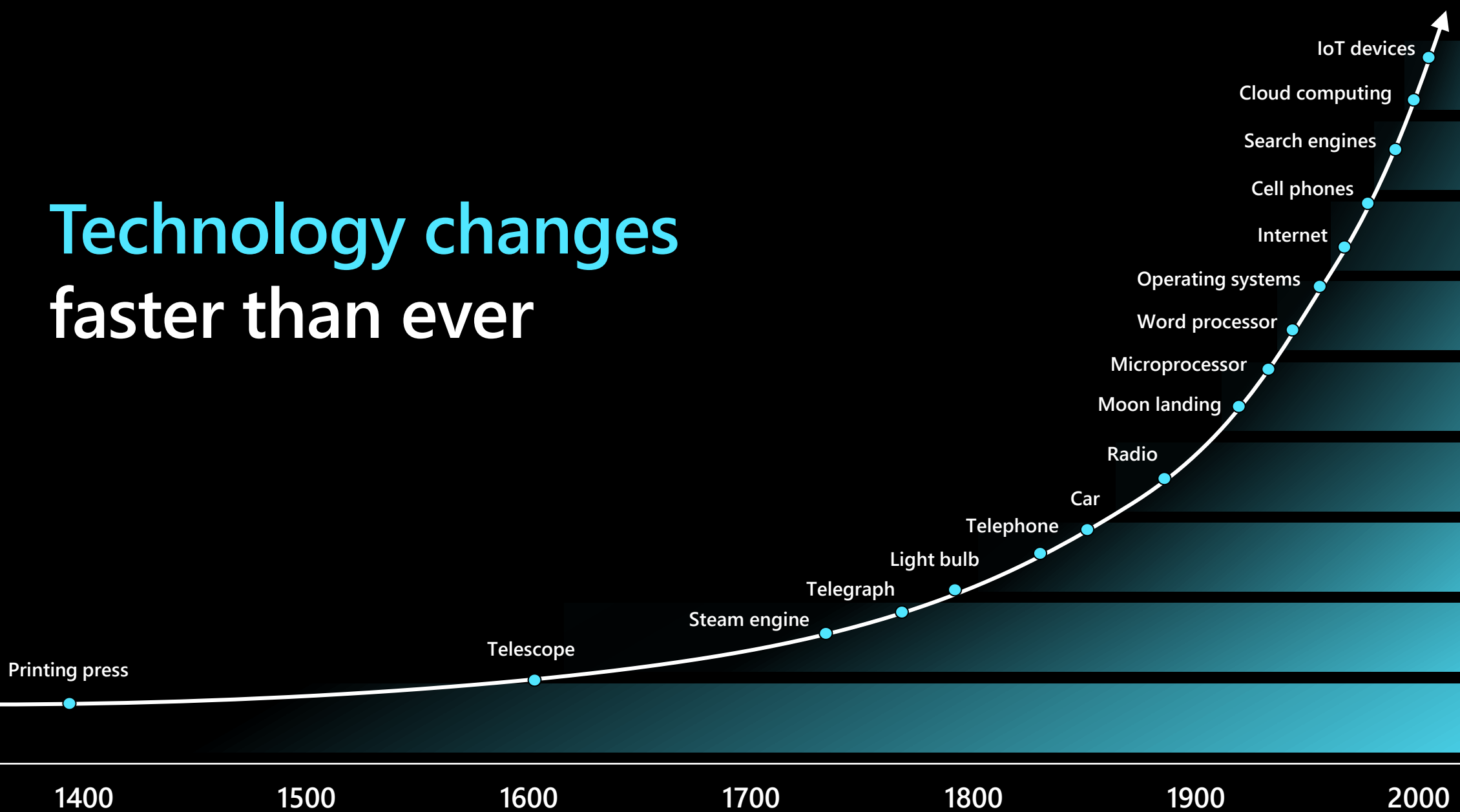




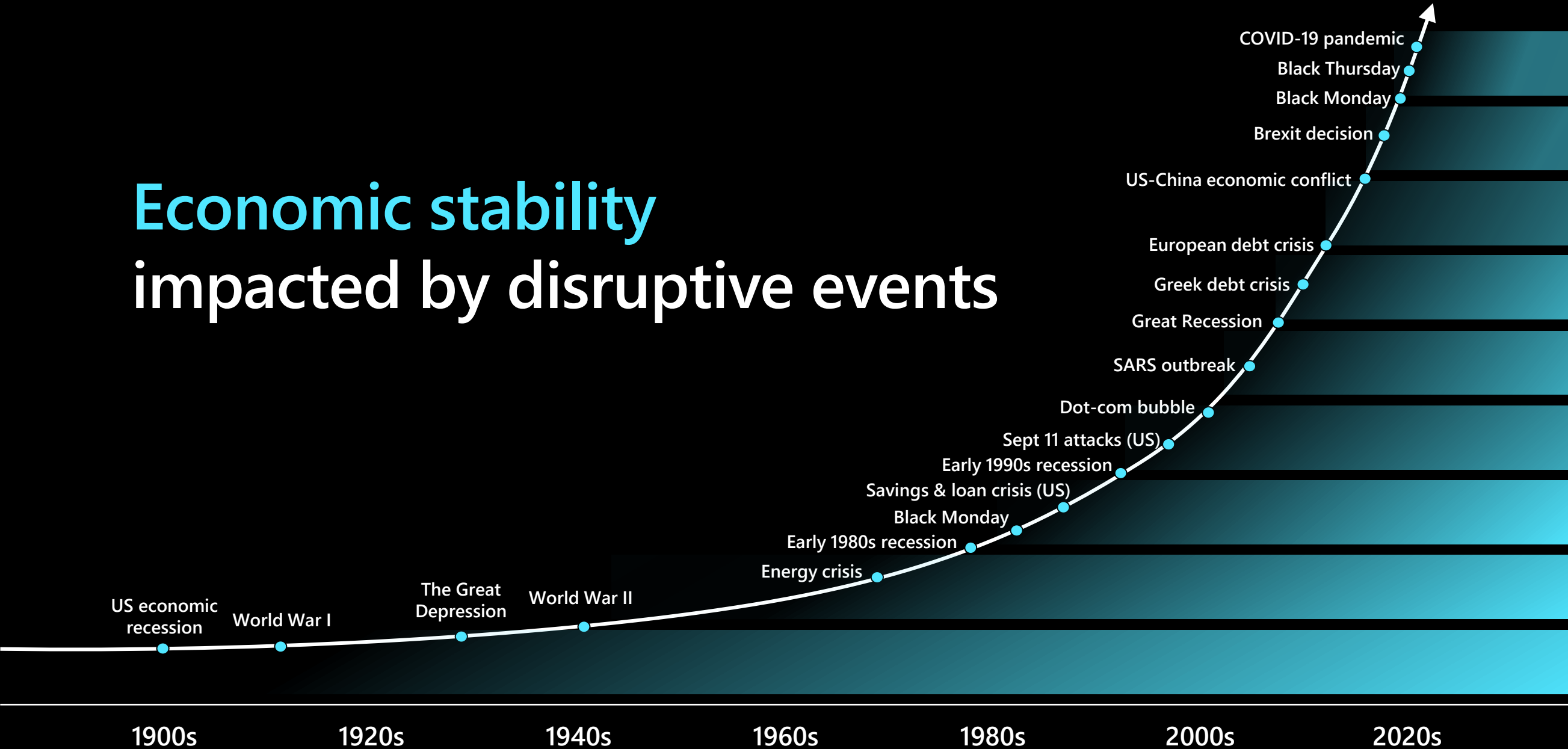
Windows Server and SQL Server Migration to Azure



Technology changes faster than ever

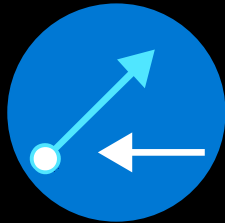


Economic stability impacted by disruptive events



Reduce cost and increase operational agility with Azure

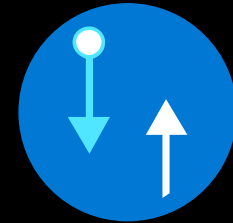
Forrester has determined the following three-year impact based on an analysis of Microsoft Azure IaaS customer feedback and quantified benefit, cost, risk, and flexibility factors



ROI
478%



Net present value
\$10.8 million



Payback
<3 months

Avoided FTE and infrastructure costs ~\$10.3M

Windows Server and SQL Server customers on Azure



Customers trust Azure for their Windows and SQL Server workloads

90%

believe Microsoft
understands their
enterprise technology
needs*

94%

reported that Microsoft
Azure meets their
compliance needs
very well*

90%

believe that Microsoft runs
both their **Windows and**
Linux workloads equally
well*

88%

believe that Microsoft
Azure provides a **hybrid**
cloud environment
extremely well*

Top of mind

What new innovations can I take advantage of in Azure that I do not have on premises or in other clouds?

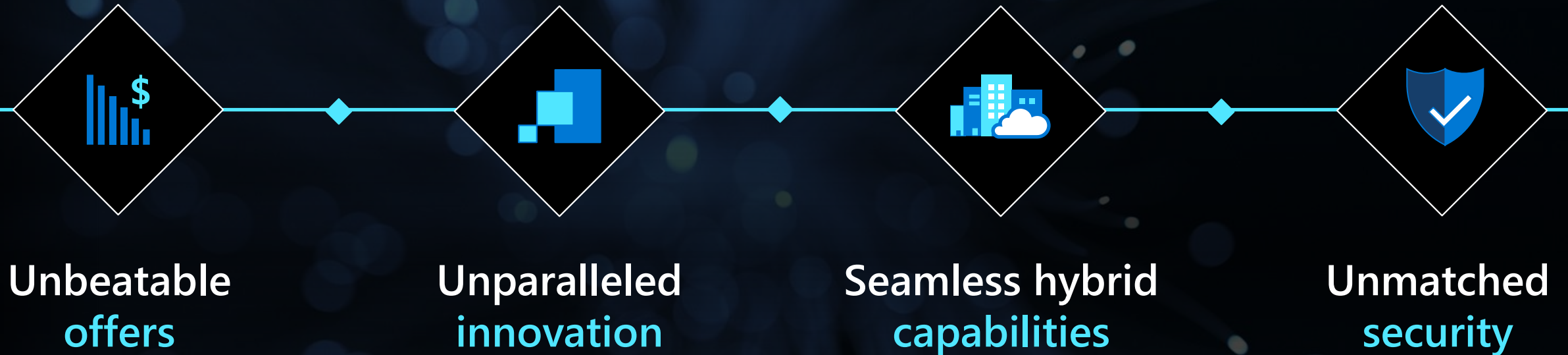
For workloads that I need to stay on-premises, can I still take advantage of Cloud innovations on-premises?

Can I take advantage of my existing Windows Server and SQL Server licensing?

Can I run my mission critical Windows Server SQL Server apps in Azure?

Are my apps, data and IT workloads secured when I run in cloud?

