The bridge to possible

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

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BRKDCN-2961

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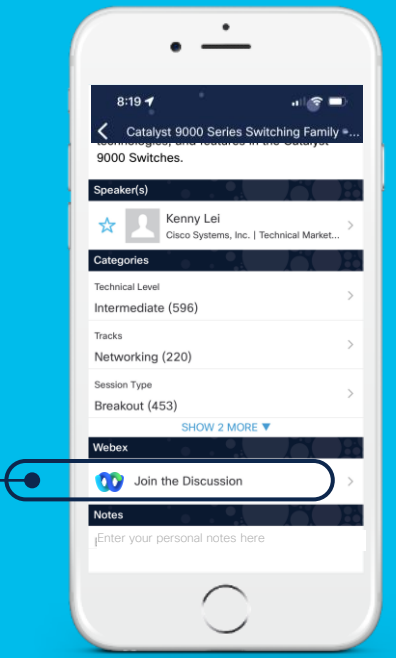

Agenda

- 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

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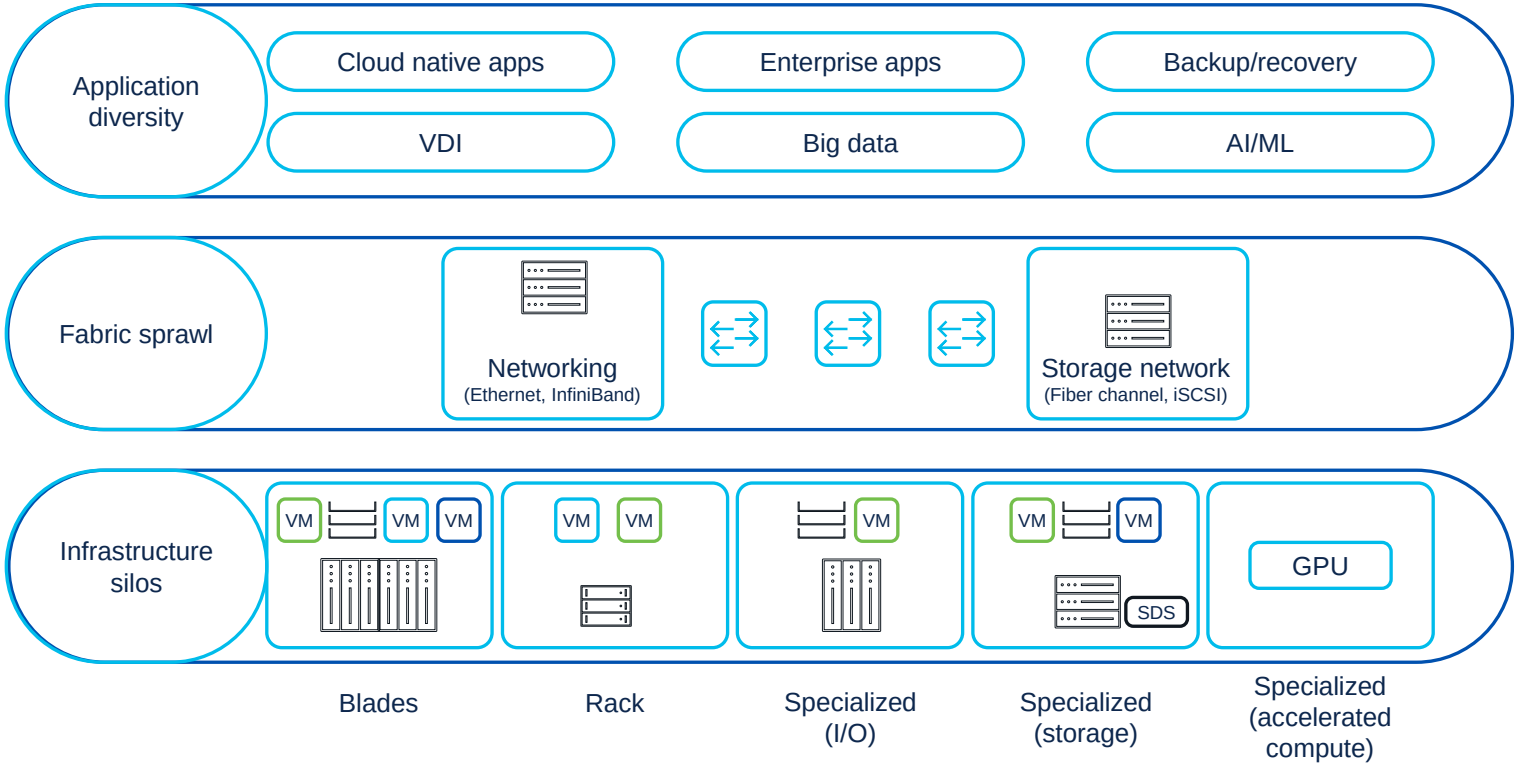
Persistent challenges for IT

Architectural silos drive complexity



Modern Hybrid Cloud Infrastructure

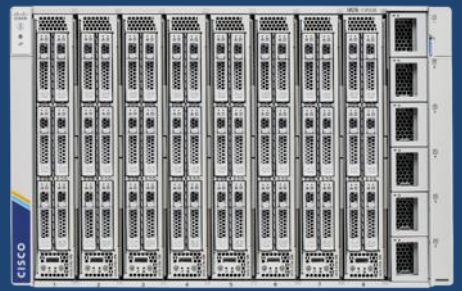
Simplify to scale, automate, and operate

- Scalable Operations
- Run Any Application
- Multiple OS/Hypervisors
- Unified, Open Fabrics
- Adaptable Infrastructure

Cisco Intersight

Traditional | Cloud Native | Hybrid | Scale Up | Scale Out

OS OS VM VM VM



Blades

Racks

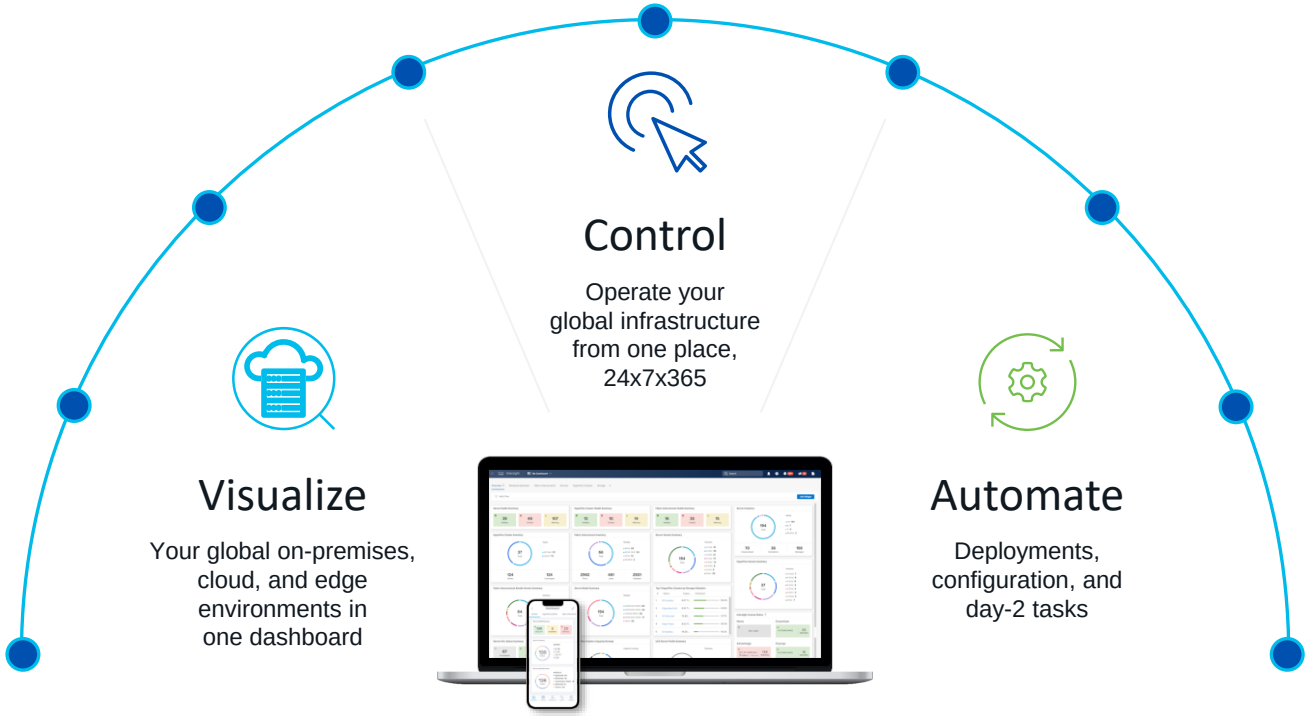
Specialized

Hyperconverged

Converged Infrastructure

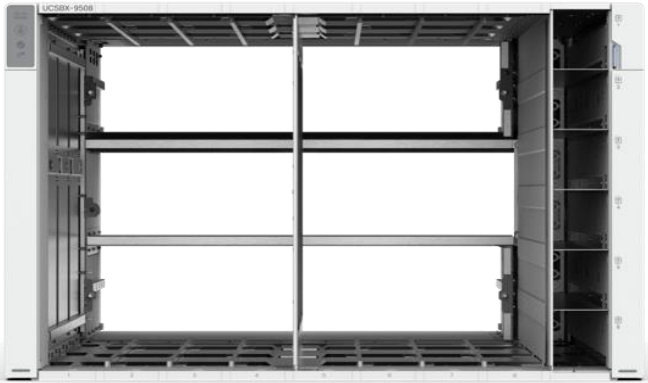
Modernize infrastructure management

Cisco Intersight Infrastructure Service

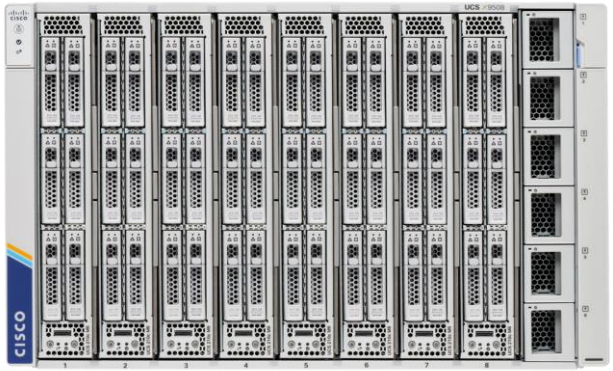


UCS X-Series

Chassis



8 Nodes

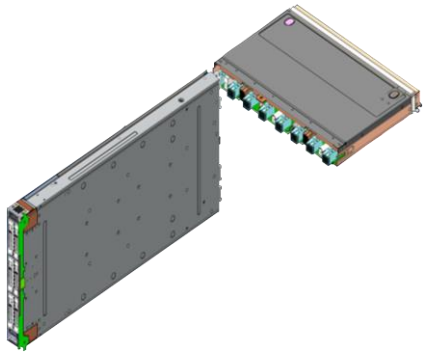


~960 cores, ~100TB mem,
>1PB drives, 48M IOPs

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

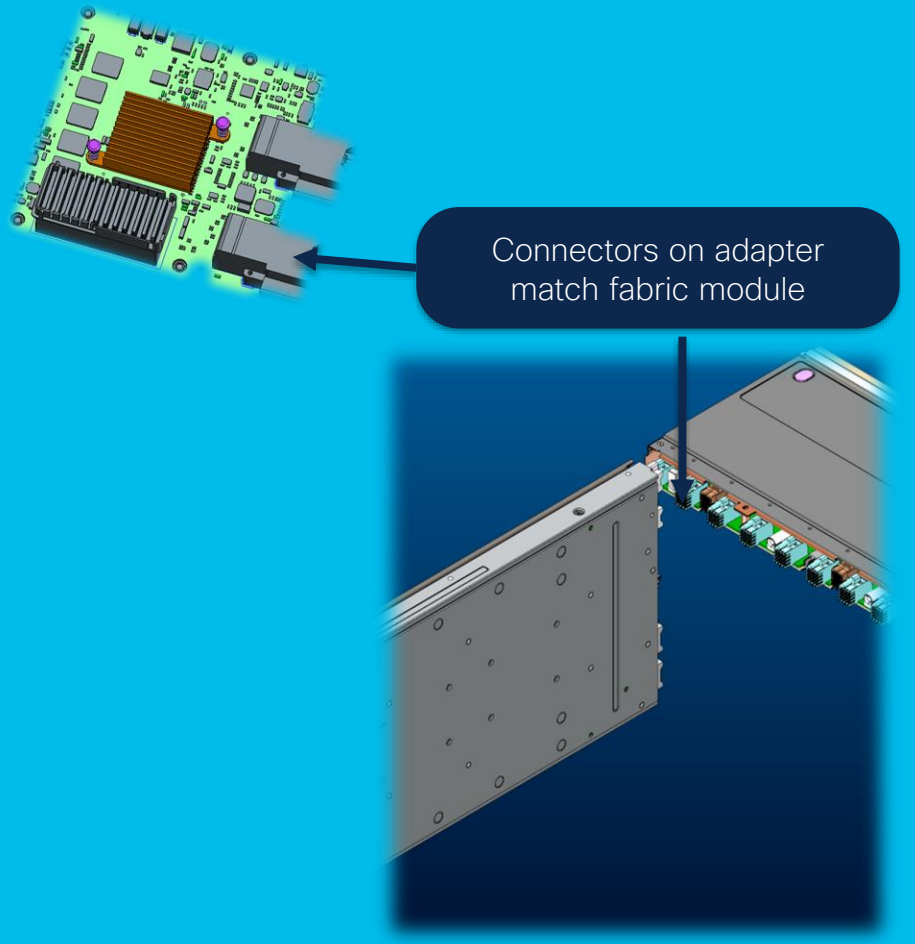


Power and cooling innovation

- 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

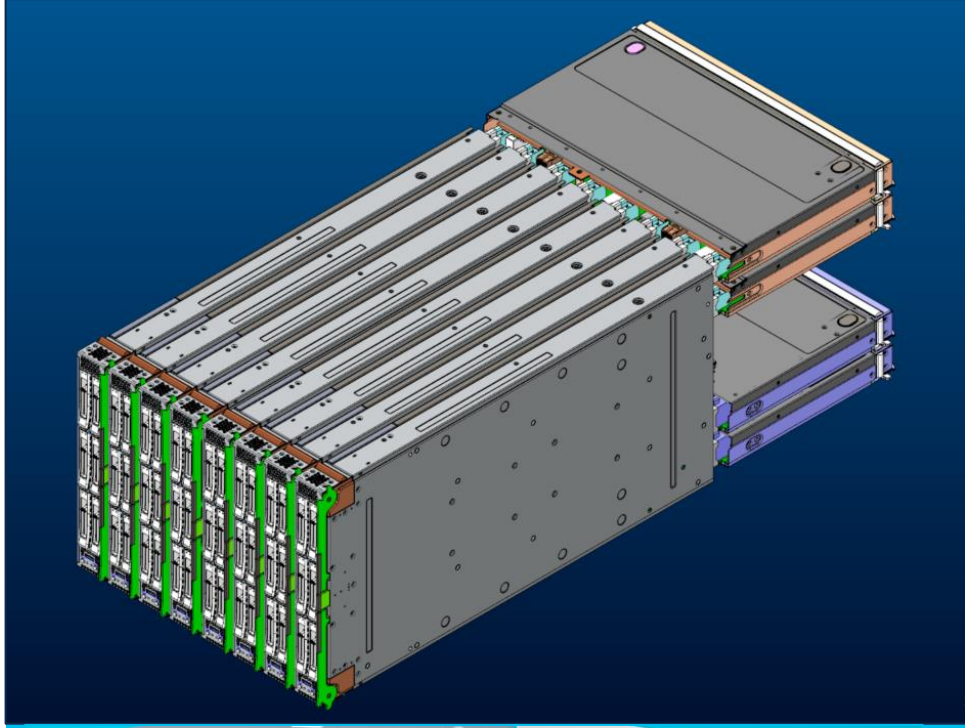


Direct node to fabric connections

Dual redundant fabrics

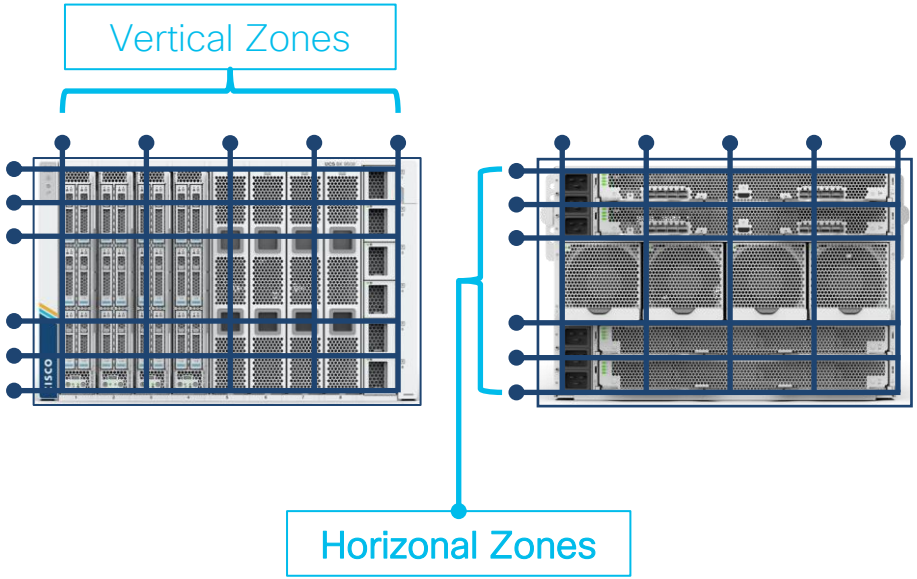
- Network (top)
- X-Fabric (bottom)

Connections from each node to all fabrics



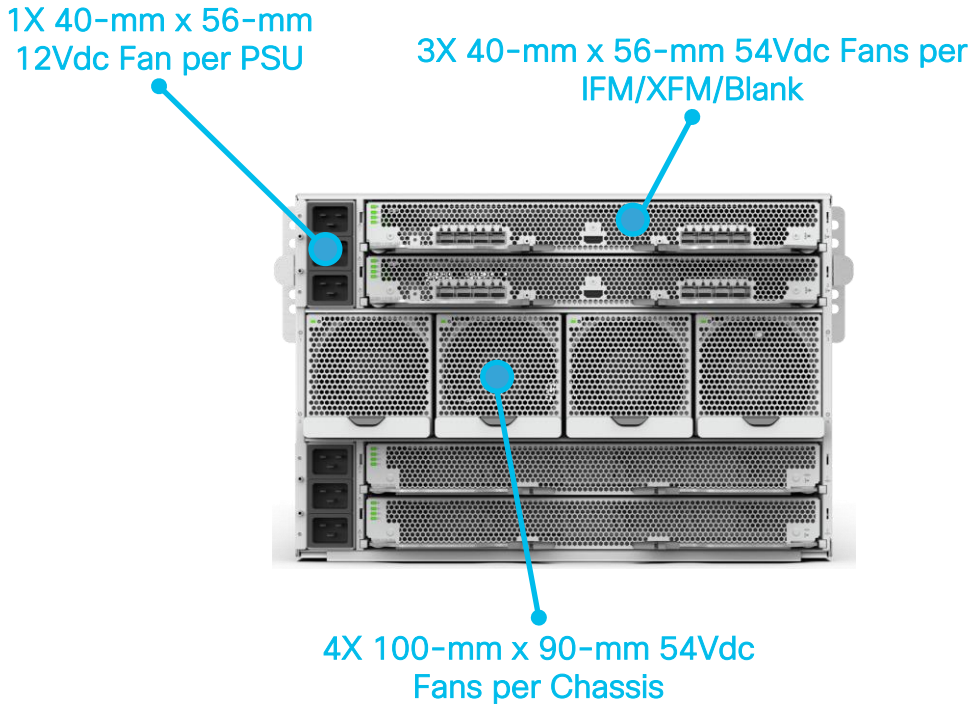
Zoned Based Cooling: Chassis

- 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



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

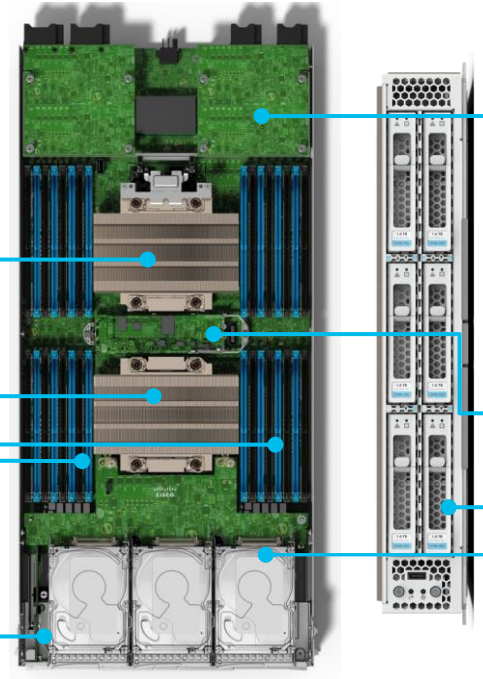
Up to 16x Optane Persistent Memory 200 Series

