Windows Virtual Desktop

WEWC1086 WVD Technical Deep Dive + Hands-on Workshop

Micha Wets - Microsoft MVP | Cloud.Architect | ASPEX | MC2MC | Technine
Bart Roels - Cloud Solution Architect | Microsoft

WEWC1086 WVD Technical Deep Dive + Hands-on Workshop

01/12/2020

Audience: Technical

Competency: Cloud Platform

Level: Advanced | Intermediate

Microsoft

WEWC1086 WVD Technical Deep Dive + Hands-on Workshop

During this Online Windows Virtual Desktop Event, you will learn all about how to technically set up your own Windows Virtual Desktop environment in a Lab environment, learn about FSLogix, MSIX App Attach, Azure DevOps, Mobile & Thin clients.

The training, conducted by Micha Wets (MVP WVD), is divided into 2 sessions: presentation and hands-on. Remember to register to both sessions to guarantee your seat and training completition.

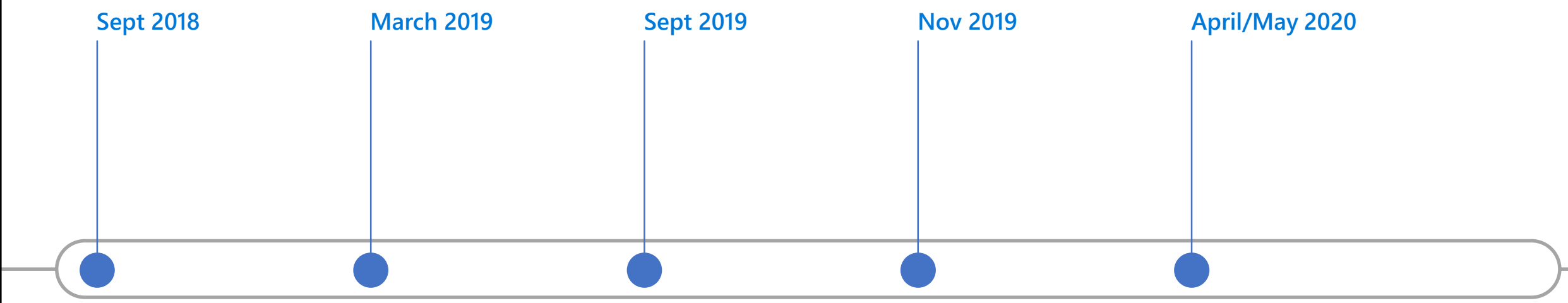
Agenda:
- Presentation-Led (2h):
Technical Deep Dive overview of Windows Virtual Desktop including the WVD, FSLogix, MSIX app attach, Azure DevOps, Azure Portal integration, Mobile & thin client support and much more.
- Break
- Proctor-Led Session:
Build your own WVD Lab environment using a step-by-step workshop and ask questions to the proctors.

During this proctor-led session you will get to build your own WVD Lab environment using a step-by-step workshop and ask questions to the proctors.

WEWC1086_1 WVD Technical Deep Dive	Tuesday, December 1, 2020 10:00 AM ~ 12:00 PM	Registration >
WEWC1086_2 WVD Technical Deep Dive	Tuesday, December 1, 2020 1:00 PM ~ 5:00 PM	Registration >

Cloud ARCHITECT

How did we get here?



Sept 2018

Ignite
Announcing WVD
Announcing Public Preview

March 2019

Ignite The Tour
WVD Public Preview

Sept 2019

GA
WVD (Fall edition) goes GA

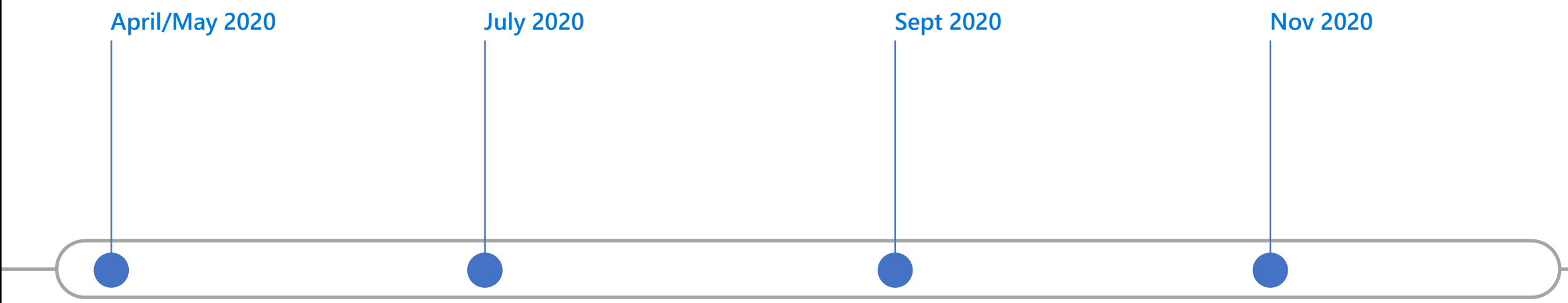
Nov 2019

Ignite
More service regions
MSIX Preview
Thin client support

April/May 2020

WVD Spring edition Preview
Azure Portal integration
Azure Files support native AD
Teams AV Redirection preview

How did we get here?



April/May 2020

WVD Spring edition Preview

Azure Portal integration
Azure Files support native AD
Teams AV Redirection preview

July 2020

WVD Spring edition GA

Azure Portal integration
Teams AV Redirection GA

Sept 2020

Ignite 2020 announcements

MSIX app attach portal integration
Start VM on Connect
Microsoft Endpoint Manager
HTML5 microphone redirection

Nov 2020

WVD Shortpath preview

UDP support for ER/S2S/P2S

Bart Roels

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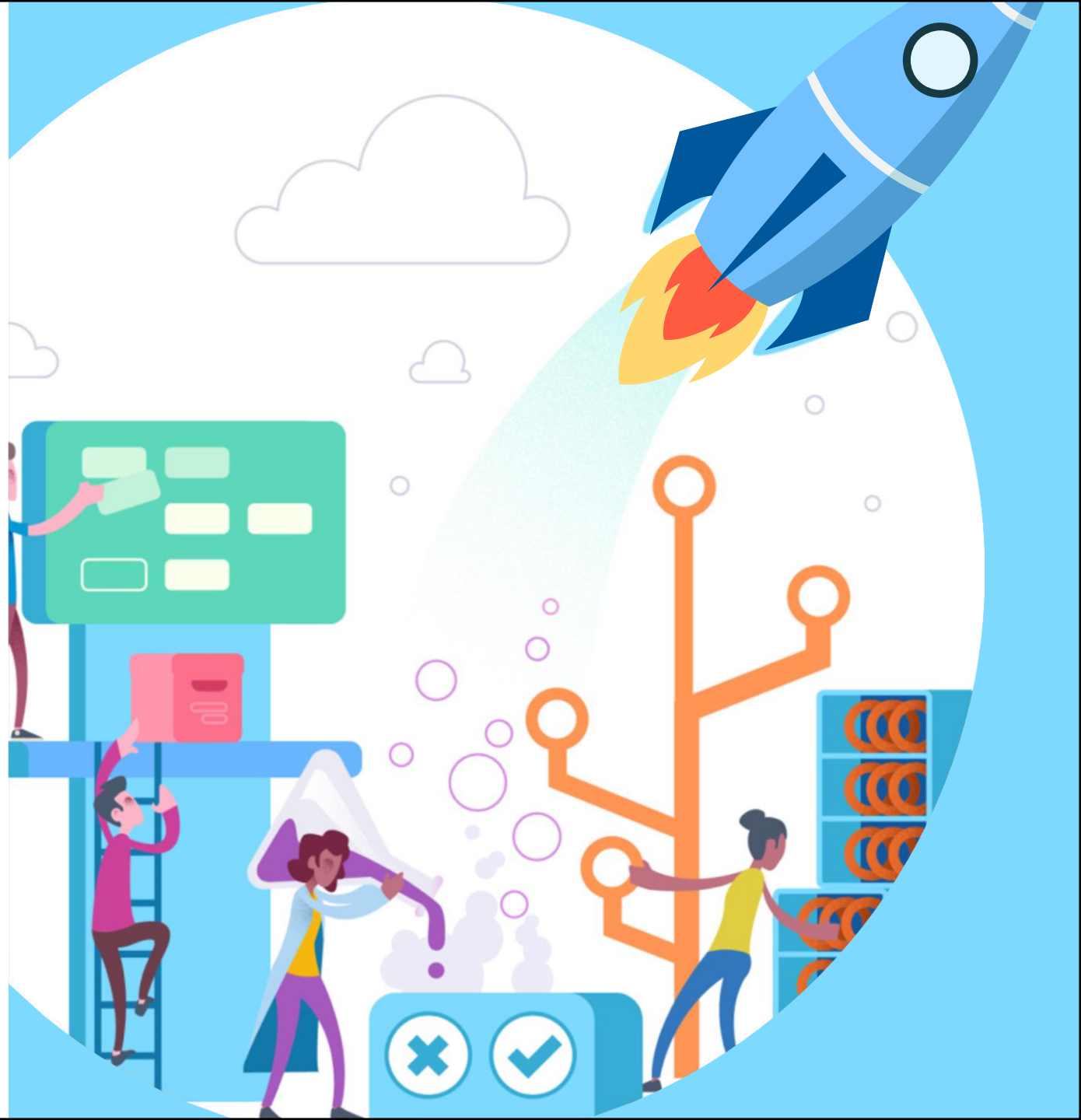
Microsoft



Micha Wets

Cloud Solution Architect
Cloud.Architect
Technology Strategist
ASPEX

Microsoft® MVP Most Valuable Professional

Windows Virtual Desktop
Remote Desktop Services

UserGroups:
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Technine (Technine.be)

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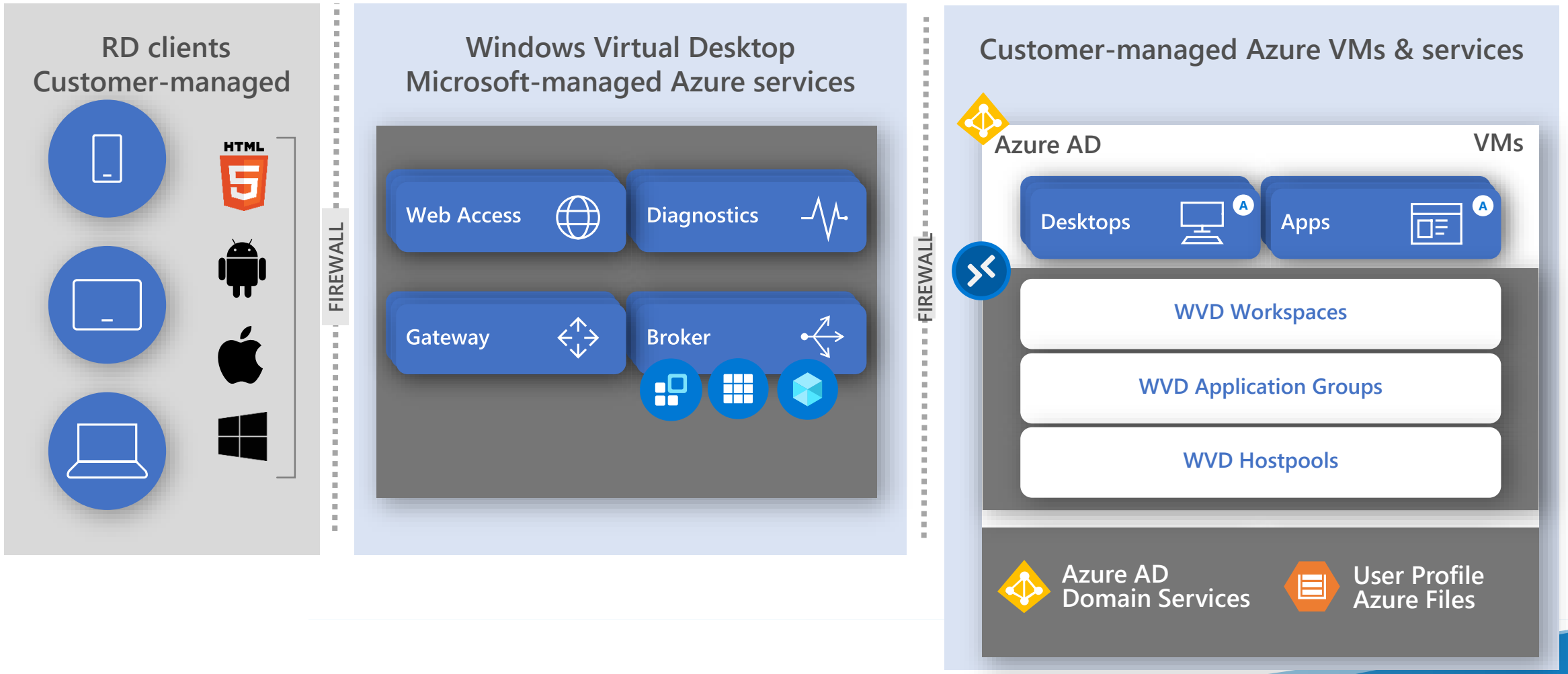
Azure Portal integration

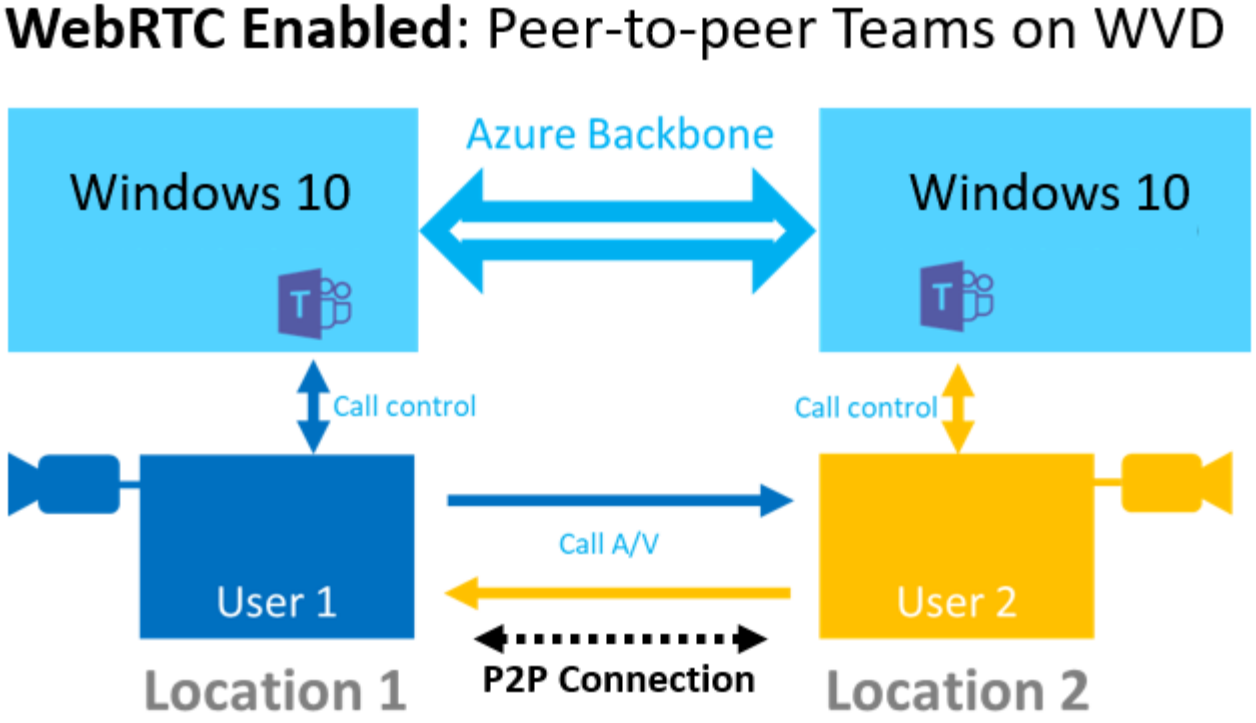
Azure Portal integration



Teams with AV Redirection media optimizations

Teams with AV Redirection media optimizations

- High-performance peer-to-peer streaming facilitated by WebRTC
- Devices will be redirected as same hardware device – better hardware redirection support
- On Win10 clients, all the benefits of the modern media stack including HW video decoding
- Support for Win10 single and multi-session with Windows Virtual Desktop.



MSIX app attach portal integration

Applications in WVD

Applications in WVD

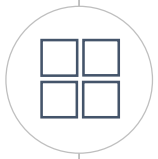
Option 1: Custom images

Deploying WVD

In the Portal

Clicking around in the portal, creating WVD Workspace, Hostpool & App Groups

- Just before creating, you can export the ARM template & parameters



ARM Templates

Deploy WVD using ARM Templates in the portal or through Powershell

Azure DevOps

Deploy WVD using ARM Templates in Azure DevOps in a CI/CD Pipeline

Deploying WVD

Sources

Azure Marketplace

Custom Images

In the Portal

Clicking around in the portal, creating WVD Workspace, Hostpool & App Groups

- Just before creating, you can export the ARM template & parameters

ARM Templates

Deploy WVD using ARM Templates in the portal or through Powershell

Azure DevOps

Deploy WVD using ARM Templates in Azure DevOps in a CI/CD Pipeline

Custom image - advantages

- Performance
- Compliance

How?

