
NIC
REBEL
EDITION

NIC REBEL EDITION

About me

Focus

Azure Virtual Desktop & Log Analytics

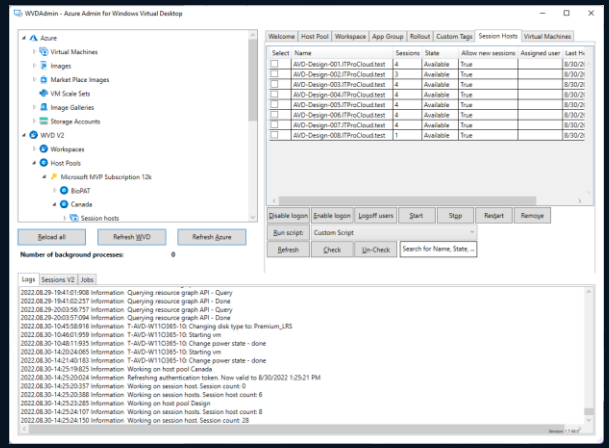
WVDAdmin & Hydra for AVD

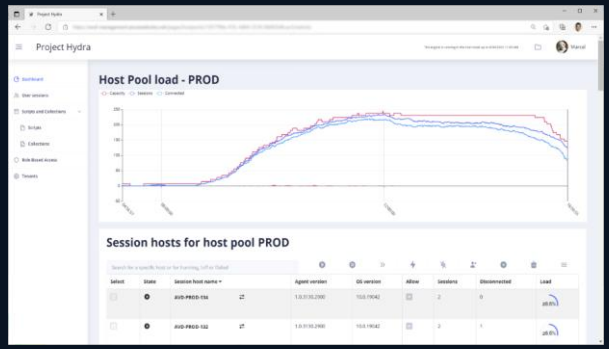
From

Germany

My Blog

blog.ITProCloud.de





NIC REBEL EDITION

MVP Microsoft Most Valuable Professional

LOGINVSI

ITProCloud

Agenda

- Upgrading from Windows 10 -> 11
- Azure Boost: NVMe, Ephemeral, v6
- Orphan Resources
- Imaging Strategies
- My Top 5 Pitfalls and Reminders

NIC REBEL EDITION

Upgrading from Windows 10 -> 11

- Why
  - Windows 10 is EOL on October 14th, 2025
- Challenges
  - Older hosts / Golden Master on V1 disks (vTPM, Trusted Launch)
  - Windows update doesn’t show an update path
  - How to run an in-place update
  - Site-node: Strange BitLocker behaviours on some updates (also Windows 11 23H2 -> 24H2)

NIC REBEL EDITION

V1 vs. V2 VM Sizes – Trusted Launch

- To upgrade from Windows 10 to Windows 11, we need a vTPM
- Usually, V1 VM sizes have no vTPM*

- Differences

	V1	V2
Boot	PCAT / BIOS	UEFI
Disk Controller	IDE	SCSI (v6: NVME)
Advanced Security Feature	X	Yes, like vTPM, trusted launch*

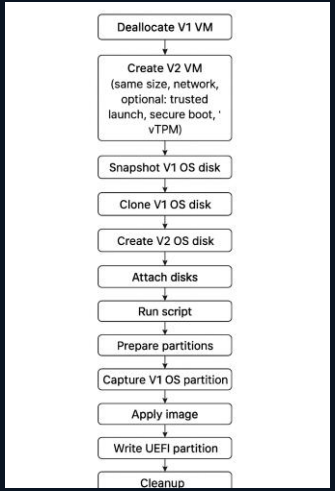
- Action
  - Migrate the VM sizes (or at least the Golden Master)

- * https://learn.microsoft.com/en-us/azure/virtual-machines/trusted-launch-existing-vm-gen-1

