Cisco Compute Hyperconverged X-Series with Nutanix in Intersight Managed Mode

Design and Deployment Guide

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About the Cisco Validated Design Program

The Cisco Validated Design (CVD) program consists of systems and solutions designed, tested, and documented to facilitate faster, more reliable, and more predictable customer deployments. For more information, go to: http://www.cisco.com/go/designzone.

Executive Summary

Application modernization is the foundation for digital transformation, enabling organizations to integrate advanced technologies. The key technologies include AI, IoT, cloud computing, and data analytics. Once integrated, these technologies enable businesses take advantage of digital innovations and identify opportunities for growth. These applications are diverse , distributed across geographies and deployed across data centers ,edge and remote sites. For instance, new AI workloads demand modern infrastructure to make inferences in branch offices, in retail locations, or at the network edge. The key challenge for IT Administrators is how to quickly deploy and manage infrastructure at scale, whether with many servers at a core data center or with many dispersed locations.

Hyperconverged Infrastructure (HCI) is the solution to many of today's challenges because it offers built-in data redundancy and a smooth path to scaling up computing and storage resources as your needs grow.

The Cisco Compute Hyperconverged X-Series (CCHC) with Nutanix (Cisco HCI with Nutanix) solution helps you overcome the challenge of deploying on a global scale with an integrated workflow. The solution uses Cisco Intersight to deploy and manage physical infrastructure, and Nutanix Prism Central to manage your hyperconverged environment. Cisco and Nutanix engineers have tightly integrated our tools through APIs, establishing a joint cloud-operating model.

Whether it is at the core, edge or remote site, Cisco HCI with Nutanix provides you with a best in class solution , enabling zero touch accelerated deployment through automated workflows, simplified operations with an enhanced solution-support model combined with proactive, automated resiliency, secure cloud-based management and deployment through Cisco Intersight and enhanced flexibility with choice of compute and network infrastructure

This Cisco Validated Design and Deployment Guide provides prescriptive guidance for the design, setup, and configuration to deploy Cisco Compute Hyperconverged X-Series System with Nutanix in Intersight Managed Mode (IMM) allowing nodes to be connected to a pair of Fabric Interconnect switches and servers are centrally managed using Cisco Intersight.

For more information on Cisco Compute for Hyperconverged with Nutanix, go to: https://www.cisco.com/go/hci

Solution Overview

This chapter contains the following:

- Audience
- Purpose of this Document
- Solution Summary

Audience

The intended audience for this document includes sales engineers, field consultants, professional services, IT managers, partner engineering staff, and customers deploying Cisco Compute Hyperconverged X-Series Solution with Nutanix. External references are provided wherever applicable, but readers are expected to be familiar with Cisco Compute, Nutanix, plus infrastructure concepts, network switching and connectivity, and the security policies of the customer installation.

Purpose of this Document

This document describes the design, configuration, and deployment steps for Cisco Compute Hyperconverged X-Series System with Nutanix in Intersight Managed Mode (IMM).

Solution Summary

Cisco Compute Hyperconverged X-Series with Nutanix is a hyperconverged infrastructure (HCI) solution integrating Cisco's best-in-class Unified Computing System (Cisco UCS), datacenter networking, and SaaS Intersight infrastructure management platform with market-leading hyperconverged software from the Nutanix Cloud Platform. This solution supports Nutanix cluster configuration in Intersight for:

- Cisco HCI X-Series Modular Server with Intelligent Fabric Module (IFM) or Fabric Interconnect Module (X series Direct) in Intersight Managed Mode (IMM).
- Cisco HCI standalone rack servers in Intersight Standalone Mode (ISM) and Intersight Managed Mode (IMM).
- A mix of modular servers and rack servers is supported in the same Nutanix cluster, but they must be connected to the same pair of Fabric interconnects. This mix is not supported when using HCI-X Direct.

The Cisco HCI X-Series delivers performance, flexibility, and optimization for deployments in data centers, in the cloud, and at remote sites. This enterprise-class server offers market-leading performance, versatility, and density without compromise for workloads. Up to eight hyperconverged nodes can reside in the 7-Rack-Unit (7RU) Cisco Compute Hyperconverged X9508 Chassis, offering one of the highest densities of compute, I/O, and storage per rack unit in the industry. Cisco Compute Hyperconverged X-Series Direct module simplifies your data center, adapting to the unpredictable needs of modern applications while also providing an edge scaled for remote branch office workloads. It minimizes the IT infrastructure deployed at edge locations to achieve desired business outcomes.

Supported Cisco HCI servers claimed in Intersight can be deployed as a Nutanix cluster with policies and profiles defined in Intersight. The supported HCI servers can be added to an existing Cisco UCS-X 9508 chassis. HCI servers can co-exist with non-HCI servers in the same chassis. The co-engineered integration between Nutanix Prism Central and Cisco Intersight enables seamless zero-touch remote deployment of Nutanix clusters with Nutanix AHV or VMware ESXi hypervisors.

All the required policies for node identity, network connectivity, BIOS, boot order, and more are automatically built based on Nutanix and Cisco recommended best practices. The resulting server profile is associated with each HCI server. After gathering the cluster configuration details, Nutanix Foundation

Central (FC) orchestrates the end-to-end remote cluster deployment through Cisco Intersight without any manual intervention.

Cisco Compute Hyperconverged X-Series with Nutanix software delivers pre-configured Cisco HCI servers that are ready to be deployed as nodes to form Nutanix clusters in a variety of configurations. Each server contains three software layers:

- UCS server firmware
- Hypervisor (Nutanix AHV or VMware ESXi)
- Hyperconverged software (Nutanix AOS)

Cisco Intersight provides integration support with Nutanix Prism Central to deploy Nutanix HCI clusters on Cisco UCS rack mount servers and X-series modular servers. This brings the HCI into remote edge and branch offices (ROBO) with cluster size starting from as low as one node and enterprise data centers for maximum scale. The solution provides maximum flexibility with choice of either a Cisco VIC or an Intel NIC for network connectivity leveraging existing network infrastructure without the need for additional networking gear.

For more information, go to: https://intersight.com/help/saas/configure/hci_nutanix#overview

The present solution elaborates on design and deployment details to deploy Cisco Compute Hyperconverged X-Series System for Nutanix configured in Intersight Managed Mode.

Technology Overview

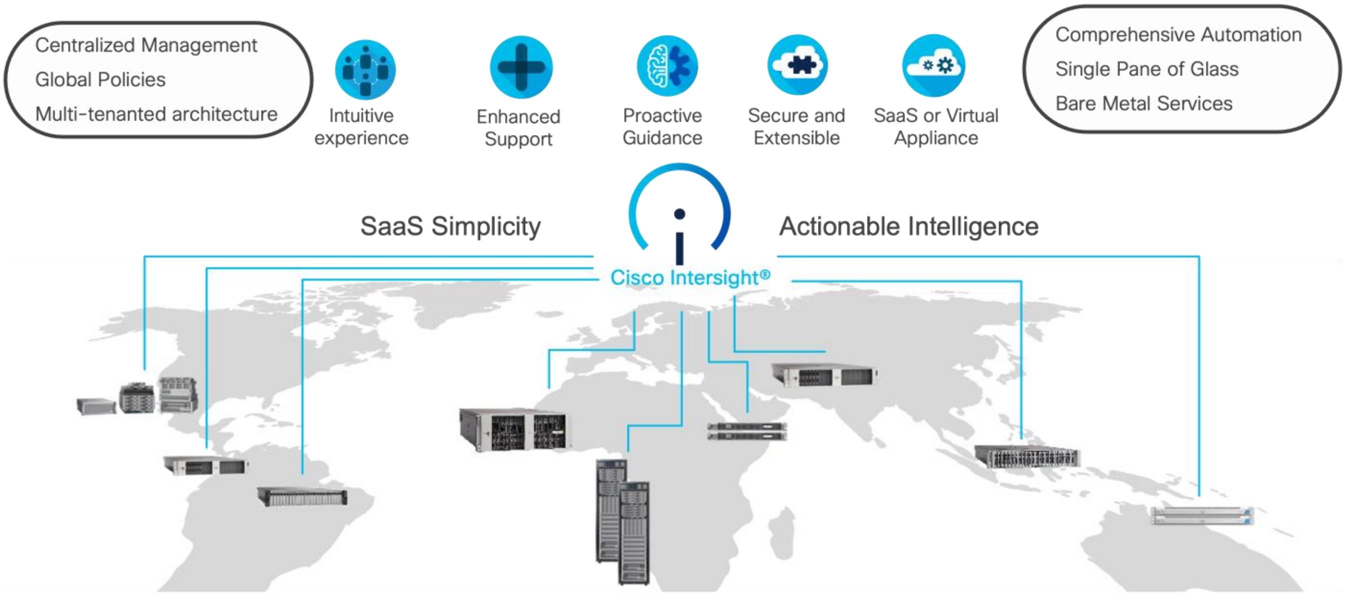
This chapter contains the following:

- Cisco Intersight Platform
- Cisco UCS Fabric Interconnect
- Cisco Compute Hyperconverged X9508 Chassis
- Cisco Compute Hyperconverged X215c M8 All NVMe Nodes

The components deployed in this solution are configured using best practices from both Cisco and Nutanix to deliver an enterprise-class data protection solution deployed on Cisco UCS X-Series Blade Servers. The following sections provide a summary of the key features and capabilities available in these components.

Cisco Intersight Platform

As applications and data become more distributed from core data center and edge locations to public clouds, a centralized management platform is essential. IT agility will be a struggle without a consolidated view of the infrastructure resources and centralized operations. Cisco Intersight provides a cloud-hosted, management and analytics platform for all Cisco Compute for Hyperconverged, Cisco UCS, and other supported third-party infrastructure deployed across the globe. It provides an efficient way of deploying, managing, and upgrading infrastructure in the data center, ROBO, edge, and co-location environments.



Cisco UCS combined with Cisco Intersight delivers a powerful, unified solution for modern infrastructure management. Here are the main benefits:

- Cloud-Native Unified Management: Manage UCS servers, networking, and storage from a single cloud dashboard, accessible anywhere and without on-premises management controllers.
- Automation, Consistency, and Speed: Automate deployment and configuration using templates and policies, ensuring consistent settings, faster provisioning, and reduced manual errors across all UCS resources.
- Enhanced Support Experience: A hosted platform allows Cisco to address issues platform-wide with the experience extending into TAC supported platforms.

- Programmability: End to end programmability with native API, SDK's and popular DevOps toolsets will enable you to deploy and manage the infrastructure quickly and easily.
- Single point of automation: Automation using Ansible, Terraform, and other tools can be done through Intersight for all systems it manages.
- Unified Management: Single pane of glass, consistent operations model, and experience for managing all systems and solutions.

For more information, go to Cisco Intersight here: https://www.cisco.com/site/us/en/products/computing/hybrid-cloud-operations/intersight-platform/index.html

Cisco Intersight Virtual Appliance

Cisco Intersight Virtual Appliance delivers the management features of Intersight in an easy to deploy VMware OVA, Microsoft Hyper-V Server VM, KVM hypervisor, and Nutanix AHV hypervisor. You can deploy Intersight Virtual Appliance as a single-node virtual machine on supported hypervisors such as VMware vSphere, Microsoft Hyper-V, KVM Hypervisor, Nutanix AHV or deploy as a multi-node cluster on VMware vSphere. Intersight Virtual Appliance provides the benefits of Cisco Intersight that offers an intelligent level of management to enable customers to analyze, simplify, and automate their environments in more advanced ways than the previous generations of tools, while allowing more flexibility with additional data locality, security, and compliance requirements.

You can deploy Intersight Virtual Appliance in one of the following modes:

- Intersight Connected Virtual Appliance
- Intersight Private Virtual Appliance
- Intersight Assist

Intersight Connected Virtual Appliance delivers the management features of Intersight while allowing you to control what system details leave your premises. Intersight Connected Virtual Appliance deployments require a connection back to Cisco and Intersight services for automatic updates and access to services for full functionality. Intersight Private Virtual Appliance delivers the management features of Intersight and allows you to ensure that no system details leave your premises. Intersight Private Virtual Appliance deployments is intended for an environment where you operate data centers in a disconnected (air gapped) mode.

For more information, see https://www.cisco.com/c/en/us/td/docs/unified_computing/Intersight/b_Cisco_Intersight_Appliance_Getting_Started_Guide/m_appliance_overview.html#id_131616

Licensing Requirements

Cisco Intersight offers services that allow you to manage, automate, optimize, and support your physical and virtual infrastructure. You can activate licenses for the following services on Cisco Intersight:

- Infrastructure Service and Cloud Orchestrator: Use these services to manage Cisco endpoints such as the Cisco UCS server and Cisco Hyperconverged system. For more information, see the Cisco Infrastructure Services License section: https://www.intersight.com/help/saas/getting_started/licensing_requirements/lic_infra
- Workload Optimizer: Use this service to optimize workloads across the hybrid infrastructure containers. For more information on the service and the features, see the Cisco Workload Optimizer License section: https://www.intersight.com/help/saas/getting_started/licensing_requirements/lic_iwo

The Infrastructure Service and Cloud Orchestrator service use a subscription-based license with multiple tiers. You can choose the required Cisco UCS Server volume tier for the selected subscription term.

Cisco Intersight Infrastructure Services licensing model was simplified to offer the following two tiers:

- Cisco Intersight Infrastructure Services Essentials: The Essentials license tier offers server management with global health monitoring, inventory, proactive support through Cisco TAC integration, multi-factor authentication, along with SDK and API access.
- Cisco Intersight Infrastructure Services Advantage: The Advantage license tier offers advanced server management with extended visibility, ecosystem integration, and automation of Cisco and third-party hardware and software, along with multi-domain solutions.

There are two different license types for Intersight:

- Intersight CVA/SaaS: Used to assign license tiers to targets claimed in SaaS and Connected Virtual Appliance (CVA).
- Intersight PVA: Used to assign license tiers to targets claimed on Private Virtual Appliance (PVA) only.

Intersight requires physical servers to belong to a Licensing tier. This can be done by providing a default tier or setting it individually from Servers View. The enforcement of Cisco Infrastructure Services licenses occurs at the server level and is not dependent on UCS domains. All servers with valid licenses can use the licensed features. As a new Intersight user, you can evaluate Intersight for a period of 90 days without a registered license.

As a new Intersight user, you can evaluate Intersight for a period of 90 days without a registered license. As long as an active license has not been activated, you can initiate a trial at any point in time, not just during the initial account creation. Note that the trial can only be activated once. During this Trial period, the features requiring licenses are available without registering Intersight with Cisco Smart Licensing. You can view details of the Trial period in the Licensing page.

Cisco UCS Fabric Interconnect

The Cisco UCS 6536 Fabric Interconnect (FI) is a core part of the Cisco Unified Computing System, providing both network connectivity and management capabilities for the system. The Cisco UCS 6536 Fabric Interconnect offers line-rate, low-latency, lossless 10/25/40/100 Gigabit Ethernet, Fibre Channel, NVMe over Fabric, and Fibre Channel over Ethernet (FCoE) functions.

The Cisco UCS 6536 Fabric Interconnect provides the communication backbone and management connectivity for the Cisco UCS X-Series compute nodes, Cisco UCS X9508 X-Series chassis, Cisco UCS B-Series blade servers, Cisco UCS 5108 B-Series server chassis, and Cisco UCS C-Series rack servers. All servers attached to a Cisco UCS 6536 Fabric Interconnect become part of a single, highly available management domain. Additionally, by supporting a unified fabric, Cisco UCS 6536 Fabric Interconnect provides both LAN and SAN connectivity for all servers within its domain.

The Cisco UCS 6536 Fabric Interconnect is built to consolidate LAN and SAN traffic onto a single unified fabric, saving on Capital Expenditures (CapEx) and Operating Expenses (OpEx) associated with multiple parallel networks, different types of adapter cards, switching infrastructure, and cabling within racks.

The Cisco UCS 6536 Fabric Interconnect can be managed through Cisco Intersight. The UCS 6536 Fabric Interconnect supports Intersight Managed Mode (IMM), which enables full manageability of Cisco UCS elements behind the UCS 6536 FI through Cisco Intersight. UCS 6536 Fabric Interconnect in Intersight managed mode will support Cisco UCS product models, including Cisco UCS X-Series Servers, Cisco UCS B-Series Blade Servers, and C-Series Rack Servers, as well as the associated storage resources and networks. For more details, go to: https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs6536-fabric-interconnect-ds.html

Cisco Compute Hyperconverged X9508 Chassis

The Cisco Compute Hyperconverged X-Series System with Nutanix combines the operational simplicity of Nutanix Cloud Platform (NCP) with the efficiency, flexibility, and sustainability of the Cisco UCS X-Series Modular System. The X-Series system comprises modular components that can be assembled into systems through the Cisco Intersight cloud-operations platform.

The image below shows Cisco Compute Hyperconverged X-Series System, front (left) and back (right):

The Cisco Compute Hyperconverged X-Series System is engineered to be adaptable and future-ready. The 7-Rack-Unit (7RU) chassis has 8 x front-facing flexible slots. These can house a combination of hyperconverged nodes, compute nodes, and a pool of future I/O resources that may include GPU accelerators, disk storage, and nonvolatile memory. 2 x 9108 25G Intelligent Fabric Modules (IFMs) at the top of the chassis that connect the chassis to upstream 6400 Series Fabric Interconnects or 6500 Series fabric interconnects. At the bottom are slots ready to house future I/O modules that can flexibly connect the compute modules with I/O devices. We call this connectivity Cisco UCS X-Fabric technology because “X” is a variable that can evolve with new technology developments.

Cisco Compute Hyperconverged X-Series with Nutanix is supported on both the Cisco Compute Hyperconverged X-Series and Cisco Compute Hyperconverged X-Series Direct platforms. The primary distinction between these two platforms lies in the integration of the fabric module. The X-Series Direct features integrated fabric interconnects, which are particularly beneficial for edge, and small- or remote-office use cases, offering a self-contained system without the need for top-of-rack switches.

The X-Series, equipped with fabric interconnects, enables seamless scalability up to 160 servers, distributed across 20 chassis, each containing up to 8 nodes. This architecture simplifies management by eliminating the need for dedicated chassis management and blade switches, while also reduces cabling requirements, thereby minimizing complexity, and enhancing operational efficiency.

For more information, see https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperconverged-x9508-chassis-ds.html

Cisco Compute Hyperconverged X215c M8 All NVMe Nodes

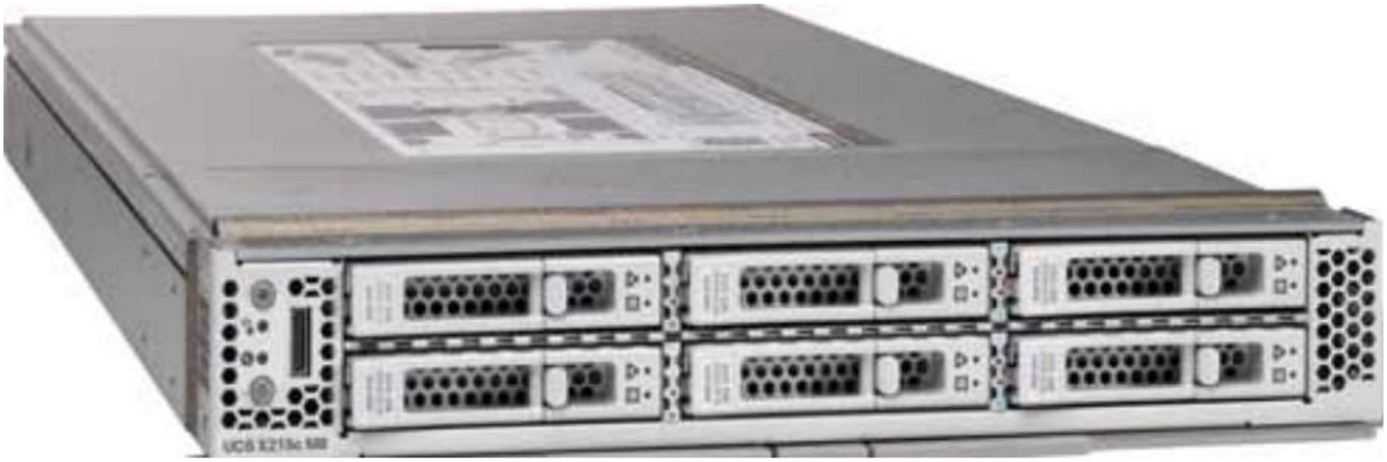
Cisco Compute Hyperconverged x215c M8 All NVMe Node delivers performance, flexibility, and optimization for deployments in data centers, in the cloud, and at remote sites. This enterprise-class server offers market-leading performance, versatility, and density without compromise for workloads. Up to 8 compute nodes can reside in the 7-Rack-Unit (7RU) Cisco UCS X9508 Server Chassis, offering one of the highest densities of compute, I/O, and storage per rack unit in the industry.

The Cisco Compute Hyperconverged x215c M8 All NVMe Node family powers 5th Gen AMD EPYC processors with 150 percent more cores per socket designed using AMD's chiplet architecture. With advanced features such as AMD Infinity Guard, compute-intensive applications will see significant performance improvements and reap other benefits such as power and cost efficiencies.

For more details, see: https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/compute-hyperconverged/x215c-m8-all-nvme-node-ds.html

For Cisco Compute Hyperconverged with Nutanix HCIXNX215c M8 All NVMe Compute Node Spec sheet, see: https://www.cisco.com/c/dam/en/us/products/collateral/hyperconverged-infrastructure/compute-hyperconverged-hcixnx215c-m8-specsheet.pdf

Figure 1. Front View: HCIXNX215C-M8SN-U All-NVMe/All-Flash Servers



For ordering information, see the Cisco Compute Hyperconverged X-Series M8 with Nutanix (CCHC + N) Ordering Guide.

Reference Architecture

This chapter contains the following:

- Deployment Architecture
- Licensing
- Software Components

Deployment Architecture

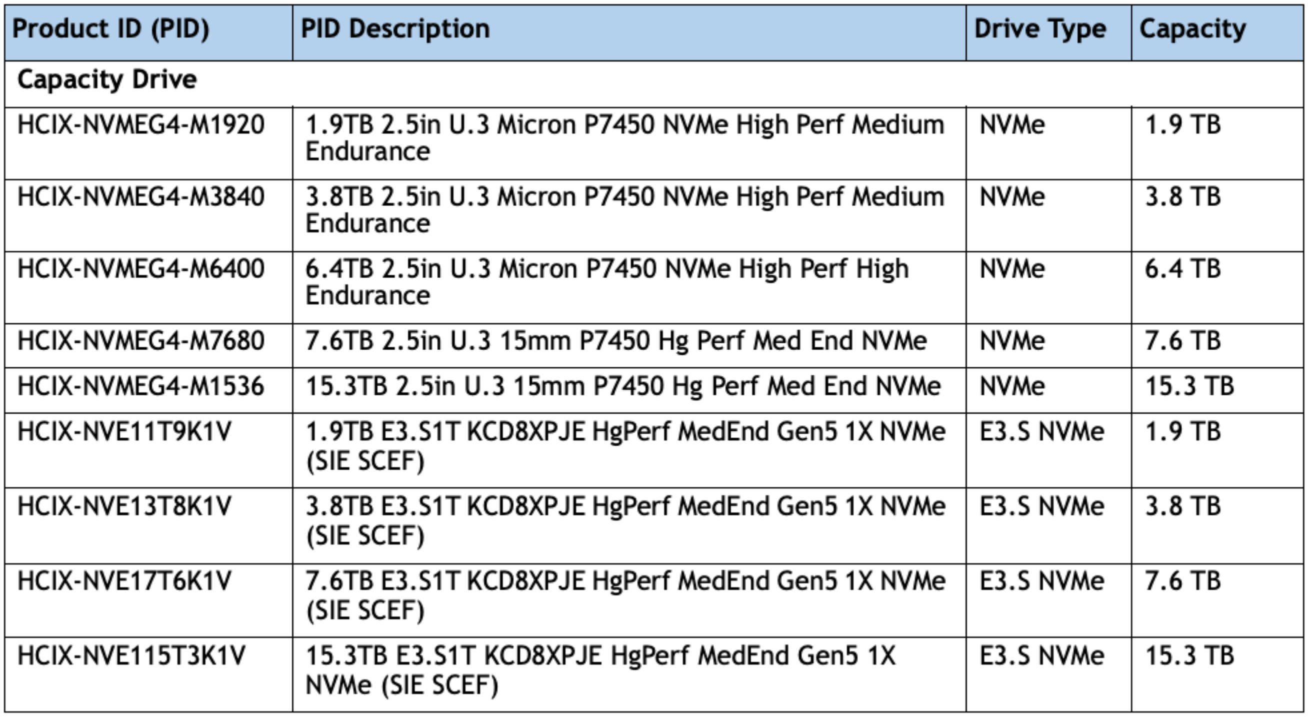
The deployment architecture for Cisco Compute Hyperconverged X-Series with Nutanix in Intersight Managed Mode (IMM) is detailed in Figure 2. The entire Day0 deployment is managed through Cisco Intersight and Nutanix Foundation Central enabled through Prism Central.

Each Compute Hyperconverged X215c M8 All NVMe server nodes is configured with the following:

- 1 x AMD EPYC 9355P 32-Core Processor
- 768 GB DDR5 memory
- 2 x 480GB M.2 card managed through M.2 RAID controller
- 6 x 1.9 TB NVMe managed through NVMe-direct-U.3 controller
- 1 x Cisco VIC 15230 2x 100G mLOM X-Series w/Secure Boot

Note: Cisco Compute Hyperconverged HCIXNX215c M8 All-NVMe Node support both NVMe U.3 as well E3.S NVMe drives. Approved configuration is either option 1: three to six U.3 NVMe drives or option 2: three to eight E3.S NVMe capacity drives. However, E3.S NVMe and U.3 NVMe drives cannot be mixed.

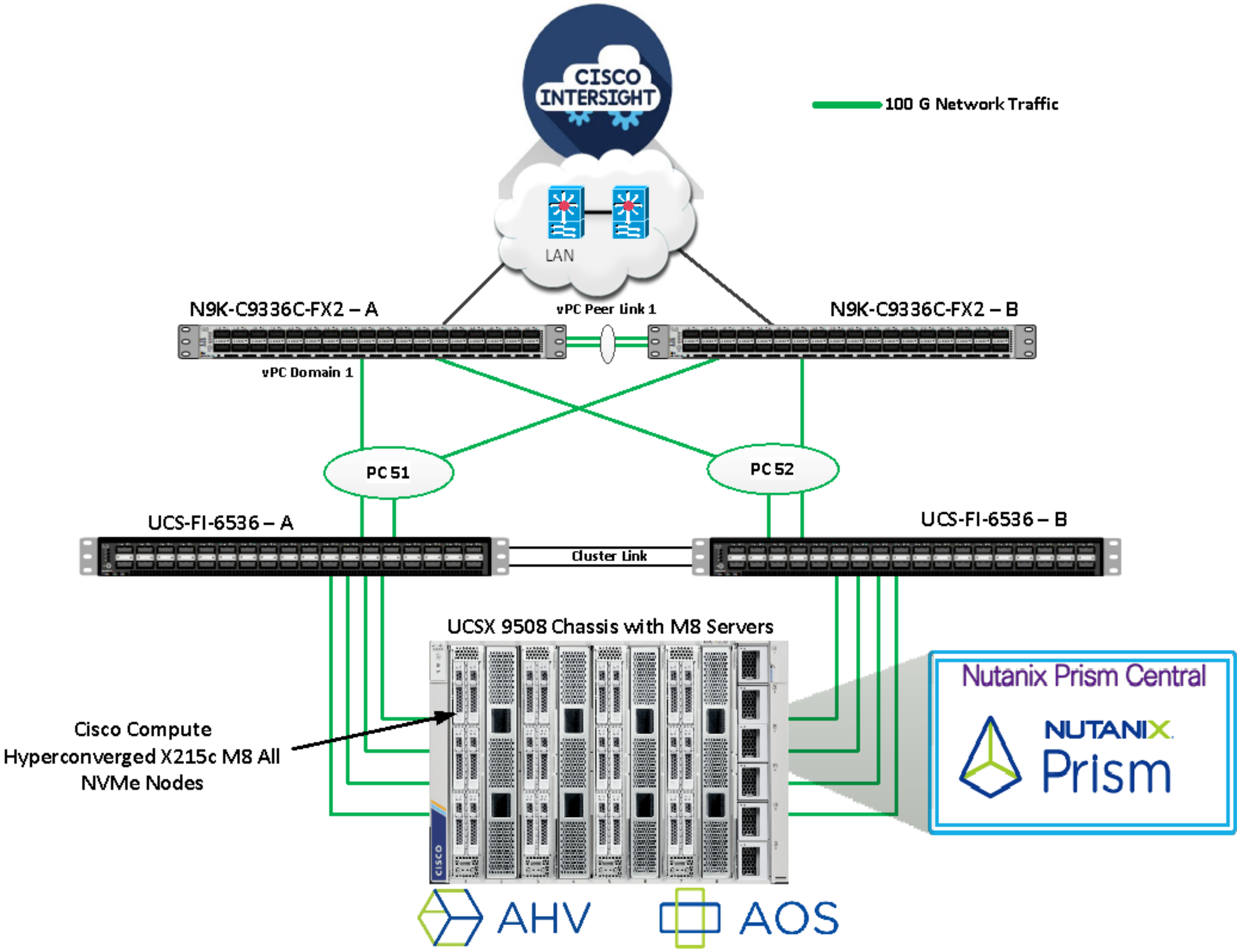
- This solution used NVMe U.3 drives but this solution can also be deployed using E3.S PCIe NVMe drives.
- The Cisco Compute Hyperconverged HCIXNX215c M8 All-NVMe Compute Node has one front mezzanine connector that can accommodate one of the following mezzanine cards:
- HCIX-X10C-PT4F: Compute Node compute pass through controller supports up to 6 NVMe U.2/U.3 drives
- HCIX-X10C-PTE3: Compute Pass Through Controller supports up to eight E3.S PCIe NVMe drives.
- Cisco supports the following NVMe and E3.S drives as shown below:



Product ID (PID)	PID Description	Drive Type	Capacity
Capacity Drive			
HCIX-NVMEG4-M1920	1.9TB 2.5in U.3 Micron P7450 NVMe High Perf Medium Endurance	NVMe	1.9 TB
HCIX-NVMEG4-M3840	3.8TB 2.5in U.3 Micron P7450 NVMe High Perf Medium Endurance	NVMe	3.8 TB
HCIX-NVMEG4-M6400	6.4TB 2.5in U.3 Micron P7450 NVMe High Perf High Endurance	NVMe	6.4 TB
HCIX-NVMEG4-M7680	7.6TB 2.5in U.3 15mm P7450 Hg Perf Med End NVMe	NVMe	7.6 TB
HCIX-NVMEG4-M1536	15.3TB 2.5in U.3 15mm P7450 Hg Perf Med End NVMe	NVMe	15.3 TB
HCIX-NVE11T9K1V	1.9TB E3.S1T KCD8XPJE HgPerf MedEnd Gen5 1X NVMe (SIE SCEF)	E3.S NVMe	1.9 TB
HCIX-NVE13T8K1V	3.8TB E3.S1T KCD8XPJE HgPerf MedEnd Gen5 1X NVMe (SIE SCEF)	E3.S NVMe	3.8 TB
HCIX-NVE17T6K1V	7.6TB E3.S1T KCD8XPJE HgPerf MedEnd Gen5 1X NVMe (SIE SCEF)	E3.S NVMe	7.6 TB
HCIX-NVE115T3K1V	15.3TB E3.S1T KCD8XPJE HgPerf MedEnd Gen5 1X NVMe (SIE SCEF)	E3.S NVMe	15.3 TB

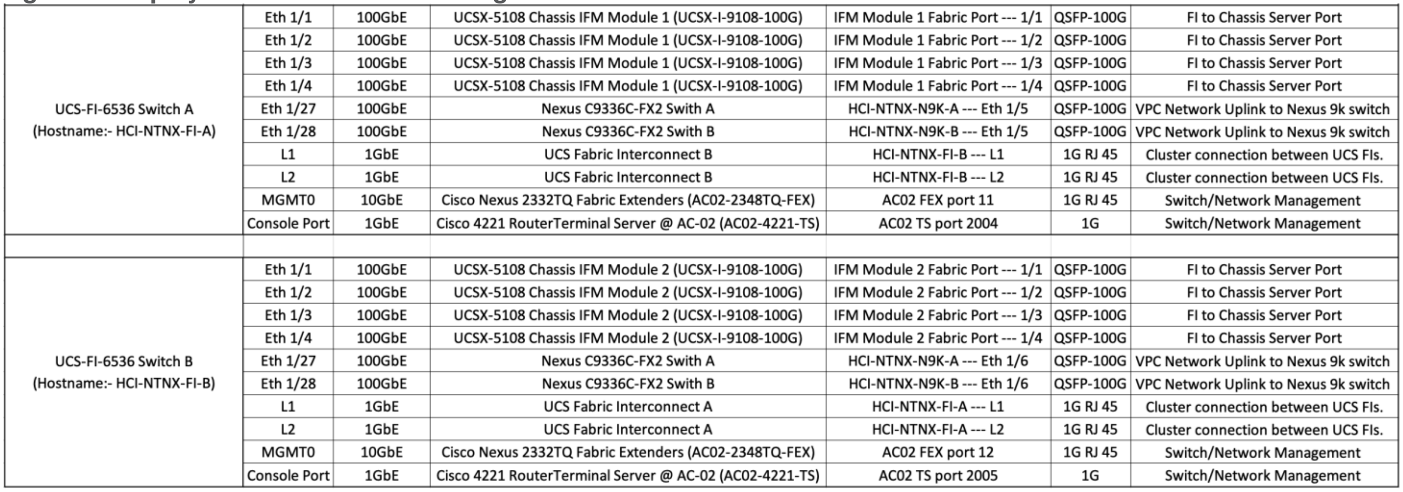
Note: This document illustrates the Cisco HCIXNX215c M8 All-NVMe/All-Flash Servers specifications as validated in this document. You have several options to configure CPU, Memory, Network cards, GPUs and Storage drives as detailed in this spec sheet: https://www.cisco.com/c/dam/en/us/products/collateral/hyperconverged-infrastructure/compute-hyperconverged-hcixnx215c-m8-specsheet.pdf

Figure 2. High-level Deployment Architecture



[Figure 3](#) illustrates the cabling diagram for fabric interconnects in this deployment mode.

