Microsoft meets Community: Windows Virtual Desktop

Disaster Recovery and Business Continuity (BCDR) options for Windows Virtual Desktop

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3rd edition

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Ryan is an end-user computing (EUC) specialist & Cloud technologist. Currently works for AppCURE and Systech IT Solutions. A speaker and presenter, who has helped customers and technical communities with end-user computing solutions, ranging from small to global 30,000-user deployments in various Fields. Ryan is the owner and author of ryanmangansitblog.com which currently has over 3 million visitors and over 200+ articles on Windows Virtual Desktop, Remote Desktop Services and VMware. Some of Ryan's community and technical awards include:

- VMware vExpert******* Seven years running
- Parallels RAS VIPP 2019, 2020
- LoginVSI Technology Advocate
- Technical person of the year 2017 KEMP Technologies
- Parallels RAS EMEA Technical Champion 2018
- Microsoft Community Speaker
- Experts Exchange Verified Expert
- Top 50 IT Blogs 2020 – Feedspot
- Top 50 Azure Blogs 2020 – Feedspot
- Author of "Quickstart guide of Windows Virtual Desktop"

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Introduction

Traditional vs Cloud VDI Disaster Recovery Options

- Traditional solutions can be expensive with a up front capital cost associated.
- Potentially complex in design, management and maintaining.
- Physical outages can have an impact *“waiting for physical resources the restored or replaced”.*
- Connectivity limitations – speed of which you can replicate and restore

What does the “Cloud” offer

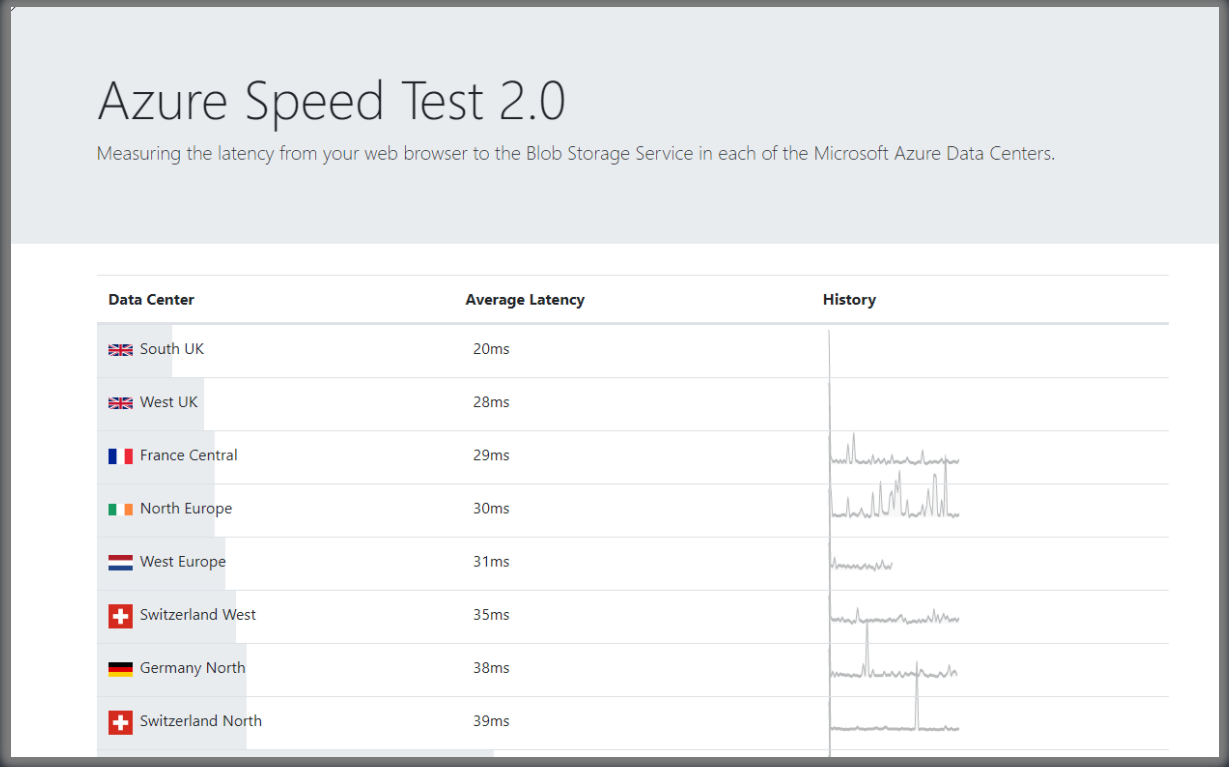
- Access 54 data centres across multiple geographic regions. These are typically 100’s of miles part.
- You can access Microsoft Azure in over 140 countries.
- Opex Expenditure (monthly subscriptions / consumption), pay for what you consume.
- Connect existing services to MS Azure. This could be on-premises or Multi cloud.

What Does This Mean for Windows Virtual Desktop.

- Fast Recovery times, utilising Microsoft's core infrastructure.
- Multiple regions accessible from a single Web browser
- Take advantage of Microsoft's Multi-Session Desktop providing a Windows 10 experience across regions.
- No Physical Hardware to worry about.

Find out where your nearest datacentre is

http://azurespeedtest.azurewebsites.net/



Windows Virtual Desktop BCDR Summarised

- Replication of Virtual Machines to a second location
- Standby Virtual Machines in a secondary location
- Profile container access from the secondary location
- User identities (Doman Controllers) are accessible / available in the secondary location
- Line-of-business applications are accessible from the secondary location.

Reserved instances

- Reduce the cost of virtual machines by using Reserved instances.

