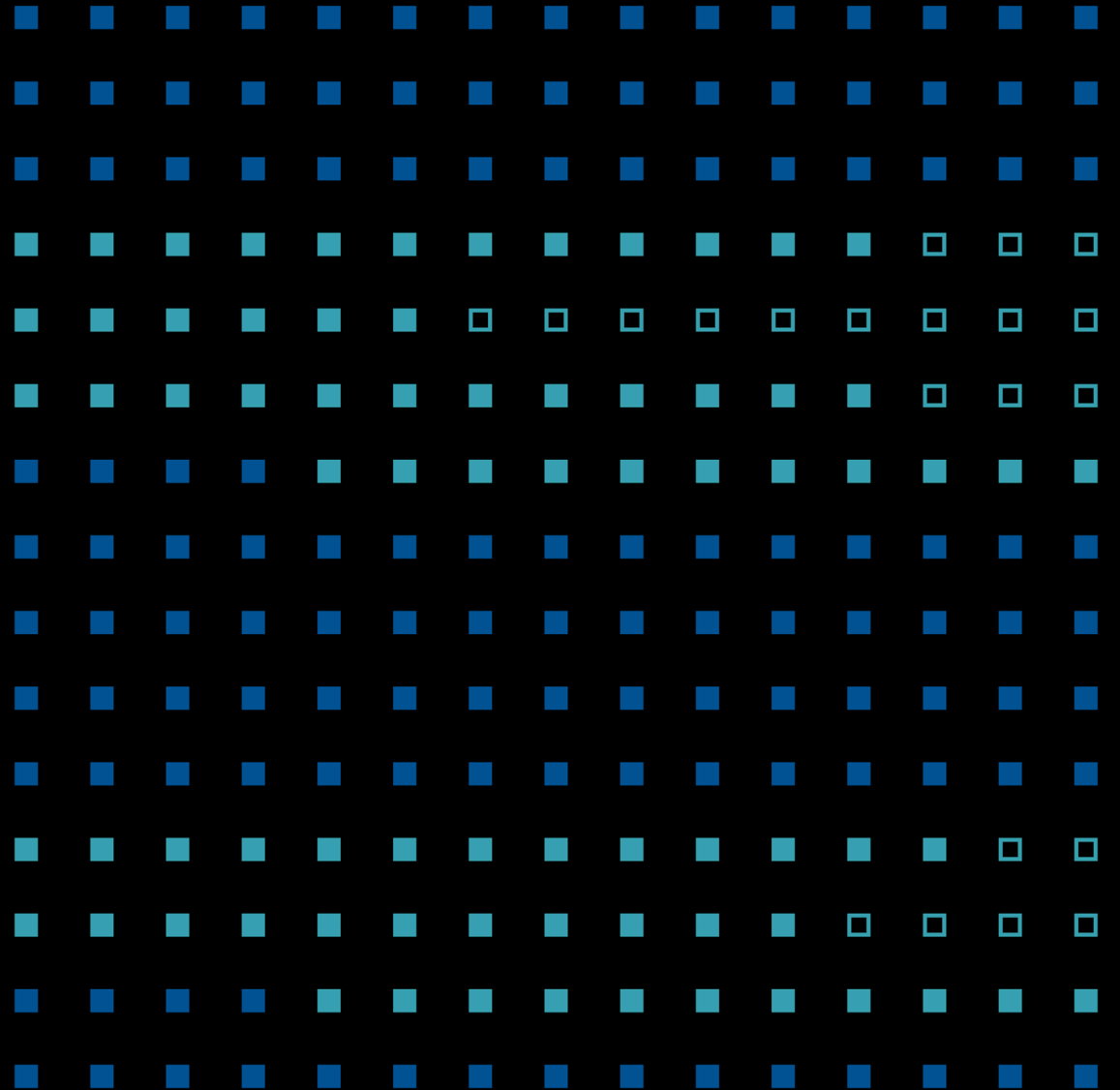


Azure Stack HCI

What is it and what is it used for?



Modernize datacenters with Azure Stack

Azure Stack HCI

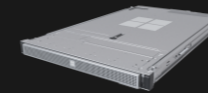
Hyperconverged solution



Native Azure Arc integration
Scalable virtualization and storage
AKS on Azure Stack HCI

Azure Stack Edge

Cloud-managed appliance



Compute, AI & IoT
at the Edge

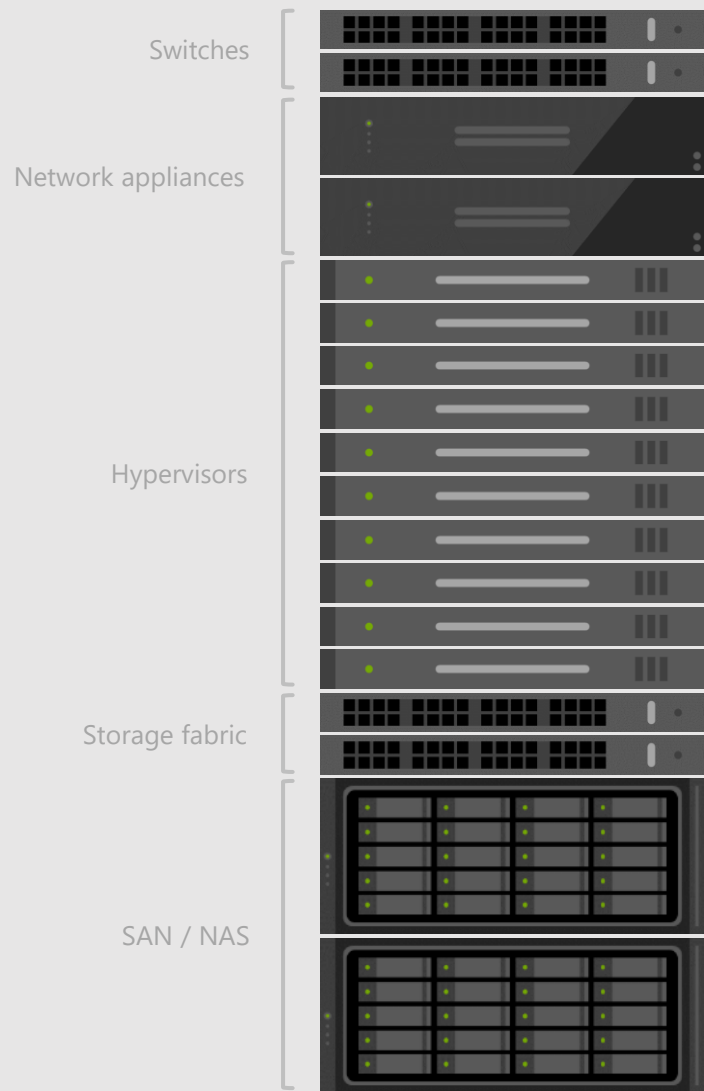
Azure Stack Hub

Cloud-native integrated system



Disconnected
scenarios

Before...



Legacy "three tier" infrastructure



...after



Hyperconverged infrastructure (HCI)

New and distinct product line



Azure Stack HCI



Windows Server

✓ Exciting roadmap of new releases

Innovation focused on being the **best infrastructure host**

Future of Hyper-V virtualization, software-defined storage and networking

Azure **subscription-based** model

Runs on **your hardware**

✓ Exciting roadmap of new releases

Innovation focused on being the **best guest** and **traditional server**

All other Windows Server roles, like IIS, File Services, DNS, DHCP, AD/DS ¹

Traditional licensing model

Runs **anywhere**



¹ Existing features like Hyper-V will not be removed unless deprecated (not planned).



Azure hybrid by design

Azure hybrid by design

Native integration with Azure Arc and Azure monitor

Connect to hybrid services like Azure security Center, Azure Backup, and Azure Site Recovery