- From onPrem
- Manually through the portal

Image from onPrem

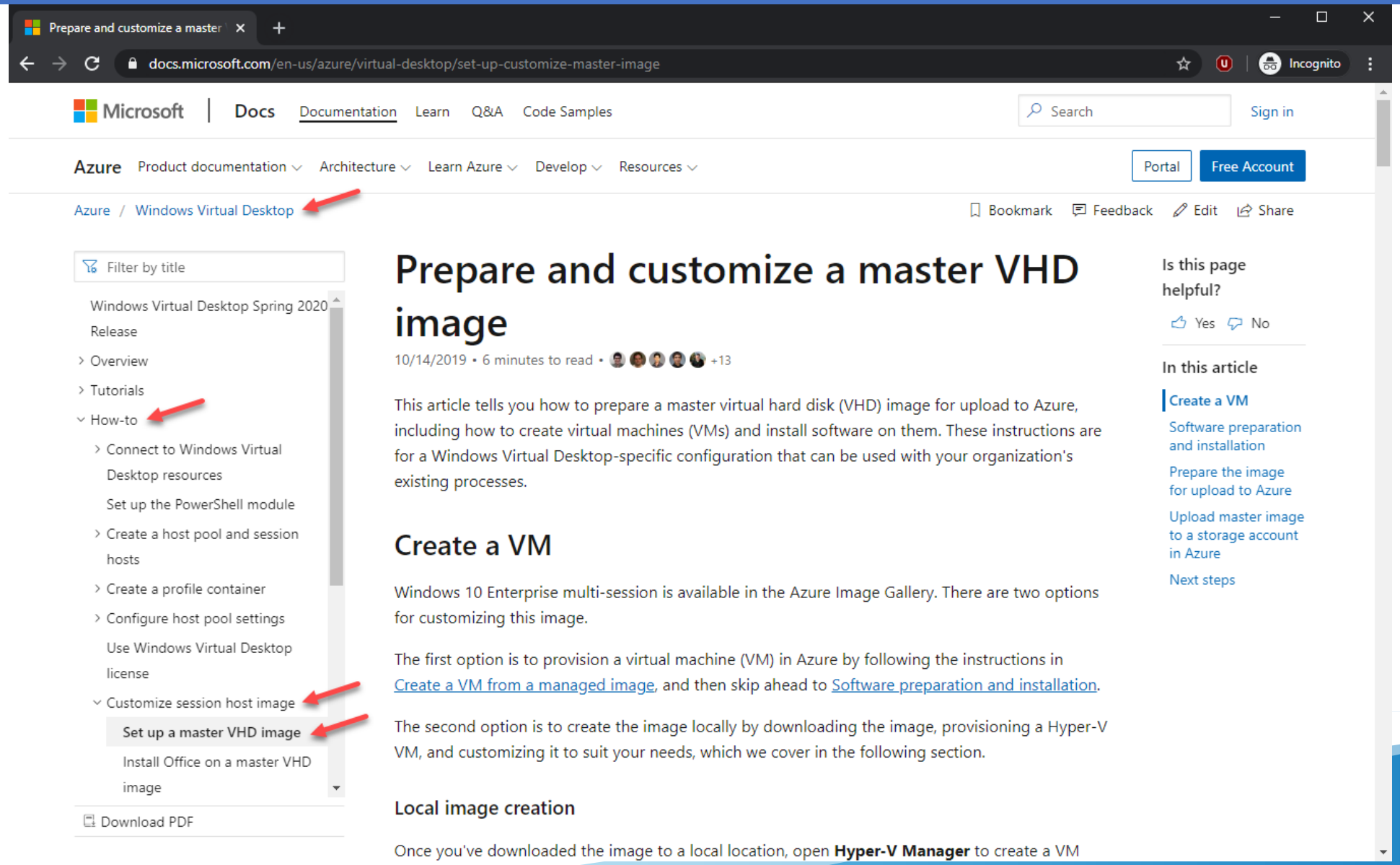
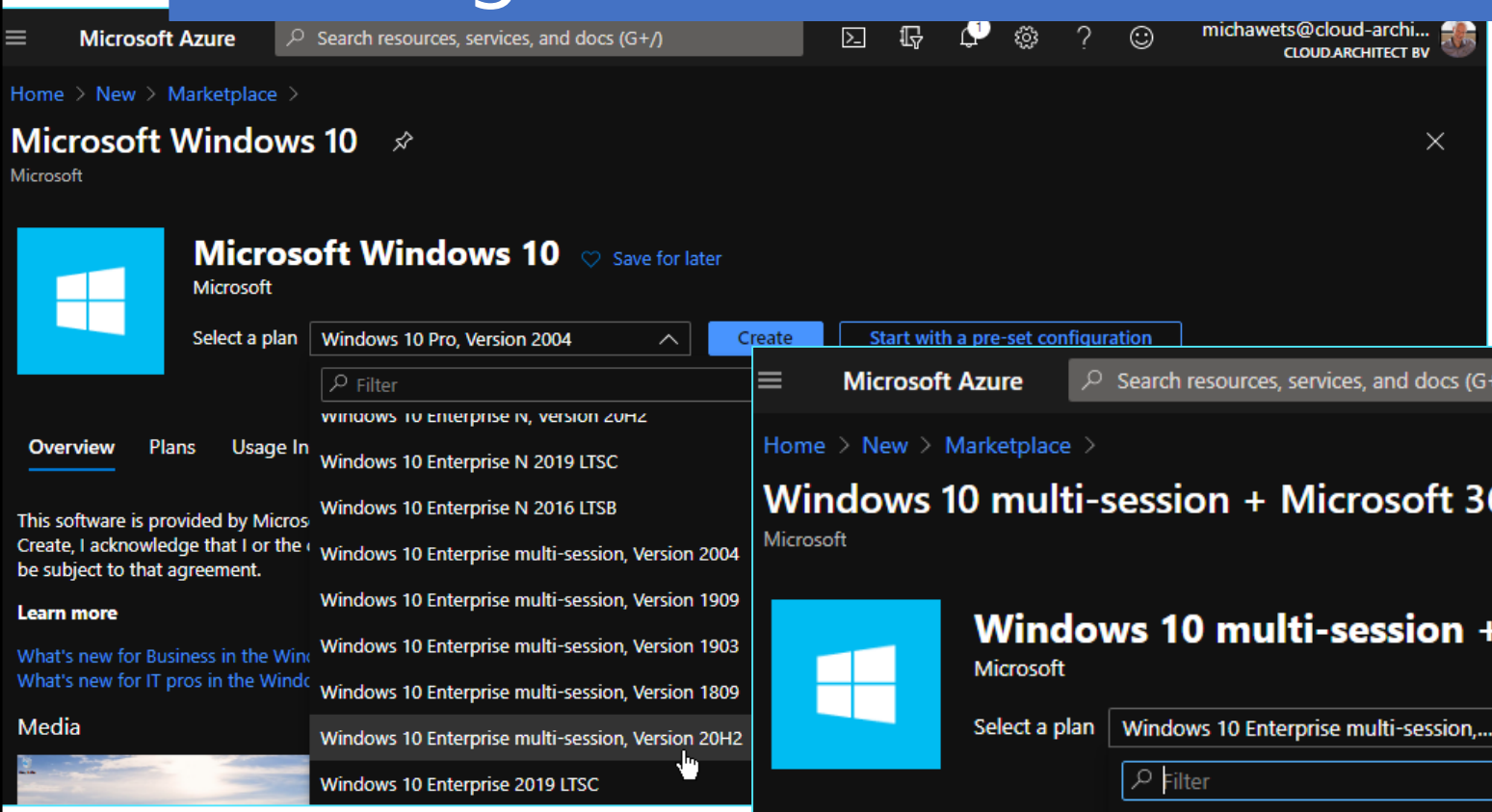
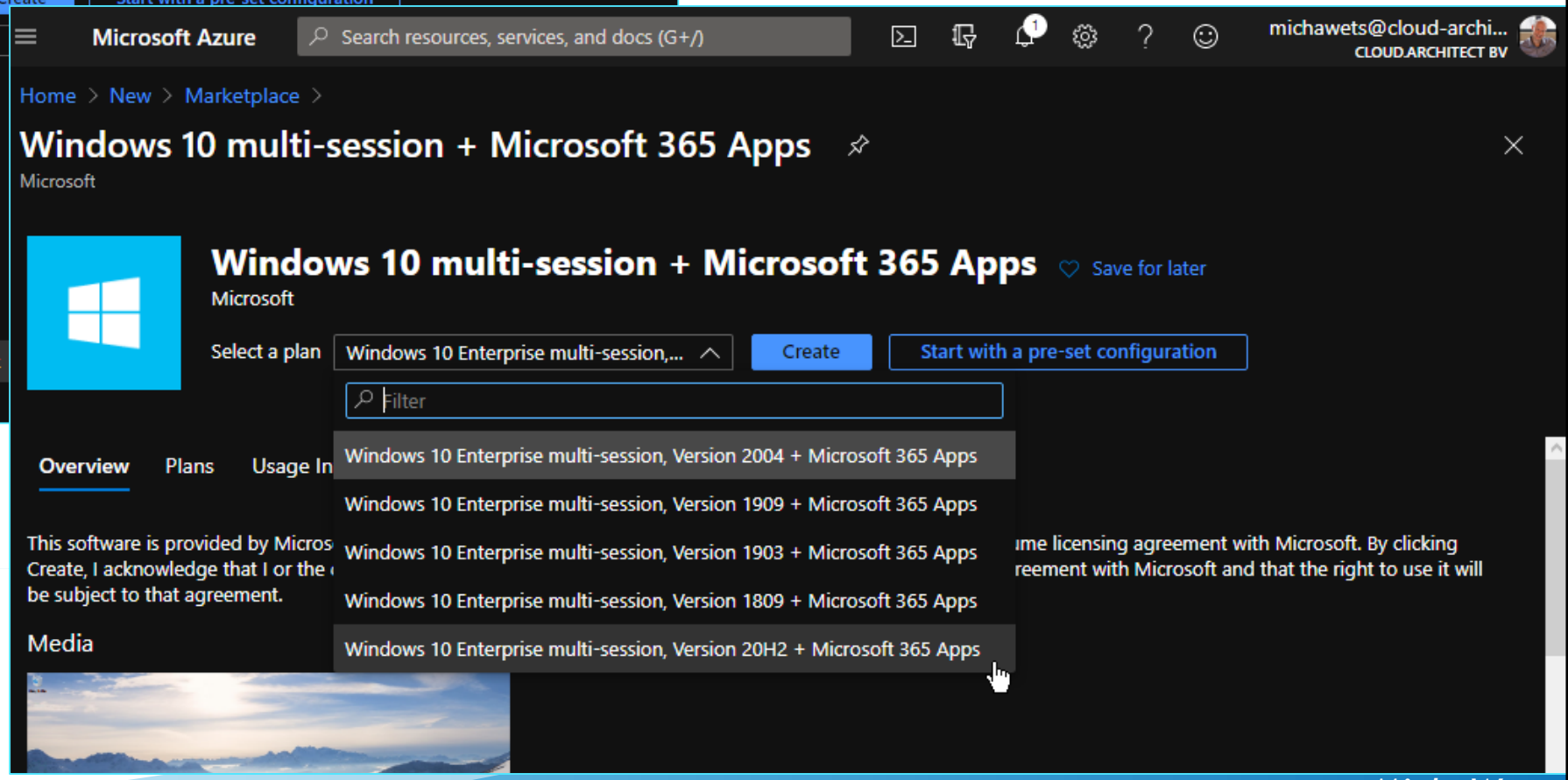


Image in Azure: Create VM, customize, sysprep and capture



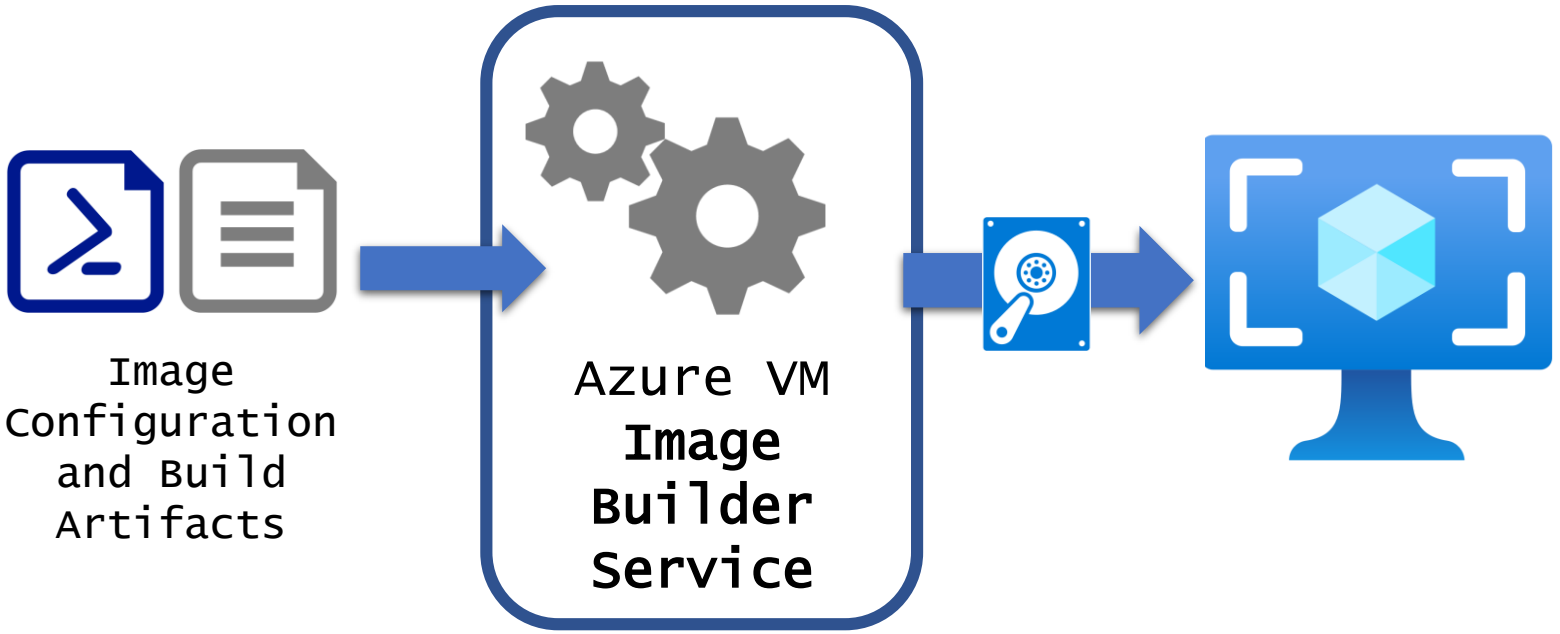


Azure Image Builder (AIB)

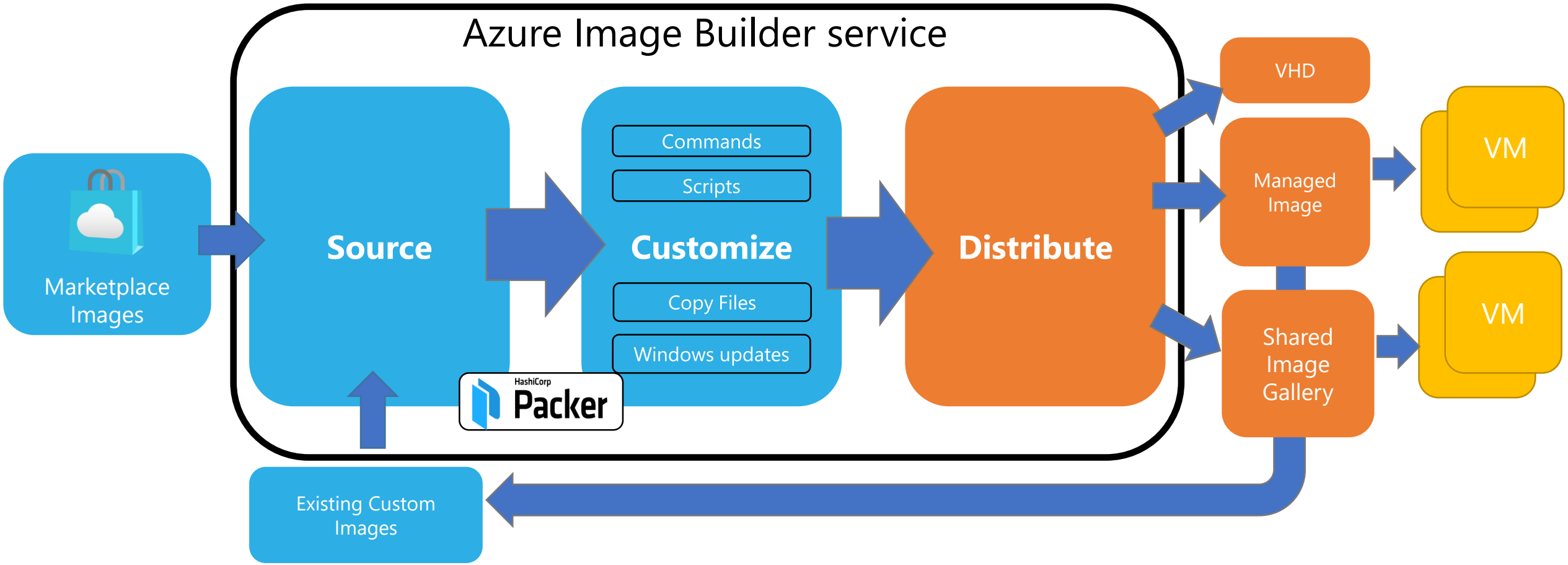
- Automatic Image creation system
- Customize your image
- Multiple distribution options

Azure Image Builder (AIB)

- Unification
- Simplification
- Compliance
- Management
- Upgrade



Azure Image Builder flow



Custom image - issues

- You need to keep the images up to date
  - Windows & AntiVirus updates
  - Custom software updates
- Redeploy Sessionhosts if the image changes
- All installed applications are visible for all users

Applications in WVD

Option 2: Custom images + App masking

FSLogix Technologies: Application Masking

- Container
- App Masking
- Java Redirection

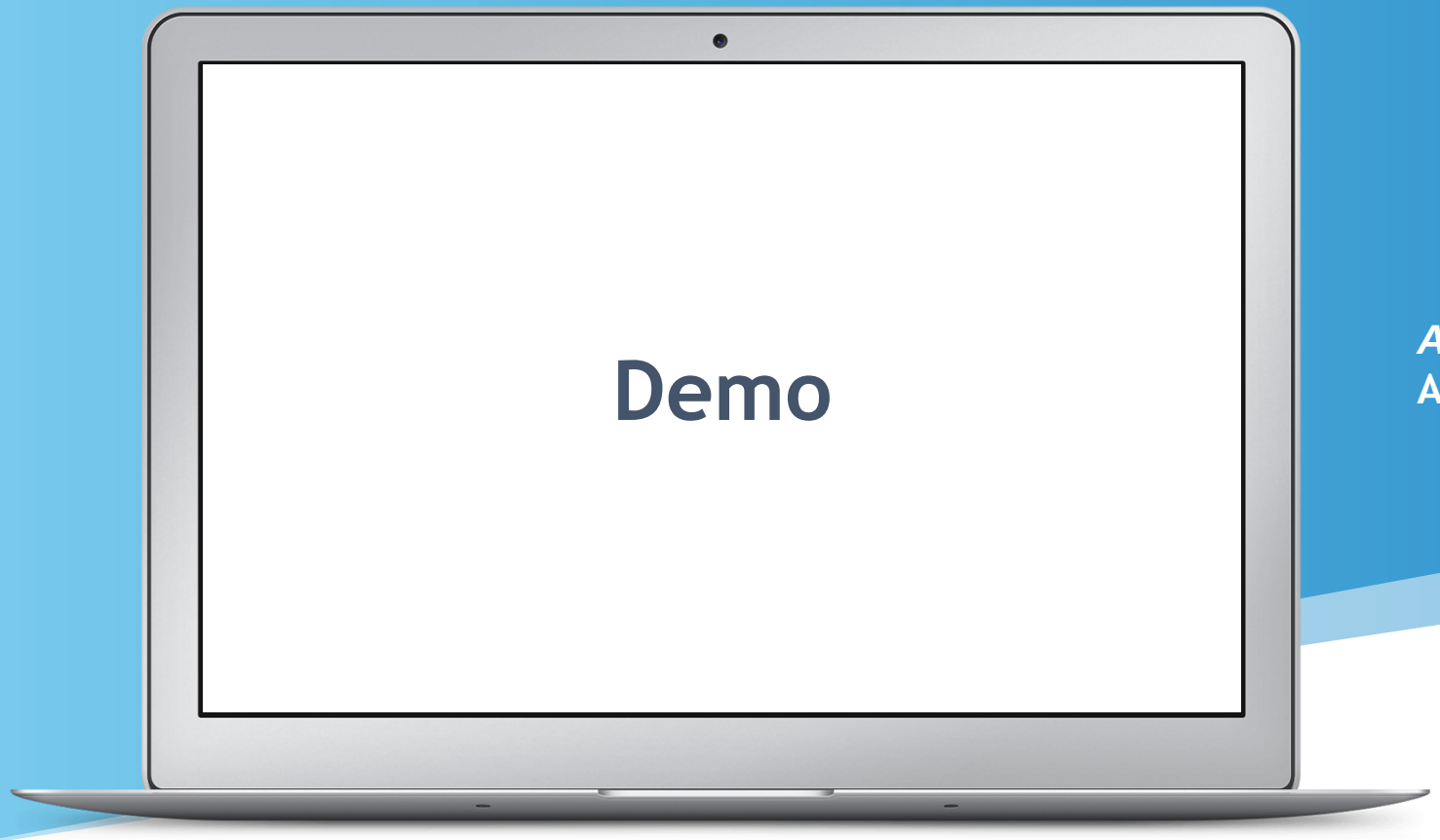
FSLogix Technologies: Application Masking

Application Management without sequencing, snapshotting, packaging, or virtualization.

