Cisco Integrated System for Microsoft Azure Stack Hub

Contents

Cisco® Integrated System for Microsoft Azure Stack Hub delivers a hybrid cloud solution that accelerates growth and simplifies management and control, all backed by two trusted technology innovators.

There is no better infrastructure than Cisco Unified Computing System™ (Cisco UCS®) to deliver on the promise of cloud computing solutions and the power of Microsoft Azure cloud. With Cisco Integrated System for Microsoft Azure Stack Hub, you get the power of the world's most robust cloud platform on a computing system designed to provide optimal performance for virtual workloads and deliver on that promise: Cisco UCS.

Cisco Integrated System for Microsoft Azure Stack Hub will help accelerate your business growth and innovation with an efficient, elastic cloud consumption model that meets the growing needs of your stakeholders. Free up essential IT resources from low-value administrative tasks and achieve full control of your new hybrid environment through automation and policy-based management tools. Bolster confidence in your IT environment supported by Cisco and Microsoft—proven innovators and trusted technology partners that are the market leaders in hybrid cloud infrastructures.

Cisco Integrated System for Microsoft Azure Stack Hub delivers these benefits:

- **The power of Microsoft Azure in your data center:** Hybrid cloud agility for Microsoft Azure services enables on-premises governance, security, and performance. Developers can create an agile Microsoft Platform-as-a-Service (PaaS) environment with API portability and a user interface identical to that of the Azure public cloud.

- **Only fully redundant Azure Stack:** Commodity Azure Stack system designs have numerous single points of failure: the Baseboard Management Controller (BMC) or management switch and the Hardware Lifecycle Host (HLH) or systems management server. With Cisco's integrated approach to Azure Stack, there are no single points of failure throughout the entire platform. BMC/management switching and general systems management are embedded within the fabric interconnects. We are able to install the solution in your data center in your own system rack.

- **Industry-leading performance:** Cisco's fully integrated Azure Stack has been designed to deliver industry- leading performance by using a 40-Gigabit Ethernet (GE) from end to end, from the network interface card in the server through to the Top-of-Rack (ToR) switch while integrating Nonvolatile Memory express (NVMe) in each server to help ensure maximum performance and maximum virtual machine density and allow growth of the cluster. Customers have the choice of hybrid or all-flash storage options leveraging the latest servers and 2nd Generation Intel® Xeon® Scalable processors, up to 28 cores per socket.

- **Best-of-class technology from end to end:** Utilizing Cisco Nexus® 9000 cloud-scale switching technology enables you to be ready for next-generation network analytics and security capabilities and to easily grow your platform.

- **Automated installation procedure:** Cisco UCS service profiles, integrated policy, templates, and open APIs enable administrators to easily deploy servers with exactly the same configuration from firmware versions to driver settings. These technologies have enabled Cisco to develop deployment tools to help ensure an automated, consistent configuration of your Azure Stack in minutes, incorporating Cisco best practices.

Microsoft Azure Stack Hub on the system designed for cloud: Cisco UCS

Cisco Azure Stack Hub is built on industry-leading server technology: Cisco UCS. With proven operational advantages, 40 percent faster infrastructure deployment, and 38 percent reduction in ongoing management costs compared to conventional server infrastructure, Cisco UCS is built for rapid scalability and hybrid cloud workloads with policy- based management, API-enabled automation, and hardware abstraction. Table 1 lists the features and benefits of Cisco Integrated System for Microsoft Azure Stack.