Monitor and manage clusters at scale from Azure

Centrally manage from Azure Portal

Fleet management for hosts and VMs

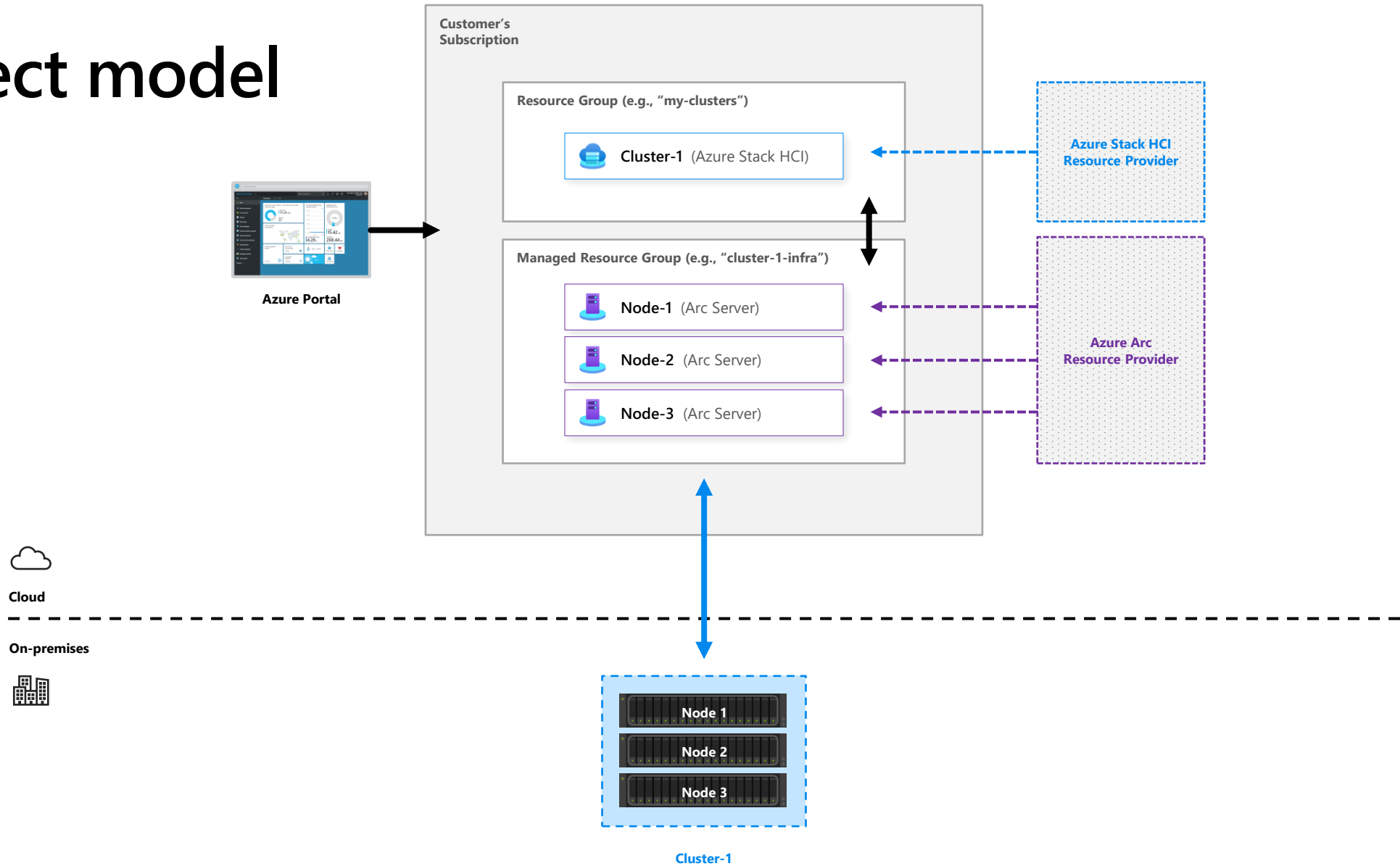
Always up to date HCI-as-a-service

Regular and consistent feature and security updates

Unified Azure billing

Leverage existing Azure support plan

Object model

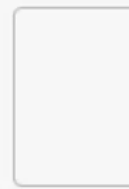
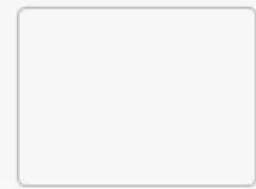
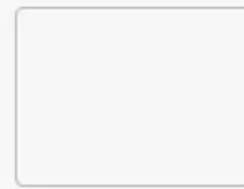
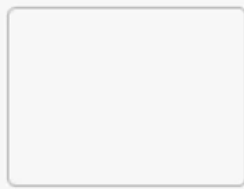
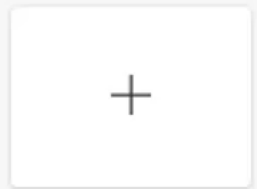
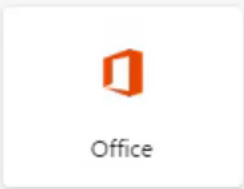




Search or enter web address



Search the web



Self-service VMs on Azure Stack HCI

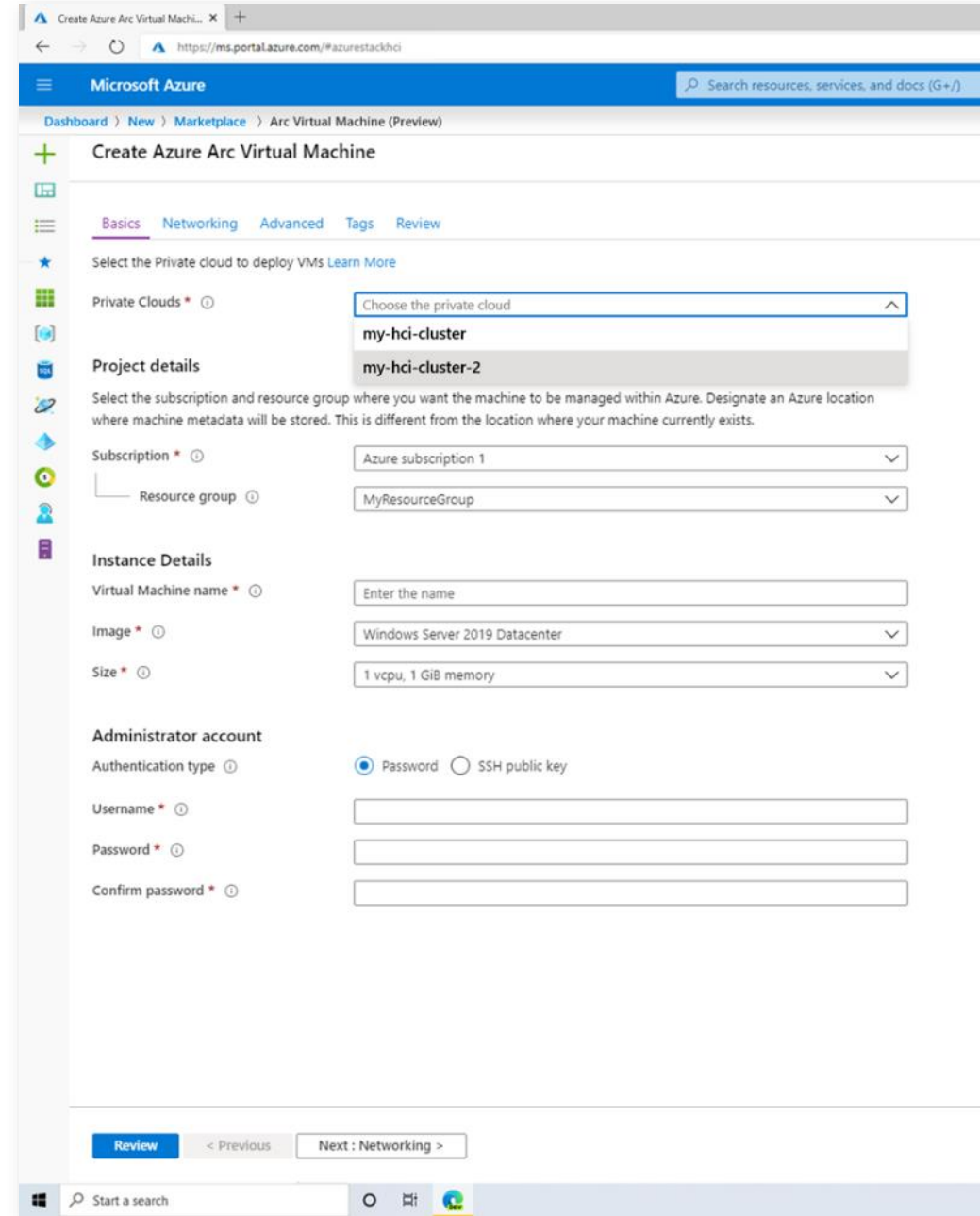
Consistent toolset with Azure Portal and Azure CLI

Delegate access to other Azure users in your Azure AD directory

They can self-provision virtual machines and virtual networks

Lightly-isolated “tenancy” abstraction from infrastructure

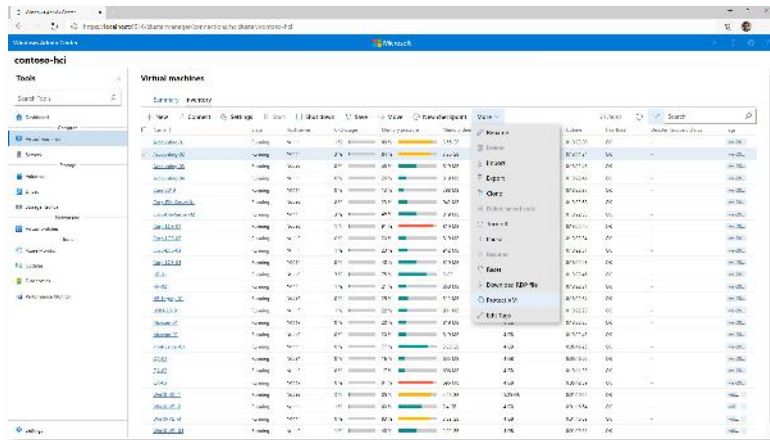
Disclaimer: Feature is under active development and subject to change.



