

# Session agenda

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1

The Nerdio Enterprise Optimization Journey

2

Unify your endpoint management

3

Unify your application management

4

Scope for DaaS solutions

5

Configure and manage Windows 365 Cloud PCs

6

Implement Scripted Actions

7

Create an Azure file share

8

Configure user experience settings for AVD

9

Create image source VMs

10

Create workspaces, host pools, and session hosts

11

Implement automations

12

Configure Auto-scale



# Nerdio management pillars

Nerdio Manager for Enterprise





# Managing cost

Analyze cost trends

Compare budget to  
actuals

Optimize VM usage



## Managing cost

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Compare budget to actuals

Optimize VM usage

## Managing usage

Analyze the number of host pools

Analyze the number of session hosts

Analyze storage usage



## Managing cost

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Compare budget to actuals

Optimize VM usage

## Managing usage

Analyze the number of host pools

Analyze the number of session hosts

Analyze storage usage

## Managing performance

Analyze the performance of Nerdio Manager  
*(SQL / App Service)*

Analyze the performance of session hosts  
*(CPU / Memory / IOPS)*

Analyze the performance of storage  
*(Throughput / IOPS / Latency)*



## Managing cost

Analyze cost trends

Compare budget to actuals

Optimize VM usage

## Managing usage

Analyze the number of host pools

Analyze the number of session hosts

Analyze storage usage

## Managing performance

Analyze the performance of Nerdio Manager  
*(SQL / App Service)*

Analyze the performance of session hosts  
*(CPU / Memory / IOPS)*

Analyze the performance of storage  
*(Throughput / IOPS / Latency)*



## Best practices

Review image / app management strategy and the health dashboard

Review the Nerdio Manager auto-scaling best practices and recommendations

Review Nerdio Manager logs / history, recommendations, and insights



# Nerdio Manager: Value add

Nerdio Manager for Enterprise





  
nerdio

### Full control:

- Right-sizing and optimizing your environment
- Evergreen patch management
- Cost management and reporting
- Unified Application and Endpoint Management
- Insights and analytics

### Simplified management and automation:

- Host pools
- Desktop images
- Applications
- Endpoints (virtual and physical)
- PowerShell scripts and tasks
- Storage
- Users and identity (remote support)

### Policy driven governance:

- Intune compliance and Conditional Access
- Full role-based access control (RBAC)
- Granular AVD auto-scaling policies
- RDP policy templates





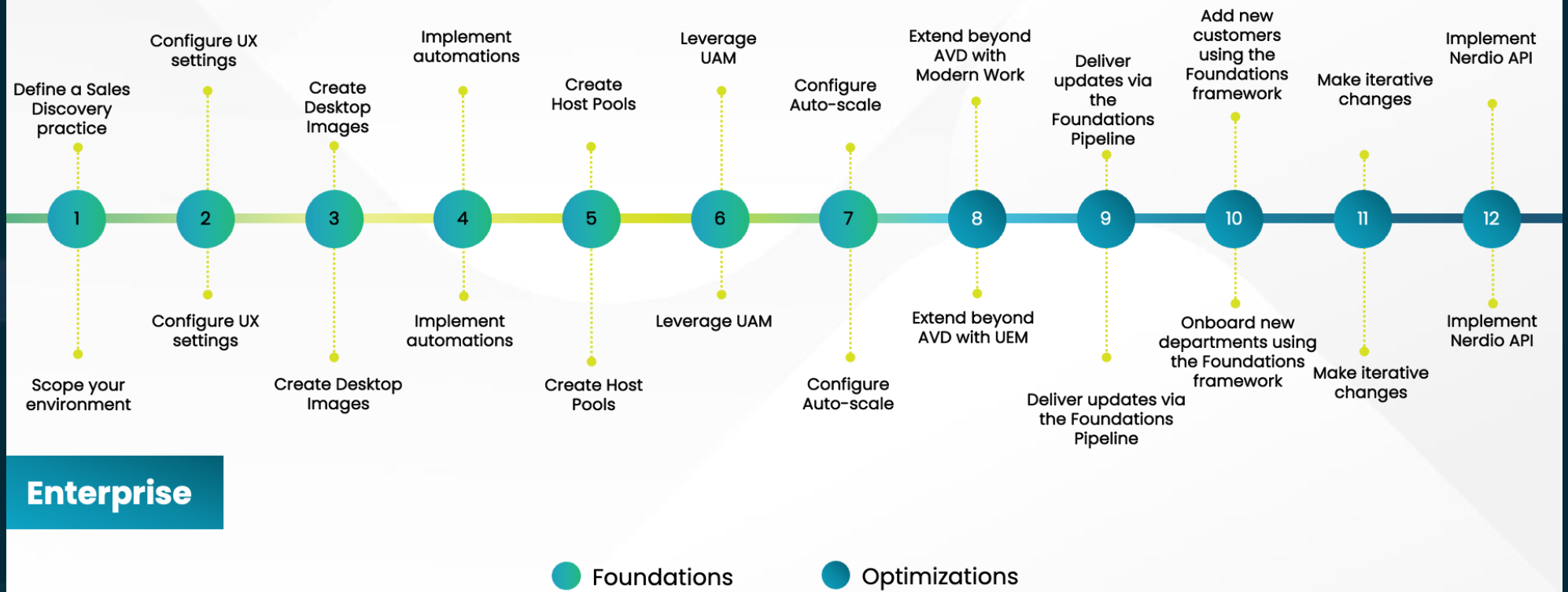
# The Enterprise Optimization Journey

Version 2.0

## Learning & Development

# The Nerdio Optimization Journey

### MSP



### Enterprise

● Foundations

● Optimizations

# Environment types

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## Traditional environments

*(On-prem/Legacy technology-dependent)*

**Traditional environments** are dependent on legacy technologies and the workflows that support them.

### Common legacy technologies include:

- SCCM
- Group Policy Objects (GPOs)
- Manual administration efforts
- One-to-one workflows
- Domain controllers
- File servers
- Exchange servers
- VPNs
- Fragmented endpoint management and endpoint security practices / tools

# Environment types

## Hybrid environments

*(Deprecating legacy dependencies)*

**Hybrid environments** are actively evolving toward a cloud-native posture. Legacy technologies are being retired and replaced.

- GPO and SCCM dependencies are transitioning to Microsoft Intune.
- Automations are being built to allow common tasks to scale.
- One-to-one workflows are evolving into one-to-many tools.
- Endpoint management and security tools and practices are being consolidated.
- Exchange and file servers are retired in favor of cloud-based solutions.
- VPN dependencies are being reduced.

# Environment types

## Cloud-native environments

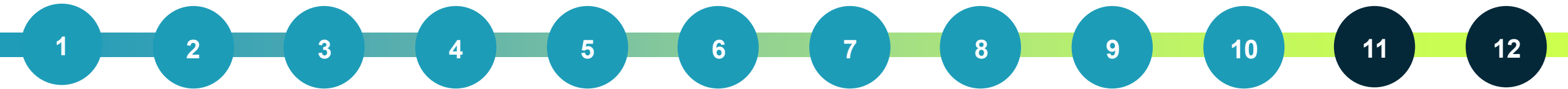
*(Fully operationalized Microsoft solution stack)*

**Cloud-native environments** leverage the modernized Microsoft cloud solution stack to meet the needs of the organization.

- Microsoft Intune and Microsoft Defender are fully operationalized for modern endpoint management.
- A fully realized and scalable suite of automations is implemented and evolves with business needs.
- Workflows are modernized by using Microsoft solutions as a central anchor.
- VPNs to access company resources are deprecated.
- The user experience is fully administered and served using cloud-based solutions.

# The Nerdio Optimization Journey

The steps to a cloud-native posture.



# Unify endpoint management

*Define what an ideal endpoint looks like and capture this definition in policies to drive consistency and scale for configuration and ongoing management.*

1

## Enterprise

- Enable Intune in Nerdio Manager
- Configure Microsoft Intune device policies
- Implement Windows Update for Business
- Implement policy backups
- Assign policies to groups
- Enroll endpoints into management with Intune
- Enable Microsoft Defender for Endpoint
- Use reporting and Insights to track and solve for drift
- Implement Console Connect

# Unify endpoint management

*Define what an ideal endpoint looks like and capture this definition in policies to drive consistency and scale for configuration and ongoing management.*

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# Unify application management

*Identify the application needs in your ecosystem – both generally applicable applications and applications specific to smaller segments. Then, use policies to automate installation and ongoing updates.*

2

## Enterprise

- Connect private application repositories to package and deploy your own unique applications, or deploy applications from public repositories.
- Create Unified Application Management (UAM) policies in Nerdio Manager to centralize the deployment of your application portfolio.
- Implement maintenance windows to automate application updates.

# Scope for DaaS solutions

*Use data to drive decisions when selecting the Microsoft VDI solution and infrastructure for your use case(s).*

3

## Enterprise

- For existing traditional environments, use user behavior details, logs, and reports to scope.
- For existing Azure environments, use user behavior details and Nerdio Insights to scope.
- For new environments (greenfield), work with application developers to scope based on anticipated user and system needs.
- Use Nerdio Insights during testing to confirm compatibility and solution fit.

# Implement Windows 365

Centralize and create configurations for scale and simplified management of Windows 365 Cloud PCs.

4

## Enterprise

- Use the outcomes from your scoping exercise to make data-driven decisions on Cloud PC sizes.
- Create Windows 365 network connections
- Create Windows 365 provisioning policies
- Create Windows 365 user settings
- Configure restore point capture
- Deploy Cloud PCs
- Assign users Windows 365 licenses
- Enable scripts for use on Windows 365 Cloud PCs.

# AVD: Configure user experience settings

Create centralized configurations for FSLogix and RDP settings to define the user experience when accessing AVD hosts.

5

## Enterprise

- Create centrally managed FSLogix profiles to enable user profile routing for host pools.
- Create centrally managed RDP settings profiles to define behaviors for user sessions.

# AVD: Implement image lifecycle management

*Use image source virtual machines for testing outside of production. Automate ongoing OS updates and more with scheduled image generation. Avoid costly recovery motions by leveraging image versioning.*

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## Enterprise

- Create image source virtual machines to consolidate common update and management tasks.
- Reduce recovery motions for restoring environments with image versions.
- Automate updates to cascade throughout your host pool ecosystem.

# AVD: Implement automations

*Leverage Scripted Actions to automate common functions on image source virtual machines, production hosts, and your Azure tenant.*

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## Enterprise

- Create and/or connect Azure DevOps and GitHub repositories to create an automation toolbox.
- Leverage automations you've already built or create new automations in Nerdio Manager.
- Group individual scripts to run together to consolidate task management.

# AVD: Configure host pools

Create and/or connect workspaces, host pools and hosts to centralize the management of your AVD ecosystem.

8

## Enterprise

- Create workspaces to reflect the logical footprint of your organization or subdivide audiences.
- Use the outcomes from your scoping exercise to make data-driven decisions on host pool experience types.
- Refine resource utilization by defining session limits and load balancing.
- Create host pools and session hosts to deliver virtual desktops to end users.
- Optimize host pool properties.
- Leverage Nerdio Insights to identify areas to save on cost or enhance user experiences.

# AVD: Extend UAM policies to cloud endpoints

*Use your unified application catalog to create Unified Application Management policies for cloud endpoints.*

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## Enterprise

### Create deployment policies for:

- AVD workspaces
- Personal AVD desktops
- AVD host pools

# AVD: Implement Auto-scale

*Automate the implementation of new desktop image versions on production resources. Optimize the number of resources and cost for your AVD host pools.*

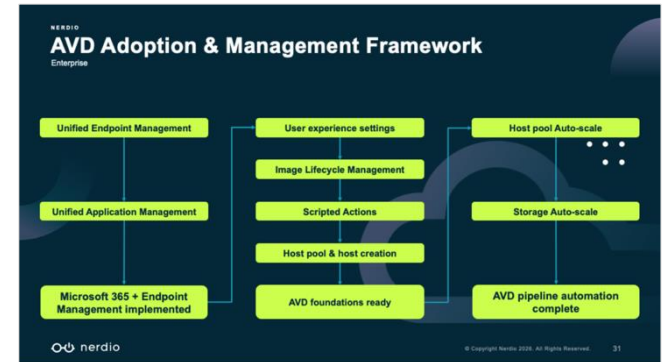
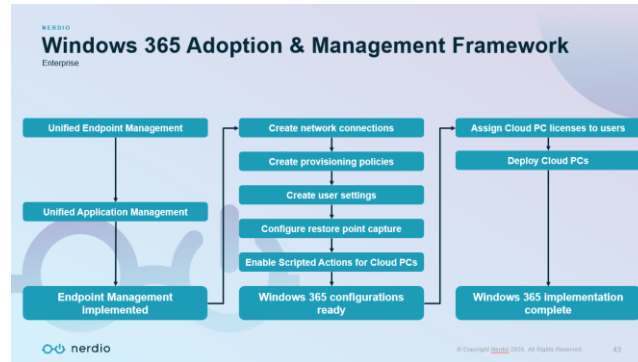
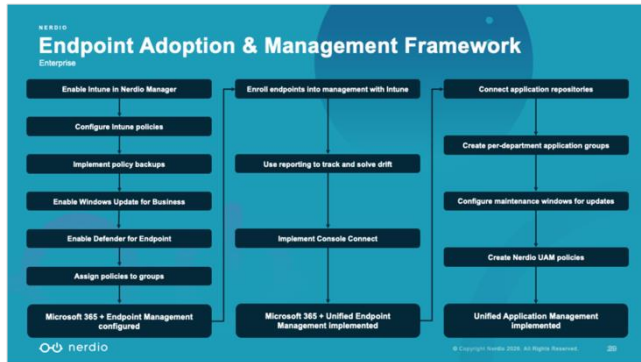
10

## Enterprise

- Combine individual host pool configurations with Auto-scale profiles to centralize management.
- Add capacity (scale out) to meet waves of demand. Remove capacity (scale in) to reduce unnecessary costs.
- Combine Auto-scale with desktop images to automatically update production hosts.
- Refine your infrastructure selections for host pools by reviewing Nerdio Advisor and Insights.
- Enable Auto-heal to detect and remediate broken hosts.
- Optimize your storage spend by leveraging Auto-scale for Azure Files Premium and/or Azure NetApp Files.

