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Enterprise Training Camp 2025

NERDIO ENGERPRISE FOUNDATIONS

Today's agenda





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Resources for today



- Scan the QR code or go to getnerdio.com/camp-review-nme
- Join the Teams Meeting
- Confirm you've received an email from me
 - If you haven't, please drop your email in the Teams chat
 - You'll need this to access the lab sandbox

Today's mission, vision, and purpose

Creating Image Source VMs

- From the Azure Marketplace
- From an existing VM

End User Experience Settings

- FSLogix Configuration
- RDP Profile Settings

Generating new image versions

- Automating new version generation
- Active vs. inactive images

Provisioning Host Pools & Hosts

- Creating dynamic / static pools
- Manually deploying session hosts

Updating Session Hosts

- Manually updating hosts
- Automating host updates

Configuring Auto-scale

Updating Image source VMs

Using scripted actions to automate

Manually applying updates

- Configuring the default schedule
- Enabling auto-healing

Unified Application Management

- Connecting to repositories
- Creating application policies

Unified Endpoint Management

- Maintaining compliance
- Adding / editing policies

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Nerdio + EUC in 2025

End user computing



The current landscape of EUC in 2025



End of Life: Windows 10 Windows Server 2012 R2



On-premises legacy virtualization is more costly and complex than ever.



Enterprise organizations are questioning TCO CapEX vs OpEX.



Cloud costs are one of the biggest risks and concerns to cloud transformation.



Organizations will soon be monitored on Scope 2 and 3 emissions.

Microsoft is winning the Virtual Desktop race in the cloud.



Compliance and GDPR is top of mind



Microsoft Copilot is the next big disruptor in EUC.

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What to expect in 2025

Modern UI timeline

April 2025

7.0 (NerdioCon release)

Pages in the new UI:

- Workspaces, Host Pools and other AVD pages.
- Settings
- Console Connect

UI toggle to switch between old and new UI.

May – July 2025 7.1, 7.2, and future releases Additional new UI pages:

- Desktop Images
- Product Update
- Users and Roles
- User Sessions
- Other pages*
 - *To be determined

August 2025

- 7.3 release (major milestone)
- New features in development will be tailored for new UI.
- Pages available in the old UI and new UI will now only be available in the new UI.
 Some pages will still be present with old UI.

End of 2025

(final annual milestone)

- All pages migrated to the new UI
- Throughout this process and into 2026:
- We'll obtain feedback from customers.
- We'll use this feedback to continuously improve the new UI/UX.

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Want to become a beta tester?

Send a request to <u>tskerritt@getnerdio.com</u> to request access to features in private preview.

Toby Skerritt

Sr. Product Manager

- The Nerdio Product team grants private preview access on a discretionary basis.
- Note that private preview features are subject to change.
- Those selected or private preview access are expected to provide feedback on feature performance and direction.



Nerdio management pillars

Nerdio Manager for Enterprise





The Nerdio Optimization Journey



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Foundations

Optimizations

Environment scoping

The Nerdio Optimization Journey



Scope your environment

Which applications do users need?

- Which are generally applicable?
- Which are workgroup specific?

How do you expect users to behave?

- Use logs to scope existing environments.
- Work with application developers to scope new (greenfield) environments.

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Foundations

User experience settings

The Nerdio Optimization Journey

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Configure user experience settings

Create centralized, scalable templates around the user experience.

- Configure and centralize FSLogix settings for use in host pools.
- Build RDP Settings Profiles to define session behavior.



The Nerdio Optimization Journey



Create Desktop Images in Nerdio Manager

Build a tool for rapid deployment and easy management.

- Scope per-workgroup needs for your Desktop Image(s).
- Identify overlap in needs and consolidate.
- Keep images thin to simplify and expedite updates and patches.





The Nerdio Optimization Journey

Implement automations

Create scalable automations for simplified management.

- Inventory and consolidate orphaned scripts, then generalize them.
- Create secure variables in Nerdio Manager.
- Connect your GitHub / DevOps repositories.
- Build scripts natively in Nerdio Manager for Enterprise.



The Nerdio Optimization Journey

Create host pools

Define how hosts should be built and configured.

- Select the Desktop Image to use as the base.
- Assign user experience settings (FSLogix, RDP Settings).
- Customize the properties to define deployment and behavior.



Unified Application Management

The Nerdio Optimization Journey

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Leverage Unified Application Management (UAM)

Implement automated, policy-driven application management.

- Inventory general applications and unique applications.
- Determine what can be automated and what cannot be automated.
- Create and connect an in-house repository.



The Nerdio Optimization Journey



Set up and configure Auto-scale

Configure Auto-scale to optimize your AVD resources.

- Use Auto-scale to help save on costs.
- Use Auto-scale profiles to centralize configurations.
- Add capacity when it counts and remove it when things slow down.
- Use Auto-heal to troubleshoot on your behalf.





The Nerdio Optimization Journey



Optimization plays:

- 8. Extend beyond AVD with Unified Endpoint Management (UEM).
- 9. Deliver updates via the foundations pipeline.
- **10.** Onboard new departments using the Foundations Framework.
- **11**. Make iterative changes rather than major projects.
- **12. Implement Nerdio API to extend into your tech stack.**

Optimizations

The Adoption & Management Framework



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Building image source VMs

Image lifecycle management



Overview of Desktop Images

What is a Desktop Image?

- An ideal configuration state for VMs.
- Enables centralization for deploying and updating hosts.

How are they created?

- From a template via the Azure Marketplace.
- From an existing Azure VM with the correct configuration. (SAS URL)



Scoping images

What type of image should you use?



Single-user image

• One-to-one, cannot be used for multisession hosts later.

Multi-session image:

• Can be used for multi-session or singlesession (personal hosts).



Total variants

- How many variants does the environment need?
- Maintain an image for each variant type.

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Items to avoid on images



Domain joining and Intune enrollment

- If the image source VM is joined to the domain GPOs will be in play.
- If the image source VM is enrolled in Intune, policies will be in play.
- Both of these methods can cause Sysprep to fail.

