

A guide to migrating from Citrix to Azure Virtual Desktop with Nerdio



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Introduction

As organizations strive to modernize their IT infrastructure and reduce costs, many are considering migrating from Citrix to Azure Virtual Desktop (AVD) with Nerdio. This guide covers the essential aspects of this migration, including motivations, licensing differences, architectural comparisons, image management, migration methods, connectivity options, and additional considerations.



Why are organizations moving from Citrix to Azure Virtual Desktop + Nerdio?

Several factors drive organizations to transition from Citrix to AVD with Nerdio:

- Cost efficiency:** AVD offers more flexibility, lower licensing costs, and simplified pricing models compared to Citrix, reducing the total cost of ownership.
- Integration with the Microsoft ecosystem:** AVD is a Microsoft product that seamlessly integrates with other Microsoft services, such as Entra ID, Microsoft 365, and security tools, providing a more cohesive experience.
- Simplified management:** Nerdio enhances AVD by offering powerful management tools that simplify deployment, scaling, and optimization of virtual desktops, making it easier to manage than Citrix.
- Scalability and flexibility:** AVD provides native cloud scalability, allowing organizations to quickly adjust resources based on demand, which is more challenging in traditional Citrix on-premises environments.
- Performance and user experience:** AVD, leveraging Microsoft's global Azure infrastructure, offers robust performance and reliability, often surpassing traditional on-premises Citrix deployments.

Licensing differences between Citrix and Azure Virtual Desktop + Nerdio

1. Citrix licensing

Citrix offers complex licensing models for specific use cases.

- a. Universal Hybrid Multi-Cloud
- b. Citrix Platform
- c. Citrix for Private Cloud

Citrix is currently priced on a named user licensing model and offers customers 3-year minimum commit renewals. More information about Citrix licensing can be found [here](#).

A key factor to note is that if you are running Server OS workloads and use RDSH, that will need to be purchased and licensed separately. Azure Virtual Desktop uses the Windows 11 Multi-session Operating System, which does not require an additional RDS CAL license. The cost savings can be considerable, as a 5-user license can cost around \$749, or a perpetual per-server license can cost around \$300 per server.

2. Azure Virtual Desktop licensing

Azure Virtual Desktop licensing is more straightforward and typically included in Microsoft 365 and Windows 10/11 Enterprise subscriptions. Costs stem from Azure infrastructure usage, including virtual machines, storage, and networking. More information can be found [here](#).

3. Nerdio licensing

Nerdio's licensing model provides additional management layers for Azure Virtual Desktop. It is more straightforward and cost-effective due to its automation and optimization features.

For further licensing information, please visit this link for Nerdio Manager for Enterprise and this link for Nerdio Manager for MSP.

Nerdio licensing has no minimum commitment, so you will only be billed for what you consume.

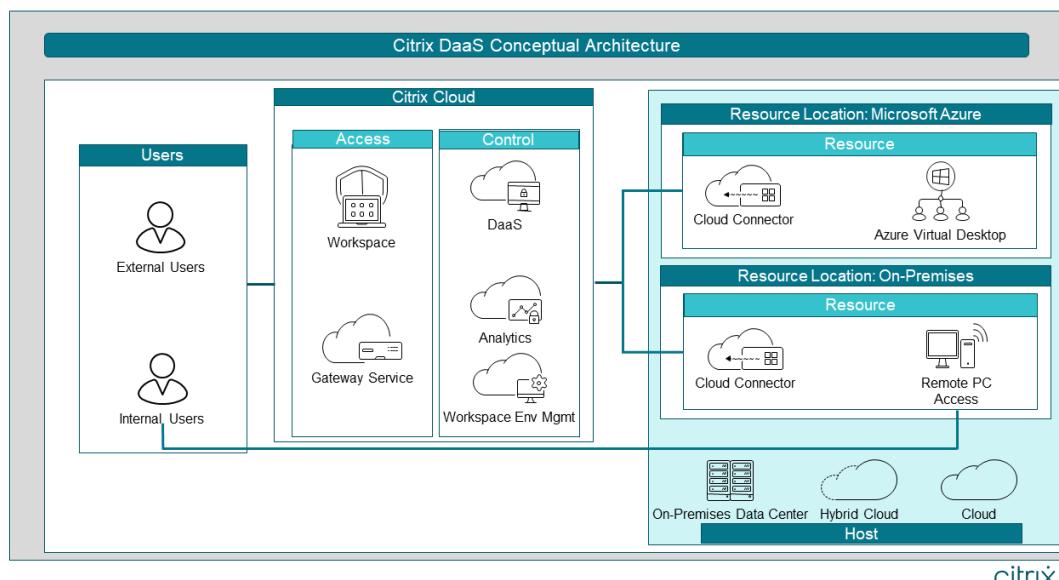
Architectural differences: Citrix vs. Azure Virtual Desktop + Nerdio

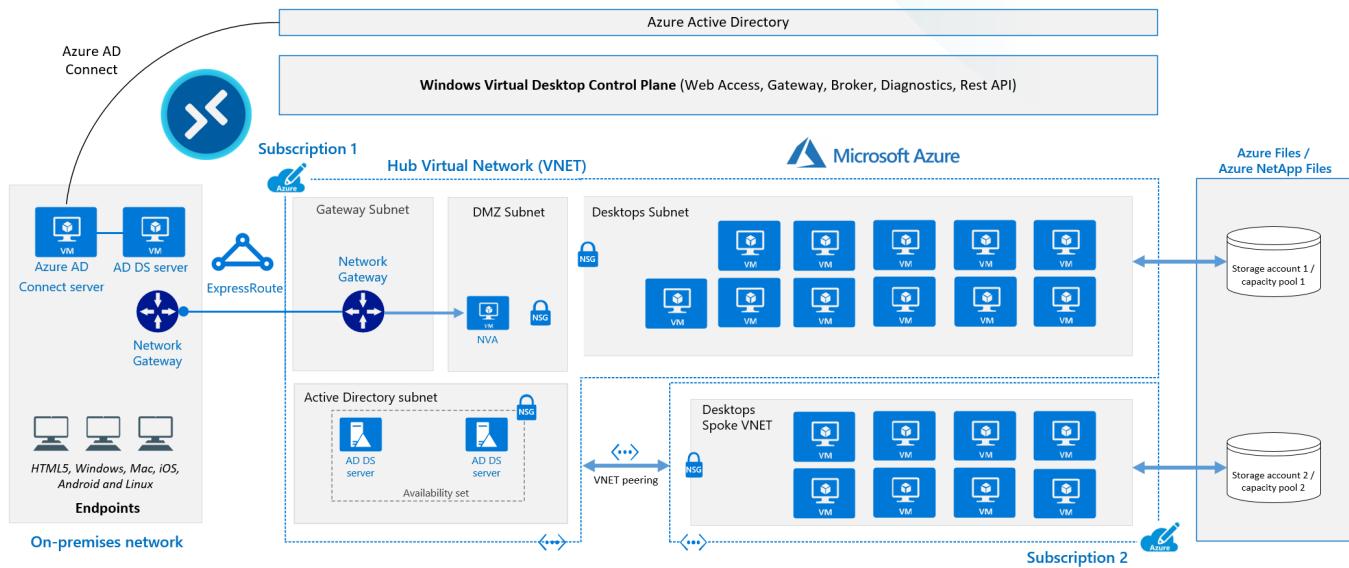
Citrix and Azure Virtual Desktop are similarly architected. Both brokering services rely on an agent on the session hosts to register against the back-end services. Once the session hosts register against the broker, they can be placed in either a machine catalog (Citrix) or a host pool (Azure Virtual Desktop), and they are then available for connections from users.

The diagram below shows the Azure Virtual Desktop architecture.

A key point to note is whether the Citrix environment could be hosted on-premises, in Amazon Web Services (AWS), Google Cloud Platform (GCP), or Microsoft Azure. Azure Virtual Desktop runs 100% in Azure, or you can run Azure Local (formerly Azure Stack HCI) to connect to on-premises workloads.

Microsoft controls and maintains the AVD brokering architecture, which can be managed in the Azure portal or via Nerdio. For further information, please visit this Microsoft help page.

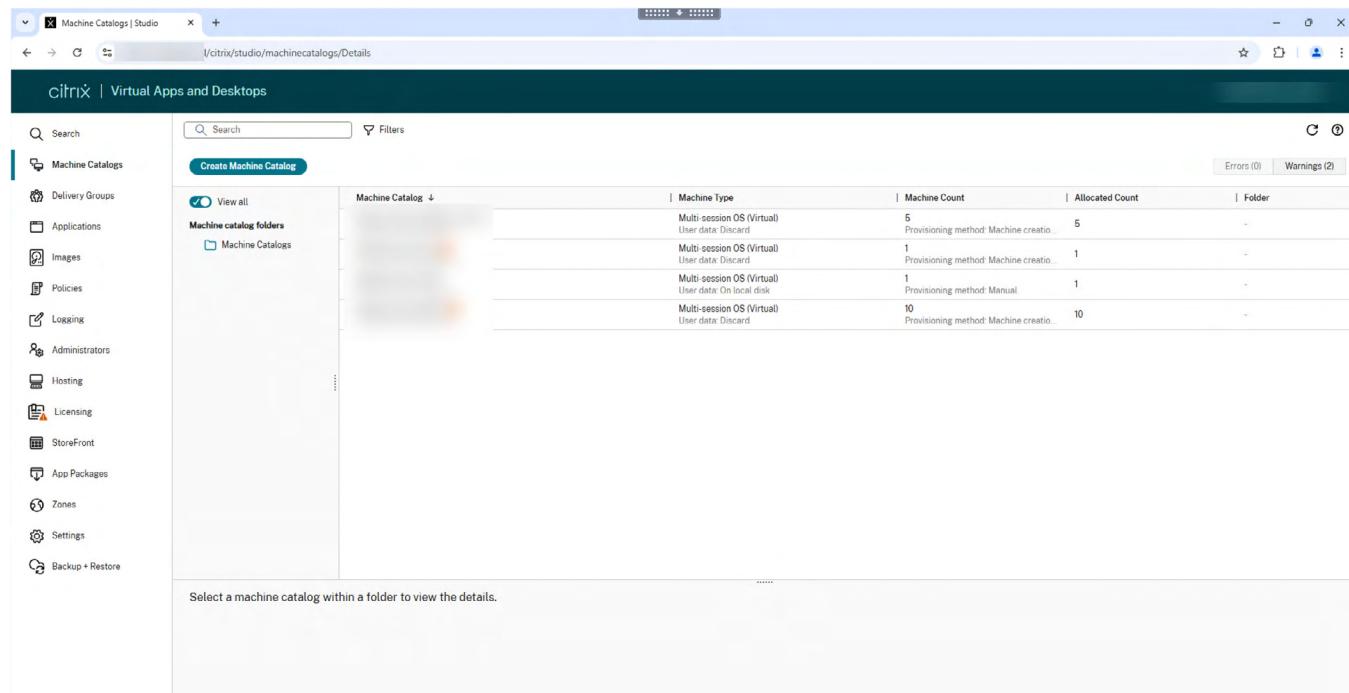




Machine catalog/delivery groups vs. host pools

One of the critical differences between Citrix and AVD is how the session hosts are allocated and how sessions are then assigned to users.

