



VMware workloads on Azure

Azure Architects Connect – 18.01.2023

Bernd Loehlein

Microsoft, GBB EMEA Solution Area Specialist adv. Migration

Marc Sauter

VMware, Staff Cloud Solution Architect AVS



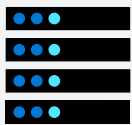
Cloud migration strategies

First steps to accelerate migration and mitigate risk

Rehost

Redeploy as-is to cloud

The least risky move to migrate existing apps.



IaaS and
Azure VMware Solution
(Azure Specialized)

Modernize

Attach workloads to cloud services

Extend capabilities of your existing VMware apps.



PaaS

Refactor

Reduce footprint and switch to containers

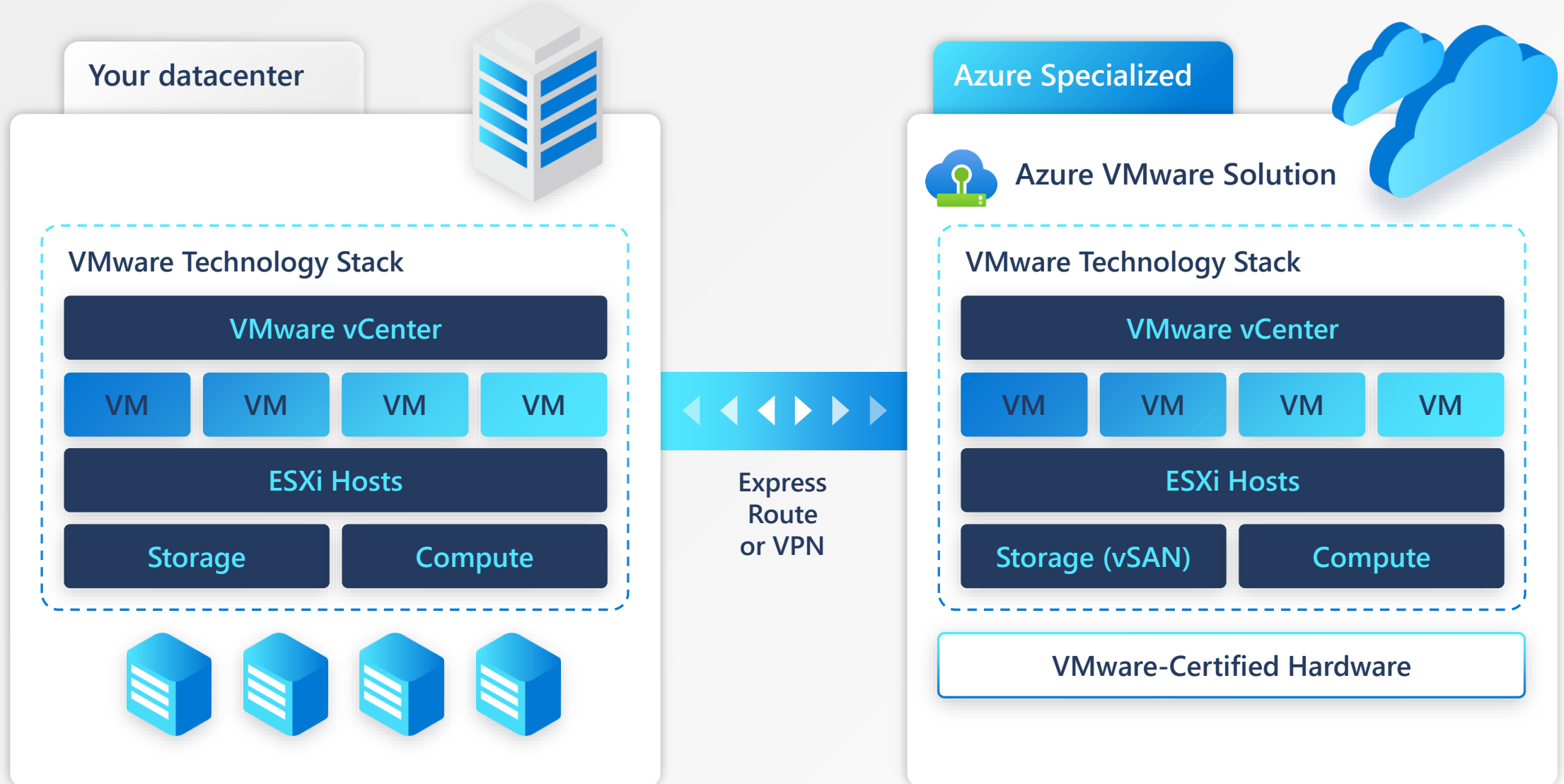
Improve total cost of ownership with economical cloud resources.



