop client (AVD)

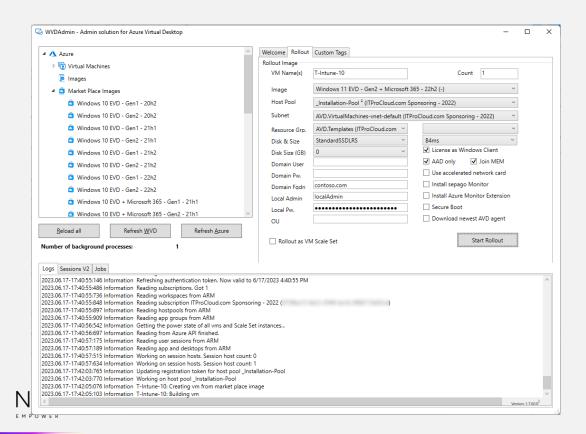


Debugging on the VM:

- Event log: Microsoft-Windows-DeviceManagement-Enterprise-Diagnostics-Provider/Admin
- Task Scheduler: Microsoft/Windows/EnterpriseMgmt (content is gone after success)
- DSREGCMD /status



Create the VM (Golden Master) With WVDAdmin



Creates a new VM and joins it to host pool, AAD, and Intune

- AAD-only
- Join MEM

One-Shoot-Solution

Alternatively: Deploy a VM (not host) directly into Intune (multi-session)



Add an application with PSAppDeployToolKit

 Using PSAppDeployToolkit https://psappdeploytoolkit.com/

- Place the files
- Modify or create a deployment script
- Create package
 IntuneWinAppUtil -c c:\testapp\v1.0 -s c:\testapp\v1.0\setup.exe -o
 c:\testappoutput\v1.0 -q
- Upload package as "Windows app (Win32)"



Configure apps in Intune portal and assign them to a group of devices

Add an application with PSAppDeployToolKit & Convert

 Using PSAppDeployToolkit https://psappdeploytoolkit.com/

- Place the files
- Modify or create a deployment script
- Use Convert.ps1 for packaging and upload
- Assign to a group of devices

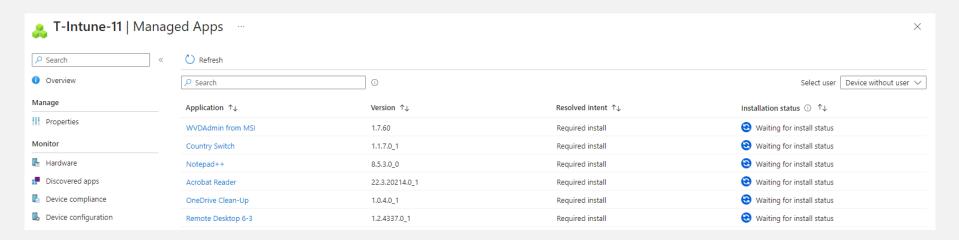


Hint: https://learn.microsoft.com/en-us/answers/questions/1659638/weve-detected-a-microsoft-intune-powershell-script





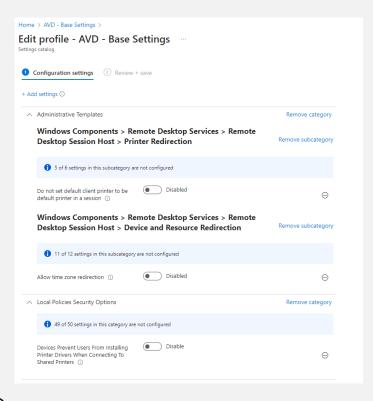
Working in Intune



Speed-up:

- Restart device
- Sync device

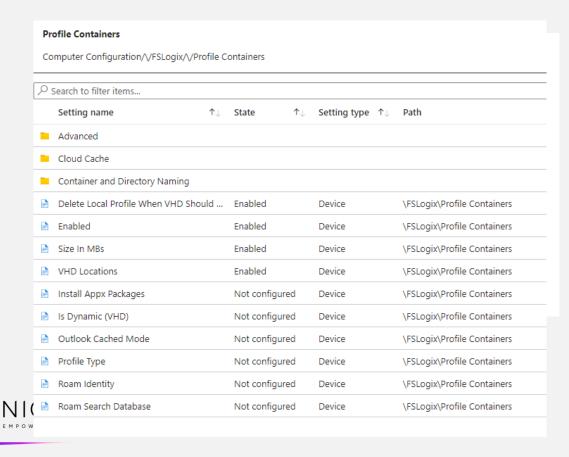




- In Intune
 Devices -> Configuration profiles
- Create a profile (like a GPO)
- Configure the settings to your needs
 - Terminal server settings (tz-red, ...)
- Assign the profile to the Golden Master group
- Wait for apply

