

Diverse Virtualization Deployment Strategies with Cisco UCS

VMware, Nutanix, Red Hat, Microsoft, and More

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Technical Marketing Engineering
BRKCOM-2460

CISCO Live !

Cisco Webex App

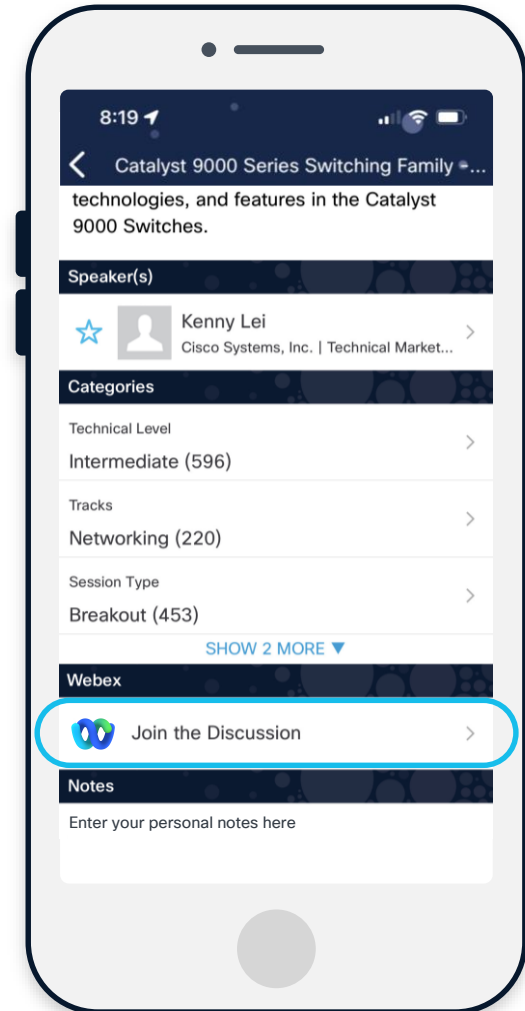
Questions?

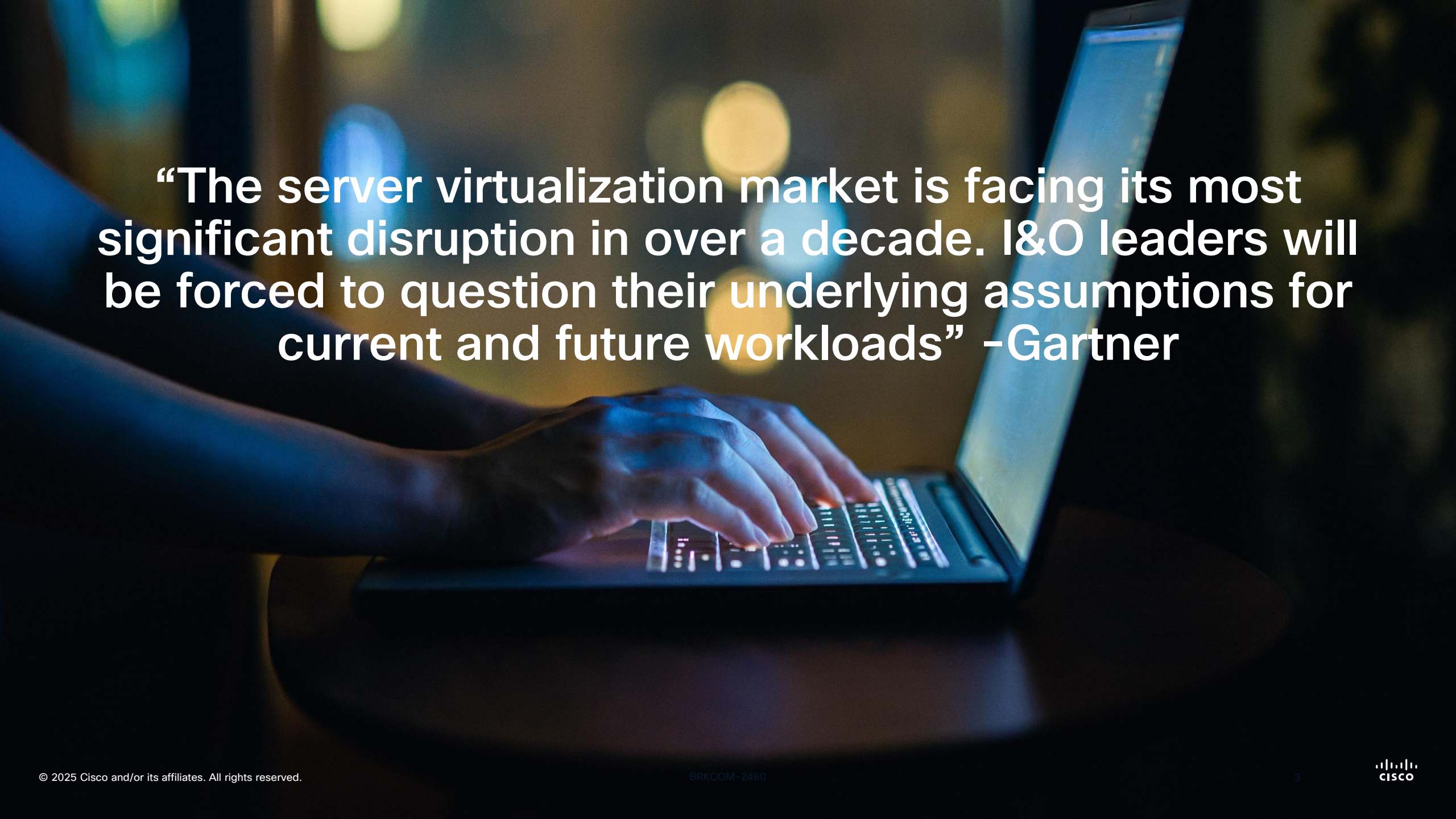
Use Cisco Webex App to chat with the speaker after the session

How

- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
- 3 Install the Webex App or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until June 13, 2025.





“The server virtualization market is facing its most significant disruption in over a decade. I&O leaders will be forced to question their underlying assumptions for current and future workloads” -Gartner

Agenda

- 01 Introduction
- 02 Broadcom/VMware
- 03 Cisco HCI with Nutanix
- 04 Red Hat OpenShift
Container Platform
- 05 Cisco HCI with Microsoft Azure Local
- 06 Bare Metal and more
- 07 Closing

Applications redefining IT

SUSTAINABILITY

Performance, Power and Footprint
Data center power consumption accounts for up to 50x that of a typical commercial office building³



HYBRID MULTICLOUD

Intelligent Workload Placement
82% of companies are operating both on-prem and in the cloud while 30% are moving to intelligent workload placement



750M

new applications
by 2025 ¹

APPLICATION ARCHITECTURE

Hyper-distributed and Hyper-diverse
Market disruption drives platform diversity
3 years with 50% of data being generated at the edge



SECURITY

Growing Attack Surface and Vectors
69% of organizations say multicloud security configuration challenges led to data breaches or exposures²



Hash
table

Llama-2

LLM

Arrays

DLRM

GenAI

Inferencing

AI / ML

Falcon3

Training

GPU

Mistral

ANN

ChatGPT

FLAN

RAG

FFNN

NLP

GAN

Let's talk about the Elephant in the room

Broadcom/VMware



- End Of Availability of Perpetual licenses
- Transition to subscription-based license model
- Transition from CPU to Core based licenses
- Reduced many single products down to 4 packages potentially forcing some customers to buy functionality they will never use.

slido

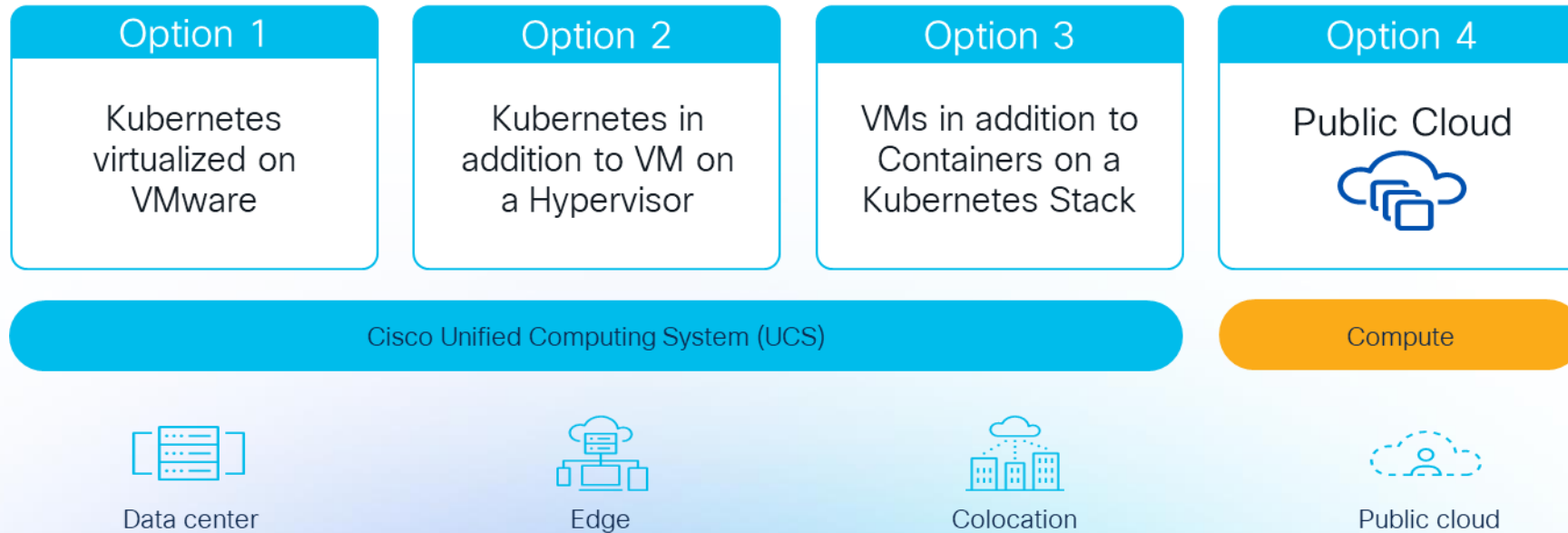
Please download and install
the Slido app on all
computers you use



Which Hypervisor are you using today?

① Start presenting to display the poll results on this slide.

What is your Stack for the Future?



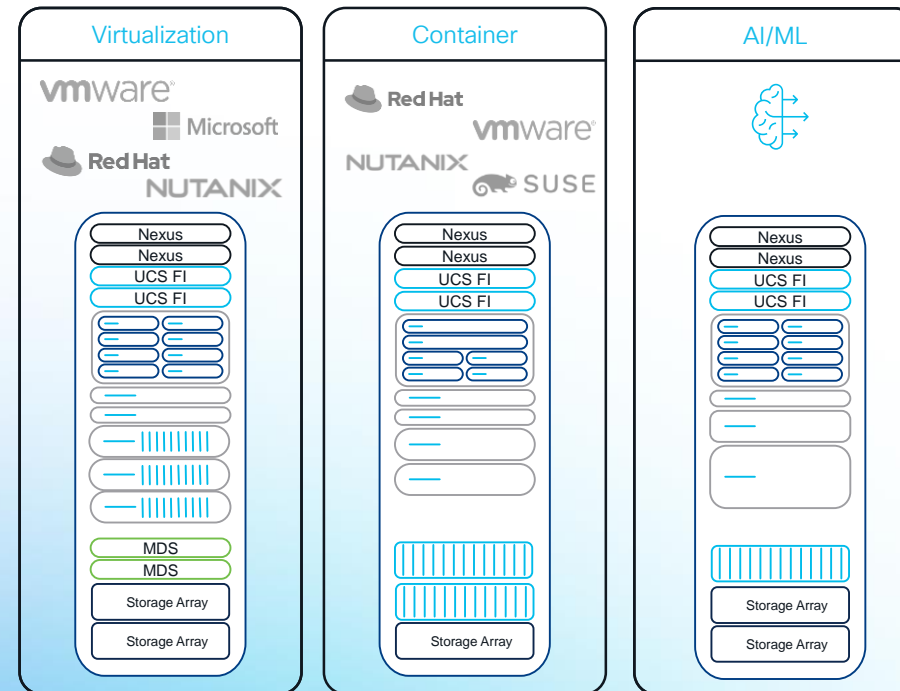
Infrastructure modernization Solutions

CVDs offering choice and flexibility for a variety of deployment types.

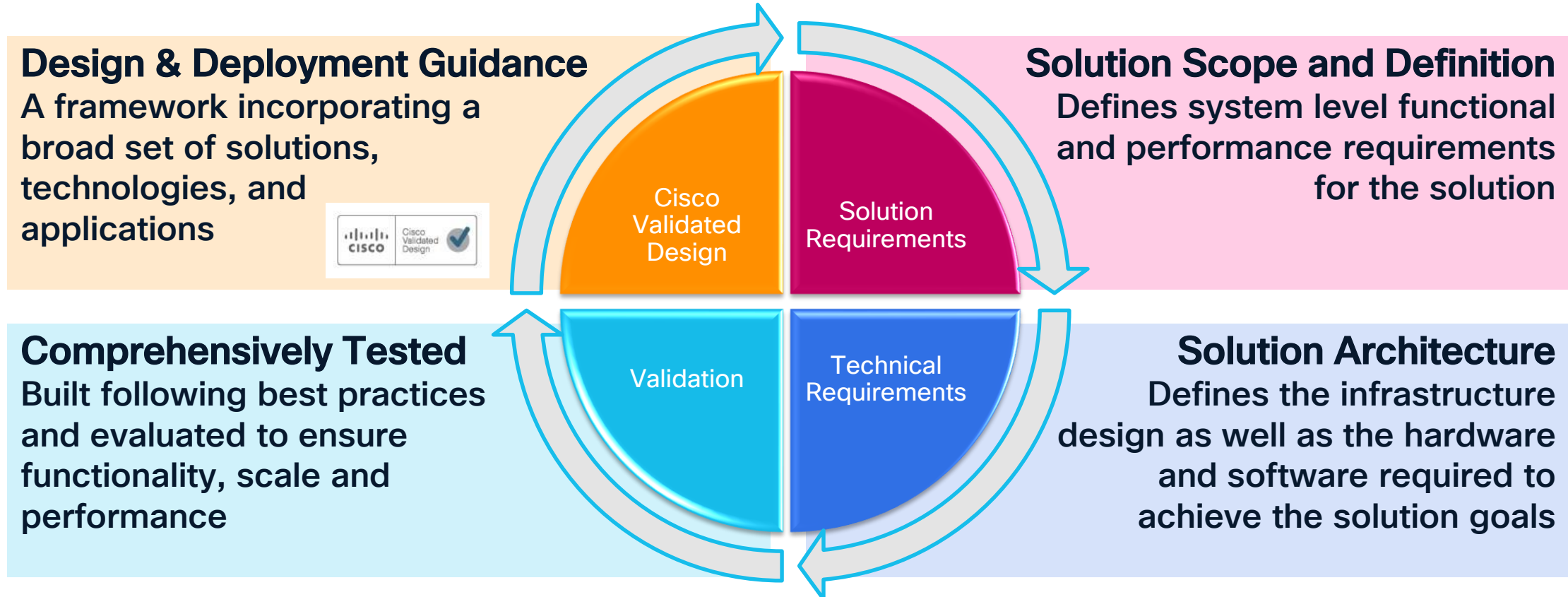
Pre-designed data center architectures that incorporate Cisco computing, Cisco networking, storage and virtualization delivering best practice design, compatibility and lowering business risk.

