

# CLOUD DAY 2022



«Come eseguire nativamente i  
workload VMware in Azure»

FRANCESCO MOLFESE  
Cloud Infrastructure Director  
**4wardPRO**



# SPONSOR

## DIAMOND



GUCCI

splunk>



## PLATINUM

improve



## GOLD



CODICEPLASTICO



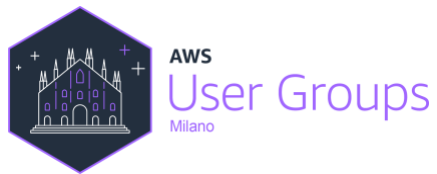
Cubbit

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# PARTNER



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# The speaker

## Francesco Molfese

- Cloud Infrastructure Director in 4wardPRO
- Microsoft MVP Cloud Datacenter Management
- Microsoft Certified Trainer
- Community Lead della Cloud Community Italiana ([www.cloudcommunity.it](http://www.cloudcommunity.it))



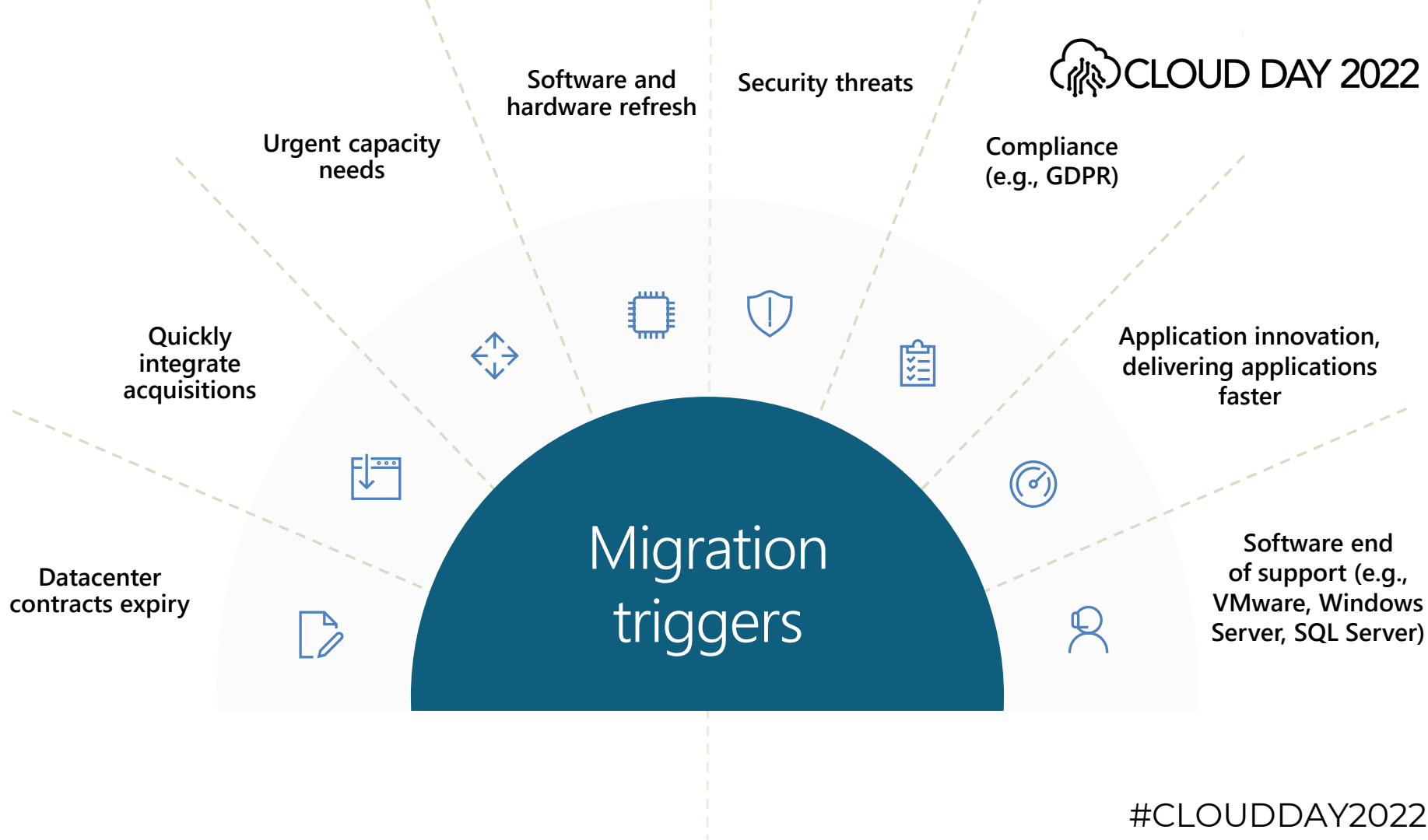


# Agenda

- Cloud migration considerations
- What makes Azure VMware Solution unique?
- Use Cases
- Architecture
- Support
- Benefits









# Microsoft Azure:

## Infra designed for every workload



### Azure

**Azure native** IaaS  
and PaaS offerings



Modern  
Apps



Business  
Critical



Dynamic  
and  
Scalable



Backup &  
Disaster  
Recovery



Security &  
Identity



Management  
& Operations

**Seamless integration**  
with other Azure Services

**Purpose-built** Azure  
for platform continuity



**NUTANIX**

**Skytap**  
for IBM Power

**vmware**



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# Cloud migration considerations



## Need for speed

Software & Hardware  
End of lifecycle

Urgent capacity  
needs

Datacenter  
contract expiry

## Cost and complexity

Project costs,  
resourcing & timeline

Application refactoring  
or rearchitecting

Business  
continuity/downtime

## People and processes

Impact of change  
management

Need for operational  
consistency

Need to grow cloud  
competency



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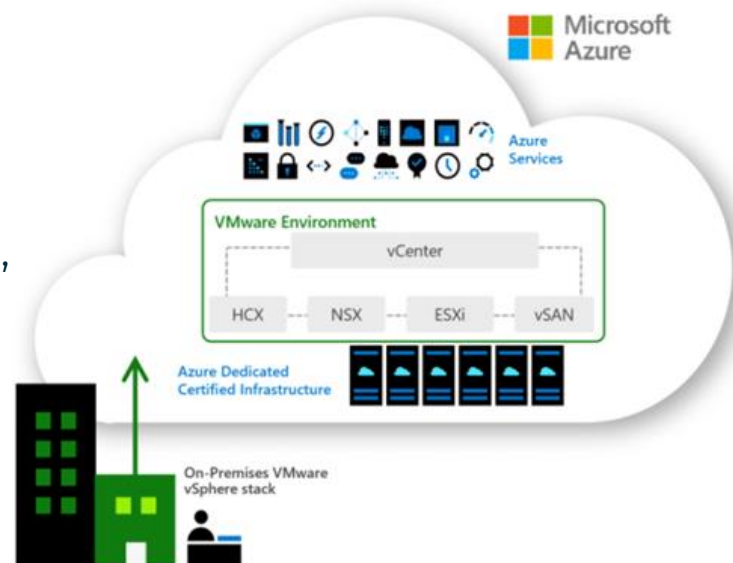
# What is Azure VMware Solution?



