

UCS X-Series: Architecture, Deployment Best Practices and Migration

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Product Manager, UCS X-Series

Cisco Webex App

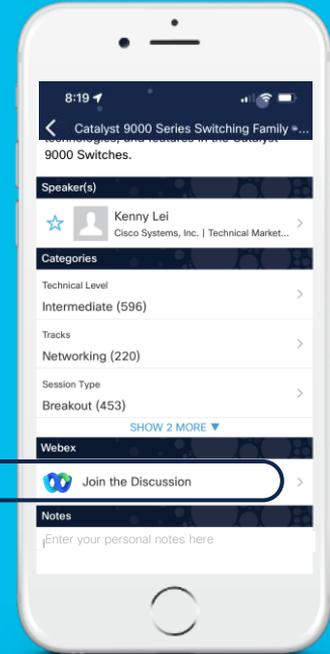
Questions?

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 until February 24, 2023.



Agenda

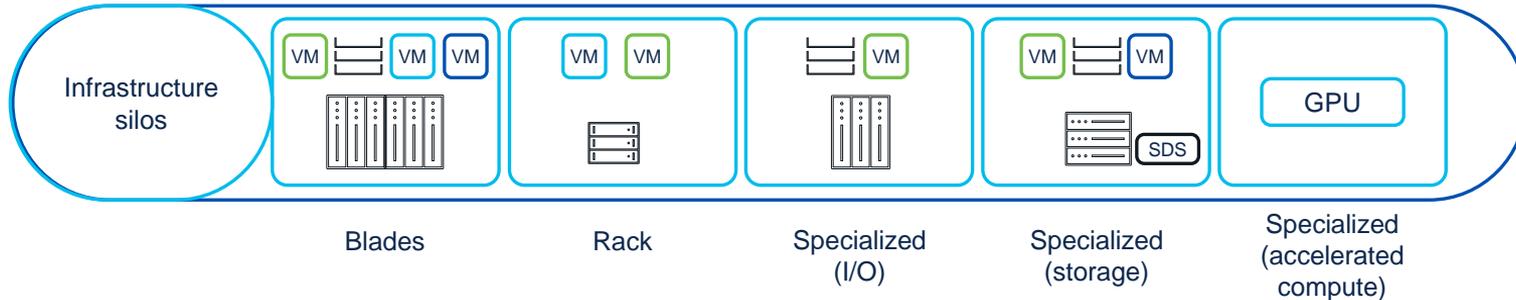
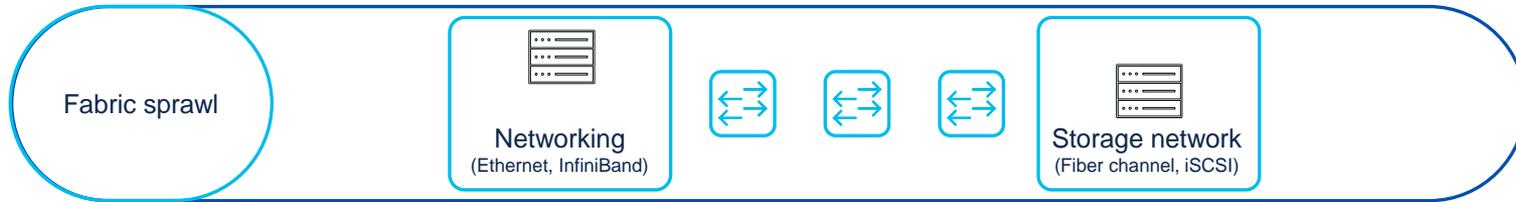
- Cisco UCS X-Series Introduction and Architecture
 - UCS X-Series Introduction
 - UCS X-Series Architecture deep dive
- Cisco UCS X-Series Deployment and Best Practices
 - Intersight IMM Managed mode
 - Pools, Policies and Profiles creation
 - Day2 Operations
 - Compute Solutions and CVD Program
- IMM Transition Tool
- Customer Use case
- Conclusion

Cisco UCS X-Series Introduction and Architecture



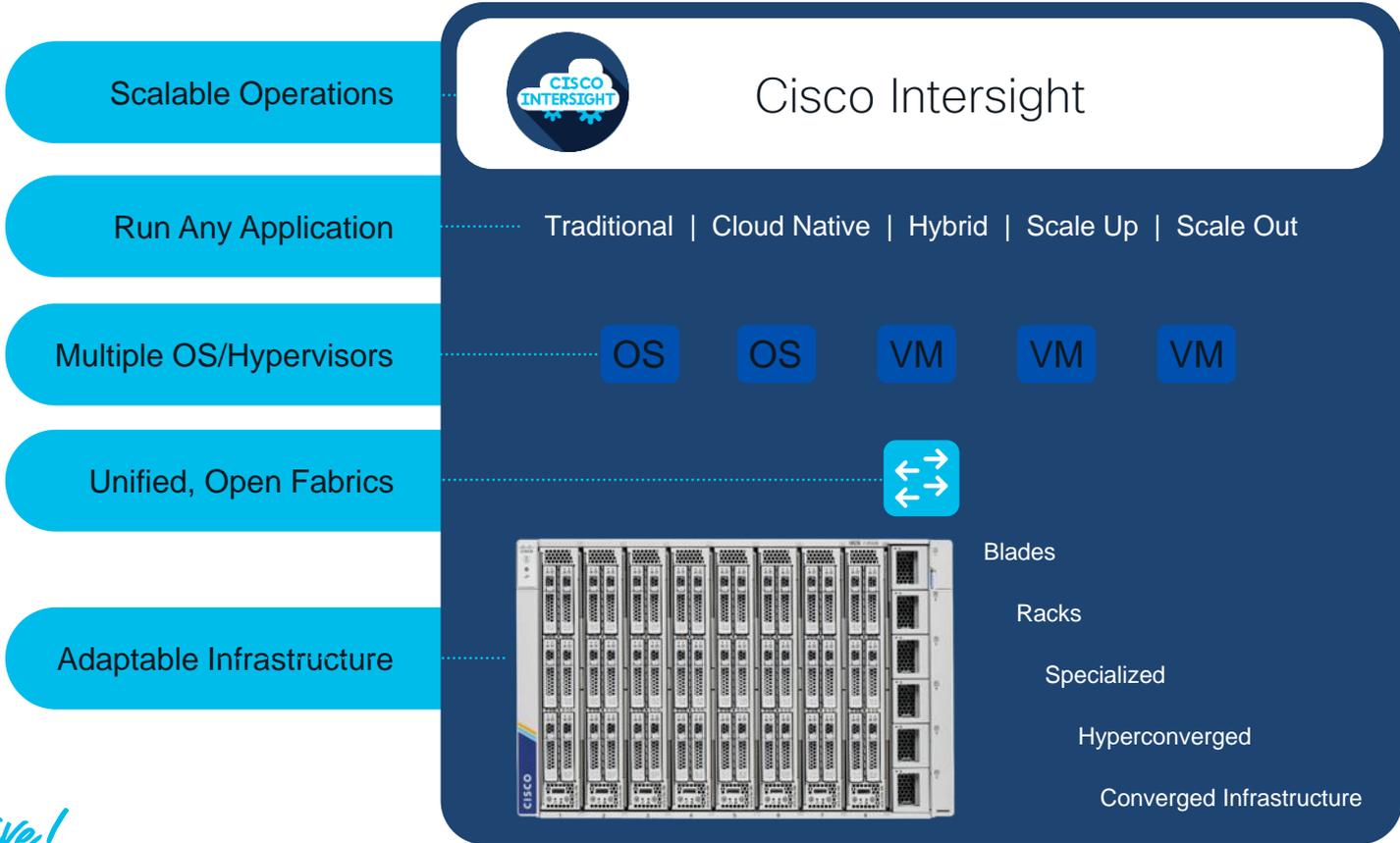
Persistent challenges for IT

Architectural silos drive complexity



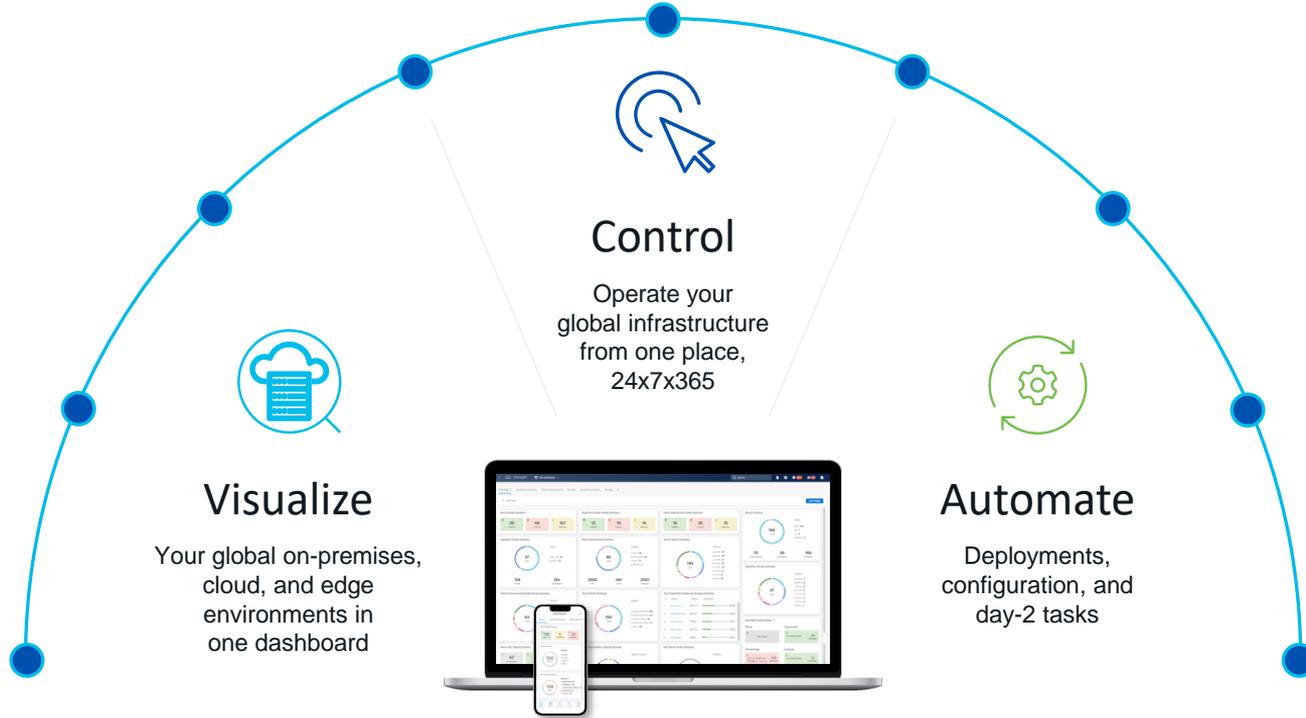
Modern Hybrid Cloud Infrastructure

Simplify to scale, automate, and operate



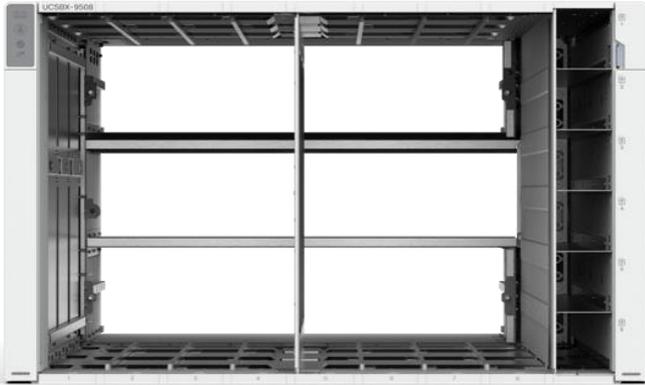
Modernize infrastructure management

Cisco Intersight Infrastructure Service

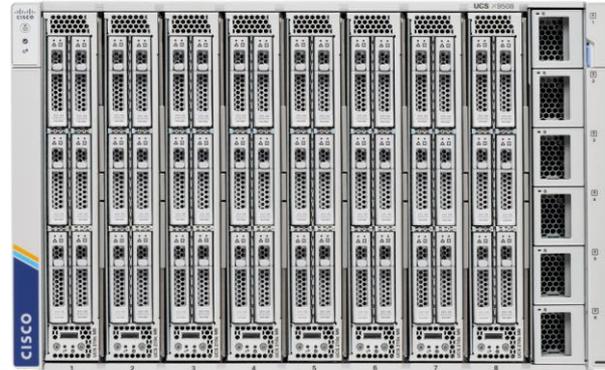


UCS X-Series

Chassis



8 Nodes



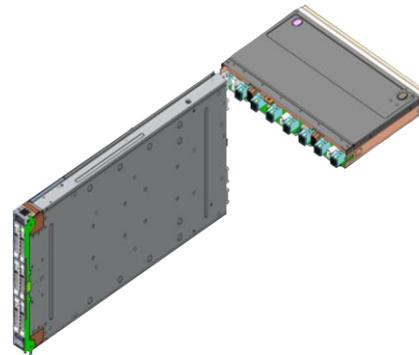
~960 cores, ~100TB mem,
>1PB drives, 48M IOPs



Intelligent Fabric Modules
Fabric for Converged Traffic
(Ethernet, Mgmt, FC, NVMeOF etc)

UCS X Fabric
(Fabric for PCIe, CXL Traffic)

Backplane less design For Fabric

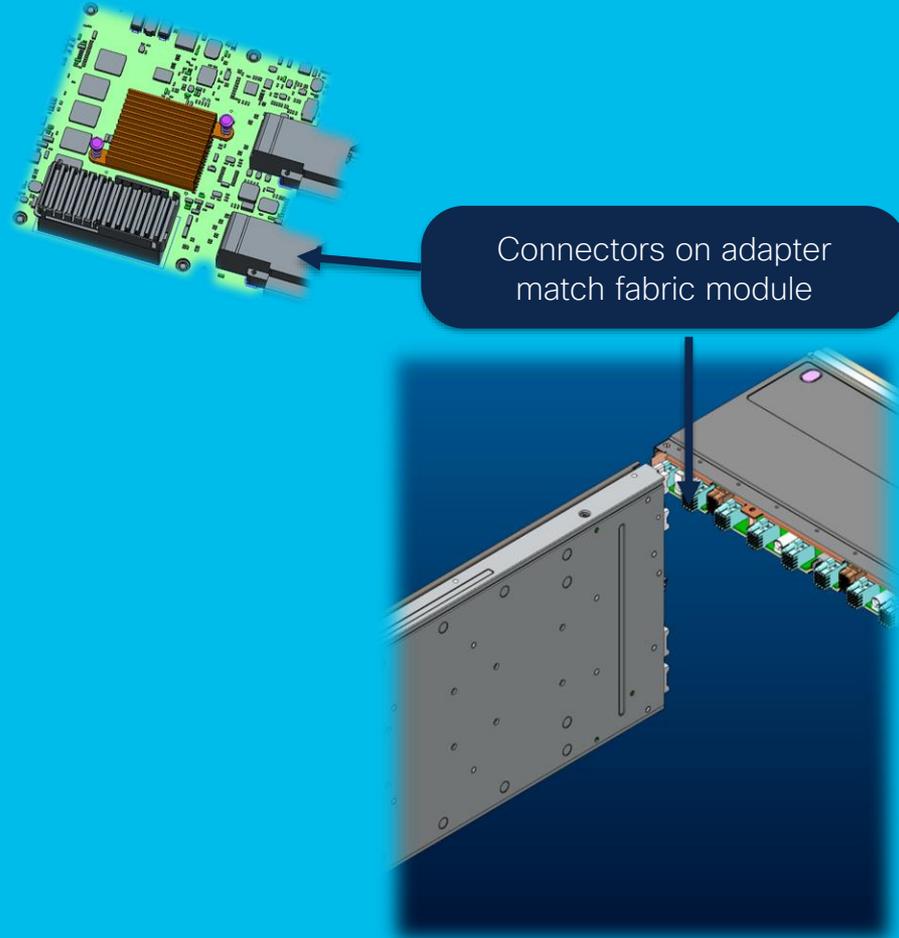


 Power and cooling innovation

- Power distribution, fan speed sensors, fan control policy, air flow, others
- High energy efficiency and power envelope for future

IO Midplane-free design

Fabric connections are on IO adapters, so compute node is independent of fabric technology