All apps installed in base image.

- Excellent app compatibility
- Only apps a user is entitled to are revealed.
- App entitlements can be changed in real time.

Massively reduce the number of gold images that must be maintained



Applications in WVD
App Masking

Custom image + App Masking - issues

- You need to keep the images up to date
- Redeploy Sessionhosts if the image changes
- ~~All installed applications are visible for all users~~

- Additional actions to set FSLogix rules
- Application licensing could be challenging

Applications in WVD

Option 3: MSIX app attach

Microsoft

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MSIX app attach

All benefits of MSIX (declarative install, simple deployment, per user, OS Managed)

Native format is MSIX (no re-packaging)

MSIX Apps can be stored off the windows disk

Remotely mount the apps to the VM on-demand

Apps groups are assigned to users, and available instantly

Looks and feels local to the user and to windows

MSIX app attach – Terminology

Expanding MSIX	Taking an MSIX package (or output from conversion) and transforming it into an app attach package
Staging / Destaging	Making the app attach package available on the WVD Host
Registering / DeRegistering	Making the stages app attach package available for the user
Delayed registration	Delay the registering of the application until session is established
On Demand	Allow users to load application on the fly as needed

MSIX app attach - advantages

- Using the MSIX standard ➔ easy convert to MSIX app attach
- Build into Windows, using direct Windows APIs
- No additional agent/server/service required
- Use of CimFS (.CIM) instead of VHD(X) (≥ Windows 10 2004)
  - Less CPU
  - Less Memory
  - Always ReadOnly

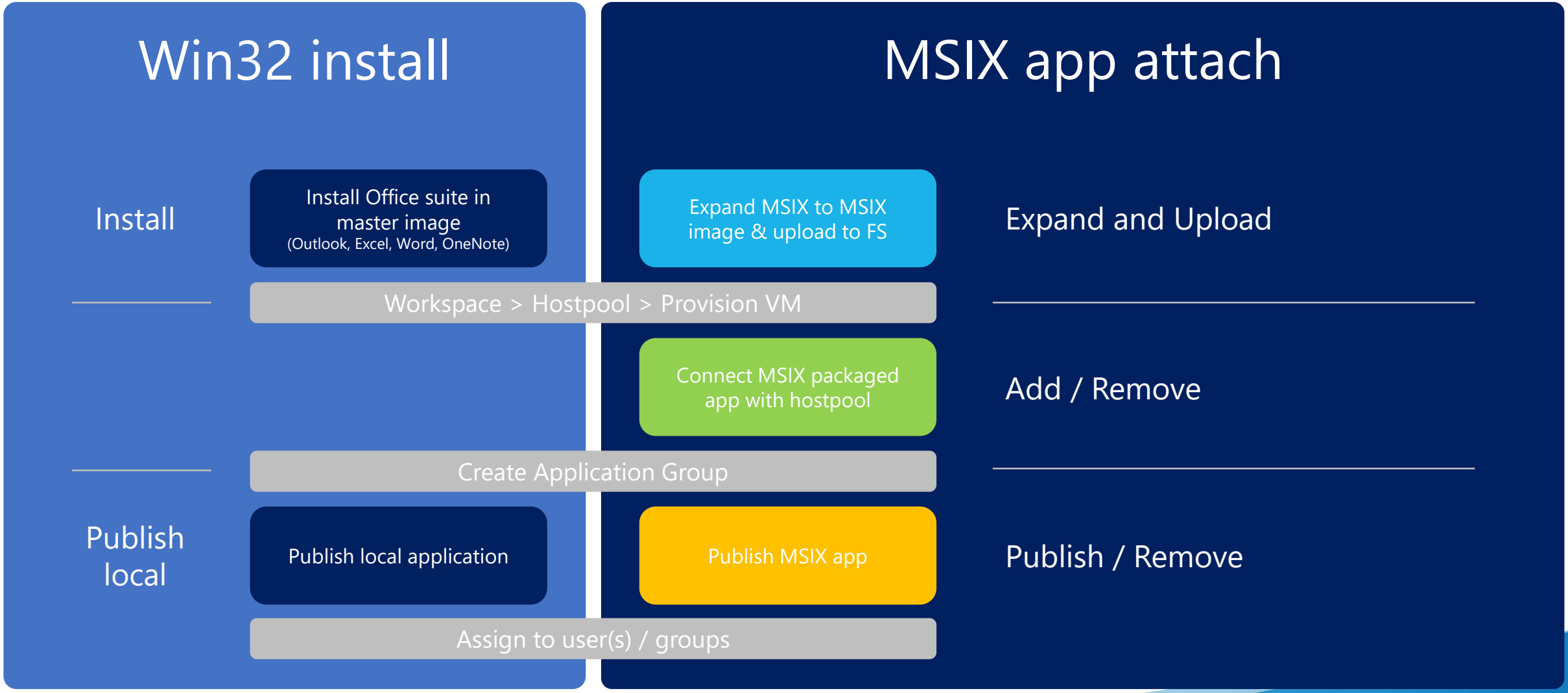
MSIX app attach – Terminology

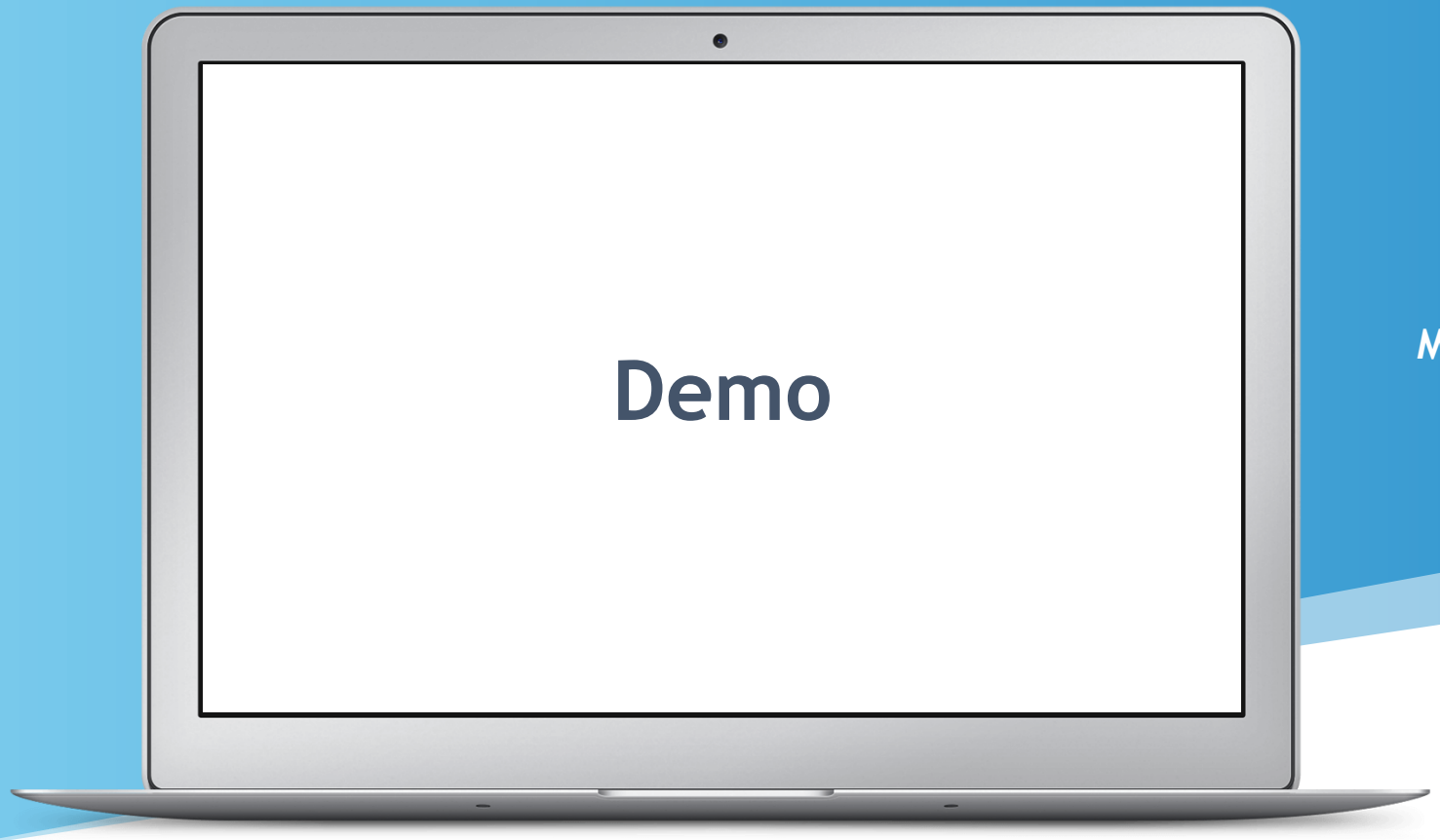
MSIX image: VHD(x) / CIM (app attach image / app attach container)

MSIX package (MSIX packaged app)

MSIX application

Traditional install vs MSIX app attach





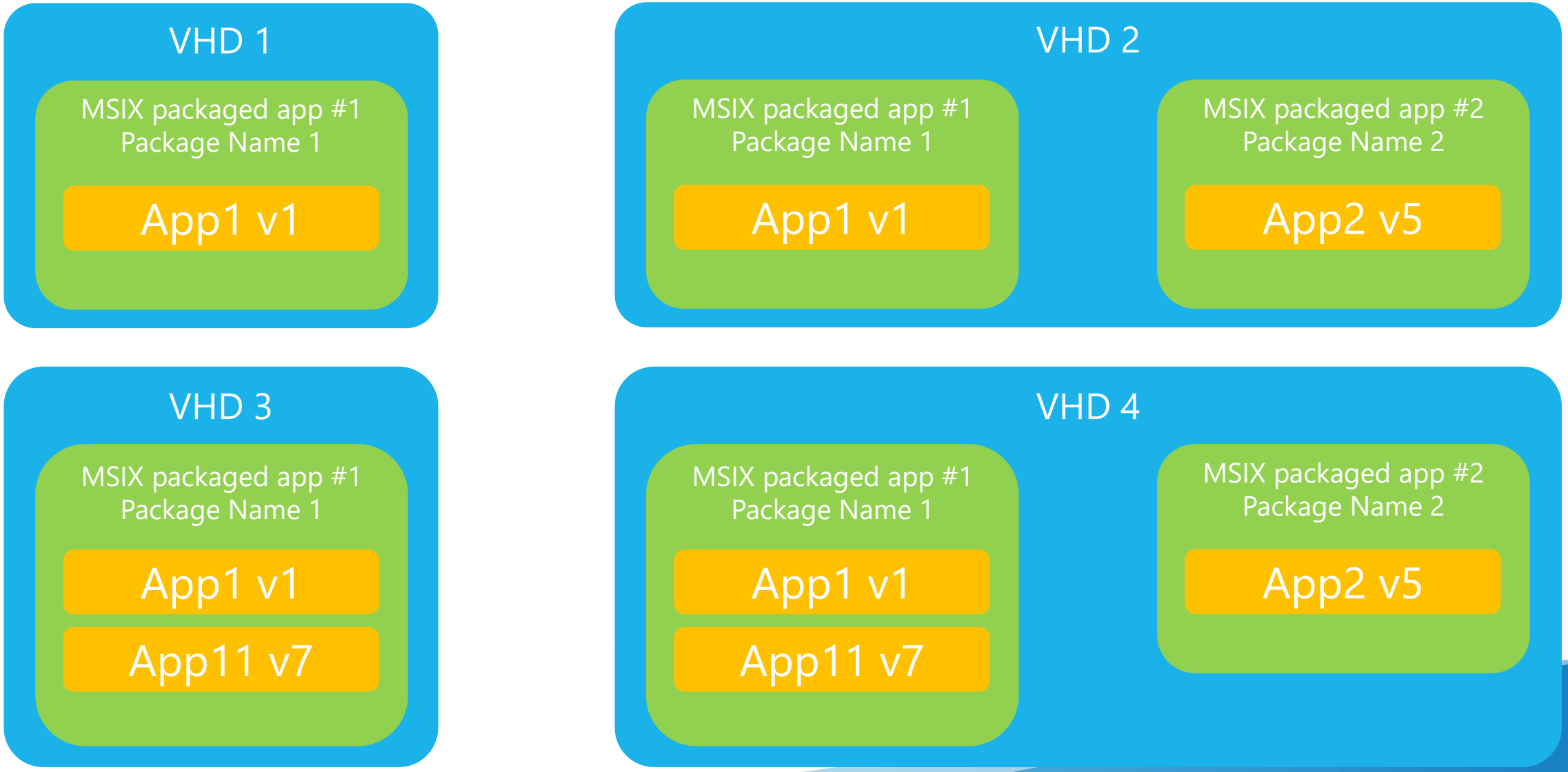
Demo

MSIX app attach

MSIX app attach - issues

- Powershell scripts
- GPOs (Startup/Shutdown or Scheduled tasks)
- ➔ additional maintenance in the environment (not in Azure Portal)
- Complex setup if VHD(X) contains multiple packages

MSIX app attach – complex disk builds



Applications in WVD

Option 4: MSIX app attach – Next Gen

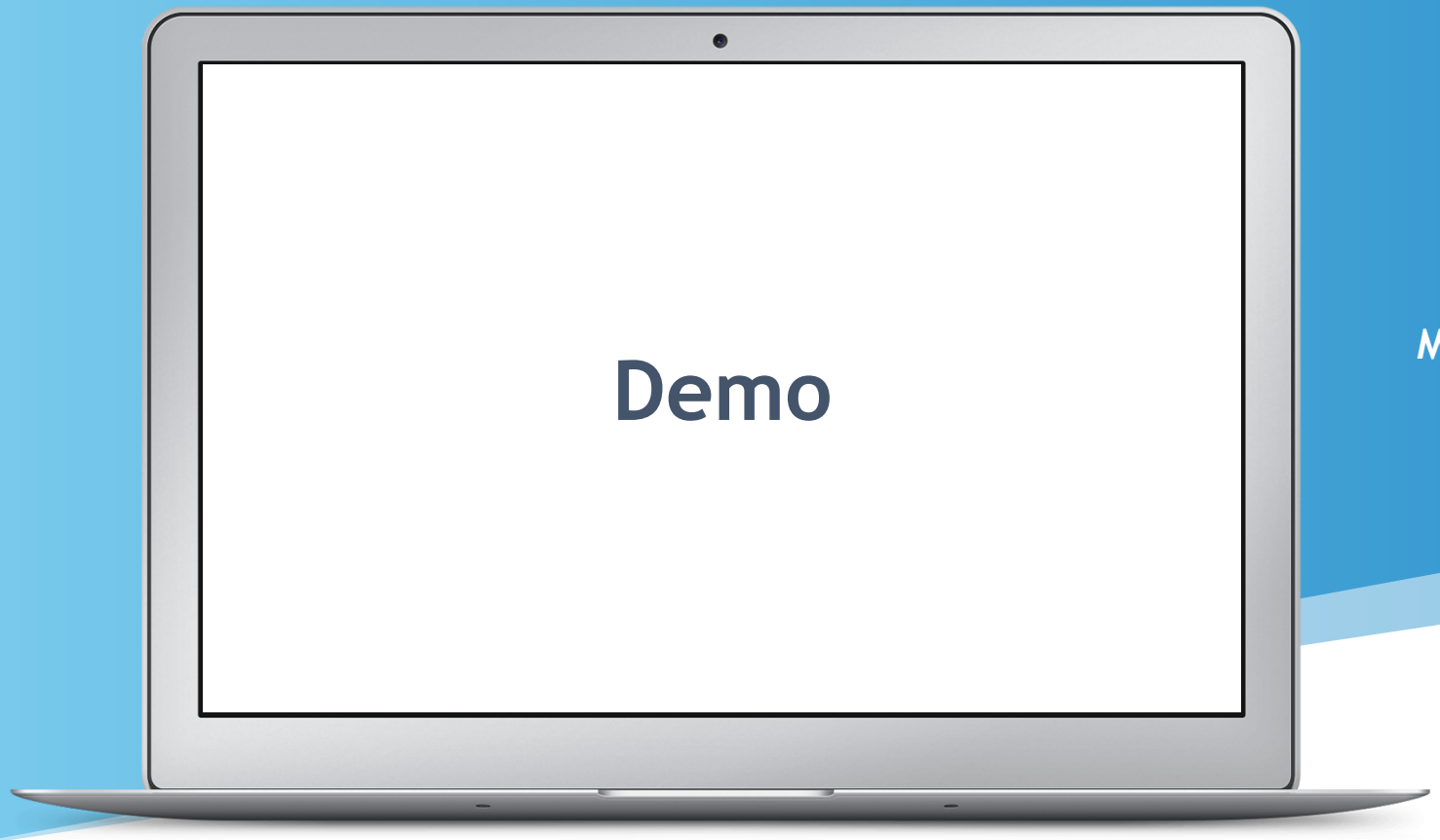
MSIX app attach – Portal integrated

- ~~Staging – Registration – De-Registration – De-Staging~~
- ~~GPOs with Powershell scripts~~