GPU

Up to 2 x PCIe GPU

+

Up to 2 x NVMe PCIe Drives



VIC

1. 100G per fabric
   - 100G 5th Gen VIC mLOM
   - or
   - 25G 4th Gen VIC mLOM
   - 25G 4th Gen VIC Mezz

Drives

Front Mezz options

1. 6 SAS/SATA with HW RAID
2. 6 NVMe PCIe Gen4 x4

Plus

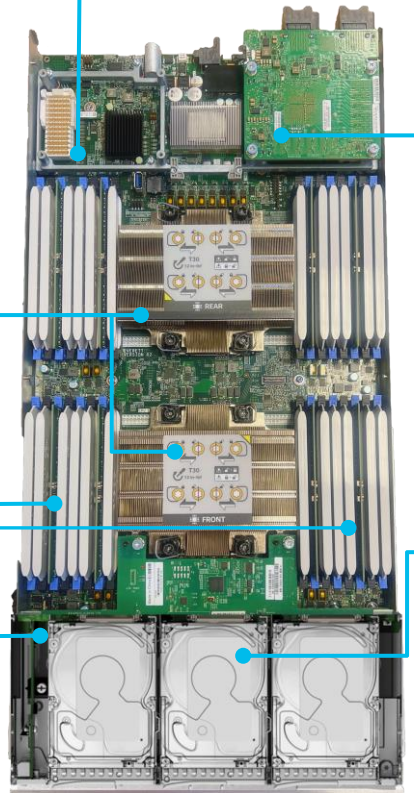
1. 2x M.2 SATA HW RAID1

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

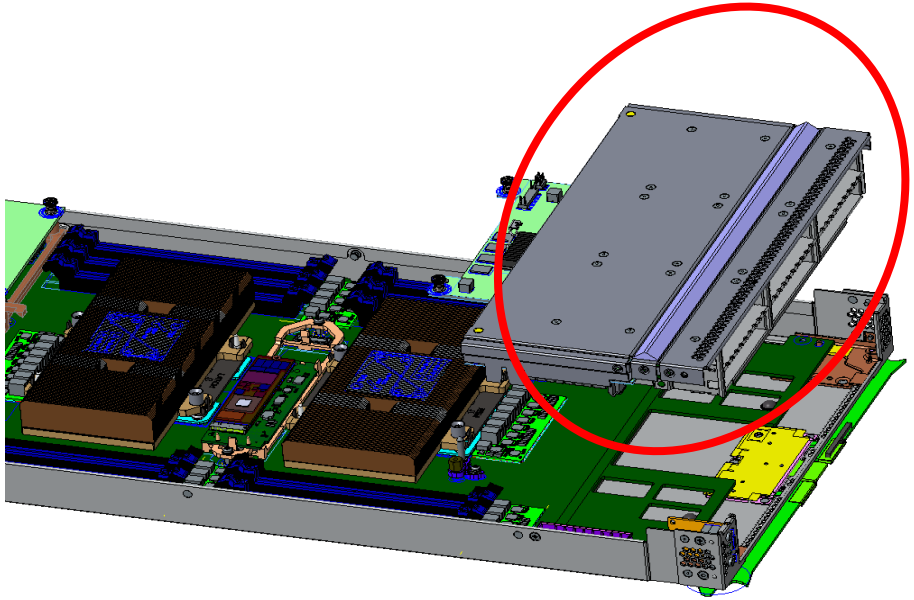
25G 5th Gen VIC mLOM
25G 5th Gen VIC Mezz

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

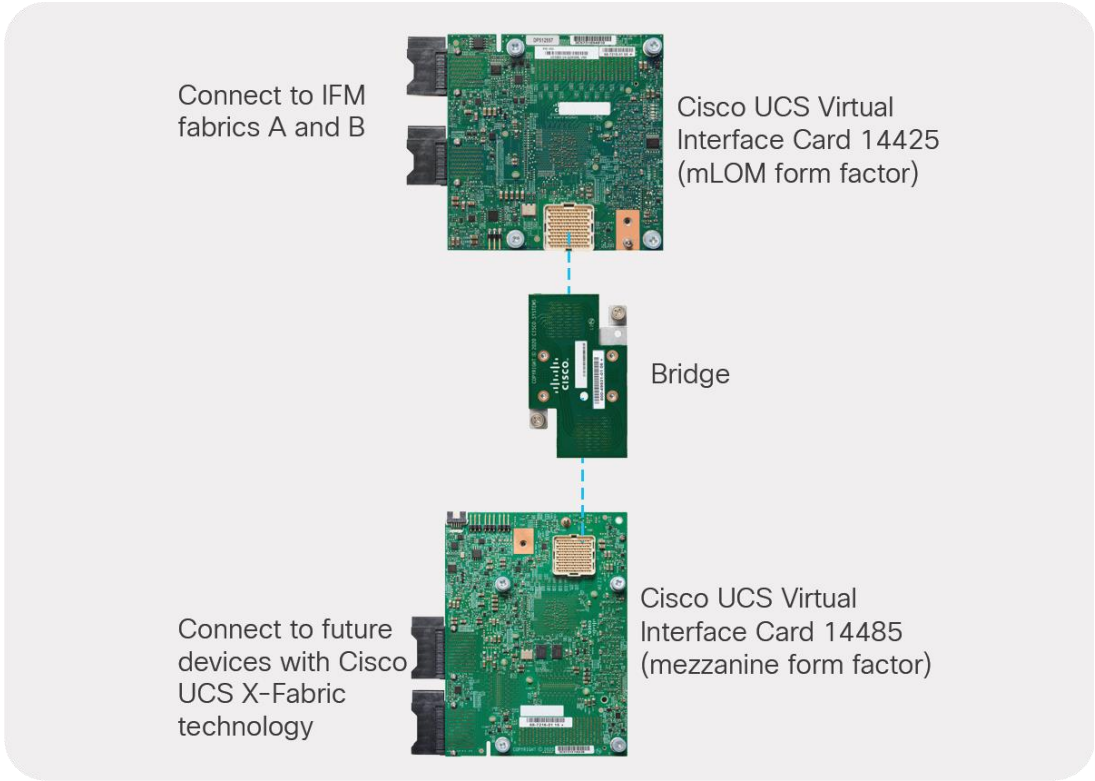
*Uplink and Appliance port only

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

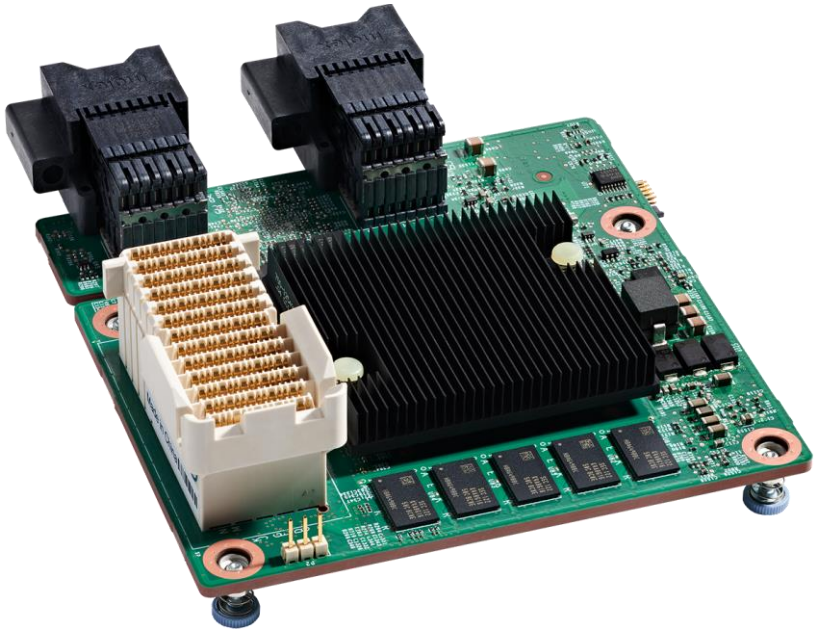
VIC 14425 (mLOM) and VIC 14825 (Mezz)

- 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



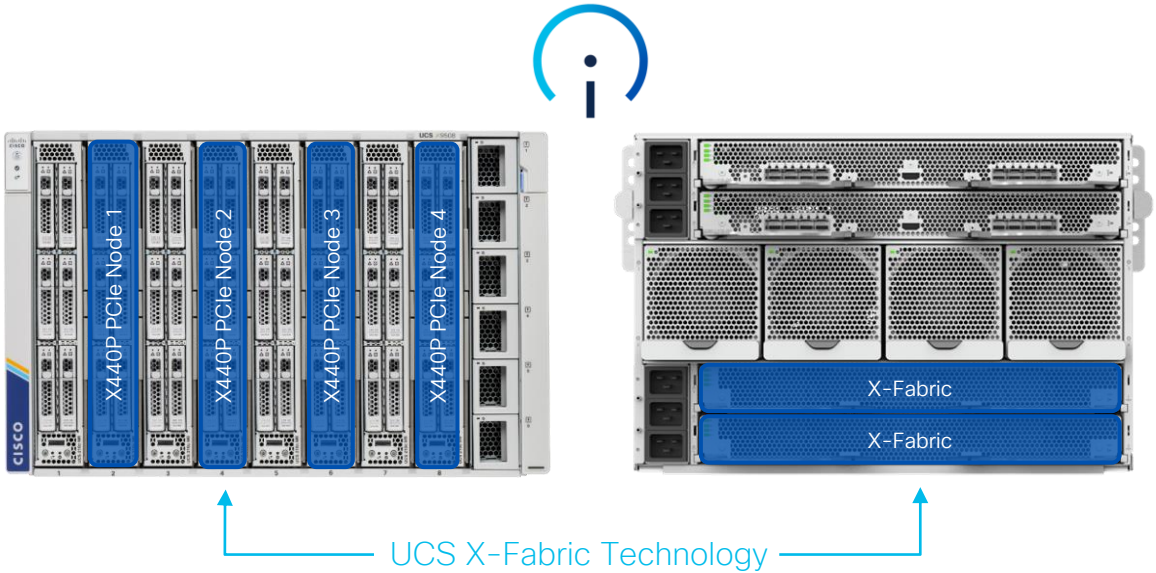
UCS X-Fabric

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

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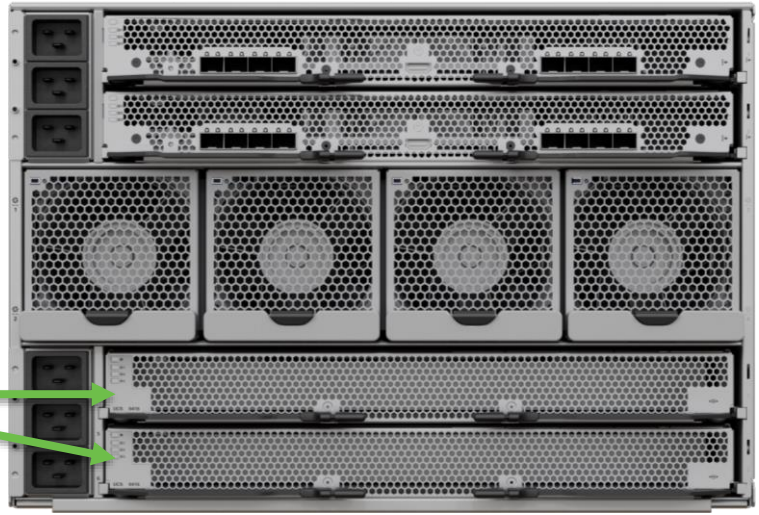
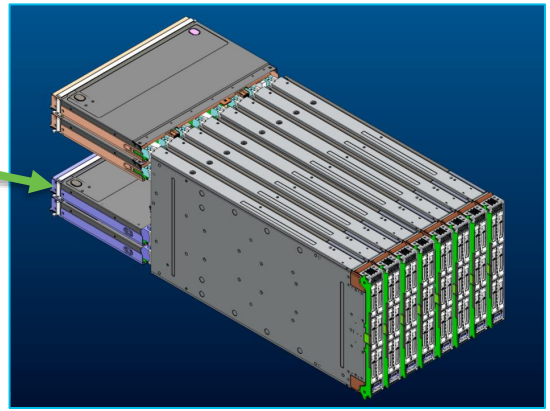
X9416 X-Fabric XFM Modules

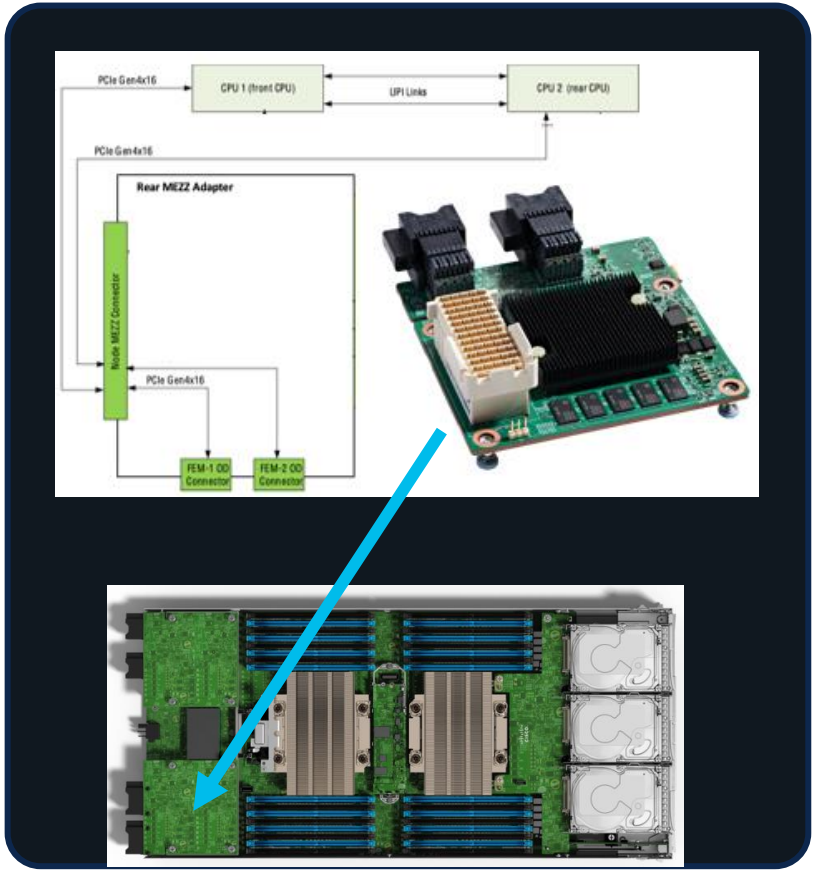
- The X9416 XFM provides fixed PCIe Gen4 x16 links between each pair of odd (N) and even (N+1) slots
- Replaces lower fabric module pair
- Can be hot swapped in a chassis with the original XFM blanks
- Connects to all chassis slots
- No configuration required





X-Fabric Mezz Cards

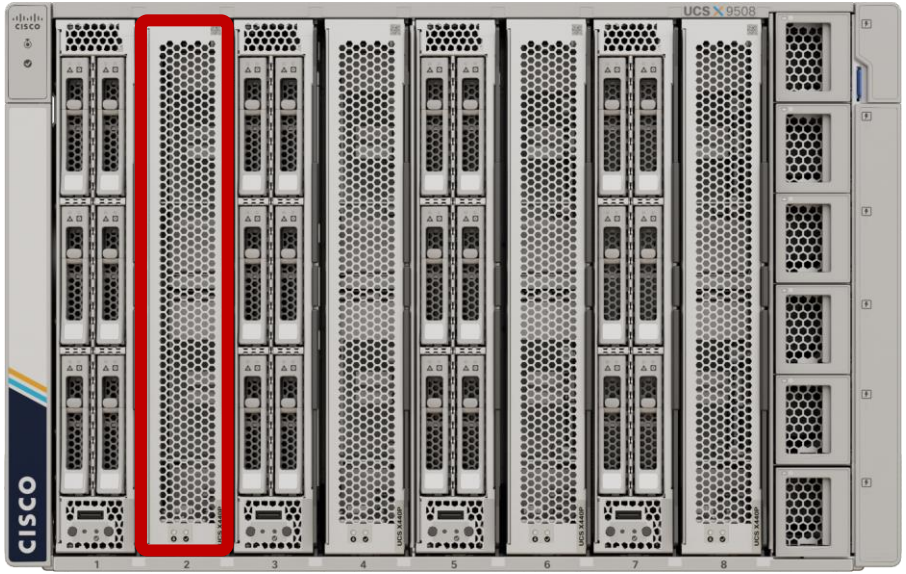
- All X-Series compute node mezzanine cards provide connectivity to the X-Fabric
  - 100Gb 14825 VIC Mezz
  - PCIe pass-through Mezz
- One PCIe Gen4 x16 link per CPU