It is a **comprehensive VMware environment on dedicated Azure** infrastructure. Built by Microsoft and VMware.

It runs **your VMware workloads natively on Azure**, supported and operated by Microsoft.

It allows **you to manage, and secure applications across VMware environments and Microsoft Azure** with a consistent operating framework.





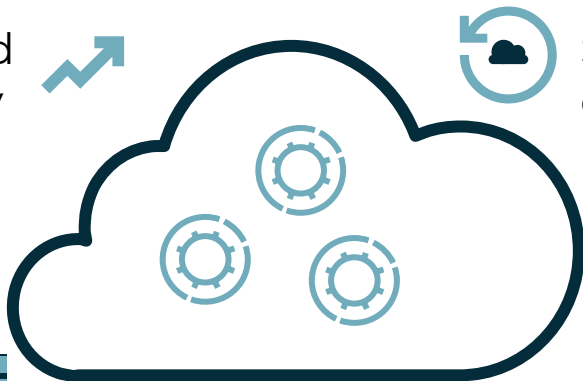
# Azure VMware Solution common use cases

Disaster recovery and  
business continuity



Speed and simplification  
of migration/hybrid cloud

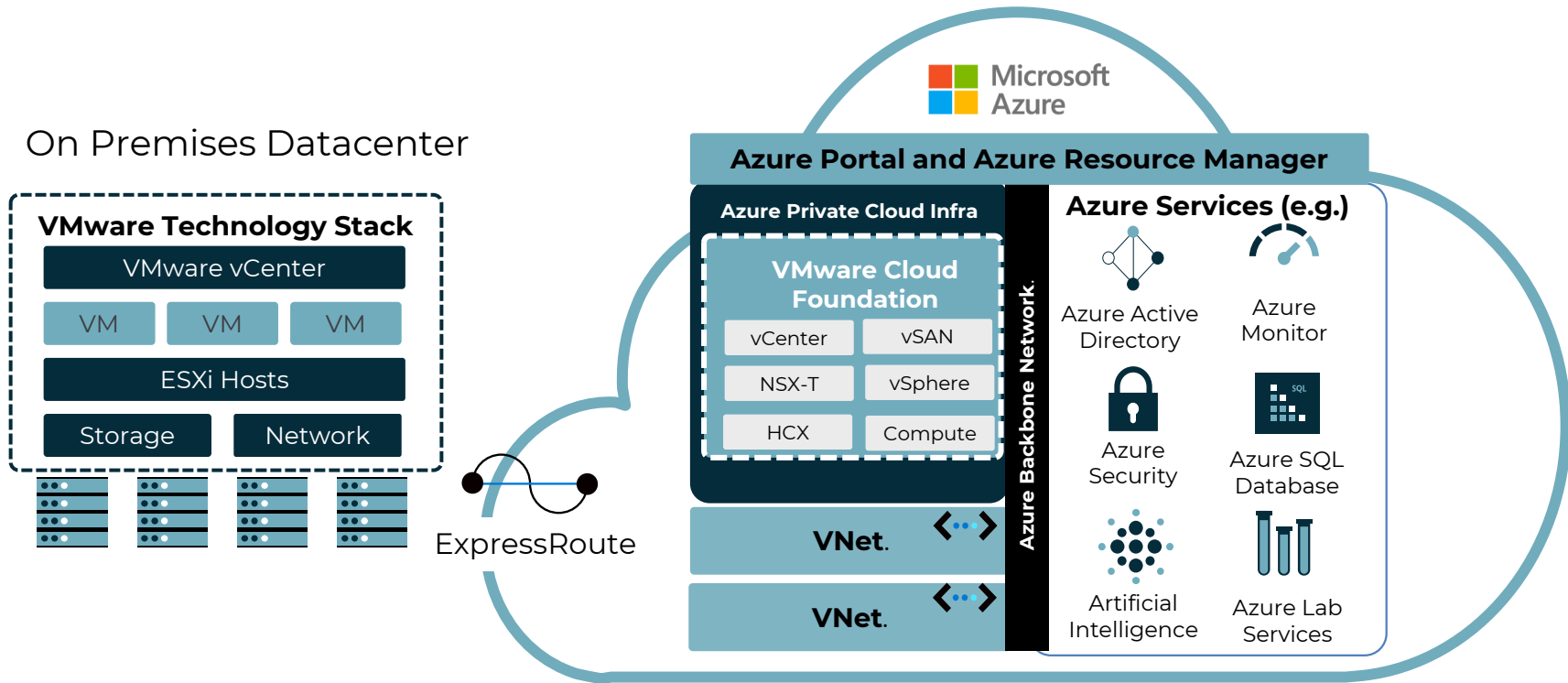
Datacenter expansion,  
reduction, or retirement



*Application  
modernization\**,  
development and testing



# Running VMware natively on Azure





# Azure VMware Solution

## Software and Hardware Package



### Software Specifications

**ESXi** - 6.7U3/7.0 Enterprise Plus

**vCenter** - 6.7U3/7.0 Standard

**vSAN** - 6.7 Enterprise

**NSX-T** - 3.1.2 Advanced

**HCX** - Advanced 4.3.3



**\*HCX Enterprise monthly add on (GA)**

### Hardware Specifications

Instance size	Core(s)	RAM	All Flash Storage	Cache
AV36	36	576 GB	15.36 TB	3.2 TB
AV36P	36	768 GB	19.20 TB (all NVMe)	1.5 TB (Intel® Optane™)
AV52	52	1.50 TB	38.40 TB (all NVMe)	1.5 TB (Intel® Optane™)

\*Minimum 3 nodes per vSphere cluster

\*Maximum 16 nodes per vSphere cluster

Maximum 96 nodes to an Azure Private Cloud instance



# Azure VMware Solution Features



Familiar VMware technology	Integration with Azure	High performance cloud infra
<ul style="list-style-type: none"><li>• Native vSphere support</li><li>• Fully featured networking stack</li><li>• vSphere management, vSAN, and NSX-T</li><li>• HCX Enterprise now available to support migration</li></ul>	<ul style="list-style-type: none"><li>• Management and governance</li><li>• Security</li><li>• Low-latency connectivity to Azure</li><li>• Leverage Azure ecosystem</li><li>• Single point of support</li><li>• DevOps toolchain</li></ul>	<ul style="list-style-type: none"><li>• Optimized elastic infrastructure</li><li>• Automated self-service provisioning</li><li>• Dedicated, isolated, bare metal infrastructure</li><li>• Redundancy and placement control</li><li>• Security and encryption</li></ul>



# Azure VMware Solution Global Availability\*



\*Region availability timeline is subject to change



# Microsoft support

## single point of contact



Azure VMware Solution is validated, supported, and certified by VMware and Microsoft.



