

## Solution Snapshot

# Microsoft Azure Stack HCI



## The Challenge

### Azure Stack HCI offers a straightforward path to hybrid cloud

With Azure Stack HCI and Intel, organizations can leverage virtualized compute and storage, clustering servers across Ethernet networks, with scalable performance and capacity, and the flexibility to support multiple workloads.

50%

of organizations are currently implementing and executing various digital transformation initiatives<sup>1</sup>

48%

of organizations would prefer a consumption-based model for data center infrastructure, assuming net-cost was the same<sup>1</sup>

56%

of major enterprises agree cloud migration is an "absolute necessity", but increasingly emphasize hybrid cloud adoption<sup>2</sup>

### Use Cases:



Trusted Enterprise Virtualization



Remote or Branch Office and Edge



Virtual Desktop Infrastructure (VDI)



High Performance Microsoft SQL Server



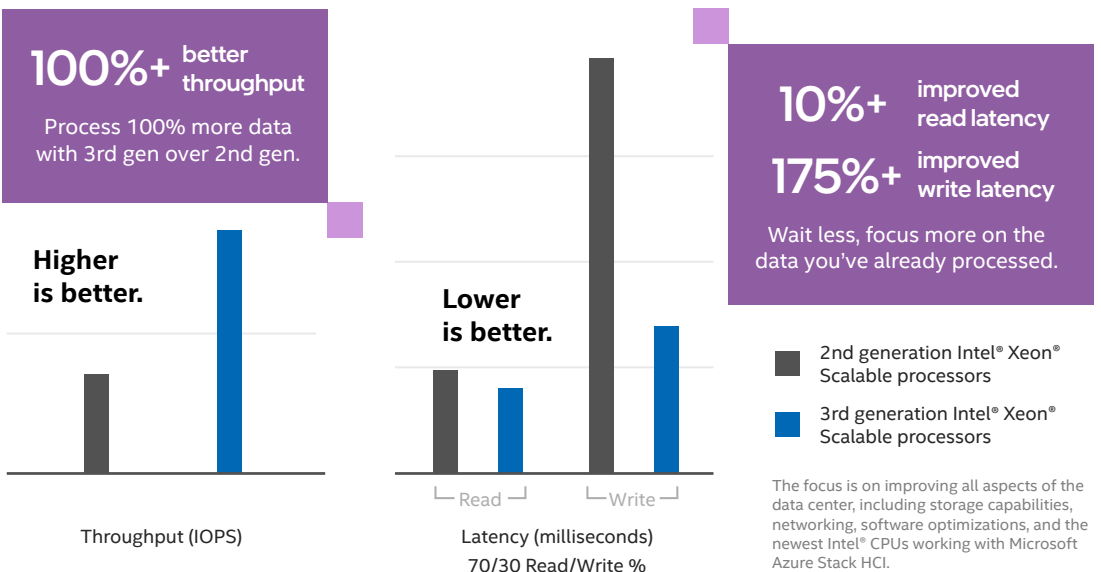
Azure Kubernetes Service

## Azure Stack HCI Overview + Benefits

Azure Stack HCI is a hyperconverged infrastructure host operating system designed by Microsoft to CONNECT on-premises and cloud resources, maximizing storage, performance, scalability, and functionality, now with built-in Azure hybrid capabilities. With zero upfront software cost, customers will get Azure Stack HCI features and security updates as part of their Azure subscription.

Intel and Microsoft worked together to combine software and hardware capabilities to create a flexible, scalable, and high-performing infrastructure for customers. Intel optimizes Azure Stack HCI through a broad set of foundational technologies designed for rapid scaling of compute and capacity for workload flexibility.

### Combining Strengths Equals Big Benefits<sup>3</sup>



The focus is on improving all aspects of the data center, including storage capabilities, networking, software optimizations, and the newest Intel® CPUs working with Microsoft Azure Stack HCI.

# Why Intel for Microsoft Azure Stack HCI?



## End-to-End Solution with Easy Migration Path

- Solutions, reference architectures, and POCs co-developed with ecosystem partners
- Consistent infrastructure with ability to migrate VMs across five generations of CPU

Wide range of 3rd generation Intel® Xeon® Scalable processor SKUs to tailor cores and frequency to workload requirements



## Optimized Performance & Security

Workload-optimized solutions with hardware-enhanced security technologies help thwart malicious exploits and maintain workload integrity

Intel® Optane™ persistent memory provides hardware security migrations and automatic data encryption



## Fast Deployment with Optimized and Configurable Solutions

- Co-engineering provides stronger solutions to better address IT pain points
- Intel-developed libraries and tools to optimize software performance