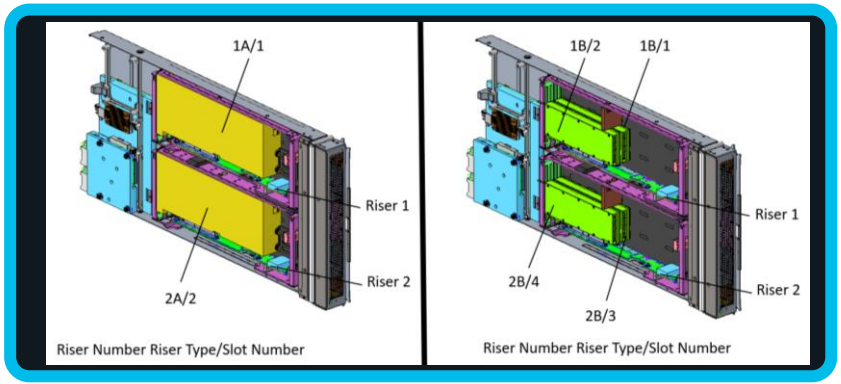


PCIe Expansion

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

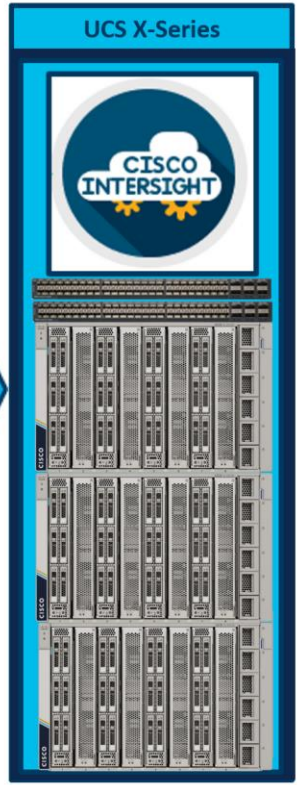




UCS X-Series NVIDIA GPU Portfolio

NVIDIA

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

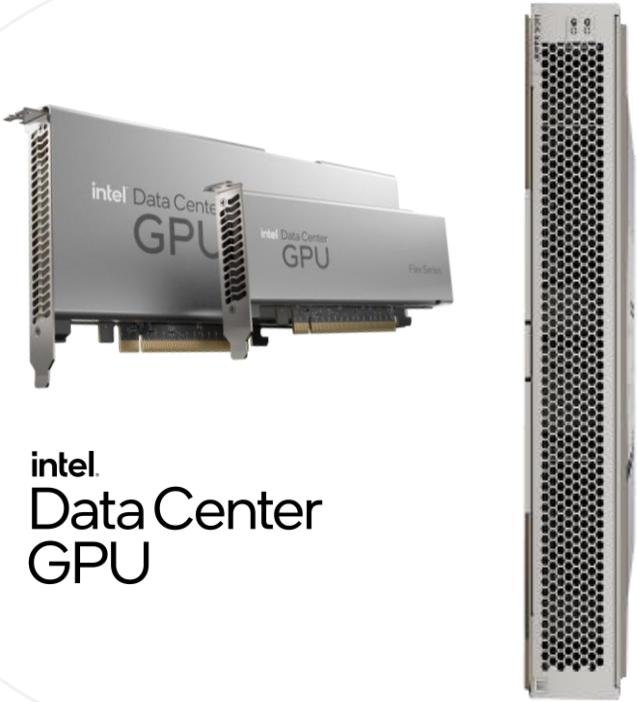


New GPUs options with UCS X-Fabric

Modular design enables flexibility and choice

Intel Data Center GPU Flex Series 140 and 170

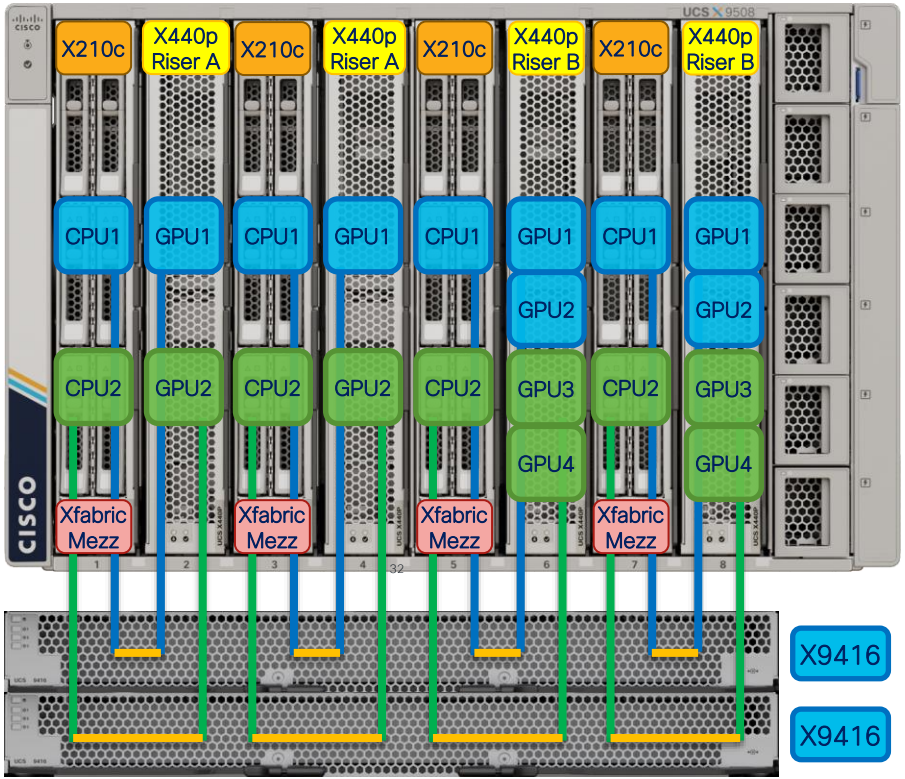
- Outstanding compute density and energy efficiency
- Main use cases: VDI and video transcode
- Secondary use cases: Rendering and AI/ML
- Up to 4x Intel Flex 140 or up to 2x Intel Flex 170
- Flex 140 GPU: HHHL, 75W PCIe*
- Flex 170 GPU: FHFL, 150W PCIe*



* Will be available 2nd Half CY23

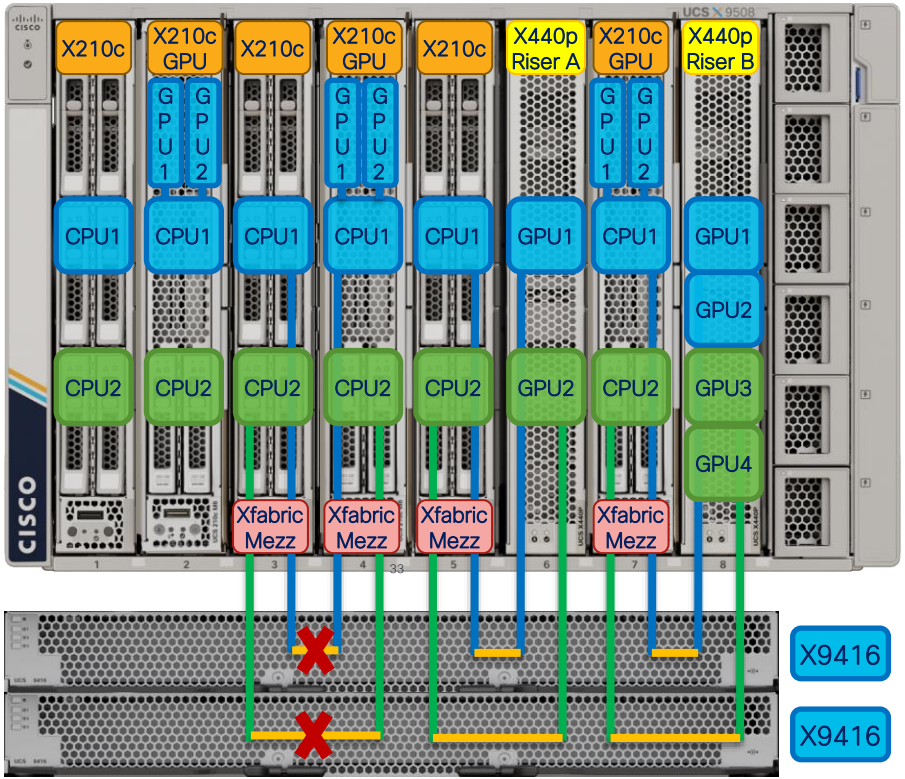
UCS X-Fabric - X210c and X440p PCIe Node

- An X-Fabric Mezz card (VIC or Pass-through) on the compute node connects it to the XFM pair
- One Gen4 x16 link per CPU is routed to the XFM pair (CPU1 to XFM1 and CPU2 to XFM2)
- The X440p connects the XFM1 link to Riser 1 and XFM2 to Riser 2
- GPU firmware is updated with the attached server firmware upgrade



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

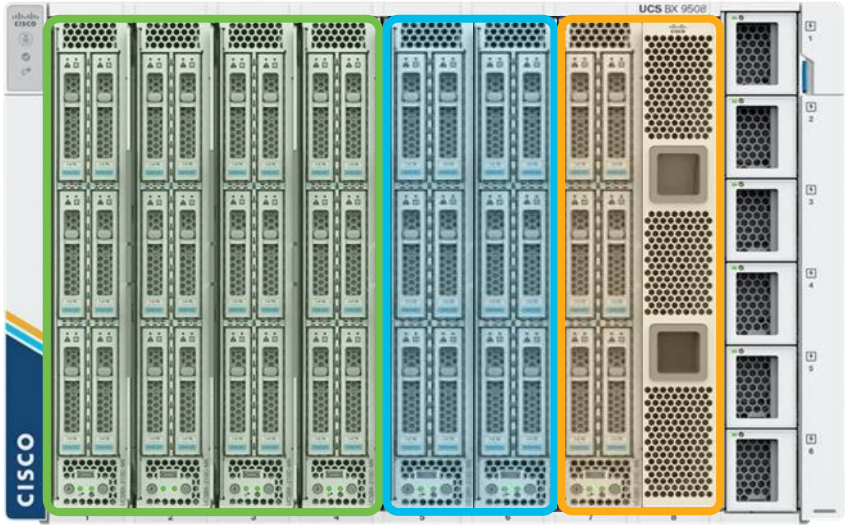
Consolidate Rack Workloads

- AI/ML
- Accelerated VDI
- Big Data, SDS, Containers

+

Traditional Blade Workloads

UCS X-Series



Up to 960
Cores per Chassis (M6 or M7)

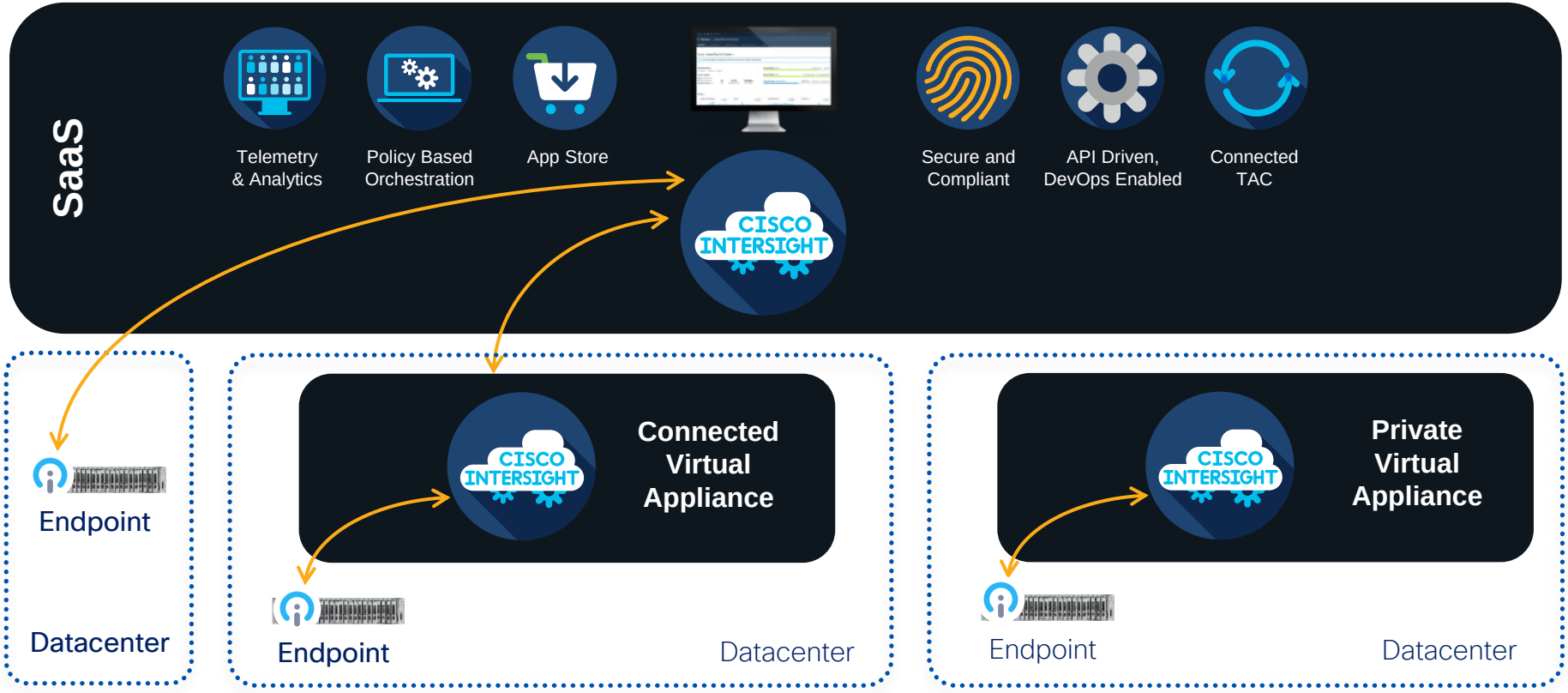
24
GPUs per Chassis

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

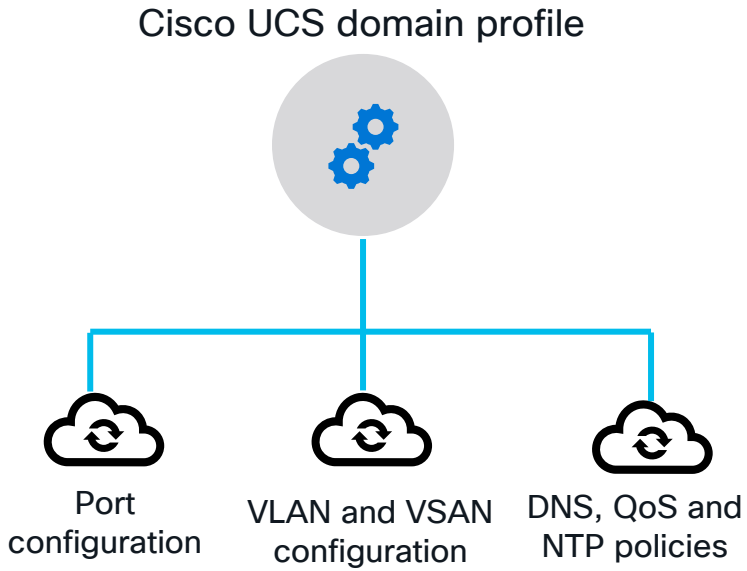
Claim Cisco UCS fabric interconnect as a target in Cisco Intersight

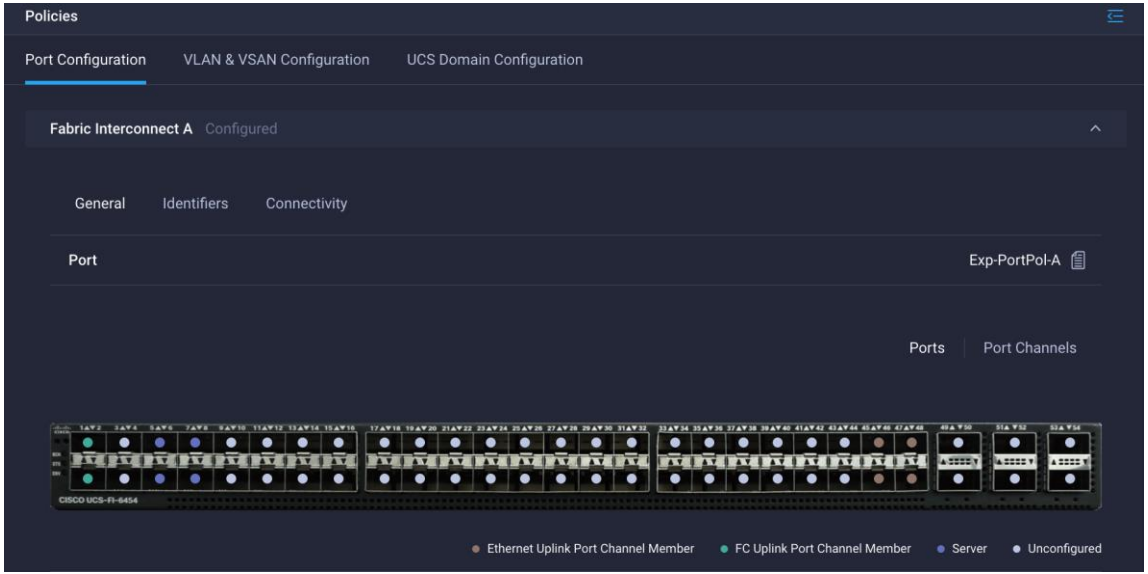
Configure Cisco UCS domain profile to connect chassis and network

Configure server profile template to defined various server parameters

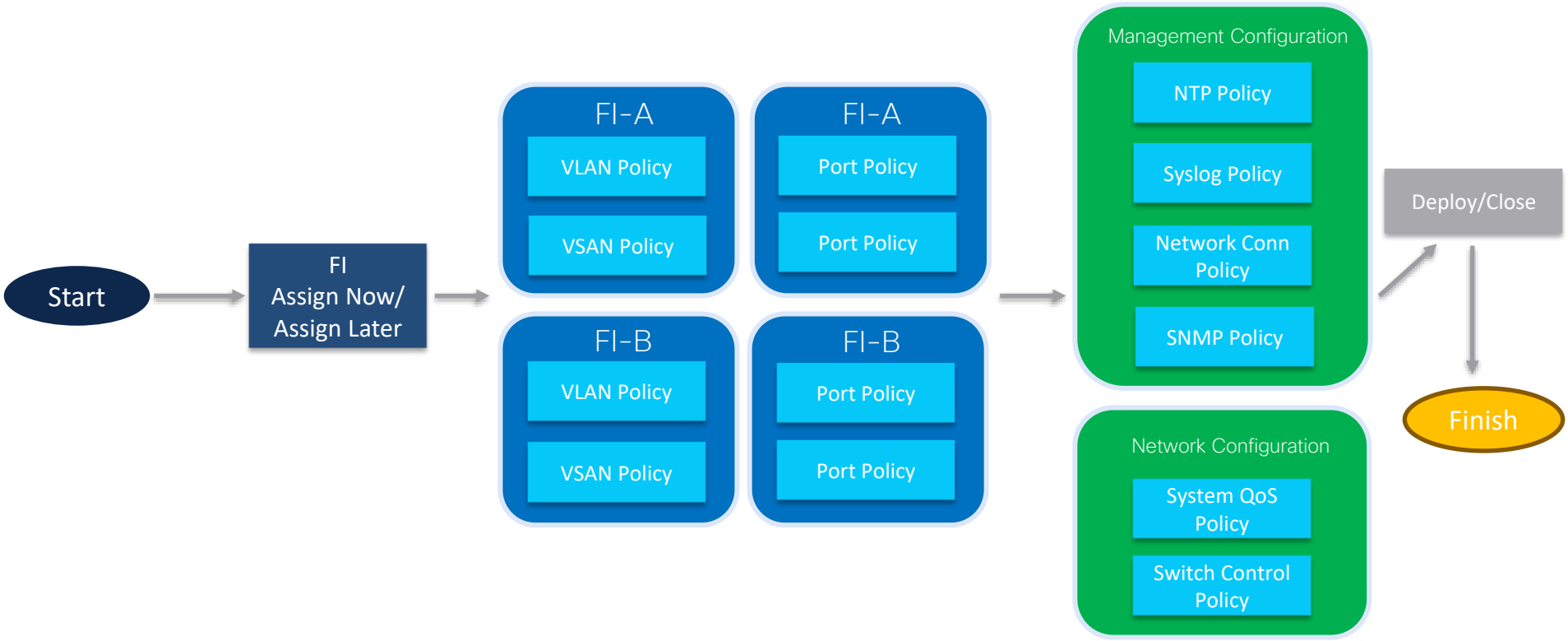
Derive and deploy server profile to configure the compute nodes

What is a Domain Profile?