### Problem Management

Microsoft is first contact and will make decision based on problem type.

Azure-related issues are addressed by Microsoft.



### When VMware support is required

Microsoft coordinates with VMware for product-specific support.

Microsoft continues to be central point to resolution.

Built with  
VMware,  
delivered by  
Microsoft





# Azure VMware Solution



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## Shared responsibility Matrix (Control boundaries)

	Physical Infrastructure	Physical Security	Azure/AVS Portal	Hardware Failures	ESXi Host	Host Patching	NSX-T	Identity Management	vCenter	VSAN	Guest OS	Applications	Virtual Machines
Deployment	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Customer Responsibility	Customer Responsibility	Customer Responsibility
Life-Cycle	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Customer Responsibility	Customer Responsibility	Customer Responsibility
Configuration	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Microsoft Responsibility	Customer Responsibility	Customer Responsibility	Customer Responsibility	Customer Responsibility	Customer Responsibility	Customer Responsibility	Customer Responsibility

■ – Microsoft Responsibility

■ – Customer Responsibility

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# Azure VMware Solution

## Storage Overview



### vSAN Storage

- Fully configured **all-flash vSAN storage**, local to the cluster.
- **De-duplication and compression** are enabled on the vSAN datastore by default.
- Two disk groups are created on each node of the vSphere cluster. Each **disk group contains one cache disk and three capacity disks**.

### vSAN storage policy

- Policy is created on the vSphere cluster and applied to the vSAN datastore, determines **how the VM storage objects are provisioned and allocated** within the datastore to guarantee the required level of service.
- Defines the **Failures to tolerate (FTT)** and the **Failure tolerance method**.
- To maintain SLA, **25% spare capacity must be maintained** on the vSAN datastore.

