I'm speaking!

Microsoft meets Community: Windows Virtual Desktop virtual event
3rd XXL edition!

Patrick Köhler
Technical Leader
Elgon IT

Container up your applications: fast, secure and efficient with MSIX app attach

Go to **aka.ms/wvdevent2020** to register NOW!

Microsoft

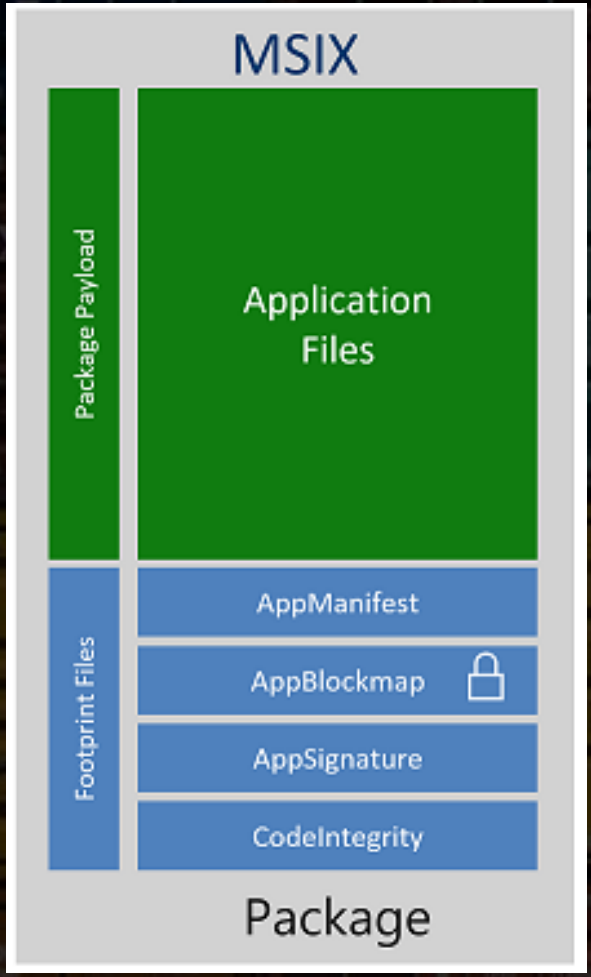
What you can expect to learn…

- The fundamentals of MSIX & App Attach
- Storage Options
- Container Security
- Toolset to create MSIX packages and containers for App Attach

What is MSIX?

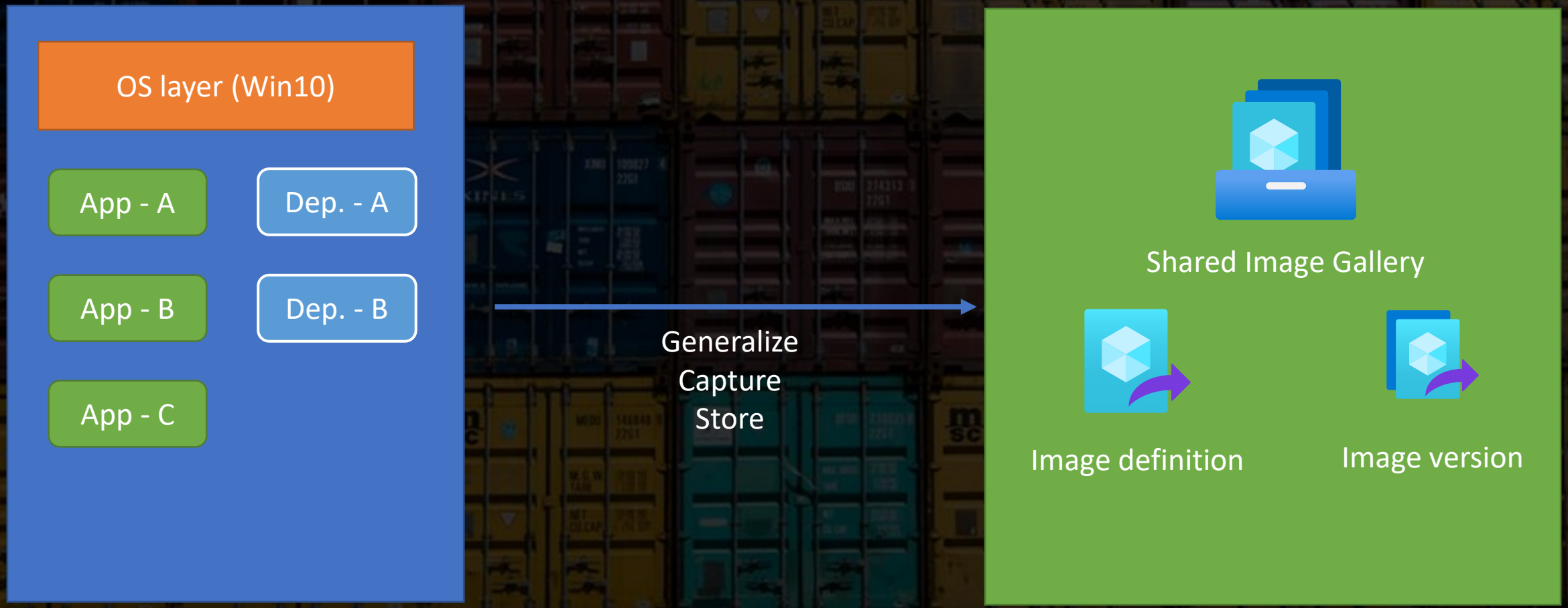
- Windows App Package Format
- Modern package and deployment features to Win32, WPF, Forms apps
- Existing app installers can be used to create a MSIX package
- Use MSIX everywhere

Inside an MSIX package



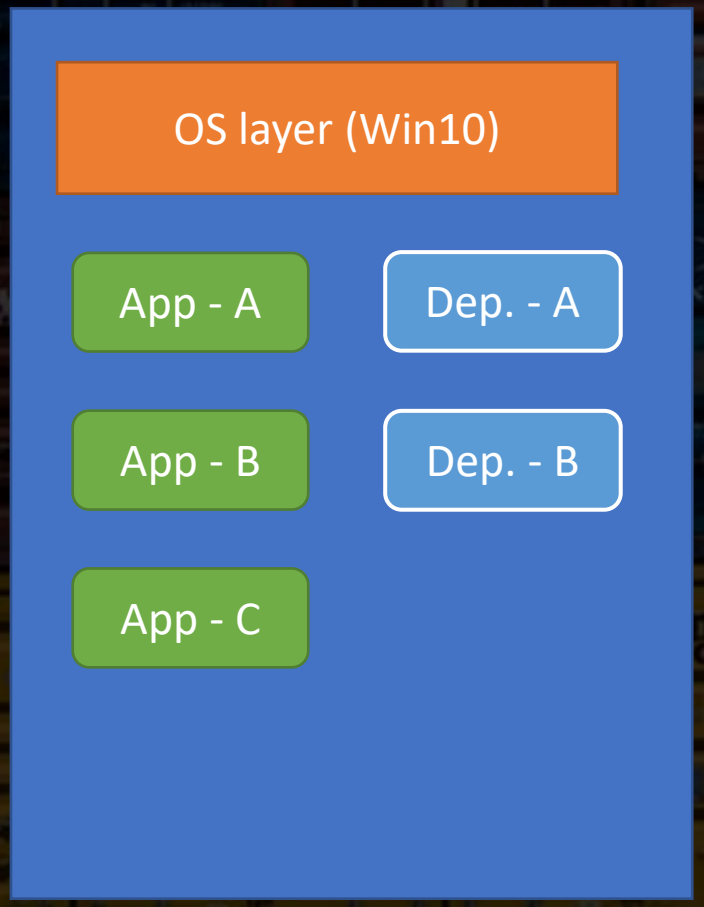
- AppxManifest.xml
- AppxBlockMap.xml
- AppxSignature.p7x
- App payload

Ways of bringing apps to WVD Session Hosts



App installation

Ways of bringing apps to WVD Session Hosts



App installation

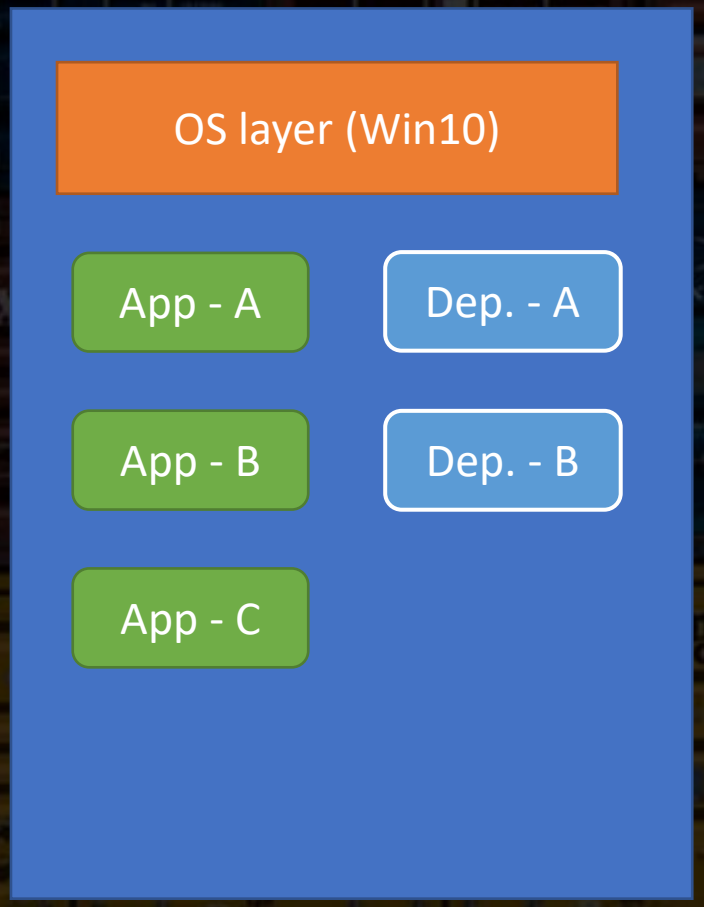
PRO

- Installation in a common way
- Dependencies can be tested like it's being delivered