NIC REBEL EDITION

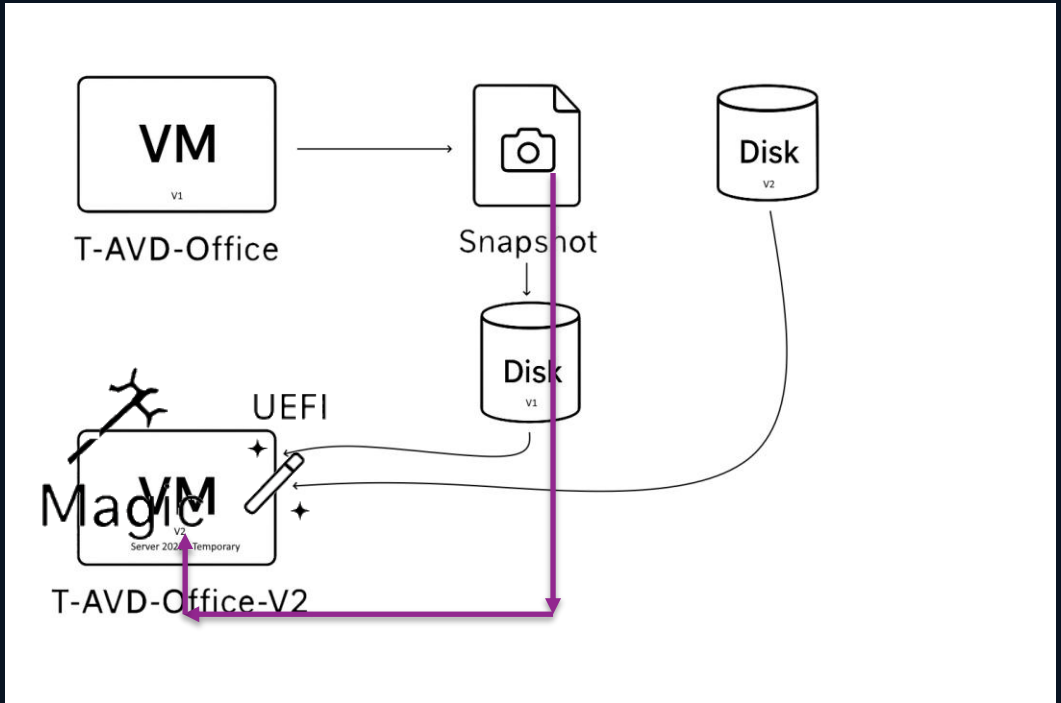
V1 vs. V2 VM Sizes – Trusted Launch

- Challenge
  - That is not directly possible!
- Solution
  - Create a V2 VM with Windows Server 2022 and a larger OS disk (256 GB+)
  - Create a copy of the V1 OS Disk (V1-disk)
  - Create a new V2 managed disk (V2-disk)
  - Attach both to the server VM
  - Capture content of the V1-disk with Dism.exe
  - Write image to the V2-disk
  - Modify partitions, write UEFI BIOS
  - We have a V2-disk with the content of the V1-disk and can create a VM



NIC REBEL EDITION

V1 vs. V2 VM Sizes – Trusted Launch



NIC REBEL EDITION

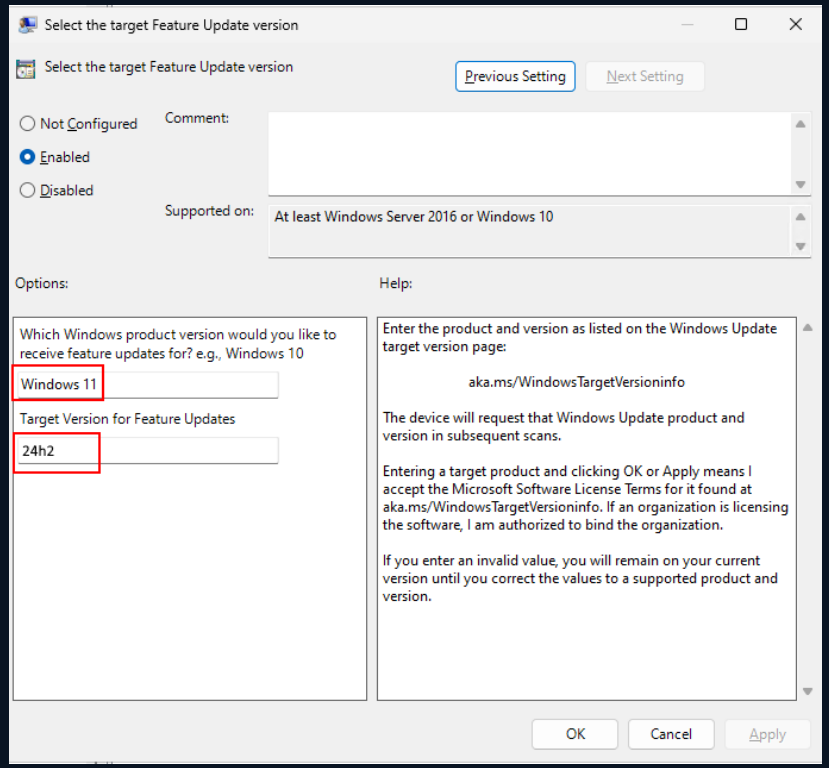
Windows – Updating

- Challenge:
  - Windows Update is not showing an update
- Two options
  - Forcing the new V2 Windows 10 client to search for a specific Windows update
  - Inplace upgrade

NIC REBEL EDITION

Windows – Updating 1

- Configuring a local policy



NIC REBEL EDITION

Windows – Updating 2

- Download multi-ISO to do an in-place upgrade
  https://www.microsoft.com/en-us/software-download/windows11

- Note: “Rumors” say that in-place upgrade is not supported in Azure and Hyper-V should be used