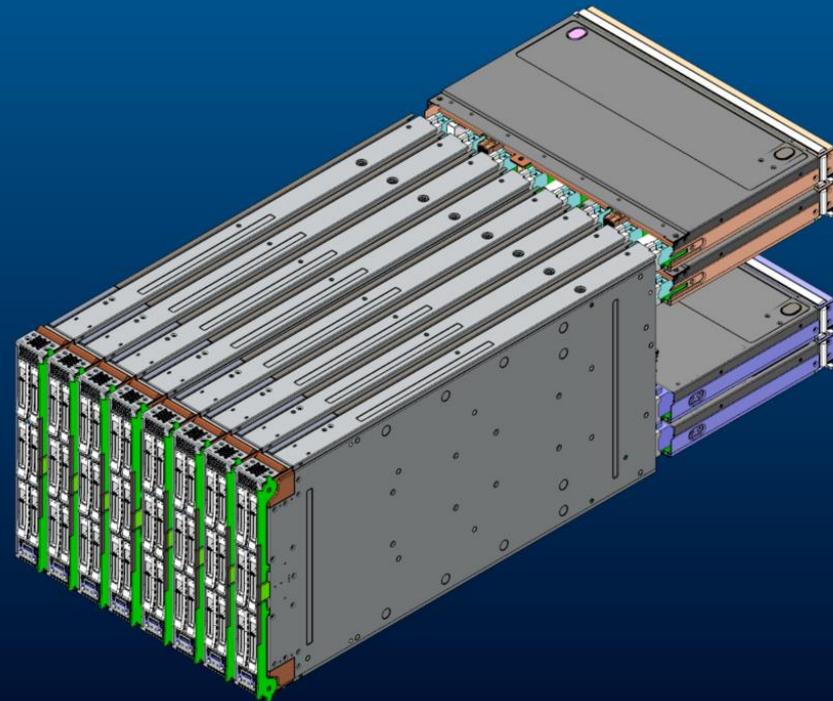


Direct node to fabric connections

Dual redundant fabrics

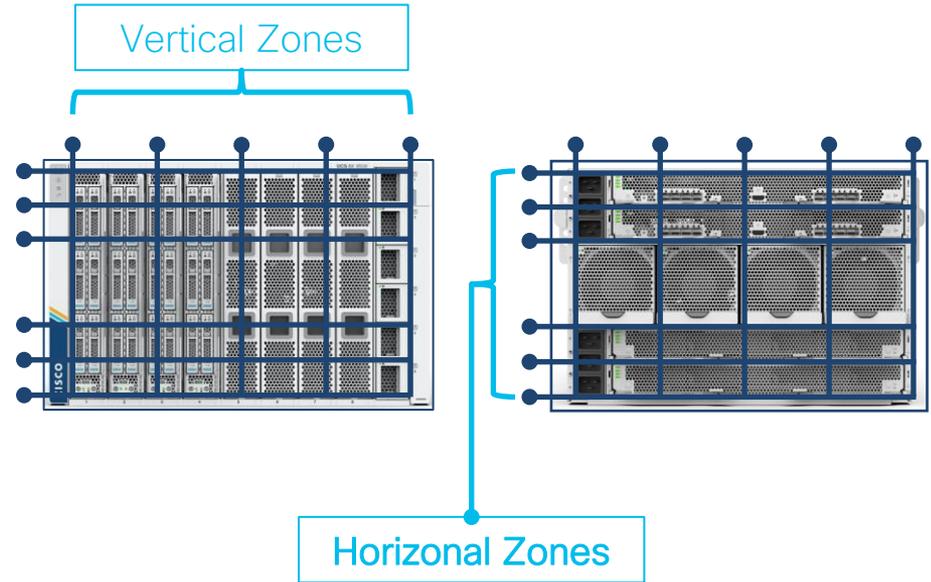
- Network (top)
- X-Fabric (bottom)

Connections from each node to all fabrics



Zoned Based Cooling: Chassis

- Vertical and horizontal zones
- Independent fan speed control based on sensors participating in each zone
- Reduces fan power consumption by right-sizing air flow on a per-zone basis, and increases overall power efficiency

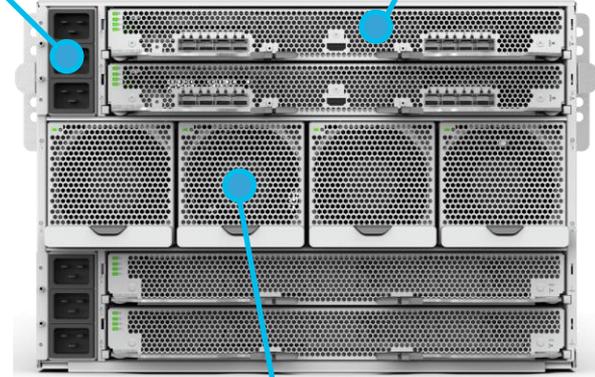


System and Module Fan Configuration

- Maximum chassis airflow is approximately 1100 CFM
- Approximately 110 CFM per node, 40 CFM per fabric module and 15 CFM per PSU
- Hot-swappable N+1 redundant
- Large higher voltage system fans provide more airflow at lower speeds, that lowers fan noise and reduces power consumption

1X 40-mm x 56-mm
12Vdc Fan per PSU

3X 40-mm x 56-mm 54Vdc Fans per
IFM/XFM/Blank



4X 100-mm x 90-mm 54Vdc
Fans per Chassis

X-Series Compute

UCS X210c M6 Compute Node – Key features

CPU

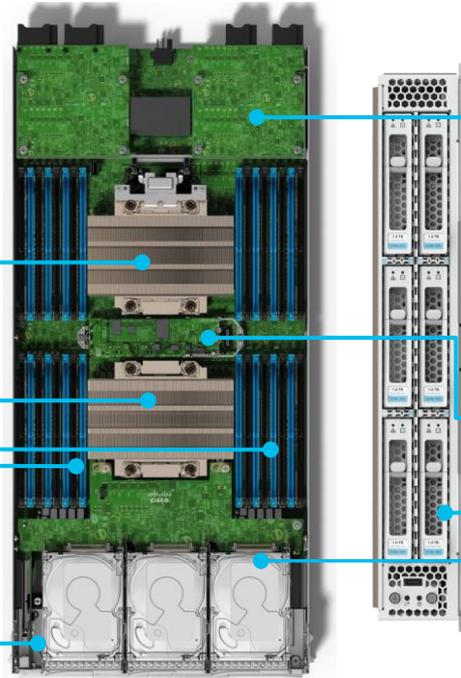
Up to 2 Intel 3rd Gen Xeon SP CPUs

Memory

Up to 32x DDR4 3200 DIMMs
Up to 16x Optane Persistent Memory 200 Series

GPU

Up to 2 x PCIe GPU
+
Up to 2 x NVMe PCIe Drives



VIC

- 100G per fabric
100G 5th Gen VIC mLOM
or
25G 4th Gen VIC mLOM
25G 4th Gen VIC Mezz

Drives

- Front Mezz options
- 6 SAS/SATA with HW RAID
 - 6 NVMe PCIe Gen4 x4
- Plus
- 2x M.2 SATA HW RAID1

UCS X210c M7 2S Compute Node

Key Features



CPU

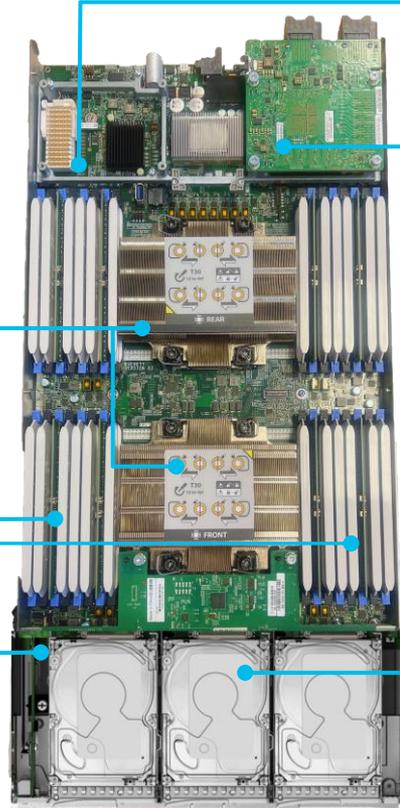
Up to 2 Intel 4th Gen Xeon CPUs

Memory

Up to 32x DDR5 4800 MT/s DIMMs

GPU

Up to 2 x PCIe GPU
+
Up to 2 x NVMe PCIe Drives



X-Fabric Mezz

Connect to PCIe Node

In future, to Memory/Drive Nodes

VIC

Up to 2 VICs

100G Cisco mLoM

25G Cisco mLoM

25G Cisco VIC Mezz

Agg NW 200G per node

Drives

2 x M.2 SATA HW Raid1/ 2 x M.2 NVMe

Up to 6 x SAS/SATA/NVMe

- RAID Controller for SAS/SATA
- Up to 90TB (15TB x 6) per Blade



UCS X410c M7 4S Compute Node

Key Features

Form Factor

Occupies two slots in chassis

CPU

Up to 4 Intel 4th Gen Xeon CPUs

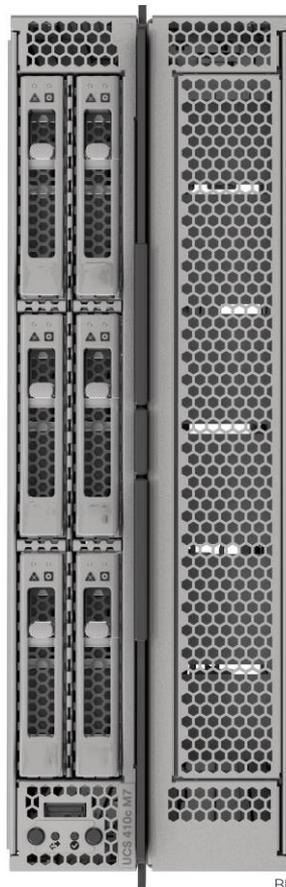
X-Fabric Mezz

Connect up to 2x PCIe Nodes

In future, to Memory/Drive Nodes

Memory

Up to 64x DDR5 4800 MT/s DIMMs



VIC

200G Aggregate/ 100G per Fabric
100G 5th Gen VIC mLOM

or

25G 5th Gen VIC mLOM
25G 5th Gen VIC Mezz

Drives/GPU

Front Mezz options

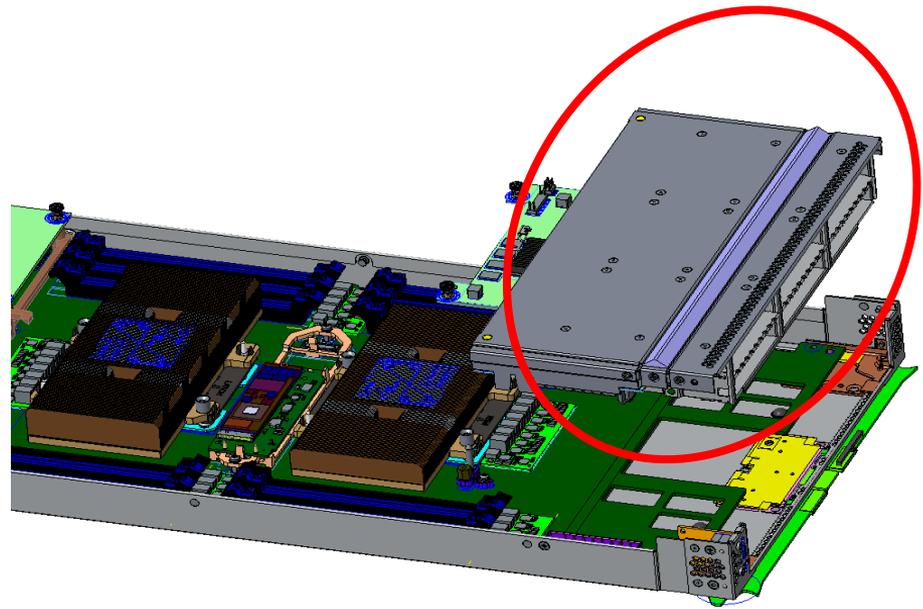
1. 6 SAS/SATA with HW RAID
2. 6 NVMe PCIe Gen4 x4
3. 2 NVMe PCIe Gen4 x4, plus 2 PCIe GPUs

Internal

1. 2x M.2 SATA HW RAID1
2. 2x M.2 NVMe

GPU on X210C

- 2x T4 (with modified heat sink) in the front mezz slot
- Supports 2x NVME drives
- High GPU density solution with GPU node (24xT4 in 7RU with 4 nodes)



UCS Unified Fabric

Fabric Interconnect– 25G and 100G



	6454	64108	6536
Total Ports	54	108	36
Ethernet only Ports	28x 10/25G, 4x 1/10/25G and 6x 40G	72x 10/25G, 8x 1/10/25G and 12x 40G	32(10*/25/40/100G)
Unified Ports	16x 10/25G Ethernet or 8/16/32G FC	16x 10/25G Ethernet or 8/16/32G FC	4x100G (10*/25/40/100G) Ethernet or 16x 8/16/32G FC with breakout
1G Ports	Port 45-48	Port 89-96	Port 9 and 10
IFM	25G	25G	25G and 100G

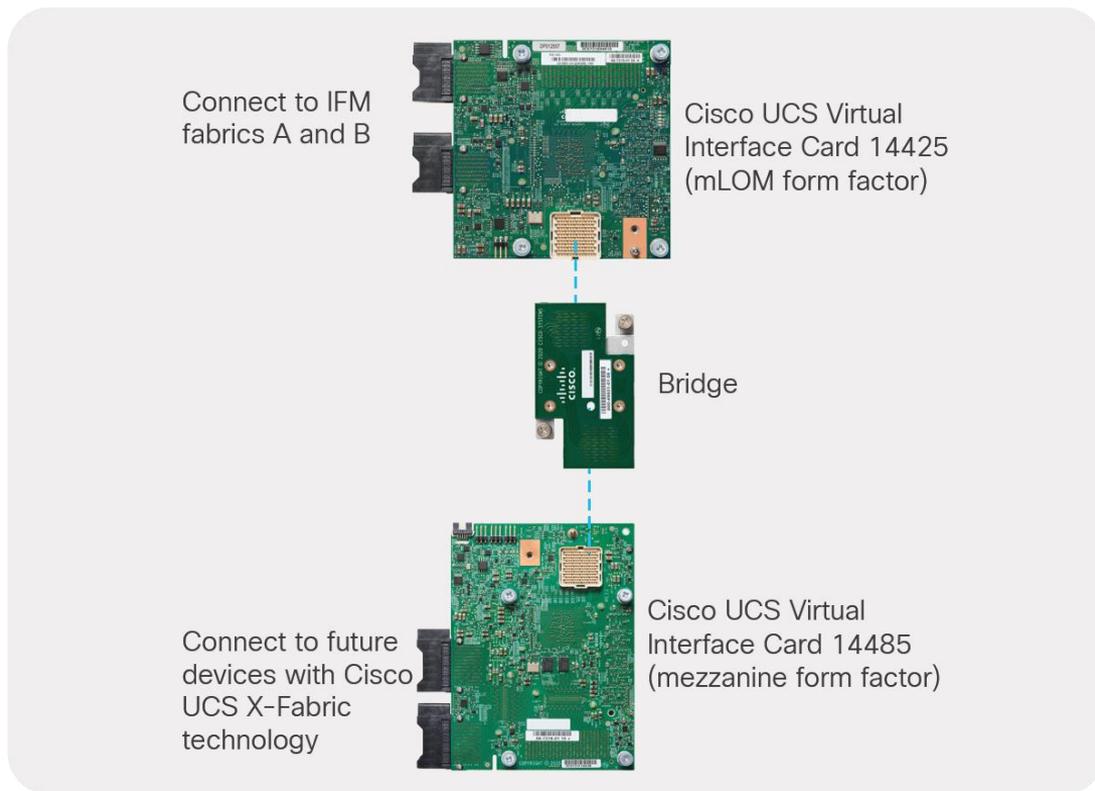
Intelligent Fabric Module (IFM) – 25G and 100G



	IFM 9108-25G	IFM 9108-100G
Fabric Interconnect	6454, 64108, 6536	6536
VIC	15231, 14425, +14825	15231, 14425, +14825
Network Interface (NIF) Ports	8 x 25G (port-channel)	8 x 100G (port-channel)
Host Interface (HIF) Ports	32 x 25G	8 x 100G or 32 x 25G
Oversubscription	4 : 1	1 : 1

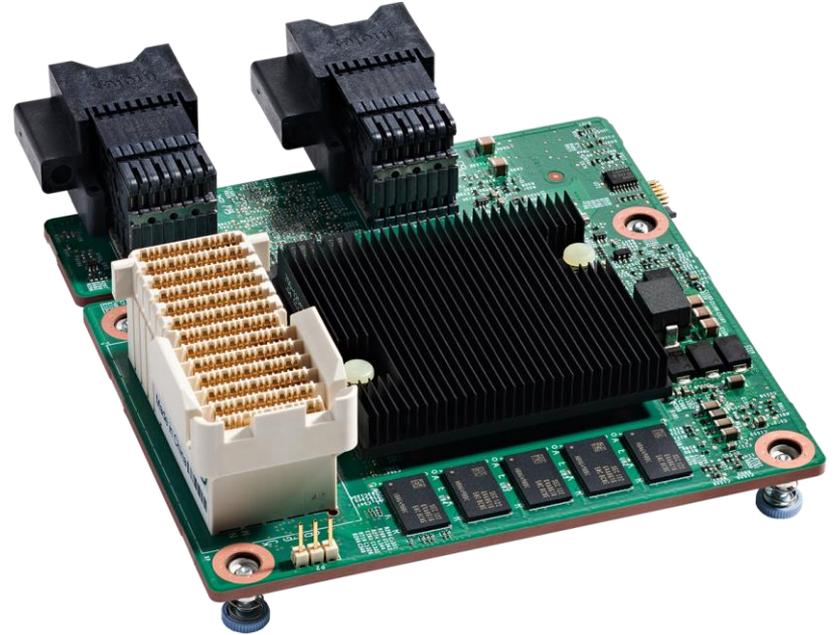
VIC 14425 (mLOM) and VIC 14825 (Mezz)