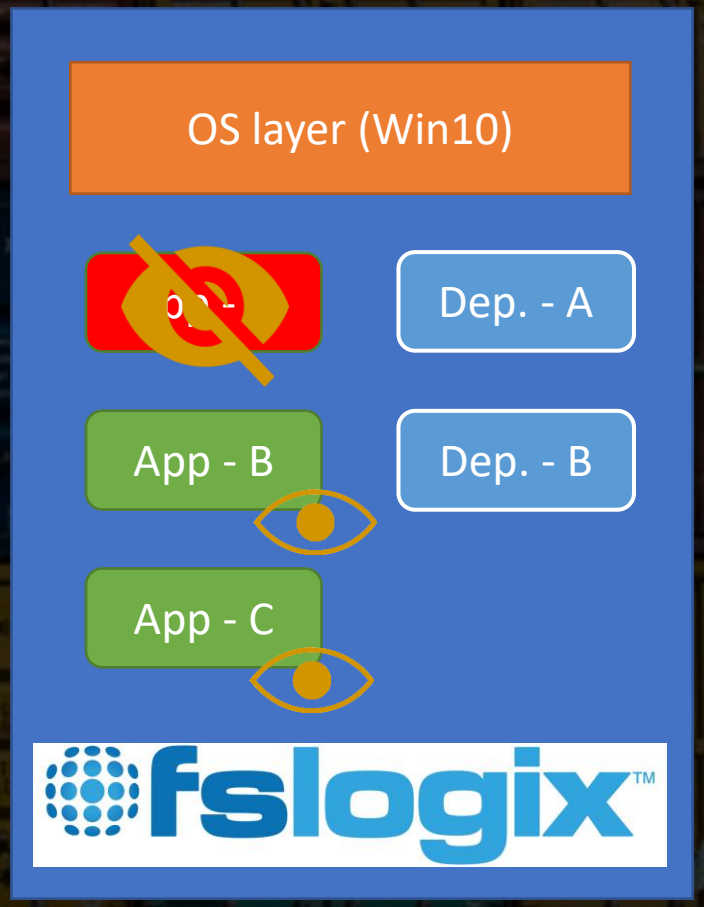
CONS

- Manual process per use case (takes time)
- Multiple points of failure in the process
- Update Management requires new image version

Ways of bringing apps to WVD Session Hosts

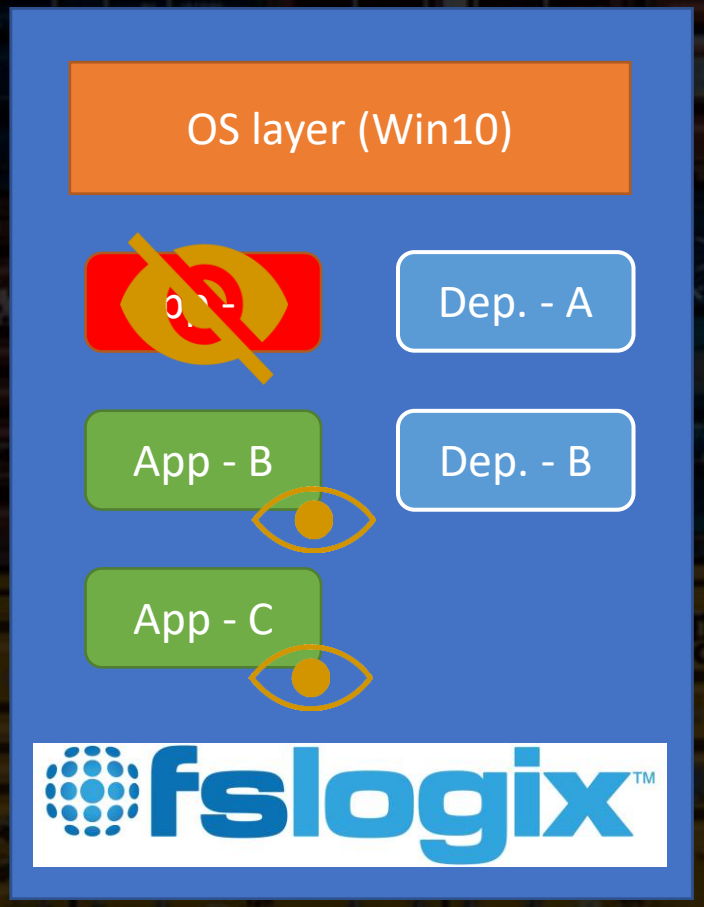


App installation



App Masking

Ways of bringing apps to WVD Session Hosts



App Masking

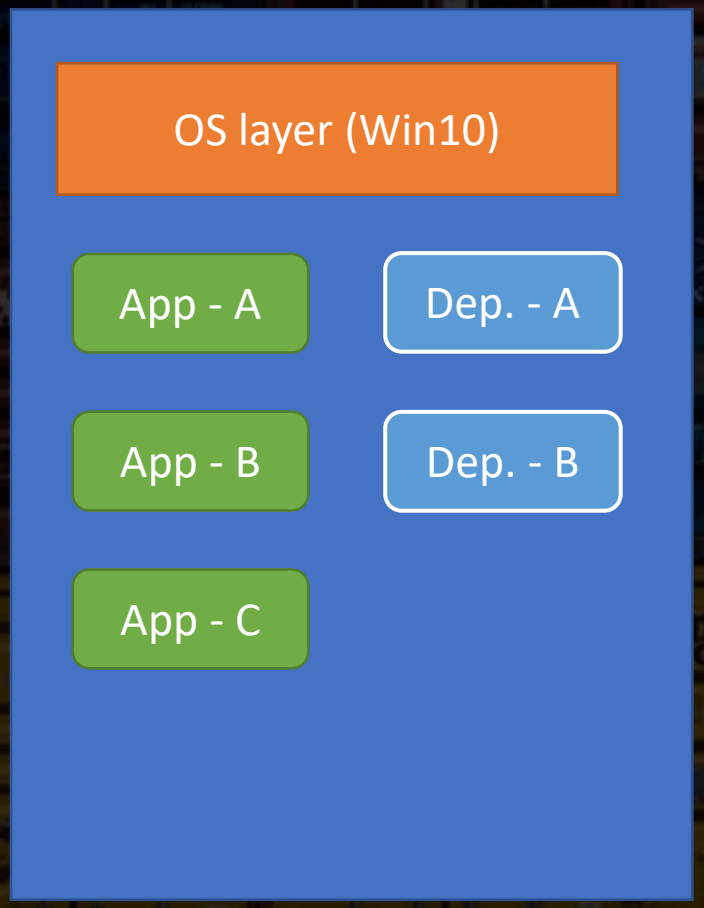
PRO

- Less images / image use cases
- Access defined at global scale through Security Groups

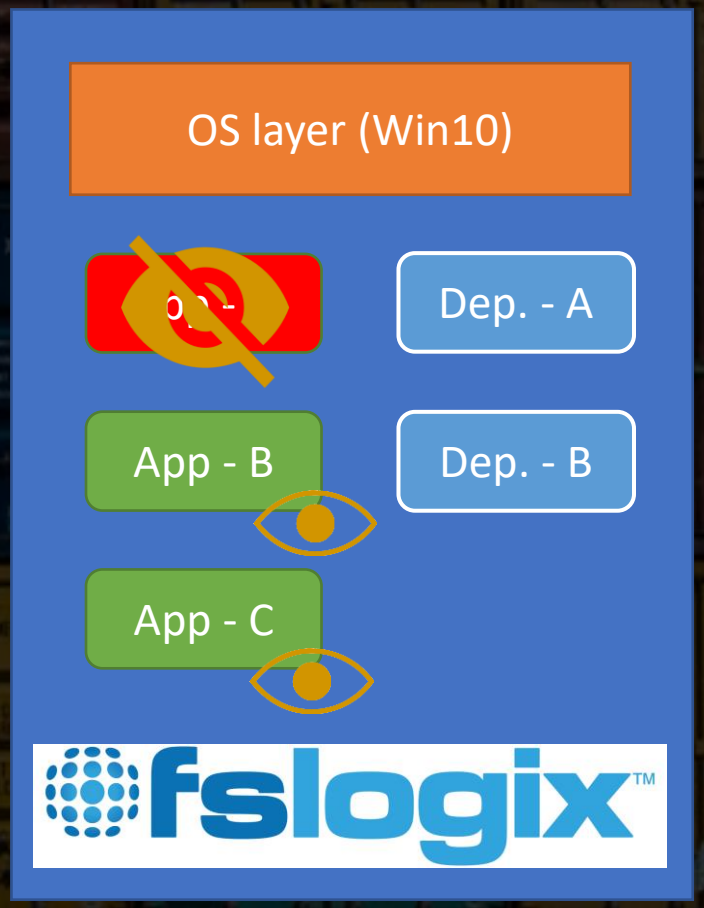
CONS

- Requires all apps to be installed
- Apps might consume much more resources as necessary
- App Rules must be on “per-machine” level