Table 1. Features and benefits of Cisco Integrated System for Microsoft Azure Stack

Feature	Benefit
The power of Microsoft Azure in your data center	Hybrid cloud agility for Microsoft Azure services enables on-premises governance, security, and performance. Developers can create an agile Microsoft PaaS environment with API portability and identical user interface to the Azure public cloud.
No single points of failure	Commodity system designs use a single BMC switch and system management server. Cisco embeds the BMC capability in its servers and fabric interconnects. Cisco UCS Manager runs on a pair of fabric interconnects, avoiding the need to invest in a Hardware Lifecycle Host (HLH).
Maximized performance within the cluster	Incorporating NVMe Peripheral Component Interconnect (PCI) cards with the server nodes and 40 GE from the Network Interface Card (NIC) through the ToR switch, we can position your organization to maximize the performance of each cluster and allow for future growth and virtual machine density. Cisco also offers the option of all-flash storage to further maximize performance.
Your data center standards used for best benefit	Cisco Nexus networking switches and technology extend your networking standard to Azure Stack. Our system is installed within your data center's system racks.
Automated installation scripts	Service profile templates automate the complete setup of your system. These templates reduce setup time from hours to minutes and incorporate best practices.
Microsoft Azure Stack Hub on the system designed for cloud: Cisco UCS	The solution is built for rapid scalability and hybrid cloud workloads with policy-based management, API- enabled automation, and hardware abstraction. Operational advantages are proven, with 40 percent faster infrastructure deployment and 38 percent reduction in ongoing management costs compared to conventional server infrastructure.

Cloud-ready, integrated system for Microsoft Azure Stack Hub

Cisco Integrated System for Microsoft Azure Stack Hub delivers accelerated growth and innovation, simplified management and control, and earned confidence and trust, all backed by two trusted technology innovators.

- **Single-vendor source**: All major system components are designed, developed, and manufactured by Cisco. Controlling the product roadmaps and management interface points provides long-term confidence.

- **Systems management:** Cisco UCS Manager is embedded within the fabric interconnect. A separate systems management server or HLH is not required, saving you money, space, and power in your data center.

- **Freedom of choice for Azure Services:** Purchase direct from Microsoft or through a Microsoft Cloud Service Partner.

- **Ease of scalability:** You can use Cisco UCS Manager's service profiles to add a system node to a cluster without professional services assistance.

- **Proven operational advantages:** Infrastructure deployment is 40 percent faster, and ongoing management costs are reduced by 38 percent compared to conventional server infrastructure.

Table 2 provides information about system components.

Table 2.   System components

Product family	Platforms supported	Cisco IOS® feature sets (images) supported
Cisco UCS	C240 M5L (hybrid storage) C240 M5sx (all-flash storage)	Each server has 32 TB, 64 TB, 96 TB, 120 TB, 144TB hybrid storage capacity
		Each server has 30 TB, 45 TB, 60 TB, 91 TB, 121 TB, all-flash storage capacity
		Note: Each server must be of the exact same configuration.
		Choice of scalable processors from 12 to 28 cores
		2.4 GHz 4214R/100W 12C/16.50MB DDR4 2400 MHz
		2.3 GHz 5118/105W 12C/16.50 MB Cache/DDR4 2400MHz
		2.1 GHz 5218R/125W 20C/27.50MB DDR4 2666 MHz
		2.2 GHz 5120/105W 14C/19.25 MB Cache/DDR4 2400MHz
		2.2 GHz 5220R/150W 24C/35.75MB DCP DDR4 2666 MHz
		2.1 GHz 6130/125W 16C/22 MB Cache/DDR4 2666MHz
		2.1 GHz 6230R/150W 26C/35.75MB DDR4 2933 MHz
		2.2 GHz 6238R/165W 28C/38.50MB DDR4 2933 MHz
		2.3 GHz 6140/140W 18C/24.75 MB Cache/DDR4 2666MHz
		2.4 GHz 6148/150W 20C/27.50 MB Cache/DDR4 2666MHz
		2.1 GHz 6152/140W 22C/30.25 MB Cache/DDR4 2666MHz
		2.9 GHz 6226R/150W 16C/22MB DDR4 2933 MHz
		2.1 GHz 6238/140W 22C/30.25MB DCP DDR4 2933 MHz
		2.1 GHz 8160/150W 24C/33 MB Cache/DDR4 2666MHz