Internet access hiccup? No problem

Admin Center (included)

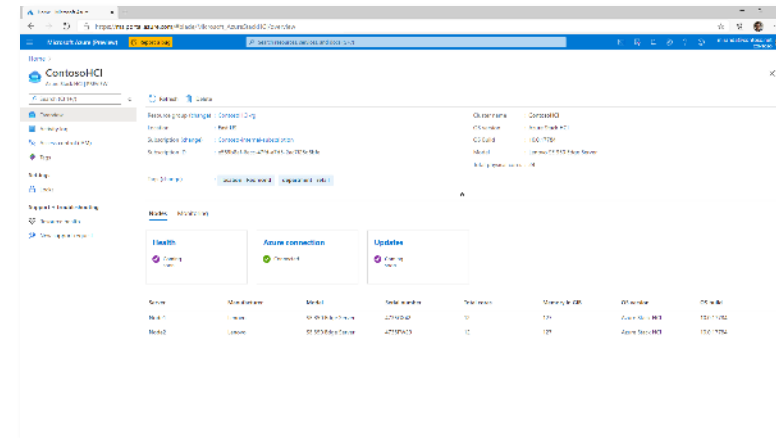
Edge-local, always available



- ✓ Initial set-up
- ✓ Manage infrastructure
- ✓ HW management extensions (*Firmware and driver updates*)
- ✓ Troubleshooting

Azure Portal (included)

Cloud-based, highly scalable



- ✓ Global visibility
- ✓ Monitoring and security services
- ✓ Request support
- ✓ Billing

← Complementary and consistent →



Enterprise scale & price-performance

Industry leading price-performance

Millions of IOPs and batch requests with Storage Spaces Direct

Optimized for SQL server workloads

Per core monthly subscription to scale up or down

Secure virtualization platform for Windows and Linux

Unlimited hosting of Linux VMs

Choice of licenses available for Windows VMs

Includes Extended Security Updates (ESU) for Windows Server 2008/R2

Built-in HA/DR

New simple Deployment GUI for clusters available through Windows Admin Center

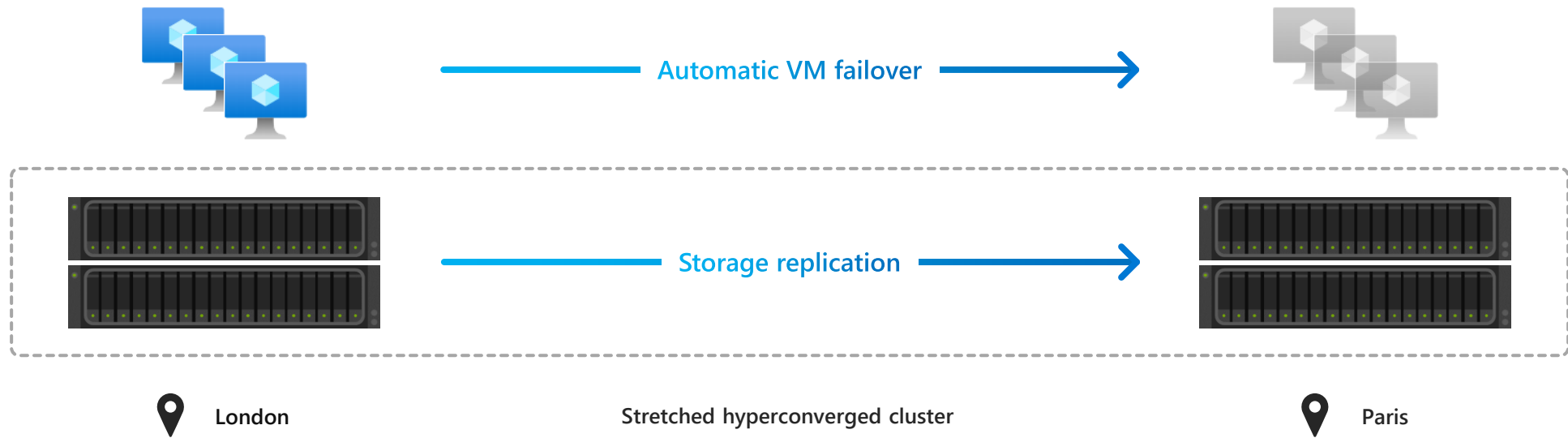
Stretch cluster: extend HCI cluster from a single site to two sites

Protect VMs with cloud backup

Native disaster recovery with stretch clustering

Span an Azure Stack HCI cluster across two rooms, two buildings, or two cities

Sync or async storage replication, optional encryption, site-local resiliency



Windows Admin Center | https://localhost:6516/clustermanager/connections/hcicluster/contoso-hci

contoso-hci

Virtual machines

Summary **Inventory**

+ New < Connect ⚙ Settings ▶ Start ☐ Shut down 📁 Save → Move ⌚ New checkpoint More ▾ 36 items 🔍 Search

Name ↑	State	Host server	CPU usage	Memory pressure	Memory demand	Assigned memory	Uptime	Heartbeat	Disaster Recovery status	Tags
Accounting-01	Running	Node1	1%	89%	3.56 GB	4 GB	0:13:23:00	OK	-	ws-20...
Accounting-02	Running	Node1	3%	84%	3.36 GB	4 GB	0:13:11:34	OK	-	ws-20...
Accounting-03	Running	Node2	0%	48%	819 MB	4 GB	0:13:22:46	OK	-	ws-20...
Accounting-04	Running	Node1	0%	20%	819 MB	4 GB	0:13:22:49	OK	-	ws-20...
Core-2019	Running	Node1	0%	13%	798 MB	6 GB	0:13:22:37	OK	-	ws-20...
Corp-File-Server-01	Running	Node2	0%	23%	942 MB	4 GB	0:13:22:58	OK	-	ws-20...
Corp-File-Server-02	Running	Node1	3%	48%	819 MB	4 GB	0:13:22:55	OK	-	ws-20...
Corp-LOB-01	Running	Node2	1%	91%	819 MB	4 GB	0:13:22:40	OK	-	ws-20...
Corp-LOB-02	Running	Node2	0%	20%	819 MB	4 GB	0:13:22:34	OK	-	ws-20...
Corp-LOB-03	Running	Node1	1%	23%	942 MB	4 GB	0:13:22:51	OK	-	ws-20...
Corp-LOB-04	Running	Node1	0%	48%	819 MB	4 GB	0:13:22:48	OK	-	ws-20...
HR-01	Running	Node2	3%	75%	3 GB	4 GB	0:13:22:46	OK	-	ws-20...
HR-02	Running	Node1	1%	21%	860 MB	4 GB	0:13:22:31	OK	-	ws-20...
HR-Legacy-01	Running	Node1	0%	25%	512 MB	2 GB	0:13:22:54	OK	-	ws-20...
LOB1-2019	Running	Node2	1%	22%	901 MB	4 GB	0:13:22:28	OK	-	ws-20...
Marcom-01	Running	Node2	0%	20%	819 MB	4 GB	0:13:22:25	OK	-	ws-20...
Marcom-02	Running	Node1	0%	20%	819 MB	4 GB	0:13:22:43	OK	-	ws-20...
Print-Server-01	Running	Node1	0%	77%	3.08 GB	4 GB	0:05:46:25	OK	-	ws-20...
QA-01	Running	Node1	0%	16%	655 MB	4 GB	0:05:46:00	OK	-	ws-20...
QA-02	Running	Node2	0%	17%	696 MB	4 GB	0:13:11:20	OK	-	ws-20...
QA-03	Running	Node2	0%	91%	696 MB	4 GB	0:05:42:59	OK	-	ws-20...
Win10-VDI-1	Running	Node2	3%	85%	4.46 GB	5.25 GB	0:01:19:54	OK	-	vdi...
Win10-VDI-2	Running	Node1	1%	60%	2.4 GB	4 GB	0:01:16:54	OK	-	vdi...
Win10-VDI-3	Running	Node1	0%	83%	3.32 GB	4 GB	0:01:16:32	OK	-	vdi...
Win10-VDI-04	Running	Node2	1%	48%	1.92 GB	4 GB	0:01:25:51	OK	-	vdi...



Familiar management and operations

Leverage existing skills

Built on foundation of Windows Server and Hyper-V

Familiar tools like Windows Server Admin Center and Azure Portal

Support for Active Directory, Group Policy Object

Work with popular tools

Work with familiar Microsoft tools such as System Center and Windows Admin Center

Compatible with popular third-party tools such as Veeam, CommVault, Solarwinds etc.

