Western Digital Storage Powers the Cisco® Integrated System for Microsoft® Azure Stack—Large Hybrid Option, 96TB

Application modernization starts with hybrid cloud infrastructure to accelerate digital business transformation, scale storage resources, and optimize performance and cost.

Highlights

Eliminate the frustration of digital business transformation by leveraging a preconfigured solution to take advantage of "cloud-native" applications and workloads.

Customer Challenges

- Meet expectations of system reliability and peak load performance
- Sustain high-utilization rates
- Reduce costs to heat, power, and cool data centers

Solution Features

- On-premises applications that run on the Azure® public cloud
- Cisco Integrated System for Microsoft Azure Stack, based on Cisco UCS®
- 96TB[1] data storage per node, up to 12 nodes; 12 nodes reach 1.2PB for data storage
- Storage capabilities of the 12-node, 96TB solution: (3) Ultrastar® DC SN200 NVMe™ SSDs HH-HL – 3.2TB capacity; (12) Ultrastar DC HC510 HDDs – 8TB capacity

Solution Benefits

- Preconfigured, ease of scale
- Initial deployment with 4 nodes, add a single node on an incremental basis, up to 12 nodes maximum
- Storage cache and data storage optimized to achieve peak performance with long-term data storage requirements

Digital Business Requires a Digital Platform

You can accelerate digital business transformation by using hybrid cloud infrastructure. By extending pubic cloud infrastructure capabilities to on-premises data centers, enterprises can leverage the vast benefits of cloud computing (i.e., elasticity, failover to Azure, "cloud-native" support, and workload flexibility) for better digital business performance.

Enterprises may require a hybrid cloud approach to solve issues surrounding latency, intermittent connectivity to public cloud, or regulatory compliance for data privacy and/or data sovereignty.

Hybrid Cloud Infrastructure Pillars

- **Scalability**—Enterprises must easily scale compute and storage resources as "cloud-native" applications and workloads grow. As the business value of a hybrid cloud architecture increases, you need the ability to rapidly scale to match business needs without sacrificing system performance and/or cost overruns from poorly planned architectures.

- **Performance**—Because enterprise data is the new currency of the digital business era, storage performance and reliability have become critical to optimize overall system performance and to maintain low-latency access to terabytes and petabytes of online data storage.

- **Cost Optimization**—Deploying and scaling a sound hybrid cloud architecture decreases enterprise risk and increases opportunities for success. When you modernize existing applications or implement new "cloud native" applications and workloads targeted at incremental revenue streams, you are effectively monetizing your data stores.

Purpose-built Hybrid Cloud Infrastructure

For successful hybrid cloud execution, from initial deployments to long-term scale, Cisco® Integrated System for Microsoft® Azure Stack leverages both Azure public cloud PaaS and IaaS services and makes them available for on-premises data centers. Western Digital powers the storage up to 96TB per node with its high-performance NVMe SSDs and reliable, high-capacity HDDs.

[1] One megabyte (MB) is equal to one million bytes, one gigabyte (GB) is equal to 1,000MB (one billion bytes), one terabyte (TB) is equal to 1,000GB (one trillion bytes), and one petabyte (PB) is equal to 1,000TB when referring to storage capacity. Accessible capacity will vary from the stated capacity due to formatting, system software, and other factors.

Solution Overview

Microsoft Azure Stack provides a purpose-built, preconfigured solution to run the same applications in on-premises data centers as those on the Azure public cloud. Azure Stack makes Azure services consistently available across the Microsoft global public cloud, across service-provider hosted public clouds, and within enterprise private clouds.

Azure Stack Solution Details

Cisco Integrated System for Microsoft Azure Stack, based on Cisco UCS, delivers Microsoft Azure enterprise cloud computing to on-premises data centers:

- **Designed for cloud**—Cisco Integrated System for Microsoft Azure Stack combines high-performance networking with Cisco Unified Fabric designed to accelerate cloud network traffic.

- **Scale with ease**—Start with 4 nodes, then scale to 12 nodes at one node increments.

- **Leading system performanc**e—Use 40 GbE from the NIC to the top-of-rack switch with Ultrastar DC SN200 NVMe SSD HH-HL add-in-cards (AIC) in each node to ensure maximum performance, allow cluster growth, and ensure maximum virtual machine density.

- **Full redundancy**—There is no single point of failure throughout the Azure Stack hardware: three Ultrastar DC SN200 NVMe SSDs are included in each node for redundancy.

Ultrastar storage products from Western Digital deliver performance and capacity for Cisco's Azure Stack:

- **Ultrastar DC SN200 NVMe SSD**—Use high-throughput, maximum-performance NVMe SSD AIC with consistently low latency for Azure Stack cache operations.

- **Ultrastar DC HC510 8TB HDD**—Azure Stack capacity tier. Use Ultrastar DC HC510 HDDs, with third-generation HelioSeal® platform, to enable high reliability and availability for data storage.

Conclusion

The ability to address digital business with hybrid cloud solutions enables an enterprise to quickly develop and support digital business applications and workloads.

Cisco, Western Digital, and Microsoft have validated this preconfigured solution to eliminate the frustrations of scaling a hybrid cloud solution.

Cisco Integrated System for Microsoft Azure Stack, powered by Western Digital storage, delivers a hybrid cloud solution with the following value proposition:

- Use this preconfigured solution to eliminate architectural guessing when attempting to mix data caching and data storage with compute and networking.

- Achieve peak performance and system reliability by eliminating single points of failure and storage device redundancy.

- Enable more workloads to run simultaneously due to consistent storage performance.

To learn more about the Cisco Integrated System for Azure Stack, visit: https://www.cisco.com/c/en/us/solutions/data-center/integrated-system-microsoft-azure-stack/

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