Windows Server and SQL Server RUN BEST ON AZURE



Cloud infrastructure you can **TRUST** to run your business

SCALABLE | EFFICIENT | RESILIENT

Windows Server and SQL Server

RUN BEST ON AZURE



Unbeatable offers

- Save up to 85% when you apply [Azure Hybrid Benefit](#) to your existing Windows and SQL Server licenses
- Save even more with 3 years of free [Extended Security Updates](#) only on Azure
- Get industry leading [price performance](#) with SQL on Windows Server on Azure



Unparalleled innovation

- Use [Azure Automanage](#) to simplify administration with intelligent operations
- Enable secure remote work by deploying virtual desktops and apps easily with [Windows Virtual Desktop](#)
- Get leading database performance from fully-managed, secure and intelligent [Azure SQL](#)
- Gain flexibility and consistency with native .NET support in [App Service](#) and Azure Kubernetes Service



Seamless hybrid capabilities

- Use familiar [Azure Active Directory](#) to connect your on-premises and cloud environments
- Extend Azure management and Azure services to any infrastructure with [Azure Arc](#)
- Enable Azure services such as backup, site recovery, monitor easily with [Windows Admin Center](#)



Unmatched security

- Get unified security management and advanced threat protection with [Azure Defender](#)
- Enable [Azure Sentinel](#), cloud-native SIEM to secure your server workloads
- Encrypt data while in use with industry leading [confidential computing](#)

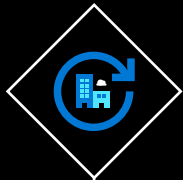
Cloud infrastructure you can **TRUST** to run your business

SCALABLE | EFFICIENT | RESILIENT



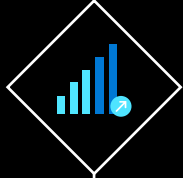
Unbeatable offers

Offers to lower your total cost of ownership



Azure Hybrid Benefit

Maximize existing investments in on-premises licenses with discounted rates on Windows Server and Azure SQL Database



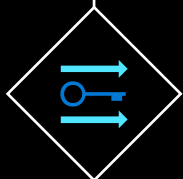
Reserved capacity

Reserve Windows Server VMs and Azure SQL resources and save up to 33%. Combine with Azure Hybrid Benefit for savings up to 80%



Spot VMs

Save up to 90% with accessing unused Azure compute for running non-time-critical workloads



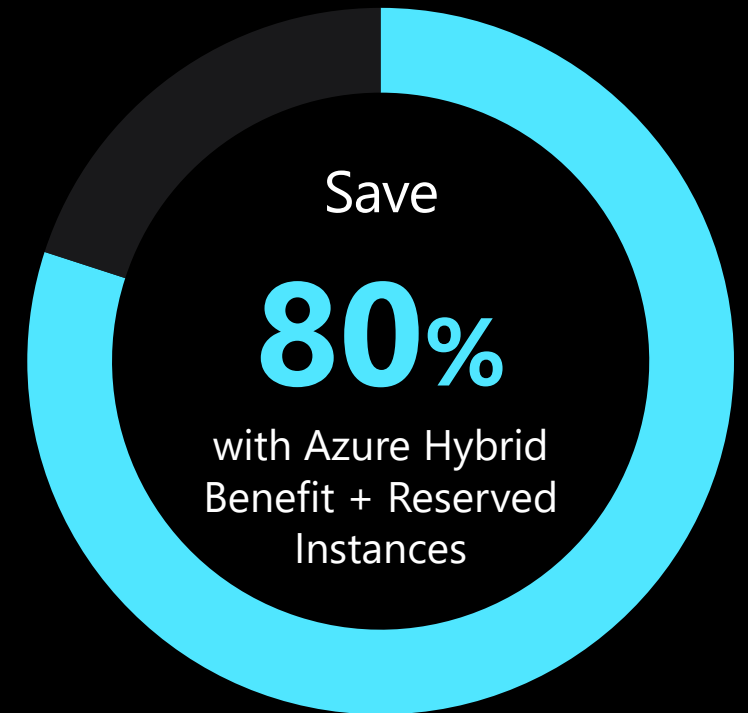
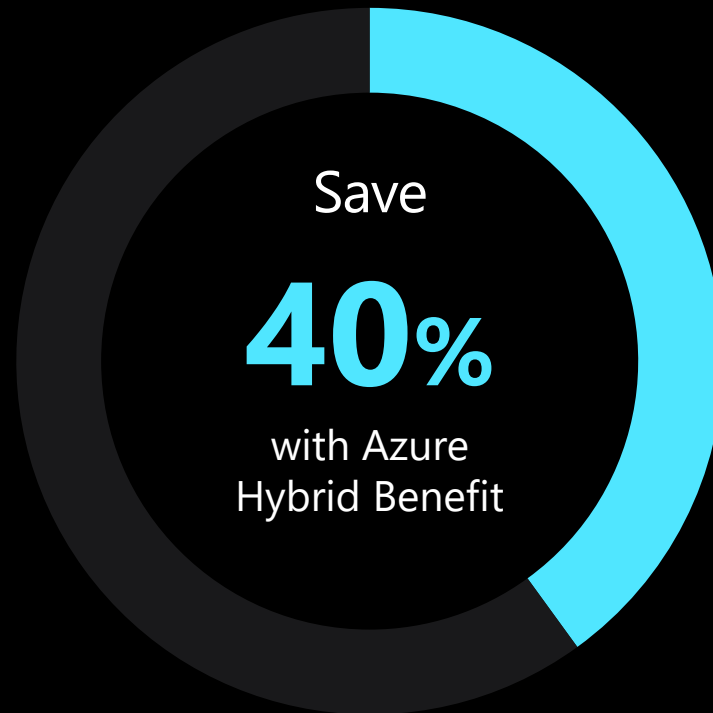
Extended security updates

Get free extended security updates for Windows Server and SQL Server 2008 and 2008 R2 for three years when running on Azure Virtual Machines

Save with Azure Hybrid Benefit

Re-use Windows Server and SQL Server licenses with Software Assurance in Azure

- ◆ Azure Virtual Machines
- ◆ Azure SQL
- ◆ Azure Dedicated Host
- ◆ Azure VMware Solution



Save money when you reserve resources in advance

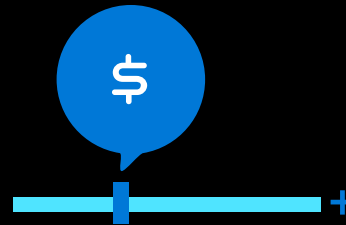
Select 1- or 3-year terms,
monthly payment options
at no extra cost

Capacity
prioritization

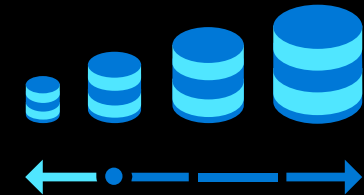
Virtual Machines,
Azure SQL, Azure Cosmos DB,
Synapse, Storage and more



Significant cost savings up to 80%
versus PAYG models



Budget predictability
pay upfront
or monthly



Flexibility to modify
reservations and
simplicity of purchase

Get deep discounts with Azure Spot VMs

Access unused Azure compute capacity at deep discounts (90%) to run non-time-critical workloads that can handle interruptions



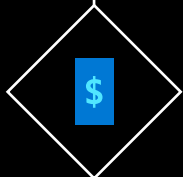
Capped prices

Pay up to the price you agree to in advance



Deployment options

Run interruptible workloads at scale on VMs and VMSS



Cost savings

Unique Azure pricing and benefits with Windows Server workloads

Get free Extended Security Updates only on Azure

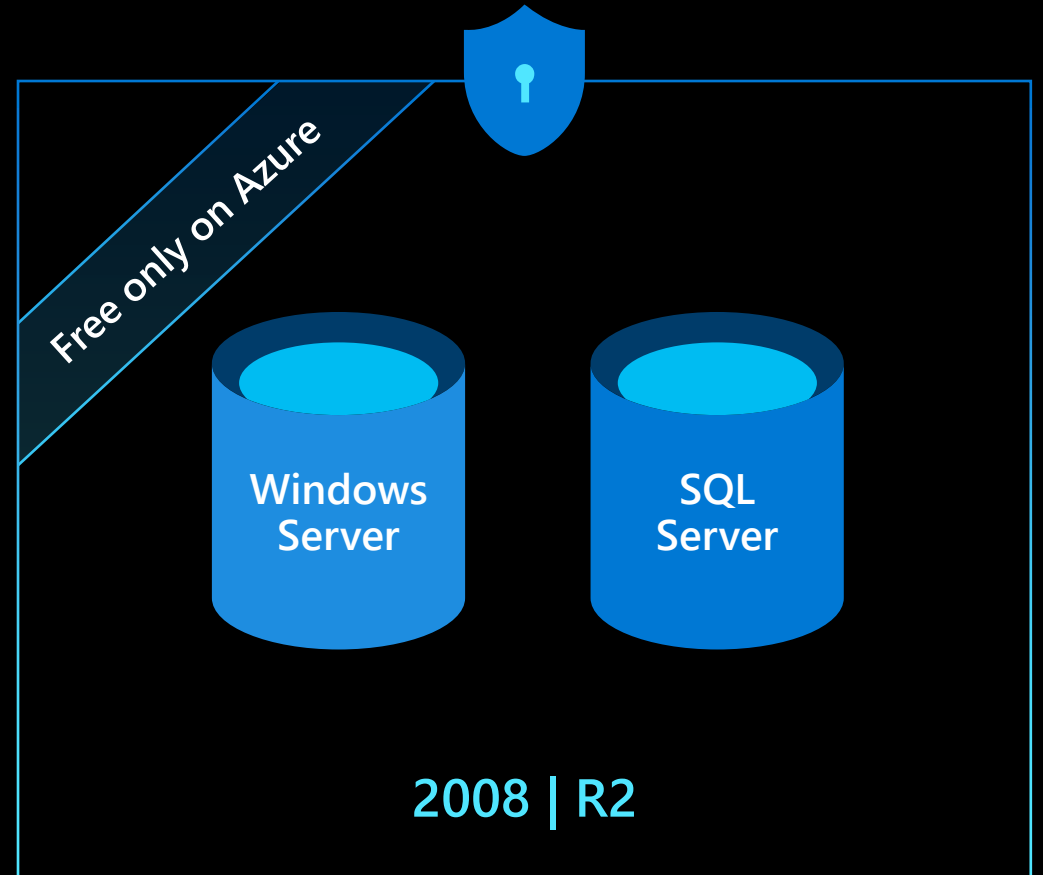
**THREE
YEARS**

of security updates for your 2008/R2 workloads from date of end of support*

75%

of the Server license cost to buy Extended Security Updates on-premises or on other clouds

**Save even more with
Azure Hybrid Benefit**



Right size and optimize resources with Azure Cost Management

◆ As you move

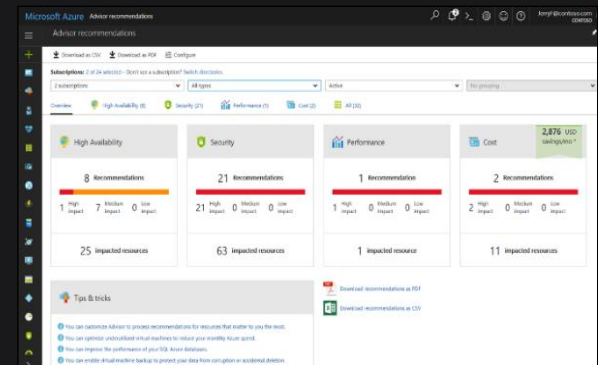
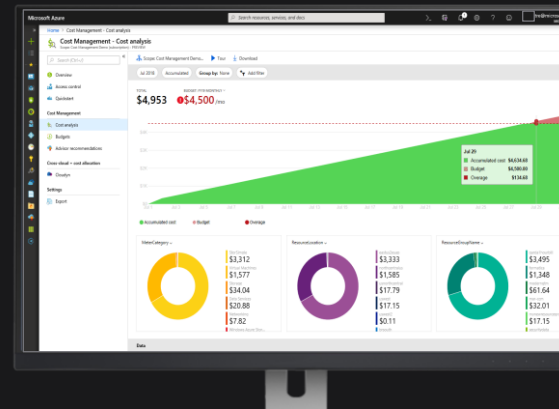
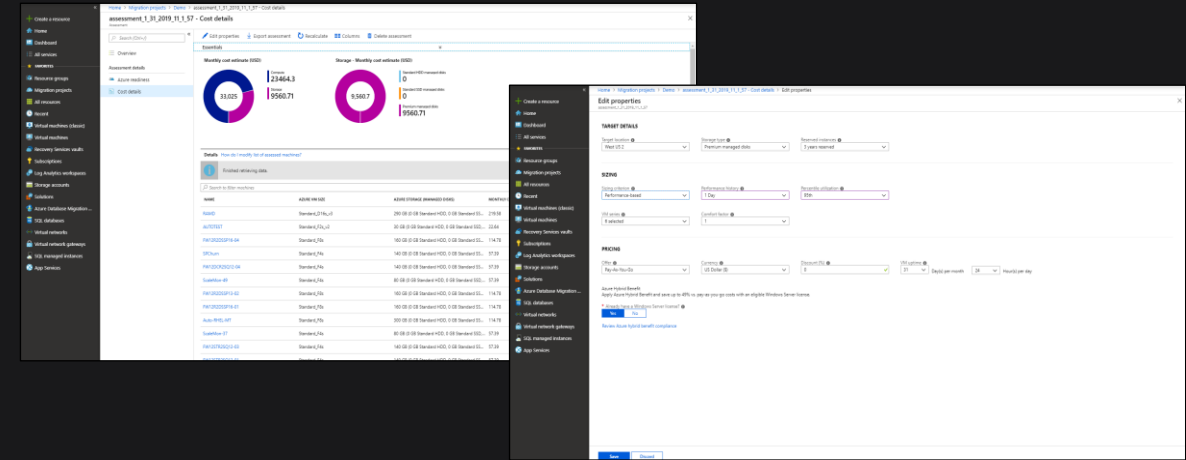
Right-size Azure resources based on assessment guidance