- 4th Gen VIC card for X210c compute node
- 4x 25G bandwidth with mLom and 8x 25G with Mezz
- X16 PCIe Gen 3
- Features
 - NVMeoF: FC-NVMe, RoCEv2
 - Overlays: NVGRE, VXLAN, Geneve
 - Hardware RSS
 - Windows VMQ/VMMQ
 - VMware NetQueue
 - DPDK

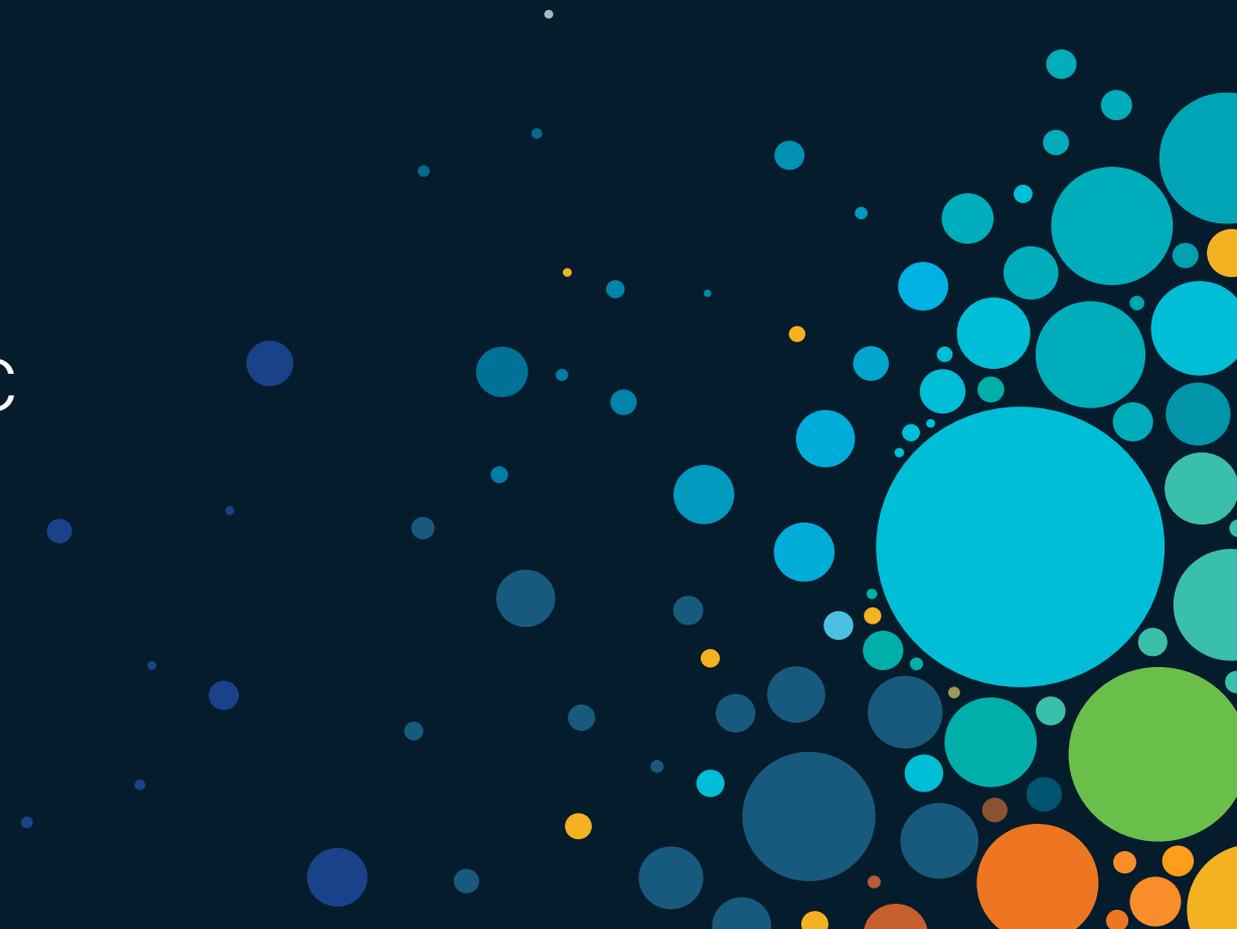


VIC 15231 MLOM

- 5th Gen VIC card
- Converged Network Adapter
- 2 x 100G with 5th Gen FI
- x16, PCIe Gen 4
- 512 virtual PCIe Devices
 - FC and Ethernet
- NVMeoF: FC-NVMe, RoCEv2
- Overlays: NVGRE, VXLAN, Geneve
- RSS, NetQueue, VMQ, VMMQ, RSSv2*
- SR-IOV*, SIOV*, usNIC, DPDK
- PTPv2, L3ECN*, 16K Rx Ring Size



UCS X-Fabric

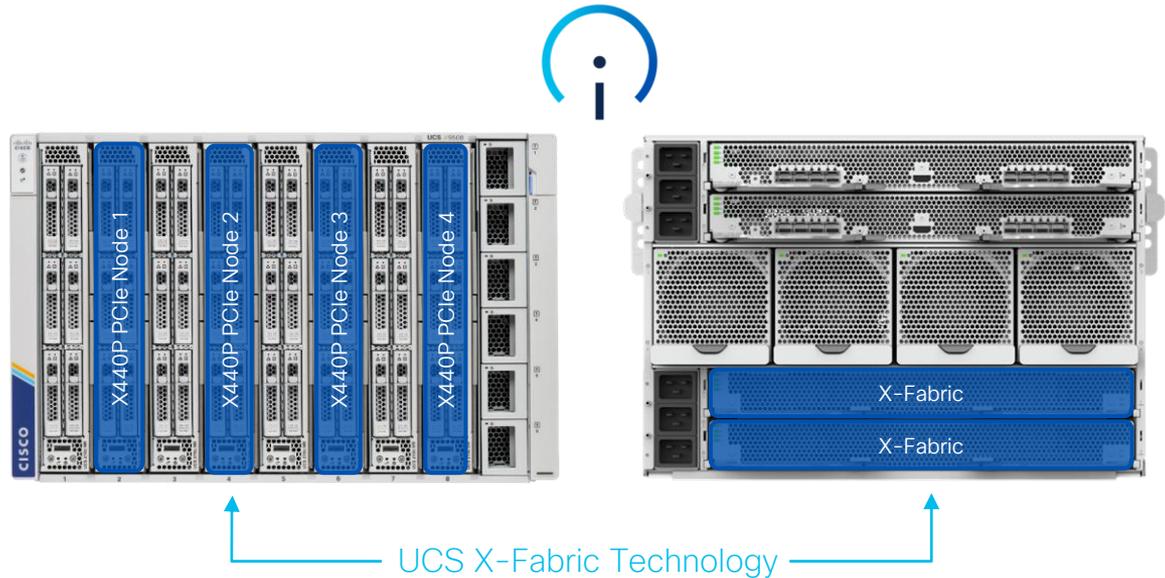


UCS X-Fabric Technology and PCIe Nodes with GPU

Open, modular design enables compute and accelerator node connectivity

PCIe node supports up to

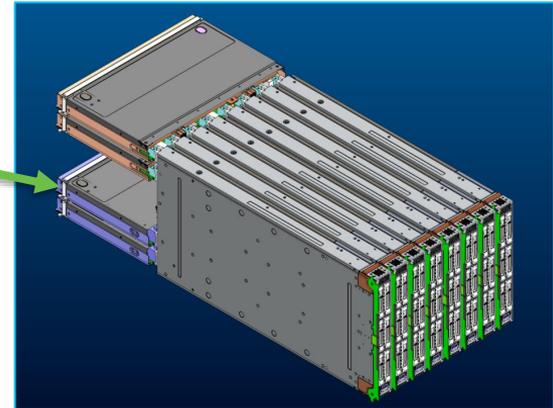
- 4x Intel Data Center GPU Flex 140*
- 2x Intel Data Center GPU Flex 170*
- 2x Nvidia A16
- 2x Nvidia A40
- 4x Nvidia T4
- 2x Nvidia A100



- ✓ Based on native PCIe Gen. 4
- ✓ Provides GPU acceleration to enterprise application
- ✓ No backplane or cables = Easily upgrades

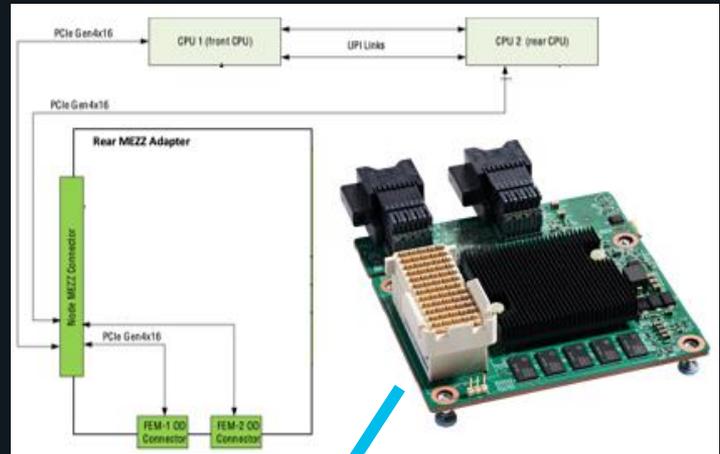
X9416 X-Fabric XFM Modules

- The X9416 XFM provides fixed PCIe Gen4 x16 links between each pair of odd (N) and even (N+1) slots
- Replaces lower fabric module pair
- Can be hot swapped in a chassis with the original XFM blanks
- Connects to all chassis slots
- No configuration required



X-Fabric Mezz Cards

- All X-Series compute node mezzanine cards provide connectivity to the X-Fabric
 - 100Gb 14825 VIC Mezz
 - PCIe pass-through Mezz
- One PCIe Gen4 x16 link per CPU

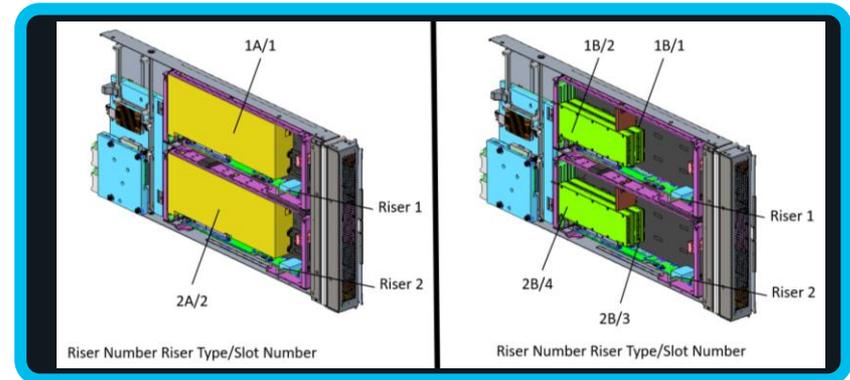
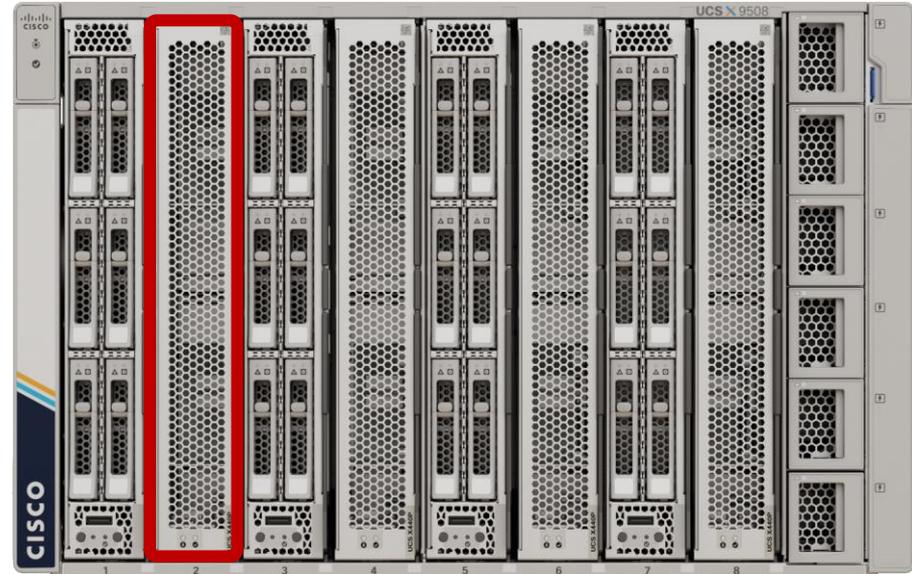


PCIe Expansion



X440p PCIe Node

- The X440p PCIe node provides 2 or 4 PCIe slots connected to an adjacent compute node
- Includes two riser cards, type A or B
- Risers include GPU power cables
- Riser A – Up to two dual width GPUs
 - NVIDIA A16, A40, or A100
- Riser B – Up to four single width GPUs
 - NVIDIA T4
- No mixing of GPU models on a server

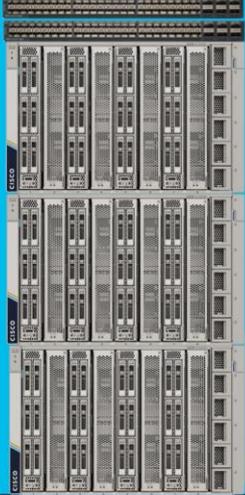


UCS X-Series NVIDIA GPU Portfolio



Compute	VDI / Virtual Workstations		
<p>NVIDIA A100</p> <p>High Performance Compute, AI, HPC</p>  <p>Up to 7x MIG instances per card</p> <p>Up to 2x Per X440p</p> <p>300W 80GB 2-slot FHFL</p>	<p>NVIDIA T4</p> <p>High Density Graphics Compact & Versatile</p>  <p>Small Footprint Data Center and Edge Inference</p> <p>Up to 4x Per X440p Max 96GB FB per server*</p> <p><small>*X440p with 4x T4s combined with 2x T4s and GPU mezz in X210c</small></p> <p>70W 16GB 1-slot HHL</p>	<p>NVIDIA A16</p> <p>Highest Density Virtual Desktop</p>  <p>High-res, multi-monitor Max # of encode/decode streams</p> <p>Up to 2x Per X440p Max 128GB FB per server</p> <p>250W 4 x 16GB 2-slot FHFL</p>	<p>NVIDIA A40</p> <p>Highest Perf Graphics Visual Computing</p>  <p>Fastest RT Graphics Largest render models</p> <p>Up to 2x Per X440p Max 96GB FB per server</p> <p>300W 48GB 2-slot FHFL</p>

