

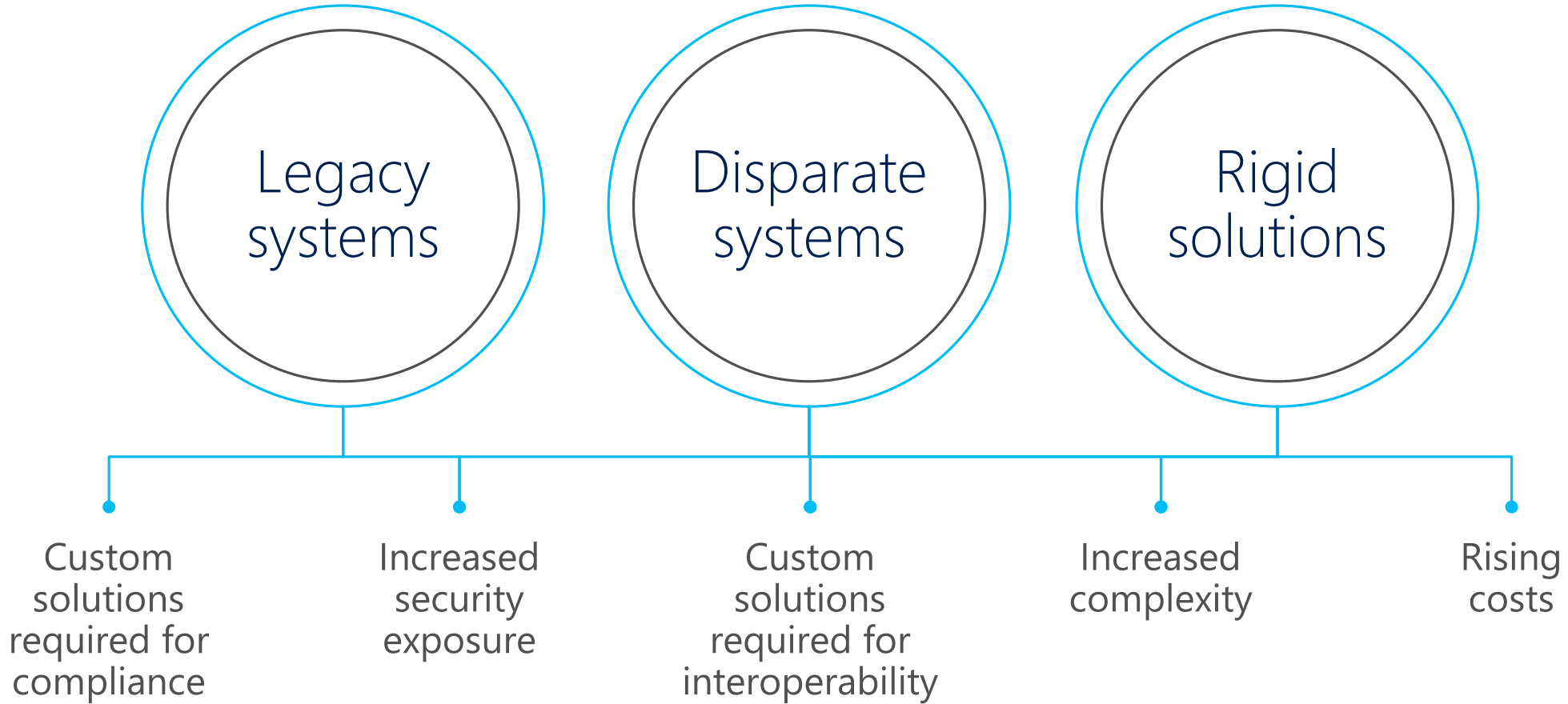


Windows Server 2019

The operating system that
bridges on-premises and Azure



IT stress points





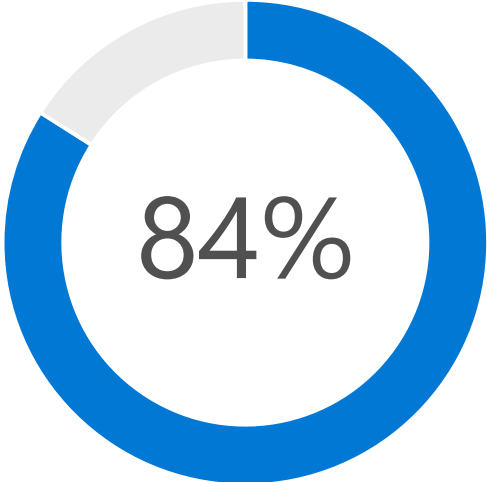
What organizations want:

Systems that distribute
workloads seamlessly

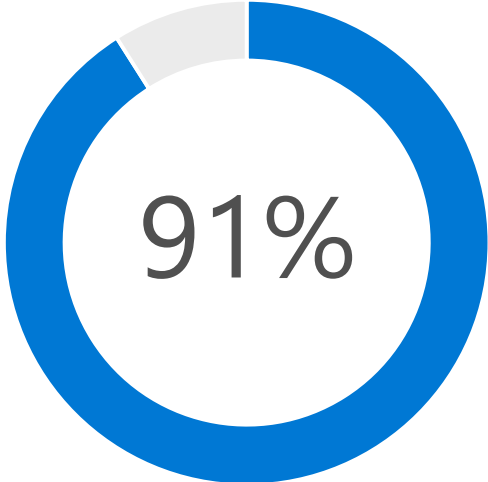
It starts with an operating system that
bridges on-premises and cloud



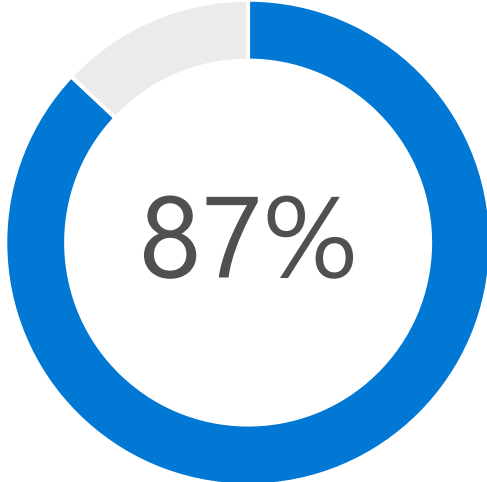
Customers embracing hybrid cloud



Enterprises have a hybrid cloud strategy, up from 55% a year ago¹



Enterprises see themselves operating hybrid clouds for the foreseeable future²



Organizations are planning to integrate on-premises datacenters with public cloud³

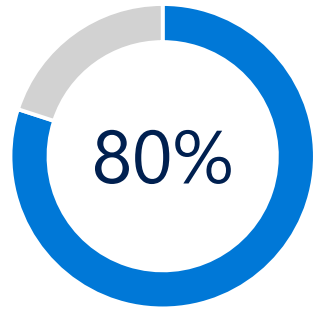
Sources:

- 1. Microsoft study, 2017
- 2. Microsoft study, 2017
- 3. Avanade research on IT modernization, April 2017



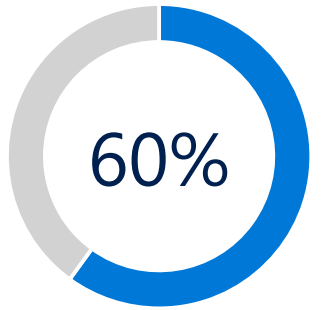
IT implementing new approaches

Hybrid datacenter



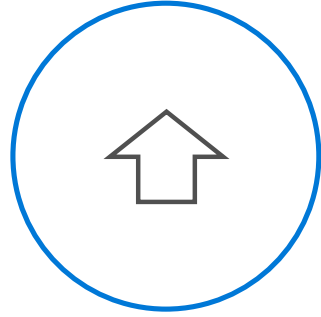
Enterprises see themselves operating hybrid clouds for the foreseeable future

Enhanced security



of enterprises will invest in data loss prevention, protection and encryption tools

Developer technologies



Use of containers and tools are up, as more enterprise adopt the technology for consistent and flexible apps across environments

Hyper-converged infrastructure (HCI)



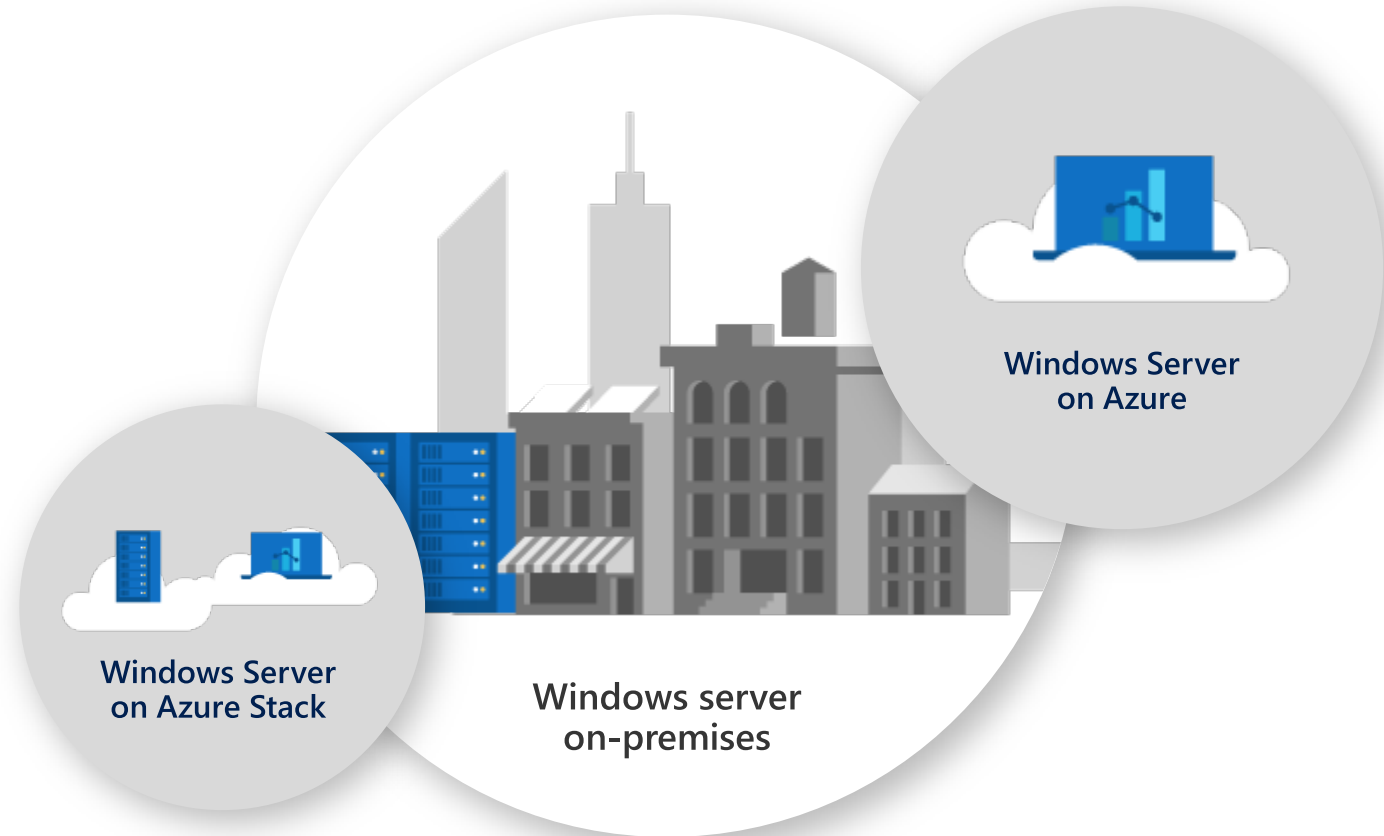
HCI which brings together compute and storage in a single system, providing higher performance and scale while reducing infrastructure costs

Source: 1-Microsoft study, 2017 2-"forecast: information security, worldwide, 2015-2021, 3Q17 update," Gartner 3-right scale 2016 state of the cloud report



Windows Server promise

Supporting you wherever you are





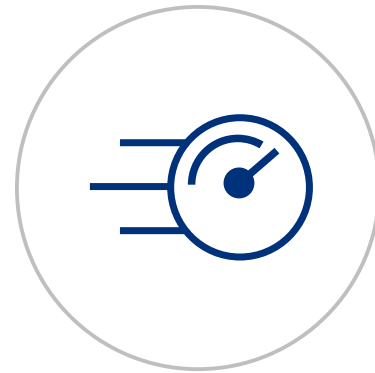
Windows Server 2019



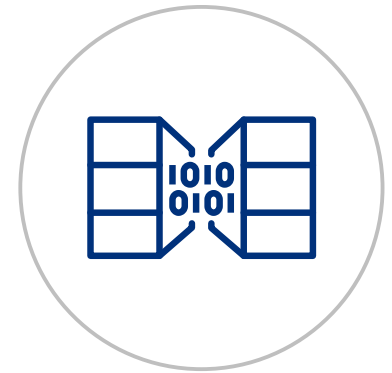
Unique hybrid capabilities with Azure



Advanced multi-layer security



Faster innovation for applications



Unprecedented hyper-converged infrastructure



We need better hybrid solutions

"I need disaster recovery that gets services back online faster"

"I need cost effective archive storage for massive amounts of data for compliance reasons"

"I can't move everything to the cloud at once, so how do I manage it all?"