Citrix uses a machine catalog to define collections of virtual machines. Once those virtual machines have been placed into a machine catalog, they can be put into different delivery groups and assigned to the relevant users.



The screenshot shows the Citrix Studio interface with the following details:

- Machine Catalogs | Studio** - The current page.
- Machine Catalogs** - The main navigation item.
- Delivery Groups**, **Applications**, **Images**, **Policies**, **Logging**, **Administrators**, **Hosting**, **Licensing**, **StoreFront**, **App Packages**, **Zones**, **Settings**, **Backup + Restore** - Other navigation items.
- Create Machine Catalog** - A button to create a new machine catalog.
- Machine Catalog** - The list of existing machine catalogs:

Machine Type	Machine Count	Allocated Count	Folder
Multi-session OS (Virtual) User data: Discard	5	5	-
Multi-session OS (Virtual) User data: Discard	1	1	-
Multi-session OS (Virtual) User data: On local disk	1	1	-
Multi-session OS (Virtual) User data: Discard	10	10	-
- Errors (0)** and **Warnings (2)** - Status indicators.
- Select a machine catalog within a folder to view the details.** - A note at the bottom of the list.

Azure Virtual Desktop uses host pools, which are groups of identical VMs that provide resources for a specific group of users. A host pool can be considered a combined machine catalog and delivery group.

With Azure Virtual Desktop, we have something called Application Groups. When we create a host pool, the application group is created, and then when we assign a user to a host pool, the user is automatically added to the app group.

Image management and VM provisioning

One of the major features of Nerdio Manager is the ability to manage images and applications, enabling you to manage the full lifecycle from within the Nerdio Console.

Historically via Citrix, administrators would need to manage their images and applications using third-party tools, such as SCCM, Packer, or similar technologies.

Citrix

Citrix uses a technology called Machine Creation Services to provision session hosts. Citrix Machine Creation Services can provision hosts quickly, as thin provisioning is used to create session hosts. A copy of the image is added to the resource groups in Azure, and each session host has an identity disk and a cache disk to which the temporary cached data is written. When the VMs are shut down or rebooted, the cache disk is reset, and the VM returns to its original state. This is known as non-persistent mode.

Image management is performed outside of Citrix, and then the master image is shut down. Citrix Machine Creation Services takes a snapshot of the image, which is then replicated to all resource groups.

Many Citrix deployments also leverage Citrix Provisioning Services. With Citrix PVS, the operating system is “streamed” to the virtual machines, which means that little local storage is required.

AVD + Nerdio

Nerdio leverages the existing image management capabilities used by Azure Virtual Desktop, which is slightly different from how Citrix operates. The most significant difference is that all the image management is performed inside the Nerdio console. Nerdio can perform all activities involved in the image management life cycle. There are a few important things to note:

1. Azure Virtual Desktop requires that images be in a sys-prepped state. Nerdio manages this process for administrators.
2. Azure Virtual Desktop can distribute images using the Azure Compute Gallery. This method provides advanced capabilities, such as version control, and the ability to distribute images to multiple Azure regions worldwide within a few clicks.
3. Nerdio can also perform application management against the session hosts and images, which Citrix cannot do.
4. Using Nerdio, users can quickly implement advanced image management with a few clicks, completely automating updating images, applications, and session hosts.

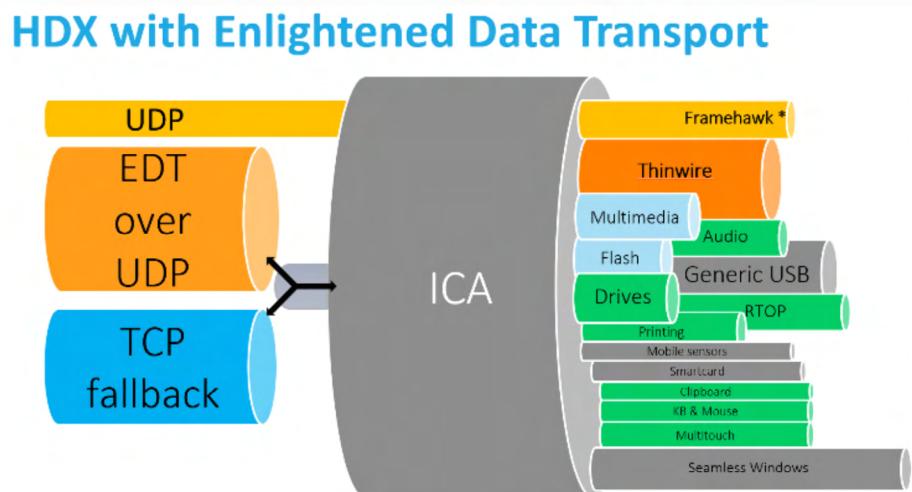
Protocol differences

The remote protocol used when connecting to a VDI desktop is one of the most critical factors in the desktop's performance. Let's compare the differences between the ICA protocol and the RDP protocols used for Citrix and Azure Virtual Desktop.

Citrix

Citrix uses the ICA protocol to deliver a solid desktop experience, even over high latency and low bandwidth connections. Historically, this has been the main driver for customers using Citrix, which has improved over the years to provide an optimized user experience. It also performs well in GPU environments by using the H.265 codecs. More recently, Citrix started using the AV1 codec.

The ICA protocol can also use Framehawk, which uses the UDP protocol. UDP can use much higher bandwidth, enabling a better user experience.

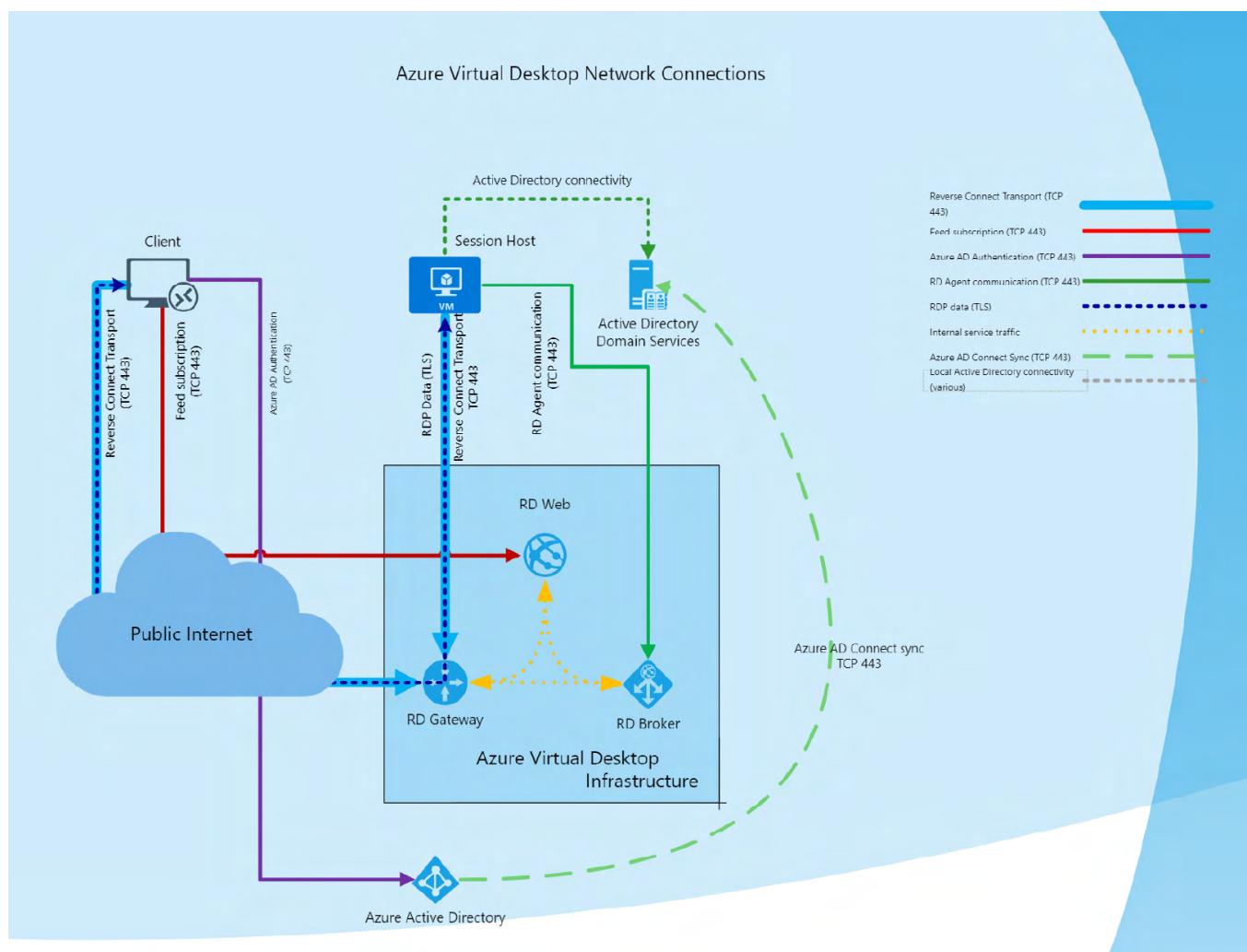
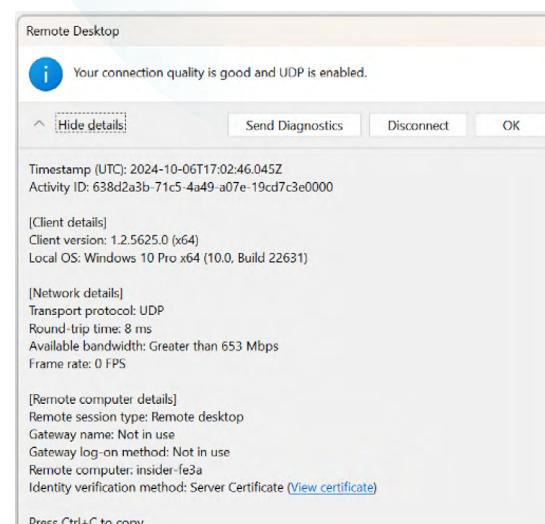


* Framehawk actually uses its own UDP data transport layer based on gearing

Azure Virtual Desktop

Azure Virtual Desktop uses the RDP protocol. Microsoft created the protocol in 1998 as part of Windows NT 4.0 Terminal Server Edition, and over time, it has improved to become more efficient for remote desktop performance. In most use cases, the performance can now match the ICA protocol from an end-user perspective.

Historically, the RDP protocol has been limited to TCP-only usage, and all traffic went through the Azure Virtual Desktop backend infrastructure. However, Microsoft released RDP Shortpath in October 2022, which allows UDP connectivity and a direct connection from the client to the session host. This significantly improves end-user performance and provides a Citrix-like experience in a high-bandwidth environment.