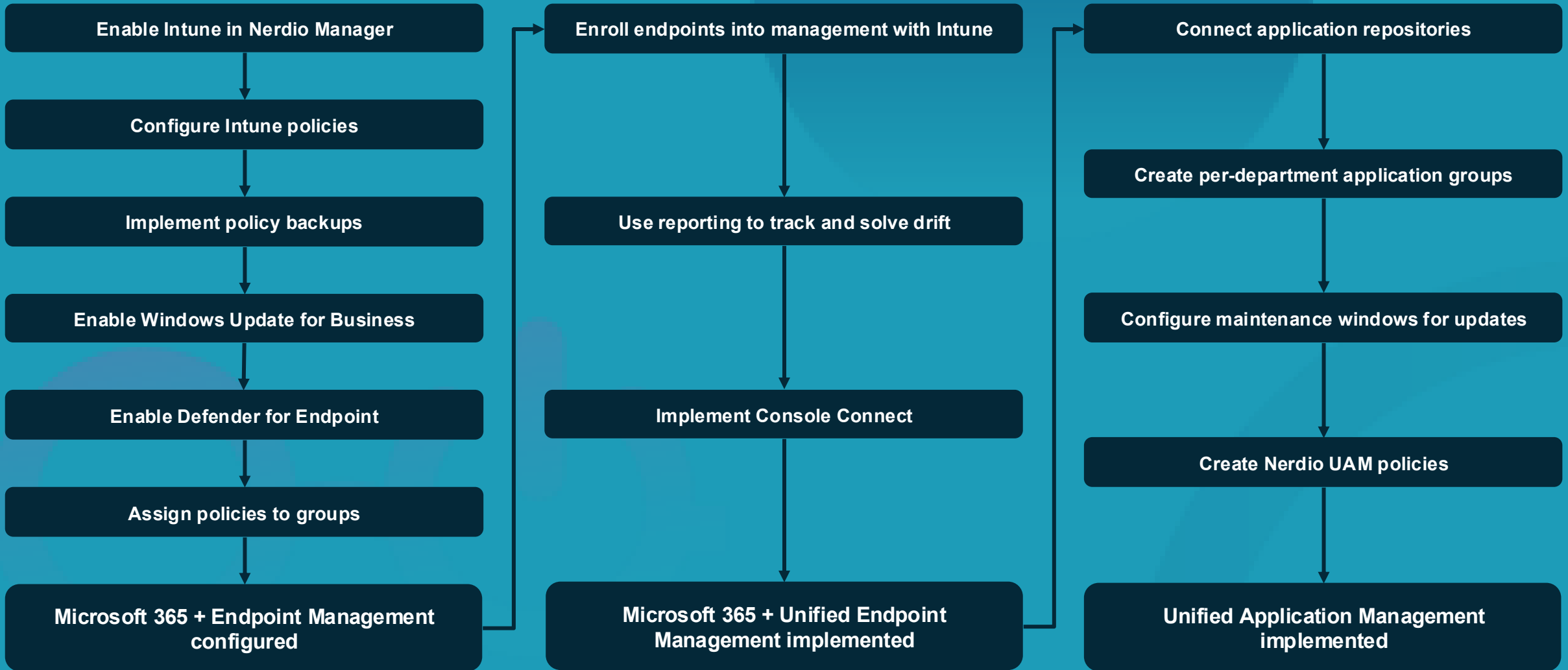
# Manage via the Foundations frameworks

Endpoint Management, Windows 365 and Azure Virtual Desktop



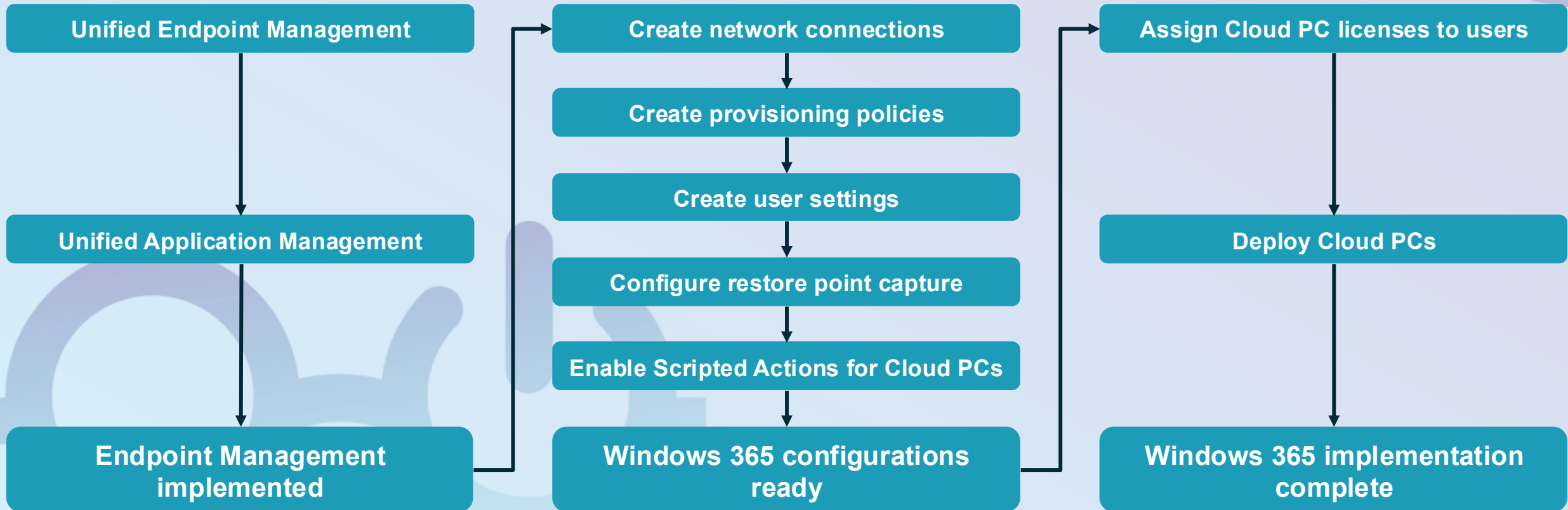
# Endpoint Adoption & Management Framework

Enterprise



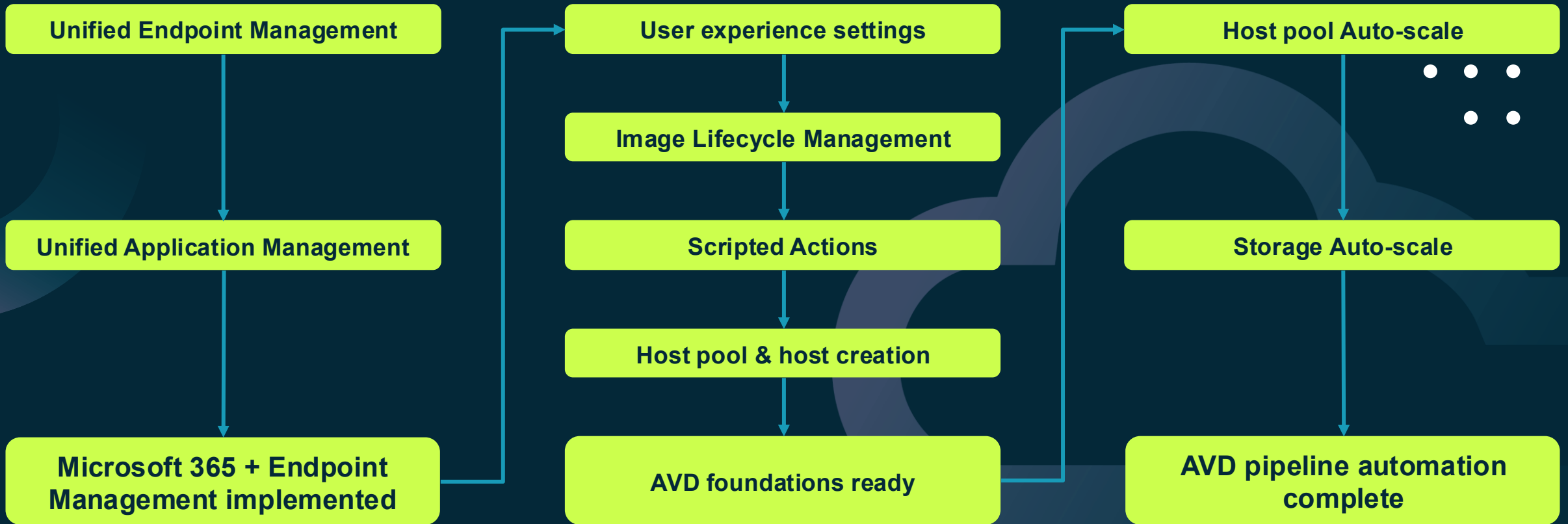
# Windows 365 Adoption & Management Framework

Enterprise



# AVD Adoption & Management Framework

Enterprise



# Implement advanced optimizations

*Take these advanced steps to optimize and advance your cloud practice*

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- Extend further into your tech stack with Nerdio API.
- Harden your Nerdio Manager install.
- Continuously improve automations.

# Unify your endpoint management

Nerdio Manager for Enterprise

# What is Intune?

## Microsoft's native MDM and MAM built to manage:

- Windows
- MacOS
- iOS
- Android
- Chrome
- Ubuntu Linux

- Replaces key Windows Active Directory functionality
- Supports policy-based management, including:
  - **Configuration profiles:** Replacement of GPOs
  - **Conditional Access (Zero Trust):** Not configured via Nerdio Manager for Enterprise
  - **Security baselines:** Device security standards
  - **Compliance policies:** Criteria for a device to be compliant
  - **Update rings:** Feature, quality, driver updates, etc.
  - **Mobile app/mobile device management:** RMM over mobile devices



# Intune plus Nerdio Manager

Extend your Intune management with Nerdio Manager

## Efficient management interface

- Overlay for common Intune tasks.
- Simplified management interface to reduce the learning curve.
- Endpoint details surfaced in Nerdio Manager's UI.
- Endpoint management within Nerdio Manager.

## Reduced management overhead

- Increase productivity and avoid additional Intune administration.
- Back up, restore, compare, and resolve policy conflicts.
- Streamline common tasks with fewer clicks.
- Review endpoint status with integrated compliance and performance reports.

## Enhanced visibility and reporting

- Built-in and custom granular RBAC roles.
- Delegated task management with just-enough access to endpoint settings.
- Unified and customizable dashboard with full device insights.

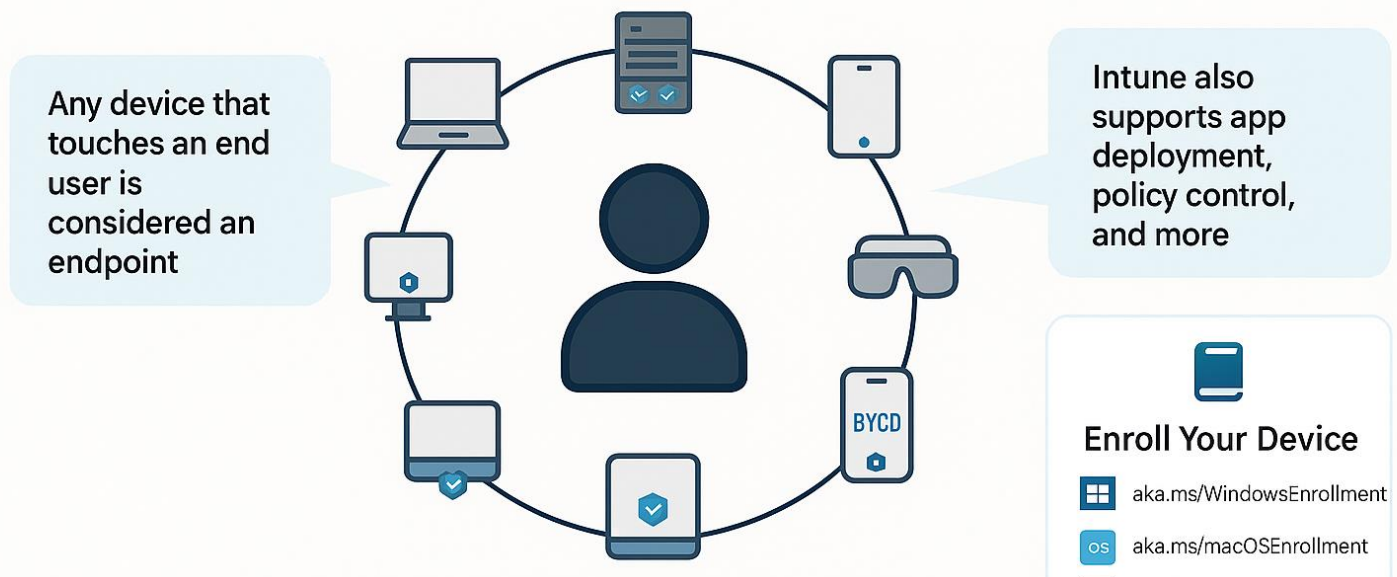


# Let's talk endpoints...

## Glossary

Term	What it stands for
BYOD	Bring Your Own Device
AVD session host	Virtual machine that delivers desktops/apps to users in an Azure Virtual Desktop.
MDM	Mobile device management
MAM	Mobile application management
LOB app	Line-of-business application
Win32 app	Windows 32-bit applications

## What Is an Endpoint?



Endpoints come in all shapes and platforms – Intune supports them all.

# Enable Intune in Nerdio Manager for Enterprise

## Prerequisites for Nerdio Manager UEM:

1. A valid Intune license available
  - **Optional:** a Windows 365 Cloud PC license
2. Intune setup within your Entra ID tenant
3. Global Admin to enable Intune integration
  - **Consent** at the organizational level

DEVICE VISIBILITY SCOPE LIMITATIONS

Device platform ⓘ

Windows

Windows Device type scope ⓘ

All

Limit by Entra ID group ⓘ

User Groups ⓘ  Device Groups ⓘ

Start typing to search...

Include devices that have no primary user ⓘ

Cancel Next

## Enable Intune

Intune integration for Unified Endpoint Management allows enrolled Windows devices to be reported on and managed directly in the Nerdio Manager console. Please review the requirements below before proceeding.

Need to configure permissions to continue setup. Click next to add required permissions.

The following pre-requisites must be met to enable Intune:

- [Intune and Windows 365 license](#) must be present in Entra ID tenant

To enable Intune integration, ensure that you are logged into Nerdio Manager with an account that has Entra ID **Global Administrator** role to add necessary permissions.

User Operating Mode **Public Preview** ⓘ

### CONFIGURE FEATURES BELOW:

- |   |  |   |
|---|--|---|
| <input checked="" type="checkbox"/> Intune managed devices* ⓘ                           | <input type="radio"/> Read-only            | <input checked="" type="radio"/> Manage |
| <input checked="" type="checkbox"/> Group membership ⓘ                                  | <input type="radio"/> Read-only            | <input checked="" type="radio"/> Manage |
| <input checked="" type="checkbox"/> Privileged operations ⓘ                             | <input type="radio"/> Read-only            | <input checked="" type="radio"/> Manage |
| <input checked="" type="checkbox"/> Local Admin Password ⓘ                              | <input type="radio"/> Read-only            | <input checked="" type="radio"/> Manage |
| <input checked="" type="checkbox"/> Scripts ⓘ   | <input checked="" type="radio"/> Read-only | — N/A                                   |
| <input checked="" type="checkbox"/> Windows 365 ⓘ                                       | — N/A                                      | <input checked="" type="radio"/> Manage |
| Hide individual Cloud PC hosts page (recommended) ⓘ <input checked="" type="checkbox"/> |  |   |
| <input checked="" type="checkbox"/> Conditional Access policies ⓘ                       | <input type="radio"/> Read-only            | <input checked="" type="radio"/> Manage |
| <input checked="" type="checkbox"/> Intune Applications and App policies ⓘ              | <input type="radio"/> Read-only            | <input checked="" type="radio"/> Manage |
| <input checked="" type="checkbox"/> Device policies ⓘ                                   | <input type="radio"/> Read-only            | <input checked="" type="radio"/> Manage |

The following permissions will be added for the Nerdio Manager application, if not already in place:

- *Application.Read.All* (application)
- *BitLockerKey.Read.All* (delegated)

Cancel Next

# Intune device policies

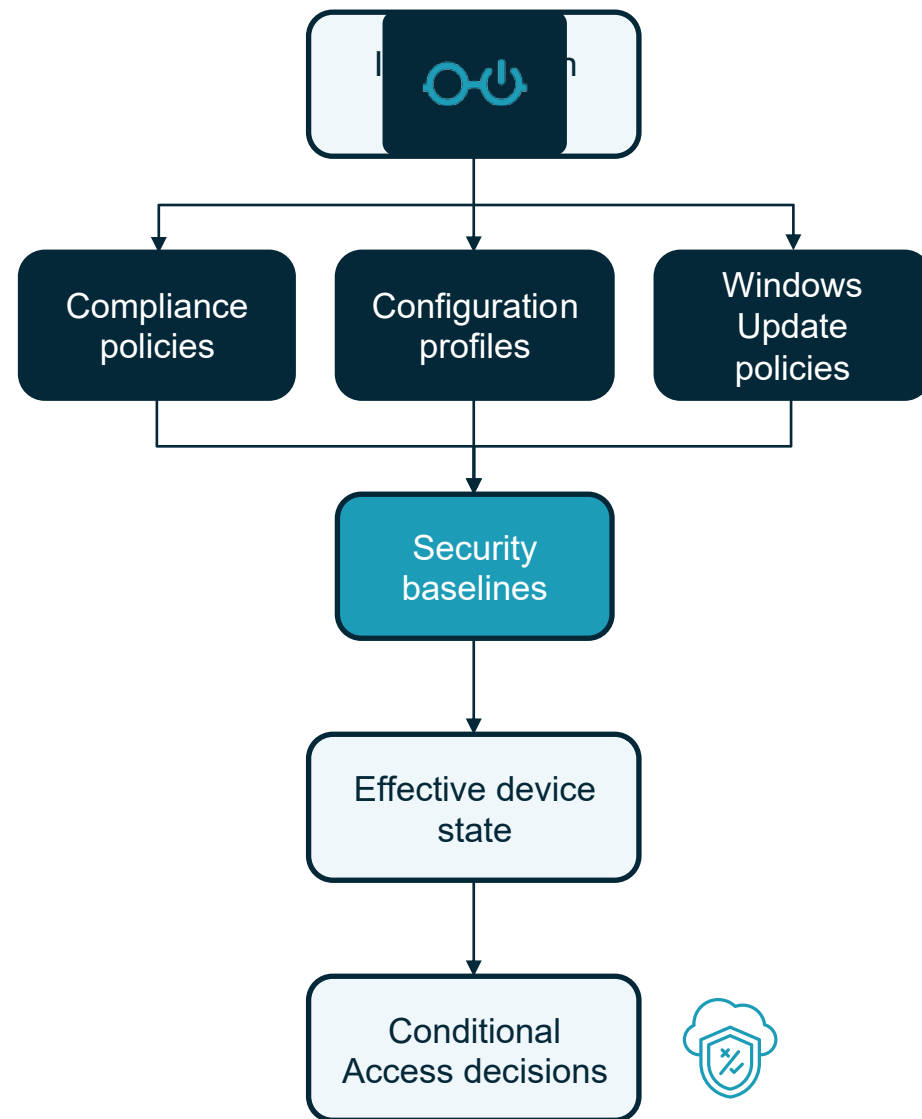
Policy	Type	Details
<b>Compliance policies</b>	Device	<ul style="list-style-type: none"> <li>Evaluates the configuration and health of the device (e.g., BitLocker, OS version).</li> </ul>
<b>Configuration profiles</b>	Device	<ul style="list-style-type: none"> <li>Provide settings like VPN, Wi-Fi, wallpaper, Defender config—all applied to the device.</li> </ul>
<b>Security baselines</b>	Device	<ul style="list-style-type: none"> <li>Provide collections of device-focused hardening settings (Defender, firewall, accounts).</li> </ul>
<b>Intune app policies</b>	Mixed	<ul style="list-style-type: none"> <li><i>App deployment</i> = device</li> <li><i>App protection</i> = user (usually for mobile apps with MAM)</li> </ul>
<b>Windows Update for Business (WUfB)</b>	Device	<ul style="list-style-type: none"> <li>Provides settings that apply to how the <i>device</i> receives and installs updates.</li> </ul>
<b>Conditional Access</b>	User	<ul style="list-style-type: none"> <li>Targets users and groups but enforces conditions like “device must be compliant”.</li> </ul>

[Compliance policies](#)
[Configuration profiles](#)
[Security baselines](#)
[Intune app policies](#)
[Windows Update](#)

# Intune device policies

- 1. Compliance policies:**  
Evaluate if devices meet security requirements; they don't enforce settings.
- 2. Configuration profiles:**  
Apply and enforce specific device settings.
- 3. Security baselines:**  
Microsoft-recommended settings for a secure posture, delivered via configuration profiles.
- 4. Windows Update policies:**  
Control how and when devices get updates (e.g., deferral periods, active hours).
- 5. Conditional Access decisions:**  
Grant or block access based on compliance and device state.