UCS X-Series

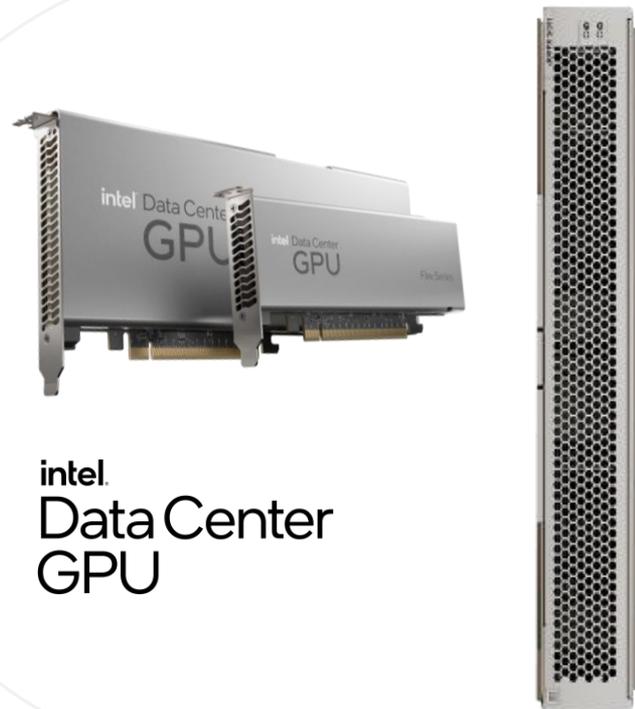


New GPUs options with UCS X-Fabric

Modular design enables flexibility and choice

Intel Data Center GPU Flex Series 140 and 170

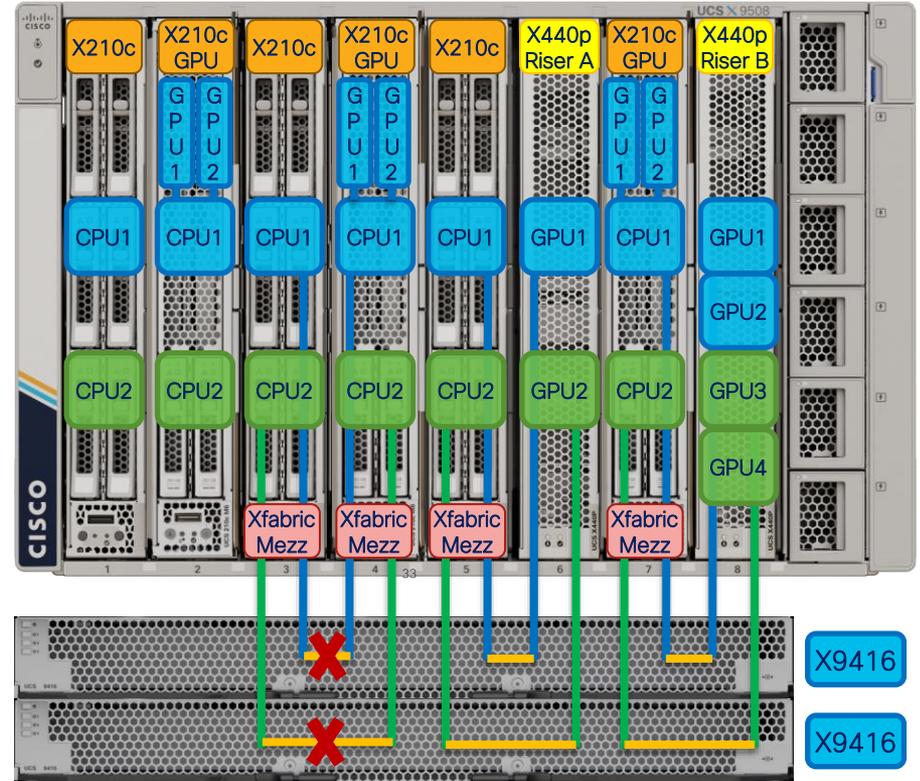
- Outstanding compute density and energy efficiency
- Main use cases: VDI and video transcode
- Secondary use cases: Rendering and AI/ML
- Up to 4x Intel Flex 140 or up to 2x Intel Flex 170
- Flex 140 GPU: HHHL, 75W PCIe*
- Flex 170 GPU: FHFL, 150W PCIe*



* Will be available 2nd Half CY23

UCS X-Fabric, X440p PCIe Node, and GPU Mezz

- Compute nodes can continue to exist in adjacent slots where the PCIe node is not needed (example slots 1 and 2)
- PCIe links through the X-Fabric **between compute nodes** will not come up, even with an X-Fabric Mezz card installed on the compute node (example slots 3 and 4)
- Compute with the GPU Front Mezz can be used with the PCIe node and Riser B to support up to six GPU per node (slots 7 and 8)



Single infrastructure for many workloads



Consolidate Rack Workloads



AI/ML



Accelerated VDI



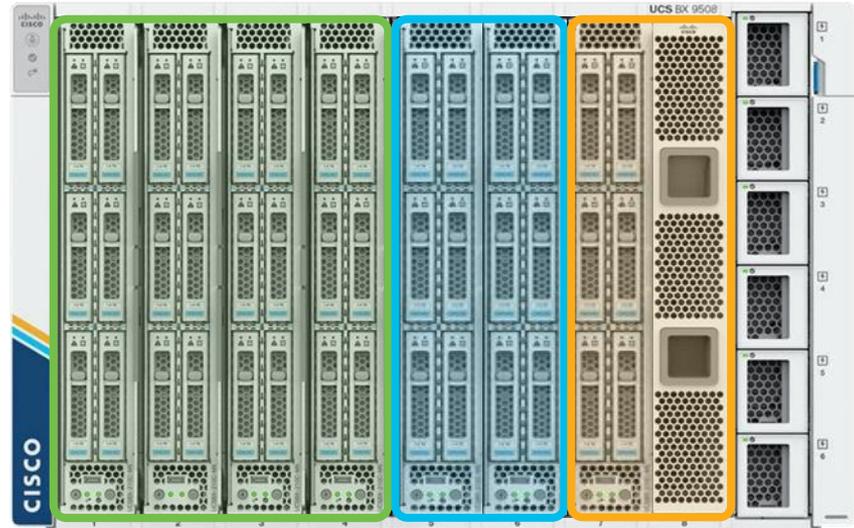
Big Data, SDS, Containers



Traditional Blade Workloads

CISCO *Live!*

UCS X-Series



Up to 960

Cores
per Chassis
(M6 or M7)

24

GPUs
per Chassis



200G

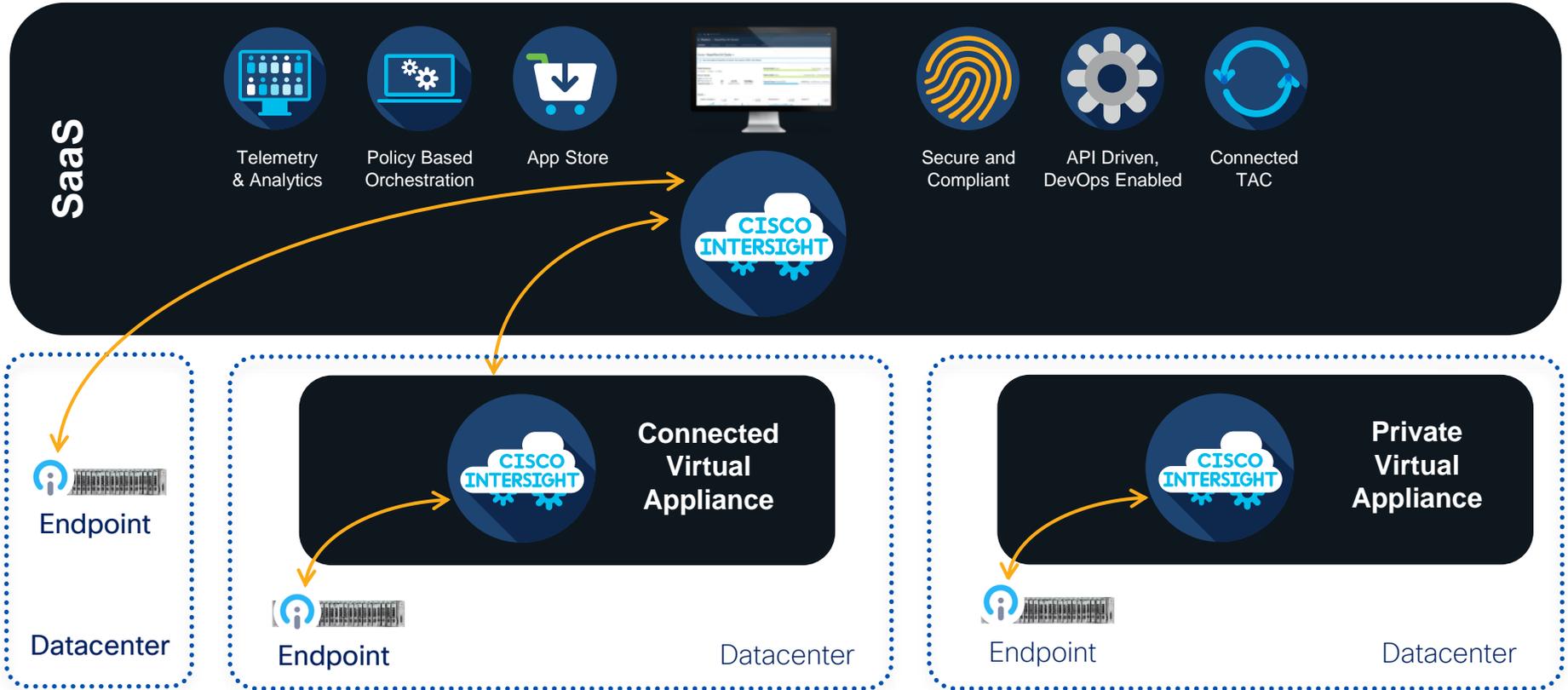
Bandwidth to
compute node

1 PB

of storage

Cisco UCS-X Series Deployment & Best Practices

Intersight Deployment Modes



Intersight Managed Mode (IMM) setup



Configure Cisco UCS fabric interconnect for Cisco Intersight Managed Mode



Claim Cisco UCS fabric interconnect as a target in Cisco Intersight



Configure Cisco UCS domain profile to connect chassis and network



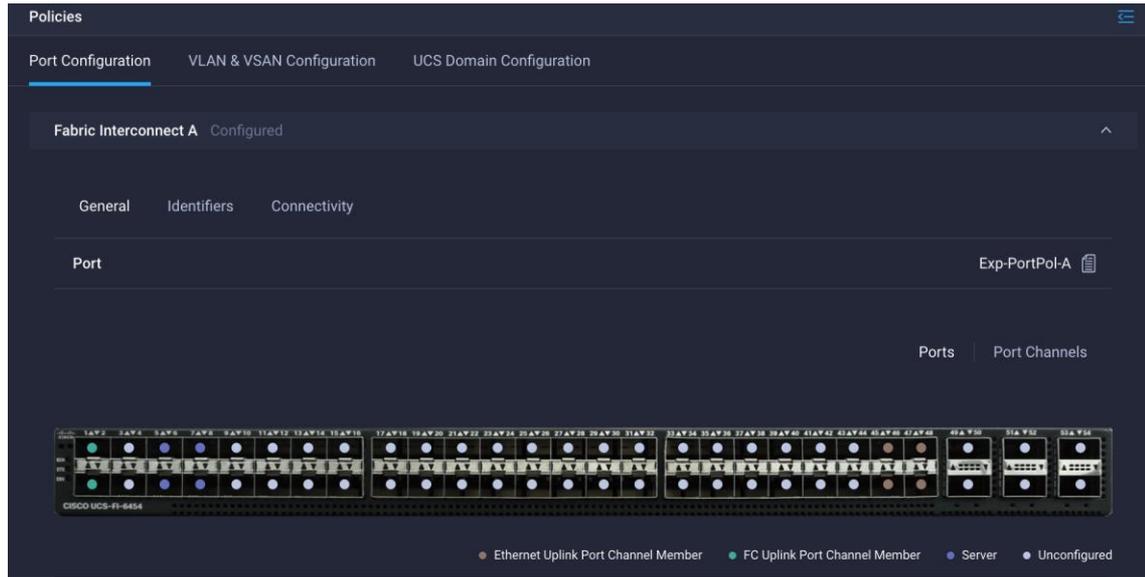
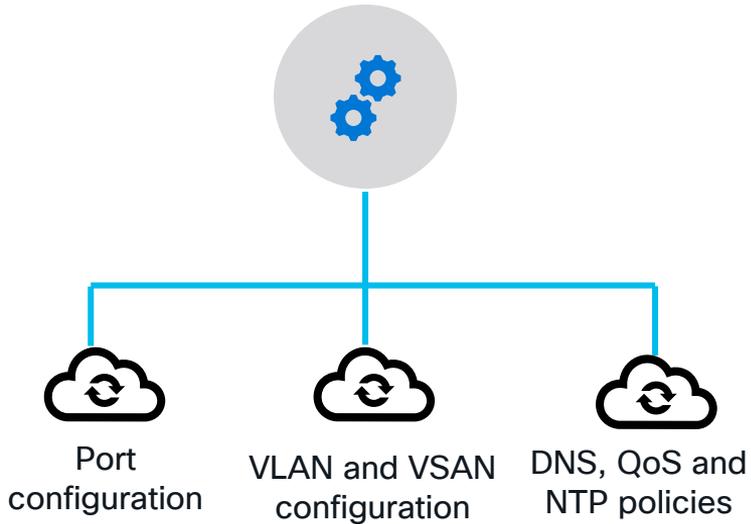
Configure server profile template to defined various server parameters



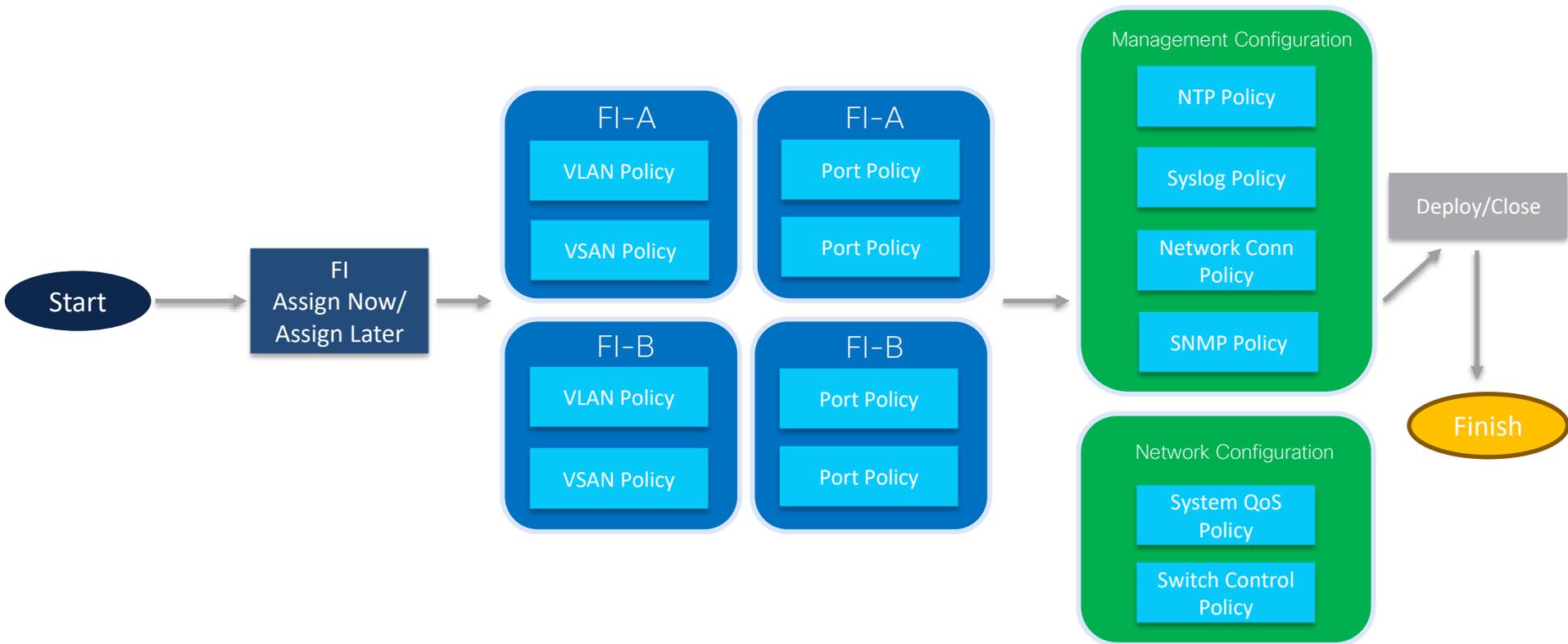
Derive and deploy server profile to configure the compute nodes

What is a Domain Profile?

Cisco UCS domain profile



High Level Intersight UCS Domain Profile Creation Overview



What is a Server Profile?