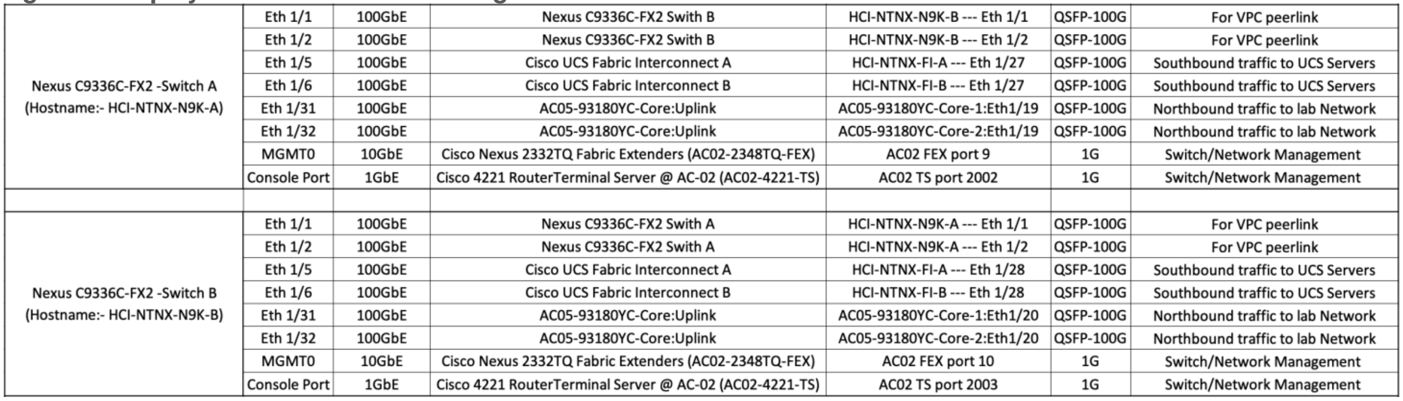
Figure 3. Deployment Architecture Cabling for Fabric Interconnects



UCS-FI-6536 Switch A (Hostname:- HCI-NTNX-FI-A)	Eth 1/1	100GbE	UCSX-5108 Chassis IFM Module 1 (UCSX-I-9108-100G)	IFM Module 1 Fabric Port --- 1/1	QSFP-100G	FI to Chassis Server Port
	Eth 1/2	100GbE	UCSX-5108 Chassis IFM Module 1 (UCSX-I-9108-100G)	IFM Module 1 Fabric Port --- 1/2	QSFP-100G	FI to Chassis Server Port
	Eth 1/3	100GbE	UCSX-5108 Chassis IFM Module 1 (UCSX-I-9108-100G)	IFM Module 1 Fabric Port --- 1/3	QSFP-100G	FI to Chassis Server Port
	Eth 1/4	100GbE	UCSX-5108 Chassis IFM Module 1 (UCSX-I-9108-100G)	IFM Module 1 Fabric Port --- 1/4	QSFP-100G	FI to Chassis Server Port
	Eth 1/27	100GbE	Nexus C9336C-FX2 Swith A	HCI-NTNX-N9K-A --- Eth 1/5	QSFP-100G	VPC Network Uplink to Nexus 9k switch
	Eth 1/28	100GbE	Nexus C9336C-FX2 Swith B	HCI-NTNX-N9K-B --- Eth 1/5	QSFP-100G	VPC Network Uplink to Nexus 9k switch
	L1	1GbE	UCS Fabric Interconnect B	HCI-NTNX-FI-B --- L1	1G RJ 45	Cluster connection between UCS FIs.
	L2	1GbE	UCS Fabric Interconnect B	HCI-NTNX-FI-B --- L2	1G RJ 45	Cluster connection between UCS FIs.
	MGMT0	10GbE	Cisco Nexus 2332TQ Fabric Extenders (AC02-2348TQ-FEX)	AC02 FEX port 11	1G RJ 45	Switch/Network Management
	Console Port	1GbE	Cisco 4221 RouterTerminal Server @ AC-02 (AC02-4221-TS)	AC02 TS port 2004	1G	Switch/Network Management
UCS-FI-6536 Switch B (Hostname:- HCI-NTNX-FI-B)	Eth 1/1	100GbE	UCSX-5108 Chassis IFM Module 2 (UCSX-I-9108-100G)	IFM Module 2 Fabric Port --- 1/1	QSFP-100G	FI to Chassis Server Port
	Eth 1/2	100GbE	UCSX-5108 Chassis IFM Module 2 (UCSX-I-9108-100G)	IFM Module 2 Fabric Port --- 1/2	QSFP-100G	FI to Chassis Server Port
	Eth 1/3	100GbE	UCSX-5108 Chassis IFM Module 2 (UCSX-I-9108-100G)	IFM Module 2 Fabric Port --- 1/3	QSFP-100G	FI to Chassis Server Port
	Eth 1/4	100GbE	UCSX-5108 Chassis IFM Module 2 (UCSX-I-9108-100G)	IFM Module 2 Fabric Port --- 1/4	QSFP-100G	FI to Chassis Server Port
	Eth 1/27	100GbE	Nexus C9336C-FX2 Swith A	HCI-NTNX-N9K-A --- Eth 1/6	QSFP-100G	VPC Network Uplink to Nexus 9k switch
	Eth 1/28	100GbE	Nexus C9336C-FX2 Swith B	HCI-NTNX-N9K-B --- Eth 1/6	QSFP-100G	VPC Network Uplink to Nexus 9k switch
	L1	1GbE	UCS Fabric Interconnect A	HCI-NTNX-FI-A --- L1	1G RJ 45	Cluster connection between UCS FIs.
	L2	1GbE	UCS Fabric Interconnect A	HCI-NTNX-FI-A --- L2	1G RJ 45	Cluster connection between UCS FIs.
	MGMT0	10GbE	Cisco Nexus 2332TQ Fabric Extenders (AC02-2348TQ-FEX)	AC02 FEX port 12	1G RJ 45	Switch/Network Management
	Console Port	1GbE	Cisco 4221 RouterTerminal Server @ AC-02 (AC02-4221-TS)	AC02 TS port 2005	1G	Switch/Network Management

[Figure 4](#) illustrates the cabling diagram for Nexus N9k-9336C-FX2 in this deployment mode.

Figure 4. Deployment Architecture Cabling



Nexus C9336C-FX2 -Switch A (Hostname:- HCI-NTNX-N9K-A)	Eth 1/1	100GbE	Nexus C9336C-FX2 Swith B	HCI-NTNX-N9K-B --- Eth 1/1	QSFP-100G	For VPC peerlink
	Eth 1/2	100GbE	Nexus C9336C-FX2 Swith B	HCI-NTNX-N9K-B --- Eth 1/2	QSFP-100G	For VPC peerlink
	Eth 1/5	100GbE	Cisco UCS Fabric Interconnect A	HCI-NTNX-FI-A --- Eth 1/27	QSFP-100G	Southbound traffic to UCS Servers
	Eth 1/6	100GbE	Cisco UCS Fabric Interconnect B	HCI-NTNX-FI-B --- Eth 1/27	QSFP-100G	Southbound traffic to UCS Servers
	Eth 1/31	100GbE	AC05-93180YC-Core:Uplink	AC05-93180YC-Core-1:Eth1/19	QSFP-100G	Northbound traffic to lab Network
	Eth 1/32	100GbE	AC05-93180YC-Core:Uplink	AC05-93180YC-Core-2:Eth1/19	QSFP-100G	Northbound traffic to lab Network
	MGMT0	10GbE	Cisco Nexus 2332TQ Fabric Extenders (AC02-2348TQ-FEX)	AC02 FEX port 9	1G	Switch/Network Management
	Console Port	1GbE	Cisco 4221 RouterTerminal Server @ AC-02 (AC02-4221-TS)	AC02 TS port 2002	1G	Switch/Network Management
Nexus C9336C-FX2 -Switch B (Hostname:- HCI-NTNX-N9K-B)	Eth 1/1	100GbE	Nexus C9336C-FX2 Swith A	HCI-NTNX-N9K-A --- Eth 1/1	QSFP-100G	For VPC peerlink
	Eth 1/2	100GbE	Nexus C9336C-FX2 Swith A	HCI-NTNX-N9K-A --- Eth 1/2	QSFP-100G	For VPC peerlink
	Eth 1/5	100GbE	Cisco UCS Fabric Interconnect A	HCI-NTNX-FI-A --- Eth 1/28	QSFP-100G	Southbound traffic to UCS Servers
	Eth 1/6	100GbE	Cisco UCS Fabric Interconnect B	HCI-NTNX-FI-B --- Eth 1/28	QSFP-100G	Southbound traffic to UCS Servers
	Eth 1/31	100GbE	AC05-93180YC-Core:Uplink	AC05-93180YC-Core-1:Eth1/20	QSFP-100G	Northbound traffic to lab Network
	Eth 1/32	100GbE	AC05-93180YC-Core:Uplink	AC05-93180YC-Core-2:Eth1/20	QSFP-100G	Northbound traffic to lab Network
	MGMT0	10GbE	Cisco Nexus 2332TQ Fabric Extenders (AC02-2348TQ-FEX)	AC02 FEX port 10	1G	Switch/Network Management
	Console Port	1GbE	Cisco 4221 RouterTerminal Server @ AC-02 (AC02-4221-TS)	AC02 TS port 2003	1G	Switch/Network Management

Licensing

Cisco Intersight Licensing

Cisco Intersight uses a subscription-based license with multiple tiers. Each Cisco automatically includes a Cisco Intersight Essential trial license when you access the Cisco Intersight portal and claim a device.

More information about Cisco Intersight Licensing and the features supported in each license can be found here: https://intersight.com/help/saas/getting_started/licensing_requirements/lic_intro

In this solution, using Cisco Intersight Advantage License Tier enables the following:

- Configuration of Server Profiles for Nutanix on Cisco UCS X-Series Blade Servers
- Integration of Cisco Intersight with Foundation Central for Day 0 to Day N operations

Software Components

Table 1 lists the software components and the versions validated for the Cisco Compute Hyperconverged X-Series with Nutanix in Intersight Managed Software Components.

Table 1. Software components and versions

Component	Version
Cisco Nexus 9000 C9336C-FX2 Switch	BIOS: version 05.53, NXOS: version 10.4(5)
Cisco UCS Fabric Interconnect	Bundle Version: 4.3(6.250084), NX-OS Version 9.3(5)I43(6b)
Cisco UCSX-215C M8 All NVMe server	Bundle Version: 5.4(0.250048)
Foundation Central	1.8.2
Prism Central deployed on ESXi cluster	pc.2022.6.0.12 (pc.2022.6.0.12.ova) pc.7.3.1.1 (pc.7.3.1.1.ova)
AHV Installer (ISO)	Version: 10.3.1.1 (Filename: AHV-DVD-x86_64-10.3.1.1-11.iso)
AOS Installer (ISO)	Version: 7.3.1.1 (Filename: nutanix_installer_package-release-ganges-7.3.1.1-stable-1d17e9eef51d876f64c25d416c1da4bfd4b04d3b-x86_64.tar.gz)

Component	Version
Cisco Intersight Managed Mode (IMM) Transition Tool	Version: v5.1.1 (Filename: MM-Transition-5.1.1.ova)

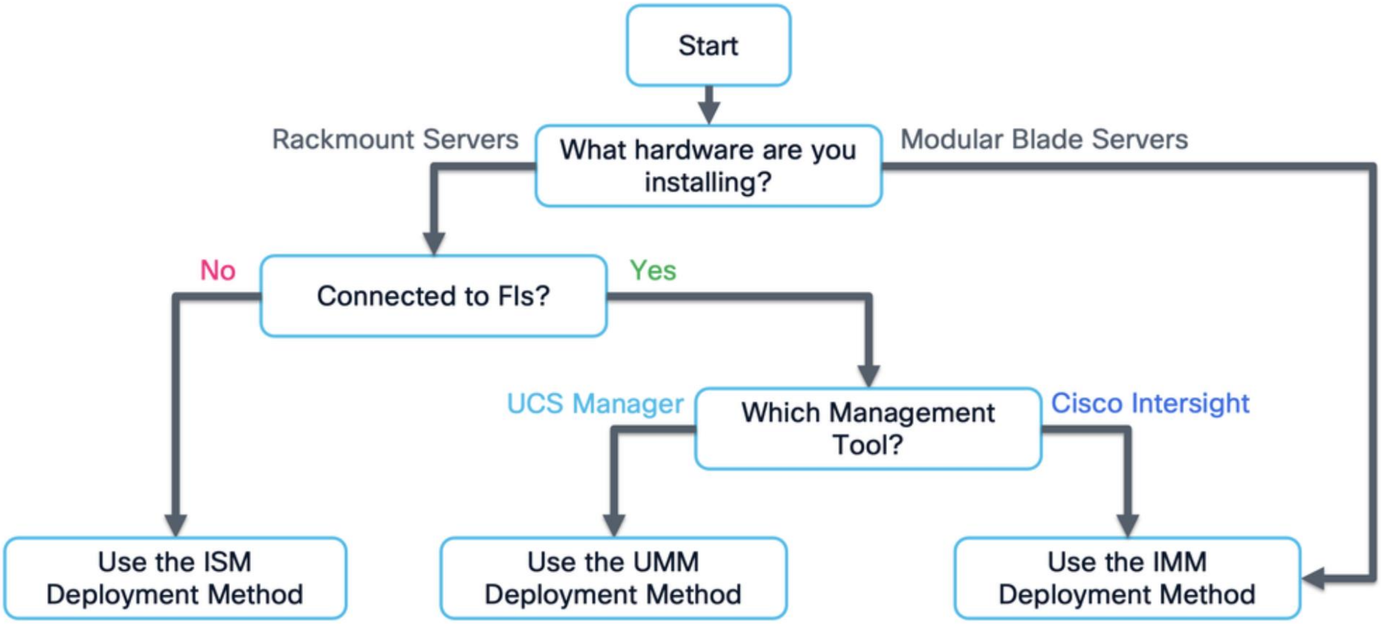
Solution Deployment

This chapter contains the following:

- Prerequisites
- Configure Policies for Cisco UCS Domain
- Configure Cisco UCS Domain Profile
- Prism Central Installation
- Configure Foundation Central
- Nutanix Cluster Creation
- Post Cluster Creation Task

This chapter describes the solution deployment for Nutanix on Cisco UCS X-Series Blade Servers in Intersight Managed Mode (IMM), with step-by-step procedures for implementing and managing the deployment. Cisco UCS X-Series connectivity in Intersight Managed Mode (IMM) relies on the Unified Fabric, which consolidates management and production traffic through a pair of UCS 6500-series Fabric Interconnects connected to the chassis via Intelligent Fabric Modules (IFMs). IMM allows Cisco Intersight to control and manage the entire UCS domain—including X-Series servers—using a cloud-based policy and operations framework, without local UCS Manager.

To ensure the correct installation process is being followed for Cisco Compute Hyperconverged with Nutanix, see the following flowchart to choose the correct documentation for the system being installed:

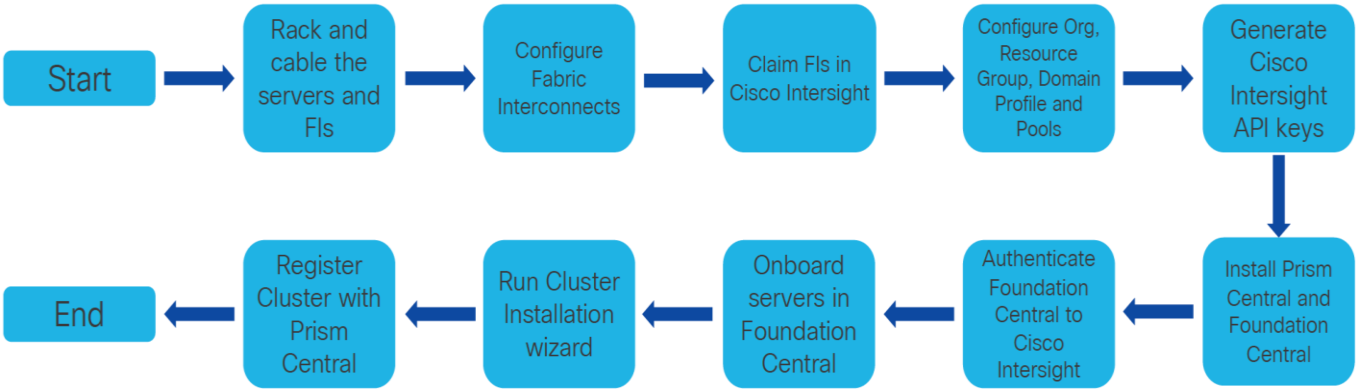

Start
What hardware are you installing?
Rackmount Servers
Modular Blade Servers
Connected to FIs?
No
Yes
Which Management Tool?
UCS Manager
Cisco Intersight
Use the ISM Deployment Method
Use the UMM Deployment Method
Use the IMM Deployment Method

Note: A Field Guide covering the installation and initial configuration of Cisco Compute Hyperconverged with Nutanix systems using Intersight Managed Mode for Cisco UCS X-Series modular blade servers and C-series rackmount servers. Intersight Managed Mode (IMM) is the term for X-series and C-series servers connected to Cisco UCS Fabric Interconnects, which are managed entirely via Cisco Intersight. This guide is intended for technical training and educational purposes, for all who wish to install Nutanix on Cisco UCS based hardware following our supported hardware and software integrations and compatibility lists. https://community.cisco.com/t5/unified-computing-system-knowledge-base/cisco-compute-hyperconverged-with-nutanix-imm-field-guide/ta-p/5219852

This document presents our best practices and recommendations as of the time of publishing and will be updated periodically. Please refer to the document history at the beginning to ensure you are using the most current version available.

Figure 5 shows the high-level configuration of installation of Nutanix clusters on Cisco UCS X-series servers in Intersight Managed Mode (IMM) such as X-series blades in a chassis that are connected to Cisco UCS Fabric Interconnects and managed by Cisco Intersight.

Figure 5. **Cisco UCS C-Series Nodes configured in Intersight Managed Mode for Nutanix**


Start
Rack and cable the servers and FIs
Configure Fabric Interconnects
Claim FIs in Cisco Intersight
Configure Org, Resource Group, Domain Profile and Pools
Generate Cisco Intersight API keys
Install Prism Central and Foundation Central
Authenticate Foundation Central to Cisco Intersight
Onboard servers in Foundation Central
Run Cluster Installation wizard
Register Cluster with Prism Central
End

Prerequisites

Cisco Intersight Managed Mode standardizes policy and operation management for Cisco UCS X-Series. The following are the high-level procedures to configure Cisco UCS X-Series in Intersight Managed Mode (IMM).

Procedure 1. Configure Cisco UCS Fabric Interconnects for Cisco Intersight Managed Mode

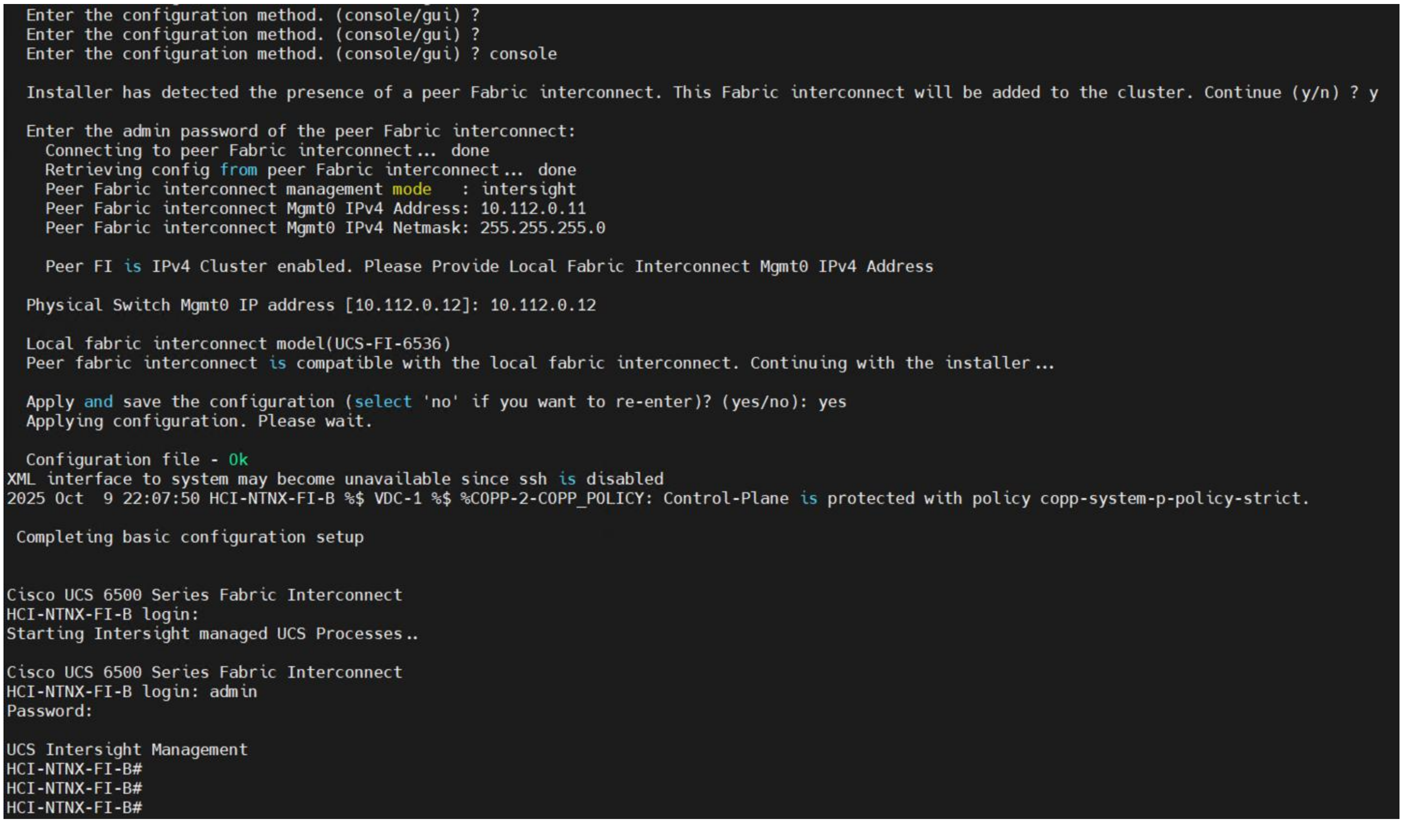
During the initial configuration, for the management mode, the configuration wizard enables you to choose whether to manage the fabric interconnect through Cisco UCS Manager or the Cisco Intersight platform.

Note: For this solution, we chose Intersight Managed Mode (IMM) for validating this Nutanix deployment.

Step 1. Verify the following physical connections on the fabric interconnect:

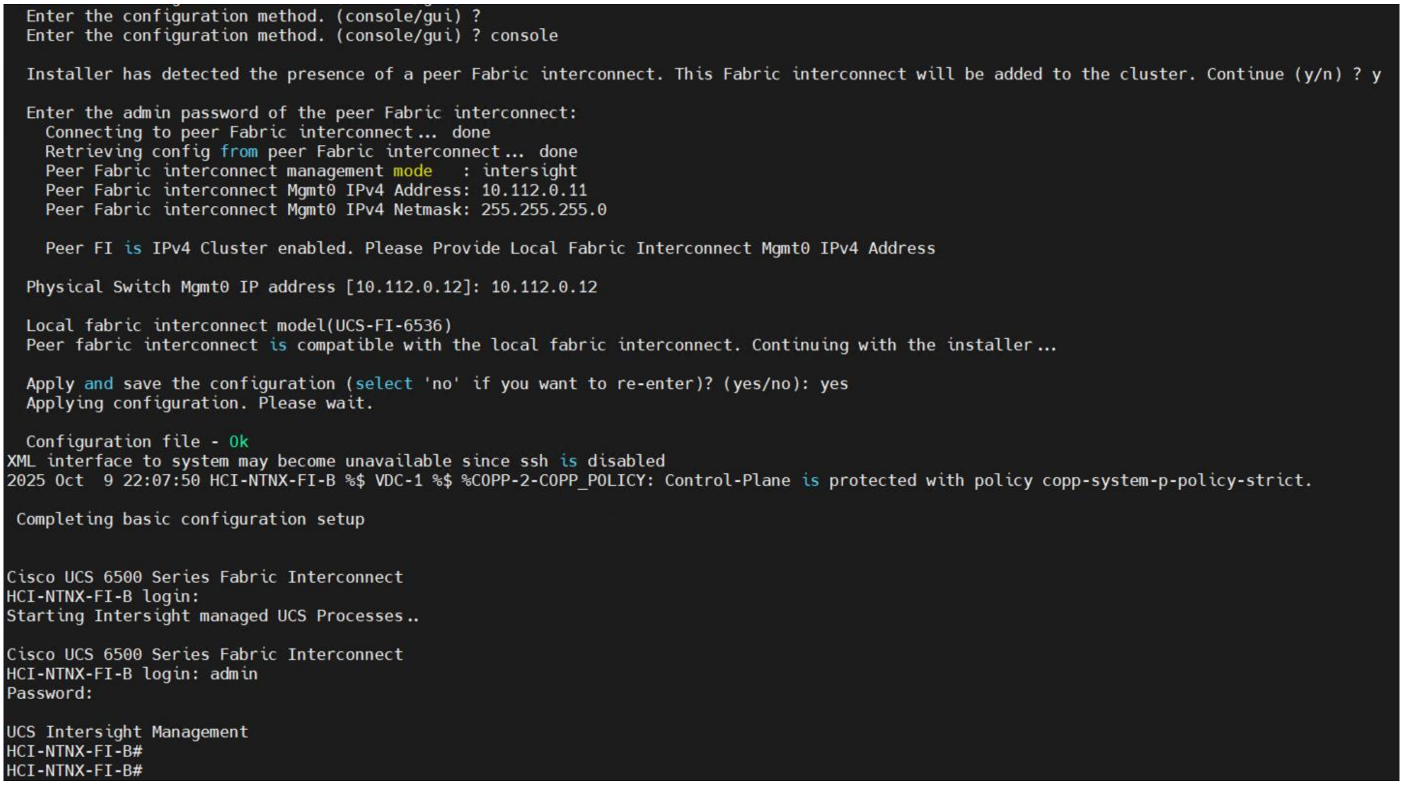
- The management Ethernet port (mgmt0) is connected to an external hub, switch, or router.
- The L1 ports on both fabric interconnects are directly connected to each other.
- The L2 ports on both fabric interconnects are directly connected to each other.

Step 2. Connect to the console port on the first fabric interconnect and configure the first FI as shown below:



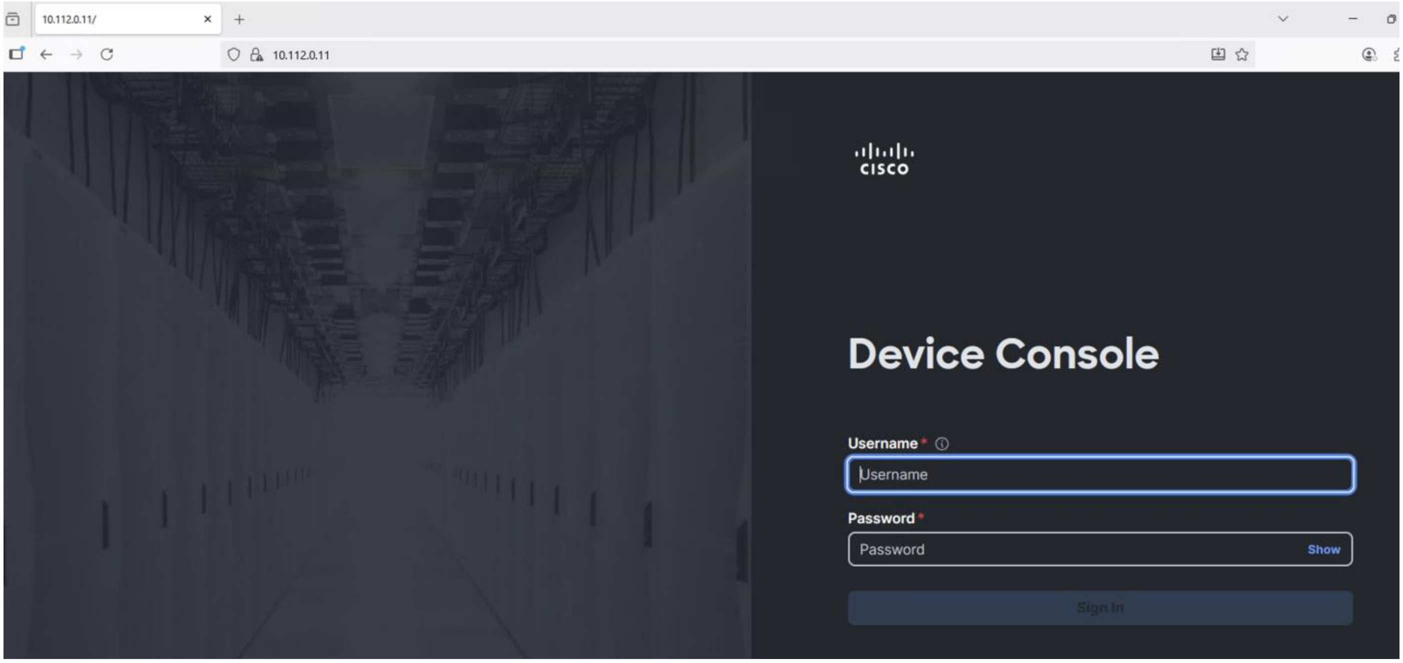
```
  Enter the configuration method. (console/gui) ?
  Enter the configuration method. (console/gui) ?
  Enter the configuration method. (console/gui) ? console

  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:
    Connecting to peer Fabric interconnect... done
    Retrieving config from peer Fabric interconnect... done
    Peer Fabric interconnect management mode   : intersight
    Peer Fabric interconnect Mgmt0 IPv4 Address: 10.112.0.11
    Peer Fabric interconnect Mgmt0 IPv4 Netmask: 255.255.255.0

    Peer FI is IPv4 Cluster enabled. Please Provide Local Fabric Interconnect Mgmt0 IPv4 Address

  Physical Switch Mgmt0 IP address [10.112.0.12]: 10.112.0.12

  Local fabric interconnect model(UCS-FI-6536)
  Peer fabric interconnect is compatible with the local fabric interconnect. Continuing with the installer...

  Apply and save the configuration (select 'no' if you want to re-enter)? (yes/no): yes
  Applying configuration. Please wait.

  Configuration file - Ok
XML interface to system may become unavailable since ssh is disabled
2025 Oct  9 22:07:50 HCI-NTNX-FI-B %$ VDC-1 %$ %COPP-2-COPP_POLICY: Control-Plane is protected with policy copp-system-p-policy-strict.

 Completing basic configuration setup


Cisco UCS 6500 Series Fabric Interconnect
HCI-NTNX-FI-B login:
Starting Intersight managed UCS Processes..

Cisco UCS 6500 Series Fabric Interconnect
HCI-NTNX-FI-B login: admin
Password:

UCS Intersight Management
HCI-NTNX-FI-B#
HCI-NTNX-FI-B#
HCI-NTNX-FI-B#
```

Step 3. Connect the console port on the second fabric interconnect B and configure it as shown below:



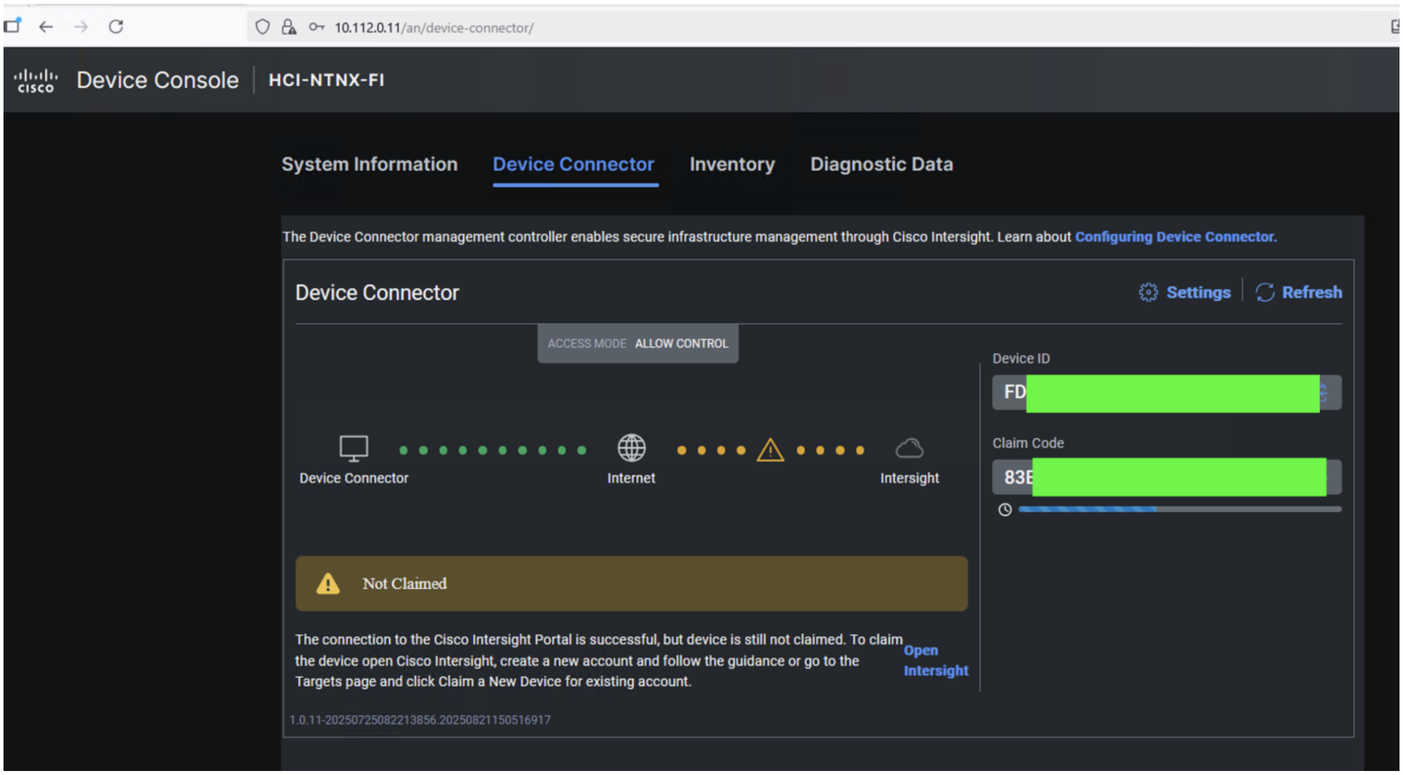
```
  Enter the configuration method. (console/gui) ?
  Enter the configuration method. (console/gui) ? console

  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:
    Connecting to peer Fabric interconnect... done
    Retrieving config from peer Fabric interconnect... done
    Peer Fabric interconnect management mode   : intersight
    Peer Fabric interconnect Mgmt0 IPv4 Address: 10.112.0.11
    Peer Fabric interconnect Mgmt0 IPv4 Netmask: 255.255.255.0

    Peer FI is IPv4 Cluster enabled. Please Provide Local Fabric Interconnect Mgmt0 IPv4 Address

  Physical Switch Mgmt0 IP address [10.112.0.12]: 10.112.0.12

  Local fabric interconnect model(UCS-FI-6536)
  Peer fabric interconnect is compatible with the local fabric interconnect. Continuing with the installer...

  Apply and save the configuration (select 'no' if you want to re-enter)? (yes/no): yes
  Applying configuration. Please wait.

  Configuration file - Ok
XML interface to system may become unavailable since ssh is disabled
2025 Oct  9 22:07:50 HCI-NTNX-FI-B %$ VDC-1 %$ %COPP-2-COPP_POLICY: Control-Plane is protected with policy copp-system-p-policy-strict.

 Completing basic configuration setup


Cisco UCS 6500 Series Fabric Interconnect
HCI-NTNX-FI-B login:
Starting Intersight managed UCS Processes..

Cisco UCS 6500 Series Fabric Interconnect
HCI-NTNX-FI-B login: admin
Password:

UCS Intersight Management
HCI-NTNX-FI-B#
HCI-NTNX-FI-B#
```

Step 4. After configuring both the FI management addresses, open a web browser and navigate to the Cisco UCS fabric interconnect management address as configured. If prompted to accept security certificates, accept, as necessary.



Step 5. Log into the device console for FI-A by entering your username and password.

Step 6. Go to the Device Connector tab and get the DEVICE ID and CLAIM Code as shown below:



The Device Connector management controller enables secure infrastructure management through Cisco Intersight. Learn about Configuring Device Connector.

Device ID: FD[redacted]

Claim Code: 83[redacted]

Not Claimed

The connection to the Cisco Intersight Portal is successful, but device is still not claimed. To claim the device open Cisco Intersight, create a new account and follow the guidance or go to the Targets page and click Claim a New Device for existing account.

