

# Azure Stack HCI - die neue Version 21H2



Manfred Helber



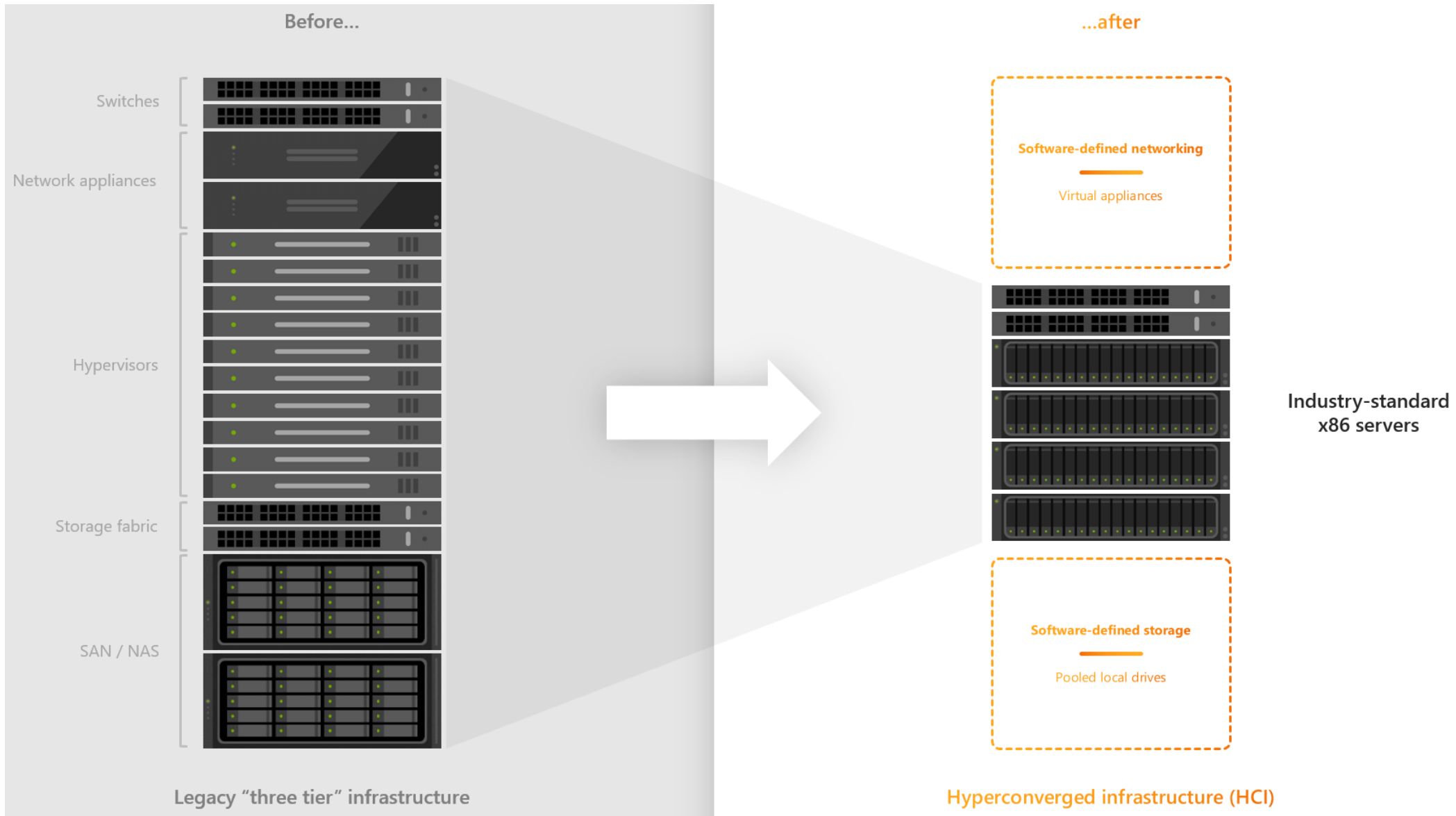
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# Themen heute

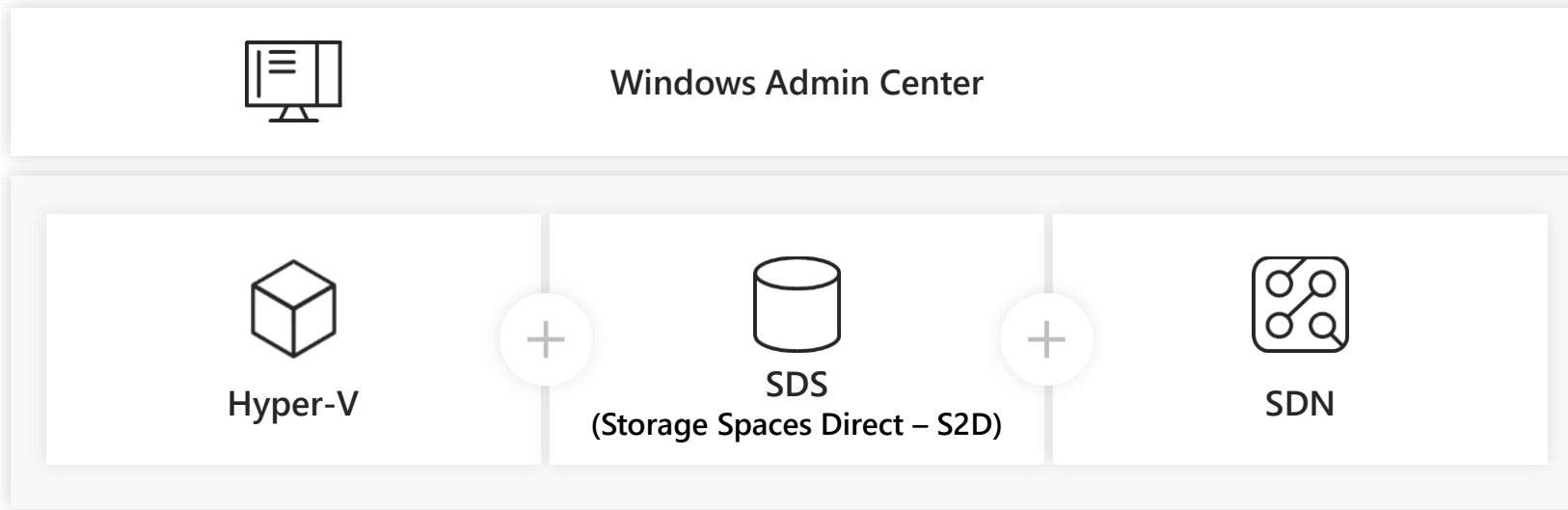
- **Neuerungen in Azure Stack HCI 21H2**
- **Migration eines bestehenden Azure Stack HCI Clusters auf die Version 21H2**
- **Ausblick auf die künftige Entwicklung von Azure Stack HCI**