## How Microsoft Intune policies work together



# Configure Intune device policies and policy lifecycle

1

1. Enable Intune

2

1. Endpoints
2. Policy Management
3. Select policy type

3

1. Select **Create**
2. Follow the wizard
3. Select a template
4. Assign to groups
5. Edit content
6. Review
7. Save

4

1. Policy lifecycle
2. Create new policies
3. Edit existing policies
4. Manage backups
5. Manage restores
6. Re-assign policies
7. Compare policies
8. Resolve policy conflicts

Compliance policies

Configuration profiles

Security baselines

Intune app policies

Windows Update

# Intune policy management

Streamline deployment process

## ➤ Policy management:

- Create and edit
- Back up and restore
- Assign
- Define policy approval workflows

## ➤ And more:

- Configure automatic backup
- Compare policy versions



# Intune policies management

Policy backup and recovery

- Policy assignment
- Policy change tracking and logging
- Policy backup / restore
- Policy change comparisons

The screenshot displays the Nerdio Manager for Enterprise interface for Conditional Access Policies. The left sidebar shows navigation options like INSIGHTS, MY CUSTOM VIEWS, HOST POOLS, SESSION HOSTS, WORKSPACES, ENDPOINTS, DESKTOP IMAGES, APPLICATIONS, SCRIPTED ACTIONS, and MONITORING. The main content area shows a list of policies with columns for NAME, STATE, ASSIGNMENTS, LAST MODIFIED, and BACKUPS. A dropdown menu is open over the BACKUPS column, showing options: Assignments, Edit or Restore, Delete, Backup, Compare, Manage Backups, and Assignments. The table lists several policies, including AVD-MFA, CA001, CA004, and a Microsoft-managed policy.


NAME	STATE	ASSIGNMENTS	LAST MODIFIED	BACKUPS
AVD-MFA	Enabled	Assigned: 2 Excluded: 1	Apr 23, 2025 04:14 PM	3
CA001: Require multi-factor authentication for admins	Enabled	Assigned: 0 Excluded: 0	Apr 6, 2023 12:23 PM	0
CA004: Require multi-factor authentication for all users	Disabled	Assigned: 0 Excluded: 0	-	0
Microsoft-managed: Multifactor authentication for admins accessing Microsoft Admin Portals	Report-only	Assigned: 0 Excluded: 0	-	0
Trigger Audit Log for Dev Ca Policy	Disabled	Assigned: All users Excluded: 1	Dec 5, 2024 10:35 AM	0


# Intune policies management

## Automatic policy backup


- **Scheduled** backup for policies created in both Nerdio Manager and Intune natively
  - **Automatic on-change** backup
  - **Backup on any edit or change** made via Nerdio Manager
- New:**
- **Backup on assignments**


### Configure Automatic Policy Backup


Automatic scheduled backup 


Automatic on-change backup 

---

**Retention policy** 

Max backups count 

Max retention period (in weeks) 

Backup Assignments 

---

By enabling automatic policy backups, the backup retention settings will automatically be activated as well. Are you sure you wish to proceed?

Yes, I'm sure

# Intune policy management

Policy comparison

Compare policy changes across versions side-by-side

COMPARE POLICY BACKUPS - AVD-MFA

Backup version: 3

```

1 {
2   "@odata.context": "https://graph.microsoft.com/beta/$metadata#identity/conditionalAccess/policies",
3   "conditions": {
4     "applications": {
5       "excludeApplications": [],
6       "includeApplications": [
7         "9cdead84-a844-4324-93f2-b2e6bb768d07"
8       ],
9       "includeAuthenticationContextClassReferences": [],
10      "includeUserActions": []
11    },
12    "clientAppTypes": [
13      "all"
14    ],
15    "locations": {
16      "excludeLocations": [
17        "1b77d6a3-318f-4196-b0b0-c55c6575330f"
18      ],
19      "includeLocations": [
20        "All"
21      ]
22    },
23    "signInRiskLevels": [],
24    "times": null,
25    "userRiskLevels": [],
26    "users": {
27      "excludeGroups": [],
28      "excludeRoles": [],
29      "excludeUsers": [
30        "f935eb44-d993-4f60-948a-0946bc81f87b"
31      ],
32      "includeGroups": [],
33      "includeRoles": [],
34      "includeUsers": []

```

Backup version: 2

```

1 {
2   "@odata.context": "https://graph.microsoft.com/beta/$metadata#identity/conditionalAccess/policies",
3   "conditions": {
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8       ],
9       "includeAuthenticationContextClassReferences": [],
10      "includeUserActions": []
11    },
12    "clientAppTypes": [
13      "all"
14    ],
15    "locations": {
16      "excludeLocations": [
17        "1b77d6a3-318f-4196-b0b0-c55c6575330f"
18      ],
19      "includeLocations": [
20        "All"
21      ]
22    },
23    "signInRiskLevels": [],
24    "times": null,
25    "userRiskLevels": [],
26    "users": {
27      "excludeGroups": [],
28      "excludeRoles": [],
29      "excludeUsers": [],
30      "includeGroups": [],
31      "includeRoles": [],
32      "includeUsers": []

```

OK

# Custom RBAC roles

Granular RBAC roles for Intune management

- ✓ Simplified role-based access control
- ✓ Granular permissions per module
- ✓ User-friendly interface

ADD ROLE DEFINITION

NAME: W365 Custom Role

DESCRIPTION:

MODULES:

- DASHBOARD: Select...
- WORKSPACES: Select...
- DESKTOP IMAGES: Select...
- INTUNE:
  - Read Devices
  - Read Update Rings and Policies
  - Manage Antivirus
  - Read User Groups
- INTUNE > WINDOWS 365: Read Only
- APP ATTACH: Select...
- UAM > DEPLOYMENT POLICIES: Select...
- UAM > APP GROUPS: Select...
- UAM > CATALOG: Select...
- SCRIPTED ACTIONS: Select...
- MONITORING: Select...
- STORAGE > AZURE FILES: Select...
- ADVISOR > MODELER: Select...
- ADVISOR > RECOMMENDATIONS: Select...
- ADVISOR > RULES: Select...
- STORAGE > AZURE NETAPP FILES: Select...
- STORAGE > LOG ANALYTICS: Select...
- DESKTOPS: Select...

Cancel OK



Windows Update for Business is a way to **control when and how Windows updates are delivered** to your organization's devices—without needing WSUS or SCCM.



# Windows Update for Business (WUfB)

Consistent  
Compliant  
Secure



## Update ring

Quality updates + Feature updates + Driver updates

Quality updates

Driver updates

Feature updates

Monitor and report



Machine



Machine



Machine



Machine



Machine



Machine



Machine

# Center for Internet Security

The Center for Internet Security (CIS) is an organization that publishes globally recognized benchmarks and controls to help organizations secure IT systems and reduce cyber risk.

1

## Simplified compliance management

- Enforce CIS Level 1 policies
- Auto-align with security benchmarks
- Configure automated policy deployment
- Reduce risk from misconfigurations

2

## Consistent and scalable management

- Apply secure settings uniformly
- Use pre-built policy templates
- Sync CIS policies via Nerdio Manager
- Assign dynamic groups
- Use pre-hardened images

3

## Trusted security standards

- Alignment with CIS benchmarks
- Backing from DHS, CISA, NIST, and ISO
- Industry recognition
- Compliance frameworks support
- Reduced attack surface

# Environment (Integrations) ☆

Home > Settings > Environment > Integrations

New UI

Azure | Nerdio | **Integrations** | Tasks 8 ✓

## App Attach Storage Locations

## Script repositories (GitHub, GitLab and Azure DevOps)

## Azure AI

### Center for Internet Security

Resources provided by CIS may incur additional costs. See the individual products below for further information.

CIS Intune Policies  Enabled ⓘ

Synchronize



## Console Connect **BETA**

- Configuration Issues
- DESKTOP IMAGES
- APPLICATIONS
- SCRIPTED ACTIONS
- MONITORING
- STORAGE
- RBAC ROLES
- NOTIFICATIONS
- LOGS
- ADVISOR
- SETTINGS
  - Environment
  - Profiles Management
  - Resources Rules
  - Custom Views
  - Theme
- UPDATES



# CREATE POLICY



- Base Info
- Assignments
- Content
- Finish

Policy type:

Configuration

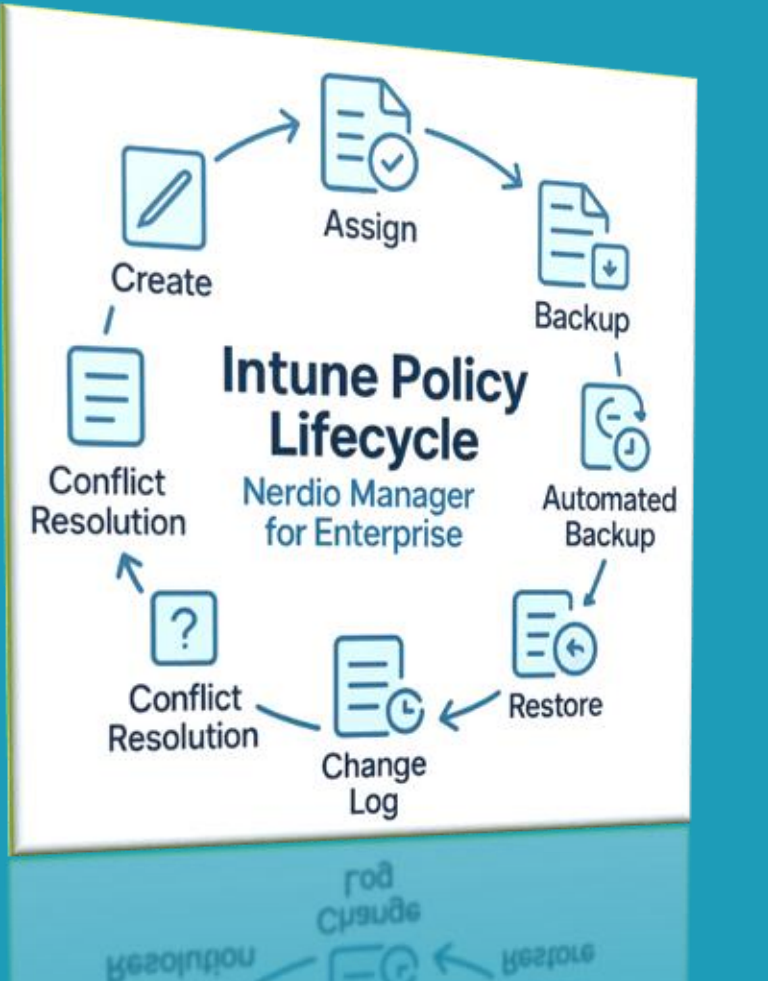
Policy template or backup:

Template

- CIS (L1) Defender - Windows 11 Intune 3.0.0**
- CIS (L1) Device Lock & WHFB - Windows 10 Intune 3.0.0
- CIS (L1) Device Lock & WHFB - Windows 11 Intune 3.0.0
- CIS (L1) Firewall - Windows 10 Intune 3.0.0
- CIS (L1) Firewall - Windows 11 Intune 3.0.0
- CIS (L1) Local Policies Security Options - Windows 10 Intune 3.0.0
- CIS (L1) Local Policies Security Options - Windows 11 Intune 3.0.0
- CIS (L1) Section 1 - 3.9.1.1 - Windows 10 Intune 3.0.0



# Intune policy lifecycle



Option	Native	Nerdio Manager
Policy backup	N	Y
Automated backup	N	Y
Policy restore	!	Y
Change tracking	N	Y
Conflict resolution	N	Y



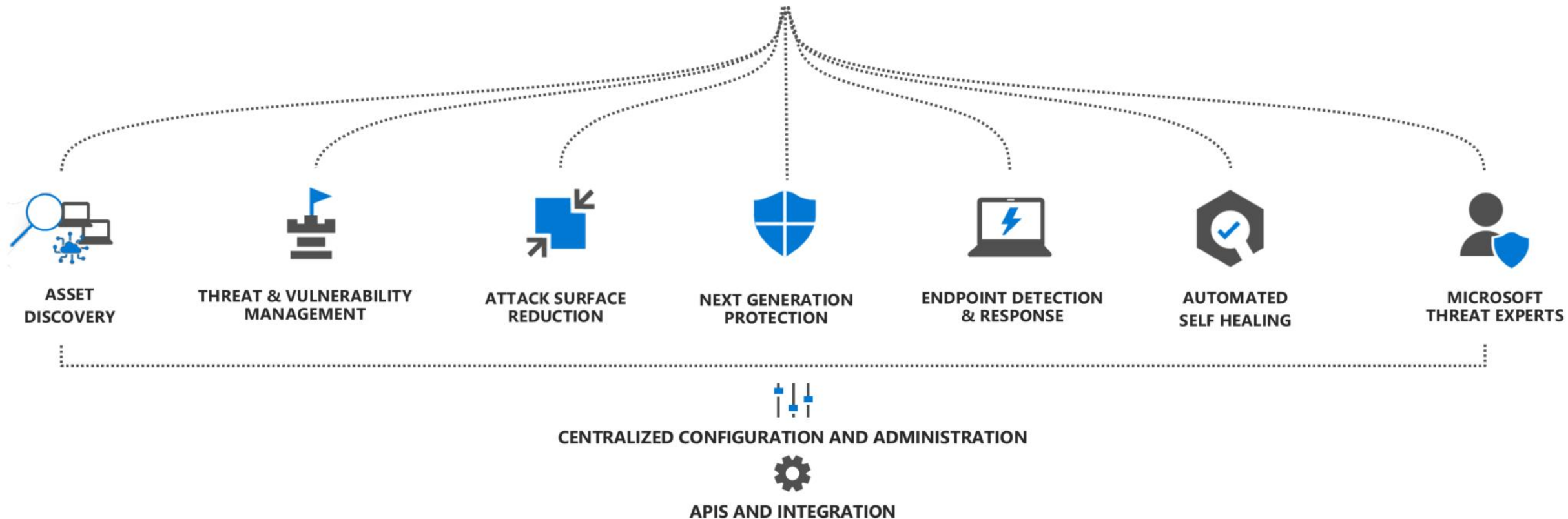
Microsoft Defender for Endpoint (MDE) is an enterprise endpoint security platform designed to help organizations **prevent, detect, investigate,** and **respond** to advanced cyber threats.





# Microsoft Defender for Endpoint

Threats are no match.

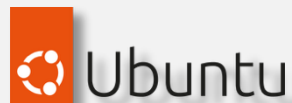
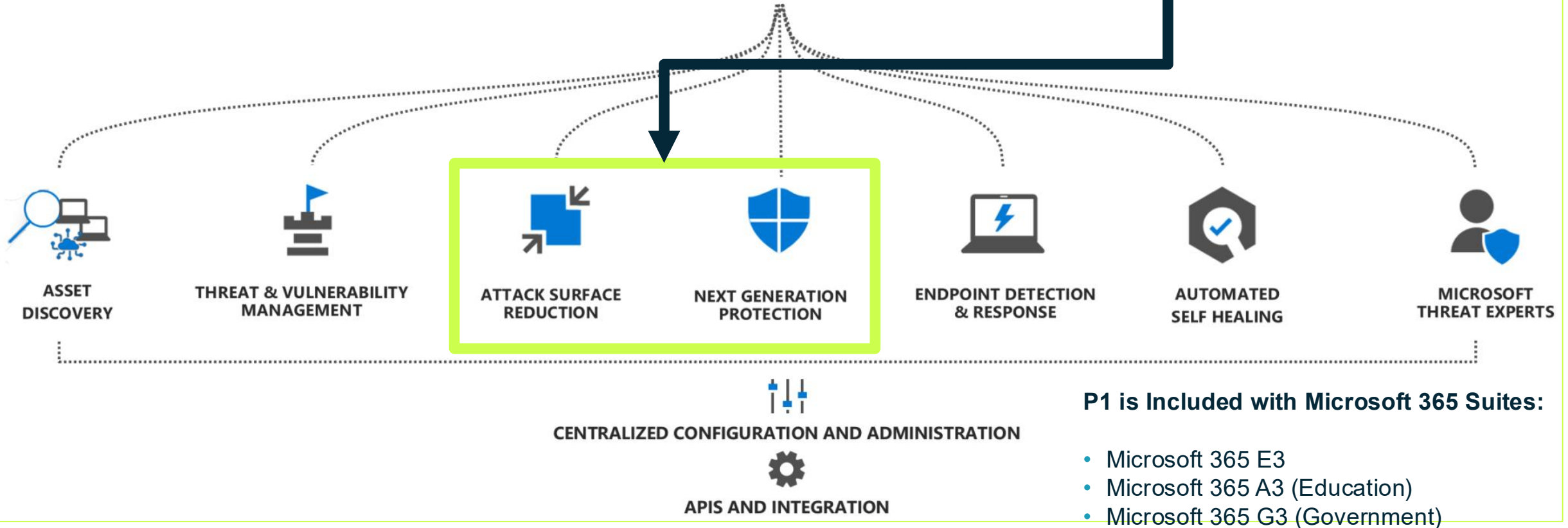




# Microsoft Defender for Endpoint

Threats are no match.

