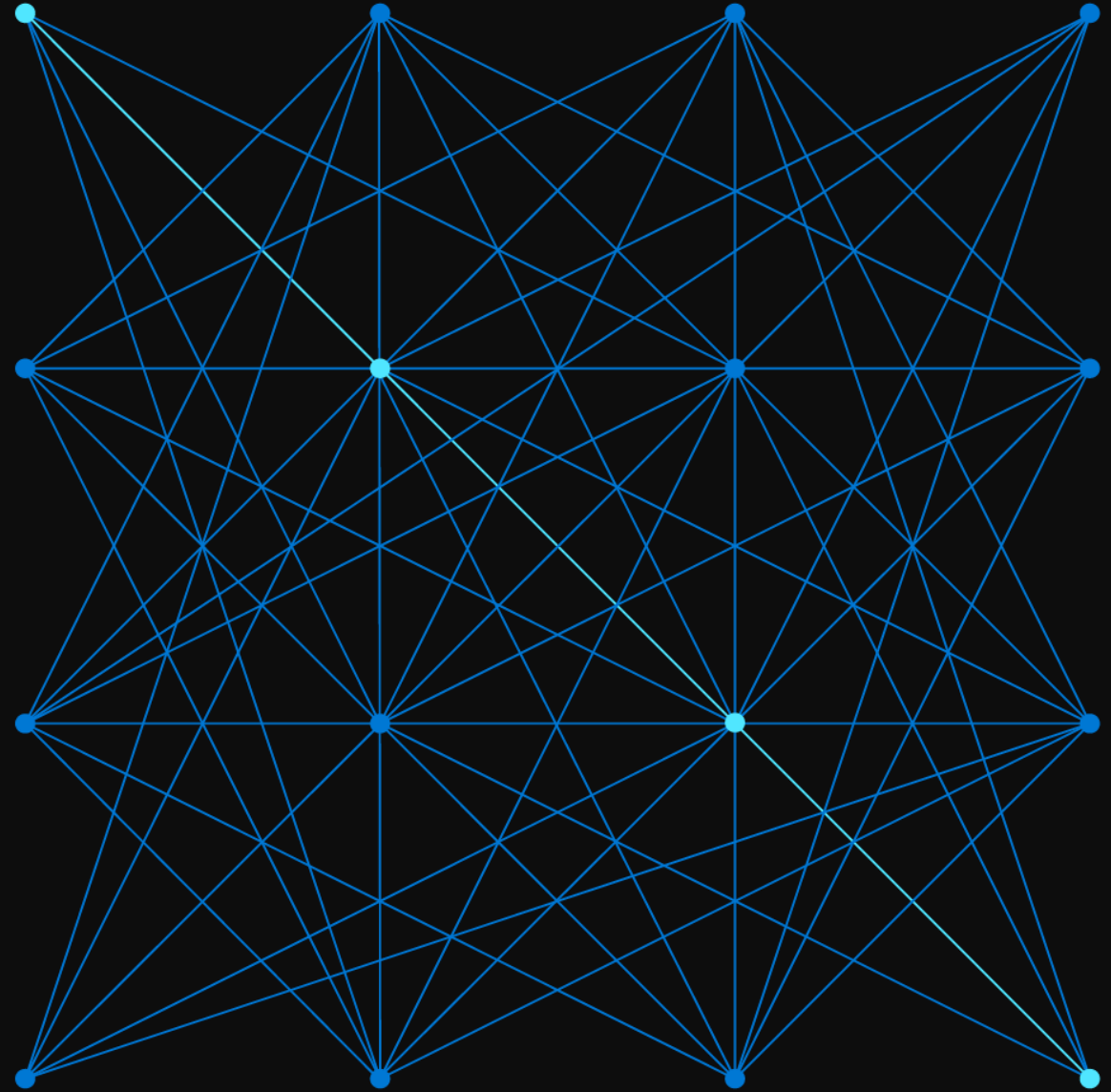# Hosters' Transformation

Common Migration Scenarios & Hybrid Cloud

Peter Mogaka
CSA

Agenda

Introduction to Migration

Windows/linux and SQL migration
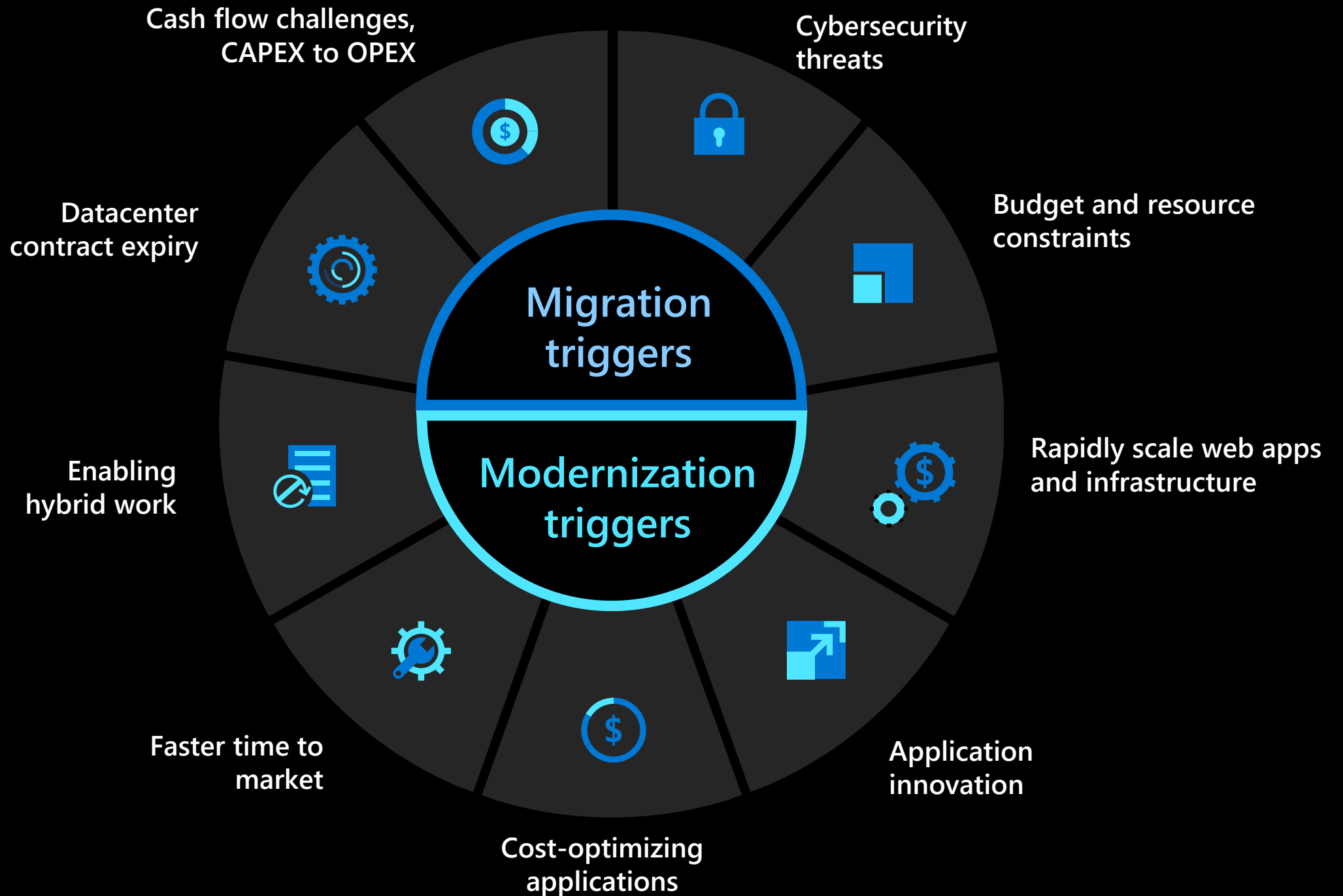
Back Up and Disaster Recovery

Azure Virtual Desktop - VDI

Azure VMware Solution

Azure Hybrid Cloud

The One Microsoft Story: the basis for building your unique managed services portfolio

Modern Workplace

Priority Scenario	Technical Scenario
Teamwork	Teamwork Deployment
	Employee Engagement & Communication
	Teams Custom Solution Development
	Content & Knowledge Management
	Meetings & Meeting Rooms
	Calling **Surface Hub** (Hardware)
Unified Endpoint Management	Device Deployment
	Desktop Virtualization
	Device as a Service
	Mobile Device Management
Security	Identity & Access Management
	Information & Data Protection
	Network Security
	Threat Protection
	Security Management
Compliance	Advisory Services
	Information Governance
Adoption & Change Management	Adoption & Change Management

Business Applications

Priority Scenario	Technical Scenario
Customer Engagement	Intelligent Sales & Marketing
	Proactive Customer Service
	Connected Field Service
Unified Operations	Modernize Finance & Operations
	Connected Commerce
	Modernize HR
Power Platform	Modern Analytics
	Business Process Automation
	App Modernization
Scalable Business Management	Modernize Finance & Operations (OP to Cloud)
	Intelligent Sales & Marketing
	Customer Service Pro

Azure

Priority Scenario	Technical Scenario	Priority Scenario	Technical Scenario
Server Migration	Windows Server Migration	Artificial Intelligence (AI)	Machine Learning
	Linux Server Migration		AI Apps & Agents
	Mainframe Migration		Knowledge Mining
	Cloud to Cloud Migration		AI Compute & Deep Learning
	VMWare Migration		AI & Business Intelligence
Data Migration	SQL Server Migration to SQL DB/SQL MI		AI & Big Data
	SQL Server Migration to IaaS		AI & Automation
	Cosmos DB Migration		3rd Party AI to Azure
	Data Modernization on-premises (DataLake)	Analytics	Modern Data Warehouse
	OSS DB to Azure		Real-time Analytics
SAP on Azure	SAP on Azure		Self-Service BI
Application Innovation	Modernize/New OSS Applications		On-premises BI Modernization
	Modernize/New .NET Applications		Hadoop/HDInsight
	Containerize with Kubernetes		Spark to Azure
IoT	IoT Hub		Databricks
	IoT Central	Advanced Networking	Virtual WAN (SDWAN)
	Digital Twins		Windows Azure Firewall
	3rd Party IoT		Front Door
High Performance Compute	High Performance Compute (Core)	Advanced Security	Identity & Access Management (IAM)
	High Performance Compute (GPU)		Threat Protection
	Specialized Storage		Network Security
	Dedicated HPC		Data & Information Protection
Virtual Desktop	RDS on IaaS		Security Management SIEM/SOAR Sentinel
	Azure virtual desktop	Mixed Reality	Mixed Reality
Intelligent Edge	Azure Stack HUB/edge/HCI	Enable Azure	DevOps (GitHub)
	Databox (Gateway/Edge)		Resilient Planning & Architecture
	IoT Edge		Cloud Adoption Framework & Governance
			Cost Optimization
			Business Continuity & Disaster Recovery