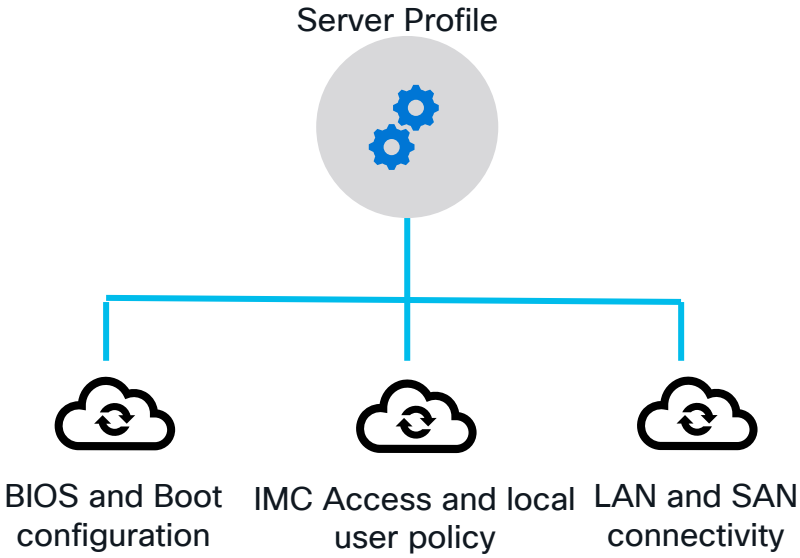


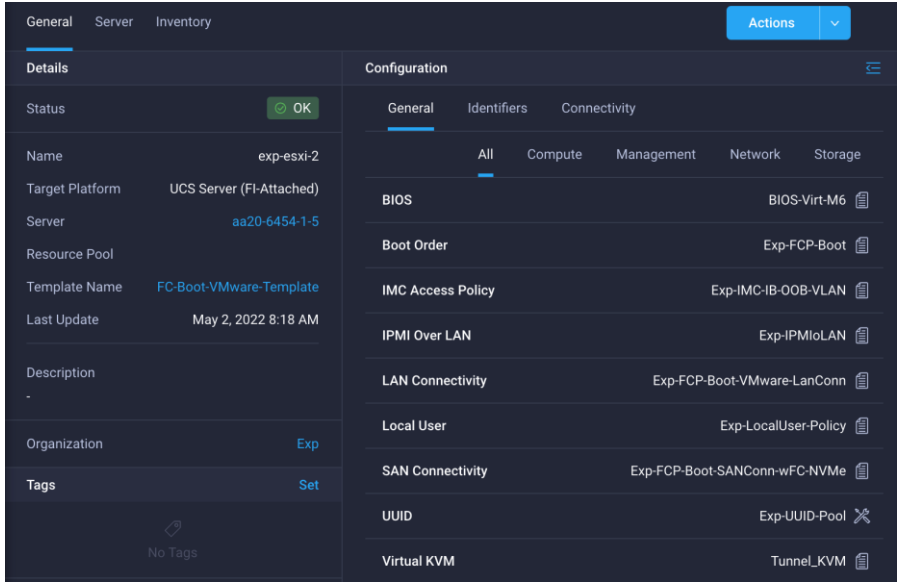


High Level Intersight UCS Domain Profile Creation Overview

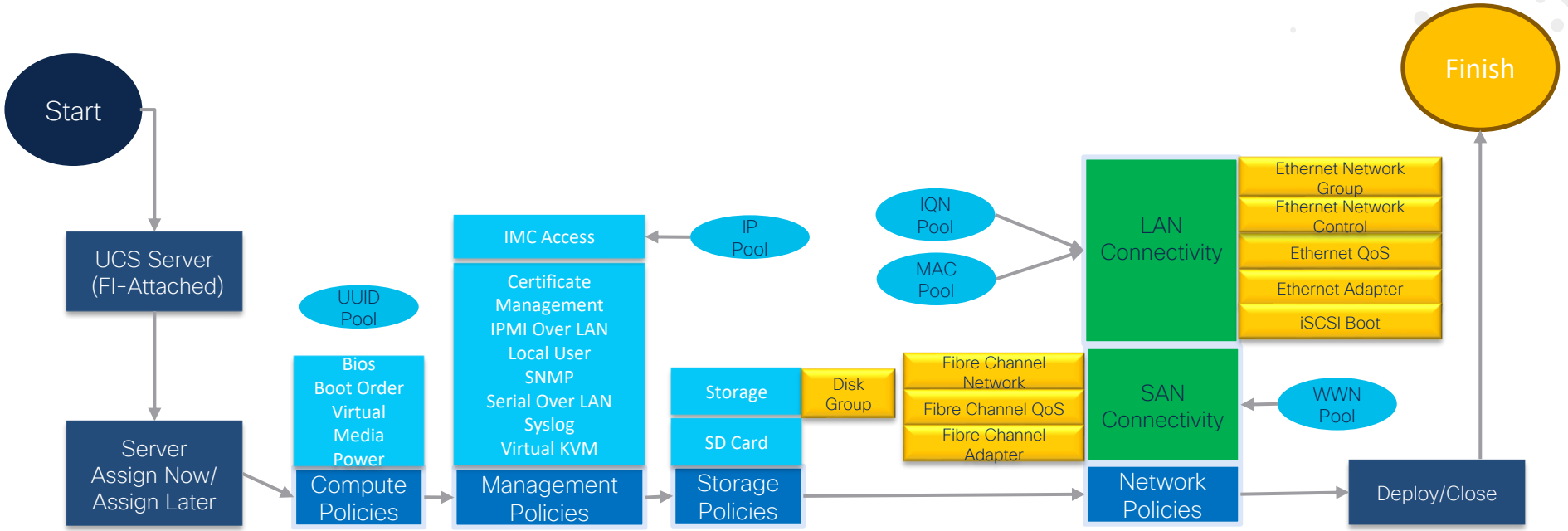


What is a Server Profile?

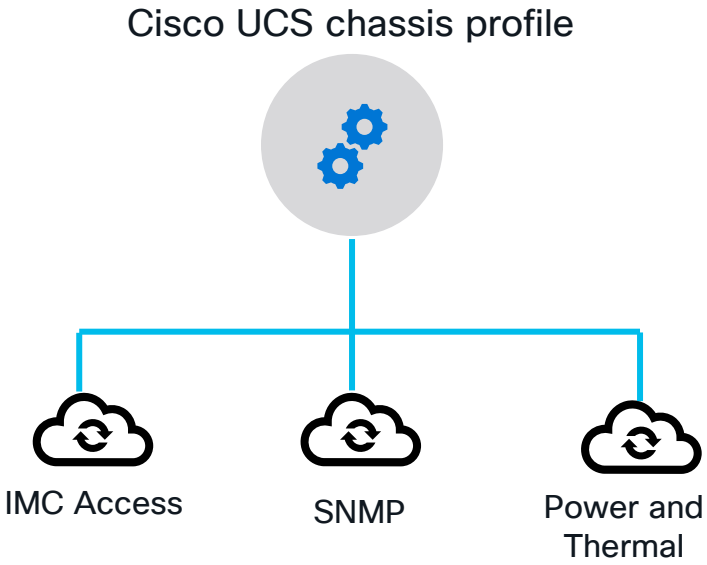


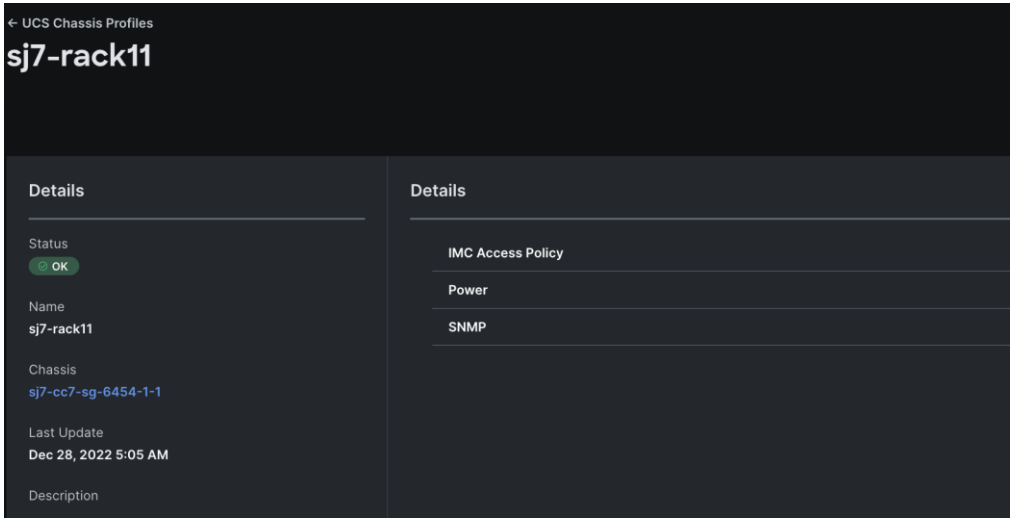


Intersight UCS Server Profile Creation Overview

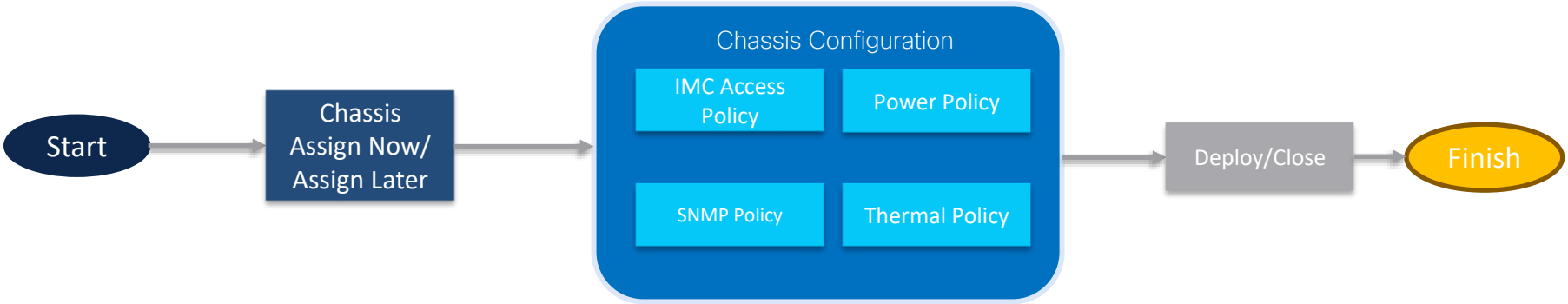


What is a Chassis Profile?





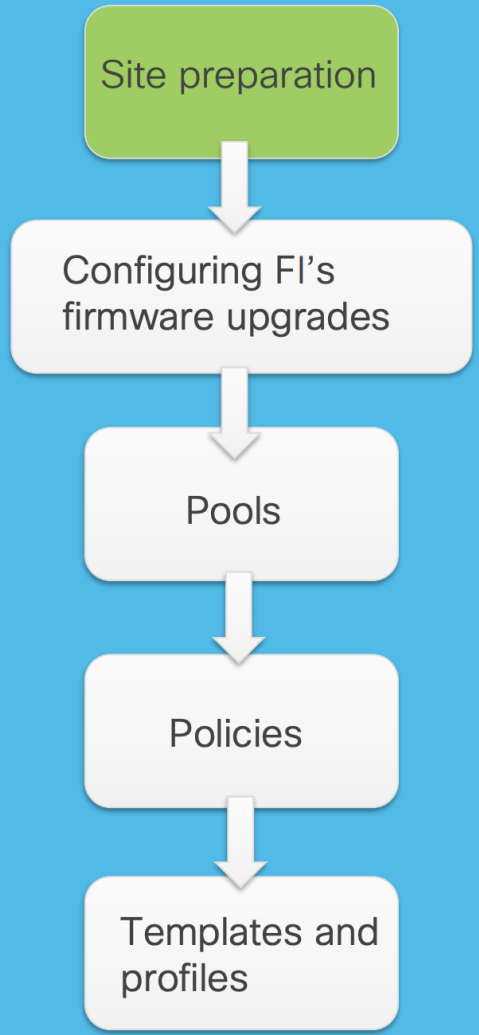
Optional – Intersight UCS Chassis Profile Creation Overview



UCS-X Deployment and Best Practices

Workflow on UCS-X and Intersight configuration

STEP 1 : Site Preparation



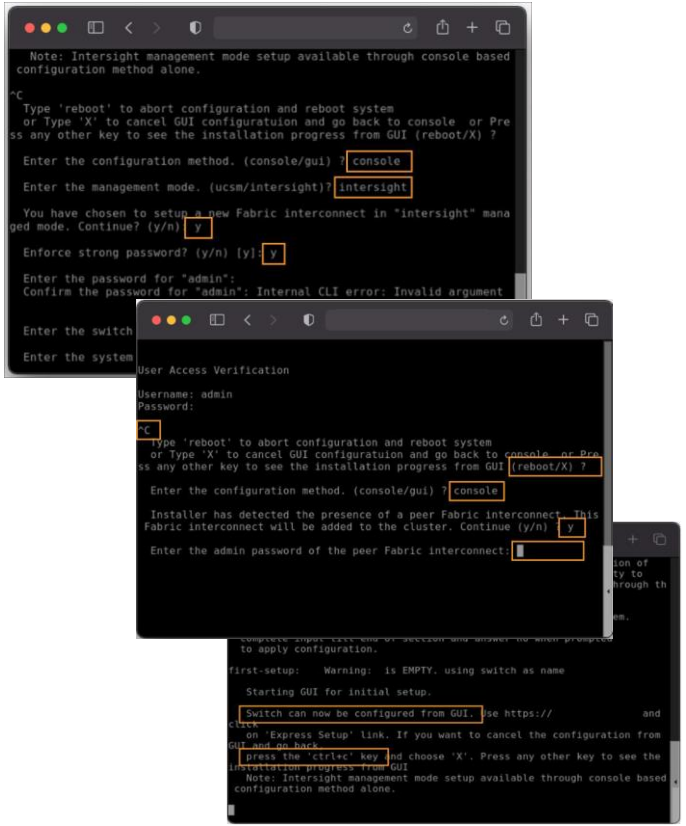
Site Preparation – Physical and Logical Install

- ✓ **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.



Preparing FI's and servers. Firmware upgrades

Intersight Pre-requisites

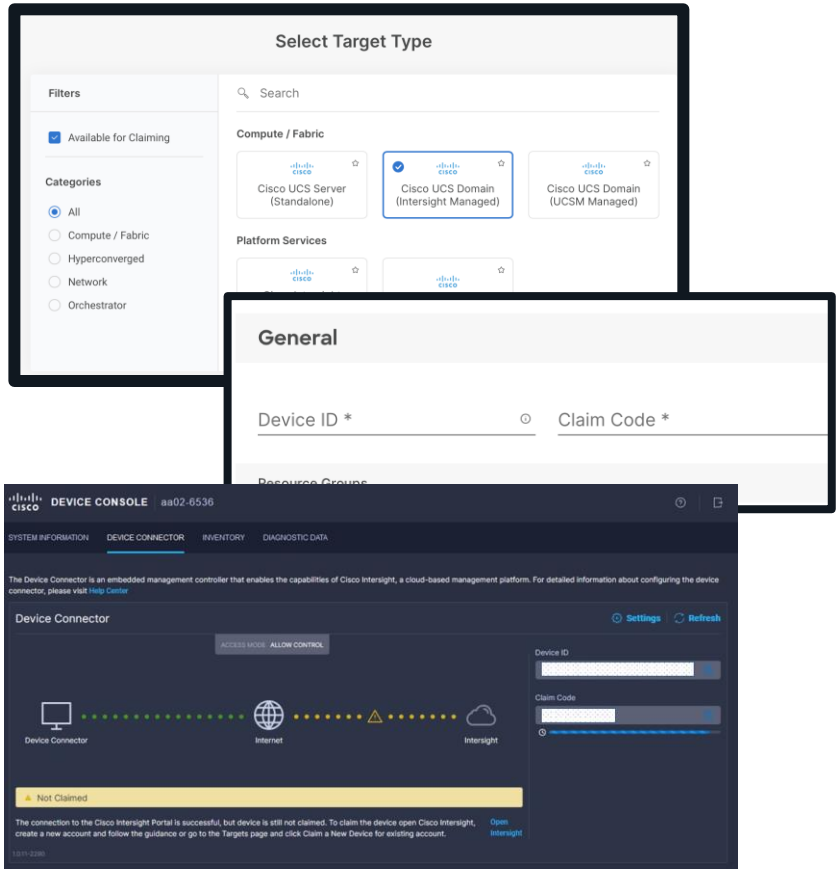
- Setup Cisco Intersight account
  - Create Intersight account to claim your devices that you want to manage from Intersight.
- Setup Licensing
  - When setting up a new Cisco Intersight account (as explained in this document), the account needs to be enabled for Cisco Smart Software Licensing.
- Create 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

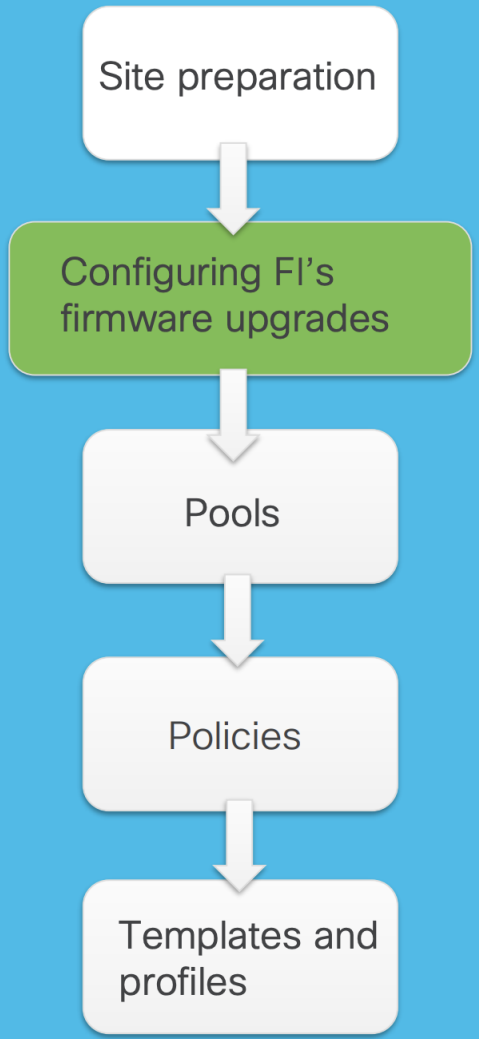
- Login to intersight.
- Goal is to add target (FI's) to intersight (UCS domain, intersight managed).
- Provide claim codes (SaaS) or FI user/pass (appliance) to add target.
- If using SaaS, claim codes can be retrieved from FI.
- We should use browser to navigate to FI IP address, provide user and passwd,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



UCS-X Deployment and Best Practices

Workflow on UCS-X and Intersight configuration

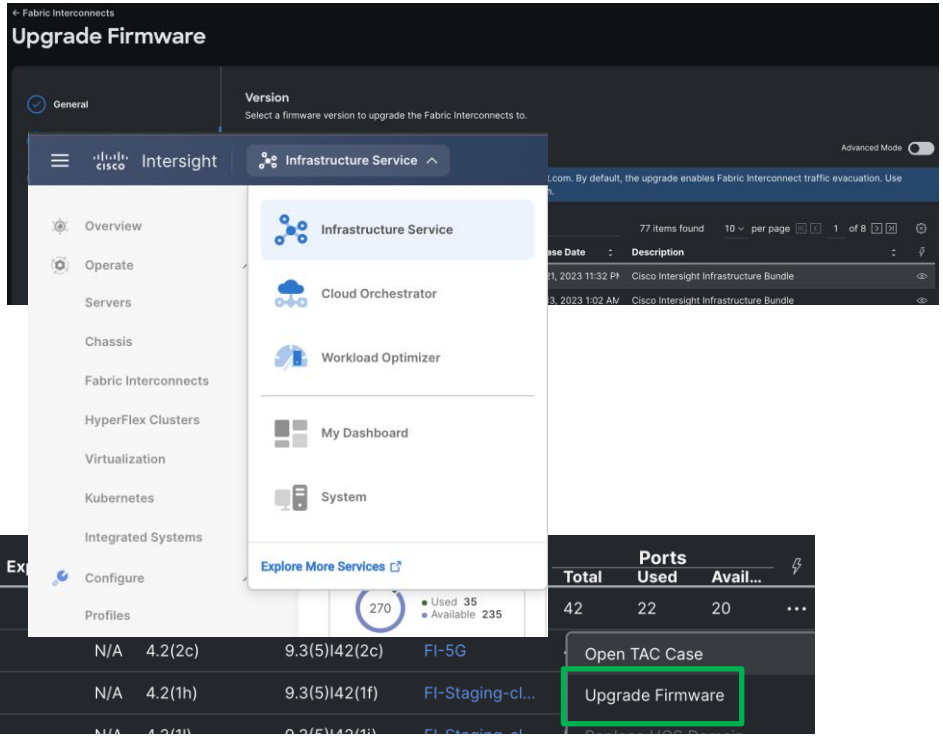
STEP 2 : Upgrade Fabric Interconnects.