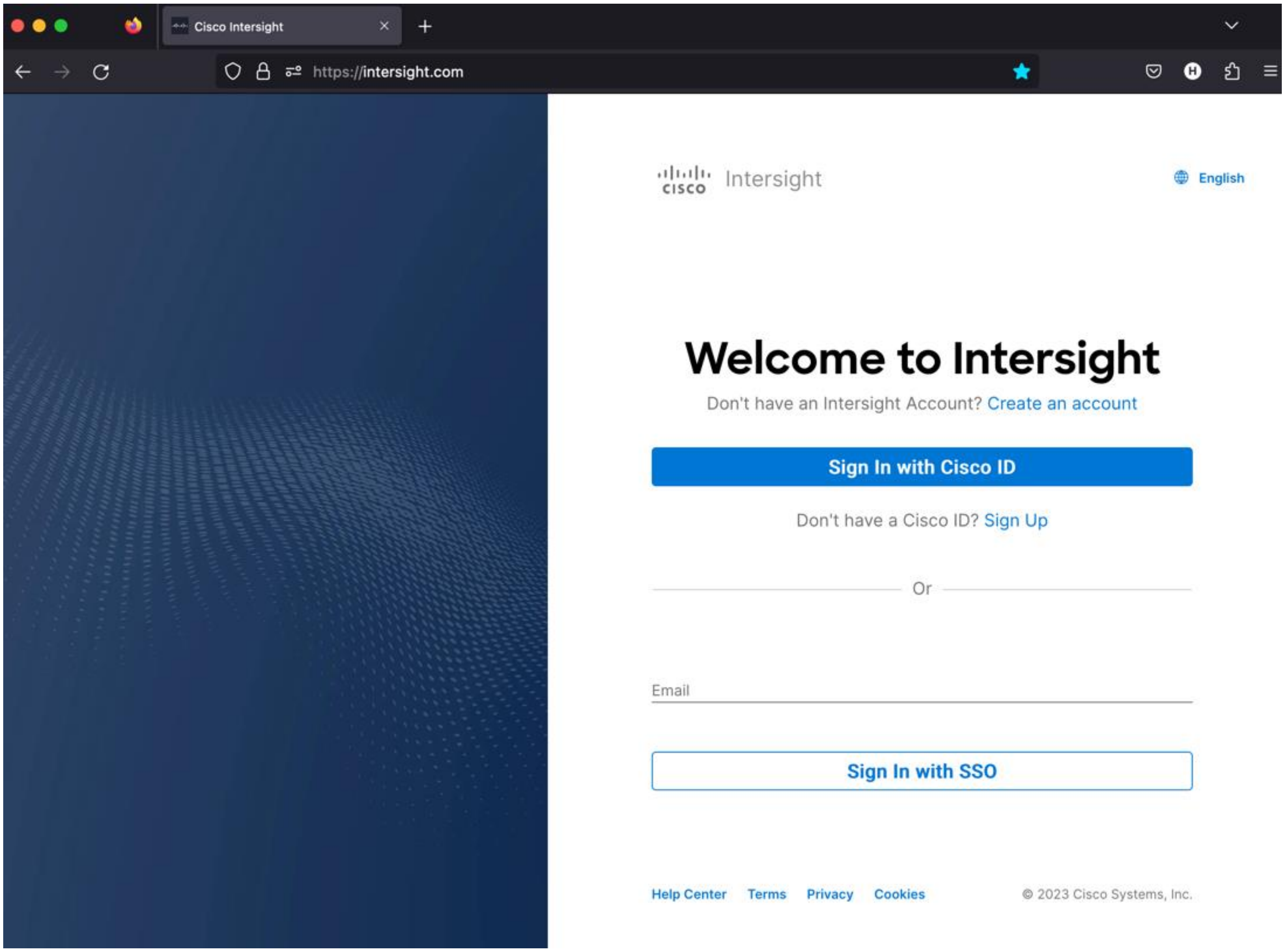
1.0.11-20250725082213856.20250821150516917

Note: After setting up the Cisco UCS fabric interconnect for Cisco Intersight Managed Mode, FIs can be claimed to a new or an existing Cisco Intersight account.

Note: When a Cisco UCS fabric interconnect is successfully added to the Cisco Intersight platform, all subsequent configuration steps are completed in the Cisco Intersight portal.

Procedure 2. Claim Fabric Interconnects in Cisco Intersight Platform

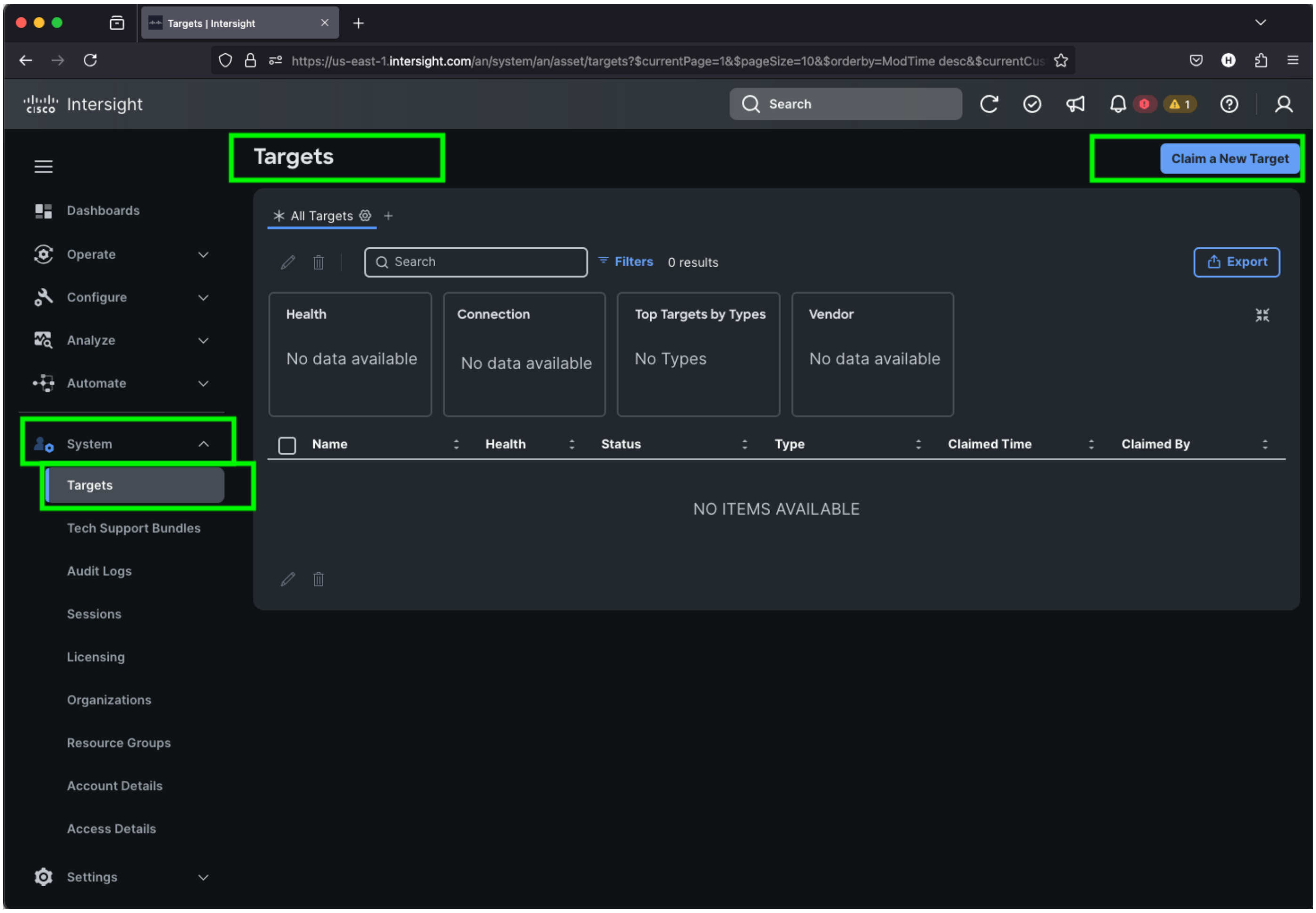
Step 1. After getting the device id and claim code of FI, go to https://intersight.com/.



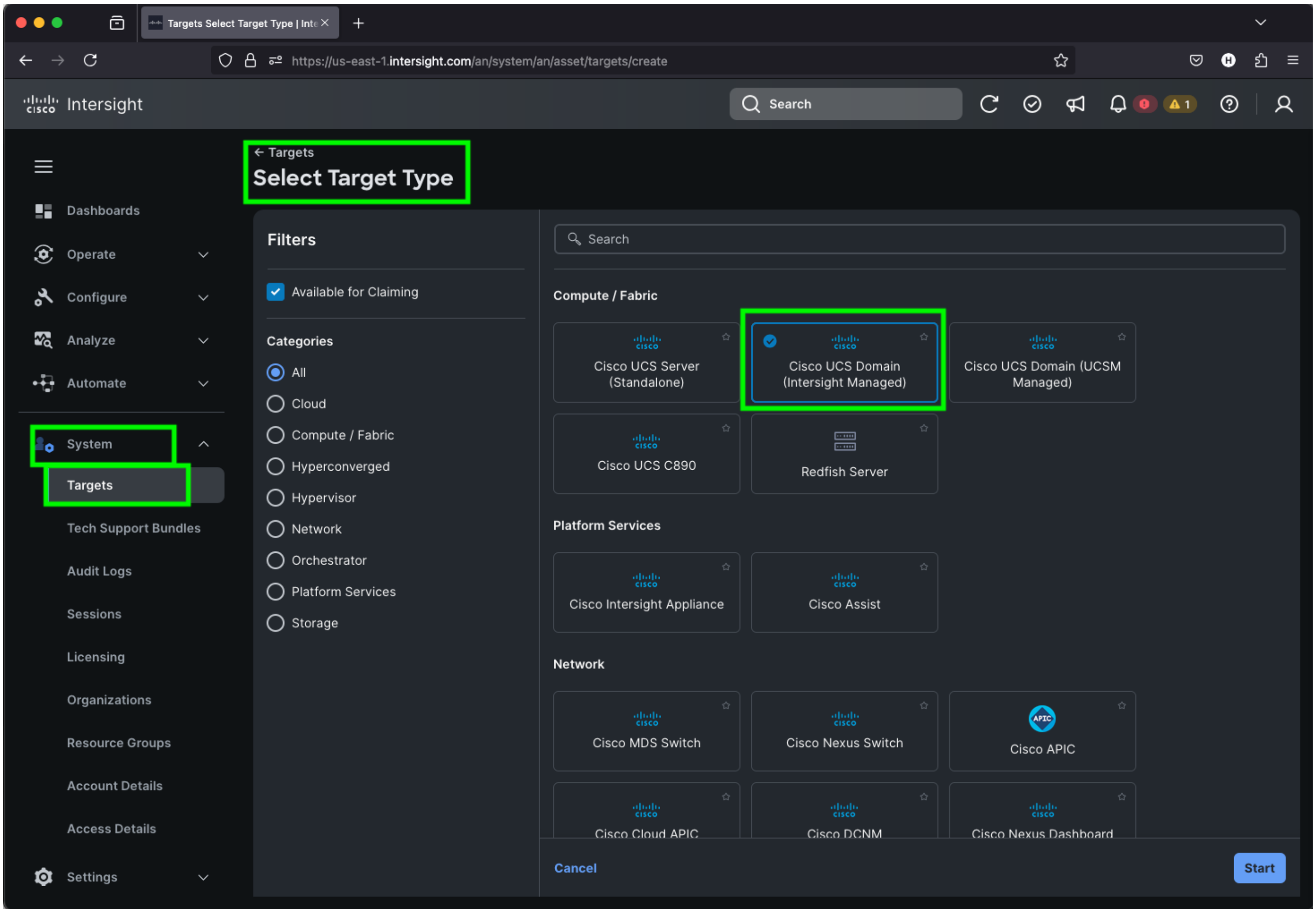
Step 2. Sign in with your Cisco ID or if you don't have one, click Sing Up and setup your account.

Note: We created the Nutanix-AMD-CVD account for this solution.

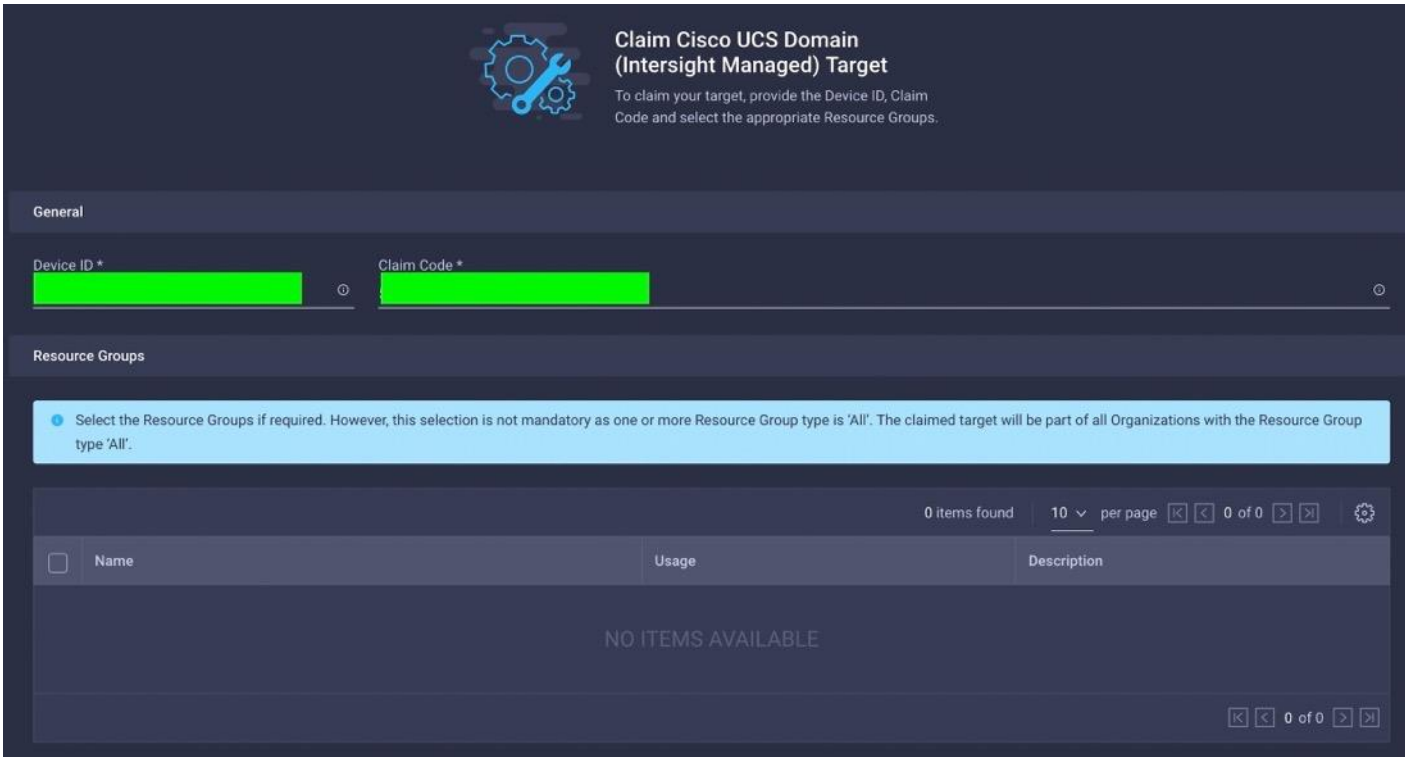
Step 3. After logging into your Cisco Intersight account, go to > System > Targets > Claim a New Target.



Step 4. For the Select Target Type, select Cisco UCS Domain (Intersight Managed) and click Start.



Step 5. Enter the Device ID and Claim Code which was previously captured. Click Claim to claim this domain in Cisco Intersight.



Claim Cisco UCS Domain (Intersight Managed) Target

To claim your target, provide the Device ID, Claim Code and select the appropriate Resource Groups.

General

Device ID * [redacted]

Claim Code * [redacted]

Resource Groups

Select the Resource Groups if required. However, this selection is not mandatory as one or more Resource Group type is 'All'. The claimed target will be part of all Organizations with the Resource Group type 'All'.

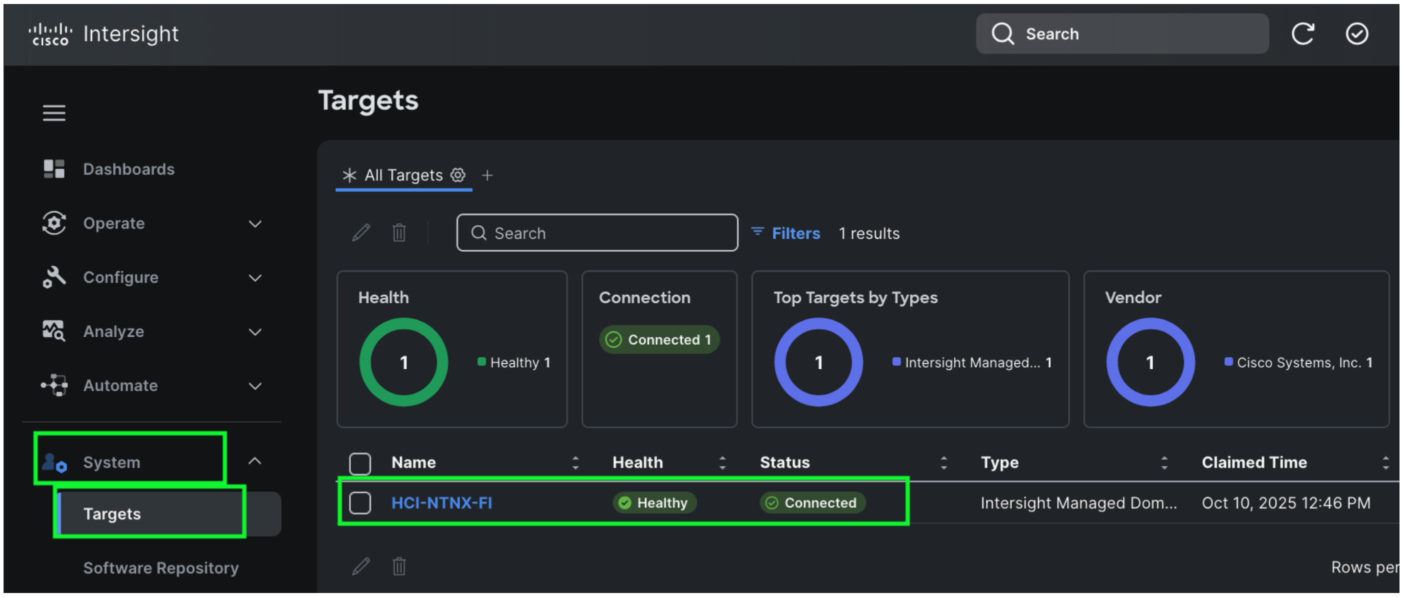
0 items found 10 per page 0 of 0

Name	Usage	Description

NO ITEMS AVAILABLE

0 of 0

When you claim this domain, you can see both FIs under this domain and verify it's under Intersight Managed Mode:



Targets

1 results

Health: 1 — Healthy 1

Connection: Connected 1

Top Targets by Types: 1 — Intersight Managed... 1

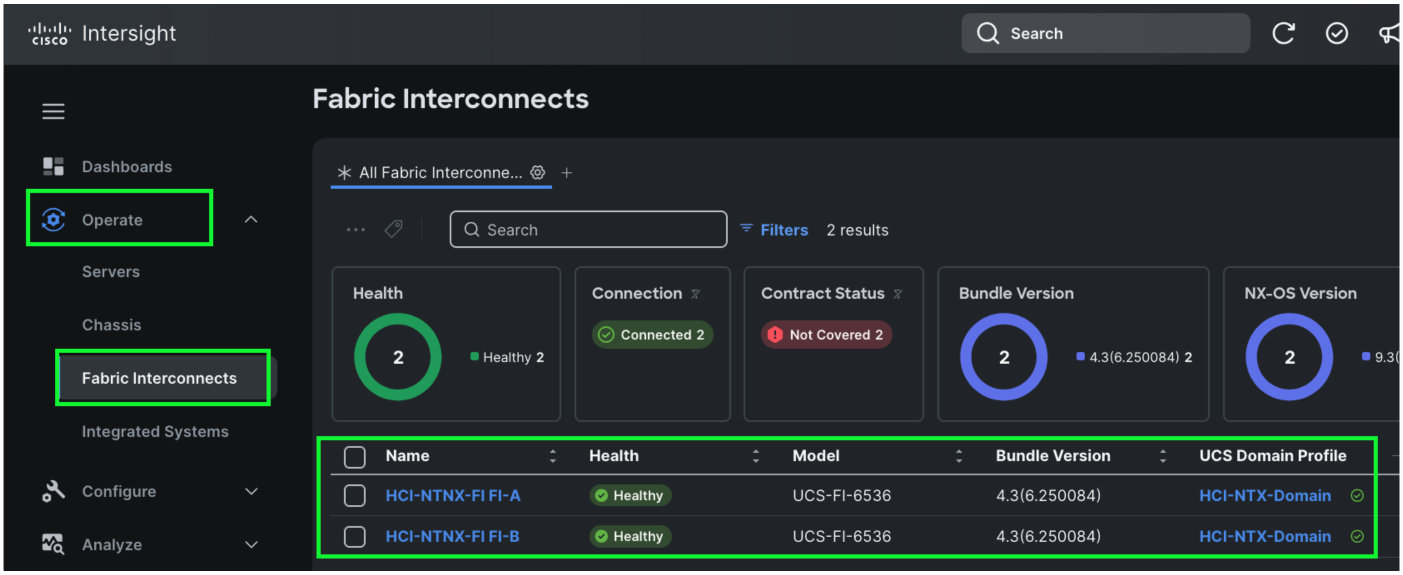
Vendor: 1 — Cisco Systems, Inc. 1

Name	Health	Status	Type	Claimed Time
HCI-NTNX-FI	Healthy	Connected	Intersight Managed Dom...	Oct 10, 2025 12:46 PM

Rows per

Cisco UCS Fabric Interconnect from the OPERATE tab shows details and Management Mode as shown below.

Note: Upgrade the fabric interconnect firmware if necessary.



Name	Health	Model	Bundle Version	UCS Domain Profile
HCI-NTNX-FI FI-A	Healthy	UCS-FI-6536	4.3(6.250084)	HCI-NTX-Domain
HCI-NTNX-FI FI-B	Healthy	UCS-FI-6536	4.3(6.250084)	HCI-NTX-Domain

Step 6. (Optional) Role-based Access Control (RBAC) in Cisco Intersight:

- Create one or more Resource Groups (optional): Create a Resource Group to organize the physical servers into a group that is placed into an organization.
- Create one or more Organizations (optional): Create an Organization and associate it with one or more Resource Groups. If you share the organization with another one, you cannot select a resource group. Organizations can either be associated with a resource group, or shared with another org, but not both.

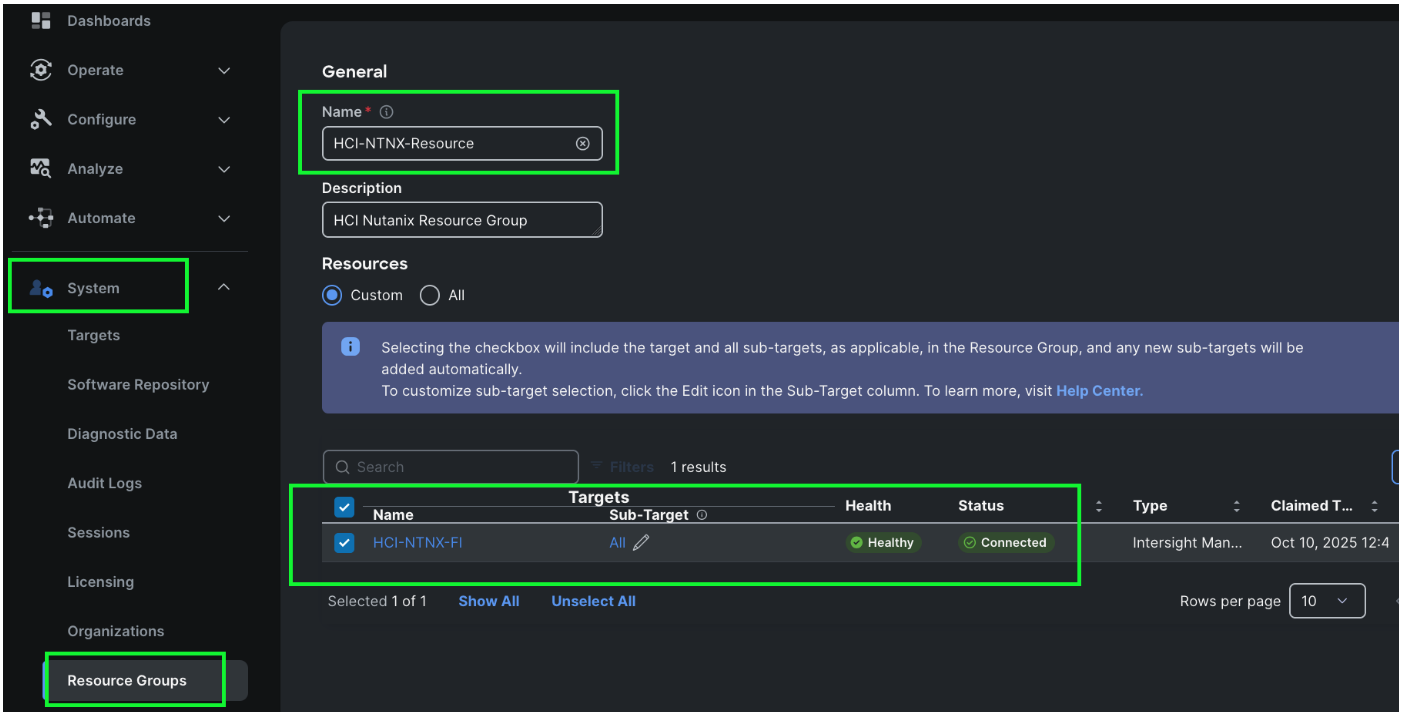
Procedure 3. Configure Cisco Intersight Account and System Settings

Step 1. Go to System > Account Details. For more details: https://intersight.com/help/saas/system/settings

Step 2. In the System tab > Select Resource Group. Create New resource group.

Step 3. Select Targets to be part of this resource group and click Create.

Note: For this solution, we created new resource group as "HCI-NTNX-Resource" and selected all the sub-targets as shown below.



General

Name * HCI-NTNX-Resource

Description HCI Nutanix Resource Group

Resources

● Custom ○ All

Selecting the checkbox will include the target and all sub-targets, as applicable, in the Resource Group, and any new sub-targets will be added automatically.
To customize sub-target selection, click the Edit icon in the Sub-Target column. To learn more, visit Help Center.

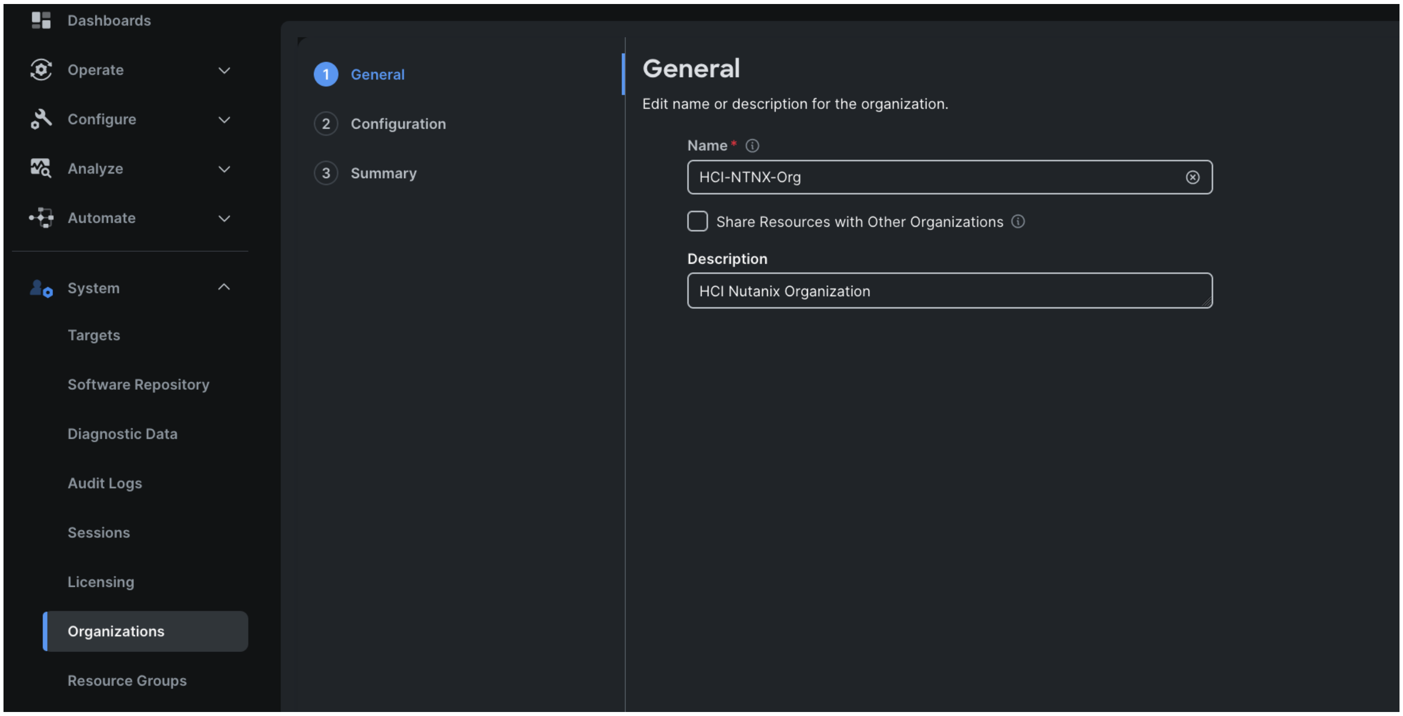
Search | Filters | 1 results

☑	Targets					
	Name	Sub-Target	Health	Status	Type	Claimed T...
☑	HCI-NTNX-FI	All	Healthy	Connected	Intersight Man...	Oct 10, 2025 12:4

Selected 1 of 1 Show All Unselect All

Rows per page 10

Step 4. We configured the HCI-NTNX-Org group for this solution. Go to System menu, select Organizations then click Create Organization.



General

Edit name or description for the organization.

Name * HCI-NTNX-Org

□ Share Resources with Other Organizations

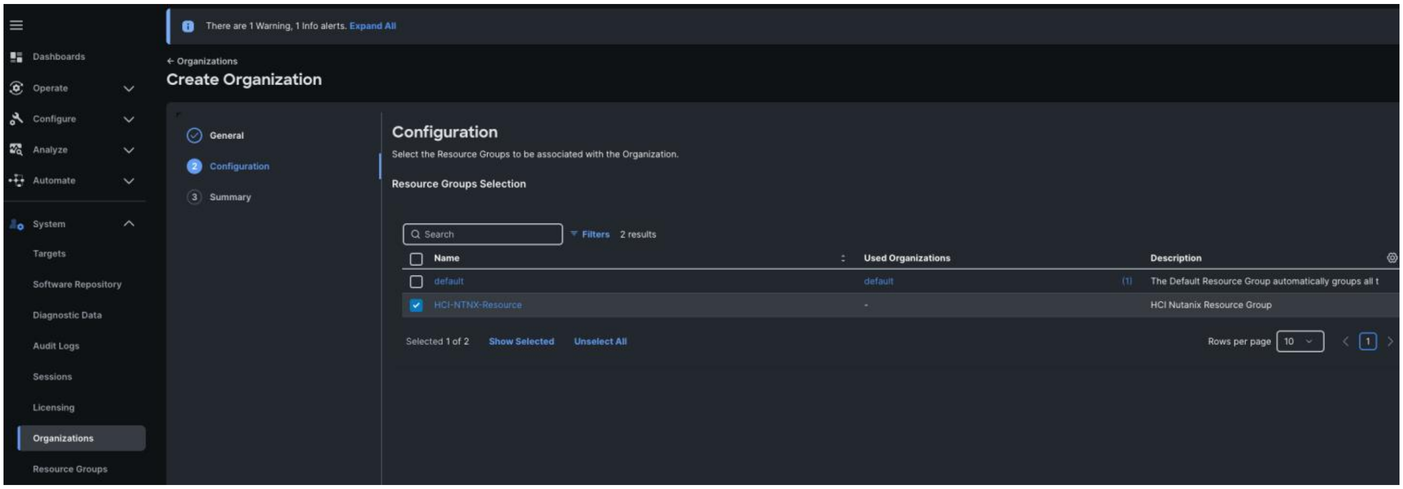
Description HCI Nutanix Organization

Step 5. Enter the name for the new Organization creation.

Step 6. (Optional) Check the box to share resources with other organizations. Click Next.

Step 7. In the configuration option, select the Spk-Resource configured earlier and click Next.

Step 8. Verify the summary page and then click Create to create organization with resource group for this deployment as shown below:



There are 1 Warning, 1 Info alerts. Expand All

← Organizations

Create Organization

Configuration

Select the Resource Groups to be associated with the Organization.

Resource Groups Selection

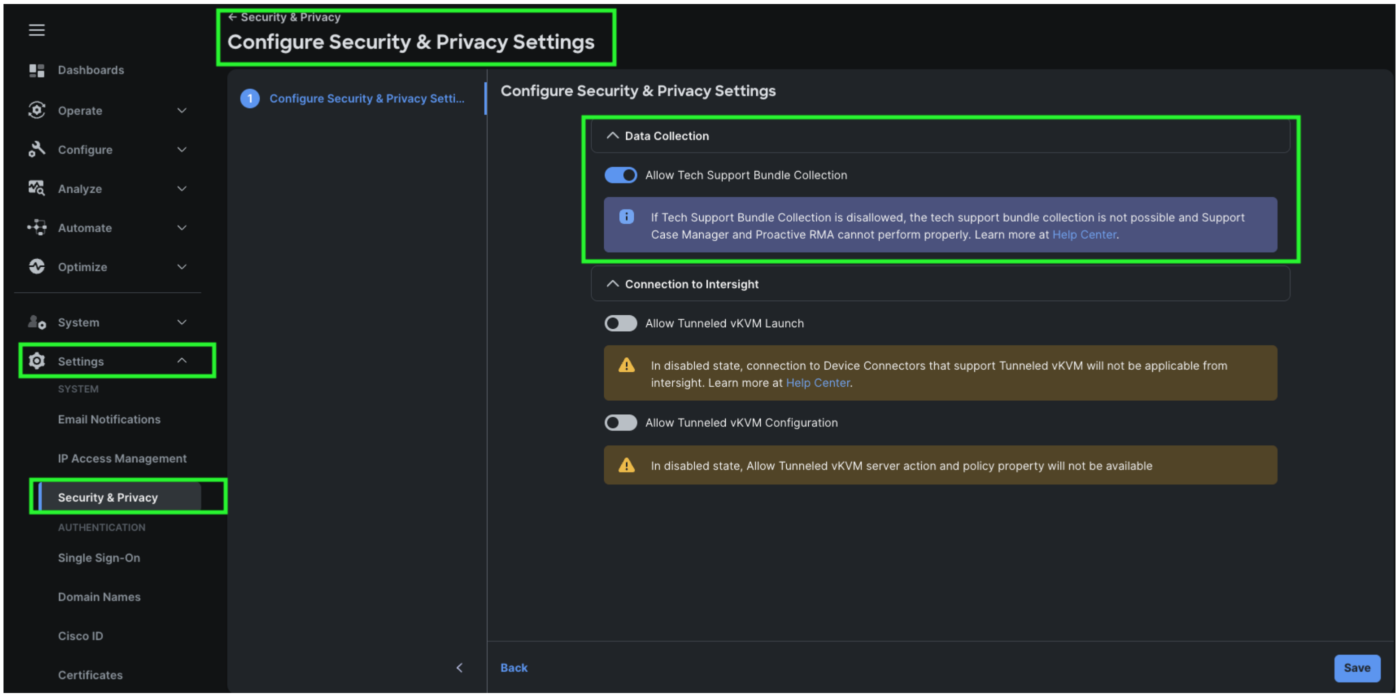
Search | Filters | 2 results

	Name	Used Organizations		Description
□	default	default	(1)	The Default Resource Group automatically groups all t
☑	HCI-NTNX-Resource	-		HCI Nutanix Resource Group

Selected 1 of 2 | Show Selected | Unselect All | Rows per page 10 | 1

Step 9. To configure allowing tech support bundle collection, go to Settings > Security & Privacy > and enable the option and then click Save.

Note: For this solution we disabled Tunneled vKVM Launch and configuration.



← Security & Privacy

Configure Security & Privacy Settings

Configure Security & Privacy Settings

Data Collection

● Allow Tech Support Bundle Collection

If Tech Support Bundle Collection is disallowed, the tech support bundle collection is not possible and Support Case Manager and Proactive RMA cannot perform properly. Learn more at Help Center.

Connection to Intersight

○ Allow Tunneled vKVM Launch

In disabled state, connection to Device Connectors that support Tunneled vKVM will not be applicable from intersight. Learn more at Help Center.