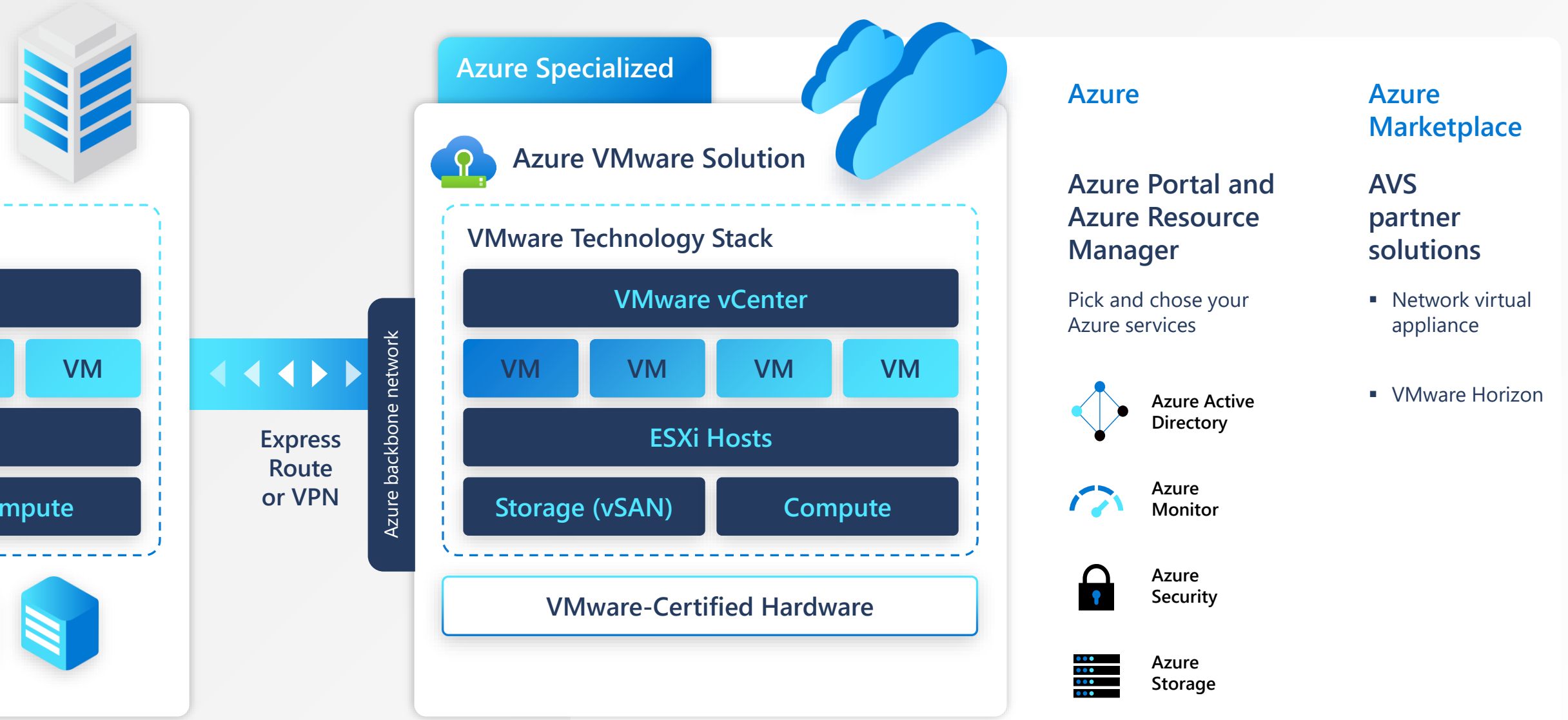
Containers



Azure VMware Solution overview



Azure VMware Solution overview



Azure Specialized

Azure VMware Solution

VMware Technology Stack

VMware vCenter

VM VM VM VM

ESXi Hosts

Storage (vSAN)

Compute

VMware-Certified Hardware

Express Route or VPN
Azure backbone network

Azure

Azure Portal and Azure Resource Manager

Pick and chose your Azure services

Azure Active Directory

Azure Monitor

Azure Security

Azure Storage

Azure Marketplace

AVS partner solutions

- Network virtual appliance
- VMware Horizon



Compute details | Current and planned



Type	AV36	AV36P	AV52 (Heavy SKU) <small>(Live in UK South, West Europe)</small>
CPU	2x Intel Xeon Gold 6140 (72 logical cores with HT)	2x Intel Xeon Gold 6240 (72 logical cores with HT)	2x Intel Xeon Platinum 8270 (104 logical cores with HT)
Clock Speed	2.3 Ghz	2.6 Ghz	2.7 Ghz
Memory	576 GB	768 GB	1.5 TB
Storage – Cache	3.2 TB NVMe	1.5 TB Intel Optane Cache	1.5 TB Intel Optane Cache
Storage	15.2 TB SATA SSD	19.2 TB All NVMe	38.4 TB All NVMe

Azure VMware Solution software and hardware package



Software specifications

ESXi – 7.0 U3c Enterprise Plus

vCenter - 7.0 U3c Standard

vSAN - 7.0 U3c Enterprise 

NSX-T – 3.1.2 Advanced

HCX - 4.x Advanced

*Minimum 3 nodes per vSphere cluster

*Maximum 16 nodes per vSphere cluster

*Maximum 96 nodes to an Azure Private Cloud instance



Save with Azure licensing benefits for VMware customers

Get predictable pricing



Save with existing licenses



Speed your migration

Hourly Pay-As-You-Go

- Use PAYG billing

Or

Lock in pricing and discounts for 1 or 3 years

- Reserved Instances (RIs) for IaaS or AVS
- Azure Savings Plan for IaaS



Avoid potential price increases with predictable pricing

Azure Hybrid Benefit

- Use Windows Server and SQL Server on-premises licenses with Software Assurance to save on Azure

Free Extended Security Updates

- 3 years free security updates on Azure for Windows Server and SQL Server 2008, 2008 R2 and 2012

Use VMware licenses to save on Azure VMware Solution

- VMware Cloud Universal Credits (VMCU)

Azure Migration and Modernization Program (AMMP)