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



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:

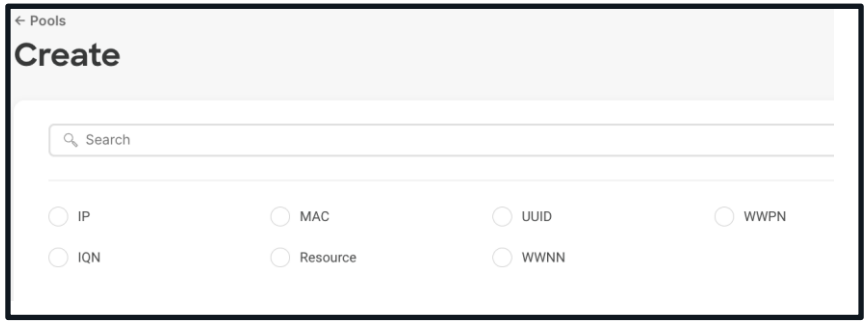
```
FI-5G-A# list-firmware-cache
DOWNLOADED DATE                IDENTIFIER                      IMAGE NAME
2022-04-04                     624b53886567612d30880060        intersight-ucs-server-210c-m6.5.0.2.220329.bin
2022-04-11                     62547ad36567612d30aa7d59        intersight-ucs-infra-5gfi.4.2.2.220314.bin
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#
```