Product family	Platforms supported	Cisco IOS® feature sets (images) supported
		2.0 GHz 8164/150W 26C/35.75 MB Cache/DDR4 2666MHz
		2.1 GHz 8176/165W 28C/38.50 MB Cache/DDR4 2666 MHz
		2.6 GHz 6142M/150W 16C/22MB Cache/DDR4 2666 MHz
		2.3 GHz 6140M/140W 18C/24.75MB Cache/DDR4 2666 MHz
		2.1 GHz 8160M/150W 24C/33MB Cache/DDR4 2666 MHz
		2.1 GHz 8170M/165W 26C/35.75MB Cache/DDR4 2666 MHz
		2.1 GHz 8176M/165W 28C/38.50MB Cache/DDR4 2666 MHz
		2.5 GHz 8180/205W 28C/38.50MB Cache/DDR4 2666MHz
		2.5 GHz 8180M/205W 28C/38.50MB Cache/DDR4 2666MHz
		2.3 GHz 5218/125W 16C/22MB 3DX DDR4 2666MHz
		2.5 GHz 6248/150W 20C/27.5MB 3DX DDR4 2933 MHz
		2.4 GHz 8260/165W 24C/35.75MB 3DX DDR4 2933 MHz
		2.2 GHz 8276/165W 28C/38.50MB 3DX DDR4 2933 MHz
		Choice of memory per node: 384 GB, 512GB, 768GB, 1024GB, 1536 GB, 2048GB
Cisco Nexus 9000 Switch	9336C-FX2	Top of rack pair of switches provides connectivity to the border switches of the customer's data center
Cisco UCS fabric interconnect	UCS-MAFI-6332	Cisco UCS fabric interconnect supports Cisco UCS Manager to manage your system and its workloads
Cisco Nexus 2000 Out of Band Management switch	N2K-C2348UPQ	Provides Cisco UCS management to dual-port 40GbE Network Interface Card (NIC)

System requirements

Table 3 lists the system requirements.

Table 3.   System requirements

C240 M5L or C240 M5sx server	Any increment from a minimum of 4 to a maximum Azure Stack supports (cannot mix models)
9336C-FX2 Nexus 9000 switch	2 (included in the fixed bill of materials)
FMSFI – 6332 Gen 3 fabric interconnect	2 (included in the fixed bill of materials)
Nexus 2000 Out of Band Management switch	2 (included in the fixed bill of materials)
Onsite installation	Included
24 x7 x4 or 24 x7 xNBD support	Included

Ordering information

Table 4 provides the ordering information.

Table 4. Ordering information

Part #	Product description
Fixed bill of materials	Ordering is easy. Simply choose the number of server nodes (4 minimum) and pick the processor, memory amount, and storage capacity. The ordering system ensures that all nodes have the same configuration and automatically adds in all other system elements to complete your Cisco Integrated System for Microsoft Azure Stack.

Cisco and partner services for Azure Stack

Services and support are provided through Cisco and our authorized installation partners. Cisco provides all support through a coordinated resolution-and-escalation process codeveloped with Microsoft. Services from Cisco and certified partners can assist you on your cloud journey with planning and design services that align technology with business goals and can increase the accuracy, speed, and efficiency of your deployment.

Cisco environmental sustainability

Information about Cisco's environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the "Environment Sustainability" section of Cisco's Corporate Social Responsibility (CSR) Report.

Reference links to information about key environmental sustainability topics (mentioned in the "Environment Sustainability" section of the CSR Report) are provided in the following table:

Sustainability topic	Reference
Information on product material content laws and regulations	Materials
Information on electronic waste laws and regulations, including products, batteries, and packaging	WEEE compliance

Cisco makes the packaging data available for informational purposes only. It may not reflect the most current legal developments, and Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice.

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Get started now

Start accelerating your business growth and innovation through the power of a hybrid cloud with Cisco Integrated System for Microsoft Azure Stack Hub in your data center. Gain the benefits of Microsoft Azure Stack with a cloud- ready infrastructure solution designed for rapid scalability and cloud-native applications. Use the Cisco ONE™ Enterprise Cloud Suite Cloud Management package to automate deployment and management of applications across 20 hybrid cloud environments, including Microsoft Azure Stack and Microsoft Azure.

For more information

Visit https://www.cisco.com/go/microsoft-azure-stack.

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