AB

Building a cloud migration business case

1

Offer a cloud migration business and technology assessment

2

Capture all potential IT functions and security and application workloads

3

Identify and prioritize migration workloads

4

Migrate workloads

THE CLOUDLAB

Tools and Programs to Help You Migrate to Azure

Call to action

Azure Migration & Modernization Program	Technical Solution Assessment
Nominate your customers directly and access investments to help accelerate customer migration and modernization engagements	Help your customer assess how their workload can move to Azure and see how much they can save
<u>Nominate a project today</u>	<u>Take a solution assessment</u>

Tools

Azure Migrate	Azure Advisor	Microsoft Cost Management

Pricing offers

Azure Hybrid Benefit	Azure Reservations	Azure Savings Plan for Compute

Assets

Partner Zone landing page	Campaign-in-a-box

Microsoft for Hosters

- Windows/Linux and SQL migration

- BC/DR

  - Azure Backup

  - Azure Site Recovery

- VDI/Azure Virtual Desktop

- Azure VMware Solution

- Azure Hybrid Cloud

  - Azure Arc

  - Azure Stack HCI

Microsoft Azure

Hosters' Modernization Survey

Azure is the best cloud for Windows Server & SQL Server

Windows Server & SQL Server are optimized in Azure with unique capabilities to increase business efficiency, while getting the best TCO

> **Save hours of day-to-day** IT time with **Azure Automanage, Hotpatch and Azure SQL fully-managed capabilities** that simplify IT management and **improve DBA productivity up to 40%**

> **Trust the SQL Server platform** with the **least security vulnerabilities** of any database in the last 10 years 1 , and **+3.5K cybersecurity Azure experts** working to help safeguard your estate

> **Save up to 85% with Azure Hybrid Benefit** when migrating to Azure Window Server and SQL Server VMs, and **up to 93% when modernizing to Azure SQL Managed Instance**

> **Innovate anywhere with options that include hybrid and multi-cloud,** programs and **free migration tools to help alleviate costs and risks** associated with your cloud migration

Azure benefits and offers

Azure Hybrid Benefit
for Windows Server and SQL Server

Save 50% versus other cloud providers

Extended Security Updates
(ESU), free only on Azure

Three years of security updates after support on-premises ends

75% of the license cost to buy standalone

Pay less with Azure. AWS is 5x more expensive
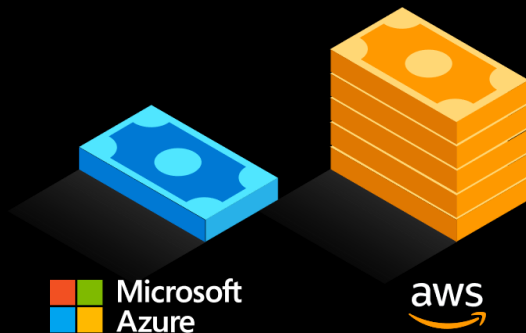
Windows Server savings illustration

Azure Hybrid Benefit Savings   ESU Savings

Azure

AWS

■ Windows VM   ■ Extended security updates
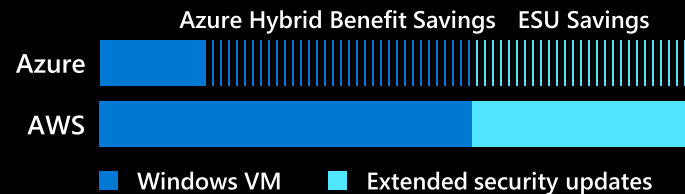
SQL Server savings illustration (PaaS)

Azure Hybrid Benefit Savings

Azure

AWS

■ Azure SQL Database   ■ AWS RDS for SQL EE
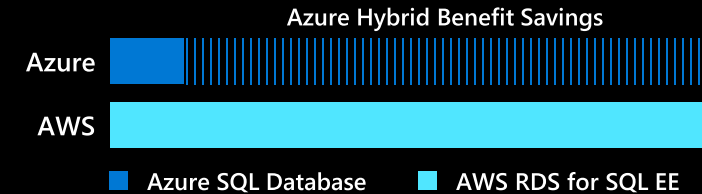
Learn more: aka.ms/why5xmore

Microsoft Azure

aws
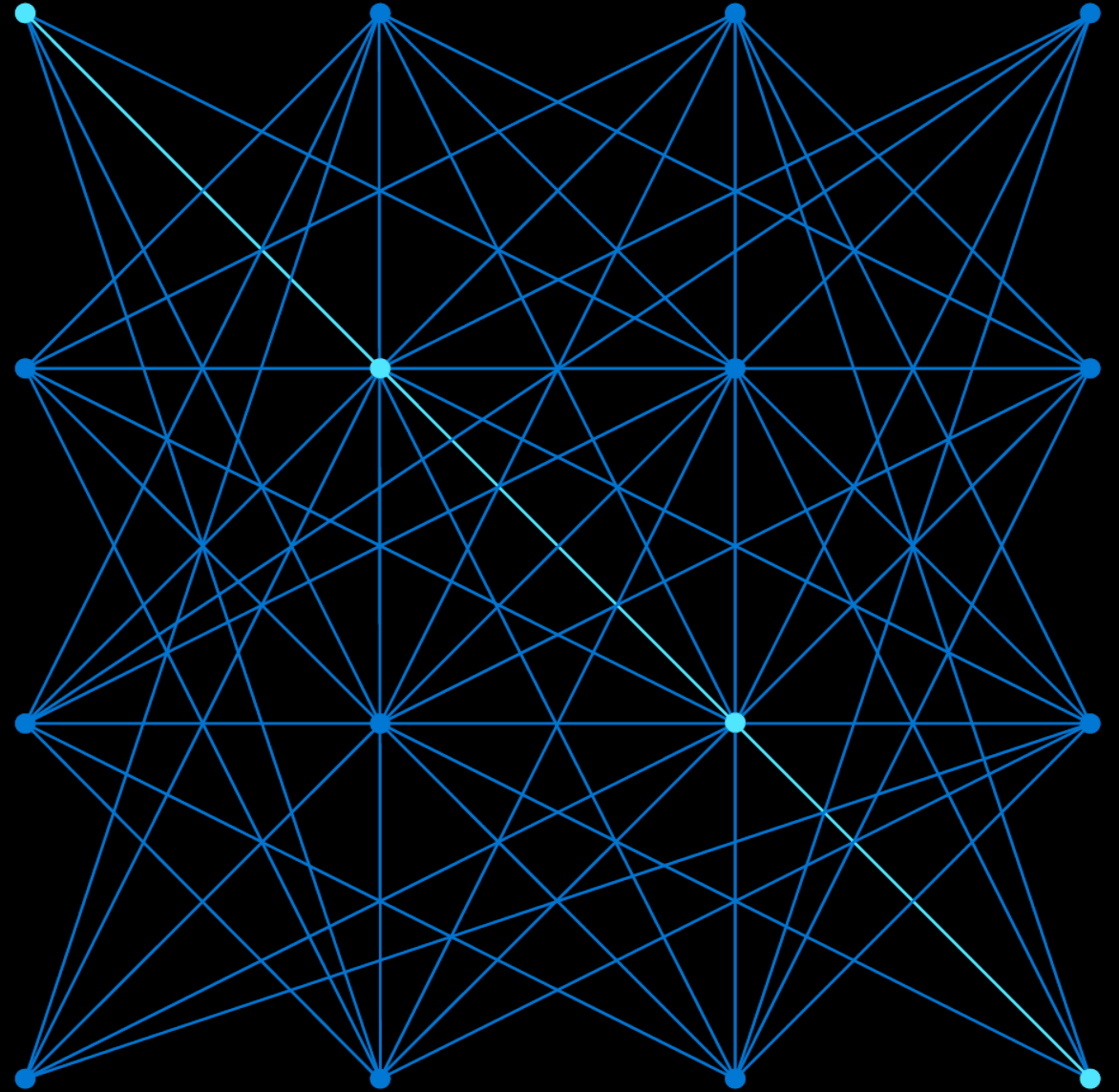
Business continuity strategy

You need all three

Primary site

Primary site   **Secondary site**

Original   **Backup**
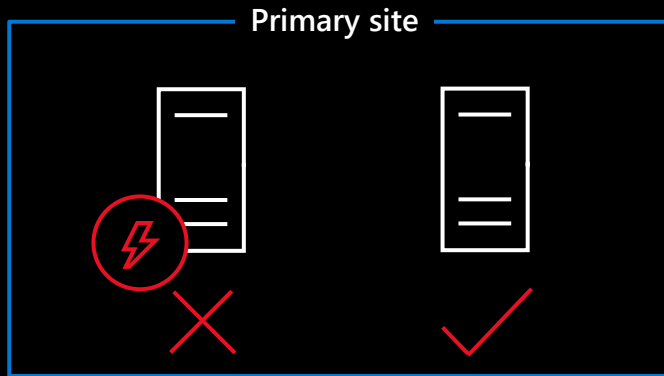
High availability

When your applications have a catastrophic failure, run a second instance
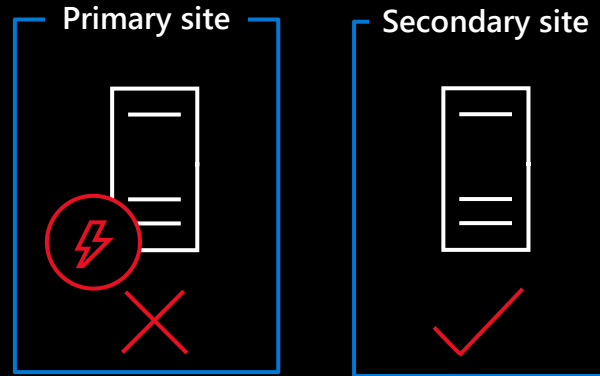
Disaster recovery

When your applications have a catastrophic failure, run them in Azure or a secondary datacenter
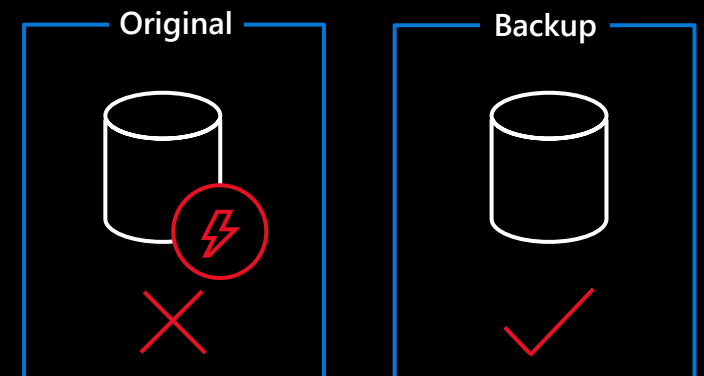
Backup

When your data is corrupted, deleted or lost, you can restore it

Azure protection options for all scenarios
Introducing Availability Zones, protecting from datacenter level failures