○ Allow Tunneled vKVM Configuration

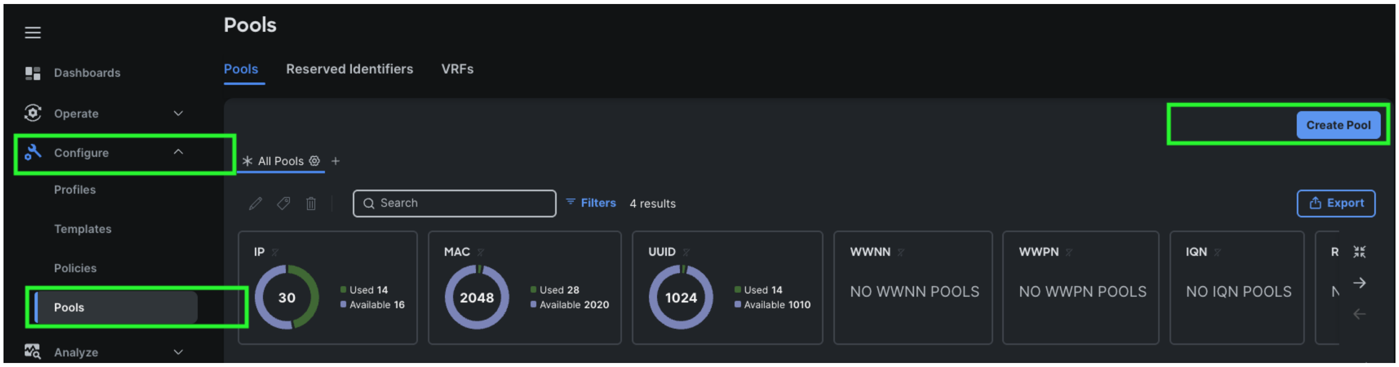
In disabled state, Allow Tunneled vKVM server action and policy property will not be available

Procedure 4. Create IP Pool

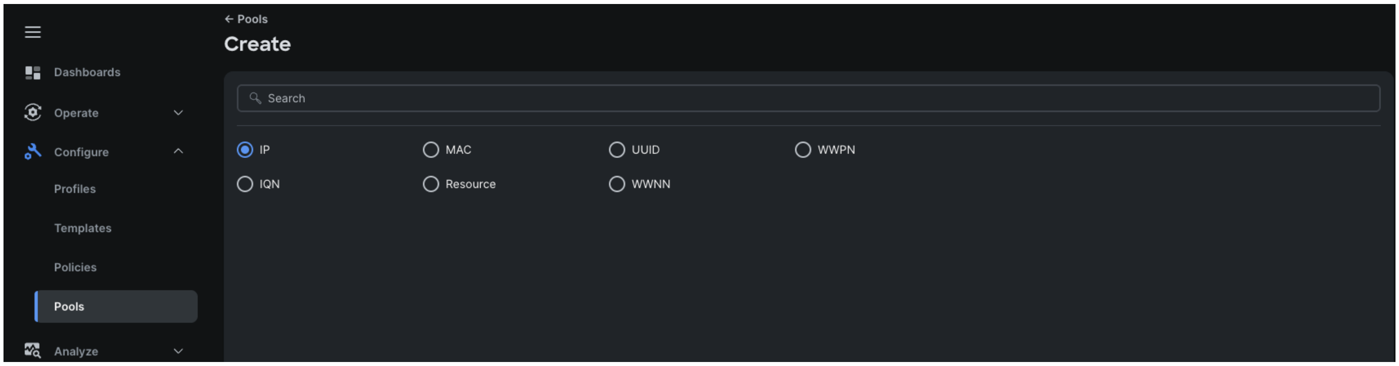
Create Prerequisite Pools: Two pools must be created before the Nutanix cluster is created; a MAC Address Pool and an IP Address Pool for the blades' IMC access, plus an optional UUID pool to assign unique identifiers to each blade.

Note: Create an IP Address Pool in the appropriate Organization with valid DNS, and a block with enough addresses to assign 1 to each server in the cluster, plus extras for future growth. The IP addresses must be in the same layer 2 subnet as the Fabric Interconnects' mgmt0 interfaces, which is known as Out-of-Band IMC access. Alternatively, In-Band IMC access uses a VLAN via the Fabric Interconnects' Ethernet uplinks. The VLAN must be defined in the Domain Profile and VLAN policy, and the IP addresses defined in this pool must be from the layer 2 subnet carried by that VLAN.

Step 1. Go to > Configure > Pools > and then click Create Pool.

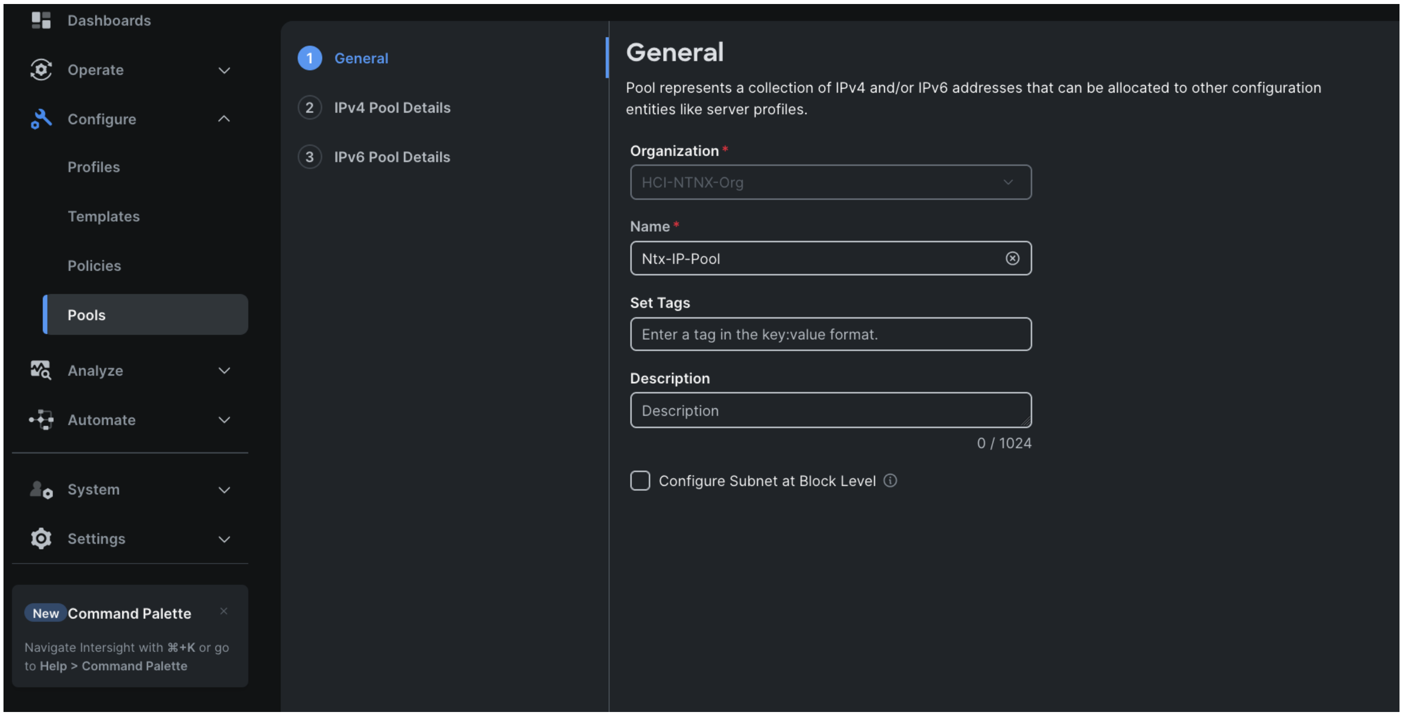


Step 2. Select IP as shown below to create the IP Pool.



● IP ○ MAC ○ UUID ○ WWPN
○ IQN ○ Resource ○ WWNN

Step 3. In the IP Pool Create section, for Organization select HCI-NTNX-Org, enter the Policy name Ntx-IP-Pool, and click Next.



General

Pool represents a collection of IPv4 and/or IPv6 addresses that can be allocated to other configuration entities like server profiles.

Organization *: HCI-NTNX-Org

Name *: Ntx-IP-Pool

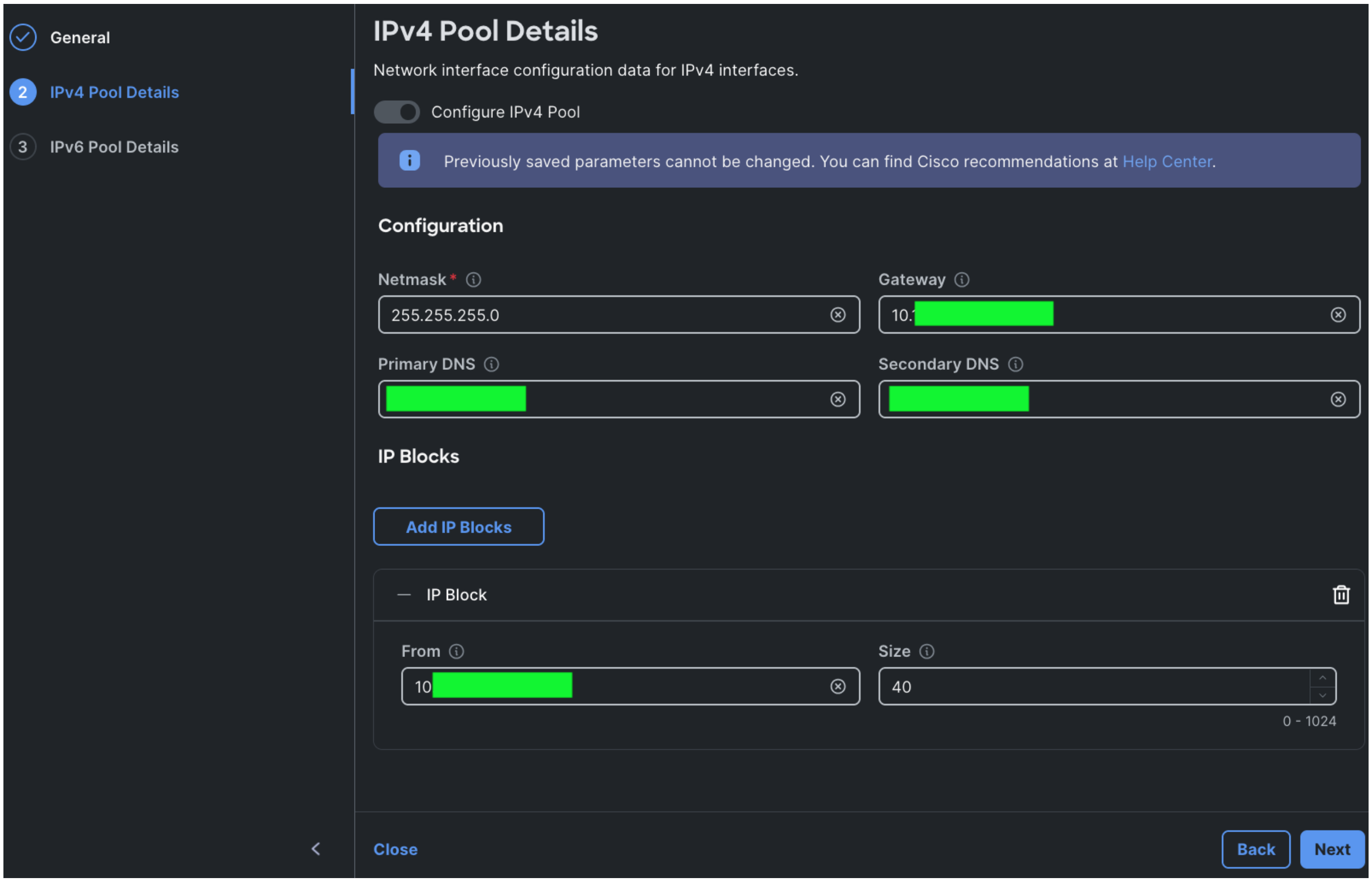
Set Tags: Enter a tag in the key:value format.

Description: Description

0 / 1024

□ Configure Subnet at Block Level

Step 4. Enter Netmask, Gateway, Primary DNS, IP Blocks and Size according to your environment and click Next.



IPv4 Pool Details

Network interface configuration data for IPv4 interfaces.

Configure IPv4 Pool

Previously saved parameters cannot be changed. You can find Cisco recommendations at Help Center.

Configuration

Netmask *: 255.255.255.0

Gateway: 10.[redacted]

Primary DNS: [redacted]

Secondary DNS: [redacted]

IP Blocks

IP Block

From: 10[redacted]

Size: 40

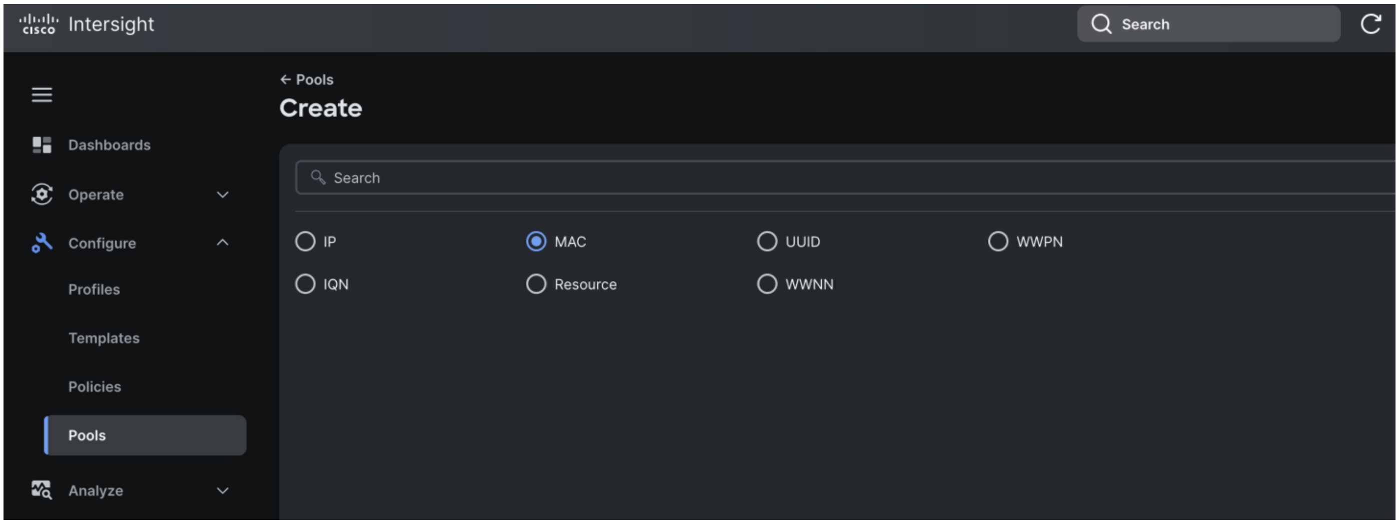
0 - 1024

Note: For this solution, we did not configure the IPv6 Pool. Keep the Configure IPv6 Pool option disabled and click Create to create the IP Pool.

Procedure 5. Create MAC Pool

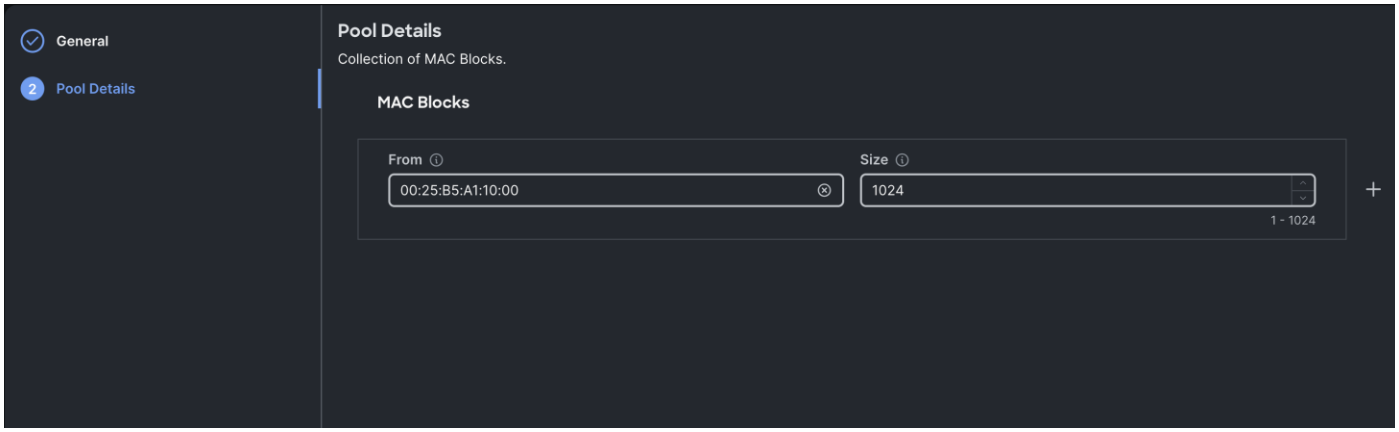
Step 1. Create a MAC Address Pool in the appropriate Organization with a unique starting block address, and with enough addresses to assign at least 2 to each server in the cluster, plus extras for future growth.

Step 2. To configure a MAC Pool for a Cisco UCS Domain profile, go to > Configure > Pools > and click Create Pool. Select option MAC to create MAC Pool.



Step 3. In the MAC Pool Create section, for the Organization, select HCI-NTNX-Org and enter the Policy name Ntx-MAC-Pool. Click Next.

Step 4. Enter the MAC Blocks from and Size of the pool according to your environment and click Create.



From: 00:25:B5:A1:10:00

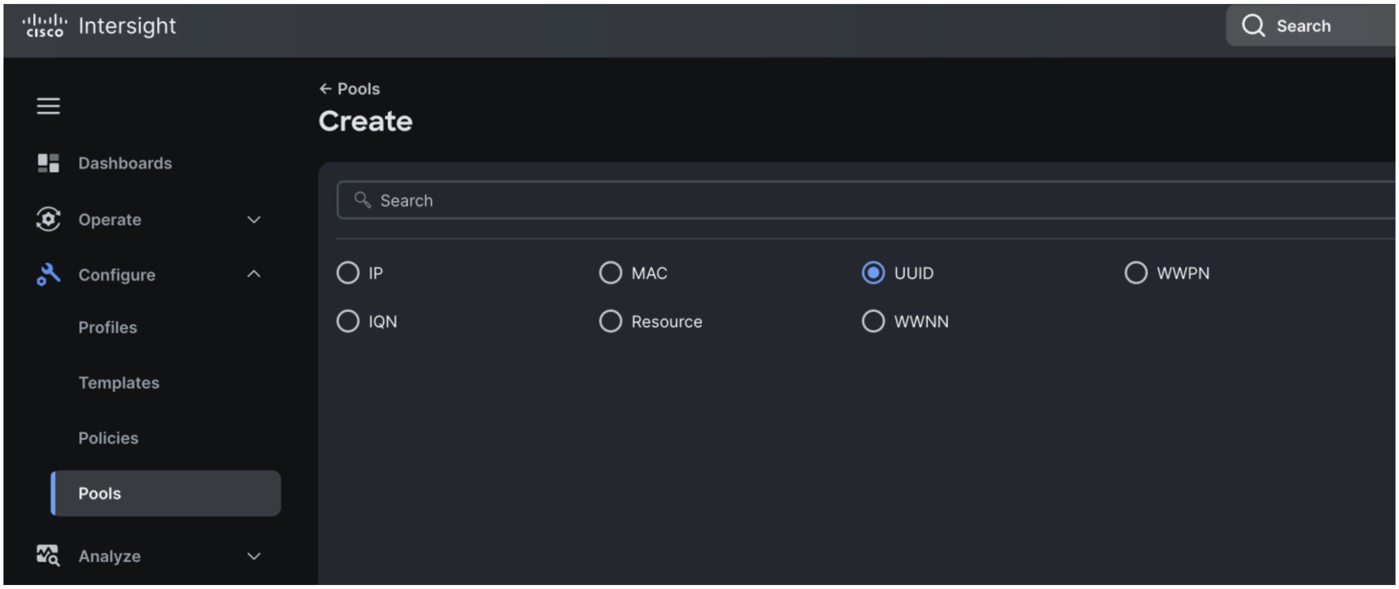
Size: 1024

1 - 1024

Procedure 6. Configure UUID Pool

Create a UUID Pool in the appropriate Organization with a unique prefix and a block with a unique starting address, and with enough addresses to assign 1 to each server in the cluster, plus extras for future growth. If a pool is not used the UUID of the blade servers' profiles will be based on the hardware UUID, which could limit the ability to move the profile to a different server in the future.

Step 1. To create UUID Pool for a Cisco UCS, go to > Configure > Pools > and click Create Pool. Select option UUID.



← Pools

Create

Search

○ IP ○ MAC ● UUID ○ WWPN

○ IQN ○ Resource ○ WWNN

Step 2. In the UUID Pool Create section, for the Organization, select HCI-NTNX-Org and enter the Policy name Ntx-UUID-Pool. Click Next.

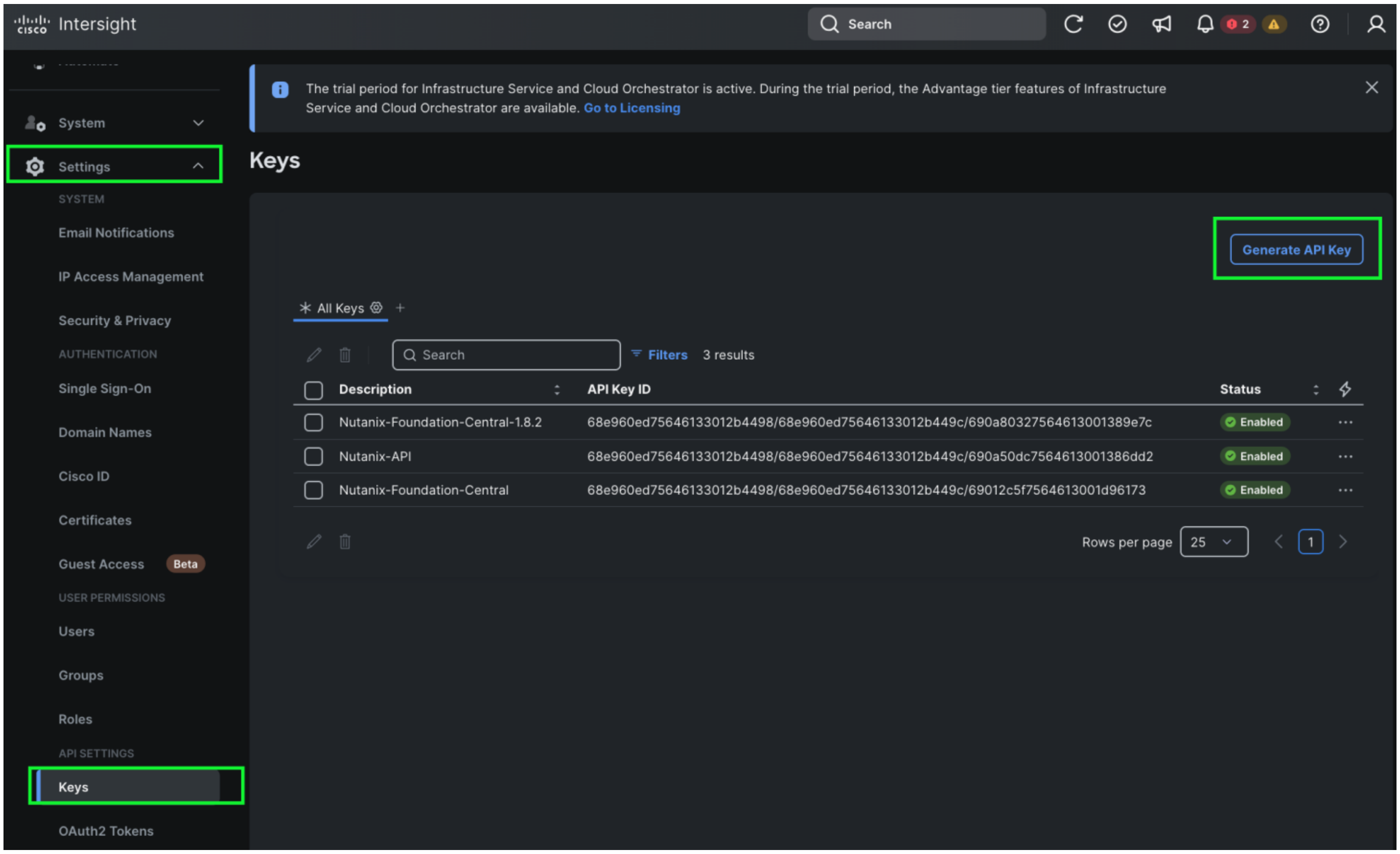
Step 3. Select Prefix, UUID block and size according to your environment and click Create.

Procedure 7. Generate Cisco Intersight API keys

The Cisco Intersight API keys allow authentication and communication of Nutanix Foundation Central with Cisco Intersight. Further, once the communication channel is setup, Nutanix Foundation Central can identify the Cisco X-Series nodes claimed in Intersight and configure Server profile and upgrade firmware of Cisco UCS X-Series Rack Servers in IMM mode.

Step 1. Log into Cisco Intersight, go to System > Settings > API keys.

Step 2. Click Generate API Keys.



The trial period for Infrastructure Service and Cloud Orchestrator is active. During the trial period, the Advantage tier features of Infrastructure Service and Cloud Orchestrator are available. Go to Licensing

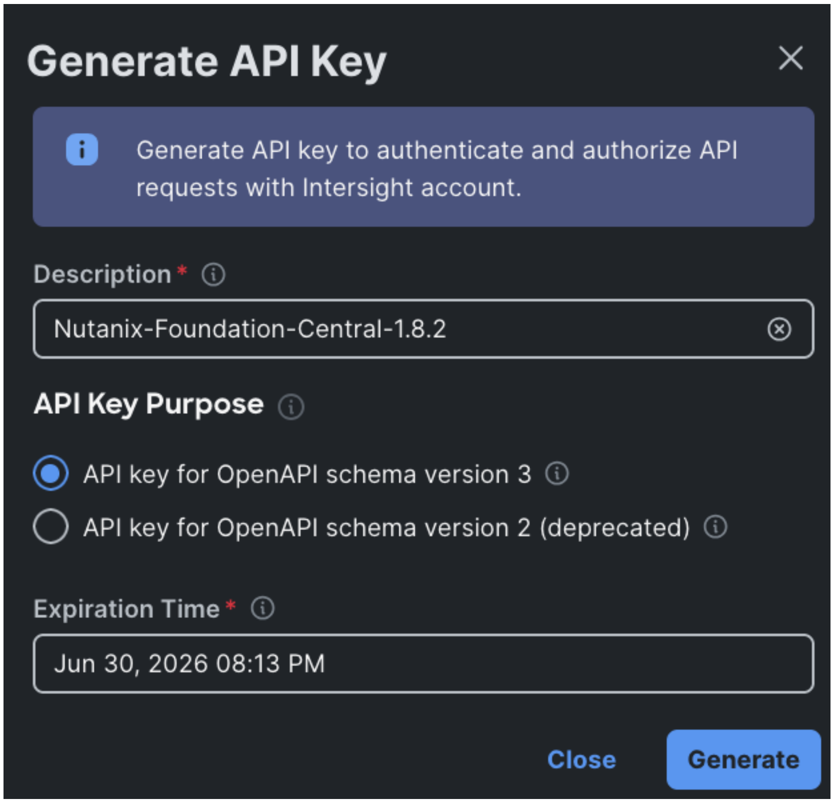
Keys

3 results

Description	API Key ID	Status
Nutanix-Foundation-Central-1.8.2	68e960ed75646133012b4498/68e960ed75646133012b449c/690a80327564613001389e7c	Enabled
Nutanix-API	68e960ed75646133012b4498/68e960ed75646133012b449c/690a50dc7564613001386dd2	Enabled
Nutanix-Foundation-Central	68e960ed75646133012b4498/68e960ed75646133012b449c/69012c5f7564613001d96173	Enabled

Rows per page 25

Step 3. Select the API key for OpenAPI schema version 3, add a description and key expiration date and click Generate.



Generate API key to authenticate and authorize API requests with Intersight account.

Description * Nutanix-Foundation-Central-1.8.2

API Key Purpose

● API key for OpenAPI schema version 3

○ API key for OpenAPI schema version 2 (deprecated)

Expiration Time * Jun 30, 2026 08:13 PM

Step 4. Once generated, save the API key ID and Secret Key at a secure place. This will be subsequently added in Nutanix Foundation Central.

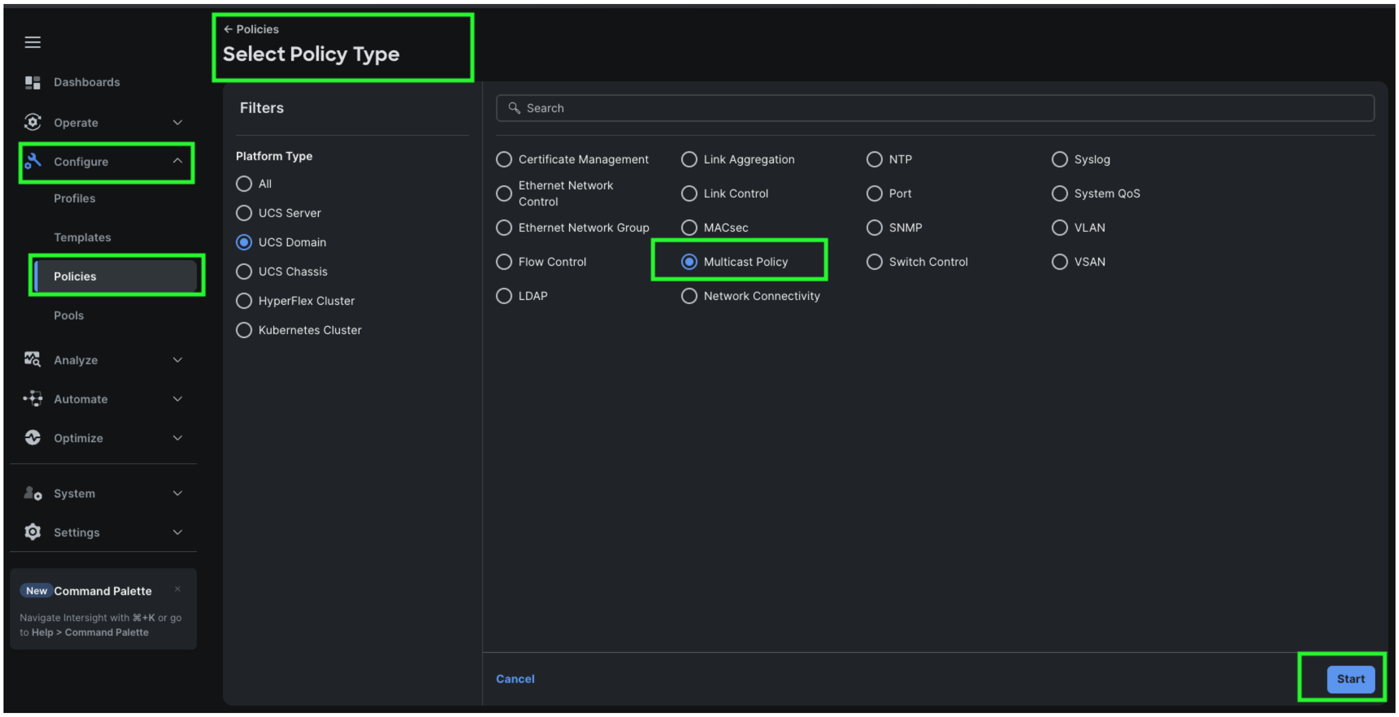
Configure Policies for Cisco UCS Domain

The following high-level procedures describe the process to deploy Prism Central either on a Nutanix Cluster or on an ESXi cluster. You should follow either of the procedures for PC installation. Procedure 1 is about deploying Prism Central on Nutanix Cluster while procedure 2 is deploying Prism Central on Non-Nutanix ESXi Cluster as explained below.

Procedure 1. Configure Multicast Policy

Step 1. To configure Multicast Policy for a Cisco UCS Domain profile, go to > Configure > Polices > and click Create Policy.

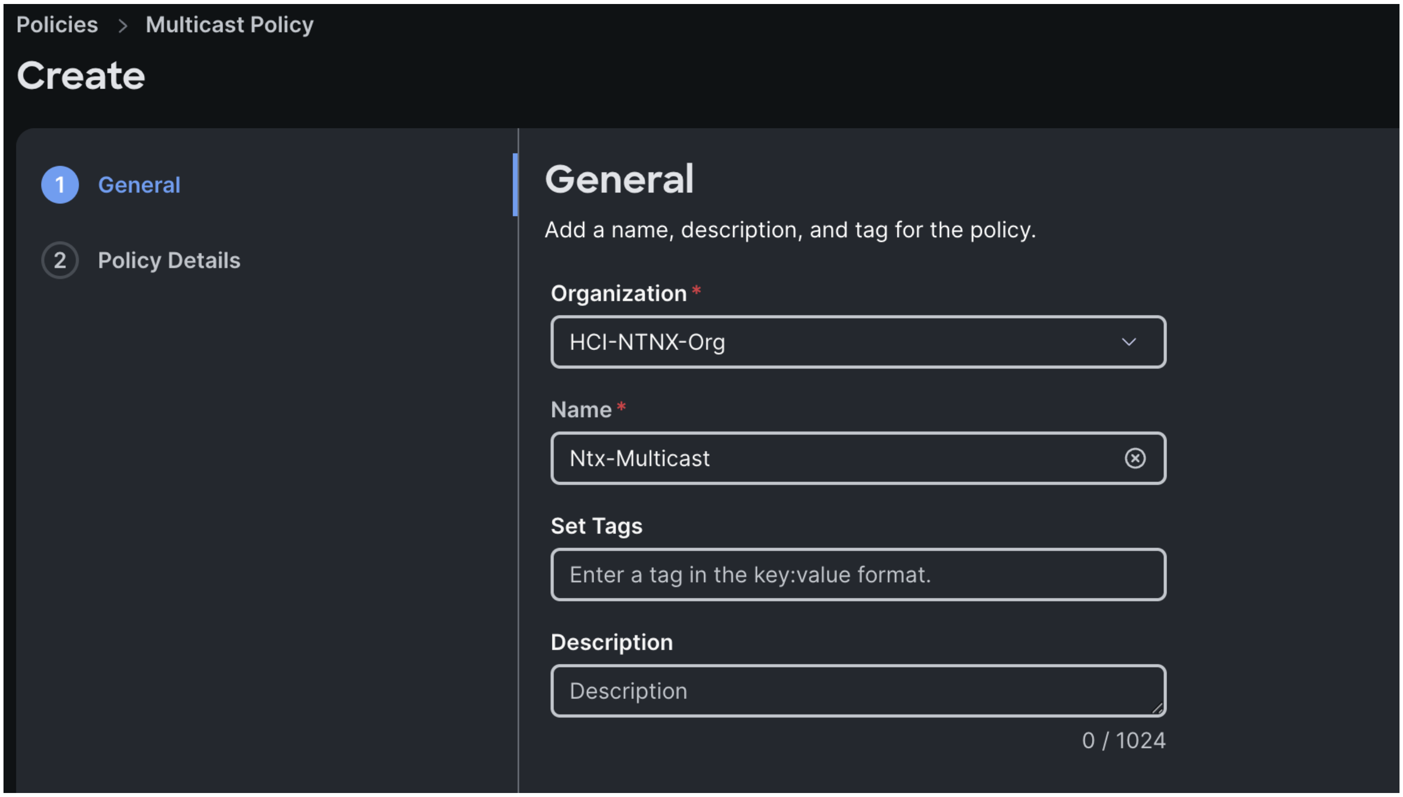
Step 2. For the platform type select UCS Domain and for Policy, select Multicast Policy.



Platform Type
○ All
○ UCS Server
● UCS Domain
○ UCS Chassis
○ HyperFlex Cluster
○ Kubernetes Cluster

○ Certificate Management	○ Link Aggregation	○ NTP	○ Syslog
○ Ethernet Network Control	○ Link Control	○ Port	○ System QoS
○ Ethernet Network Group	○ MACsec	○ SNMP	○ VLAN
○ Flow Control	● Multicast Policy	○ Switch Control	○ VSAN
○ LDAP	○ Network Connectivity		

Step 3. In the Multicast Policy Create section, for the Organization select HCI-NTNX-Org and for the Policy name Ntx-Multicast. Click Next.


Policies > Multicast Policy

Create

1 General

2 Policy Details

General

Add a name, description, and tag for the policy.