## PLAN 1



# Intune reporting and troubleshooting

Trend analysis helps me track weak spots early.

Trends over time help me explain issues to leadership with real data.

Through customizable dashboard, I get exactly the data I need.

Issue severity saves me hours of triage time.

Patch issues? I can spot them before users even notice.

I don't need to jump between portals. It's all right here in Nerdio Manager.





# Let's see it in action!

*Unify your endpoint management*

**DEMO**

**Just watch!**

- **UEM demo**
- **Policy lifecycle:**
  - Creating a new (CIS and WUfB) policy
  - Importing JSON code
  - Reporting

# Unified Application Management

Nerdio Manager for Enterprise

# Introduction to UAM

Unified Application Management offers a single pane of glass to manage applications across AVD, Windows 365 Cloud PCs, and physical devices.



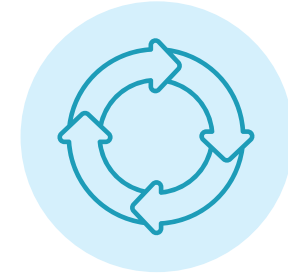
## Integration options

- WinGet
- SCCM
- Intune
- App Attach
- Shell Apps



## Application deployments

- One-time and policy-based
- Compliance and maintenance
- Device management



## Supported applications

- .exe
- .msi
- .msix
- Complex applications

# Benefits of UAM

Unified Application Management offers a single pane of glass to manage applications across AVD, Windows 365 Cloud PCs, and physical devices.



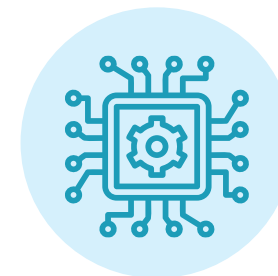
## Security

- Quickly address application updates and vulnerabilities



## Time

- Reduce manual management for physical and virtual devices
- Implement policy-based deployments



## Tool sprawl

- Cut down on the variety of application deployment tools

# UAM key concepts

- Applications
- Targets
- Repositories
- Deployment technologies

# Application deployment cycle

## Key items for Unified Application Management

### Repositories

- Microsoft Store
- WinGet community
- Private / custom repository
- Google Play store
- App Store

### Applications

- EXE
- MSI
- MSIX App Attach
  - CIM, VHD
- MSSTORE
- NULLSOFT
- Portable Zip
  - Single file
- PWA
- WIX

### Targets

- Pooled AVD host pools
- Personal AVD desktops
  - User / group
  - Specific pools
- Intune connected / enrolled
  - Users or groups
  - Device groups

# Deployment technologies

How will the  
applications be  
deployed?

## WinGet

- **Azure connected (virtual):** Native Azure tech-called extensions.
- **Intune connected (physical):** Intune pushes scripts for WinGet commands.

## SCCM

- **Azure connected (virtual):** Native Azure tech-called extensions.
- **Intune connected (physical):** Intune pushes scripts for WinGet commands.

## Shell apps

- **Azure connected (virtual):** Native Azure tech-called extensions.
- **Intune connected (physical):** Intune pushes scripts for WinGet commands.
- Can call WinGet commands if needed.

## App Attach (virtual only)

- Attaches the app package to the VM.

# Application deployment options

## One-time deployment

- **Application testing**
- **One-off installations**

## Policy-based deployment

- **App installation on hosts**
- **App maintenance and updates**
- **App versioning and control**

# What is WinGet?

- Microsoft-created Windows Package Manager
- Command-line utility introduced in Windows 10
- Agentless integration built into Windows 10 and Windows 11
- Supported repositories: Microsoft Store, WinGet repo, custom repository
- Easy to manage, upgrade, install, and uninstall apps

# WinGet commands

Examples of WinGet commands are:

- Search for apps in the repository:

```
winget search <app-name>
```

- Install applications:

```
winget install <app-name>
```

- List installed applications:

```
winget list
```

- Upgrade all installed apps:

```
winget upgrade --all
```

- Uninstall applications:

```
winget uninstall <app-name>
```



# Let's see it in action!

*Unified Application Management*

**DEMO**

**Just watch!**

- Link or add a WinGet repository.

# Nerdio Manager for Enterprise: Lab

See the lab guide for detailed steps.



## WinGet lab

- ✓ Run WinGet commands.



# Launch WinGet via PowerShell

## winget --info

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

```
C:\Windows\System32\cmd.e x + v
Winget Directories
-----
Logs %LOCALAPPDATA%\Packages\Microsoft.DesktopAppInstaller_8wekyb3d8bbwe\LocalState\DiagOutputDir
User Settings %LOCALAPPDATA%\Packages\Microsoft.DesktopAppInstaller_8wekyb3d8bbwe\LocalState\settings.json
Portable Links Directory (User) %LOCALAPPDATA%\Microsoft\WinGet\Links
Portable Links Directory (Machine) C:\Program Files\WinGet\Links
Portable Package Root (User) %LOCALAPPDATA%\Microsoft\WinGet\Packages
Portable Package Root C:\Program Files\WinGet\Packages
Portable Package Root (x86) C:\Program Files (x86)\WinGet\Packages
Installer Downloads %USERPROFILE%\Downloads
Configuration Modules %LOCALAPPDATA%\Microsoft\WinGet\Configuration\Modules

Links
-----
Privacy Statement https://aka.ms/winget-privacy
License Agreement https://aka.ms/winget-license
Third Party Notices https://aka.ms/winget-3rdPartyNotice
Homepage https://aka.ms/winget
Windows Store Terms https://www.microsoft.com/en-us/storedocs/terms-of-sale

Admin Setting State
-----
LocalManifestFiles Disabled
BypassCertificatePinningForMicrosoftStore Disabled
InstallerHashOverride Disabled
LocalArchiveMalwareScanOverride Disabled
ProxyCommandLineOptions Disabled
DefaultProxy Disabled

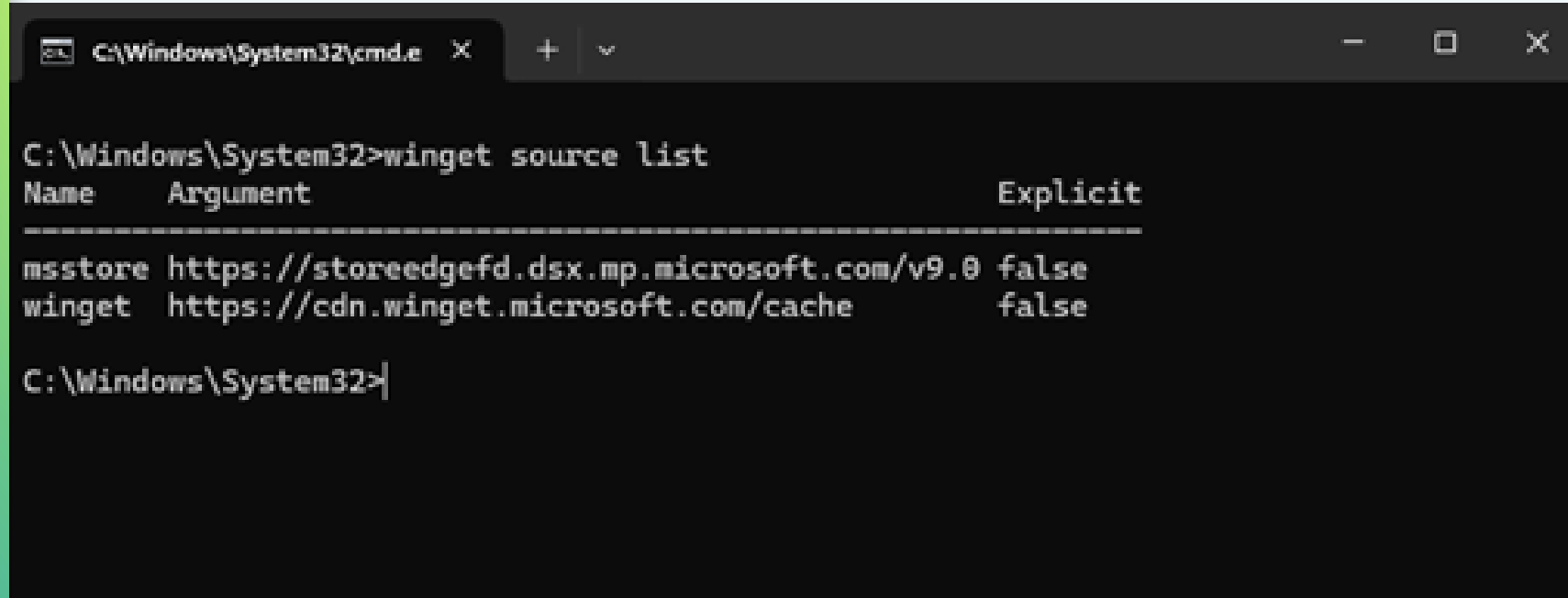
C:\Windows\System32>
```

# View WinGet sources

## winget source list

### Use this command to:

- ✓ List and manage sources for Windows Package Manager.
- ✓ Add, remove, update, reset, or export repositories.



```
C:\Windows\System32\cmd.e x + v - □ X  
C:\Windows\System32>winget source list  
Name      Argument                                     Explicit  
-----  
msstore   https://storeedgefd.dsx.mp.microsoft.com/v9.0 false  
winget    https://cdn.winget.microsoft.com/cache      false  
C:\Windows\System32>
```

# List WinGet apps on PC

## winget list

### ✓ Use this command to:

- Manage all applications, regardless of whether they were first installed with WinGet.
- Lists all installed applications on your computer.

### ✓ What it shows:

- App names
- Installed versions
- Source information (whether a package manifest exists in WinGet's sources)

```

C:\Windows\System32\cmd.exe X + 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_x64__8... 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 upgrades available.

C:\Windows\System32>
```

# Upgrade all applications

```
winget upgrade --all
```

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

```
Administrator: Windows Powe
(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:\>
```

# What is SCCM?

**Microsoft System Center Configuration Manager (SCCM) is used to:**

- Install and manage applications
- Package apps and deliver from a centralized location.
- Detect installed apps and define management rules.
- Define policies for initial deployment and maintenance windows.



# SCCM and Nerdio Manager

- **Validate account permissions** for each scenario.
- **Prepare the environment:**
  - **Create** a private repository
  - **Configure** the Azure Arc agent:
    - ✓ Connect directly to the SCCM primary site server itself
    - ✓ Use a proxy VM with direct line-of-sight access to the SCCM primary site server
- **Link the SCCM server or a proxy VM** in Nerdio Manager.
- **Import SCCM applications** into Nerdio Manager.
- **Deploy applications** to session hosts.

# What is App Attach?

- Microsoft technology for attaching app packages to the OS.
- Provides independent management of the app and OS.
- Two versions available: MSIX app attach and App Attach v2.

# MSIX App Attach and App Attach (v2)

## MSIX App Attach

- Permissions are controlled by assignment to application groups.
- All desktop users see all MSIX applications.
- Applications run only on the host pool where they're added.
- Applications must be deleted and recreated to update.
- Users can't run two versions of the same application on the same session host.
- Telemetry is not available through Azure Log Analytics.

## App Attach (v2)

- Permissions are applied per application per use.
- Desktop users see only the App Attach applications assigned to them.
- The same application package can be used across multiple host pools.
- Applications run on session hosts in the same Azure region as the package.
- Applications can be upgraded without the need for a maintenance window.
- Two versions of the same application can run on the same session host.
- Telemetry is available through Azure Log Analytics.

# App Attach: Requirements



## Certificates

- MSIX packages require a valid code-signing certificate.
- **Options:**
  - Trusted code signing certificate
  - PKI
  - Self-signed certificate



## Storage

- Application packages are stored on an SMB file share.
- File share permissions required for users and session hosts.
- Use VHD/X or CimFS package format.



## Session hosts

- Support for Entra hybrid joined session hosts.
- Support for Entra ID joined session hosts.
- Entra Domain Services is not supported.



## Applications




- Native application support:
  - .msix
  - .appx
  - .appv
- Microsoft partner App Attach applications are available.
- Packages stored in a linked resource group.

# What are Shell Apps?

- Enable the creation of complex scripted deployments through policies.
- Can deploy multiple components via PowerShell.
- Can use the detection script feature to send success and failure status.
- In most cases, used in large deployments or where WinGet is not practical.
- Native PowerShell scripts: WinGet CAN be called as part of the installation.

# Shell Apps: Detect

## ADD SHELL APP

- General
- Detect**
- Install 
- Uninstall 
- Versions 

Configure custom script to detect whether application is installed on the host or not.

```
1 $basePath = 'C:\Program Files'
2 $programFolderName = 'VLC'
3 $programFolderPath = Join-Path $basePath $programFolderName
4
5 $programFolderExists = Test-Path $programFolderPath
6 if (!$programFolderExists) {
7     return $false
8 }
9
10 # $programFileName = 'app.txt'
11 # $programFileFullPath = Join-Path $programFolderPath $programFileName
12
13 # Requesting only folder path for testing
14 # return Test-Path $programFileFullPath
15
16 return Test-Path $programFolderPath
```

Script status: healthy ^


No secure variables detected ⓘ

Snippets ▾

Close Create

# Shell Apps: Install

### ADD SHELL APP

- General
- Detect
- Install**
- Uninstall 
- Versions



Configure custom script to install the application.

```
1 # Define the download URL for VLC Player
2 $vlcDownloadUrl = "https://download.videolan.org/videoan/vlc/3.0.20/win64/vlc-3.0.20-wi
3
4 # Define the installation path (you can modify it as needed)
5 $installPath = "C:\Program Files\VLC"
6
7 # Create a temporary directory for downloading the installer
8 $tempDir = "C:\Windows\Temp\VLC"
9
10 #create temp dir
11 New-Item -Path "C:\Windows\Temp" -Name "VLC" -ItemType Directory
12
13 # Download VLC installer
14 Invoke-WebRequest -Uri $vlcDownloadUrl -OutFile "vlc-3.0.20-win64.msi"
15
16 # Install VLC Player
17 Start-Process msixec.exe -Wait -ArgumentList "/i C:\Windows\Temp\VLC\vlc-3.0.20-win64.m
18
19 # Clean up temporary directory
20 Remove-Item -Path $tempDir -Force -Recurse
21
22 Write-Host "VLC Player has been installed successfully."
```

Script status: **healthy** ▾

Applied to 1 version ▾

Snippets ▲

- `$Context.Log("")` - write log message.
- `$Context.TargetVersion` - get target app version configured in policy.
- `$Context.DetectedVersion` - get version name returned by detection script.
- `$Context.Versions` - get list of all known versions.
- `$Context.GetAttachedBinary()` - get absolute path to downloaded attached file. 
- Parameterization - inject secure variables as script parameters. 