The example shows that 653 Mbps of bandwidth is available on an Azure Virtual Desktop in the UK South and has only 8ms of latency. [Source](#)

Image management capabilities

Citrix image management is handled through Citrix Studio, where administrators create, maintain, and update master images for VMs using Citrix Provisioning Services or Citrix Machine Creation Services.

AVD with Nerdio offers more robust image management capabilities. Nerdio allows for the creation, maintenance, and automated updates of master images directly in the Nerdio console. Nerdio simplifies this process with intuitive interfaces and automated workflows.

To manage Azure Virtual Desktop images using Nerdio:

- Utilize Nerdio Manager, which provides tools for image versioning, updating, and scaling across host pools.
- Schedule updates and automate rollouts to reduce downtime and maintain consistency across the virtual desktop environment.

**POWERED BY
NERDIO MIGRATE**

Looking to accelerate your Citrix to AVD transition?

Nerdio Migrate automates key migration steps—helping you modernize faster, reduce risk, and simplify your move to Azure.

Migrating Citrix images to Azure Virtual Desktop + Nerdio

When migrating images from Citrix to Azure Virtual Desktop, you first need to look at the operating system version and where that image is currently hosted. Generally, using Citrix, you will see the following types of operating systems:

- Windows Server 2012–2022 R2 RDSH
- Windows 10 Enterprise single-session
- Windows 11 Enterprise single-session

Ideally, you will want to build a new image and migrate to Windows 11 multi-session to ensure that you remain supported by Microsoft. However, you can also import an existing image into Nerdio. If your image is a Windows Server operating system image, you will still need to maintain RDS licenses and an RDSH licensing server, which is why it is recommended to migrate to Windows 11 multi-session images if possible.

In this section, we will cover both scenarios.

First, we will import an existing image into Nerdio and then create a brand-new image.

Discovery

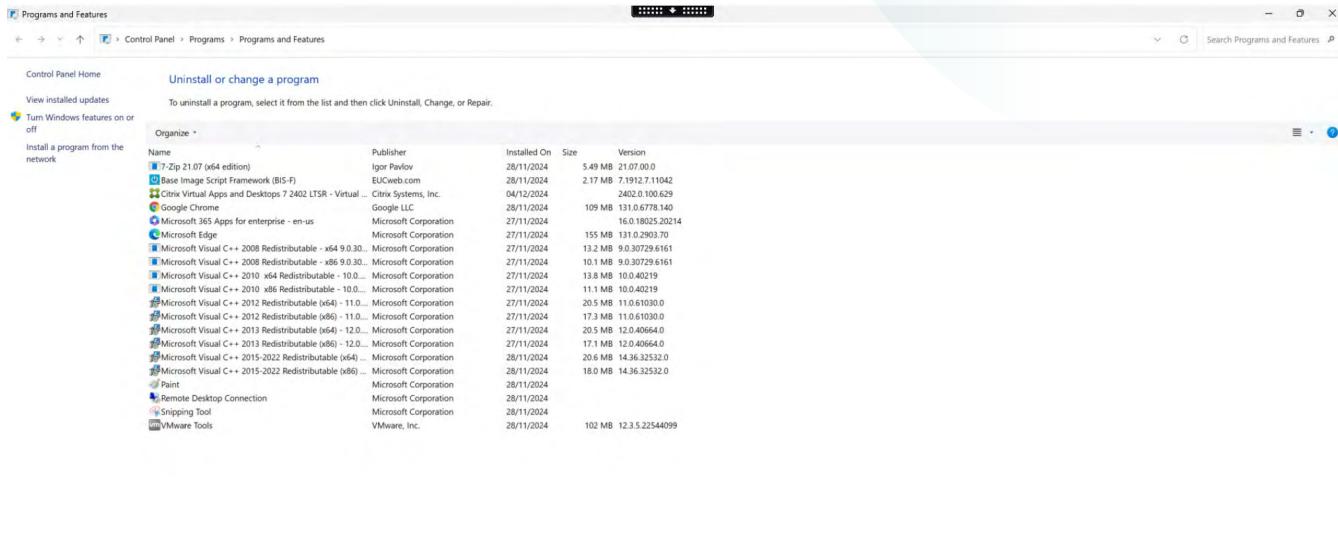
When migrating from one solution to another, e.g. Citrix to Azure Virtual Desktop, the first step should be an application discovery piece.

In most scenarios, migrating your applications from one solution to another will require the most effort. Factors may include operating system compatibility and the location of the backend infrastructure.

For example, databases hosted on-premises may need to migrate to Azure. If your desktop is in Azure and the database is on-premises, then users may experience slow responses from their applications.

The easiest way to discover what applications are installed on the image is to log onto your master image and see which applications need to be migrated to the new solution. Any applications that are not required can be removed from the image pre-migration.

If you use a tool like SCCM or Configuration Manager, you may also receive a list of applications currently used in your production environment.



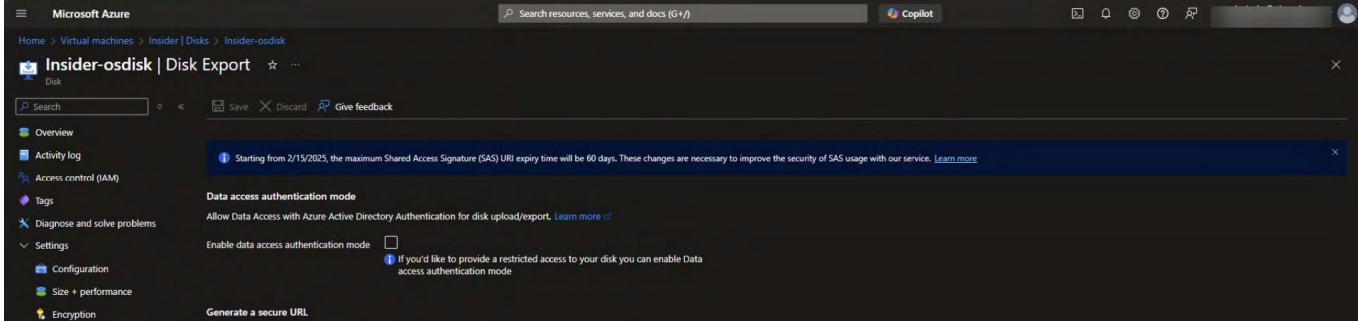
Creating a new image from your existing image

Once you have removed the applications you do not need from the master image, you will need to take a snapshot of it and create a SAS URL. You will use this SAS URL to import the image into Nerdio and create other images.

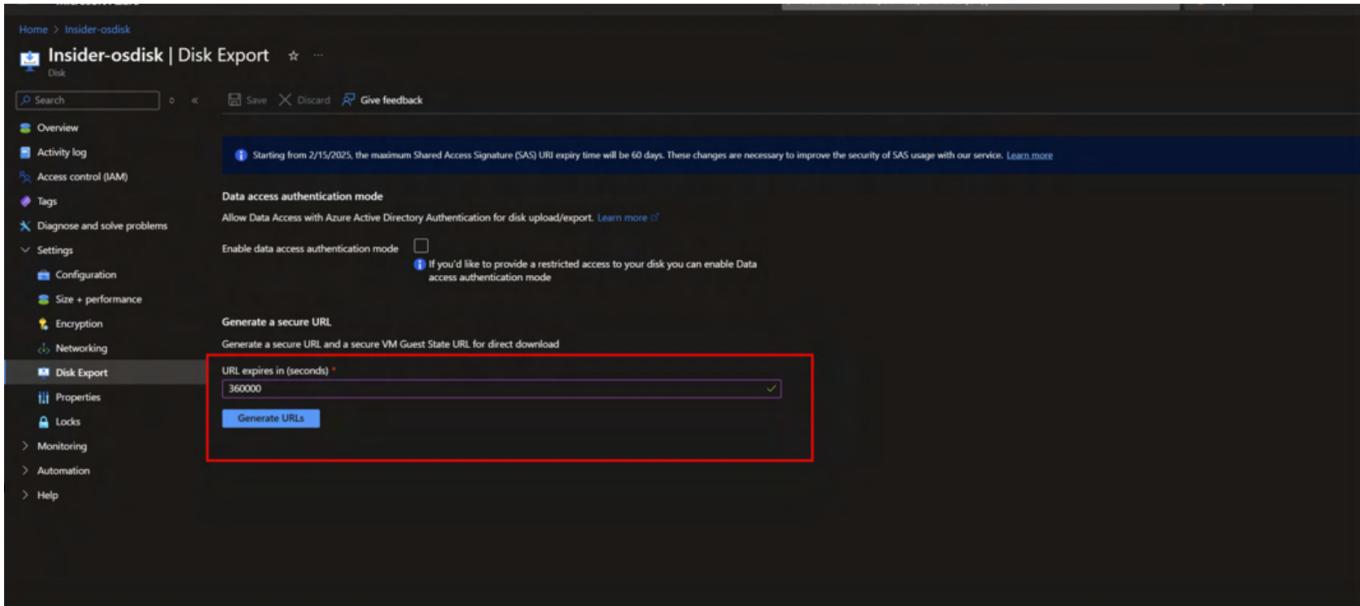
A SAS URL provides secure, delegated access to the storage account containing the snapshot of the image. It is secure because only the administrator knows the URL needed to retrieve the disk image.

To create the SAS URL, perform the following steps:

1. Head over to the Azure Portal and find your master image (assuming your image is in Azure—if not, you must migrate it from Hyper-V/VMware onto a VHD format and upload it to Azure).
2. Go to **Disk** and select the disk that contains your master image.



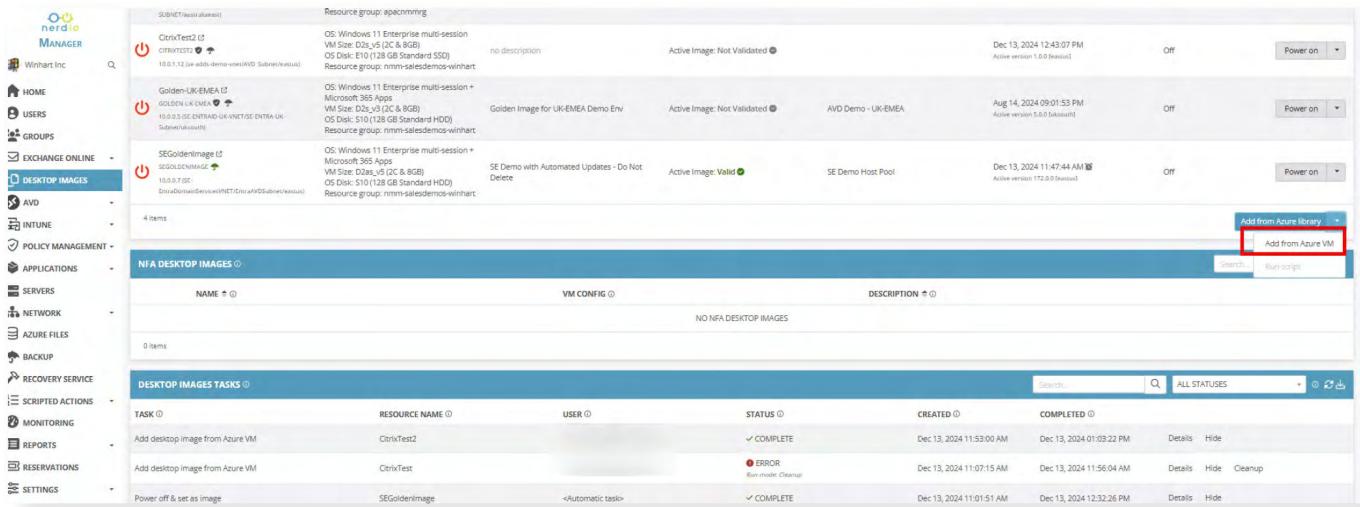
3. Select **Disk Export** and enter a URL that expires in **3600000 seconds**.