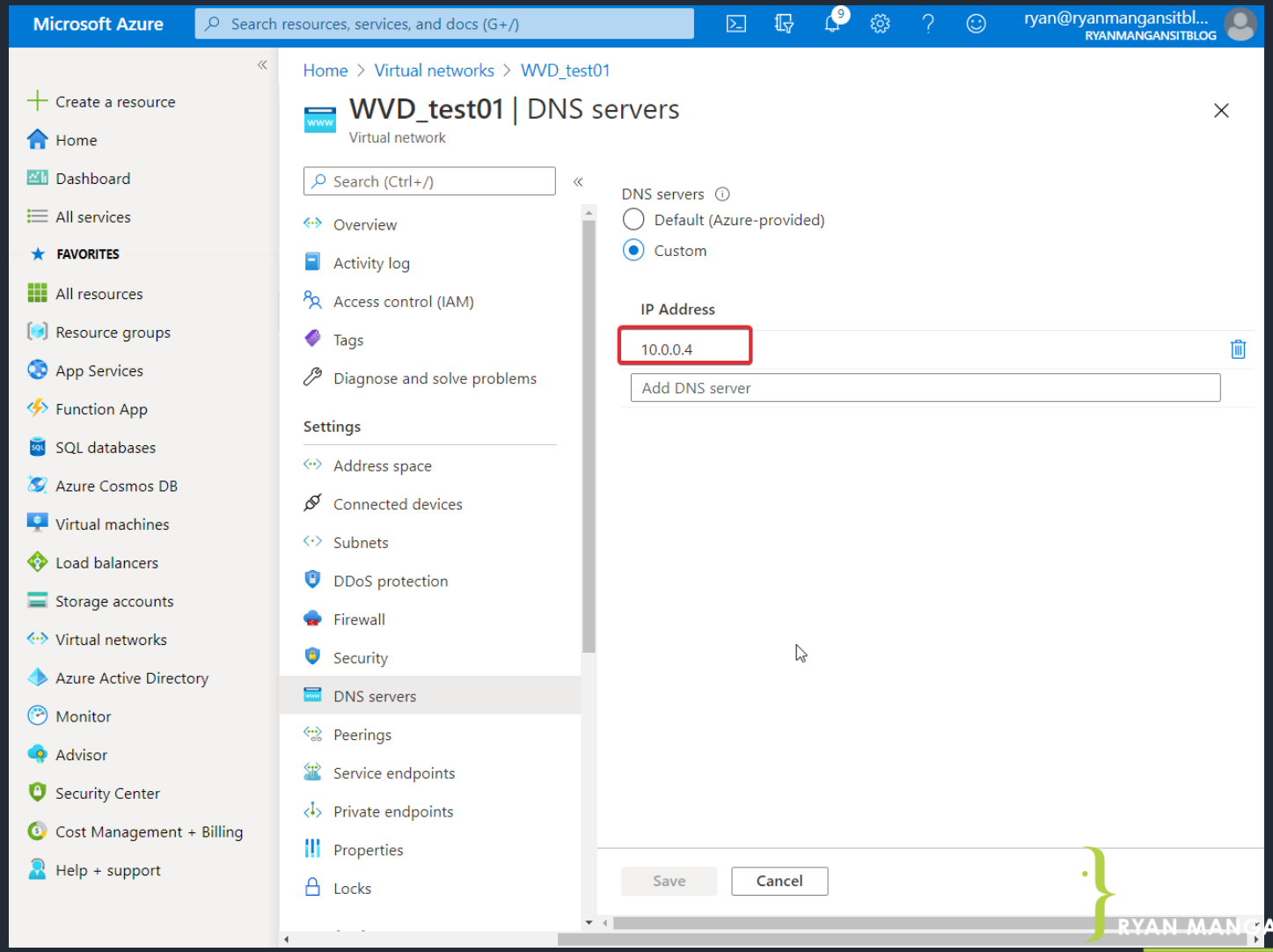
Networking

Consider your networking during an outage

- A vNET must be setup in the second region.
- For users who need access to on-premises resources, you will also need to ensure the VNET can access them. This can be done using a VPN, NVA, ExpressRoute, or virtual WAN.
- Azure Site Recovery (ASR) is recommended for setting up a VNET in the failover region as it preserves your primary networks settings whereas peering does not.

DNS…. DNS… DNS…

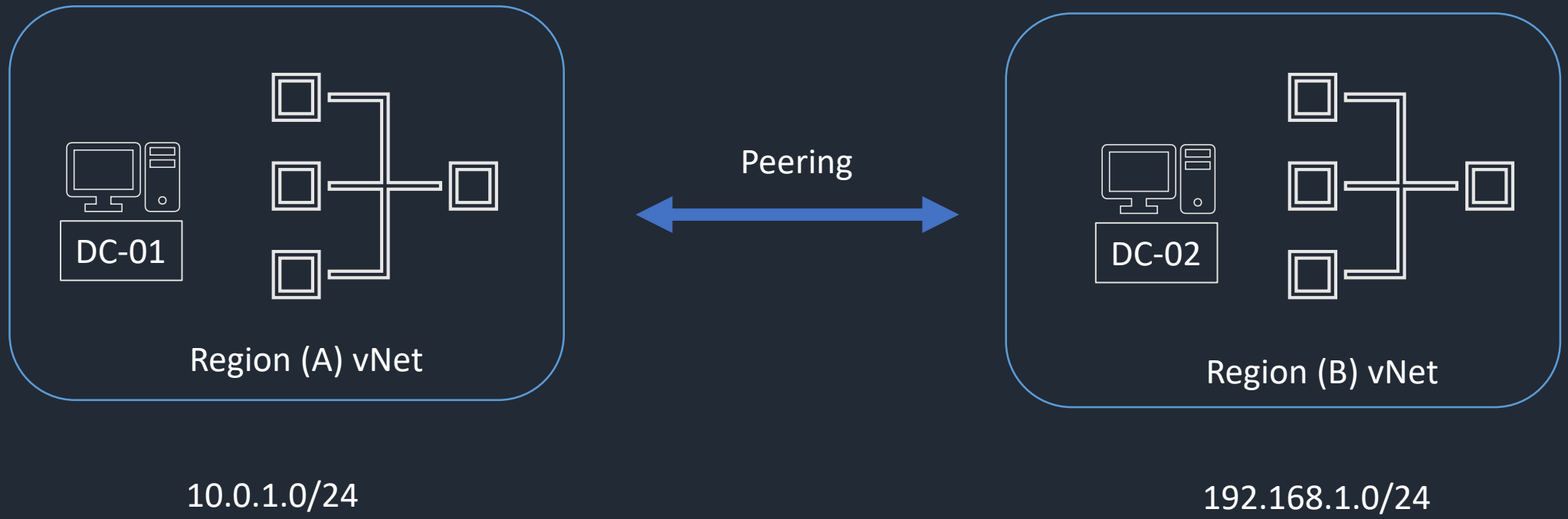
- Does your failover region have the correct DNS settings ?