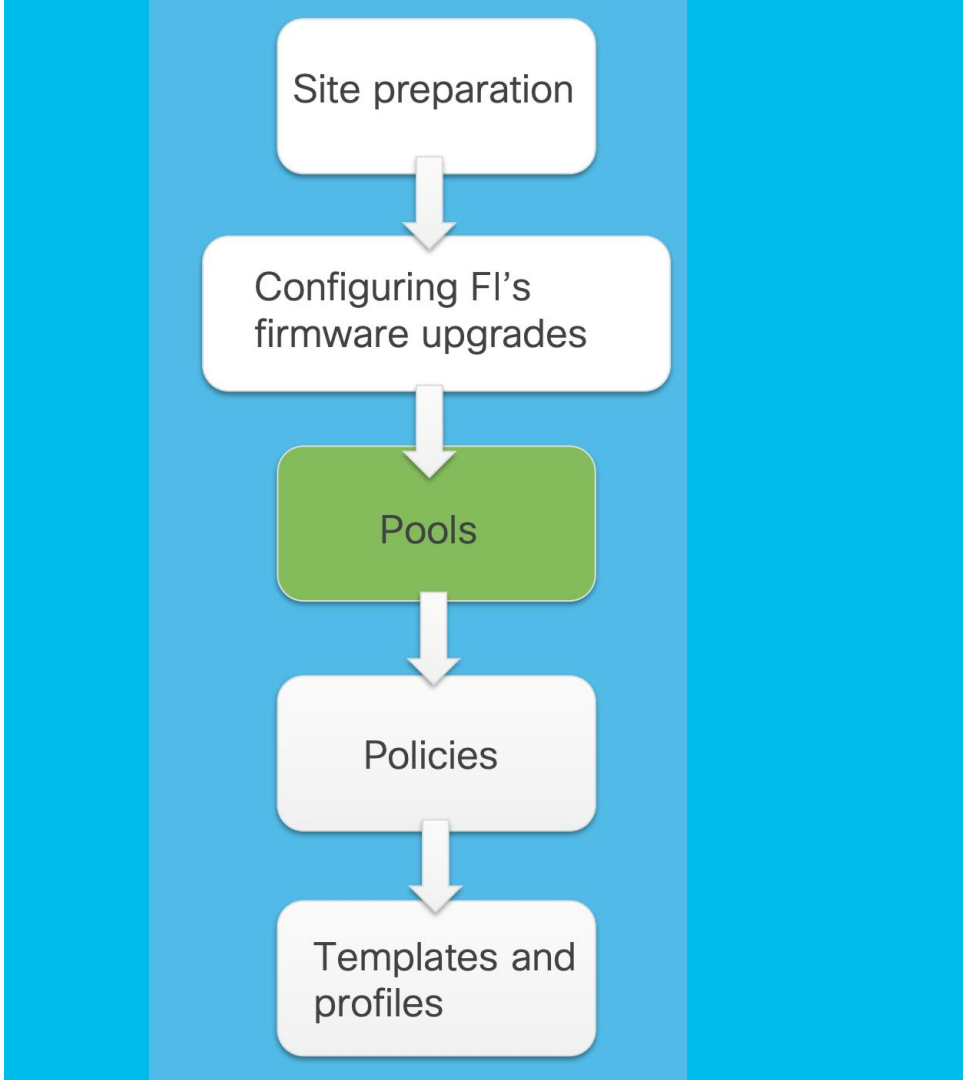
```
FI-5G-A(nx-os)# show system internal flash
Mount-on                    1K-blocks      Used    Available  Use%  Filesystem
/                             9265152   3127724      6137428    34  none
/usr_ro                         75008     75008            0   100  /dev/loop0
/usr                          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/icam                     1048576         0      1048576     0  none
/volatile                     2097152     81536      2015616     4  none
/debug                           5120       100         5020     2  none
/mnt/ifc/cfg/db                524288         0       524288     0  none
/dev/mqueue                         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.



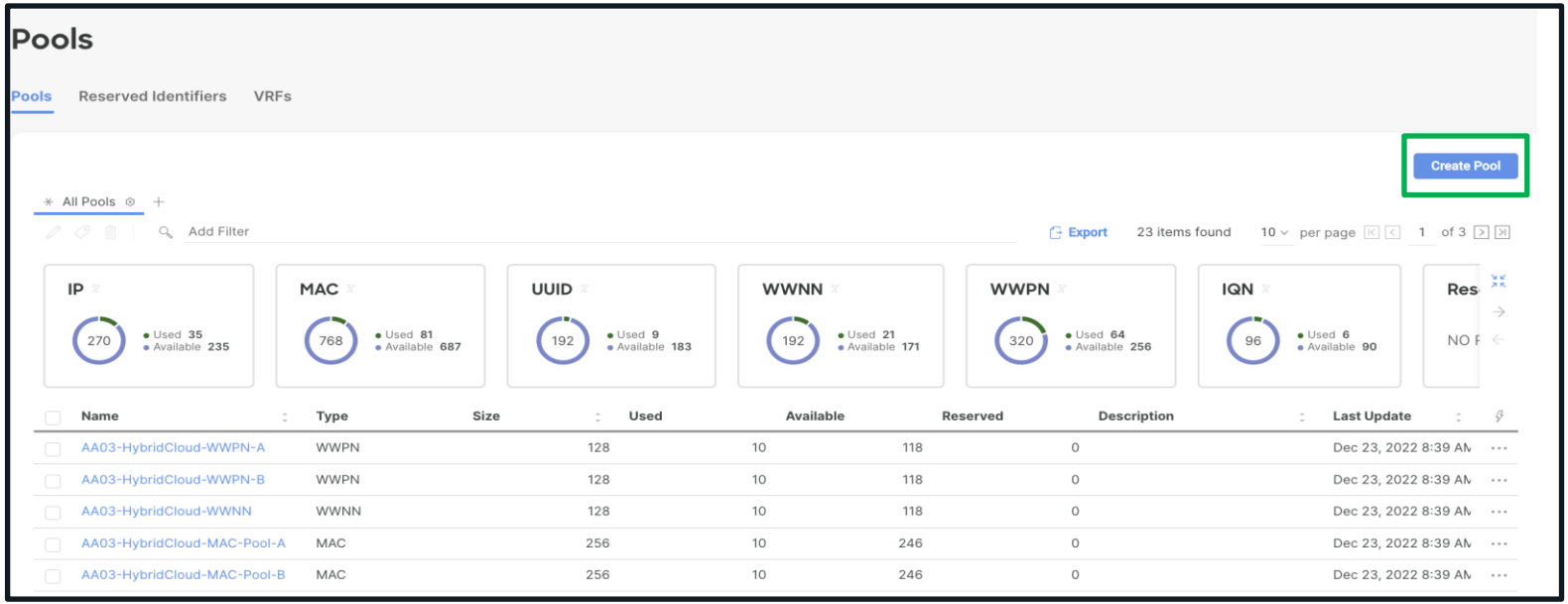


cisco Live!

Pools, policies, templates, profiles

Third step : Pools

In Intersight, browse to Configure > Pools.



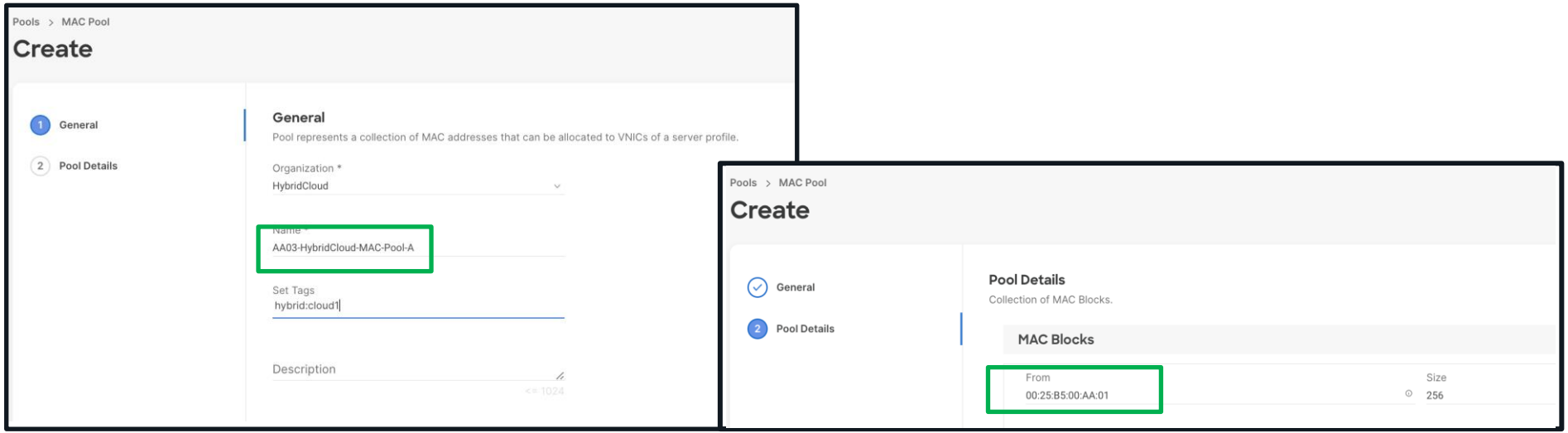
Even if all pools and policies can be created during template/profiles deployment, it would make work more structured and easier if we create pools and policies in advance.

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

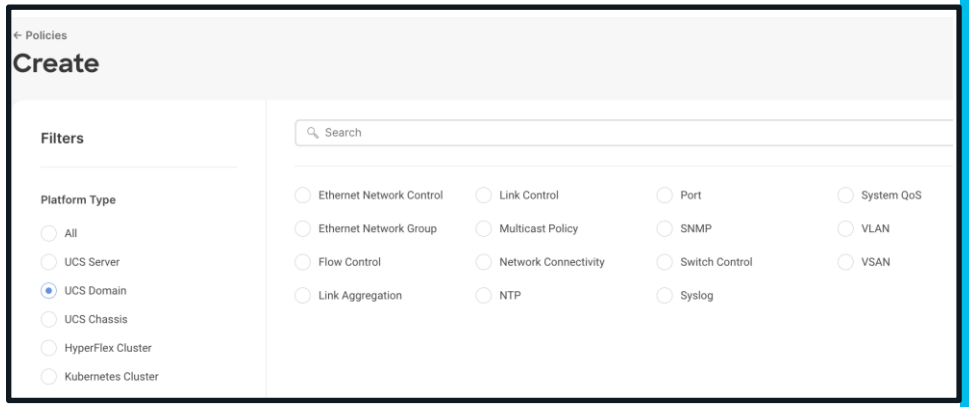
Example: xxx_mac_pool-A, 00:25:B5:00:AA:01 & xxx_mac_pool-B, 00:25:B5:00:BB:01

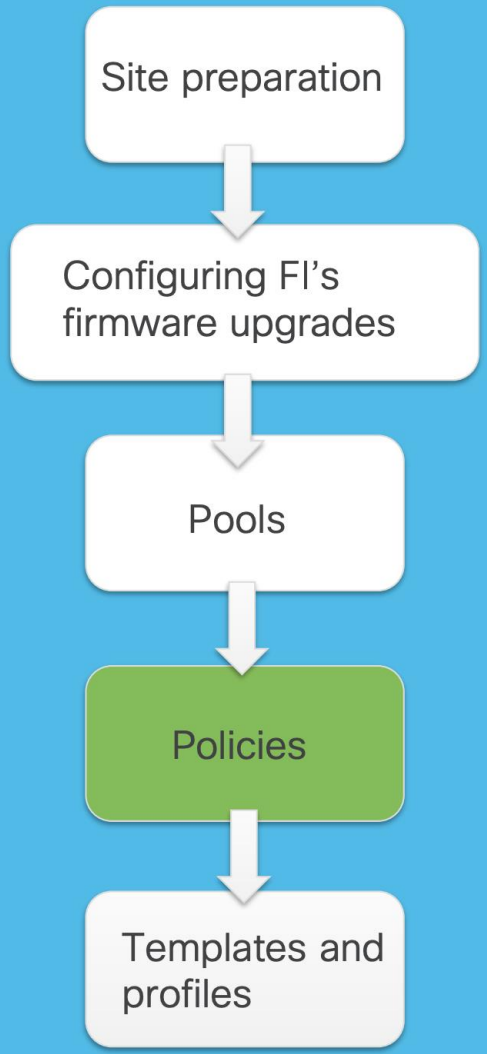


UCS-X Deployment and Best Practices

Workflow on UCS-X and Intersight configuration

STEP 4 : Create policies.





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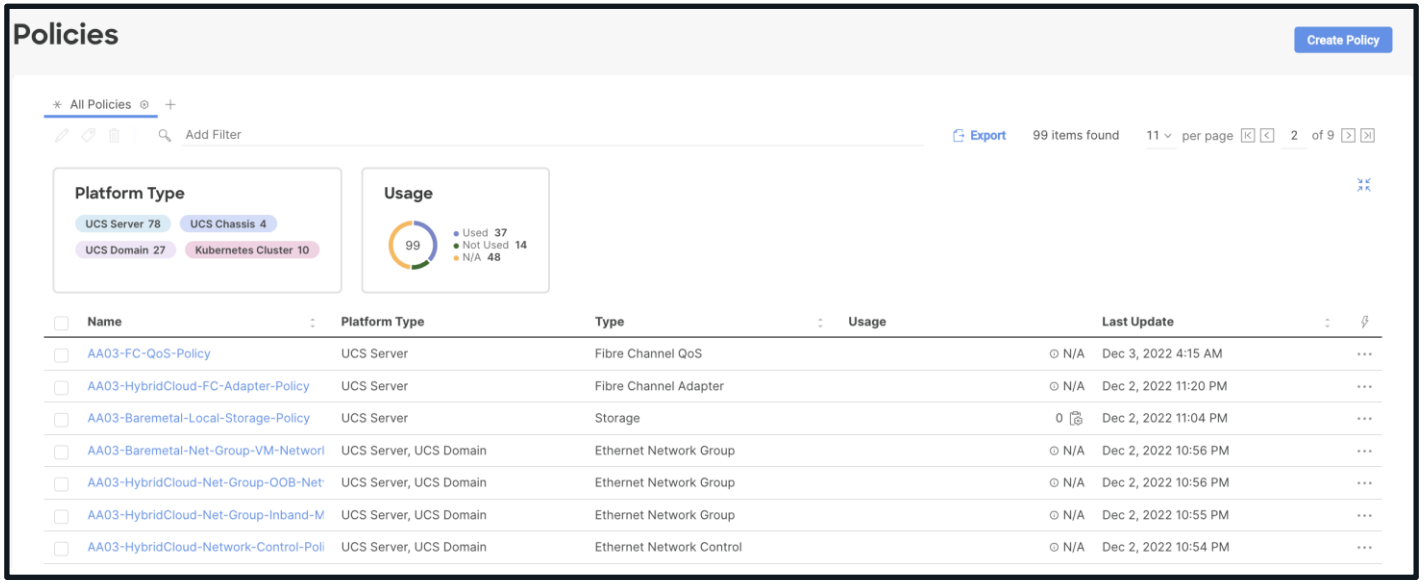
Pools, policies, templates, profiles

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

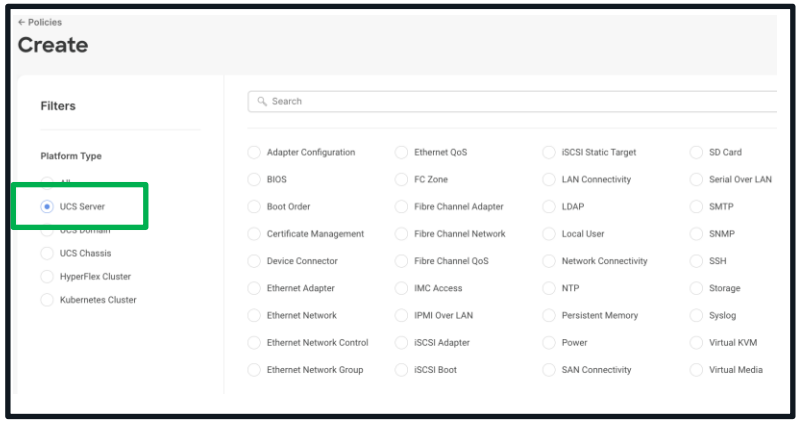


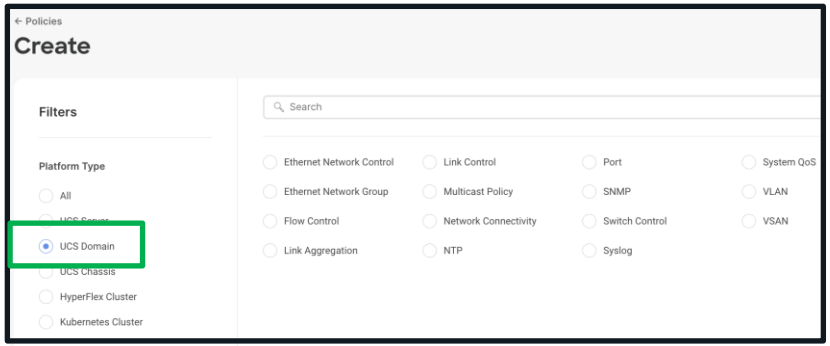
In Intersight, browse to Configure > Policy > Create Policy.

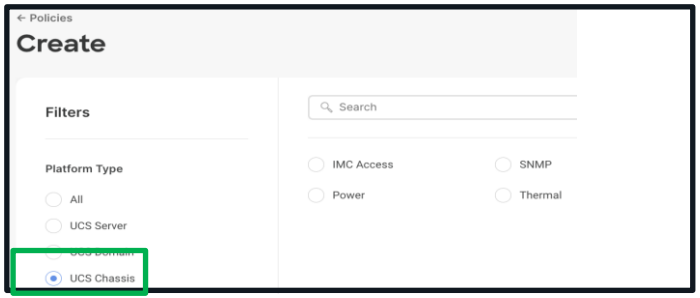
Pools, policies, templates, profiles

Fourth step : Create policies

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





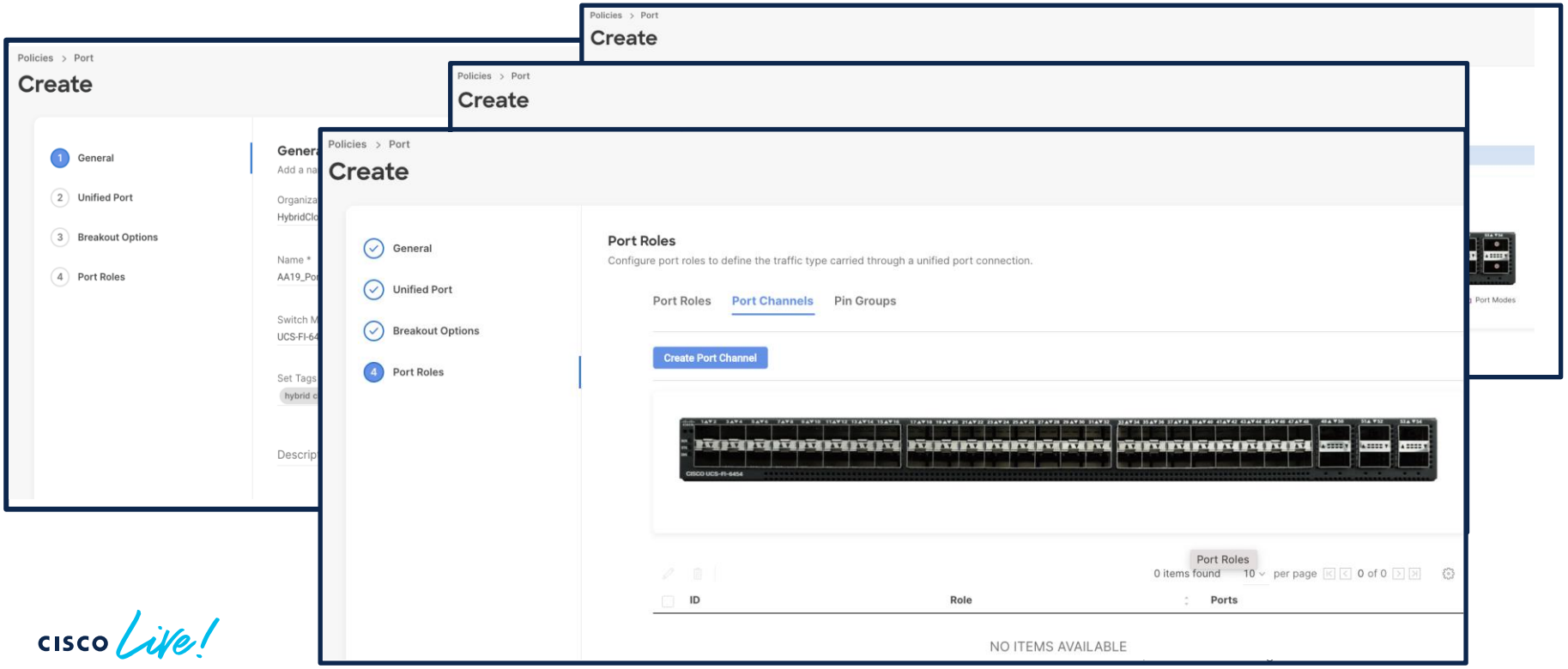


As with pools, we can define all policies while creating templates and profiles, but it will give more structure to create them in advance.

Pools, policies, templates, profiles

Fourth step : Create policies

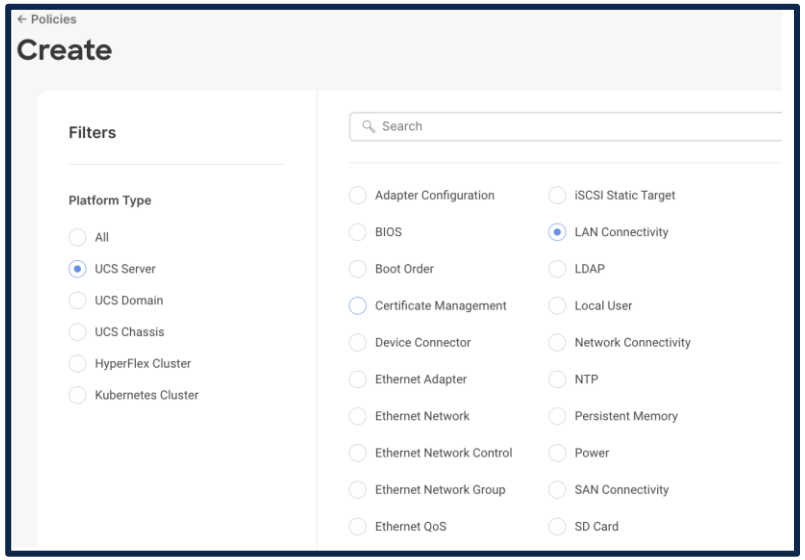