Image-incompatible apps or security products

- Until recently, the Zscaler client was <u>not</u> compatible with multi-session VMs.
- Security products can interrupt and cause issues with Sysprep.
 - Many solutions can be made image compatible.
 - If not, avoid installing them on the image source VM.

Per-user Install Applications

- We recommend installing these *after* host provisioning via UAM or Intune.
- The fewer applications on the image source VM, the more predictable updates become.

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Creating Desktop Images



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The image source VM is the engine

It is NOT the image itself.

Image source VM

- Target for changes
- Patches/Updates
- One-to-many

Desktop Image

- Used to deploy hosts
- Versioning supported
- Use to rapidly scale

Automations

- Custom app installs
- Customizations
- Intune Policies

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Let's see it in action!

Image lifecycle management

Walkthrough

• Image source VM creation options

Lab

• Add an image source VM

Environment credentials:

Username: firstname.lastname@nerdiouniversity.net

Password: N3rdi@2025

Using logs to resolve errors

Waiting for proper vm configuration	Apr 1, 2024 03:30 PM Apr 1, 2024 03:33 PM	✓ COMPLETE	Wait for 3 minutes	
Prepare config	Apr 1, 2024 03:33 PM Apr 1, 2024 03:33 PM	✓ COMPLETE	Uninstall TreeSize app added to config	
Get or create config- 1317c55a8281d09ffd1478943de8a77a blob	Apr 1, 2024 03:33 PM Apr 1, 2024 03:33 PM	✓ COMPLETE	Created new blob Container: app-management-configs Result file: ec66ddbd-1fdf-4e58-b922-66e0be7e9258.json	
Get or create result- 1317c55a8281d09ffd1478943de8a77a blob	Apr 1, 2024 03:33 PM Apr 1, 2024 03:33 PM	✓ COMPLETE	Created new blob Container: app-management-configs Result file: 5cca2fad-d287-4b54-918b-e517eea3b9ee.json	
Upload text to blob	Apr 1, 2024 03:33 PM Apr 1, 2024 03:33 PM	✓ COMPLETE	Success	
Install Application Management Extension	Apr 1, 2024 03:33 PM Apr 1, 2024 05:05 PM	ERROR	An existing VM extension of type CustomScriptExtension detected. Going to remove it. Logging old result: > VM extension details: Installation failed Extension was removed Installation is still in progress > Exception details Download App management logs Error: An error occurred extension installation	
Load results from storage container	Apr 1, 2024 05:05 PM Apr 1, 2024 05:05 PM	ERROR	Error: Results unavailable	
Stop VM	Apr 1, 2024 05:05 PM Apr 1, 2024 05:05 PM	✓ COMPLETE	Success	
				Class
				ciose



ERROR HANDLING

Contacting Nerdio Support

Interacting with Nerdio's Support team.

When to contact Nerdio support

- If you see and cannot solve an error in NME, reach out!
- All other items beyond NMM are "out of scope"

Contact methods

NME.support@getnerdio.com

What to include

- A full screenshot of any error messages.
- Steps to replicate the issue.
- Any steps you've taken so far.

Common items we cannot solve

- FSLogix errors
- Hosts showing "unavailable"
- Host deployment failures

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User experience settings



USER EXPERIENCE SETTINGS

Introduction to FSLogix

What is FSLogix?

- User profile container technology.
- Allows user profiles to roam without losing their customizations.



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Best practices for FSLogix

Azure Files

- Microsoft recommends Premium storage in Azure Files.
- Premium Storage for Azure Files is Nerdio auto-scale compatible.
- Nerdio auto-scaling ensures there is always enough storage available.
- Lower tiers of storage may cause errors in daily operations.

Storage Options

- File Server Share
- Azure Files (Premium)
- Azure NetApp Files (1 TiB minimum required)

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USER EXPERIENCE SETTINGS

Introduction to RDP Profiles

What is an RDP Profile?

• A configuration created in Nerdio that defines the RDP experience for users.



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Common RDP Profile settings

audiocapturemode

• Defines whether audio input can be redirected from the local device to the session.

camerastoredirect

• Makes the local webcam / camera available in the session.

devicestoredirect

• Allows plug in devices to appear in the session.

drivestoredirect

• Redirects drives from the local machine to the session (e.g. USB drives).

redirectprinters

• Allows local printers to be made available in the session.

redirectclipboard

• Allows clipboard sharing between the local device and session.

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Let's see it in action!

User experience settings

Walkthrough

- Create and configure FSLogix profiles
- Create and configure RDP Settings Profiles

Workspaces, Host Pools, and Session Hosts

Creating AVD resources


Overview of AVD Workspaces

These are logical groupings of Application Groups and Host Pools in Azure.

- Each host pool must be associated with a workspace.
- Workspaces can include a mix of static and dynamic host pools.

How are they created?

- You can create workspaces natively in Azure and link them to Nerdio.
- Or you can create them directly in Nerdio.

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Overview of AVD Host Pools

Host Pools are groupings of identical session hosts (VMs) that share common attributes. These VMs serve the end user experience.



WORKSPACES, HOST POOLS, AND SESSION HOSTS

Session Hosts & Load Balancing

Host Pool + Breath-first







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WORKSPACES, HOST POOLS, AND SESSION HOSTS

Session Hosts & Load Balancing

Host Pool + Depth-first









Host Pool types

Dynamic Host Pools

- Contain a flexible number of session hosts.
- Compatible with Nerdio Auto-scale.
- If Auto-scale isn't configured, the pool will not scale in / out based on the workload.

Static Host Pools

- Contains a set number of session hosts.
- Not compatible with Auto-scale.
- Host pools from an existing environment appear as static pools (can be converted to dynamic).

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Let's see it in action!