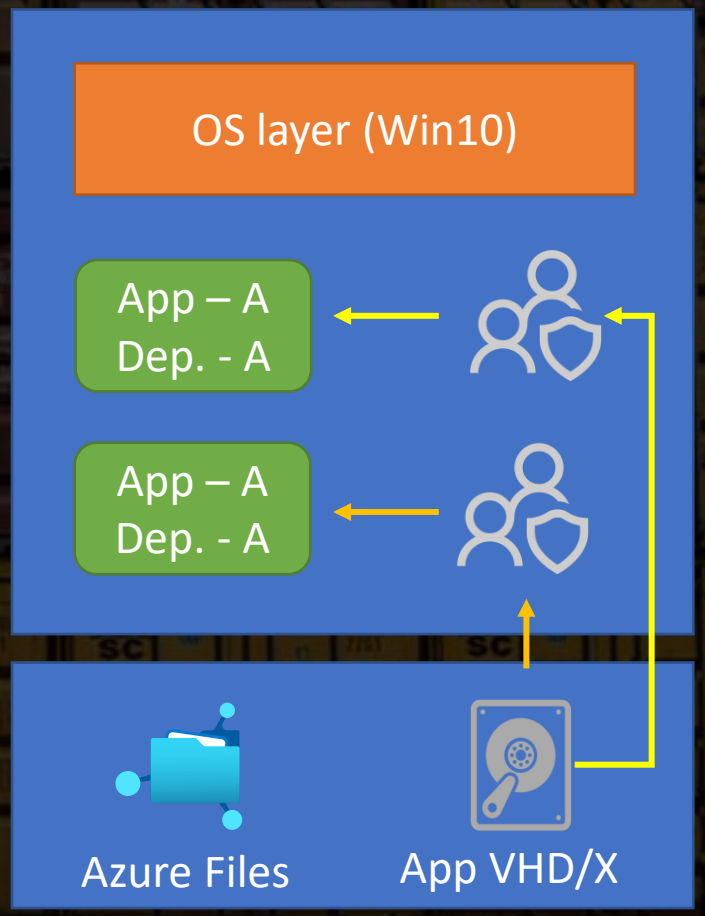
Ways of bringing apps to WVD Session Hosts



App installation

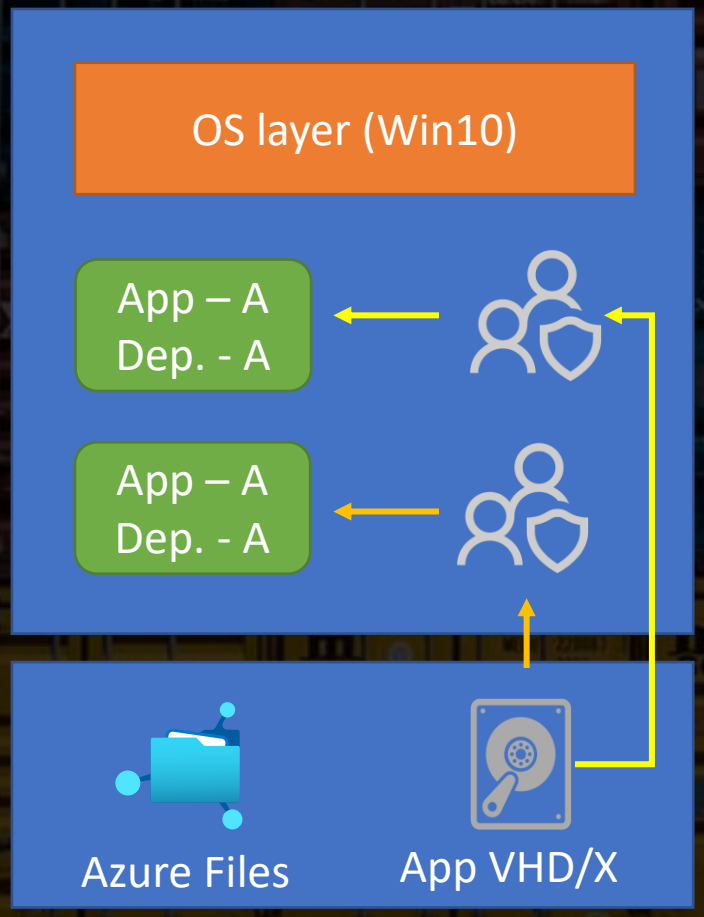


App Masking



MSIX App Attach

Ways of bringing apps to WVD Session Hosts



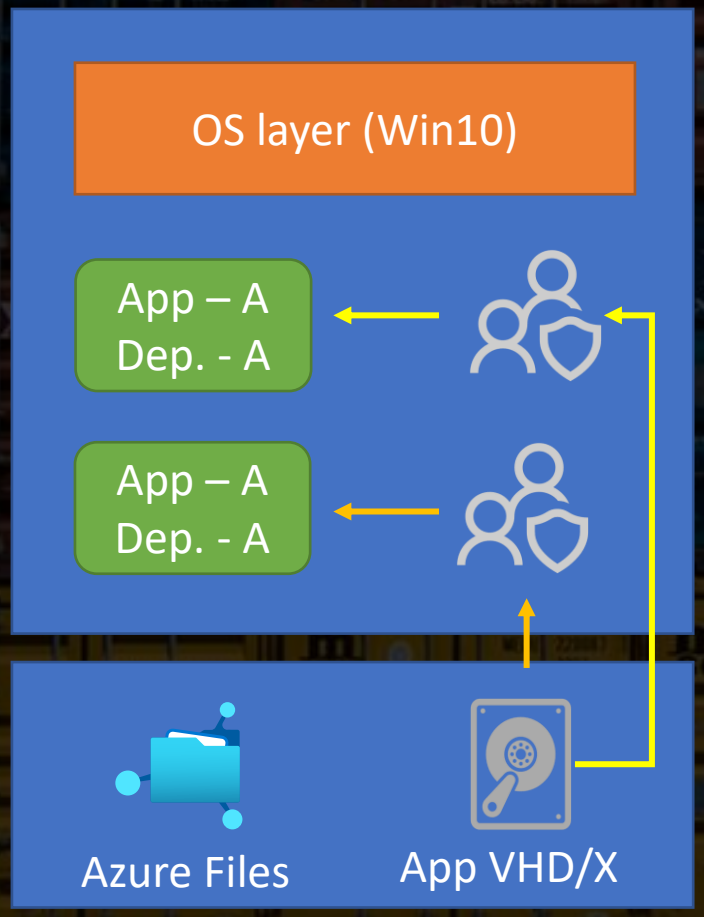
MSIX App Attach

PRO

- Less images / image use cases
- Same package format across your organization
- No repackaging needed
- Agentless provisioning of apps on per user basis
- Control over apps provisioned per-user!

CURRENTLY IN PUBLIC PREVIEW!

Ways of bringing apps to WVD Session Hosts

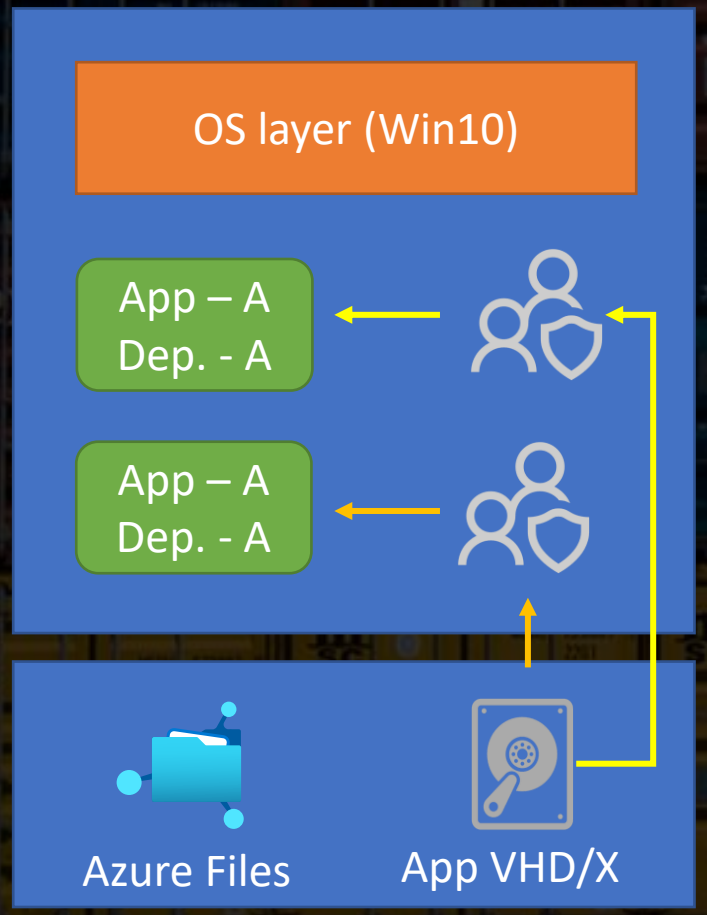


MSIX App Attach

Requirements

- Windows 10 2004 or 19041 Insiders preview release
- SMB compatible network share
- Session Host must have Read-Permission to share
- Signing of the MSIX package required