Organization * HCI-NTNX-Org

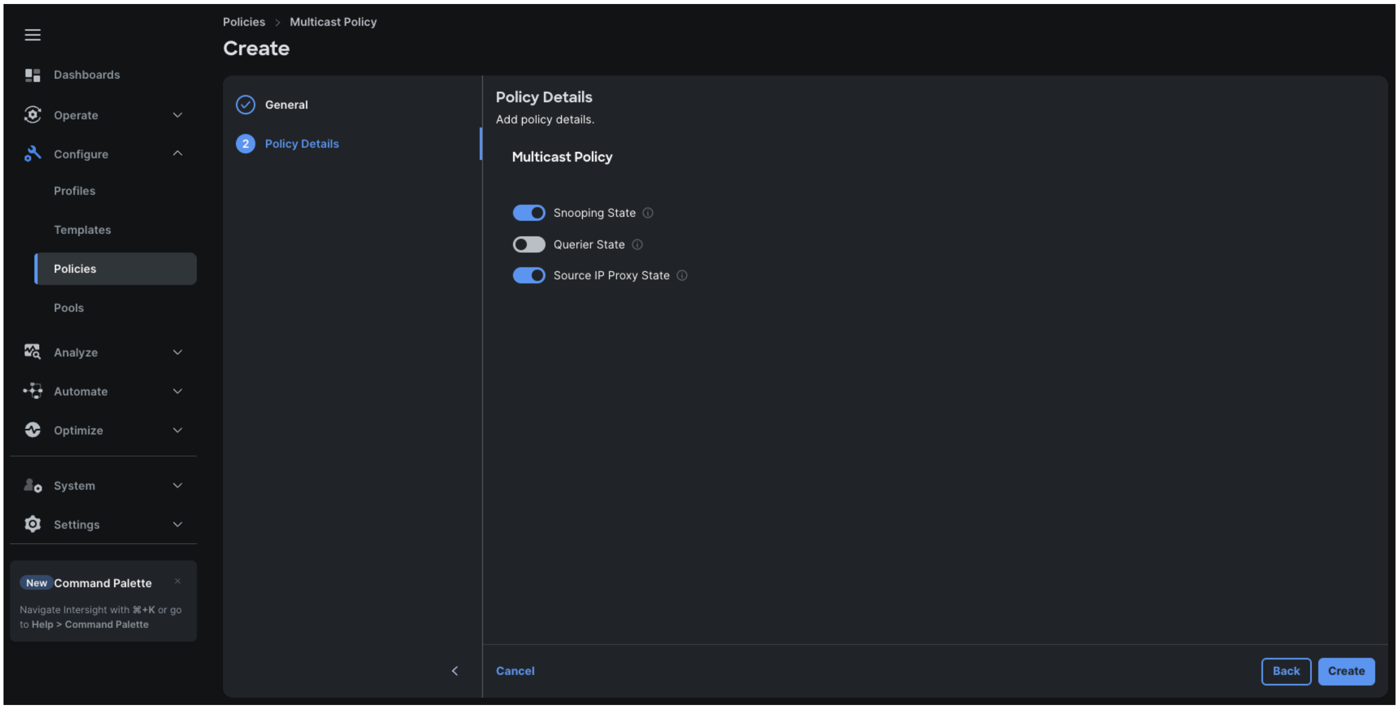
Name * Ntx-Multicast

Set Tags: Enter a tag in the key:value format.

Description: Description

0 / 1024

Step 4. In the Policy Details section, select Snooping State and Source IP Proxy State.



Policies > Multicast Policy

Create

General

2 Policy Details

Policy Details

Add policy details.

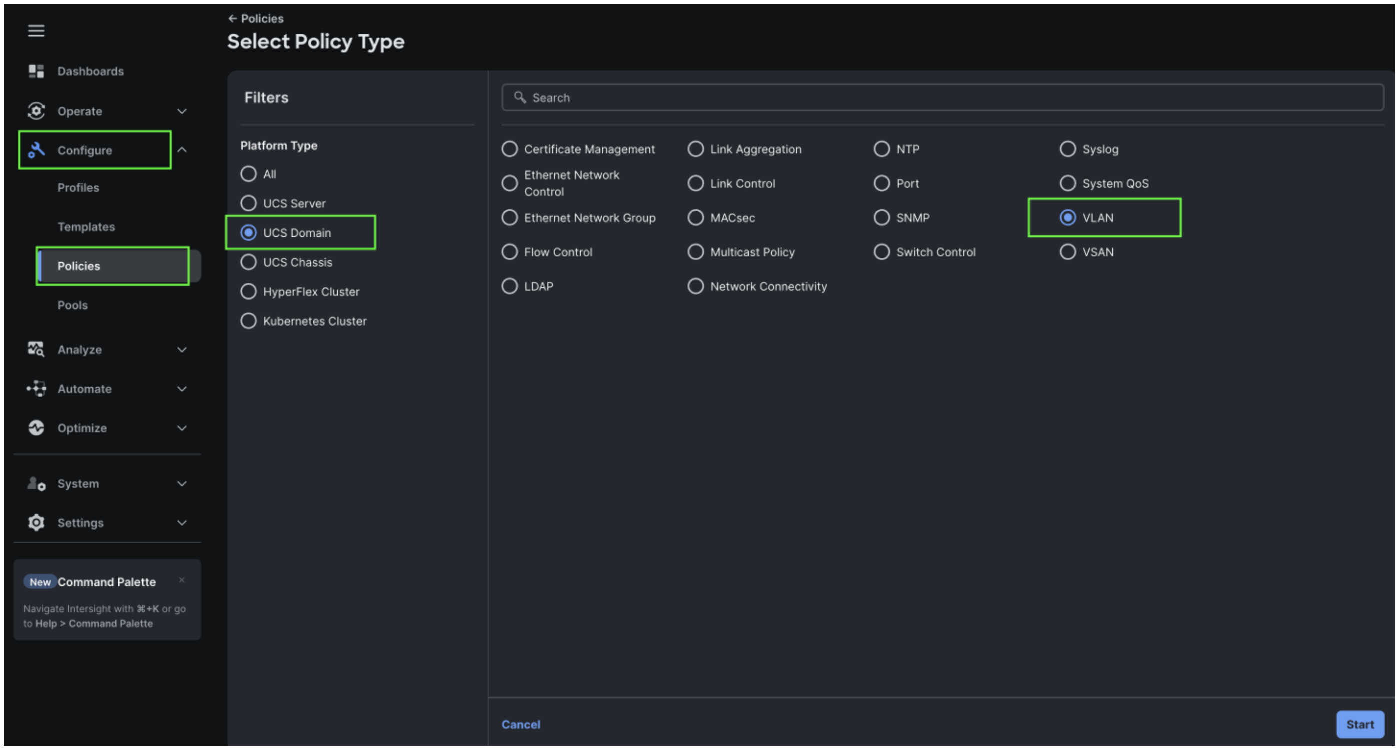
Multicast Policy

- Snooping State: on
- Querier State: off
- Source IP Proxy State: on

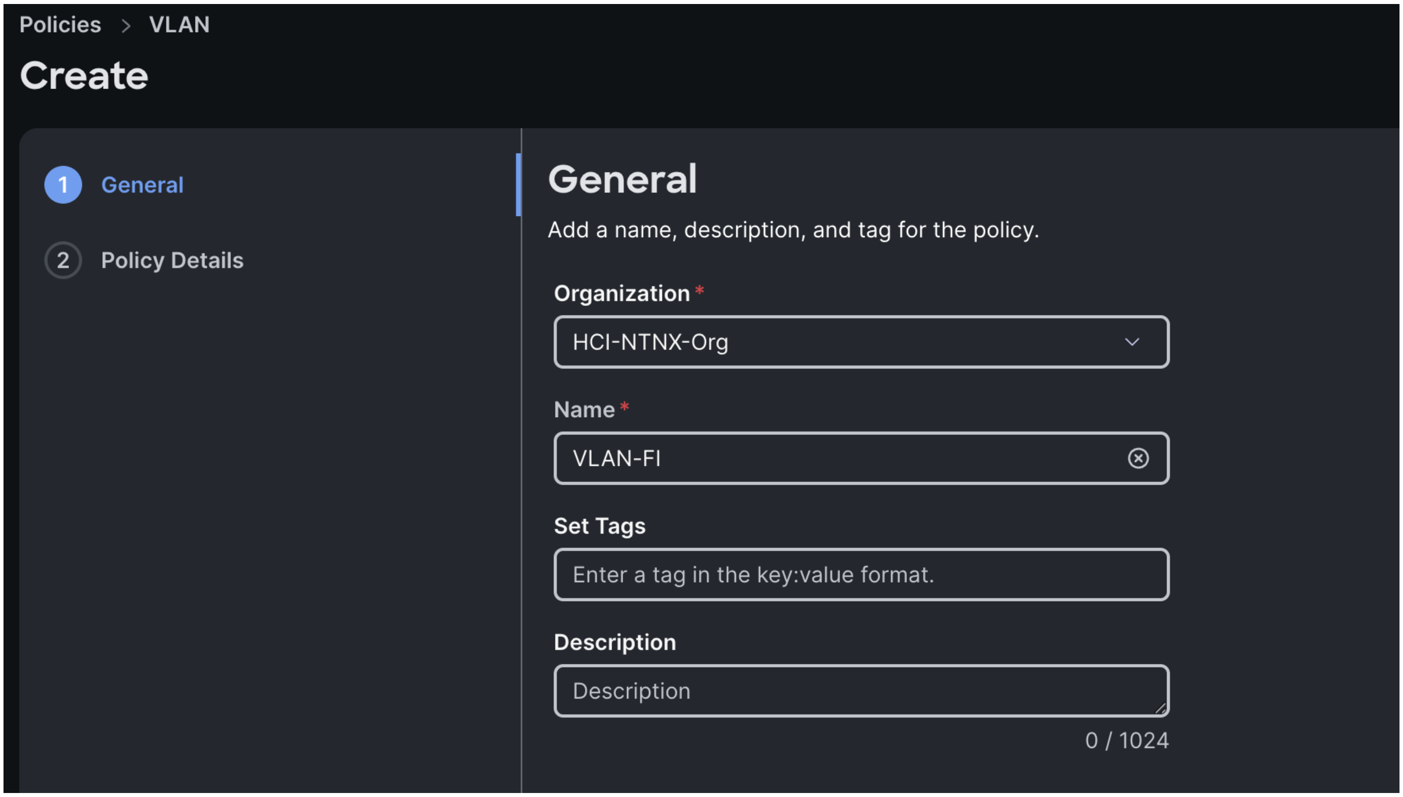
Step 5. Click Create to create this policy.

Procedure 2. Configure VLANs

Step 1. To configure the VLAN Policy for the Cisco UCS Domain profile, go to > Configure > Polices > and click Create Policy. For the platform type select UCS Domain and for the Policy select VLAN.



Step 2. In the VLAN Policy Create section, for the Organization select HCI-NTNX-Org and for the Policy name select VLAN-FI. Click Next.


Policies > VLAN

Create

1 General

2 Policy Details

General

Add a name, description, and tag for the policy.

Organization *: HCI-NTNX-Org

Name *: VLAN-FI

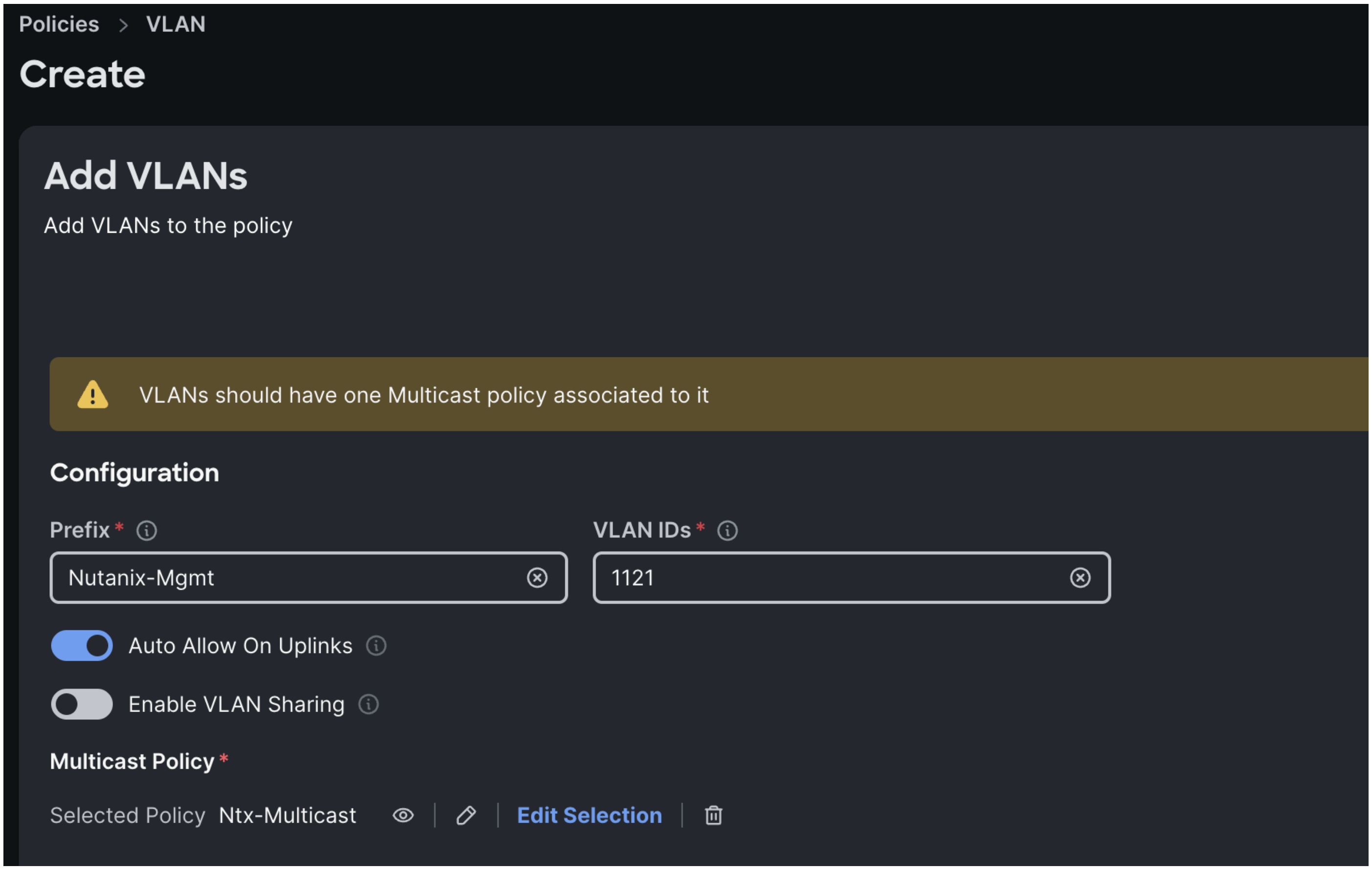
Set Tags: Enter a tag in the key:value format.

Description: Description

0 / 1024

Step 3. In the Policy Details section, to configure the individual VLANs, select Add VLANs.

Step 4. Provide a name, VLAN ID for the VLAN and select the Multicast Policy as shown below:



Policies > VLAN

Create

Add VLANs

Add VLANs to the policy

⚠ VLANs should have one Multicast policy associated to it

Configuration

Prefix *: Nutanix-Mgmt

VLAN IDs *: 1121

● Auto Allow On Uplinks (on)

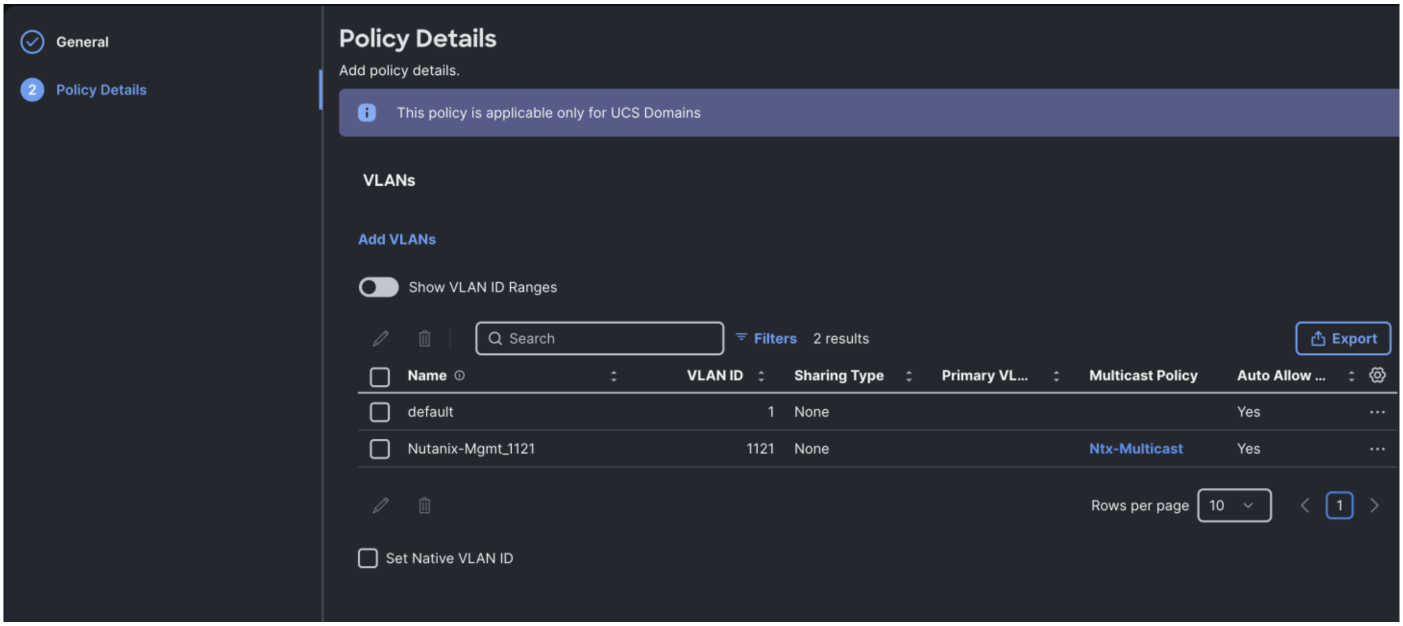
○ Enable VLAN Sharing (off)

Multicast Policy *

Selected Policy Ntx-Multicast | Edit Selection

Step 5. Click Add to add this VLAN to the policy.

Step 6. Review the policy details and click Create to create this policy.



Policy Details

Add policy details.

This policy is applicable only for UCS Domains

VLANs

Add VLANs

○ Show VLAN ID Ranges

Search | Filters | 2 results | Export

□	Name	VLAN ID	Sharing Type	Primary VL...	Multicast Policy	Auto Allow ...
□	default	1	None			Yes
□	Nutanix-Mgmt_1121	1121	None		Ntx-Multicast	Yes

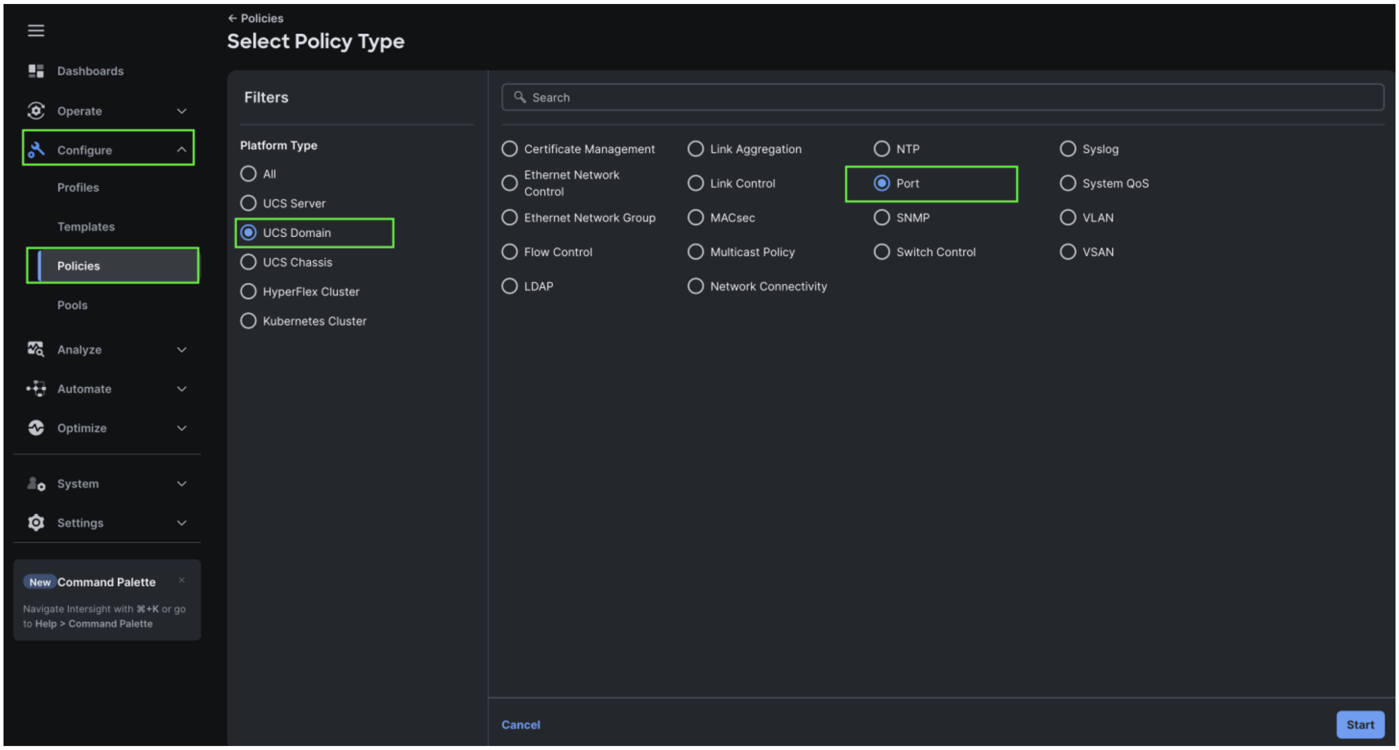
Rows per page 10 | 1

□ Set Native VLAN ID

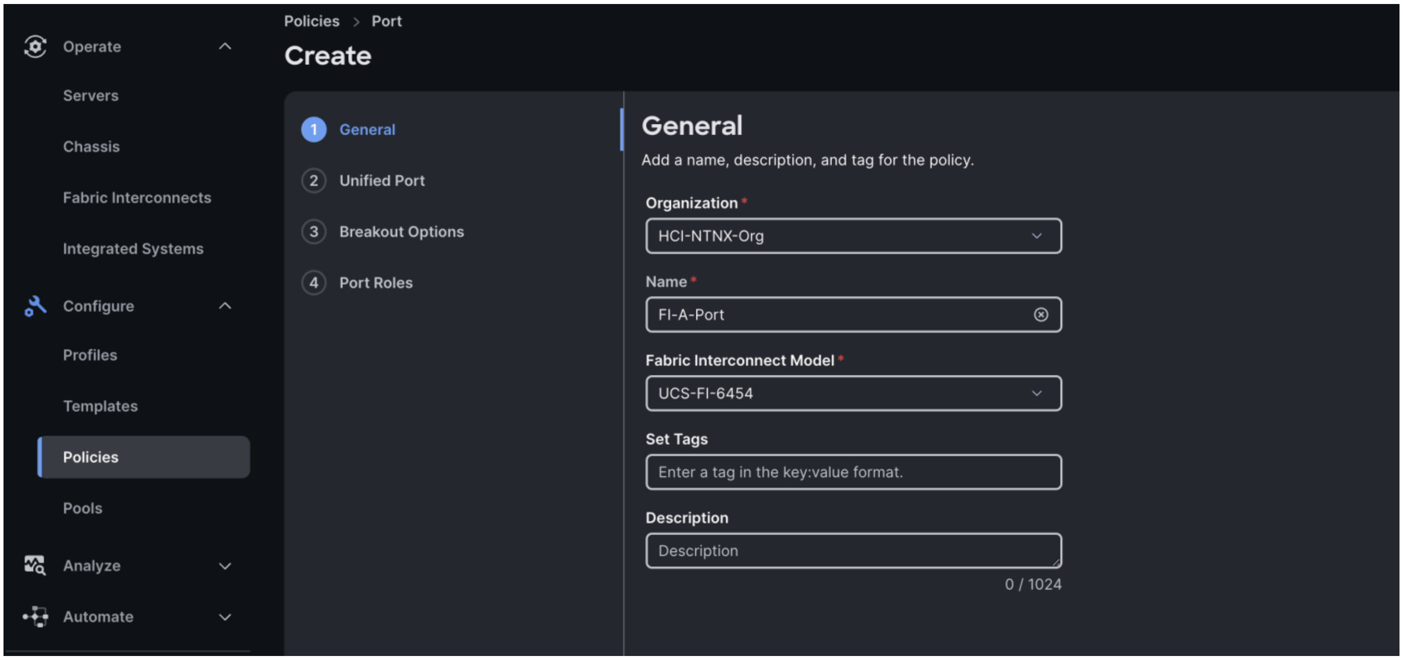
Procedure 3. Configure Port Policy

Step 1. Go to Configure > Polices > and click Create Policy.

Step 2. For the platform type select UCS Domain and for the policy, select Port.



Step 3. In the Port Policy Create section, for the Organization, select HCI-NTNX-Org, for the policy name select FI-A-Port and for the Switch Model select UCS-FI-6536. Click Next.



General

Add a name, description, and tag for the policy.

Organization *: HCI-NTNX-Org

Name *: FI-A-Port

Fabric Interconnect Model *: UCS-FI-6454

Set Tags: Enter a tag in the key:value format.

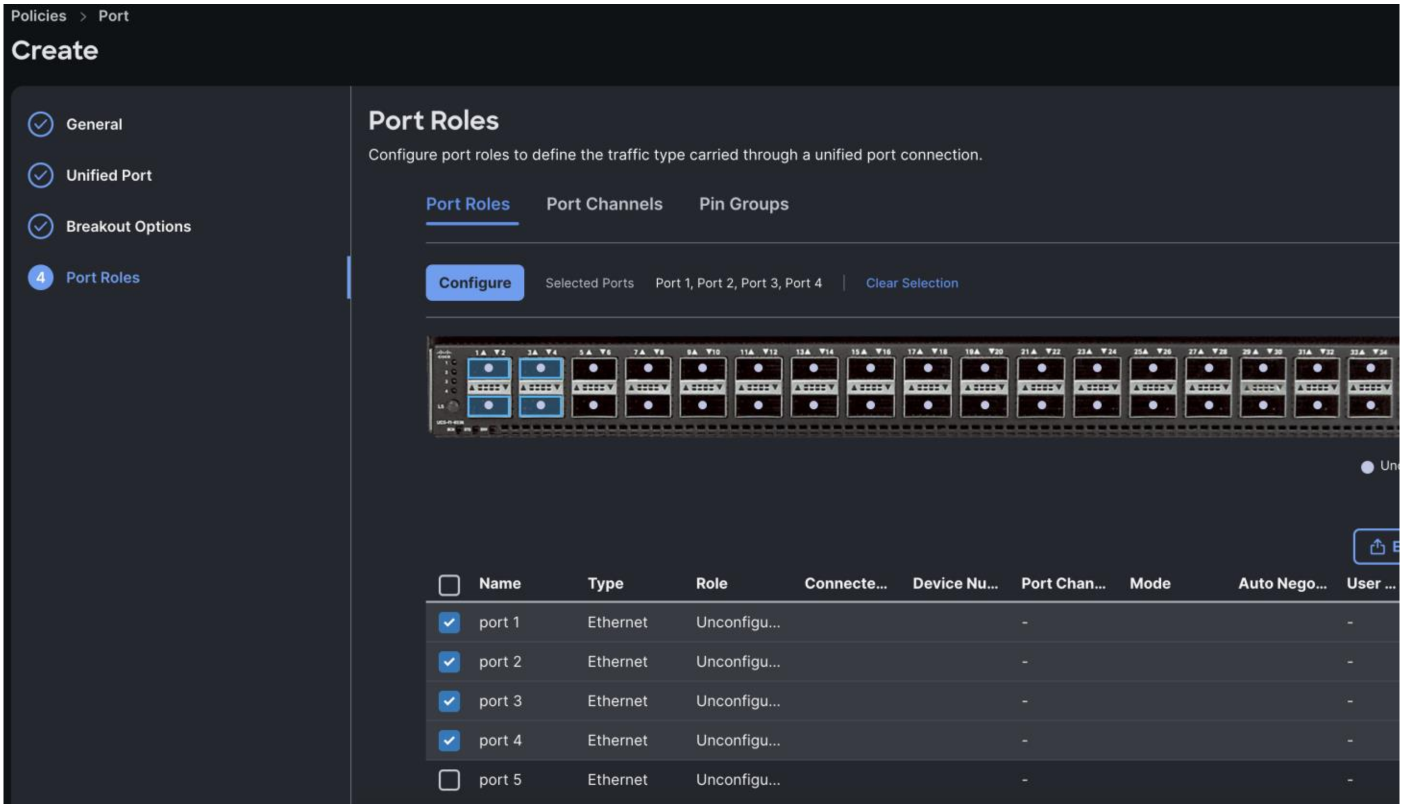
Description: Description

0 / 1024

Note: We did not configure the Fibre Channel Ports for this solution. In the Unified Port section, leave it as default and click Next.

Note: We did not configure the Breakout options for this solution. Leave it as default and click Next.

Step 4. In the Port Role section, select port 1 to 4 and click Configure.



Policies > Port

Create

- ✓ General
- ✓ Unified Port
- ✓ Breakout Options
- 4 Port Roles

Port Roles

Configure port roles to define the traffic type carried through a unified port connection.

Selected Ports Port 1, Port 2, Port 3, Port 4 | Clear Selection

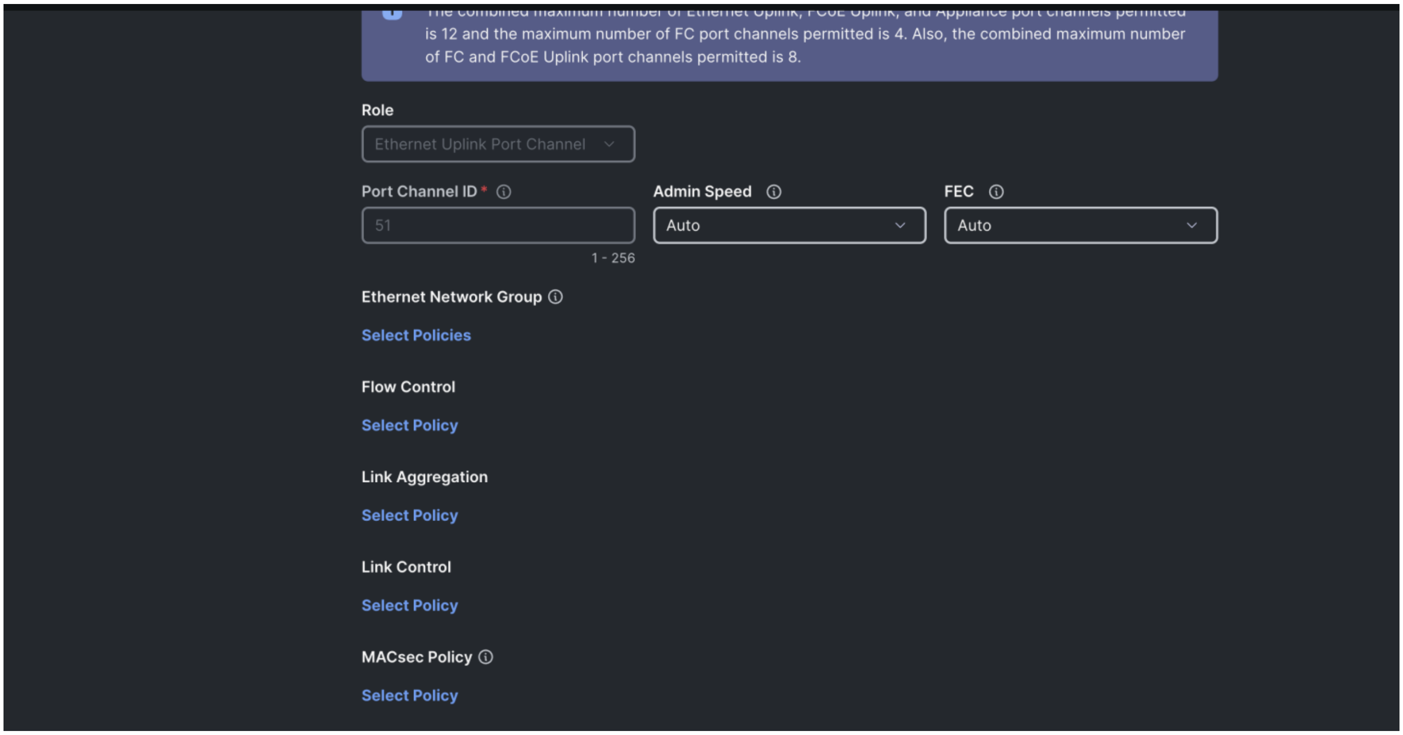
☐	Name	Type	Role	Connecte...	Device Nu...	Port Chan...	Mode	Auto Nego...	User ...
☑	port 1	Ethernet	Unconfigu...			-			-
☑	port 2	Ethernet	Unconfigu...			-			-
☑	port 3	Ethernet	Unconfigu...			-			-
☑	port 4	Ethernet	Unconfigu...			-			-
☐	port 5	Ethernet	Unconfigu...			-			-

Step 5. In the Configure section, for Role select Server and keep the Auto Negotiation ON, keep Manual Server Numbering as disable.

Step 6. Click SAVE to add this configuration for port roles.

Step 7. Go to the Port Channels tab and select Port 27 to 28 and click Create Port Channel between FI-A and both Cisco Nexus Switches.

Step 8. In the Create Port Channel section, for Role select Ethernet Uplinks Port Channel, and for the Port Channel ID select 51 and select Auto for the Admin Speed.



The combined maximum number of Ethernet Uplink, FCoE Uplink, and Appliance port channels permitted is 12 and the maximum number of FC port channels permitted is 4. Also, the combined maximum number of FC and FCoE Uplink port channels permitted is 8.

Role: Ethernet Uplink Port Channel

Port Channel ID *: 51 (1 - 256)

Admin Speed: Auto

FEC: Auto

Ethernet Network Group: Select Policies

Flow Control: Select Policy

Link Aggregation: Select Policy

Link Control: Select Policy

MACsec Policy: Select Policy

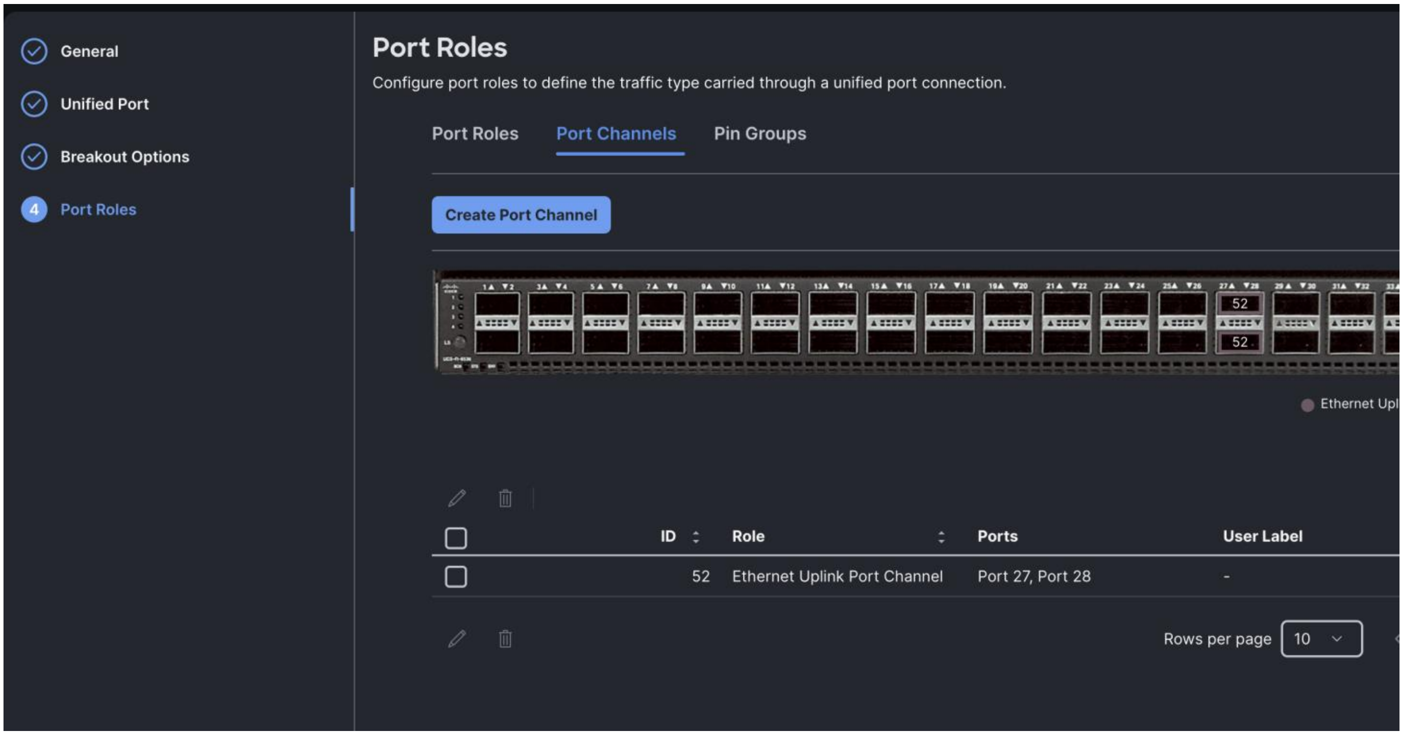
Step 9. Click SAVE to add this configuration for uplink port roles.