User experience settings

Lab

- Creating AVD workspaces
- Create a dynamic Host Pool
- Add session hosts

Walkthrough

Adjusting Host Pool properties

Building image source VMs

Image lifecycle management



Applying updates and changes

Image source VM

- Target for changes
- Patches/Updates
- One-to-many

Desktop Image

- Used to deploy hosts
- Versioning supported
- Use to rapidly scale

Automations

- Custom app installs
- Customizations
- Intune Policies

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IMAGE LIFECYCLE MANAGEMENT

Update methodologies

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- Automated!
- Leverages what you've already built.

Windows Update for Business

- Automated!
- Validates that production resources built from a Desktop Image match expected Windows versions.

Manually

- Do this only if you must.
- Time-consuming.
- Error-prone.

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IMAGE LIFECYCLE MANAGEMENT

Create an image – the Nerdio way!

The Nerdio logo indicates automated steps.



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Scripted Actions in Nerdio

Scripted Actions are collected in repositories.

- Nerdio provides a default repository.
- You can connect your own GitHub or DevOps.

Two types of Scripted Actions

- Azure Runbooks these are for the Azure environment itself.
- Windows Scripts these are scripts for VMs.

Scripts can be generalized and use variables

• Secure variables



Scripted Actions in Nerdio

Secure Variables

- Stored in the key vault. Only available for scripted actions (NO Intune policies).
- Can be used with generalized scripts to provide boutique customizations.



EDIT SCRIPTED ACTION

NAME:	Set FSLogix size including dropdown	í
DESCRIPTION:	When assigned it show s a dropdown from 5 to 50GB (5-10-20-30-50), if nothing is selected the default value will be set to 10GB.	Ġ
TAGS:	Type to create new or select existing	í
SCRIPT EXECUTION MODE:	Individual	í

ENABLE CLOUD PC

∽ SCRIPT ③

1	param (Construction of the second sec
2	<pre>[Parameter(Mandatory = \$true)]</pre>	 Become and an effective and an effective and an effective and an excession rate and an effective an effective and an effective an effective an effective an effective an effective an effective an ef
3	[ValidateSet("5", "10", "20", "30", "50")]	
4	<pre>[string]\$ProfileSizeGB = "10"</pre>	
5		
6		
7	# Convert GB to MB	
8	<pre>\$ProfileSizeMB = [int]\$ProfileSizeGB * 1024</pre>	
9		
10	# Set FSLogix profile size limit	
11	New-Item -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Force Out-Null	
12	Set-ItemProperty -Path "HKLM:\SOFTWARE\FSLogix\Profiles" -Name "SizeInMBs" -Value \$ProfileSizeMB -Type DWord	
13		
14	Write-Output "FSLogix profile size limit set to \$ProfileSizeGB GB (\$ProfileSizeMB MB)"	
> SCRIP	T PARAMETERS BUILDER BETA	
		Cancel Save & close



Off 🛈





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Let's see it in action!

Updating image source VMs with Scripted Actions and generating Desktop Image versions

Lab

• Updating the image source VM

Walkthrough

- Adding Secure Variables
- Adding Scripted Actions

Lab

Creating Desktop Images

Updating Session hosts

Workspaces, Host Pools, and Session Hosts



UPDATING SESSION HOSTS

Updating AVD Session Hosts



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Let's see it in action!

Updating AVD Session Hosts

Walkthrough

• Updating individual hosts

Lab

• Updating host pools

Configuring Auto-scale

Host Pools



Auto-scale for Host Pools



- Automate the volume of resources based on capacity.
 - Add capacity when it counts.
 - Avoid overspending during times of less demand.
- Create schedules for weekends, holidays, and more.
- Automatically update / re-image host pools.
- Automatically heal broken hosts.

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Auto-scale schedules

Default Schedule

The default schedule defines daily auto-scale

parameters.

- The number of hosts to maintain.
- Peak hours.
- Typical changes in capacity needs.

Alternative Schedule

The alternative schedule overrides the default schedule

to accommodate non-typical situations.

- Holidays or events with a decrease in AVD activity.
- Increases in workload, such as seasonal work.
- Any other pre-planned changes in activity.

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Let's see it in action!

Auto-scale for host pools

Walkthrough

- Configuring Auto-scale
 - Auto-scale profiles
 - Host Pools

Configuring Auto-scale

Azure storage



Auto-scale for Azure Files and Azure NetApp Files

Configure Auto-scale for Azure Files Premium and Azure NetApp Files.





Nerdio Auto-scale for Azure Files & NetApp Files

- Prevent over-utilization by allocating storage when needed.
- Prevent overspending by removing capacity when not needed.
- Nerdio Auto-scale supports:
 - Azure Files Premium
 - Azure NetApp Files (ANF)

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Capacity vs. Performance

Consider both capacity and performance when sizing FSLogix storage.

- Azure Files Premium Performance based on share capacity.
- Azure NetApp Files Performance based on capacity pool.

Azure	e Premium File Shares Performa	ance
Capacity (GiB)	Baseline IOPS	Throughput
100	3100	110 MiB/s
500	3500	150 MiB/s
1024	4024	203 MiB/s
5120	8120	613 MiB/s

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Let's see it in action!

Auto-scale for Azure Storage

Walkthrough

• Configure Auto-scale for Azure Files Premium

Unified Application Management

UAM



Deployment technologies

How will the

applications be

deployed?

WinGet

- The public repository is connected by default.
- Connect your own!

SCCM

Manage applications imported from SCCM.

Intune application deployments

Manage applications imported from SCCM.

MSIX App Attach / App Attach

Mount MSIX App Attach images to session hosts.

Shell Apps

• For complex applications incompatible with WinGet.

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UNIFIED APPLICATION MANAGEMENT

WinGet Overview

What is it?

• Winget gives administrators an easy way to manage, upgrade, install and uninstall applications.

How does it work?

- Winget is built into Windows 10 & 11.
- It manages applications via repositories.
 - E.g., Microsoft Store, GitHub, public Winget repository, custom repositories.

Windows PowerShell

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Successfully verified installer hash Starting package install... Successfully installed

(11/24) Found Microsoft Teams [Microsoft.Teams] Version 1.6.00.27573 This application is licensed to you by its owner.