# HCI-Grundlagen

# Hyper-Converged Infrastructure (HCI) - Grundlagen



# Die Technologie hinter Azure Stack HCI



# Growing Azure Stack HCI into its own product line



Azure Stack HCI



Windows Server

✓ Exciting roadmap of new releases

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

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

Run apps inside Windows or Linux virtual machines

Runs on **your hardware**

✓ Exciting roadmap of new releases

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

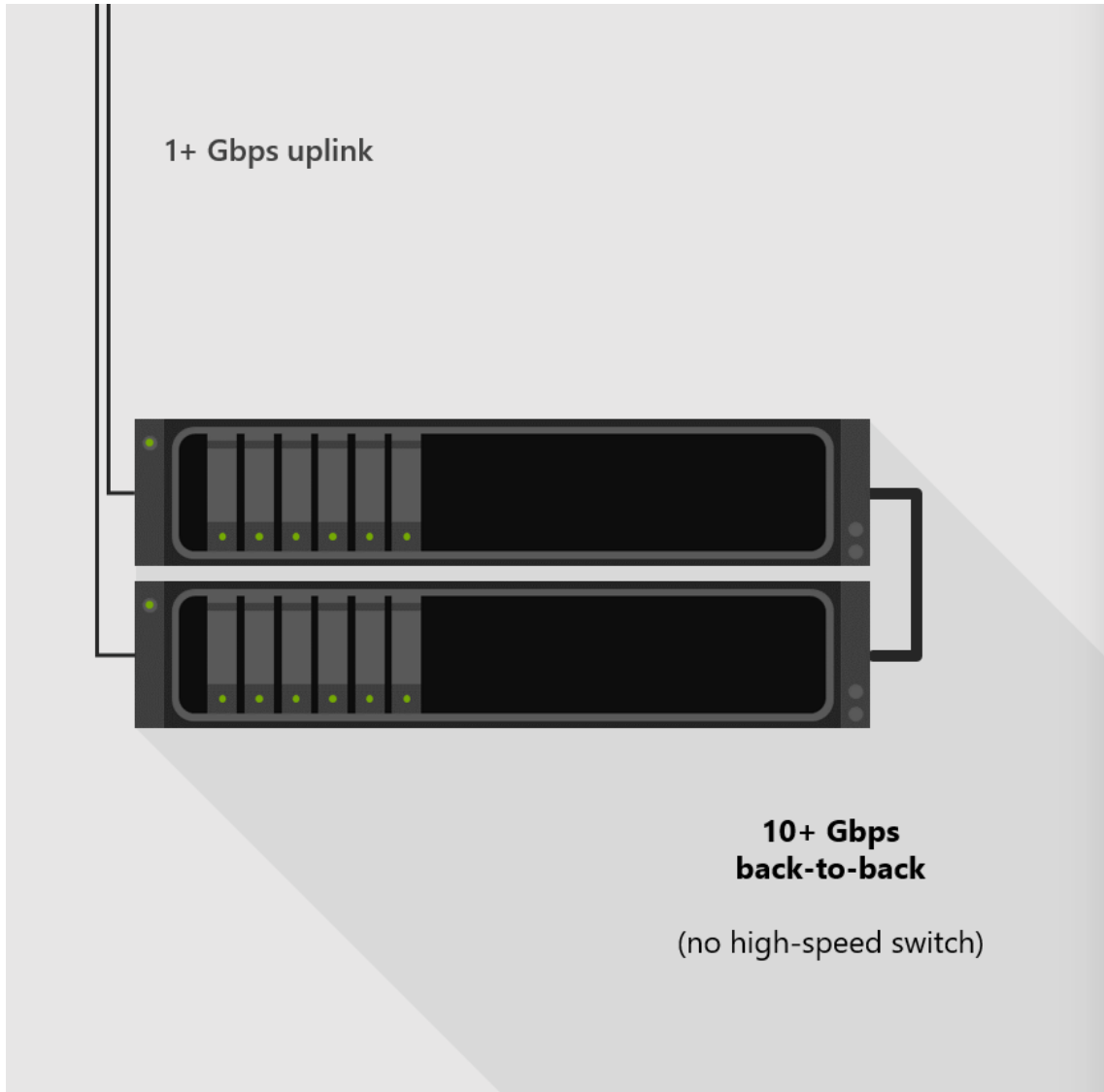
**All other Windows Server roles,**  
like IIS, File Services, DNS, DHCP, AD/DS