Benefit from automation

Management tasks are completely scriptable using popular, cross-platform Windows PowerShell framework



Choice of deployment options

Choice of Validated Nodes or Integrated Systems

Validated Nodes based on standardized reference architecture

Available Integrated Systems for fastest time-to-value: pre-installed software and integrated drivers and firmware

Extensive choices of OEM vendors

Choose your preferred vendor for local support and delivery

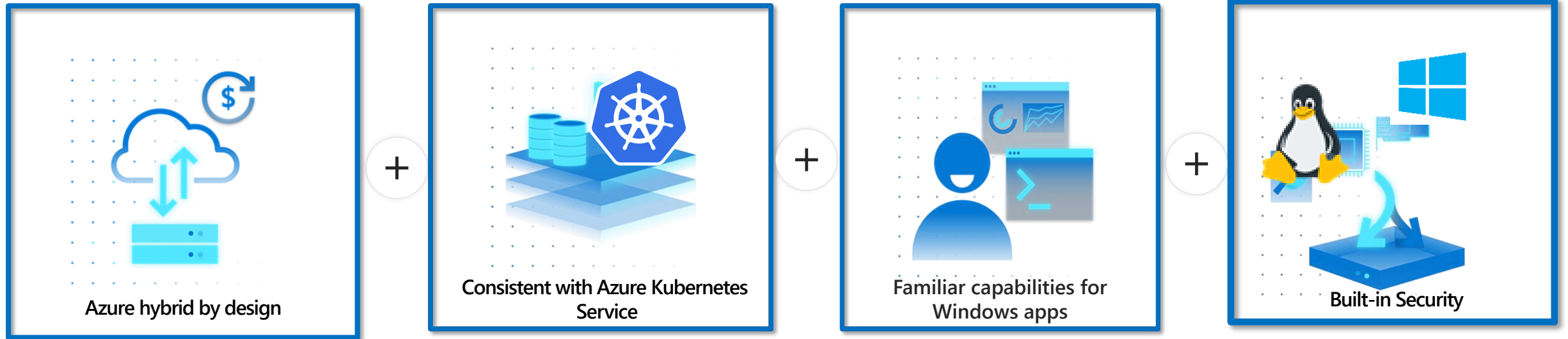
Flexible sizing available from small to rack class options

Use existing hardware

Reuse your existing hardware that matches Validated Node requirements

What is AKS on Azure Stack HCI

Familiar Kubernetes application platform available on Azure Stack HCI



Azure Connected

Built-in Azure Arc capability

Always Up to Date like Azure

Single" step installation and update of a fully conformant Kubernetes cluster

AKS consistent Kubernetes cluster management

Familiar Azure experience

Differentiated container solution for Windows host

Local administration with Windows Admin Center

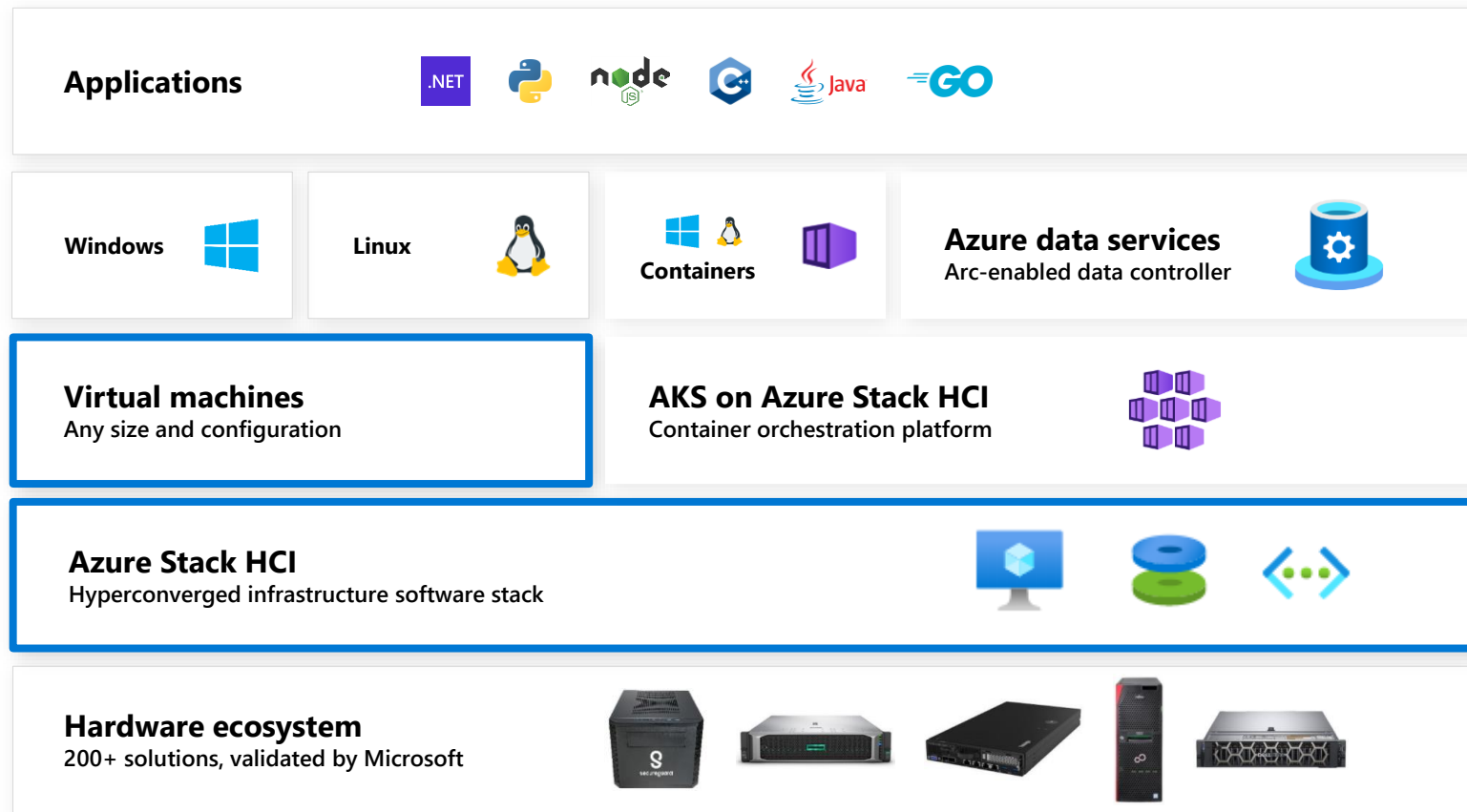
Built-in support for Windows and Linux

Secure and Trusted Platform

Single and consistent Identity

Secure and resilient infrastructure

Azure Stack HCI hybrid management



Azure Arc
Cloud management

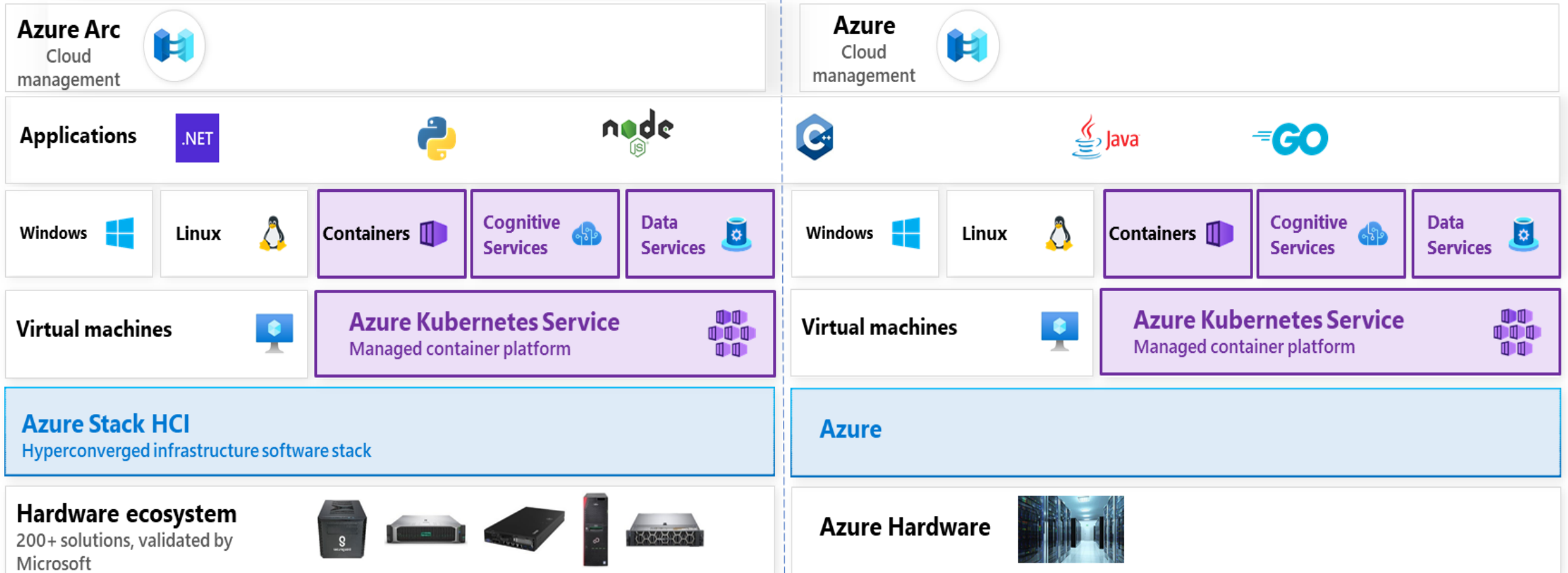


- VM Self-Service
- Azure Automanage Best Practices
- Azure Monitor Workbooks
- Monitoring Visualizations, Alerts
- Extensions Management
- Every Node Arc Enabled