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UNIFIED APPLICATION MANAGEMENT

WinGet Overview





Let's see it in action!

Unified Application Management

Lab

• WinGet commands

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Launch WinGet via PowerShell

WinGet ---info

Shows the version of WinGet and the default locations of install folders, etc.

gs er Settings rtable Links Directory (User) rtable Links Directory (Machine rtable Package Root (User) rtable Package Root rtable Package Root (x86) staller Downloads nfiguration Modules	<pre>%LOCALAPPDATA%\Packages\Microsoft.DesktopAppInstaller_8wekyb3d8bbwe\LocalState\DiagOutputDir %LOCALAPPDATA%\Packages\Microsoft.DesktopAppInstaller_8wekyb3d8bbwe\LocalState\settings.json %LOCALAPPDATA%\Microsoft\WinGet\Links e) C:\Program Files\WinGet\Links %LOCALAPPDATA%\Microsoft\WinGet\Packages C:\Program Files\WinGet\Packages C:\Program Files (x86)\WinGet\Packages %USERPROFILE%\Downloads %LOCALAPPDATA%\Microsoft\WinGet\Configuration\Modules</pre>	
nks		
ivacy Statement https://aka.m cense Agreement https://aka.m ird Party Notices https://aka.m mepage https://aka.m ndows Store Terms https://www.m	ns/winget-privacy ms/winget-license ms/winget-3rdPartyNotice ms/winget microsoft.com/en-us/storedocs/terms-of-sale	
nin Setting	State	
calManifestFiles bassCertificatePinningForMicros stallerHashOverride calArchiveMalwareScanOverride bxyCommandLineOptions faultProxy	Disabled softStore Disabled Disabled Disabled Disabled Disabled	

UNIFIED APPLICATION MANAGEMENT

View WinGet sources

WinGet source list

Use this command to list and manage sources for Windows Package Manager.

You can add, remove, update, reset, or export repositories.

≅. C:\Windows\System32\cmd.e × + ∽		- 0 ×
:\Windows\System32>winget source list ame Argument	Explicit	
sstore https://storeedgefd.dsx.mp.microsoft.com/v9.0 inget https://cdn.winget.microsoft.com/cache	false false	
:\Windows\System32>		

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List WinGet apps on the PC

WinGet list

Lists all the applications on your computer, the versions, and whether there is an available manifest in WinGet's sources.

All applications can be managed regardless of whether they were first installed with WinGet.

🖾 C:\Windows\System32\cmd.e × + v		
Windows Clock	MSIX\Microsoft WindowsAlarms 1.0.75.0 x64 1.0.75.0	
Microsoft.WindowsAppRuntime.1.4	MSIX\Microsoft.WindowsAppRuntime.1.4 4000 4000.1309.2056.0	
Microsoft.WindowsAppRuntime.1.4	MSIX\Microsoft.WindowsAppRuntime.1.4_4000 4000.1309.2056.0	
Microsoft.WindowsAppRuntime.1.5	MSIX\Microsoft.WindowsAppRuntime.1.5_5001 5001.373.1736.0	
Microsoft.WindowsAppRuntime.1.5	MSIX\Microsoft.WindowsAppRuntime.1.5_5001 5001.373.1736.0	
WindowsAppRuntime.1.6	MSIX\Microsoft.WindowsAppRuntime.1.6_6000 6000.457.2140.0	
WindowsAppRuntime.1.6	MSIX\Microsoft.WindowsAppRuntime.1.6_6000 6000.457.2140.0	
Windows Calculator	MSIX\Microsoft.WindowsCalculator_11.2502.2 11.2502.2.0	
Windows Camera	MSIX\Microsoft.WindowsCamera_2025.2502.17 2025.2502.17.0	
Feedback Hub	MSIX\Microsoft.WindowsFeedbackHub_1.2503.1 1.2503.11103.0	
Windows Maps	MSIX\Microsoft.WindowsMaps_1.0.64.0_x648 1.0.64.0	
Windows Notepad	MSIX\Microsoft.WindowsNotepad_11.2501.31.0 11.2501.31.0	
Windows Sound Recorder	MSIX\Microsoft.WindowsSoundRecorder_1.0.90 1.0.90.0	
Microsoft Store	MSIX\Microsoft.WindowsStore_22503.1401.4.0 22503.1401.4.0	
Windows Terminal	Microsoft.WindowsTerminal 1.22.10731.0 1.22.11141.0	winget
Windows Package Manager Source (winget) V2	MSIX\Microsoft.Winget.Source_2025.428.1552 2025.428.1552.44	
Xbox TCUI	MSIX\Microsoft.Xbox.TCUI_1.24.10001.0_x64 1.24.10001.0	
Xbox Game Bar Plugin	MSIX\Microsoft.XboxGameOverlay_1.54.4001.0 1.54.4001.0	
Game Bar	MSIX\Microsoft.XboxGamingOverlay_7.225.408… 7.225.4081.0	
Xbox Identity Provider	MSIX\Microsoft.XboxIdentityProvider_12.115 12.115.1001.0	
Xbox Game Speech Window	MSIX\Microsoft.XboxSpeechToTextOverlay_1.2… 1.21.13002.0	
Phone Link	MSIX\Microsoft.YourPhone_1.25032.76.0_x64 1.25032.76.0	
Windows Media Player	MSIX\Microsoft.ZuneMusic_11.2503.5.0_x64 11.2503.5.0	
Movies & TV	MSIX\Microsoft.ZuneVideo_10.25031.10021.0 10.25031.10021.0	
Quick Assist	MSIX\MicrosoftCorporationII.QuickAssist_2 2.0.36.0	
Windows Web Experience Pack	MSIX\MicrosoftWindows.Client.WebExperience 525.8401.30.0	
Cross Device Experience Host	MSIX\MicrosoftWindows.CrossDevice_1.25032 1.25032.52.0	
Mail and Calendar	MSIX\microsoft.windowscommunicationsapps_1 16005.14326.22342.0	

C:\Windows\System32>

List apps with available upgrades

WinGet upgrade

Returns a list of any installed applications with a newer version available for upgrade.