NIC REBEL EDITION

Windows – Ready

- We hopefully migrated our Golden Master to Windows 11
- Does this work always?
- Automate the process with PowerShell:
  - https://blog.itprocloud.de/Migrate-Azure-V1-VM-to-Azure-V2-VM-In-A-Safe-Way/
  - https://blog.itprocloud.de/Update-Windows-10-Multi-user-to-Windows-11-Multi-user/

NIC REBEL EDITION

Azure Boost: NVMe, Ephemeral on v6

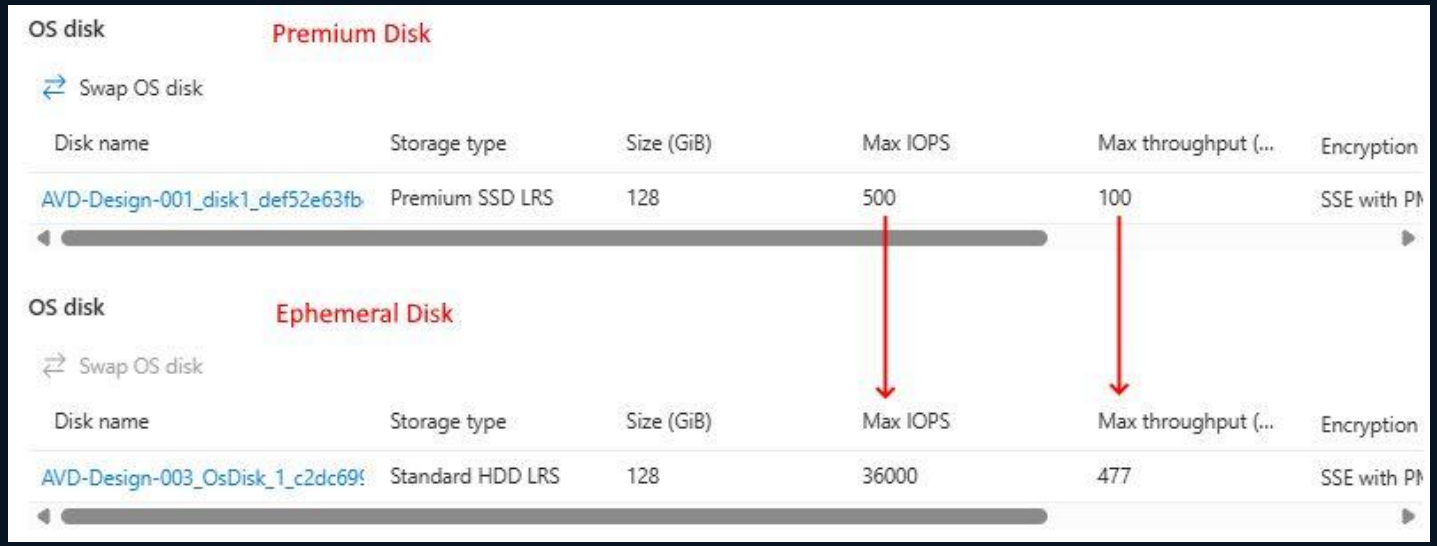
The new start in town “boost VMs”

- Advantages of boost with NVMe:
  - Higher input/output operations per second (IOPS)
  - Higher throughput (MBps)
  - Faster network connection
  - Modern CPU
  - Offloading of virtualisation tasks

NIC REBEL EDITION

Azure Boost: NVMe, Ephemeral on v6

The new start in town “boost VMs”



NIC REBEL EDITION

Azure Boost: NVMe, Ephemeral on v6

NIC REBEL EDITION

Azure Boost: NVMe, Ephemeral on v6

Challenges

- No migration path for Windows
- Images are not compatible (custom, gallery)
- Pagefile on C:\ instead of D: \, if present

NIC REBEL EDITION

Azure Boost: Migration

“There is no support way to migrate to a V6 directly.”

(as I know)

NIC REBEL EDITION

Azure Boost: Images

- Microsoft Marketplace images are working (scsi, nvme)
- Custom images are not working
- If we have no way to migrate a Golden Master, we have to create a new v6 Golden Master – with all the effort
- But …