Port policy (used in Domain Profile)

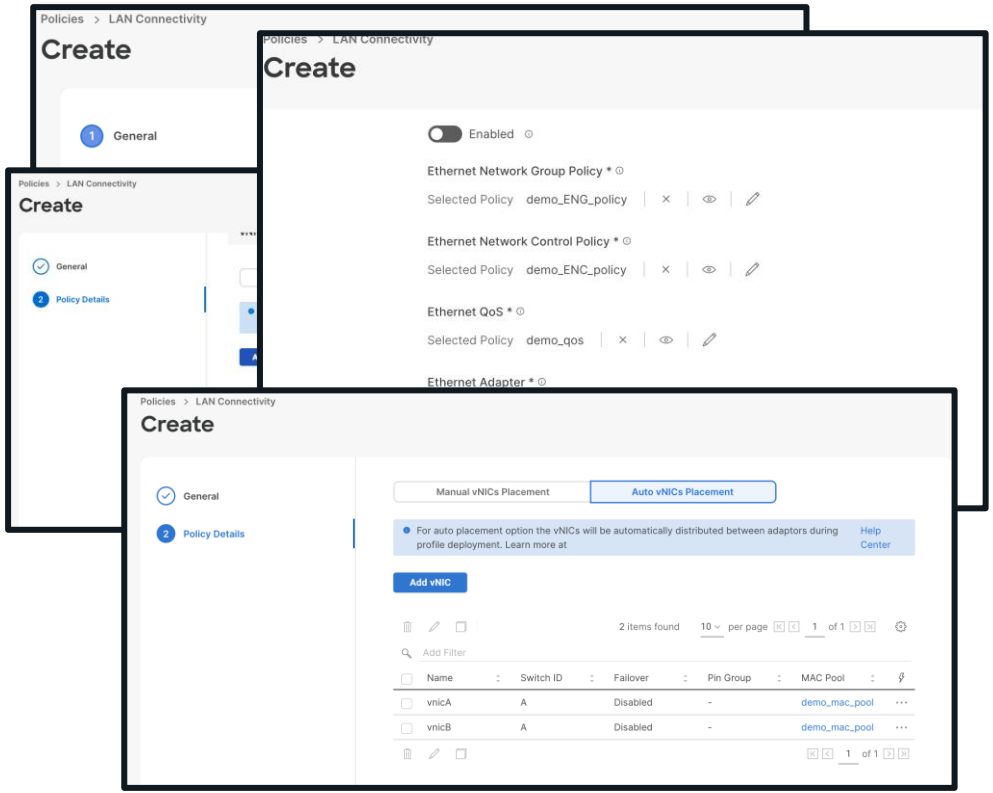


Pools, policies, templates, profiles

Fourth step : Create policies

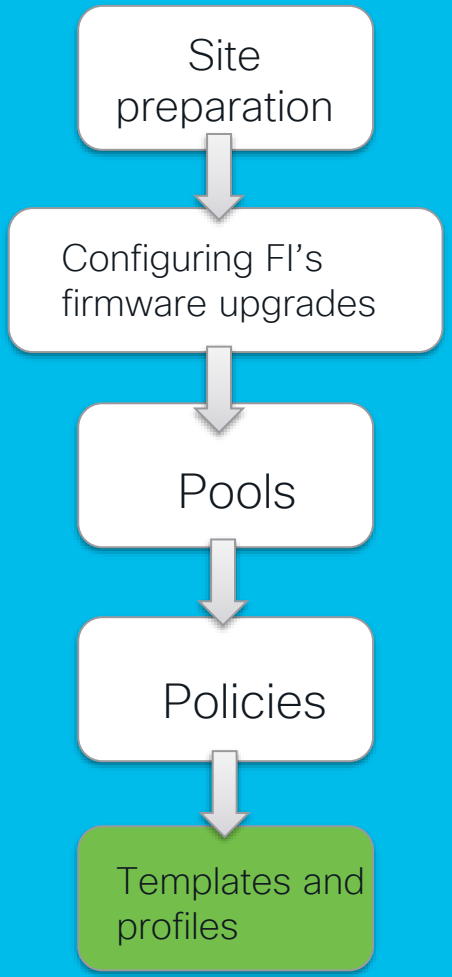
LAN connectivity policy
(used in Server Profile)





Workflow on UCS-X and Intersight configuration

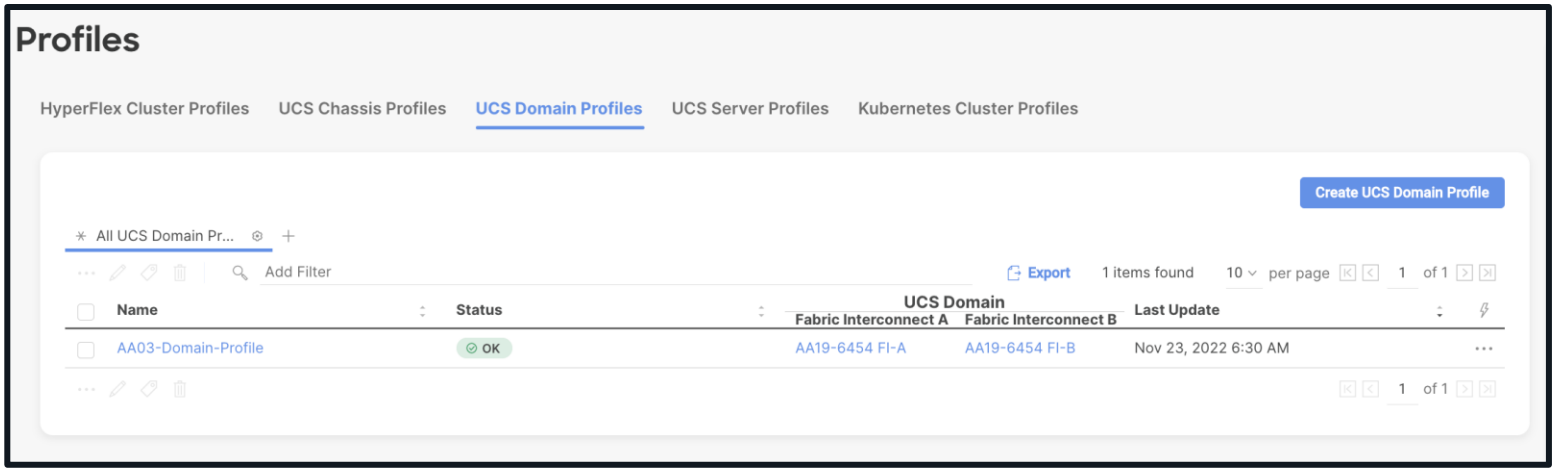
STEP 5 : Create profiles and templates.



Pools, policies, templates, profiles

Fifth step: Create UCS domain profile

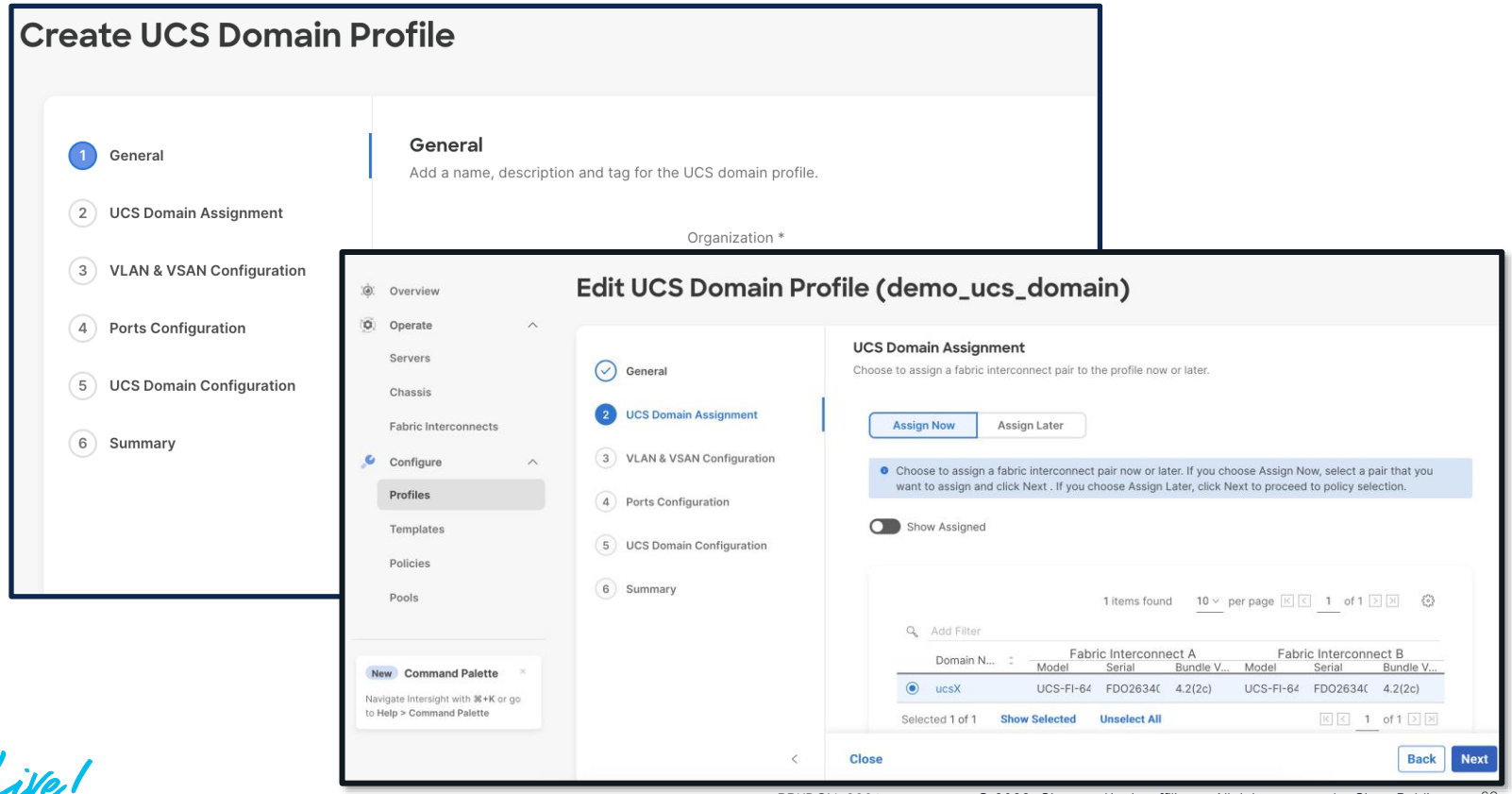
- Now we can put all those pools and policies into use.
- Intersight cannot discover any hardware connected to the Fabric Interconnects until its ports are configured, and that is done through a domain profile.



Configure > Profiles > Create UCS Domain Profiles

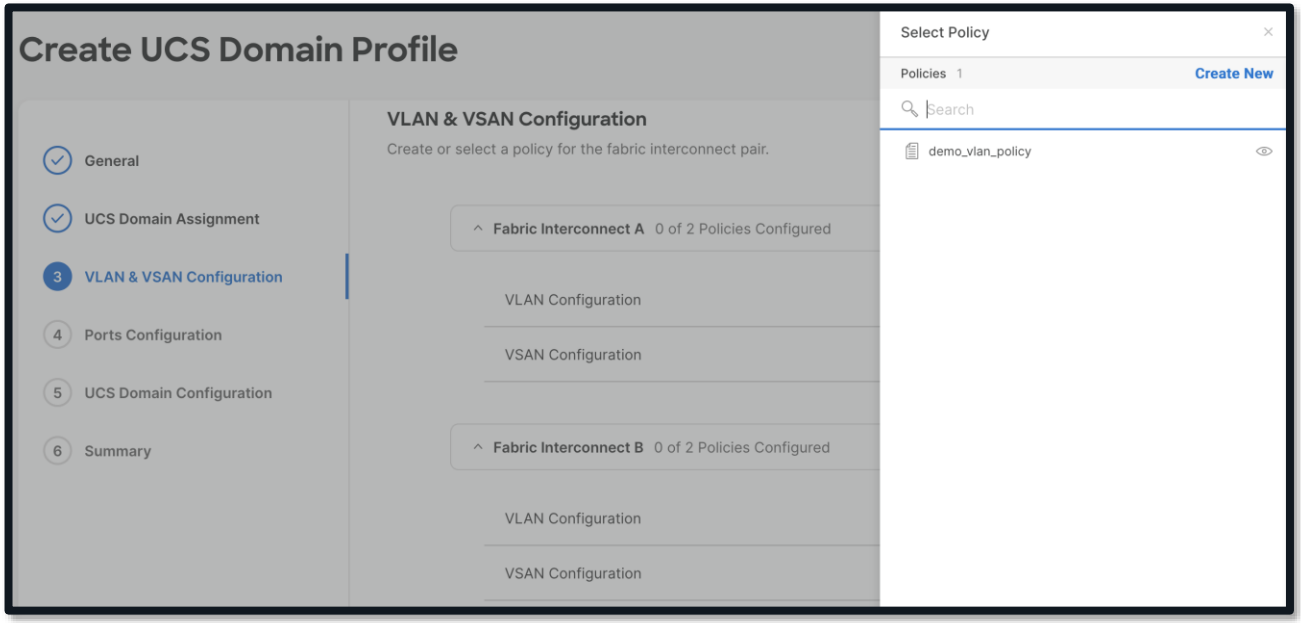
Pools, policies, templates, profiles

Fifth step : Create UCS domain profile



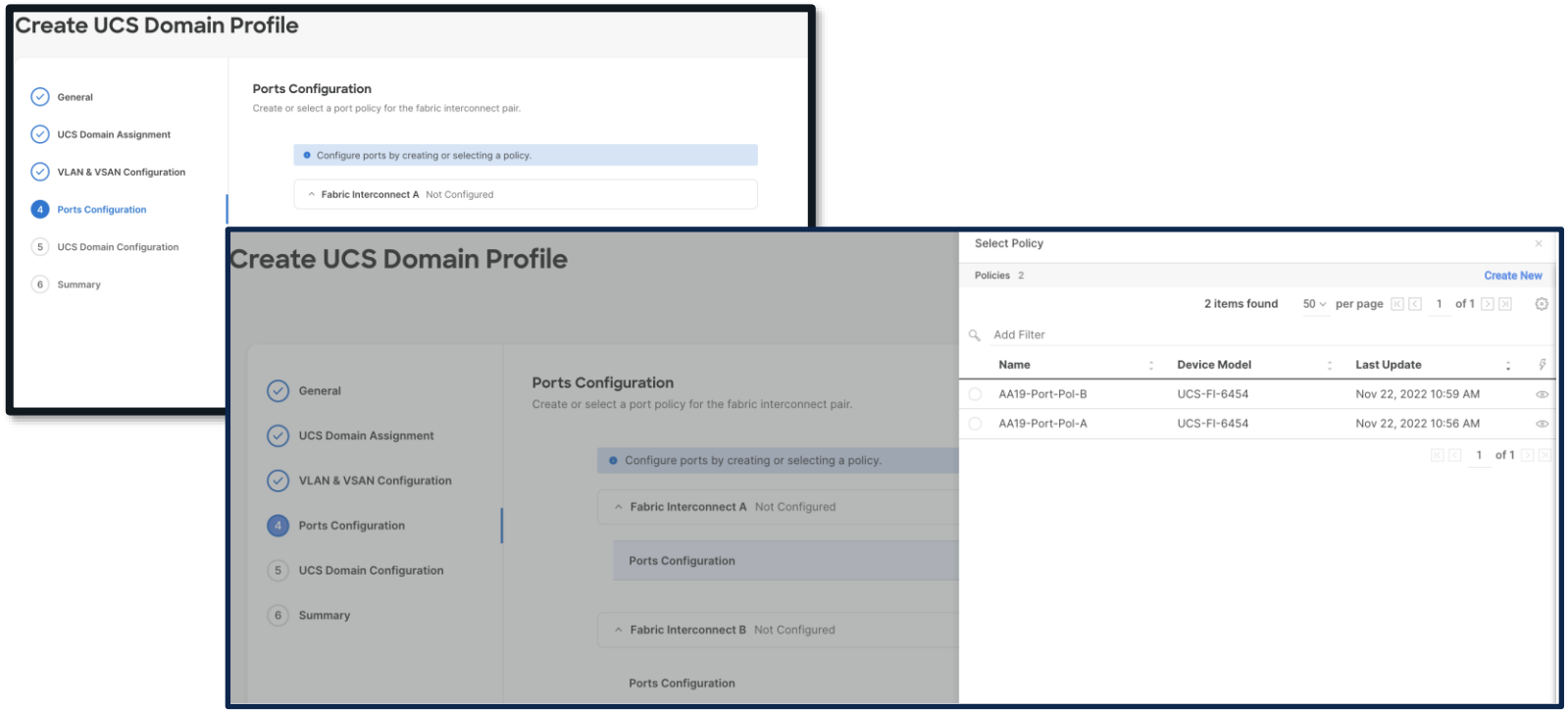
Pools, policies, templates, profiles

Fifth step : Create UCS domain profile



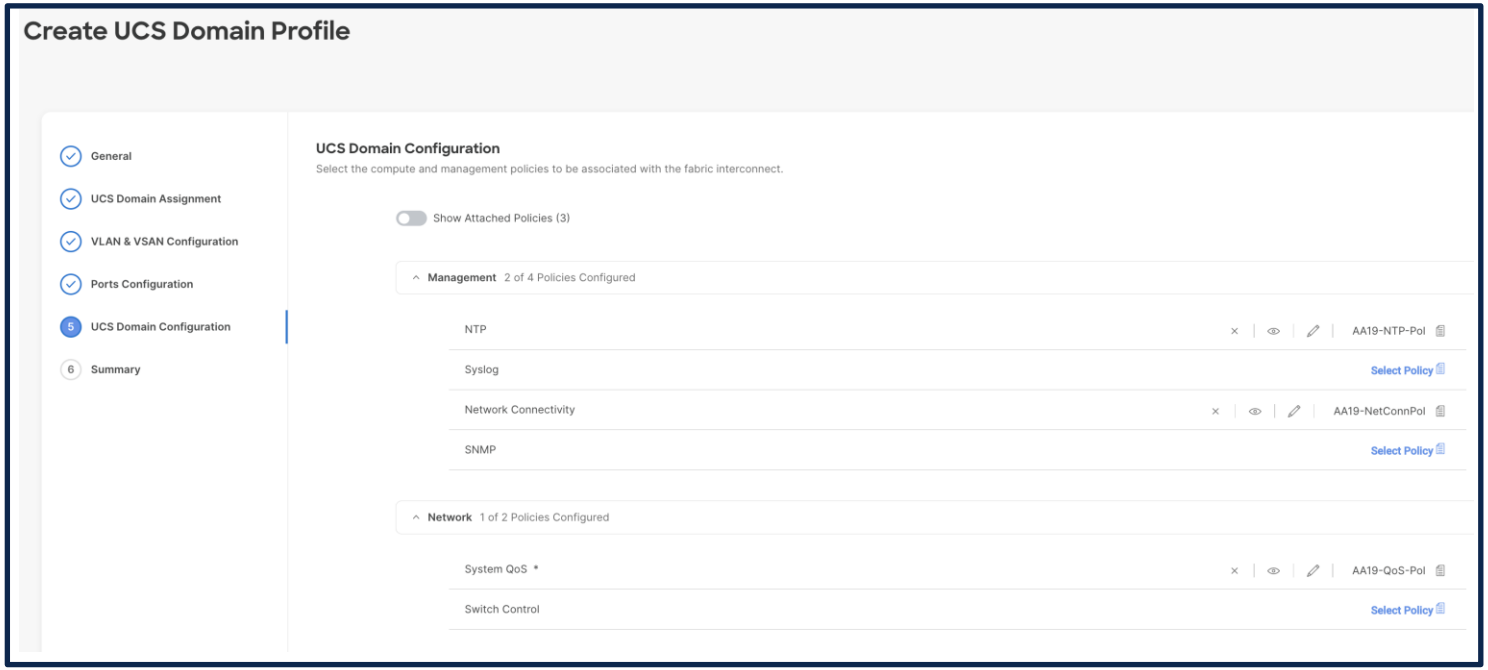
Pools, policies, templates, profiles

Fifth step : Create UCS domain profile



Pools, policies, templates, profiles

Fifth step : Create UCS domain profile

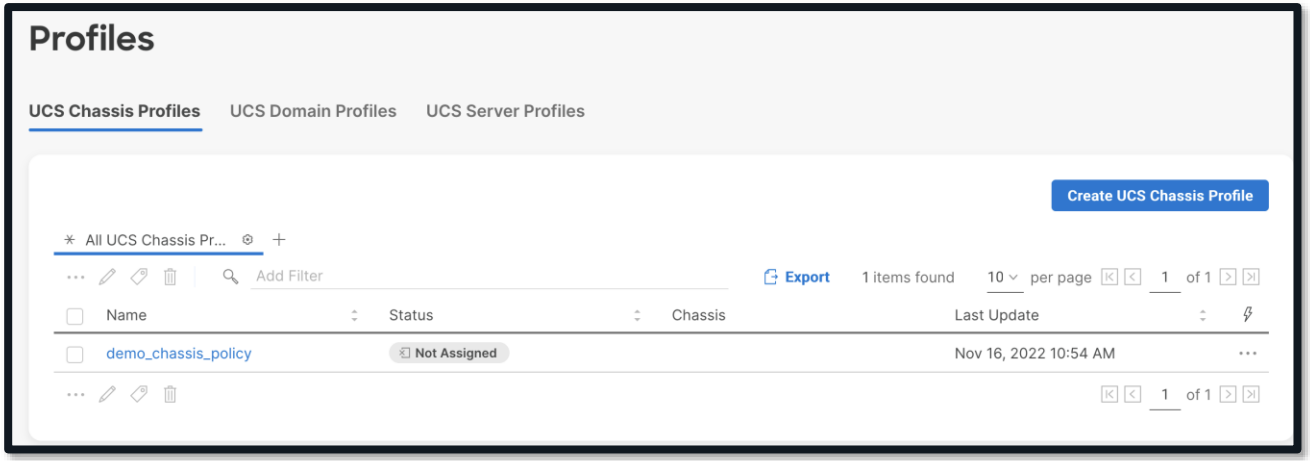


Close/Deploy Profile

Pools, policies, templates, profiles

Fifth step: Chasis profile and discovery

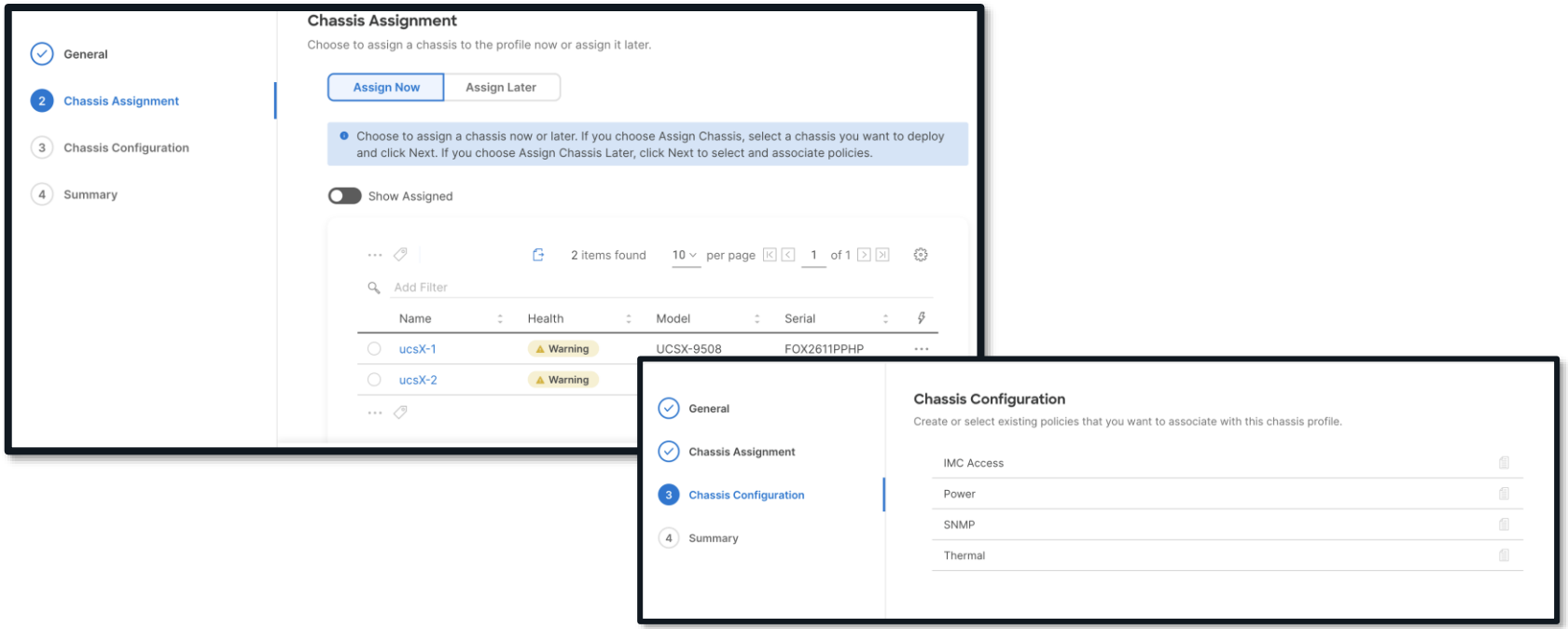
Configure → Profiles → UCS Chassis Profiles → Create UCS Chassis Profile



Pools, policies, templates, profiles

Fifth step: Chasis profile and discovery

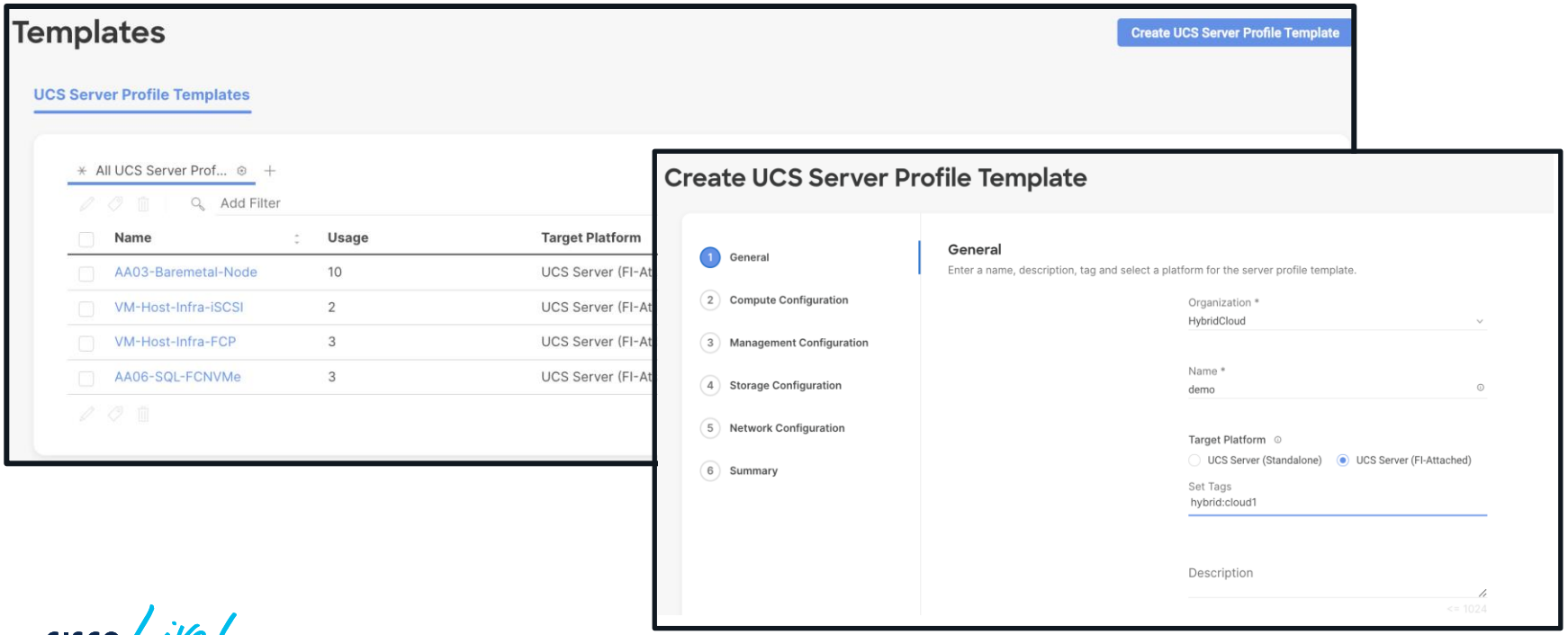
Configure → Profiles → UCS Chassis Profiles → Create UCS Chassis Profile



Pools, policies, templates, profiles

Fifth step: Create Server Profile templates

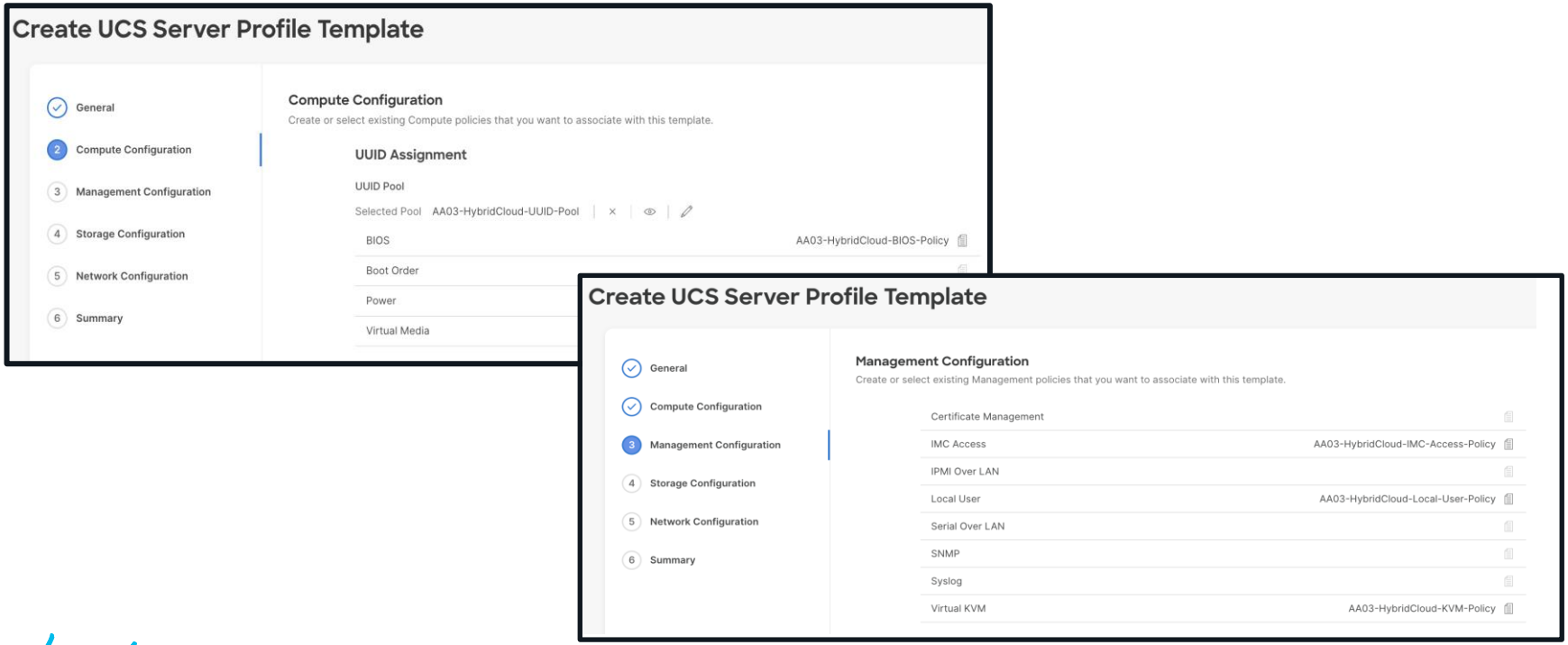
Configure → Templates → Create UCS Server Profile Template



Pools, policies, templates, profiles

Fifth step: Create Server Profile templates

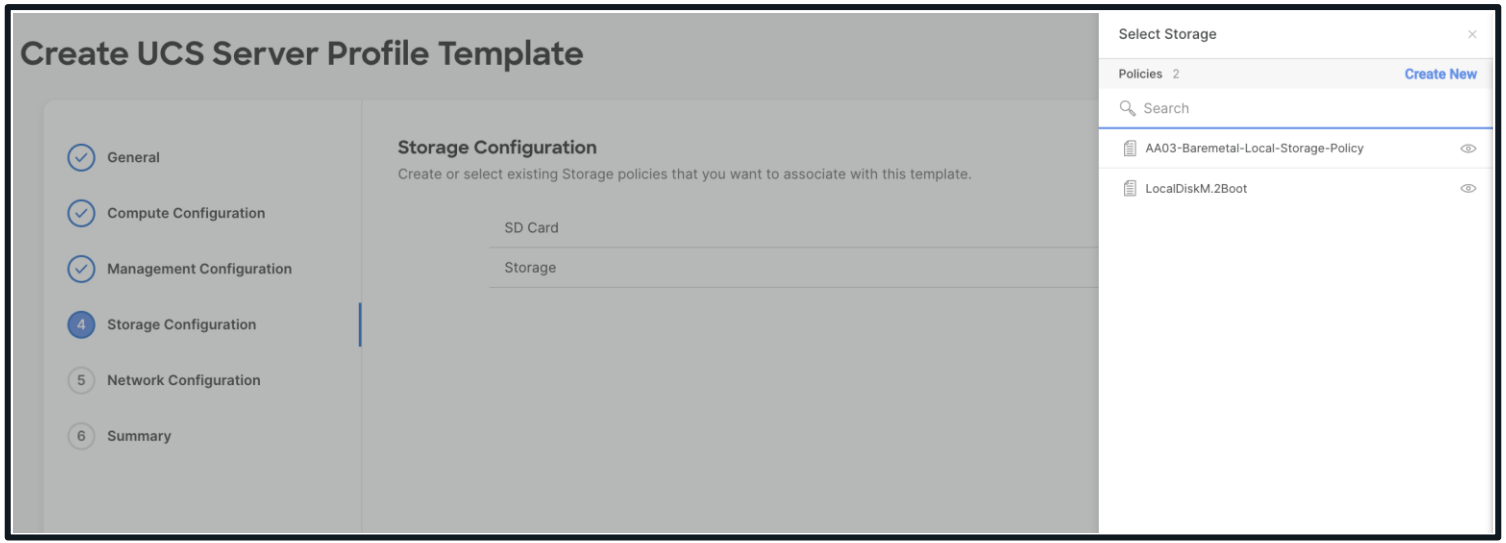
Configure → Profiles → UCS Chassis Profiles → Create UCS Chassis Profile



Pools, policies, templates, profiles

Fifth step: Create Server Profile templates

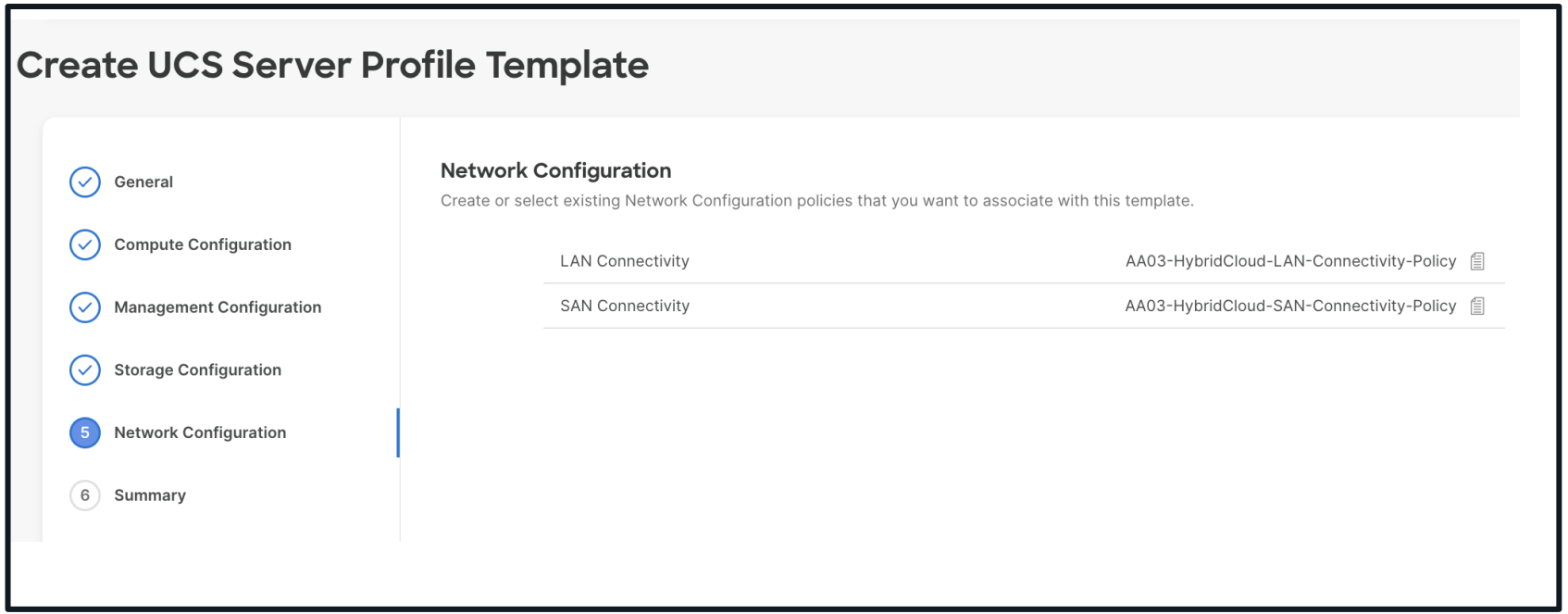
Configure → Templates → Create UCS Server Profile Template



Pools, policies, templates, profiles