Note: That also works "OK" for the hosts



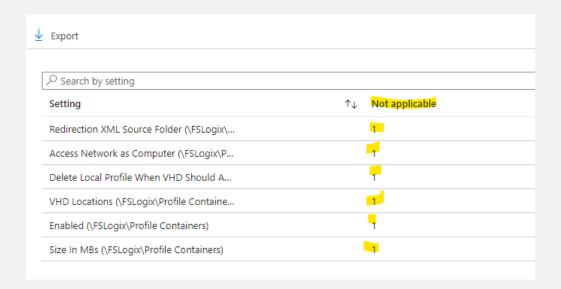


Missing GPOs?

- Import ADMX-files
- ConfigurationProfiles -> ImportADMX

- **New profile** for "Imported ADMX

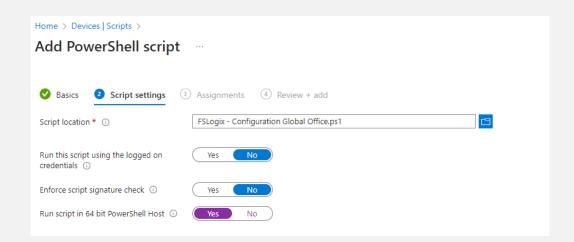
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Unfortunately – not supported on multi-user OS

So, we have to do some settings in another way





Run a PowerShell script to configure the host additionally

Yes, that works 😉

This is an example for an imported ADMX-file. Luckily, FSLogix configuration is now part of Intune policy



Capturing an Image

Clean-up before running sysprep

- Remove AAD extension:
 - HKLM:\SOFTWARE\Microsoft\Windows Azure\CurrentVersion\AADLoginForWindowsExtension
 - HKLM:\SYSTEM\CurrentControlSet\Control\CloudDomainJoin
 - Certificate: CN=MS-Organization-P2P-Access*
- Remove Intune configuration:
 - HKLM:\SOFTWARE\Microsoft\IntuneManagementExtension
 - HKLM:\SOFTWARE\Microsoft\EnterpriseDesktopAppManagement
 - HKLM:\SOFTWARE\Microsoft\PolicyManager\current\device
- And others (removing AVD client, ...)
- Handle policies re-apply\



Capturing an Image

```
# Removing an old intune configuration to avoid an uninstall of installed applications
LogWriter ("Removing intune configuration")
if ((Get-Service -Name IntuneManagementExtension -ErrorAction SilentlyContinue) -ne $null) {
    Stop-Service -Name IntuneManagementExtension -ErrorAction SilentlyContinue -Force
Uninstall-Package -Name "Microsoft Intune Management Extension" -AllVersions -Force -ErrorAction SilentlyContinue
Remove-Item -Path "HKLM:\SOFTWARE\Microsoft\IntuneManagementExtension" -Recurse -Force -ErrorAction Ignore
Remove-Item -Path "HKLM:\SOFTWARE\Microsoft\EnterpriseDesktopAppManagement" -Recurse -Force -ErrorAction Ignore
# Removing an older SCCM/MECM configuration
if ((Get-Service -Name comexec -ErrorAction SilentlyContinue) -ne Snull ) {
    Stop-Service -Name ccmexec -ErrorAction SilentlyContinue
   LogWriter ("Removing SCCM/MECM configuration")
    Remove-Item -Path "Senv:systemroot\smscfg.ini" -Force -ErrorAction Ignore
   Remove-Item -Path "HKLM:\Software\Microsoft\SystemCertificates\SMS\Certificates\*" -Confirm:\false -Force -ErrorAction
```

ITPC-WVD-Image-Processing.ps1

(newest version: https://github.com/MarcelMeurer/WVD-Hydra/blob/main/bin/app data/Jobs/Continuous/WorkerEngine/Scripts/ITPC-WVD-Image-Processing.ps1)