Designed for enterprise use cases and applications including AI/ML, Containers, SAP HANA, Desktop virtualization, Data protection and hybrid multi-cloud.

The Configuration principals used in the CVD allow customers to scale each component as required.



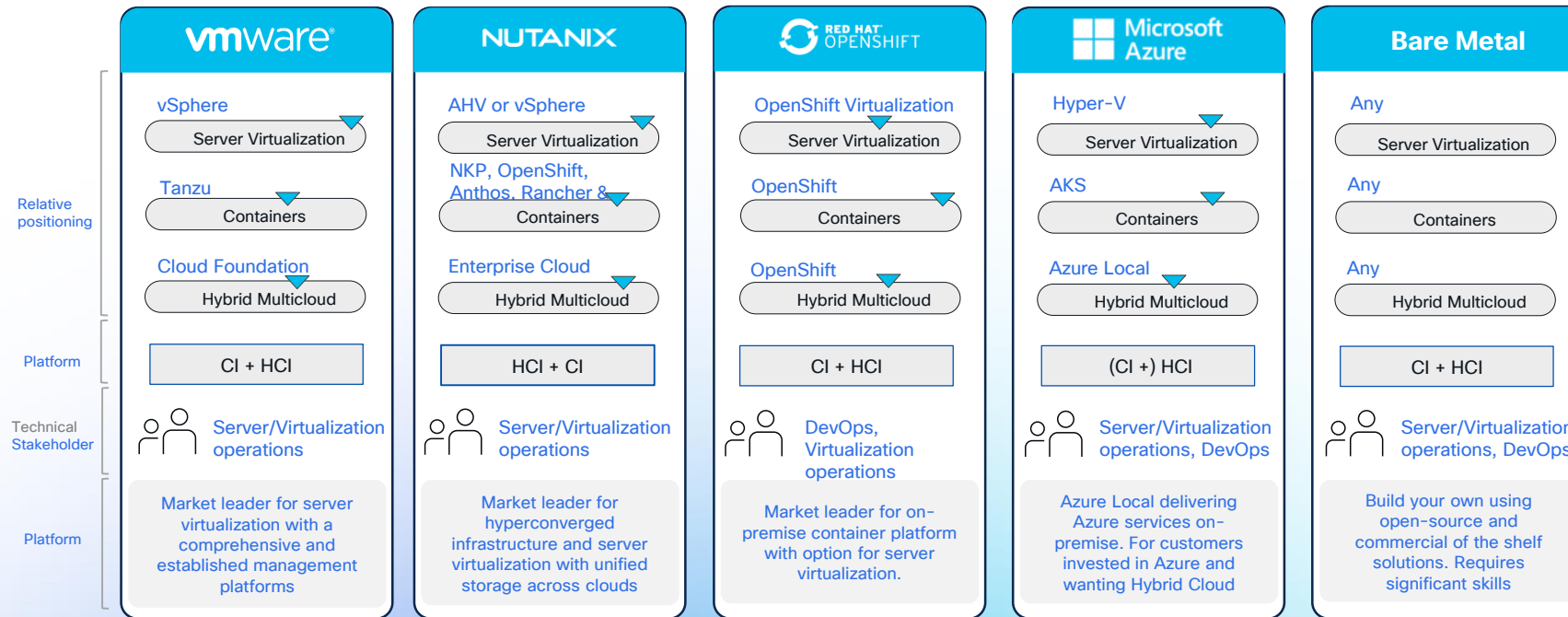
Cisco Validated Design Process




Easily Deploy New Systems With Expert Guidance

Consistent, Successful Technology Deployments Addressing Business Initiatives

Application Platform Modernization Crossroads

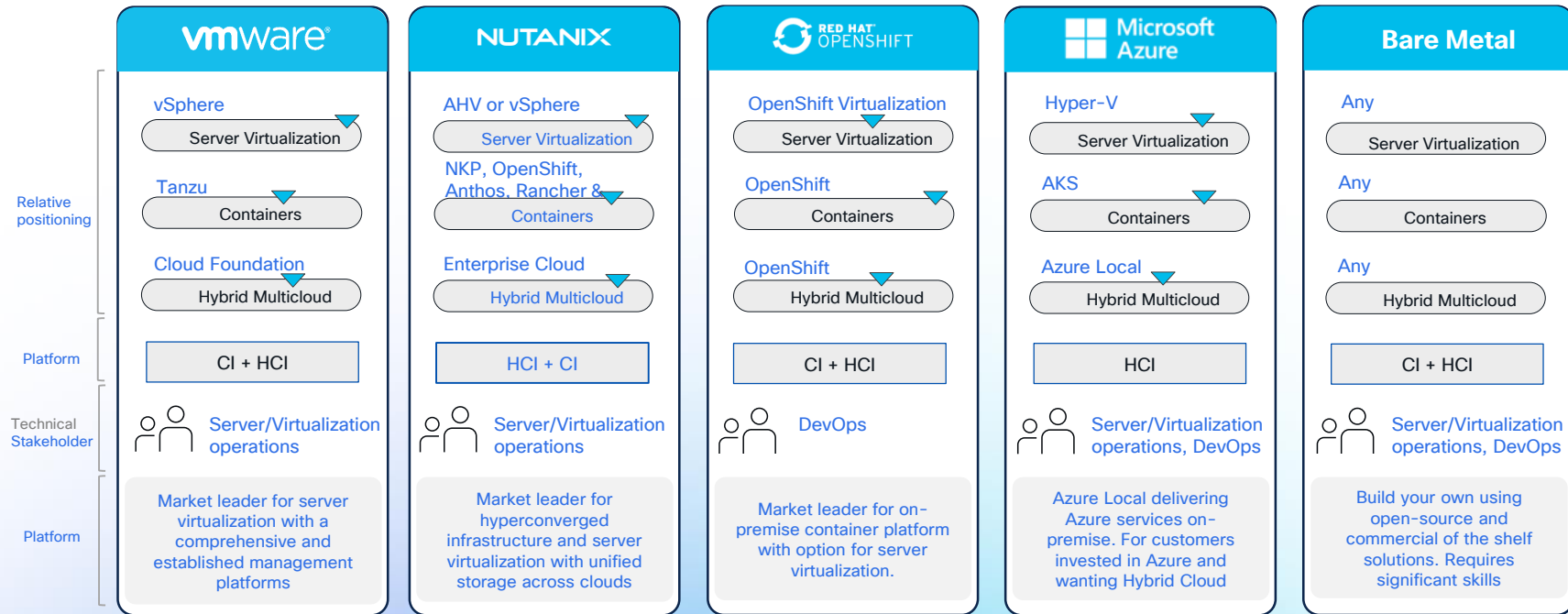


A close-up photograph of a person's hands. The left hand is resting on a tablet computer, with fingers slightly curled as if about to touch the screen. The right hand is holding a yellow and black card, possibly a credit card or a business card, held vertically. The background is dark and out of focus, suggesting an office or business environment. The lighting is soft, highlighting the hands and the devices.

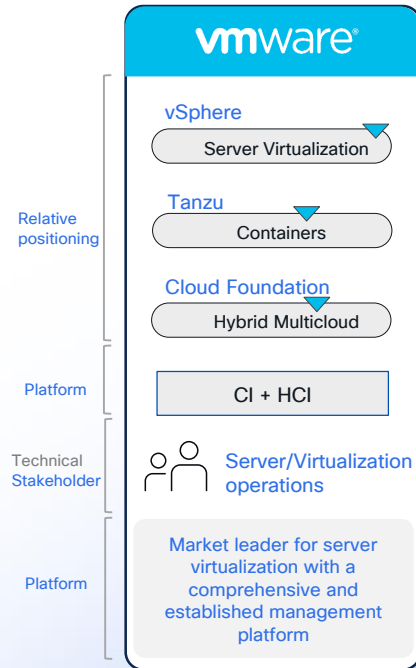
Server Virtualization market disruption is happening!

With Cisco UCS you have choices.

VMware



VMware



A Leader in Virtualization

VMware give customers the most matured platform and ecosystem for virtualization in the datacenter and across clouds.



Broad Partner Integrations

Integrations and Plug-Ins allow full application platform and infrastructure lifecycle management.



Application Modernization

VMware Tanzu helps companies to adopt containerized application and cloud native workload in the data center

- Most of the K8s deployments are running on top of VMware.

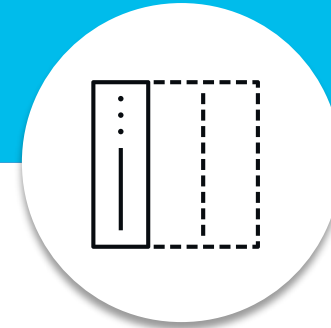
Cisco solutions to continue with VMware



Deliver VMware on Cisco **Converged** and **Hyperconverged** infrastructure assured by Cisco validated designs.



Manage and optimize the VMware Software Defined data center with **VMware Cloud Foundation** or **VMware vSphere Foundation** deployed on Cisco UCS series



Optimize VMware licensing costs through server refresh and consolidation

Validated Solutions for VMware



Validated and Integrated Solutions to reduce deployment time and risk.

Pre-designed data center architectures that incorporate Cisco computing, Cisco networking, storage and VMware virtualization delivering best practice design, compatibility and lowering business risk.

Converged and Hyper Converged solutions to address every scale and deployment option.



Simplified operations with Cisco Intersight integrations including vCenter HA plugin, Intersight Device Connector for Nutanix Prism.

Intersight & VMware

VMware Inventory in Intersight



See
the Information you need



Connect
the information and components



Operate
Simplified operation through Information

Core Virtual Machines operations

Virtual Machines Summary

- Status: Stopped 25, Running 19, Pending 1
- OS: 45 total (Rocky Linux 18, Other 32-bit 8, Other 2.6.x Linux 6, Ubuntu Linux 3, Other 10)
- CPU Utilization: 44% (OK)
- Memory Utilization: 45% (OK)

Name	Status	CPUs	CPU Capacity	CPU Utilization	Memory Capac...	IP Address	Placement
na-vc	Running	4	8.78 GHz	40.0%	21.00 GiB	10.1.156.200	AA13-FlexPod...
na-ucsm-plugin	Running	4	9.58 GHz	0.2%	16.00 GiB	10.1.156.205, fe80::250:56ff:fe9... (2)	AA13 Start/Resume
na-snapctr	Running	4	9.58 GHz	1.2%	12.00 GiB	10.1.156.202	AA13 Stop
na-ontap-tools	Running	2	4.79 GHz	1.0%	12.00 GiB	10.1.156.201	AA13 Soft Stop
na-iom-ad	Running	2	4.79 GHz	0.5%	4.00 GiB	10.3.156.250	AA13 Suspend
na-intersight-assist	Running	16	38.32 GHz	9.5%	32.00 GiB	10.1.156.206, fe80::250:56ff:fe9... (2)	AA13 Reset
na-aiqum	Running	4	9.58 GHz	1.5%	12.00 GiB	10.1.156.203, fe80::250:56ff:fe9... (2)	AA13 Restart
fp-ansible	Running	2	4.79 GHz	0.5%	16.00 GiB	10.1.156.33	AA13 Terminate
cfx-fso-worker01	Running	8	19.16 GHz	100%	64.00 GiB	10.1.156.42, fe80::250:56ff:fe9... (2)	AA13 Launch VM Console
cfx-fso-infra-pfm01	Running	8	19.16 GHz	9.5%	48.00 GiB	10.1.156.41, fe80::250:56ff:fe9... (2)	AA13-FlexPod...

From the VM to the physical Server

The image displays three overlapping screenshots of the Cisco Intersight management interface, illustrating the path from a virtual machine (VM) to its physical host server. Red arrows indicate the navigation flow:

- Top Screenshot (VM View):** Shows the 'Virtualization > Virtual Machines' page for VM 'aa16-vc'. The 'Host' field is highlighted with a red box and labeled 'aa16-esxi-1.flexpod.cisco.com'. A red arrow points from this box to the middle screenshot.
- Middle Screenshot (Host View):** Shows the 'Virtualization > Hosts' page for host 'aa16-esxi-1.flexpod.cisco.com'. The 'Server' field is highlighted with a red box and labeled 'AA16-6454-1-1'. A red arrow points from this box to the bottom screenshot.
- Bottom Screenshot (Server View):** Shows the 'Servers' page for server 'AA16-6454-1-1', which is in a 'Healthy' state. The 'Properties' section shows the server is a 'Cisco UCSB-B200-M6'.

Cluster Life-Cycle Operations – with Ansible

Cluster Installation

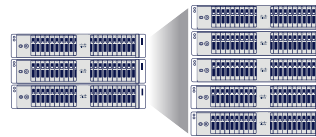


Ansible Playbooks to automate the initial setup across Cisco UCS, Nexus, Storage, and VMware Infrastructure.

Operational Summary

- Inventory Cisco UCS servers
- Create Cisco UCS Service Profiles
- Perform hypervisor imaging
- Create a new Datacenter and Cluster
- Add the nodes to the cluster
- Configure network and storage.

Cluster Expansion

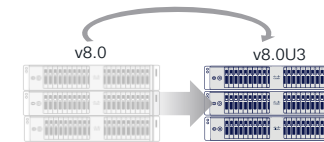


Cluster expansion automation across Cisco UCS, Nexus, Storage and VMware Infrastructure, driven by Ansible Playbooks.

Operational Summary

- Inventory new Cisco UCS servers
- Create Cisco UCS Service Profiles for new nodes
- Perform hypervisor imaging
- Join new nodes to existing clusters.
- Configure network and storage.

Cluster Upgrade



Manual change of Server Profile configuration in Intersight and Host Profile in vCenter

Operational Summary

- Update policies for Cisco UCS infrastructure and server firmware.
- Upgrade Cisco UCS Infrastructure firmware.
- Update host profile for VMware ESXi in vCenter
- Upgrade of ESXi software and implicit update of Cisco UCS server firmware while reboot ESXi.

slido

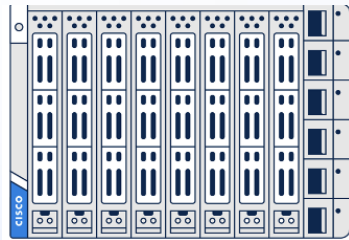
Please download and install
the Slido app on all
computers you use



Are you looking for an alternative virtualization stack?