Runtime for Windows apps like SQL Server

Runs **anywhere**



# Die Technologie hinter Azure Stack HCI



## Start small...

### Minimal footprint

**Just 2** servers minimum

**(4 × SSD)** or **(2 SSD + 4 HDD)** per server

**No minimum** processor and memory

**1 × 10 Gbps** network adapter

**SATA, DOM, M.2**

### Made possible by

#### Lightweight quorum

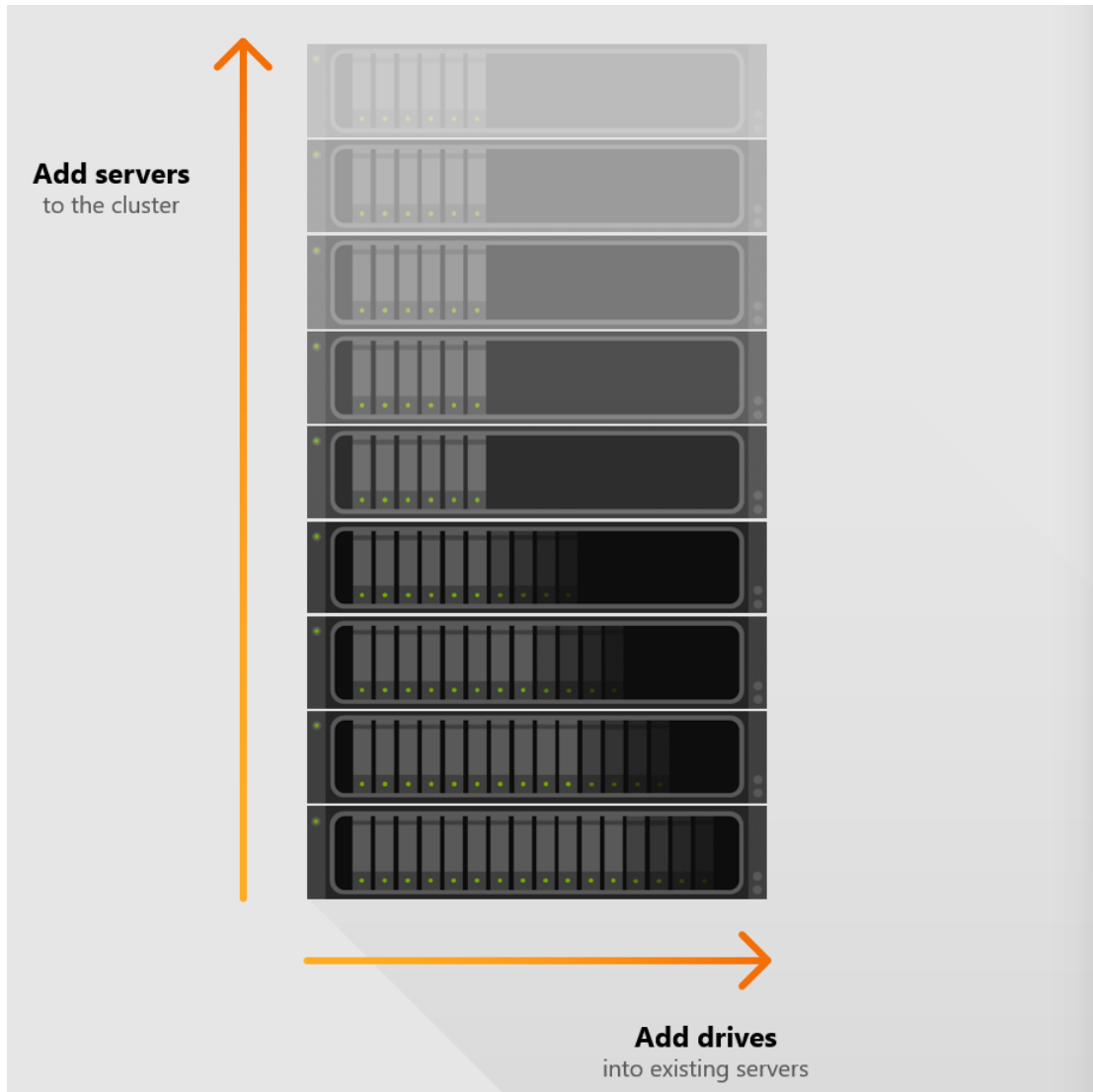
Cloud, file share, or USB key

No costly Witness VM Appliance

#### Nested resiliency

Withstand multiple failures

# Die Technologie hinter Azure Stack HCI



## Scale with your needs

### Scale up, scale out

**Up to 16 servers** per cluster

Limited by rack and switch ports

**Up to 4,000 TB** storage capacity per cluster

Store all of Wikipedia in every language 50 times

### With no downtime

**Automatic** VM load balancing

**Automatic** storage rebalancing



# Neuerungen in Azure Stack HCI 21H2

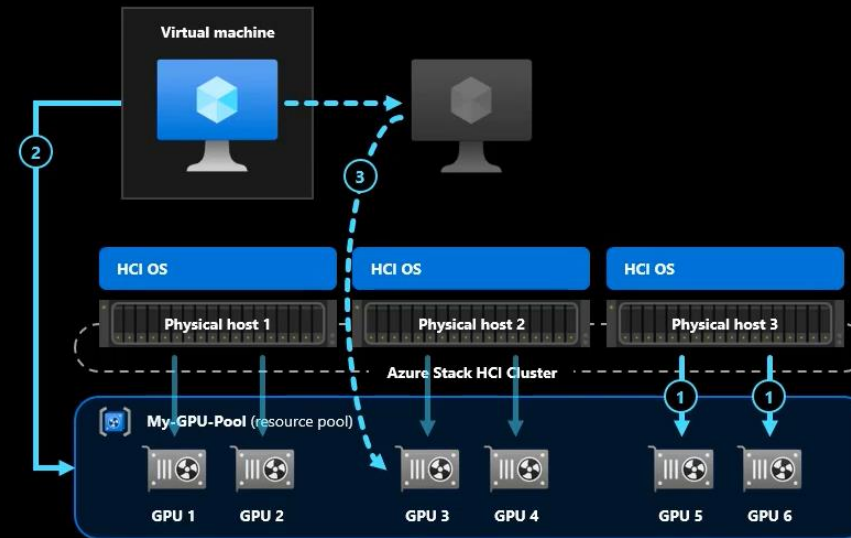
# GPUs with clustered VMs

# How it works: GPU pools

Group GPUs for high availability



- 1 On every node, create PCI Express resource pool with same name and add GPUs to the pool
- 2 Assign VM to GPU pool instead of individual GPU
- 3 During failover or move, cluster will start VM on another host if there are GPUs available in the pool



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GPUs

Settings

GPU

Navigate to GPU pools to assign VMs to GPUs

GPUs GPU pools

Update driver Enable Disable Mount Dismount

4 items


<input type="checkbox"/>	Name	Status	Manufacturer	Location	Driver version	Assignment status
	sme-l					
	Microsoft Basic Display Adapter (Low Resolu...	OK	(Standard display types)	PCI bus 3, device 0, function 0	10.0.20348.1	Not assignable
	NVIDIA Tesla T4	Dismounted	NVIDIA	PCI bus 23, device 0, function 0	27.21.14.5239	Ready for assignment
	sme-l					
	Microsoft Basic Display Adapter (Low Resolu...	OK	(Standard display types)	PCI bus 3, device 0, function 0	10.0.20348.1	Not assignable
	NVIDIA Tesla T4	Dismounted	NVIDIA	PCI bus 23, device 0, function 0	27.21.14.5182	Ready for assignment

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GPUs GPU pools



GPU pools

GPU pools are required in order to assign your GPU to virtual machines

A GPU pool is a collection of one or more GPUs. Instead of directly assigning a GPU to your VM, GPU pools are assigned to your VMs. GPU pools of the same name should consist of the same type of GPU to ensure high availability.

Create GPU pool

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GPUs GPU pools

New GPU pool

Enter the name and select the GPUs you want associated with this GPU pool below

To ensure high availability, a GPU pool with the same name must be created on each node of the cluster

Servers\*

GPU pool name\*

Select GPUs\*

<input checked="" type="checkbox"/> Name	Status	Manufacturer
<input checked="" type="checkbox"/> sme- NVIDIA Tesla T4	<input type="checkbox"/> Dismounted	NVIDIA
<input checked="" type="checkbox"/> sme- NVIDIA Tesla T4	<input type="checkbox"/> Dismounted	NVIDIA

Advanced

Assign without mitigation driver (not recommended)

Save Cancel

Server1.corp.contoso.com

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GPU

GPUs GPU pools

- New pool
- Server
- newpool (2)
  - SME-L
  - SME-L

Assign VM to GPU pool

GPU pool assignments enable software running in VMs to access the GPU hardware connected to the host. [Read more](#)

Type of assignment \*

For security reasons, Microsoft recommends installing a device mitigation driver from your GPUs' vendor. You may assign a GPU without a mitigation driver by using the Advanced options below. [Read more about DDA assignment](#)

Server \*

GPU pool \*

The pool named newpool consists of the following GPUs: NVIDIA Tesla T4

Virtual machine \*

Assigning with DDA may affect the AutomaticStopAction, GuestControlledCacheType, and memory-mapped IO spaces values of your VM. Furthermore, your VM may restart during assignment.

Advanced

Low memory mapped IO space (in MB)

High memory mapped IO space (in MB)

The MMIO space values above are reasonable values to set for experimenting with a single GPU. If after starting the VM, the device is reporting an error relating to not enough resources, you'll likely need to modify these values. Consult [Plan for Deploying Devices using Discrete Device Assignment to learn](#) how to precisely calculate MMIO requirements.

Configure offline action to force shutdown

DDA assignment does not support live migration of virtual machines. Clicking this checkbox will change the VM's default offline action to be a force shutdown. Thus, this VM will automatically shutdown prior to a failover to ensure GPU high availability. If this is unchecked, you will have to manually shut down your VM to successfully migrate.