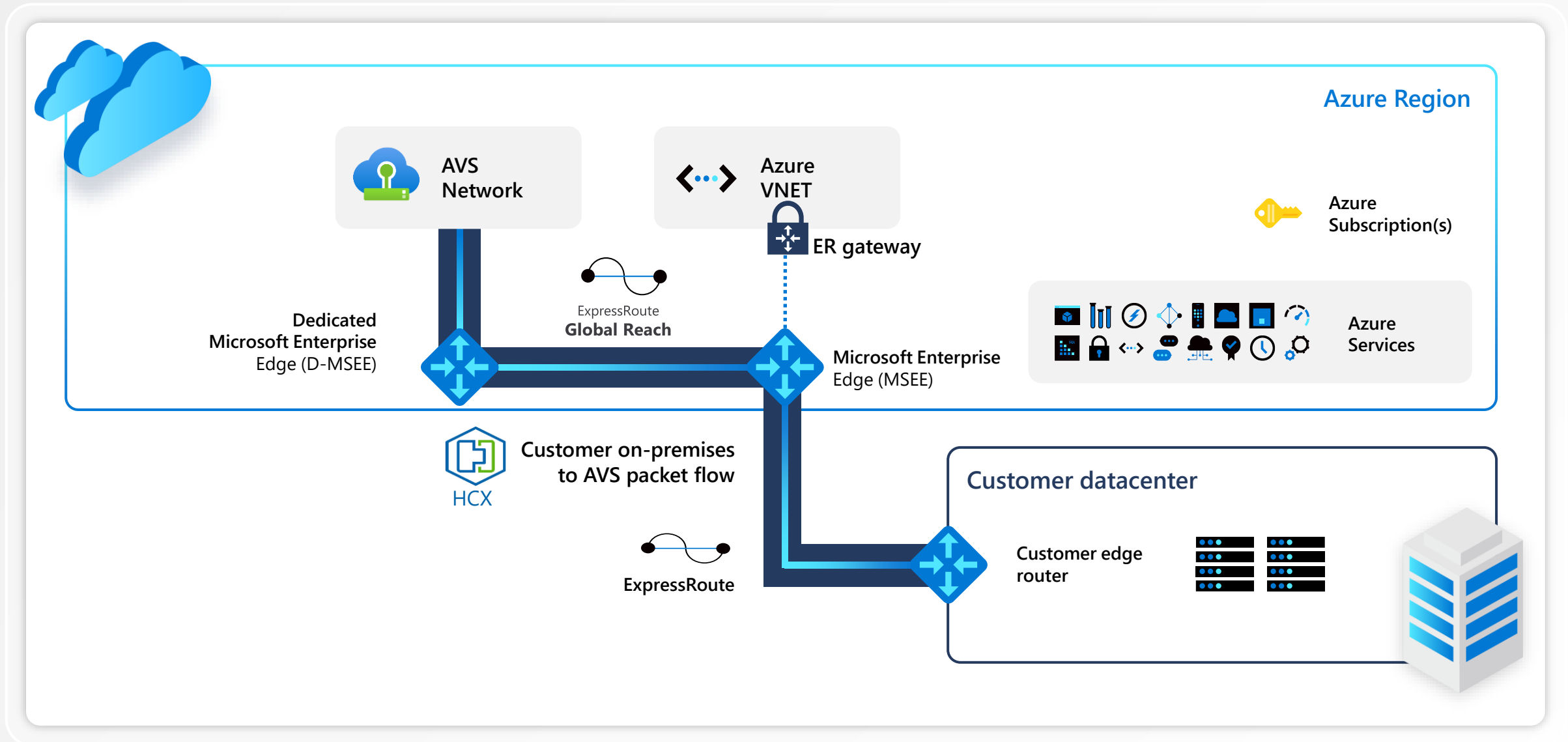
- Discover and assess your on-premises applications to identify migration candidates.
- Find best practice migration guidelines and tools.
- Work with expert migration partners.
- Skill up your organization for long-term success.