- Azure Portal integration
- **WVD RD Agent!**
- CimFS (.CIM)
- Complex disk builds ➔ no issue

MSIX app attach – PreReqs

- File storage
  - Azure Fileshare
  - Azure NetApp files
  - Fileserver
- MSIX app attach packages (vhdx/cim) uploaded
- WVD sessionhosts ➔ access to MSIX images



Demo

MSIX app attach

Add MSIX Package to Hostpool

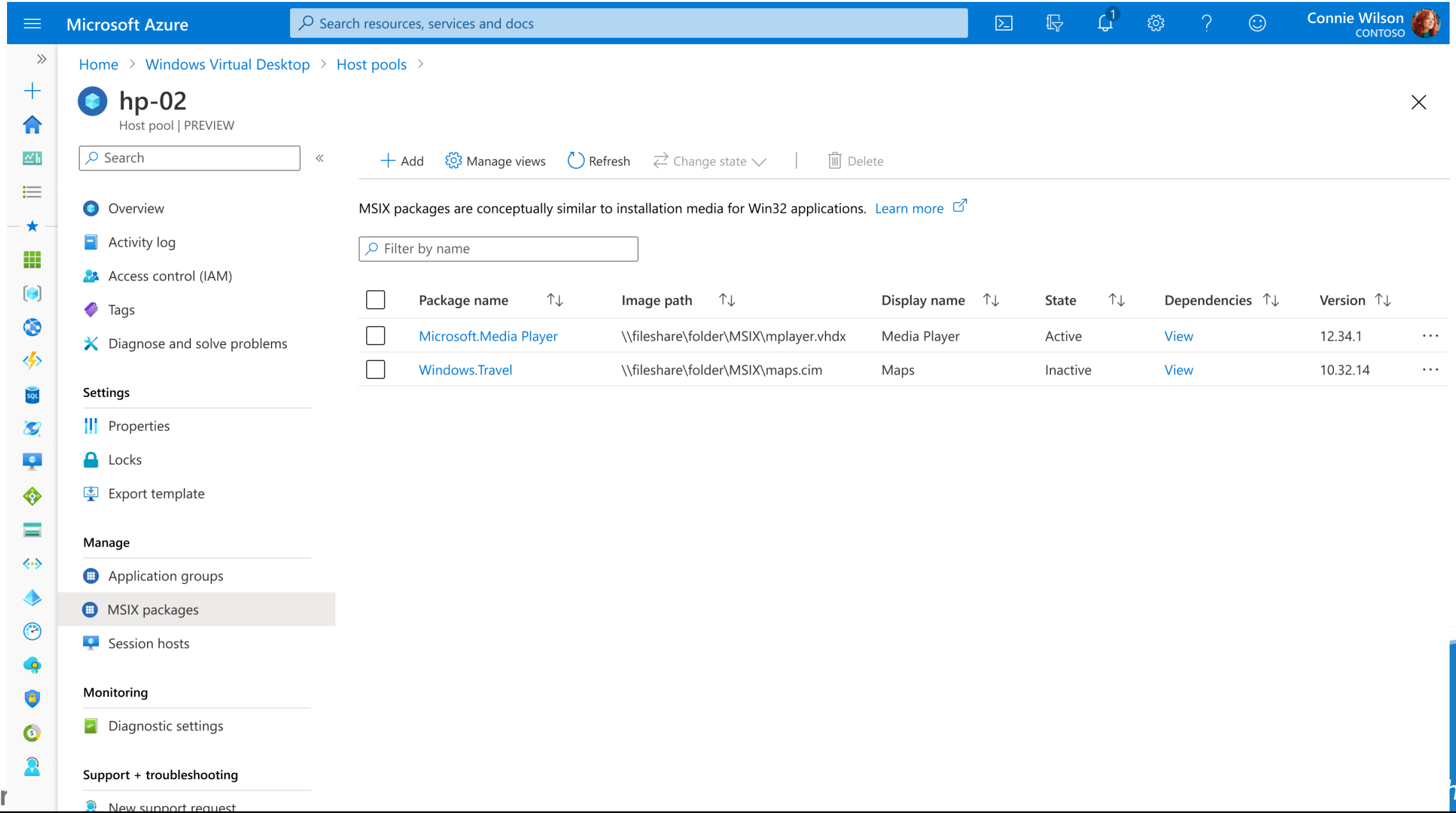
MSIX app attach – Terminology

MSIX image: VHD(x) / CIM (app attach image / app attach container)

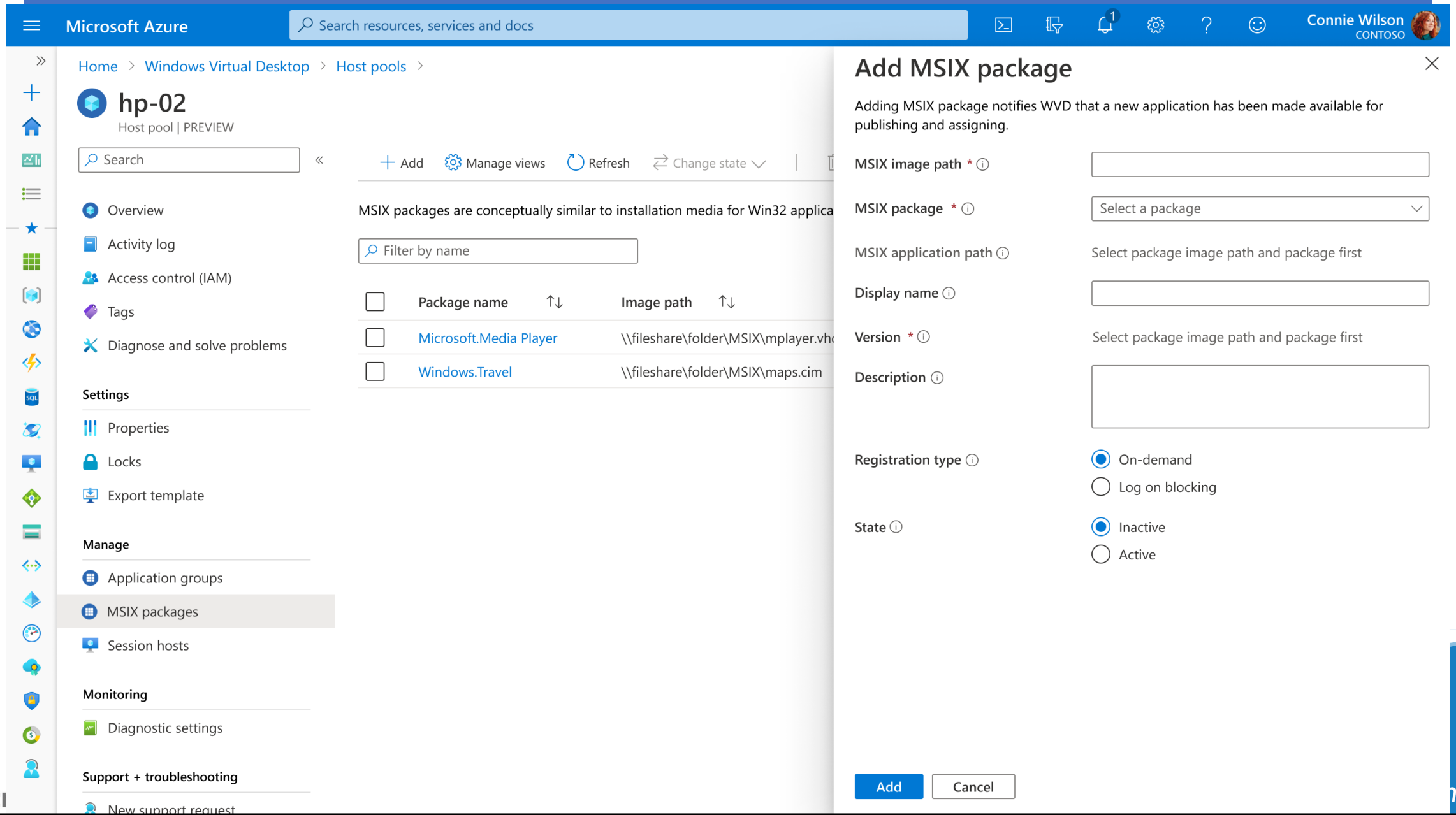
MSIX package (MSIX packaged app)