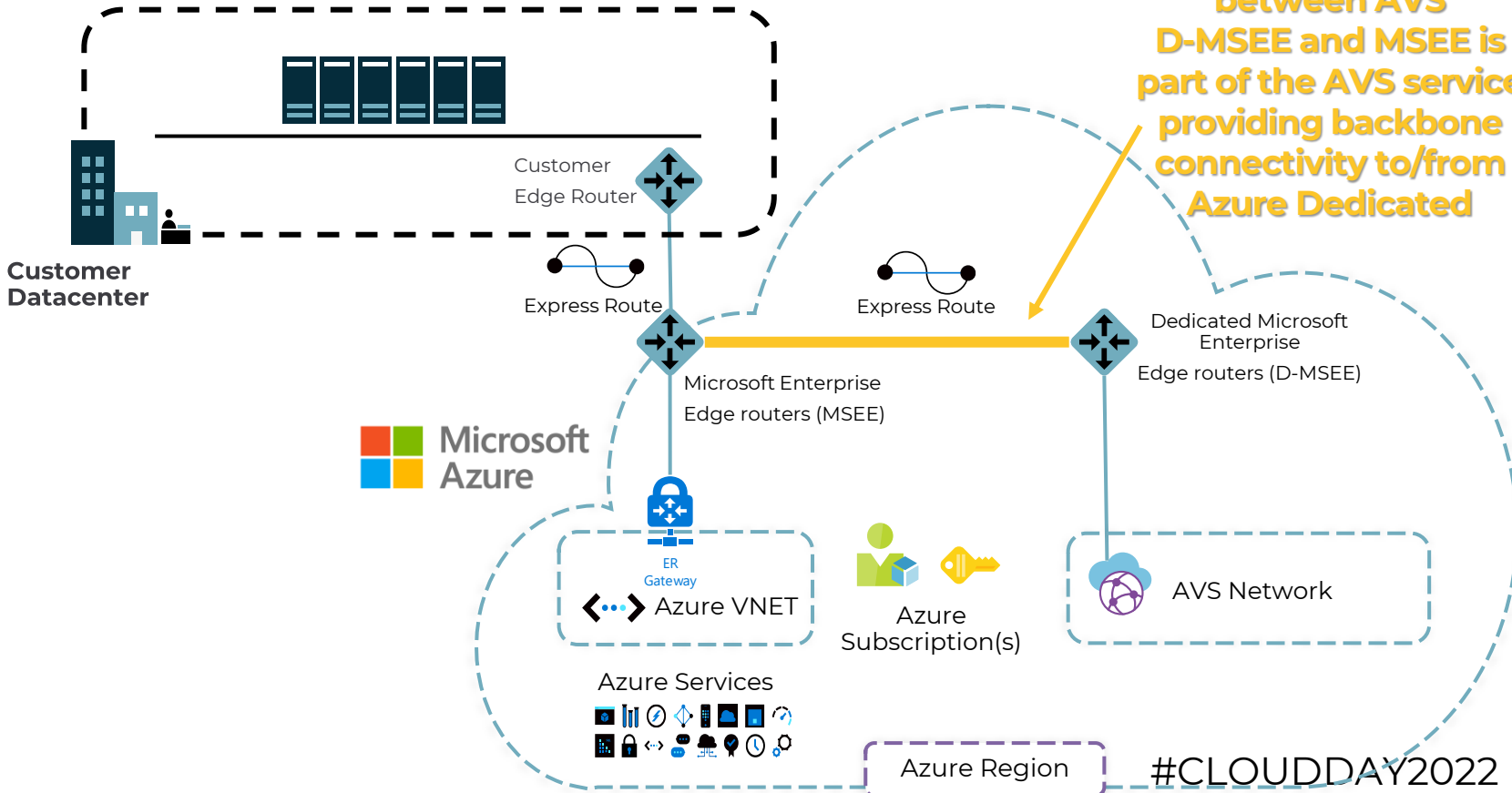


# Azure VMware Solutions

## Networking

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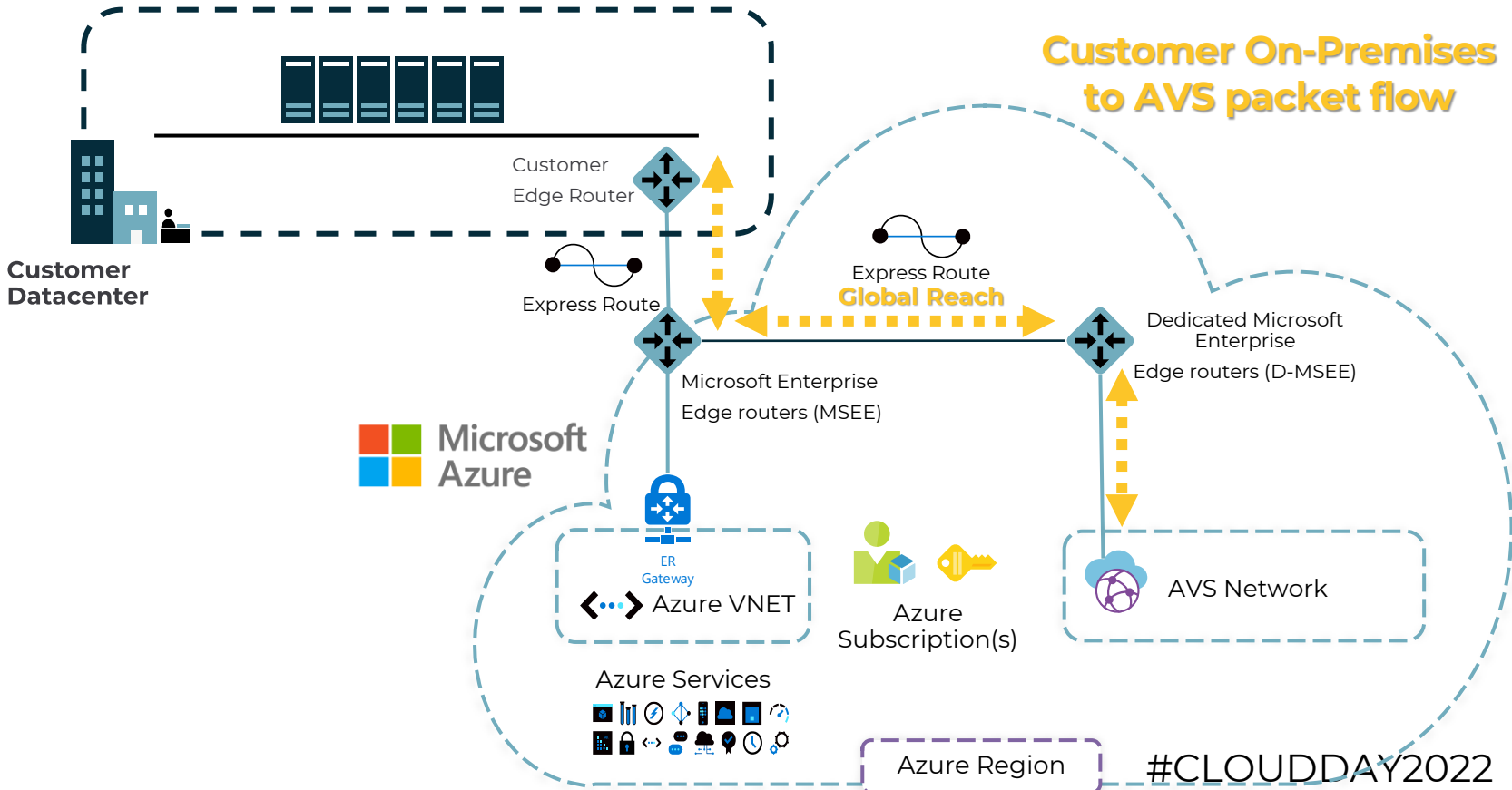
**The ExpressRoute between AVS D-MSEE and MSEE is part of the AVS service providing backbone connectivity to/from Azure Dedicated**