IT



Windows Server 2019

Unique hybrid capabilities with Azure

Extend your datacenter to the cloud

Add built-in hybrid management capabilities



Hybrid datacenter platform

Maximize investments, gain new ones with Windows Server 2019



Extend datacenter to the cloud

Maximize existing investments

Eliminate need to build custom solutions



Add built-in hybrid management capabilities

Built-in Azure active directory integration

Azure backup, Azure site recovery and more

Storage migration services

Easier connection to Azure virtual networks

Natively integrated Azure backup

Windows admin center

Single browser-based view of Windows Server workloads running on-premises and in Azure

Seamlessly integrated with Azure services, simplifies setup and status checks

The screenshot displays the Windows Admin Center interface for Azure Backup. The left-hand navigation pane includes a 'Tools' section with a search bar and a list of tools: Overview, Backup (Preview), Certificates, Devices, Events, Files, Firewall, Local Users & Groups, Network, PowerShell, Processes, Registry, Remote Desktop, Roles & Features, Services, Storage, Storage Replica, and Updates. The main content area is titled 'Azure Backup' and provides a comprehensive overview of the backup configuration and status.

Azure Backup Overview
Protect your Windows Servers from corruptions, attacks or disasters by backing up your server directly to Microsoft Azure. [Provide feedback](#)

Overview | Recovery Points | Jobs

Recovery Services Vault: **DPMUR4Vault1hajaj** | Backup and Retention schedule: [Backup Policy](#) | Subscription Name: **741221e5-58fb-4b40-a9b0-a7a9374cd214** | Latest Recovery Point: **6/12/2018, 6:00:17 AM**

Last Backup Status: **Success** | Next Scheduled Backup: **6/12/2018, 5:30:00 PM** | Oldest Recovery Point: **6/7/2018, 1:47:36 PM** | Update Information: **Up To Date**

Jobs
Success > 9 | Failed > 1 | Warning > 1 | In Progress > 0

Recovery Points
Files and Folders > 7 | System State > 1

Recent Jobs

Jobs	Start Time
Backup of E:\ : Job completed.	6/12/2018, 6:00:17 AM
Backup of E:\ : Job completed.	6/11/2018, 7:39:41 AM

Protected Items

Backup Now | Stop Backup | Modify Backup Schedule | Refresh | Delete backup data

Name	Protection Status	Latest Backup Status	Latest Recovery Point	Last Backup Duration
E\	Valid	Success	6/12/2018, 6:00:17 AM	00:00:50
System State	Valid	Success	6/11/2018, 6:48:25 AM	00:24:23

We need better security solutions

"How do we stay ahead of emerging security exploits?"

"How do I keep virtualized workloads safe?"



IT

\$141*

Average amount paid in USD for each lost or stolen record containing sensitive or confidential information

\$3.62 million*

Average total cost of a data breach

*Cost of data breach study: Global analysis, 2017, Ponemon Institute



Windows Server 2019

Advanced multi-layer security

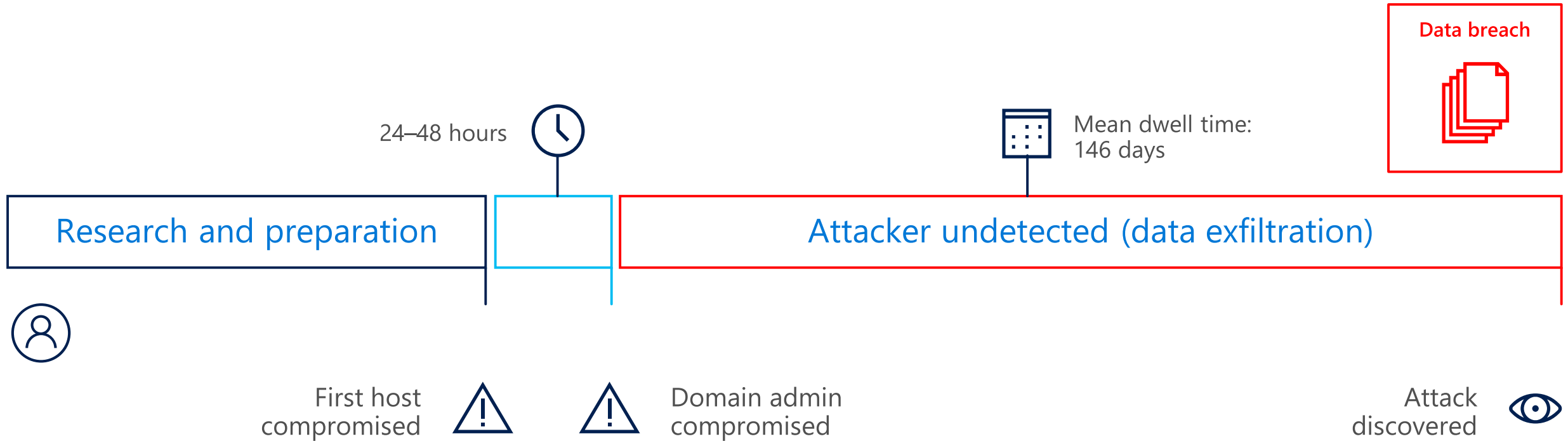
Manage privileged identities

Secure the operating system

Secure virtualization fabric

Attack timeline

Average attack timeline: entry—breach





Enhanced security capabilities

Protect your datacenter with Windows Server 2019



Manage privileged identities

Give administrators and system components just enough access privilege with Just Enough Administration



Secure the operating system

Discover and address security breaches with Windows Defender Advanced Threat Protection

Help prevent host intrusion with Windows Defender Exploit Guard



Secure virtualization fabric

Run Linux inside a protected virtual machine with Shielded VMs for Linux

Protect network traffic with the flip of a switch with Encrypted Subnets

We need Dev and IT to work together

"How do I create applications fast without worrying about the production environment?"

"How can I make sure my new apps run as expected on production servers?"

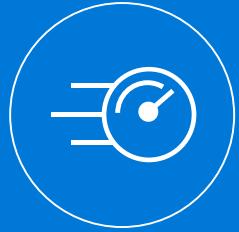


Developers

How do I manage servers and maintain compliance when we are continuously deploying new code?"