The screenshot shows the 'Disk Export' settings for a VM named 'Insider-osdisk'. The 'URL expires in (seconds)' field is set to 3600000, indicated by a red box. The 'Generate URLs' button is visible below the input field.

This will generate a [URL](#) that you can use to import the image into Nerdio.

4. Log onto your **Nerdio Manager** instance, head over to **Desktop Images**, and select “**Add from Azure Library**.”



The screenshot shows the 'NFA DESKTOP IMAGES' table in the Nerdio Manager. A red box highlights the 'Add from Azure Library' button in the top right corner of the table. The table lists several desktop images, including 'CitrixTest2', 'GoldenImage_UK-EMEA', and 'SEGoldenImage'. The bottom section shows 'DESKTOP IMAGES TASKS' with a table of tasks and their status.

5. Fill in the required details and press **OK to proceed.**

ADD IMAGE FROM AZURE VM ⓘ

Would you like to add a desktop from Azure VM?

NAME:	<input type="text" value="CitrixTest"/> ⓘ
DESCRIPTION:	<input type="text"/> ⓘ
SAS URL:	<input type="text" value="https://md-hdd-jldmpr4ctbwl.z43.blob.storage.azure.net/ghhn5hwmm'"/> ⓘ
NETWORK:	<input type="text" value="se-adds-demo-vnet (AVD_Subnet)"/> ⓘ
OS:	<input type="text" value="Windows 11 (23H2) Enterprise multi-session - Gen2 (multi-session)"/> ⓘ
VM SIZE:	<input type="text" value="D2ads_v5 (2C & 8GB @ \$0.10/hr retail)"/> ⓘ
OS DISK:	<input type="text" value="E10 (128 GB Standard SSD @ \$0.01/hr retail)"/> ⓘ
RESOURCE GROUP:	<input type="text" value="NMM-SalesDemos-WinHart"/> ⓘ

Create image VM as Gen2 ⓘ

Use Trusted Launch ⓘ

Join to AD ⓘ

Enable for cloud PCs ⓘ

Do not create image object ⓘ

Enable time zone redirection ⓘ

Set time zone: ⓘ

Uninstall FSLogix app ⓘ

Uninstall AVD agent ⓘ

Install all AVD enabled certificates ⓘ

Validate image ⓘ

Use Boot Diagnostic Insights ⓘ

Provide custom credentials for a local administrator user ⓘ

Geographic distribution & Azure compute gallery ⓘ

Run the following scripted actions: ⓘ

Applications Management ⓘ

In Azure Portal, stop the VM, go to its OS Disk and select Disk Export to generate the SAS URL.

Your existing image will then be imported into Nerdio. To verify the process has been completed, you should see your image appear under **Desktop Images**, and the “**Add Desktop Image from Azure VM**” should show as “**Complete**.”

The screenshot shows the Nerdio Manager interface with the following sections:

- Desktop Images:** Lists several desktop images, including "Windows 11 Enterprise multi-session" and "Windows 11 Enterprise multi-session 2". One entry, "CitrixTest2", is highlighted with a red box.
- NFA Desktop Images:** Shows a single entry: "NO NFA DESKTOP IMAGES".
- Desktop Images Tasks:** Displays a list of tasks:
 - "Add desktop image from Azure VM" (Resource Name: CitrixTest2, User: CitrixTest2, Status: COMPLETE, Created: Dec 13, 2024 11:53:00 AM, Completed: Dec 13, 2024 01:03:22 PM)
 - "Add desktop image from Azure VM" (Resource Name: CitrixTest2, User: CitrixTest2, Status: ERROR, Created: Dec 13, 2024 11:07:15 AM, Completed: Dec 13, 2024 11:56:04 AM)
 - "Power off & set as image" (Resource Name: SEGoldenImage, User: Automatic test, Status: COMPLETE, Created: Dec 13, 2024 11:01:51 AM, Completed: Dec 13, 2024 12:32:26 PM)

During the import process, the following things happen:

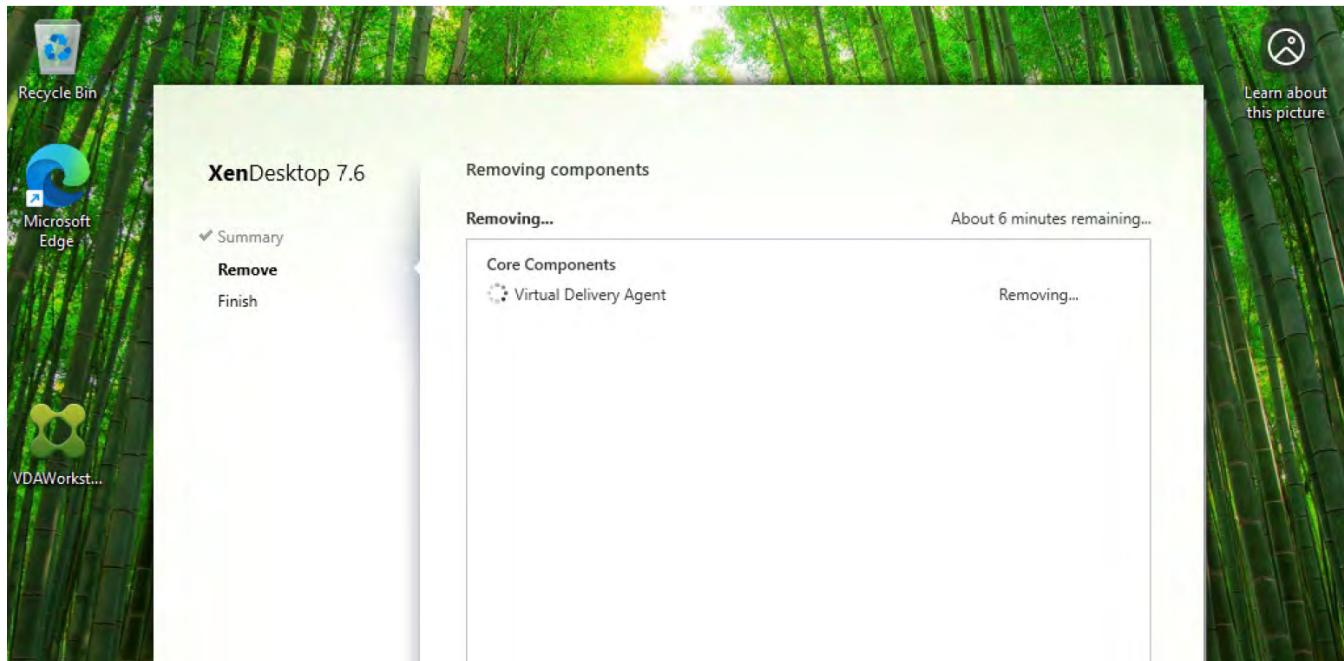
- The image will be upgraded to **Gen2** if that is selected so you can update to Windows 11.
- Any existing **FSLogix agents** will be uninstalled, as Nerdio will manage these going forward.
- Any existing **Azure Virtual Desktop agents** will be removed.
- The image will be **sys-prepped** and can be used immediately to deploy Azure Virtual Desktop session hosts.

6. The next step is to **remove the Citrix agents** on the master image, as these can interfere with Teams redirection and multimedia redirection. To remove the Citrix agents, you will need to power on the virtual machine via the **Nerdio console**.

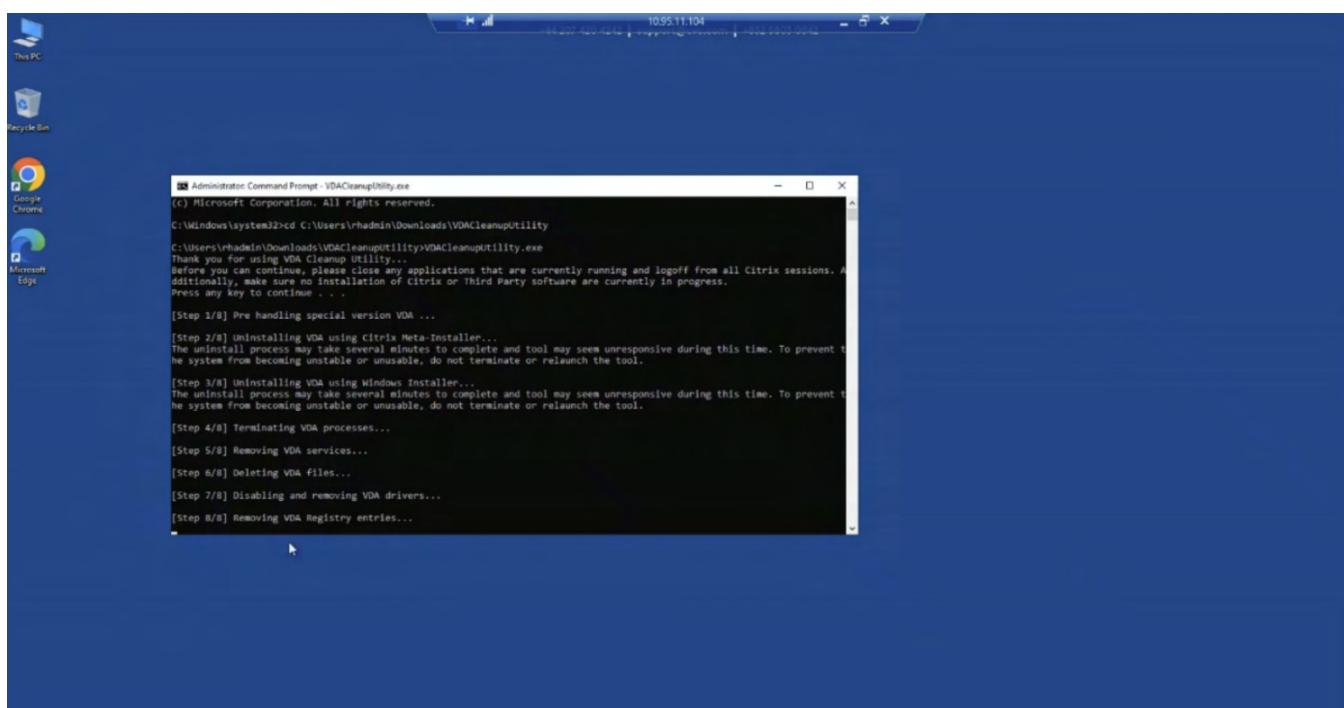
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- NFA Desktop Images:** Shows a single entry: "NO NFA DESKTOP IMAGES".
- Desktop Images Tasks:** Displays a list of tasks:
 - "Start desktop image" (Resource Name: CitrixTest2, User: CitrixTest2, Status: COMPLETE, Created: Dec 13, 2024 01:12:01 PM, Completed: Dec 13, 2024 01:17:14 PM)
 - "Add desktop image from Azure VM" (Resource Name: CitrixTest2, User: CitrixTest2, Status: COMPLETE, Created: Dec 13, 2024 11:53:00 AM, Completed: Dec 13, 2024 01:33:22 PM)