Server Profile



BIOS and Boot configuration

IMC Access and local user policy

LAN and SAN connectivity

vNIC and vHBA configuration

CDP and LLDP configuration

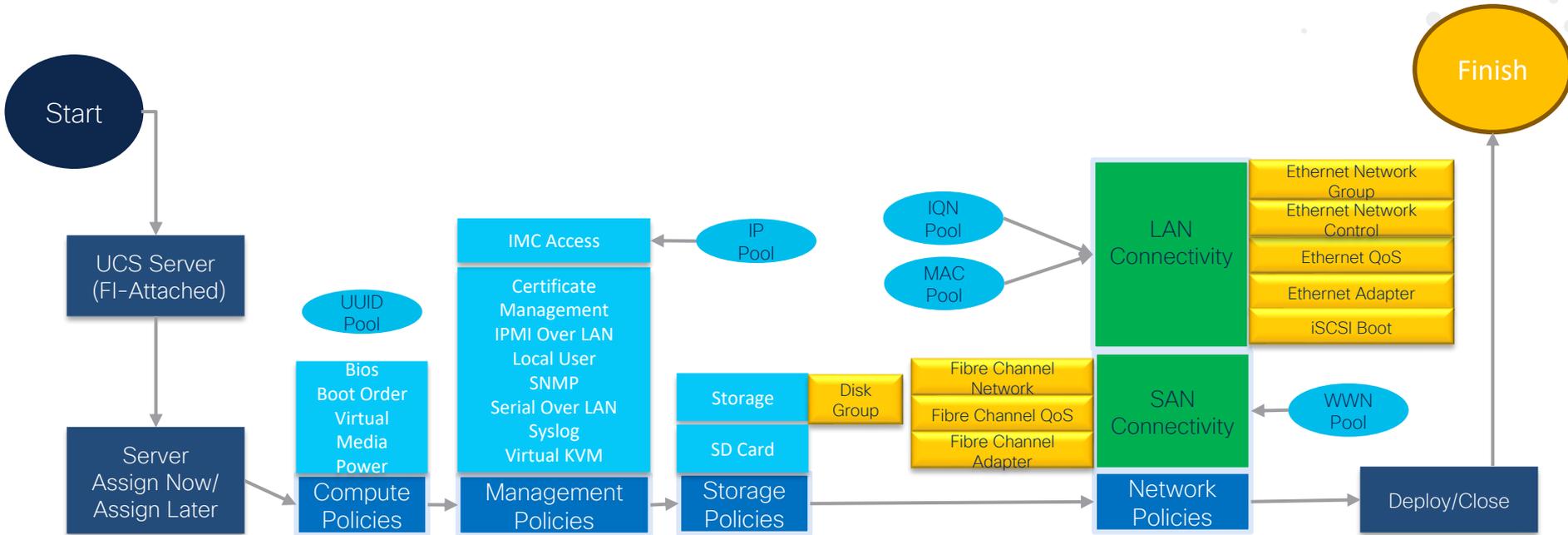
MAC and WWxN pool mapping

Ethernet adapter configuration

MTU and QoS configuration

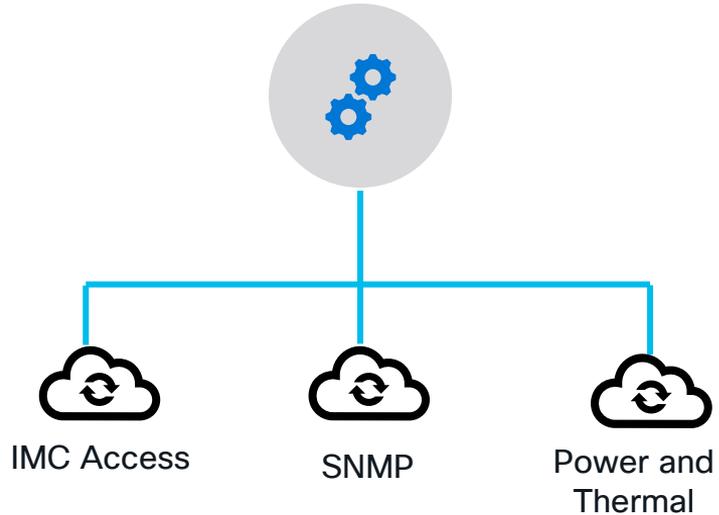
Details		Configuration	
Status	OK	General Identifiers Connectivity	
Name	exp-esxi-2	All Compute Management Network Storage	
Target Platform	UCS Server (FI-Attached)	BIOS BIOS-Virt-M6	
Server	aa20-6454-1-5	Boot Order Exp-FCP-Boot	
Resource Pool		IMC Access Policy Exp-IMC-IB-OOB-VLAN	
Template Name	FC-Boot-VMware-Template	IPMI Over LAN Exp-IPMIoLAN	
Last Update	May 2, 2022 8:18 AM	LAN Connectivity Exp-FCP-Boot-VMware-LanConn	
Description		Local User Exp-LocalUser-Policy	
Organization	Exp	SAN Connectivity Exp-FCP-Boot-SANConn-wFC-NVMe	
Tags	Set	UUID Exp-UUID-Pool	
	No Tags	Virtual KVM Tunnel_KVM	

Intersight UCS Server Profile Creation Overview



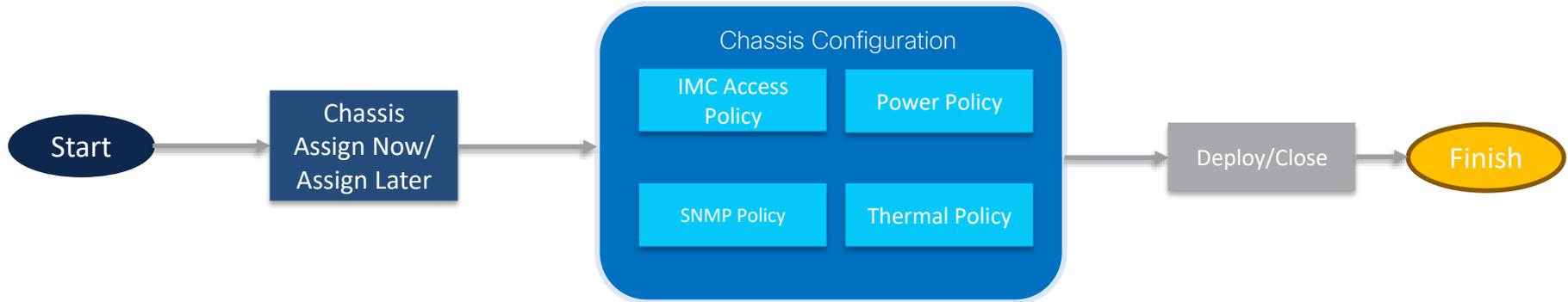
What is a Chassis Profile?

Cisco UCS chassis profile



The screenshot shows the configuration page for a UCS Chassis Profile named 'sj7-rack11'. The page has a dark theme. At the top left, there is a back arrow and the text 'UCS Chassis Profiles'. Below this is the profile name 'sj7-rack11'. The main content is divided into two columns, both titled 'Details'. The left column shows the following information: Status (OK), Name (sj7-rack11), Chassis (sj7-cc7-sg-6454-1-1), Last Update (Dec 28, 2022 5:05 AM), and Description. The right column shows a list of policy categories: IMC Access Policy, Power, and SNMP.

Optional – Intersight UCS Chassis Profile Creation Overview



UCS-X Deployment and Best Practices

Workflow on UCS-X and Intersight configuration

STEP 1 : Site Preparation

Site preparation

Configuring FI's
firmware upgrades

Pools

Policies

Templates and
profiles

Site Preparation – Physical and Logical Install

- ✓ **Site planning checklist** (Space evaluation ,Environmental evaluation ,Power evaluation ,Grounding evaluation ,Cable and interface equipment evaluation etc): <https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-x-series-modular-system/ucs-x-series-quick-start-guide.html>
- ✓ Listing all the required VLAN , VSAN , IP , MAC , POOL , WWNN and WWPN
- ✓ Port mapping
- ✓ Naming schema (Pools , Policy etc)
- ✓ No Overlapping VLANS
- ✓ Proactively manage appliance Backup and Restore if CVA/PVA is used
- ✓ Power calculator tool - <https://ucspowercalc.cloudapps.cisco.com/public/index.jsp>
- ✓ For Connected Virtual appliance (CVA) installation (A Record , PTR Record ,CNAME etc)-
https://www.cisco.com/c/en/us/td/docs/unified_computing/Intersight/b_Cisco_Intersight_Appliance_Getting_Started_Guide/m_installing_intersight_appliance.html?bookSearch=true#id_95741

Preparing FI's and servers. Firmware upgrades

First step: Prepare UCS FI's for IMM mode

- IMM should be configured from console.
- Managed mode should be “intersight”.
- Define password type.
- Configure first FI (A) with network parameters, DNS, domain name.
- Confirmation of parameters.
- Secondary FI (B) will detect primary FI take over configuration from primary node.

The image displays three overlapping terminal windows showing the configuration process for UCS Fabric Interconnects (FI) in Intersight mode. The top window shows the initial configuration prompts: selecting 'console' as the configuration method, 'intersight' as the management mode, and confirming the setup of a new Fabric interconnect. The middle window shows 'User Access Verification' where the user 'admin' is logged in. The bottom window shows the detection of a peer Fabric interconnect and the start of GUI configuration, with a warning that the switch name is empty.

```
Note: Intersight management mode setup available through console based configuration method alone.
^C
Type 'reboot' to abort configuration and reboot system or Type 'X' to cancel GUI configuration and go back to console or Press any other key to see the installation progress from GUI (reboot/X) ?
Enter the configuration method. (console/gui) ? console
Enter the management mode. (ucsm/intersight)? intersight
You have chosen to setup a new Fabric interconnect in "intersight" managed mode. Continue? (y/n) y
Enforce strong password? (y/n) [y] y
Enter the password for "admin":
Confirm the password for "admin": Internal CLI error: Invalid argument
Enter the switch
Enter the system

User Access Verification
Username: admin
Password:
^C
Type 'reboot' to abort configuration and reboot system or Type 'X' to cancel GUI configuration and go back to console or Press any other key to see the installation progress from GUI (reboot/X) ?
Enter the configuration method. (console/gui) ? console
Installer has detected the presence of a peer Fabric interconnect. This Fabric interconnect will be added to the cluster. Continue (y/n) y
Enter the admin password of the peer Fabric interconnect:

first-setup: Warning: is EMPTY, using switch as name
Starting GUI for initial setup.
Switch can now be configured from GUI. Use https:// and
on "Express Setup" link. If you want to cancel the configuration from GUI, press the 'ctrl+c' key and choose 'X'. Press any other key to see the installation progress from GUI
Note: Intersight management mode setup available through console based configuration method alone.
```

Preparing FI's and servers. Firmware upgrades

Intersight Pre-requisites

- **Setup Cisco Intersight account**
 - Create Intersight account to claim your devices that you want to manage from Intersight.
- **Setup Licensing**
 - When setting up a new Cisco Intersight account (as explained in this document), the account needs to be enabled for Cisco Smart Software Licensing.
- **Create Resource Group**
 - Resources such as targets will be logically grouped. One or more resource groups can be created for granular control of the resources.
- **Create Organization**
 - An Organization is a logical entity which enables multi-tenancy through separation of resources in an account. The Organization allows you to use the Resource Groups and enables you to apply the configuration settings on a subset of targets.
- **Configure Roles**
 - A role represents a collection of privileges to perform a set of operations and provides a user access to resources.

Preparing FI's and servers. Firmware upgrades

First step: Claim FI's to Intersight

Navigate to : System->admin->targets->claim new target

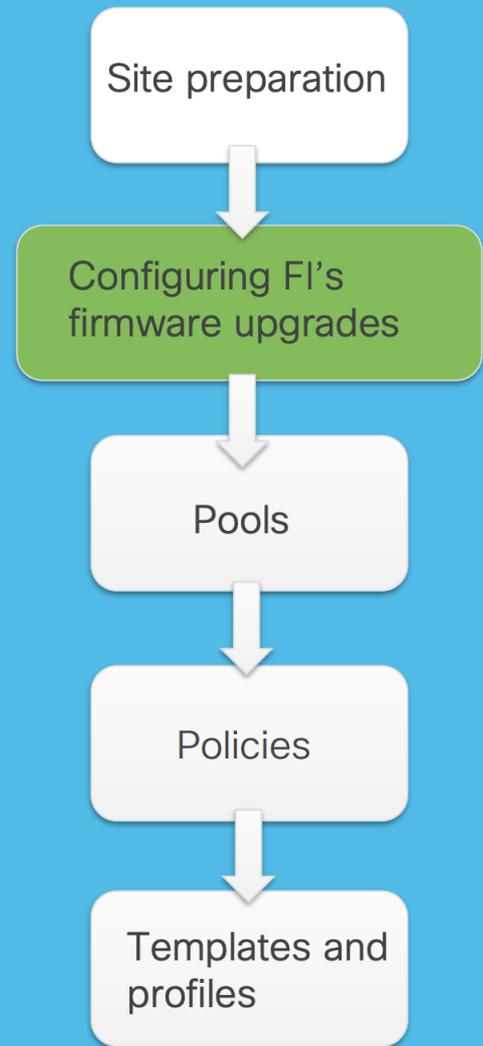
- Login to intersight.
- Goal is to add target (FI's) to intersight (UCS domain, intersight managed).
- Provide claim codes (SaaS) or FI user/pass (appliance) to add target.
- If using SaaS, claim codes can be retrieved from FI.
- We should use browser to navigate to FI IP address, provide user and passwd, and from device connector obtain Device ID and Claim Codes to be used with intersight.

The image displays three screenshots from the Cisco Intersight web interface. The top screenshot, titled "Select Target Type", shows a search and filter interface. Under the "Compute / Fabric" category, the "Cisco UCS Domain (Intersight Managed)" option is selected. The middle screenshot, titled "General", shows the "Device ID *" and "Claim Code *" input fields. The bottom screenshot, titled "DEVICE CONSOLE", shows the "Device Connector" section with a "Not Claimed" status bar and instructions for claiming the device.

UCS-X Deployment and Best Practices

Workflow on UCS-X and Intersight configuration

STEP 2 : Upgrade Fabric Interconnects.



Preparing FI's and servers. Firmware upgrades

Second step: Upgrade FI's Firmware

- In Intersight, browse to **OPERATE > Fabric Interconnects**. Click the three dots at the end of the row for either of the Fabric Interconnects and select **“Upgrade Firmware”**.
- Click **“Start”** to bypass the first screen of the firmware upgrade. You will be able to select desired firmware

The screenshot shows the Cisco Intersight interface. On the left, a table lists Fabric Interconnects (FI) with columns for Name, Health, Contract Status, Manage..., and Model. The 'Upgrade Firmware' button is highlighted in a green box in the bottom right corner of the interface.

Name	Health	Contract Status	Manage...	Model	Exp...
FI-5G FI-A	Healthy	Not Covered	172.26.131.146	UCS-FI-6536	
FI-5G FI-B	Healthy	Not Covered	172.26.131.147	UCS-FI-6536	N/A 4.2(2c) 9.3(5)I42(2c) FI-5G
FI-Stage FI-A	Healthy	Not Covered	172.26.131.152	UCS-FI-6454	N/A 4.2(1h) 9.3(5)I42(1f) FI-Staging-cl...
FI-Stage FI-B	Healthy	Not Covered	172.26.131.153	UCS-FI-6454	N/A 4.2(1h) 9.3(5)I42(1f) FI-Staging-cl...

The screenshot shows the 'Upgrade Firmware' dialog box in the Cisco Intersight interface. The dialog has a 'General' tab and a 'Version' section. The 'Version' section contains a dropdown menu for selecting a firmware version to upgrade the Fabric Interconnects to. The 'Start' button is highlighted in a green box.

Upgrade Firmware

General

Version

Select a firmware version to upgrade the Fabric Interconnects to.