IT



Windows Server 2019

Faster innovation for applications

Improved container support

Improved Linux support

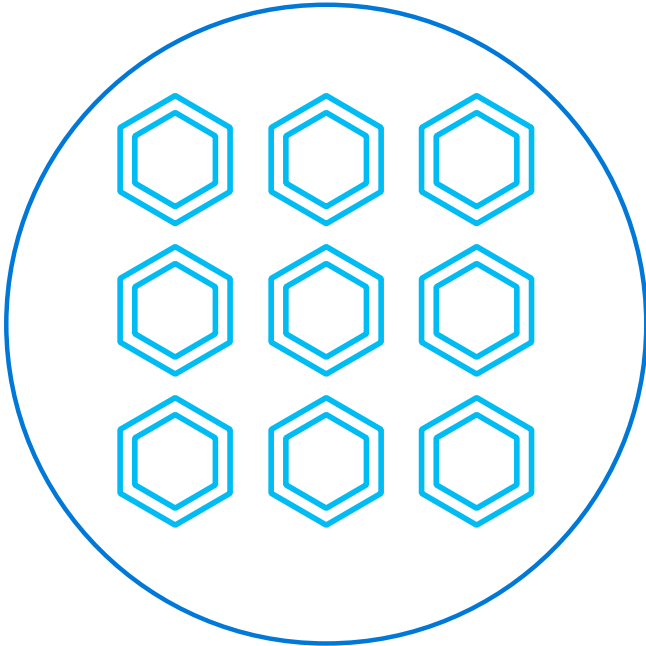


Containers bring Dev and Ops together

Empower developers to create innovative applications fast

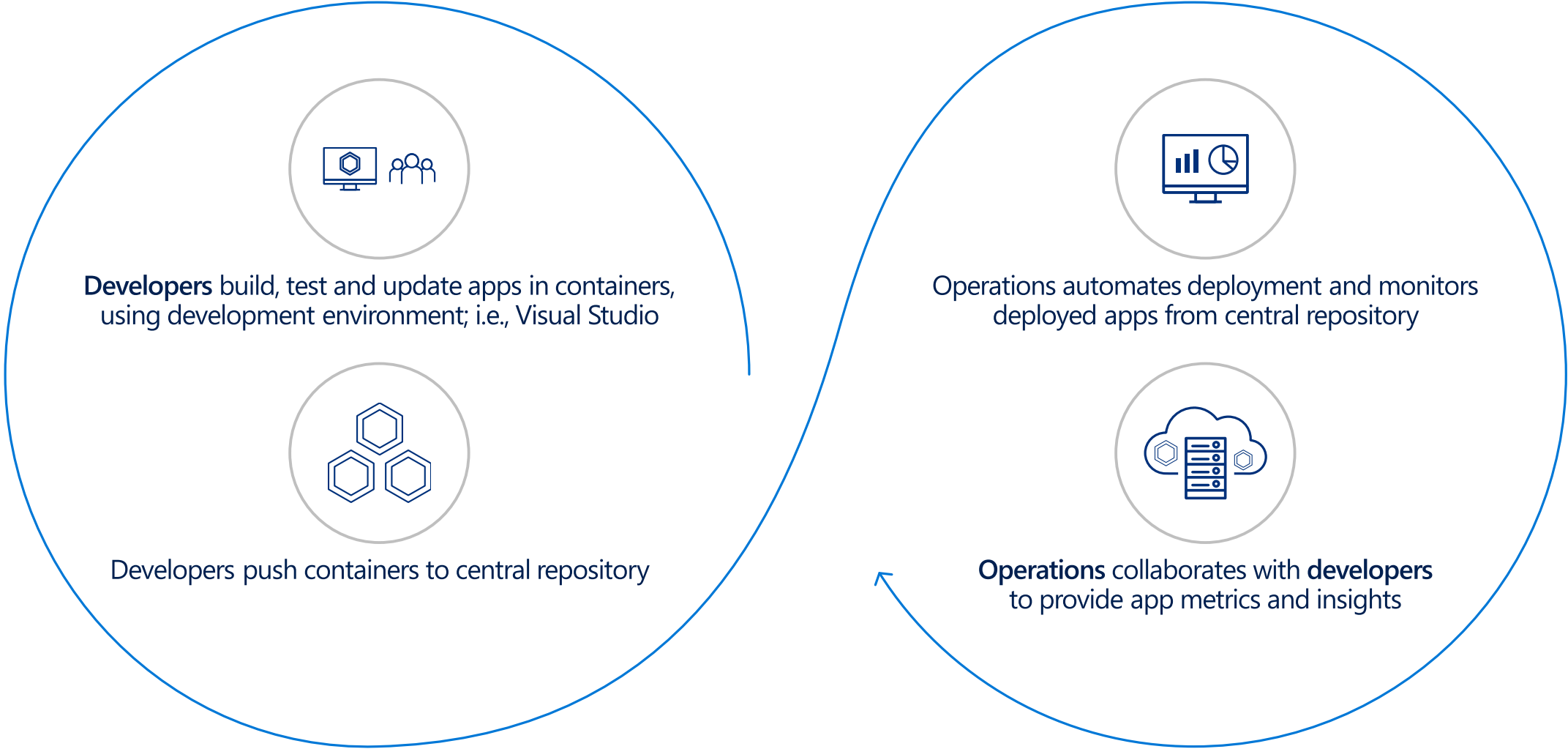


...without disrupting IT's ability to manage servers and maintain control





Containers are central to DevOps collaboration





Faster innovation for applications

Enable developers and IT pros to build and refactor apps faster

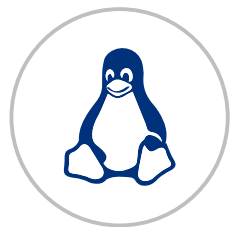


Improved container support

Kubernetes support—improvements to compute, storage and networking components of a Kubernetes cluster

Red Hat open-shift container platform

Optimized images for Server Core and Nano Server



Improved Linux support

Linux containers on Windows host

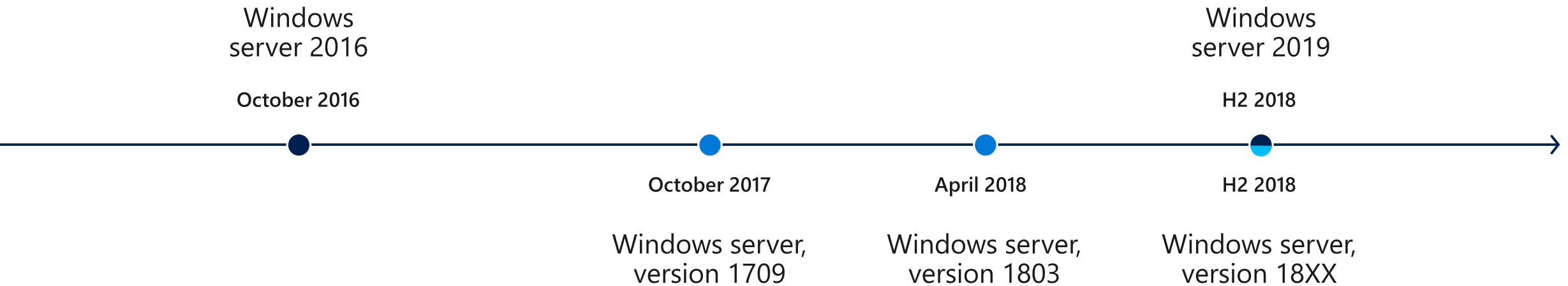
Support for tools such as open SSH, Curl, Tar

Windows Subsystem for Linux



This is how you get the fast innovation

Long-term servicing channel



Semi-annual channel



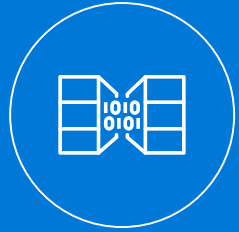
We need better datacenter scale and speed

"How do I simplify my ability to expand and scale operations?"