Assign Cancel

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sme-lse350-g.server1.corp.contoso.com

✔ **Successfully assigned GPU pool to VMs**  
 Assigning GPU pool 'newpool' to 'Windows Server 2022 workload'  
 sme-lse350-g.server1.corp.contoso.com 8:31:10 PM

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**GPU**

GPUs GPU pools

New pool Delete pool Edit pool + Assign VM to pool - Unassign VM 2 items

Server	GPU	Assignment status	Assigned VMs
newpool (2)			
SME-	NVIDIA Tesla T4	Assigned	Windows Server 2022 workload
SME-	NVIDIA Tesla T4	Available (Not assigned)	Ready for assignment

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sme-lse350-g.server1.corp.contoso.com

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**GPU**

GPUs GPU pools

📄 New pool
🗑️ Delete pool
✎ Edit pool
➕ Assign VM to pool
➖ Unassign VM

Server	GPU	Assignment status
<span>▼ newpool (2)</span>		
✓ SME-	NVIDIA Tesla T4	Assigned
SME-	NVIDIA Tesla T4	Available (Not assigned)

**Unassign VM from GPU pool**

Multiple VMs have been assigned to this GPU pool. Select which VMs you wish to unassign:

Virtual machines\*

Windows Server 2022 workload ⌵

**⚠️** Unassigning a VM from a GPU pool will not revert changes that were made during assignment. If desired, manually revert changes such as AutomaticStopAction, GuestControlledCacheType, memory-mapped IO, and OfflineAction on your VM.

Unassign
Cancel

# Dynamic processor compatibility mode

# hci-cluster1.corp.contoso.com

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## Settings for test\_can\_delete

- General
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- Processors \***
- Disks
- Networks
- Boot order
- Checkpoints
- Integration services
- Security
- Affinity rules

### Processors

Number of virtual processors \*

Enable nested virtualization

Processor compatibility ⓘ

Compatible across the cluster (Recommended)

Compatible across other hosts with the same CPU manufacturer

Save processor settings

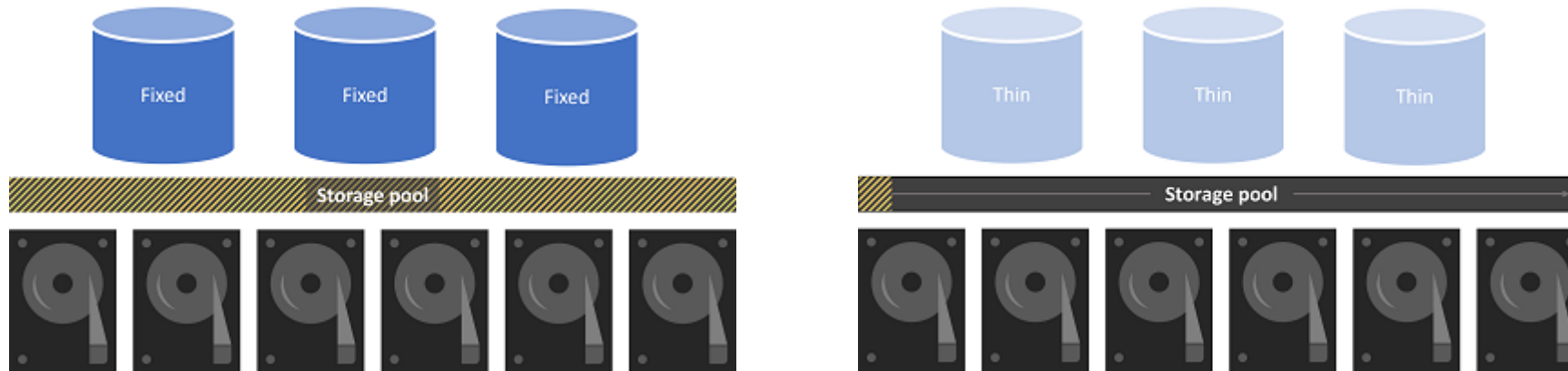
Discard changes

Close

# Live Demo

# Storage Thin Provisioning

# Thin vs. fixed provisioned volumes



# Live Demo

# Adjustable storage repair speed



Windows Admin Center | Cluster Manager Microsoft

ymdtwyxpklkv.cfdev.nttest.microsoft.com

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**Storage Spaces and pools**

Always add new drives: Yes

Always retire failed drives: Yes

Storage repair speed: Medium (recommended)

**Storage pool: S2D on yMDTwYxHh**

Storage pool friendly name: Medium (recommended)

Storage pool version: High

Default provisioning type:  Thin

**Storage bus layer**

Connectivity between servers: Up

Cache state:  On  Off

Cache mode for HDD: Read/Write

Cache mode for SSD: Write only

Cache page size: 16 KB

Cache metadata reserve: 32 GB

Disable write cache if last node: No

# Live Demo

# Nested virtualization on AMD

# Nested virtualization on AMD

Azure Stack HCI, version 21H2 adds support for nested virtualization on AMD processors. Now you can run nested virtualization on first generation EPYC processors or newer generations (Naples, Rome, Milan).

Prerequisites:

- Azure Stack HCI, version 21H2
- VM configuration version 10.0 or greater
- An AMD EPYC processor with SVM enabled

# Migration eines bestehenden Azure Stack HCI Clusters auf die Version 21H2

# Was kostet Azure Stack HCI OS?

## Azure Stack HCI – Preise

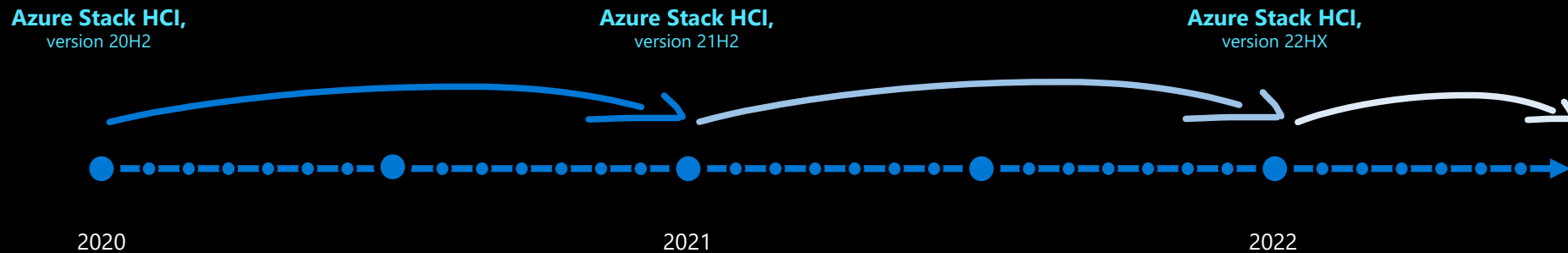


Instanz	Zahlungsintervall	Preis
Azure Stack HCI	Monatliche Dienstgebühr	€9/physischer Kern/Monat

Azure Stack HCI offers a free trial for the first 60 days after registration. You will be charged the monthly service fee after your first 60 days using the service.

# Azure Stack HCI has an always up-to-date subscription

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



## Update cadence:

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

## d114-ashcicl21.mhdemolab.de

## Tools



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Updates PREVIEW ⓘ[Available updates](#) [History](#)**Updates are available**

Microsoft recommends applying these updates now.

**Feature update for Azure Stack HCI, version 21H2**

Get faster performance, stronger security, and new features with today's update to Azure Stack HCI, version 21H2. New features include GPU support for clustered virtual machines, improved processor compatibility, adjustable storage resync speed, thin provisioning for storage volumes, intent-based cluster network configuration, and AES-256 encryption. [Learn more](#)

[Install](#)[Check for updates](#)[Cancel the install](#)

Select update type

 Feature update (Recommended)  Quality updates only

Name	OS version	State
d114-ashcin01	10.0.17784	Available
Feature update to Microsoft server operating system, version 21H2		
d114-ashcin02	10.0.17784	Available
Feature update to Microsoft server operating system, version 21H2		



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Updates PREVIEW[Available updates](#) [History](#)

## Updates are available

Microsoft recommends applying these updates now.