① Start presenting to display the poll results on this slide.

Server Virtualization market disruption is happening. With Cisco UCS you have choices.



vmware®

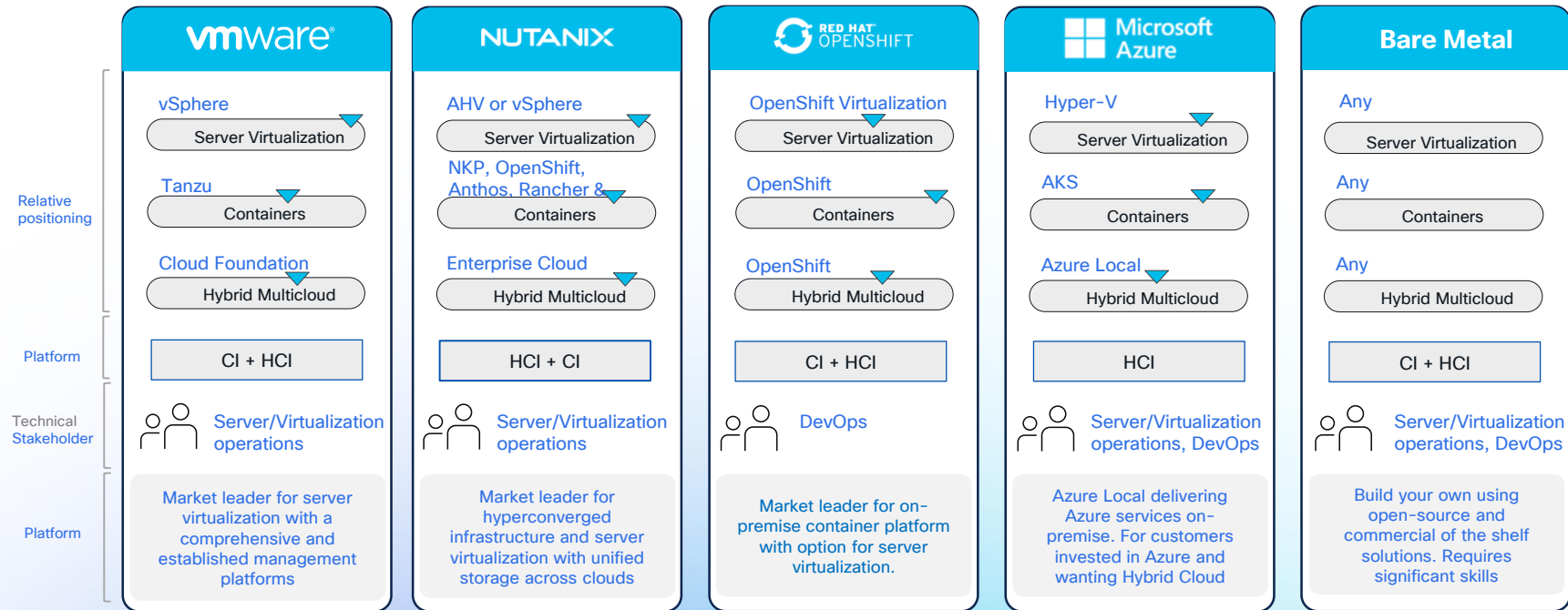
NUTANIX



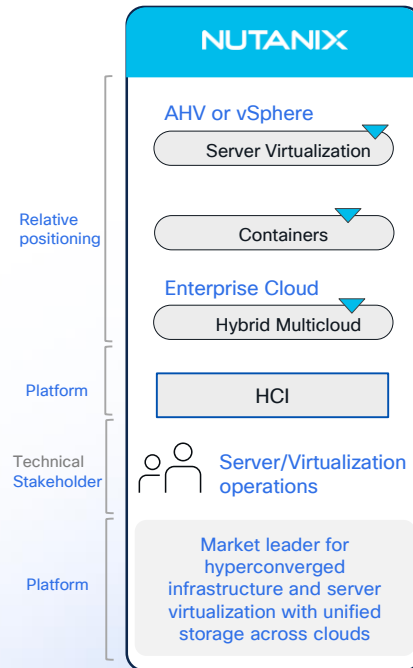
Azure Stack

vmware®

Cisco HCI with Nutanix



Cisco HCI with Nutanix



A Leader in HCI

Give customers a VMware alternative with extensive capabilities for **virtualization, containers and unified storage** across clouds.



Simplify with cloud operations

Eliminate complexity with better visibility, control, and consistency across highly distributed environments



Resilient hyperconverged solution

Keep systems running with augmented support, resiliency, and security capabilities

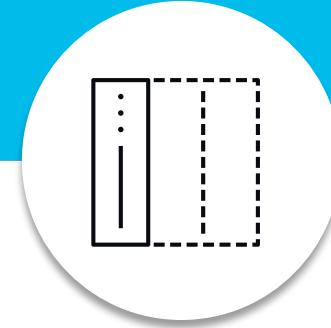
Continue with Cisco + Nutanix



The industries most comprehensive partnership between Cisco and Nutanix delivering **joint engineering and support**



Simplify with cloud operations eliminate complexity with better visibility, control, and consistency across highly distributed environments



Nutanix **Prism and Intersight** cloud-based management for full application platform and infrastructure lifecycle management

Cisco Intersight Management

Fully integrated with Cisco's UCS enterprise management software

Deployment

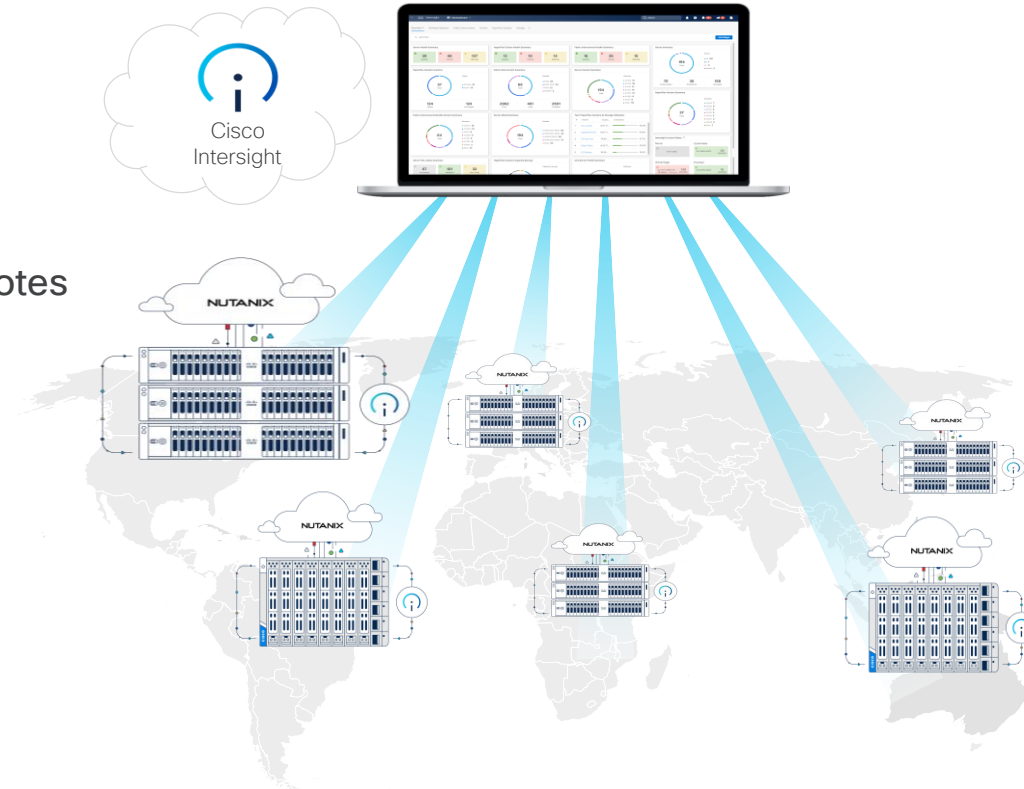
- Intersight Standalone Mode (ISM)
- Intersight Managed Mode (IMM)
- UCS Managed Mode (UMM)
- Remotely deployed and configured

Support & Monitoring

- Connected TAC, Proactive RMA
- eBonded Support & Shared Case Notes
- Intersight Device Connector & Nutanix Prism Central Integrations

Upgrade & Expand

- 1-Click Automated Software and Firmware Upgrades
- Cluster Expansion & Validation
- Day-1 Nutanix Software Release Support



Cisco Device Connector

Nutanix Prism Central (PC) can be managed as target connected to the Intersight portal through a Cisco Device Connector.

Cisco Device Connector is an embedded management controller that enables the capabilities of Cisco Intersight

- Cisco Device Connector application is available in Nutanix Market Place
- From the marketplace, download and install Cisco device connector in Prism Central
- A bi-directional channel is established between Cisco Intersight and Prism Central
- Prism Central v4 Management APIs are used by Cisco Intersight to display day 1 management features.

The screenshot displays the Nutanix Marketplace interface. At the top, there's a search bar and navigation options. Below, a large banner for 'Nutanix Kubernetes Management' is visible. The main content area is titled 'Nutanix Apps' and features a grid of application cards. Each card includes an icon, the application name, version, a brief description, and a 'Get' button. The 'Cisco Intersight Device Connector' application is highlighted with an orange border. Other visible applications include 'Kubernetes Management v2.2.3', 'Self Service v4.0.0', 'Foundation Central v1.7.0', 'Move v5.4.1', 'Files v5.0.0.1', 'Database Service v2.5.1.1', 'Objects v5.0.0', and 'OpenShift v2.0.0'. The 'Preferred Partners' section at the bottom also lists 'Cisco Intersight Device Connector' and 'OpenShift'.

Cisco HCI Nutanix cluster list view

Nutanix Clusters

* All Clusters @ +

Search Filters 12 results

Health 12 Critical 12

Upgrade Status 8 Succeeded 8

Nutanix License Status Not Enforced 7 Out of Compliance 3 In Compliance 2

Node Count 12 1-Nodes 10 3-Nodes 1 4-Nodes 1

Hypervisor Type 8 AHV 5 ESX 3

AOS Version 12 6.8 8 2024.3 4

Name	Prism Central	Health	Upgrade Status	Nutanix License Status	License Tier	Hypervisor	AOS Version	Node Count	VM Count
m6-esx	m6-esxi-pc	Critical	Succeeded	In Compliance	Advantage	ESX	6.8	1	3
t-rex-cluster	t-rex-pc	Critical	Succeeded	Not Enforced	None	AHV	6.8	3	6
m7qclaim	PC_10.193.200.111	Critical	Succeeded	Out of Compliance	Advantage	AHV	6.8	1	3
m7-220ESXI	PC_10.193.200.111	Critical	Succeeded	Out of Compliance	Advantage	ESX	6.8	1	1
m7blade	PC_10.193.200.111	Critical	Succeeded	Not Enforced	None	AHV	6.8	1	1
m7ESXblade	PC_10.193.200.111	Critical	Succeeded	Not Enforced	None	ESX	6.8	1	1
4node-ucsm	PC_10.193.200.111	Critical	Succeeded	Not Enforced	None	AHV	6.8	4	4
Staging-IMM-PC-Cluster	PC_250	Critical	Succeeded	Not Enforced	None	AHV	6.8	1	2
PC_250	PC_250	Critical	—	Not Enforced	None	—	2024.3	1	0
m6-esxi-pc	m6-esxi-pc	Critical	—	In Compliance	None	—	2024.3	1	0
t-rex-pc	t-rex-pc	Critical	—	Not Enforced	None	—	2024.3	1	0
PC_10.193.200.111	PC_10.193.200.111	Critical	—	Out of Compliance	None	—	2024.3	1	0

Rows per page 25 < 1 >

Cisco HCI Nutanix cluster detail view

The screenshot displays the Cisco Intersight interface for a Nutanix cluster named 'm7qaclaim'. The interface is divided into several sections:

- Navigation Sidebar:** Includes Overview, Operate (Servers, Chassis, Fabric Interconnects, Nutanix Clusters, HyperFlex Clusters, Integrated Systems), Analyze (Explorer), and Configure (Profiles, Templates, Policies, Pools).
- Cluster Overview (General Tab):**
 - Details:** Connection (Connected), Health (Critical), Name (m7qaclaim), AOS Version (6.8), Node Count (1), Upgrade Status (Succeeded), Nutanix License Status (Out of Compliance), IP Address (10.193.200.99), Hypervisor (AHV), VM Count (3), Intersight License Tier (Advantage), Storage Usage (0.27 TiB, 6.0%), Storage Capacity (4.42 TiB), Organization (default/custom-all), and Tags (No Tags).
 - Properties:**
 - Nodes:** A table with columns: Name, Status, Hypervisor IP, CVM IP, Model, Serial. One node is listed: m7qanode1 (Connected, 10.193.200.97, 10.193.200.98, Cisco UCS C220-M7S, WZP28180VKN).
 - Nutanix License:** A table with columns: Name, Category, Sub Category, Type, Meter, Quantity, Earliest Expiry Date.

Name	Category	Sub Category	Type	Meter	Quantity	Earliest Expiry Date
NCM ULTIMATE	ULTIMATE	—	NCM	CORES	20	Sep 19, 2024 5:00 PM
NCI ULTIMATE	ULTIMATE	—	NCI	CORES	20	Sep 13, 2024 5:00 PM
NUS PRO	PRO	—	NUS	—	0	Sep 13, 2024 5:00 PM
 - Nutanix Compliance:** A table with columns: Name, Type, Status, Violation Type, Violation Date.

Name	Type	Status	Violation Type	Violation Date
FILE	NUS	Out of Compliance	LICENSE_EXPIRED	Sep 13, 2024 5:00 PM
OBJECT	NUS	Out of Compliance	LICENSE_EXPIRED	Sep 13, 2024 5:00 PM
PRISM	NCM	Out of Compliance	LICENSE_EXPIRED	Sep 19, 2024 5:00 PM
CALM	NCM	Out of Compliance	LICENSE_EXPIRED	Sep 19, 2024 5:00 PM
AOS	NCI	Out of Compliance	LICENSE_EXPIRED	Sep 13, 2024 5:00 PM
 - Nutanix License Violations:** Feature: Expired License, Capacity.
- Events and Alarms Panel:**
 - Alarms:** 4 Active, 1 Acknowledged.
 - Severity:** All.
 - Events:**
 - License Expiry:** Nov 14, 2024 2:27 PM. Detailed license expiry info: LIC-02487646 - 20.0 CORES NCI Ultimate expired on 2024-09-14.
 - PC License Expiry:** Nov 14, 2024 2:27 PM. Detailed license expiry info: NUS-PRO-INCLUDED - 3.0 TIB NUS Pro expired on 2024-09-14.
 - Detected iSCSI discovery or login through ...:** Nov 14, 2024 2:27 PM. Detected iSCSI discovery from client 64.102.14.233 through cluster external IP address.
 - Power supply 1 is Down on block WZP2818...:** Nov 14, 2024 2:27 PM. Power supply 1 is down on block WZP28180VKN.
 - The cluster is using password based ssh a...:** Nov 14, 2024 2:27 PM. Password-based remote login is enabled on the cluster. It is recommended to use key-based ssh access instead of password-based ssh access for better security.
 - Host 10.193.200.97 is using default passwo...:** Nov 14, 2024 2:27 PM. Please update the default password(s) on the AHV host(s) for user(s): root to harden the security on the clusters. Nutanix recommends immediately changing all default passwords.