Using a Network Virtual Appliance (NVA)

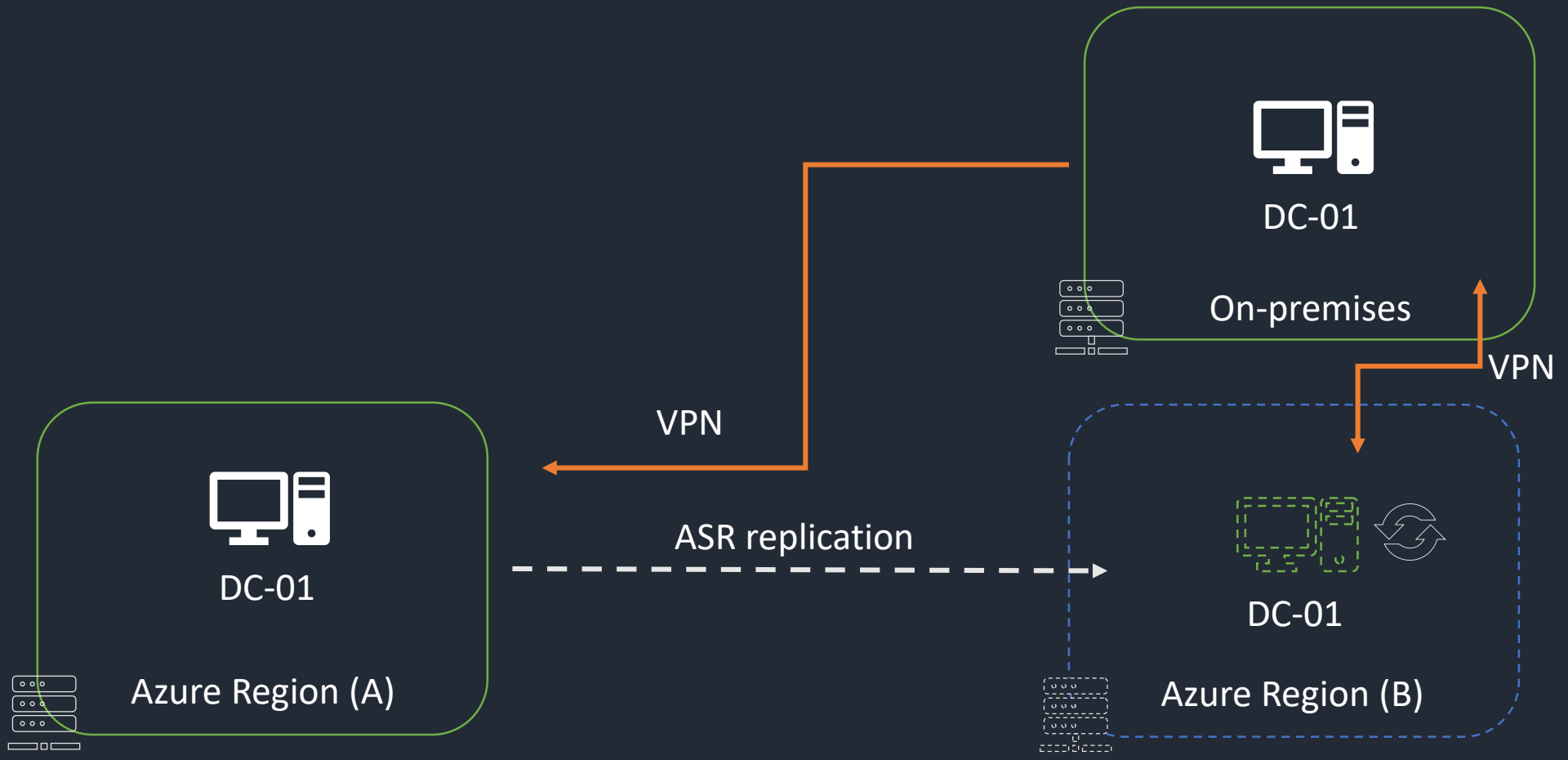
- Have you included all the required Microsoft exceptions / Rules for Windows Virtual Desktop.
- Can the NVA communicate correctly with the WVD Management plane.
- Make sure you test…

What does peering look like



Domain controllers in Azure

Domain controllers in Azure



Virtual Machines

Virtual Machine Options

- Azure Site Recovery (ASR) replicate all your VM's in the Second region
- Create a New Host Pool in the second region and leave Turned Off
- A single host pool with Virtual Machines from two regions. Leave Region two VM's turned off.