Capturing an Image

Using WVDAdmin or Hydra

- Includes clean-up
- Doesn't destroy the maser

Note: Start the master after imaging in the Azure Portal to recreate the link to the host pool



Master VM

Windows 10, domain-joined

Preparation

Installation and configuration with Intune

Temporary VM

Exact copy of the Golden Master

Sysprep + Generalize

Generalize Windows, often more difficult than expected

Image

Generate an image



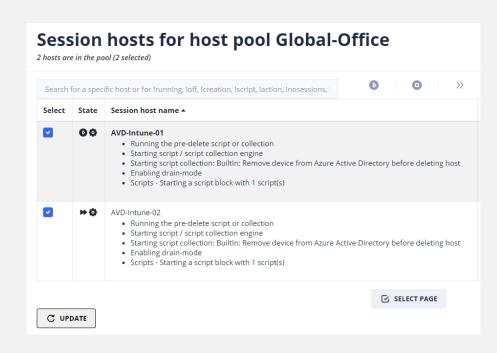


Host Life-Cycle

If you delete a host:

- Remove device in AAD
- Remove device in Intune (optional)

Hydra can remove devices on-delete automatically





Summary

- For personal pools with Win10/11 Enterprise: 🔽
- Not everything works in multi-user with Intune
- Use the extension "AADLoginForWindows" V2 with MDM parameter
- Use PowerShell or tools to capture an image without losing the data (WVDAdmin, Hydra)
- Not every configuration survives Sysprep (workaround or tools like Hydra)
- Clean-up:
 - Azure AD Device
 - Intune Device (optional, but looks better)



Links

 WVDAdmin https://blog.itprocloud.de/Windows-Virtual-Desktop-Admin/

 Hydra for Azure Virtual Desktop https://github.com/MarcelMeurer/WVD-Hydra



One or two other points

Retirements and Breaking Changes 🔒

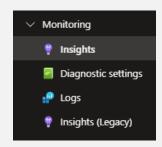




Retirements and Breaking Changes

- Azure Log Analytics Agent August 2024
 - Uninstall the old Log Analytics Agent
 - Prepare the configuration for the new AMA (right insights)
 - Deploy the new agent
 - Or redeploy with the new agent (also available in Hydra)

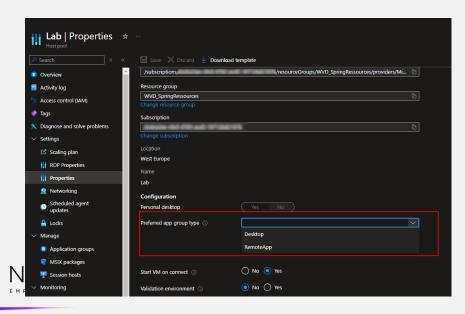






Retirements and Breaking Changes

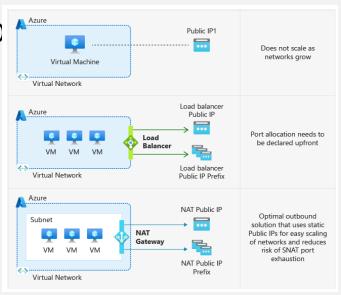
- Preferred App Group Type around July
 - A single user to a pool can only see the desktop or the remote apps

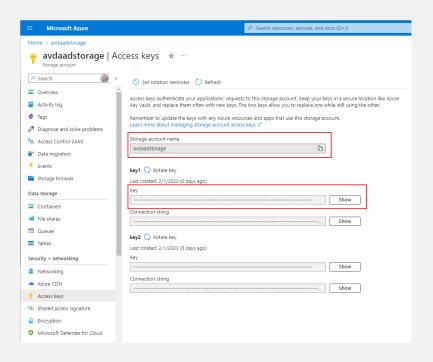




Retirements and Breaking Changes

- Azure Default Outbound September 20
 - No Internet access by default
 - You need one of the following methods:
 - Public IP
 - Load-balancer
 - NAT Gateway (#1)
 - Router / Appliance