Close Create

# Shell Apps: Uninstall

### ADD SHELL APP

- General
- Detect
- Install
- Uninstall**
- Versions

Configure custom script to uninstall the application.

```
1 # Define the uninstaller path (modify if needed)
2 $uninstallerPath = "C:\Program Files\VLC"
3
4 # Check if VLC Player is installed
5 if (Test-Path $uninstallerPath) {
6     # Uninstall VLC Player
7     Start-Process -FilePath $uninstallerPath -ArgumentList "/S" -Wait
8
9     Write-Host "VLC Player has been uninstalled successfully."
10 } else {
11     Write-Host "VLC Player is not installed on this system."
12 }
```

Script status: healthy ▾

Snippets ▾

Close Create

# Shell Apps: Version

ADD SHELL APP

General

Detect

Install

Uninstall

**Versions**

SELECT VERSION

Add new Delete current

GENERAL

Name: \*

Preview ⓘ

Unzip ⓘ

FILE ⓘ  No

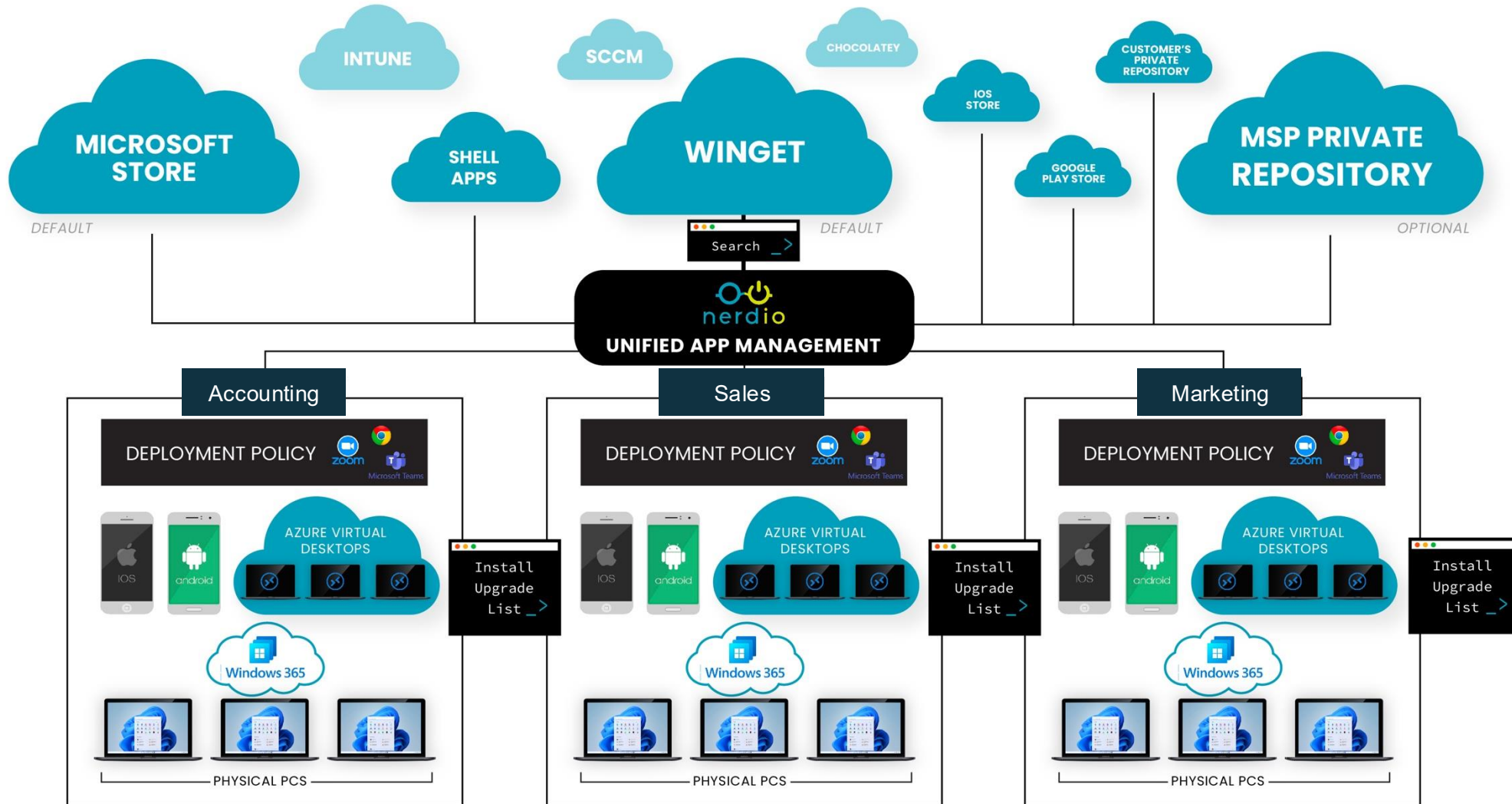
OVERRIDE INSTALL  No

Close Create

# What is Intune application import?

- Extract and Import applications from Intune.
- Import existing Intune Win32 and LOB applications into the Nerdio Unified Catalog.
- Deploy imported applications as Shell Apps.

# Unified Catalog



# UAM Intune app delivery

DEPLOYMENT POLICIES 🔍 Search... ☆

STATUS <span>🕒</span>	NAME <span>⬆</span>	APPLICATIONS	TARGETS	LAST RUN	RESULT	
<span>●</span>	Test	📄 Foxit PDF Reader [latest]	1 device group	Apr 17, 2025 12:19 PM	1 <span>🕒</span>	<span>Edit</span> <span>⌵</span>

Remediations Platform scripts

+ Add 🔄 Refresh ↓ Export ☰ Columns ⌵

🔍 Search 🕒 🔍 Add filters

Script name	Platform	Assigned	Script type
<a href="#">INSTALL-SCRIPT-6581c9af400c4ecea5821bb8238ea936</a>	Windows	Yes	PowerShell script

DEPLOYMENT STATUS BETA 🔍

SEARCH 🔍 FILTER BY POLICY TYPE Any × ⌵ FILTER BY SCOPE Any × ⌵ DEVICE STATUS Any × ⌵ ACT

DEVICE <span>⬆</span> <span>🕒</span>	POLICY <span>⬆</span> <span>🕒</span>	APPLICATIONS <span>🕒</span>	STATUS <span>⬆</span> <span>🕒</span>
entEntraID-d8bf	Test: (Intune)	🕒 📄 Foxit PDF Reader [2024.4.0.27683]	🕒 PENDING Last update: 7 minutes ago



# Let's see it in action!

*Image lifecycle management*

## Environment credentials:

**Username:** `firstname.lastname@nerdiouniversity.net`

**Password:** `N3rdi@2026`

# Nerdio Manager for Enterprise: Lab

See the lab guide for detailed steps.



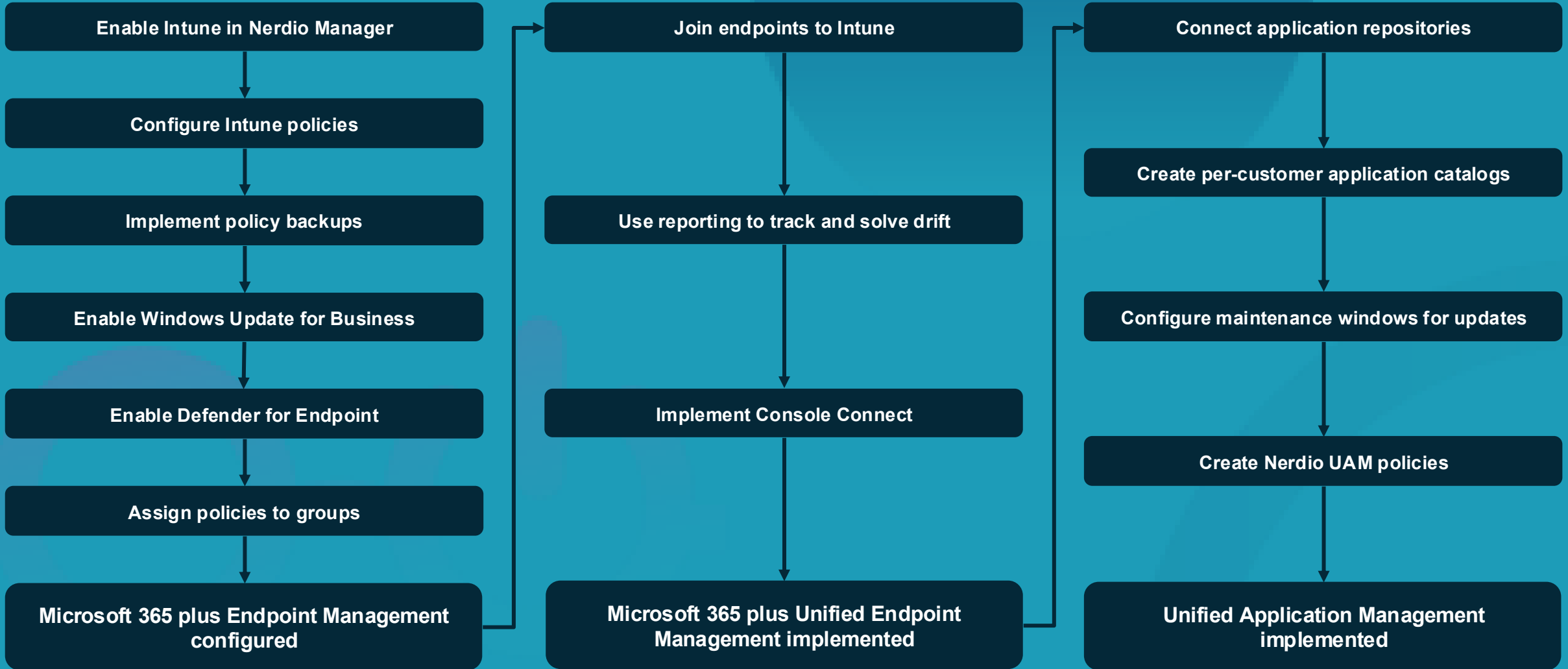
## Unified Application Management

- ✓ Create a deployment policy



# Endpoint Adoption and Management Framework

Enterprise





# Scope for DaaS solutions

Nerdio Manager for Enterprise



# Why Daas?

IT priorities are shifting as we move to a new era for innovation. Information provided by Gartner.



## Digital transformation

**95%**

of new initiatives will be cloud-native by 2026.



## Distributed workforces

**39%**

of global knowledge workers will work in hybrid environments.



## Economic pressures

**45%**

of all IT spend will be on cloud by 2026.



## AI-mania

**71%**

of companies say they are already using AI.

**Unrelenting security threats**

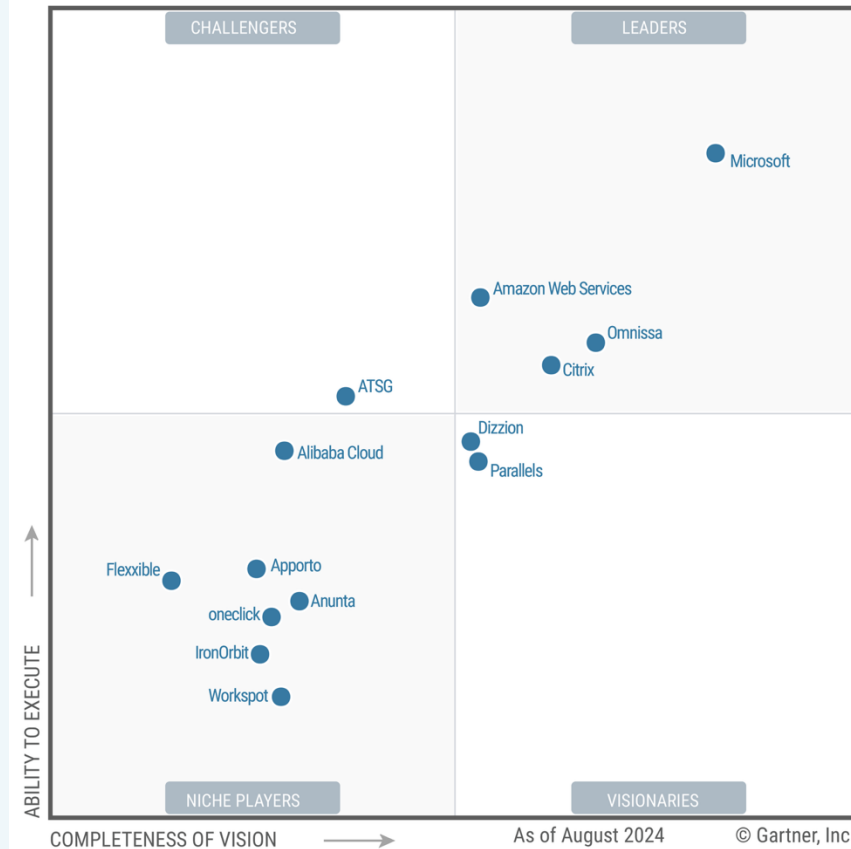
# Gartner Magic Quadrant for DaaS

Microsoft has been named a Leader in the 2024 Gartner® Magic Quadrant™ for desktop as a service (DaaS) for the second consecutive year.

Windows 365, Azure Virtual Desktop, and Microsoft Dev Box provide a full range of solutions for businesses of all sizes that are scalable, flexible, and secure:

- Seamless integration with Windows, Microsoft Intune, Microsoft 365, and Azure.
- Comprehensive security, adaptable policy frameworks, and reliable compliance measures.
- Costs optimized while ensuring employees easy, personalized access to Windows in the cloud.

Figure 1: Magic Quadrant for Desktop as a Service



Gartner.

# Azure Virtual Desktop

Azure Virtual Desktop enables a secured remote desktop experience from anywhere.

## Deploy and manage virtualized Windows desktops and apps in the cloud:

- **Virtual Windows desktop** hosted in Azure.
- Allows users to securely stream their **personalized Windows experience** (apps, data, and settings) to any device, including Windows, Mac, iPad, Android, or even a web browser.

### **Flexible:**

- Access Windows 11 and Windows 10 from anywhere.

### **Controlled:**

- Maintain full control over configuration and management.

### **Backed by industry- leading features:**

- Get the security and reliability of Microsoft Azure.

### **Efficient and transparent:**

- Optimize cost with pooled VMs and multi-sessions.
- Pay only for what you use with metering.

# Windows 365

Windows 365 provides a **personalized, powerful, simple, and secured** full Windows 11 or Windows 10 experience.

## Windows 365 is a cloud-based service from Microsoft that provides Cloud PCs:

- **Virtual Windows desktop** hosted by Microsoft on customers' behalf.
- Allows users to securely stream their **personalized Windows experience** (apps, data, and settings) to any device, including Windows, Mac, iPad, Android, or even a web browser.

### **Personalized:**

- All your apps, content, and settings, streamed from the Microsoft cloud to any device.

### **Powerful:**

- Scalable Cloud PCs bring the Windows 11 or Windows 10 experience to you, on any device.

### **Simple:**

- Provision and deploy Windows on a Cloud PC today, right from Microsoft Intune or at [windows365.microsoft.com](https://windows365.microsoft.com).

### **Secured:**

- Enhancing the security benefits of Cloud PCs with new Windows 11 and Windows 10 security features.

# Azure Virtual Desktop or Windows 365

Which is the best fit for your use case?

## Azure Virtual Desktop:

- **A cloud VDI platform** that delivers hosted desktops and apps with maximum flexibility and control.
- **Optimized for flexibility and control:**
  - ✓ Windows 11, Windows 10, single- or multi-session, Windows Server
  - ✓ Azure portal
  - ✓ PaaS: Granular controls over configuration and management
  - ✓ Consumption-based pricing
  - ✓ Rich app and desktop remoting experience
  - ✓ Windows App, HTML5, thin clients

## Windows 365:

- **A complete Software as a Service (SaaS) solution** that securely streams your personalized Windows desktop, apps, settings, and content from the Microsoft Cloud to any device.
- **Optimized for simplicity and experience:**
  - ✓ Windows 11 or Windows 10 single session
  - ✓ Intune admin portal
  - ✓ SaaS: complete end-to-end Microsoft service
  - ✓ Predictable per user, per month pricing
  - ✓ Rich app and desktop remoting experience
    - Self-service actions (restart, restore, reset, and troubleshoot)
  - ✓ Windows App, HTML5, thin clients, Windows 365 link



# Configure and manage Windows 365

Nerdio Manager for Enterprise

# Windows 365

**Windows 365** is a cloud-based SaaS service that automatically creates Cloud PCs for your end users.

## It provides:

- ✓ Remote desktop hosted by Microsoft
- ✓ Intune management
- ✓ Per-user licensing

# Windows 365 licenses

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

# Windows 365

## Overview

### Licensed per user:

- 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.

### Intune Management:

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

### Custom Image:

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

# Windows 365 with Nerdio Manager

Extend your management of Windows 365 and Intune with Nerdio Manager:



- **Manage** network connections and provisioning policies.
- **Create, update, and manage** the lifecycle of Windows 365 images.
- **Create, modify, backup/restore, and track** changes to Intune policies over time.
- **Monitor** device performance and compliance with advanced reporting.
- **Create** granular RBAC roles for endpoint management.
- **Migrate** AVD personal hosts to Windows 365 Cloud PCs.

# Network connections

A **Windows 365 network connection** allows Cloud PCs to connect to network-based resources.

**There are two types of network connections:**

- ✓ Microsoft Entra join
- ✓ Hybrid Microsoft Entra join:
  - Requires connectivity to an Active Directory Domain Services (AD DS) domain.