## Feature update for

Get faster performance for virtual machines, improved configuration, and

## Feature updates include quality updates

You don't need to install them separately. You do have to install feature updates within six months of release to stay supported.

[Install](#)

Select update type

- Feature update (Recommended)  Quality updates only

Name	OS version	State
<input type="checkbox"/> d114-ashcin01	10.0.17784	Available
Feature update to Microsoft server operating system, version 21H2		
<input type="checkbox"/> d114-ashcin02	10.0.17784	Available
Feature update to Microsoft server operating system, version 21H2		

version 21H2. New features include GPU support for clustered storage volumes, intent-based cluster network

[Got it](#)[Cancel](#)

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Feature update to Microsoft server operating system, version 21H2		
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Feature update to Microsoft server operating system, version 21H2		

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## Install updates

1 Readiness Check 2 Install

Condition	Result
Every server has enough free space on the boot volume.	Passed
CPU resources are available to move VMs.	Checking...
Cluster validation: cluster configuration	Checking...
Cluster validation: Hyper-V configuration	Checking...
Cluster validation: system inventory	Checking...
Memory is available to move VMs.	Checking...
Cluster validation: network	Checking...
Every server uses the same OS release channel.	Passed
All volumes are healthy with full resilience.	Passed
Cluster validation: Storage Spaces Direct	Checking...
Cluster validation: system configuration	Checking...

Checking that the cluster is ready to be updated...

Check again

Back

Next: Install

Exit

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## Install updates

- 1 Readiness Check
- 2 Install


Condition	Result
Every server has enough free space on the boot volume.	✓ Passed
CPU resources are available to move VMs.	✓ Passed
Cluster validation: cluster configuration	⚠ Warning <a href="#">Details</a>
Cluster validation: Hyper-V configuration	✓ Passed
Cluster validation: system inventory	✓ Passed
Memory is available to move VMs.	✓ Passed
Cluster validation: network	✓ Passed
Every server uses the same OS release channel.	✓ Passed
All volumes are healthy with full resiliency.	✓ Passed
Cluster validation: Storage Spaces Direct	✓ Passed
Cluster validation: system configuration	⚠ Warning <a href="#">Details</a>

⚠ Please review warnings before updating.




[Check again](#)[Back](#)[Next: Install](#)[Exit](#)

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## Install updates

✓ Readiness Check 2 Install

Review the updates listed below. When you're ready, select Install to start the update.

If an update requires restarting servers, we do so one at a time, moving cluster roles such as VMs between servers to prevent downtime.


Name


▼ d114-ashcin01

Feature update to Microsoft server operating system, version 21H2

▼ d114-ashcin02

Feature update to Microsoft server operating system, version 21H2

 This update contains new features and could take longer than other updates.

Update the cluster functional level to enable new features 

[Back](#)[Install](#)[Exit](#)

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⋮  
Starting the update run...

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Updates PREVIEW[Available updates](#) [History](#)

## Installing updates

Wait until updating is complete before using any other tools to update this cluster.

Install

Check for updates

Cancel the install

Name	OS version	State
d114-ashcin01	10.0.17784	Waiting
d114-ashcin02	10.0.17784	Scanning

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Updates PREVIEW[Available updates](#) [History](#)**Installing updates**

Wait until updating is complete before using any other tools to update this cluster.


[Install](#)[Check for updates](#)[Cancel the install](#)

Name	OS version	State
d114-ashcin01	10.0.17784	Waiting
d114-ashcin02	10.0.17784	Installing new OS






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Wait until updating is complete before using any other tools to update this cluster.

[Install](#)[Check for updates](#)[Cancel the install](#)


Name	OS version	State
d114-ashcin01	10.0.17784	 Staging
d114-ashcin02	10.0.20348	 Updates applied

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Wait until updating is complete before using any other tools to update this cluster.

Install

Check for updates

Cancel the install

Name	OS version	State
d114-ashcin01	10.0.17784	 Installing new OS
d114-ashcin02	10.0.20348	 Updates applied

## s2dclusterwd.mhdemolab.de

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## Storage Spaces and pools

Always add new drives

Yes



Always retire failed drives

Yes



## Storage pool: S2D on S2DClusterWD

Storage pool friendly name \*

S2D on S2DClusterWD

Storage pool version

Windows Server 2019



Default provisioning type

Fixed

## Storage bus layer

Connectivity between servers

Up

Cache state

 On  Off

Cache mode for HDD

Read/Write



Cache mode for SSD

Write only



Cache page size

16 KB

Cache metadata reserve

32 GB

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Storage pool version

Windows Server 2019

Windows Server 2019

Windows Server 2022 (newer)

## Storage bus layer

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Cache mode for SSD

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## Storage Spaces and pools

Always add new drives

Yes

Always retire failed drives

Yes


## Storage pool: S2D on S2DClusterWD

Storage pool friendly name \*

S2D on S2DClusterWD

Storage pool version

Windows Server 2022 (newer)

 Increasing the storage pool version can't be undone.