Simplify and scale with cloud operations

Unified operations across your distributed environment with Cisco Intersight and Nutanix Prism Central

- See and control your entire Cisco Compute Hyperconverged estate with Cisco Intersight
- Unified storage and cluster management with Nutanix Prism Central
- Turnkey solution combining compute, networking, storage, management, and hybrid multicloud platform simplifies end-to-end experience
- Augmented support and resiliency capabilities keep systems up and running at global scale



Remotely deploy and manage

CONVENTIONAL INFRASTRUCTURE	Ship from factory	Integrate/configure	Stage	Ship people/infra to sites	IT deploy on-site
NUTANIX WITH INTERSIGHT	Ship to sites	Connect to Intersight and Prism Central	Deploy and manage remotely		

Cluster Life-Cycle Operations

Cluster Installation



with
NUTANIX
Foundation VM

Fully integrated cluster installation automation across Cisco UCS and Nutanix Cloud Infrastructure, driven from Nutanix Foundation.

Operational Summary

- Inventory Cisco UCS servers
- Create Cisco UCS Service Profiles
- Perform hypervisor imaging
- Deploy Nutanix storage controller VM (CVM)
- Create new hypervisor and storage cluster

Cluster Expansion



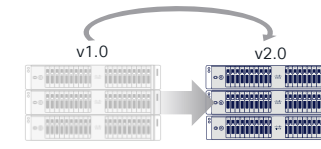
with
NUTANIX
Prism

Fully integrated cluster expansion automation across Cisco UCS and Nutanix Cloud Infrastructure, driven from Nutanix Prism or Prism Central.

Operational Summary

- Inventory new Cisco UCS servers
- Create Cisco UCS Service Profiles for new nodes
- Perform hypervisor imaging
- Deploy Nutanix storage controller VM (CVM) on new nodes
- Join new nodes to existing hypervisor and storage clusters

Cluster Upgrade



with
NUTANIX
Prism

Fully integrated end-to-end cluster software and firmware upgrades with Nutanix Prism or Prism Central Life Cycle Management (LCM).

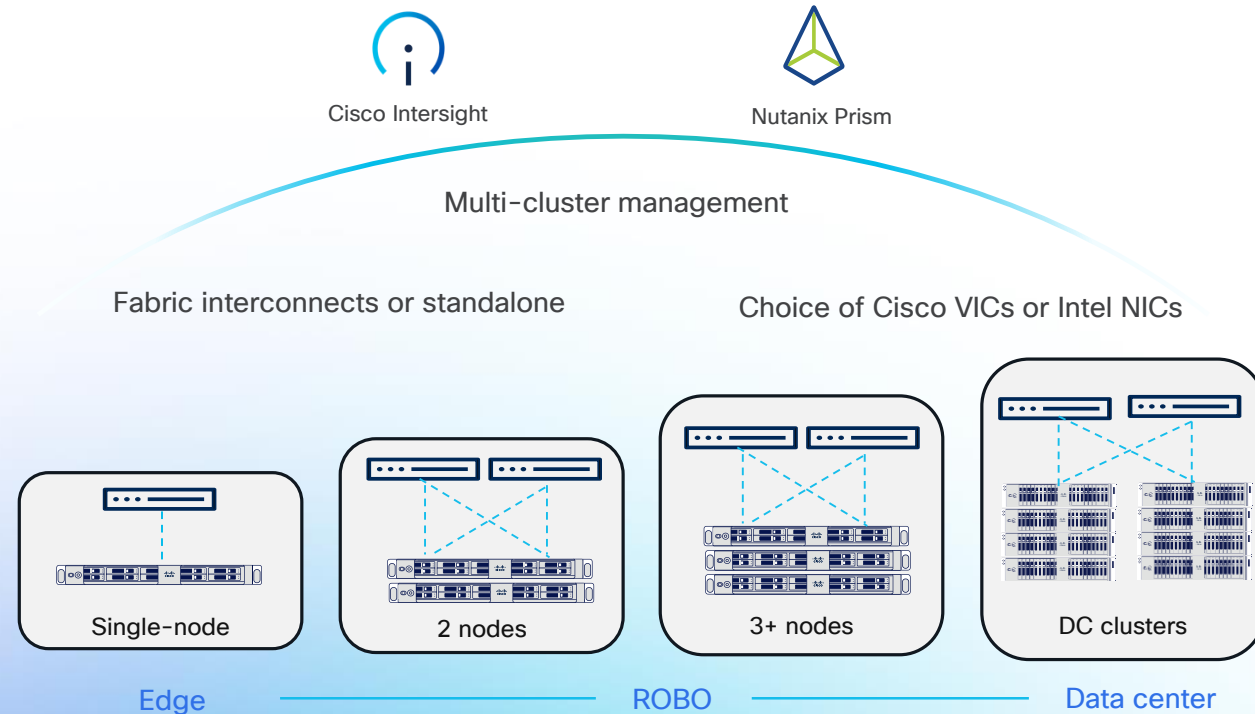
Operational Summary

- Upgrade of Cisco UCS infrastructure and server firmware
- Upgrade of hypervisor software, VMware ESXi and/or Nutanix AHV
- Upgrade of Nutanix Cloud Infrastructure software

Flexible Deployment Options Intersight Standalone Mode for HCI

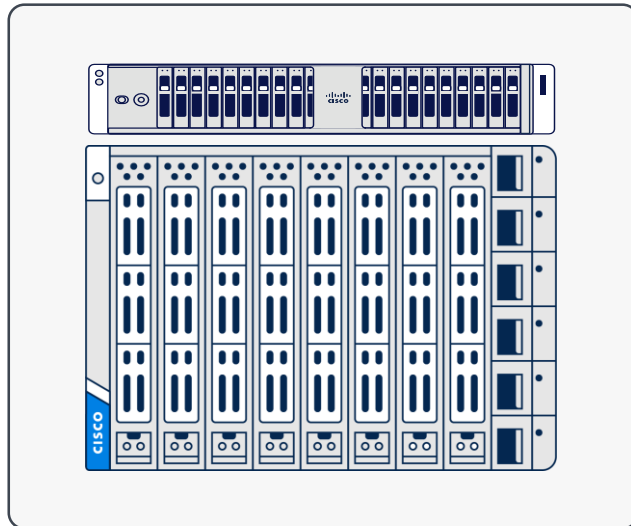
Deploy Nutanix cluster on Cisco HCI Nodes

- With or without UCS Fabric Interconnect
- Deploy in edge/remote locations or primary data centers
- Flexible networking options with Cisco VIC and Intel NICs
- Policy-based management from Intersight
- Start as small as 1 and 2 nodes for ROBO
- Parallel multi-cluster deployment with Nutanix Prism Central
- Support for AHV and ESXi hypervisors
- Support for M6 and M7 nodes

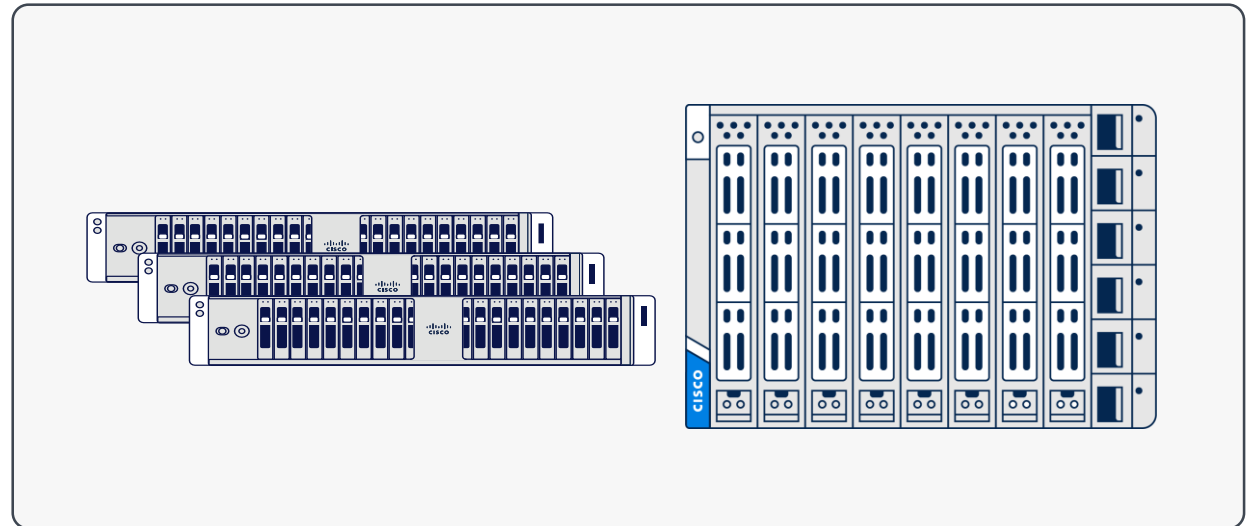


Reuse and Repurpose Servers

Cisco UCS rackmount M6/M7 and X-Series M7 modular servers



Cisco Compute Hyperconverged with Nutanix Cluster



- Reuse and repurpose existing servers
- Cisco can convert newly purchased HCI nodes back to regular x86 servers
- Provides investment protection with a standardized platform
- Same deployment and operational automations as factory-prepped appliances
- Three tier upgrades and future proofing

Introducing Cisco, Pure Storage, and Nutanix An Even Better Together Story: FlashStack with Nutanix

Combination of Best-of-Breed hardware and software

Pre-Validated & Integrated Solution

Simplified Management & Infrastructure Visibility

Cisco Validated Designs (CVDs) for Optimized Workloads



Introducing: Compute Node Scaling in an HCI Cluster

Unique Cisco & Nutanix offering

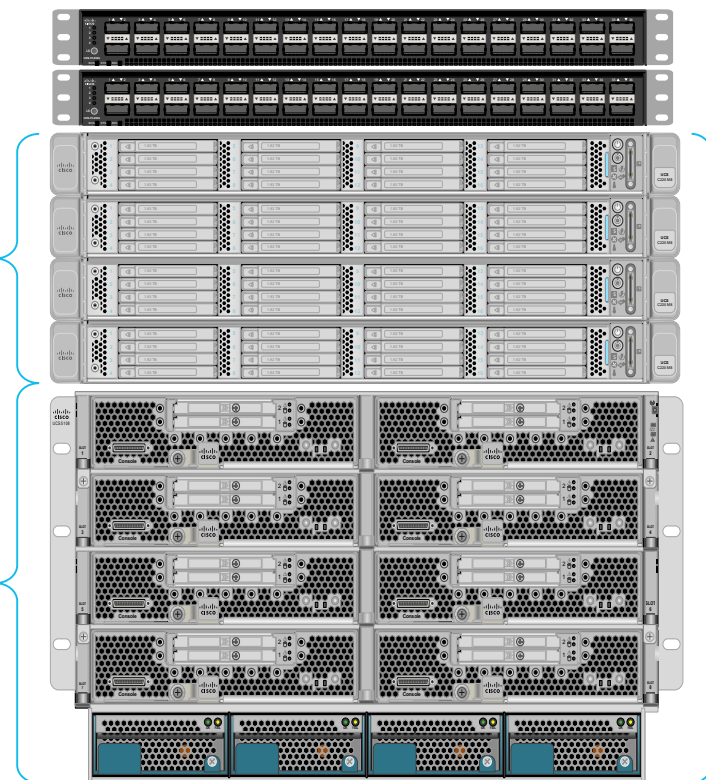
Flexible compute resource scaling

Reuse existing UCS hardware

Great for compute heavy workloads

New or existing UCS
HCI w/ Nutanix
(AHV) cluster

Scale with existing
B200 M5/M6 UCS
Blades



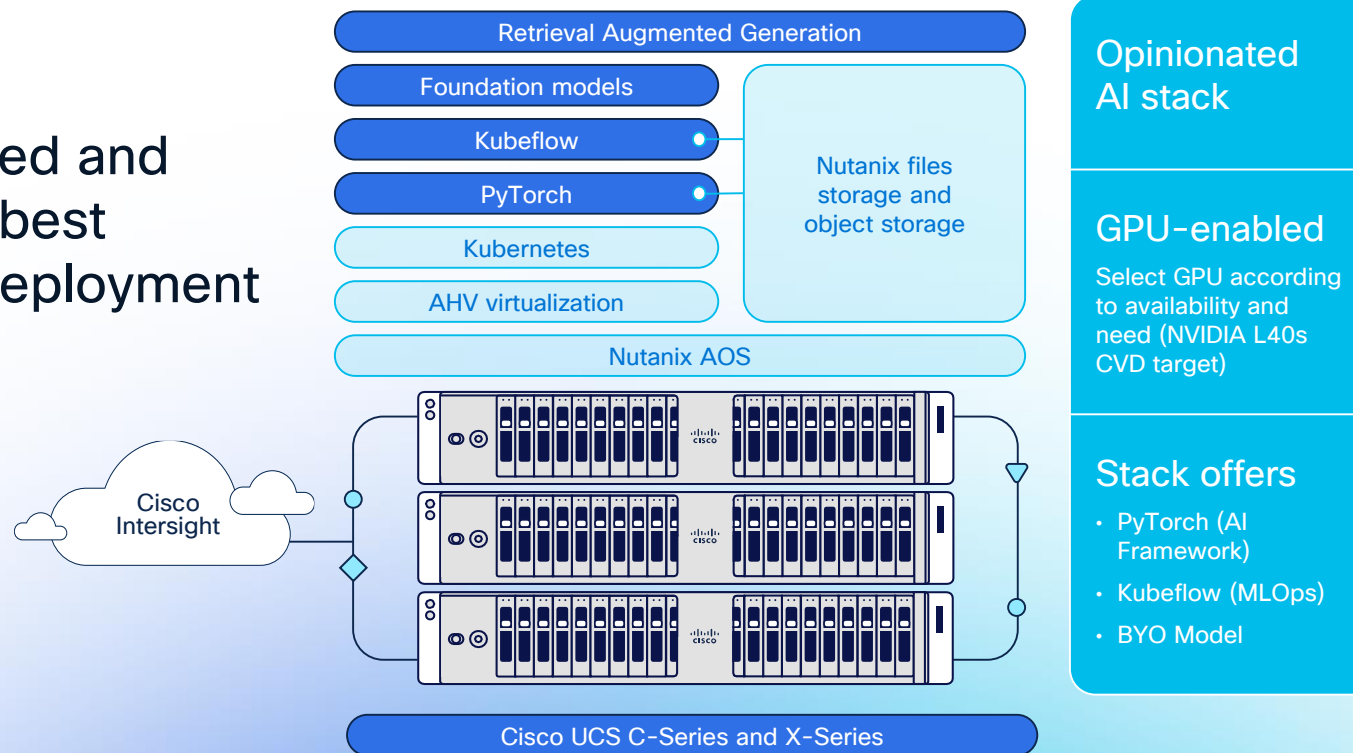
Single UCS HCI
with Nutanix (AHV)
cluster