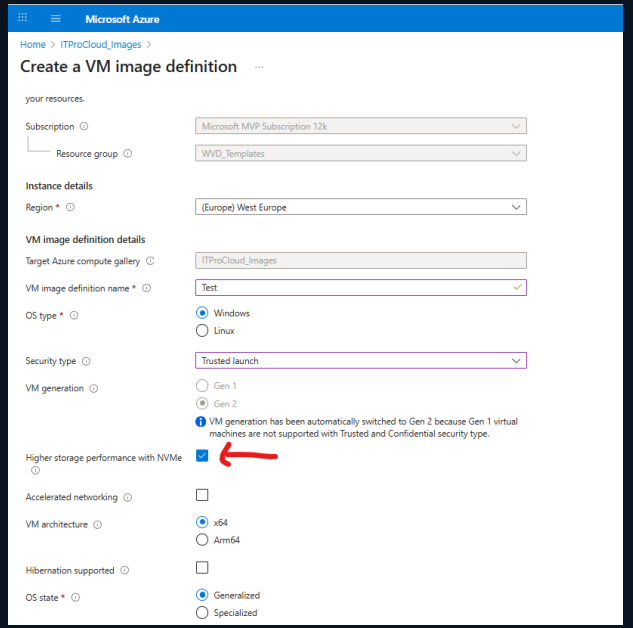
NIC REBEL EDITION

Azure Boost: Images

We can use a specific Azure Compute Gallery Definition

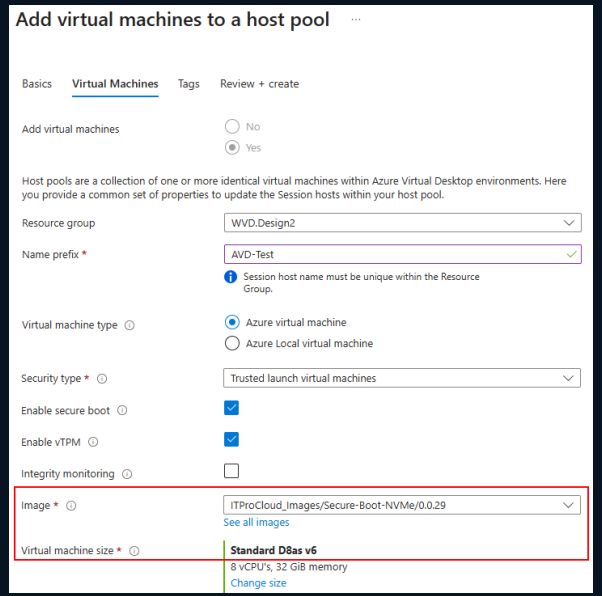
- Create a new definition
- Enable NVME
- Security type “trusted launch” (recommend)

- Capture the image from your old Golden Master into the definition (WVDAdmin, Hydra, PowerShell, …)



Azure Boost: Images

You can now deploy session hosts with that image from the Gallery Definition



Hints:

- The operating system must support NVMe

NIC REBEL EDITION

Demo Time

NIC REBEL EDITION

Azure Boost: Migration

One step back

If the OS supports NVMe, we can migrate existing VMs:

- Capture a specialized image into a prepared Gallery Definition
- Create a new v6 VM based on that image
- Done

NIC REBEL EDITION

Azure Boost: Pagefile

Do you know the “Don’t store data on D: drive” drive?

- E.g.: D8ads_v6
  - d stands for a local drive on the hypervisor
  - Perfect for the pagefile, because no network in between

And?

Hint: Check out https://cloudprice.net/

NIC REBEL EDITION

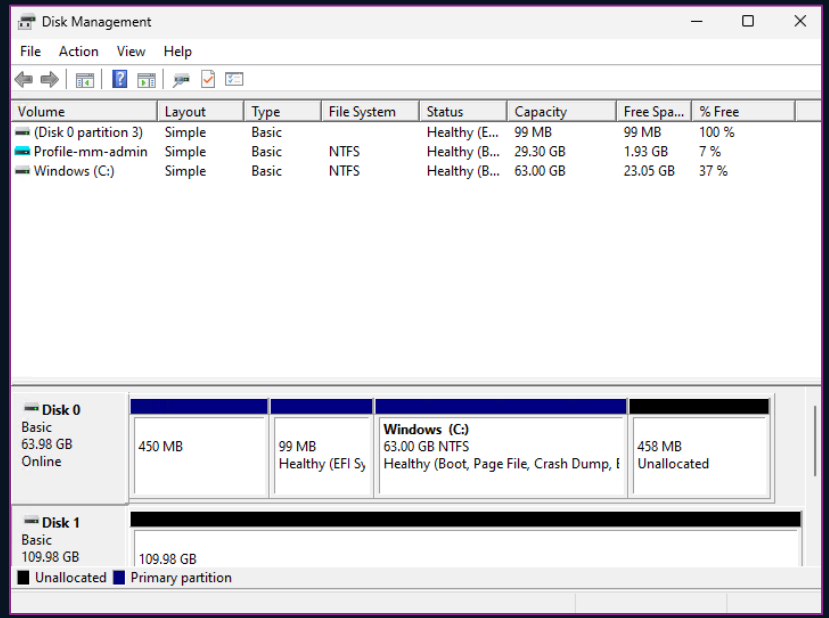
Azure Boost: Pagefile

Do you know the “Don’t store data on D: drive” drive?