Default provisioning type

Fixed

## Storage bus layer

Connectivity between servers

Up

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 On  Off

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Read/Write

Cache mode for SSD

Write only

Cache page size

16 KB

Cache metadata reserve

32 GB

## s2dclusterwd.mhdemolab.de

## Tools

Search Tools

Dashboard

## Compute

Virtual machines

Servers

Azure Kubernetes Service

## Storage

Volumes

Drives

Storage Replica

## Networking

Virtual switches

## Tools

Azure Monitor

Updates

Diagnostics

Performance Monitor

## Settings

## Storage

In-memory cache

Storage Spaces and pools

## Cluster

Access point

Node shutdown behavior

Cluster traffic encryption

Virtual machine load balancing

Witness

Affinity rules

Diagnostic data

## Hyper-V Host Settings

General

Enhanced Session Mode

NUMA Spanning

Storage Migration

## Azure Stack HCI

Azure Stack HCI registration

Activate Windows Server VMs

Join the preview channel

## Storage Spaces and pools

Always add new drives

Yes

Always retire failed drives

Yes

## Storage pool: S2D on S2DClusterWD

Storage pool friendly name \*

S2D on S2DClusterWD

Storage pool version

Windows Server 2022

Default provisioning type

 Fixed  Thin

## Storage bus layer

Connectivity between servers

Up

Cache state

 On  Off

Cache mode for HDD

Read/Write

Cache mode for SSD

Write only

Cache page size

16 KB

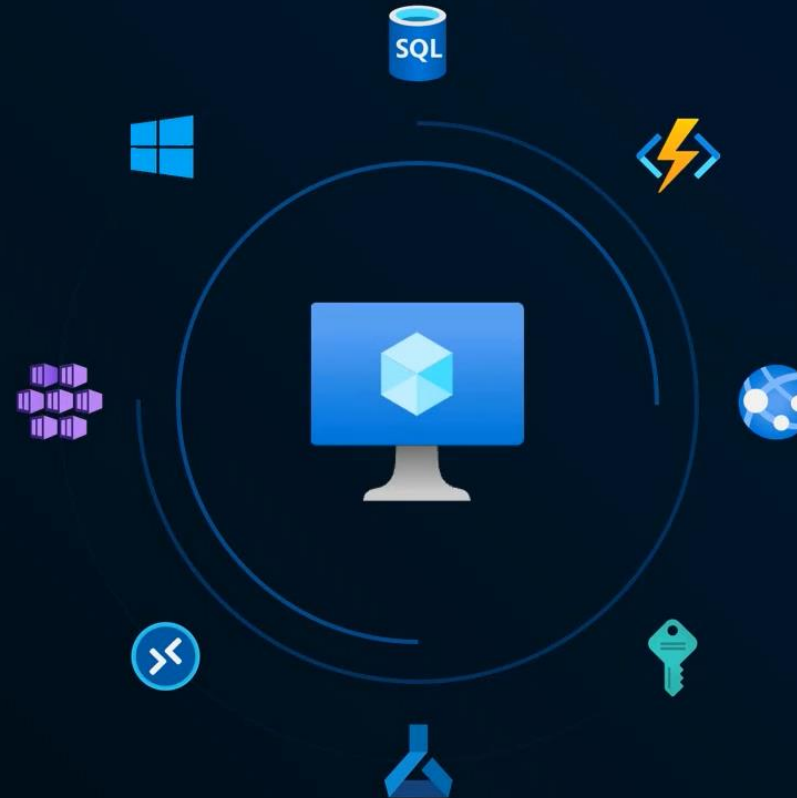
Cache metadata reserve

32 GB

# Ausblick auf die künftige Entwicklung von Azure Stack HCI

# Azure workloads and benefits

*on Azure Stack HCI*





# Windows Server better-together

with Azure Stack HCI, version 21H2

*For newer workloads...*



## Windows Server 2022 Azure Edition (coming soon)

Special version of Windows Server for Azure VMs only, with unique benefits

- ✓ Hot patching (no restart)
- ✓ Azure Extended Network
- ✓ SMB over QUIC

*For older workloads...*



## Free extended security updates (ESUs)

Lift and shift onto Azure Stack HCI to secure older workloads on-premises

- ✓ Windows Server 2008/R2
- ✓ Windows Server 2012/R2
- ✓ SQL Server 2008/R2
- ✓ SQL Server 2012/R2

*For all Windows Server workloads...*



## Convenient inherited activation (AVMA)

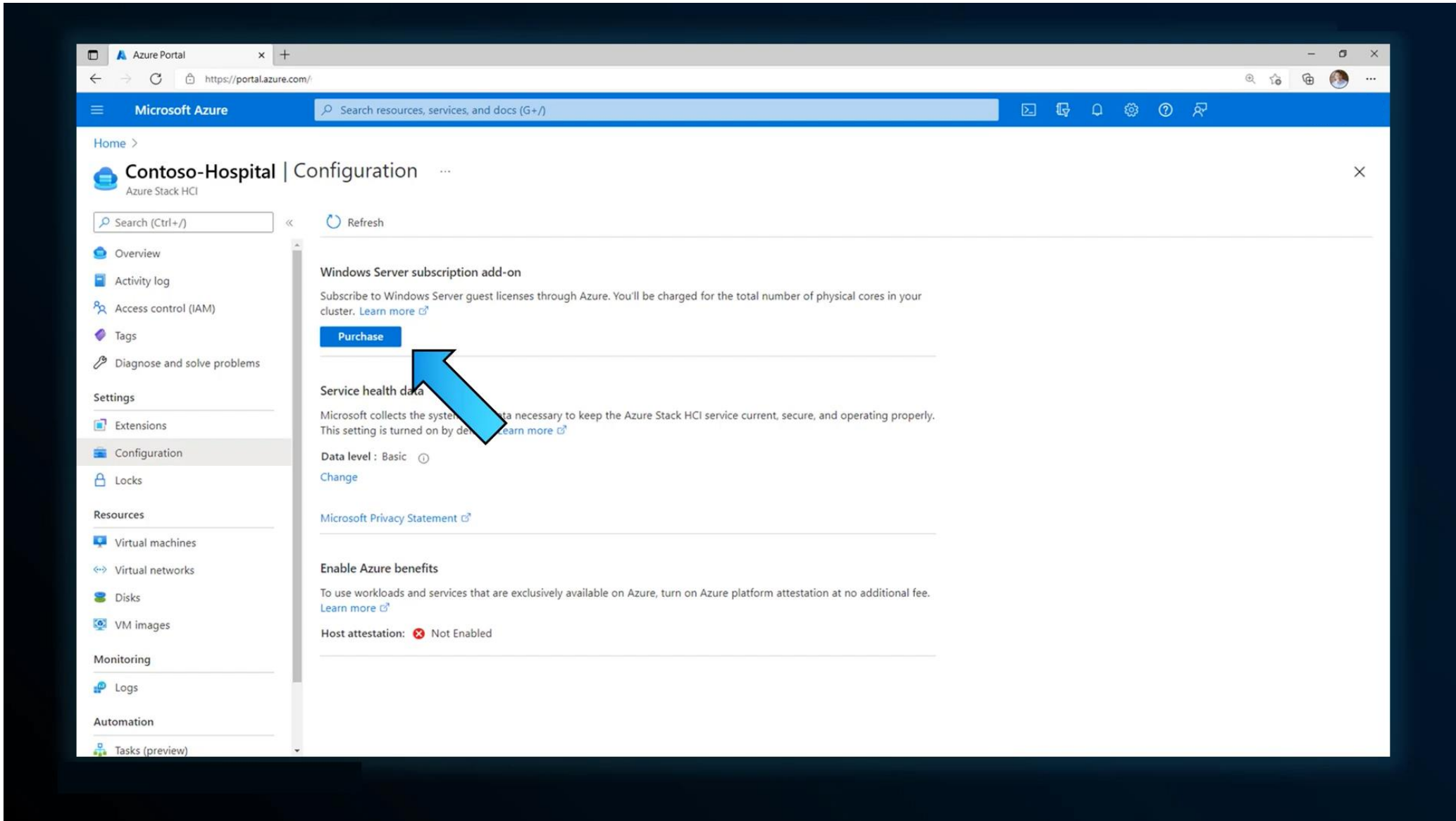
Simplify licensing with Automatic Virtual Machine Activation

- Option 1: Enter key into host
- Option 2: Add-on subscription

New

00:02:56

00:28:17



*Announcing...*

# Azure Virtual Desktop

for Azure Stack HCI (preview)

New

# Azure Virtual Desktop for Azure Stack HCI (preview)

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



## Cloud control plane

Fully managed, cloud-hosted  
VDI management plane



## End-user experience

Windows 10 and 11  
Enterprise multi-session



## Lower latency

Direct access to local session  
hosts with RDP Shortpath



# Continuous Azure Kubernetes Service innovation

Monthly AKS-HCI releases since general availability in May 2021

## June

2106 update

### Prometheus integration

- Deploy Prometheus with `-enableMonitoring` parameter
- Deploy to existing workload with `Install-AksHciMonitoring` cmdlet

### PowerShell fixes

- Fix upgrade path when target cluster exists
- Update yaml with KVA Version on upgrade

### AKS-HCI infrastructure fixes and

- KVA version upgrade
- CSI upgrade before Cluster upgrade to fix upgrade hang
- Telemetry upgrade
- Block nodepool scale if there is OS upgrade available
- Make clusterAPI upgrade its own Phase of Upgrade
- kvactl http timeout fix

### Security fixes

- Path traversal fix

### Break glass scenario

- Token Rotation on AKS-HCI host Upgrade
- Admin token rotation in cloudagent
- Repair PowerShell cmdlets