Fifth step: Create Server Profile templates

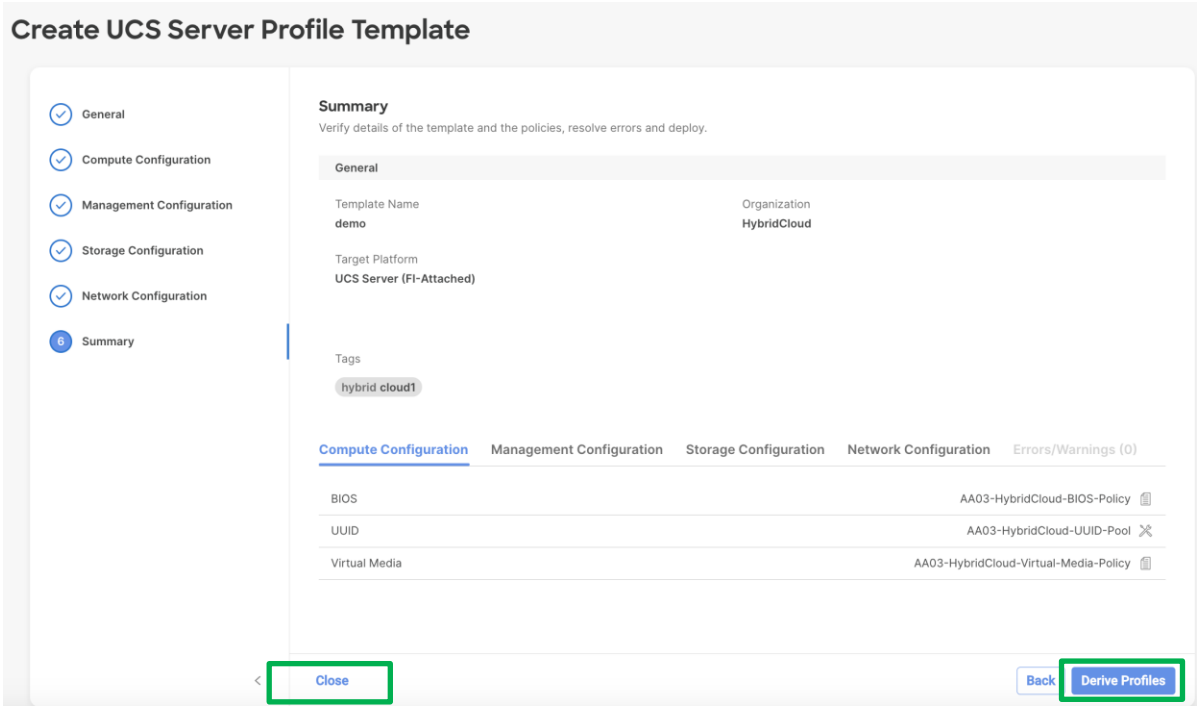
Configure → Templates → Create UCS Server Profile Template



Pools, policies, templates, profiles

Fifth step: Derive Server Profiles

Configure → Templates → Create UCS Server Profile Template



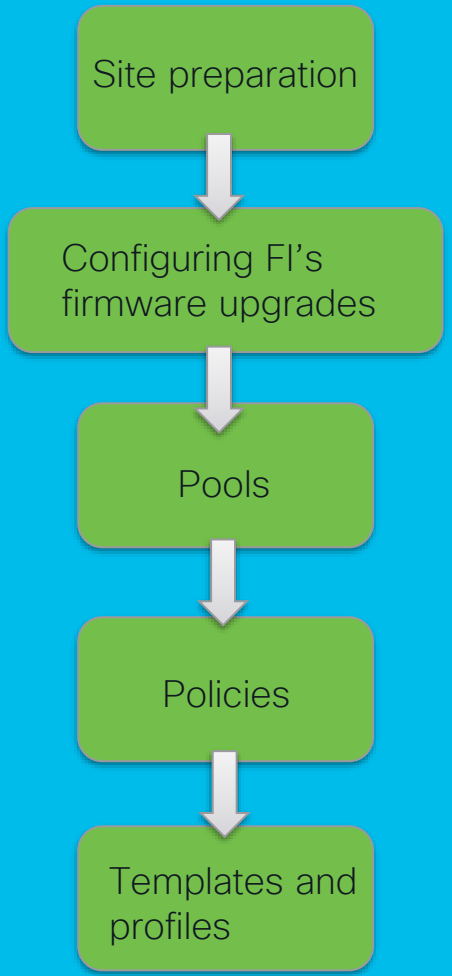
UCS-X Deployment and Best Practices

Workflow on UCS-X and Intersight configuration

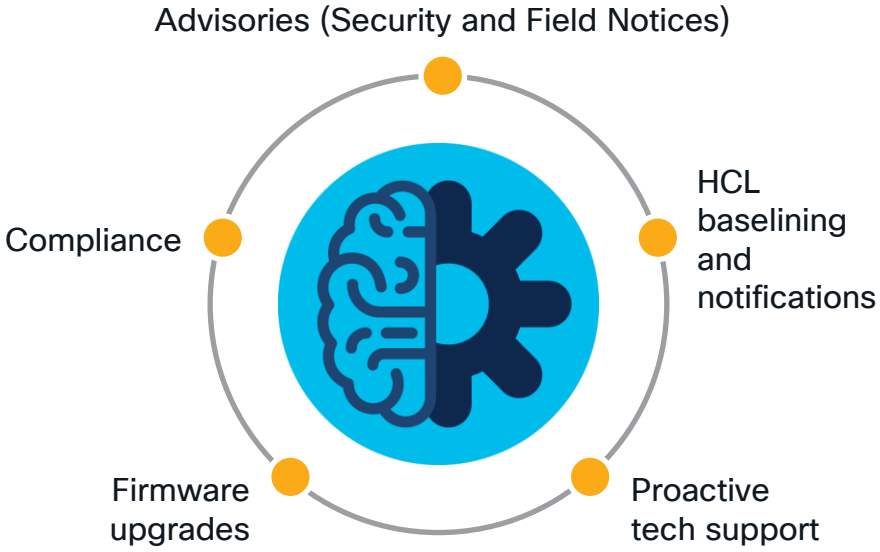
Our infrastructure is configured now

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

But, what now?



Cisco Intersight – Day2 Operations



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

HITACHI

NetApp

PURESTORAGE®

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

Automate storage management and orchestration

Use storage task library to create and execute workflows

ServiceNow plugin

servicenow

Incident management

Basic configuration

Inventory module

Third-party server support

Dell PowerEdge/HPE ProLiant

See inventory and health

Add to automated workflows

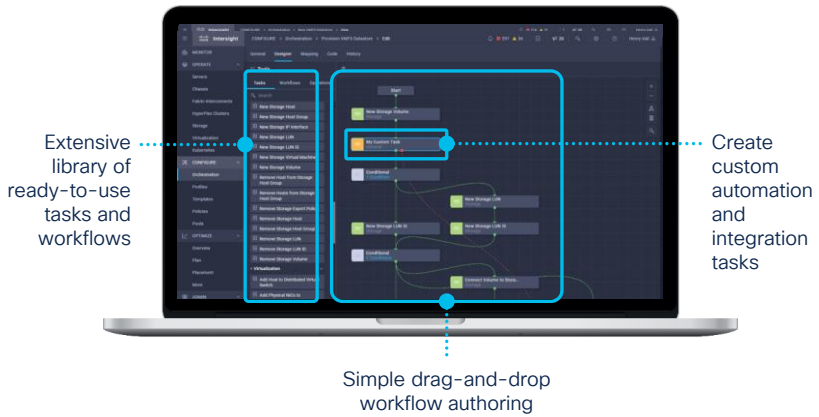
Automate

Create automated workflows to…

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

Two options

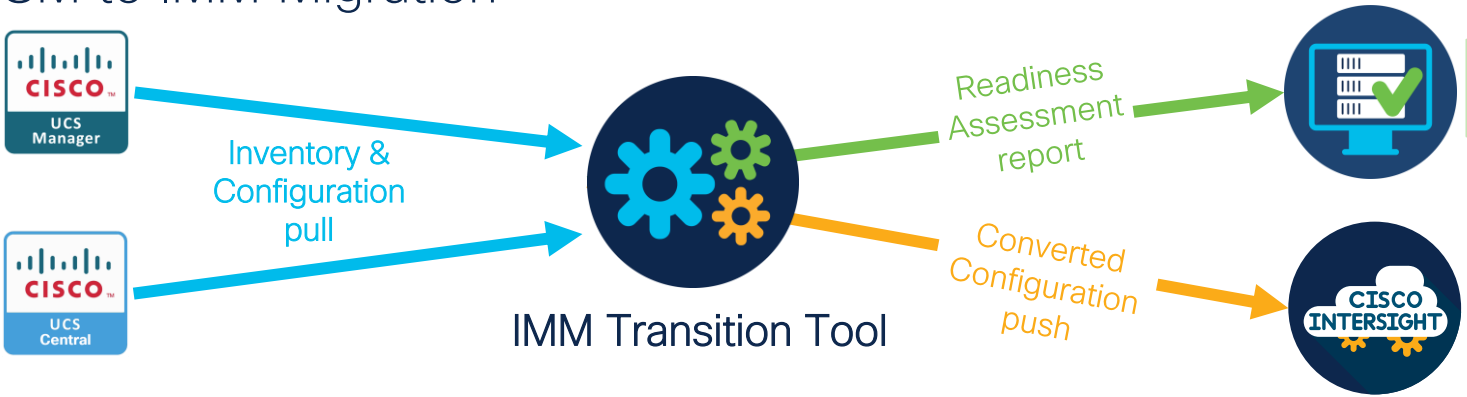
- Workflow designer
  Drag-and-drop workflow authoring
- APIs/SDKs
  For using your existing automation tools (Ansible, Terraform, etc.)



"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

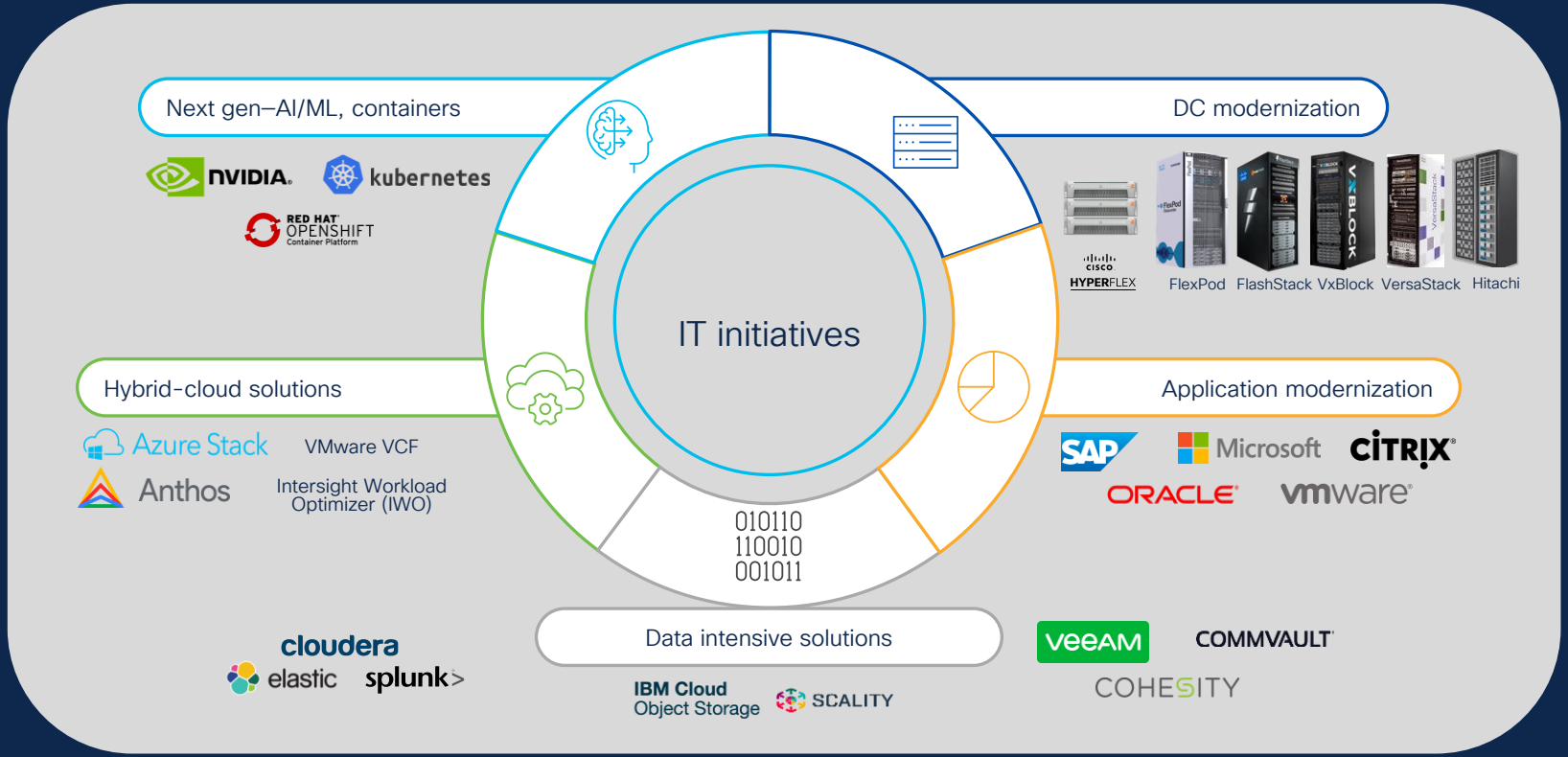
- Assesses **hardware & firmware compatibility**
- **Extends** existing **Service Profile Templates** to Intersight
- Automatically converts related **server policies** (boot, BIOS, LAN/SAN connectivity, etc.)
- Converts **fabric configuration** (VLANs/VSANs, port configuration, etc.)

Cisco UCS X-Series Compute Solutions

cisco Live!

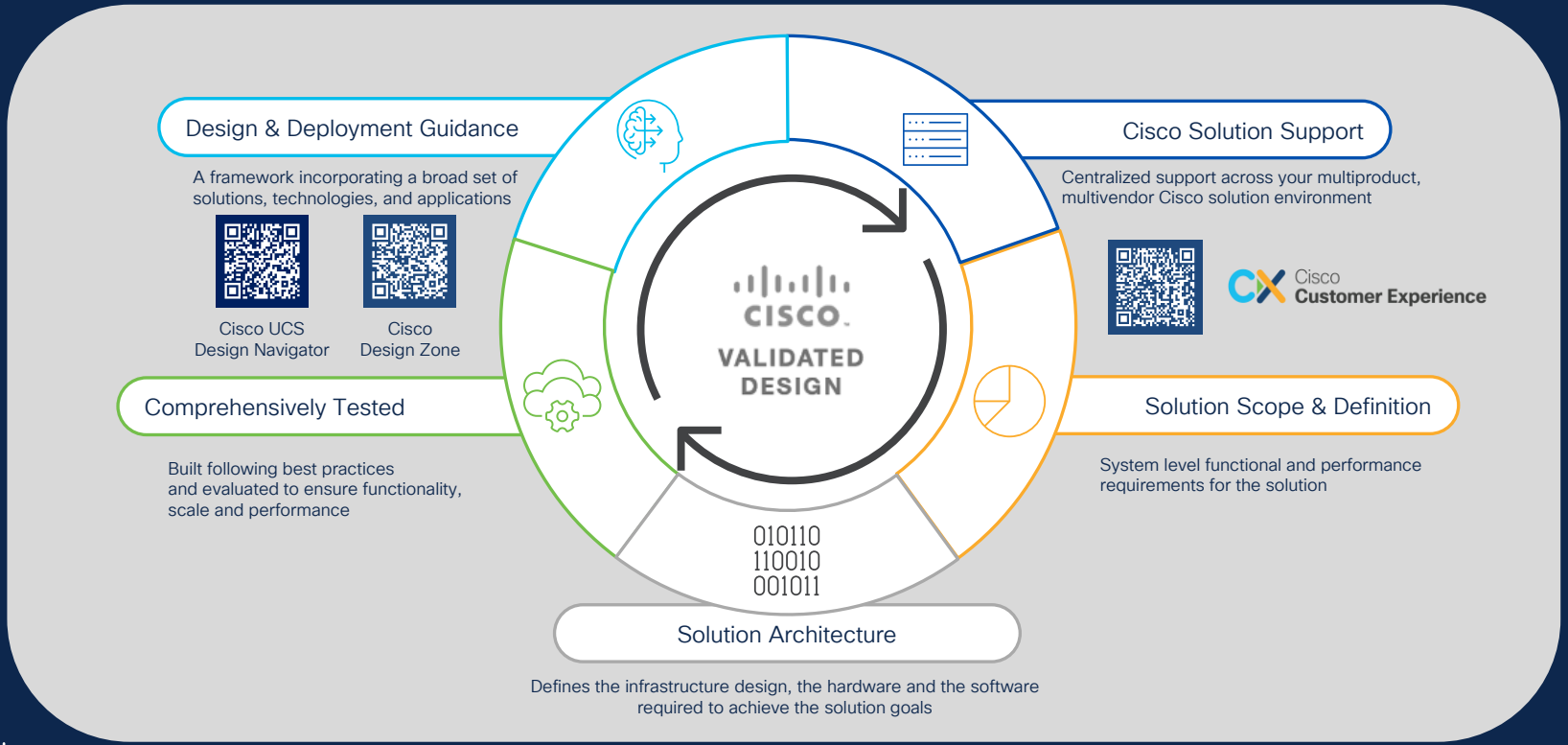
Solutions Powered Portfolio

Simplifying infrastructure & operations



Cisco Validated Design Program

Successful Technology Deployments Addressing Business Initiatives

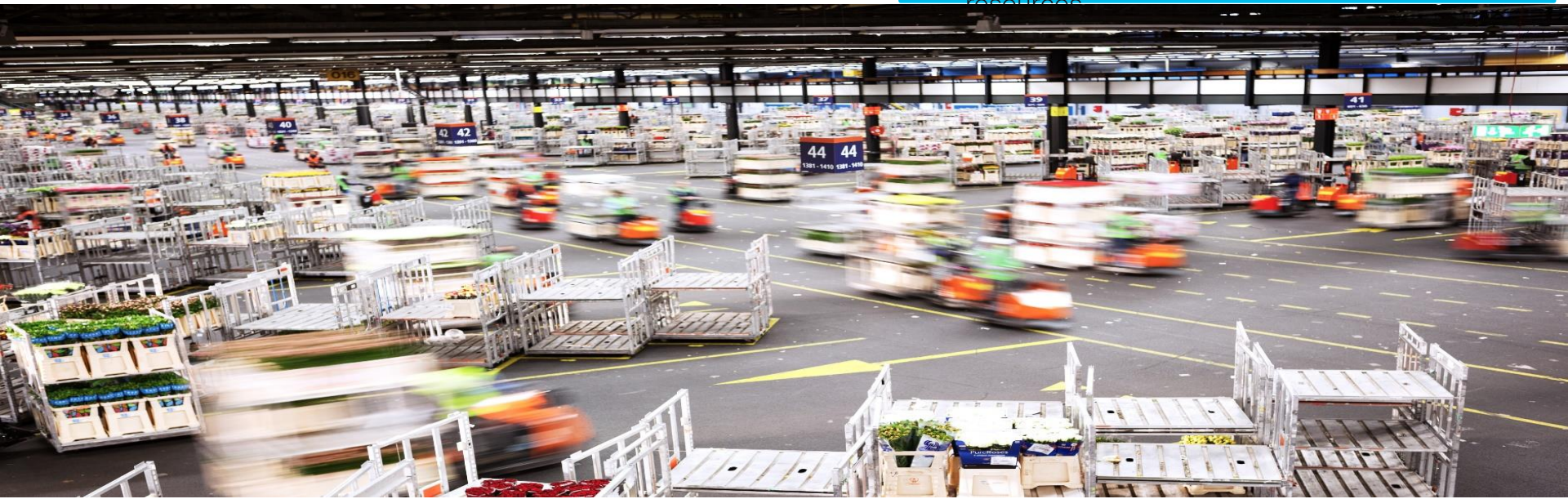


Use case : e-commerce customer

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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The bridge to possible

Thank you


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ALL IN