Ways of bringing apps to WVD Session Hosts



MSIX App Attach

MSIX App Attach – Terminology

- Expand
- Stage
- Register
- De-Register
- De-Stage

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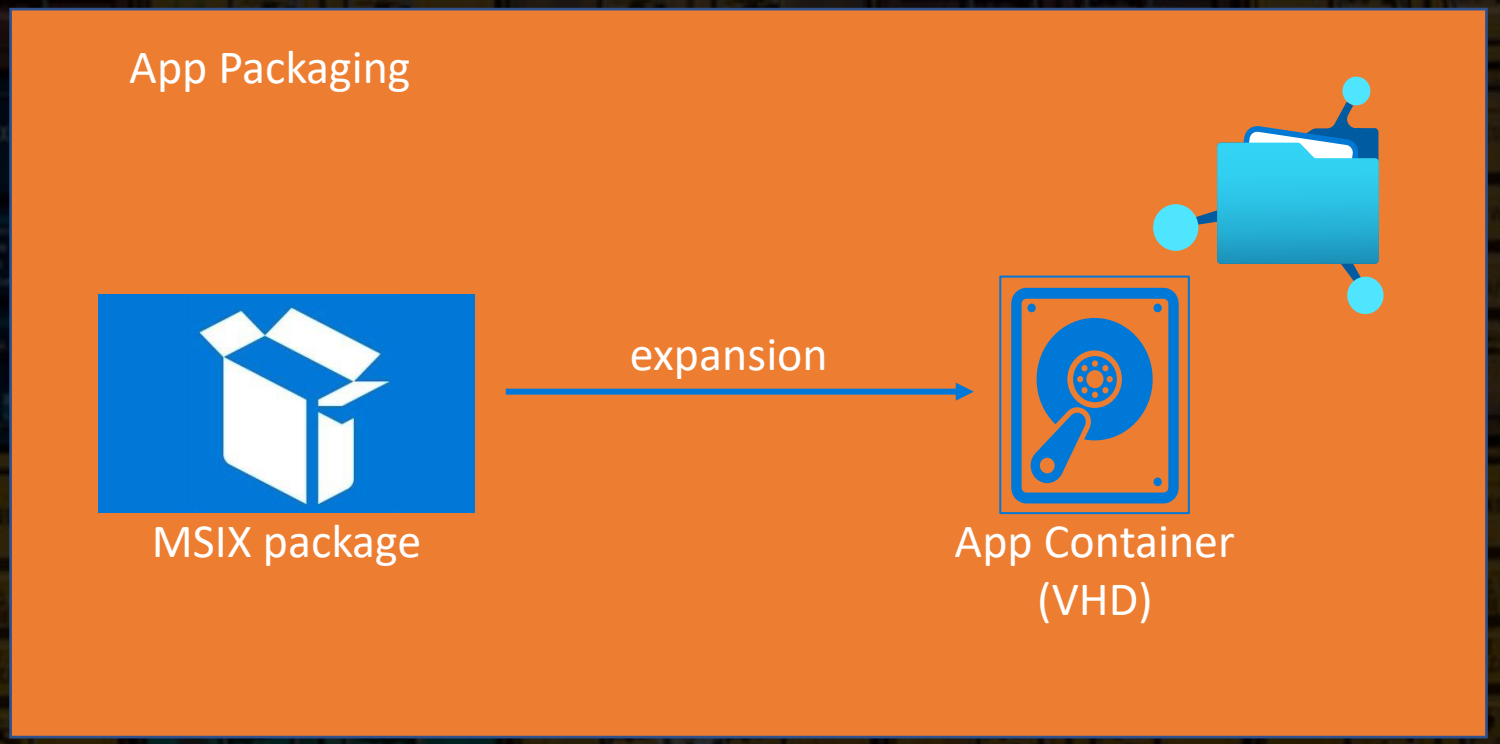

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MSIX App Attach – Terminology

Expand

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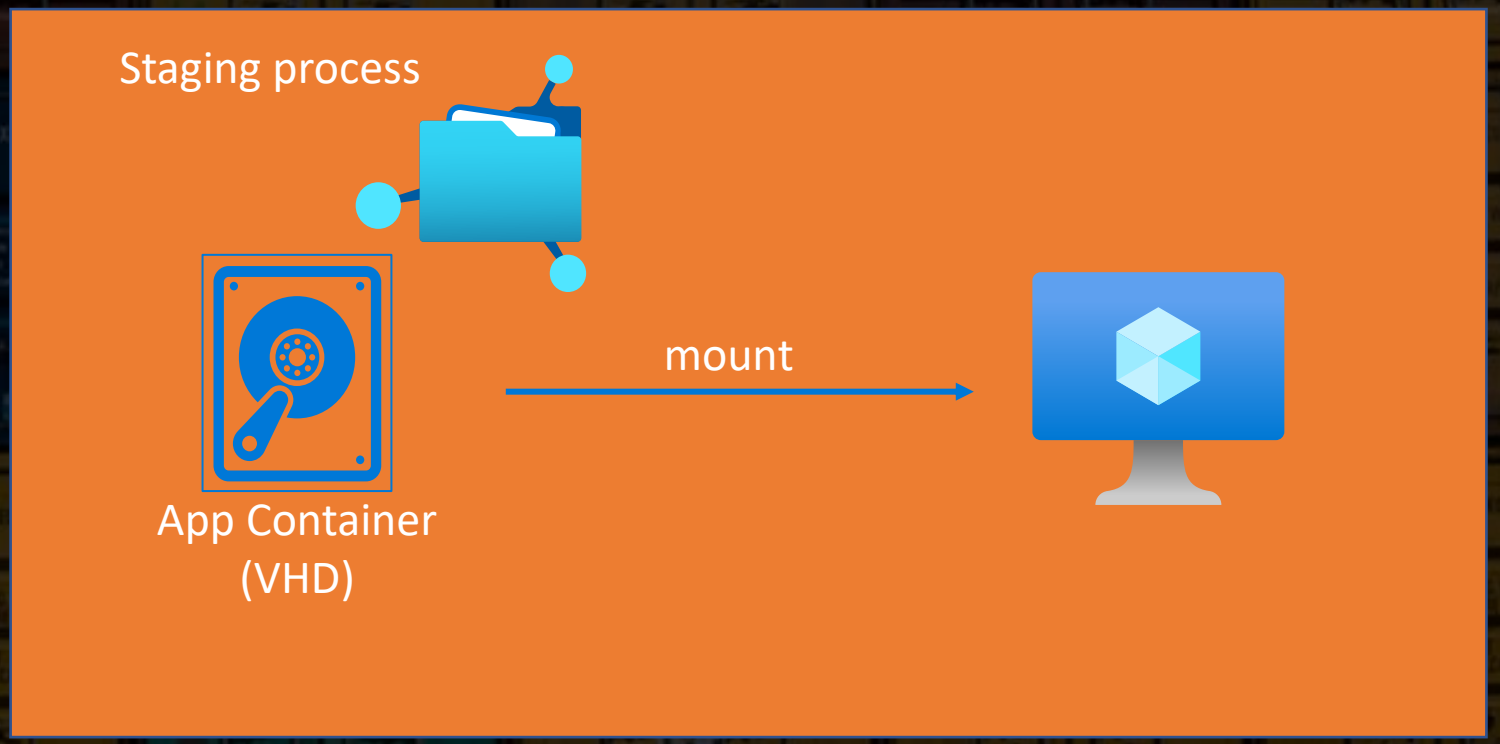
Register