### CREATE NETWORK CONNECTION

**NAME**

Network type

Hybrid Entra ID join | ▾

Resource Group for cloud PC network cards

NME-Resources ▾

Network

NME-Infra/Sub3-EastUS-Vnet/hp-Subnet (East US) ▾

Available IP addresses: 250 (1 of 251 used)

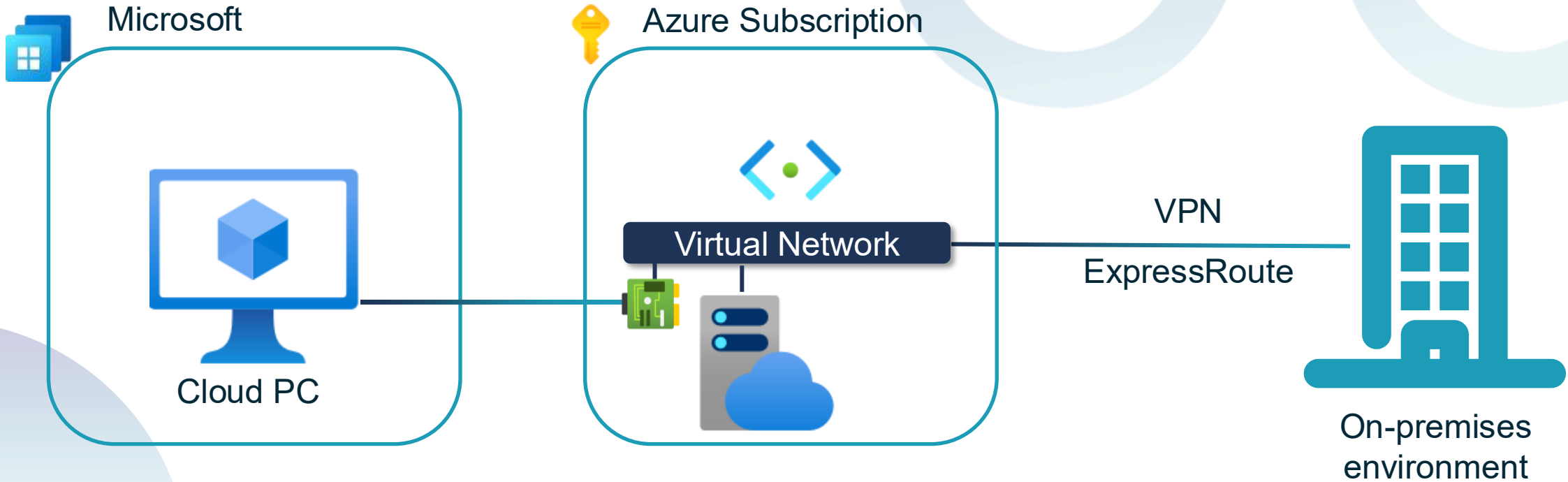
Active Directory

AD NerdioUniversity ▾

Cancel OK

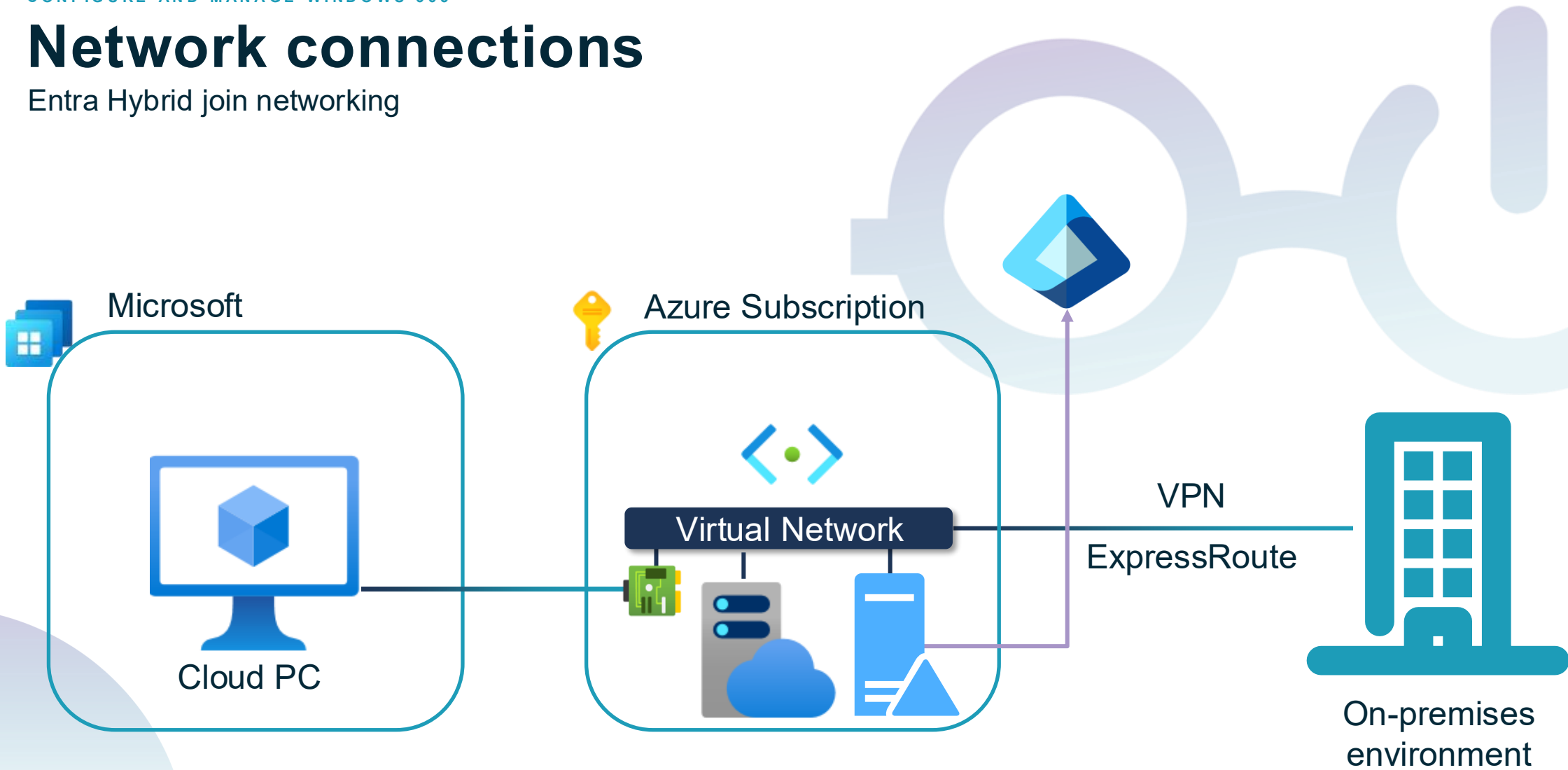
# Network connections

Private network connectivity



# Network connections

Entra Hybrid join networking



# Provisioning policies

A provisioning policy in Windows 365 is the configuration that defines how Cloud PCs are created and assigned to users.

## Simplified deployment

Automates Cloud PC setup for specific groups or departments.

## Consistency

Ensures uniform configurations across all Cloud PCs.

## Flexibility

Supports various license types, images, and networks to meet diverse organizational needs.

## Scalability

Facilitates large-scale deployments with minimal administrative effort.

# Provisioning policies

Streamline deployment process

- License type
- Cloud PC image
- Network connection
- User group assignments

CREATE PROVISIONING POLICY

Name  
Support-Team

Description  
Provisioning Policy for the Support Team w/ custom Image

License type  
Enterprise

Cloud PC image  
CloudPC-All\_30bbb2d4-1118-4962-a2e0-030ee699d8da (1.0.0)

Language & Region  
English (United States)

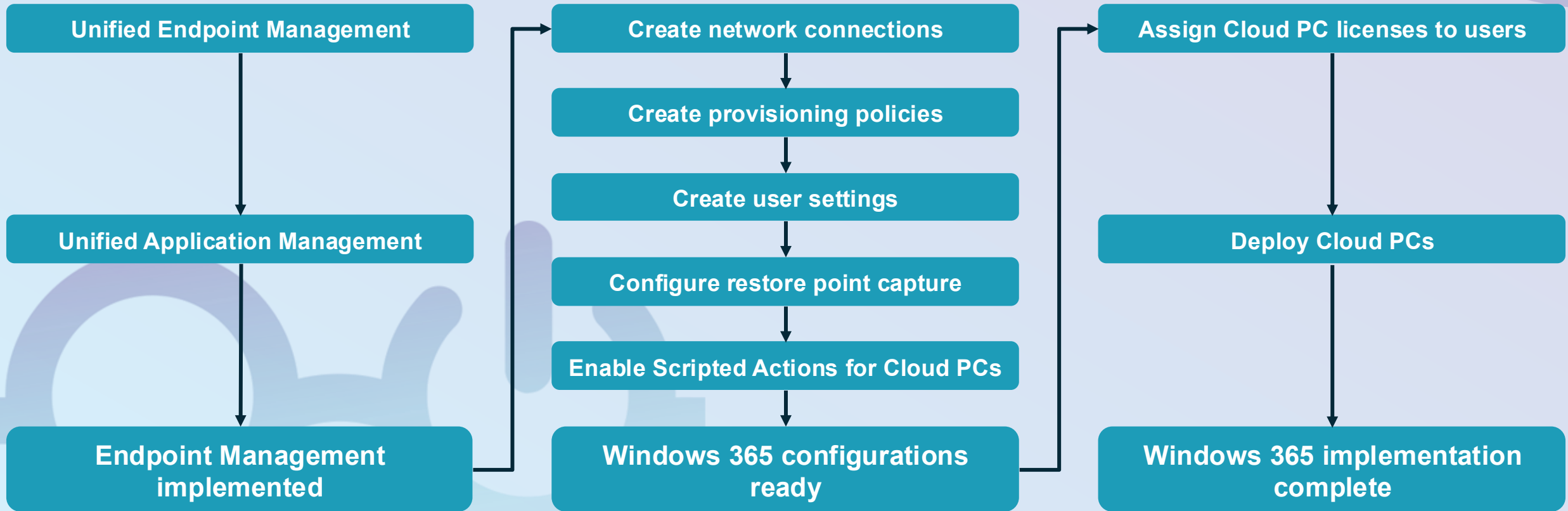
Network connection  
Support

Manual Entra ID group assignments  
Support Team

Cancel OK

# Windows 365 Adoption and Management Framework

Nerdio Manager for Enterprise





# Scripted Actions



Nerdio Manager for Enterprise



# Nerdio Manager Automation with Scripted Actions

Scripted Actions overview



## Intuitive interface

- Leverage Nerdio Manager simplified UI
- Clone, edit, create
- Single pane of management



## Scheduling

- Run on-demand
- Run during maintenance window(s)
  - Plan with time zone requirements in mind
- Pre- and post-maintenance checks



## Orchestration

- Build automation workflows
- Solve for dependencies
- Automate testing and integration



## Script library

- Utilize your existing scripts
- Take advantage of the pre-created scripts available in Nerdio Manager from day one

# Scripted Actions groups

- Collections of scripted actions.
  - Bundle scripts, installers, coded automations into department, locations, or use case scenarios
- Centrally manage bulk scripted action tasks.
- Assign as part of a standard deployment task.
- Runs in the order specified in the task list.
- Improves performance with multiple scripts.



# Scripted Actions Scope

## Azure runbooks:

- Run in the Azure environment
- Used to manage Azure infrastructure
- Leverage Azure Automation runbooks
- Azure runbooks scripted actions must be enabled for the account

## Windows scripts:

- Runs on a Windows virtual machine
- Used to manage Windows OS
- Leverages custom script extensions
- Windows scripts are enabled by default

# Enabling Azure runbooks

In Nerdio Manager:

- Navigate to **Settings > Environment**.
- On the **Nerdio** tab:
  - Expand **Azure Runbooks Scripted Actions**.
  - Turn the **Use Azure Automation Runbooks?** option on.

## Azure Runbooks Scripted Actions

Use Azure Automation Runbooks?

Enabling Azure runbooks Scripted Actions will create a new Azure Automation account. To enable this functionality you must be a Global Administrator and subscription Owner.

Automation Account Location

Central US

This task may take some time to run. Monitor progress in the tasks section.

Cancel

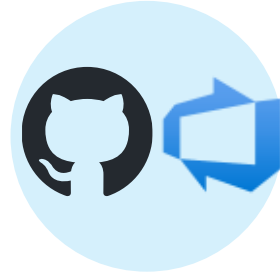
OK

# Scripted Actions repositories



## Nerdio GitHub

- Managed by Nerdio
- Read-only repository



## Link existing repos

- Premium feature in Nerdio Manager
- Supports:
  - GitHub
  - GitHub Enterprise
  - Azure DevOps
  - GitLab
  - GitLab Enterprise



## Nerdio database

- Nerdio database
- Default location for scripts

# Nerdio variables

## Variable:

- A storage location that represents a value.
- Represented in PowerShell as “***\$name***”.
- Makes code more efficient and reusable.
- Values can be changed without modifying the underlying code.

## Secure variables:

- Use Azure Key Vault to store secure elements such as API keys and passwords.
- Are used in scripts instead of being added in clear text.
- Never store sensitive information in code.
- Are one location to update if a value changes.

# Azure Files



Nerdio Manager for Enterprise

# Azure file storage options

Select the best location for Windows file storage in Azure.



## File Server

- High management overhead.
- Performance based on VM and disk size.



## Azure Files Premium

- Is recommended for most use cases.
- Manage with Nerdio Manager.



## Azure NetApp Files

- Offers high-performance and replication across Azure regions.
- Manage with Nerdio Manager.

# SMB file shares in Azure

## Why file shares in Azure?

- Reduced management overhead
- Decreased latency for file access
- Support for AD DS and cloud-native identities
- High availability with LRS and ZRS storage
- Azure-native backup and recovery solution



### FSLogix

Store FSLogix profiles close to users for decreased latency.



### App Attach

Provides storage location for App Attach packages.



### File Storage

Cloud-based file share with AD DS integration.

# Azure storage accounts

Storage configuration	Azure Files Standard PAYG	Azure Files Standard Provisioned V2	Azure Files Premium	Azure NetApp Files
<b>Billing model</b>	Space used	Capacity, IOPS, and throughput provisioned	Space provisioned	Space provisioned
<b>Max IOPS</b>	20,000	50,000	102,400	450,000
<b>Max IOPS per file</b>	1,000	1,000	8,000	Up to volume limit
<b>Throughput</b>	Ingress 3,200 MiB/s Egress 6,400 MiB/s	5,120 MiB/s	10 GiB/sec	10 GiB/s
<b>Max throughput per file</b>	60 MiB/s	60 MiB/s	1 GiB/s	Up to volume limit

# User experience settings for AVD

---

Nerdio Manager for Enterprise



# FSLogix

User profile portability



# Introduction to FSLogix

## What is FSLogix?

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



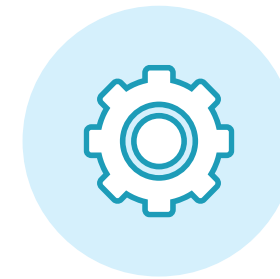
### Storage

Azure Files  
Azure NetApp Files  
File Server



### Agent / Application

Nerdio Manager automatically installs by default when a new session host is created.



### Configuration

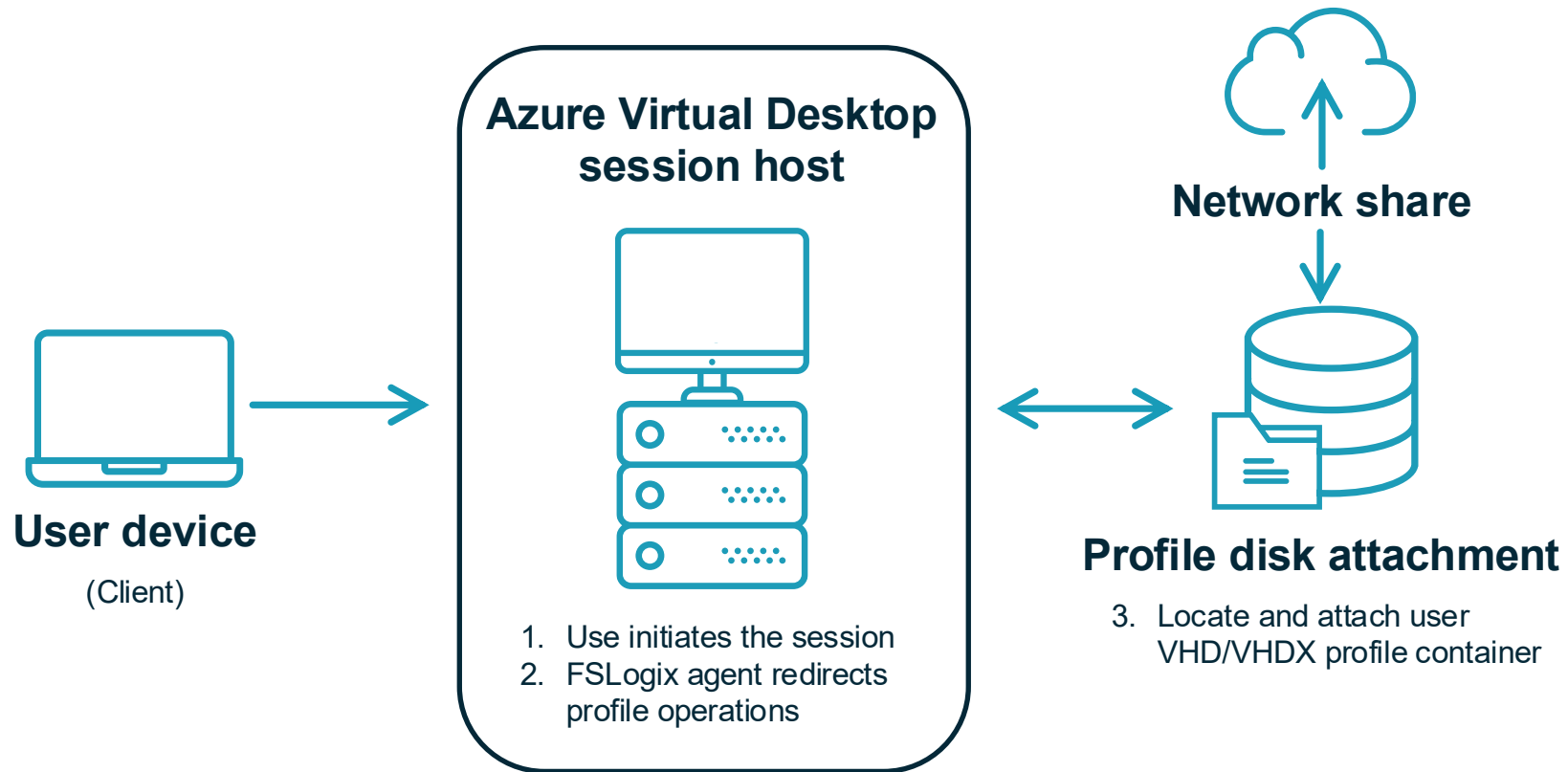
Create these profiles in Nerdio Manager and assign them to host pools for centralized management