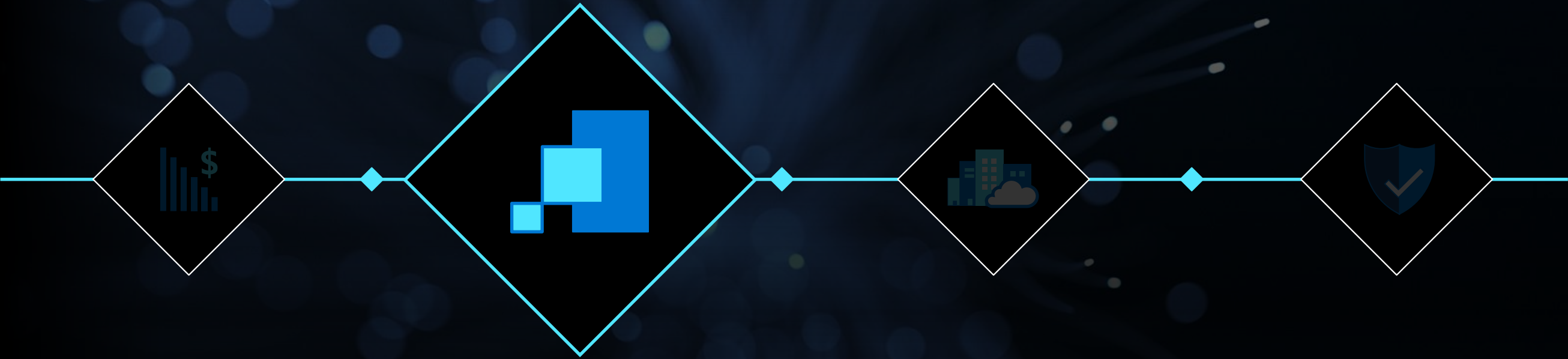
Use Azure Hybrid Benefit and Azure Reserved Instances to save money

◆ After you move

Unified experience to optimize cloud spends: Azure Cost Management

Azure Advisor: Built-in best practice recommendations (e.g., turn off idle VMs)





Unparalleled innovation

Unparalleled innovation for your Windows Server workloads



Build .NET apps with fully managed [App Service](#) on Azure



Enable secure mode work by deploying virtual desktops and apps easily with [Windows Virtual Desktop](#)



[Azure Automanage](#) to simplify operations for Windows Server VMs on Azure

NEW



[Windows Admin Center in Azure](#), the best server management tool available right inside the Azure Portal

NEW



[AKS on Azure Stack HCI](#) for app modernization on-premises or at the edge

NEW

Build .NET apps with fully managed App Service on Azure



Peerless Innovation

The only managed app hosting platform for .NET

Modernize Windows applications with containers



Operate Confidently

Industry leading performance and security for 9T queries daily¹

Host 2M apps and 41B daily requests with 99.95% SLA²



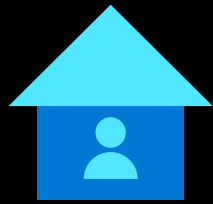
Optimize Cost

Save 40% and more using Azure Hybrid Benefit for WS and SQL Server

Save up to 50% with reserved instance pricing for App Service

Windows Virtual Desktop

Enable a secure, remote desktop experience from anywhere



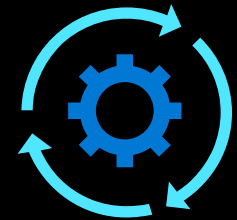
Deliver Windows 10 on
any device, anywhere



Built-in intelligent
security



Deploy and scale
in minutes



Reduce cost using
existing licenses
and pay only for
what you use

Strong partner ecosystem that helps you migrate and modernize

Azure Automanage

SIMPLIFIED MANAGEMENT OF WINDOWS SERVER VIRTUAL MACHINES



Reduce cost by automating
Windows Server management



Improve workload uptime
with optimized operations



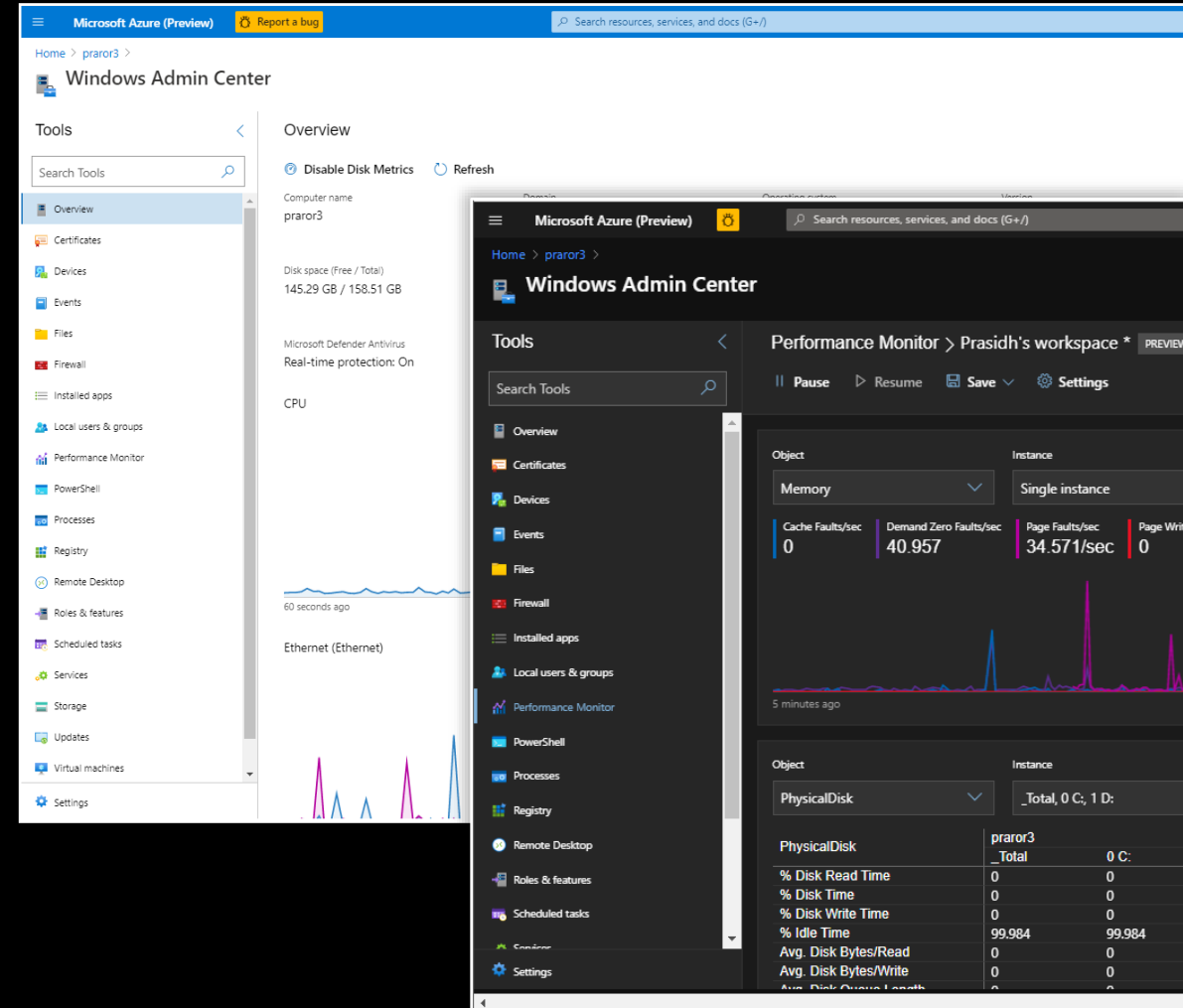
Implement security
best practices

Azure Automanage reduces day-to-day VM management tasks with optimized, automated operations across the entire lifecycle of dev/test and production virtual machines (VMs)

Windows Admin Center in Azure

Your favorite server management tool available natively in the Azure Portal

- ✓ Manage your Windows Server VMs on Azure
- ✓ Granular management, configuration, troubleshooting, and maintenance
- ✓ Always up to date with the newest features



Introducing AKS on Azure Stack HCI

Familiar Kubernetes platform available on Azure Stack HCI



Azure hybrid by design

+



Consistent with Azure Kubernetes Service



+



Familiar capabilities for Windows apps



+



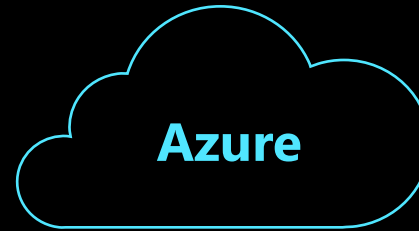
Built-in security



Seamless hybrid capabilities

Azure Hybrid

Innovation anywhere with Azure



Single control plane with **Azure Arc**



Bring **Azure services** to any infrastructure



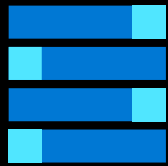
Modernize datacenters with **Azure Stack**



Extend to the edge with **Azure IoT**

Azure Arc enabled Servers

Bring on-premises and multi-cloud servers to Azure with Azure Arc



Reach

Windows VM
& Linux & Bare-Metal
Domain agnostic



Management

At-scale searchable inventory
Unified management experience
Consistent VM Extensions



Governance & Security

Built-in Azure Policies
Server security baseline
Role-Based Access Control
Compliance across environments



Any infrastructure, same tools



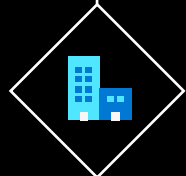
Manage Windows Server from anywhere

Windows Admin Center

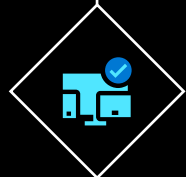
Azure Site Recovery Azure Backup Azure Update Management Azure Monitor