De-Register

De-Stage



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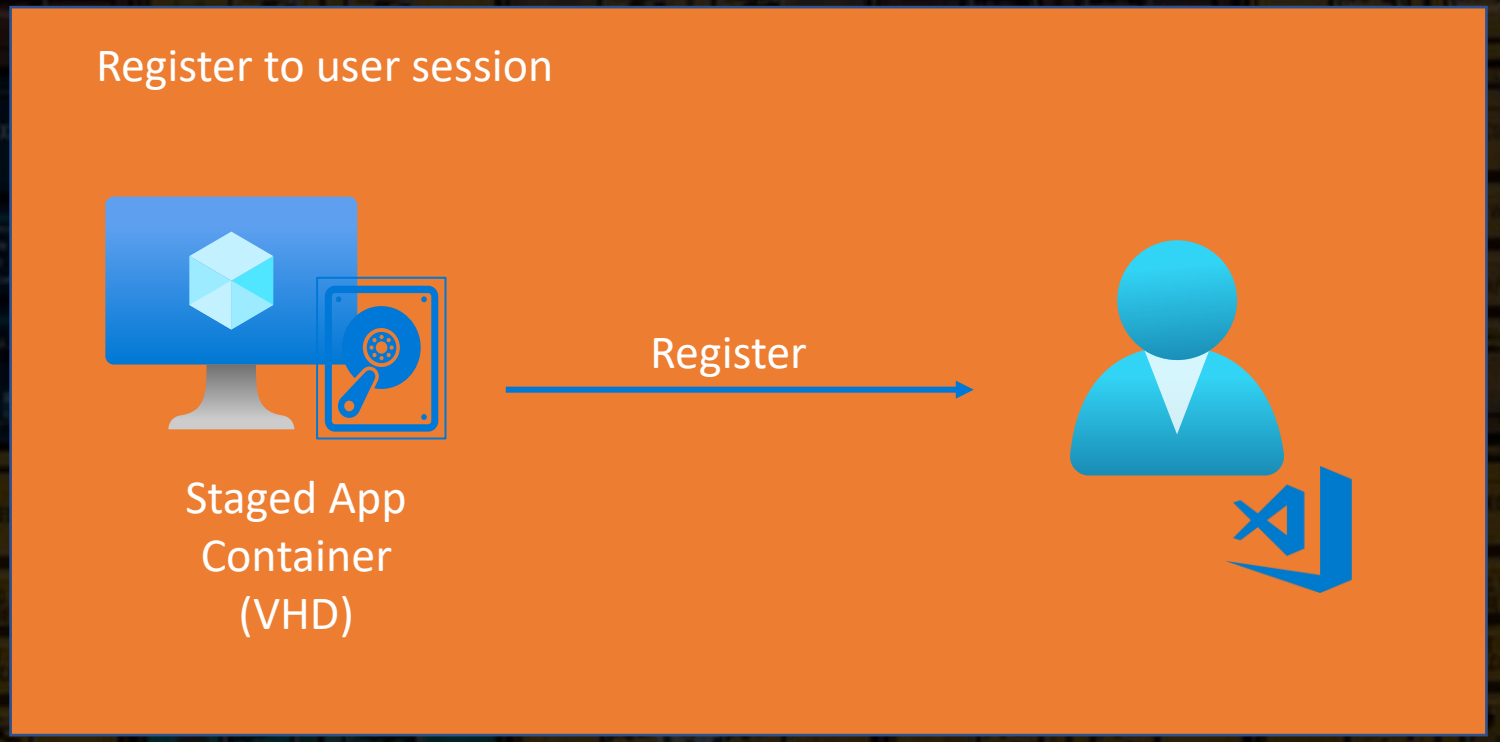

MSIX App Attach – Terminology

- Expand
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- De-Stage

MSIX App Attach – Terminology

Expand

Stage

Register

De-Register

De-Stage

De-Register the Application from the user session

Dismount the VHD from the virtual machine

MSIX App Attach – Terminology

Expand

Stage

Register

De-Register

De-Stage

Computer Level

MSIX App Attach – Terminology

Expand

Stage

Register

De-Register

De-Stage

User Level

MSIX App Attach - Procedure

DEMONSTRATION!

Demonstration Summary

What you've seen is…

- How the processing PowerShell scripts are built and what they mean
- How to manually start an MSIX App Attach Container
- How to configure these PowerShell scripts via Group Policy to "automate" and control the attachment process

Where to store my containers?

Azure Files (Premium)
AD Authentication
SMB Multichannel

Azure NetApp Files

File Server VM

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Where to store my containers?

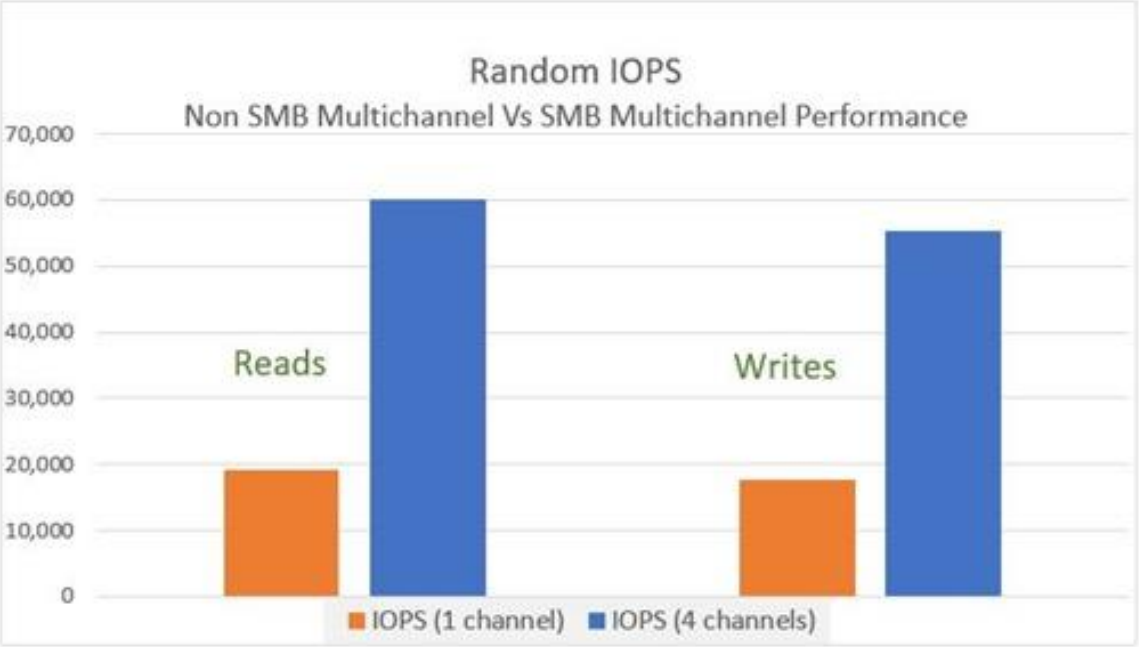
Azure Files (Premium)
AD Authentication
SMB Multichannel

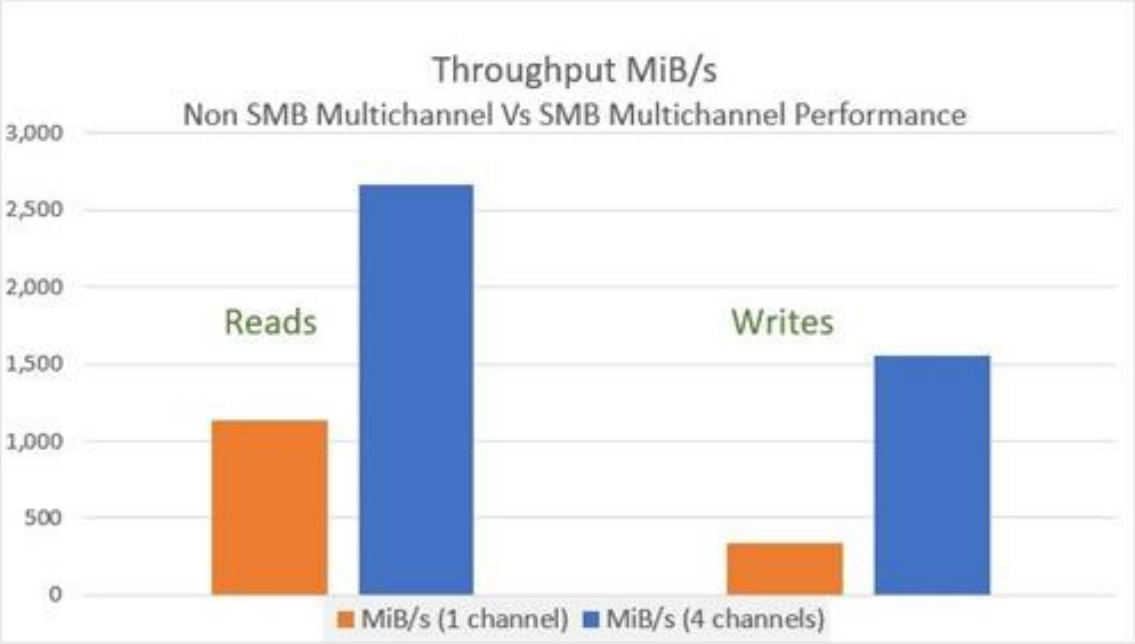
Benefits

- Lower deployment costs
- Active Directory Authentication
- Improved performance with SMB Multichannel (Premium)
  - Increased IOPS
  - Higher throughput

https://azure.microsoft.com/en-us/blog/boost-your-client-performance-with-azure-files-smb-multichannel/

Where to store my containers?