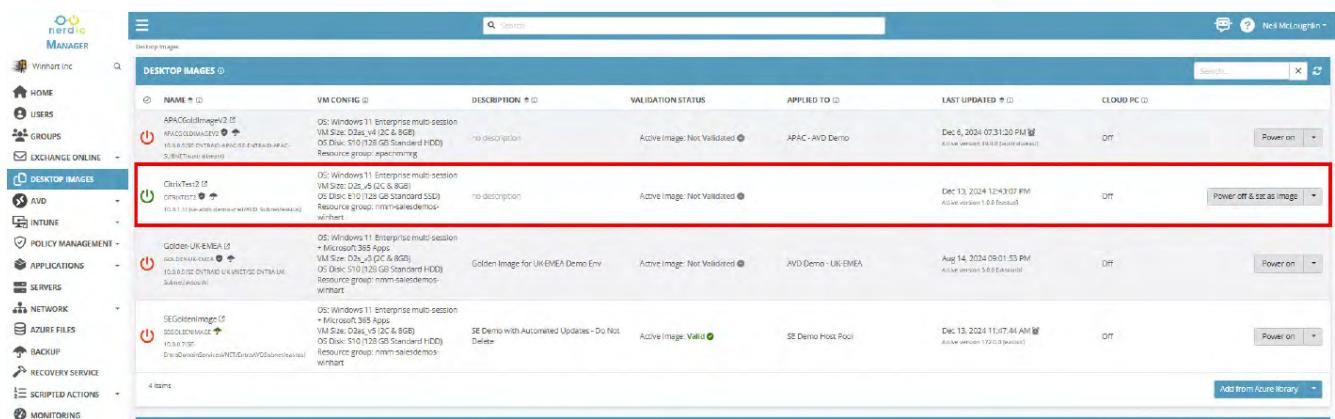
7. Once the master image is powered on, log onto the virtual machine and **uninstall the Citrix VDA agent**.



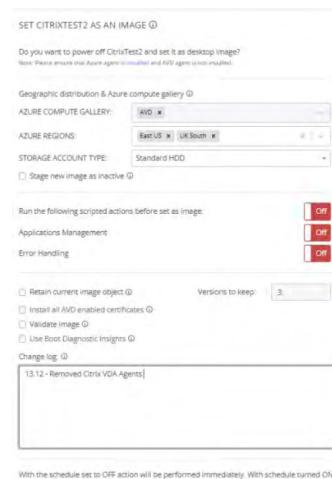
8. After uninstalling the Citrix VDA agent, **reboot the VM** and run the **Citrix VDA cleanup utility** to remove any remaining components.



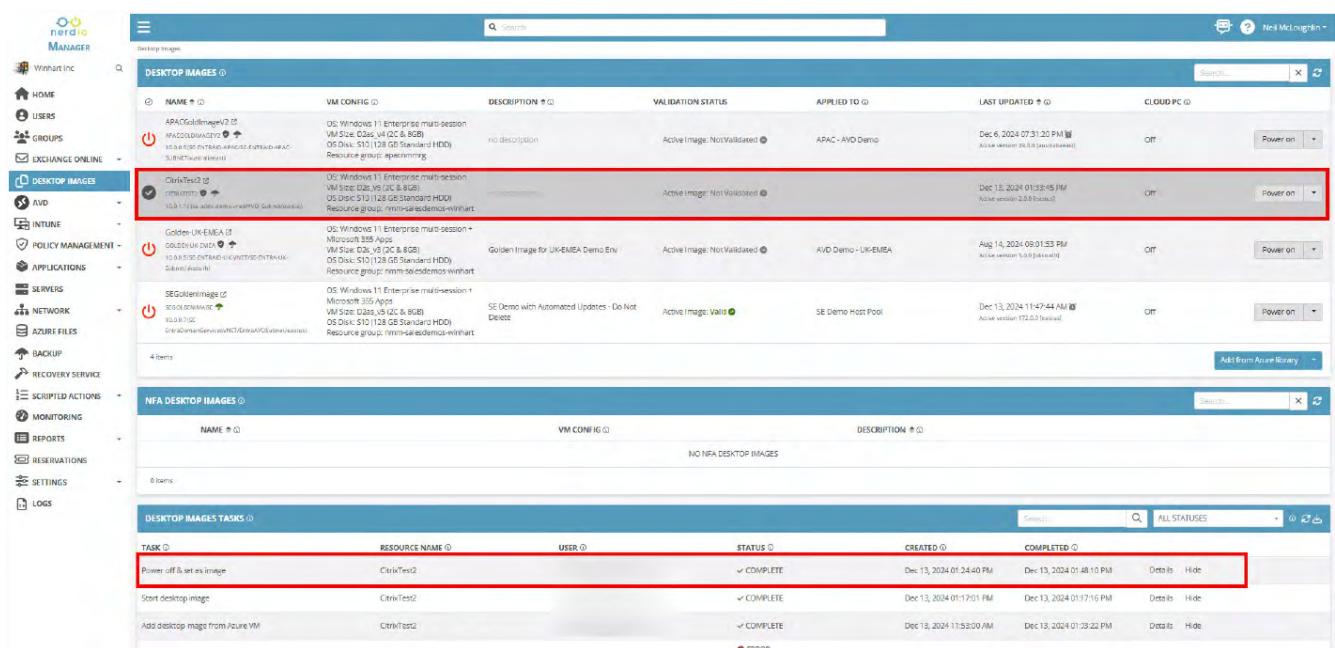
9. Once the VM has been rebooted, select “**Power Off and Set as Image**” in Nerdio.



10. If you want to publish the image to the **Azure Compute Gallery** to deploy across multiple regions, select that option.



11. The image processing is complete, and you can now deploy session hosts using the image.



Creating a new image within the Nerdio console

The other method of preparing your image is to create a clean new image. This is the preferred method, as it ensures you start fresh and leave behind any potential issues from your previous image.

For more information about creating images in **Nerdio Manager**, please visit the following links:

MSP: [Nerdio Manager for MSP Help Center](#)

Enterprise: [Nerdio Manager for Enterprise Help Center](#)

To create a new image in Nerdio Manager:

1. Select “Add from Azure Library” in the Nerdio Manager console.

The screenshot shows the 'Desktop Images' section of the Nerdio Manager interface. The left sidebar includes sections for HOME, USERS, GROUPS, EXCHANGE ONLINE, DESKTOP IMAGES (selected), AVD, INTUNE, POLICY MANAGEMENT, APPLICATIONS, SERVERS, AZURE FILES, BACKUP, RECOVERY SERVICE, SCRIPTED ACTIONS, MONITORING, and REPORTS. The main area displays a table of desktop images with columns for NAME, VM CONFIG, DESCRIPTION, VALIDATION STATUS, APPLIED TO, LAST UPDATED, and CLOUD PC. The 'Add from Azure Library' button is located in the bottom right corner of the table area.

2. Fill in all the necessary details.

The screenshot shows the 'ADD DESKTOP IMAGE' dialog box. It includes fields for NAME (set to 'CitrixTest'), DESCRIPTION, NETWORK (set to 'se-adds-demo-vnet (AVD_Subnet)'), AZURE IMAGE (set to 'Windows 11 (23H2) Enterprise multi-session - Gen2 (multi-session)'), VM SIZE (set to 'D2as_v5 (2C & 8GB)'), OS DISK (set to 'E10 (128 GB Standard SSD @ \$0.01/hr retail)'), and RESOURCE GROUP (set to 'NMM-SalesDemos-WinHart'). Other options include 'Use Trusted Launch', 'Join to AD', 'Enable for cloud PCs', 'Do not create image object', 'Enable time zone redirection', 'Set time zone' (set to 'UTC+00:00 Dublin, Edinburgh, Lisbon, London'), 'Install all AVD certificates', 'Uninstall FSLogix app', 'Validate image', 'Use Boot Diagnostic Insights', and 'Provide custom credentials for a local administrator user' (with fields for USERNAME, PASSWORD, and CONFIRM PASSWORD). At the bottom, there are sections for 'Geographic distribution & Azure compute gallery', 'Run the following scripted actions', 'Applications Management', and a note about task duration. The 'Cancel' and 'OK' buttons are at the bottom right.

3. Press **OK** to begin the image creation process.

The process takes approximately 20 minutes and involves the following steps:

- **Nerdio creates an Azure VM** from an existing **Azure Marketplace** image to become the master image.
- **Nerdio takes a snapshot** of the master image and creates a temporary VM.
- **Nerdio runs the Sysprep process** on that VM and publishes the image to the **Azure Compute Gallery**.