"How do I get a single management view across compute, storage and networking?"



IT



Windows Server 2019

Unprecedented hyper-converged infrastructure

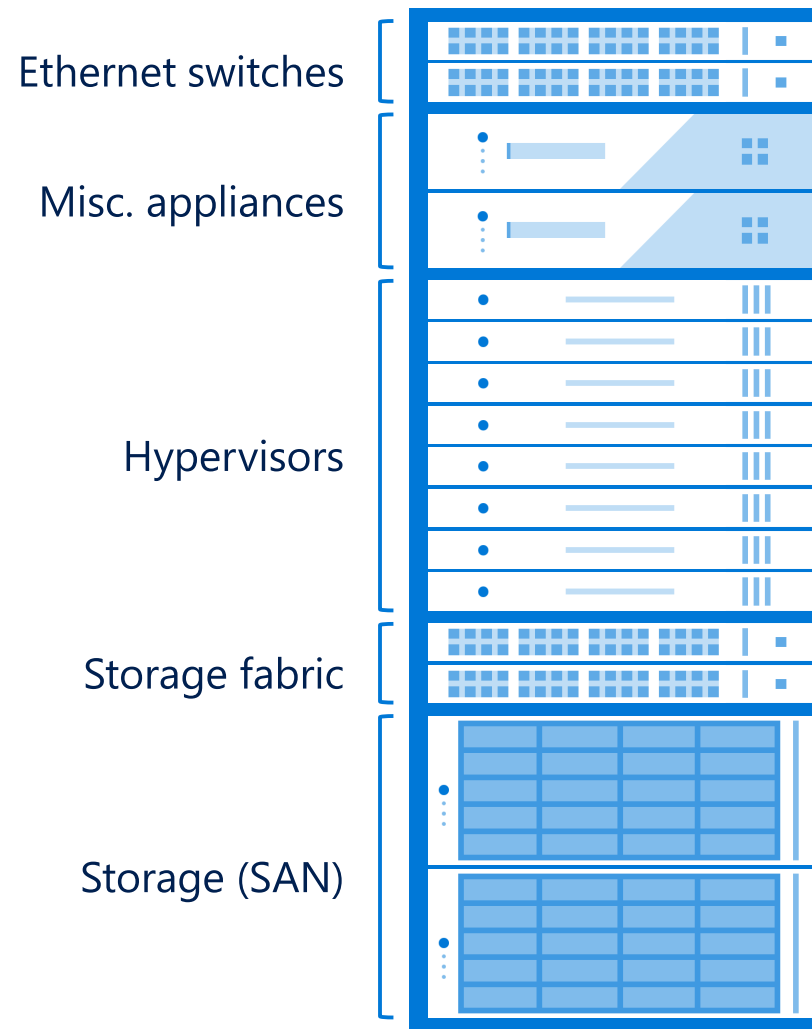
Industry leading performance

Microsoft-validated solutions ready to go

Simplified management

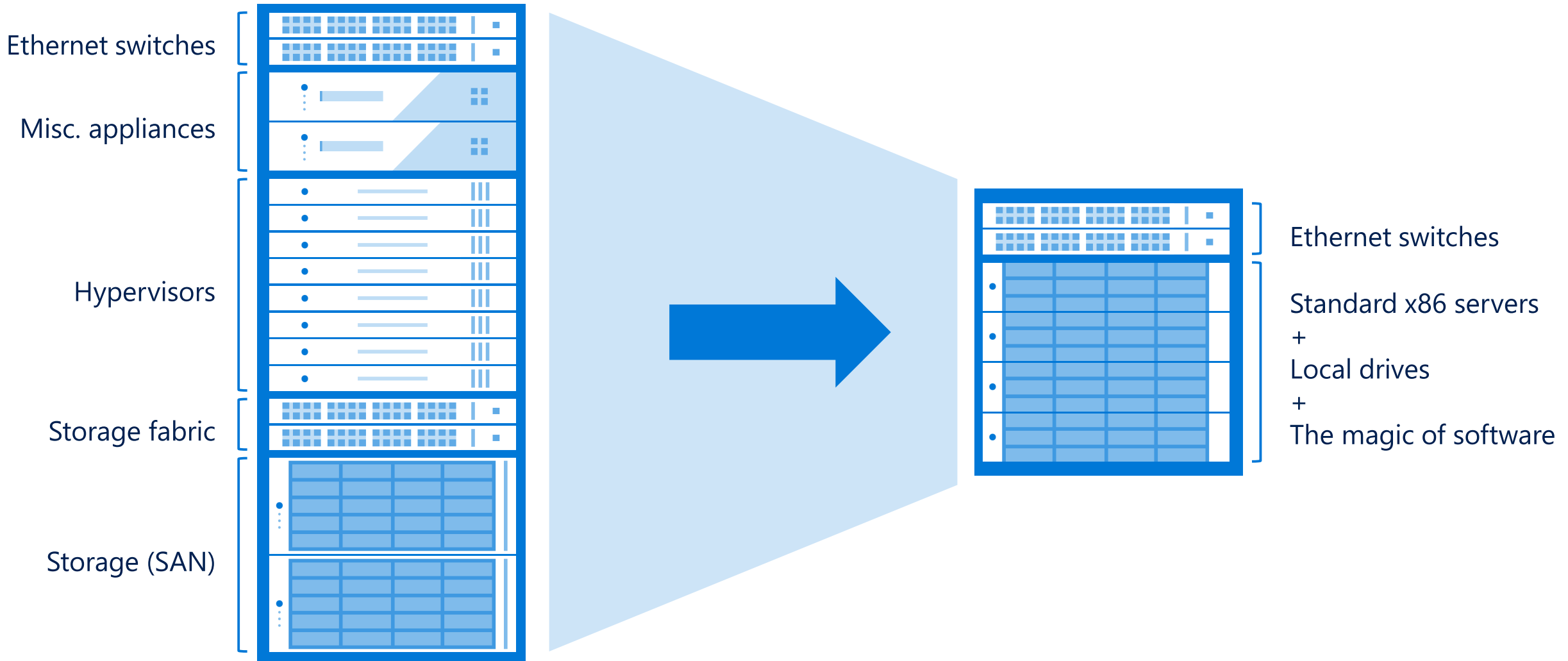


Traditional three-tier infrastructure



Older three-tier infrastructure

Hyper-converged infrastructure (HCI)





Evolution of Windows Server hyper-converged

Hyper-V



Introduced in 2008,
ten years ago!