MSIX application

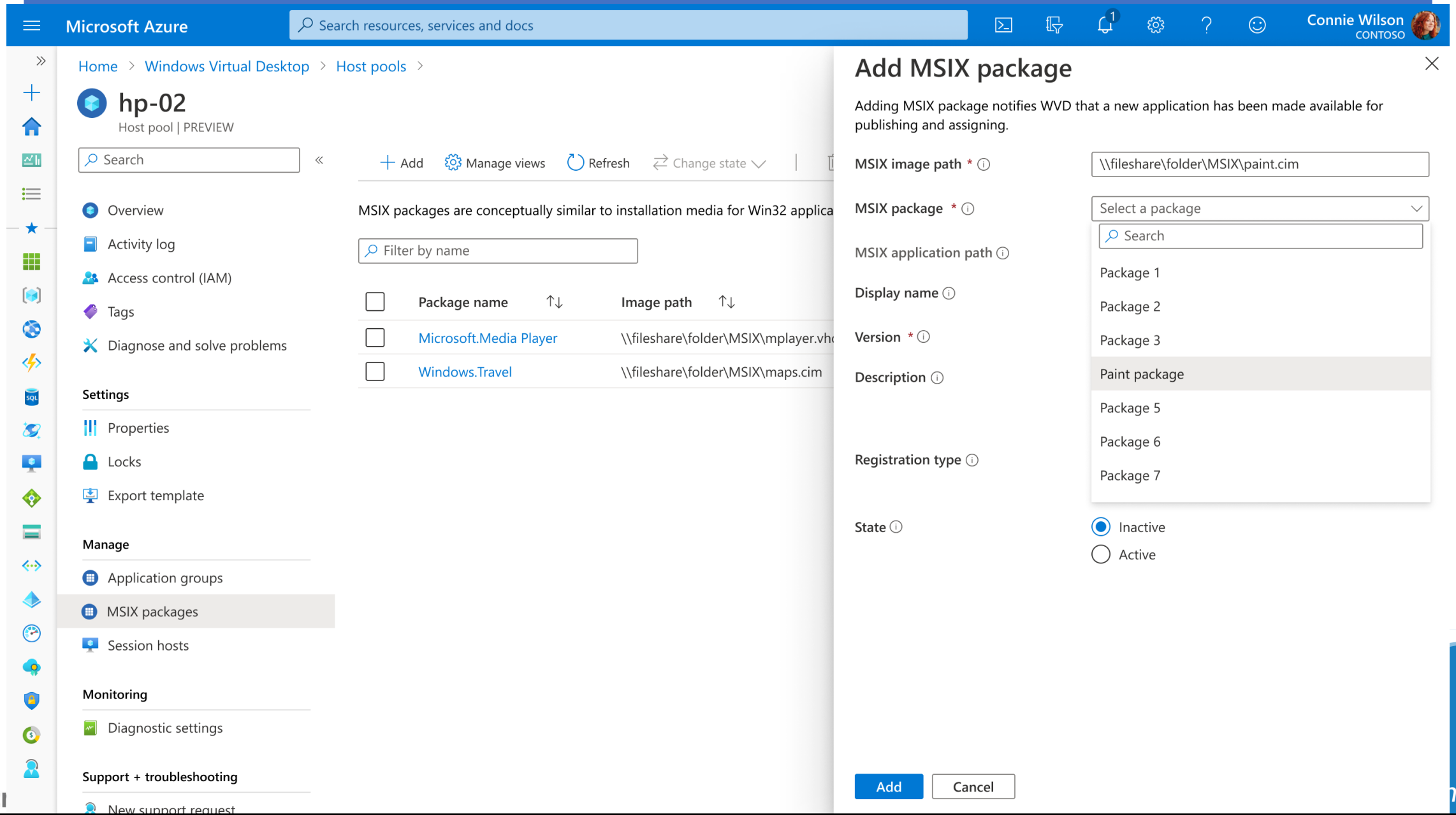
Add MSIX Package

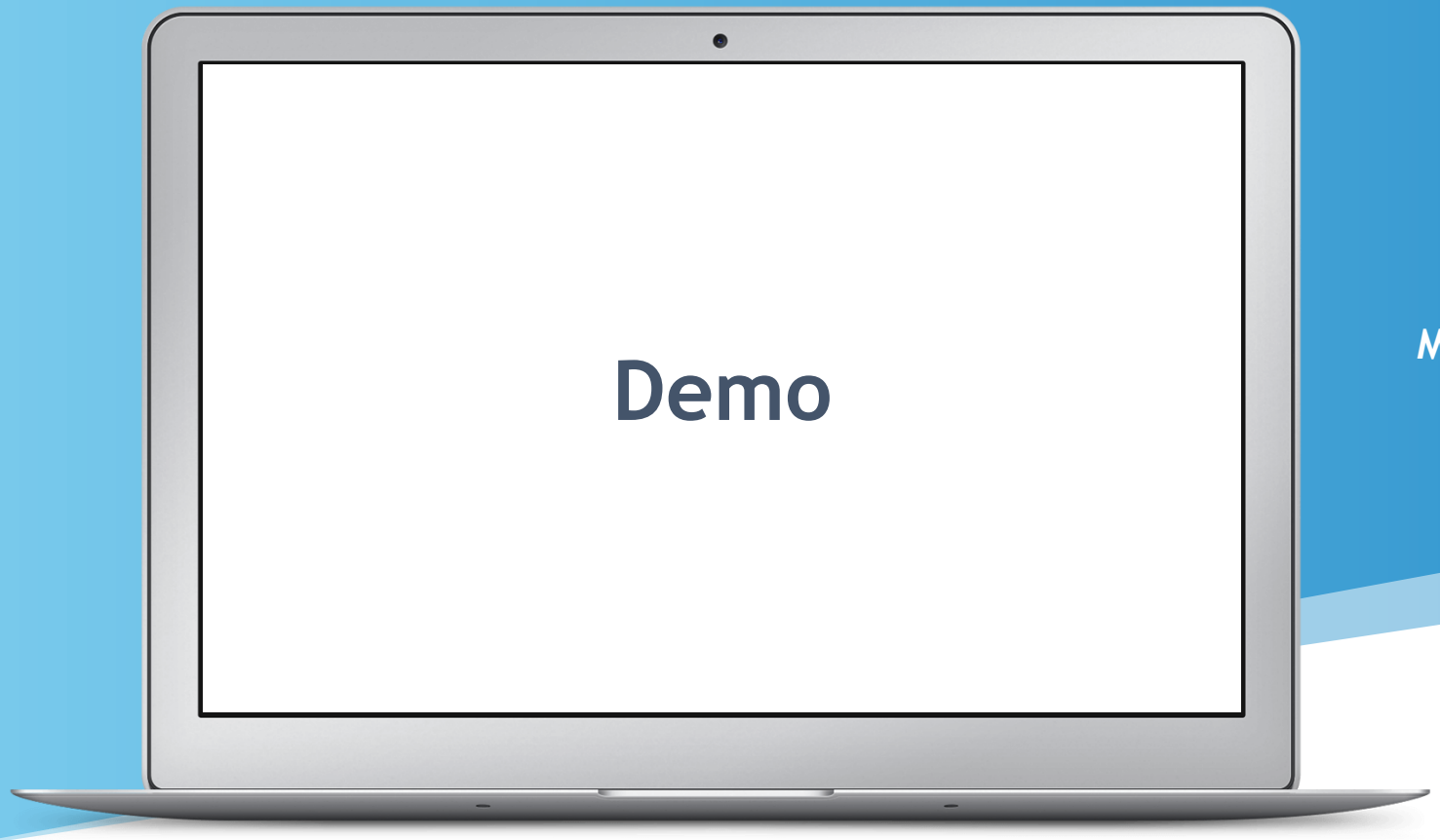


Add MSIX Package



Add MSIX Package

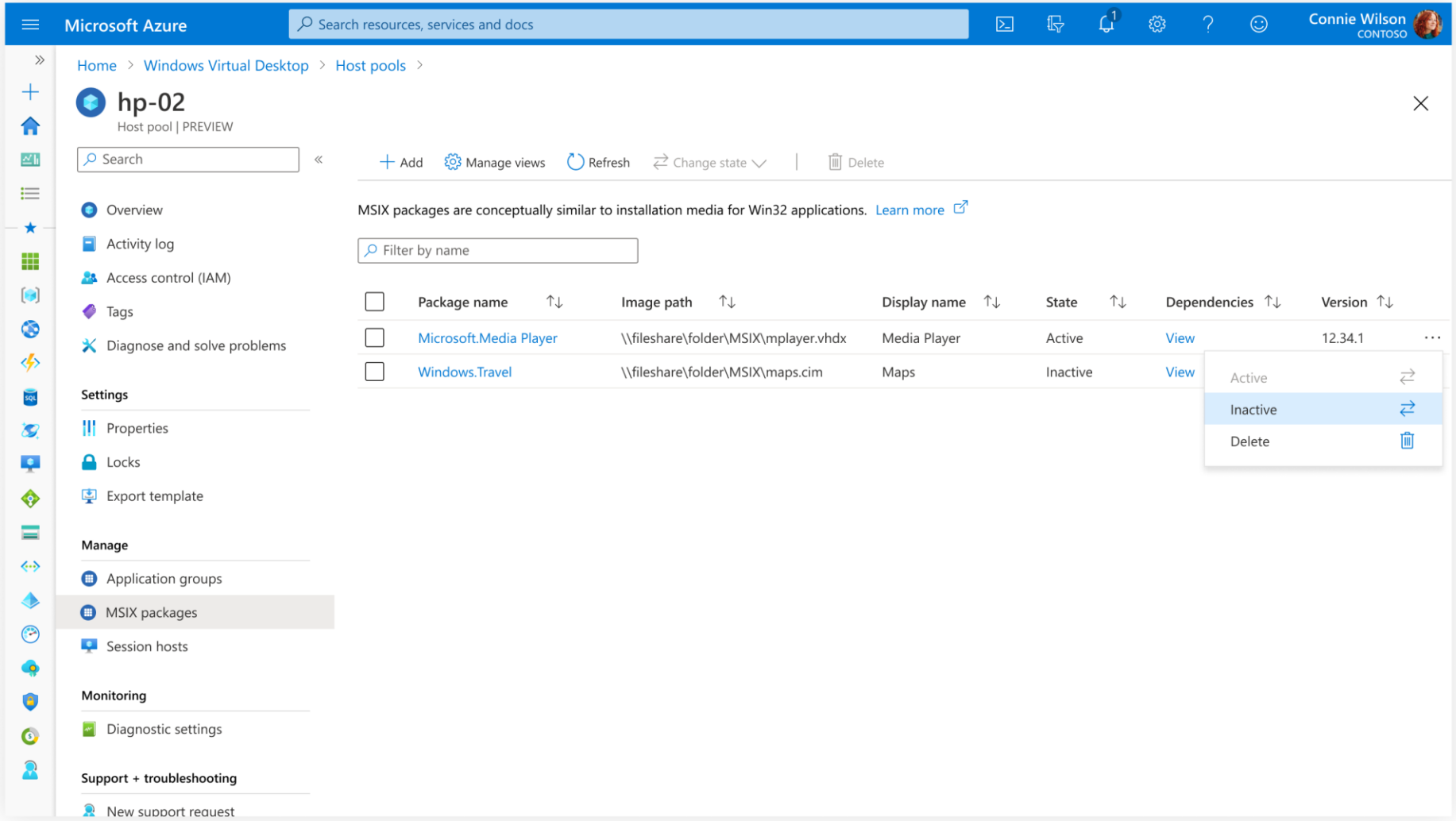




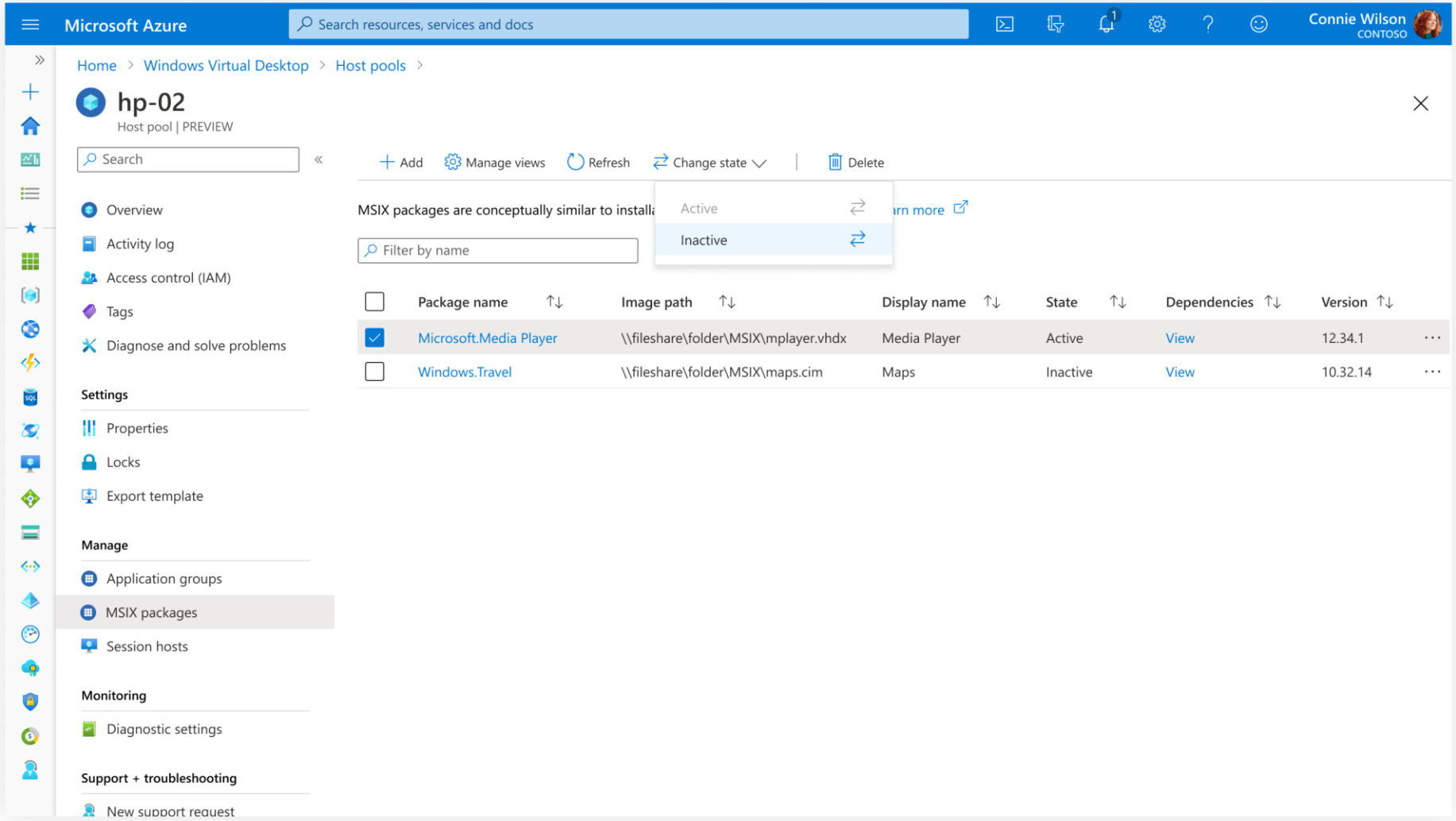
Demo

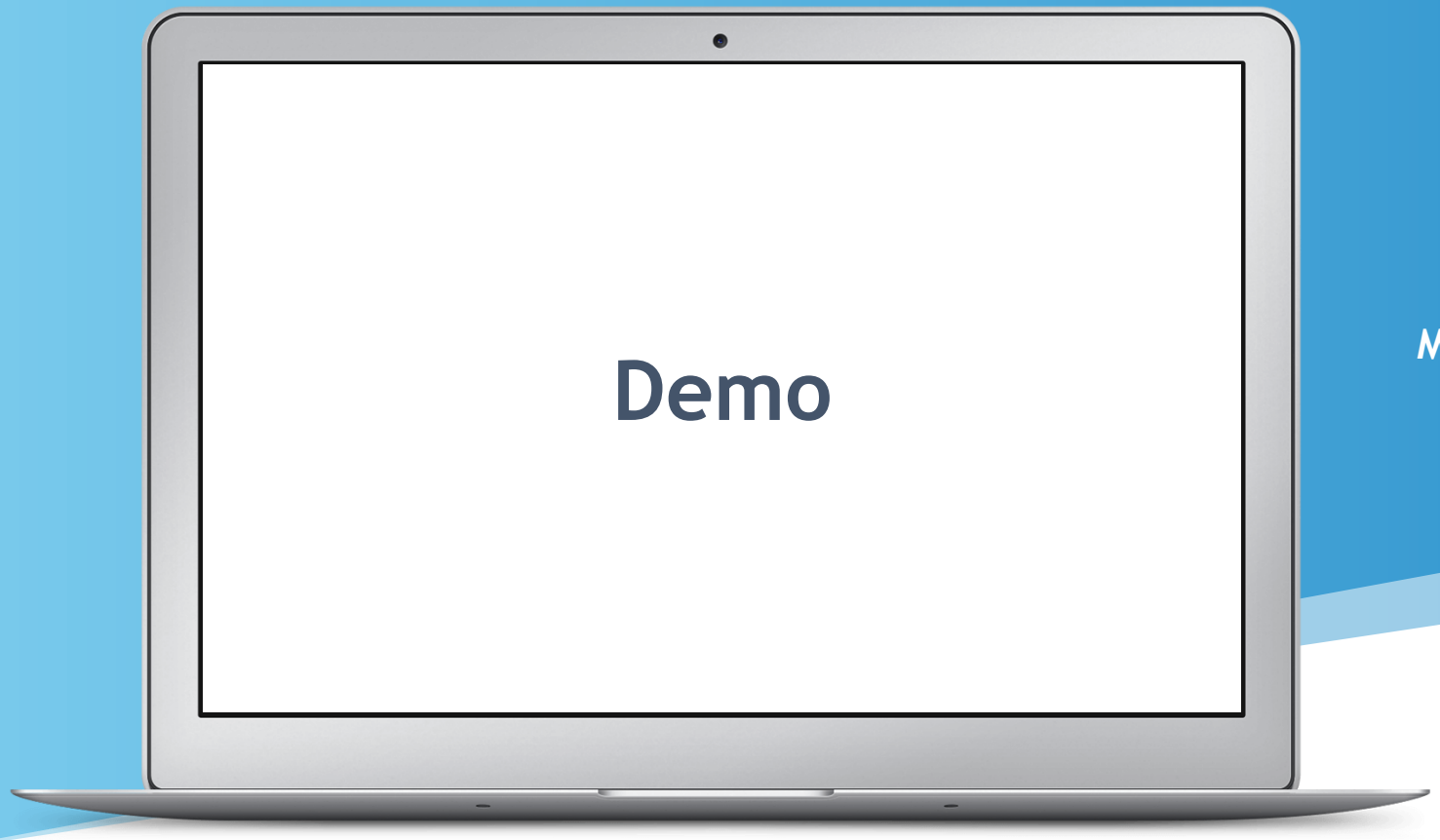
MSIX app attach
Change app status

Change state: Active to Inactive



Change state: Active to Inactive



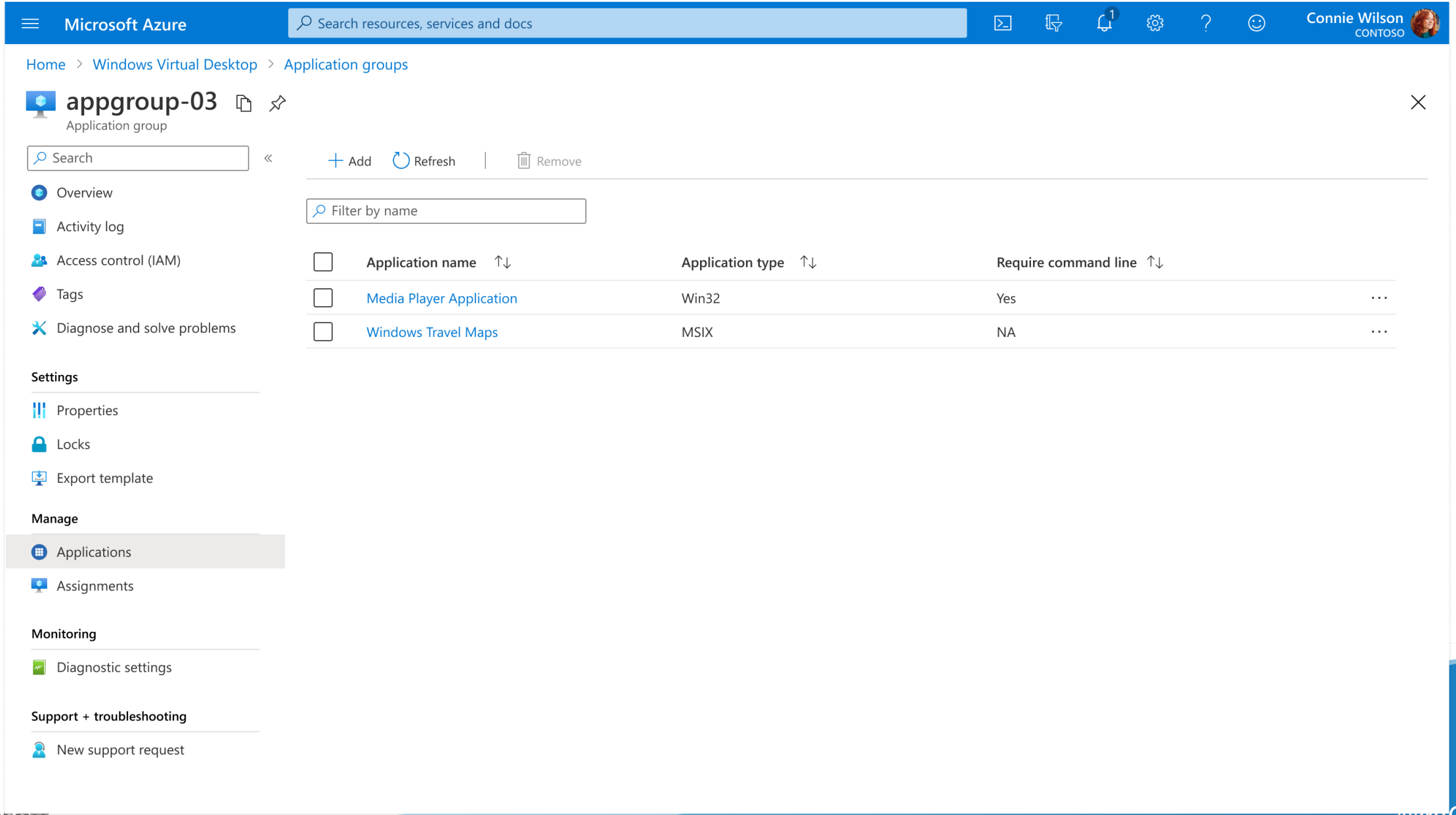


Demo

MSIX app attach

Publish MSIX in Application Group

Publish MSIX in Application Group



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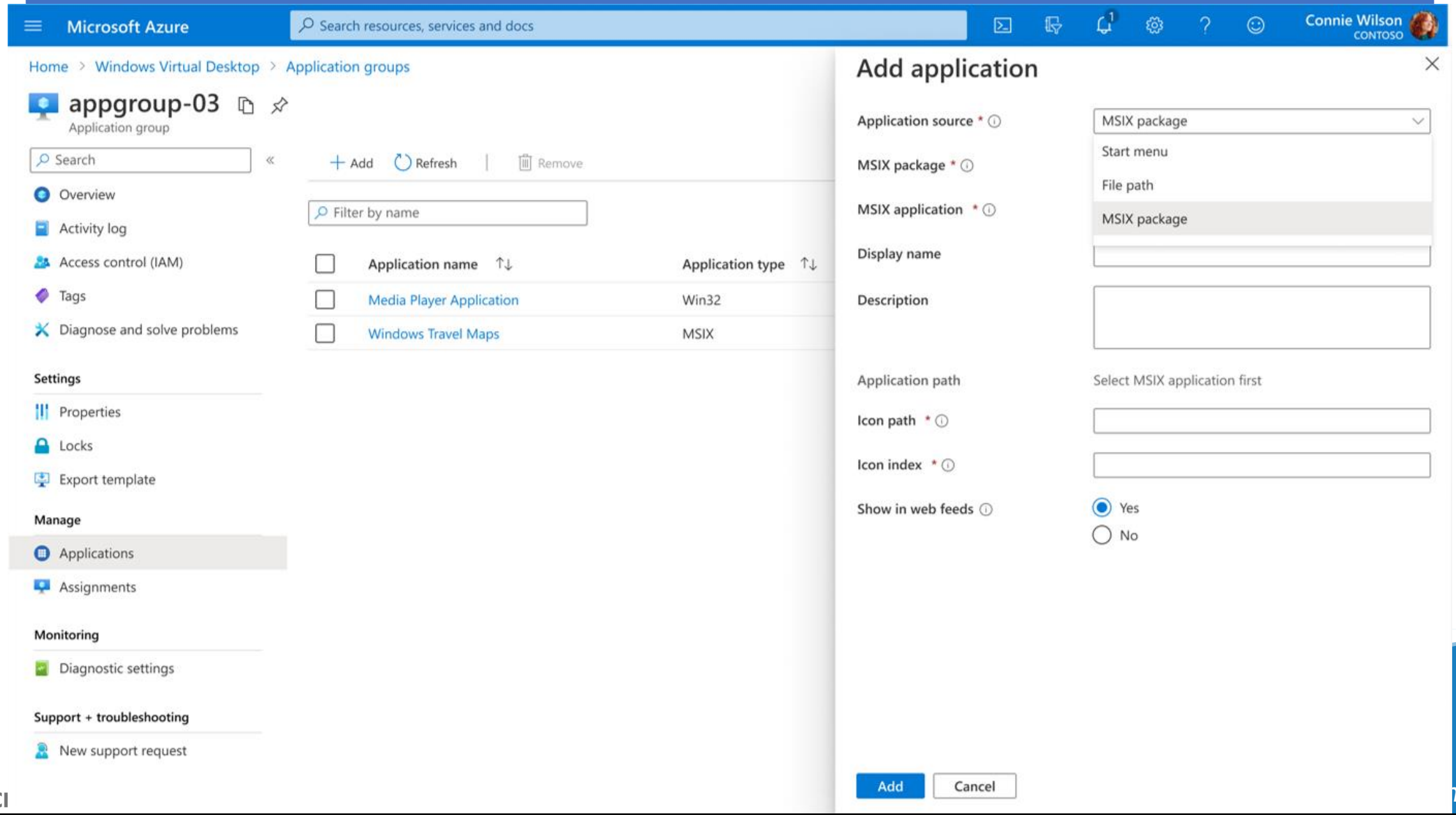