Job Details - Add desktop image from Azure library				
EMAIL:	NAME	START / COMPLETE	STATUS	RESULT
	Check image OS	Dec 11, 2024 12:06:29 AM Dec 11, 2024 12:06:29 AM	✓ COMPLETE	Image OS: Windows11 Enterprise multi-session
	Get Directory Profile	Dec 11, 2024 12:06:39 AM Dec 11, 2024 12:06:39 AM	✓ COMPLETE	Directory Profile id was not specified
	Provide storage account	Dec 11, 2024 12:06:39 AM Dec 11, 2024 12:06:40 AM	✓ COMPLETE	Standard: [REDACTED]
	Create network interface	Dec 11, 2024 12:06:40 AM Dec 11, 2024 12:06:41 AM	✓ COMPLETE	2edabdd08bf/resourceGroups/NMM-SalesDemos-WinHart/providers/Microsoft.Network/networkInterfaces/ahickey-testing-nic
	Create vm	Dec 11, 2024 12:06:41 AM Dec 11, 2024 12:10:43 AM	✓ COMPLETE	Market place image id: MicrosoftWindowsDesktop/windows-11/win11-21h2-avd/latest Trusted launch: OFF
	Enable timezone redirections	Dec 11, 2024 12:10:43 AM Dec 11, 2024 12:13:45 AM	✓ COMPLETE	Extension added successfully
	Remove 'Enable timezone redirections' extension from VM	Dec 11, 2024 12:13:45 AM Dec 11, 2024 12:15:17 AM	✓ COMPLETE	Extension was removed
	Uninstall FSLogix	Dec 11, 2024 12:15:17 AM Dec 11, 2024 12:18:50 AM	✓ COMPLETE	Configuration: Uninstall FSLogix agent: Yes Uninstall AVO agents: No Extension added successfully Extension was removed
	Stop template VM	Dec 11, 2024 12:18:50 AM Dec 11, 2024 12:19:31 AM	✓ COMPLETE	Success
	Copy template VM disk	Dec 11, 2024 12:19:31 AM Dec 11, 2024 12:19:33 AM	✓ COMPLETE	Template VM disk copied /subscriptions/[REDACTED]/resourceGroups/NMM-SalesDemos-WinHart/providers/Microsoft.Compute/disks/[REDACTED]-tmp-odisk
	Provide storage account	Dec 11, 2024 12:19:33 AM Dec 11, 2024 12:19:34 AM	✓ COMPLETE	Standard: stn829678040828fc6cc5c044
	Create network interface	Dec 11, 2024 12:19:34 AM Dec 11, 2024 12:19:35 AM	✓ COMPLETE	/subscriptions/[REDACTED]/resourceGroups/NMM-SalesDemos-WinHart/providers/Microsoft.Network/networkInterfaces/[REDACTED]-testing-emp-nic
	Create vm	Dec 11, 2024 12:19:35 AM Dec 11, 2024 12:19:51 AM	✓ COMPLETE	VM created: /subscriptions/[REDACTED]/resourceGroups/NMM-SalesDemos-WinHart/providers/Microsoft.Compute/virtualMachines/[REDACTED]-testing-emp
	Remove users from temp VM	Dec 11, 2024 12:19:51 AM Dec 11, 2024 12:21:53 AM	✓ COMPLETE	Extension added successfully
	Remove 'Remove users' extension from temp VM	Dec 11, 2024 12:21:53 AM Dec 11, 2024 12:23:24 AM	✓ COMPLETE	Extension was removed
	Start sysprep process on temp VM	Dec 11, 2024 12:23:24 AM Dec 11, 2024 12:25:25 AM	✓ COMPLETE	Extension added successfully

Application deployment methods

Deploying applications on **Azure Virtual Desktop + Nerdio** differs from traditional **Citrix** deployment methods.

Citrix

Since Citrix master images are handled outside of Citrix, the platform does not have built-in application management features beyond publishing applications. Traditionally, Citrix applications have been deployed by:

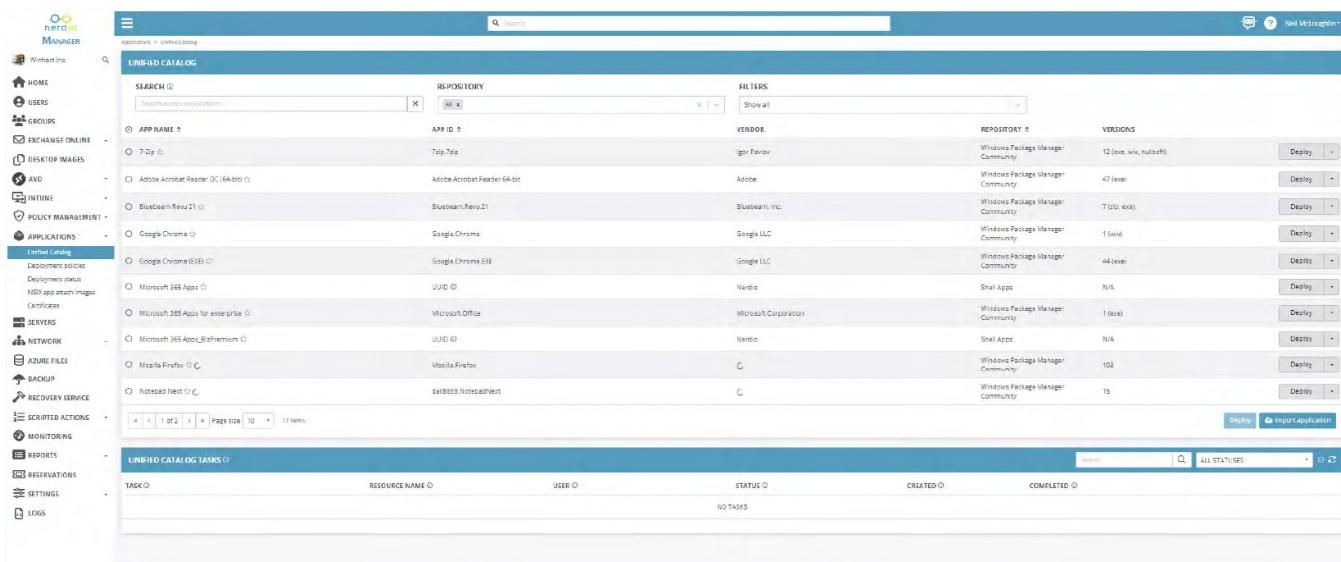
- **Manual installation** onto the master images
- **Virtualization** using Microsoft App-V
- **Advanced scripting** with tools like Packer or Azure DevOps

Azure Virtual Desktop and Nerdio

Nerdio offers built-in functionality to deploy, manage, and update applications across images and session hosts. Nerdio's automation capabilities simplify application deployment, enabling a fully automated process with just a few clicks.

Recommended Nerdio application deployment methods:

1. **Scripted actions:** PowerShell scripts executed on images or session hosts using PowerShell DSC. Useful for deploying applications and configuring settings.
2. **Nerdio unified application management (UAM):** The preferred method for deploying applications. Supports multiple repositories such as SCCM, Intune, and Winget. Organizations can also create private Winget repositories for custom applications.
3. **ConfigMgr/Intune:** If you already use SCCM or Intune, you can integrate them with Nerdio to manage and deploy applications directly from the Nerdio console.



The screenshot shows the Nerdio Manager interface with the following sections:

- Left Sidebar:** Navigation menu with sections like HOME, USERS, GROUPS, EXCHANGE ONLINE, DESKTOP IMAGES, AND, INTUNE, POLICY MANAGEMENT, APPLICATIONS (selected), SERVERS, NETWORK, AZURE FILES, BACKUP, RECOVERY SERVICE, SCRIPTED ACTIONS, MONITORING, REPORTS, RESERVATIONS, and SETTINGS.
- Unified Catalog:** Displays a list of applications with columns for APP NAME, APP ID, VENDOR, REPOSITORY, and VERSIONS. Applications listed include 7-Zip, Adobe Acrobat Reader DC, Bluebeam Revu, Google Chrome, Microsoft 365 Apps, Mozilla Firefox, and Notepad Next.
- Unified Catalog Tasks:** A table showing tasks with columns for TASK, RESOURCE NAME, USER, STATUS, CREATED, and COMPLETED.

Profile management

Profile management is a critical factor when migrating from **Citrix** to **Azure Virtual Desktop**. The migration method depends on the existing profile management solution used in Citrix.

Citrix profile management methods:

- Citrix user profile management (UPM):** Citrix's built-in profile management solution that enhances login speed and user experience.
- FSLogix:** Many Citrix environments use FSLogix, which is Microsoft's recommended profile management solution.
- Third-party solutions:** Some organizations use third-party tools like Liquidware or Ivanti, but these are less common as FSLogix and Citrix UPM have improved.

The screenshot shows the Nerdio Migrator for M365 interface. The left sidebar contains a navigation menu with various options like 'ACCOUNTS', 'MANAGED APPS', 'PHYSICAL WORKSPACES', 'SHARED SCHEDULED TASKS', 'BACKUP & DRAWSHARE', 'API ENDPOINTS', 'EVENTS DASHBOARD', 'PROACTIVE ENGINES', 'GLOBAL IMAGES', and 'APPLICATIONS'. The 'APPLICATIONS' section is currently selected, showing sub-options like 'Jabber', 'Citrix', 'Microsoft 365', 'Citrix Receiver', 'Citrix Receiver 2021', 'Google Chrome', and 'Granary for Microsoft Office 365'. The main content area is divided into two sections: 'UNIFIED CATALOG' and 'UNIFIED CATALOG TASKS'.

UNIFIED CATALOG: This section displays a list of resources in the 'REPOSITORY'. The columns include 'SEARCH ID', 'NAME', 'VERSION', 'REPOSITORY ID', 'REPOSITORY NAME', 'CREATED ID', and 'CREATED TIME'. Each row represents a different application or service, such as 'Citrix Receiver 2021', 'Adobe', 'Adobe Systems Incorporated', 'Citrix Package Manager Community', and 'Citrix Receiver 2021'. The 'REPOSITORY' column shows the provider for each resource.

UNIFIED CATALOG TASKS: This section displays a list of tasks in the 'REPOSITORY'. The columns include 'MARK ID', 'RESOURCE NAME ID', 'NAME', 'STATUS ID', 'CREATED ID', and 'CREATED TIME'. The tasks listed include 'Update app account configuration', 'Create app', 'Create terminal for application', 'Update app account configuration', and 'Update app account configuration'. Each task has a status (e.g., 'COMPLETED') and a creation timestamp.

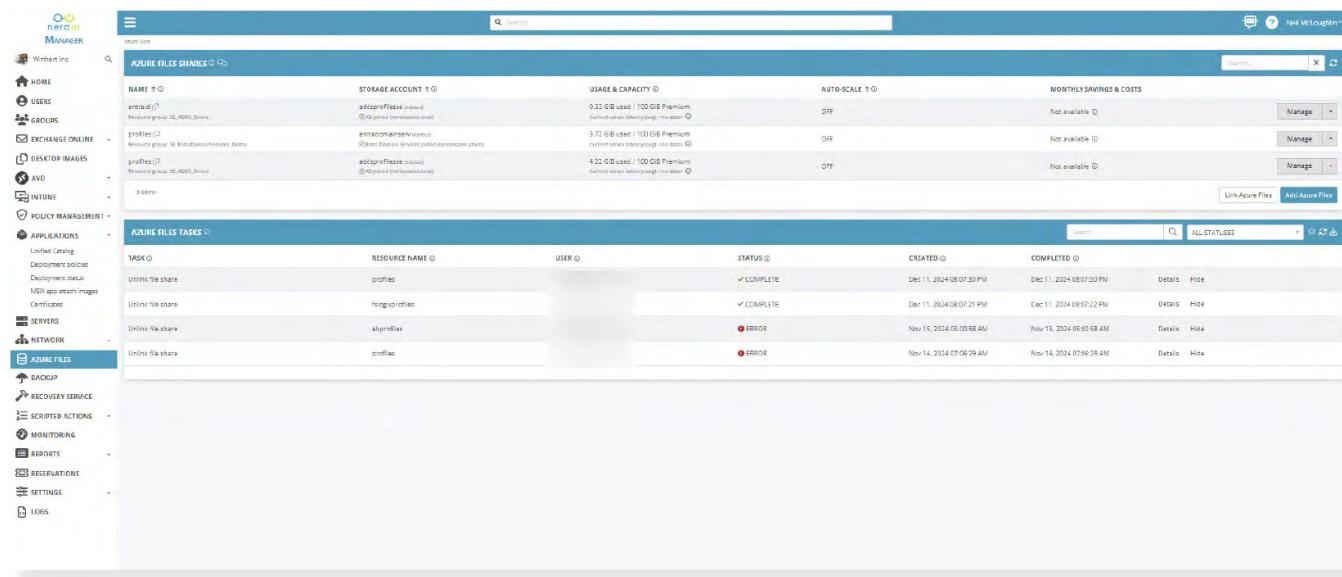
Migrating Citrix profiles to FSLogix with Nerdio

Many Citrix environments already use **FSLogix**. If so, migration is straightforward. If **Citrix UPM** is in use, it is recommended to create **new profiles** when migrating to AVD.