Source: [github.com/azure/aks-hci/releases](https://github.com/azure/aks-hci/releases)

## July

2107 update

### Features

- Node pool support for AKS-HCI (PowerShell only)
- Multiple Windows and Linux node pools of different sizes
- Separate Panic Traces to improve debugging of errors
- Storage container info
- Secure Boot enabled by default for all VMs
- Encrypt node agent's windows registry config store data
- Automatically spreading the VM data across all the CSVs in the environment to improve reliability
- Calico is now the default CNI plugin for target cluster
- Bump up latest Go version to 1.15.x
- Step upgrade support for users in GA to move to July update

### Windows Admin Center

- Dynamic support for PowerShell versioning
- Accessibility updates
- Reliability improvements
- Bug fixes in upgrade scenarios

### Bug fixes

- Fixed AKSHCI monitoring using PowerShell
- Fixed WAC error during update from GA build to newer version
- TLS Versions

## August

2108 update

### Features

- Support for ContainerD on Linux
- Continued GPU platform support (private preview)
- Enable/Disable-AksHciPreview to switch between rings
- KVA/Node pool status clear error reporting
- KVA Stage to Wait for Appliance IP
- Update CloudAgent service starts individual resources rather than group
- Check for cloudservicecidr parameters in static IP based deployments
- Security – Compiler flags
- Security – TLS versions

### Linux

- ContainerD replacing Moby
- GPU drivers in CBL-Mariner

### Windows

- Update calico, flannel and kube-proxy container image pipelines
- Update cloud operator to support WS 2022 worker node

### Windows Admin Center

- Fixed CredSSP setup errors and DeploymentStatusComponent
- Node pool UI added in WAC
- UX to deploy arc appliance through WAC

### Bug fixes

- Do not allow deletion of VHD in use
- Fixed CloudAgent crash during concurrent map access and write
- Fixed CloudAgent hang during vhd attach

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# Arc-enabled PaaS services on Azure Stack HCI

Each with their own scenarios and feature roadmap



## SQL managed instances

Fully managed SQL managed instance with built-in management capabilities to drastically reduce your management overhead.



## PostgreSQL Hyperscale (preview)

Semi-managed PostgreSQL Hyperscale server group that meets your requirements of data residency and customer control.



## App services (preview)

Powerful web, mobile, and API apps. Build standards-based web apps and APIs using .NET, Java, Node.js, PHP, and Python.



## Functions (preview)

Process events with serverless code. Accelerate and simplify serverless application development with serverless compute.



## Logic apps (preview)

Quickly build powerful integration solutions. Create workflows leveraging hundreds of connectors and the visual designer.



## API management (preview)

Move faster with unified management platform for APIs across hybrid, edge, multi-cloud, and all your environments.

Tutorials, demos and more: [aka.ms/AzureArcJumpstart](https://aka.ms/AzureArcJumpstart)

# Review of Azure workloads and benefits

available on Azure Stack HCI, version 21H2



## Windows Server

Azure Edition (coming soon),  
free ESUs, pay-as-you-go



## Azure Kubernetes Service

Deploy and manage Windows  
and Linux containers



## PaaS services (preview)

Managed SQL, App services,  
Functions, Logic Apps



## Azure Virtual Desktop (preview)

Cloud-hosted control plane,  
Windows multi-session

New



# Azure management and governance

*for Azure Stack HCI*



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# Multi-cluster monitoring in the Azure Portal

with Azure Monitor Insights for Azure Stack HCI (preview)



## Azure-native solution

Nothing to integrate, no database or third-party software to manage



## Highly scalable

Scales to 100s of clusters, independent of domain or physical location



## Customizable

Visualizations and underlying queries are extensible by users or integrators

Home > Monitor

## Monitor | Azure Stack HCI (preview)

Search resources, services, and docs (G+)

Search (Ctrl+/)

Workbooks Customize Auto refresh: Off

This view provides an overview of selected clusters and associated nodes that have connected to Azure in the last 24 hours. If you don't see a particular cluster, check the filters here as well as the cluster's connection to Azure on the **Azure Stack HCI** resource page. To see if monitoring is enabled on the cluster, use the **Get started** tab.

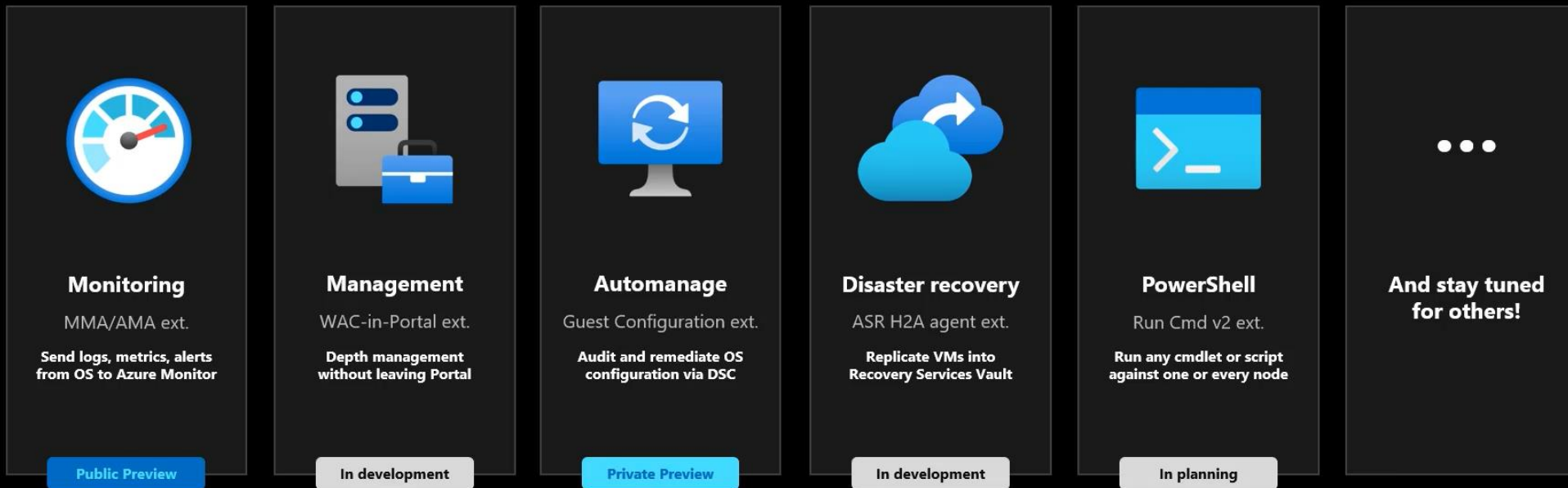
Total clusters: 4  
 Healthy: 4  
 Warning: 0  
 Critical: 0  
 Other: 0

Cluster > Node	Last updated	Health status	Node state	Uptime	CPU usage	Used memory	Network
AltaylHciCluster	5/25/2021, 8:45:27 AM	Healthy	4 of 4 up		0 %	468.19 of 512 GB available	
TK5-3WP07R0815	5/25/2021, 8:45:27 AM	Healthy	Up	14 hr	0 %	116.01 of 128 GB available	
TK5-3WP07R0816	5/25/2021, 8:45:27 AM	Healthy	Up	14 hr	0 %	117.33 of 128 GB available	
TK5-3WP07R0817	5/25/2021, 8:45:27 AM	Healthy	Up	14 hr	0 %	117.3 of 128 GB available	
TK5-3WP07R0818	5/25/2021, 8:45:27 AM	Healthy	Up	14 hr	0 %	117.54 of 128 GB available	
Atlanta	5/25/2021, 8:25:00 AM	Healthy	3 of 3 up		3.33 %	19.89 of 48 GB available	
Boston MA	5/25/2021, 8:25:00 AM	Healthy	3 of 3 up		5.5 %	25.53 of 48 GB available	