Scaled without
storage resources

Nutanix GPT in a Box on Cisco

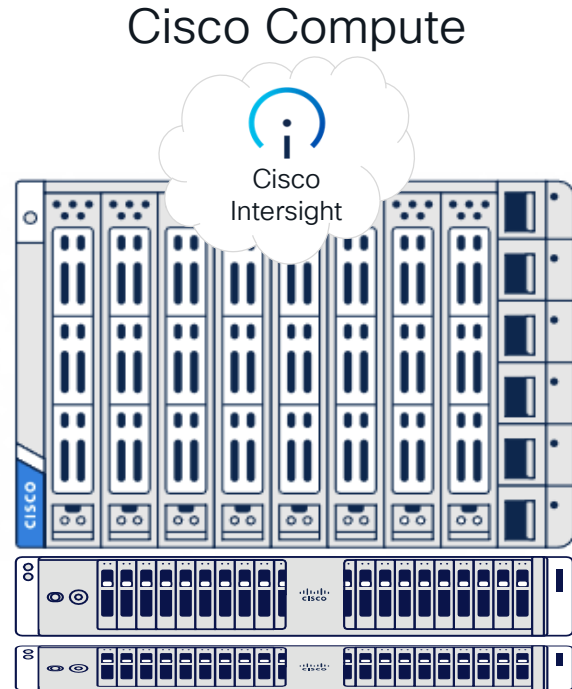
Designed, tested and validated with best practices for deployment

Designed, tested and validated with best practices for deployment



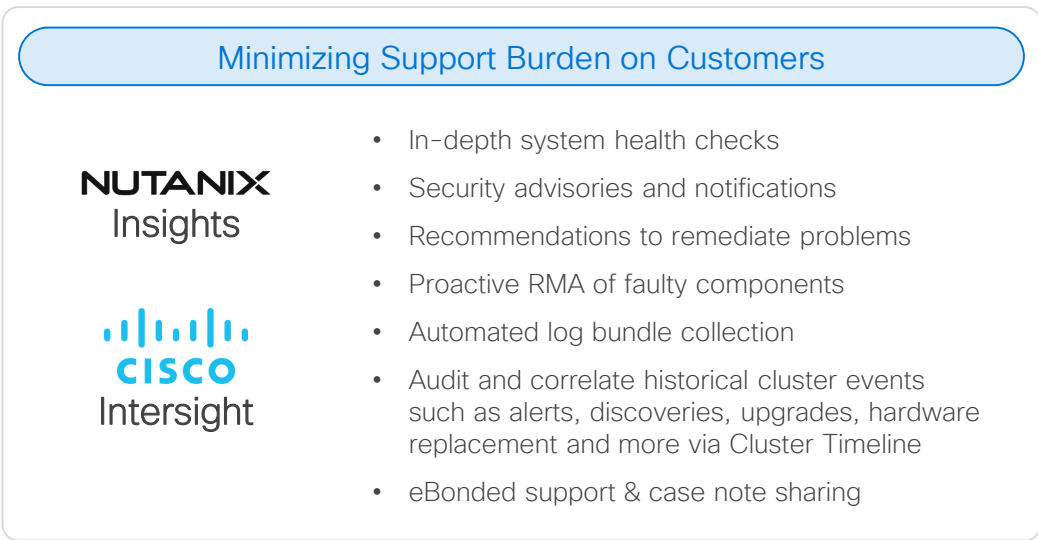
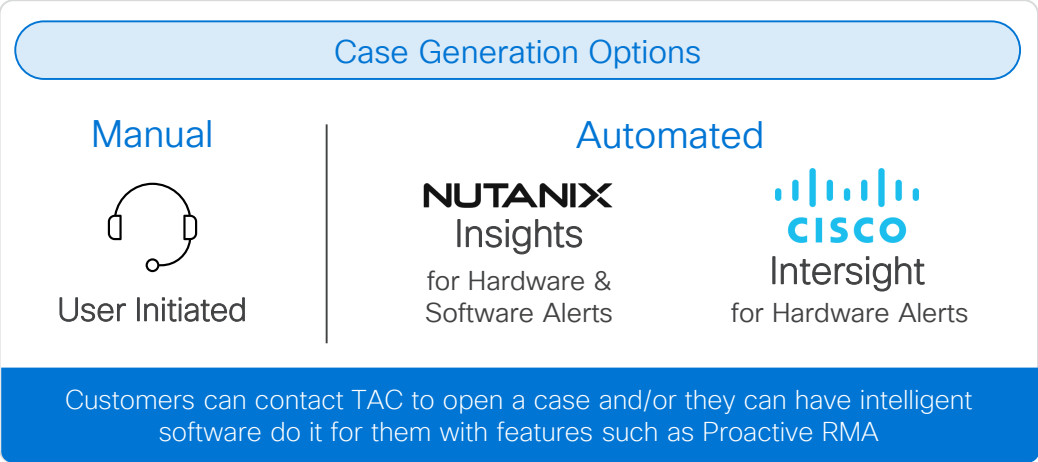
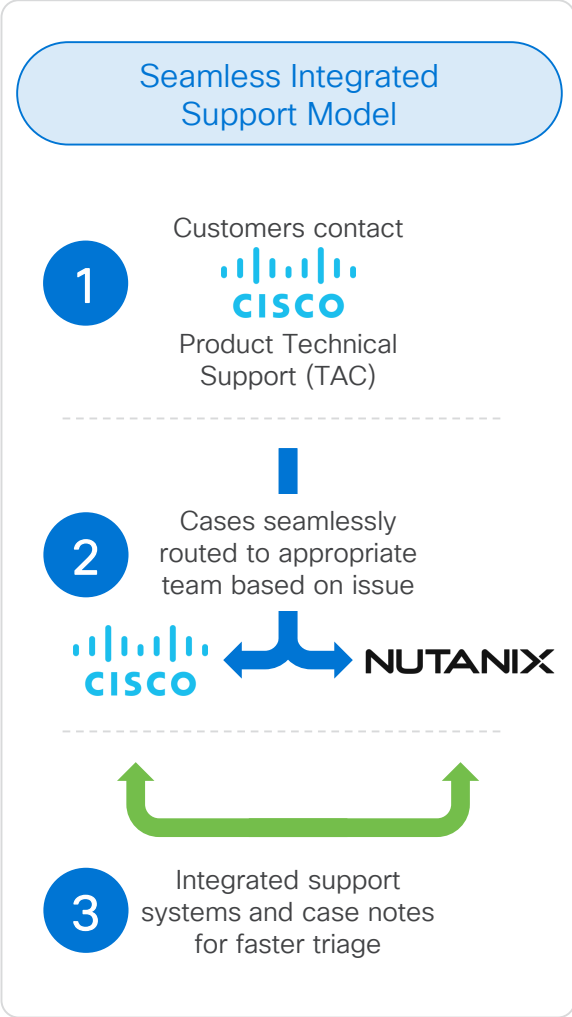
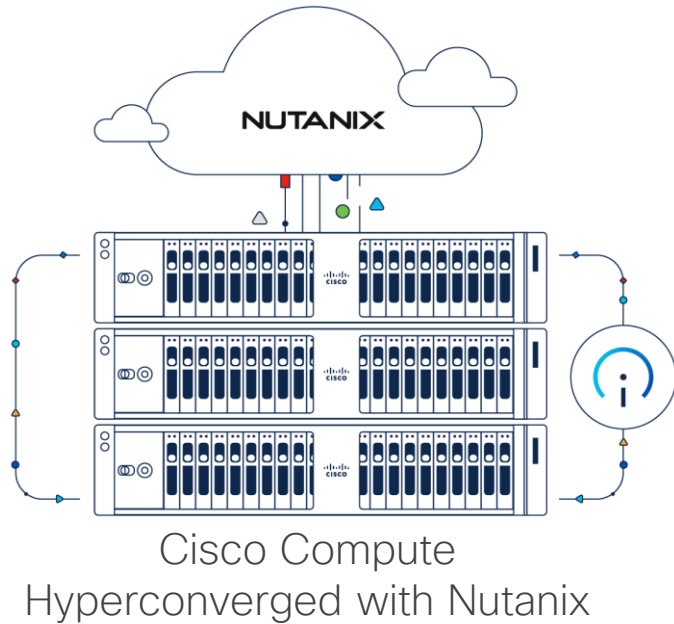
Full Solution Stack Through Cisco

NUTANIX Cloud Platform



- NCP Bundles
- Nutanix Cloud Infrastructure (NCI)
 - Nutanix Cloud Manager (NCM)
 - Nutanix Unified Storage (NUS)
 - Nutanix Data Lens (NDL)
 - Nutanix Enterprise AI (NAI)
 - Nutanix Kubernetes Platform (NKP)
 - Nutanix Cloud Infrastructure – VDI (EUC)
 - Nutanix Edge Solutions (NCI-E)

Global Integrated Support Organizations



Other Related Sessions

BRKCOM-1010 – Cisco HCI 101 in 60 minutes (Monday – 8:00 – 9:00 AM)

☆ **BRKCOM-1111 – Operational Best Practices to Deploy & Manage Cisco HCI w/ Nutanix (Wednesday – 3:30 – 5:00 PM)**

☆ **BRKCOM-2026 – The Power of Two: Simplifying Cisco HCI Deployment, Expansions, and Management Using Cisco Intersight & Nutanix Prism Central (Thursday – 1:00 – 2:00 PM)**

☆ Still available to sign up and attend

slido

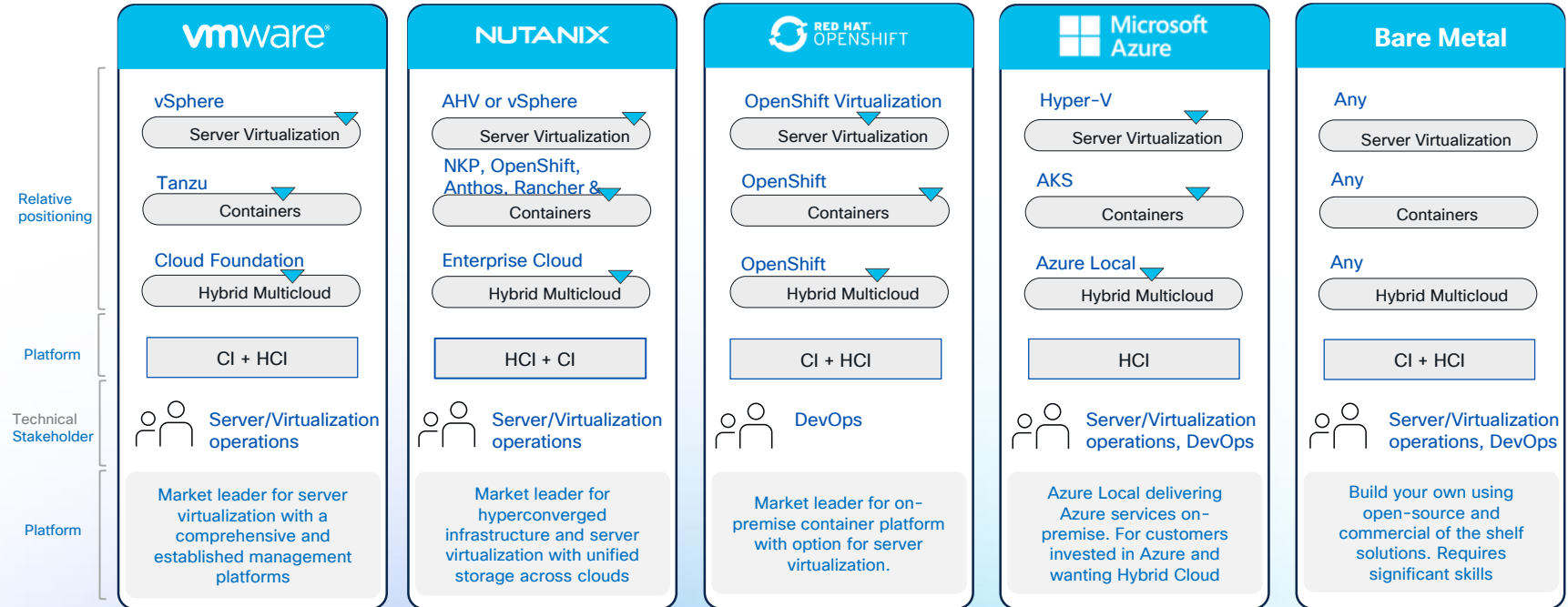
Please download and install
the Slido app on all
computers you use



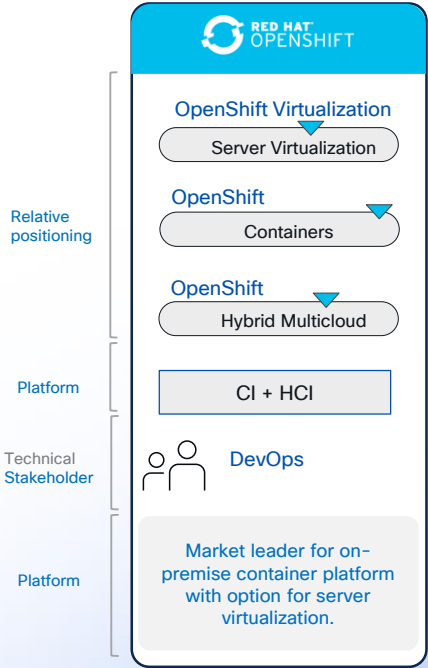
Are you running your major
Kubernetes Cluster(s) on Virtual
Machines, on Bare-Metal, or in the
Public Cloud?

① Start presenting to display the poll results on this slide.

Red Hat OpenShift Container Platform



Red Hat OpenShift Container Platform



A Leader in Container Platform

Red Hat OpenShift Container Platform (OCP) give customers a matured platform and ecosystem to run and manage containerized workloads in the datacenter and across clouds.



Validated Solutions / Patterns

Validated pattern supports companies deploying solutions and reducing risk and time.



Application Modernization

Red Hat OCP helps companies to adopt containerized application and cloud native workload in the data center and across clouds and manage them from a single place.

Cisco + Red Hat message



Consolidate containers and VMs with OpenShift on bare-metal UCS to build private cloud as part of a true hybrid multi-cloud solution.



Unleash the power of AI by deploying a full-stack AI solution on OpenShift on UCS. Use OpenShift AI to manage lifecycle of AI models.



Harness the power of edge workloads with the new purpose-built edge infrastructure running the industry leading container platform. All managed at scale from the cloud.