Steps to deploy FSLogix profiles with Nerdio:

1. Create a storage account and file share

- Traditionally, profile data was stored on **Citrix Profile Management** or on-premises file services.
- In **AVD + Nerdio**, user profiles are stored in **Azure Files** or **Azure NetApp Files**.



The screenshot shows the Nerdio Manager interface. On the left, the sidebar includes sections for Home, User Groups, Exchange Online, Desktop Images, AVD, and Azure Files (which is currently selected). The main area displays two tables: 'AZURE FILES SHARES' and 'AZURE FILES TASKS'.

AZURE FILES SHARES table:

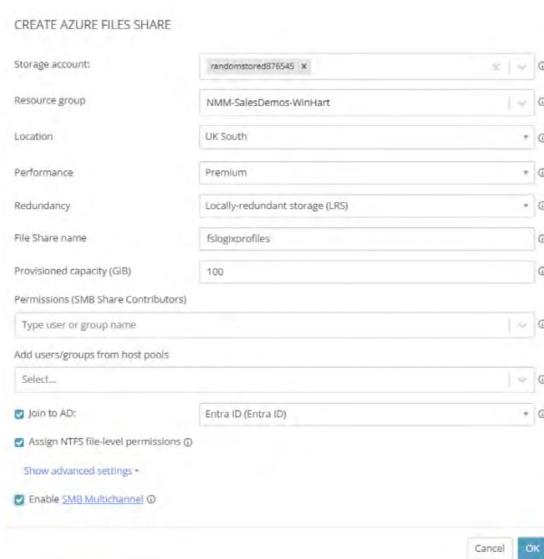
NAME	STORAGE ACCOUNT	USAGE & CAPACITY	AUTO-SCALE	MONTHLY SAVINGS & COSTS
profiles (1)	fslogix-profiles (1)	8.21 GB used / 100 GB Premium (Compute usage: 100% - 1000% usage)	OFF	Not available
profiles (2)	fslogix-profiles (2)	3.72 GB used / 100 GB Premium (Compute usage: 100% - 1000% usage)	OFF	Not available
profiles (3)	fslogix-profiles (3)	4.22 GB used / 100 GB Premium (Compute usage: 100% - 1000% usage)	OFF	Not available

AZURE FILES TASKS table:

TASK	RESOURCE NAME	USER	STATUS	CREATED	COMPLETED
Unlink file share	profiles		✓ COMPLETE	Dec 11, 2024 05:07:30 PM	Dec 11, 2024 05:07:30 PM
Unlink file share	fslogix-profiles		✓ COMPLETE	Dec 11, 2024 08:07:21 PM	Dec 11, 2024 08:07:22 PM
Unlink file share	shyndias		● ERROR	Nov 15, 2024 05:09:58 AM	Nov 15, 2024 05:09:58 AM
Unlink file share	profiles		● ERROR	Nov 14, 2024 07:06:29 AM	Nov 14, 2024 07:06:29 AM

2. Set up Azure Files for FSLogix storage

- Navigate to the **Nerdio Manager console**.
- Go to **Azure Files > Add Azure Files**.
- Enter the required details.



The dialog box is titled 'CREATE AZURE FILES SHARE'. It contains the following fields:

- Storage account: randomstored876545
- Resource group: NMM-SalesDemos-Win-Hart
- Location: UK South
- Performance: Premium
- Redundancy: Locally-redundant storage (LRS)
- File Share name: fslogixprofiles
- Provisioned capacity (GB): 100
- Permissions (SMB Share Contributors): Type user or group name: (empty)
- Add users/groups from host pools: Select...
- Join to AD: (checkbox) (checked) Entrada ID (Entrada ID)
- Assign NTFS file-level permissions (checkbox)
- Show advanced settings (button)
- Enable SMB Multichannel (checkbox)

Buttons at the bottom: Cancel, OK.

3. Configure FSLogix settings

- Once the Azure Files storage is created, configure FSLogix policies in **Nerdio Manager**.
- Assign FSLogix configurations to **host pools**.

ADD FSLOGIX PROFILES STORAGE CONFIGURATION ⓘ

Name
FSLogixtest

Use Cloud Cache ⓘ

Configure session hosts registry for Microsoft Entra Joined storage ⓘ

Exclude the Nerdio stored admin account from FSLogix ⓘ

Exclude the domain admin account from FSLogix ⓘ

Domain admin username
Leave empty for using domain admin username from AD config

FSLogix version ⓘ
Latest - FSLogix 2210 hotfix 4 (2.9.8884.27471)

FSLogix Profiles path (VHDLocation): ⓘ
1. fslogixprofiles (virtualmtest.file.core.windows.net/fslogixprofiles)

FSLogix Registry Options: ⓘ
Common settings

DeleteLocalProfileWhenVHDShouldApply	1 ⓘ	Reset
FlipFlopProfileDirectoryName	0 ⓘ	Reset
PreventLoginWithFailure	1 ⓘ	Reset
PreventLoginWithTempProfile	1 ⓘ	Reset
RedirXMLSourceFolder	Not configured ⓘ	Reset
SizeInMBs	Not configured ⓘ	Reset
VolumeType	vhdx ⓘ	Reset

Configure Office Container to redirect Microsoft Office user data ⓘ off

Redirections ⓘ off

Cancel **OK**

4. Apply FSLogix settings to host pools

- In **Nerdio Manager**, navigate to **AVD > Host Pools > Properties**.
- Under **FSLogix settings**, apply the necessary profile configurations.

AVD DEMO - APAC (ENTRA ID) PROPERTIES

FSLogix*

Use FSLogix Profiles: on

Use Cloud Cache ⓘ

Configure session hosts registry for Microsoft Entra Joined storage ⓘ

Exclude the Nerdio stored admin account from FSLogix ⓘ

Domain admin username
Leave empty for using domain admin username from AD config

FSLogix version ⓘ
Latest - FSLogix 2210 hotfix 4 (2.9.8884.27471)

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PreventLoginWithTempProfile	1 ⓘ	Reset
RedirXMLSourceFolder	Not configured ⓘ	Reset
SizeInMBs	Not configured ⓘ	Reset
VolumeType	vhdx ⓘ	Reset

Configure Office Container to redirect Microsoft Office user data ⓘ off

Redirections ⓘ off

Apply to existing hosts

These changes will apply only to newly created (or re-imaged) hosts.

Cancel **Save** **Save & Close**

Creating session hosts and host pools

The next step in migration is to create a **host pool** where session hosts will be added. A host pool in **AVD** is equivalent to a **Citrix delivery group and machine catalog** combined.

To create a host pool in Nerdio:

1. Navigate to **AVD > Host Pools > Add Host Pool**.
2. Configure the required settings and save the pool.
3. Deploy session hosts within the host pool.

For more details, refer to the Nerdio documentation.

ADD HOST POOL

NAME:	Finance
DESCRIPTION:	Hostpool for the Finance Team
DESKTOP/APP EXPERIENCE:	
<input checked="" type="radio"/> Multi user desktop (pooled) (1) <input type="radio"/> Multi user RemoteApp (pooled) (1) <input type="radio"/> Single user desktop (pooled) (1) <input type="radio"/> Single user desktop (personal) (1)	
DIRECTORY:	Default (Entra ID)
FSLOGIX:	Default
There are several limitations, including limited support for FSLogix. Review Microsoft's MFA requirements for Microsoft Entra joined VMs. Learn more	
WORKSPACE:	WVD Workspace
NAME PREFIX:	finance-{????}
NETWORK:	nw (aadds-subnet)
DESKTOP IMAGE:	Windows 11 (23H2) Enterprise multi-session - Gen2 (multi-se...
VM SIZE:	D8ads_v5 (8C & 32GB @ \$0.47/hr retail)
OS DISK:	E10 (128 GB Standard SSD @ \$0.01/hr retail)
RESOURCE GROUP:	NMM-SalesDemos-WinHart
QUICK ASSIGN:	Type user or group name
<input checked="" type="checkbox"/> Use Trusted Launch (1)	

Configuring auto-scaling

One of the primary reasons organizations choose a **VDI or DaaS solution** is to save money on operational expenses. **Citrix auto-scaling** is basic compared to **Nerdio's dynamic auto-scaling** capabilities.

Nerdio auto-scaling advantages:

- Built **directly into Azure App Service** for optimal efficiency.
- Uses **advanced algorithms** to adjust resources dynamically.
- Reduces **Azure costs** by automatically shutting down idle VMs.

To configure auto-scaling in Nerdio Manager:

1. Set **scaling thresholds** based on user activity and demand.
2. Define **power settings** to automatically start/stop VMs.
3. Align configurations with **business needs** to optimize cost efficiency.

HOST POOL SIZING

ACTIVE HOST (defined as: (1))	AVD agent Available
Basic host pool (Capacity):	2 (1) <input type="checkbox"/> Hosted in the pool ID
Min host pool (Capacity):	1 (1) <input type="checkbox"/> Hosted in the pool ID
Boot suspend user capacity:	up to 0 (1) <input type="checkbox"/> Hosted in the pool ID

SCALING LOGIC

Pool settings	Stall limit per host: 5 (1) Maximum host pool sessions: 10 (1)
Load balancing:	Breadth First (1) Stale Session
Triggers (scale out on ANY condition, scale in on ALL condition):	<input type="checkbox"/> Select instance PING (1) Available sessions: 1 (1) <input type="checkbox"/> Minimum host available sessions: 2 (1)
Scale in restrictions	Stop or remove hosts if hosts in the pool: 1 (1) <input type="checkbox"/> Scale in trigger condition: 1 (1) Scale in trigger condition: 1 (1)
ROLLING DRAIN MODE	<input type="checkbox"/>
PRE-STAGE HOSTS	<input type="checkbox"/>
MESSAGING	Send a warning message to users on the host: 10 minutes (1) The message should say: (1) Sorry for the interruption. We are using auto drainkeeping and need you to log out. You can log in right away to continue working. We will

For detailed auto-scaling instructions:

Nerdio Manager for MSP: [Auto-scaling guide](#)

Nerdio Manager for Enterprise: [Auto-scaling guide](#)

Connectivity: Citrix vs. Azure Virtual Desktop

Citrix connectivity is managed through the Citrix Workspace app, which supports various protocols and offers features such as session roaming and high-definition user experiences.