Intel® Ethernet 800 Series Network adapters offer 10 to 200GbE featuring iWARP and RoCEv2 providing low latency and enhanced throughput



## Industry-leading trust from Intel

Collaboration with the ecosystem drives industry standards such as NVMe Express, NVMe-oF, DMTF Redfish/SNIA Swordfish, and Confidential Computing Consortium

Created as an Intel® Select Solution for Microsoft Azure Stack HCI featuring 3rd generation Intel® Xeon® Scalable processors, this solution offers a verified hardware and software stack for the data center and the edge

Performance varies by use, configuration and other factors. Learn more at [www.intel.com/PerformanceIndex](http://www.intel.com/PerformanceIndex). No product or component can be absolutely secure. Your costs and results may vary. Intel technologies may require enabled hardware, software or service activation. Intel technologies may require enabled hardware, software or service activation.

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## Want More Information?

### What are Intel® Select Solutions?

Intel® Select Solutions eliminate guesswork with rigorously benchmarked testing and verified solutions that include a tailored combination of Intel data center compute, memory, storage, and networking technologies.

### Resources

[Intel + Microsoft Partnership](#)

[Intel® Select Solutions](#)

[Microsoft Azure Stack HCI](#)

1 <https://www.esg-global.com/hubfs/ESG-Infographic-2021-Technology-Trends-to-Watch.pdf>

2 <https://www.zdnet.com/article/hybrid-cloud-and-low-code-approaches-gained-favor-during-covid-19-crisis/>

3 Base: Tested by Intel as of 3/12/2021. 4 Node, 2x Intel® Xeon® Gold 6330 CPU, 1x Intel® Server Board M50CYP, Total Memory: 256GB (16 x 16 GB 2933MHz DDR4 RDIMM), Intel® Hyper-Threading Technology: Enabled, Turbo: Enabled, Storage (boot): 1 x Intel® SSD D3-S4510 Series (480GB, 2.5in SATA 6Gb/s, 3D2, TLC), Storage: 4x Intel® SSD DC P4610 Series (3.2TB) (NVMe), Network devices: 1 x 100 GbE Intel® Ethernet Network Adapter E810-C-Q2, Network speed: 25 GbE, 1 x 10 GbE Intel® Ethernet Converged Network Adapter X550-T2, Network Speed: 10 GbE, OS/Software: Microsoft Azure Stack HCI build 17763 with SQL Server 2019 Standard Edition RTM CU9, DiskSpd (QD=8,30w:70r): 1.396M IOPS @4.03ms(r), @6.95ms(w) for 90% requests OLTP workloads TPCROC-C: 2.165M NOPM, Throughput for OLTP workloads: 2.2M NOPM

Intel internal testing as of February 15, 2019. Intel® Select Solutions for Microsoft Azure Stack® HCI Data Center model Base configuration: 2 x Intel® Xeon® Gold 6230 processor, Intel® Server Board S2600WFT, 512 GB Intel® Optane™ DC persistent memory (4 x 128 GB, 2,666 megatransfers per second [MT/s]), 192 GB DRAM (12 x 16 GB, 2,666 MT/s), Intel® Hyper-Threading Technology (Intel® HT Technology) enabled, Intel® Turbo Boost Technology enabled, storage (boot): 1 x 480 GB Intel® SSD DC 3520 N.2 SATA, storage (cache): 2 x 375 GB Intel® Optane™ SSD DC P4800X, storage (capacity): 4 x 4 TB Intel® SSD DC P4510 PCIe\* NVMe Express\* (NVMe)\*, 1 x 25 gigabits per second (Gbps) Chelsio® network adaptor, 25 GbE, Windows Server 2019 Datacenter edition\* build 17763. Plus configuration: 2 x Intel® Xeon® Gold 6252 processor, Intel® Server Board S2600WFT, 1,584 GB Intel® Optane™ DC persistent memory (12 x 128 GB, 2,666 NT/s), 192 GB DRAM (12 x 16 GB, 2,666 MT/s), Intel® HT Technology enabled, Intel® Turbo Boost Technology enabled, storage (boot): 1 x 480 GB Intel® SSD DC 3520 M.2 SATA, storage (cache): 2 x 500 GB Intel® Optane™ SSD DC persistent memory, storage (capacity): 4 x 4 TB Intel® SSD DC P4510 PCIe NVMe, 1 x 25 gigabits per second (Gbps) Chelsio network adaptor, 25 GbE, Windows Server 2019 Datacenter edition build 17763.