Step 10. Click SAVE to complete this configuration for all the server ports and uplink port roles.

Note: We configured the FI-B ports and created a Port Policy for FI-B, “FI-B-Port.”

Note: As configured for FI-A, we configured the port policy for FI-B. For FI-B, configured port 1 to 4 for server ports and ports 27 to 28 as the ethernet uplink port-channel ports.

Note: For FI-B, we configured Port-Channel ID as 52 for Ethernet Uplink Port Channel as shown below:



☐	ID	Role	Ports	User Label
☐	52	Ethernet Uplink Port Channel	Port 27, Port 28	-

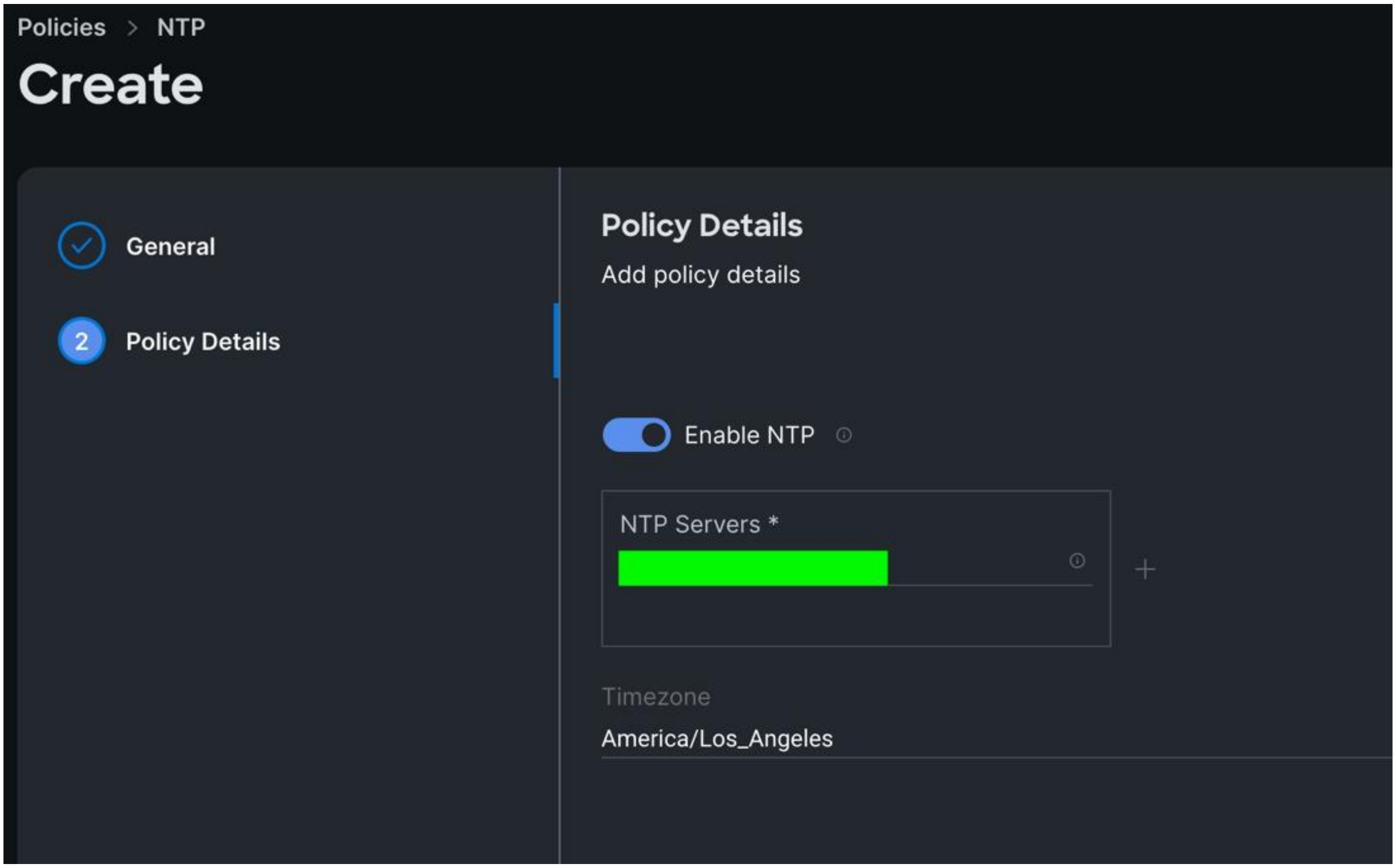
This completes the Port Policy for FI-A and FI-B for Cisco UCS Domain profile.

Procedure 4. Configure NTP Policy

Step 1. To configure the NTP Policy for the Cisco UCS Domain profile, go to > Configure > Polices > and click Create Policy. For the platform type select UCS Domain and for the policy select NTP.

Step 2. In the NTP Policy Create section, for the Organization select HCI-NTNX-Org and for the policy name select NTP-Policy. Click Next.

Step 3. In the Policy Details section, select the option to enable the NTP Server and enter your NTP Server details as shown below:



Policies > NTP

Create

Policy Details

Add policy details

Enable NTP: on

NTP Servers *: [redacted]

Timezone: America/Los_Angeles

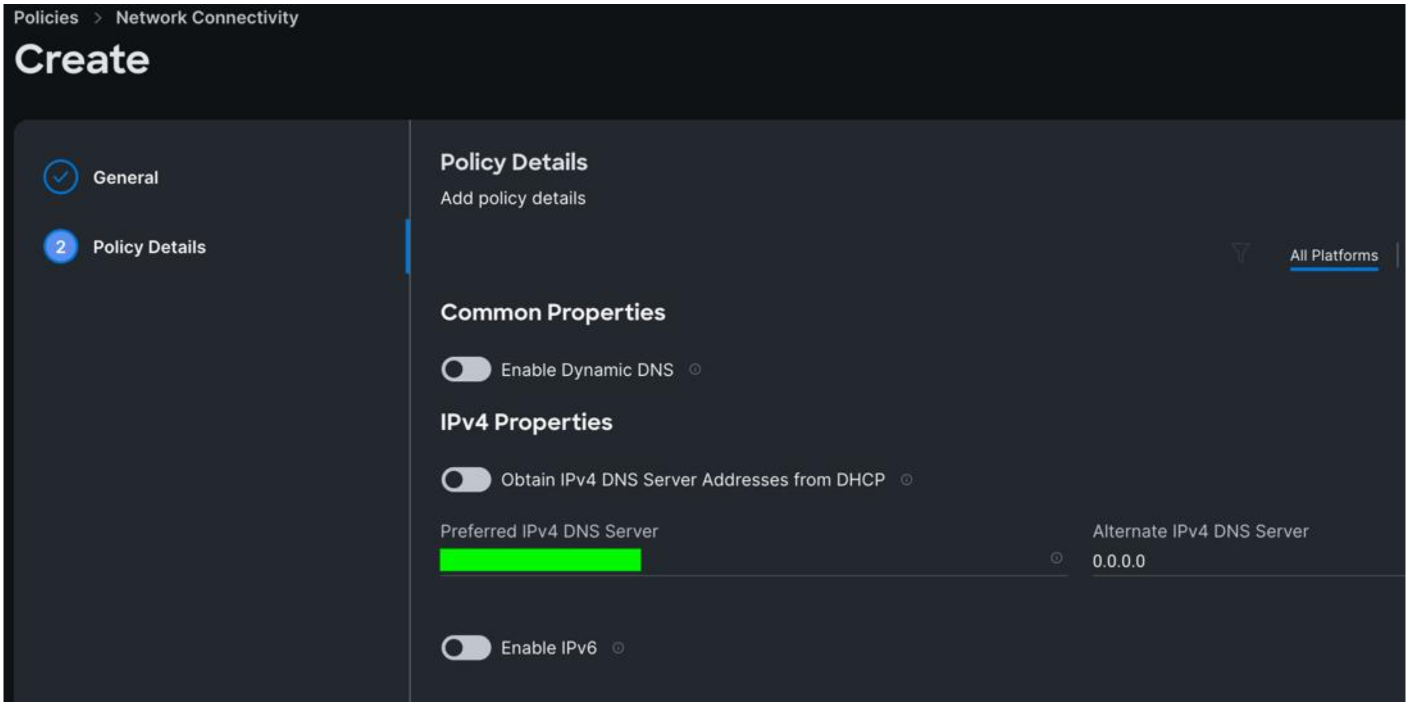
Step 4. Click Create.

Procedure 5. Configure Network Connectivity Policy

Step 1. To configure to Network Connectivity Policy for the Cisco UCS Domain profile, go to > Configure > Polices > and click Create Policy. For the platform type select UCS Domain and for the policy select Network Connectivity.

Step 2. In the Network Connectivity Policy Create section, for the Organization select HCI-NTNX-Org and for the policy name select Network-Connectivity-Policy. Click Next.

Step 3. In the Policy Details section, enter the IPv4 DNS Server information according to your environment details as shown below:



Policy Details

Add policy details

Common Properties

○ Enable Dynamic DNS

IPv4 Properties

○ Obtain IPv4 DNS Server Addresses from DHCP

Preferred IPv4 DNS Server: [redacted]

Alternate IPv4 DNS Server: 0.0.0.0

○ Enable IPv6

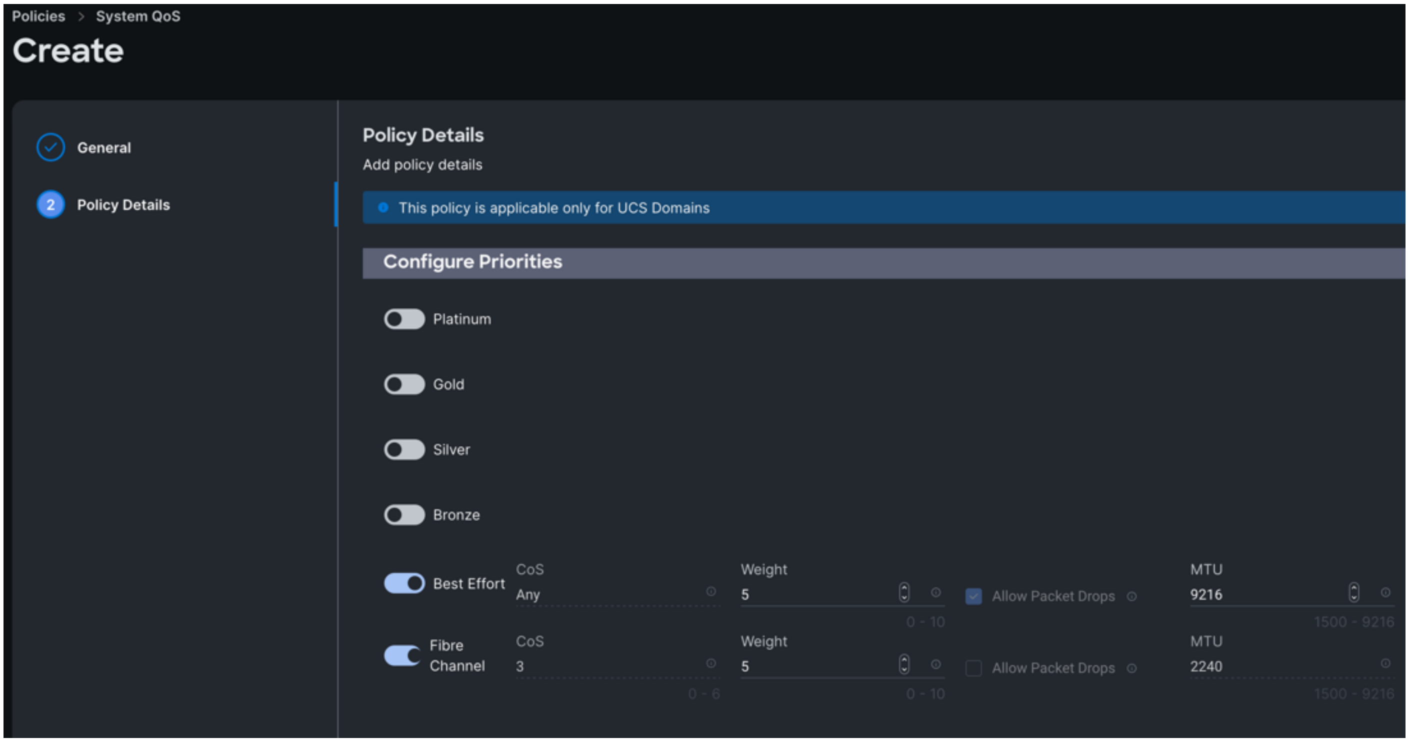
Step 4. Click Create.

Procedure 6. Configure System QoS Policy

Step 1. To configure the System QoS Policy for the Cisco UCS Domain profile, go to > Infrastructure Service > Configure > Polices > and click Create Policy. For the platform type select UCS Domain and for the policy select System QoS.

Step 2. In the System QoS Policy Create section, for the Organization select HCI-NTNX-Org and for the policy name select Ntx-QoS. Click Next.

Step 3. In the Policy Details section under Configure Priorities, select Best Effort and set the MTU size to 9216.



Policies > System QoS

Create

General

2 Policy Details

Policy Details

Add policy details

This policy is applicable only for UCS Domains

Configure Priorities

Platinum

Gold

Silver

Bronze

	CoS	Weight		MTU
Best Effort	Any	5 (0 - 10)	☑ Allow Packet Drops	9216 (1500 - 9216)
Fibre Channel	3 (0 - 6)	5 (0 - 10)	□ Allow Packet Drops	2240 (1500 - 9216)

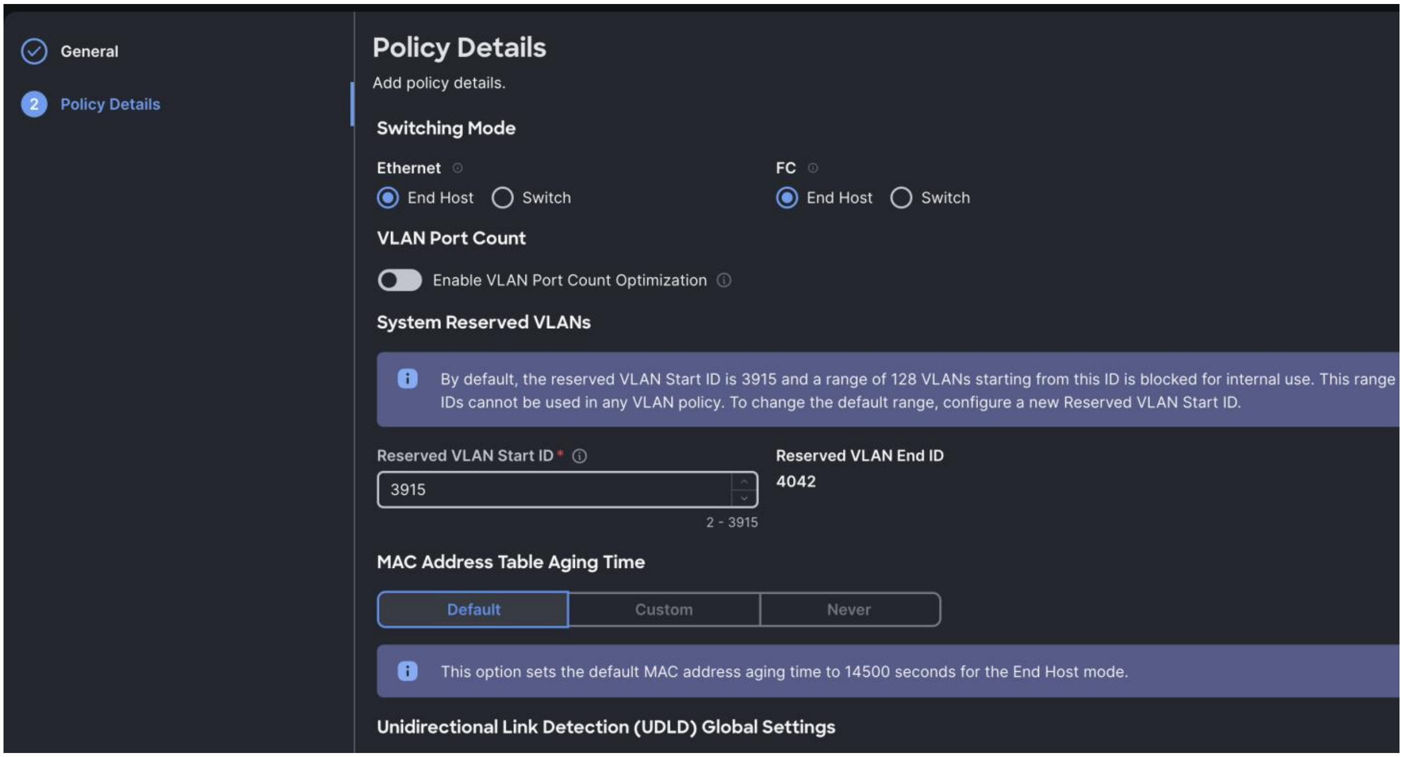
Step 4. Click Create.

Procedure 7. Configure Switch Control Policy

Step 1. To configure the Switch Control Policy for the UCS Domain profile, go to > Infrastructure Service > Configure > Polices > and click Create Policy. For the platform type select UCS Domain and for the policy select Switch Control.

Step 2. In the Switch Control Policy Create section, for the Organization select HCI-NTNX-Org and for the policy name select Ntx-Switch-Control. Click Next.

Step 3. In the Policy Details section, keep all the option default as shown below:



Policy Details

Add policy details.

Switching Mode

Ethernet: ● End Host ○ Switch

FC: ● End Host ○ Switch

VLAN Port Count

Enable VLAN Port Count Optimization: off

System Reserved VLANs

By default, the reserved VLAN Start ID is 3915 and a range of 128 VLANs starting from this ID is blocked for internal use. This range IDs cannot be used in any VLAN policy. To change the default range, configure a new Reserved VLAN Start ID.

Reserved VLAN Start ID *: 3915 (2 - 3915)

Reserved VLAN End ID: 4042

MAC Address Table Aging Time: [✓ Default] Custom Never

This option sets the default MAC address aging time to 14500 seconds for the End Host mode.

Unidirectional Link Detection (UDLD) Global Settings

Step 4. Click Create to create this policy.

Configure Cisco UCS Domain Profile

A Domain Profile must be created and deployed to the Fabric Interconnects. The Domain Profile defines the roles of the ports on the Fabric Interconnects, the VLANs used on the network and several other domain-wide policy settings such as QoS. After the Domain Profile is deployed the rackmount servers and/or modular blades will discover and can then be onboarded in Foundation Central and targeted for a Nutanix cluster deployment. Ensure that the profile and all the associated policies are created in the Organization that also contains the Resource Group for the Fabric Interconnects and servers.

For more information, go to:
https://intersight.com/help/saas/features/fabric_interconnects/configure#domain_profile

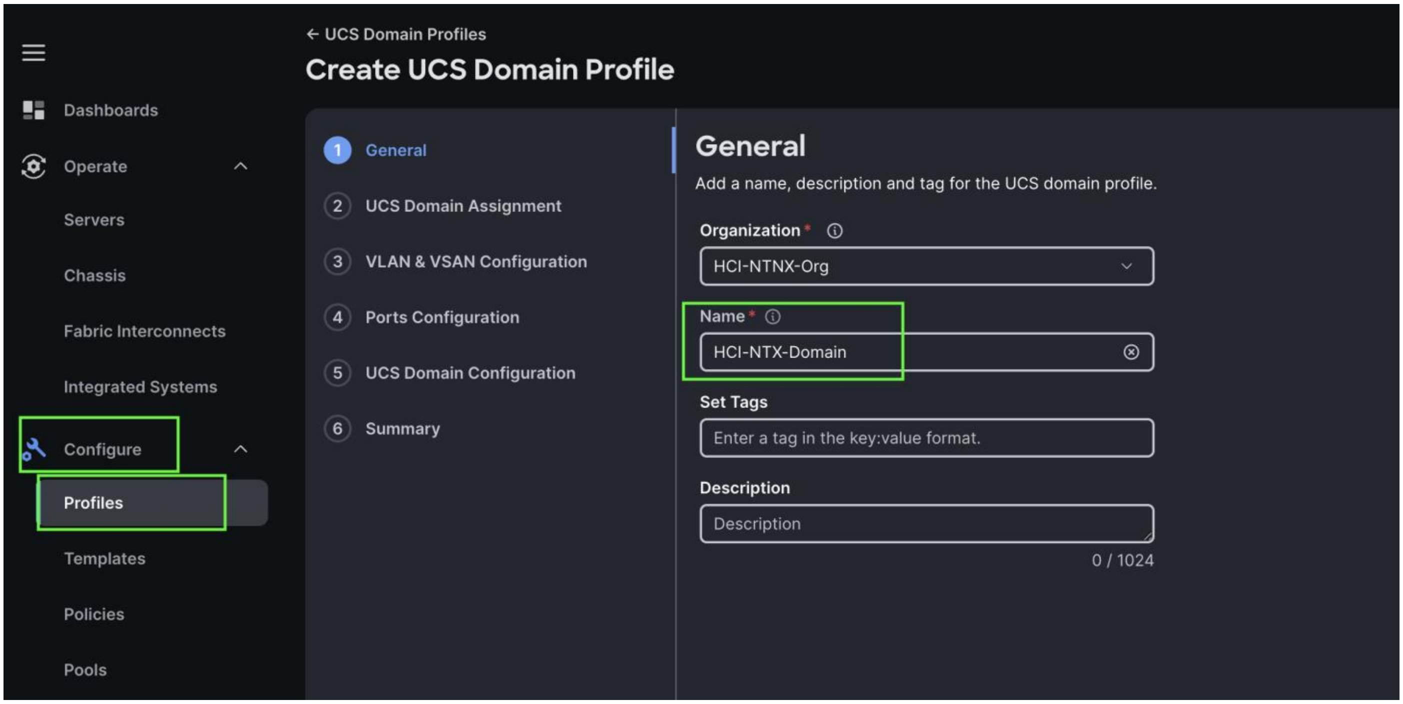
Some of the characteristics of the Cisco UCS domain profile are:

- A single domain profile (HCI-NTNX-Domain) is created for the pair of Cisco UCS fabric interconnects.
- Unique port policies are defined for the two fabric interconnects.
- The VLAN configuration policy is common to the fabric interconnect pair because both fabric interconnects are configured for the same set of VLANs.
- The Network Time Protocol (NTP), network connectivity, and system Quality-of-Service (QoS) policies are common to the fabric interconnect pair.

Procedure 1. Create UCS Domain Profile

Step 1. To create a domain profile, go to Configure > Profiles > then go to the UCS Domain Profiles tab and click Create UCS Domain Profile

Step 2. For the domain profile name, enter HCI-NTNX-Domain and for the Organization select what was previously configured. Click Next.



Create UCS Domain Profile

General

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

Organization * : HCI-NTNX-Org

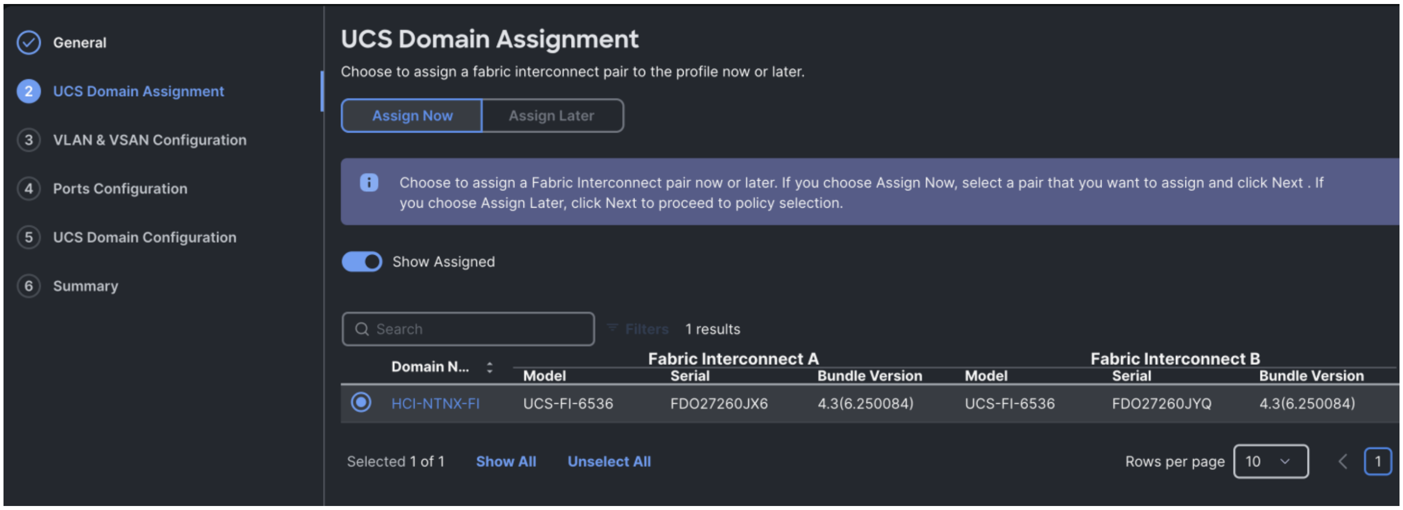
Name * : HCI-NTX-Domain

Set Tags: Enter a tag in the key:value format.

Description: Description

0 / 1024

Step 3. In the UCS Domain Assignment menu, for the Domain Name select HCI-NTNXC-FI which was previously added into this domain and click Next.



UCS Domain Assignment

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

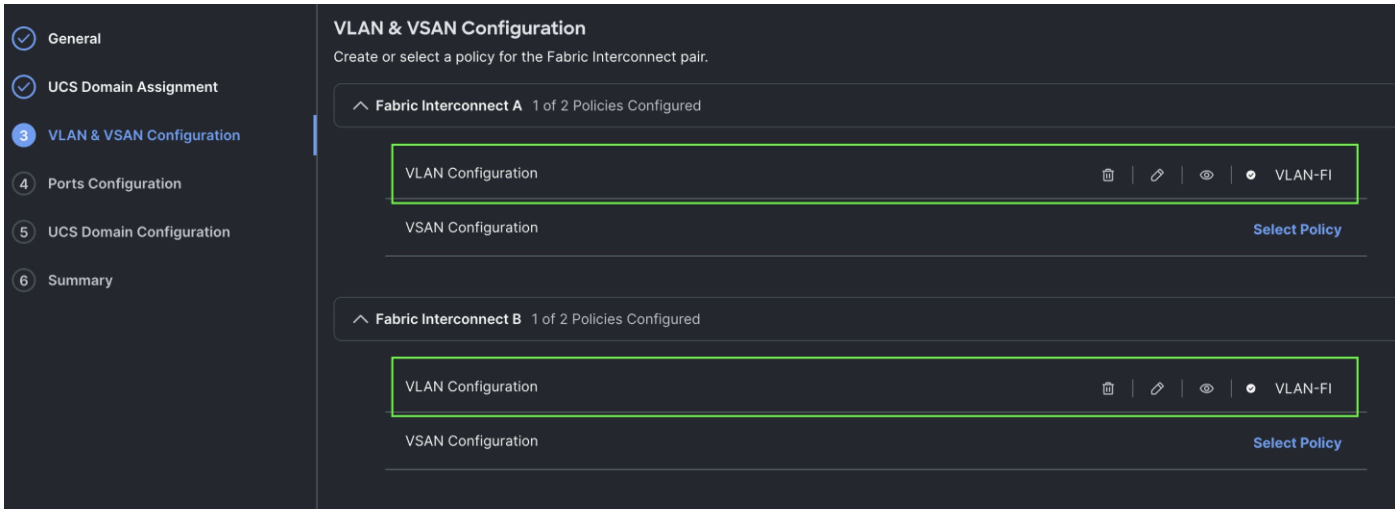
Choose to assign a Fabric Interconnect pair now or later. If you choose Assign Now, select a pair that you want to assign and click Next . If you choose Assign Later, click Next to proceed to policy selection.

1 results

	Fabric Interconnect A			Fabric Interconnect B		
Domain N...	Model	Serial	Bundle Version	Model	Serial	Bundle Version
● HCI-NTNX-FI	UCS-FI-6536	FDO27260JX6	4.3(6.250084)	UCS-FI-6536	FDO27260JYQ	4.3(6.250084)

Selected 1 of 1

Step 4. In the VLAN Configuration screen, for the VLAN Configuration for both FIs, select VLAN-FI and click Next.



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

VLAN & VSAN Configuration

Create or select a policy for the Fabric Interconnect pair.

Fabric Interconnect A 1 of 2 Policies Configured

VLAN Configuration — VLAN-FI

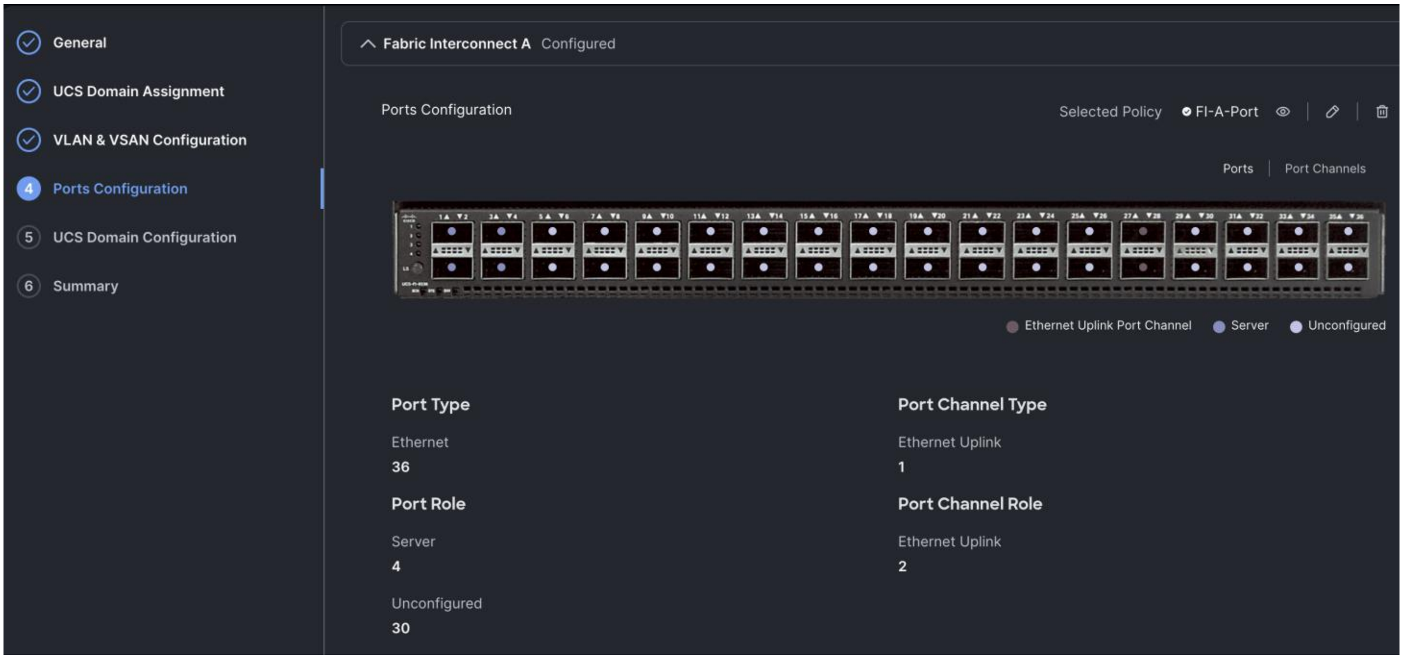
VSAN Configuration — Select Policy

Fabric Interconnect B 1 of 2 Policies Configured

VLAN Configuration — VLAN-FI

VSAN Configuration — Select Policy

Step 5. In the Port Configuration section, for the Port Configuration Policy for FI-A select FI-A-Port.



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

Fabric Interconnect A Configured

Ports Configuration — Selected Policy ● FI-A-Port

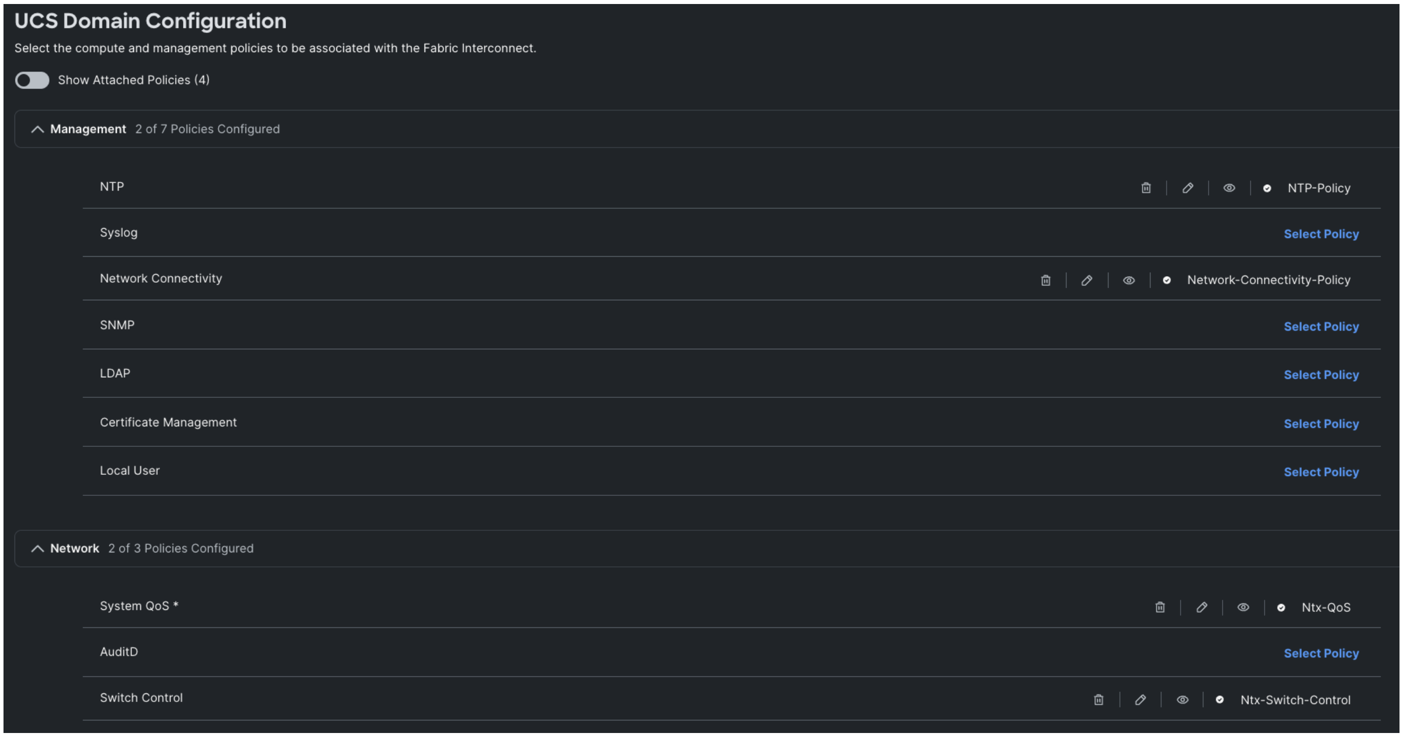
Ports | Port Channels

● Ethernet Uplink Port Channel ● Server ● Unconfigured

Port Type	Port Channel Type
Ethernet 36	Ethernet Uplink 1
Port Role	**Port Channel Role**
Server 4	Ethernet Uplink 2
Unconfigured 30	

Step 6. For the port configuration policy for FI-B select FI-B-Port .