Blast radius

Datacenter

Region

Availability
Zone 1

Availability
Zone 2

Availability
Zone 3

Data Residency boundary

Region 1

Region 2
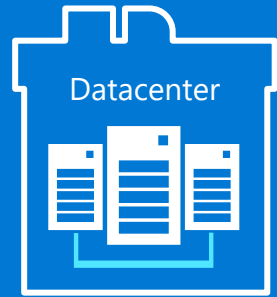
Availability Sets

High Availability protection from hardware failures in a datacenter
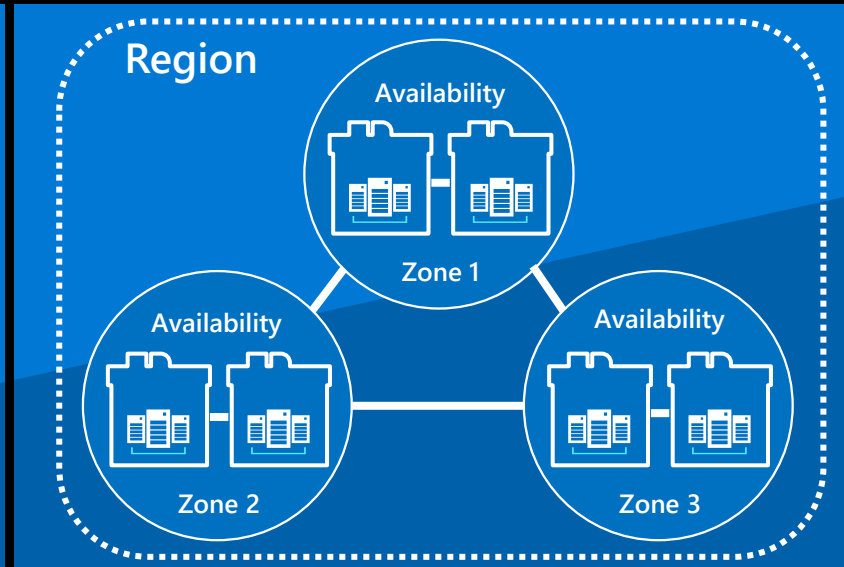
Availability Zones

High Availability protection against loss of datacenters; Multiple datacenters per physically separated zone; each zone features independent network, cooling, and power
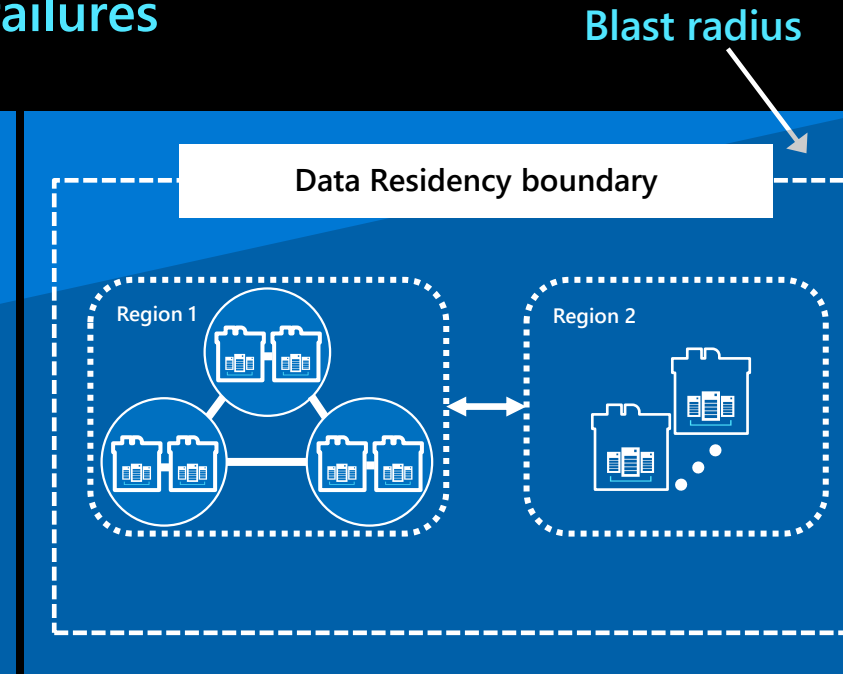
Region Pairs

Protection for your data and applications from the loss of an entire region with Geo-Redundant Storage (GRS) and Azure Site Recovery

Azure Site Recovery minimizes downtime

Source region

Azure Site Recovery

Target region

Source VM

Source disk

Target VM
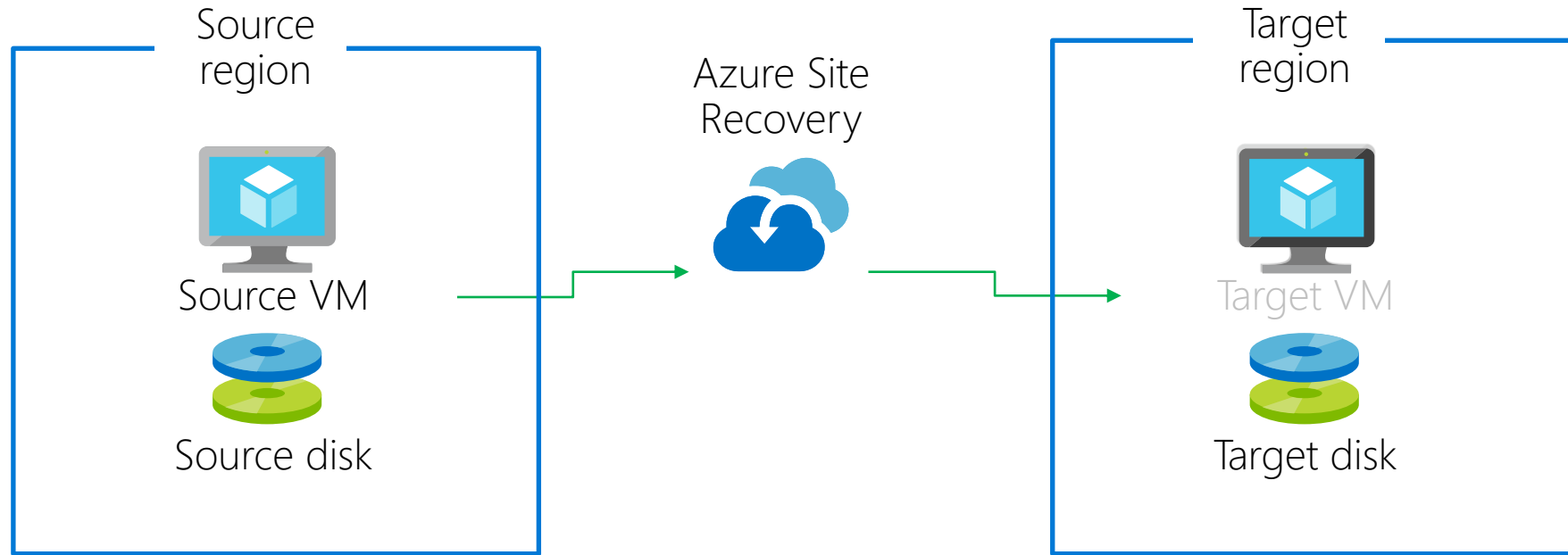
Target disk

Azure Site Recovery helps mitigate data-loss by (near) continuous replication of the source disks to target disks in a secondary region

Azure Site Recovery helps minimize impact of outages by reducing time required to restore applications

Microsoft Azure

Replicate and failover on-premises apps to Azure

Key features include:

> Use Azure as your replication site

> Automated VM protection and replication

> Remote health monitoring

> Customizable recovery plans

> No-impact recovery plan testing

> Orchestrated recovery of tiered applications

> Support for heterogeneous environments

Azure Site Recovery

Orchestration and replication

Microsoft System Center

Enterprise, SMB, and HSP primary site

Windows Server

Linux server

VMware/ Physical
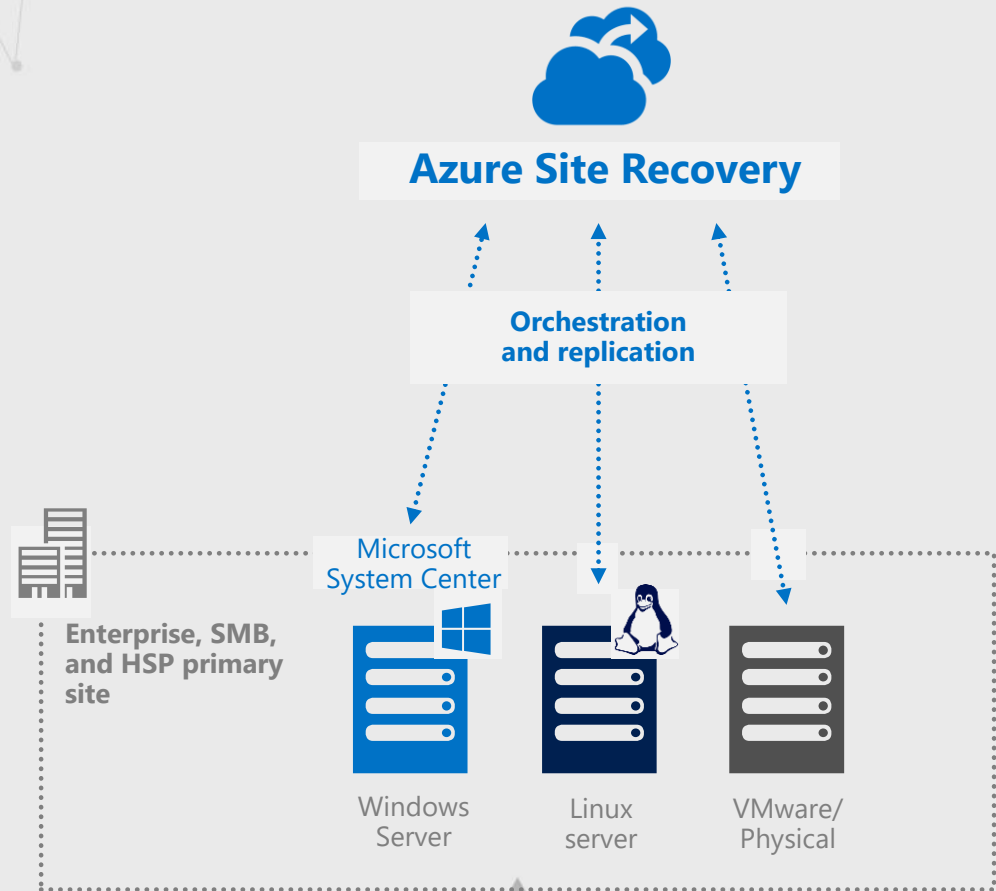
Azure Backup Overview

Backups (snapshots or stream-based) are transferred over secure network to Azure Backup managed storage where they are retained as per the user defined backup policy in the standard or archive tier. Backup data is then encrypted and copied to multiple zones or regions for greater durability. Backup center enables the user to manage and monitor everything backup-related from a single console.
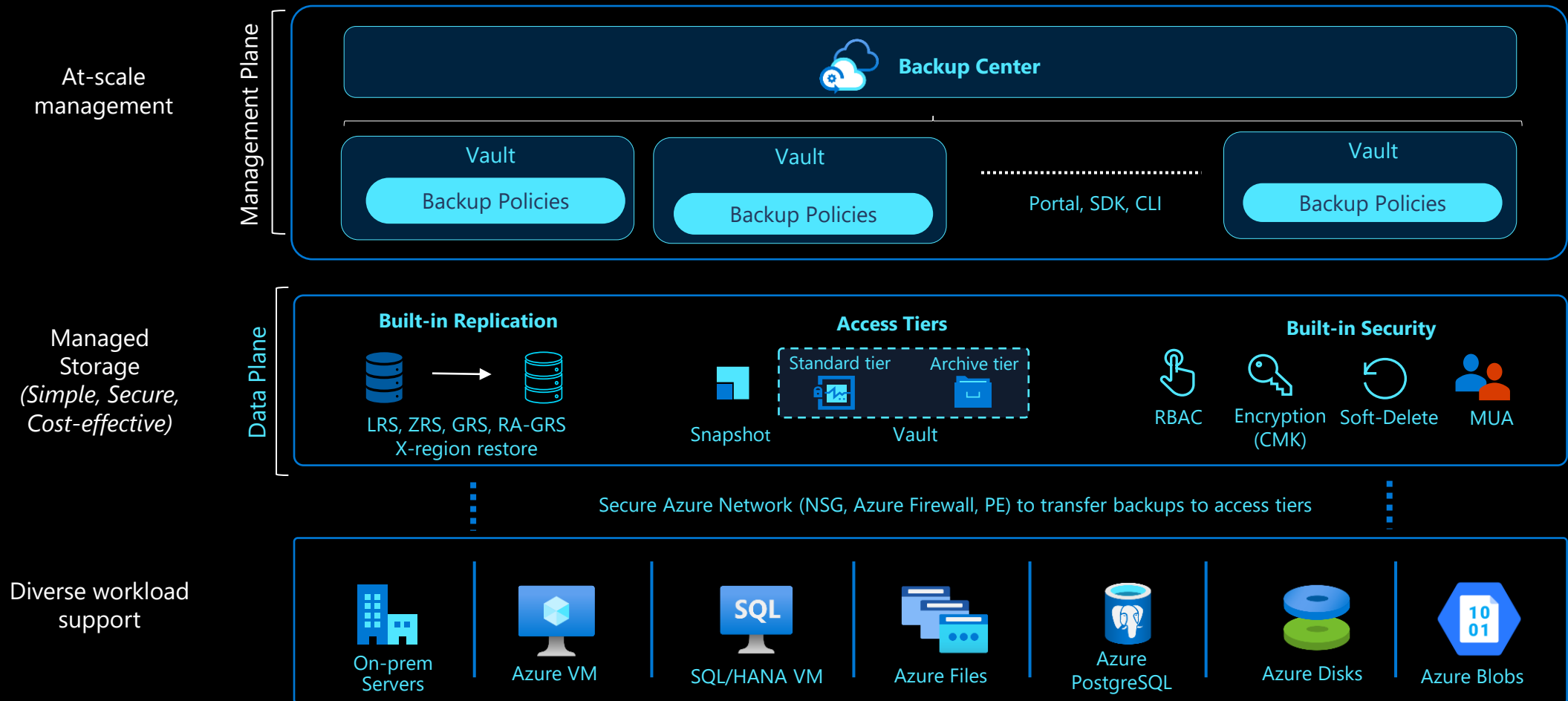
Customer choice

Microsoft Azure   Azure Backup | Azure Site Recovery

Top Backup and Disaster Recovery ISVs

VERITAS

Gartner MQ Leader

Strategic alliance with Microsoft

Backup, Archive, DR

Protect On-premises & Azure machines & Azure optimized*

Global Deduplication

COMMVAULT

Gartner MQ Leader

Highest level of Azure integration

Backup, Archive, DR

On-premises, Azure VMs, Azure SQL, BLOBs, HDinsight

Deduplication

rubrik

Gartner Visionary

Fastest growing ISV #1 in Customer Sat^

Backup, Archive, DR

On-premises machines

Global Deduplication

Zerto

Gartner MQ Leader

Offers fast recovery of VMs to Azure

DR & Backup

Customers love agentless solution

veeAM

Gartner MQ Leader

Built in Backup and recovery for Azure

VMs & Physical Servers

Microsoft

Delivering a Windows Experience via the Cloud

Microsoft Cloud Solutions

Cloud PC – Windows 365

A complete SaaS service that securely streams your personalized Windows desktop, apps, settings, and content from the Microsoft cloud, to any device

Cloud VDI – Azure Virtual Desktop

A cloud VDI platform that delivers hosted desktops and apps with maximum flexibility

Azure Virtual Desktop

Control plane →
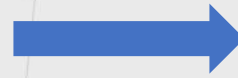
High Level Architecture

Azure Active Directory identity management service synched/federated with Active Directory

Pooled or Personal Virtual Machines

Secure reverse connection through Gateways

Optional Multi Factor Authentication and Conditional Access

Control Plane created and managed by Microsoft

Managed by Microsoft

- Web access
- Diagnostics
- Gateway
- Management
- Broker
- Load balancing

Your subscription – Your control

- Windows 7 Enterprise
- Windows 10 Enterprise
- Windows Server 2012 R2 and up
- Windows 10 Enterprise multi-session
- RemoteApp

Managed by Microsoft

- Compute
- Storage
- Compute
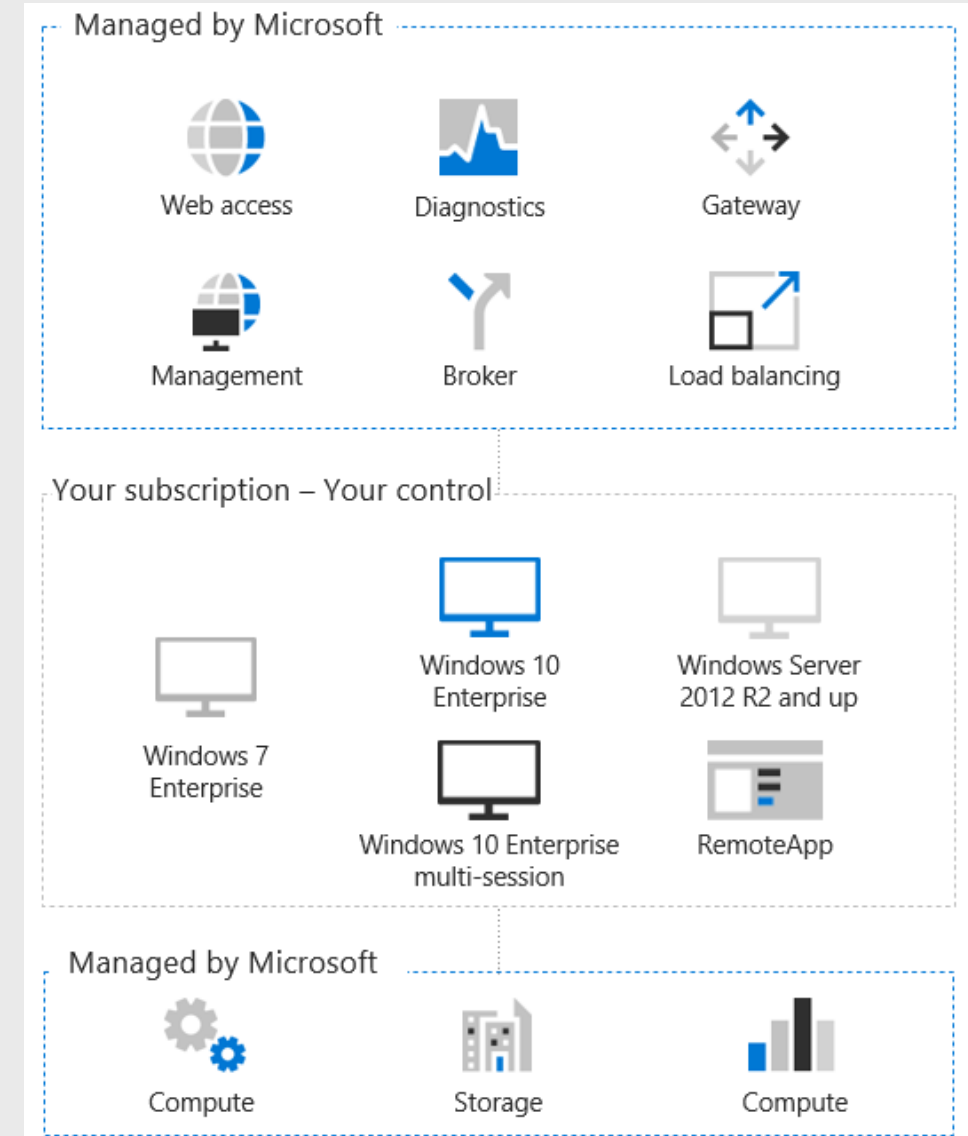
Three ways to save when migrating RDS to Azure Virtual Desktop

Infrastructure Costs

- Scale infrastructure up or down in Azure based on your business needs
- Pay only for what you use
- Leverage multi-session and reserved instances to maximize VM usage

Licensing Costs

- Use existing eligible Windows or Microsoft 365 licenses
- No RDS CAL required with multi-session
- App Assure available to address compatibility issues

Total Cost of Ownership

- No requirement for brokering, Gateway or Web Access
- Track performance and resolve issues with Log Analytics and Azure Monitor
- Automate deployment with ARM and Azure DevOps