Foundation of our
hyperscale Azure cloud

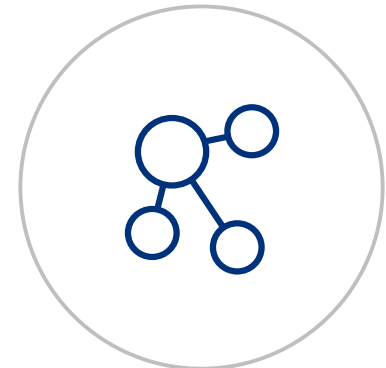
Storage Spaces Direct



New in Windows
server 2016

In development for 5+
years at Microsoft
Foundation of Azure Stack

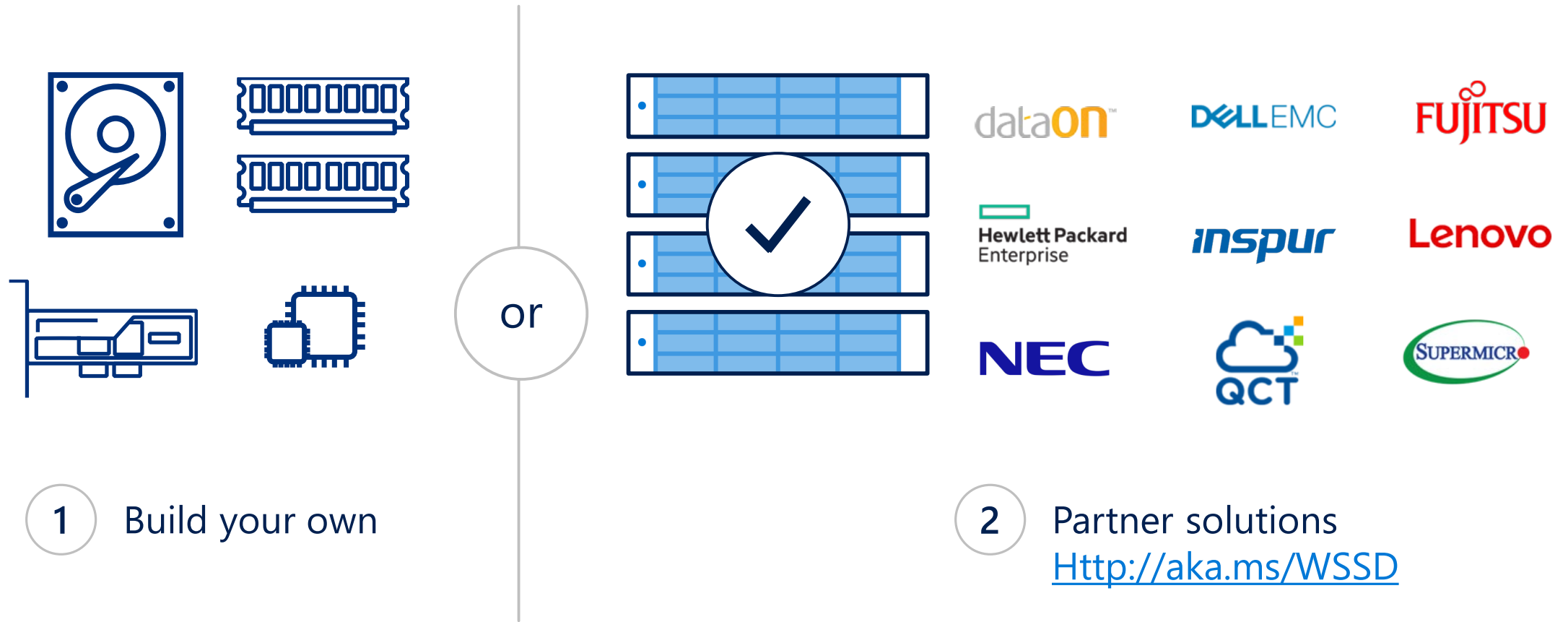
Software-defined Networking



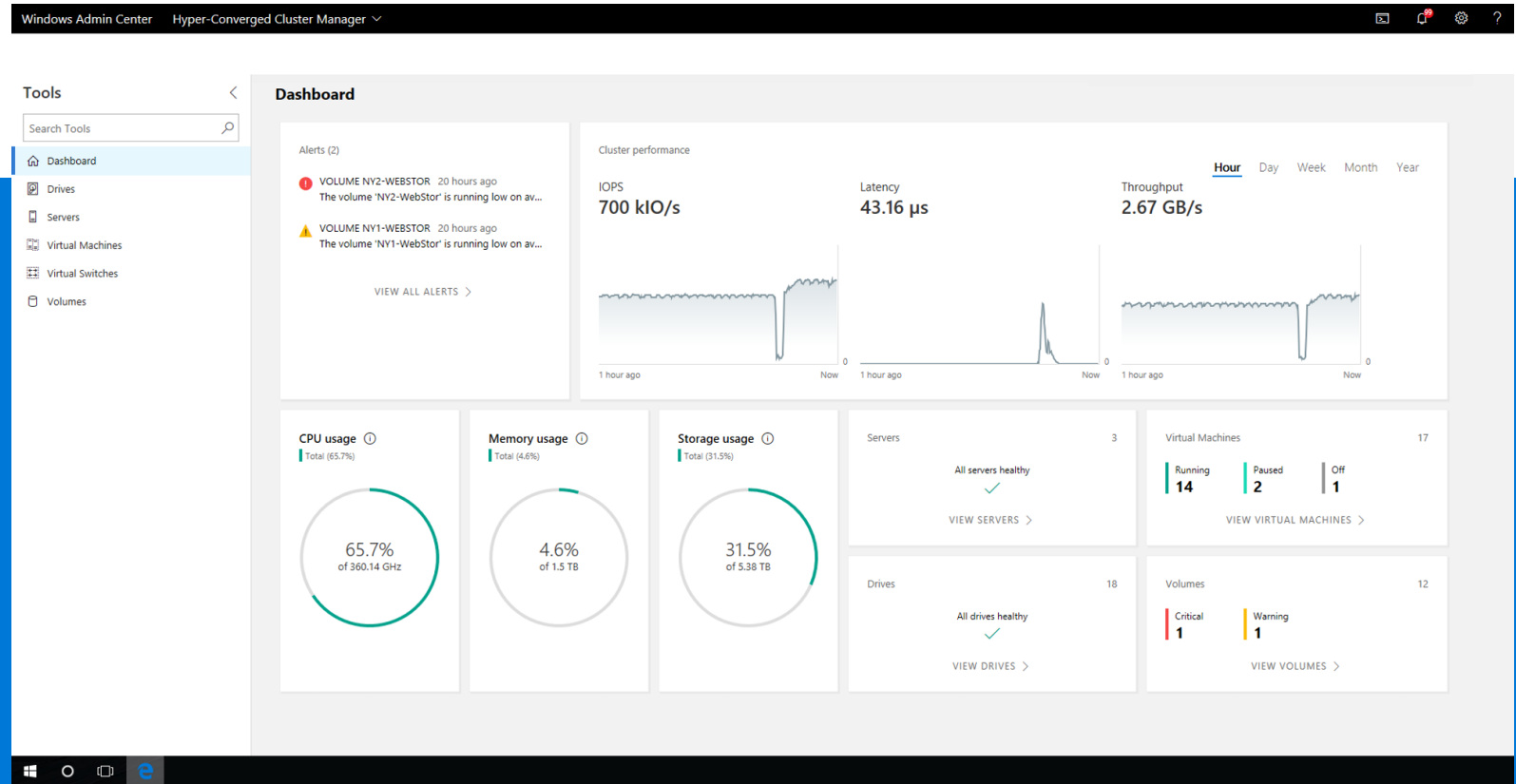
New in Windows
server 2016

Inspired by Azure

Accelerate your HCI deployment with WSSD



Simplified HCI management



Windows admin center

Manage Windows Server HCI solutions for Windows Server 2016 or 2019

Hybrid Cloud integration built-in

Extensible to partners

Fine-tune solution performance



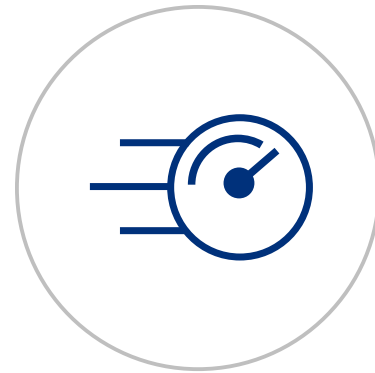
Windows Server 2019



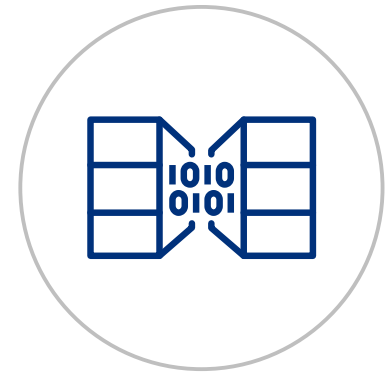
Unique hybrid capabilities with Azure



Advanced multi-layer security



Faster innovation for applications



Unprecedented hyper-converged infrastructure

What you can start doing today

Getting cloud ready

Protecting Windows Server 2008
and R2 workloads

Adding up the savings with Azure
hybrid benefit





Options to get cloud ready



Transform with Azure



On-premises

Rehost

Migrate Windows server 2008 and 2008 R2 workloads to Azure VM

Refactor, rearchitect, or rebuild

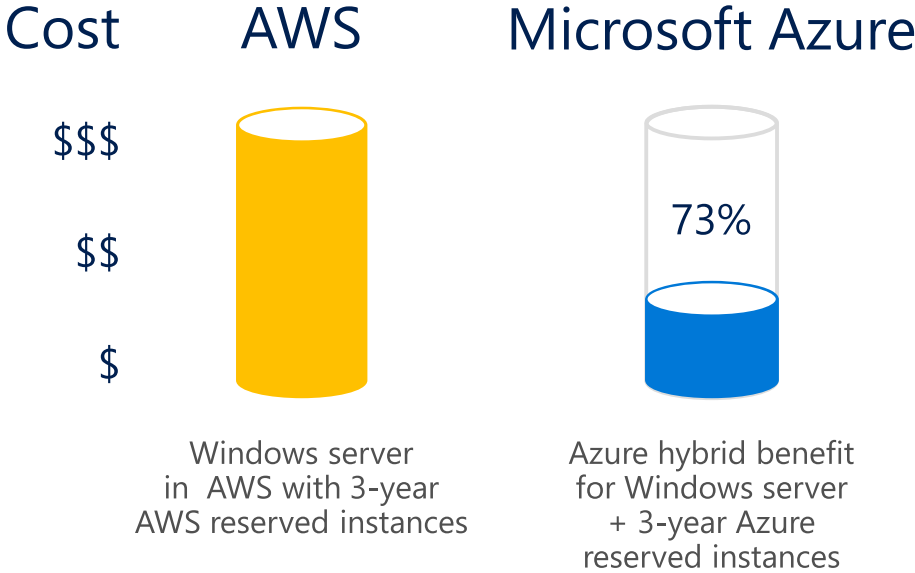
Innovate with Windows server containers and Azure services

Upgrade

Upgrade to Windows server 2019 and get cloud and DevOps ready