Admin Center
Edge-local management

Azure Hybrid Consistency

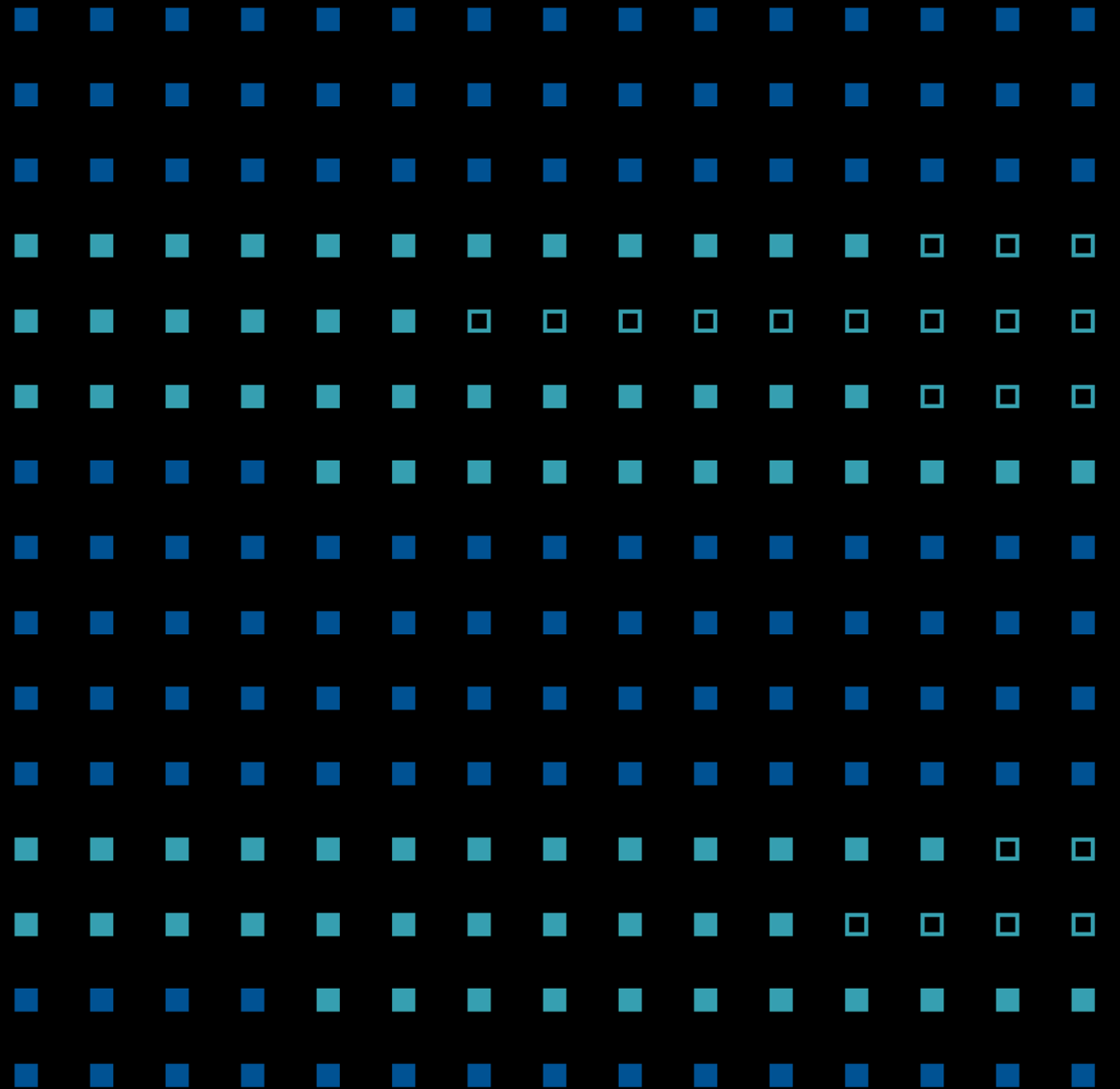


← Azure Stack HCI in Private Data Center →

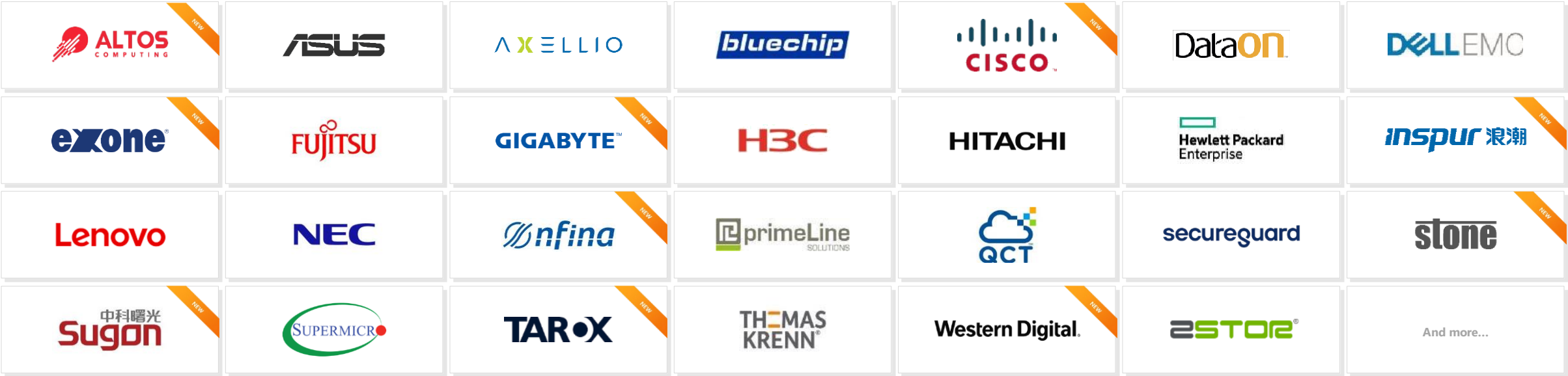
← Azure →

← Hybrid Azure →

Form Factors



Choose hardware from your preferred vendor at [Azure.com/HCI](https://azure.com/HCI)



200+ solutions

25+ partners

Solutions catalog at [Azure.com/HCI](https://azure.com/HCI)





Azure Stack HCI Catalog Help me choose

Showing 1-12 of 72 platforms with 179 solutions

Search Sort By

Refine results

- ^ Integrated System
 - Integrated System
 - Validated Node
- ^ Product optimized for
 - Branch office and edge
 - Virtual desktop infrastructure
 - Microsoft SQL Server
 - Trusted enterprise virtualization
 - Tightly integrated Kubernetes
- ^ Manufacturer
- ^ Storage
- ^ Regional Availability

<input type="checkbox"/> Compare	<input type="checkbox"/> Compare	<input type="checkbox"/> Compare	<input type="checkbox"/> Compare
			
Lenovo ThinkAgile MX Series Integrated Systems Lenovo CPU: 16 to 56 cores RAM: 64GB to 3TB <i>9 different solutions</i> Configure >	AX-740xd Dell Technologies CPU: 16 to 48 cores RAM: 96GB to 2TB <i>6 different solutions</i> Configure >	AX-640 Dell Technologies CPU: 16 to 48 cores RAM: 96GB to 2TB <i>5 different solutions</i> Configure >	Lenovo ThinkAgile MX1000 Series Integrated Systems CPU: 8 to 16 cores RAM: 64GB to 256GB <i>4 different solutions</i> Configure >
<input type="checkbox"/> Compare	<input type="checkbox"/> Compare	<input type="checkbox"/> Compare	<input type="checkbox"/> Compare

Multiple Form Factors from various vendors for any environment



ROBO

Tower form factor-for no rack environments

Edge Compute Scenarios

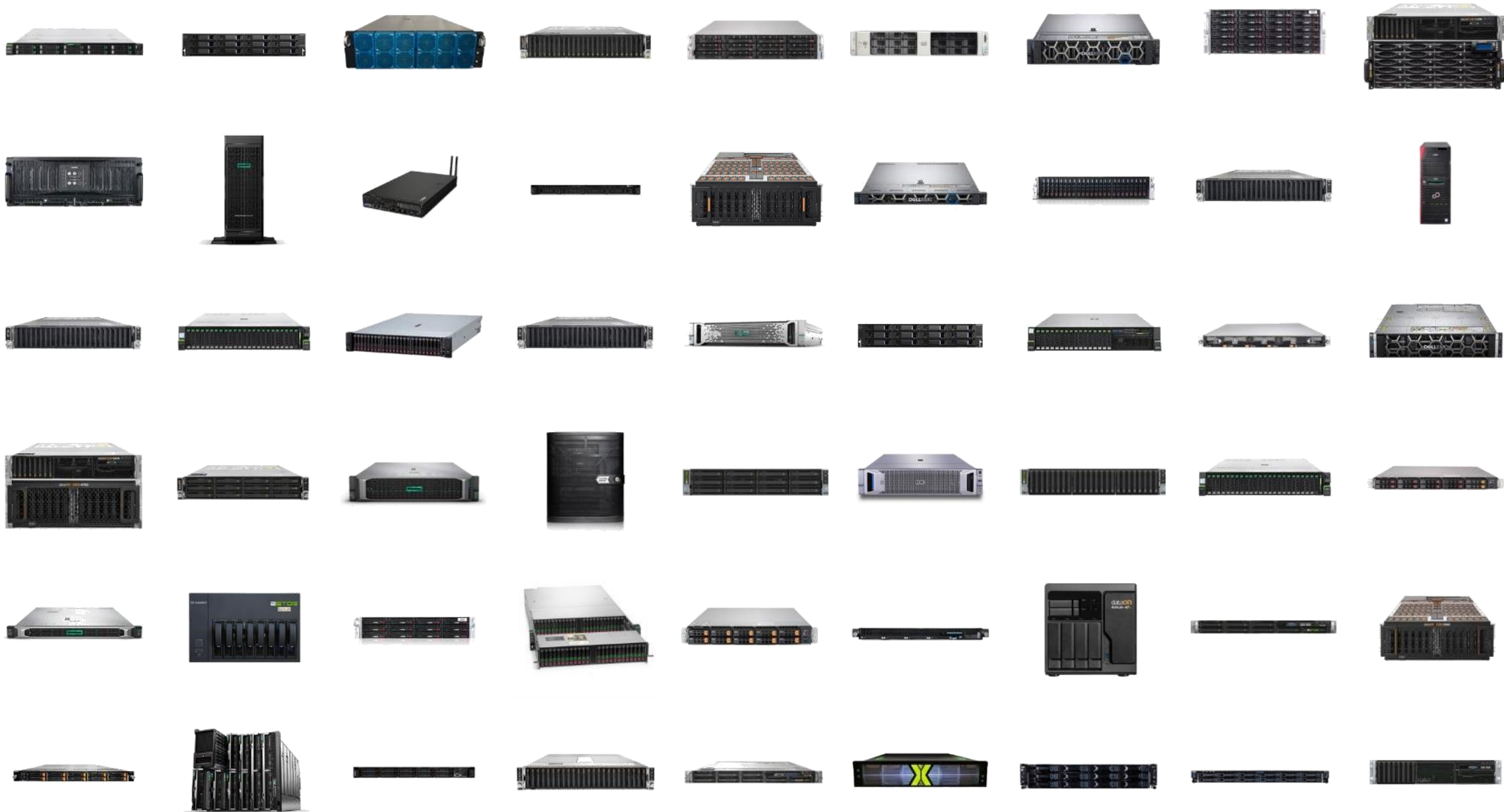
Super small footprint for edge scenarios-can be ruggedized