Infrastructure Service

Cloud Orchestrator

Workload Optimizer

My Dashboard

System

Explore More Services

270

Used 35 Available 235

Ports

Total	Used	Avail...
42	22	20

Open TAC Case

Upgrade Firmware

Preparing FI's and servers. Firmware upgrades

Second step: Upgrade FI's Firmware

Workflow tasks are as follows:

- Download intersight FI bundle from Intersight software repository
- Upgrade IOMs
- Evacuate data traffic on FI B
- Activate FI B
- Wait for User Ack : for FI reboot
- Wait for activate to complete
- Evacuate data traffic on the FI A
- Activate FI A
- Wait for User Ack : for FI reboot
- Wait for activate to complete

Firmware pre-requisites

Please ensure we have available storage in the Fabric Interconnect partitions for the firmware bundle to be downloaded:

90 percent free space in /var/tmp

20 percent free space in /var/sysmgr

30 percent free space in /mnt/pss

20 percent free space in /bootflash

Command: **Show system internal flash**

How to clear the unused firmware images:

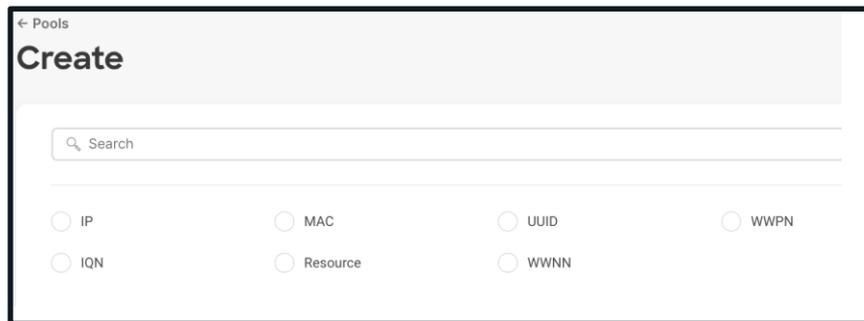
```
FI-5G-A# list-firmware-cache
DOWNLOADED DATE      IDENTIFIER          IMAGE NAME
2022-04-04            624b53886567612d30880060 intersight-ucs-server-210c-m6.5.0.2.220329.bin
2022-04-11            62547ad36567612d30aa7d59 intersight-ucs-infra-5gfi.4.2.2.220314.bin
2022-05-03            627168806567612d30e37396 intersight-ucs-server-210c-m6.5.0.2.220417.bin
2022-05-05            6274161d6567612d3048d877 intersight-ucs-server-210c-m6.5.0.2.220503.bin
2022-05-10            627ac38f6567612d3065e47f intersight-ucs-server-210c-m6.5.0.2.220506.bin
2022-06-27            62b9efe96567612d300f8fb2 intersight-ucs-server-210c-m6.5.0.2.220615.bin
2022-11-03            6363caf66567612d30baf34d intersight-ucs-infra-5gfi.4.2.2c.bin
2022-11-07            636919ba6567612d30bf8c8b intersight-ucs-server-b200-m6.4.2.2d.bin
FI-5G-A# list-firmware-cache
DOWNLOADED DATE      IDENTIFIER          IMAGE NAME
2022-04-04            624b53886567612d30880060 intersight-ucs-server-210c-m6.5.0.2.220329.bin
2022-04-11            62547ad36567612d30aa7d59 intersight-ucs-infra-5gfi.4.2.2.220314.bin
2022-05-03            627168806567612d30e37396 intersight-ucs-server-210c-m6.5.0.2.220417.bin
2022-05-05            6274161d6567612d3048d877 intersight-ucs-server-210c-m6.5.0.2.220503.bin
2022-05-10            627ac38f6567612d3065e47f intersight-ucs-server-210c-m6.5.0.2.220506.bin
2022-06-27            62b9efe96567612d300f8fb2 intersight-ucs-server-210c-m6.5.0.2.220615.bin
2022-11-03            6363caf66567612d30baf34d intersight-ucs-infra-5gfi.4.2.2c.bin
2022-11-07            636919ba6567612d30bf8c8b intersight-ucs-server-b200-m6.4.2.2d.bin
FI-5G-A# clear-firmware-cache 62547ad36567612d30aa7d59
62547ad36567612d30aa7d59
The Intersight cache will be cleared.
Are you sure? Enter 'y' to continue:y
Cache cleared
FI-5G-A#
```

```
FI-5G-A(nx-os)# show system internal flash
Mount-on              1K-blocks  Used   Available  Use%  Filesystem
/                      9265152   3127724 6137428    34   none
/usr_ro                75008     75008    0          100  /dev/loop0
/usr                   9265152   3127724 6137428    34   aufs
/proc                  0          0         0          0    proc
/proc/fs/nfsd          0          0         0          0    nfsd
/etc                   5120      3384     1736       67   none
/nxos/tmp              102400    1504     100896     2    none
/nxos/xlog              81920    28068    53852     35   none
/nxos/dme_logs         81920    8316     73604     11   none
/var/volatile/log      51200    51200     0          100  none
/var/home              5120      12       5108       1    none
/var/volatile/tmp      614400    2568     611832     1    none
/var/sysmgr            3891200   663140   3228060    18   none
/var/sysmgr/ftp        2097152   264632   1832520    13   none
/var/sysmgr/ftp/debug_logs 10240     0         10240     0    none
/var/sysmgr/srv_logs  256000    152888   103112     60   none
/var/sysmgr/startup-cfg 614400    8384     606016     2    none
/dev/shm               4194304   538648   3655656    13   none
/dev/icom              1048576   0         1048576    0    none
/volatile              2097152   81536    2015616    4    none
/debug                 5120      100       5020       2    none
/mnt/ifs/cfg/db        524288    0         524288     0    none
/dev/queue             0          0         0          0    none
/isan_lib_ro           54144     54144    0          100  /dev/loop1
/isan_bin_ro           60416     60416    0          100  /dev/loop2
/isan_bin_eth_ro      62720     62720    0          100  /dev/loop3
/isan_lib_eth_ro      10112     10112    0          100  /dev/loop4
/isan_lib_n9k_ro      4224      4224     0          100  /dev/loop5
/isan_bin_n9k_ro      128       128      0          100  /dev/loop6
/isan/bin              9265152   3127724 6137428    34   aufs
/isan/lib              9265152   3127724 6137428    34   aufs
/debugfs               0          0         0          0    debugfs
/debugfs/tracing      0          0         0          0    tracefs
/bootflash             87021412  29474156 57547256   34   /dev/sda4
/bootflash/.rpmstore/patching 193687    1564     182123     1    /dev/loop10
/mnt/cfg/0             59365     2243     53846      4    /dev/sda5
```

UCS-X Deployment and Best Practices

Workflow on UCS-X and Intersight configuration

STEP 3 : Create pools.



The screenshot shows the 'Create Pools' interface in Intersight. At the top left, there is a back arrow and the text '← Pools'. Below this is a 'Create' header. A search bar with a magnifying glass icon and the text 'Search' is present. Below the search bar, there are seven radio button options arranged in two rows: IP, MAC, UUID, WWPN in the first row, and IQN, Resource, WWNN in the second row. All radio buttons are currently unselected.

Site preparation

Configuring FI's
firmware upgrades

Pools

Policies

Templates and
profiles

Pools, policies, templates, profiles

Third step : Pools

In Intersight, browse to Configure > Pools.

The screenshot displays the 'Pools' configuration page in Cisco Intersight. At the top right, a 'Create Pool' button is highlighted with a green box. Below this, there are summary cards for various identifiers:

- IP**: Used 35, Available 235
- MAC**: Used 81, Available 687
- UUID**: Used 9, Available 183
- WWNN**: Used 21, Available 171
- WWPN**: Used 64, Available 256
- IQN**: Used 6, Available 90

Below the summary cards is a table listing the pools:

Name	Type	Size	Used	Available	Reserved	Description	Last Update
AA03-HybridCloud-WWPN-A	WWPN	128	10	118	0		Dec 23, 2022 8:39 AM
AA03-HybridCloud-WWPN-B	WWPN	128	10	118	0		Dec 23, 2022 8:39 AM
AA03-HybridCloud-WWNN	WWNN	128	10	118	0		Dec 23, 2022 8:39 AM
AA03-HybridCloud-MAC-Pool-A	MAC	256	10	246	0		Dec 23, 2022 8:39 AM
AA03-HybridCloud-MAC-Pool-B	MAC	256	10	246	0		Dec 23, 2022 8:39 AM

Even if all pools and policies can be created during template/profiles deployment, it would make work more structured and easier if we create pools and policies in advance.

Pools, policies, templates, profiles

Third step : Pools

- Use Tags while creating objects for better searching and organization of objects
- Create separate Pools (PWWN, MAC) for each Fabric. If creating two Pools for Fabric-A & B, example for MAC Address Pool, use A in the next-to last octet of the starting MAC address to identify MAC address as Fabric A addresses

Example: `xxx_mac_pool-A, 00:25:B5:00:AA:01` & `xxx_mac_pool-B, 00:25:B5:00:BB:01`

Pools > MAC Pool

Create

1 General

2 Pool Details

General
Pool represents a collection of MAC addresses that can be allocated to VNICs of a server profile.

Organization *
HybridCloud

Name
AA03-HybridCloud-MAC-Pool-A

Set Tags
hybrid:cloud1

Description
<= 1024

Pools > MAC Pool

Create

1 General

2 Pool Details

Pool Details
Collection of MAC Blocks.

MAC Blocks

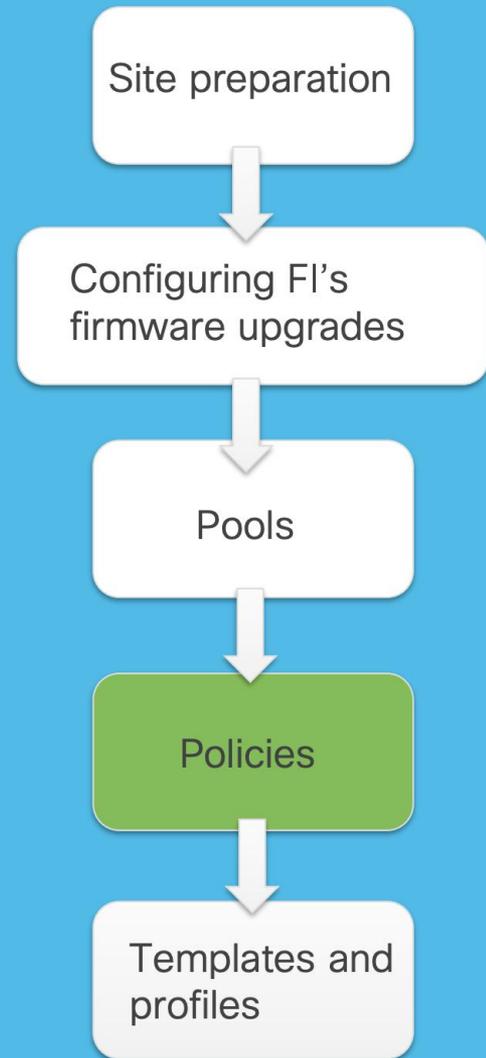
From	Size
00:25:B5:00:AA:01	256

UCS-X Deployment and Best Practices

Workflow on UCS-X and Intersight configuration

STEP 4 : Create policies.

The screenshot shows the 'Create Policies' page in the Intersight UI. It features a search bar at the top and a 'Filters' section on the left. The 'Platform Type' filter is expanded, showing several options: All, UCS Server, UCS Domain (selected), UCS Chassis, HyperFlex Cluster, and Kubernetes Cluster. The main area contains a grid of radio buttons for various policy types, including Ethernet Network Control, Link Control, Port, System QoS, Ethernet Network Group, Multicast Policy, SNMP, VLAN, Flow Control, Network Connectivity, Switch Control, VSAN, Link Aggregation, NTP, and Syslog.



Pools, policies, templates, profiles

Fourth step : Create policies

- Always refer UCS best practice white papers for BIOS and Network settings
- Create BIOS policy and use recommended settings for your specific application
- Create QoS policy and enable Jumbo maximum transmission units (MTUs) for vNICs for required traffic types
- Use default ethernet adapter policy for OS, tweak settings for new policy based on requirements

Policies Create Policy

* All Policies +

Export 99 items found 11 per page 2 of 9

Platform Type

- UCS Server 78
- UCS Chassis 4
- UCS Domain 27
- Kubernetes Cluster 10

Usage

- Used 37
- Not Used 14
- N/A 48

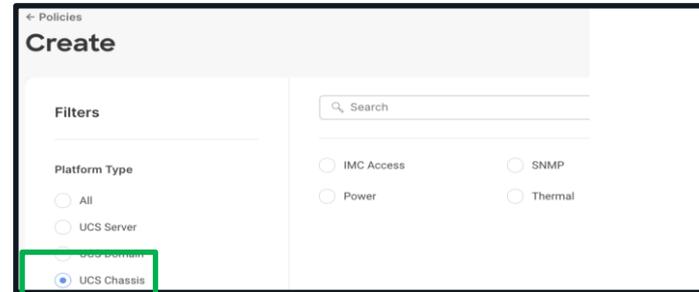
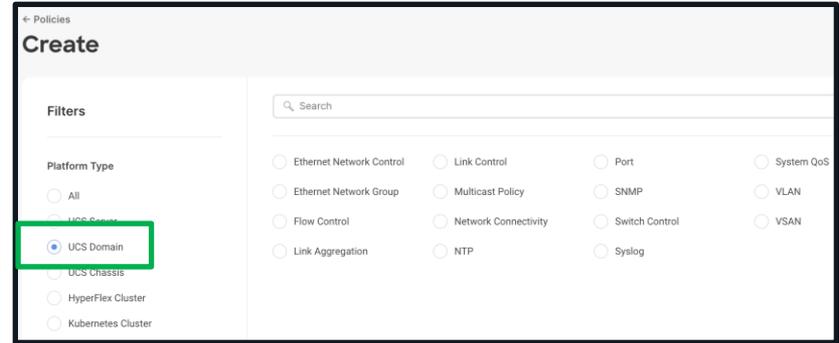
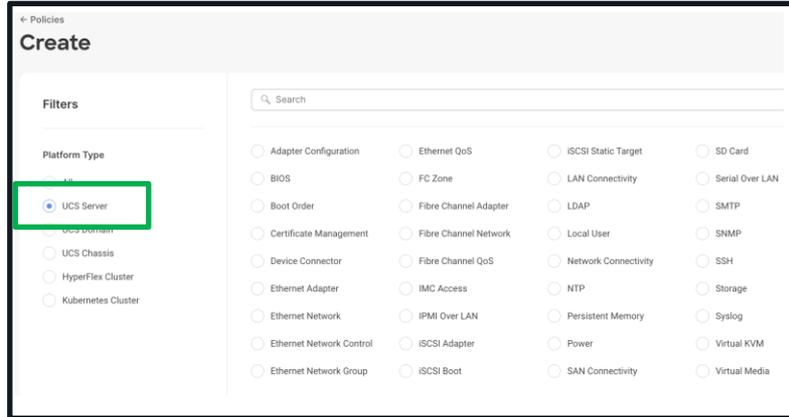
<input type="checkbox"/>	Name	Platform Type	Type	Usage	Last Update	
<input type="checkbox"/>	AA03-FC-QoS-Policy	UCS Server	Fibre Channel QoS	0 N/A	Dec 3, 2022 4:15 AM	...
<input type="checkbox"/>	AA03-HybridCloud-FC-Adapter-Policy	UCS Server	Fibre Channel Adapter	0 N/A	Dec 2, 2022 11:20 PM	...
<input type="checkbox"/>	AA03-Baremetal-Local-Storage-Policy	UCS Server	Storage	0	Dec 2, 2022 11:04 PM	...
<input type="checkbox"/>	AA03-Baremetal-Net-Group-VM-Network	UCS Server, UCS Domain	Ethernet Network Group	0 N/A	Dec 2, 2022 10:56 PM	...
<input type="checkbox"/>	AA03-HybridCloud-Net-Group-OOB-Net	UCS Server, UCS Domain	Ethernet Network Group	0 N/A	Dec 2, 2022 10:56 PM	...
<input type="checkbox"/>	AA03-HybridCloud-Net-Group-Inband-M	UCS Server, UCS Domain	Ethernet Network Group	0 N/A	Dec 2, 2022 10:55 PM	...
<input type="checkbox"/>	AA03-HybridCloud-Network-Control-Pol	UCS Server, UCS Domain	Ethernet Network Control	0 N/A	Dec 2, 2022 10:54 PM	...

In Intersight, browse to Configure > Policy > Create Policy.

Pools, policies, templates, profiles

Fourth step : Create policies

In Intersight, browse to Configure > Policy > Create Policy.



As with pools, we can define all policies while creating templates and profiles, but it will give more structure to create them in advance.

Pools, policies, templates, profiles

Fourth step : Create policies

Port policy (used in Domain Profile)

The screenshot displays the 'Create' page for a Port Policy in the Cisco UCS Manager. The page is divided into several sections:

- Navigation:** 'Policies > Port' breadcrumb and 'Create' title.
- Left Sidebar:** A list of configuration steps: 1. General, 2. Unified Port, 3. Breakout Options, and 4. Port Roles (highlighted).
- Form Fields:** Fields for 'Name *' (AA19_Po...), 'Switch M' (UCS-FI-64...), and 'Set Tags' (hybrid c...).
- Port Roles Section:**
 - Port Roles:** A section with a description: 'Configure port roles to define the traffic type carried through a unified port connection.' It includes tabs for 'Port Roles', 'Port Channels', and 'Pin Groups'. A 'Create Port Channel' button is present.
 - Image:** A photograph of a Cisco UCS-FI-6454 server rack.
 - Table:** A table with 10 columns, each representing a port role configuration. The columns are labeled 'PORT' and 'STATE'. The table is currently empty, with 'NO ITEMS AVAILABLE' displayed below it.
 - Footer:** A table header with columns 'ID', 'Role', and 'Ports'. Below the header, it shows '0 items found', '10 per page', and '0 of 0'.