Create a holistic view differentiates your cloud migration proposal

```
┌─────────────────┐                                    ┌─────────────────┐
│                 │        Average of 37% savings      │                 │
│      VDI        │  ────────────────────────────────▶ │  Azure Virtual  │
│   RDS/CITRIX    │    Far more advanced and secure    │    Desktop      │
│                 │                                    │                 │
└─────────────────┘                                    └─────────────────┘
         ▲                                                      ▲
         │                        ┌──────────────┬──────────────┼──────────────┐
         │                        │              │              │              │
┌─────────────────────┐  ┌──────────────────────┐ ┌──────────────────────┐ ┌──────────────────────┐
│ Windows Server SPLA │  │ Microsoft Defender   │ │ Choosing the right   │ │ Windows 11 inclusive │
│    RDS SPLA         │  │    for Endpoint      │ │  virtual machine     │ │       rights         │
│ Hosted Office SPLA  │  │ Microsoft Defender   │ │       (VM)           │ │  Replacing RDS/Citrix│
│  Citrix licensing   │  │    Antivirus         │ │ Windows Server AHB   │ │ Microsoft 365 license│
│                     │  │ Multifactor          │ │   Right sizing       │ │      mobility        │
│                     │  │  authentication      │ │     Snoozing         │ │ Azure Active         │
│                     │  │ Conditional Access   │ │ Reserved instances   │ │  Directory (AD)      │
│                     │  │ Azure monitoring     │ │                      │ │                      │
│                     │  │  and encryption      │ │                      │ │                      │
└─────────────────────┘  └──────────────────────┘ └──────────────────────┘ └──────────────────────┘
         ▲                          ▲                        ▲                         ▲
         │                          │                        │                         │
┌─────────────────┐        ┌─────────────────┐    ┌─────────────────┐       ┌─────────────────┐
│                 │        │                 │    │                 │       │                 │
│ Legacy hosting  │        │    Security     │    │     Azure       │       │  Microsoft 365  │
│                 │        │                 │    │                 │       │                 │
└─────────────────┘        └─────────────────┘    └─────────────────┘       └─────────────────┘
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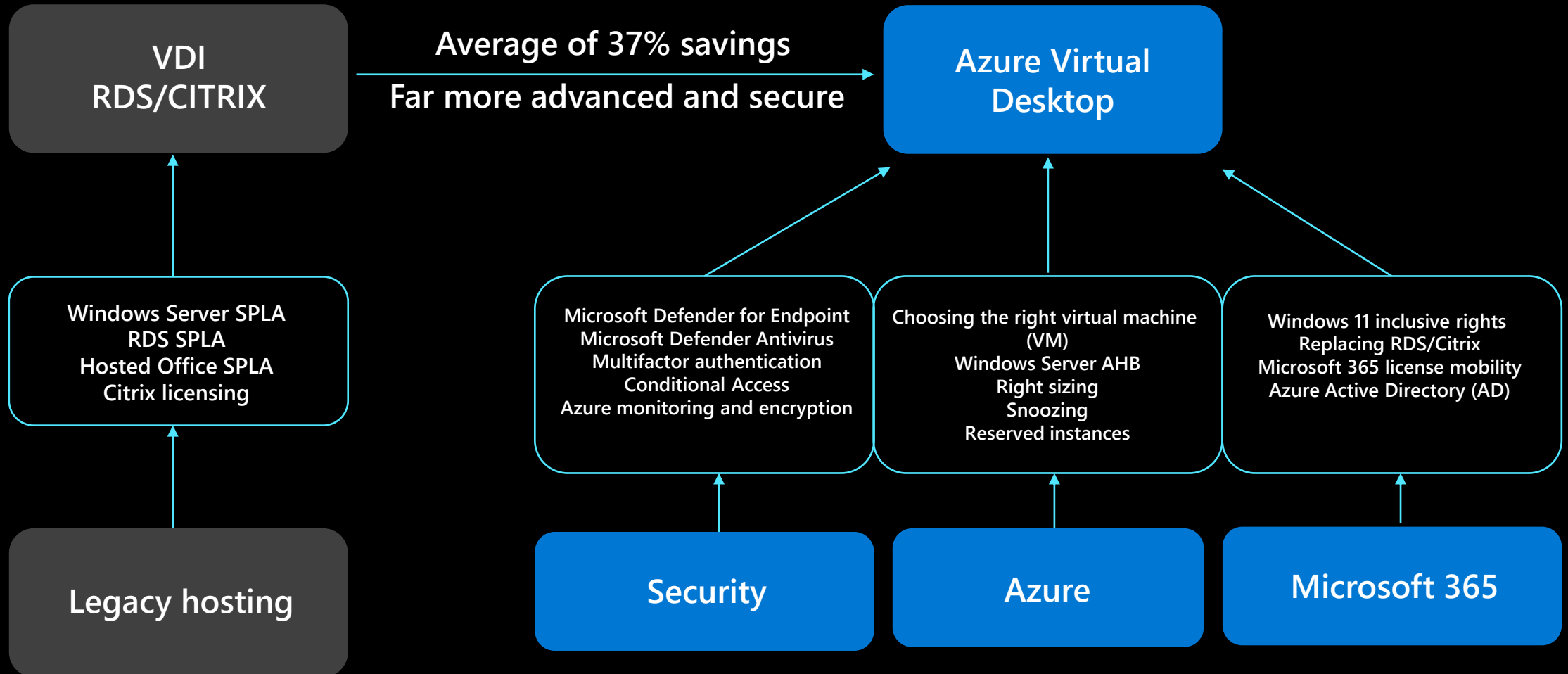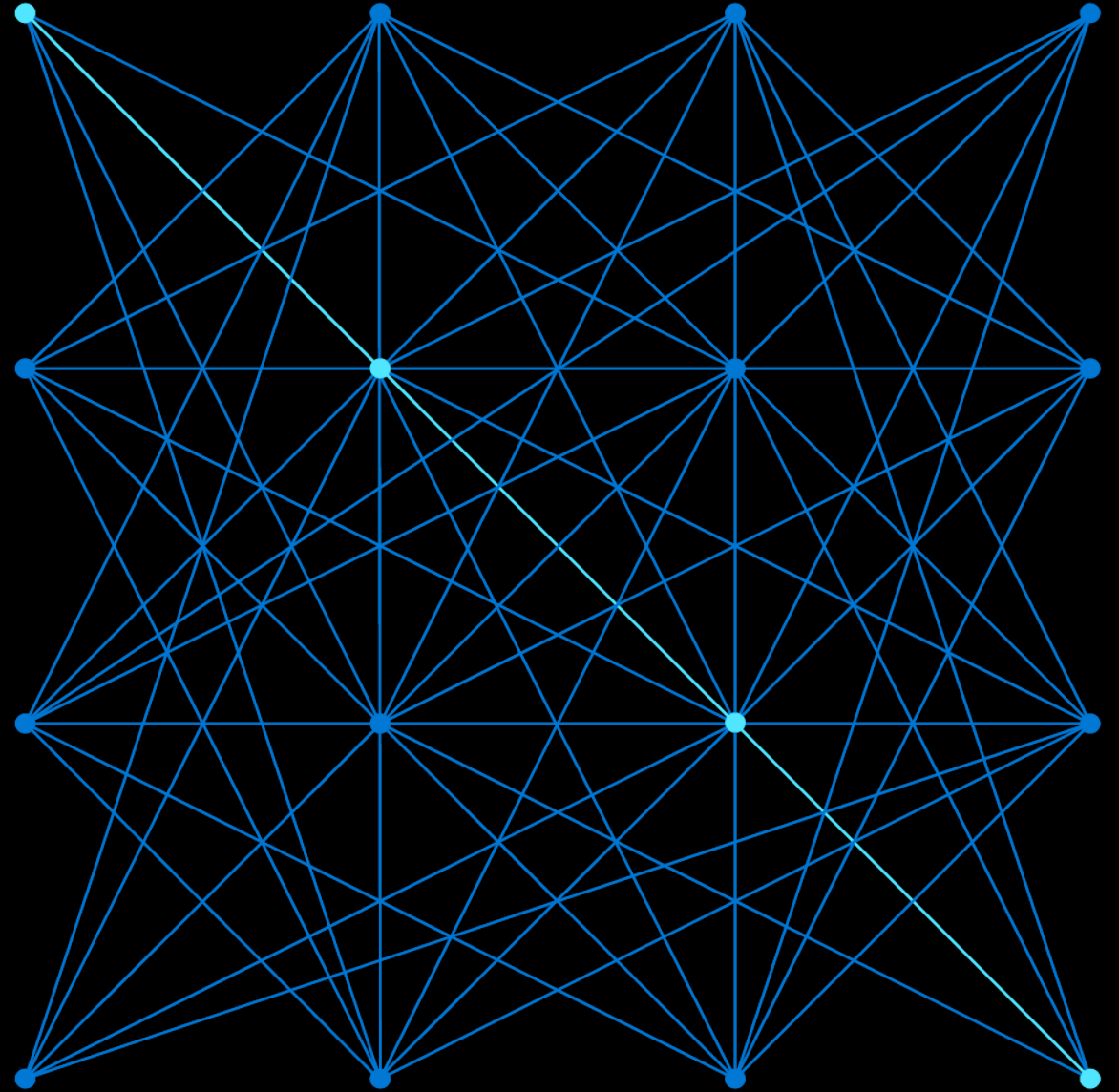
THE CLOUDLAB

Microsoft Azure

Azure Vmware solution

Migrate and modernize your VMware investments on Azure
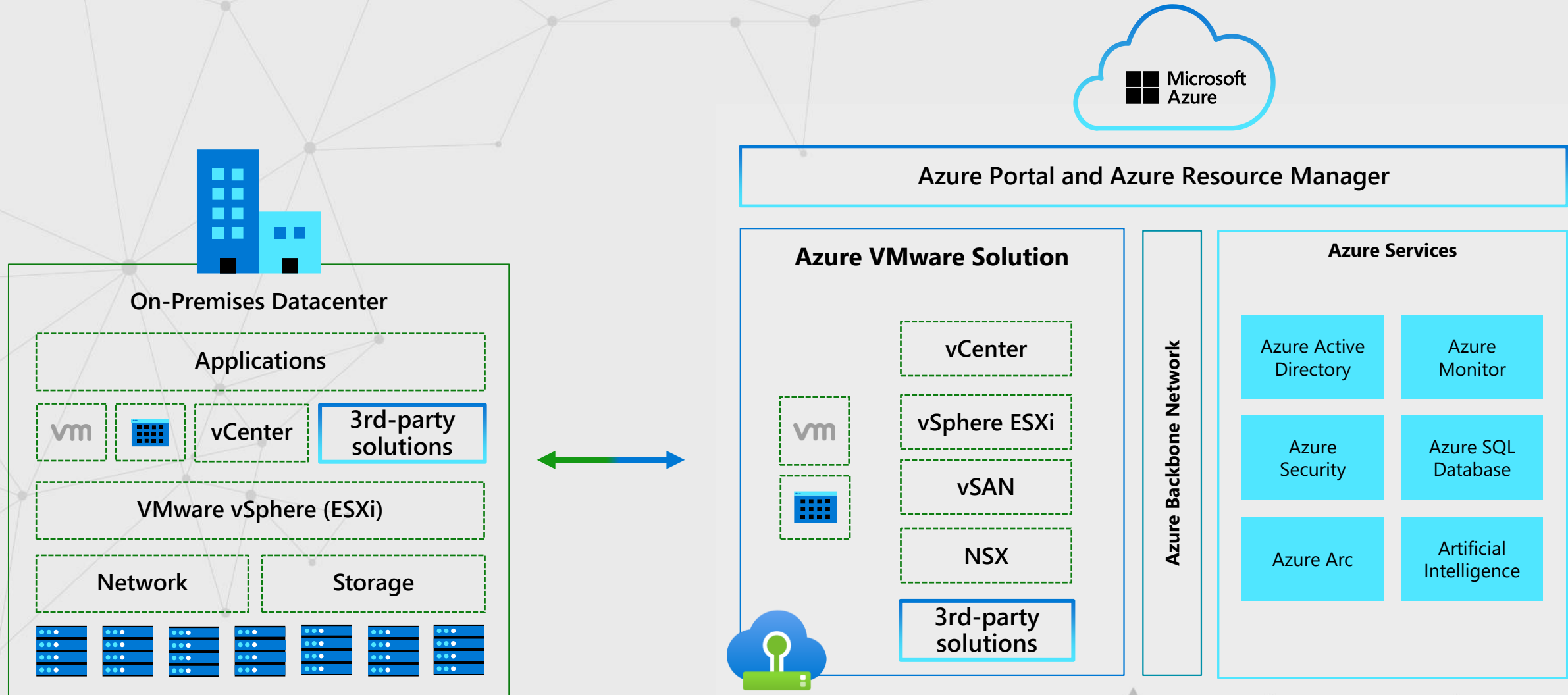
Your organization today

- Existing VMware on-prem environment
- Existing VMware skillsets
- Existing VMware licenses

Cloud benefits

- Save with consumption-based licensing
- Stop overprovisioning hardware
- Gain business and IT agility
- Access global scale and elasticity