You have an Outage – Before you do anything

You need to end user sessions in the current region

1. WVD Classic: Invoke-RdsUserSessionLogoff

OR

2. Azure-Integrated Version of Windows Virtual Desktop: Remove-AzWvdUserSession

Once all Users are signed out of the primary region, you can then failover the virtual machines.

Demo of WVD Session Host Failover

Managing Identities

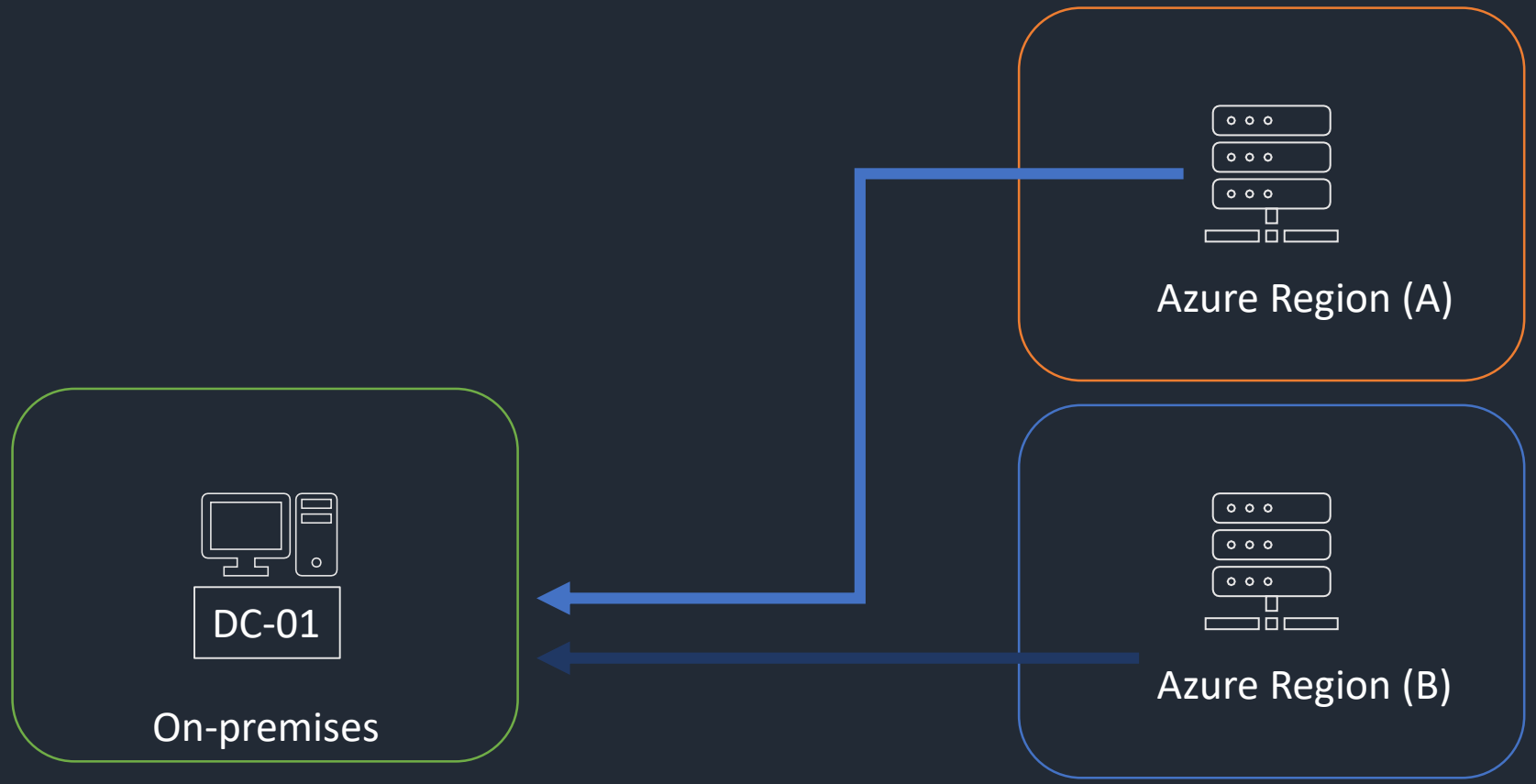
Domain Controllers

- With most things Windows related, you need a Domain. This includes Windows Virtual Desktop
- There are several options available to you.
- Communication on the primary and secondary region must be able to communicate with AD DS or Azure AD DS.