Pools, policies, templates, profiles

Fourth step : Create policies

LAN connectivity policy
(used in Server Profile)

Create

Filters

Search

Platform Type

- All
- UCS Server
- UCS Domain
- UCS Chassis
- HyperFlex Cluster
- Kubernetes Cluster

Adapter Configuration

- Adapter Configuration
- BIOS
- Boot Order
- Certificate Management
- Device Connector
- Ethernet Adapter
- Ethernet Network
- Ethernet Network Control
- Ethernet Network Group
- Ethernet QoS

Other Categories

- iSCSI Static Target
- LAN Connectivity
- LDAP
- Local User
- Network Connectivity
- NTP
- Persistent Memory
- Power
- SAN Connectivity
- SD Card

Create

General

Enabled

Ethernet Network Group Policy *
Selected Policy demo_ENG_policy

Ethernet Network Control Policy *
Selected Policy demo_ENC_policy

Ethernet QoS *
Selected Policy demo_qos

Ethernet Adapter *

Create

General

Policy Details

Manual vNICs Placement | Auto vNICs Placement

For auto placement option the vNICs will be automatically distributed between adaptors during profile deployment. [Help Center](#)

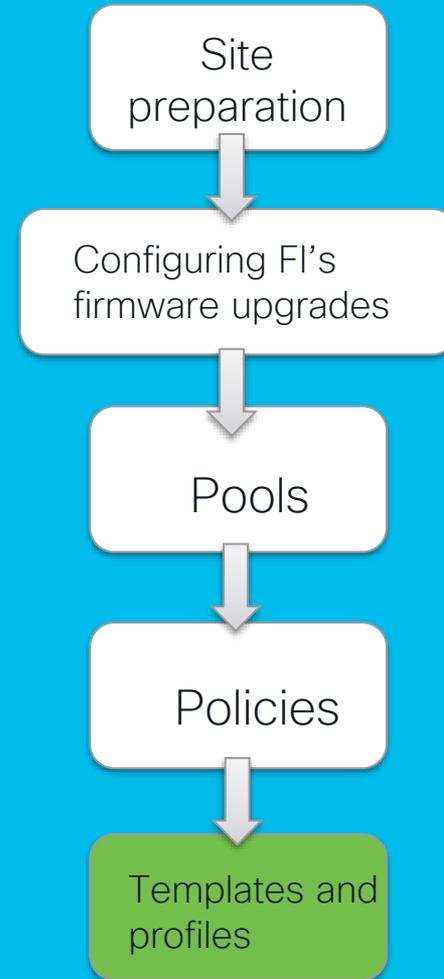
Add vNIC

2 Items found | 10 per page | 1 of 1

Name	Switch ID	Fallover	Pin Group	MAC Pool	
vnicA	A	Disabled	-	demo_mac_pool	...
vnicB	A	Disabled	-	demo_mac_pool	...

Workflow on UCS-X and Intersight configuration

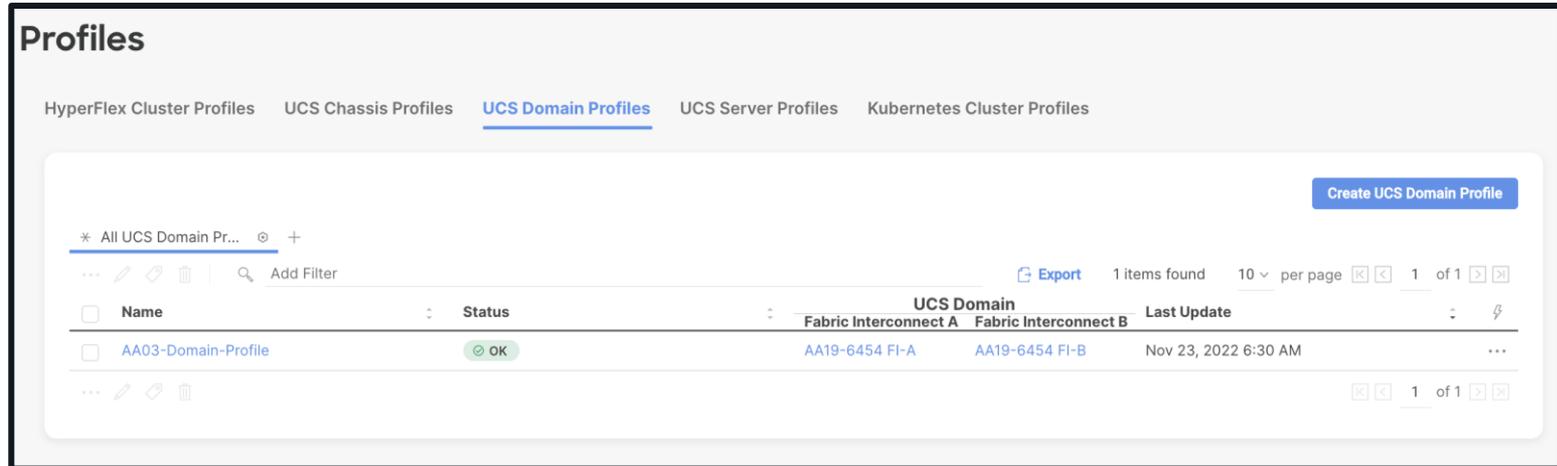
STEP 5 : Create profiles and templates.



Pools, policies, templates, profiles

Fifth step: Create UCS domain profile

- Now we can put all those pools and policies into use.
- Intersight cannot discover any hardware connected to the Fabric Interconnects until its ports are configured, and that is done through a domain profile.



The screenshot shows the 'Profiles' page in Cisco Intersight. The 'UCS Domain Profiles' tab is selected. A table lists the profiles, with one profile named 'AA03-Domain-Profile' shown in detail. The table has columns for Name, Status, UCS Domain (with sub-columns for Fabric Interconnect A and Fabric Interconnect B), and Last Update. The profile 'AA03-Domain-Profile' has a status of 'OK' and was last updated on Nov 23, 2022 6:30 AM. The table also shows pagination controls and an 'Export' button.

Name	Status	UCS Domain		Last Update
		Fabric Interconnect A	Fabric Interconnect B	
AA03-Domain-Profile	OK	AA19-6454 FI-A	AA19-6454 FI-B	Nov 23, 2022 6:30 AM

Configure > Profiles > Create UCS Domain Profiles

Pools, policies, templates, profiles

Fifth step : Create UCS domain profile

Create UCS Domain Profile

- 1 General
- 2 UCS Domain Assignment
- 3 VLAN & VSAN Configuration
- 4 Ports Configuration
- 5 UCS Domain Configuration
- 6 Summary

General

Add a name, description and tag for the UCS domain profile.

Organization *

Edit UCS Domain Profile (demo_ucs_domain)

- Overview
- Operate
 - Servers
 - Chassis
 - Fabric Interconnects
- Configure
 - Profiles
 - Templates
 - Policies
 - Pools

- ✓ General
- 2 UCS Domain Assignment
- 3 VLAN & VSAN Configuration
- 4 Ports Configuration
- 5 UCS Domain Configuration
- 6 Summary

UCS Domain Assignment

Choose to assign a fabric interconnect pair to the profile now or later.

- Choose to assign a fabric interconnect pair now or later. If you choose Assign Now, select a pair that you want to assign and click Next. If you choose Assign Later, click Next to proceed to policy selection.

Show Assigned

1 items found 10 per page 1 of 1

Add Filter

Domain N...	Fabric Interconnect A			Fabric Interconnect B		
	Model	Serial	Bundle V...	Model	Serial	Bundle V...
<input checked="" type="radio"/> ucxX	UCS-FI-64	FDO2634C	4.2(2c)	UCS-FI-64	FDO2634C	4.2(2c)

Selected 1 of 1

Pools, policies, templates, profiles

Fifth step : Create UCS domain profile

The screenshot displays the 'Create UCS Domain Profile' configuration page. The left sidebar shows a progress indicator with six steps: General, UCS Domain Assignment, **VLAN & VSAN Configuration** (current step), Ports Configuration, UCS Domain Configuration, and Summary. The main content area is titled 'VLAN & VSAN Configuration' and includes the instruction 'Create or select a policy for the fabric interconnect pair.' Below this, there are two sections for 'Fabric Interconnect A' and 'Fabric Interconnect B', each showing '0 of 2 Policies Configured' and sub-sections for 'VLAN Configuration' and 'VSAN Configuration'. A 'Select Policy' dialog box is open on the right, showing a search bar and a list of policies, with 'demo_vlan_policy' selected.

Pools, policies, templates, profiles

Fifth step : Create UCS domain profile

Create UCS Domain Profile

- General
- UCS Domain Assignment
- VLAN & VSAN Configuration
- 4 Ports Configuration**
- 5 UCS Domain Configuration
- 6 Summary

Ports Configuration

Create or select a port policy for the fabric interconnect pair.

Configure ports by creating or selecting a policy.

^ Fabric Interconnect A Not Configured

Create UCS Domain Profile

- General
- UCS Domain Assignment
- VLAN & VSAN Configuration
- 4 Ports Configuration**
- 5 UCS Domain Configuration
- 6 Summary

Ports Configuration

Create or select a port policy for the fabric interconnect pair.

Configure ports by creating or selecting a policy.

^ Fabric Interconnect A Not Configured

Ports Configuration

^ Fabric Interconnect B Not Configured

Ports Configuration

Select Policy

Policies 2 [Create New](#)

2 items found 50 per page 1 of 1

Add Filter

Name	Device Model	Last Update
AA19-Port-Pol-B	UCS-FI-6454	Nov 22, 2022 10:59 AM
AA19-Port-Pol-A	UCS-FI-6454	Nov 22, 2022 10:56 AM

1 of 1

Pools, policies, templates, profiles

Fifth step : Create UCS domain profile

Create UCS Domain Profile

- General
- UCS Domain Assignment
- VLAN & VSAN Configuration
- Ports Configuration
- UCS Domain Configuration**
- Summary

UCS Domain Configuration

Select the compute and management policies to be associated with the fabric interconnect.

Show Attached Policies (3)

Management 2 of 4 Policies Configured

NTP	x eye edit delete	AA19-NTP-Pol
Syslog		Select Policy
Network Connectivity	x eye edit delete	AA19-NetConnPol
SNMP		Select Policy

Network 1 of 2 Policies Configured

System QoS *	x eye edit delete	AA19-QoS-Pol
Switch Control		Select Policy

Close/Deploy Profile

Pools, policies, templates, profiles

Fifth step: Chasis profile and discovery

Configure → Profiles → UCS Chassis Profiles → Create UCS Chassis Profile

The screenshot displays the 'Profiles' management interface. At the top, there are three tabs: 'UCS Chassis Profiles' (selected), 'UCS Domain Profiles', and 'UCS Server Profiles'. A blue button labeled 'Create UCS Chassis Profile' is located in the top right corner. Below the tabs, there is a search bar with the text '* All UCS Chassis Pr...' and a plus sign. To the right of the search bar is an 'Export' button. Below the search bar, there is a table with the following columns: 'Name', 'Status', 'Chassis', and 'Last Update'. The table contains one row with the name 'demo_chassis_policy', a status of 'Not Assigned', and a last update time of 'Nov 16, 2022 10:54 AM'. The table also includes pagination controls showing '1 items found', '10 per page', and '1 of 1'.

Name	Status	Chassis	Last Update
demo_chassis_policy	Not Assigned		Nov 16, 2022 10:54 AM

Pools, policies, templates, profiles

Fifth step: Chassis profile and discovery

Configure → Profiles → UCS Chassis Profiles → Create UCS Chassis Profile

The image displays two overlapping screenshots of the UCS Chassis Profile configuration interface. The top screenshot shows the 'Chassis Assignment' step, and the bottom screenshot shows the 'Chassis Configuration' step.

Chassis Assignment Screenshot:

- Navigation menu: General (checked), Chassis Assignment (selected), Chassis Configuration, Summary.
- Section: Chassis Assignment
- Text: Choose to assign a chassis to the profile now or assign it later.
- Buttons: Assign Now, Assign Later.
- Instructional text: Choose to assign a chassis now or later. If you choose Assign Chassis, select a chassis you want to deploy and click Next. If you choose Assign Chassis Later, click Next to select and associate policies.
- Toggle: Show Assigned (off).
- Table: 2 items found, 10 per page, 1 of 1.

Name	Health	Model	Serial
ucsX-1	Warning	UCSX-9508	FOX2611PPHP
ucsX-2	Warning		

Chassis Configuration Screenshot:

- Navigation menu: General (checked), Chassis Assignment, Chassis Configuration (selected), Summary.
- Section: Chassis Configuration
- Text: Create or select existing policies that you want to associate with this chassis profile.
- Fields: IMC Access, Power, SNMP, Thermal.

Pools, policies, templates, profiles

Fifth step: Create Server Profile templates

Configure → Templates → Create UCS Server Profile Template

The image shows two overlapping screenshots from the Cisco UCS Manager interface. The background screenshot displays the 'Templates' page, which includes a table of existing UCS Server Profile Templates. The foreground screenshot shows the 'Create UCS Server Profile Template' wizard, currently on the 'General' step.

Templates

UCS Server Profile Templates

* All UCS Server Prof... +

Add Filter

Name	Usage	Target Platform
AA03-Baremetal-Node	10	UCS Server (FI-At
VM-Host-Infra-ISCSI	2	UCS Server (FI-At
VM-Host-Infra-FCP	3	UCS Server (FI-At
AA06-SQL-FCNVMe	3	UCS Server (FI-At

Create UCS Server Profile Template

General

Enter a name, description, tag and select a platform for the server profile template.

Organization *
HybridCloud

Name *
demo

Target Platform UCS Server (Standalone) UCS Server (FI-Attached)

Set Tags
hybrid:cloud1

Description

<< 1024

Pools, policies, templates, profiles

Fifth step: Create Server Profile templates

Configure → Profiles → UCS Chassis Profiles → Create UCS Chassis Profile

Create UCS Server Profile Template

General (checked)

2 Compute Configuration

3 Management Configuration

4 Storage Configuration

5 Network Configuration

6 Summary

Compute Configuration

Create or select existing Compute policies that you want to associate with this template.

UUID Assignment

UUID Pool
Selected Pool AA03-HybridCloud-UUID-Pool | x | eye | edit

BIOS AA03-HybridCloud-BIOS-Policy | edit

Boot Order

Power

Virtual Media

Create UCS Server Profile Template

General (checked)

Compute Configuration (checked)

3 Management Configuration

4 Storage Configuration

5 Network Configuration

6 Summary

Management Configuration

Create or select existing Management policies that you want to associate with this template.

Certificate Management

IMC Access AA03-HybridCloud-IMC-Access-Policy | edit

IPMI Over LAN

Local User AA03-HybridCloud-Local-User-Policy | edit

Serial Over LAN

SNMP

Syslog

Virtual KVM AA03-HybridCloud-KVM-Policy | edit

Pools, policies, templates, profiles

Fifth step: Create Server Profile templates

Configure → Templates → Create UCS Server Profile Template

The screenshot displays the 'Create UCS Server Profile Template' wizard. On the left, a vertical navigation pane shows six steps: General, Compute Configuration, Management Configuration, Storage Configuration (highlighted with a blue bar and the number 4), Network Configuration, and Summary. The main area is titled 'Storage Configuration' and contains the instruction: 'Create or select existing Storage policies that you want to associate with this template.' Below this instruction are two input fields: 'SD Card' and 'Storage'. On the right side, a 'Select Storage' dialog box is open, showing a list of policies. The dialog has a search bar and a 'Create New' link. The list contains two items: 'AA03-Baremetal-Local-Storage-Policy' and 'LocalDiskM.2Boot', each with a document icon and an eye icon.

Pools, policies, templates, profiles

Fifth step: Create Server Profile templates

Configure → Templates → Create UCS Server Profile Template

Create UCS Server Profile Template

- General
- Compute Configuration
- Management Configuration
- Storage Configuration
- 5 Network Configuration**
- 6 Summary

Network Configuration

Create or select existing Network Configuration policies that you want to associate with this template.

LAN Connectivity	AA03-HybridCloud-LAN-Connectivity-Policy 
SAN Connectivity	AA03-HybridCloud-SAN-Connectivity-Policy 

Pools, policies, templates, profiles

Fifth step: Derive Server Profiles

Configure → Templates → Create UCS Server Profile Template

Create UCS Server Profile Template

- General
- Compute Configuration
- Management Configuration
- Storage Configuration
- Network Configuration
- Summary**

Summary

Verify details of the template and the policies, resolve errors and deploy.

General

Template Name	Organization
demo	HybridCloud
Target Platform	
UCS Server (FI-Attached)	
Tags	
hybrid cloud1	

Compute Configuration

BIOS	AA03-HybridCloud-BIOS-Policy
UUID	AA03-HybridCloud-UUID-Pool
Virtual Media	AA03-HybridCloud-Virtual-Media-Policy

Management Configuration

Storage Configuration

Network Configuration

Errors/Warnings (0)

< **Close**

Back **Derive Profiles**

CISCO *Live!*

BRKDCN-2961

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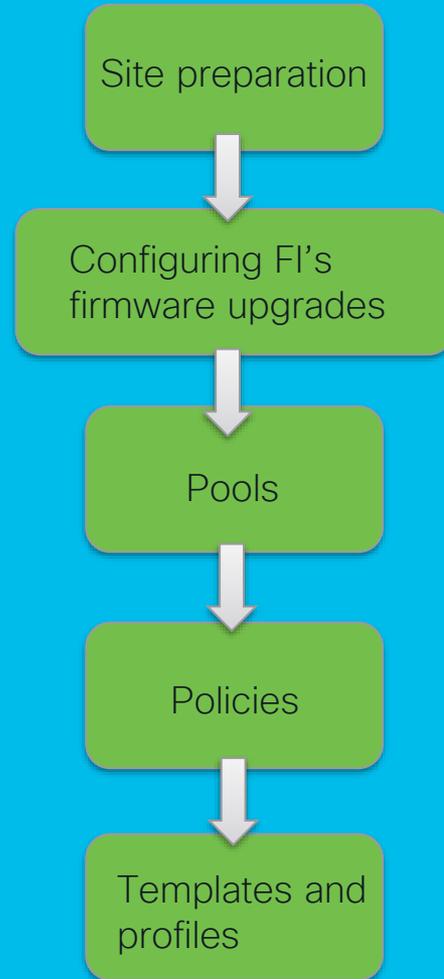
UCS-X Deployment and Best Practices

Workflow on UCS-X and Intersight configuration

Our infrastructure is configured now

- FI's added to intersight
- Policies created
- Profiles created
- All up-to-date, visible, no warnings...