- Increase security and resiliency
- Use hybrid cloud options, if needed

Azure VMware

Microsoft Azure

Azure Portal and Azure Resource Manager

On-Premises Datacenter

- Applications
- vm
- vCenter
- 3rd-party solutions
- VMware vSphere (ESXi)
- Network
- Storage

Azure VMware Solution

- vCenter
- vSphere ESXi
- vSAN
- NSX
- 3rd-party solutions

Azure Backbone Network

Azure Services

Azure Active Directory	Azure Monitor
Azure Security	Azure SQL Database
Azure Arc	Artificial Intelligence

- AVS is comprehensive VMware environment on Azure infrastructure.
- Run VMware workloads natively as an Azure service.
- Manage and secure applications across VMware environments and Microsoft Azure.

Azure VMware

Benefits

Single Point of Contact "Microsoft" for Support

Microsoft is first contact, and coordinates with VMware for product-specific support

Free Extended Security Updates

3 years free security updates for Windows Server 2008 R2 / 2012 R2 SQL Server 2008 R2 / 2012

Reserved Instances Discounts and Savings

SKU	1 year	3 years
AV36/P	34% off	53%
AV52	26% off	46% off

Exclusive Azure Hybrid Benefit

Bring Windows Server and SQL Server on-premises licenses with Software Assurance to Azure
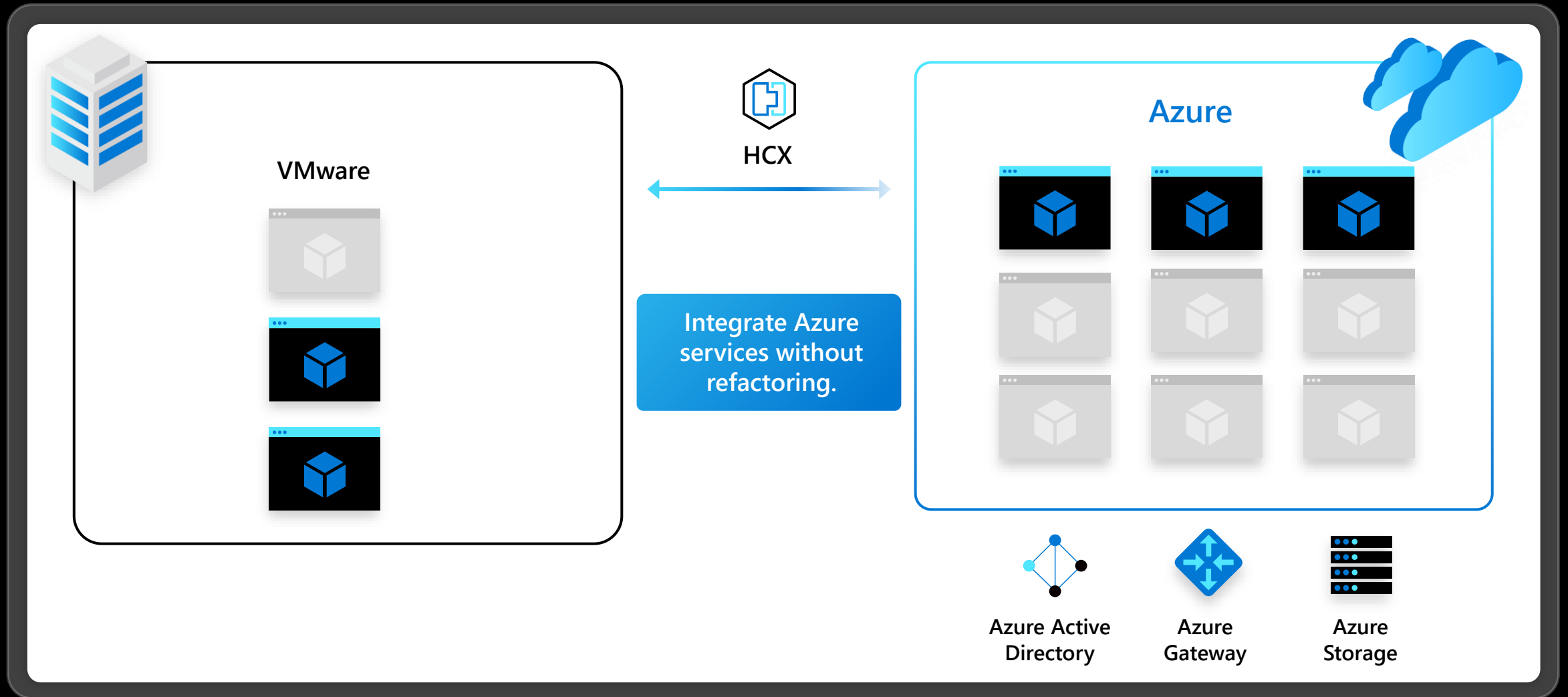
Azure VMware

Azure VMware Solution

Instance size	Core(s)	RAM	All Flash Storage	Cache	Hourly	1 year reserved	3 year reserved
AV36	36	576 GB	15.36 TB	3.2 TB	€9.63/hour	€6.40/hour ~34% savings	€4.50/hour ~53% savings
AV36P	36	768 GB	19.20 TB (all NVMe)	1.5 TB (Intel® Optane™)	N/A/hour	N/A/hour	N/A/hour
AV52	52	1.50 TB	38.40 TB (all NVMe)	1.5 TB (Intel® Optane™)	€21.68/hour	€16.19/hour ~25% savings	€11.72/hour ~46% savings

A minimum of three nodes are required to deploy Azure VMware Solutions Private Cloud. Pricing shown above reflects single-node pricing only. This pricing covers VMware licensing costs of NSX-T, vSphere, vSAN and HCX Advanced.
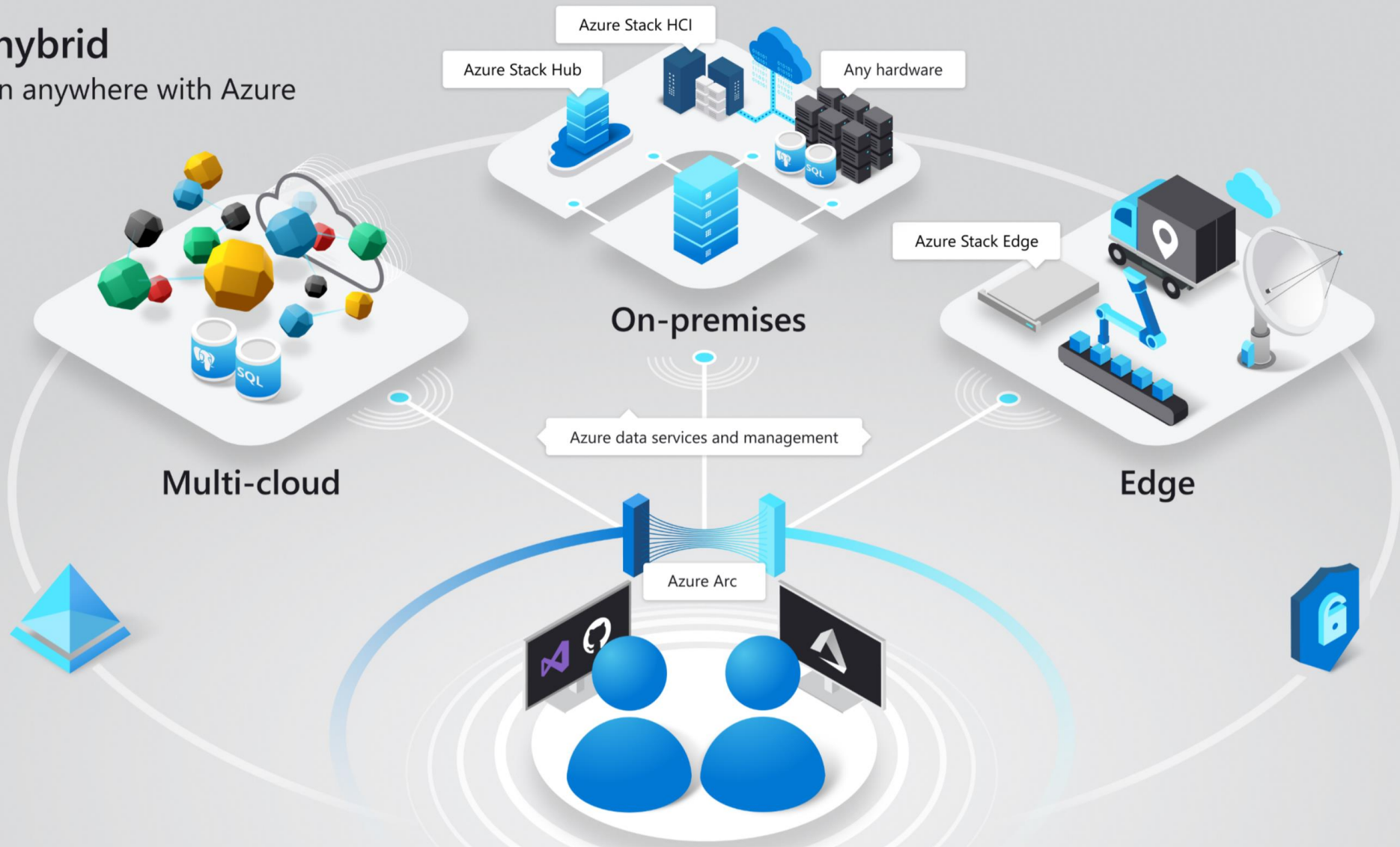
Pricing - Azure VMware Solution | Microsoft Azure
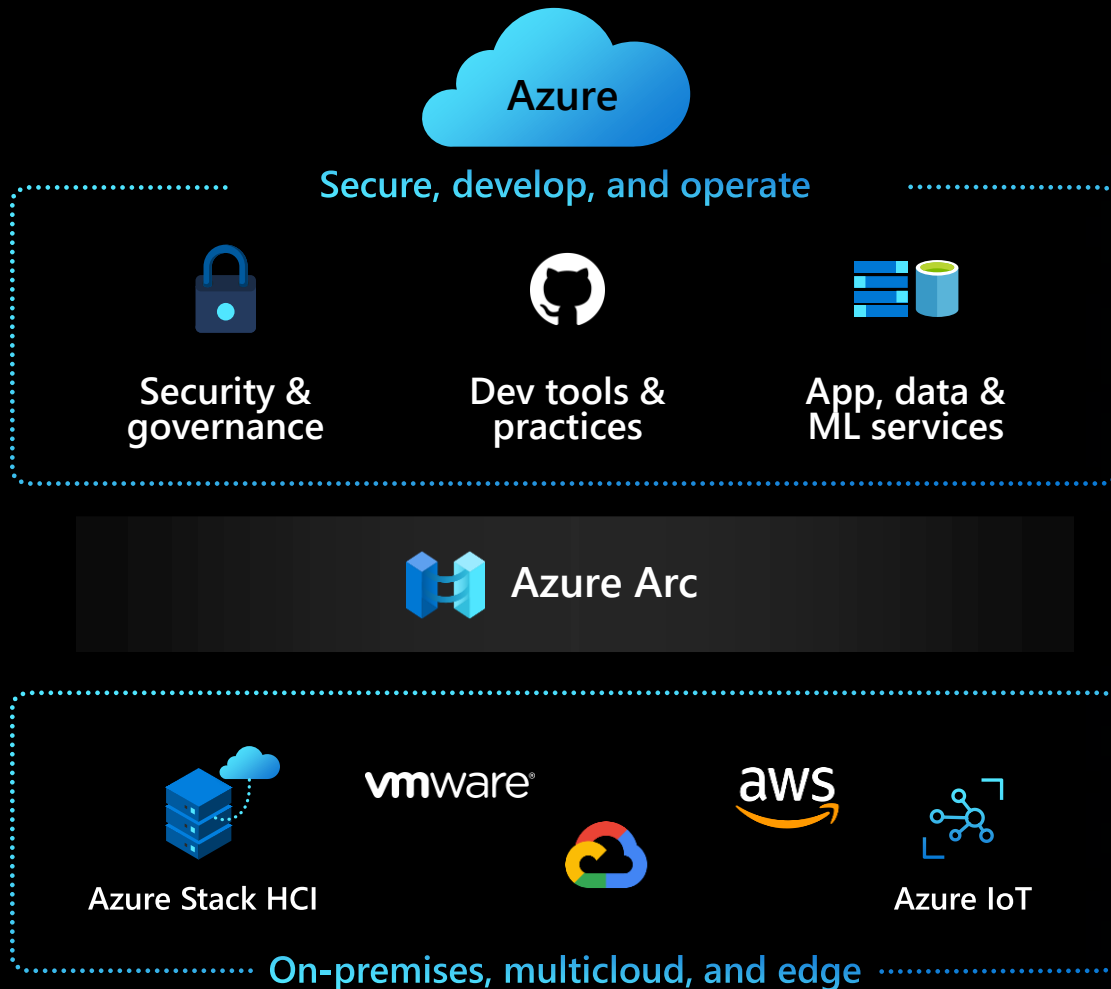
Empowering app modernization

VMware

HCX

Azure

Integrate Azure services without refactoring.

Azure Active Directory

Azure Gateway

Azure Storage

Azure Arc

Microsoft Azure

Our mission with Azure Stack HCI + Azure Arc is to deliver the best of Azure to our customers, on their servers, that they control, with their preferred tools, on their premises.
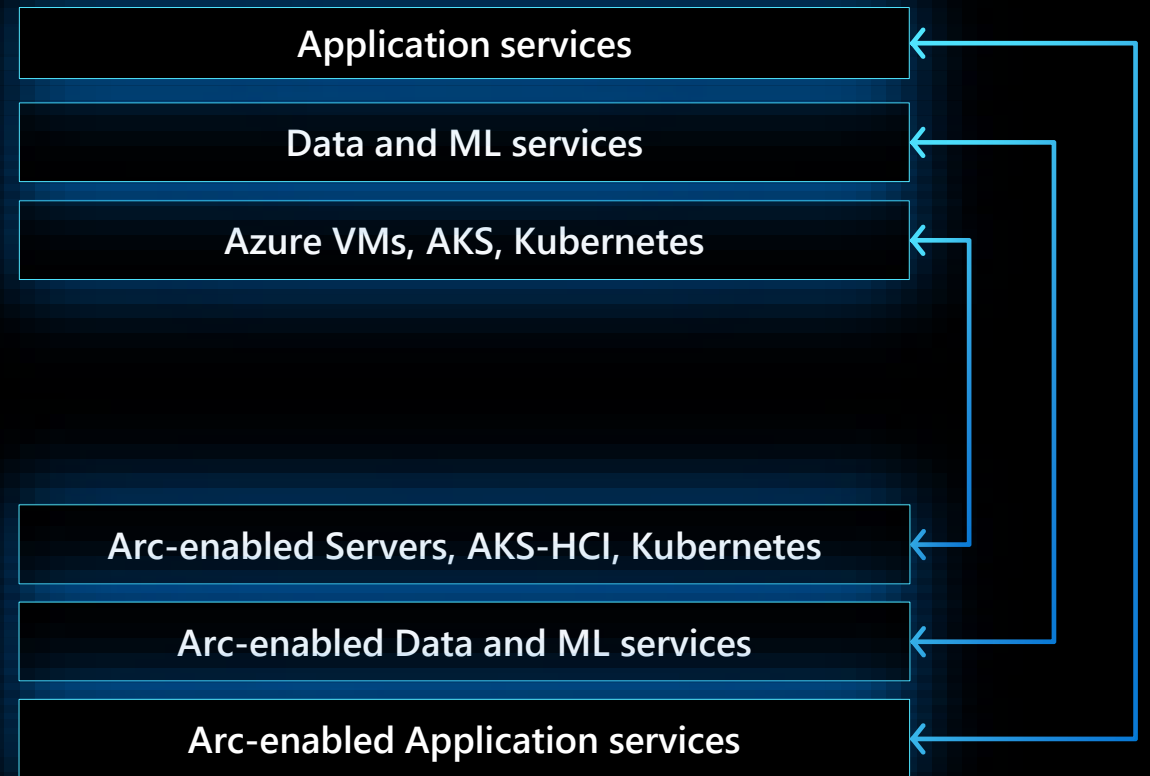
Secure and govern across environments

Cloud-based threat detection

Dynamic visibility and compliance

Save costs on disparate 3rd party management tools

Microsoft Defender for Cloud

Microsoft Sentinel

Azure Monitor

Azure Policy

Azure Arc-enabled servers

Azure Arc-enabled SQL servers

Azure Arc-enabled VMware vSphere VMS

Azure Arc-enabled Kubernetes

Azure Stack HCI

vmware®

aws

On-premises, multicloud, and edge

Azure IoT

Azure Arc-enabled servers

GENERALLY AVAILABLE

Bring Azure capabilities to your on-premises and multicloud servers with Azure Arc

Reach

Windows and Linux

VM and bare metal

At scale searchable inventory

Configure