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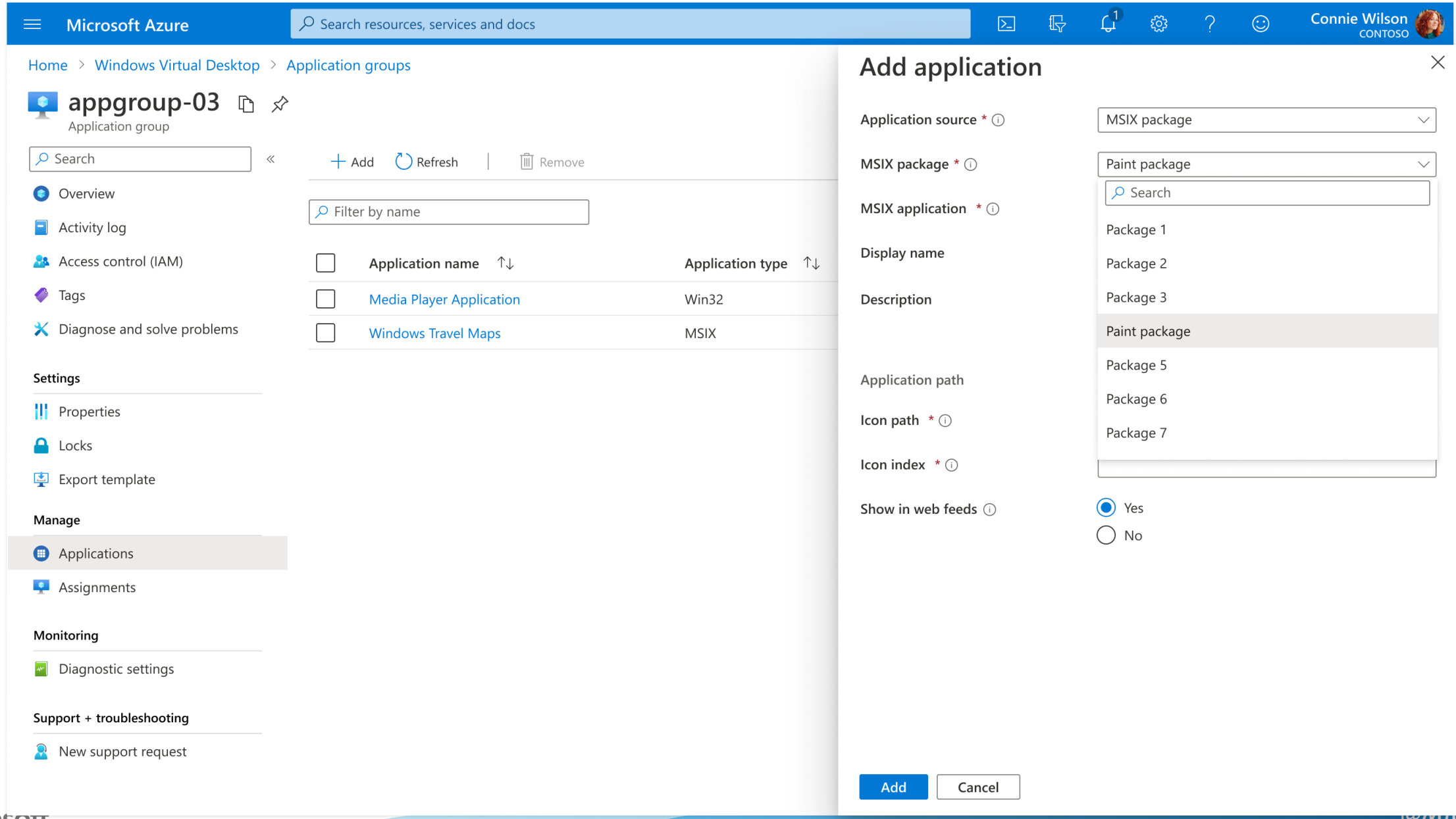

Microsoft

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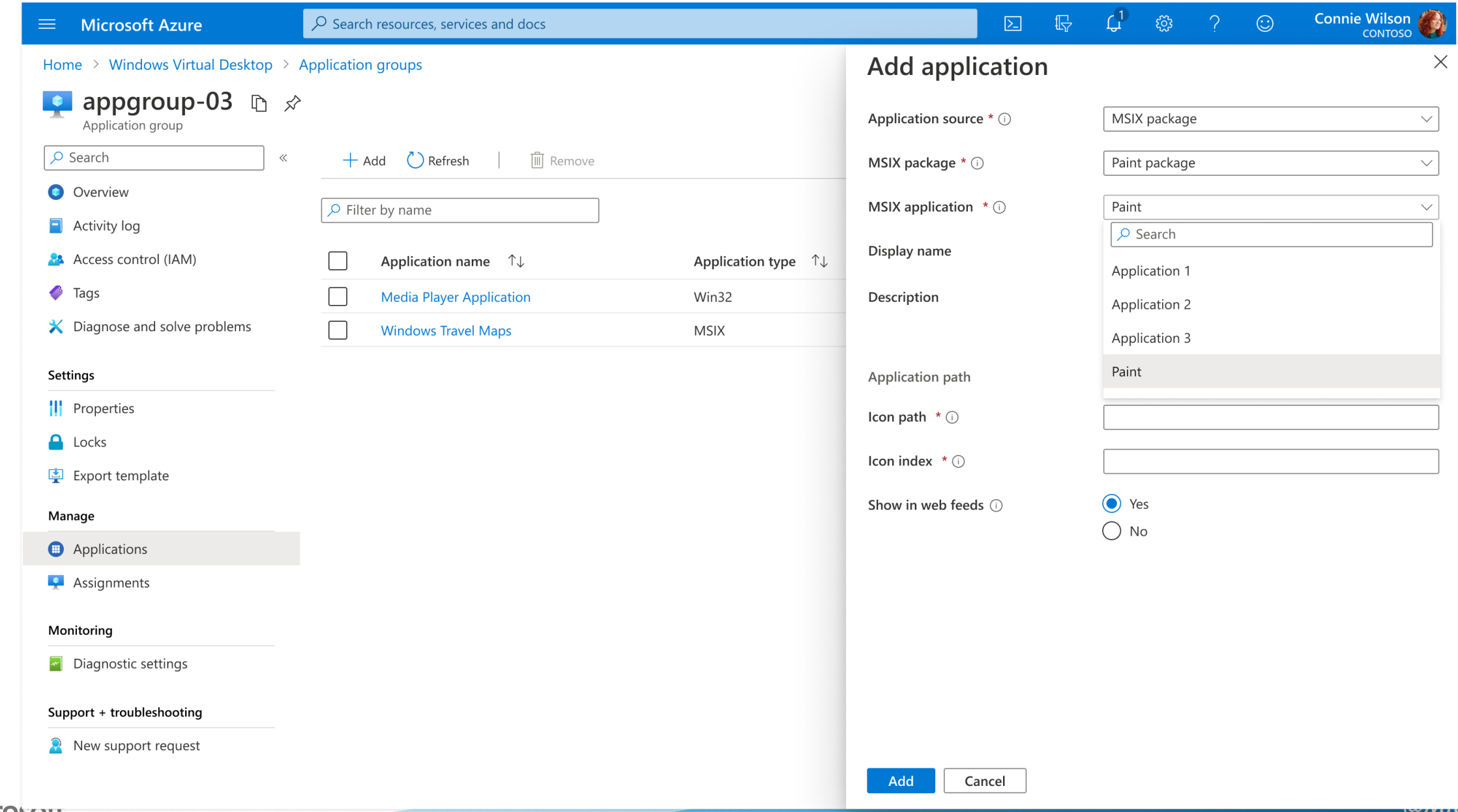
Publish MSIX in Application Group



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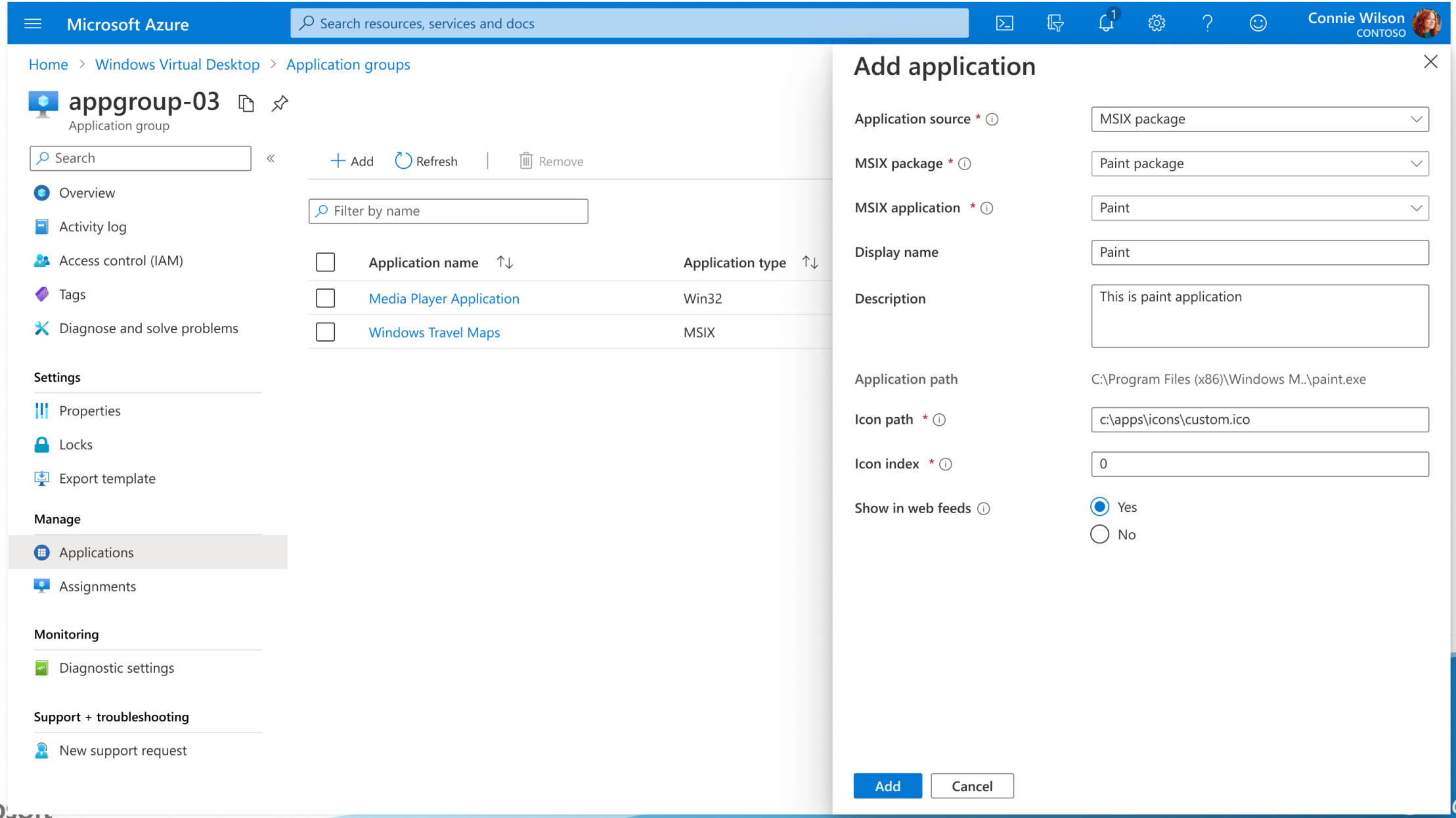

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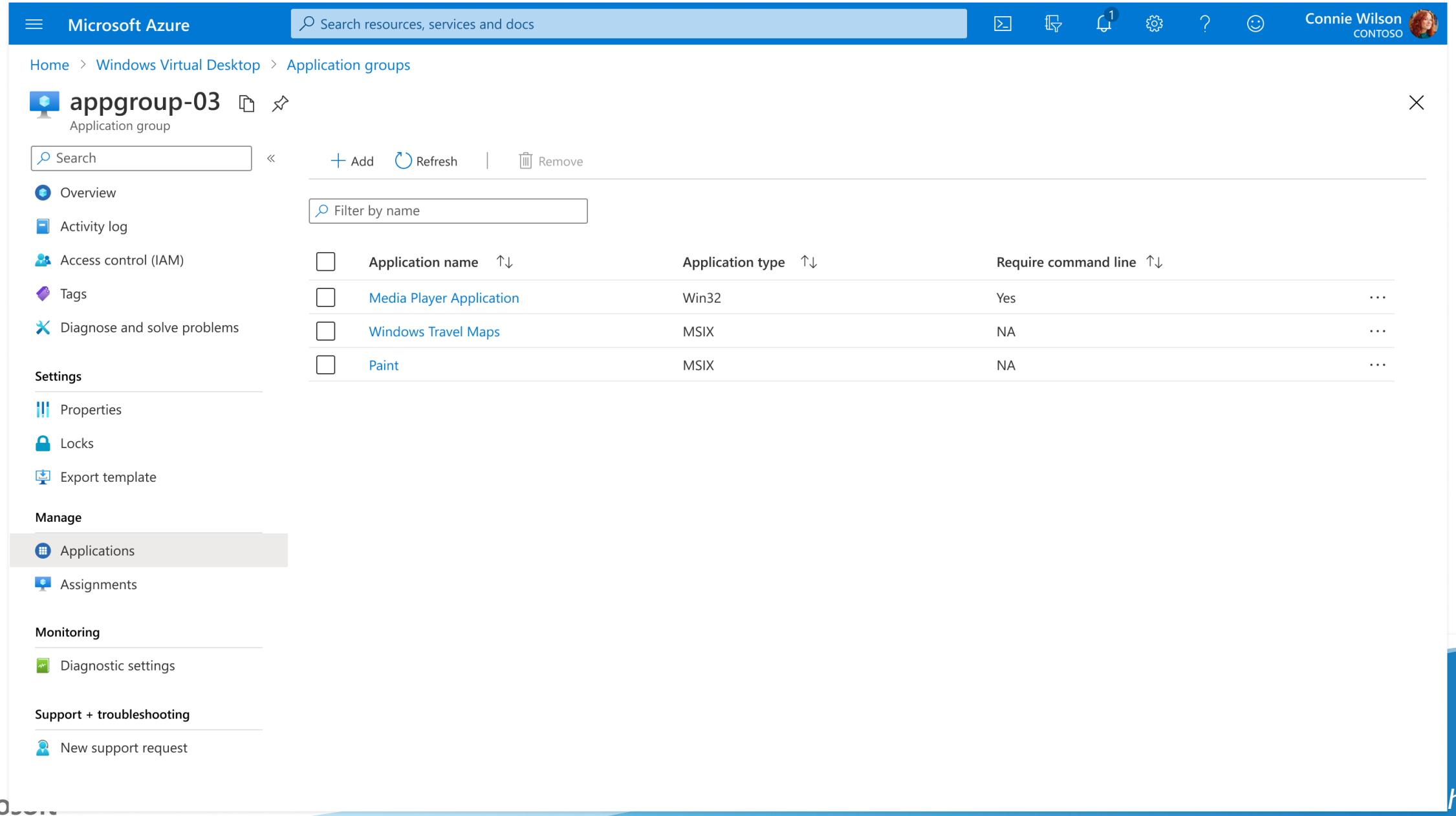


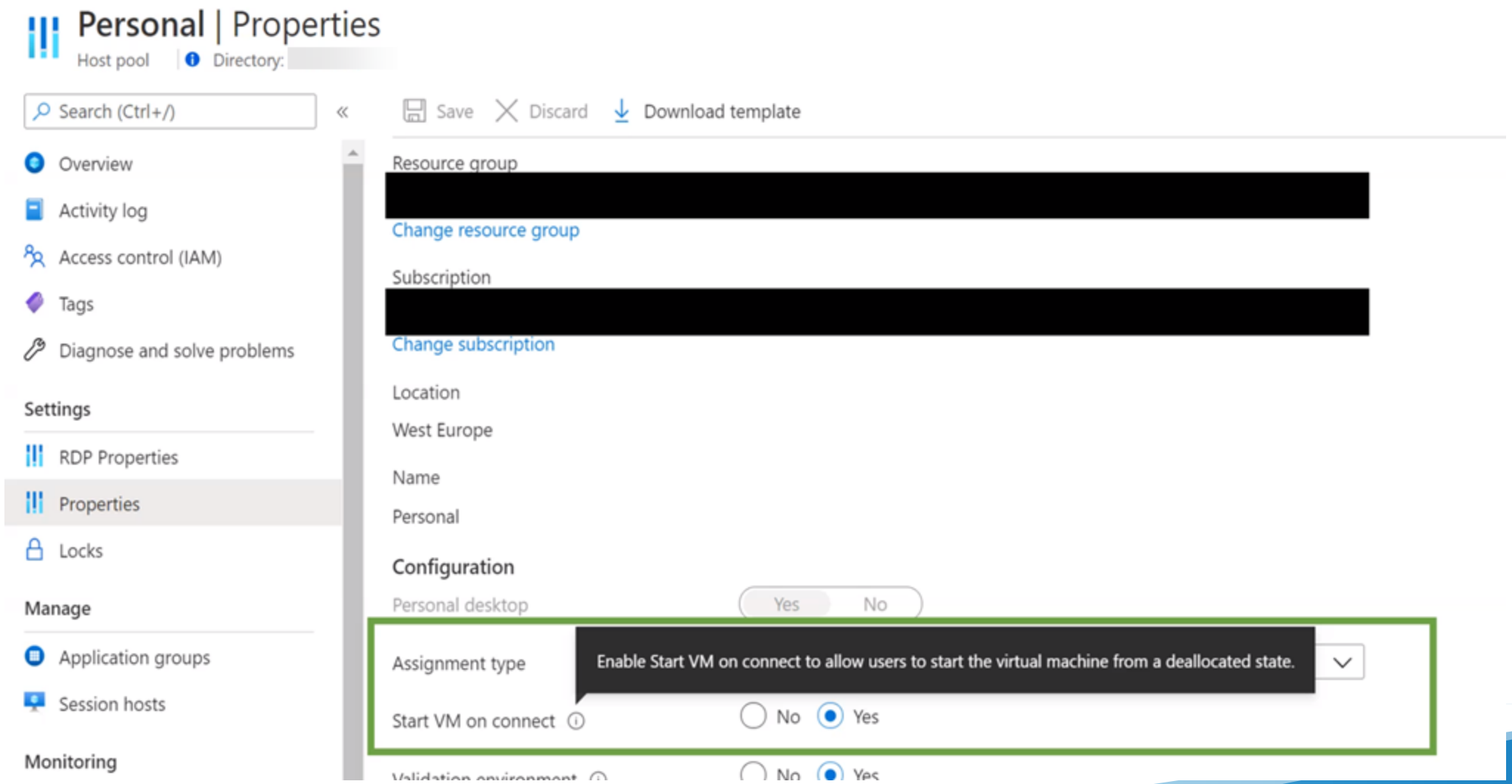
Start VM on Connect

(Private Preview)