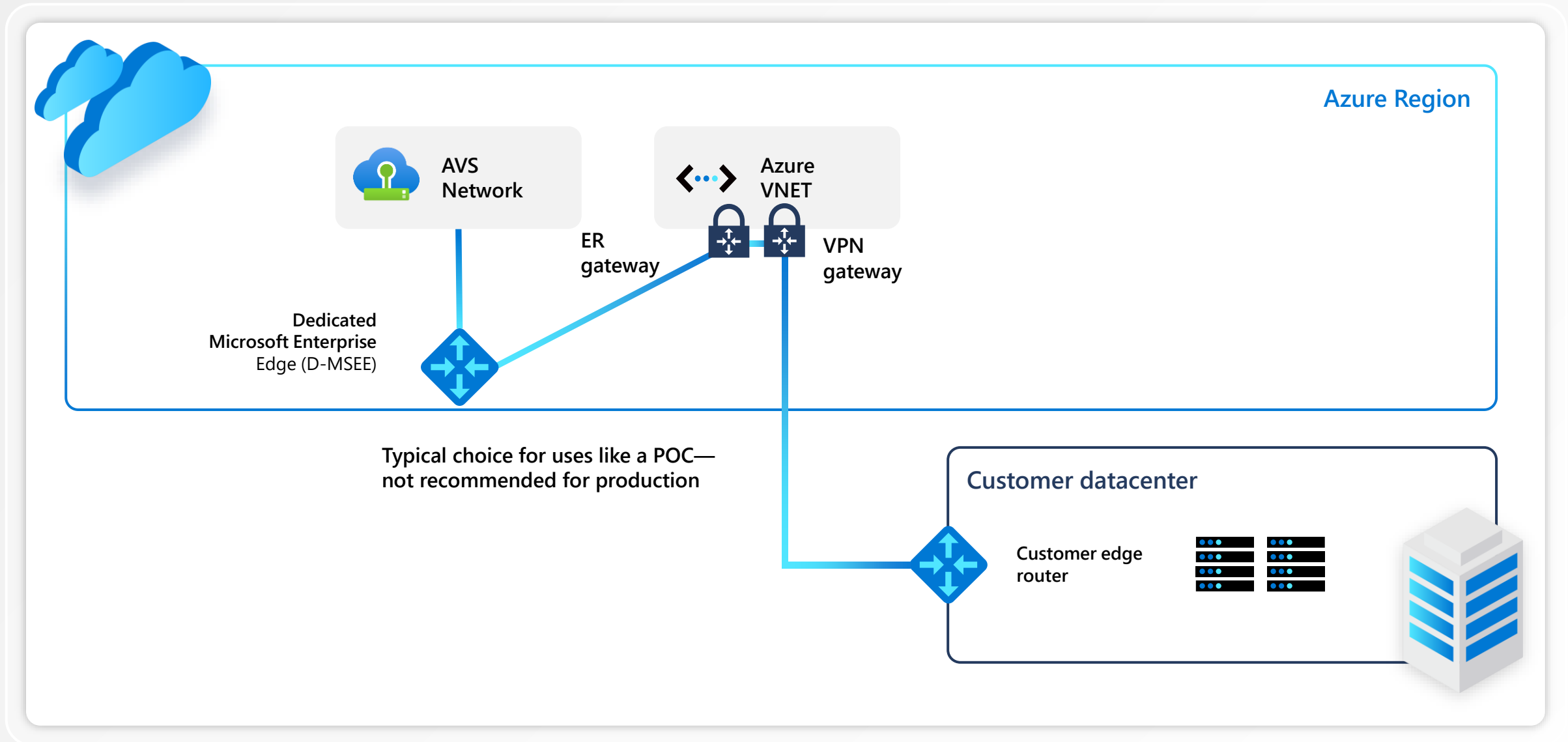
Azure VMware Solution common use cases



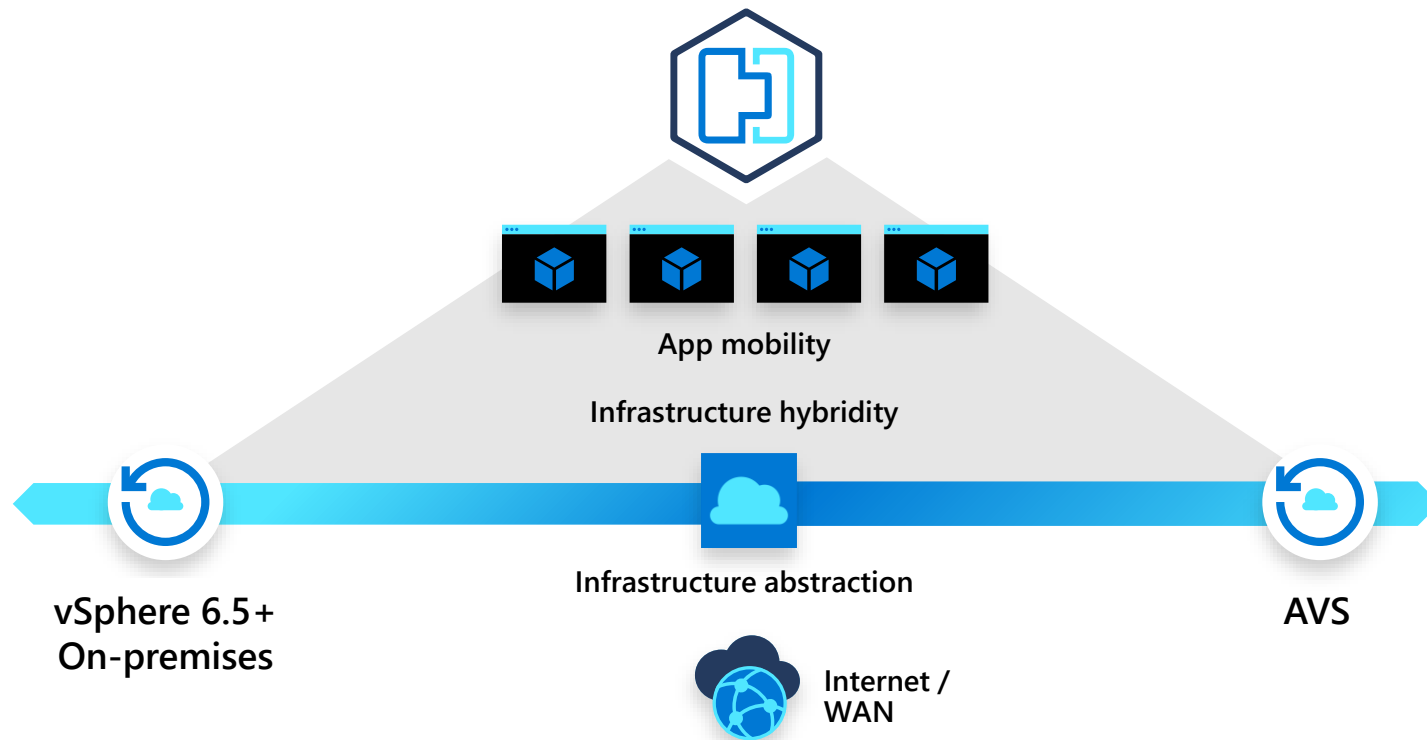
Azure VMware Solution | On-prem to SDDC



Azure VMware Solution | VPN connectivity



Azure VMware Solution | VMware HCX



Accelerate cloud adoption App

Mobility across vSphere 6.5+ version on-premises to AVS.