Consistent VM extensions

Centralized agent management—Monitoring, Security, Update Management

Govern

Built-in Azure policies

Compliance across environments

Audit and enforce OS settings

Secure

Azure Active Directory Managed Identity

Server security baselines

Role-Based Access control

Any infrastructure, familiar tools

Azure Arc-enabled VMware vSphere PREVIEW

Provision and Manage VMware VMs from Azure using Azure Arc

Virtual Machine Lifecycle

Perform full lifecycle management such as create, resize, and delete on VMware VMs from Azure

Self-Serve Operations

Use Azure RBAC to enable teams and workload owners to provision and manage VMs on demand

Single Pane View

Browse your VMware VMs from your data centers and AVS along with your Azure VMs

Discover and onboard existing VMware VMs to Azure

Azure Management services

Perform governance, monitoring, update management, security at scale using rich Azure management services like Azure Monitor, Security Center and others

← VMware vSphere environments hosted in your datacenter or on Azure VMware Solutions →

Use cases for hybrid and multicloud security

Azure AD

Identity and access management

Microsoft Defender for Cloud

Cloud security posture management and protection

Microsoft Sentinel

Intelligent security analytics across the organization with a cloud-native SIEM

Azure Arc

Multi-cloud | Datacenter | Edge

Develop cloud-native, operate anywhere

Build and modernize to cloud-native apps on any Kubernetes

Bring cloud data management to any infrastructure

Consistent GitOps and policy driven deployment and configuration across environments

Integrate Azure Security, governance and monitoring into your DevOps toolkit

Azure Arc-enabled Kubernetes

Azure Arc-enabled SQL Managed Instance

Azure Arc-enabled PostgreSQL

Azure Stack HCI

vmware®

aws

On-premises, multicloud, and edge

Azure IoT

Flexibly meet regulatory and connectivity needs

Meet data residency and sovereignty requirements

Simplified infrastructure for low-latency applications

Operate fully or intermittently connected

Azure Arc

Azure Stack HCI

vmware®

aws

Azure IoT

Azure Private MEC

On-premises, multicloud, and edge

Meet regulatory and connectivity needs

Azure Stack HCI

Modern subscription for hybrid cloud with Arc-enabled infrastructure

Azure hybrid by design

Enterprise scale and price performance

Familiar management and operations

Choice of deployment options

When to use Azure Stack HCI

Run virtual machines on-premises and easily connect to Azure hybrid services

Modernize and secure your datacenter

Run intelligent Edge and remote branch solutions

Deploy high performance workloads

Deploy cloud native apps and Azure Arc enabled services

Azure Arc and Azure Stack HCI
Platform architecture

Microsoft Azure

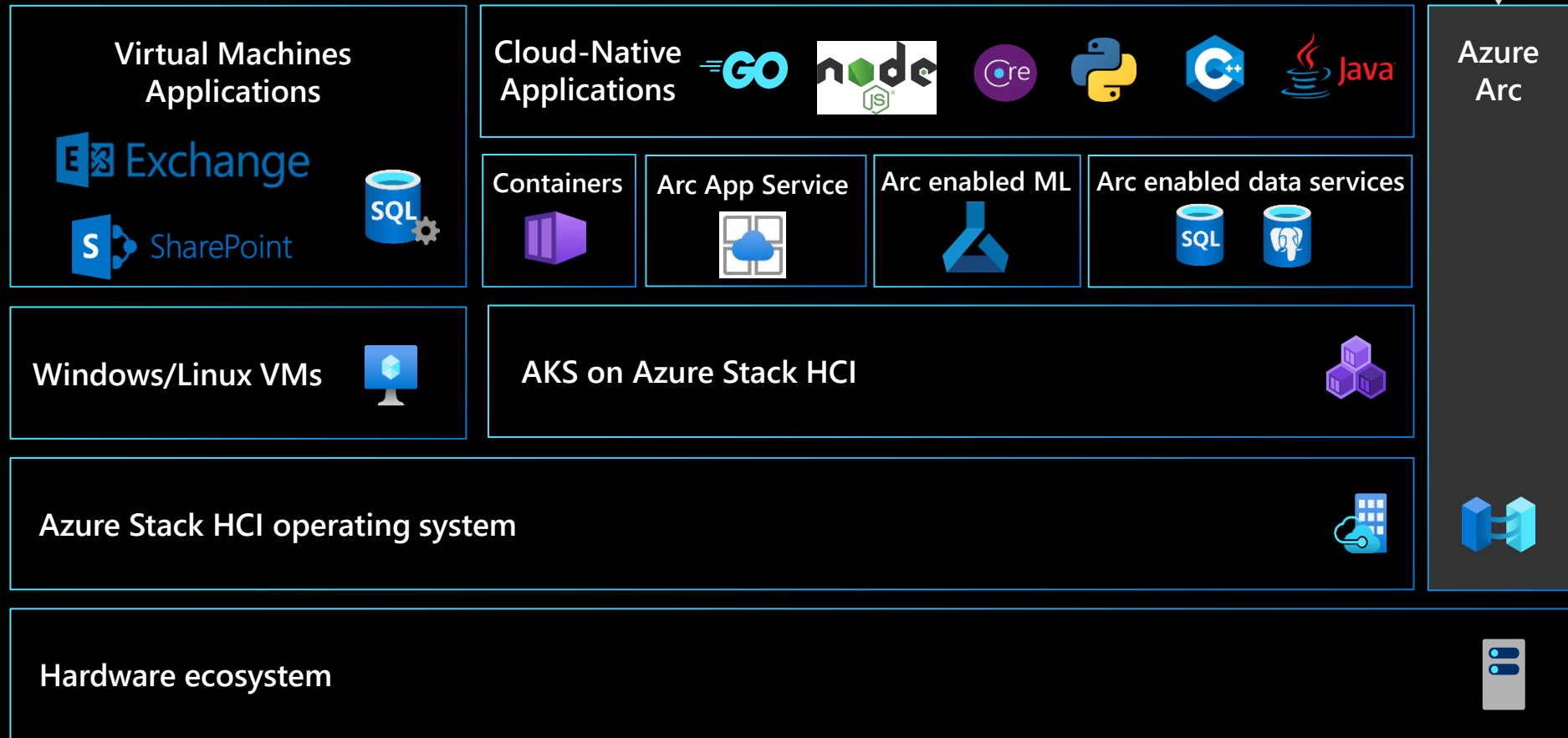**Hybrid Services**

- Site Recovery
- Backup
- Update Mgmt
- File Sync
- Monitor
- Security Center

Windows Admin Center
Edge-local management

Virtual Machines Applications

Exchange

SharePoint

SQL

Cloud-Native Applications