Use existing licenses to save in Azure with Azure hybrid benefit



Maximum savings only in Azure

- ✓ Azure is the most cost-effective cloud for Windows server
- ✓ Maximize your investment in Microsoft server software

Disclaimers

- The 73% saving is based on the combination of Windows Server Azure hybrid benefit and 3-year Azure reserved instance. The cost does not include software assurance cost
- Sample annual cost comparison of two D2V3 Windows Server VMs. Savings based two D2V3 VMs in US west 2 region running 744 hours/month for 12 months; base compute rate at SUSE Linux enterprise rate for US west 2. Azure pricing as of 04/24/2018. AWS pricing as of 04/24/2018. Price subject to change. Actual savings may vary based on location, instance type or usage

Options to manage end of support for 2008 and 2008 R2 workloads



Transform with Azure

Migrate applications to Azure VMs

Get 3 years of extended security updates for Windows Server 2008 and 2008 R2 at no additional charge

Migrate data to Azure managed instances or VMs

Azure managed Instances offers a version-free option

Azure virtual machines include 3 more years of extended security updates for SQL server 2008 or 2008 R2 at no additional charge

Modernize when ready

Upgrade in Azure when ready

Or transform apps and data with Azure services



Upgrade on-premises

Upgrade to latest version

Windows Server 2016 or 2019
SQL Server 2016 or 2017

Can't meet the deadline?