C:\Windows\System32>winget upgrade Name	Id	Version	Available	Source
Bitwarden	Bitwarden.Bitwarden	2025.2.1	2025.3.1	winget
7-Zip 23.01 (x64)	7zip.7zip	23.01	24.09	winget
Git	Git.Git	2.42.0.2	2.49.0	winget
Microsoft 365 Apps for enterprise - en-us	Microsoft.Office	16.0.18129.20200	16.0.18623.20156	winget
Zoom VDI Workplace (64-bit)	Zoom.Zoom.VDI	6.2.25780	6.3.25910	winget
Remote Desktop Agent Boot Loader	Microsoft.WindowsVirtualDesktopBootloader	1.0.8925.0	1.0.9023.1100	winget
Azure Data Studio	Microsoft.AzureDataStudio	1.46.1	1.51.1	winget
Microsoft ODBC Driver 17 for SQL Server	Microsoft.msodbcsql.17	17.10.3.1	17.10.6.1	winget
Remote Desktop	Microsoft.RemoteDesktopClient	1.2.6014.0	1.2.6187.0	winget
Microsoft Visual Studio Code	Microsoft.VisualStudioCode	1.83.1	1.99.3	winget
Notepad++ (32-bit x86)	Notepad++.Notepad++	8.5.8	8.7.9	winget
Git Extensions 4.1.0.16698	GitExtensionsTeam.GitExtensions	4.1.0	5.2.1	winget
Microsoft PowerBI Desktop (x64)	Microsoft.PowerBI	2.122.746.0	2.142.928.0	winget
Microsoft Visual C++ 2015-2022 Redistributa	Microsoft.VCRedist.2015+.x86	14.40.33810.0	14.42.34438.0	winget
Microsoft Visual C++ 2015-2022 Redistributa	Microsoft.VCRedist.2015+.x64	14.42.34433.0	14.42.34438.0	winget
Microsoft SQL Server Management Studio - 19…	Microsoft.SQLServerManagementStudio	19.1	20.2.1	winget
Snagit 2024	TechSmith.Snagit.2024	24.3.0	24.3.2	winget
Microsoft Visual C++ 2013 Redistributable (…	Microsoft.VCRedist.2013.x64	12.0.40660.0	12.0.40664.0	winget
Microsoft .NET SDK 8.0.100-rc.2.23502.2 (x6	Microsoft.DotNet.SDK.Preview	8.0.100-rc.2.23502.2	10.0.100-preview.3.25201.16	winget
Dev Home	Microsoft.DevHome	0.2000.758.0	0.2001.758.0	winget
Windows Terminal	Microsoft.WindowsTerminal	1.22.10731.0	1.22.11141.0	winget
21 ungrades available				

C:\Windows\System32>

C:\Windows\System32\cmd.e ×
UNIFIED APPLICATION MANAGEMENT

Upgrade all applications

WinGet upgrade --all

Upgrades all applications on your upgrade list to the latest version shown in the manifest.



(12/14) Found Zoom Workplace (EXE) [Zoom.Zoom.EXE] Version 6.3.5 (54827) This application is licensed to you by its owner. Microsoft is not responsible for, nor does it grant any licenses to, third-party packages. Downloading https://zoom.us/client/6.3.5.54827/ZoomInstallerFull.exe?archType=x64 107 MB / 107 MB Successfully verified installer hash Starting package install... Successfully installed (13/14) Found Python 3.12 [Python.Python.3.12] Version 3.12.8 This application is licensed to you by its owner. Microsoft is not responsible for, nor does it grant any licenses to, third-party packages. Downloading https://www.python.org/ftp/python/3.12.8/python-3.12.8-amd64.exe 25.7 MB / 25.7 MB Successfully verified installer hash Starting package install... Successfully installed (14/14) Found Microsoft Teams [Microsoft.Teams] Version 24335.208.3315.1951 This application is licensed to you by its owner. Microsoft is not responsible for, nor does it grant any licenses to, third-party packages. Successfully verified installer hash Starting package install... 95% Successfully installed. Restart the application to complete the upgrade. PS C:\>

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Let's see it in action!

Unified Application Management

Walkthrough

• Importing Applications

Lab

• Creating and assigning UAM policies

Review

The Adoption & Management Framework



The Adoption & Management Framework



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Unified Endpoint Management





UNIFIED ENDPOINT MANAGEMENT

What is Intune?

Microsoft's native MDM and MAM built to manage

• Windows, MacOS, iOS, Android, Chrome, Ubuntu Linux

A replacement for key Windows Active Directory functionality

Manage different types of policies

- Configuration Profiles (instead of GPOs)
- Conditional Access (Zero Trust) Not configured via NME
- Security Baselines (Security Standards of a device)
- Compliance Policies (Criteria needed for a device to be compliant)
- Update Rings (Feature, Quality, Driver Updates, etc)
- Mobile App/Mobile Device Management (RMM over Mobile Devices)

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UNIFIED ENDPOINT MANAGEMENT

What is an endpoint?

Any device that touches an end user is considered an endpoint.

• *Physical desktops, laptops, mobile devices, and even virtual devices.*

Is a server an endpoint?

- Traditionally no, but some Intune functions work on servers as well.
- Microsoft makes a distinction between <u>Corporate-owned devices</u> and <u>BYOD devices</u>.

In addition to managing policies, Intune can also deploy LOB apps

- Enroll a Windows Device: <u>https://aka.ms/WindowsEnrollmentGuide</u>
- Enroll a MacOS Device: <u>https://aka.ms/macOSEnrollmentGuide</u>
- Enroll an iOS Device: <u>https://aka.ms/iOSEnrollmentGuide</u>
- Enroll an Android Device: <u>https://aka.ms/AndroidEnrollmentGuide</u>

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Nerdio Unified Endpoint Management

Streamlined Management Interface

- Overlay that exposes common Intune tasks.
- Simplified management interface (Changelog, Versions, Statuses, Rollbacks)
- Surface endpoint details in the Nerdio Portal.