Three ways to keep the domain controller available

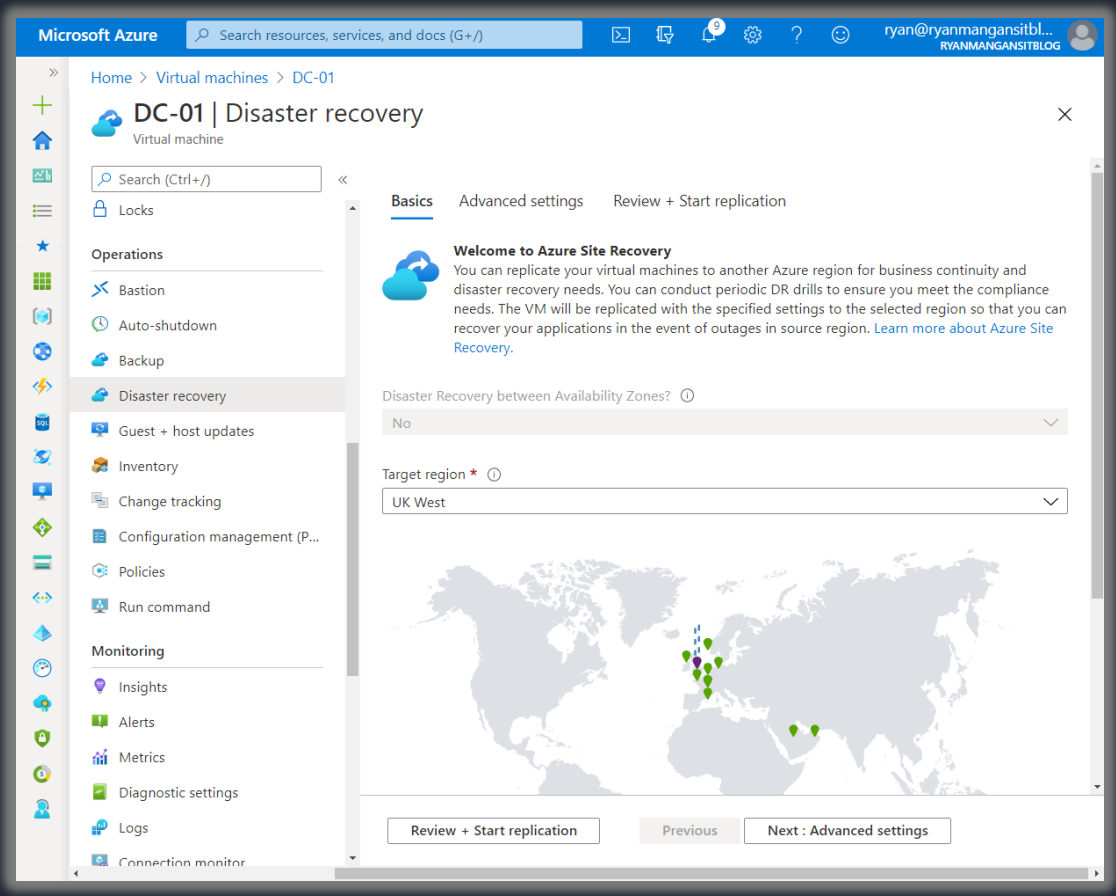
- Have Active Directory Domain Controller at secondary location
- Use an on-premises Active Directory Domain Controller
- Replicate Active Directory Domain Controller using Azure Site Recovery

Azure Regions accessing a DC via VPN



Some of the options available to you.

- Use ASR to replicate your Domain controller between primary and failover regions.
- Deploy a DC to your failover region.
- Link your secondary region back to on-premises.



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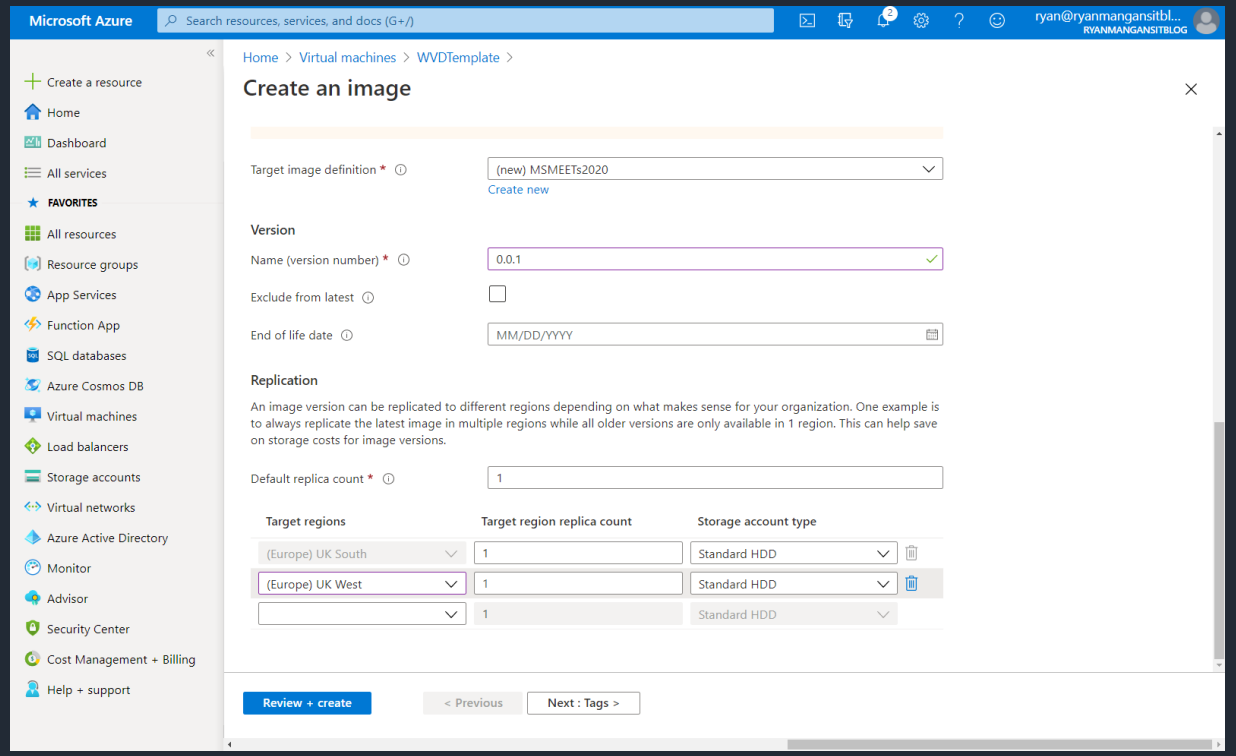
Shared Image Galleries (SIG)

Shared Image Gallery (SIG)

- Replicate Windows 10 Images from the primary region to multiple other regions.
- Offering global replication of images for easy management
- Standardise your image globally from a single source.