Hybrid cloud extension

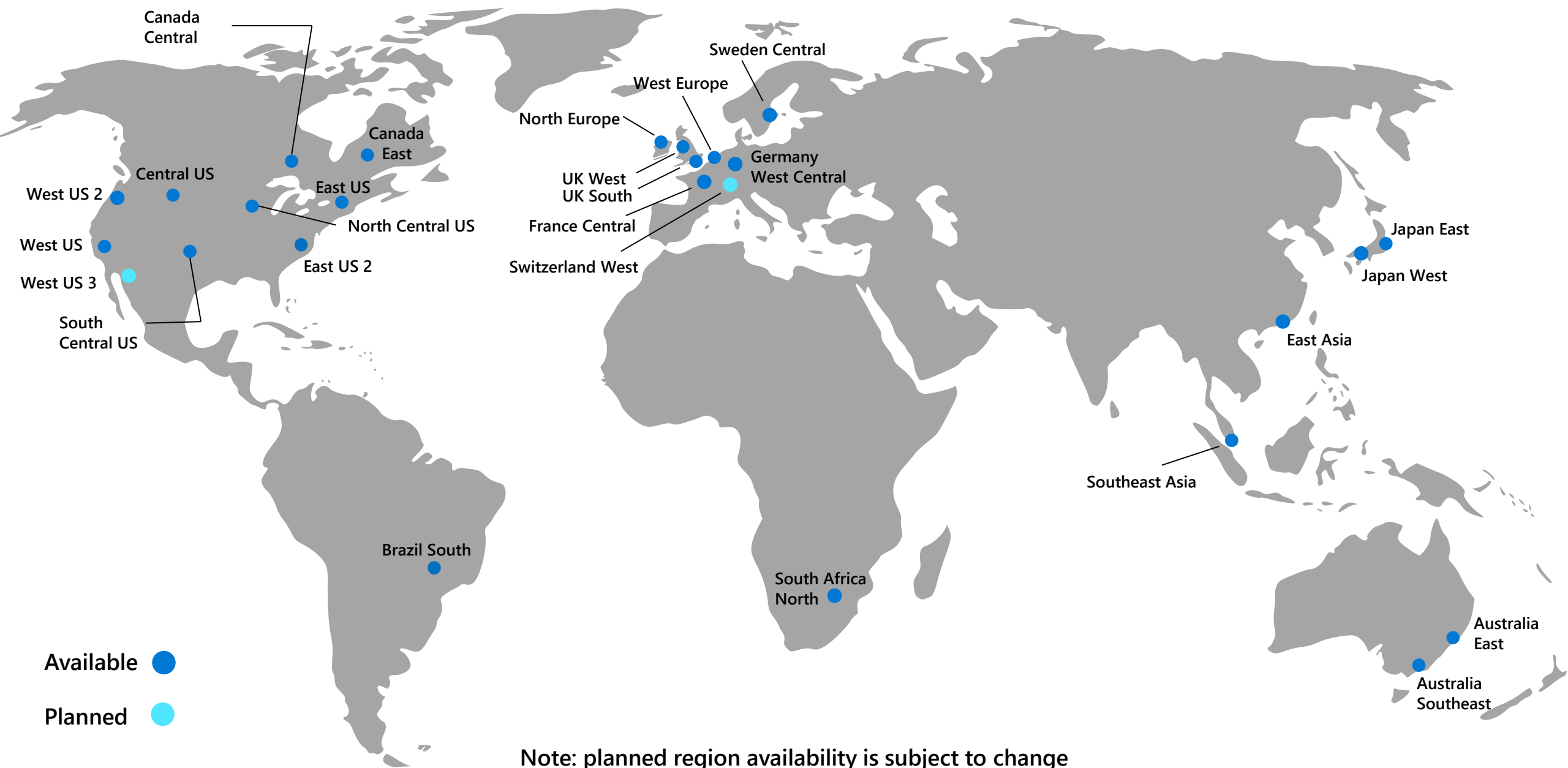
Multisite, WAN-optimized, secured, load-balanced, traffic-engineered network extension.

Transform with bulk migration

Zero downtime on live migrations and scheduled large-scale warm migrations.



Azure VMware Solution: Global Availability



Note: planned region availability is subject to change

The most compliance coverage for VMware in the cloud

Global



- ✓ ISO 27001:2013
- ✓ ISO 27017:2015
- ✓ ISO 27018:2014
- ✓ ISO 27701:2019
- ✓ ISO 22301:2012
- ✓ ISO 9001:2015
- ✓ ISO 20000-1:2011
- ✓ SOC 1 Type 2
- ✓ SOC 2 Type 2
- ✓ SOC 3
- ✓ CSA STAR Certification
- ✓ CSA STAR Attestation
- ✓ CSA STAR Self-Assessment
- ✓ WCAG 2.0 (ISO 40500:2012)

US Government



- ✓ FedRAMP High
- ✓ EAR
- ✓ DoD DISA SRG Level 4
- ✓ DoD DISA SRG Level 2
- ✓ NIST CSF
- ✓ Section 508 VPATs*
- ✓ FIPS 140-2