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# Roadmap: Extensions planned for Azure Stack HCI

Adding powerful new functionality through the extension mechanism



New

# Provision and manage VMs from the Azure Portal

The screenshot shows the Azure Portal interface for a resource group named 'Contoso-Hospital' (Azure Stack HCI). The left-hand navigation pane is visible, with 'Virtual machines' highlighted and a blue arrow pointing to it. The main content area displays the 'Essentials' section, including resource group details like 'Contoso-Hospital-rg', 'Health status: Healthy', and 'Location: eastus2euap'. Below this, there are tabs for 'Nodes', 'Monitoring', and 'Capabilities'. The 'Nodes' tab is active, showing a table of servers:

Server	Azure connection	Manufact
TK5-3WP07R0815	Connected	Dell Inc.
TK5-3WP07R0816	Connected	Dell Inc.
TK5-3WP07R0817	Connected	Dell Inc.
TK5-3WP07R0818	Connected	Dell Inc.

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# Provision and manage VMs from the Azure Portal

with Arc-enabled VM management for Azure Stack HCI (preview)



## Azure Portal

Consistent user experience across cloud and edge



## ARM templates

Automate VM deployments with ARM templates



## RBAC and self-service

Users can access their VMs only, not the host fabric



COMING SOON

## Arc-enabled guests

Manage and monitor the guest OS and apps

The screenshot shows the Azure Portal interface for creating an Azure Arc virtual machine. The browser address bar shows the URL <https://portal.azure.com/>. The page title is "Create an Azure Arc virtual machine".






The navigation tabs are: Basics (selected), Disks, Networking, Tags, and Review + create.

The main content area is divided into sections:

- Project details:** Select the subscription to deploy your virtual machine. Use resource groups like folders to organize and manage all your resources.
  - Subscription: Contoso-Prod
  - Resource group: New Resource Group (with a "Create new" link below)
- Instance details:** Select the custom location for your new virtual machine. Some custom locations may support more than one kind of virtual machine.
  - Virtual machine name: radiology-session-host
  - Custom location: Contoso-Hospital
  - Virtual machine kind: Azure Stack HCI virtual machine
  - Image: Windows 10 multi-session (with a dropdown menu showing: Windows 10 Pro, Windows Server 2022 Datacenter, Windows Server 2019 Datacenter)
  - Virtual processor count: (empty)
  - Memory (GB): (empty)
  - Memory type: Static (selected)

# Lösungen von Thomas Krenn für Azure Stack HCI

# Lösungen von Thomas Krenn für Azure Stack HCI

<input type="checkbox"/> Vergleichen	<input type="checkbox"/> Vergleichen	<input type="checkbox"/> Vergleichen	<input type="checkbox"/> Vergleichen	<input type="checkbox"/> Vergleichen
				
<b>AzSHCI Series Dual-AMD 2U - RA22x</b> Thomas-Krenn.AG Skalieren: 2 bis 4 Knoten CPU: 16 bis 128 Kerne RAM: 64GB bis 1TB	<b>AzSHCI Series Dual-Intel 2U - RI22x</b> Thomas-Krenn.AG Skalieren: 2 bis 4 Knoten CPU: 16 bis 56 Kerne RAM: 64GB bis 1TB	<b>AzSHCI Series Dual-AMD 4U - RA24x</b> Thomas-Krenn.AG Skalieren: 2 bis 4 Knoten CPU: 16 bis 128 Kerne RAM: 64GB bis 1TB	<b>AzSHCI Series Dual-Intel 4U - RI24x</b> Thomas-Krenn.AG Skalieren: 2 bis 4 Knoten CPU: 16 bis 56 Kerne RAM: 64GB bis 1TB	<b>Azure Stack HCI Micro-Cluster</b> Thomas-Krenn.AG Skalieren: 2 Knoten CPU: 8 bis 16 Kerne RAM: 128GB bis 128GB
9 verschiedene Lösungen	9 verschiedene Lösungen	6 verschiedene Lösungen	6 verschiedene Lösungen	1 Lösung
<a href="#">Konfigurieren &gt;</a>	<a href="#">Konfigurieren &gt;</a>	<a href="#">Konfigurieren &gt;</a>	<a href="#">Konfigurieren &gt;</a>	<a href="#">Konfigurieren &gt;</a>



## Driver & Firmware Updates - Windows Admin Center (WAC) Extension

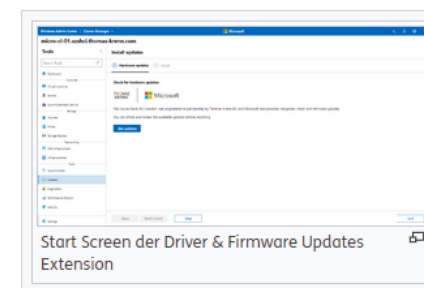
[Hauptseite](#) > [Server-Software](#) > [Windows](#) > [Windows Admin Center](#)

Die **Windows Admin Center Extension** bietet eine einfache und zentrale Möglichkeit, **Treiber und Firmware Versionen zu installieren und upzudaten**. Dank der nahtlosen Integration in den Prozess des Cluster Aware Updating (CAU) Dienstes, sowie in den Cluster Creation Wizard (CCU) können bereits beim Deployment von Azure Stack HCI, bzw. bei der laufenden Wartung des HCI Clusters die Versionen gleich gehalten werden.

Die in der Extension verfügbaren Treiber und Firmware Versionen werden explizit mit den kompatiblen Systemen getestet und nach einem erfolgreichen Test für die Extension freigegeben. Somit können Sie immer auf Nummer sicher gehen, dass Sie genau die richtigen Versionen verwenden.

### Inhaltsverzeichnis [\[Verbergen\]](#)

- 1 [Kompatibilität zu Thomas-Krenn-Systemen](#)
- 2 [Eigenschaften der Extension](#)
- 3 [Installation der Driver & Firmware Updates Extension](#)
- 4 [Handhabung beim Verbindungsaufbau](#)
- 5 [Workflow beim Cluster Aware Updating \(CAU\)](#)
  - 5.1 [Cluster Aware Updating \(CAU\) aufrufen](#)
  - 5.2 [Driver & Firmware Updates Extension aufrufen](#)
  - 5.3 [Hardware-Updates auswählen und verteilen](#)
  - 5.4 [CAU Prozess starten und Updates installieren](#)
- 6 [Workflow beim Cluster Creation Wizard \(CCU\)](#)



## Kompatibilität zu Thomas-Krenn-Systemen

Die Driver & Firmware Updates Extension ist zum aktuellen Zeitpunkt für folgende Systeme der Thomas-Krenn.AG kompatibel.

FRU und DMI-Namen der kompatiblen Systeme:

- Thomas-Krenn.AG AzSHCI Micro-Cluster TA

# Vielen Dank!



Manfred Helber



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