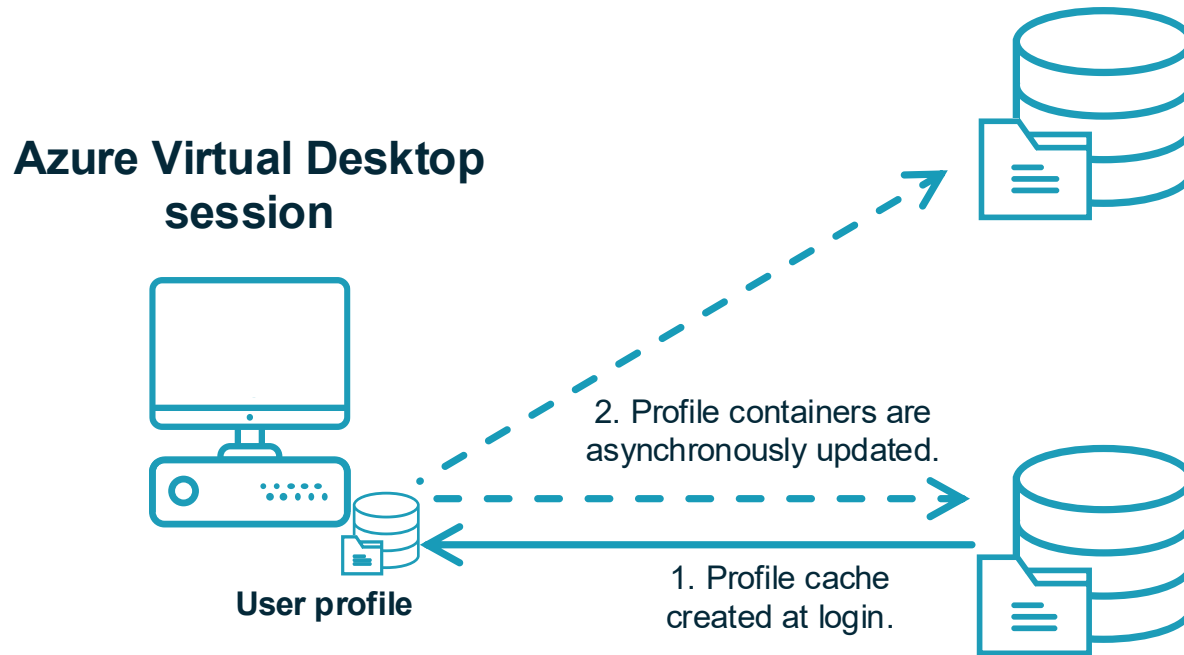
# FSLogix storage options

- **FSLogix with a file share:**
  - Use a file share to store the FSLogix profile.
- **FSLogix with Cloud Cache:**
  - Use a file share to cache user profiles on the local computer.
- **FSLogix ODFC container:**
  - Use an Office container for Microsoft 365 data.

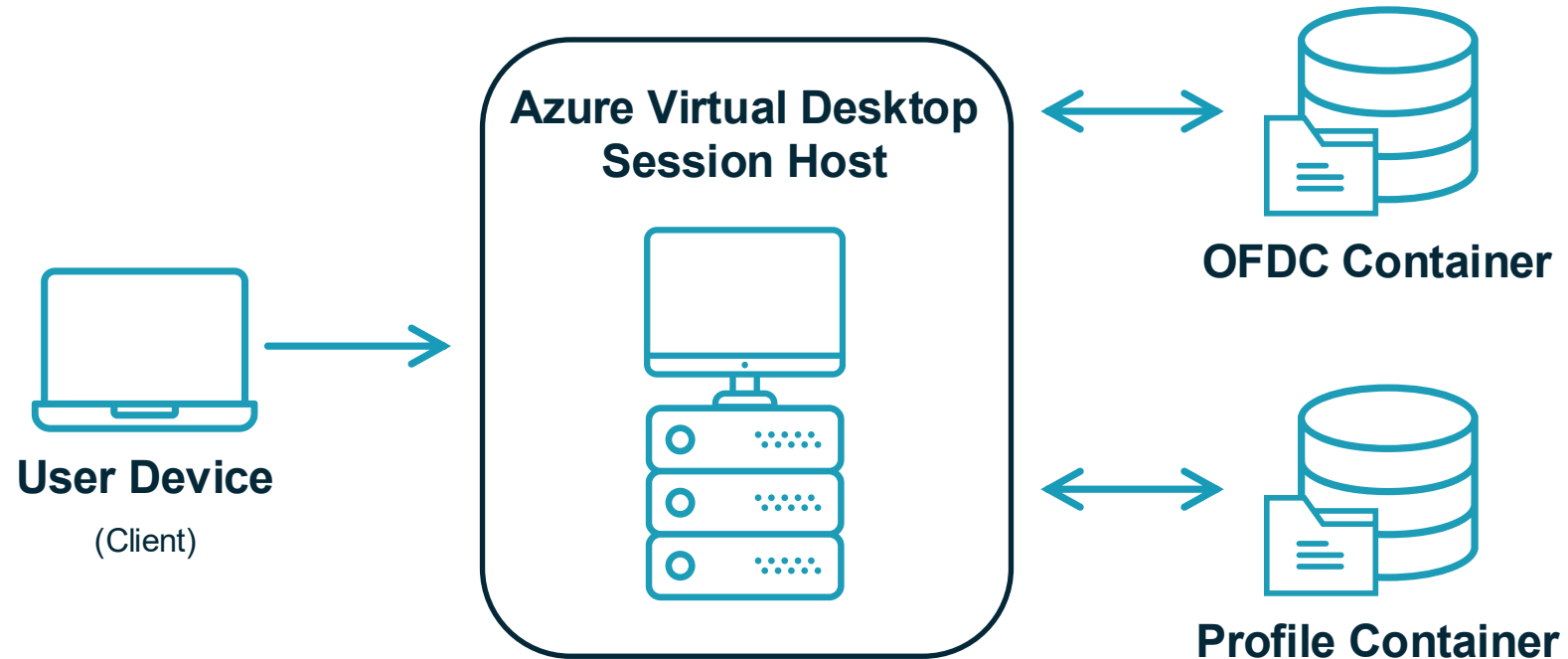
# FSLogix profile disk attachment



# FSLogix Cloud Cache



# FSLogix ODFS (Office) Container



# FSLogix profile storage

- Microsoft recommends Azure Files Premium storage.
- Azure NetApp Files is a high-performance alternative to Azure Files Premium.
- Azure Files Premium and Azure NetApp Files work with Nerdio Manager's Auto-scale.
- Nerdio Manager's Auto-scaling ensures there is always enough storage capacity and performance.
- Lower tiers of storage may cause errors in daily operations.



# FSLogix and Entra ID-joined session hosts

## **GA:** Windows AD requirement:

- FSLogix with Entra ID joined session hosts is supported.
- The user ID must be sourced from Windows AD and replicated to Entra ID.
- Alternatively, use Blob storage with Cloud Cache.

## **Preview:** Cloud-native identity with Azure Files: Entra-only secure access for the modern enterprise

- Use cloud-native user identities with Azure Files.
- No need for Windows AD!



# RDP settings



Customize the behavior of remote sessions



# Introduction to RDP profiles

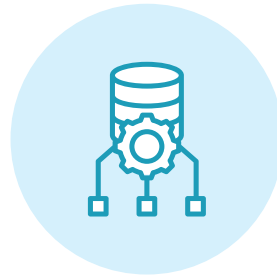
## What is an RDP profile?

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



### Configure

Create in the **Settings** menu, and then assign to host pools.



### Assign per host pool

You can also create them on a per-host pool basis.



### Centralize management

Centralize management and make changes from one location.

# 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.



# Building image source VMs

Nerdio Manager for Enterprise

# 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 multi-session hosts later.
- **Multi-session image:** Can be used for multi-session or single-session (personal hosts).

How many variants does the environment need?

Maintain an image for each variant type in the customer account.

# Items to avoid on images

Don't break Sysprep!



## 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 methods can cause Sysprep to fail.



## Image-incompatible 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 application installs

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

# Creating desktop images

Plan your strategy for image source virtual machines



## Identify the scope

- ✓ Can one desktop image solve for every session host?
- ✓ If not, how many desktop images do you need?
- ✓ Do you need a single-user or multi-user image?



## Plan for “before” and “after”

- ✓ Which applications must be included on the image?
- ✓ Which applications can be installed after host provisioning?
- ✓ *Can post-deployment app installs be automated?*



## Create the image source VM

- ✓ New from the Azure Marketplace.
- ✓ *Start fresh and create from an ideal default state.*
- ✓ New from existing Azure VM.
- ✓ *Import an existing VM to create images.*

# The image source VM is the engine

**NOT** the image itself!

## Image source VM

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

## Desktop image

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

## Automations

- Custom app installs
- Customizations
- Intune policies

# 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 <a href="#">Download App management logs</a> 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

[Close](#)

# Contacting Nerdio Support

Interact with Nerdio's Support team

## When to contact Nerdio's Support

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

## Contact methods

- [NME.support@getnerdio.com](mailto: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 displayed as "unavailable"
- Host deployment failures

# Workspaces, host pools, and session hosts

---

Nerdio Manager for Enterprise

# Overview: AVD workspaces

## 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.
- Session management is performed at the workspace level.

## How are they created?

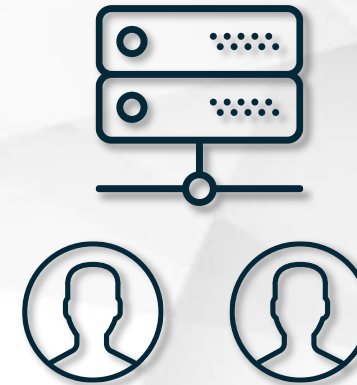
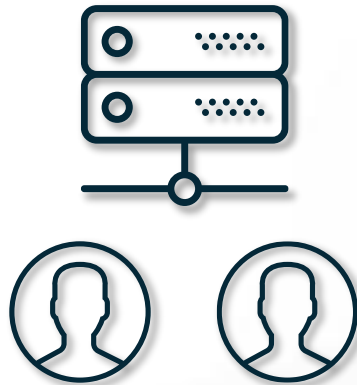
- Natively in Azure and linked to Nerdio Manager
- Alternatively, directly in Nerdio Manager

# Overview: AVD host pools

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

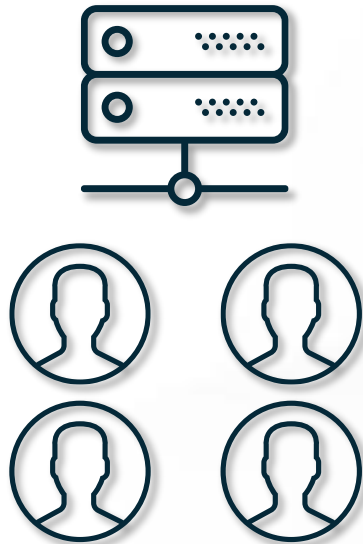
# Session hosts and load balancing

## Host pool plus breadth-first



# Session hosts and load balancing

## Host pool plus depth-first



# Host pool types

## Dynamic host pools

Contain a flexible number of session hosts

Compatible with Nerdio Manager's Auto-scale

If Auto-scale isn't configured, the pool will not  
scale in / out

## Static host pools

Contain a set number of hosts

Not compatible with Nerdio Manager's Auto-scale

Host pools from an existing environment appear as  
static pools (can be converted to dynamic)

# Implement automations

---

Nerdio Manager for Enterprise

# Set as Image

Considerations and best practices



## Update image

Install OS and crucial application updates on the image source VM



## Keep thin

Install on the image only what is crucial



## Be frugal

Keep the number of images to a minimum



## By default

New desktop image versions are set as active



## Stage image

When possible, stage the new image, allowing for testing



## VM clone

“Run the following scripted actions before...” operation happens on the clone, not the image source VM

# Stage desktop image: Considerations

## Stage as inactive

- A window to perform QA and testing.
- Always test changes before activation.

## Auto-activate after

- Schedule automatic activation after a set period.
  - Manual activation is always an option.
- Activated images update all associated host pools via:
  - Auto-scaling
  - Scheduled tasks

## Image version

- Older image versions are purged based on the selected configuration.
- Re-image existing session hosts with older versions based on your **Current Image Action** configuration.

# Image source VM update methodologies

## Via Scripted Actions

- Automated
- Leverages what you've already built

## Via Windows Update for Business

- Automated

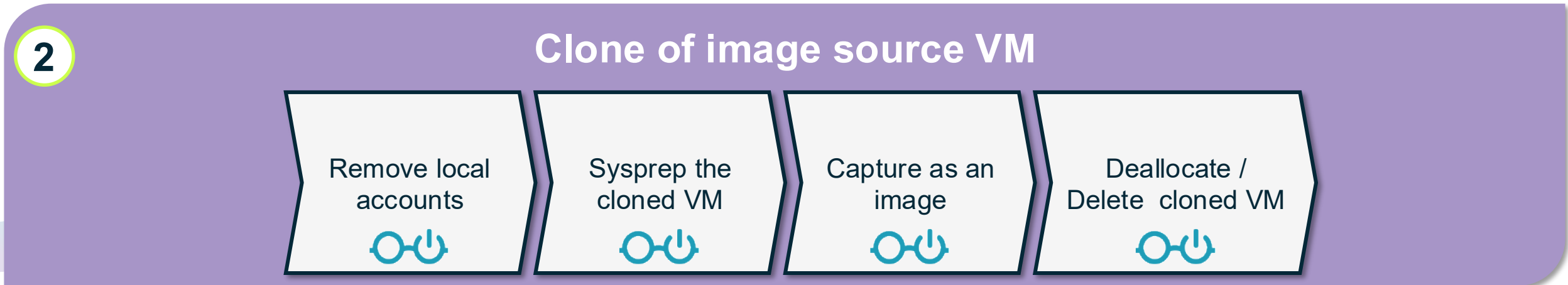
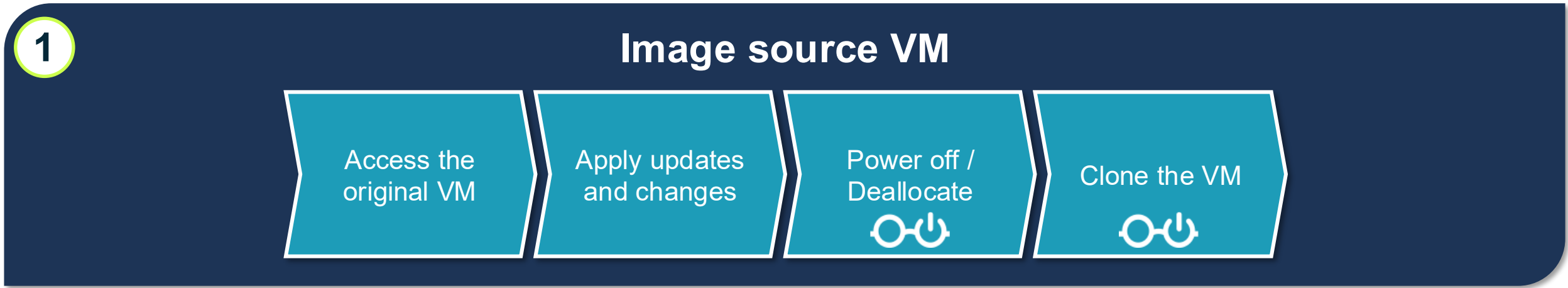
## Manually

*(Do this only if you must!)*

- Time-consuming
- Error-prone

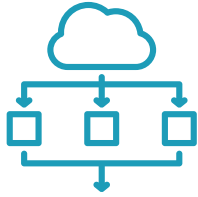
# Nerdio Manager image staging

The Nerdio logo indicates where the automation happens!