The D: drive is not automatically mounted

Challenge:

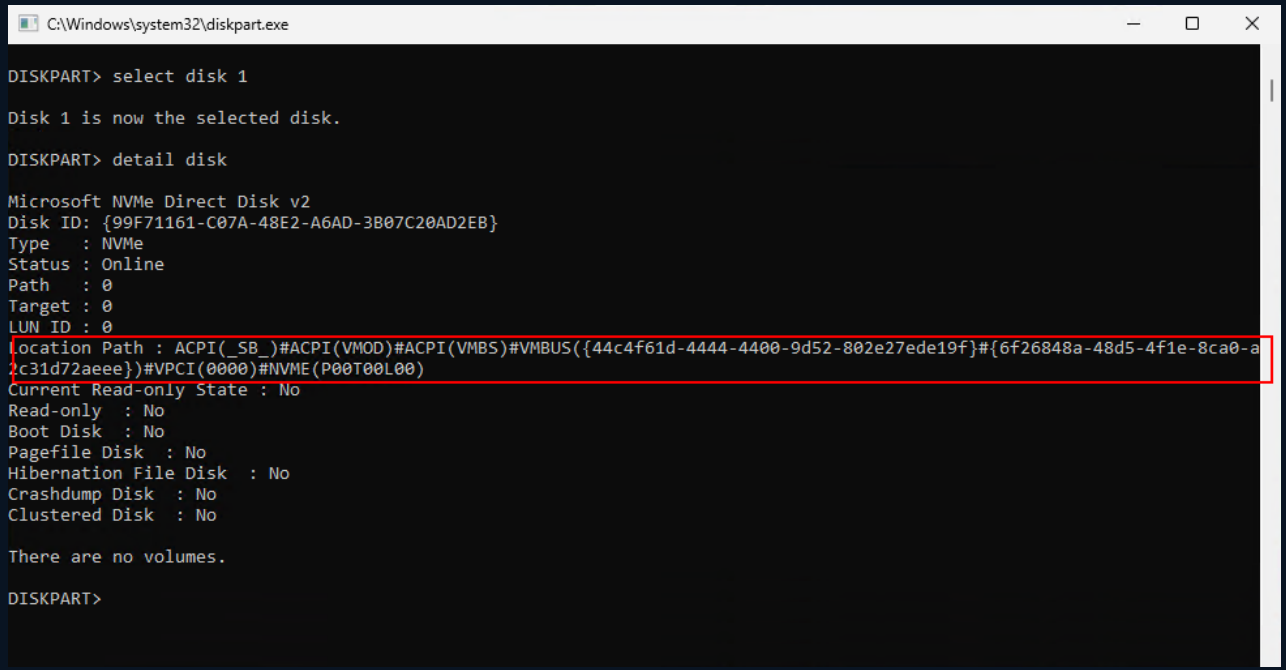
- Mount D:
- Format D:
- Reconfigure the pagefile
- Reboot



NIC REBEL EDITION

Azure Boost: Pagefile

But:



NIC REBEL EDITION

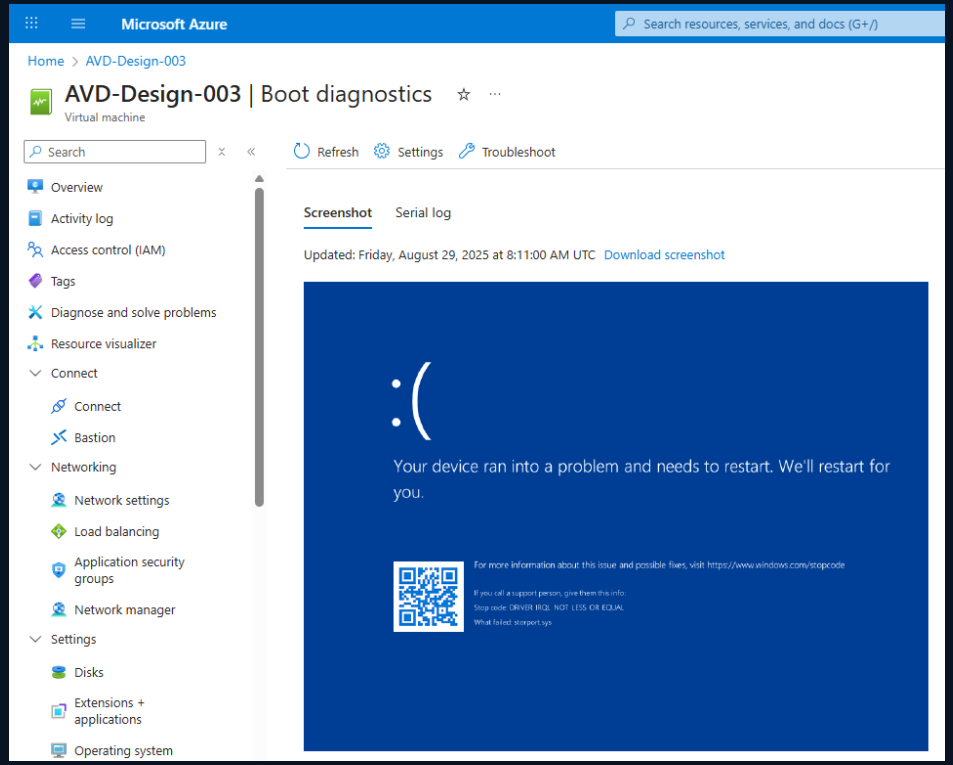
Azure Boost: Pagefile

- How to handle the pagefile:
  - Each time the host is allocated, the ID is changed
  - Therefore:
    - Detect if the NVMe disk exists but is not mounted/formatted
    - Mount and format the disk
    - Reconfigure pagefile
    - Do a reboot (a reboot will not change the device ID)
    - Do that very early before the AVD agent starts