Datacenter Modernization

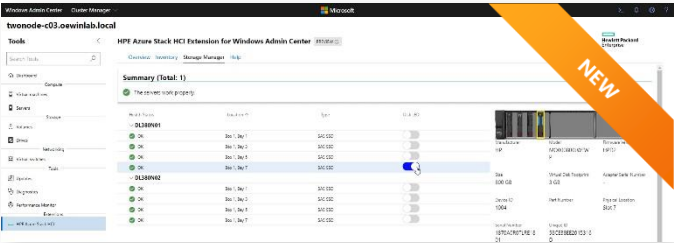
Industry rack mounted servers in various height-for datacenter modernization

Workload Flexibility

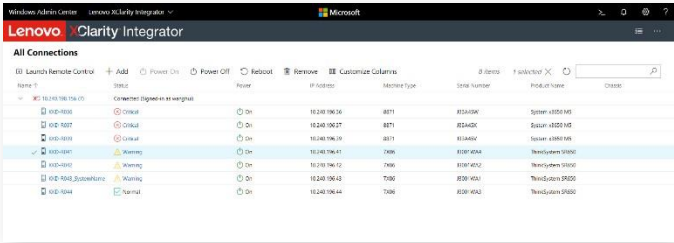
Composable architecture and blade server for ultimate in provisioning and workloads flexibility



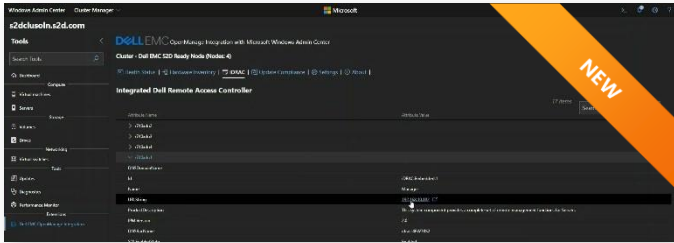
Management extensions available from major vendors