Step 7. In the UCS Domain Configuration section, select the policy for NTP, Network Connectivity, System QoS and Switch Control as shown below:



UCS Domain Configuration

Select the compute and management policies to be associated with the Fabric Interconnect.

Show Attached Policies (4)

Management 2 of 7 Policies Configured

NTP	NTP-Policy
Syslog	Select Policy
Network Connectivity	Network-Connectivity-Policy
SNMP	Select Policy
LDAP	Select Policy
Certificate Management	Select Policy
Local User	Select Policy

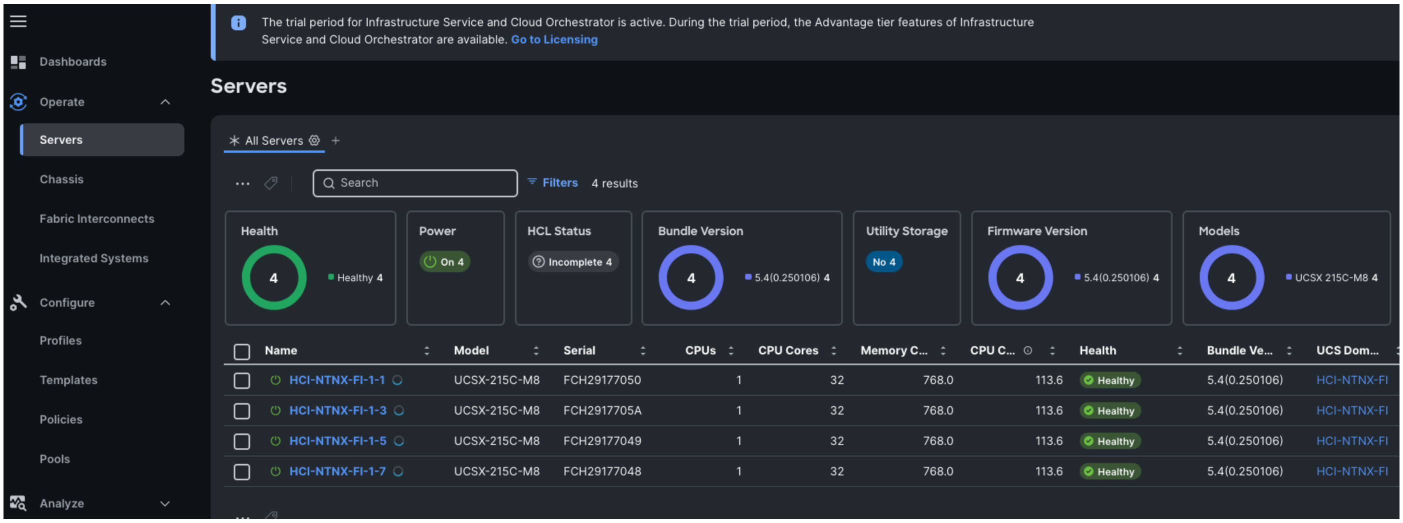
Network 2 of 3 Policies Configured

System QoS *	Ntx-QoS
AuditD	Select Policy
Switch Control	Ntx-Switch-Control

Step 8. In the Summary window, review the policies and click Deploy to create Domain Profile.

Note: After the Cisco UCS domain profile has been successfully created and deployed, the policies including the port policies are pushed to the Cisco UCS fabric interconnects. The Cisco UCS domain profile can easily be cloned to install additional Cisco UCS systems. When cloning the Cisco UCS domain profile, the new Cisco UCS domains utilize the existing policies for the consistent deployment of additional Cisco UCS systems at scale.

Step 9. The Cisco UCSX-215C-M8 Compute Nodes are automatically discovered when the ports are successfully configured using the domain profile as shown below. You can check the status of this discovery by clicking Request next to the Refresh page option.



The trial period for Infrastructure Service and Cloud Orchestrator is active. During the trial period, the Advantage tier features of Infrastructure Service and Cloud Orchestrator are available. Go to Licensing

Servers

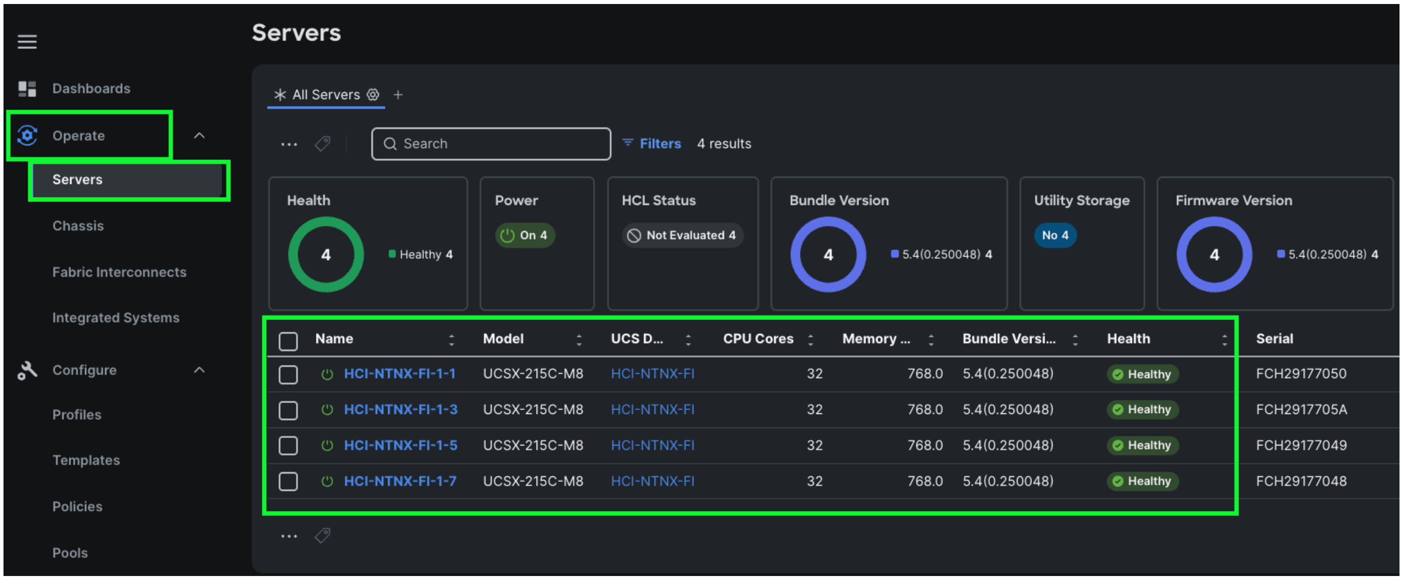
All Servers

Search Filters 4 results

Health: 4, Healthy 4 | Power: On 4 | HCL Status: Incomplete 4 | Bundle Version: 4, 5.4(0.250106) 4 | Utility Storage: No 4 | Firmware Version: 4, 5.4(0.250106) 4 | Models: 4, UCSX 215C-M8 4

☐	Name	Model	Serial	CPUs	CPU Cores	Memory C...	CPU C...	Health	Bundle Ve...	UCS Dom...
☐	HCI-NTNX-FI-1-1	UCSX-215C-M8	FCH29177050	1	32	768.0	113.6	Healthy	5.4(0.250106)	HCI-NTNX-FI
☐	HCI-NTNX-FI-1-3	UCSX-215C-M8	FCH2917705A	1	32	768.0	113.6	Healthy	5.4(0.250106)	HCI-NTNX-FI
☐	HCI-NTNX-FI-1-5	UCSX-215C-M8	FCH29177049	1	32	768.0	113.6	Healthy	5.4(0.250106)	HCI-NTNX-FI
☐	HCI-NTNX-FI-1-7	UCSX-215C-M8	FCH29177048	1	32	768.0	113.6	Healthy	5.4(0.250106)	HCI-NTNX-FI

After discovering the servers successfully, you will find all the servers as shown below:



Servers

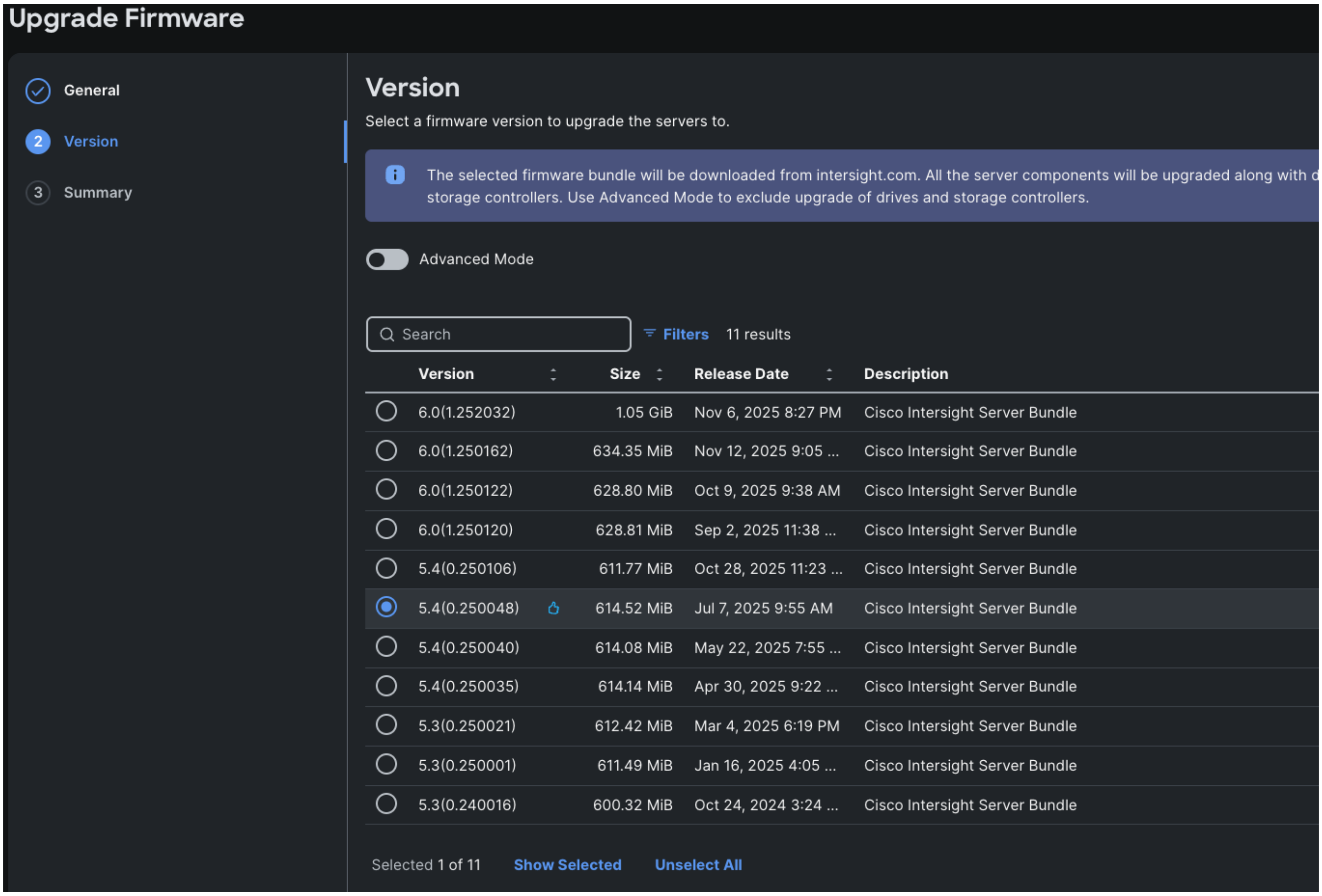
4 results

Health	Power	HCL Status	Bundle Version	Utility Storage	Firmware Version
4 Healthy 4	On 4	Not Evaluated 4	4 5.4(0.250048) 4	No 4	4 5.4(0.250048) 4

□	Name	Model	UCS D...	CPU Cores	Memory ...	Bundle Versi...	Health	Serial
□	HCI-NTNX-FI-1-1	UCSX-215C-M8	HCI-NTNX-FI	32	768.0	5.4(0.250048)	Healthy	FCH29177050
□	HCI-NTNX-FI-1-3	UCSX-215C-M8	HCI-NTNX-FI	32	768.0	5.4(0.250048)	Healthy	FCH2917705A
□	HCI-NTNX-FI-1-5	UCSX-215C-M8	HCI-NTNX-FI	32	768.0	5.4(0.250048)	Healthy	FCH29177049
□	HCI-NTNX-FI-1-7	UCSX-215C-M8	HCI-NTNX-FI	32	768.0	5.4(0.250048)	Healthy	FCH29177048

Step 10. After discovering the servers successfully, upgrade all server firmware through IMM to the supported release. To do this, check the box for All Servers and then click the ellipses and from the drop-down list, select Upgrade Firmware.

Step 11. In the Upgrade Firmware section, select all servers and click Next. In the Version section, for the supported firmware version release select 5.4 (0.250048) and click Next, then click Upgrade to upgrade the firmware on all servers simultaneously.



Version

Select a firmware version to upgrade the servers to.

The selected firmware bundle will be downloaded from intersight.com. All the server components will be upgraded along with d storage controllers. Use Advanced Mode to exclude upgrade of drives and storage controllers.

11 results

	Version	Size	Release Date	Description
○	6.0(1.252032)	1.05 GiB	Nov 6, 2025 8:27 PM	Cisco Intersight Server Bundle
○	6.0(1.250162)	634.35 MiB	Nov 12, 2025 9:05 ...	Cisco Intersight Server Bundle
○	6.0(1.250122)	628.80 MiB	Oct 9, 2025 9:38 AM	Cisco Intersight Server Bundle
○	6.0(1.250120)	628.81 MiB	Sep 2, 2025 11:38 ...	Cisco Intersight Server Bundle
○	5.4(0.250106)	611.77 MiB	Oct 28, 2025 11:23 ...	Cisco Intersight Server Bundle
●	5.4(0.250048)	614.52 MiB	Jul 7, 2025 9:55 AM	Cisco Intersight Server Bundle
○	5.4(0.250040)	614.08 MiB	May 22, 2025 7:55 ...	Cisco Intersight Server Bundle
○	5.4(0.250035)	614.14 MiB	Apr 30, 2025 9:22 ...	Cisco Intersight Server Bundle
○	5.3(0.250021)	612.42 MiB	Mar 4, 2025 6:19 PM	Cisco Intersight Server Bundle
○	5.3(0.250001)	611.49 MiB	Jan 16, 2025 4:05 ...	Cisco Intersight Server Bundle
○	5.3(0.240016)	600.32 MiB	Oct 24, 2024 3:24 ...	Cisco Intersight Server Bundle

Selected 1 of 11

Step 12. After the successful firmware upgrade, you are now ready to configure nutanix cluster configuration.

Prior to beginning the installation of Nutanix Cluster on Cisco UCS X-Series servers in IMM, you should ensure you have deployed Nutanix Prism Central and enabled Nutanix Foundation Central through Nutanix marketplace available through Prism Central. Foundation Central can create clusters from factory-imaged nodes and reimage existing nodes that are already registered with Foundation Central from Prism Central. This provides benefits such as creating and deploying several clusters on remote sites, such as ROBO, without requiring onsite visits.

To continue with the deployment of Nutanix on Cisco UCS X-Series servers in Intersight Managed Mode (IMM), ensure the following:

- Cisco Intersight SaaS account, or the connected or private virtual appliance with sufficient licenses
- Prism Central is deployed on either a Nutanix Cluster or on ESXi cluster
- Foundation Central is enabled on Prism Central and upgrade it to the latest version 1.8.2
- A local webserver is available hosting Nutanix AHV and AOS images such as the Cisco IMM toolkit VM
- NTP sync and DNS name resolution for Cisco Intersight or the Intersight appliance, and Prism Central

Note: For this solution, we used non-Nutanix ESXi Prism Central 2022.6.0.12 for only as a temporary single VM for Foundation Central to install the initial cluster. Cisco recommends that an installation of Prism Central on a non-Nutanix ESXi platform is only used temporarily to install the first Nutanix clusters, and long-term the best solution is to deploy Prism Central on a Nutanix cluster.

Note: If desired, Prism Central version 2024.3.x or 7.3.x can be deployed as an OVA on a non-Nutanix ESXi infrastructure platform instead of Prism Central version 2022.6, however the process to do so has additional requirements and is a more difficult installation process. When deploying Prism Central in a non-Nutanix environment, ensure that you use the necessary ESXi administrator credentials to install or upgrade a Prism Central instance in a non-Nutanix ESXi environment. For more information please refer as: https://portal.nutanix.com/page/documents/details?targetId=Prism-Central-Guide:mul-install-prism-central-non-nutanix-c.html

Prism Central Installation

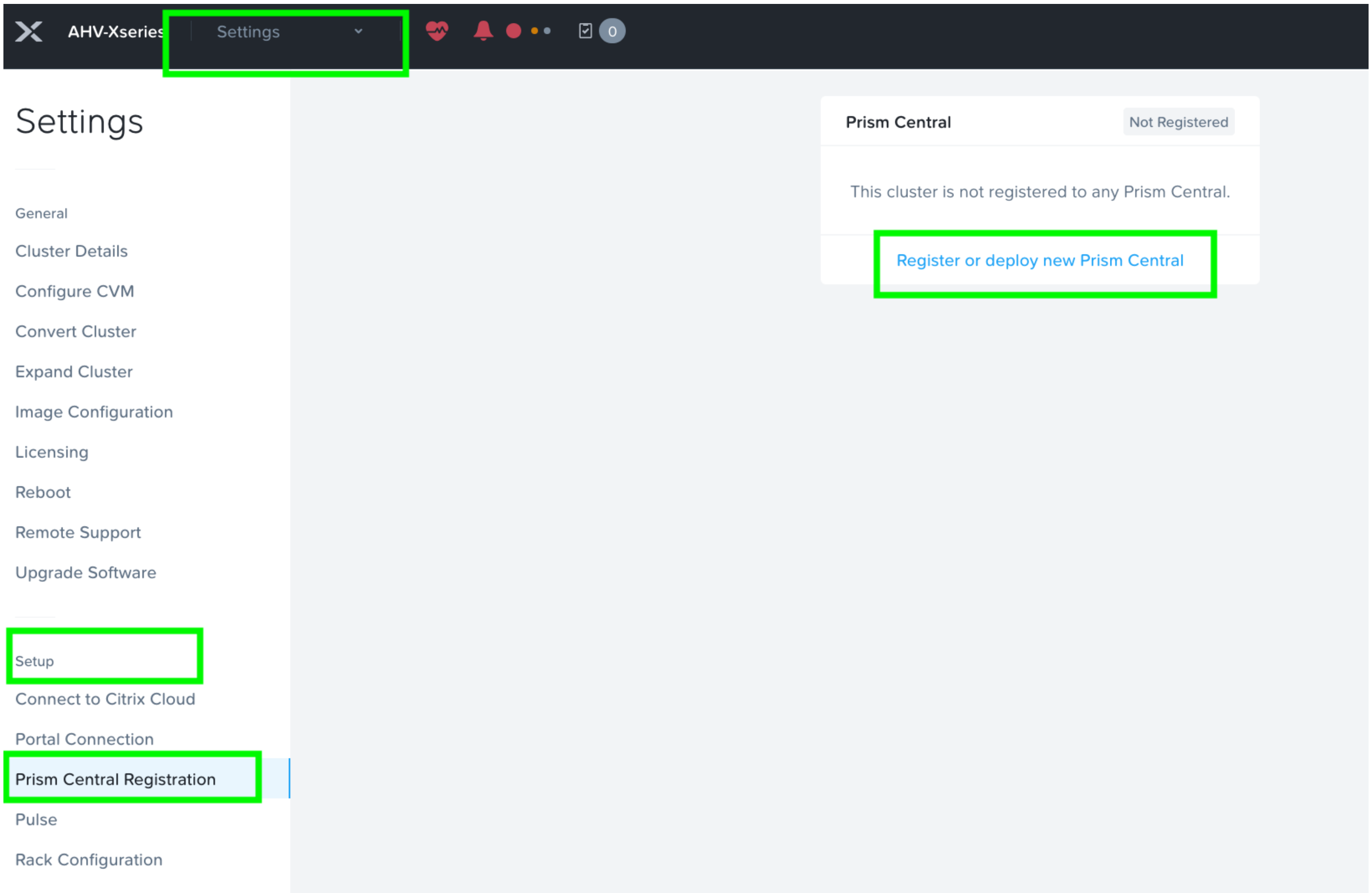
The following high-level procedures describe the process to deploy Prism Central either on a Nutanix Cluster or on an ESXi cluster. You should follow either of the procedures for PC installation. Procedure 1 is about deploying Prism Central on Nutanix Cluster while procedure 2 is deploying Prism Central on Non-Nutanix ESXi Cluster as explained below.

Procedure 1. Deploy PC 7.3.1.1 on Nutanix Cluster

Note: Skip this step if you already have PC 7.3.1.1

Step 1. Log into Prism Element on Nutanix Cluster and navigate to Settings > Prism Central Registration.

Step 2. Select the option Register or deploy new Prism Central.



Settings

General

Cluster Details

Configure CVM

Convert Cluster

Expand Cluster

Image Configuration

Licensing

Reboot

Remote Support

Upgrade Software

Setup

Connect to Citrix Cloud

Portal Connection

Prism Central Registration

Pulse

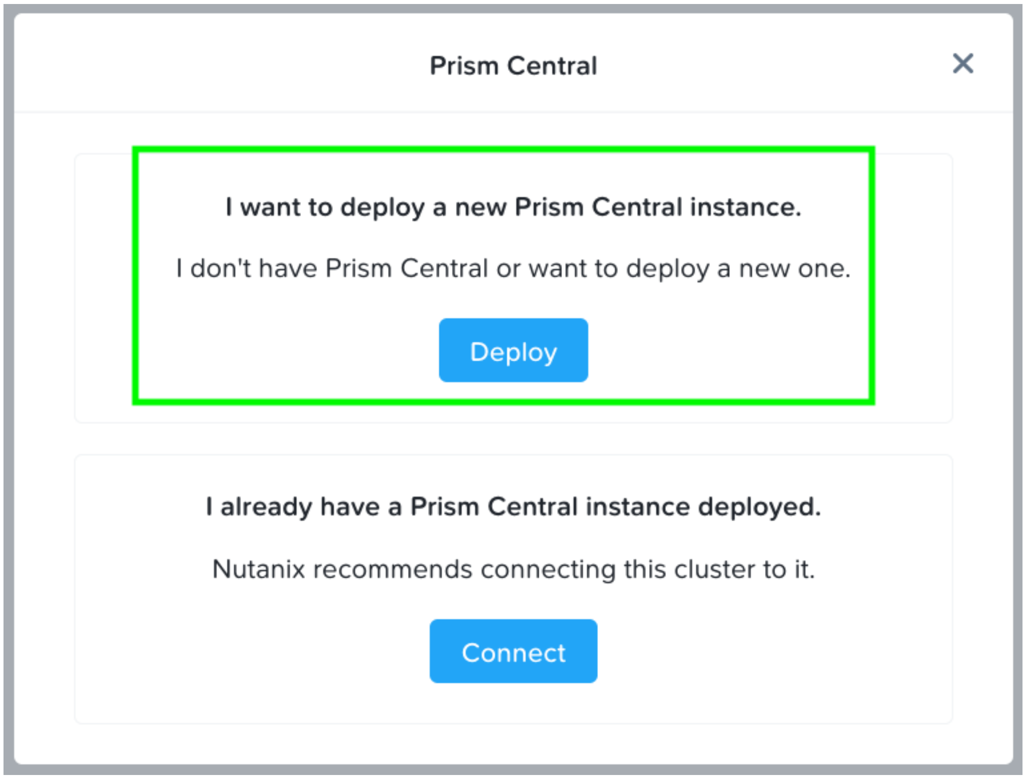
Rack Configuration

Prism Central — Not Registered

This cluster is not registered to any Prism Central.

Register or deploy new Prism Central

Step 3. Click Deploy, as shown below, to deploy a new Prism Central Instance:



Prism Central

I want to deploy a new Prism Central instance.

I don't have Prism Central or want to deploy a new one.

Deploy

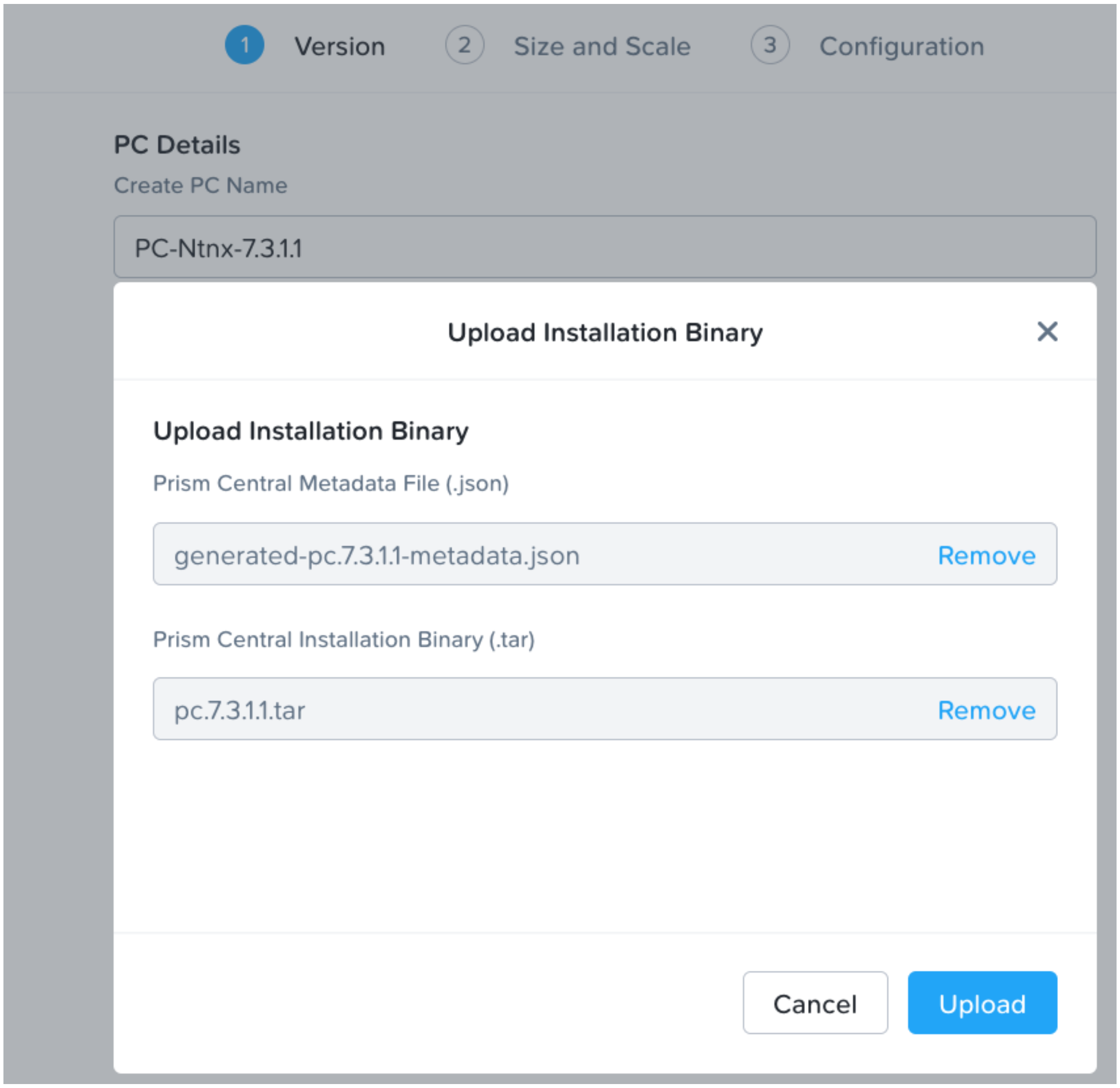
I already have a Prism Central instance deployed.

Nutanix recommends connecting this cluster to it.

Connect

Step 4. Prism Central binaries are available here: https://portal.nutanix.com/page/downloads?product=prism

Step 5. Download Prism Central Metadata File (.json) and Prism Central Installation Binary (.tar) installation binary for the supported version 7.3.1.1 and upload it by clicking the option Upload Installation Binary.



PC Details

Create PC Name: PC-Ntnx-7.3.1.1

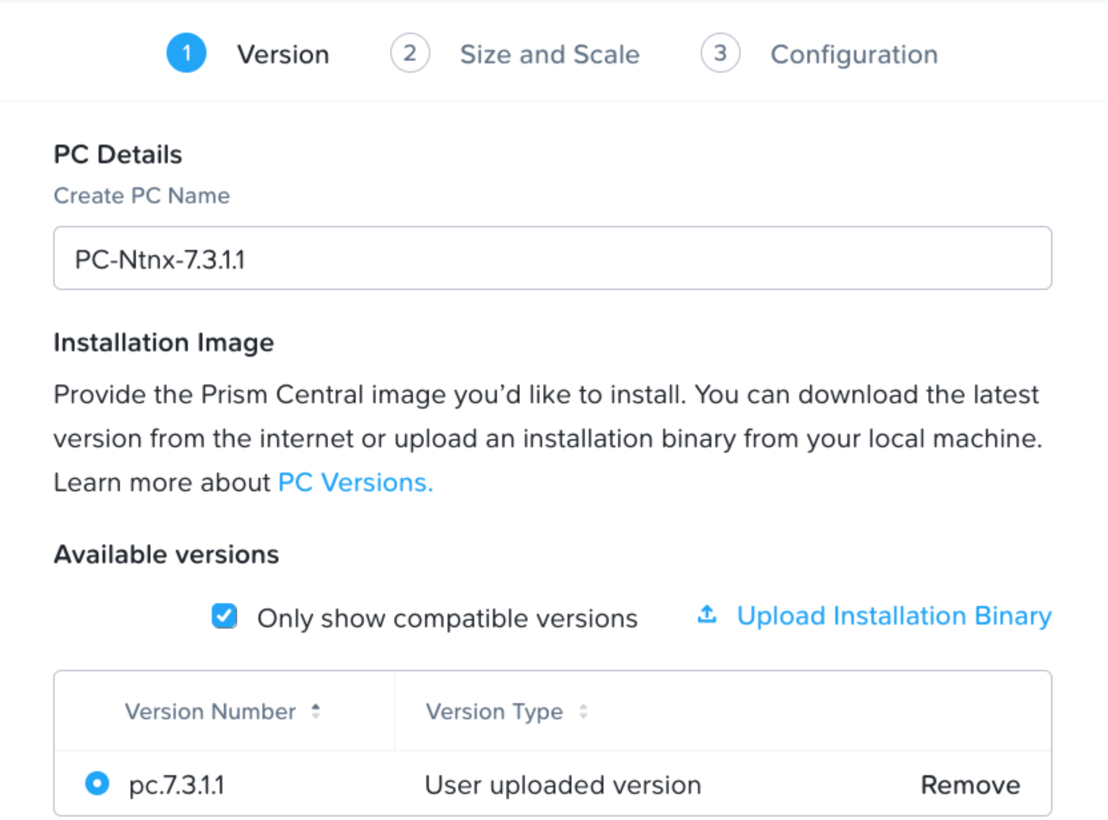
Upload Installation Binary

Upload Installation Binary

Prism Central Metadata File (.json): generated-pc.7.3.1.1-metadata.json

Prism Central Installation Binary (.tar): pc.7.3.1.1.tar

Note: For this solution, we deployed Prism Central version 7.3.1.1 as shown below.



PC Details

Create PC Name

PC-Ntnx-7.3.1.1

Installation Image

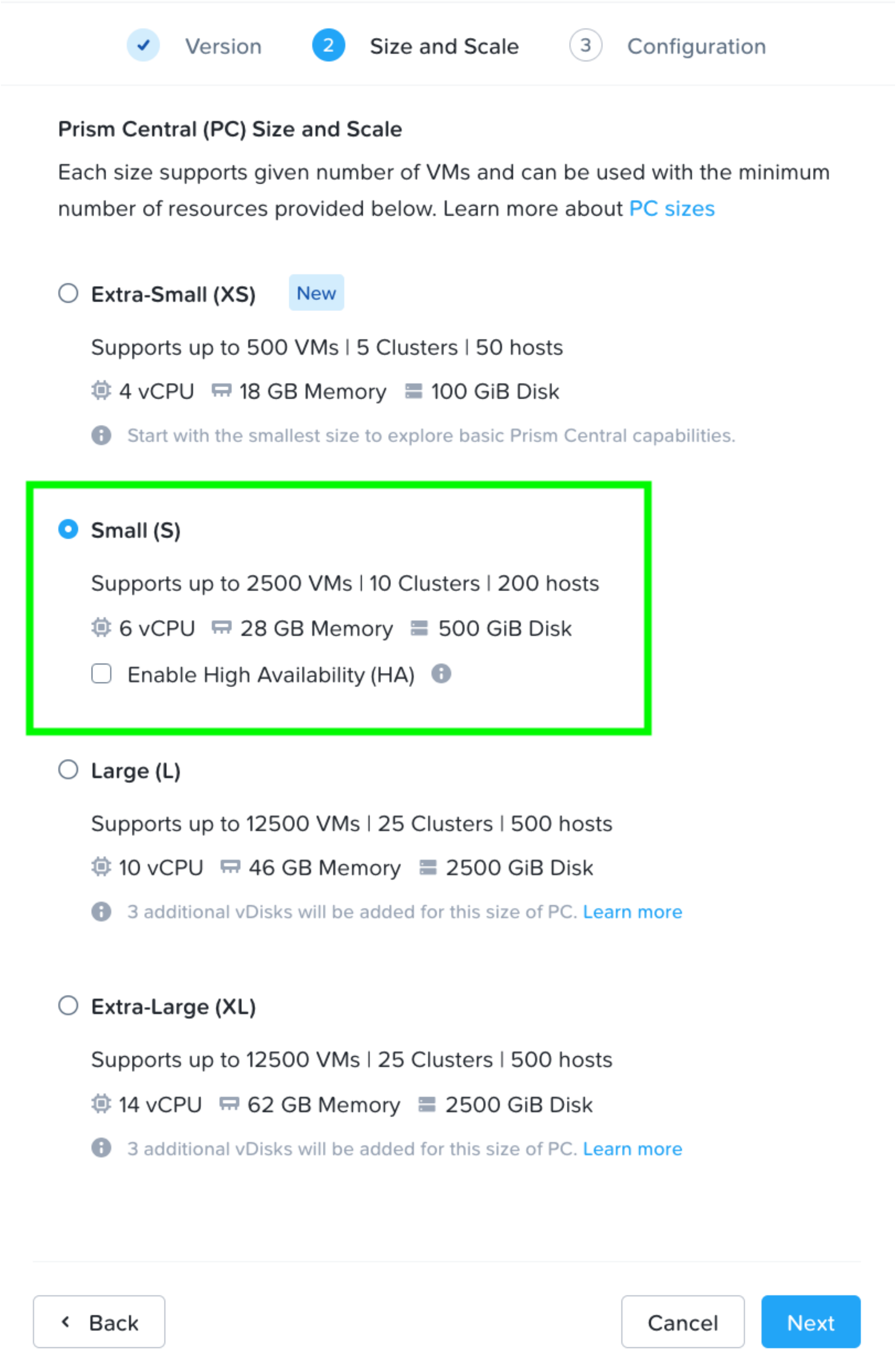
Provide the Prism Central image you'd like to install. You can download the latest version from the internet or upload an installation binary from your local machine. Learn more about PC Versions.

Available versions

☑ Only show compatible versions

	Version Number	Version Type	
●	pc.7.3.1.1	User uploaded version	Remove

Step 6. Select the appropriate Prism Central deployment option as per your resiliency requirement.



✓ Version 2 Size and Scale 3 Configuration

Prism Central (PC) Size and Scale

Each size supports given number of VMs and can be used with the minimum number of resources provided below. Learn more about PC sizes

○ Extra-Small (XS) New

Supports up to 500 VMs | 5 Clusters | 50 hosts

4 vCPU 18 GB Memory 100 GiB Disk

Start with the smallest size to explore basic Prism Central capabilities.