Industry



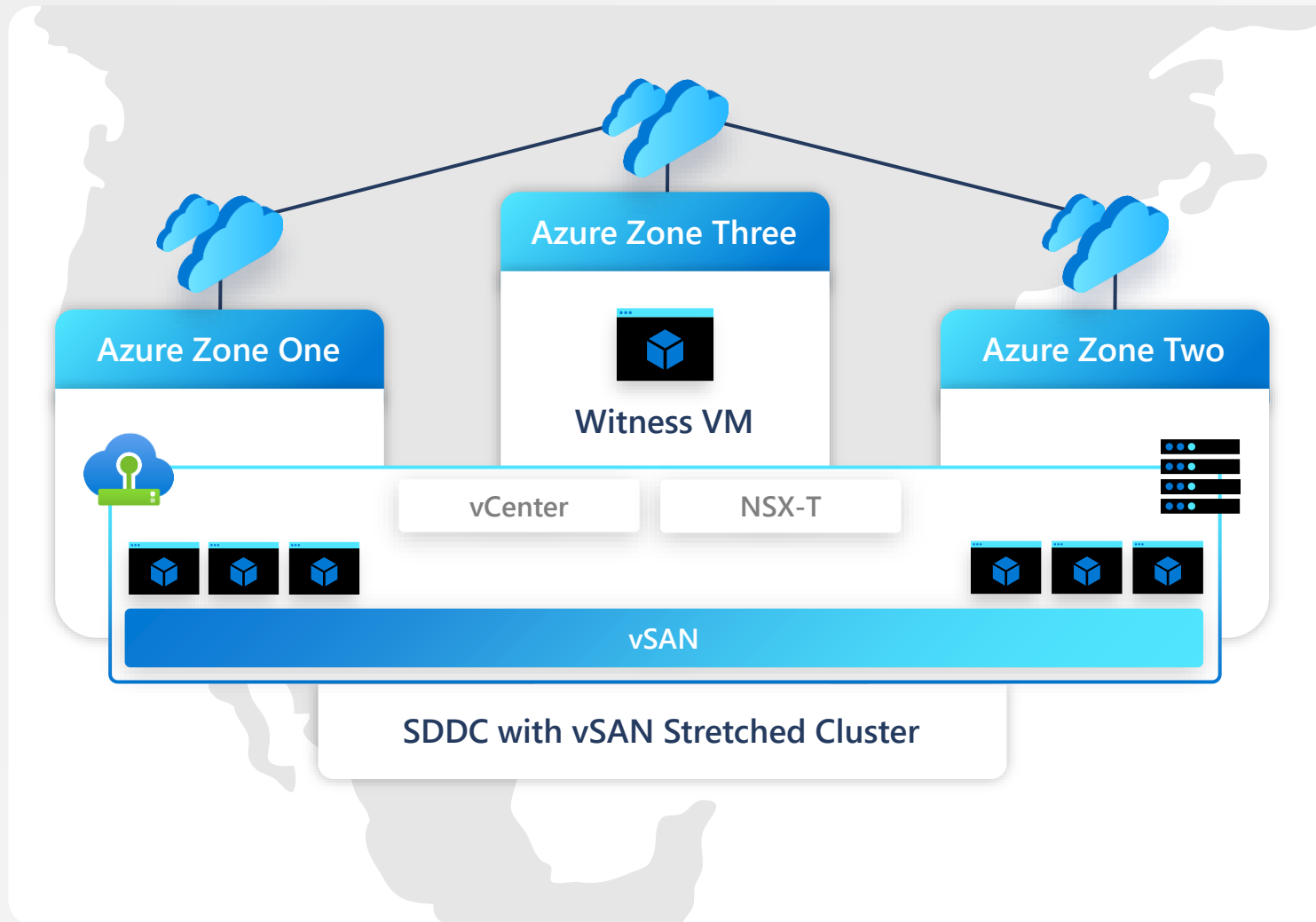
- ✓ PCI DSS Level 1
- ✓ GLBA (US)
- ✓ FFIEC (US)
- ✓ SEC 17a-4 (US)
- ✓ SEC Regulation SCI
- ✓ CFTC 1.31 (US)
- ✓ SOX (US)
- ✓ 23 NYCRR 500 (US)
- ✓ OSFI (Canada)
- ✓ FCA + PRA (UK)
- ✓ APRA (Australia)
- ✓ FINMA (Switzerland)
- ✓ FSA (Denmark)
- ✓ RBI + IRDAI (India)
- ✓ MAS + ABS (Singapore)
- ✓ NBB + FSMA (Belgium)
- ✓ AFM + DNB (Netherlands)
- ✓ AMF + ACPR (France)
- ✓ KNF (Poland)
- ✓ European Banking Authority (EBA)
- ✓ HIPAA BAA (US)
- ✓ HITECH certification
- ✓ HITRUST
- ✓ TISAX
- ✓ TruSight
- ✓ GxP (FDA 21 CFR Part 11)
- ✓ OSPAR
- ✓ NERC
- ✓ MARS-E (US)
- ✓ NHS IG Toolkit (UK)
- ✓ CDSA
- ✓ MPAA (US)
- ✓ DPP (UK)
- ✓ FERPA (US)

Regional



- ✓ Argentina PDPA
- ✓ Canada Privacy Laws
- ✓ EU EN 301 549
- ✓ EU ENISA IAF
- ✓ EU Model Clauses
- ✓ EU – US Privacy Shield
- ✓ GDPR
- ✓ Germany C5
- ✓ Japan My Number Act
- ✓ Netherlands BIR 2012
- ✓ NEN 7510:2011 (Netherlands)
- ✓ Spain DPA

Azure VMware Solution | vSAN Stretched Clusters



Protect against Azure zone failure

Create a single vSAN Cluster that can be enabled to span two separate availability zones.

Improve applications reliability

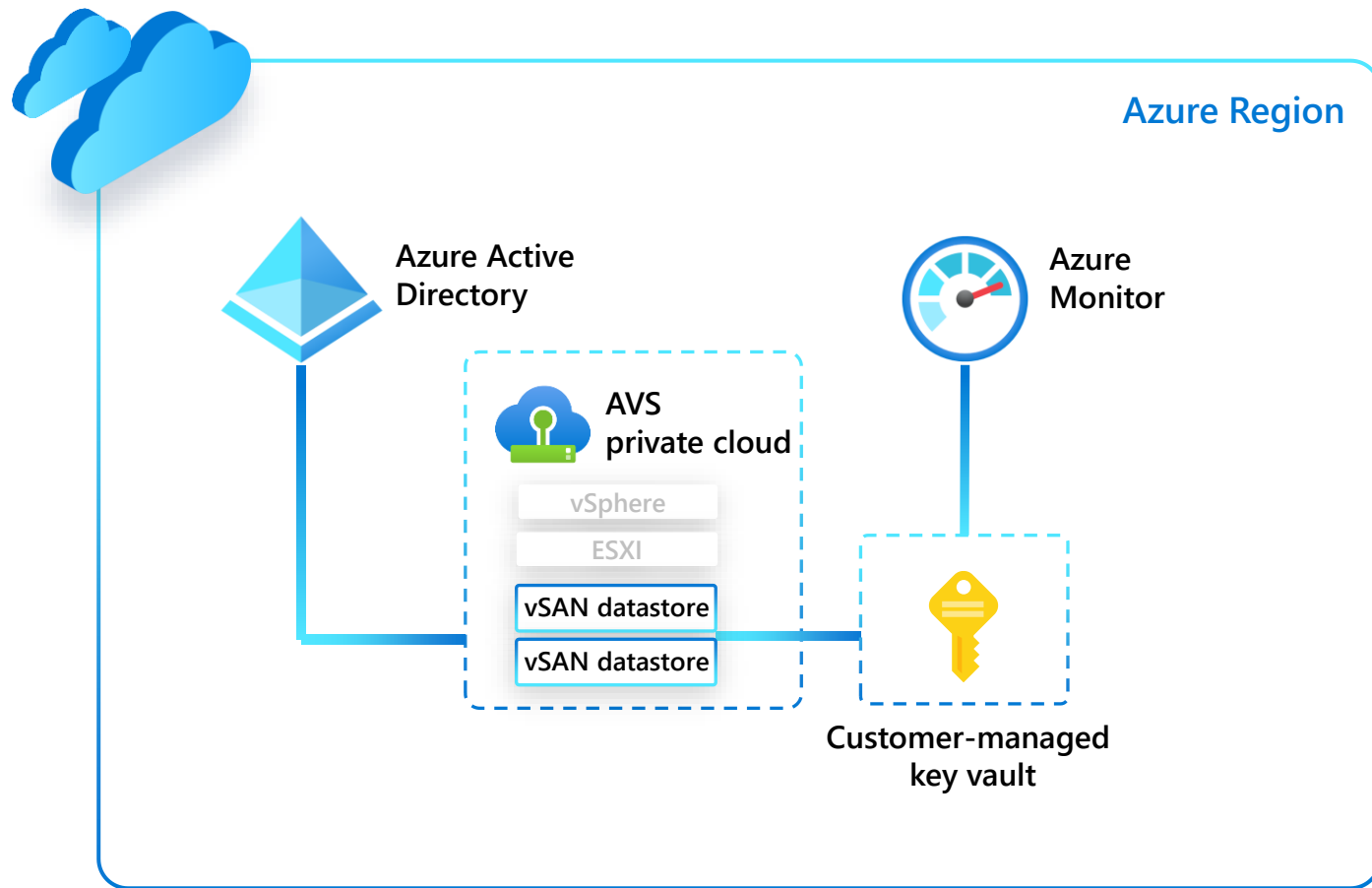
Provide a zero RTO recovery for enterprise applications without needing to re-architect or deploy expensive DR solutions.