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Demo - Shared Image Galleries

FSLogix Profile Containers

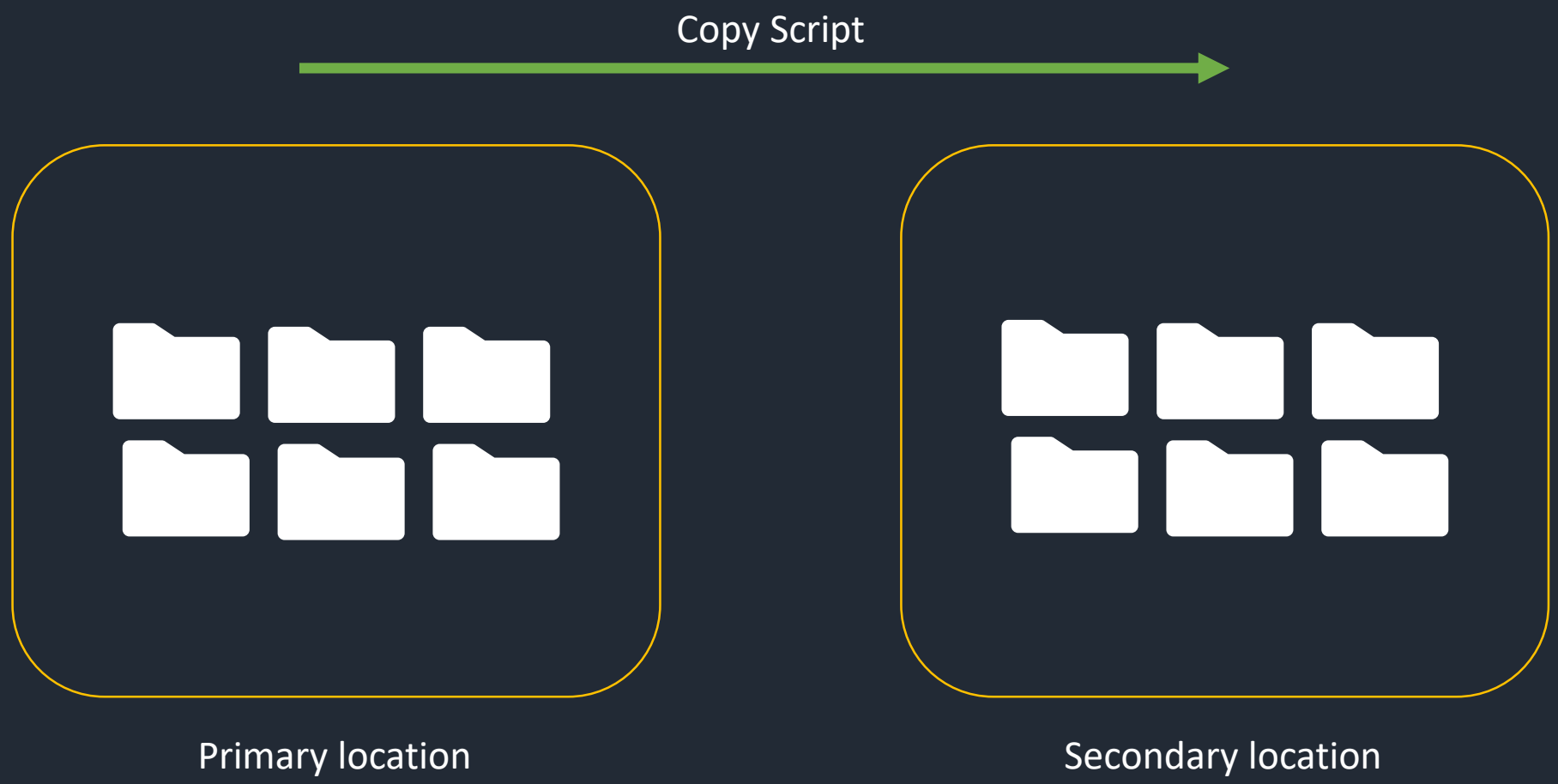
FSLogix Profile Containers

FSLogix Profile contains have be delivered in 5 different ways:

- Storage Spaces Direct (S2D)
- Network drives (VM with extra drives)
- Azure Files
- Azure NetApp Files
- Cloud Cache for replication