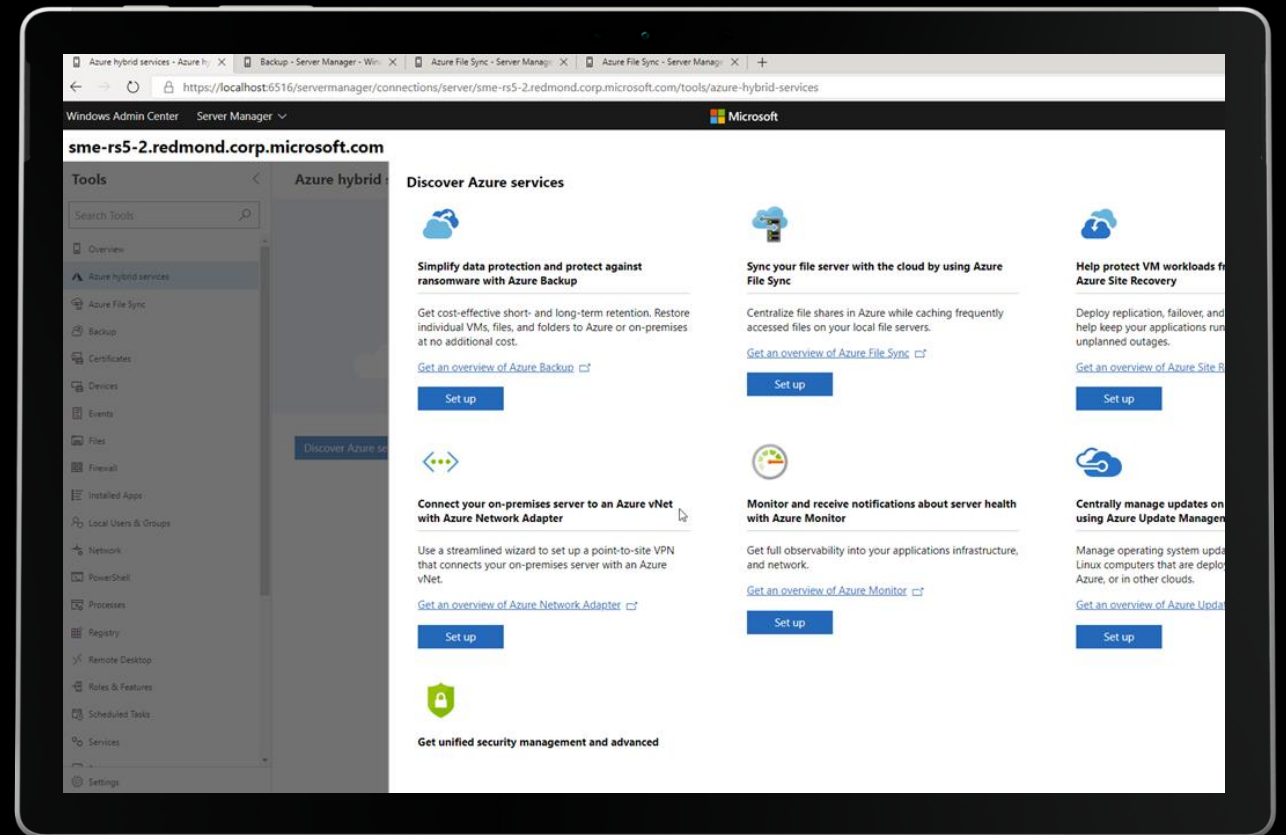
Discover
Azure services



Onboard
From your on-premises machine



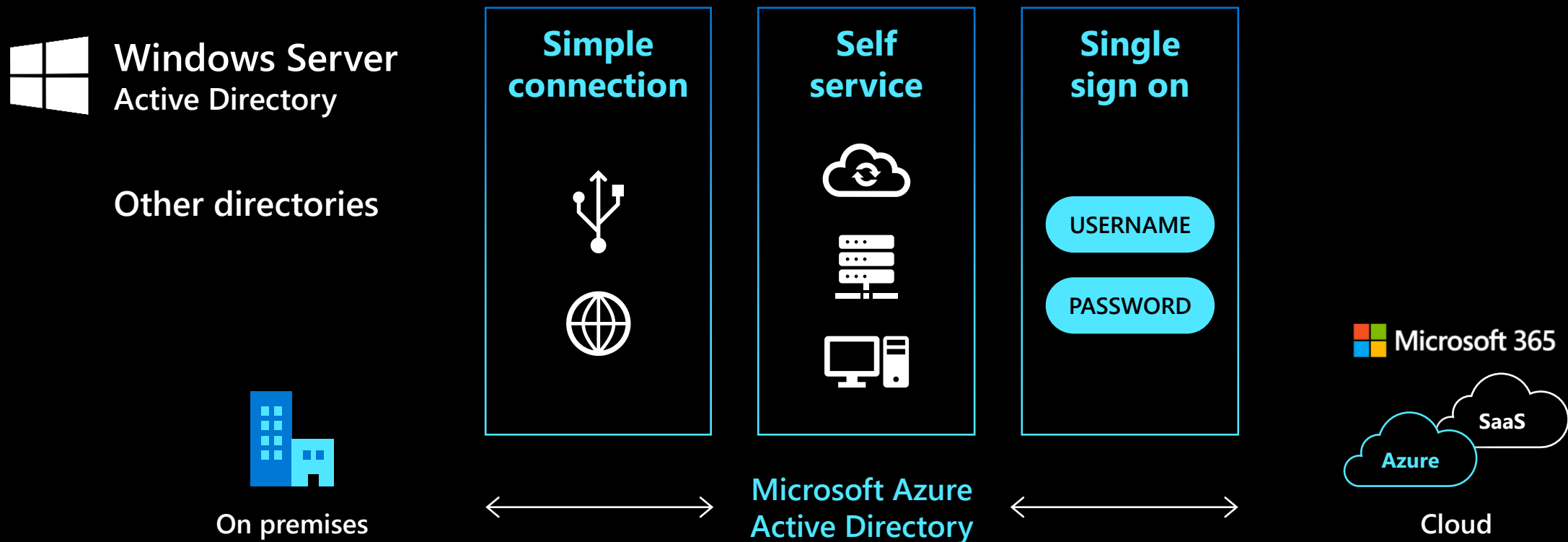
Manage
Windows Servers on-premises
and Azure



Manage hybrid identities from a universal platform

Azure Active Directory

Consistent on-premises and Azure | SSO for any app, anywhere | Secured user credentials

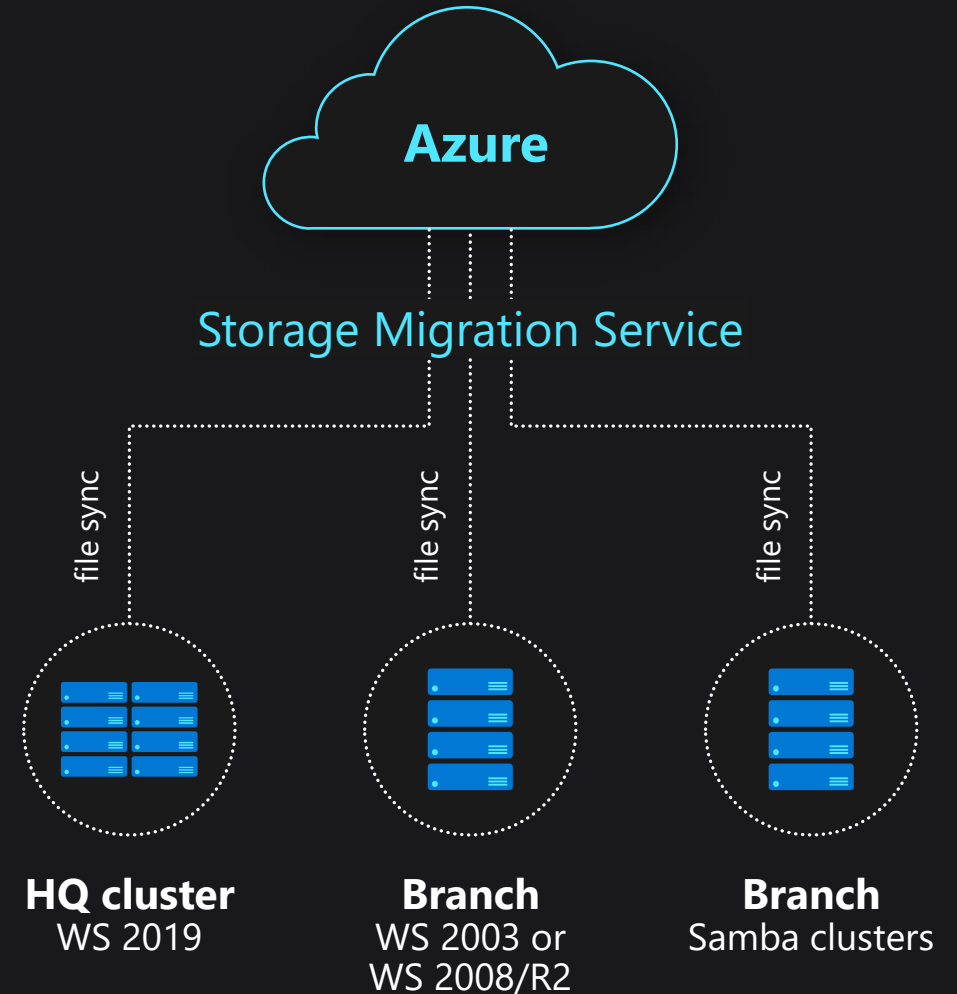


Hybrid Windows file shares for your apps

Storage Migration Service
and Azure File Sync

Multi-site sync | Cloud backup |
Rapid File Server DR

- ✓ Centralize File Services in Azure
- ✓ Transform Your Windows file servers into hot caches of your data
- ✓ Modernize your File Servers running on Windows Server 2003, 2008/R2, 2012/R2, 2016, and 2019



For workloads that must stay on-premises

Modernize datacenters with Azure Stack portfolio solutions



Azure Stack Edge

Cloud-managed appliance

Machine learning at the edge
Edge compute and IoT solutions
Network data transfer to cloud



Azure Stack HCI

Hyperconverged solution

Scalable virtualization and storage
Remote branch office
High-performance workloads

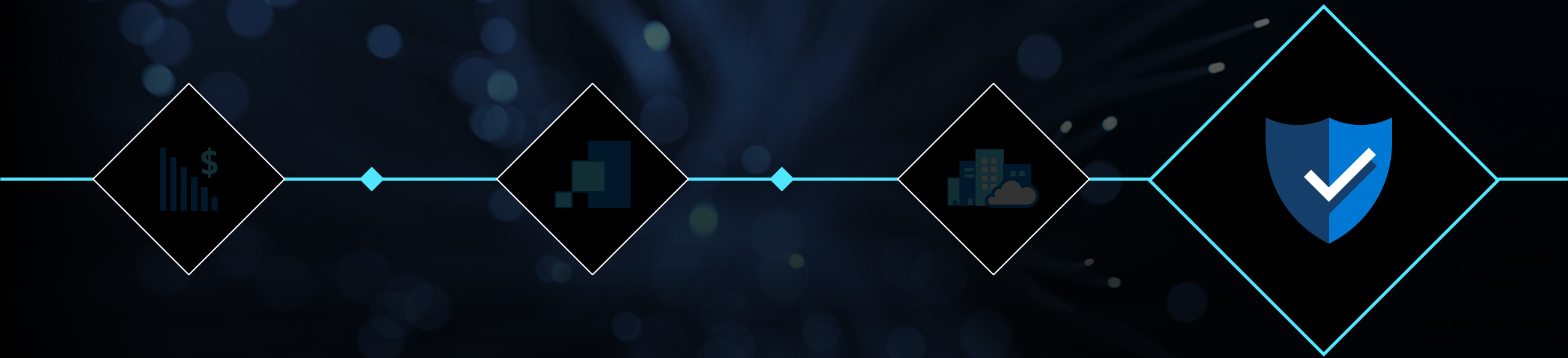


Azure Stack Hub

Cloud-native integrated system

Disconnected scenarios
Data sovereignty
Application modernization

100s of solutions from your preferred hardware vendors



Unmatched security

Comprehensive security for your workloads

Built-in Azure services

Advanced threat protection

Security posture management

Enterprise-wide security analytics



Azure
Security Center

Unified security
management
across hybrid
cloud workloads



Azure
Sentinel

AI-driven Security
Information and Event
Management (SIEM)



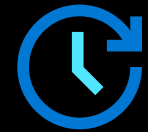
SQL
Analytics

Unique database
security monitoring
for your cloud SQL



Intel
SGX

Industry leading
confidential
computing



Free security
updates

Extended security for
Windows Server
and SQL Server
2008/R2 workloads

>3,500

full-time security professionals

8 trillion

global signals daily

\$1 billion

annual cybersecurity investment

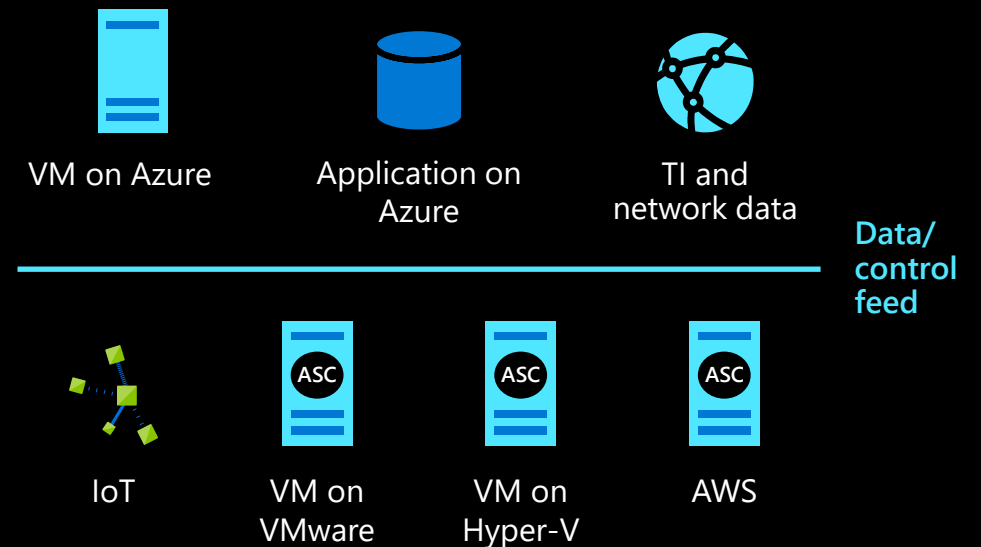
Secure your apps

with built-in protection in Windows Server VMs and Azure Security Center

WINDOWS SERVER 2019

- ✓ Advanced Threat Detection to detect attacks and zero-day exploits
- ✓ Defender Exploit Guard to help combat ransomware attacks
- ✓ Encrypted Subnets
- ✓ Just-in-time and just-enough-access, risk-based adaptive policies, and data protection to help secure both data and productivity
- ✓ Secure Windows Server instances on-premises directly from Windows Admin Center