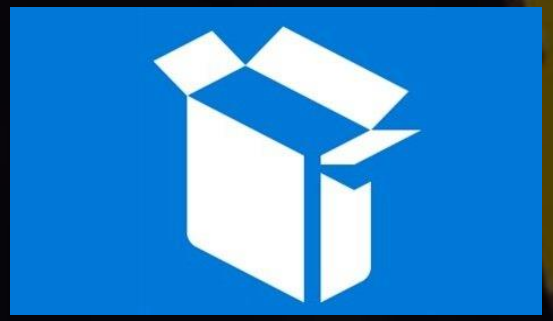


Container Security

MSIX App Attach containers are protected from being manipulated once they're containerized

- VHD/X's will be opened in Read-Only mode
- MSIX package within MUST be signed with a certificate

Container Security



MSIX Package

Internal / External CA

Self-Signed

Container Security

MSIX Package

Administrator: Windows PowerS

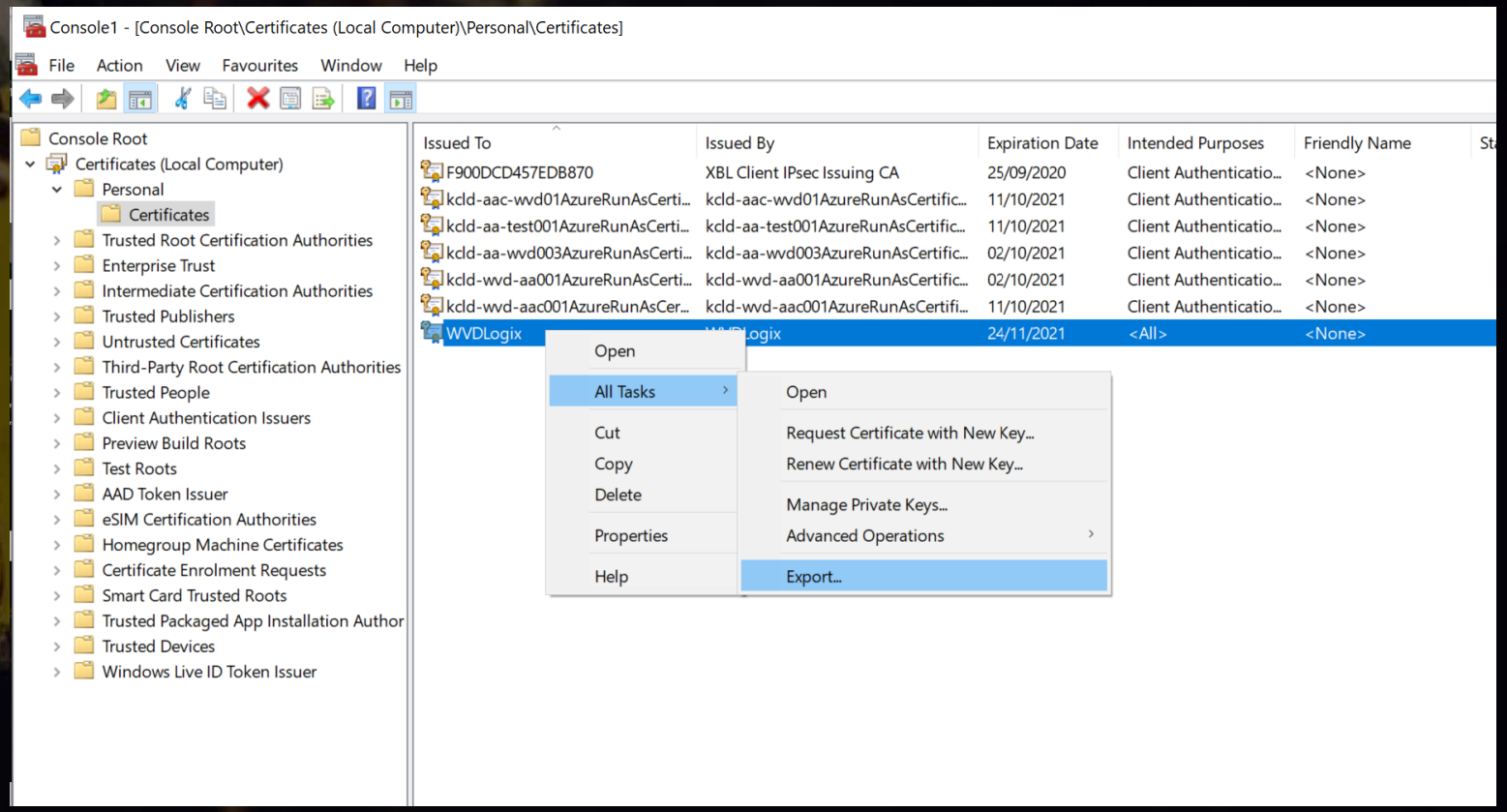
```
PS C:\Users\pkohler> New-SelfSignedCertificate -Type Custom -Subject "CN=WVDLogix" -KeyUsage DigitalS
ignature -KeyAlgorithm RSA -KeyLength 2048 -CertStoreLocation "cert:\LocalMachine\My"


   PSParentPath: Microsoft.PowerShell.Security\Certificate::LocalMachine\My

Thumbprint                                Subject
----------                                -------
E84FB13D9F3B879E94507BFF6438B12970B802ED  CN=WVDLogix
```

Container Security

MSIX Package



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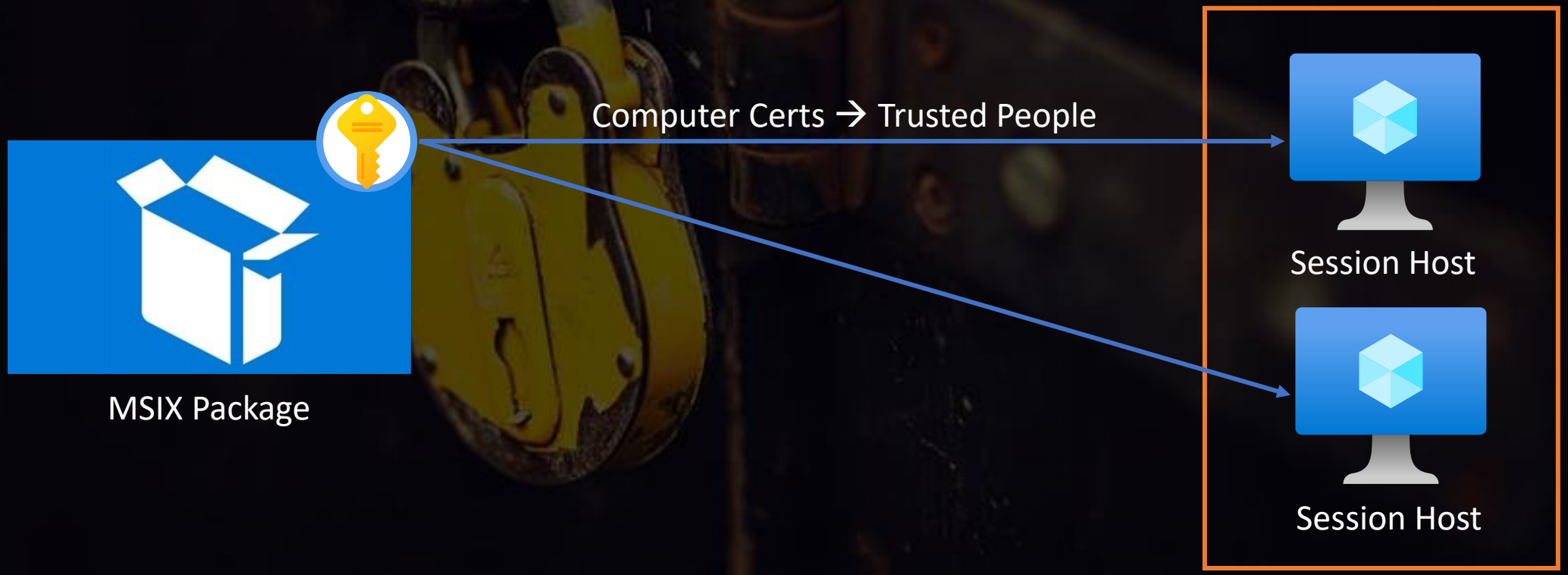