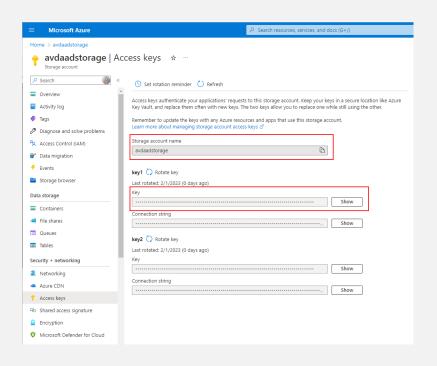




- Doesn't worked by design
- User's identity today is not known by Azure files
- Workaround:
 - Configure FSLogix to run in the system account
 - Give system account storage account identity
 - Only use one storage account for profiles and not for other data
- https://blog.itprocloud.de/Using-FSLogix-fileshares-with-Azure-AD-cloud-identities-in-Azure-Virtual-Desktop-AVD/



```
write-host "Configuring FSLogix"
    $fileServer="avdaadstorage.file.core.windows.net"
    $profileShare="\\$($fileServer)\profiles"
    $user="localhost\avdaadstorage"
    $secret="##############"
    New-Item -Path "HKLM:\SOFTWARE" -Name "FSLogix" -ErrorAction Ignore
    New-Item -Path "HKLM:\SOFTWARE\FSLogix" -Name "Profiles" -ErrorAction Ignore
    New-ItemProperty -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Name "Enabled" -Value 1 -force
    New-ItemProperty -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Name "VHDLocations" -Value $profileShare -force
    New-ItemProperty -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Name "ConcurrentUserSessions" -Value 1 -force
    New-ItemProperty -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Name "DeleteLocalProfileWhenVHDShouldApply" -Value 1 -force
    New-ItemProperty -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Name "FlipFlopProfileDirectoryName" -Value 1 -force
    New-ItemProperty -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Name "IsDynamic" -Value 1 -force
    New-ItemProperty -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Name "KeepLocalDir" -Value 0 -force
    New-ItemProperty -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Name "ProfileType" -Value 0 -force
    New-ItemProperty -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Name "SizeInMBs" -Value 40000 -force
    New-ItemProperty -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Name "VolumeType" -Value "VHDX" -force
    New-ItemProperty -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Name "AccessNetworkAsComputerObject" -Value 1 -force
    # Store credentials to access the storage account
    cmdkev.exe /add:$fileServer /user:$($user) /pass:$($secret)
    # Disable Windows Defender Credential Guard (only needed for Windows 11 22H2)
    New-ItemProperty -Path "HKLM:\SYSTEM\CurrentControlSet\Control\Lsa" -Name "LsaCfgFlags" -Value 0 -force
EMF write-host "The script has finished."
```



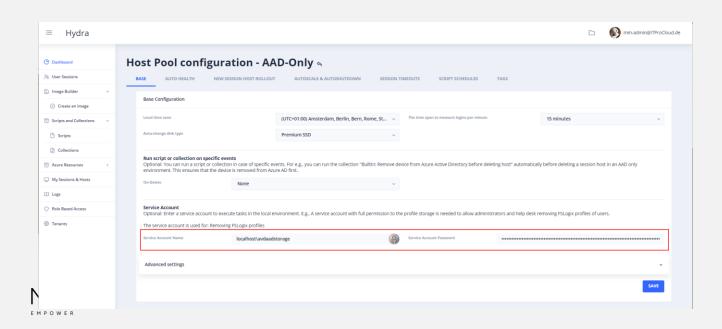
 Script deployment with Intune

 Challenge: Sysprep remove the secret of the storage account

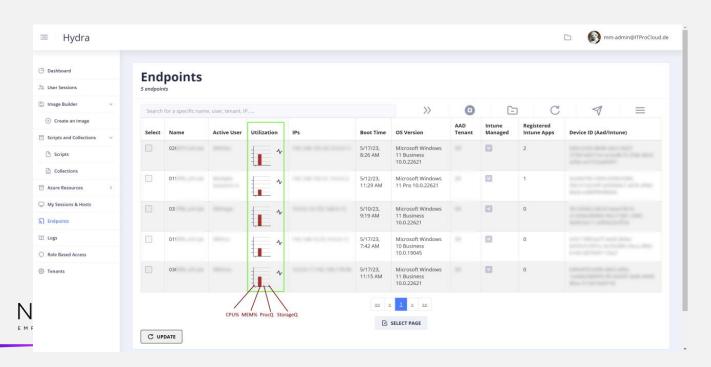
 Workaround: Use PowerShell to remember



Or: Run the script after rollout of a new host



Did you know? Managing clients / endpoints with Hydra



Thanks a lot 🙏

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