Focus on core requirements, not DR

Get the required highly available infrastructure as you deploy VMs on the vSAN Stretched Cluster.



Microsoft Azure private cloud data security



Sensitive data protection

By default, customer data is protected with Encryption at Rest.

Customer-managed keys

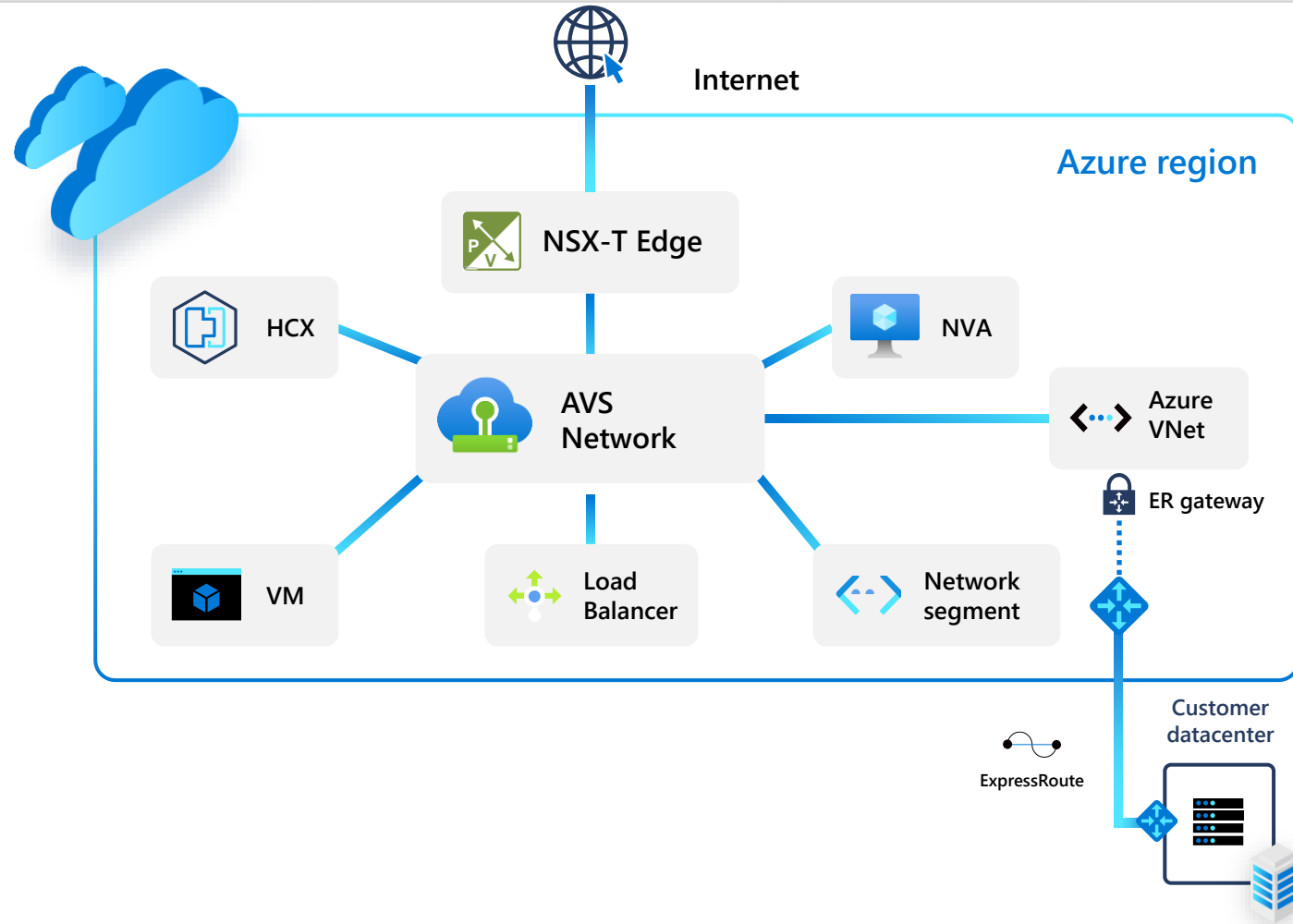
Organizations can now bring and manage their own master encryption keys via Azure Key Vault.