Intersight provisioning for Assisted Installer



Automate

Automating the boot process using Intersight reduces manual tasks and failures.



Simplicity

Bringing the power of Intersight to the Red Hat Administrator inside their own tools



Seamless Integration

Cross launch provides a smooth integration without the need for API key exchanges

✓ Discovery ISO is ready to be downloaded.

Adding hosts instructions

1. Download ~~the~~ Discovery ISO (onto a USB drive, attach it to a virtual media, etc.) and use it to boot your hosts.
2. Keep the Discovery ISO media connected to the device throughout the installation process and set each host to boot **only one time** from this device.
3. Booted hosts should appear in the host inventory table. This might take a few minutes.

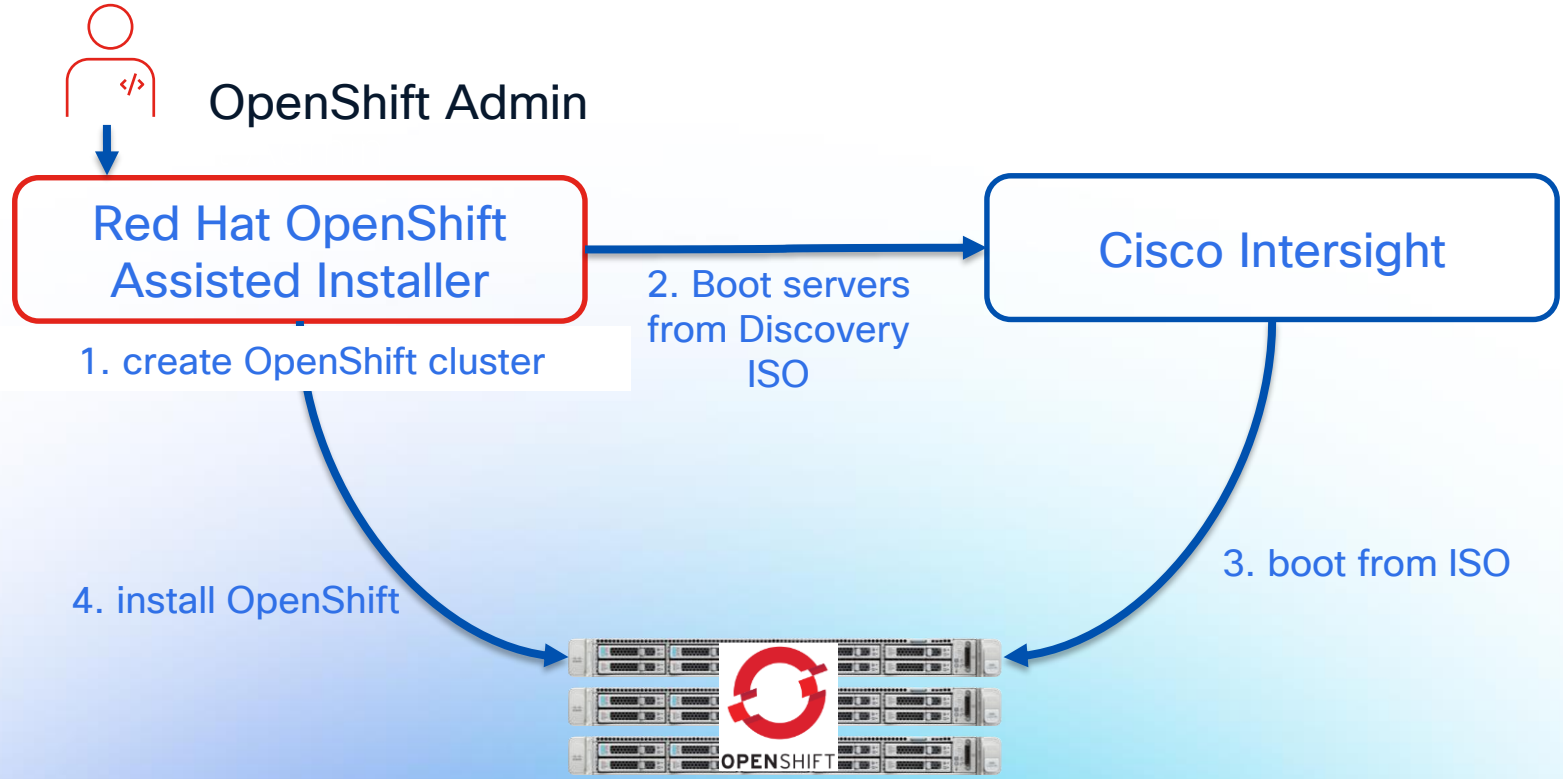
[Add hosts from Cisco Intersight](#)

Discovery ISO URL
https://api.openshift.com/api/assisted-images/bytoken/eyJh...

Command to download the ISO:
wget -O discovery_image_ocp-dhcp.iso 'https://api.openshift...

ⓘ Never share your downloaded ISO with anyone else. Forwarding it might put your credentials and personal data at risk.

Intersight provisioning for Assisted Installer



What's Next?



MCE / ACM Integration



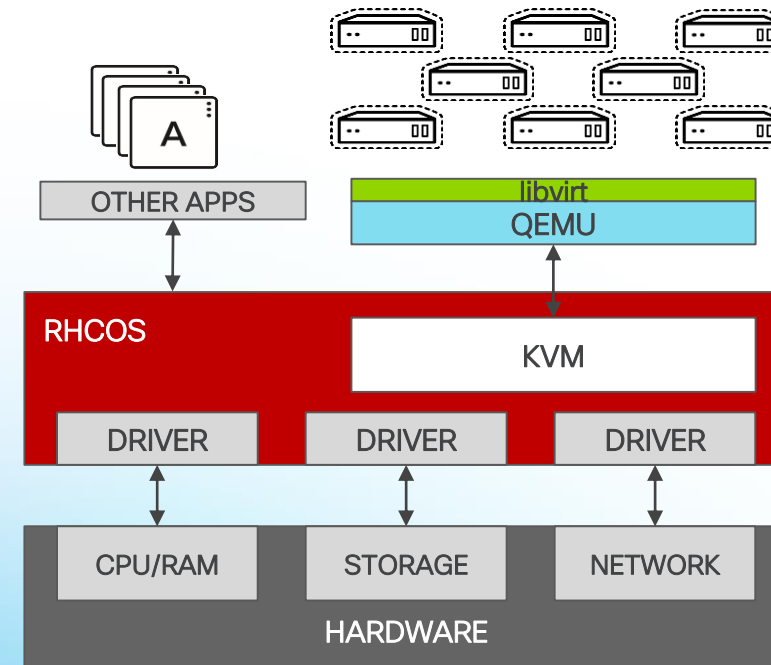
Intersight / Hybrid-Cloud
Console integration



Validated-Pattern /
Edge Solution

Red Hat OpenShift Virtualization

- Virtual machines
 - Running in containers, managed as Pods
 - Using the KVM hypervisor
- Scheduled, deployed, and managed by Kubernetes
- Integrated with container orchestrator resources and services
 - Networking connectivity
 - Persistent storage

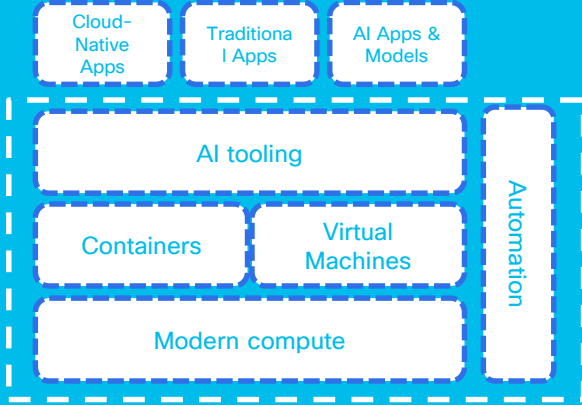


How Cisco and Red Hat helps



We deliver a validated, full-stack, private cloud platform

for deploying applications in containers and VMs, running AI workloads, and automating your infrastructure from Cisco



Application Platform Modernization, AI-ready Infrastructure

So you can:



Reduce costs

With future-ready, sustainable, and secure compute infrastructure



Deploy apps faster and securely

Consolidate container and virtualization platforms

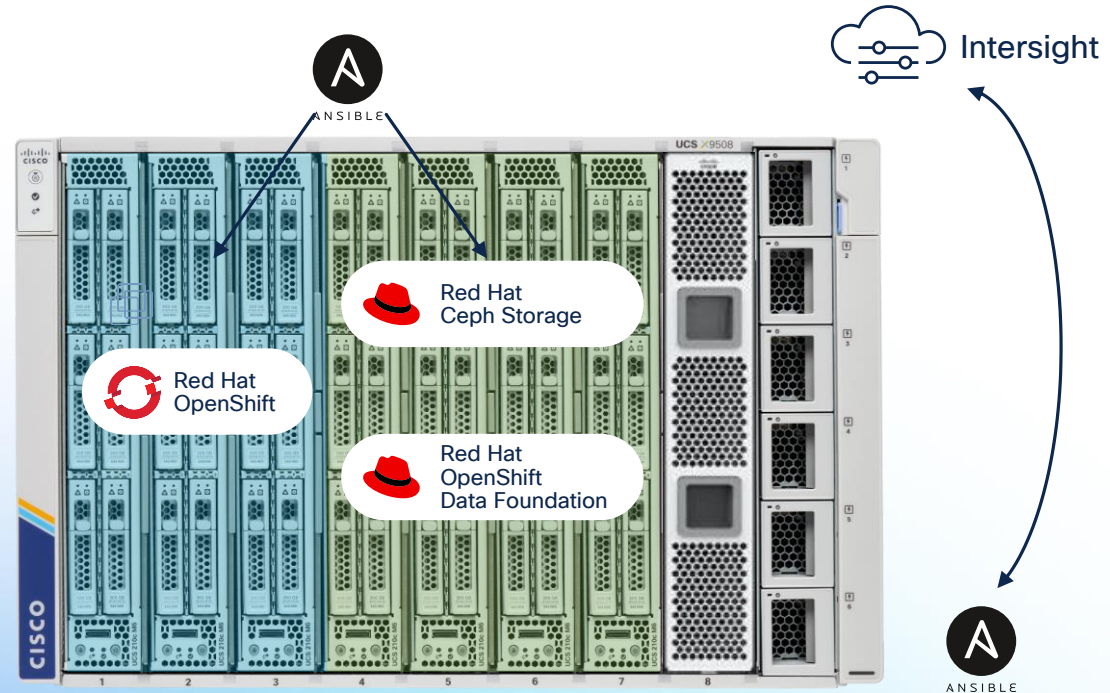


Support AI initiatives

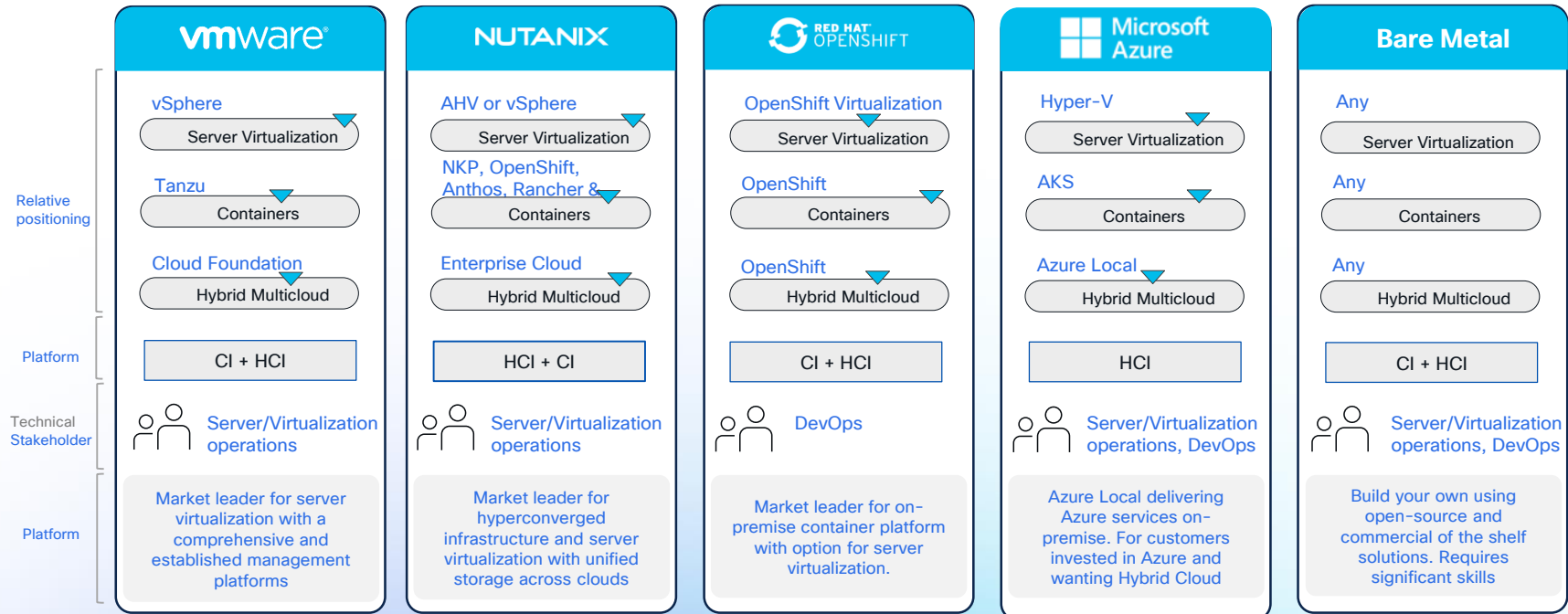
Build, train, and maintain inferencing solutions to delight your customers

Red Hat OCP and ODF – Hyperconverged Container Platform

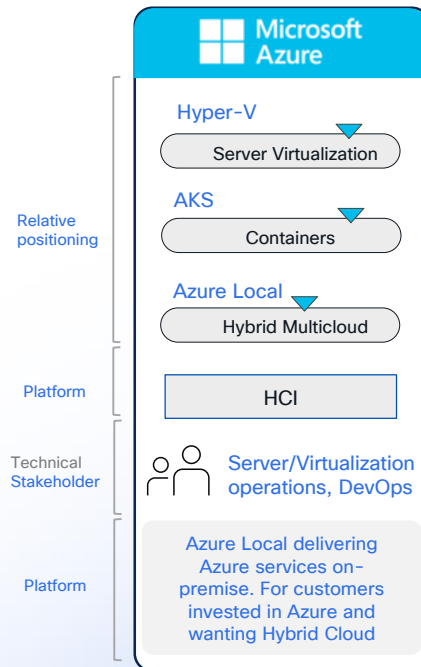
- Cisco UCS X-Series connected to FI and managed by Intersight through IMM
- Configuration and deployment through Intersight Ansible
- Automated install
- Preparation of all nodes through Ansible
- Install of OCP, Ceph, and ODF



Microsoft Azure Local with Hyper-V



Microsoft Azure Local with Hyper-V



A Leader in Virtualization

Hyper-V provides an extremely feature rich virtualization alternative whose license is included with each Windows Server license. Many customers already have Hyper-V licenses and just don't know it!