# Azure VMware Solutions

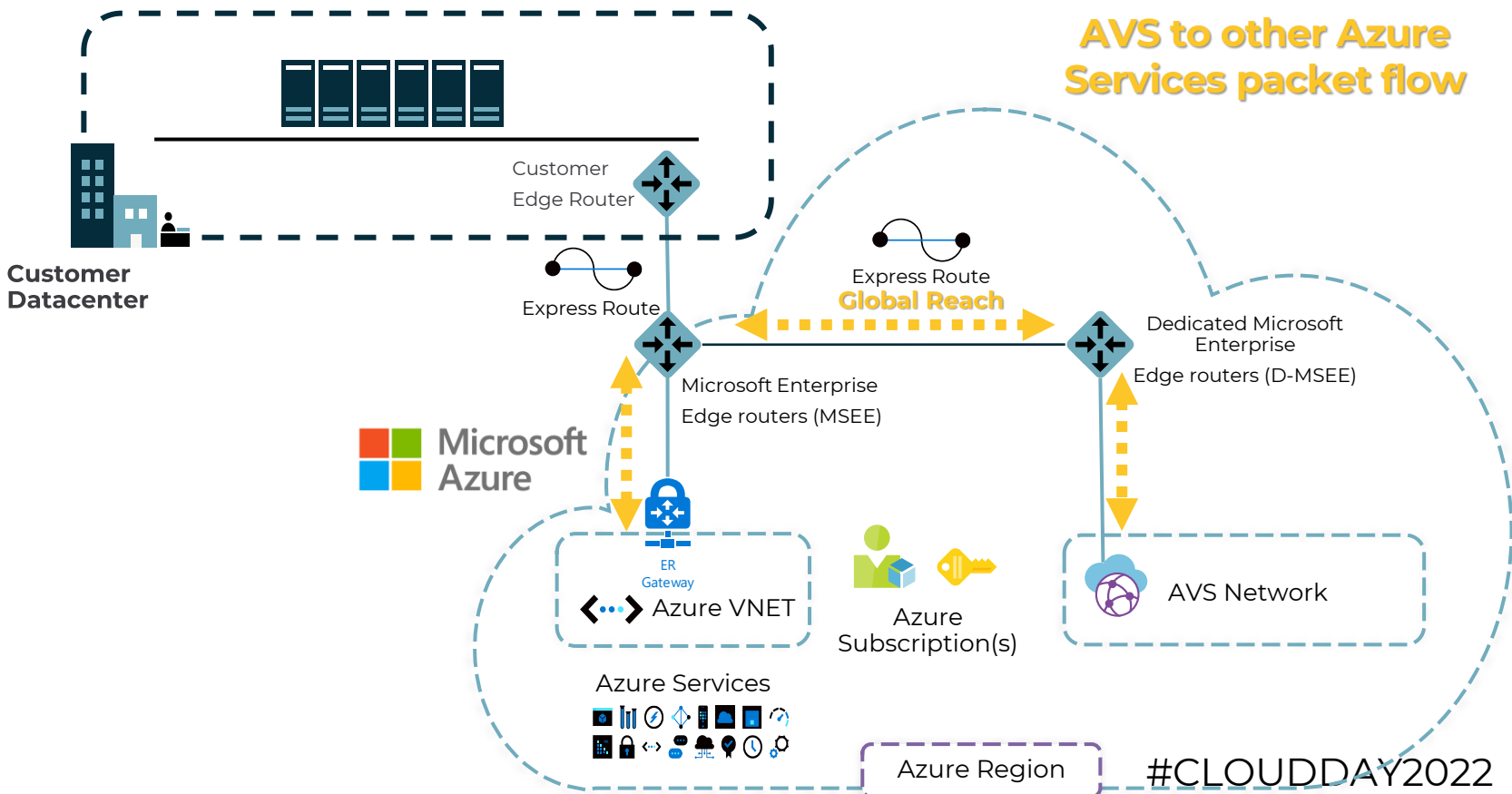
## On Prem to SDDC using Global Reach





# Azure VMware Solutions

## SDDC to VNet using Global Reach





# DEMO: Deploy Azure VMware Solution



## Subscriptions

VMware, Inc. (onevmw.onmicrosoft.com)

Add

Search for any field... Subscriptions == global filter My role == all Status == all Add filter

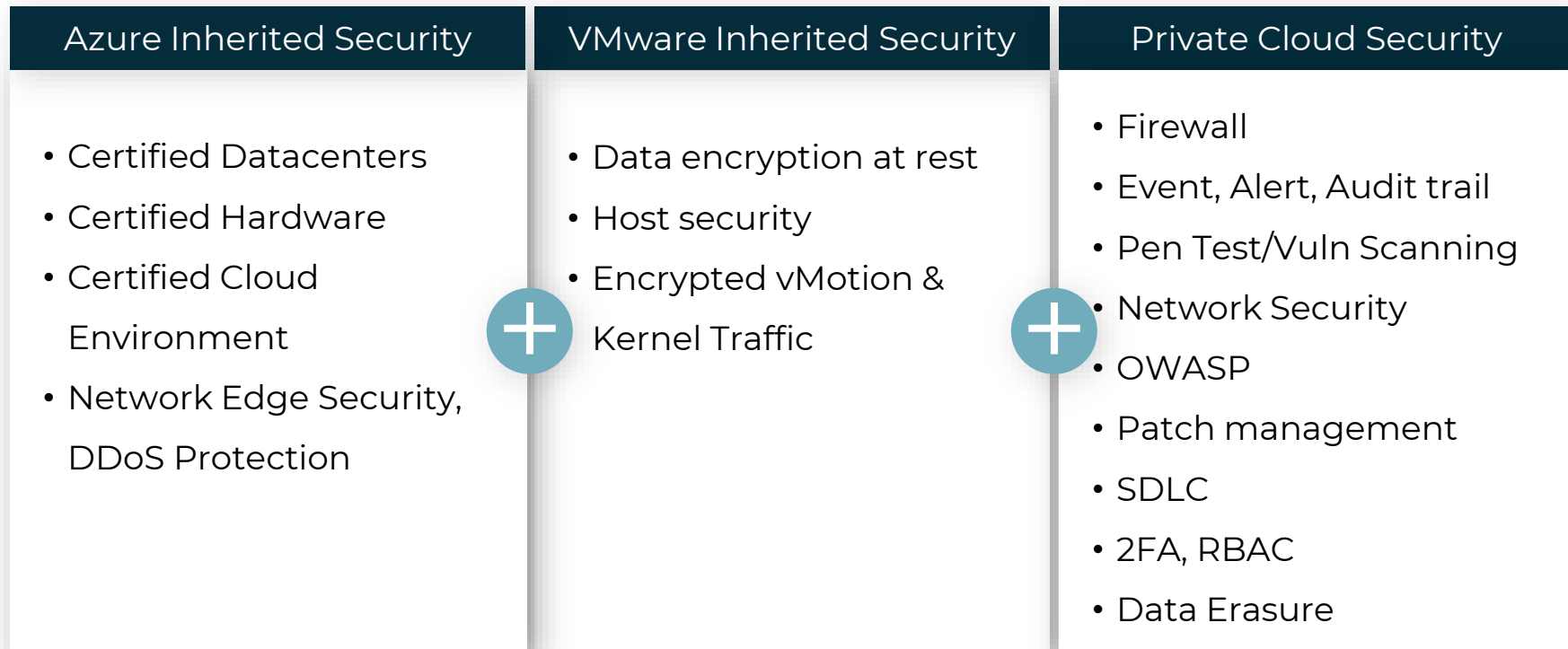
Showing 1 to 1 of 1

Subscription name ↑↓	Subscription ID ↑↓	My role ↑↓	Current cost	Secure Score ↑↓	Parent management group ↑↓	Status ↑↓
VMware AVS Pre-Sales Team	ef11bf1c-cc9a-405d-a5af-abc8c2f56b36			-	Tenant Root Group	Active