Reduce Management Overhead

- Increase productivity and avoid additional Intune administration.
- Focus on common management tasks.
- Streamline common tasks with fewer clicks.
- View endpoint status with device compliance and performance reports.

Increase Security

- Build-in and custom, granular RBAC roles.
- Delegate common tasks with just-enough access to common endpoint settings.

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UNIFIED ENDPOINT MANAGEMENT

Microsoft Intune & Nerdio Manager

Extend your management of Intune and Windows 365 with Nerdio.



- Create, modify, backup and track changes to Intune Policies over time.
- Monitor device performance and compliance with advanced reporting.
- Manage Windows 365 images, network connections and provisioning policies.
- ✓ Create granular RBAC roles for endpoint management.

WINDOWS 365 Windows 365 Overview

Windows 365 is a cloud-based SaaS service that automatically

creates Cloud PCs for your end users.

- Remote desktop hosted by Microsoft
- Managed by Intune
- Licensed per user



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WINDOWS 365

Windows 365 Business vs Enterprise

Windows 365 Business

- Windows 10 or 11 Pro
- No Intune management
- No private network connectivity
- Entra ID join
- Limited to 300 seats per tenant

Windows 365 Enterprise

- Windows 10 or 11 Enterprise
- Management integrated with Intune
- Private Azure network connection
- Entra ID or AD DS join
- No seat limit per tenant

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WINDOWS 365 Windows 365 Overview

Licensed per user

- Users require the following licenses:
- Windows 365 Enterprise
- Windows 10 or 11 Enterprise*
- Intune*
- Entra ID P1 or P2*
 - *Commonly included in bundles.

Private Network Connectivity

 Connect Cloud PCs to a Microsoft-managed network or private virtual network hosted in an Azure subscription.



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WINDOWS 365 Windows 365 Overview

Licensed per user

- Users require the following licenses:
- Windows 365 Enterprise
- Windows 10 or 11 Enterprise*
- Intune*
- Entra ID P1 or P2*
 - *Commonly included in bundles.

Private Network Connectivity

 Connect Cloud PCs to a Microsoft-managed network or private virtual network hosted in an Azure subscription.

Entra ID or Windows AD DS Hybrid Join

 Join the Cloud PC to Entra ID or Windows AD and Entra ID with Entra Hybrid ID Join.



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Windows 365 & Nerdio + Intune

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CREATE	NETWORK	CONNECTIO	ЛC
--------	---------	-----------	----

NAME		
Hybrid Network Connection		
Network type		
Hybrid Entra ID join		\sim
Resource Group for cloud PC network cards		
NWM-Demo		Ŧ
Network		
NWM-Demo/WestUS3-VNet/wus3-lan (West US 3)		Ŧ
Available IP addresses: 248 (3 of 251 used)		
Active Directory		
Nerdio Default Profile (default)		*
	Cancel	ок

Name	
NerdioCon	
Description	
Cloud PCs for NerdioCon	
License type	
Enterprise	~
Cloud PC image	
NerdioCon64-ALL (2.0.0)	•
Language & Region	
English (United States)	x ~
Network connection	
NerdioCon	<pre></pre>
Manual Entra ID group assignments	

CREATE PROVISIONING POLICY



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RBAC roles

Custom RBAC roles for

Intune Management

EDIT ROLE DEFINITION			
NAME:	Intune - Device R	BAC example	0
DESCRIPTION:	Device RBAC exa	mple	0
MODULES:			
호크 DASHBOARD		Select	~
企 WORKSPACES		Select	~
DESKTOP IMAGES		Select	~
⊑D INTUNE		Read Devices × Read Update Rings and Policies × Manage Antivirus × Read User Groups ×	~
INTUNE > WINDOWS 365		Select	~
APP ATTACH		Select	~
∃Ξ SCRIPTED ACTIONS		Select	~
MONITORING		Select	~
STORAGE > AZURE FILES		Select	~
STORAGE > AZURE NETAPP FILES		Select	~
STORAGE > LOG ANALYTICS		Select	~
DESKTOPS		Select	~

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Cancel

ОК

Windows 365 Management Recap



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Licensed per user

- Users require a Windows 365, Windows 10* or 11 Enterprise*, Intune*, and Entra ID P1 or P2 license*.
- *Commonly included in bundles.

Private Network Connectivity

 Connect Cloud PCs to a Microsoft-managed network or private virtual network hosted in an Azure subscription.

Entra ID or Windows AD DS Hybrid Join

• Join the Cloud PC to Entra ID or Windows AD with Entra Hybrid Join.

Intune Management

• Windows 365 management is built into Intune and available in Nerdio.

Custom Image

• Use a Microsoft gallery image or a custom image with pre-installed applications and settings.

WINDOWS 365

Windows 365 Management Recap

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Private Virtual Network

- Connect Cloud PCs to private Azure virtual network (VNet).
- Private connectivity to Azure resources.
- Connectivity to on-premises resources with VPN or ExpressRoute.
- Use company firewall for content filtering from the cloud PC, adhere to organizational internet policies.

Provisioning Policies

Create, manage, and update Windows 365 provisioning policies from Nerdio Manager for Enterprise.

Custom images

- Pre-install applications on a custom image.
- Apply customizations to the image.
- Use Nerdio image lifecycle management and automation to keep images up to date.

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Let's see it in action!

Unified Application Management

Walkthrough

- UEM integration and portal navigation
- Backup and restore a policy
- Create an Intune RBAC role
- Provision a Cloud PC

Additional Settings for Success



Review Auto-scale savings

Best practice #1

Check Auto-scaling monthly

savings for each host pool.

- The minimum should be around 40% –
 60% depending on usage.
- Review Auto-scaling history and filter by User Sessions and Savings Graph.
- Review Autoscaling savings for each Host pool.