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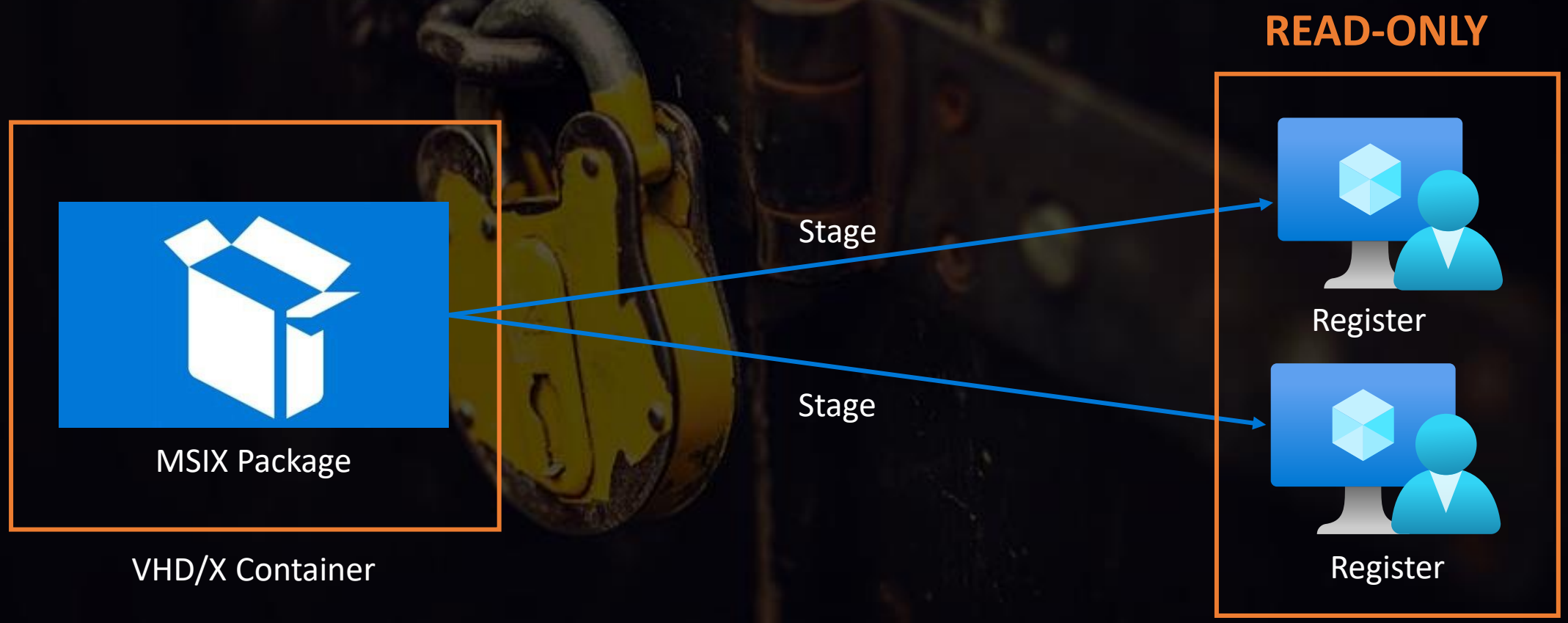


Toolset for App Attach

Requirements to prepare MSIX packages:

- MSIX Packaging Tool (Windows 10, 1809 or later)
- Participation in the Windows Insider Program (if Insider Build is used)
- Valid Microsoft Account (App access from the Store)
- Admin privileges to run the tool
- Certificate Authority (Intern / Extern) or Self-Signed Certificate

Toolset for App Attach

Requirements to prepare App Attach (manual):

- Windows 10 – 2004 or later
- Preparation of PowerShell scripts for staging / registering / de-registering / de-staging
- MSIXMGR

Requirements to prepare App Attach (automatically):

- Windows 10 – 2004 or later
- MSIX Commander (Community Tool)

https://github.com/bergerpascal/MSIX_Commander

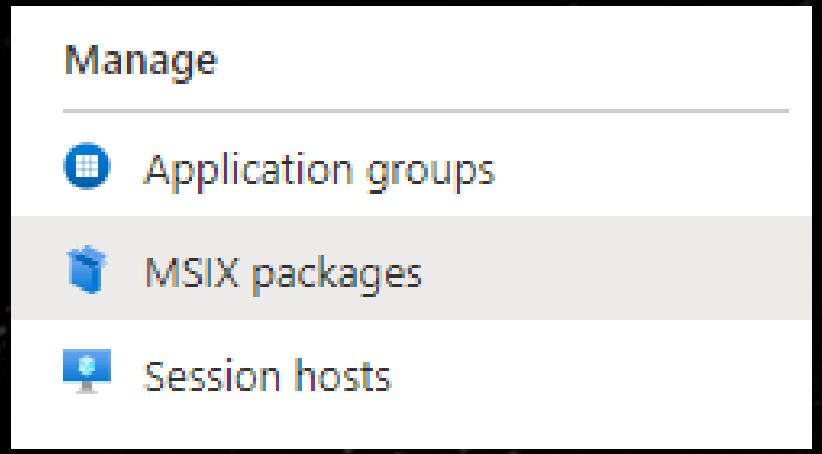
DEMONSTRATION!

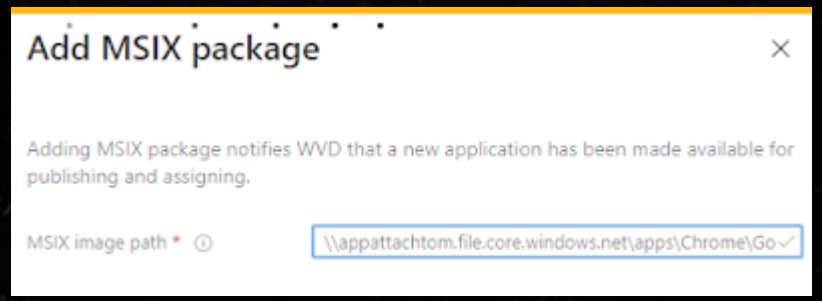
Demonstration Summary

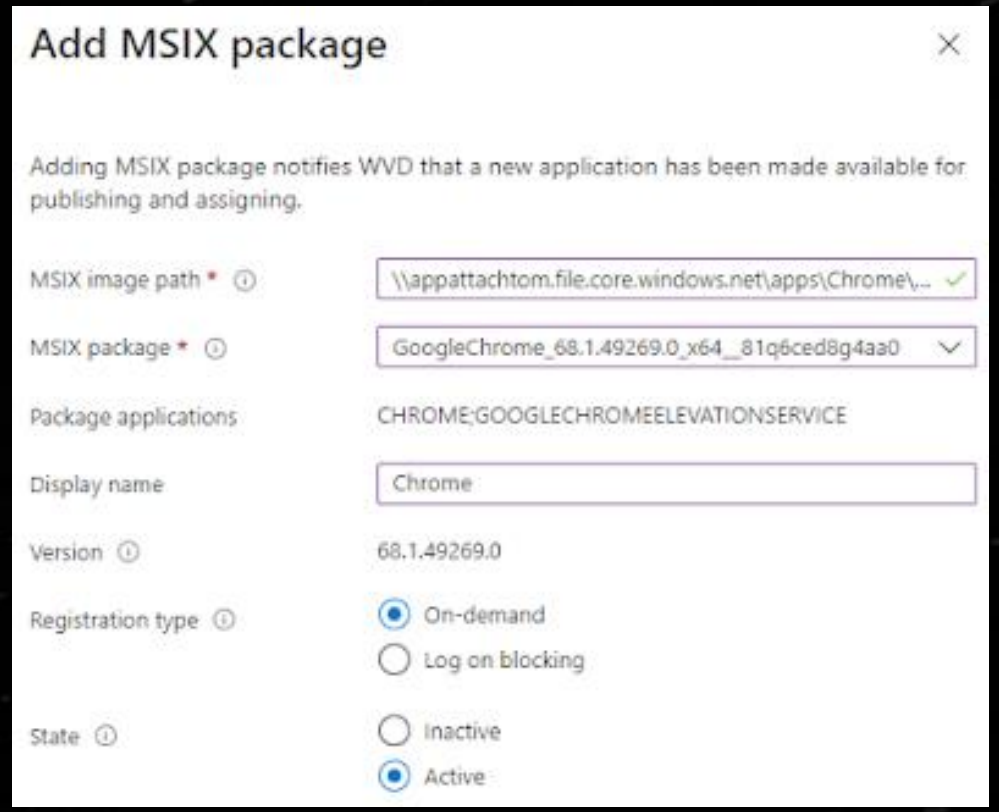
What you've seen is…

- How to expand an MSIX package as preparation for App Attach
- How to prepare the scripts for MSIX App Attach
- How to include multiple apps into a single VHDX package