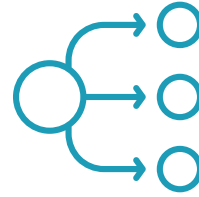
# Update the image source VM

Use Scripted Actions to automate updates



## Keep consistent

- Focus on outcomes rather than engineering
- Solve for consistency and compliance
- Repeat with simple sight into deployment



## Stage

- Stage new images
- Know the patching schedule, e.g., “Patch Tuesday”
- Test QC and LOB applications



## Activate

- Hands-on review or automatic
- Manual activation - dynamic environments
- Auto-activation - predictable environments

# Updating session hosts

---

# Updating AVD session hosts

**Session host 1**



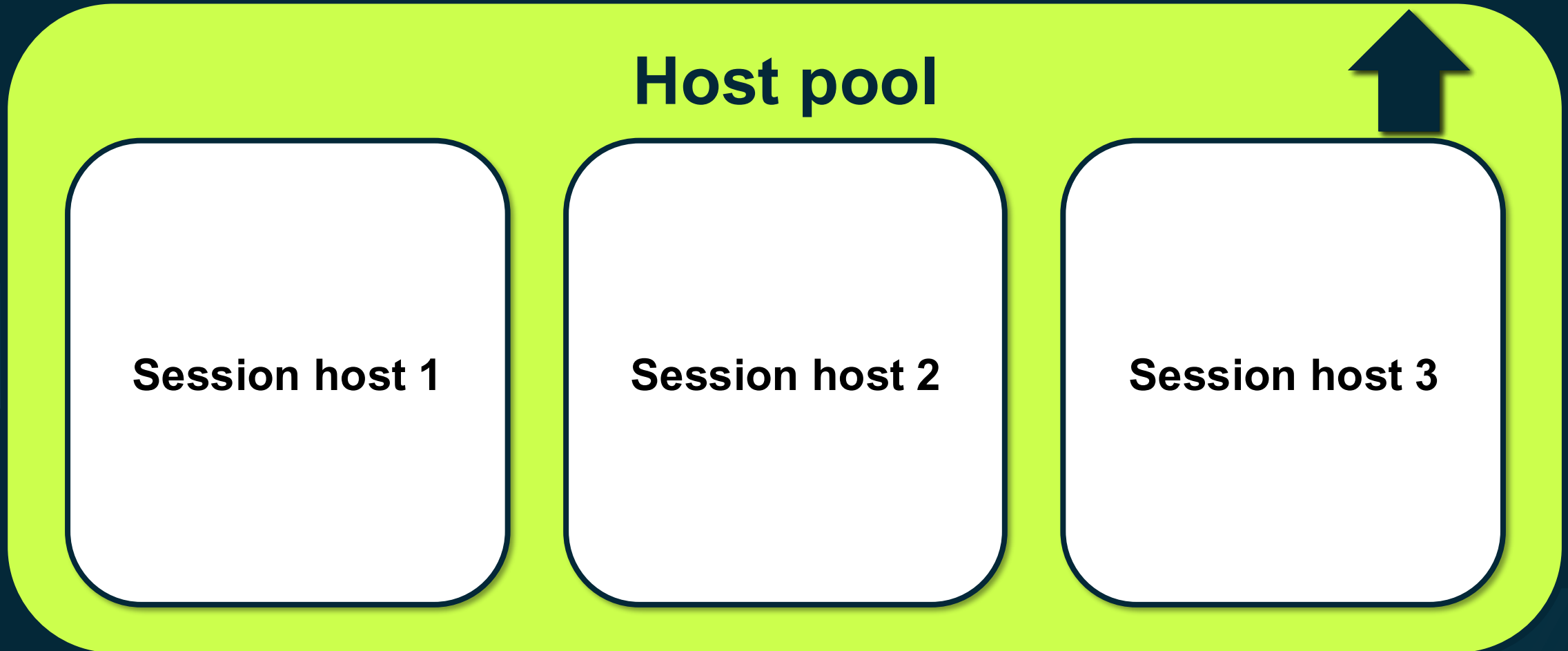
**Session host 2**



**Session host 3**



# Updating AVD session hosts

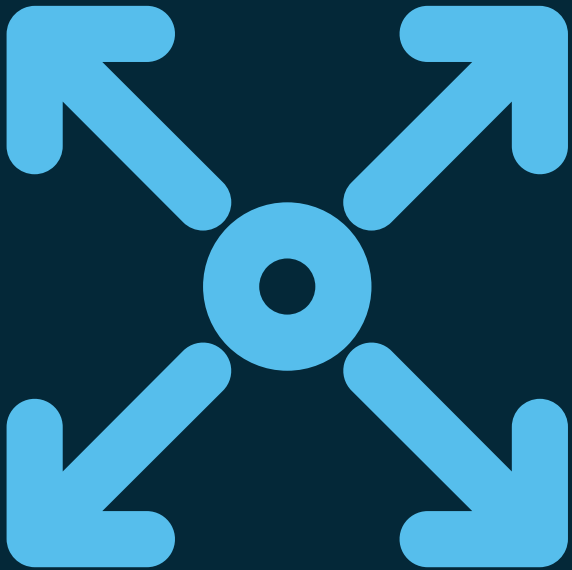


# Auto-scale for host pools

---

Simplify management and save costs with Nerdio Manager's Auto-scale.

# Why use Nerdio Manager's Auto-scale?



- **Reduce costs:**
  - Deallocate unused session hosts
  - Change disk type on deallocated session hosts
- **Automate resource scaling:**
  - Adjust capacity based on usage
  - Scale out to add capacity on demand
  - Apply advanced Auto-scale criteria
  - Create multiple schedules for weekends, holidays, and more
- **Automate host pools maintenance:**
  - Automate updating and re-imaging host pools
  - Automate recovery or rebuild of broken session hosts

# Auto-scale schedules

## Default schedule

### Defines daily auto-scale parameters:

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

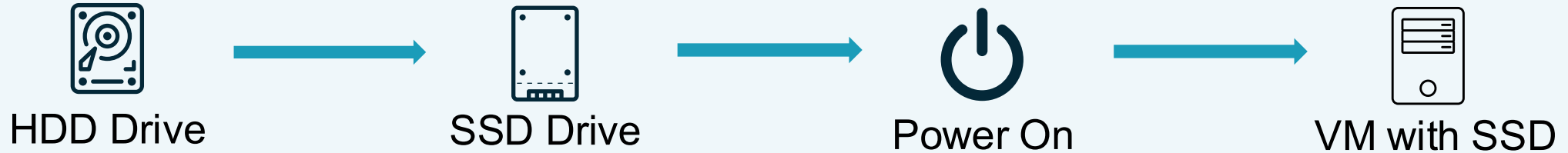
## Alternative schedule

### Overrides the default schedule to accommodate non-typical situations:

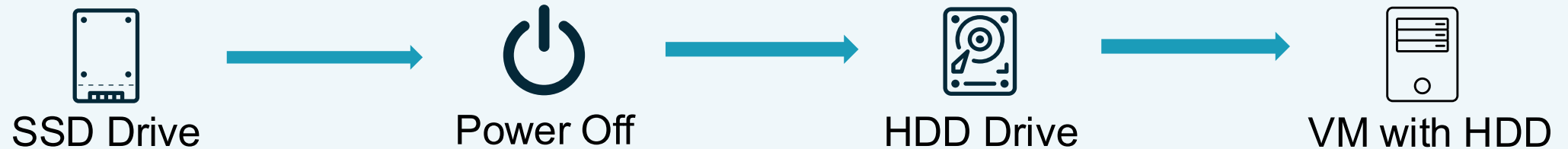
- Holidays or events with a decrease in AVD activity
- Increases in workload, such as seasonal work
- Any other pre-planned changes in activity

# Personal host pool disk Auto-scale

Nerdio Manager's power on:



Nerdio Manager's power off:



User-initiated start VM on connect:



# Configure host pool Auto-scale profiles

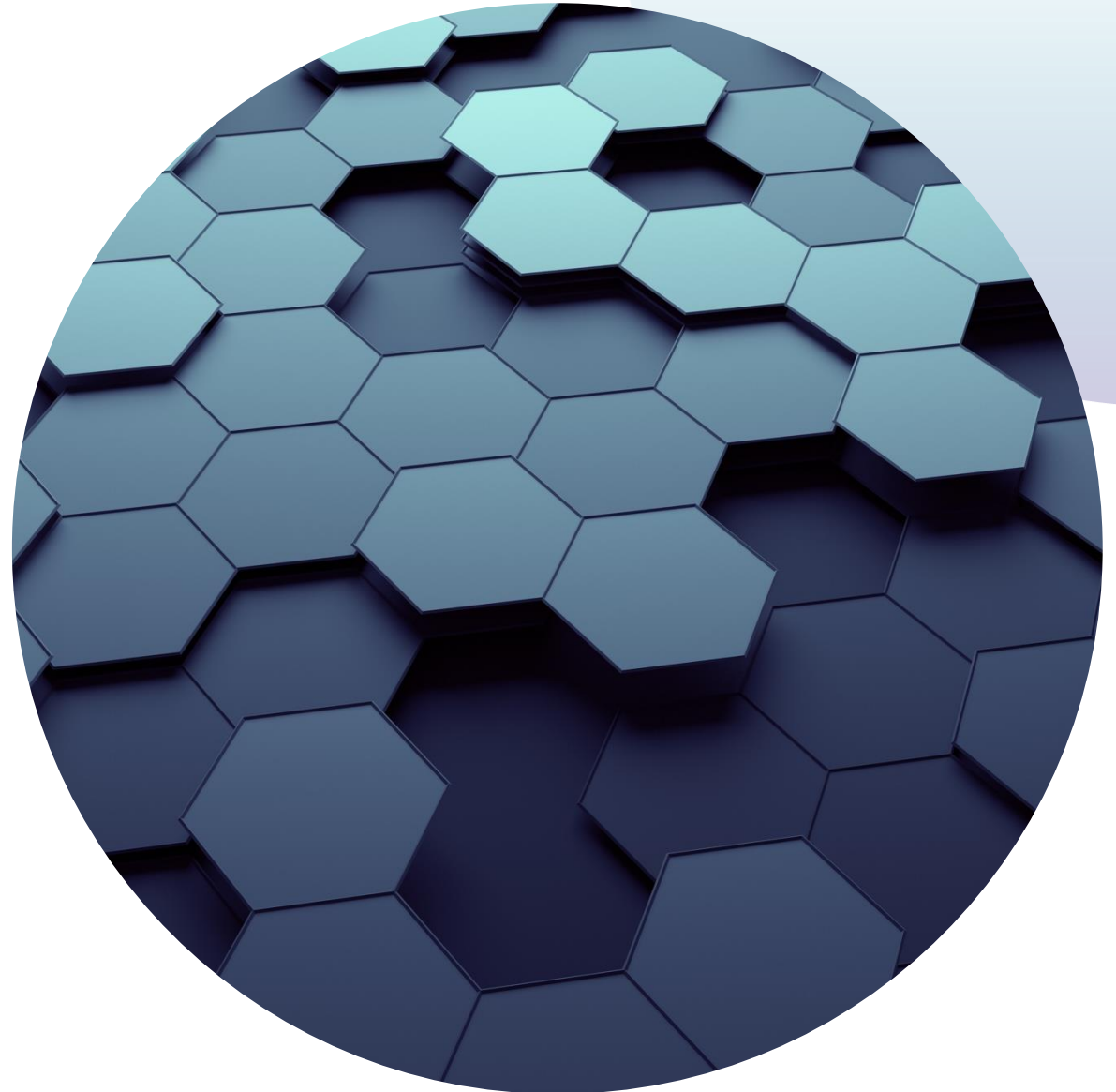
---

Configure and apply Nerdio Manager's Auto-scale profiles

# Auto-scale profiles

Auto-scale profiles offer a centralized way to configure and manage settings across multiple host pools.

- **Shared:** Used for a pooled host pool.
- **Schedule-based (personal):** Used to auto-scale personal host pools on a schedule.
- **User-driven (personal):** Used to auto-scale user personal host pools with no active or disconnected sessions.



# Overview of Auto-scale for Azure Files and Azure NetApp Files

---

Configure Azure Files Premium and Azure NetApp Files auto-scale for capacity and performance.

# Nerdio Manager Auto-scale for files

**Optimize your  
Microsoft Azure  
storage solutions**

- **Increase storage capacity when it matters**
  - Prevent over-utilization by allocating additional storage when needed.
- **Avoid unnecessary costs**
  - Avoid overspending by reducing unnecessary storage capacity.
  - Nerdio Auto-scale supports:
    - Azure Files (Premium only)
    - Azure NetApp Files (ANF)

# Azure Files Premium performance

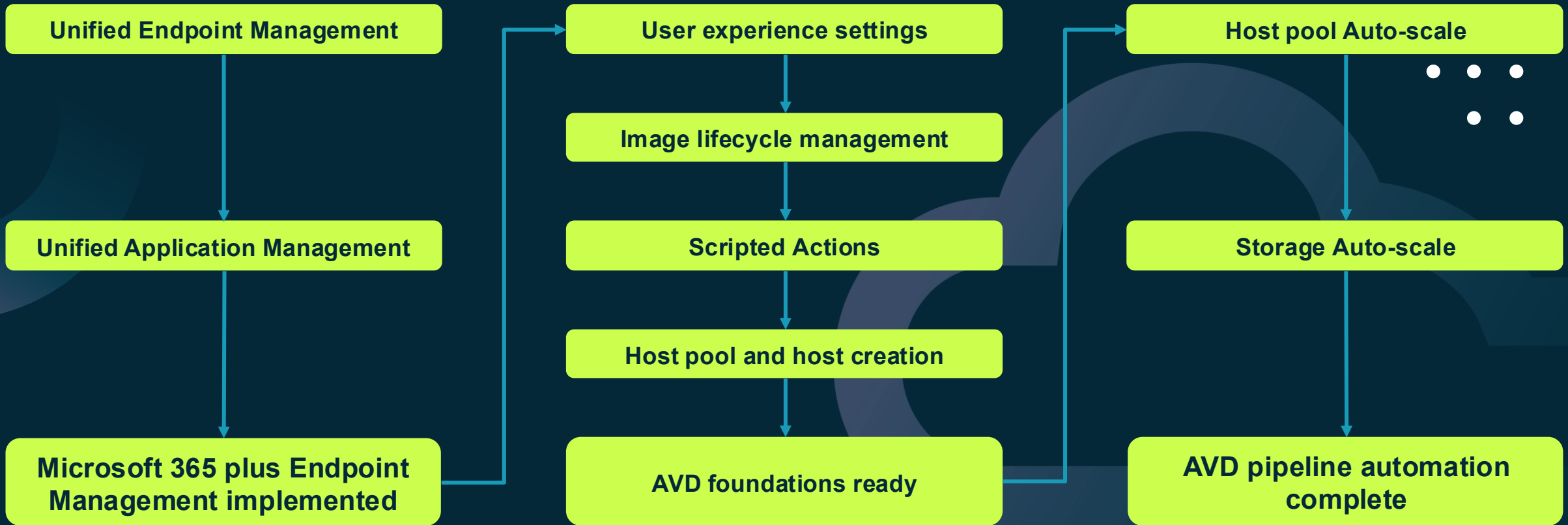
Consider both capacity and performance when sizing FSLogix storage:

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

Azure Premium file shares performance		
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

# AVD Adoption and Management Framework

Nerdio Manager for Enterprise





# Notifications in Nerdio Manager

---

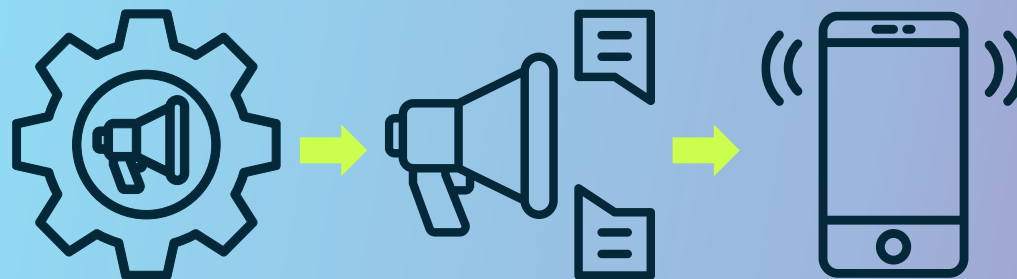
Enabling and creating useful notifications in your Azure environment using Nerdio Manager.

# Enabling notifications

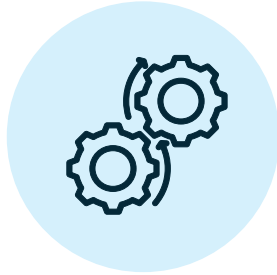
## Enable using:

- Microsoft 365 user account
- An existing SMTP server
- A webhook

## Flexible methods to meet your environment



# Nerdio Notifications



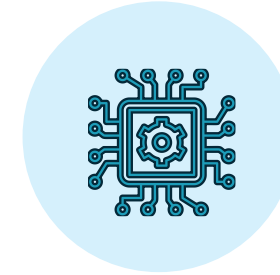
## Maintain

- Maintain existing workspaces, host pools, and hosts.
- Ensure new or updated resources are not impacting correctly working resources.



## Evolve

- Easily spot opportunities to improve or modify environment.
- Monitor newly implemented changes.



## Know

- Notifications for any Nerdio-managed infrastructure.
- Proactive and fast reaction.

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