Microsoft

@MichaWets

Start VM on Connect (Private Preview)



Microsoft Endpoint Manager

(Public Preview)

Microsoft

@MichaWets

Microsoft Endpoint Manager (Public Preview)

PreReqs

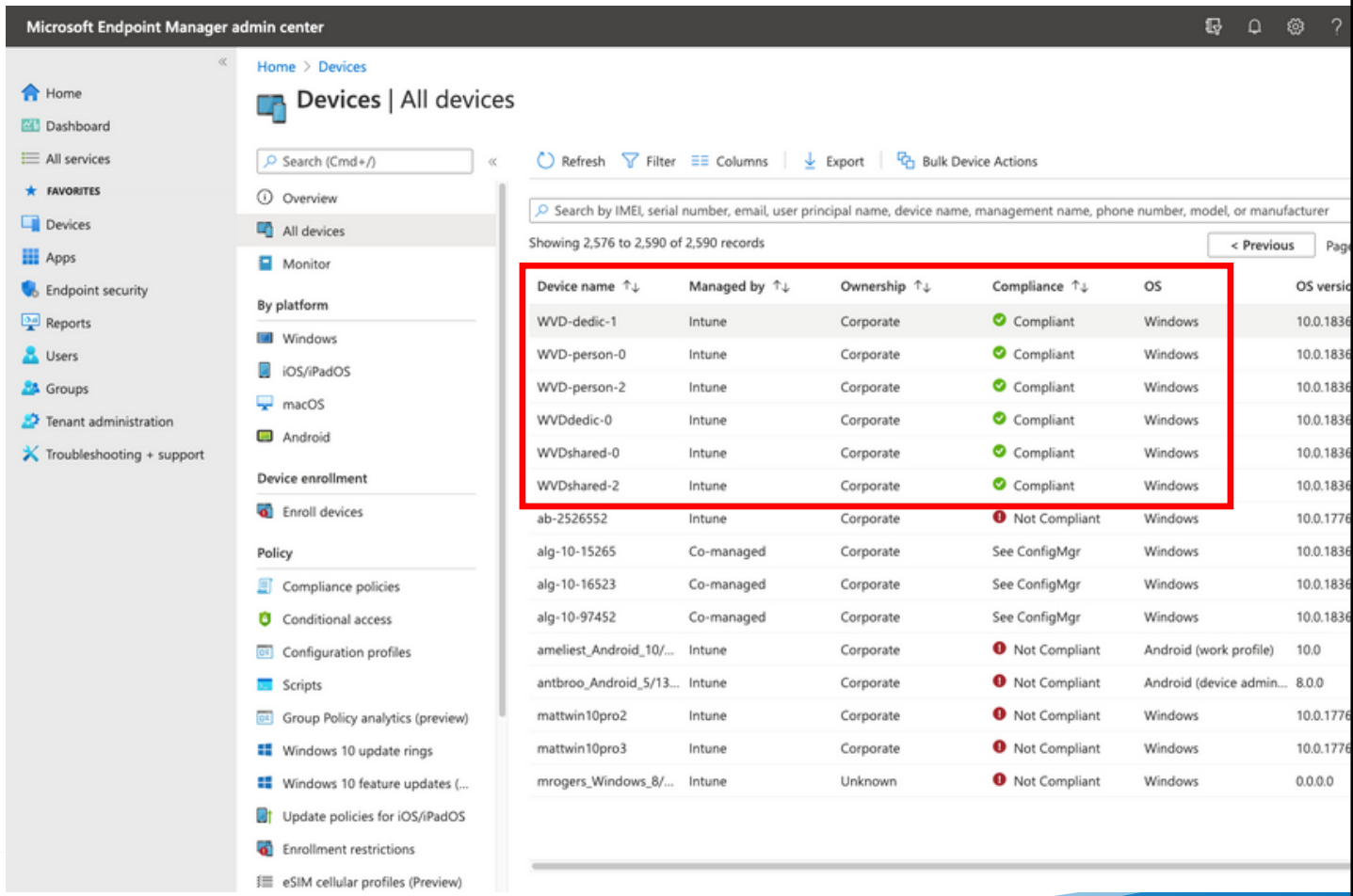
- Hybrid AD joined

Benefits

- Manage policies
- Distribute application
- Centralized view across both physical devices & virtual desktops

Available for

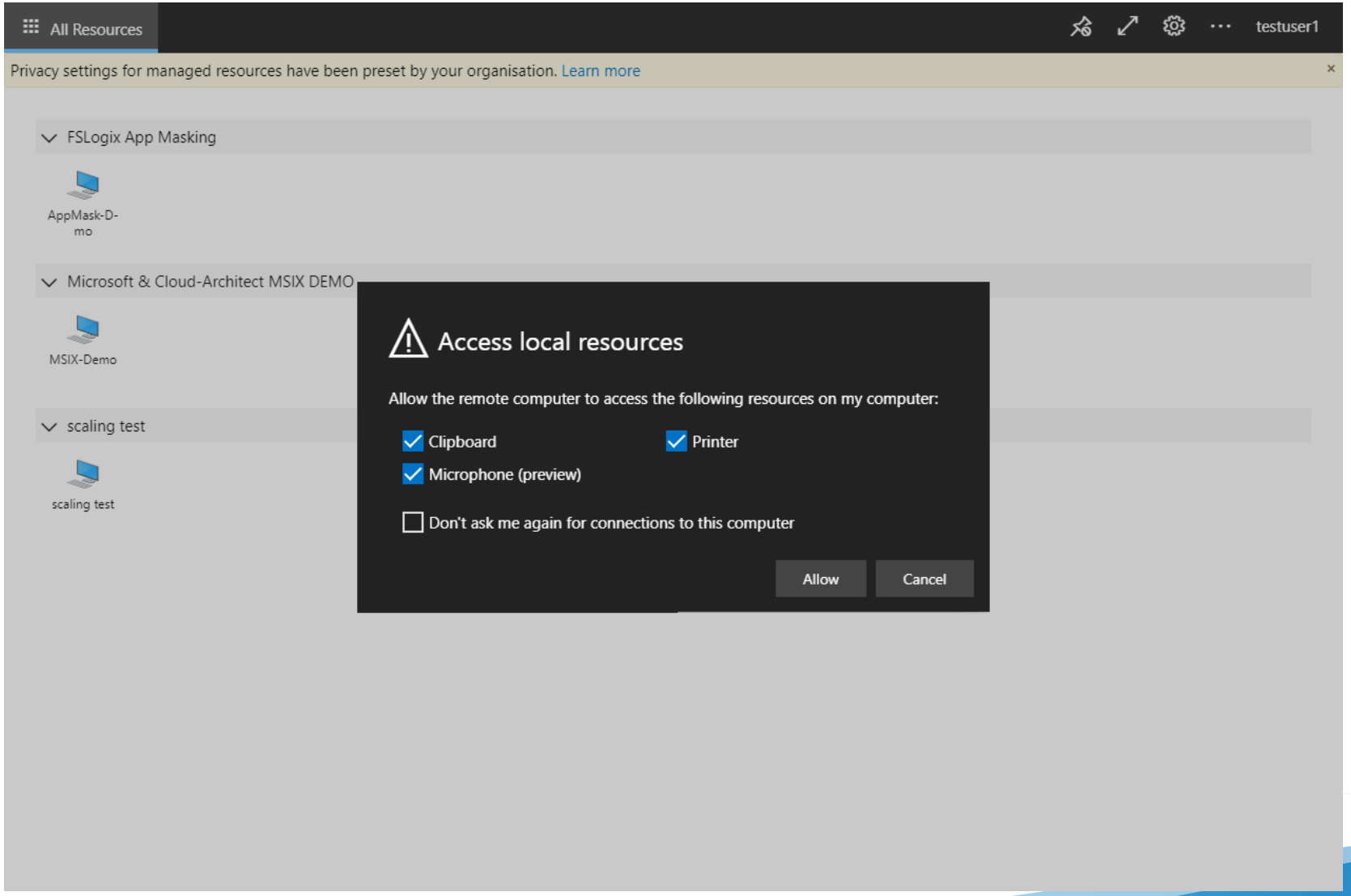
- Windows 10 Enterprise desktops (GA)
- Windows 10 Enterprise multi-session (preview – 25 sessions)



HTML5 microphone redirection

(Public Preview)

HTML5 microphone redirection (Public Preview)



Azure Monitor for WVD

(Private Preview)

Microsoft

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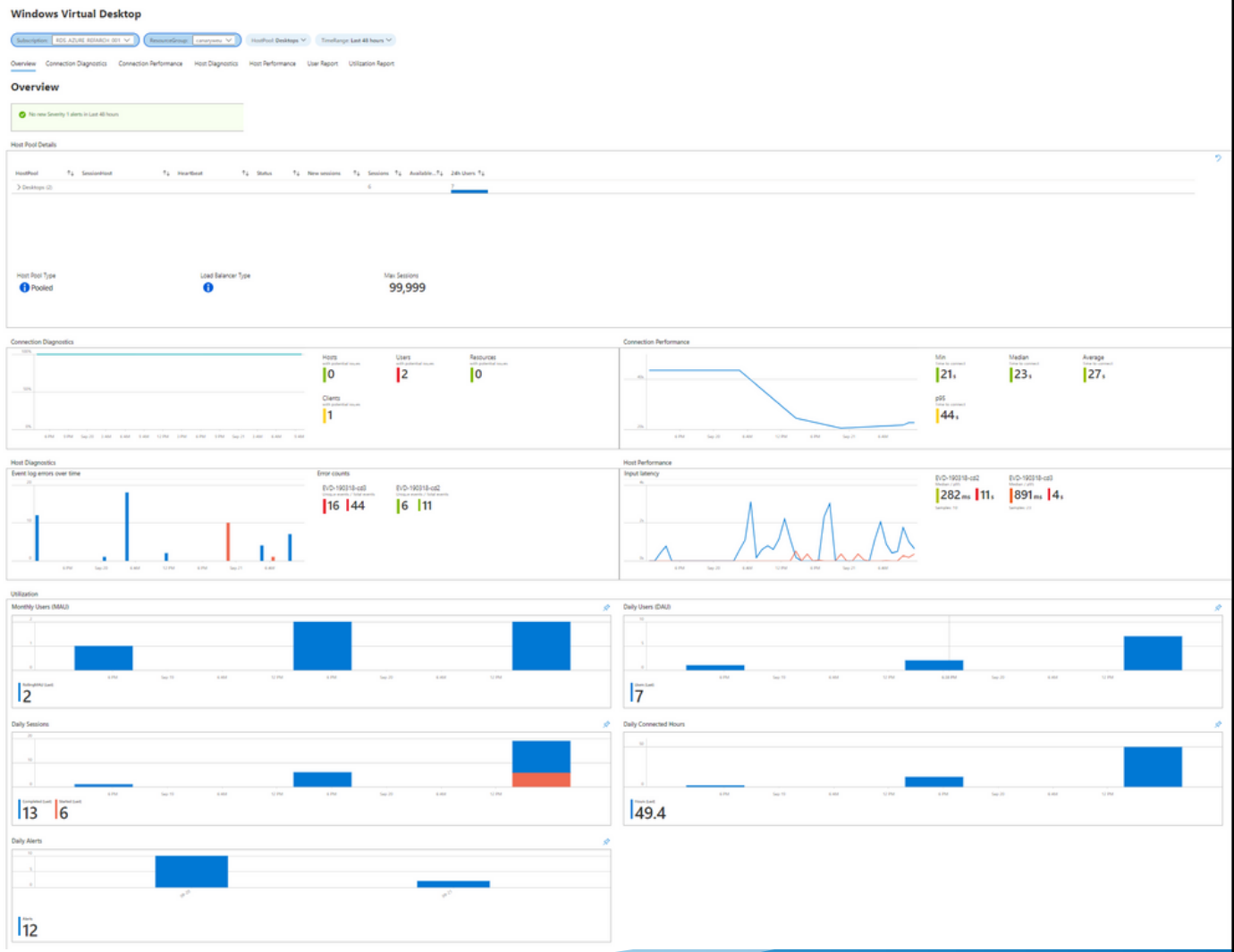
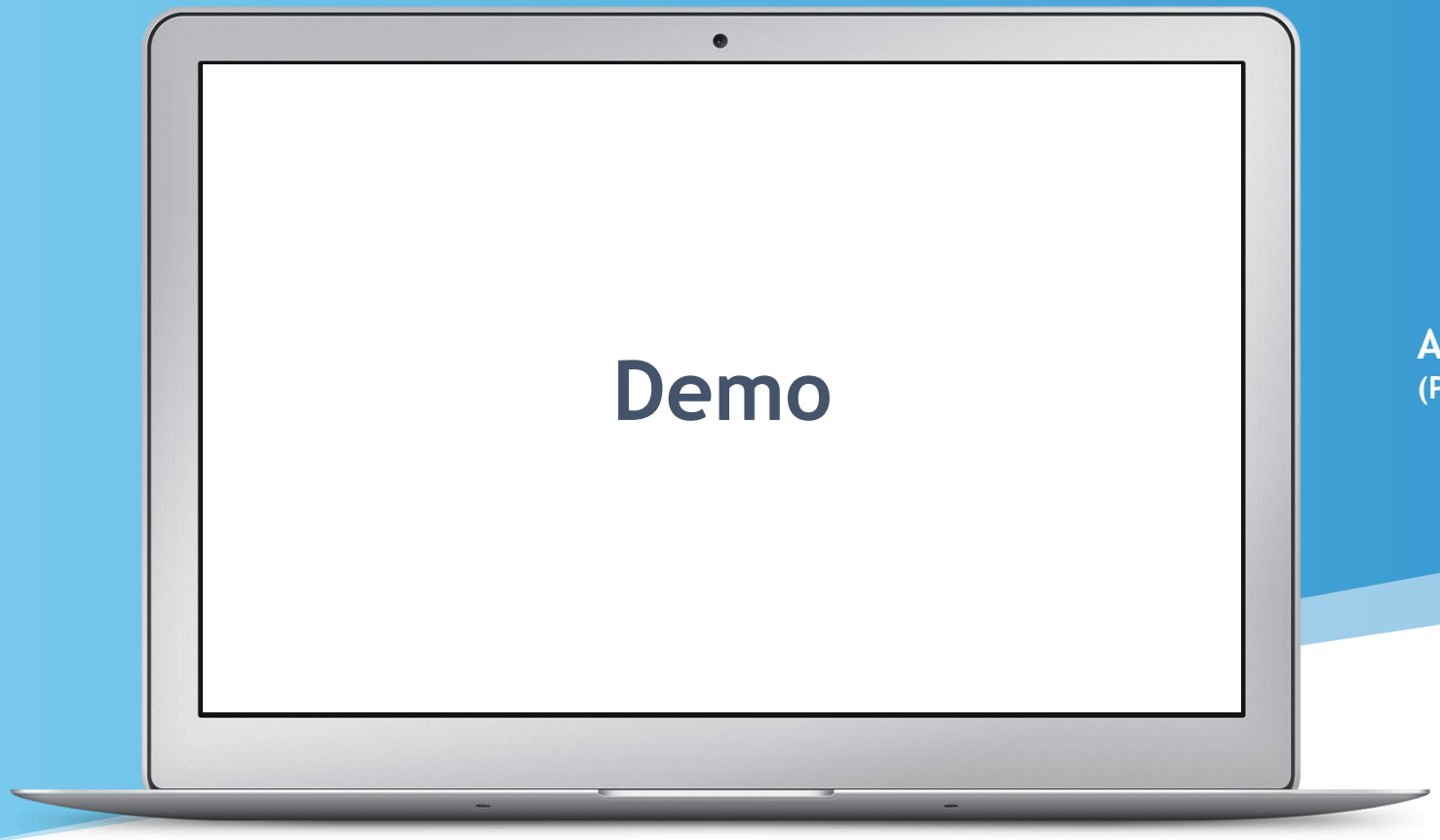
Azure Monitor for WVD (Private Preview)

- Monitoring telemetry
- Visualizations
- Debug & troubleshooting issues
- Configure alerts to proactively identify issues
- Look at connection and host level performance
- Drill down to specific user session
- Usage across host pools





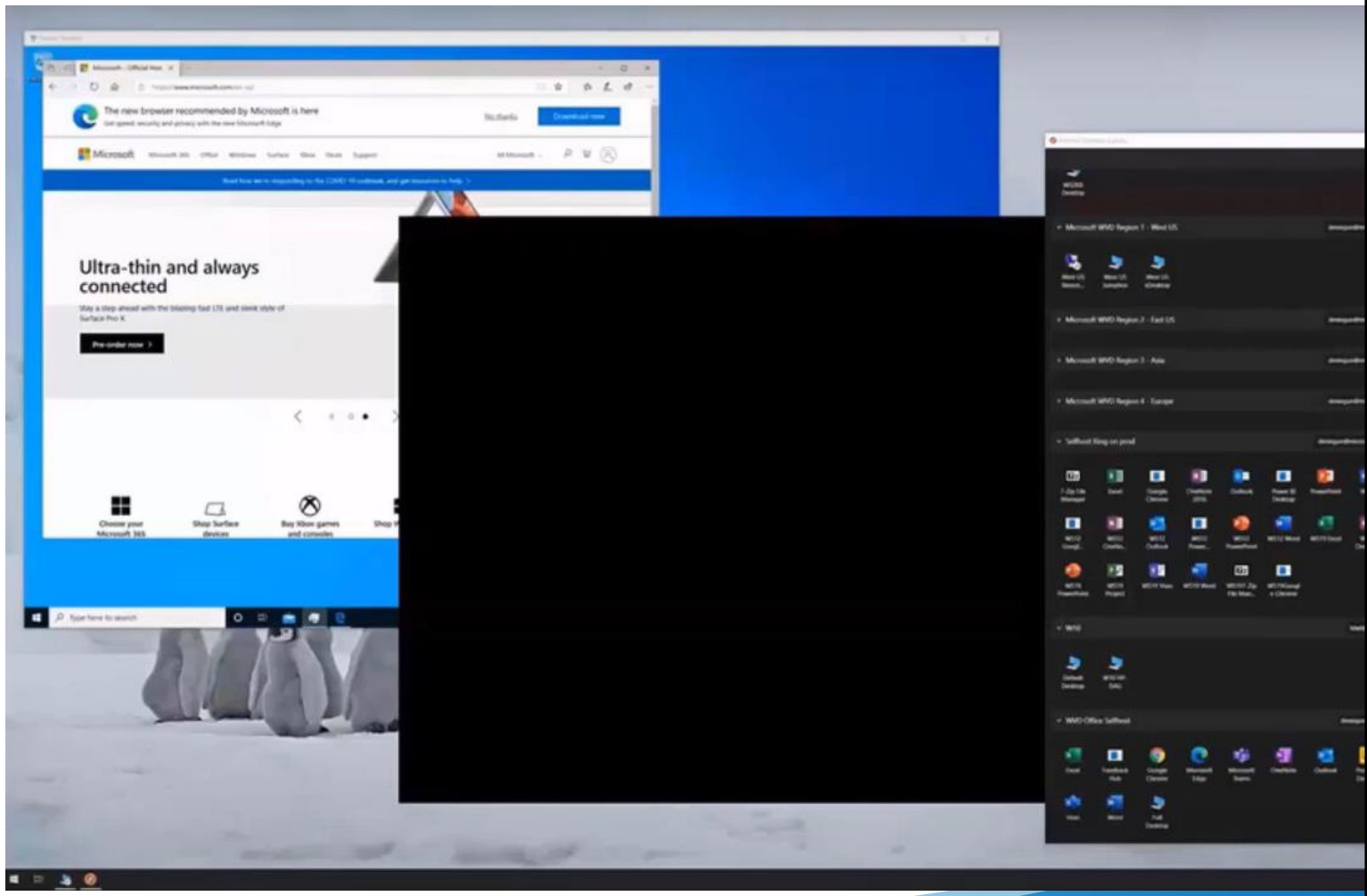
Azure Monitor for WVD
(Private Preview)