Consistent Management

Microsoft Azure Arc provides a consistent management overlay to enable customer to manage data on-premise on Azure Local and in Azure public cloud.



Application Modernization

Hyper-V combined with Azure services helps companies adopt containerized applications and cloud native workloads in the data center

Cisco + Microsoft offering



Consistently build and run hybrid apps across on-premises, cloud, and edge with Azure and Azure Local providing optimal system performance



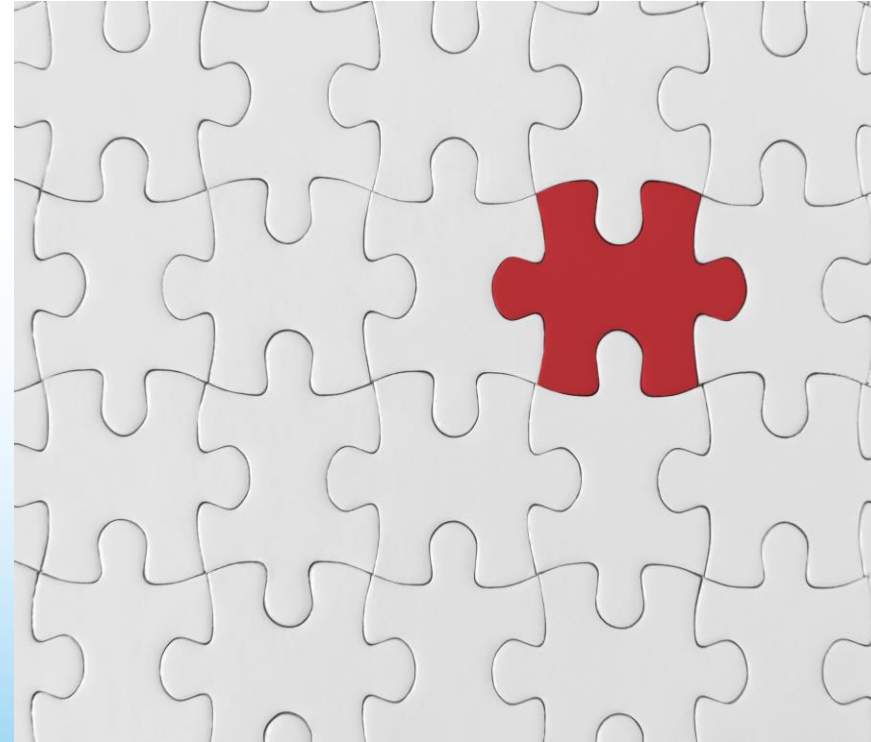
Flexible, powerful designs hosting a wide range of workloads from AI to VDI. Leveraging the latest in Cisco and MSFT technology.



Long and extensive partnership jointly developing solutions for on-premise and Azure based deployments. Support teams collaborate on customer issues.

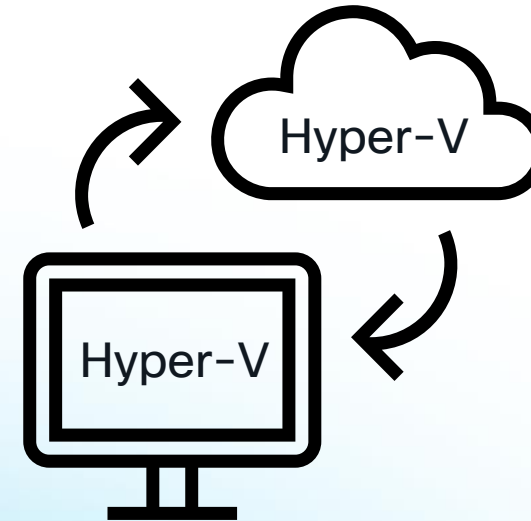
Hyper-V is core to Microsoft Solutions

- Azure
- Azure Local
- Windows Server/Windows
- SQL Server
- Containers with Hyper-V isolation
- Platform Security
- Xbox



Windows Server 2025 Hyper-V New Features

- GPU Partitioning (GPU-P)
- GPU-P with Live Migration
- GPU-P with High Availability
- Dynamic Processor Compatibility
- Workgroup Hyper-V Clusters
- Network ATC
- Native ReFS Deduplication & Compression
- VM Performance Improvement
 - Host – Up to 4 PB Memory
 - Host – Up to 2048 Logical Processors
 - VM – 240 TB Memory
 - VM – 2048 Virtual Processors



Cisco UCS C240 M7SN Azure Local Scalability

Maximum configuration (16 nodes):

- Up to 5.8 PB of system raw storage
- Up to 128 TB of system memory
- Up to 2048 Intel processor cores

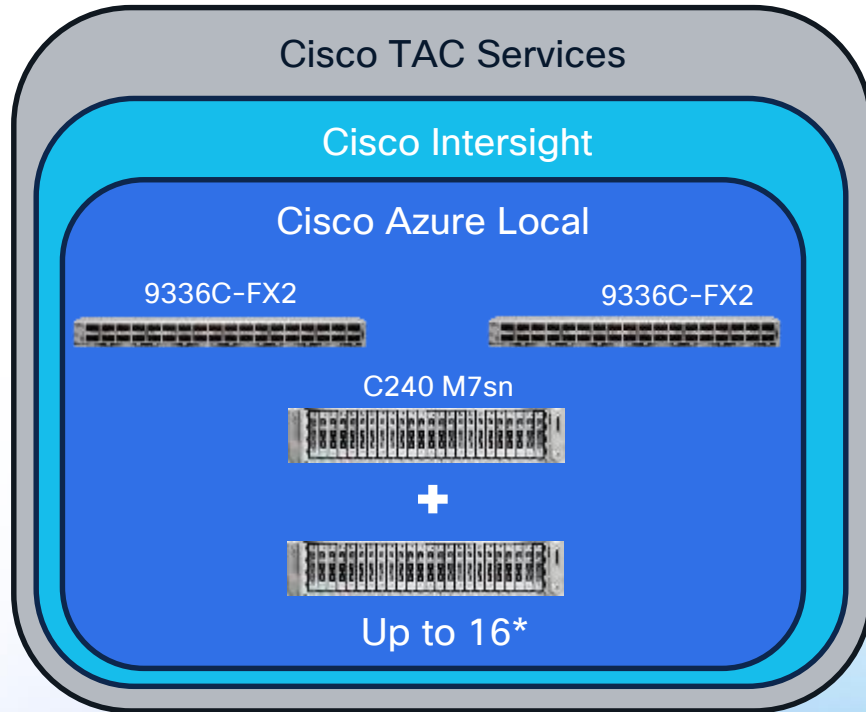


2x Cisco 9336C-FX2
Nexus Switch

Cisco UCS C240 M7SN
Rack Server



Validated Azure Local Design

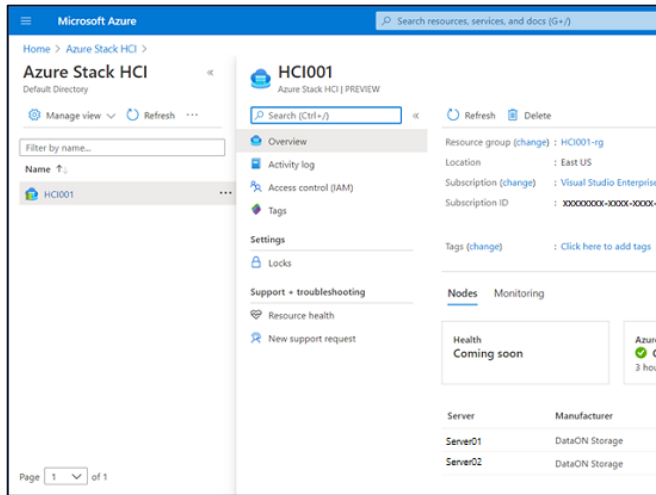


- Scale from 1 to 16 nodes, initially or add-on*
- 5th gen Intel Xeon Scalable processors
- Storage: Single tier all NVMe**
- Up to 100G End to End
- Support for optional Nvidia GPUs
- Intersight cloud-based management
- Nexus 9300-Series ToR switches
- NX-OS or ACI choice
- No single points of failure
- Contact either Cisco or Microsoft for support

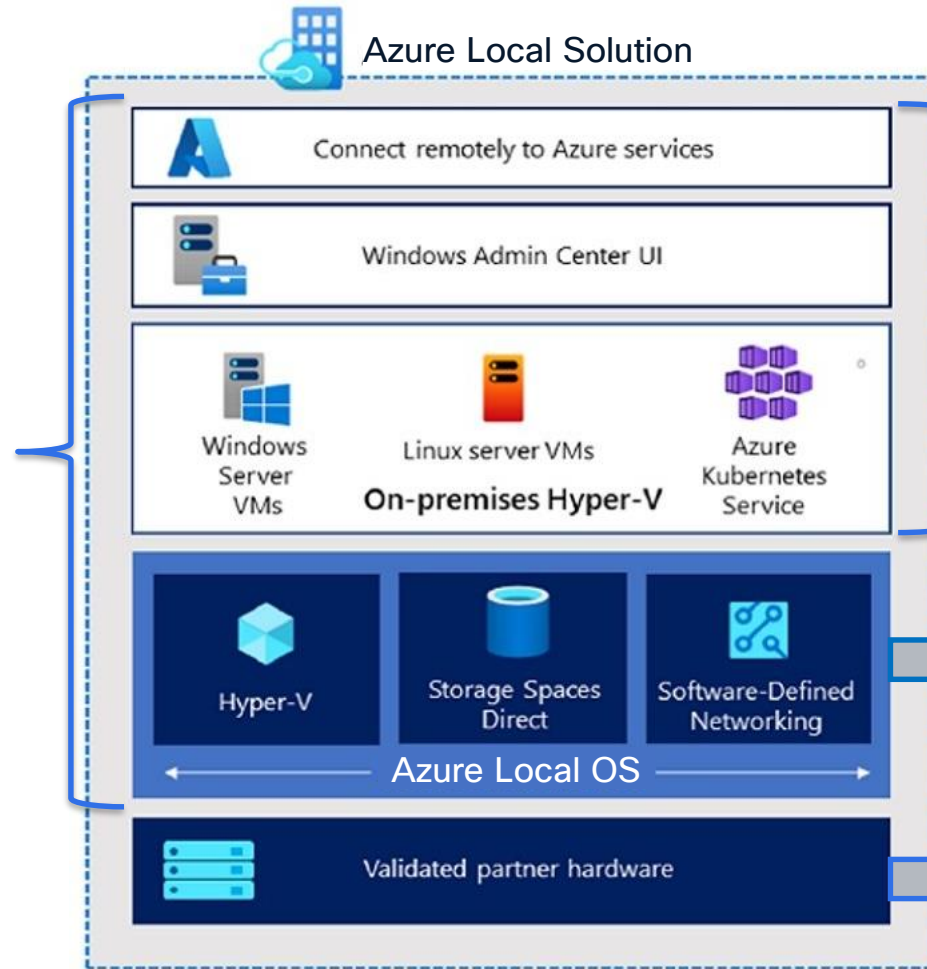
* Microsoft requires server nodes configured **EXACTLY** same.
** Windows Server 2025 increase NVMe performance by 60%.

ACI Whitepaper for Azure Local: https://www.cisco.com/c/en/us/td/docs/dcn/whitepapers/ACI_AzureStackHCI_whitepaper.html

Azure Local Software Architecture



Azure Portal



Range of services become available with Azure Local OS

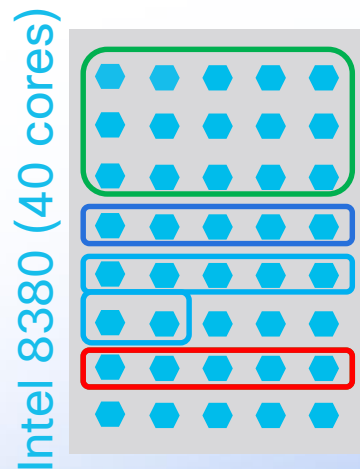
- Azure Backup
- Azure Site Recovery
- Azure File Sync
- Azure Monitor
- Azure Update Management

- Includes product support
- Automatic patching & security updates
- Requires connection to Azure, every 30 days



Cisco - Unique Advantage for Azure Local

- Cisco Intersight provides ability to turn core on/off with system reboot
- Azure Stack HCI OS only needs to be licensed on cores it sees (turned on)



Initial order, enable 15 cores.

License = \$1,800/yr

+ 1 year, enable 5 cores, add

License = \$+600/yr

+ 6 months, enable 7 cores, add

License = \$+840/yr

TOTAL \$3,240/yr

+ 6 months, enable 5 cores, add

License = \$ +600/yr

+ 6 months, drop 5 cores, remove

License = \$-600/yr

Note: Azure Local OS is \$10/core/month

Cisco AI-Driven Secure Enterprise Data Architecture

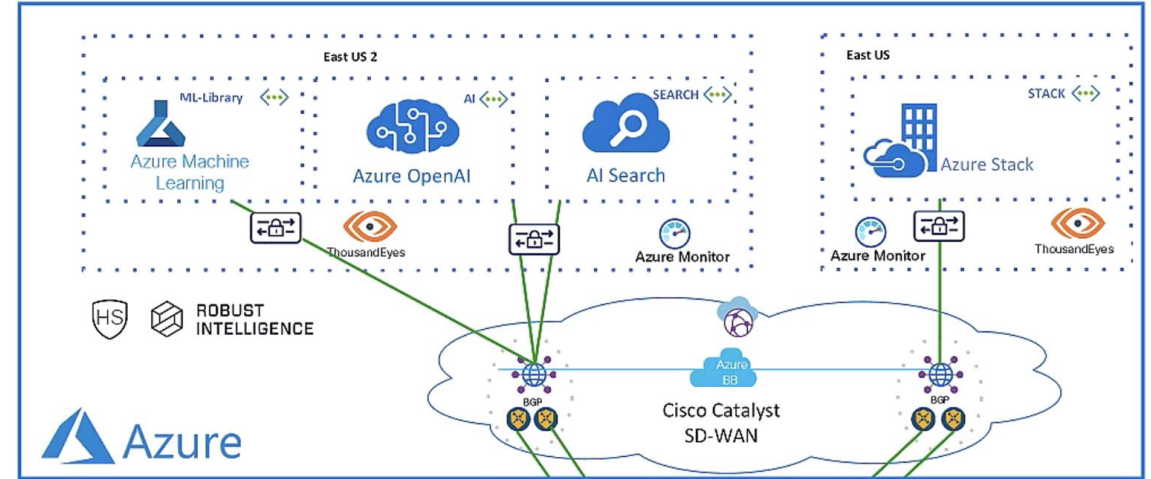
Cisco AI-Driven Secure Enterprise Data Architecture Overview

Leverage Azure OpenAI, based in Azure to help deliver on you AI driven challenges.