GO | node.js | Core | Python | C++ | Java

Containers	Arc App Service	Arc enabled ML	Arc enabled data services
			SQL

Azure Arc

Windows/Linux VMs

AKS on Azure Stack HCI

Azure Stack HCI operating system

Hardware ecosystem

USD $10/month
per physical processor core*

Does not include Guest OS licensing

Cores

80

70

60

50

40

30

20

10

Cores from running virtual machines

Physical cores

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Days
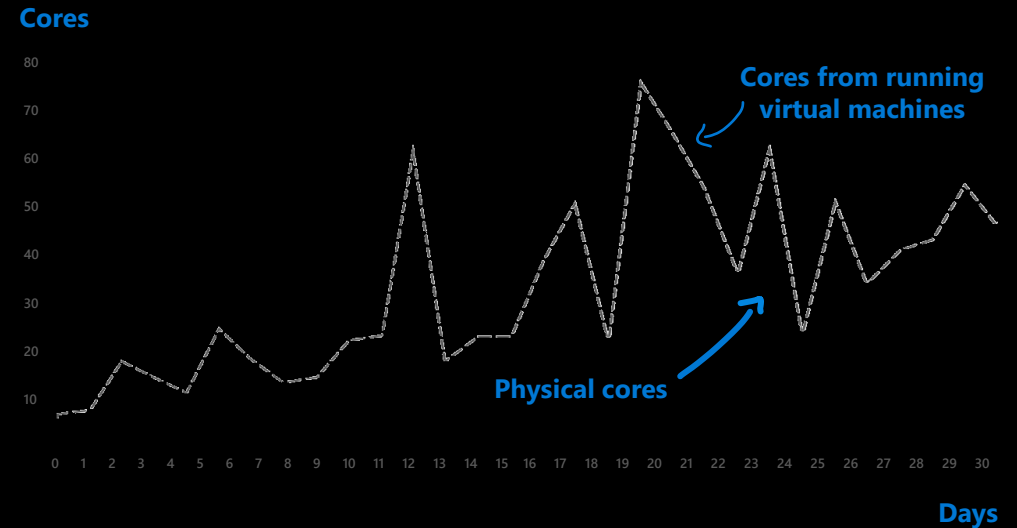
Predictable
Doesn't vary with consumption, more VMs doesn't cost more

Simple
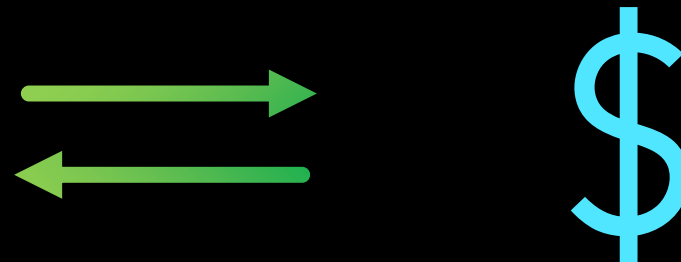No math with memory, storage, or network ingress/egress

Efficient
Virtualize efficiently, with higher v-to-p density

Swap your Hyper-V hosts for Azure Stack HCI

Fall 2022

New Software Assurance benefit *

$

**Licensed cores of WS Datacenter
with Software Assurance**

**Cores of Azure Stack HCI
at no additional cost**

* 1 physical core license of Windows Server Datacenter with Software Assurances (SA) entitles you to use 1 physical core of Azure Stack HCI at no additional cost.
You must register your Azure Stack HCI cluster to claim this benefit in the Azure Portal. Once your SA contract is verified, the monthly service fee for that cluster changes to zero.
Target effective date (subject to change) October 12, 2022. Please note that add-on services like Microsoft Defender for Cloud are still sold separately.

Learn more – https://aka.ms/AHBforHCI

Azure Virtual Desktop for Azure Stack HCI (preview)

Extending the benefits of cloud-managed VDI to on-premises

Modernize your app and virtual desktop infrastructure

Fully managed, cloud-hosted VDI management plane

Deliver Windows 10 to any device

Windows 10 and 11 Enterprise multi-session with seamless Microsoft Office and Microsoft Teams experience

Optimal performance with full control

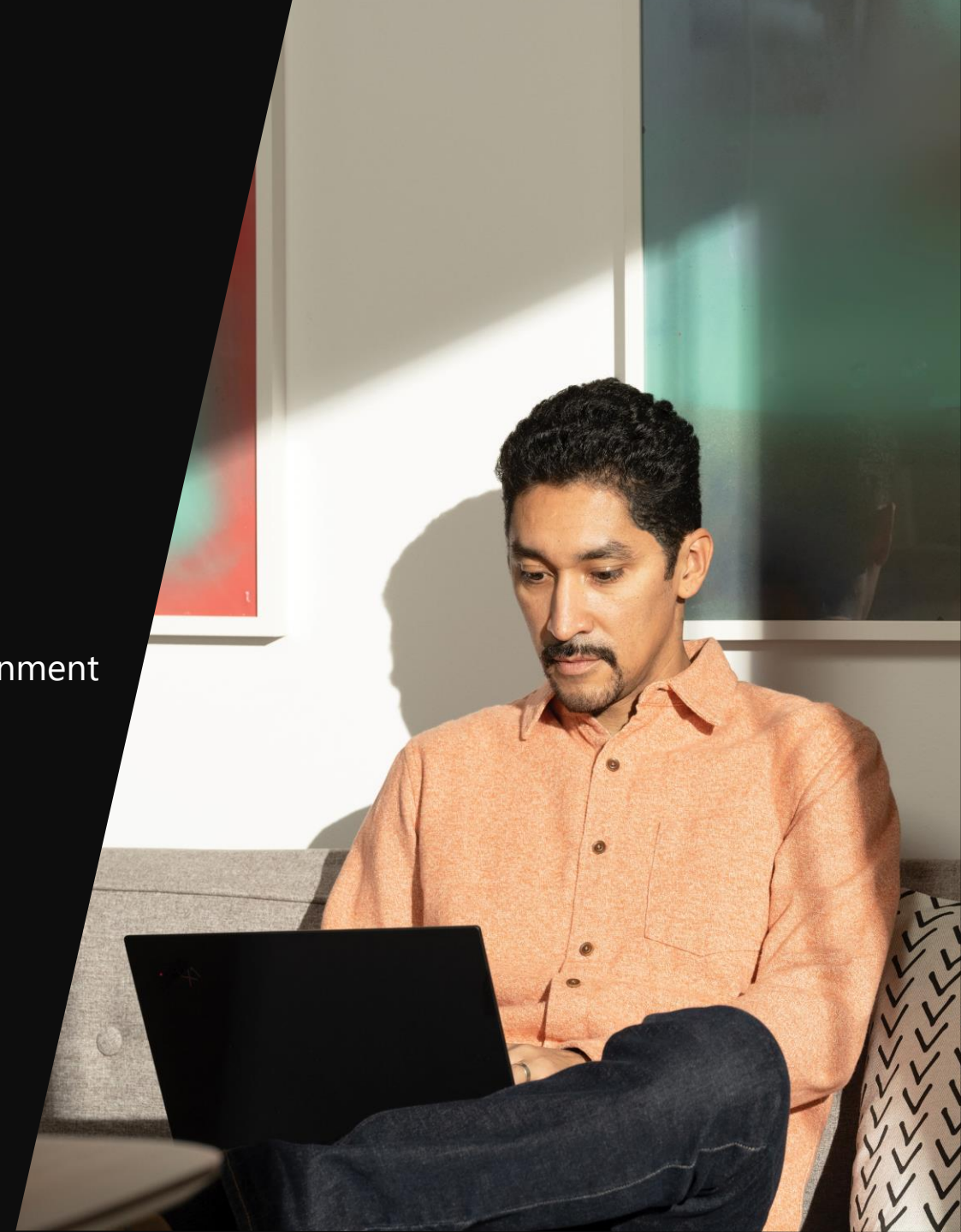Direct access to local session hosts with RDP Shortpath

Help from Microsoft

What we offer?

- **No customer; no help.**
- Tech skilling – Hackathon, tech envisioning etc.
- Tech intensity – MCPP, certification, co-sell solutions/offers.
- Advisory – PoCs, Architecture review.

DON'Ts

- Support
- Touch production environment

Join these challenges to learn more;

Cloud Skills Challenges;

- Fundamentals - Challenge | Microsoft Learn
- Architect - Challenge | Microsoft Learn

Way Forward – Call to Action

- Reach out for help. – PoCs, Architecture review etc

- More skilling events - [Opplæring for leverandører av infrastruktur og IT drift – Norge Cloud Champion](#)

- Cloud Skills Challenge
  Fundamentals - [Challenge | Microsoft Learn](#)
  Architect - [Challenge | Microsoft Learn](#)

- Nominate customers – [solution assessments](#)

My contacts – reach out

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Get started

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Azure.com/AMMP
Azure.com/FastTrack

Check your migration readiness
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Assess and move your workloads
aka.ms/azuremigrate

Thank you