Buy extended security updates to get 3 more years of security updates for Windows Server and SQL server 2008 or 2008 R2

Upgrade when ready

or

Get started

Download Windows
server 2019 preview

<http://aka.ms/WS2019Preview>

Download Windows
admin center

<http://aka.ms/WindowsAdminCenter>

Check out the
WSSD program

<http://aka.ms/WSSD>



Appendix



Windows Server 2016 customer stories

Create



Acuutech®

Hosters

CORONA

ModusLink



brightsolid
Technical Innovation with Personal Service

Youth VILLAGES.
The force for families

rackspace®



BINARY
CONFIDENCE



malaysia airlines

Rakuten

tyco

यूपी 100 UP
आपकी सेवा में सदैव तत्पर

Alaska
AIRLINES



Danske
Fragtmand

Energy company electrifies pace of innovation and expansion

Ambit Energy provides electricity and natural-gas services in deregulated markets around the world. It uses technology as a competitive differentiator, employing microservices, DevOps, and continuous deployment to speed software development. To stand up infrastructure just as quickly, Ambit uses Microsoft Azure services such as Azure Container Service, together with infrastructure as code and open source technologies, to completely automate infrastructure provisioning. By implementing Azure, Ambit can move dramatically faster to enhance its services and enter new markets. Infrastructure redundancy is flexible and worry-free. And costs are 22 percent lower, which helps Ambit compete in the crowded electricity market. Because Ambit's cloud journey is gradual, it appreciates the fact that Azure is a great hybrid-cloud enabler, connecting easily to Ambit datacenters.



Products and Services

- Microsoft Azure
 - Azure Container Service
- More in speaker notes

Organization Size

1,000 employees

Industry

Power & Utilities

Country

United States

Partner

Business Need

Optimize operational efficiency





Mining company extracts more value from business processes with digital transformation

Canada's Capstone Mining wanted to share information more efficiently, reliably, and affordably across remote locations. Capstone digitally transformed its business environment by moving from on-premises datacenters to the cloud with Microsoft Office 365 and the Microsoft Azure platform. As a result, the company has access to data and mission-critical applications anytime, anywhere. And by eliminating on-premises infrastructure, Capstone is on track to save US\$6 million over three years. Most importantly, employees have more time for activities that add more business value.



Products and Services

- Microsoft Azure
- Azure Site Recovery
- Azure Virtual Machines
- Office 365

Organization Size

744 employees

Industry

Process Manufacturing & Resources

Country

Canada

Partner

Softlanding

Business Need

Business Agility





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

- Microsoft Azure
- Azure Service Fabric
- Windows Server 2016
- Windows Server Containers

Organization Size

15,600 employees

Industry

Travel and transportation

Country

United States





Altair Engineering democratizes HPC access using the cloud

Altair Engineering makes computer-aided engineering software used to create stronger, better, more innovative products, from bicycles to space shuttles. To make its HyperWorks and Inspire applications available to more engineers, Altair delivers them through its Unlimited platform running in Microsoft Azure. In Azure, these solutions have access to affordable high-performance computing (HPC) resources, which enables low-cost collaboration among large engineering teams and opens up new markets for Altair.



Products and Services

- Microsoft Azure
- Microsoft Azure Container Service
- Microsoft Azure Virtual Machines

Organization Size

2,000 Employees

Industry

Manufacturing

Country

United States





Tencent Games uses Azure Service Fabric and Windows Server 2016 with containers to move its PC gaming platform to the cloud

Azure Service Fabric delivers a microservices platform that empowers developers and organizations to develop and manage cloud/server applications composed of microservices. Unlike the traditional client-server mode, each service manages and stores its own state, and scales the code and states at the same time to serve elastic requirements. Tencent Games can also create, deploy, and maintain new game applications that start small and grow to massive scale with hundreds or thousands of machines.



Products and Services

- Azure Service Fabric
- Windows Server 2016

Organization Size

10,000+ employees

Industry

Professional Services

Country

China





Allscripts scales through Azure and uses Azure Hybrid Benefit to save up to 82 percent on costs.

“Being able to provide access to datacenters worldwide as well as the various technology sets to allow us to grow as a technology company was the primary driver for us to head to Azure.

“Azure Hybrid Benefit is very important to us for controlling our costs for our long-running 24/7/365 applications. Through the use of Azure Hybrid Benefit, we will be able to reduce our overall costs by up to 82%.”

Jeff Brady
Senior Program Manager, Allscripts



Products and Services

HockeyApp
.NET Framework
SQL Server
Visual Studio Team Services
Xamarin for Visual Studio
Xamarin Test Cloud

Organization Size

7,500

Industry

Health

Country

United States

Business Need

App Development
Environment in the Cloud



SQL Server 2019를 사용하는 10가지 이유

SQL Server 2019는 업계에서 가장 뛰어난 성능과 보안 기능을 제공합니다. 원하는 언어와 플랫폼을 선택할 수 있고, 정형 데이터와 비정형 데이터를 모두 활용합니다.

1. 빅 데이터를 활용한다.



SQL Server, Spark, HDFS로 구성된 빅 데이터 클러스터에서 확장 가능한 컴퓨팅과 스토리지를 사용함. 확장된 데이터 마트에서 데이터 캐싱 사용

2. 워크로드에서 AI를 활용한다.



SQL Server ML Services 또는 Spark ML에서 Azure Data Studio 노트북으로 모델을 학습하고 운영하는 완벽한 AI 플랫폼을 제공함

3. 데이터의 이동이 불필요하다.



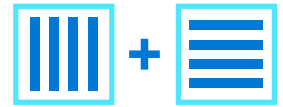
데이터의 이동이나 복제 없이, 데이터 가상화로 정형/비정형 데이터의 쿼리를 처리함

4. 시각적 데이터로 파악하고 소통한다.



SQL Server BI 도구와 Power BI Report Server를 사용하여 시각적 데이터 탐색과 인터랙티브한 분석을 수행함

5. 운영 데이터를 실시간으로 분석한다.



HTAP를 사용한 운영 데이터 분석을 위해 인메모리 기술을 사용함. 지속성 메모리를 통해 동시성과 확장성이 향상됨

6. SQL Server의 규모를 자동으로 조정한다.



지능형 쿼리 처리 기능이 쿼리 규모를 확장하고 자동 계획 수정이 성능 문제를 해결함

7. 데이터베이스 유지관리 시간이 줄고 비즈니스 가동시간이 증가한다.



더 많은 온라인 인덱싱 작업으로 가동시간이 증가. Kubernetes를 사용한 컨테이너에서 Always On 가용성 그룹을 실행함

8. 보안 강화로 이동 중인 데이터를 보호한다.



SQL Server는 Always Encrypted 보안 영역에서 컴퓨팅 보호를 비롯한 보안 계층을 사용함

9. 정교한 리소스를 사용하여 규정 준수를 추적한다.



GDPR 및 취약성 평가 도구의 데이터 검색 및 분류 레이블 작업을 통해 규정 준수를 추적함

10. 선택과 유연성으로 최적화한다.



Windows, Linux, 컨테이너를 선택할 수 있도록 지원함. SQL Server에서 Java 코드를 실행하고 그래프 데이터를 저장하고 분석

➤ SQL Server Early Adoption Program에 참여하실 분은 신청하세요.

<https://aka.ms/eapsignup>