AZURE SECURITY CENTER



Edge, on-premises, and multi-cloud

Unified Security Management with Azure Security Center

- ◆ Get a bird's-eye security posture view
- ◆ Continuously monitor and protect all your cross-cloud resources
- ◆ Remote health monitoring
- ◆ Follow best practice recommendations
- ◆ Get visibility into the compliance state of your Azure environment



Simplify SIEM with Azure Sentinel

Cloud native and Intelligent security analytics for your enterprise including Windows Server and SQL Server workloads



Limitless cloud speed and scale



Bring your **Office 365** data for **FREE**



Easy integration with your **existing tools**



Faster threat protection with **AI by your side**



Advanced data security for SQL Server on Azure VM

◆ Azure Advanced Threat Protection*

A cloud-based security solution that leverages Active Directory to identify, detect, and investigate advanced threats, compromised identities, and malicious insiders

◆ Vulnerability assessment*

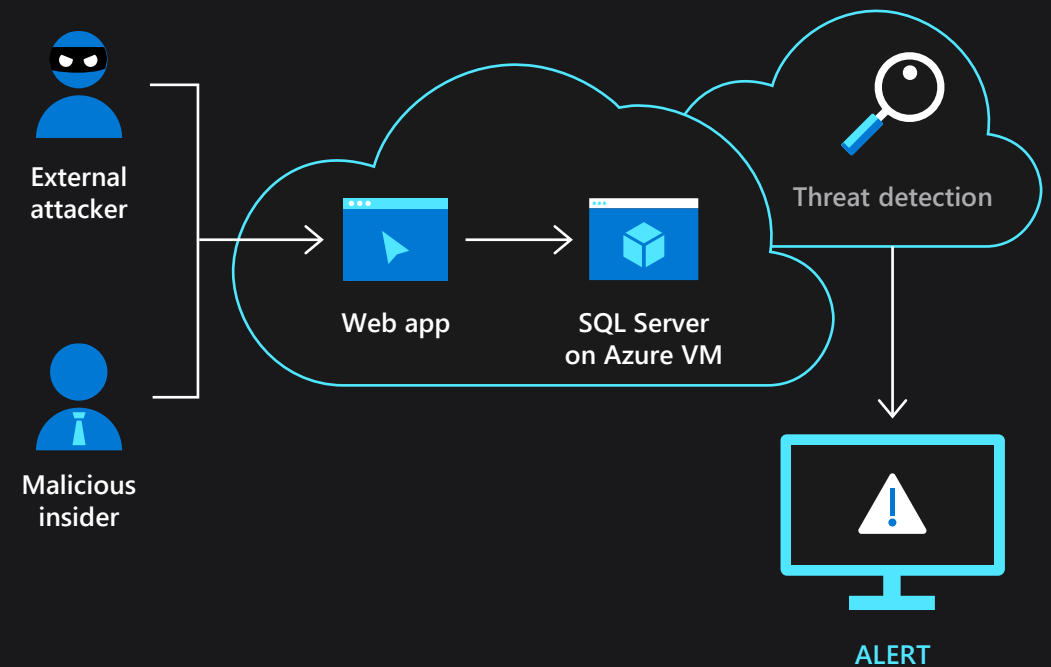
A service that provides visibility into your security state and includes actionable steps to resolve security issues and enhance your database security

◆ Data discovery and classification*

A new tool built into SSMS for discovering, classifying, labeling and reporting on the sensitive data in your databases

* Supported on SQL Server 2012 and later

Azure Advanced Threat Protection



Automated security patching for SQL on Azure VMs

- ◆ **Rest easy with automated security patching**

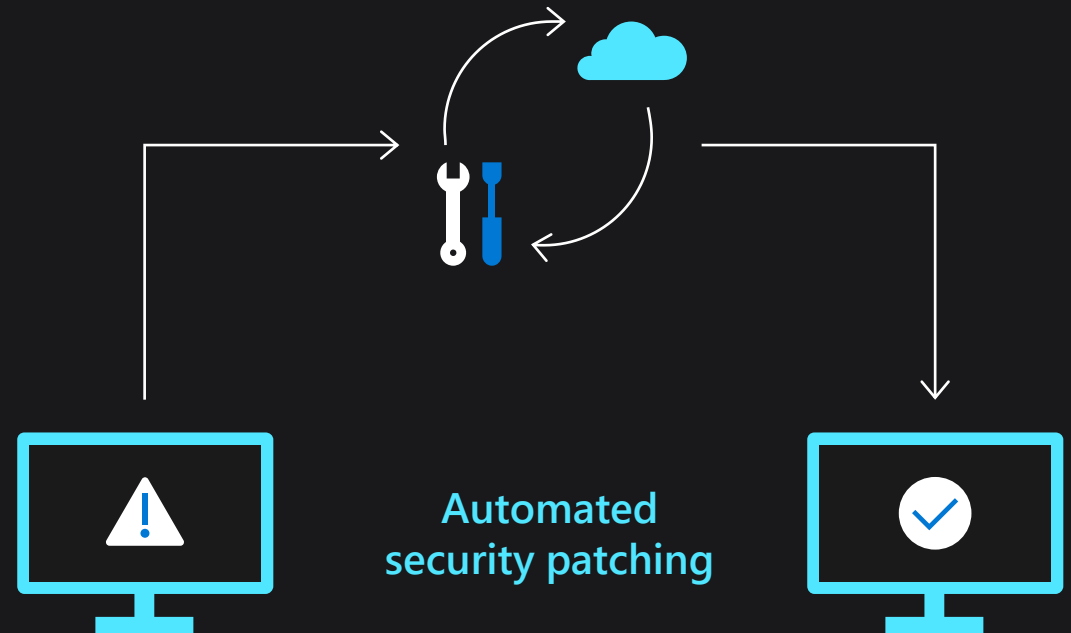
Critical security patches are automatically applied to SQL Server on Azure Virtual Machines

Establish a maintenance window to ensure that system updates and restarts occur at the best possible time

- ◆ **Always installed from the latest version of SQL Server**

Optimized images supported by SQL Server Engineering include the latest updates

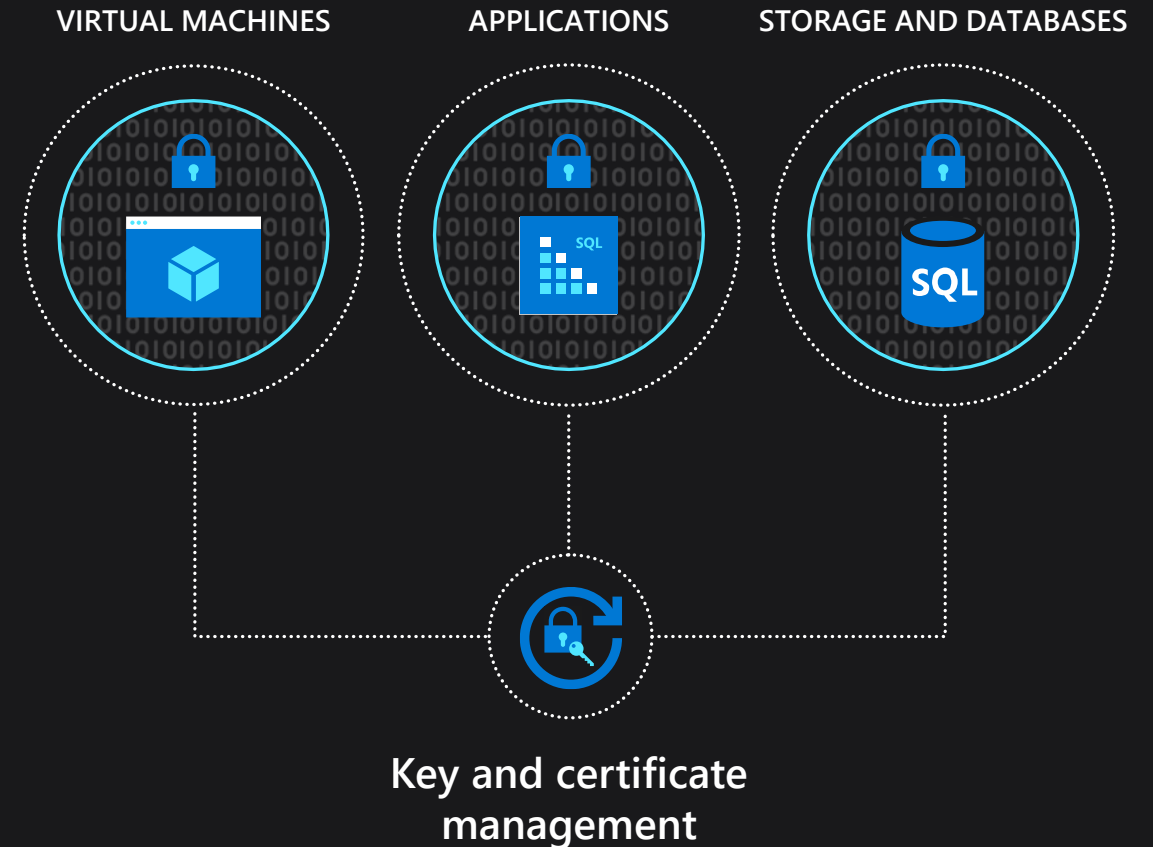
Automate VM storage configuration through the Azure portal, including storage accessibility and optimization based on workload type



Industry-leading confidential computing capabilities

Integrated across disks, storage, and SQL

- ◆ Encryption of data while in use
- ◆ Enables new scenarios like secure block-chain or multi-party machine learning
- ◆ Safeguard keys and other secrets using HSMs



The background is a dark blue gradient with a bokeh effect of out-of-focus light spots in various shades of blue and cyan. Overlaid on this are several thin, glowing blue lines that resemble fiber optic cables or data paths, some with small white dots at their ends, creating a sense of connectivity and technology.