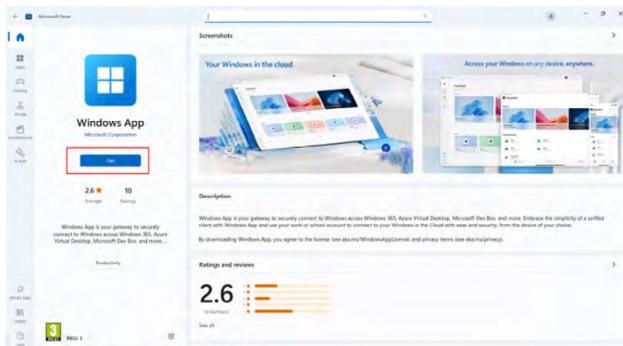
Azure Virtual Desktop uses the Windows App or browser-based access for connectivity. It supports RDP Shortpath, a feature that enhances RDP performance by optimizing the network path, reducing latency, and improving user experience.

Deploying the Windows App

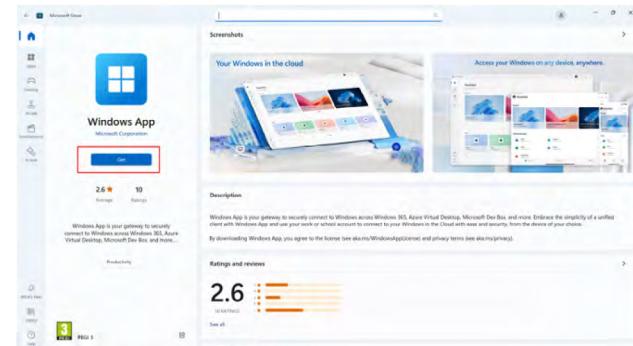
The preferred method of connecting to Azure Virtual Desktop or Windows 365 is via the Windows App. The Windows App is deployed from the Windows Store and can be deployed into Windows, macOS, iOS/iPadOS, Android/Chrome OS, and a browser version. It can also be deployed as an MSI application if required.

Installing from the Windows Store

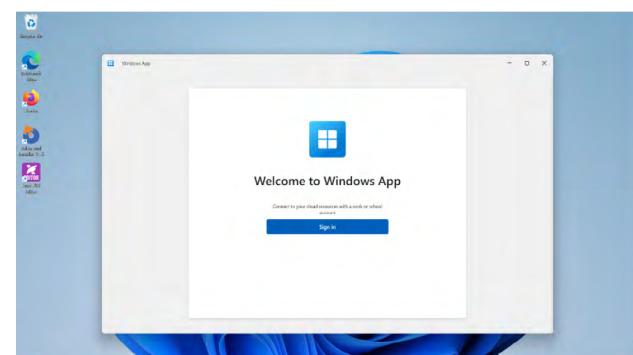
1. On the device that you want to install the Windows App on, head over to the Windows Store, search for "Windows App," and select "Get."



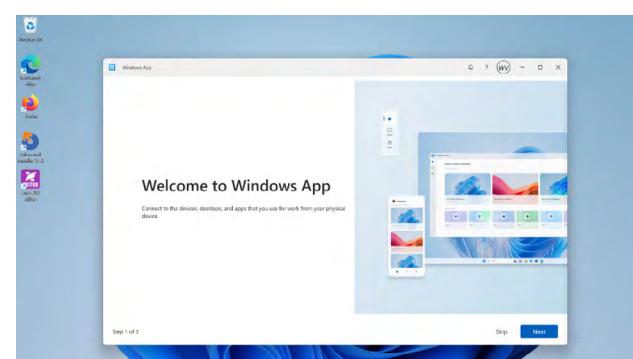
2. Once it has been installed, select "Open."



3. You will be prompted for your sign-in credentials.



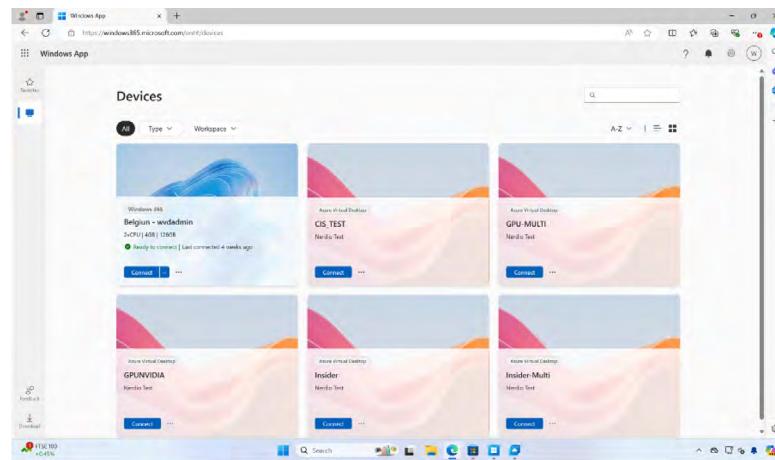
4. Once the credentials have been entered, you will receive a "Welcome to the Windows App" screen. Select next to continue.



Windows app web

A web URL can also be used to access the Windows app, like how Citrix customers used to connect to StoreFront. The web URL to use is <https://windows.cloud.microsoft/>.

This has the same interface that the Windows App client uses.



Policies

The way that user policy settings are applied via Citrix and Azure Virtual Desktop are quite different and need to be managed accordingly.

Citrix HDX Policies were very customizable, and you could target different machine catalogs, users, devices, etc.

A screenshot of a 'Edit Policy' dialog box titled 'Edit Policy' and 'Browser Content Redirection'. The left pane shows a tree view of policy settings under 'Name and Description'. The 'Server Limits' node is expanded, showing sub-options like 'Session Interactivity', 'Session Limits', 'Session Reliability', and 'Session Watermark'. The right pane shows a table of settings with columns 'Name and Description', 'Settings', and 'Current Value'. The table includes the following rows:

Name and Description	Settings	Current Value
Connector for Configuration Manager 2012	<input type="checkbox"/> > <input checked="" type="checkbox"/> Disconnected session timer - Multi-session	Disabled
ICA	<input type="checkbox"/> > <input checked="" type="checkbox"/> Disconnected session timer interval - Multi-session	1440 minutes
> Adobe Flash Delivery	<input type="checkbox"/> > <input checked="" type="checkbox"/> Server idle timer interval	0 milliseconds
> App Protection	<input type="checkbox"/> > <input checked="" type="checkbox"/> Session connection timer - Multi-session	Disabled
> Audit	<input type="checkbox"/> > <input checked="" type="checkbox"/> Session connection timer interval - Multi-session	1440 minutes
> Auto Client Reconnect	<input type="checkbox"/> > <input checked="" type="checkbox"/> Session idle timer - Multi-session	Disabled
> Bandwidth	<input type="checkbox"/> > <input checked="" type="checkbox"/> Session idle timer interval - Multi-session	1440 minutes
> Bidirectional Content Redirection		
> Client Sensors		
> Desktop UI		
> End User Monitoring		
> Enhanced Desktop Experience		
> File Redirection		
> Graphics		
> Keep Alive		
> Keyboard and IME		
> Local App Access		
> Mobile Experience		
> Multi-Stream Connections		
> Multimedia		
> Port Redirection		
> Printing		
> Security		
> Server Limits		
> Session Interactivity		
> Session Limits		
> Session Reliability		
> Session Watermark		
> TWAIN Devices		
> Time Zone Control		
> USB Devices		

At the bottom of the dialog box are 'Save' and 'Cancel' buttons.

Session time limits	
Active Directory	Enable user desktop session time limits to control what happens to disconnected, idle or long sessions.
AVD	ENABLE USER SESSION TIME LIMITS:
VM Deployment	
Azure Capacity Extender	LOG OFF DISCONNECTED SESSIONS AFTER:
Custom RDP	DISCONNECT IDLE SESSIONS AFTER:
FSLogix	DISCONNECT ACTIVE SESSIONS AFTER:
Azure Monitor	LOG OFF, INSTEAD OF DISCONNECTING, ACTIVE AND IDLE SESSIONS:

Azure Virtual Desktop policies can be managed via Nerdio, and a lot of the settings are similar, such as disconnection timeout settings. However, the most notable change is that you cannot manage user policies with Azure Virtual Desktop like you could with Citrix.

Any user-specific settings should be managed by Group Policy or Intune.

Within Nerdio, you can configure policies in two separate locations:

The first section is the properties of the host pool. The image to the right shows how to configure session time limits.

For a complete list of available policy settings please [visit this page](#).

Edit mode			
Common settings			
Active Directory			
AVD			
VM Deployment	<input checked="" type="checkbox"/> Redirect microphone (audiocapturemode)	Not configured ⓘ	Reset
Azure Capacity Extender	<input checked="" type="checkbox"/> Redirect speaker (audiomode)	Not configured ⓘ	Reset
Custom RDP	<input checked="" type="checkbox"/> Redirect cameras (camerastoredirect)	Not configured ⓘ	Reset
FSLogix	<input checked="" type="checkbox"/> Redirect local drives (drivestoredirect)	Not configured ⓘ	Reset
Azure Monitor	<input checked="" type="checkbox"/> Redirect clipboard (redirectclipboard)	Not configured ⓘ	Reset
Session time limits	<input checked="" type="checkbox"/> Redirect printers (redirectprinters)	Not configured ⓘ	Reset
	<input checked="" type="checkbox"/> Redirect location	Not configured ⓘ	Reset
	<input checked="" type="checkbox"/> Full screen (screen mode id)	Not configured ⓘ	Reset
	<input checked="" type="checkbox"/> Multi-monitor (use multimon)	Not configured ⓘ	Reset
	<input checked="" type="checkbox"/> RDP efficient multimedia streaming (videoplaybackmode)	Not configured ⓘ	Reset
	<input checked="" type="checkbox"/> Auto-reconnect (autoreconnection enabled)	Not configured ⓘ	Reset
	<input checked="" type="checkbox"/> Entra ID authentication (targetsaadjoined)	1 ⓘ	Reset
All settings			
Refer this KB article for more information about options above			
	Cancel	Save	Save & close



Summary

Migrating from Citrix to Azure Virtual Desktop with Nerdio provides a streamlined path to modernize virtual desktops, reduce costs, and boost performance. With careful planning and the support of Nerdio's powerful management tools, organizations can fully leverage Azure's cloud infrastructure.

Nerdio's comprehensive toolkit is designed to make the migration process as smooth and seamless as possible. For additional assistance, feel free to contact our team.

About Nerdio

Nerdio is a leading provider of powerful, simplified cloud management solutions for businesses of all sizes. Trusted by managed service providers (MSPs) and enterprise IT departments alike, Nerdio equips organizations with seamless, cost-effective management tools for Azure Virtual Desktop (AVD), Windows 365, and comprehensive Modern Work solutions.

With thousands of customers worldwide, Nerdio accelerates cloud adoption, enabling companies to thrive in an era of hybrid work by providing modern, future-proof technology that adapts to evolving workplace needs.

For more information, please visit www.getnerdio.com.



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