Optimize Auto-scale for hosts

Best practice #2

Is Auto-scale configured

optimally?

- Determine if hosts are properly sized.
- Are there too many or too few sessions per host?
- Is the best load balancing option in place?

Make incremental changes and monitor – don't set and forget!





Review host sizing

Best practice #3

Check utilization and sizing.

- Are host CPU and memory resources being used predictably?
- Are hosts sized correctly?
 - Are you under or over-spec'd?
 - Is your environment cost-efficient?





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Use FSLogix

Best practice #4

Deliver a consistent user

AV

VN

Az Se

experience.

- Configure FSLogix and apply settings • within Nerdio Manager.
- Create multiple FSLogix configurations. ٠
- Centrally manage FSLogix. •
- Simplify images install and hide apps ٠

with app masking, built into Nerdio.

e Directory		USE FSLOGIX PROFILE	5:			55 - 55 - 50° -
		Custom				
eployment		Use Cloud Cache @				
om RDP		FSLogix Profiles path ((VHDLocation): ④			
jix		1. profiles (\\avddesktopden	no.file.core.windows.net\profiles)		x	
Monitor	_					
on time limits	DISCOV	ERED APPLICAT	IONS			
	NAME		INST	ALLATION DIRECTORY	PATHS FOUND	
	Missorof	t 205 Appendix ante	CREATE RULE SET			
	MICrosof	t 365 Apps for ente	Rules Sets are collections of a	polication paths with assigned users of	or groups	
	Microsof	t Edge		pprication patho manassigned asero (, Brocher	
	Microsof	t Monitoring Agent	RULE SET NAME	Enable VSCode		🗹 Enabled 🛈
	Microsof	t OneDrive	Applications 🛈			
			Select discovered applicatio	ns or type to create new		· (j)
	Microsof	t Search in Bing				
	Microsof	t Visual Studio Cod	 Microsoft Visual Studic 	o Code 🧯		
			Available to Everyone ①			
			Allow only the following users	and groups:		
			은 Neil McLoughlin (nmcloughlin	@getnerdio.com) ×		X ~
			Rule sets are automatic	cally applied to hosts when they are a	lded or re-imaged. You can also apply this rule set	manually.
					Cancel Save & apply	Save & close



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Review storage sizing

Best practice #5





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Check utilization and sizing.

- Is storage sized appropriately for FSLogix? ٠
 - Consider performance
 - *IOPS, throughput, latency*
- Enable auto-scaling in Nerdio Manager to ٠ reduce unnecessary costs.

MANAGE AUTOSCALE FOR FSLOGIX AUTO-SCALE ① A premium file share is billed by provisioned share size, regardless of the used capacity. Share sizes can range from 100 GiB to 102,400 GiB. IO and network bandwidth limits scale with the provisioned share size. When turned on, storage auto-scale will grow the provisioned share size in response to anticipated usage demand or increased storage latency. It will also decrease the provisioned capacity to reduce costs when the extra performance is no longer needed (not more than once every 24 hours). PROVISIONED SIZE (QUOTA) (3) PERFORMANCE MINIMUN MAXIMUM Quota unit: Absolute (GiB) BASELINE 500 500 Relative (%) Minimum size) + 10 🗘 GiB (100 GiB) 🛈 10/S bsolute (GiB BURST IO/S (1) 4000 4000 Maximum size EGRESS RATE ① 66.00 MiBytes/ 66.00 MiBytes/s used capacity (14.72 GiB) + 15 🗘 GiB, less than 102400 🗘 GiB (100 GiB) 🛈 INGRESS 44.00 MiBytes/ 44.00 MiBytes/s RATE

SCHEDULED QUOTA IN	ICREASE (i)	Off
SCALING LOGIC		
Select auto-scale trigger:	Success Server Latency (avg)	
Increase quota (scale out) by 10	GIB if Success Server Latency exceeds 20 + ms for 5 + minutes (current latency: 2.75 ms)	
Decrease quota (scale in) by 20	GIB if Success Server Latency drops below 10 C ms for 15 * minutes (current latency: 2.75 ms)	
Provisioned size (quota) can be c	ecreased only 24 hours after the last quota increase. Last quota increase: Oct 29, 2022 05:28 AM	

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Log Analytics Workspace (LAW)

Best practice #6

Review utilization and sizing.

- Modify retention period to suit ٠
 - requirements.
 - Consider user cost attribution and ٠ auto-shrink.
- Change counters in Nerdio Manager to suit ٠ your needs.



CONFIGURE NMW-APP-LAW-Y2PJ2XM7SLPDS WINDOWS COUNTERS

hardware components, operating systems, and applications

Low

Windows performance counters	
NAME \$	SAMPLE RATE (SECONDS) ≑ USAGE (%) ≑
User Input Delay per Process(*)\Max Input Delay	60 🗘 87 %
User Input Delay per Session(*)\Max Input Delay	60 🕄 3.4 %
PhysicalDisk(*)\Avg. Disk sec/Read	60 🕀 1 %
PhysicalDisk(*)\Avg. Disk sec/Write	60 🕤 1 %
PhysicalDisk(*)\Avg. Disk Queue Length	60 😌 0.79 %
Processor Information(_Total)\% Processor Time	60 😌 0.77 %
Memory(*)\Available Mbytes	60 😌 0.77 %
Memory(*)\Pages/sec	60 🕄 0.71 %

~ (i)

nmw-app-law-y2pj2xm7slpds Created: Apr 6, 2022 01:54 AM Workspace type: AVD diagnostics (default)

PRESET:

Retention period: 30 days Monthly usage (last 31 days): 1.7 GB (i) Log data retention (beyond 31 days): 0 GB (

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Enable Auto-heal

Best practice #7

Automate common fixes via script.

- Define what you consider to be a broken host.
- Configure reboots and recovery actions to take to resolve the issue.