**STEP 1: REGISTER THE AVS PROVIDER TO  
YOUR SUBSCRIPTION!**



# Security building blocks





# Migrate and Extend

## VMware workloads to the cloud



### Azure VMware Solution



Built-in continuity,  
speed and scale  
with modern infra



Leverage  
existing VMware  
skills, and tools



Seamlessly  
modernize apps  
overtime with Azure



Unmatched pricing  
for Windows and  
SQL Server

← **Accelerate, Modernize, Simplify** →



# Azure pricing benefits for Azure VMware Solution

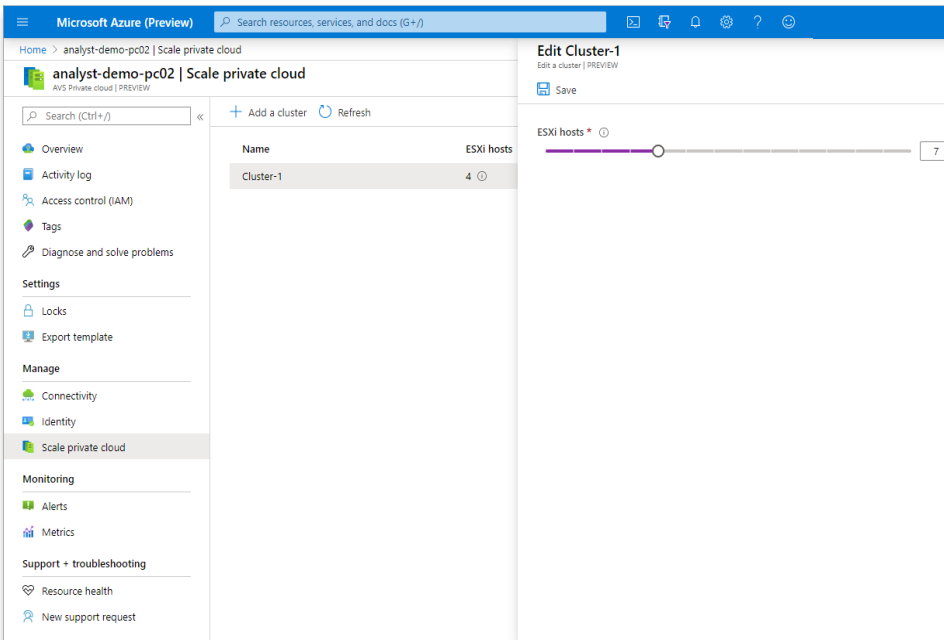


## Hourly Pay as You Go (PAYG) billing

Reserved Instances		Azure Hybrid Benefit		Free Extended Security Updates
1 year or 3 years Reserved Instance discounts for Azure VMware Solution.		Bring Windows Server and SQL Server on-premises licenses with Software Assurance to Azure		3 years free security updates for Windows Server 2008 R2 SQL Server 2008 R2
Available on Azure	+	Only on Azure	+	Only on Azure
Save 30-50% on the cost of dedicated nodes with RIs				75% of the license cost to purchase standalone support



# Seamless management for Azure infrastructure resources



**Easily scale infrastructure as your business needs it** through the Azure Portal.

Add new nodes as required to **increase compute and storage during peak times**. And **delete nodes seasonally** when infrastructure demands are lower.

**Add and delete new clusters as required:**

- Min **3 nodes** per cluster
- Max **16 nodes** in a vSphere cluster
- Max **96 nodes** to an Azure Private Cloud instance



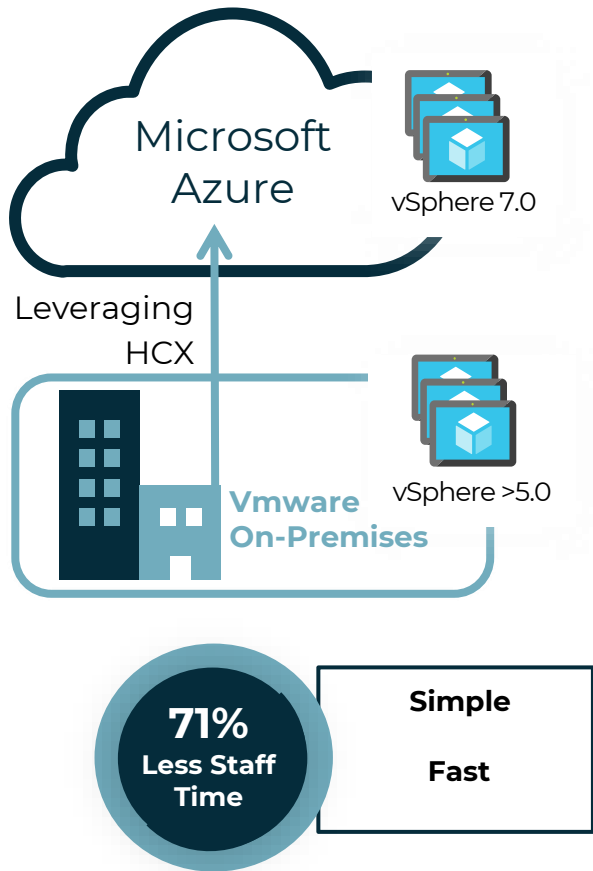
# Familiar and consistent VMware tools and technology

Create operational consistency for admins as you **continue to use VMware for resources running on Azure infrastructure** including vSphere Client and NSX-T Manager.

Access to **vSphere, HCX and NSX-T** are **enabled during the Private Cloud deployment process**. Credentials registered in Azure connect to the private cluster hosts.