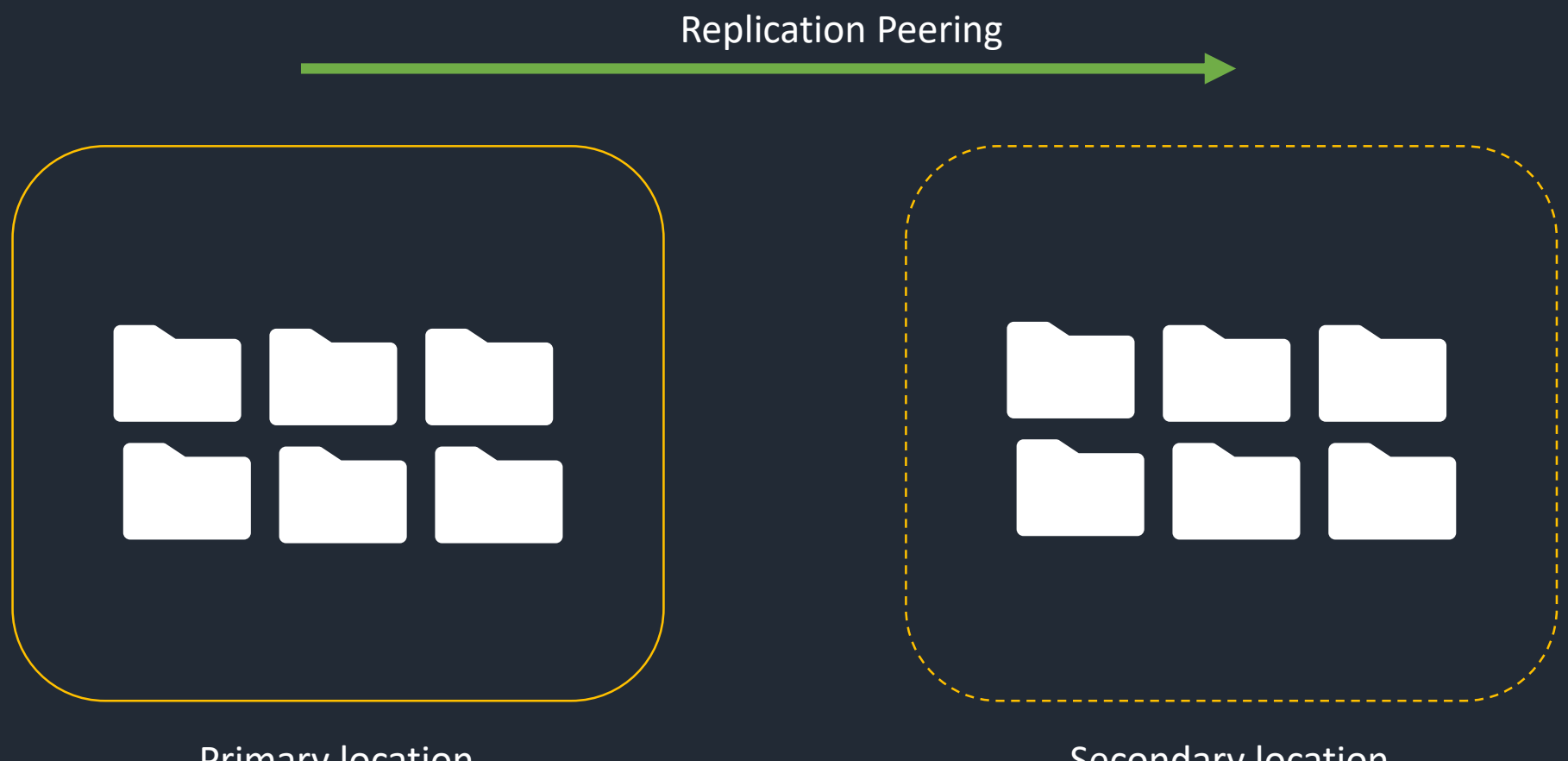
Azure Files

FSLogix Profile Containers

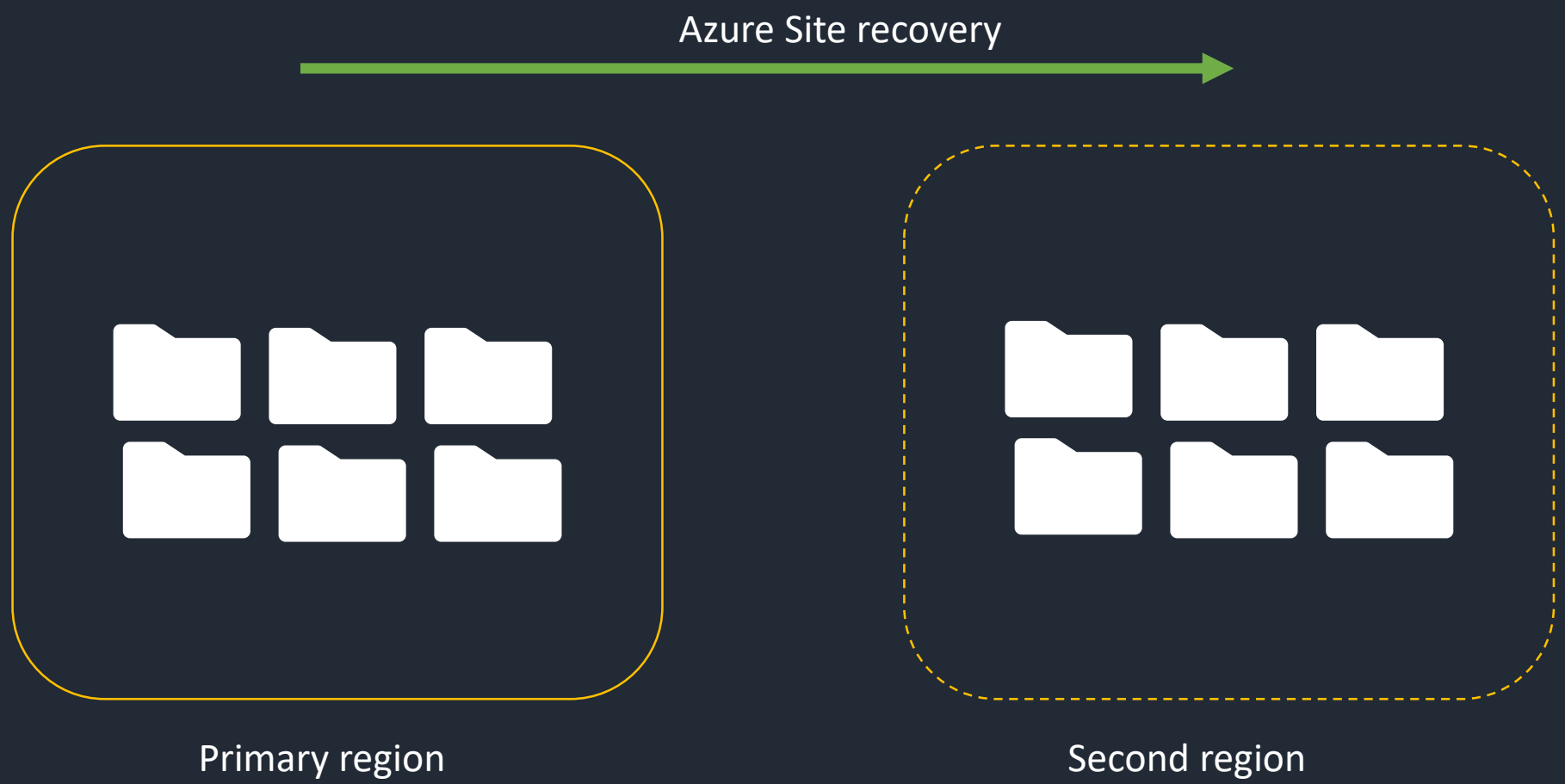


Azure NetApp Files

FSLogix Profile Containers



FSLogix Profile Containers



FSLogix Cloud Cache

- Cloud Cache uses a local profile to service reads from a redirected profile container.
- Cloud Caches offers protection for short term connectivity loss to remote profile containers
- As well as Active / Active redundancy for profile containers.
- It is important that you carefully spec the storage performance for cloud Cache.

Cloud Cache Demo

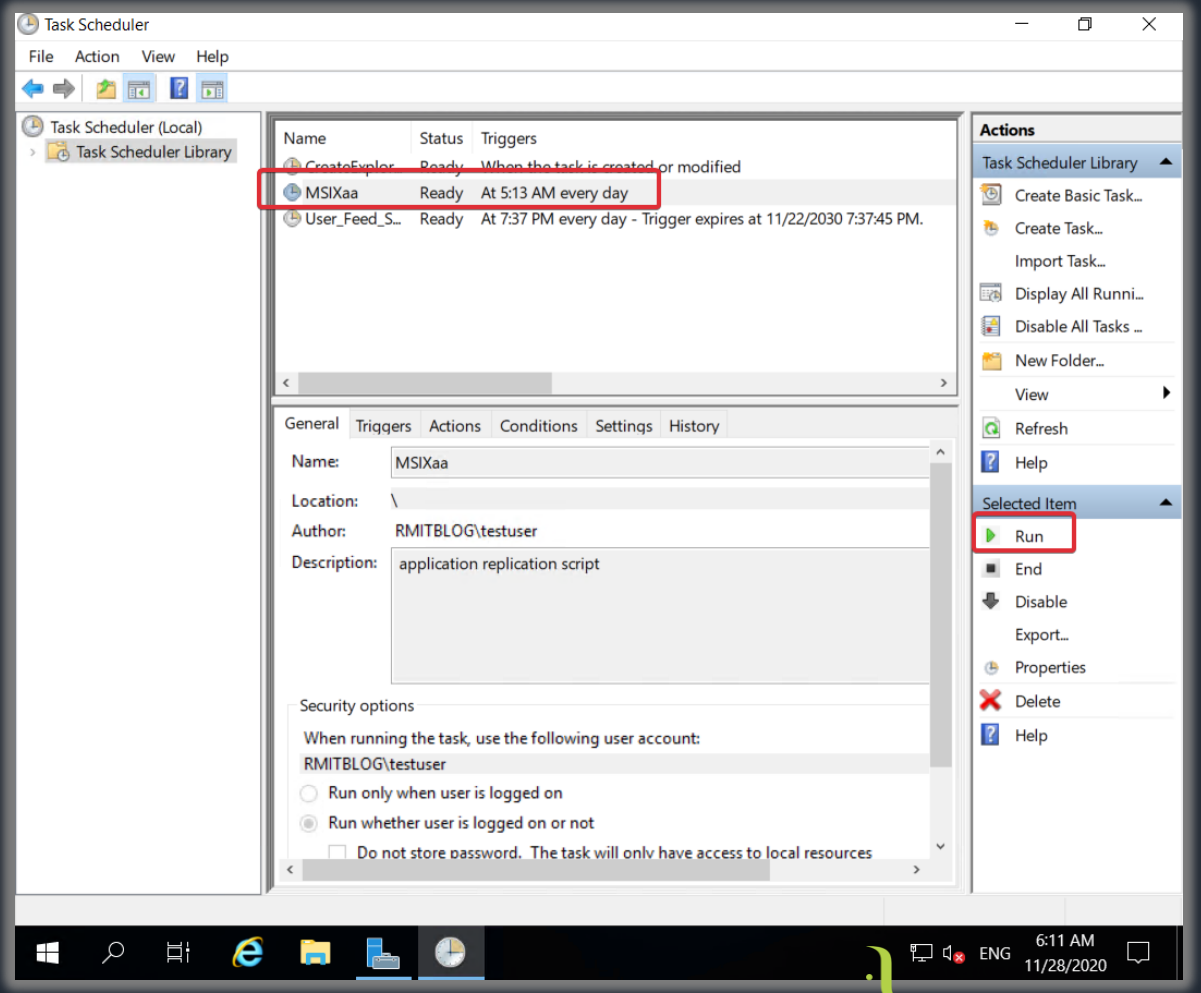
MSIX App Attach (MSIXAA)

MSIX app attach (MSIXAA)


```
robocopy.exe “S:\MSIXAASTORE1" "T:\MSIXAASTORE2 " /E /XO /LOG+:"T:test.log
```

Replicating MSIX images (MSIXAA)

- Similar offerings as shown with FSLogix.
- As MSIX images are read only , you can use Robocopy or Azure automation replicate between the two regions.



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MSIX App Attach Demo

Summary

Summary

- Regular testing should still be carried out.
- Only failover 100 VMs at a time, if you need more complete in batches of 100 every 10 minutes.
- Always ensure that Users are logged of session hosts before carrying out failover.