- The upcoming Hydra version will do that automatically if you want.

NIC REBEL EDITION

Azure Boost: Finally



NIC REBEL EDITION

Orphan resources


```
"Name": "Design/AVD-Design-002.ITProCloud.test",
"Id": "/subscriptions/dcdce2ee-c9c0-4765-acd5-197126d21978/resourcegroups/WVD.Design2/providers/Microsoft.DesktopVirtualization/hostpools/Design/sessionhosts/AVD-Design-002
"Type": "Microsoft.DesktopVirtualization/hostpools/sessionhosts",
"Properties": {
  "LastHeartBeat": "2025-09-03T06:47:28.62Z",
  "Sessions": 0,
  "AgentVersion": "1.0.11802.2200",
  "AllowNewSession": true,
  "AssignedUser": null,
  "FriendlyName": null,
  "Status": 2,
  "StatusTimestamp": null,
  "OsVersion": "10.0.22621.5768",
  "SxSStackVersion": "rdp-sxs250508650",
  "UpdateState": 3,
  "LastUpdateTime": "2025-09-01T08:18:35.25Z",
  "UpdateErrorMessage": "",
  "SessionHostHealthCheckResultObject": [],
  "ResourceId": "/subscriptions/dcdce2ee-c9c0-4765-acd5-197126d21978/resourceGroups/WVD.Design2/providers/Microsoft.Compute/virtualMachines/AVD-Design-002",
  "VirtualMachineId": "e2330658-aeaa-46d6-8906-24cb9e14fb63"
```


NIC REBEL EDITION

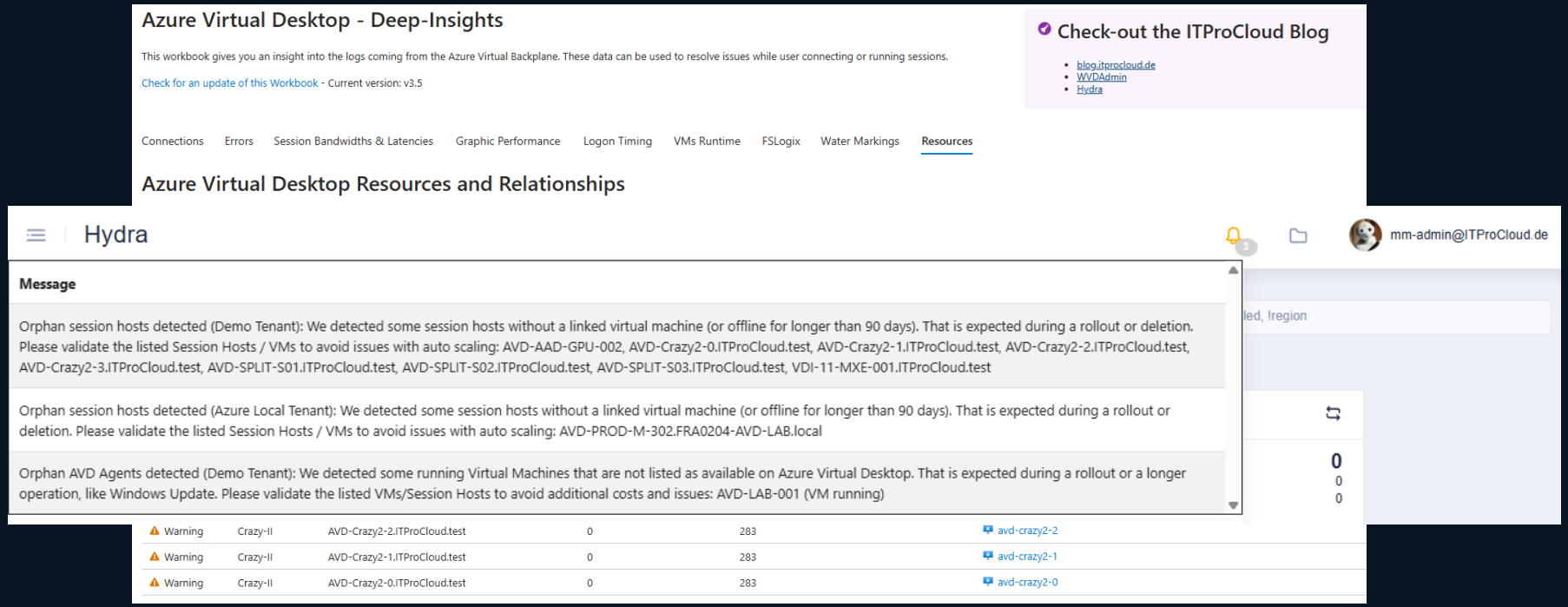
Orphan resources

While a host is only linked to a VM, the following can happen:

- Orphan Host: The VM is deleted, but not the host -> Issues in autoscaling
- Orphan VM: The session host is deleted (in the Azure Portal), but the VM still exists:
  - If the VM is running, you pay for the full VM – Autoscale will not shut down the VM
  - You may run out of IP addresses
  - Storage costs
- Different and similar: If a host/VM is offline for 90+ days, the AVD Agent cannot connect to the backend the next time
  - The hosts show up as unavailable/shutdown -> See orphan host

NIC REBEL EDITION

Orphan resources - Investigate



- Link: https://blog.itprocloud.de/AVD-Azure-Virtual-Desktop-Error-Drill-Down-Workbook/

NIC REBEL EDITION

Orphan resources

We will see it in my don’t does….

Demo Time

NIC REBEL EDITION

Imaging Strategies

“Isn't using templates so 90s?”

I don’t think so…

NIC REBEL EDITION

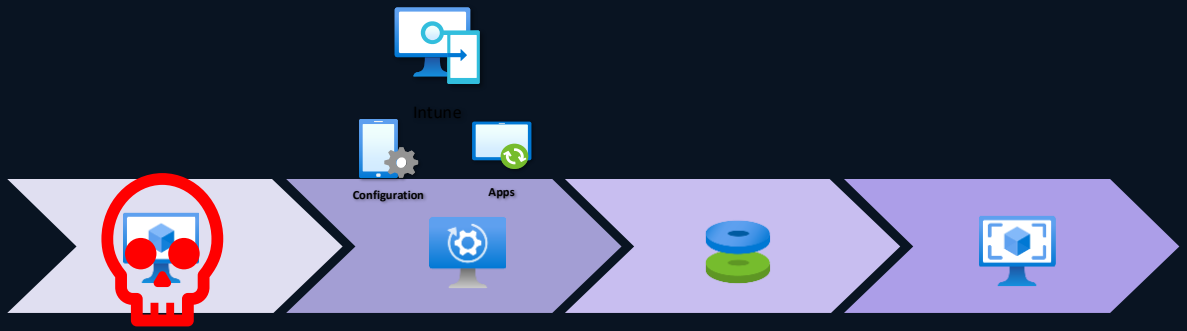
Imaging Strategies

Why imaging still matters for most cases:

- Fast deployment
  Deployment of session hosts with all apps and configuration in minutes
- Ready-to-use
  Users can connect directly and work with the apps
- Simple
  No complex installation process with all challenges regarding autoscaling, processes are in use, …
- Repeatable
  All hosts in a shared pool are equal
- Management
  So easy – with the right tools
- …

NIC REBEL EDITION

Imaging Strategies - Native



Master VM
Windows 11

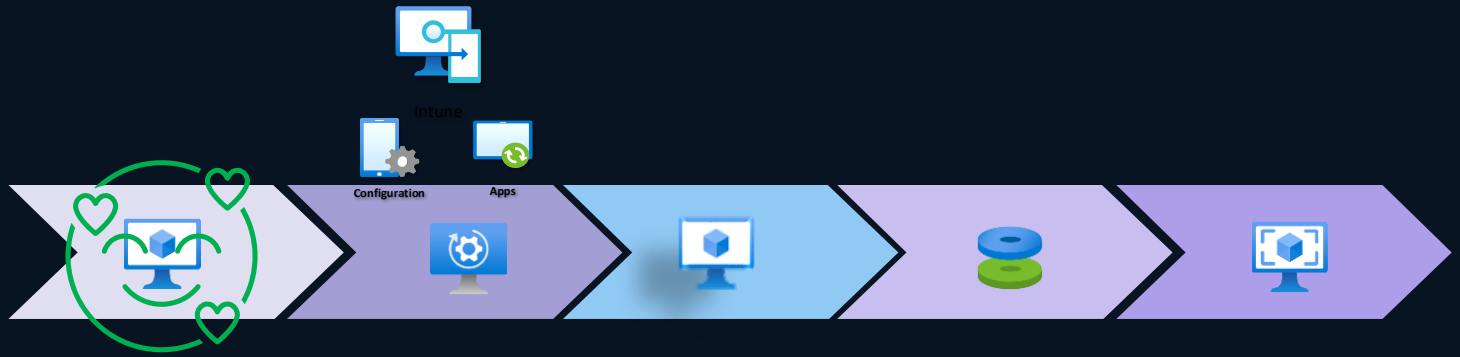
Preparation
Installation and configuration with Intune, etc.