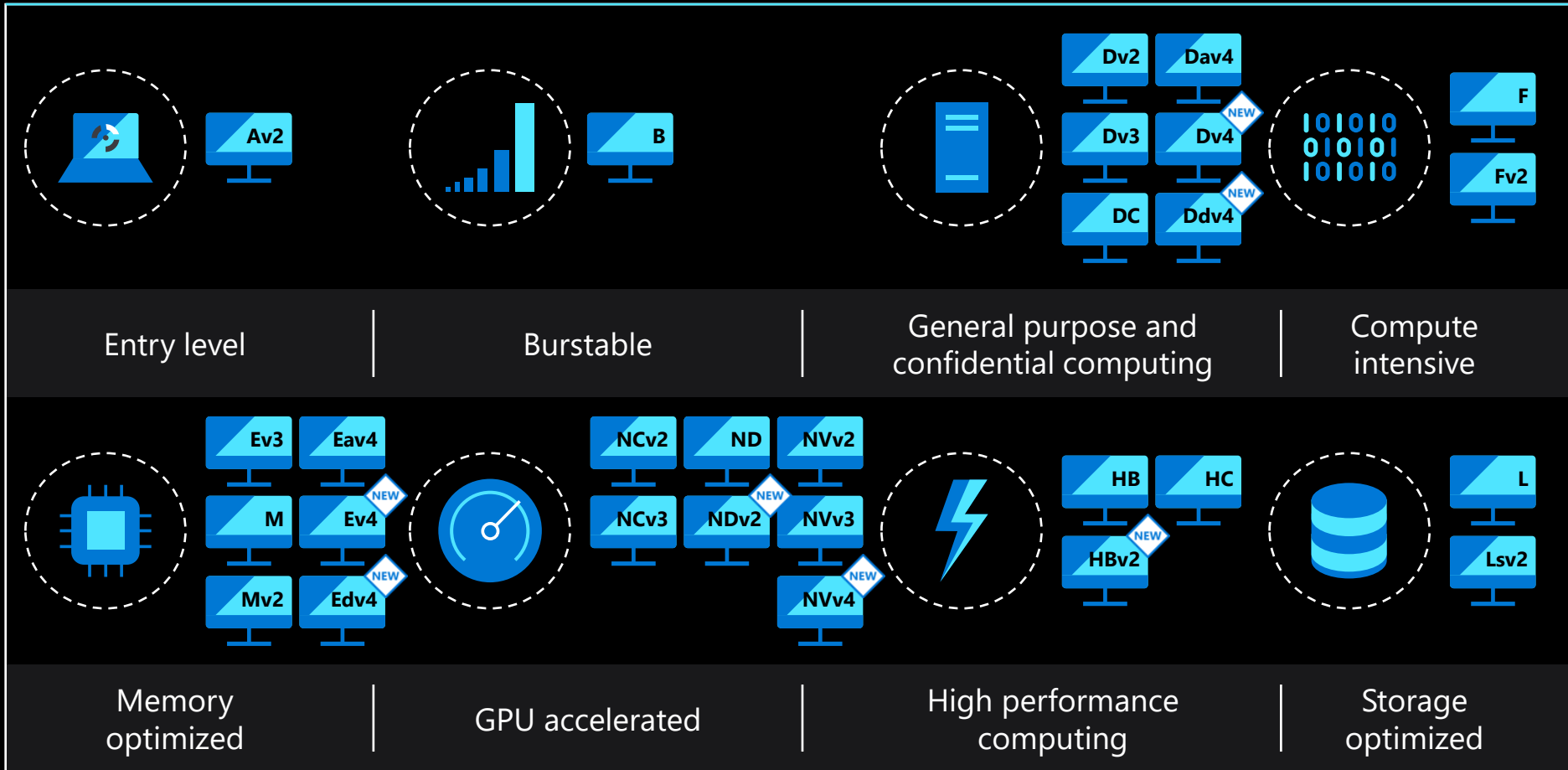
Cloud infrastructure you can **TRUST** to run your business

SCALABLE | EFFICIENT | RESILIENT

Computing options for every workload

VIRTUAL MACHINES

PURPOSE-BUILT



vmware®

SAP®

NetApp®

Extending your on-premises VMware environment

Azure VMware Solution

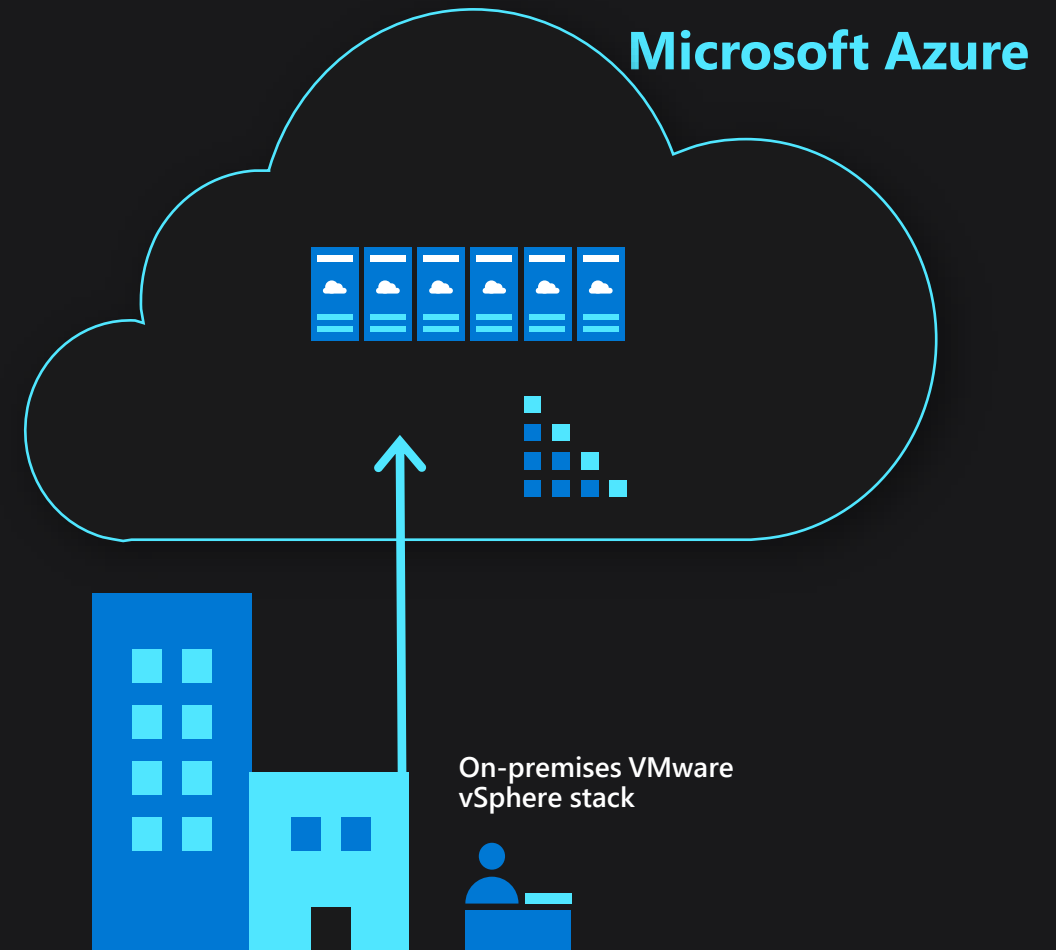
It is a **comprehensive VMware environment on dedicated Azure infrastructure.**

Built by Microsoft and VMware

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

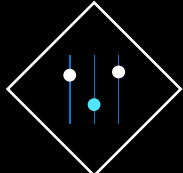
It allows **you to manage, and secure applications across VMware environments and Microsoft Azure** with a consistent operating framework

Enjoy **unmatched pricing** for Windows Server and SQL Server



Single tenant environment

for Windows Server and SQL Server with Azure Dedicated Host



Control

Determine maintenance cycles, VM placement and underlying server capabilities



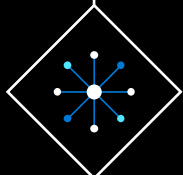
Compliance

Alignment with corporate policies requiring host level isolation or a dedicated physical server



Cost savings

Alignment with corporate policies requiring host level isolation or a dedicated physical server

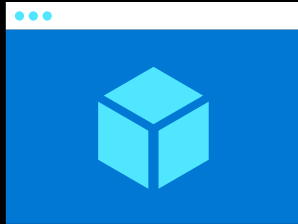


Unlimited virtualization rights

Customers with Software Assurance have full control over virtualization when entire host is licensed with SQL Server Enterprise Edition and Windows Server Datacenter

Fully-compatible SQL options for existing databases

Azure SQL



SQL Server on Azure Virtual Machines

Best for rehosting and apps
requiring OS-level access

INFRASTRUCTURE-AS-A-SERVICE



Azure SQL Managed Instance

Best for modernizing
existing apps

PLATFORM-AS-A-SERVICE



Azure SQL Database

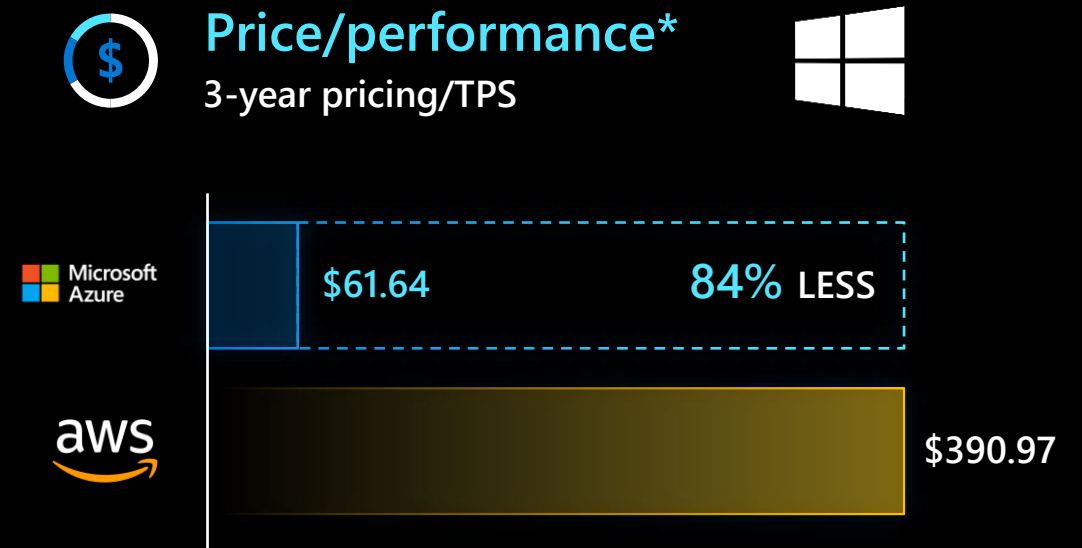
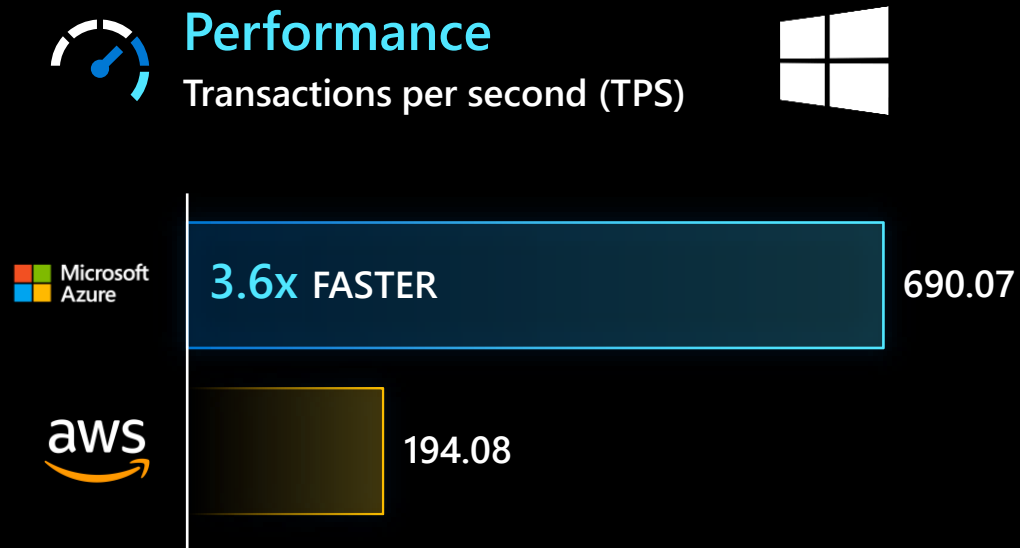
Best for supporting
modern cloud apps

SQL Server on Azure VMs for mission-critical workloads

SQL Server 2019 Enterprise (Windows) on Azure vs. AWS EC2

February 2020 benchmark

- SQL Server on Azure includes Azure Hybrid Benefit
- SQL Server on AWS includes license mobility



*Includes Azure Hybrid Benefit and Reserved Instances with three-year commitment

Storage for every workload

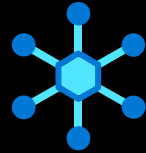
Azure Disk Storage

	Characteristics	Workloads
 Standard HDD	Low-cost storage	Backups, non-critical, infrequently accessed workloads
 Standard SSD	Consistent performance	Web servers, lightly used enterprise applications, and dev/test
 Premium SSD	High performance	Databases, most enterprise production workloads, container volumes
 Ultra disk	Sub-millisecond latency	SAP HANA, top-tier databases, transaction-heavy workloads