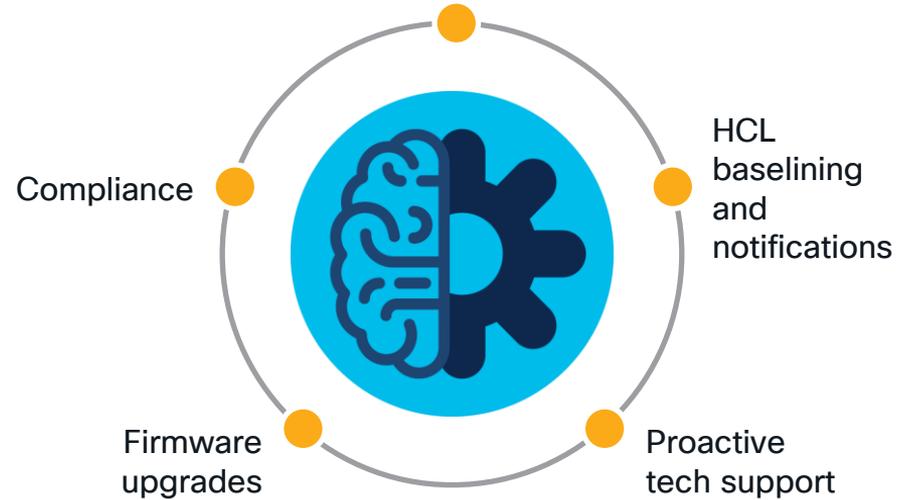
But, what now?



Cisco Intersight – Day2 Operations



Advisories (Security and Field Notices)



Cisco Intersight - Integrate

Cisco Converged Infrastructure Solutions with UCS X-Series



Simplified cloud-based management of solution components

Monitoring, orchestration, and workload optimization for different layers of solutions

Storage plugins



See storage capacity, controllers, configuration, snapshots, and replication



Automate storage management and orchestration



Use storage task library to create and execute workflows

ServiceNow plugin



Incident management

Basic configuration

Inventory module

Third-party server support



Dell PowerEdge/HPE ProLiant



See inventory and health

Add to automated workflows

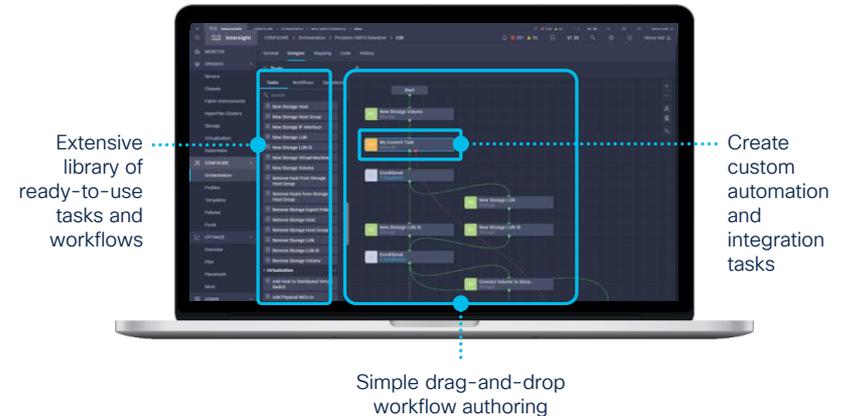
Automate

Create automated workflows to...

- Accelerate delivery of apps and infrastructure
- Reduce risk with standardization
- Simplify cross-domain orchestration

Two options

- Workflow designer
Drag-and-drop workflow authoring
- APIs/SDKs
For using your existing automation tools (Ansible, Terraform, etc.)



“With consistent and repeatable workflows offered by Cisco Intersight, IT teams can save time and decrease operational costs.”

ESG

IMM Transition Tool

UCSM to IMM Migration



IMM Transition Tool

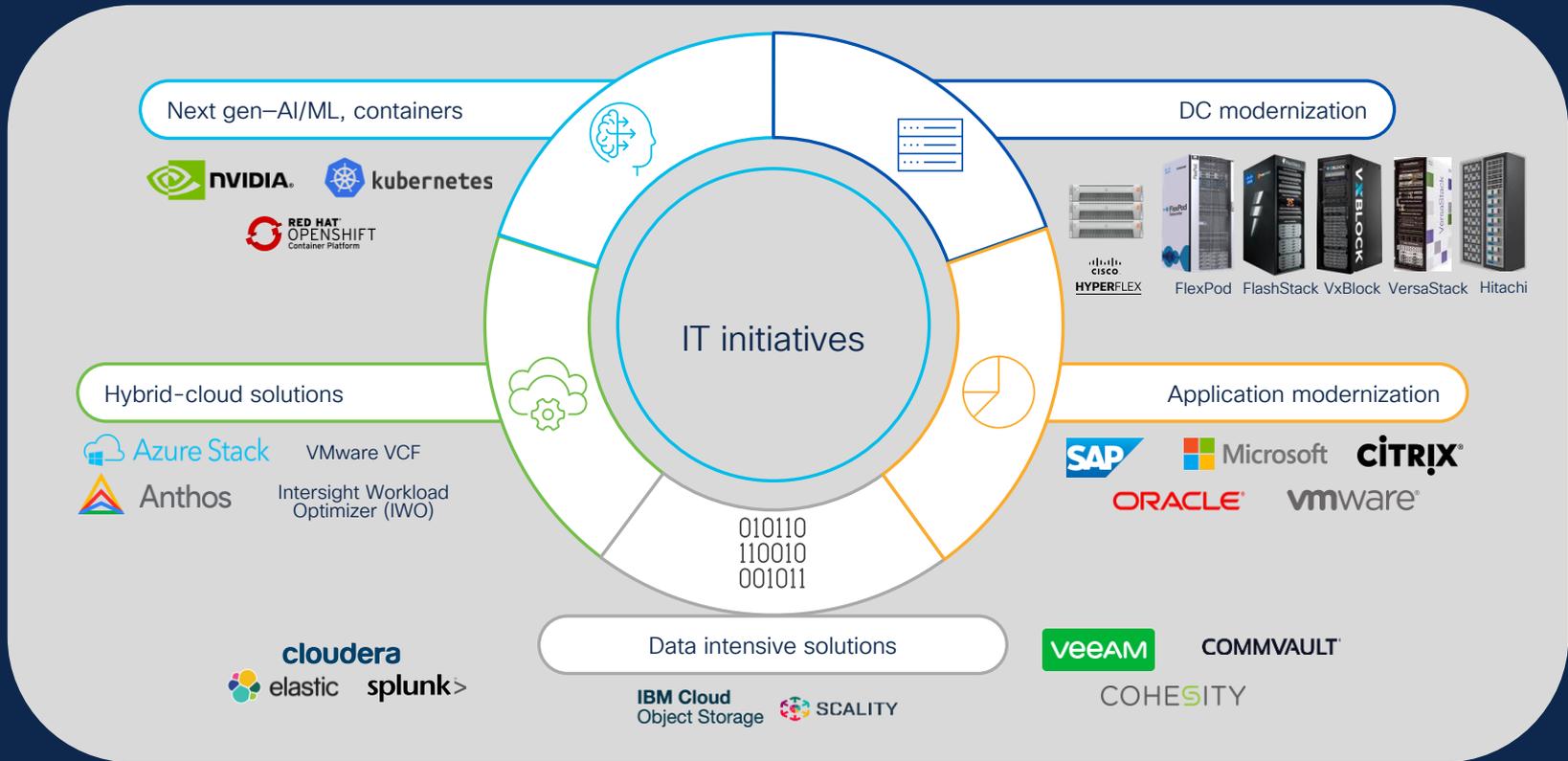
- Assesses **hardware & firmware compatibility**
- **Extends** existing **Service Profile Templates** to Intersight
- Automatically converts related **server policies** (boot, BIOS, LAN/SAN connectivity, etc.)
- Converts **fabric configuration** (VLANs/VSANs, port configuration, etc.)

Cisco UCS X-Series Compute Solutions



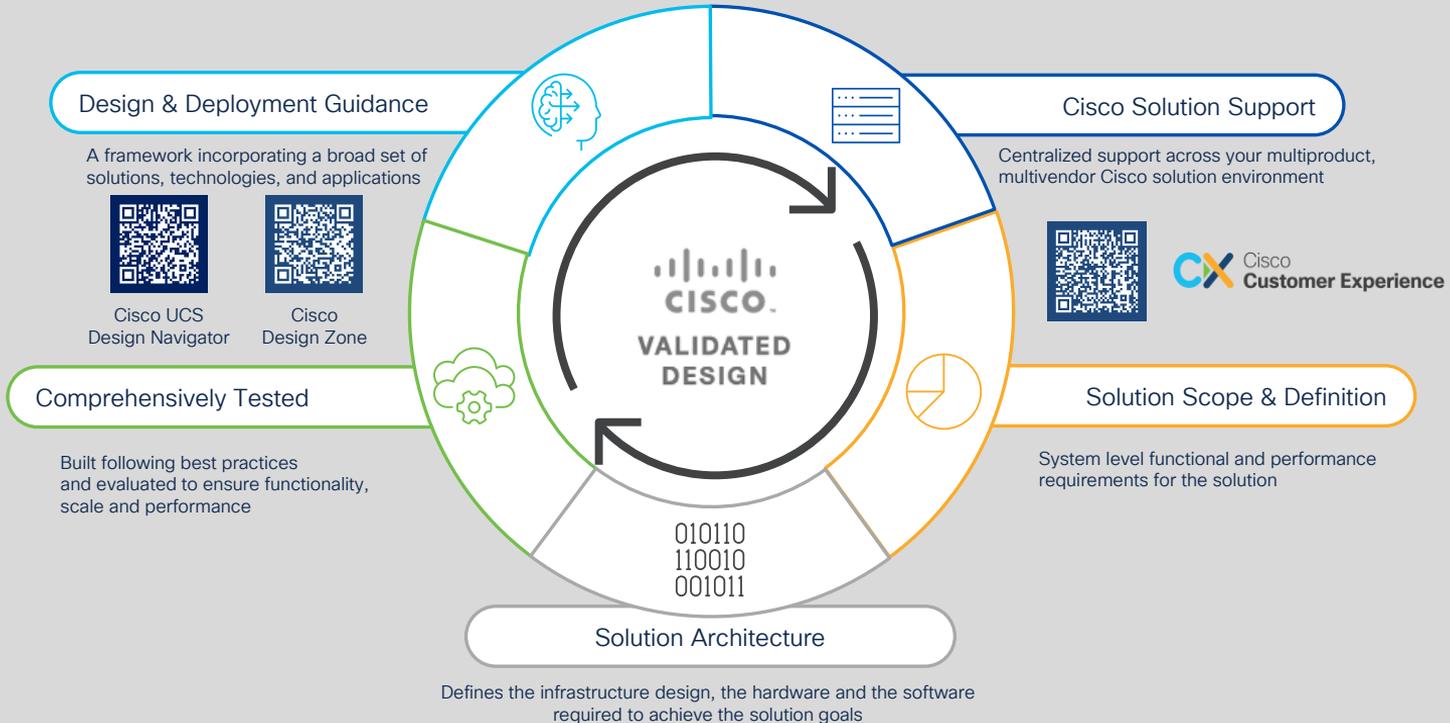
Solutions Powered Portfolio

Simplifying infrastructure & operations



Cisco Validated Design Program

Successful Technology Deployments Addressing Business Initiatives

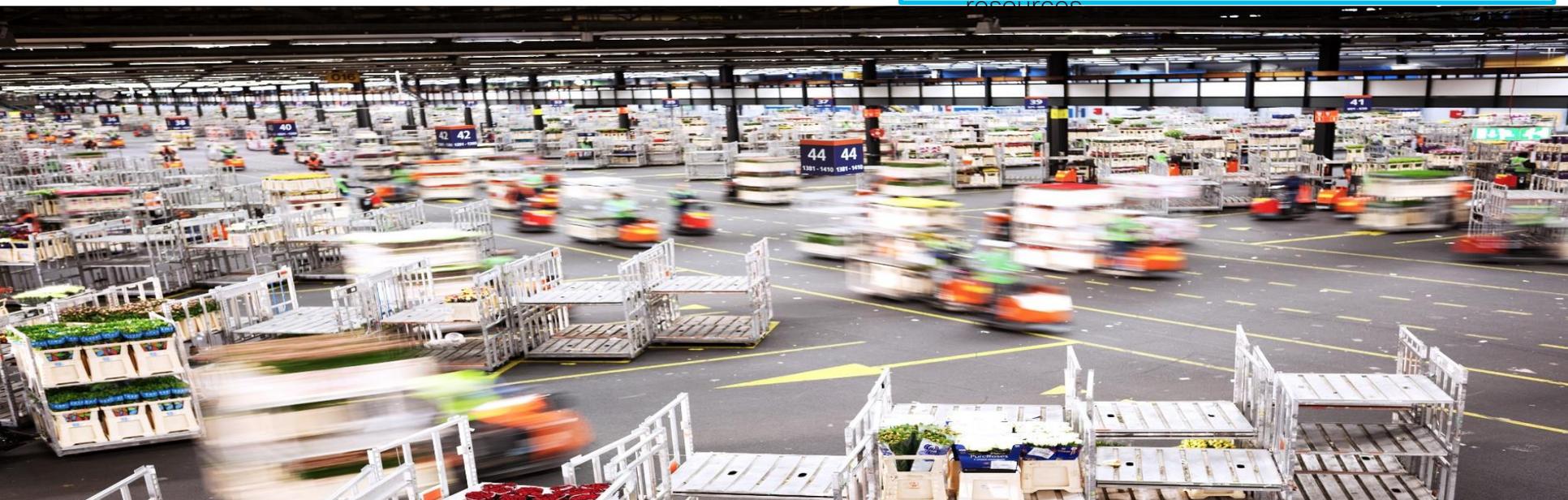


Use case : e-commerce customer

Need to dynamically add/remove resources to support application needs

Customer Requirements

- Application needs compute resources and GPUs
- Fast re-provisioning of servers to rebalance app resource needs
- Upgrade compute but use the same GPUs and vice versa
- Independent life cycle management of resources



Demo - Agenda

- *Provision new UCS X210c M7 server with Cisco Intersight*
- *Disaggregated life cycle management of CPUs and GPUs*
- *Stateless Compute Management*

So what we
Learned?

- UCSX Introduction
- What is IMM
- UCS X-Series Deployment
- Installation, Scalability,
Firmware and Operation
Best Practices
- Migration

X-Series white papers

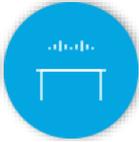
- [Cisco UCS X-Series Quick Start Guide](#)
- [Cisco UCS X210c M6 Compute Node Disk I/O Characterization](#)
- [Deploy Cisco UCS X210c Compute Node with Cisco Intersight Management Mode for VDI](#)
- [FlashStack with Cisco UCS X-Series and Cisco Intersight](#)
- [FlexPod Datacenter with Cisco UCS X-Series and Cisco Intersight](#)
- [Power SAP HANA with the Cisco UCS X-Series Certified by SAP](#)
- [Deploy SAP HANA Scale-Up Appliance with UCS X-Series](#)
- [Cisco UCS and Intel SGX with Fortanix Confidential Computing Manager](#)
- [Deploy a High-Performance Standalone Oracle Database Solution: Oracle 19c on Cisco UCS X-Series](#)
- [FlexPod Datacenter with Citrix VDI and VMware vSphere 7 for up to 2500 Seats](#)
- [FlexPod XCS Solution with Cisco Intersight Platform Tech Preview](#)
- [Red Hat OpenShift Container Platform with OpenShift Data Foundation on Cisco UCS X-Series](#)
- [Cisco UCS X-Series Servers with Intel Optane Persistent Memory for Virtual Desktop Infrastructure White Paper](#)
- [Get Answers from Your Data with Cisco UCS Integrated Infrastructure for Splunk Enterprise](#)

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- Please complete your session survey after each session. Your feedback is important.
- Complete a minimum of 4 session surveys and the Overall Conference survey (open from Thursday) to receive your Cisco Live t-shirt.
- All surveys can be taken in the Cisco Events Mobile App or by logging in to the Session Catalog and clicking the "Attendee Dashboard" at <https://www.ciscolive.com/emea/learn/sessions/session-catalog.html>



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Attend any of the related sessions at the DevNet, Capture the Flag, and Walk-in Labs zones.



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



The bridge to possible

Thank you

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ALL IN