Encryption control

Customers now have greater control over their own encryption.



Azure VMware Solution | Enable public IP to the NSX Edge



Direct internet access

Enable inbound and outbound internet access for AVS to NSX-T Edge—does not interact with other Azure-native services.

DDoS protection

DDoS security protection against network traffic in and out of the internet.

NSX Edge as terminating point

Use the NSX Manager to configure network security and connectivity in and out of the internet.



Azure VMware Solution – External Storage Options

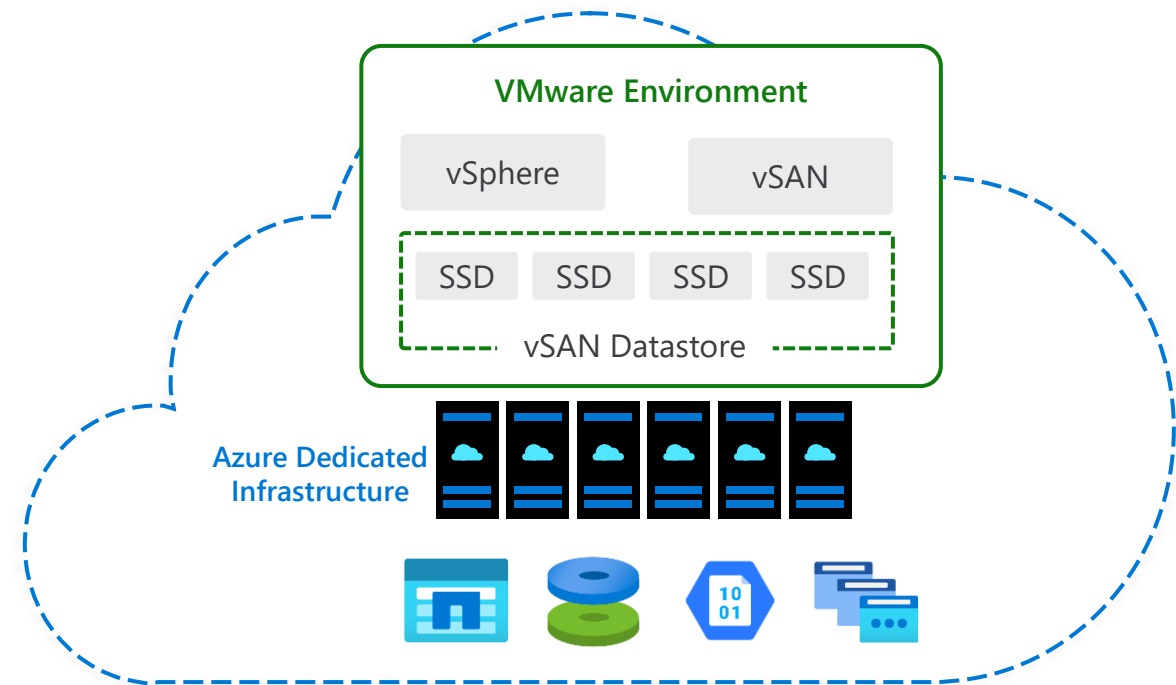
External storage options enable scaling of the available storage without expanding the cluster-size. Allows for instant scaling supporting performance and capacity demands.

Available storage options include:

- Azure NetApp Files Datastores
- Guest-OS access to storage services
 - SMB via Azure Files or Azure NetApp Files
 - NFS via Azure Blob, Azure Files or Azure NetApp Files
 - Object via Azure Blob

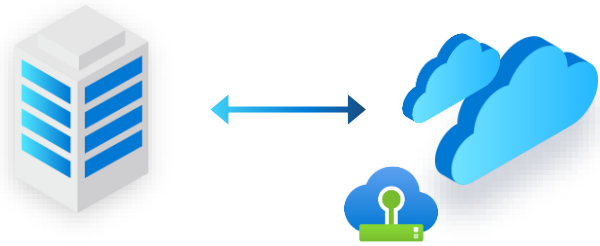
External storage benefits:

- ✓ Keep node count low to reduce licensing cost
- ✓ Implement pilot SDDC for disaster recovery to optimize DR cost
- ✓ Azure NetApp Files capabilities as snapshots, volume clones, cross-region replication and backup



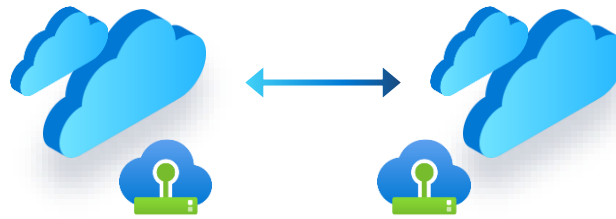
Flexible disaster recovery options with Azure VMware Solution

Simplifying disaster recovery



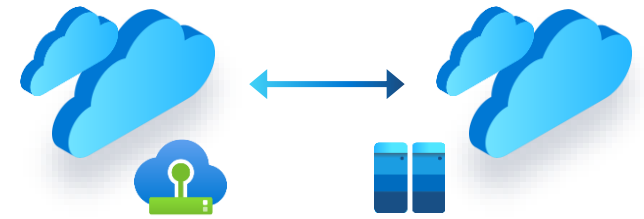
From on-premises to AVS

Providing cloud disaster recovery



From AVS to AVS

Advancing cloud disaster recovery options



From AVS to Azure services

Partner
solutions

vmware®
Site Recovery Manager

Zerto

JetStream
SOFTWARE



Azure VMware Solution

Wrap up



Cloud efficiencies will outweigh current on-prem economics over time.



Seamlessly integrate your VMware environment with **flexible options**.



Predictability in licensing costs as you migrate and modernize at your pace.