Network services for any workload

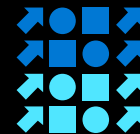
Connect and extend

Azure Peering Service
Azure Virtual WAN
Express Route
VPN
IPV6 o VNETS



Protect

Azure Private Link
Azure Firewall Manager
Azure Bastion
Azure WAF



Deliver

Application Gateway
Azure Front Door
Azure CDN



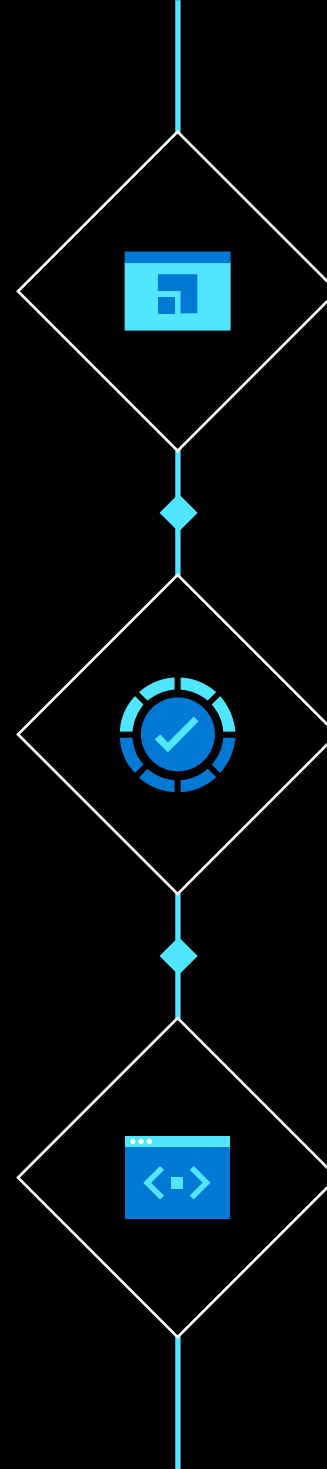
Monitor

Internet Analyzer
Azure Monitor for Networks



Azure
Networking
services

Building reliable systems is a shared responsibility



Your application

Your **app** or **workload** architecture

Resiliency features

Optional Azure capabilities **you enable as needed**—high availability, disaster recovery, and backup

Resilient foundation

Core Azure capabilities **built into the platform**—how the foundation is designed, operated, and monitored to ensure availability

Business continuity to run mission-critical workloads

Azure backup + Azure site recovery + high availability

51%¹

improvement in the efficiency of IT Teams

76%¹

faster backups

66%¹

reduction in average data recovery time

337%¹

5-year return on investment

HIGH AVAILABILITY

SLA 99.9%

Isolated VM failure

SLA 99.95%

Hardware failure

SLA 99.9%

Entire datacenter failure

RTO 30 minutes

Entire region failure

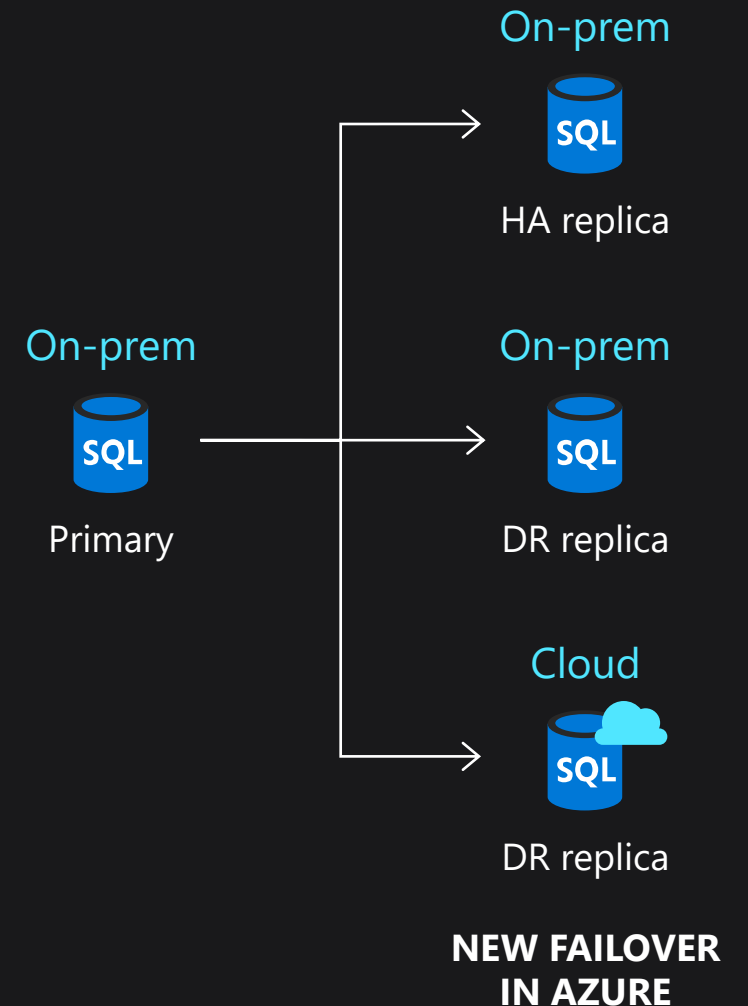
1. IDC White Paper, sponsored by Microsoft, Azure Site Recovery and Azure Backup Are Helping Improve Business Operations, June 2019. The study compares Azure Site Recovery and Azure Backup with an on-premises backup and disaster recovery solution.

Free HA and DR for SQL Server on Azure VMs when you have SA

Failover servers for high availability

Run passive SQL Server instances in a separate OS or server for high availability on-premises in anticipation of a failover event

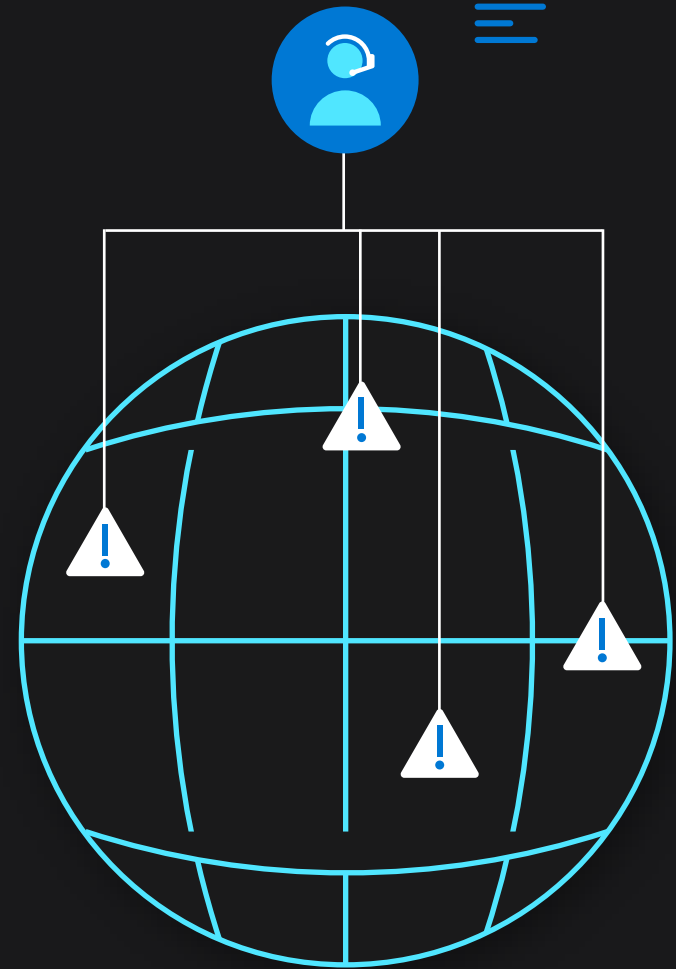
- ◆ Failover servers for disaster recovery
Run passive SQL Server instances in a separate OS or server on-premises for disaster recovery in anticipation of a failover event
- ◆ Failover servers for disaster recovery in Azure **NEW**
Run passive SQL Server instances in a separate OS or server for disaster recovery in Azure in anticipation of a failover event
- ◆ Cloud primaries can be replicated on the cloud for HA and DR



Enterprise-grade support

First-class, first-party support

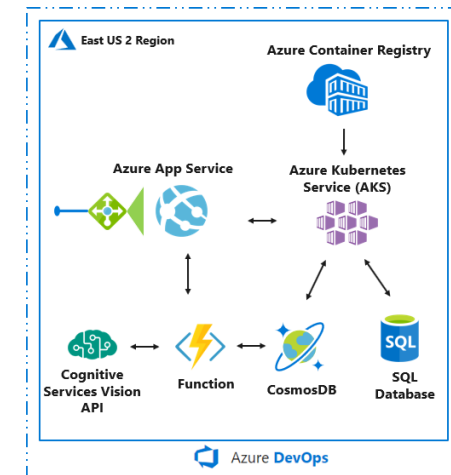
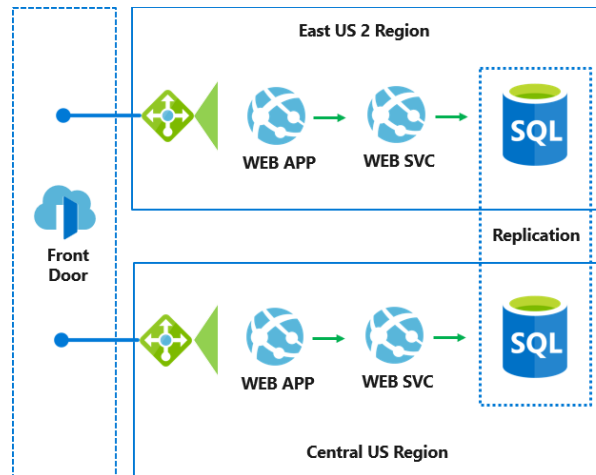
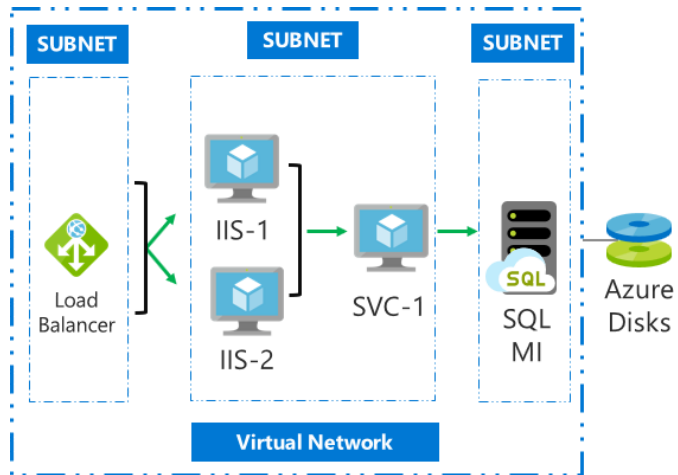
- ◆ Products are built to interface —better integration, higher compatibility, and less support needed
- ◆ Avoid the hassle of going to multiple companies for support
- ◆ Continue to build on existing skills and investments as you transition apps to Azure
- ◆ Multilingual support is available 24/7



The background is a dark blue gradient with a bokeh effect of out-of-focus light spots in various shades of blue and cyan. On the right side, there are several thin, glowing blue lines that resemble fiber optic cables or data paths, some ending in small white or yellow dots.