A future look to MSIX App Attach

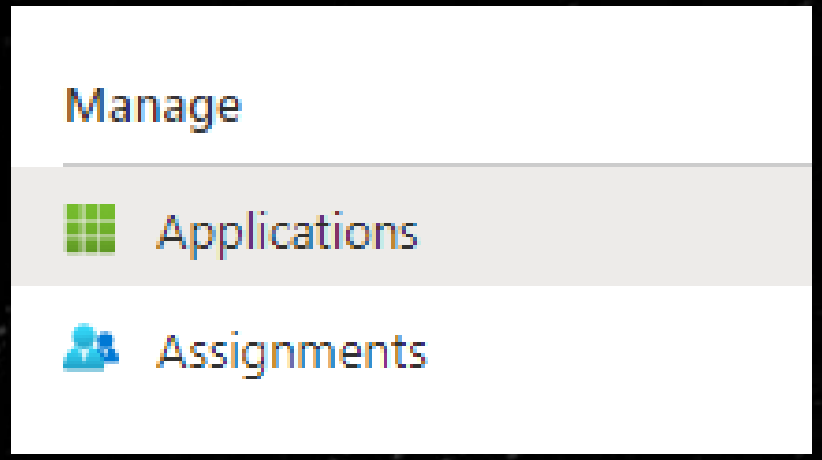


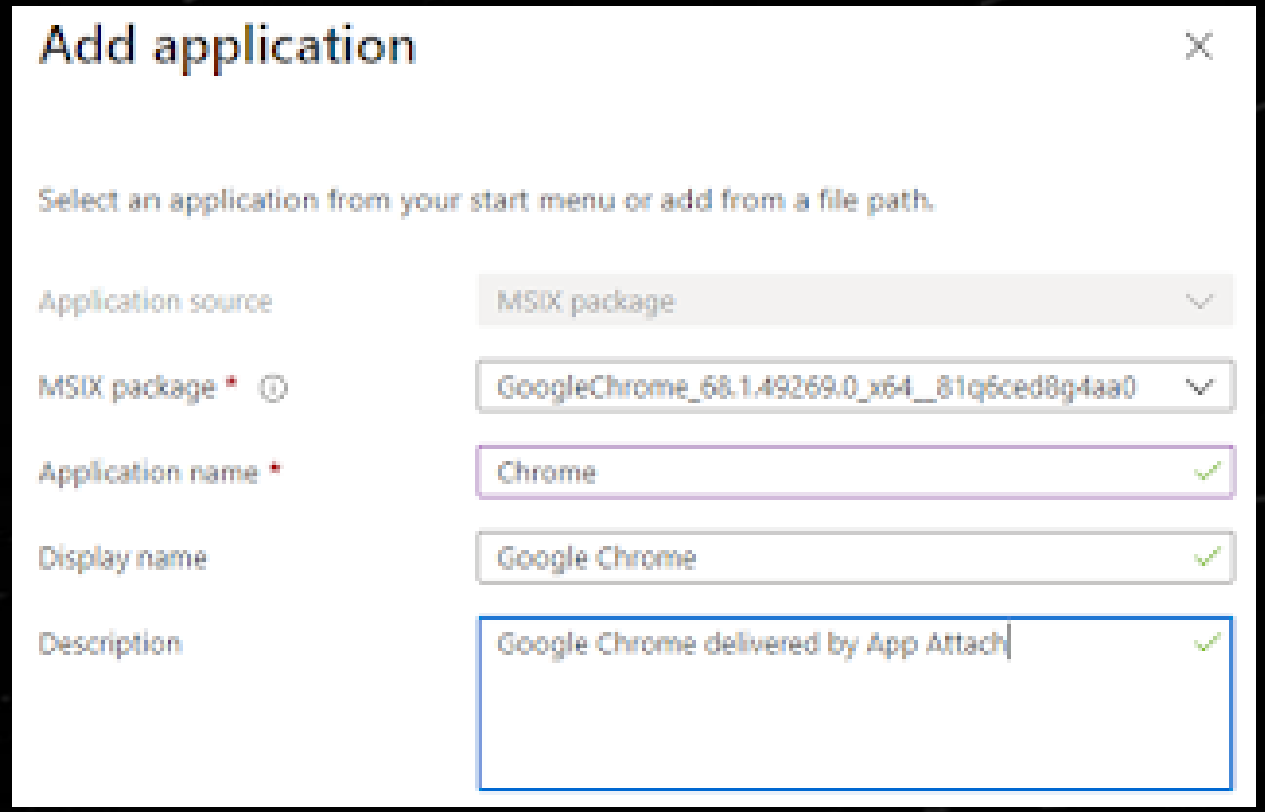




MSIX App Attach - the future of application delivery, a sneak peak of the upcoming Azure portal integration | Tom Hickling (xenithit.blogspot.com)

A future look to MSIX App Attach





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A future look to MSIX App Attach

New-AzWvdMsixPackage

Module: Az.DesktopVirtualization

Create or update a MSIX package.

PowerShell Copy

```
New-AzWvdMsixPackage
   -FullName <String>
   -HostPoolName <String>
   -ResourceGroupName <String>
   [-DisplayName <String>]
   [-ImagePath <String>]
   [-IsActive]
   [-IsRegularRegistration]
   [-SubscriptionId <String>]
   [-LastUpdated <DateTime>]
   [-PackageApplication <IMsixPackageApplications[]>]
   [-PackageDependency <IMsixPackageDependencies[]>]
   [-PackageFamilyName <String>]
   [-PackageName <String>]
   [-PackageRelativePath <String>]
   [-Version <String>]
   [-DefaultProfile <PSObject>]
   [-Confirm]
   [-WhatIf]
   [<CommonParameters>]
```

PowerShell

```
New-AzWvdMsixPackage
   -HostPoolName <String>
   -PackageAlias <String>
   -ResourceGroupName <String>
   [-DisplayName <String>]
   [-ImagePath <String>]
   [-IsActive]
   [-IsRegularRegistration]
   [-SubscriptionId <String>]
   [-DefaultProfile <PSObject>]
   [<CommonParameters>]
```

https://docs.microsoft.com/en-us/powershell/module/az.desktopvirtualization/new-azwvdmsixpackage

A future look to MSIX App Attach

Support for .Cim

- New file extension with Composite Image File System (CimFS)
- Much faster attachment compared to VHD/X
- Less CPU consumption

Specs	VHD	CimFS
Average mount time	356 ms	255 ms
Average unmount time	1615 ms	36 ms
Memory consumption	6% (of 8 GB)	2% (of 8 GB)
CPU (count spike)	Maxed out multiple times	No impact

A future look to MSIX App Attach

Tools that support Cim already today!

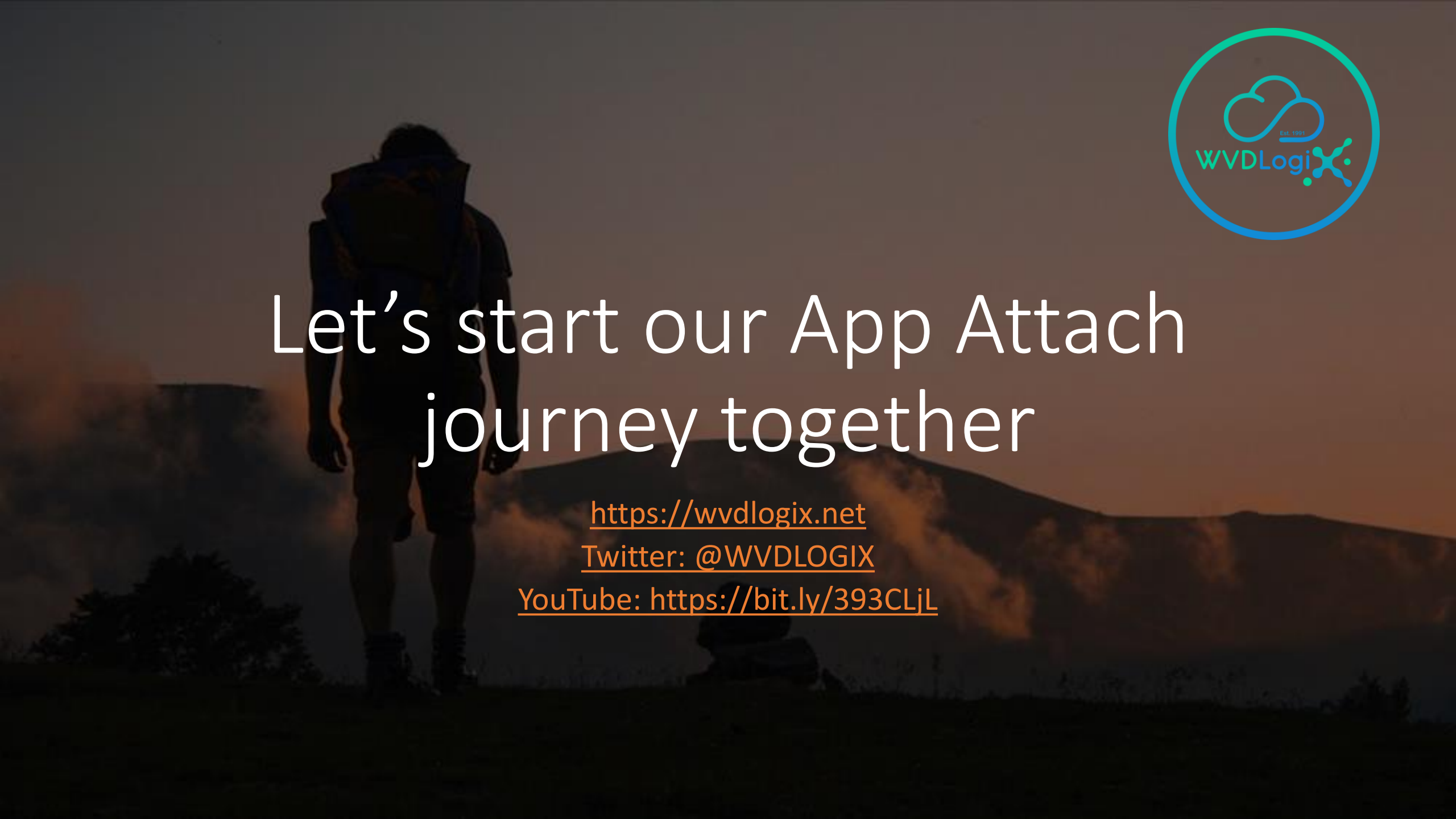
- appCure – Creation of Cim containers (https://appcure.io)

- CIMUTIL – Community Tool to mount-dismount Cim-Container (https://github.com/RMITBLOG/MSIX_APP_ATTACH)

Good resources

- https://wvdlogix.net – Blog Patrick Köhler
- https://ryanmangansitblog.com - Ryan Mangans IT Blog
- Desktops in the Cloud feat. Stefan Georgiev

RUN MSIX APPATTACH



Let’s start our App Attach journey together

https://wvdlogix.net
Twitter: @WVDLOGIX
YouTube: https://bit.ly/393CLjL