AUTO-HEAL BROKEN HOSTS ③				
Auto-scale can automatically attempt to repa	ir "broken" session hosts by restarting, running scripted actions (e.g. re-install AVD agent), and dele	ting/red	reating	g the
	Unavailable X SxS stack listener not ready X and Has no active sessions			٣
Host is broken if AVD agent status is:	FSLogix not healthy $$ V Upgrade failed $$ X $$ $$ $$ $$			
	Needs assistance 🗙 Stale heartbeat (>2hrs) 🗙			
Minutes before first action:	10 •			
	1. 🗱 Restart AVD Agent (Individual) [Nerdio, Preview]	×		
	2. 🔁 Restart VM	×		
Recovery actions:	3. 🕰 Reinstall AVD Agent (Individual) [Nerdio, Preview]	×	×	×
	4. 👕 Delete VM (and re-create by auto-scale)	×		
Minutes between recovery actions:	10 Q			



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Use reserved instances (RIs)

Best practice #8

Reserved Instances reduce

the cost of session hosts.

- Especially useful if there is an always-٠ on base capacity present.
- Use the modeler to project the impact ٠ of reserved instances.
- RIs can be analyzed on a per-host ٠ pool basis.

				· · · · · · · · · · · · · · · · · · ·
Month (94.69 Named Month \$12.96	ly savings: \$227.15 6) I user cost: \$2.16/month ③ ly active user cost: /month	(i) (i)	Manage Hosts	
	Configure History		Autoscale Hosts	
Month (92.21	RI analytics		Applications •	RI ANALYTICS FOR MULTI SESSION DESKTOP
Nameo	Force start		Properties Clone host pool	 Today This week Last 30 days This Month Last week Last Month
Month	ly savings: \$154.11	í	Delete host pool	○ Custom 10/03/2023 - 11/01/2023
				CPU-hours for selected dates:62.72 (1)Projected CPU-months:0.09 (1)
				Reserved Instances (RI) Recommendation:Region:southcentralusVM family:D2as_v4Total CPU cores:0 ③



Close

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Use Azure Capacity Extender (ACE)

Best practice #9



How does it work?

- ACE is enabled on host pools.
- It allows Nerdio Manager to provision machines on alternative VM sizes if the default is unavailable.
- Unless you have specific requirements, we recommend using ACE!

MULTI SESSION DESKTOP PROPER	TIES		
Directory AVD VM Deployment Azure Capacity Extender	ENABLE AZURE CAPACITY EXTENDER Enabling Azure Capacity Extender allows administrators to specify additional VM sizes in the event that sufficient are not available in the Azure region to complete Create and Power On tasks with the preferred VM Size HOST POOL DEFAULT VM SIZE ③	resou	in irces
RDP settings FSLogix	D2as_v4 (2C & 8GB @ \$0.12/hr)	×	~
Sepago Session time limits	1. D2ads_v5 (2C & 8GB @ \$0.12/hr)	×	~
Backup Disaster Recovery	Use intelligent Azure Capacity Extender ①		
	Cancel Save S	Save &	close

Use VM Rightsizing

Best practice #10





How does it work?

- VMRSS gathers and assesses ٠ resource demand over time.
 - This produces data-driven ٠ recommendations to resize over / under-provisioned desktop VMs.

VMRSS works for both personal and ٠ pooled desktops.

D2as_v5 (2C & 8GB) ④ More data is required	尊 CPU 2% [50%-80%]	₩ MEM 50% [50%-80%]	 D2as_v4 (D2a_v4 (2 D2s_v4 (2 	2C & 8GB) C & 8GB) C & 8GB)		 CPU MEM SAVINGS MONTH EST. 	+1.1% +2.6% +46.1% -\$21.23
VM RIGHT SIZING FOR DEDICATED	PERSONAL HOST POOLS CONFIGURATI	ION	Results ^③				
				VALUE (%) 🛈	DURATION (i)	FROM (i)	то 🛈
It is a predefined rule. It cannot be char	iged, but can be cloned and\or disabled.		CPU (Full usage)	2	10 days 09:19:58	Oct 3, 2023 07:31 AM	Oct 24, 2023 01:23 AM
		On	CPU (Active only)	3	0 days 13:36:44	Oct 11, 2023 11:36 PM	Oct 20, 2023 08:24 AM
NAME:	VM Right sizing for dedicated personal host pools	(RAM (Full usage)	50	1 days 23:40:23	Oct 3, 2023 08:22 AM	Oct 24, 2023 01:23 AM
DESCRIPTION:		6	RAM (Active only)	47	0 days 03:22:57	Oct 11, 2023 11:37 PM	Oct 20, 2023 08:16 AM
HOST POOLS:	Any × VM Right Sizing	× ~ ©	75%				
VM Right Sizing Settings () NAME: CPU INCREASE TRIGGER: CPU DECREASE TRIGGER: RAM INCREASE TRIGGER: RAM DECREASE TRIGGER: C Active Sessions Only ()	80 0 % 0 60 0 % 0 80 0 % 0 60 0 % 0	٥	50% 25% 0% 10/05 → CPU ▲ 90th Samples Interval ④	1007 1009 1011 percentile of CPU -> Cl -> RAM	10/13 10/15 10/17 10/1 10/13 10/15 10/17 10/1 10 Active \$ 90th percentile Active \$ 90th percentile Active \$ 90th percentile PU days 00:00:15	0 10/21 10/23 10/25 10/ of CPU Active ~~RAM ▲ 90/th p AMA Active ~~All RAM	27 10/29 10/31 11/02 bercentile of RAM

Use the latest VM generation

Best practice #11

Use the latest VM version for

better performance.

- Going from an Intel v4 VM to a v5 VM can provide up to 24% better performance.
- Moving from a D16DS_v4 to v5 saw 12% more users on a single session host,.
- Newer VM versions cost nearly the same as previous versions with double digit performance improvements.

VM SIZE:	No change	•	
OS DISK:	D4s C	λ	
	D4s_v3 (4C & 16GB)		
	D4s_v4 (4C & 16GB)		
	D4s_v5 (4C & 16GB)		s



No change

Thank You