Sysprep + Generalize
Generalize Windows, often more difficult than expected

Image
Generate an image

NIC REBEL EDITION

Imaging Strategies – With tools



- Makes a copy from the Golden Master
- Works with the copy (temporary VM)
  - Sysprep
  - Generalization & grab the image
- Remove temporary VM
- The Golden Master can be reused

NIC REBEL EDITION

Imaging Strategies - Challenges

What do we have to care about:

- Image types:
  - Custom/compute images
  - Gallery Images
  - Azure local images
- VM types:
  - Security type standard
  - Security type trusted launch
  - Confidential
- Specific settings:
  - Accelerated NIC
  - NVMe vs. SCSI
  - Plan-based (not plant-based)
  - Hibernation
  - …
- Sysprep ☹

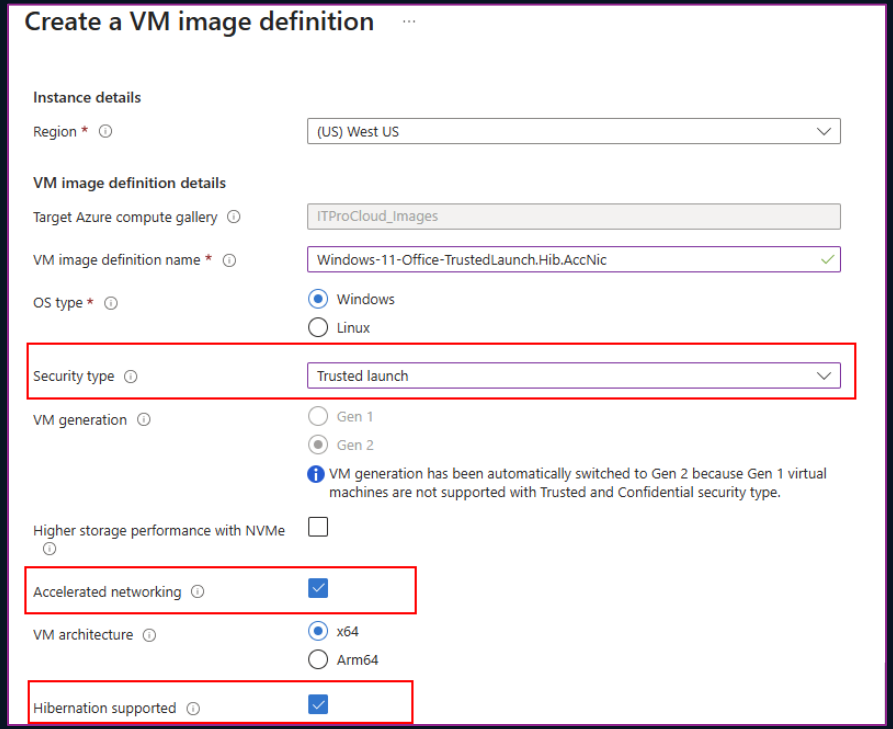
NIC REBEL EDITION

Imaging Strategies – Gallery Definition

Example:

A correct gallery definition is needed for a deployment of:

- Hibernation enabled
- Trusted Launch
- Accelerated NIC



NIC REBEL EDITION

Demo Time

NIC REBEL EDITION

My top 5

Does and don’t do:

“Never delete a host in the Azure Portal without reading the small letters”

Don’t forget to delete the VM – or use fancy tools to do that. Don’t forget the disk and nic

NIC REBEL EDITION

My top 5

Does and don’t do:

“Separate FSLogix profiles and don’t mix them up (usually)”

Keep a folder for each host pool to store the profiles. Use the same name as the pool and configure NTFS permissions correctly

NIC REBEL EDITION

My top 5

Does and don’t do:

“Choose the right storage for FSLogix”

Huge differences between performance, provisioned and used capacity, pay-as-you-go, and the “Provisioned price model”

E.g., Pay-as-you-go, standard storage: Tier and transactions matters

NIC REBEL EDITION

My top 5

Does and don’t do:

“Always configure diagnostic settings on the pools”

This gives you so many insights into what happens on the backend.

https://blog.itprocloud.de/AVD-Azure-Virtual-Desktop-Error-Drill-Down-Workbook/

NIC REBEL EDITION

My top 5

Does and don’t do:

“Check for orphan resources”

Stop paying for VM of “unavailable” session hosts.

https://blog.itprocloud.de/AVD-Azure-Virtual-Desktop-Error-Drill-Down-Workbook/

NIC REBEL EDITION

My top 5

Does and don’t do:

“Don’t put a half-installed Windows Update in an Image”

Stop slow deployments.

NIC REBEL EDITION

Thanks a lot

NIC REBEL EDITION