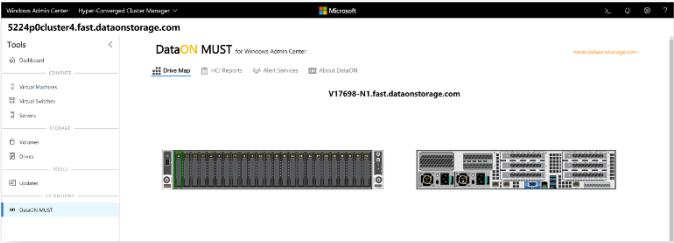
 **Hewlett Packard Enterprise**



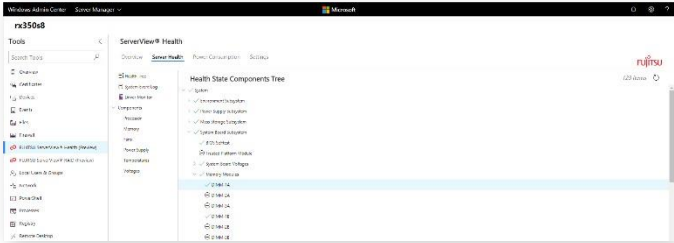
Lenovo



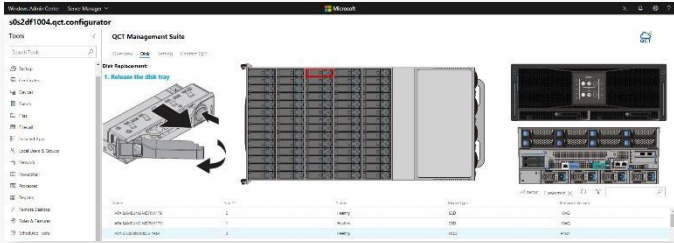
DELL EMC



dataON™



FUJITSU



QCT™
Quanta Cloud Technology

Add servers
to the cluster



Add drives
into existing servers

Scale with your needs

Scale up, scale out

Up to 16 servers per cluster

Up to 4,000 TB storage capacity per cluster

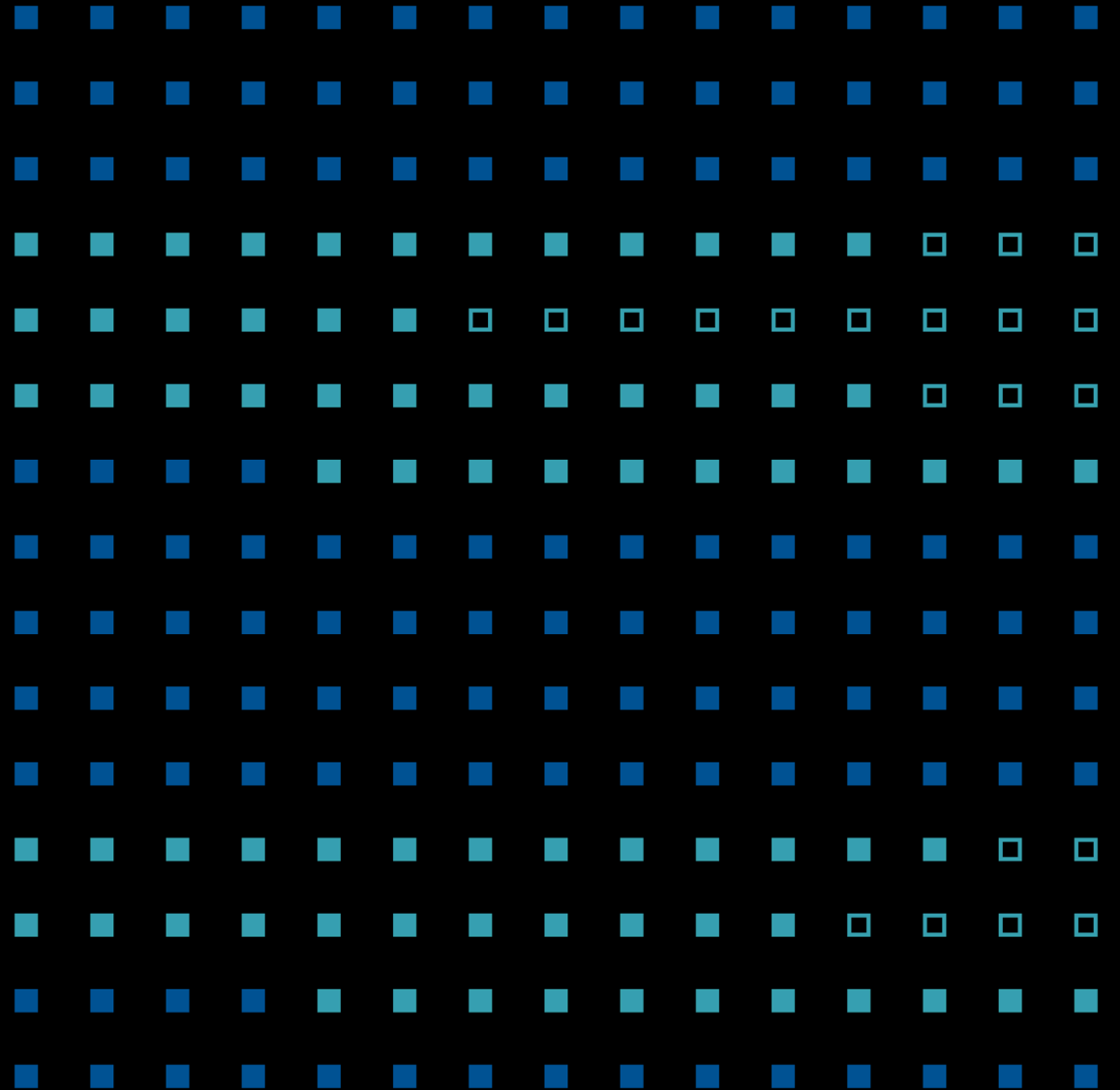
Beyond 1,000 servers with cluster sets

With no downtime

Automatic VM load balancing

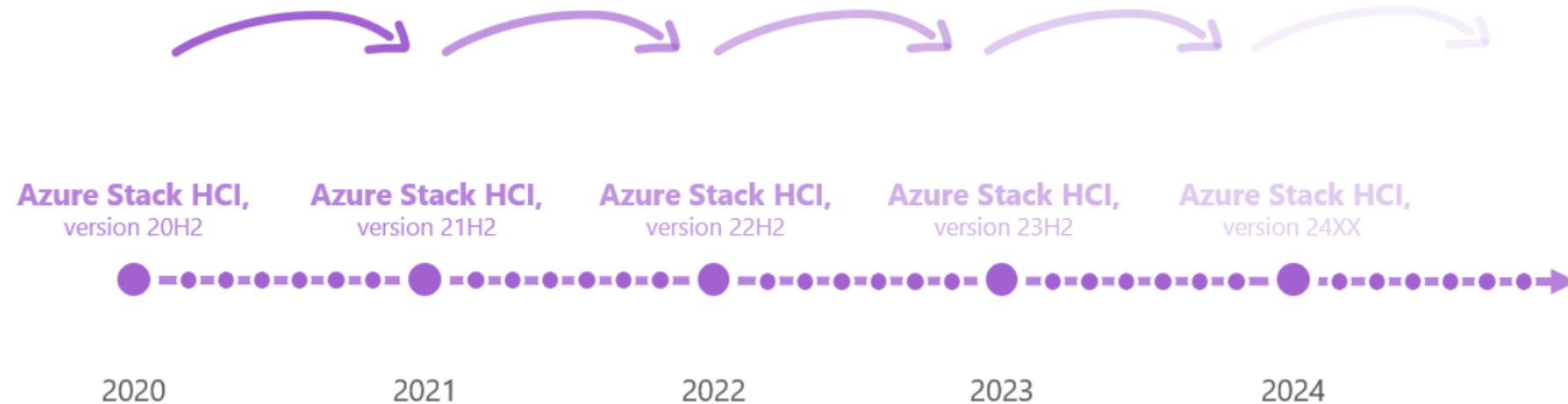
Automatic storage rebalancing

Licensing



Always up-to-date subscription

Yearly major releases planned for 2020, 2021, 2022, and beyond



Subscription business model = customers are always entitled to updates

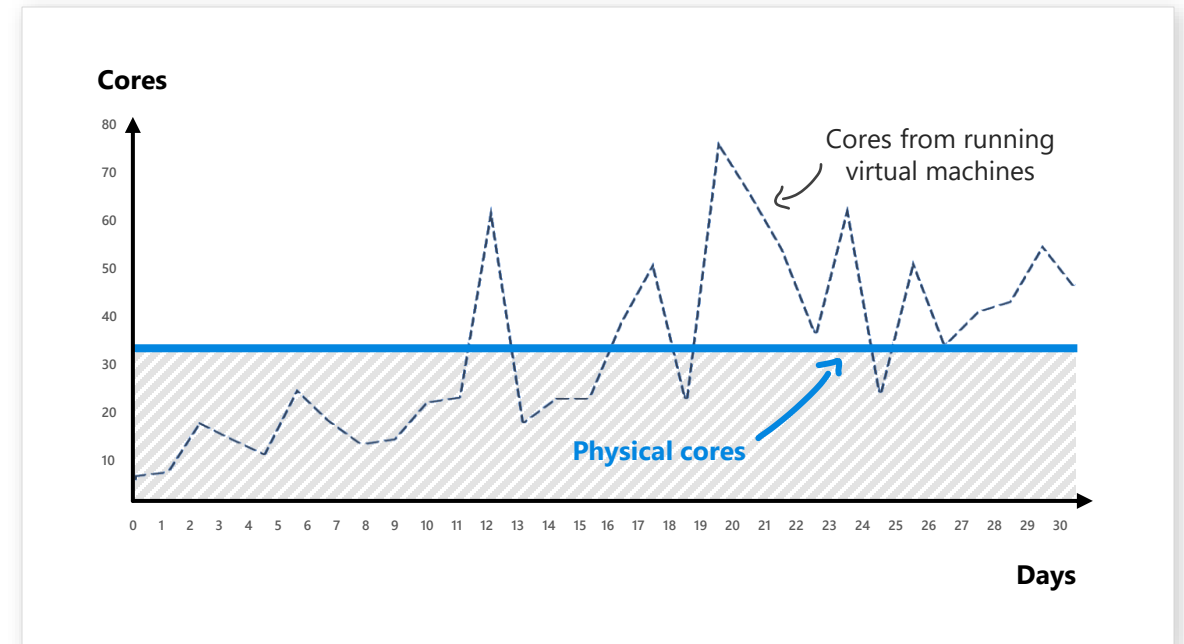
Update cadence:

- Monthly security and quality updates, on the same "Patch Tuesday" timeline as Windows proper
- Once per year, the monthly update will be what's called a "Feature Update" with new features
- OEM firmware/driver packages are typically available quarterly

<https://docs.microsoft.com/en-us/azure-stack/hci/concepts/updates>

What does Azure Stack HCI charge for?

\$10/month
per physical processor core ¹



Predictable

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



Simple

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



Rewards

Those who virtualize efficiently, with higher v-to-p density

¹ Price is subject to change before launch (but we *think* this is right)

Costs scale predictably from edge to datacenter



FUJITSU

PRIMERGY TX1330 M4

4 cores

Cost per server

\$40 /month



Lenovo

ThinkSystem SE350

8 cores

Cost per server

\$80 /month



DELL EMC

PowerEdge R640

16 cores

Cost per server

\$160 /month



Hewlett Packard
Enterprise

ProLiant DL 380 Gen 10

24 cores

Cost per server

\$240 /month



No minimum or maximum

(starts from 1 core for 1 day)



How does it work: License guests and apps separately

As little or as much Windows Server as you need, like other HCI platforms



What you want to run:

**Linux applications
Open source software**

What you buy:

OEM HW

+

Azure Stack HCI

+

*Nothing else from Microsoft
List price free*

Host: Subscription

Guest: Perpetual



What you want to run:

**A few Windows Server roles
or applications**

What you buy:

Validated OEM HW

+

Azure Stack HCI

+

Windows Server 2019 Standard(s)
List price 882 USD per 2 guests*



What you want to run:

**Unlimited Windows Server
roles or applications**

What you buy:

Validated OEM HW

+

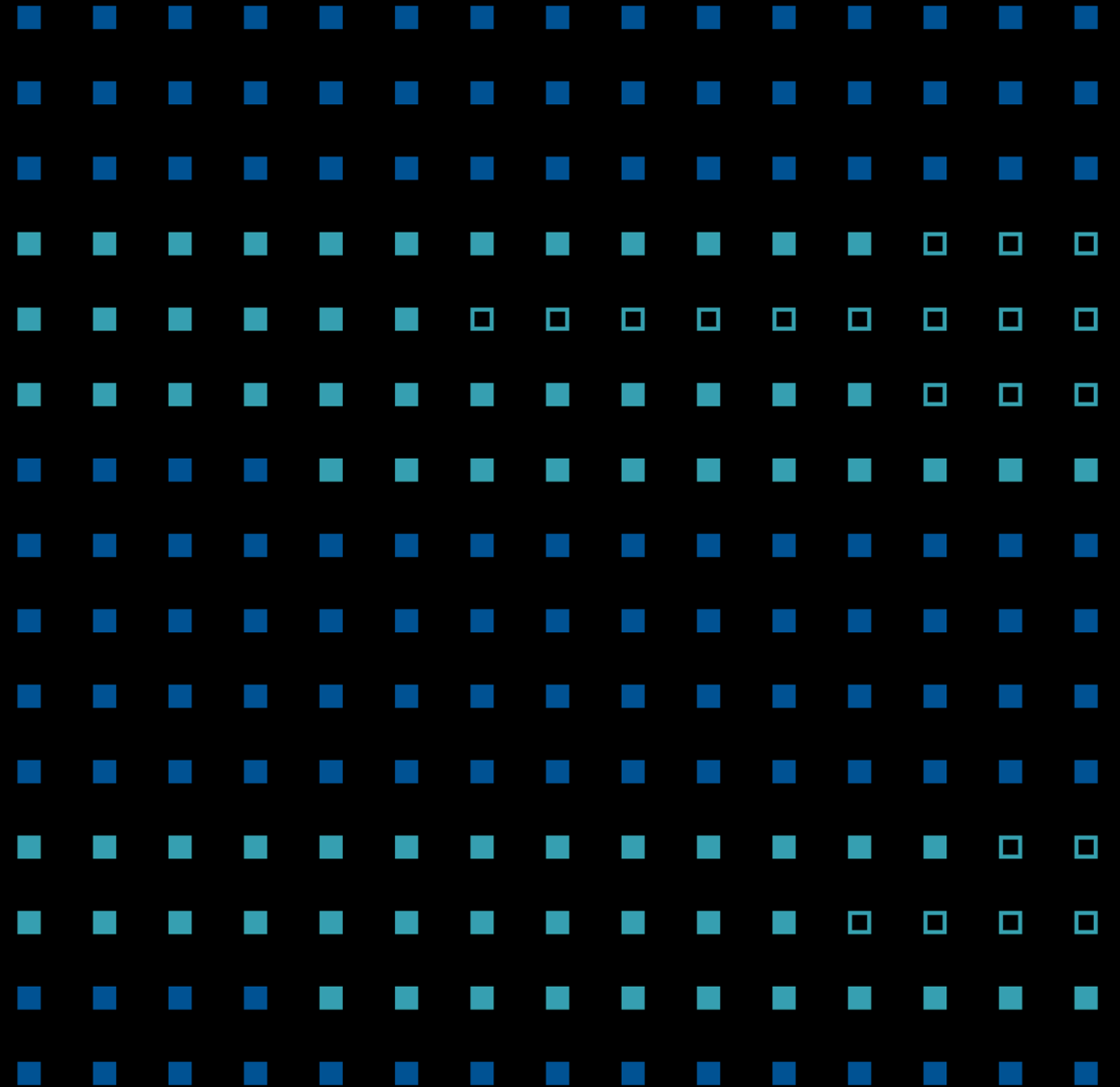
Azure Stack HCI

+

Windows Server 2019 Datacenter
List price 6,155 USD for unlimited guests*

- Windows Server list prices vary by core count.
- Azure Stack HCI subscription can work with previous version of Windows Server

Next Steps



How to evaluate the new **Azure Stack HCI**

1



Register

Register for the download, further information and access to technical programs

2



Download

Install Azure Stack HCI Preview and Windows Admin Center

3



Tutorial

Guidance to help get the most from Azure Stack HCI evaluation experience

[Get Started Today >](#)

Resources

Read

Azure Stack HCI Product Page azure.com/hci

Azure Stack HCI Announcement Blog aka.ms/azurestackhicipreviewblog

Azure Stack HCI Overview Whitepaper aka.ms/azurestackhcioverview

Watch

Video: Discover the new Azure Stack HCI aka.ms/discoverazurestackhci

Azure Stack HCI Inspire Session : [Modernize Datacenters with HCI](#)

Do

Evaluate Azure Stack HCI Preview aka.ms/evaluate-hci

Visit [Tech Docs](#) to see how it all works

Visit the Azure Stack HCI Catalog aka.ms/azurestackhxicatalog

Azure Stack HCI Technical Roadmap [Public]

2020 H2 July – December

- Stretch clustering for BC/DR
- Guided cluster deployment workflow
- Storage resync 4-5x faster
- Integrated full-stack firmware/driver updates
- Azure Kubernetes Service (Preview)
- Covered by Azure Support
- 200+ validated OEM solutions

2021 H1 January – June

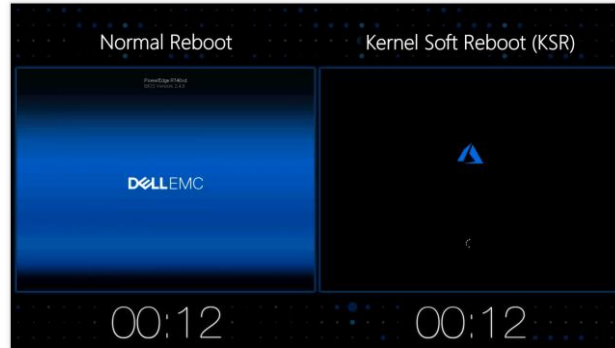
- Azure Arc integration (Preview)
- Azure Policy, Azure Automation, and extensions
- Monitor at scale from Azure
- VM self-service in Azure Portal (Preview)
- AVMA for Windows Server virtual machines
- Regional expansion, incl. China
- Azure Stack HCI Preview release channel

2021 H2 July – December

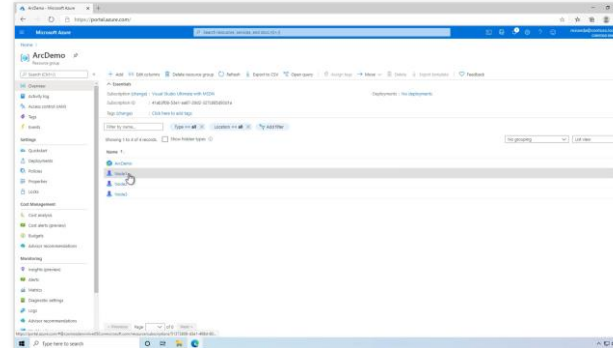
- Restart in seconds with kernel soft reboot
- Intent-driven network configuration
- GPU acceleration for AI/ML workloads
- Thin provisioning for Storage Spaces Direct
- All-new CPU compatibility mode
- 256-bit SMB encryption with RDMA
- ... and more!

PLEASE NOTE: Forward-looking statements always subject to change.

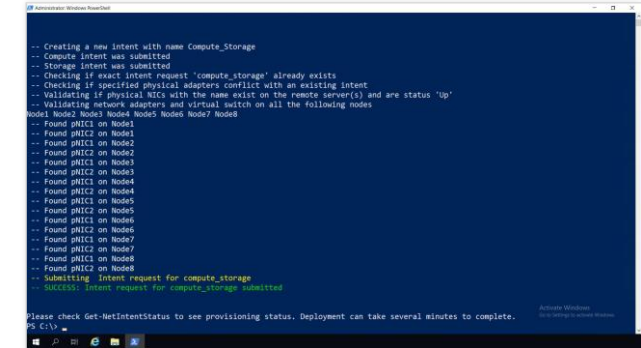
Technical Roadmap Demo Series [Public]



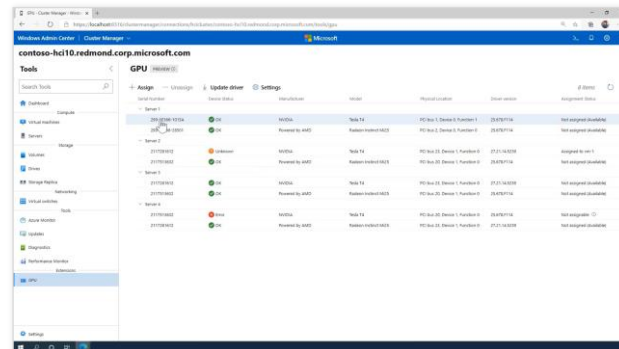
Restart in seconds with kernel soft reboot
<https://www.youtube.com/watch?v=tdfF2iBClaE&>



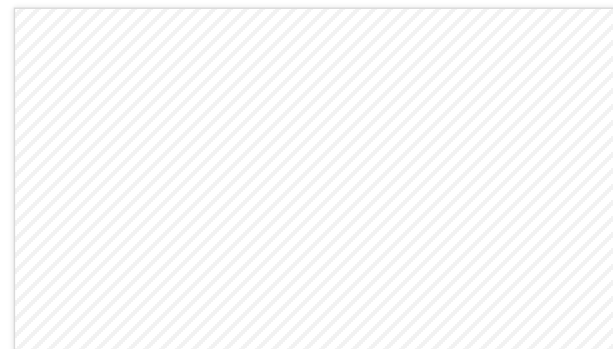
Manage from the cloud with Azure Arc
<https://www.youtube.com/watch?v=NoyCtEQpCdk&>



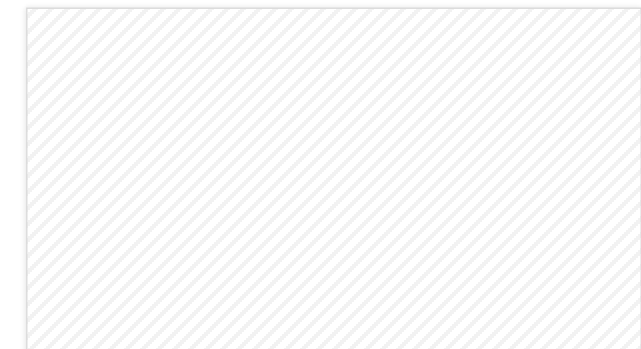
Intent-driven configuration with Network ATC
<https://www.youtube.com/watch?v=Z8UO6EGnh0k&>



GPU management
<https://www.youtube.com/watch?v=Y3eN2ke9gfw&>



Processor compatibility mode
Coming soon...



Faster, more secure encryption
Coming soon...

Azure Stack HCI | What's new at a glance

A new hyperconverged infrastructure host operating system delivered as an Azure service

1 Standalone HCI Host software stack

Customer Value

Secure virtualization for VM
Proven industry performance with Storage Spaces Direct
Built-in high availability and disaster recovery with Stretch Cluster – New feature
No cost extended support for Windows Server 2008/R2
New integrated system form factor

2 Delivered as an Azure Service

Native integration with Azure Portal and Azure Resource Manager
Only pay per core, not socket
Unified billing process
Always up to date software with new features as available
Monitor cluster fleet at scale
Customer can leverage existing Azure support plan

3 Arc enabled

Create VMs on HCI through Azure Portal (future Arc enablement)
Manage VMs in Azure leveraging cloud integration
Leverage in IoT Edge VM to run Azure Cognitive Service

4 In depth integration with hybrid management services

New deployment GUI through Windows Admin Center for HCI clusters
Natively monitor, secure and backup to cloud