# Using VMware HCX for Migration to Azure VMware Solution

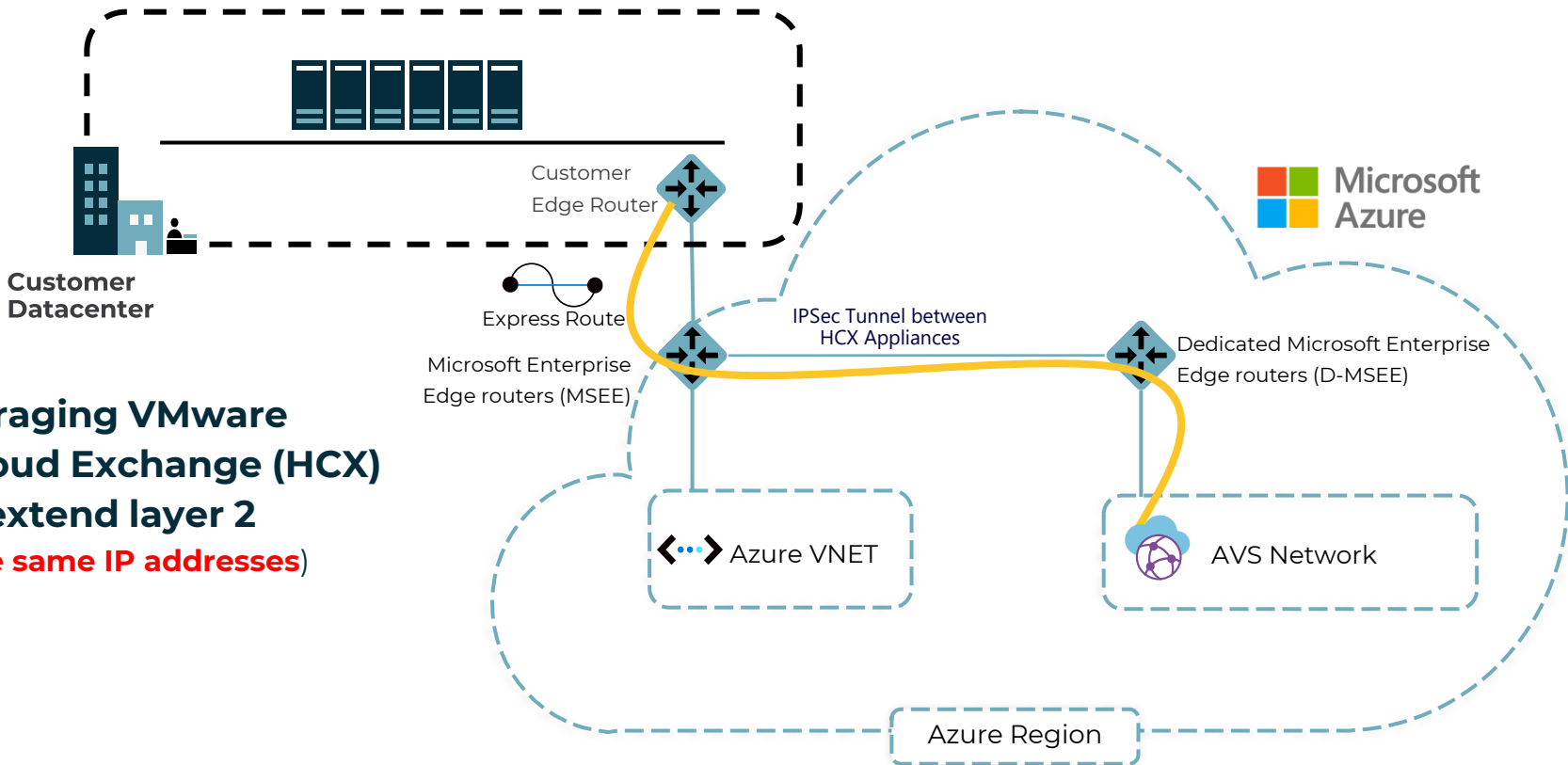


- Large scale **bulk migration** using HCX
- **Replication Assisted vMotion**
- Any **vSphere to vSphere** migration
- **vSphere version upgrade:** vSphere 5.0+ to any current vSphere version
- **HCX for site pairing** and DR
- **Parallel VM migration** threads
- **No change in IP**, no NAT
- **Secure proxy** for vMotion and replication traffic



# Azure VMware Solutions

## Networking (Logical)

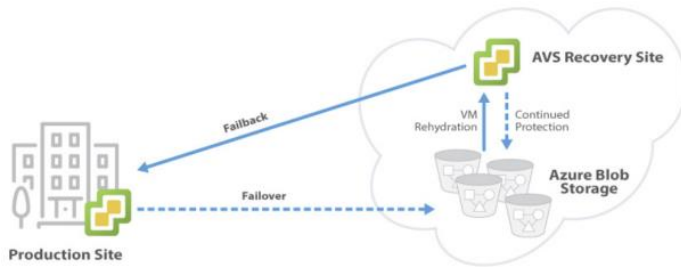


**Leveraging VMware  
Hybrid Cloud Exchange (HCX)  
to extend layer 2**  
(use the same IP addresses)



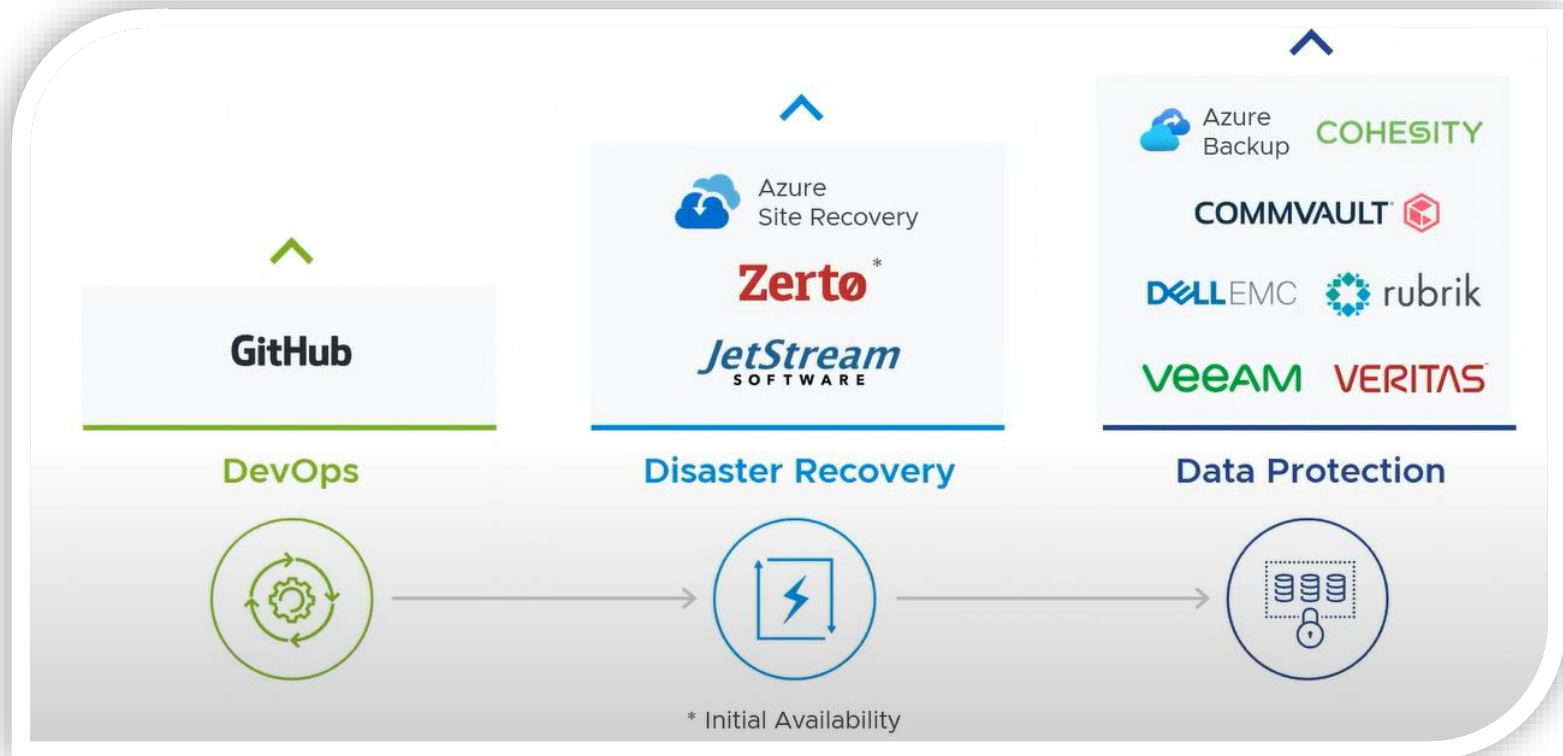
# Disaster Recovery Solutions using Azure VMware Solution