Get started

Azure offers flexibility to meet your business requirements



Migrate

Lift and shift applications to Azure and leverage SQL VMs

Modernize

With Azure Web Applications and Azure SQL Database along with Front Door

Microservices

Build cloud-native services using Windows Containers and Azure Services

Choose the right destination



Line of business apps

	MIGRATE	MODERNIZE
Apps	Azure VMs Azure VMware Solutions	AKS with Windows containers Azure Container Instance App Service
Databases	SQL Server on Azure VMs	Azure SQL Database Cosmos DB



Packaged apps

Apps	Azure Marketplace
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IT Workloads

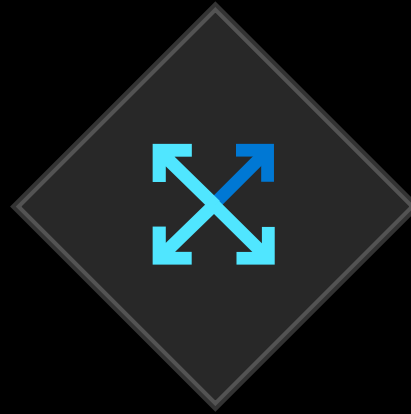
Identity and Networking	Azure VMs Azure Active Directory Azure Active Directory Domain Services
Networking	Azure VMs Azure DNS
File Server	Azure VMs Azure Files and Azure Files Sync with Storage Migration Service
Remote Desktop Services	Windows Virtual Desktop

Take advantage of offers to lower migration costs



Microsoft Cloud Adoption Framework

Proven guidance to accelerate your
cloud adoption journey



Azure Migration Program FastTrack for Azure

Best practices & resources, including Azure
engineering & specialized partners

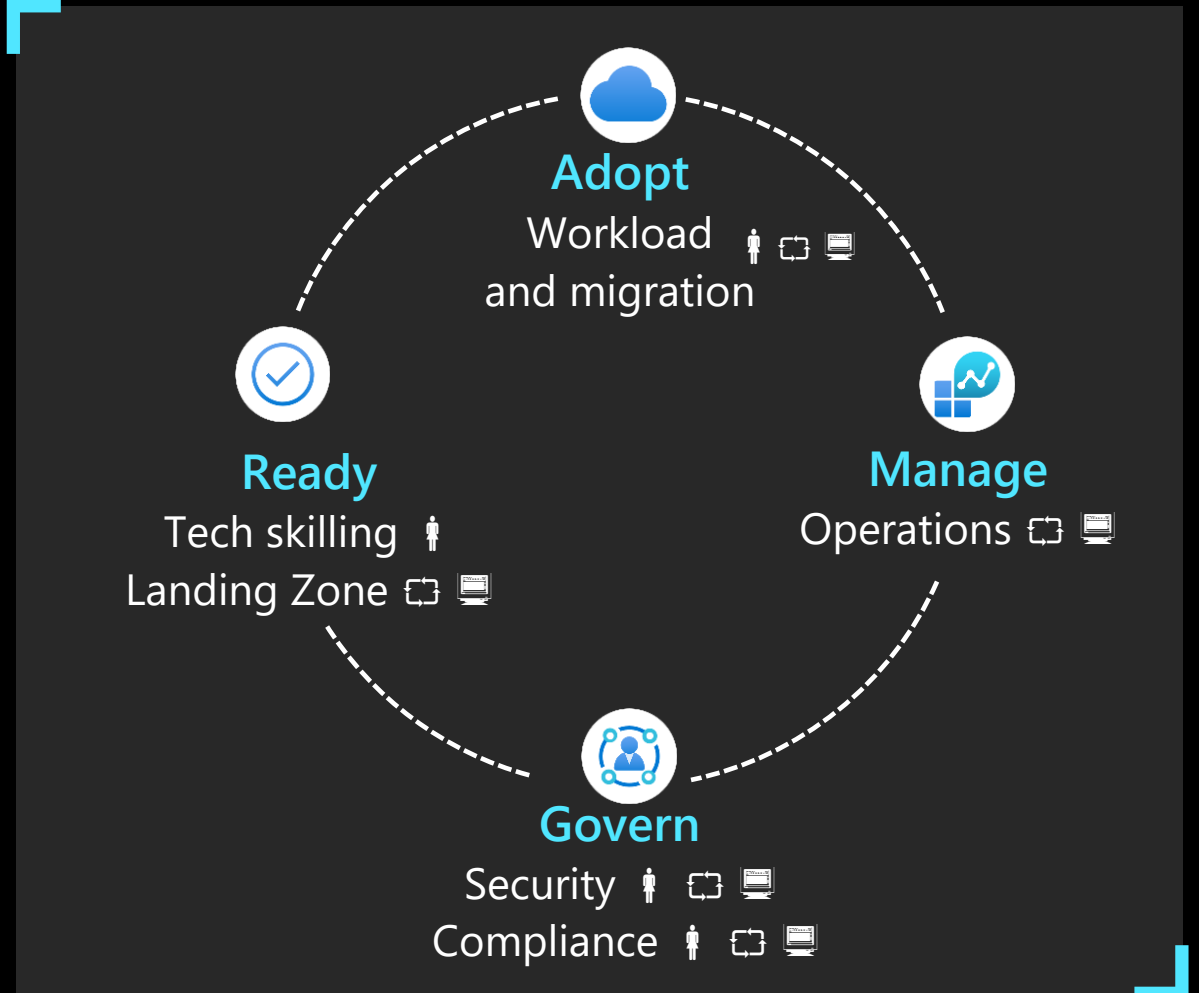
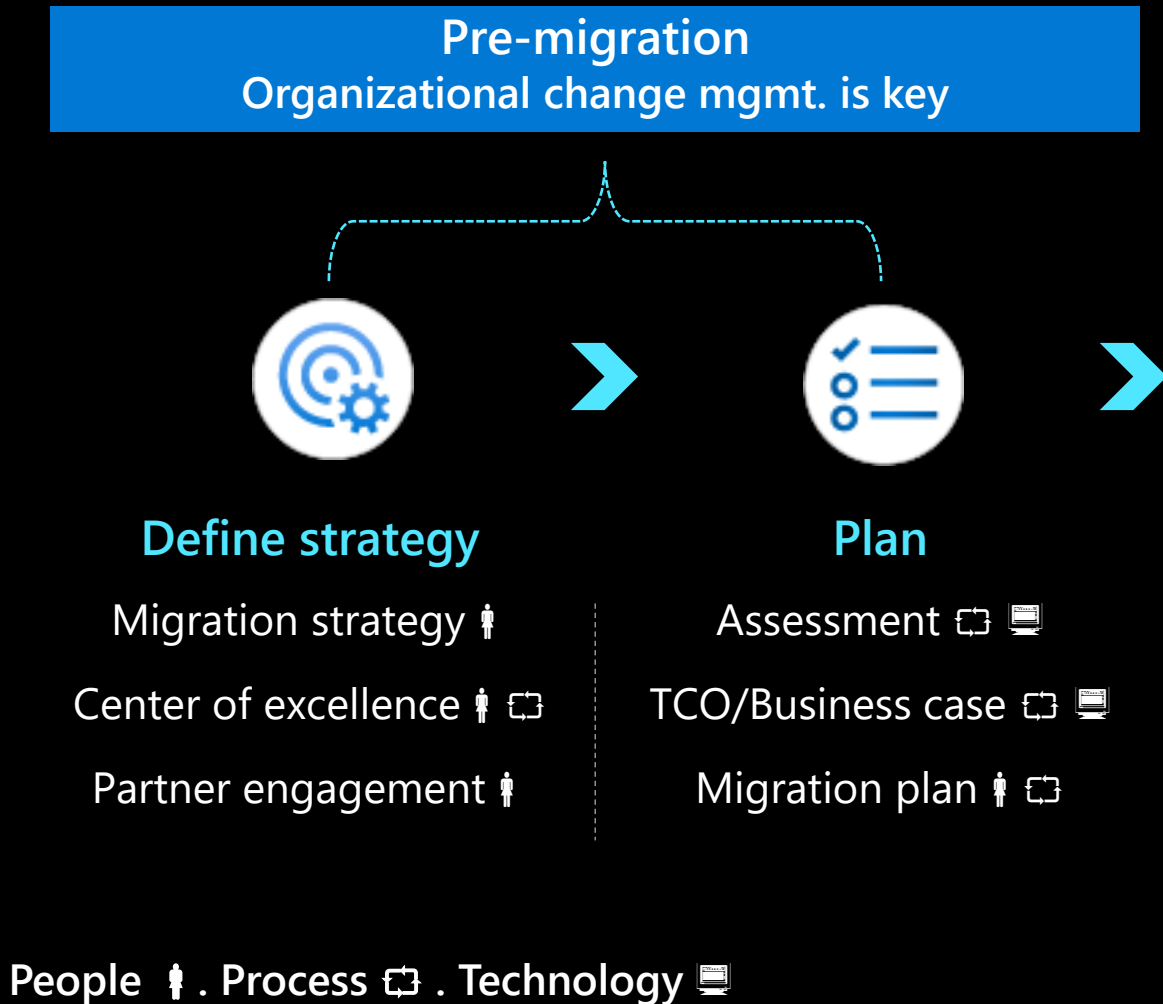


Azure Migrate

Single hub for all
your migration needs

Define your migration journey

Informed by the Microsoft Cloud Adoption Framework for Azure



...Azure Migration Program can help

Optimize costs and migrate with confidence with the right expert help at every stage. Use best-practice guidance, direct access to Azure engineers, tools, and specialized partners.



Count on a proven methodology



Get free Azure migration tools



Pay less with cost effective offers



Access in-depth assistance with FastTrack for Azure engineering



Gain new skills with technical courses



Receive support from specialized partners

Assess your IT environment

Azure Migrate



Azure Migrate

- ▶ **Multiple scenarios** | Migrate Windows and Linux Servers, Databases, Data, Web Applications and Virtual Desktops
- ▶ **Diverse capabilities** | Comprehensive discovery, assessment, and migration capabilities powered by Azure and third-party tools
- ▶ **Centralized visibility** | Centralized migration repository delivering end-to-end tracking and insights

...and, select right tools and services for your database

On-premises

Microsoft Azure

Microsoft SQL Server

ORACLE

MySQL



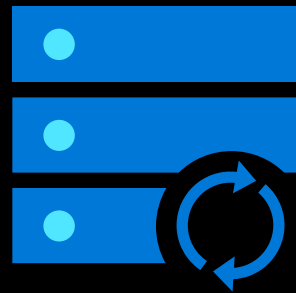
mongoDB

aws



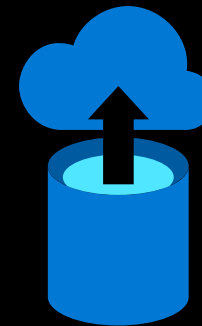
Google Cloud

Assessment



Azure Migrate/DMA
Database Experimentation
Advisor(DEA)
SQL Server Migration
Assistant (SSMA)

Migration



Azure Database
Migration Service



Leading global insurance company improves actuarial calculation capability while generating savings

Voted the most admired life and health insurance company by Fortune magazine in 2015, MetLife is a global provider of life insurance, annuities, employee benefits and asset management. MetLife offers its customers many financial products tailored to meet their unique needs, and critical to its success is the ability to perform complex actuarial modeling of business data. To this end, the company shifted some of the high-performance computing and data processing this modeling requires to the Microsoft Azure cloud platform. MetLife benefited from the flexibility and scalability of Azure data processing capabilities to achieve faster, more accurate actuarial calculations and save significant infrastructure costs, which resulted in more value for the company, its customers, and other stakeholders around the world.



Products and services

Analytics Platform System
Azure Cloud Services
Windows Server

Organization size

10,000+
employees

Industry

Insurance

Country

United States



Alaska Airlines makes shopping easier with faster flow of new e-commerce features

A great online shopping experience begins with great software, and Alaska Airlines is using microservices, Microsoft Azure, and Windows Server Containers with Docker to launch new e-commerce features faster—in minutes versus days. Travelers get new offers sooner, which in turn translates to happier customers and higher revenues. By running its e-commerce engine in Azure in hybrid fashion, Alaska can also scale more easily and cost-effectively, ensuring its sites run at the optimum point of performance and cost.



Products and services

Azure
Azure API Management
Azure App Service
Azure Application Insights

Azure Cache for Redis
Azure DevOps
Azure Service Fabric
Azure Storage

Azure Virtual Machines
Azure Virtual Network
Windows Server 2016 Datacenter
Windows Server Containers

Organization size

10,000+ employees

Industry

Travel and Transportation

Country

United States



H&R Block delivers scalable, multichannel tax preparation services with Azure and Microsoft SQL Server 2017

H&R Block wanted to unify its disparate data sources so the company could deliver more seamless multichannel experiences and provide better service for its customers. By moving various workloads to Microsoft SQL Server 2017 and Microsoft Azure and using Azure data services, the tax provider has been able to enhance service delivery, scale to meet its peaks in demand, and accelerate innovation. Starting with SQL Server on Azure Virtual Machines and later adding Azure SQL Managed Instance, H&R Block improved application performance and reduced roadblocks to innovation. Now it can meet the future head on—and deliver smart, powerful multichannel experiences that keep customers coming back.



Products and services

Microsoft Azure
Azure Virtual Machines
Azure SQL Managed Instance

Microsoft SQL Server on
Azure Virtual Machines
Microsoft SQL Server 2017

Organization size

10,000+
employees

Industry

Professional
Services

Country

United States





Discover More

[Azure Hybrid Benefit](#)

[TCO Calculator](#)

[Azure VMware Solutions](#)

[Azure Hybrid](#)

[Linux on Azure](#)