Screen capture protection

(Private Preview)

Screen capture protection (Private Preview)

- Protect sensitive information
- Both Remote Apps & Desktops
- On all supported WVD clients



Windows Virtual Desktop RDP Shortpath

(Public Preview)

Microsoft

@MichaWets

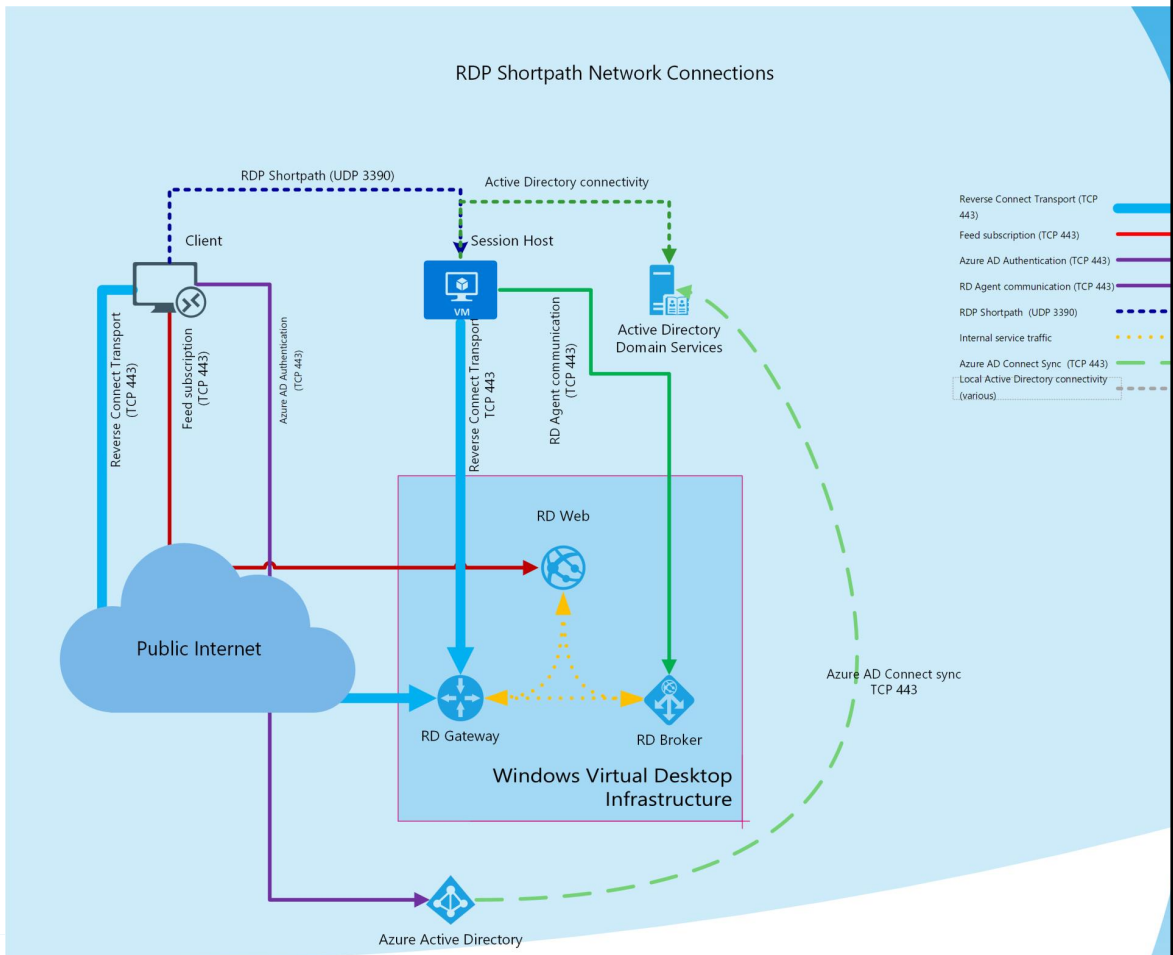
Windows Virtual Desktop RDP Shortpath (Private Preview)

Requirements

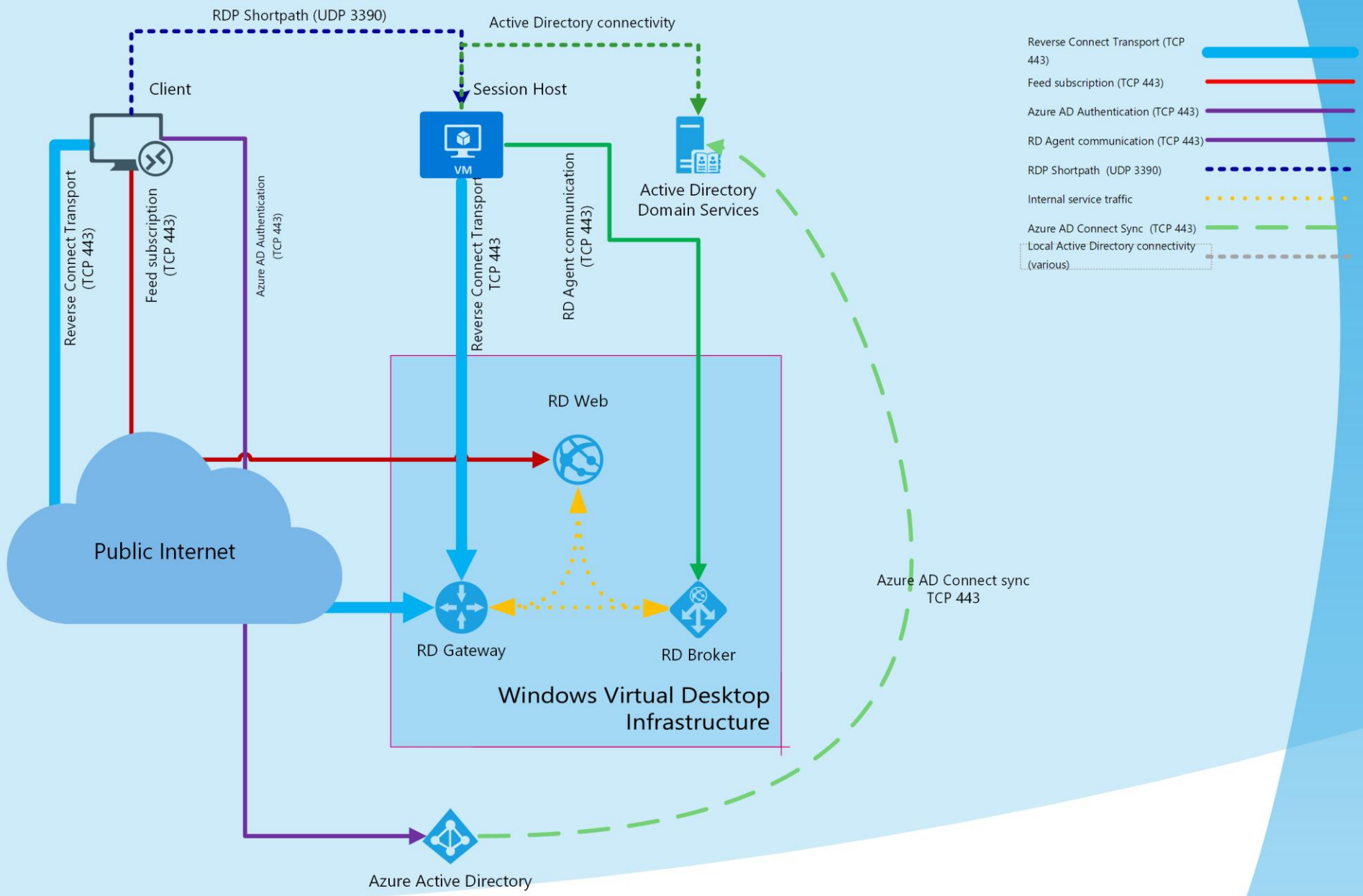
- Client needs direct line-of-sight with Sessionhost
  - ExpressRoute
  - Site-to-Site (S2S)
  - Point-to-Site (P2S)
  - Public IP (pls don't)

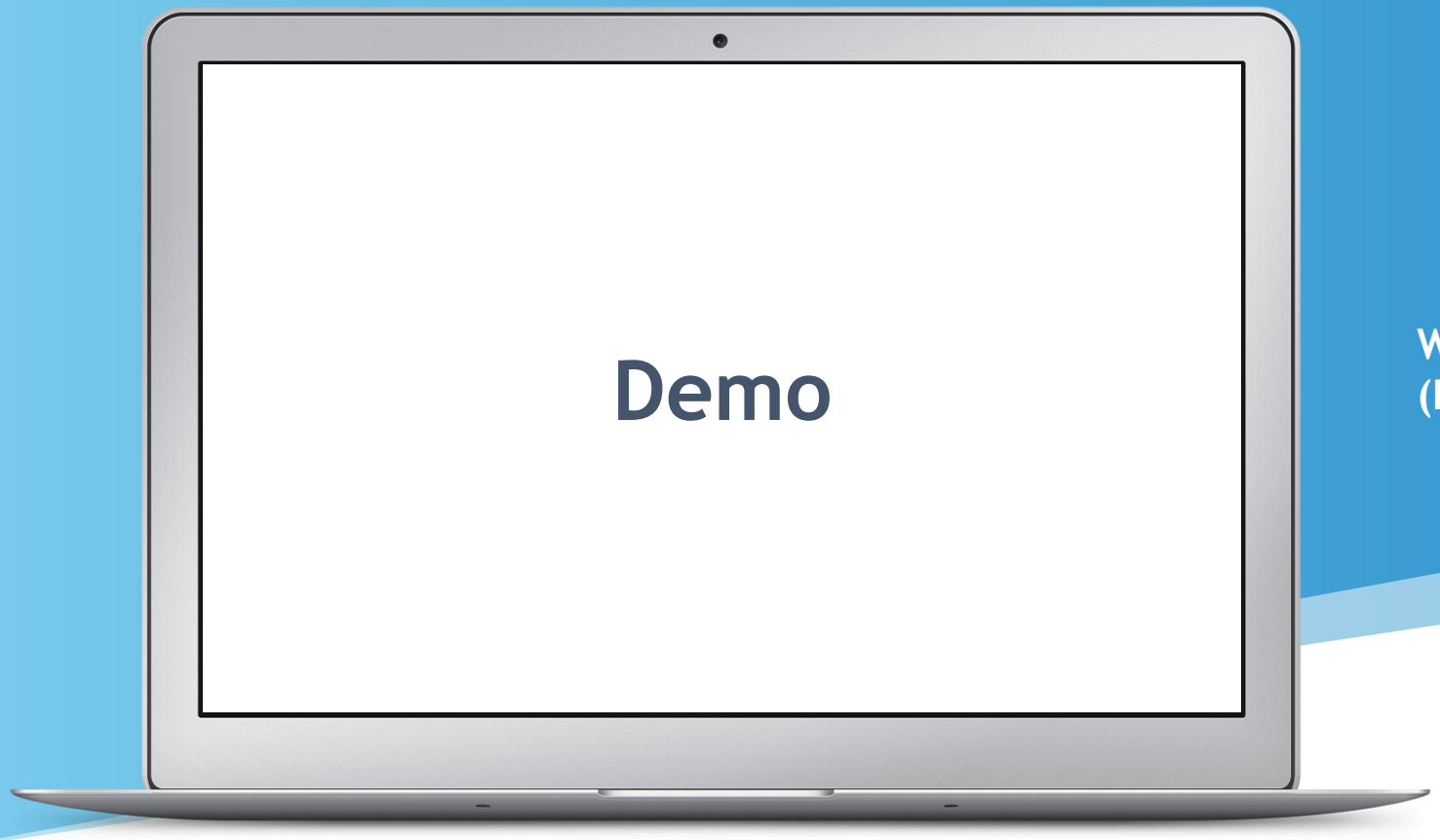
Benefits

- Based on top of highly efficient Universal Rate Control Protocol (URCP)
- Direct connectivity between Remote Desktop client and Session Host
- Reduces the round-trip time
- Support for configuring Quality of Service (QoS)
- Limiting outbound network traffic
  (throttle rate for each session)



RDP Shortpath Network Connections





Windows Virtual Desktop RDP Shortpath
(Public Preview)

Other updates

Other updates

WVD Client

- Multiple accounts in the client
  _msradc TXT 1 Hours https://rdweb.wvd.microsoft.com/api/arm/feeddiscovery
- Auto update client

Management

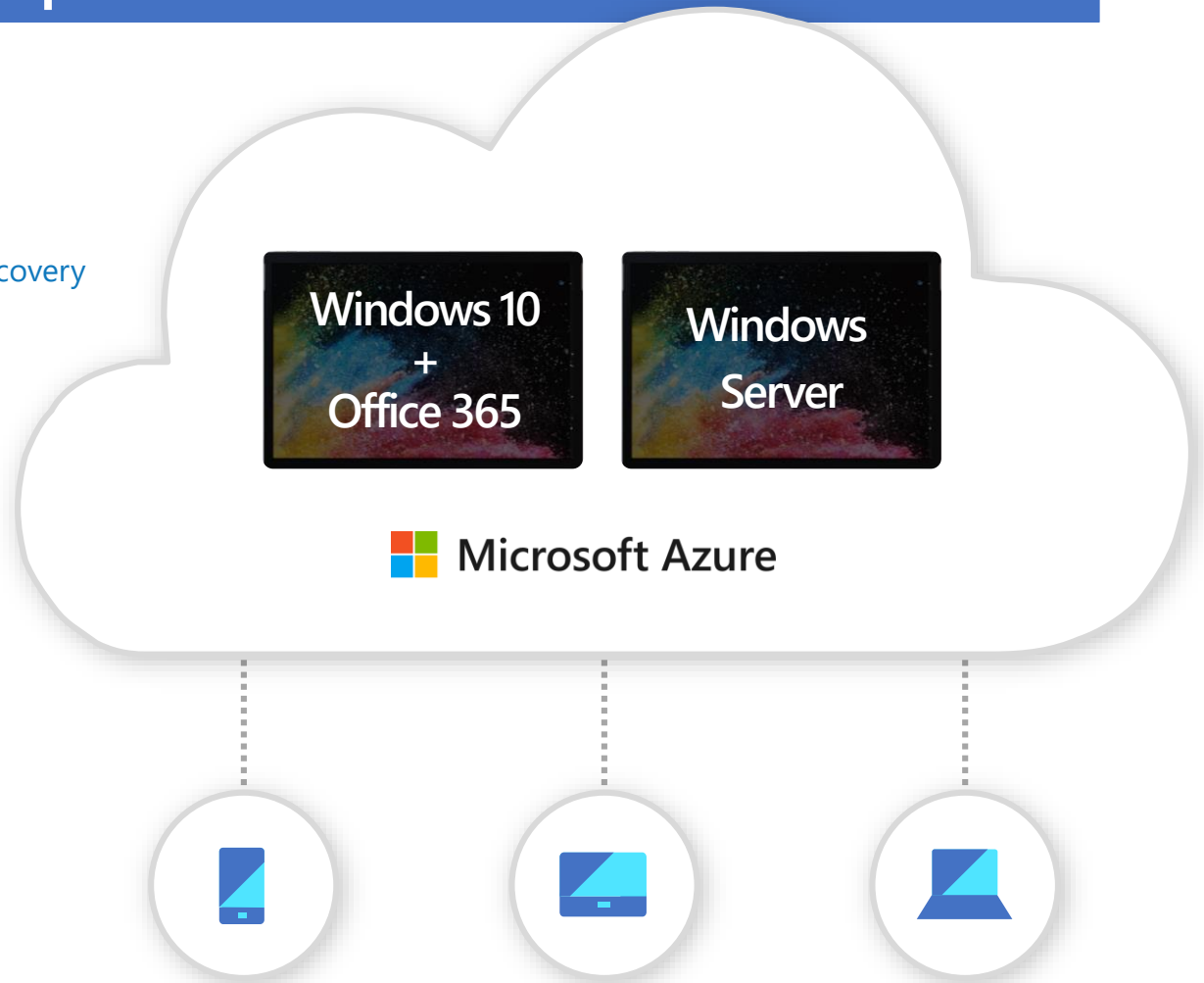
- Update to Powershell modules
  Az.DesktopVirtualization 2.0.1

Optimizations

- Multi Media Redirection (Chrome & Edge extension)

Azure Portal

- Change VM image template
- Renaming of session desktops



Windows Virtual Desktop

WEWC1086 WVD Technical Deep Dive + Hands-on Workshop

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Bart Roels - Cloud Solution Architect | Microsoft