- **VMware HCX Disaster Recovery (DR)**
  - Not recommended for large environments
- **VMware Site Recovery Manager (SRM)**
  - On-premise VMware to AVS private cloud
  - Primary AVS to a secondary disaster recovery AVS
- **Third party solutions**
  - Jetstream
  - Zerto
  - RiverMeadow





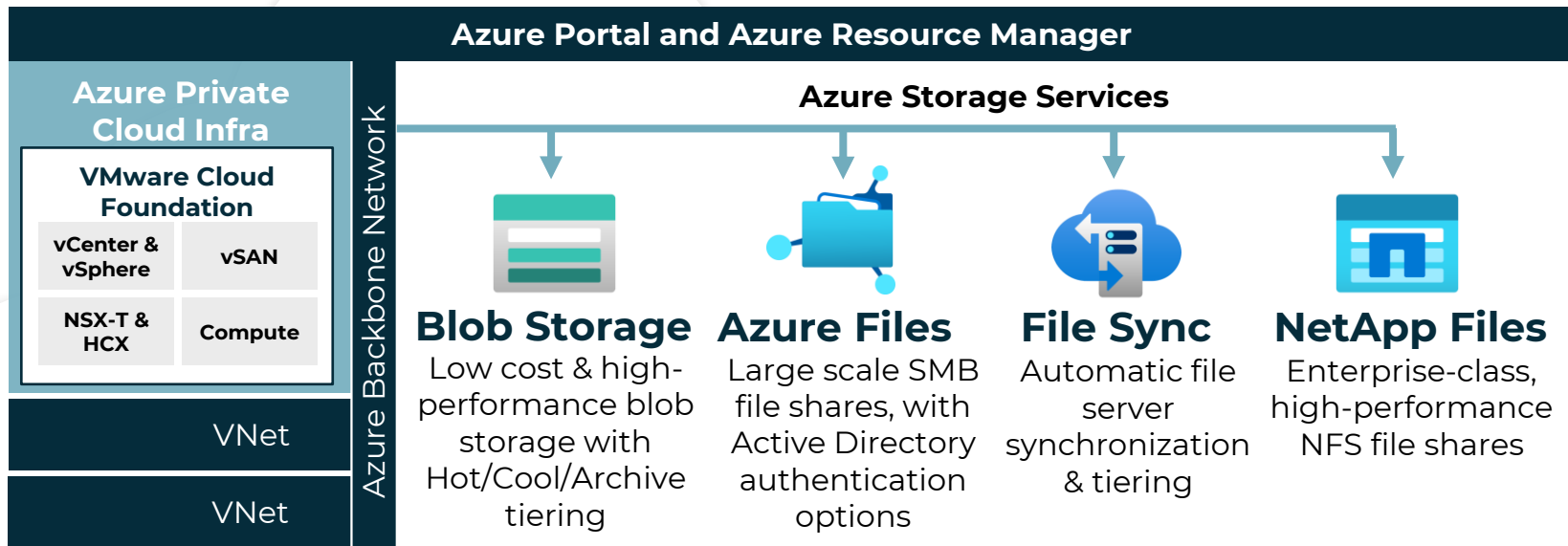
# Ecosystem of Technology Partner Solutions





# Azure VMware Solution with Azure Storage Integration

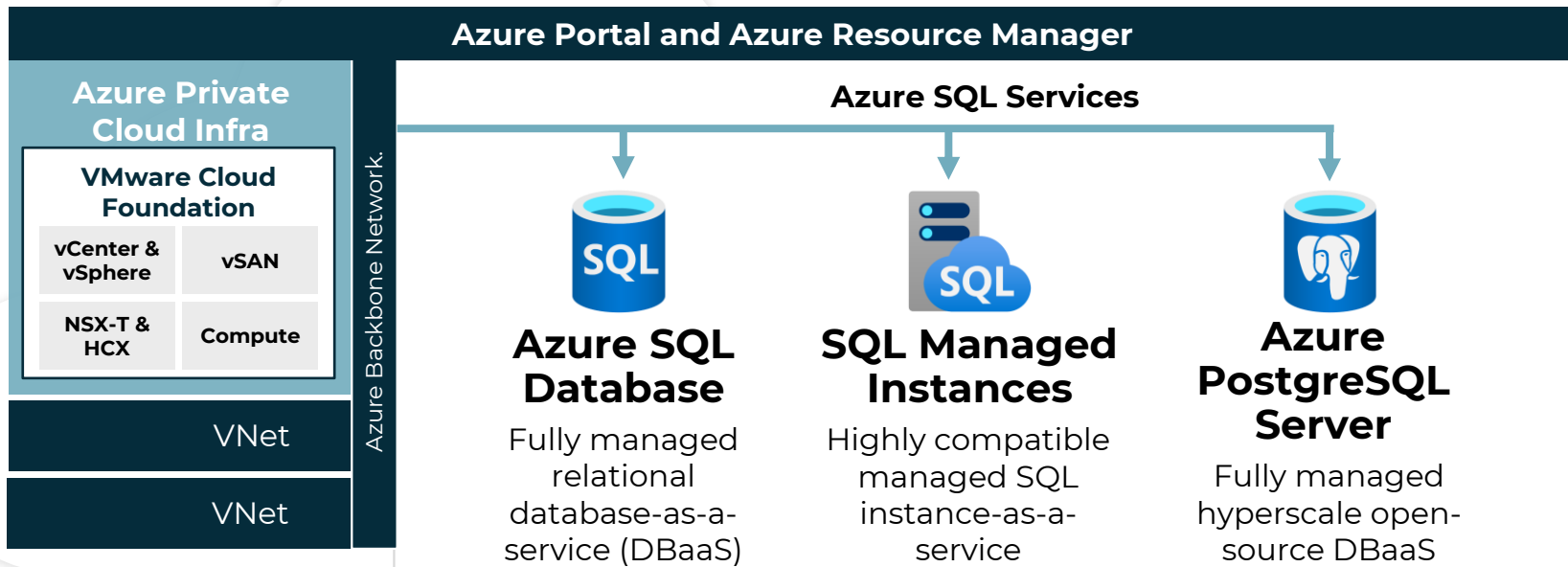
Microsoft Azure





# Azure VMware Solution with Azure SQL Integration

Microsoft Azure





# Three Key Take-Aways

1

## AVS *\*is\** Azure

*Native Azure integration*

*Cloud SLA, Region Availability*

*Utilize Azure for VMware  
centric Hybrid Cloud*

2

## Run VMware on Azure

*Sold and supported by  
Microsoft*

*Direct VMware  
partnership - VMware  
verified*

3

## Benefits

*Simple, fast, nondisruptive  
movement to the cloud,  
without refactoring*

*Management utilizing the  
tools your business already  
runs on*



# Grazie!