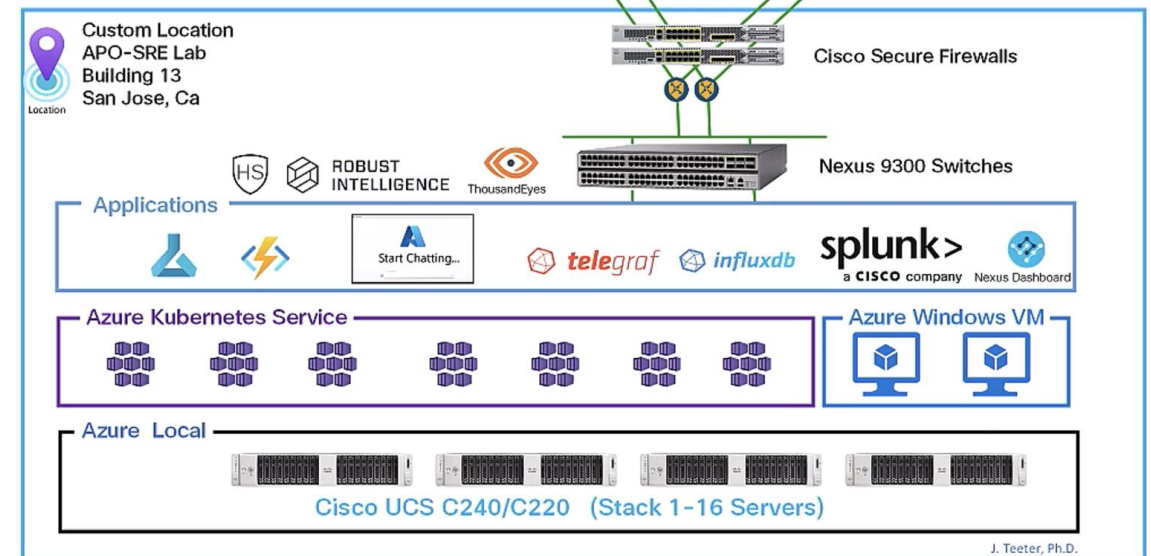
Cisco Technologies:

- Azure Local System
- Splunk
- ThousandEyes
- SD-WAN
- Hypershield
- Robust Intelligence
- Secure Firewalls
- Nexus Dashboard
- Nexus Networking

Azure
Cloud



Your
Data Center



Cisco Advantages for Azure Local

All system elements come from Cisco



Control all roadmaps and system integration points.

Nexus as networking and security standard



World's leading standard for data connectivity and security.

Utilize customer's choice of rack in data center



Maintains approved best practice for system rack.

Positioned for performance



All NVMe storage, 100G NIC, 5th Gen Scalable Intel Xeon CPUs.

Leverage eco-system partners and products



A wide range of management tools, data security, installation & consulting services, simple updating processes.

Cloud based management



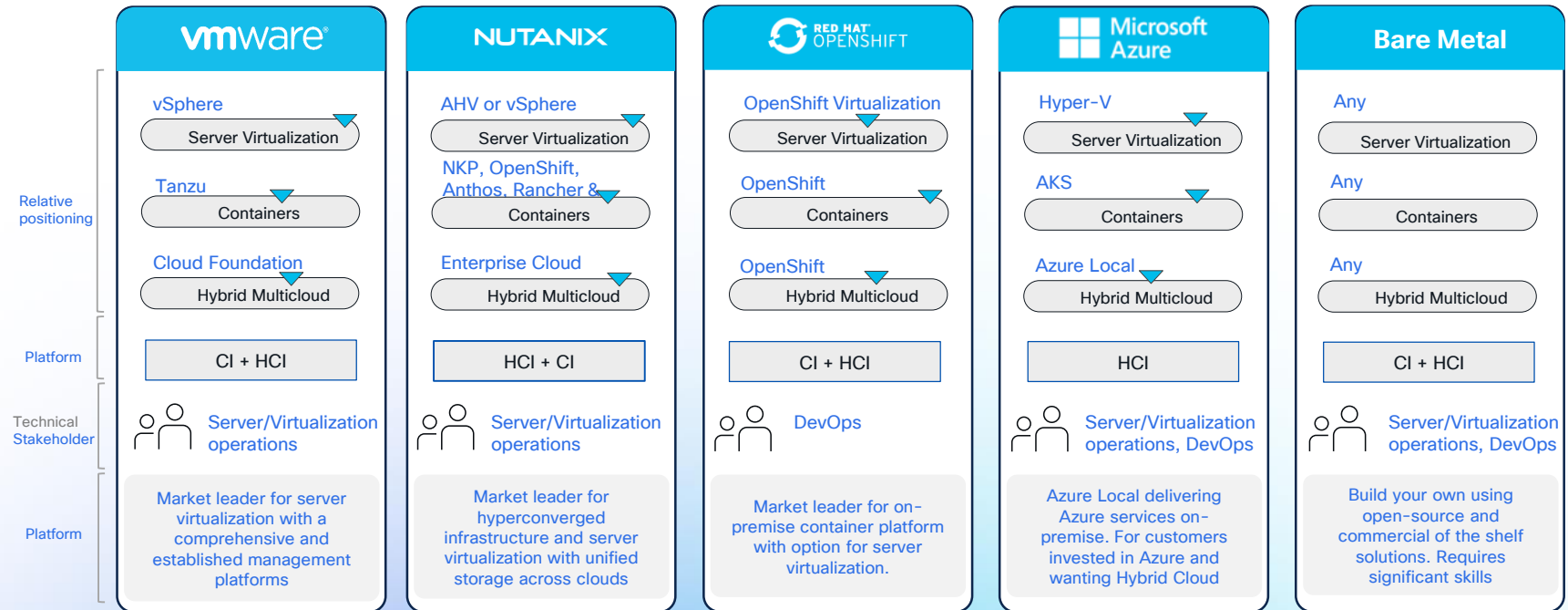
Intersight policies across multiple locations, global patch management. Azure Stack HCI OS updated directly from Azure.

Cisco Support

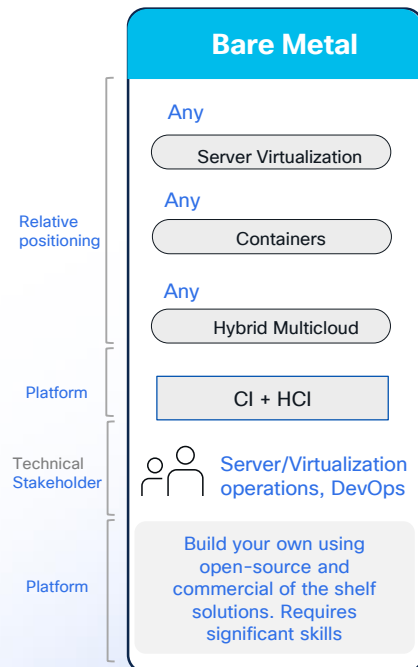


Collaborative Support - Contact either Cisco or Microsoft.

Bare Metal and other Solutions



Bare Metal and other Solutions



Stateless Computing

Cisco UCS provides a stateless compute platform allowing companies to use and re-use existing hardware based on application and business demand.



Broad Partner Ecosystem

A broad range of supported and certified hardware and software components to build virtualization and container solutions of any scale.



Application Modernization

Cisco UCS provides a versatile platform to help customers running bare-metal, virtualized, and containerized applications and use-cases.

UCS Infrastructure Solutions - Ready to Scale



Manage all your UCS servers regardless of their location from a single pane of glass



Utilize recognized best practices to design and implement and manage your solution stack.



Integrate with the forthcoming Edge Compute Platform to efficiently manage bare-metal, virtual, and container workloads across any location.

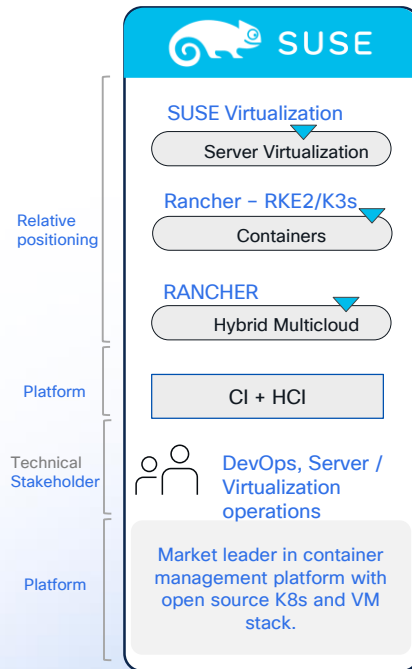
Bare-Metal = Build your own Stack?

Any supported
Operating
System

Any supported
Virtual Machine
Manager or
Container
Manager

Any OS, VM
and Container
Management
tool

SUSE Virtualization and SUSE Rancher



A Global Leader in Container Management

Simplifies and addresses the operational and security challenges of managing multiple Kubernetes clusters across any infrastructure.



Open-Source Efficiency

Avoid vendor lock-in, reduce TCO, and maximize certified hardware use with scalable, secure open-source solutions.



Enhanced Security and Innovation

A single, secure, and scalable platform to manage VMs and containers while bridging legacy and cloud-native solutions for reliable application deployment.

DC to Cloud to Edge with Cisco and SUSE

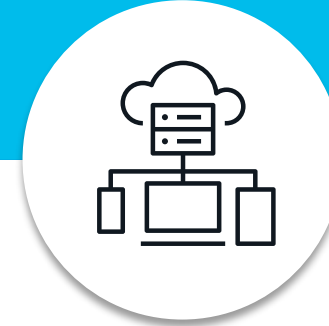


Validated Solutions for Enterprise Applications, Container workloads and virtualization. Helping customers Modernize applications for secure scaling across any infrastructure



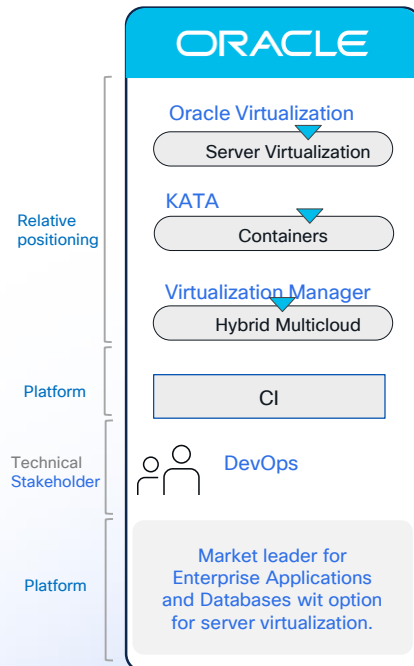
Open-Source architecture to right-size the solutions to your ideal technical and business outcomes.

SLE / SLE Micro
RKE2 / K3S / Harvester
Single-node / Multi-node



Infrastructure & workload observability, management, and updates across data centers, cloud, and edge locations.

Oracle Virtualization



Oracle Virtualization is designed for hybrid cloud
Backed by affordable enterprise support for hybrid environments, reducing operation and support costs while increasing IT efficiency and agility—on premises and in the cloud.

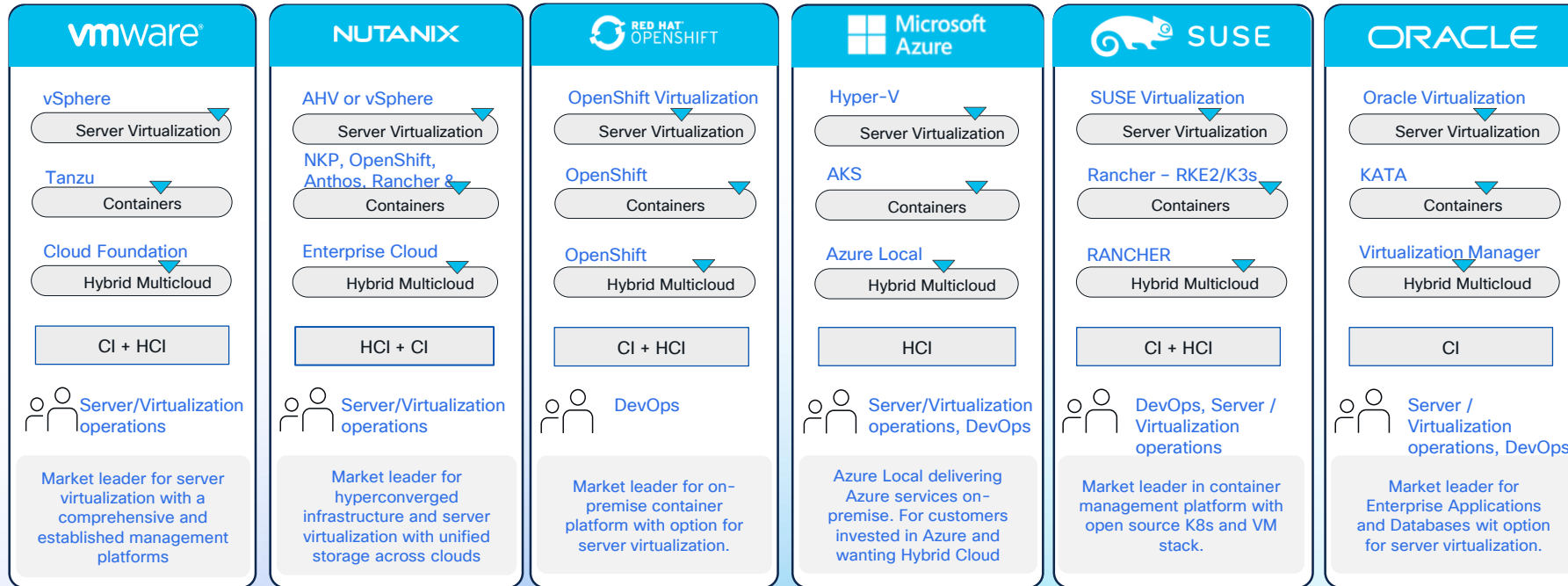


Speed of containers with the isolation of VMs
Kata Containers is an Open Container Initiative compliant runtime that uses lightweight virtual machines to provide isolation using hardware virtualization technology.



Integration
Oracle VM server virtualization software is supported by a long list of partners to support management, monitoring, data protection, and other important services and tasks.

Many Options One Platform - Cisco UCS



Complete your session evaluations



Complete a minimum of 4 session surveys and the Overall Event Survey to be entered in a drawing to win 1 of 5 full conference passes to Cisco Live 2026.



Earn 100 points per survey completed and compete on the Cisco Live Challenge leaderboard.



Level up and earn exclusive prizes!



Complete your surveys in the Cisco Live mobile app.

Continue your education



Visit the Cisco Showcase for related demos



Book your one-on-one Meet the Engineer meeting



Attend the interactive education with DevNet, Capture the Flag, and Walk-in Labs



Visit the On-Demand Library for more sessions at www.CiscoLive.com/on-demand

Thank you

CISCO Live !