● Small (S)

Supports up to 2500 VMs | 10 Clusters | 200 hosts

6 vCPU 28 GB Memory 500 GiB Disk

□ Enable High Availability (HA)

○ Large (L)

Supports up to 12500 VMs | 25 Clusters | 500 hosts

10 vCPU 46 GB Memory 2500 GiB Disk

3 additional vDisks will be added for this size of PC. Learn more

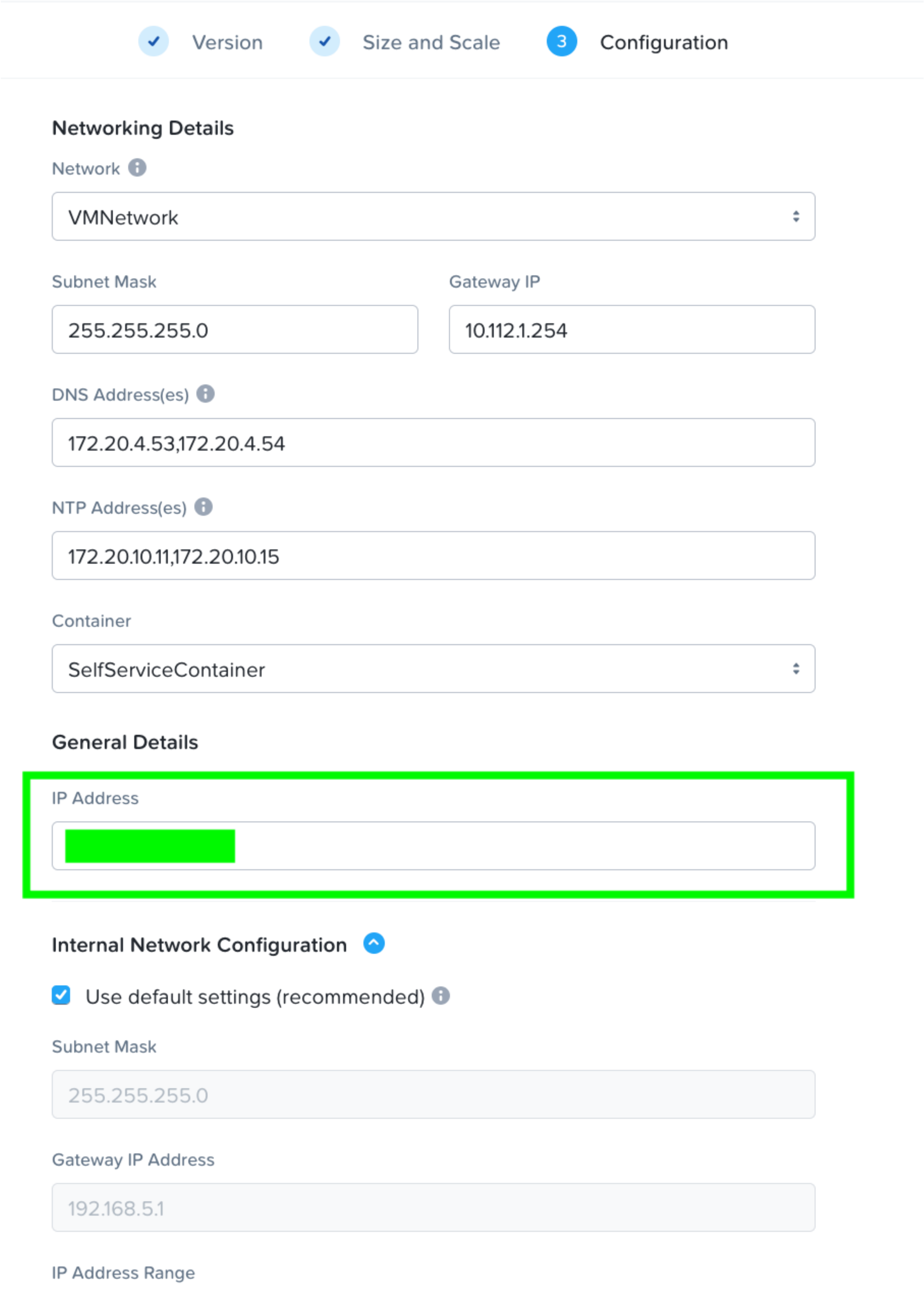
○ Extra-Large (XL)

Supports up to 12500 VMs | 25 Clusters | 500 hosts

14 vCPU 62 GB Memory 2500 GiB Disk

3 additional vDisks will be added for this size of PC. Learn more

Step 7. Enter valid networking details and IP addressing for Prism Central. Even though DNS is optional, ensure a valid DNS is defined for successful discovery of Cisco Intersight domain name.



Networking Details

Network: VMNetwork

Subnet Mask: 255.255.255.0

Gateway IP: 10.112.1.254

DNS Address(es): 172.20.4.53,172.20.4.54

NTP Address(es): 172.20.10.11,172.20.10.15

Container: SelfServiceContainer

General Details

IP Address: [redacted]

Internal Network Configuration

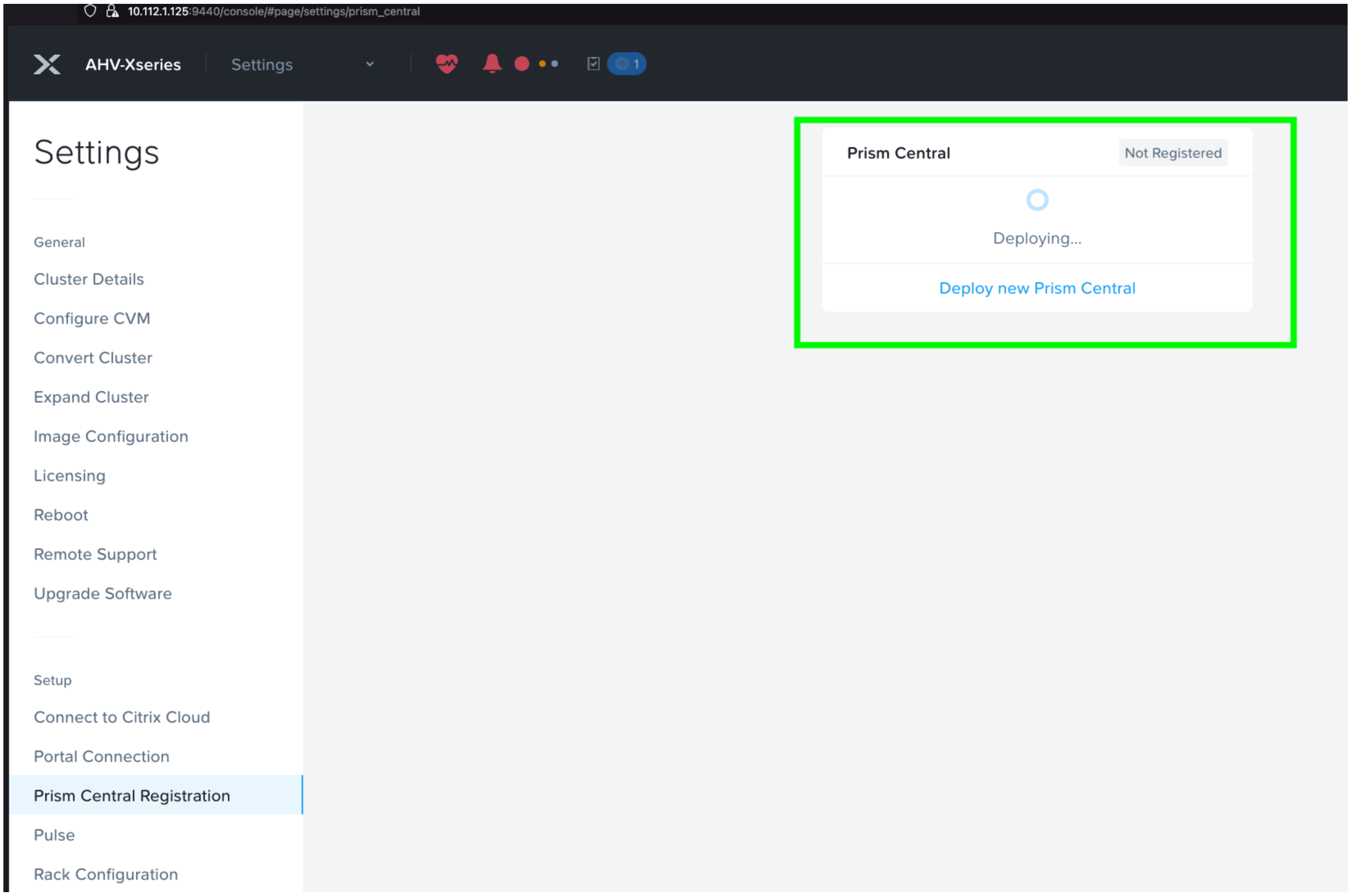
☑ Use default settings (recommended)

Subnet Mask: 255.255.255.0

Gateway IP Address: 192.168.5.1

IP Address Range

Step 8. Click Deploy to create and deploy Prism Central on Nutanix Cluster.


10.112.1.125:9440/console/#page/settings/prism_central

Settings

General

- Cluster Details
- Configure CVM
- Convert Cluster
- Expand Cluster
- Image Configuration
- Licensing
- Reboot
- Remote Support
- Upgrade Software

Setup

- Connect to Citrix Cloud
- Portal Connection
- Prism Central Registration
- Pulse
- Rack Configuration

Prism Central — Not Registered

Deploying...

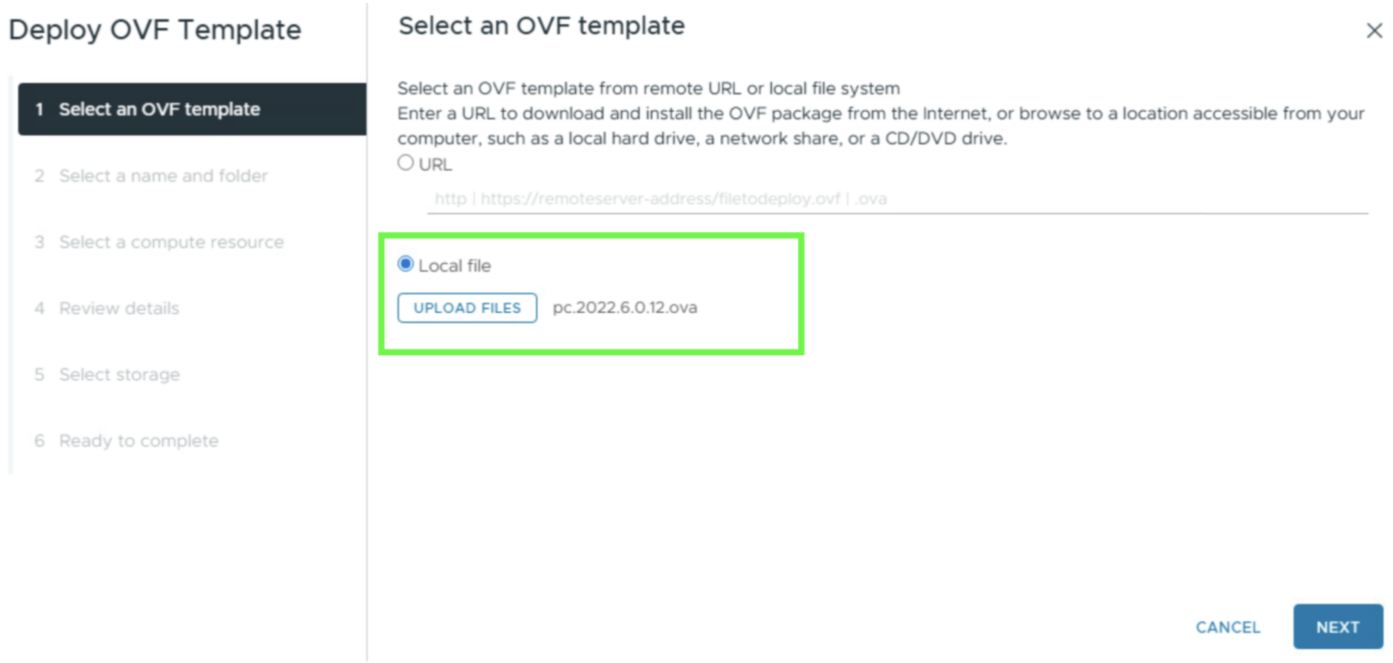
Deploy new Prism Central

Procedure 2. Deploy PC 2022.6.x on ESXi Cluster

Note: Skip this step if you already have a Prism Central Instance configured from Procedure 1.

Step 1. Download Prism Central 2022.6.12 OVA here: https://portal.nutanix.com/page/downloads?product=prism

Step 2. Identify an ESXi host and deploy OVF template.



Select an OVF template

Select an OVF template from remote URL or local file system

Enter a URL to download and install the OVF package from the Internet, or browse to a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.

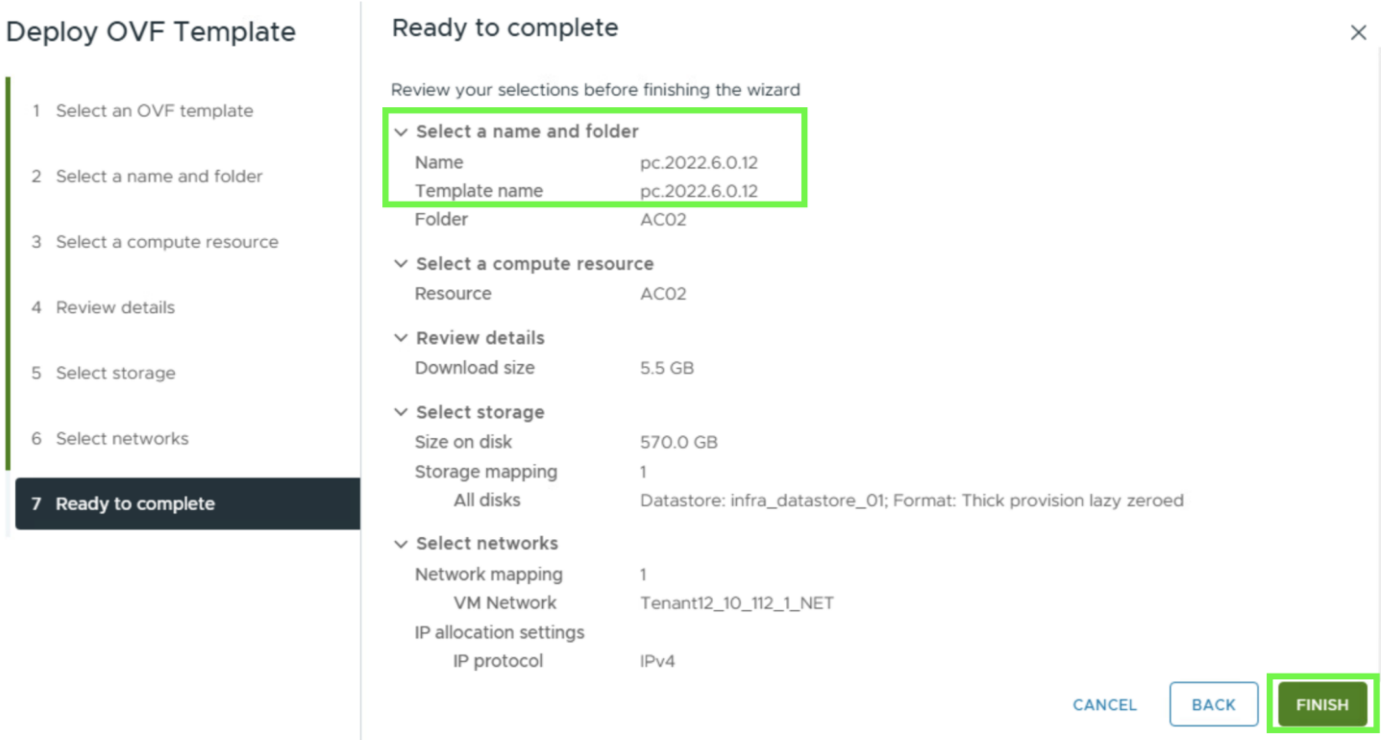
○ URL

http | https://remoteserver-address/filetodeploy.ovf | .ova

● Local file

pc.2022.6.0.12.ova

Step 3. Identify compute, storage, and network resource on ESXi Cluster and deploy the OVF template.



Ready to complete

Review your selections before finishing the wizard

Select a name and folder
Name pc.2022.6.0.12
Template name pc.2022.6.0.12
Folder AC02

Select a compute resource
Resource AC02

Review details
Download size 5.5 GB

Select storage
Size on disk 570.0 GB
Storage mapping 1
All disks Datastore: infra_datastore_01; Format: Thick provision lazy zeroed

Select networks
Network mapping 1
VM Network Tenant12_10_112_1_NET
IP allocation settings
IP protocol IPv4

Step 4. When the OVA is deployed, power ON the VM.

Note: Post installation steps for Prism Central on ESXi are detailed here: https://portal.nutanix.com/page/documents/details?targetId=Prism-Central-Guide-vpc_7_3:upg-vm-install-wc-t.html

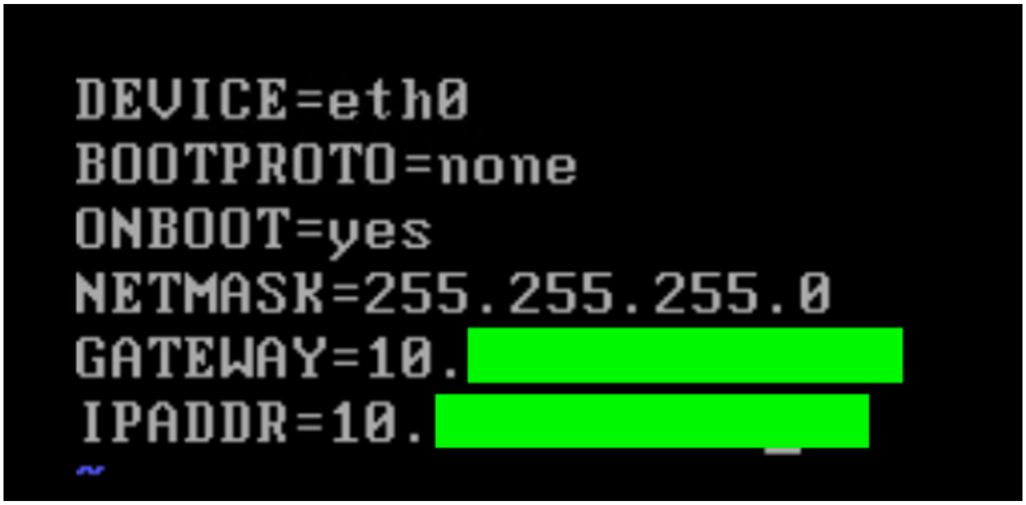
Step 5. Wait at least 20-25 minutes before you log into PC instance through ESXi web console.

Step 6. Open the vSphere/ESXi web interface and connect to the Prism Central VM's console. Use the default credentials to log in as user Nutanix and password nutanix/4u.

Step 7. Assign a static IP address, subnet mask, gateway to the Prism Central VM.

Step 8. Edit the ifcfg-eth0 with the following settings (sudo vi /etc/sysconfig/network-scripts/ifcfg-eth0):

- NETMASK=" xxx.xxx.xxx.xxx"
- IPADDR=" xxx.xxx.xxx.xxx"
- BOOTPROTO=" none"
- GATEWAY=" xxx.xxx.xxx.xxx"



```
DEVICE=eth0
BOOTPROTO=none
ONBOOT=yes
NETMASK=255.255.255.0
GATEWAY=10.[redacted]
IPADDR=10.[redacted]
~
```

Step 9. Confirm and save changes.

Step 10. Edit the /etc/hosts file to remove all lines containing any entry like 127.0.0.1 NTNX-10-3-190-99-ACVM:

- $ sudo vi /etc/hosts
- $ sudo reboot

Step 11. After completing above steps, reboot the VM to apply the updated network configuration.

Step 12. Wait for the “nutanix-rc-local” service to complete, confirming services (such as Genesis) are running.

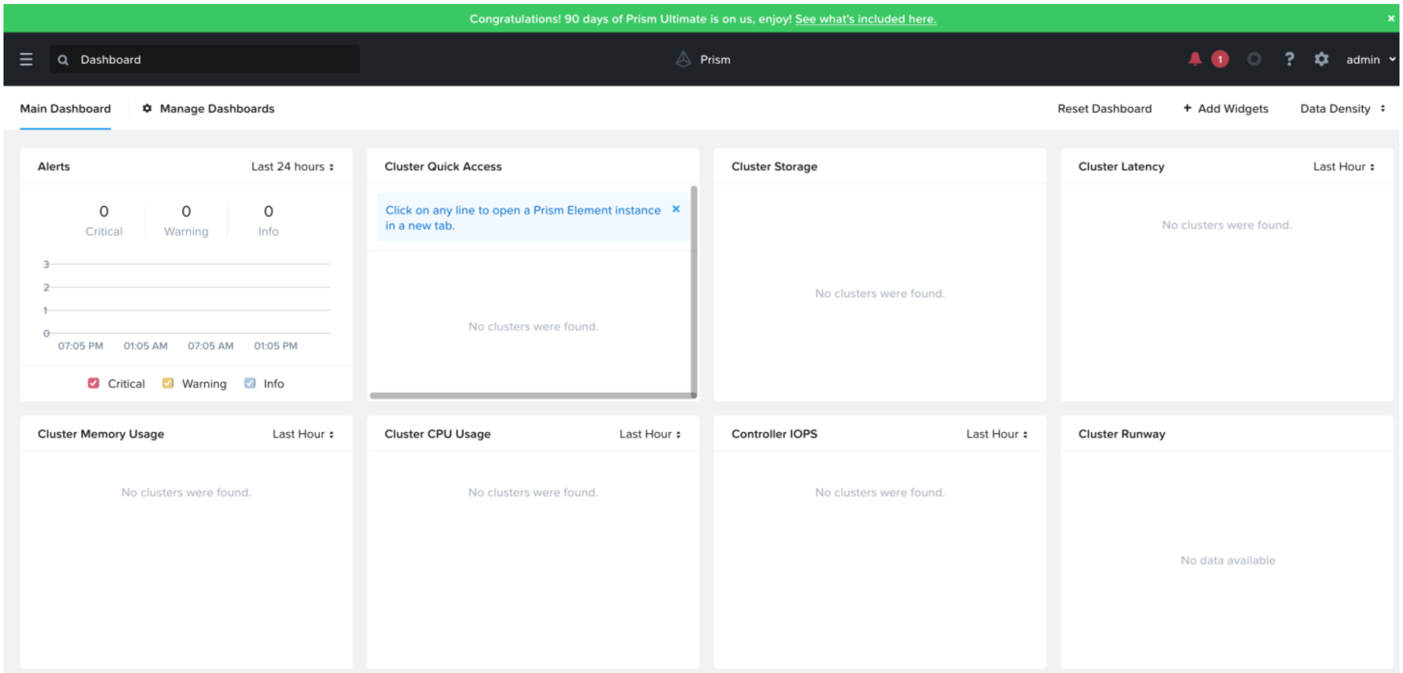
Step 13. Log into the Prism Central VM using SSH as user: nutanix and password: nutanix/4u

Step 14. Run the command to create the Prism Central cluster:

```
$ cluster --cluster_function_list "multicluster" -s <static_ip_address> --dns_servers
"<DNS 1 IP>,<DNS 2 IP>" --ntp_servers "<NTP 1 IP>,<NTP 2 IP>" create
```

Step 15. Log into the Prism Central VM GUI with a web browser at https://<static_ip_address>:9440 as user: “admin” & password: “nutanix/4u”

Step 16. When completed, log into Prism Central 2022.6.x.



Configure Foundation Central

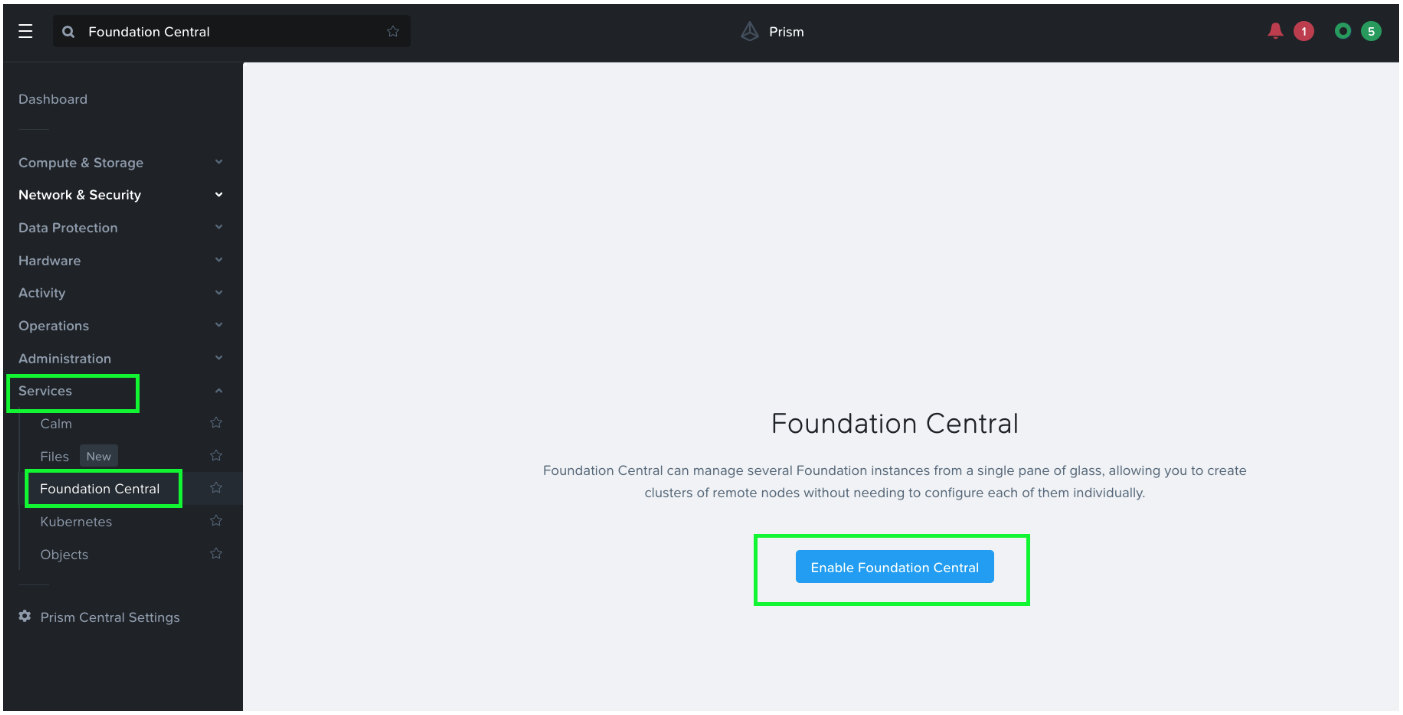
This section provides the procedures to enable and upgrade Foundation Central on Prism Central 2022.6.x.

Procedure 1. Enable and Upgrade Foundation Central (FC) to 1.8.2 on PC 2022.6.x

Note: Upgrade Foundation Central on Prism Central via CLI as explained below.

Note: Ensure the DNS (name server) and NTP settings are updated in Prism Central.

Step 1. Go to Services > Foundation Central and enable Foundation Central.



Foundation Central can manage several Foundation instances from a single pane of glass, allowing you to create clusters of remote nodes without needing to configure each of them individually.

Step 2. After enabling Foundation Central, upgrade to the latest Foundation Central.

Step 3. Download the latest Foundation Central LCM Bundle (1.8.2) lcm_foundation-central_1.8.2.tar.gz from the Nutanix Downloads page (https://portal.nutanix.com/page/downloads?product=foundationcentral) and copy it to the Prism Central VM at /home/nutanix/.

Step 4. For more information on upgrading FC to 1.8.x, go to: https://portal.nutanix.com/page/documents/details?targetId=Foundation-Central-v1_8:v1-upgrade-fc-cli-t.html

Step 5. SSH into Prism Central VM with the username nutanix.

Step 6. Extract the bundle to a temporary directory:

```
mkdir /home/nutanix/fc_installer
tar -xf /home/nutanix/lcm_foundation-central_1.8.2.tar.gz -C /home/nutanix/fc_installer/
```

Step 7. Stop the Foundation Central service if it is running:

```
genesis stop foundation_central
```

Step 8. Remove the Foundation Central files if they are present:

```
sudo rm -rf /home/docker/foundation_central/*
```

Step 9. Extract the Foundation Central bits to the target location:

```
sudo tar -xJf /home/nutanix/fc_installer/builds/foundation-central-
builds/1.8.2/foundation-central-installer.tar.xz -C /home/docker/foundation_central/
```

Step 10. Set the directory permission to nutanix:nutanix:

```
sudo chown -R nutanix:nutanix /home/docker/foundation_central/*
```

Step 11. Start the Foundation Central service:

```
cluster start
```

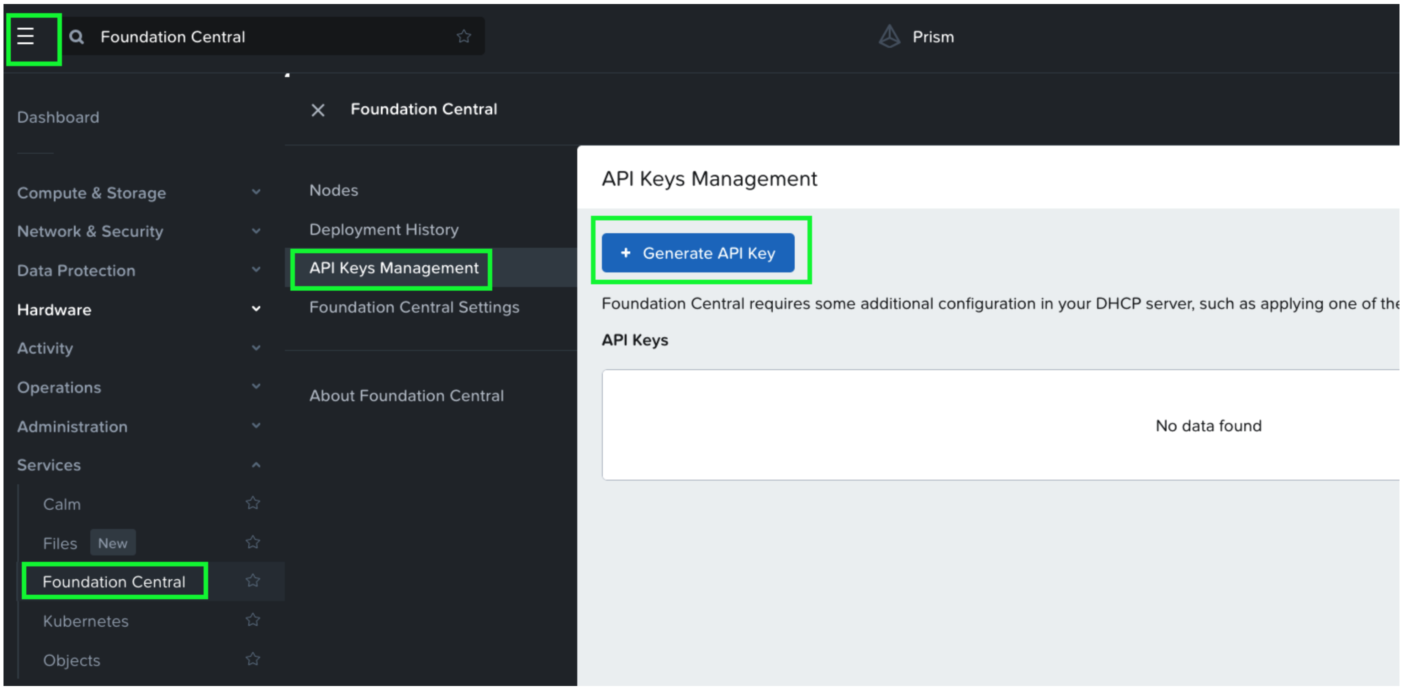
Step 12. In some cases, you may need to flush your browser cache and reboot the Prism Central server after the manual upgrade.

Step 13. You can validate the service status by running genesis status command on the Prism Central VM.

Procedure 2. Generate API Keys in Foundation Central (FC)

Note: Ensure the DNS (name server) and NTP settings are updated in Prism Central.

Step 1. In Prism Central, go to Services > Foundation Central > Settings and click Generate API Key.

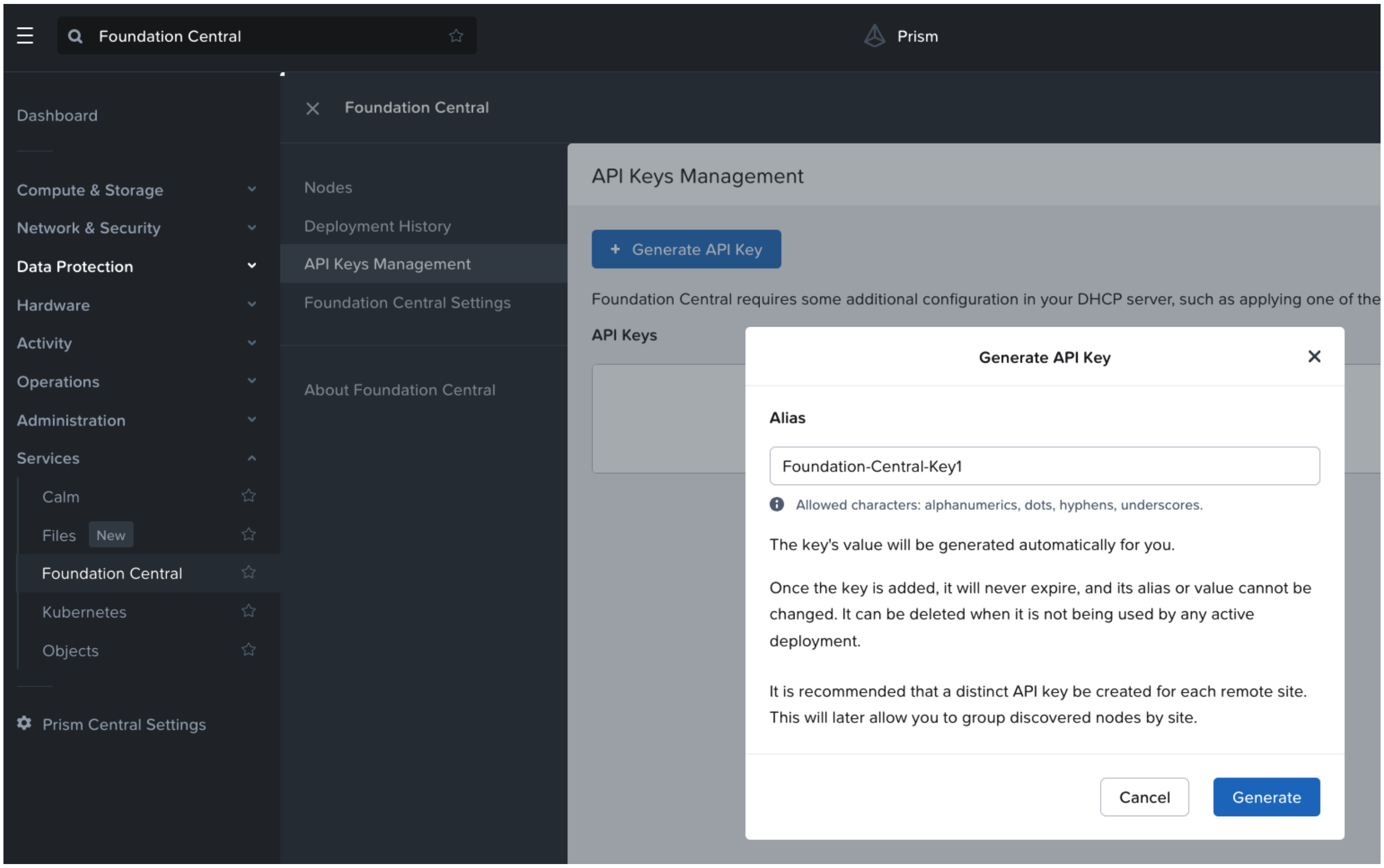


Foundation Central requires some additional configuration in your DHCP server, such as applying one of the

API Keys

No data found

Step 2. In Generate API Key, enter the name of the Alias name of the key as Foundation-Central-Key1 and click Generate.



Foundation Central requires some additional configuration in your DHCP server, such as applying one of the

API Keys

Generate API Key

Alias: Foundation-Central-Key1

Allowed characters: alphanumerics, dots, hyphens, underscores.

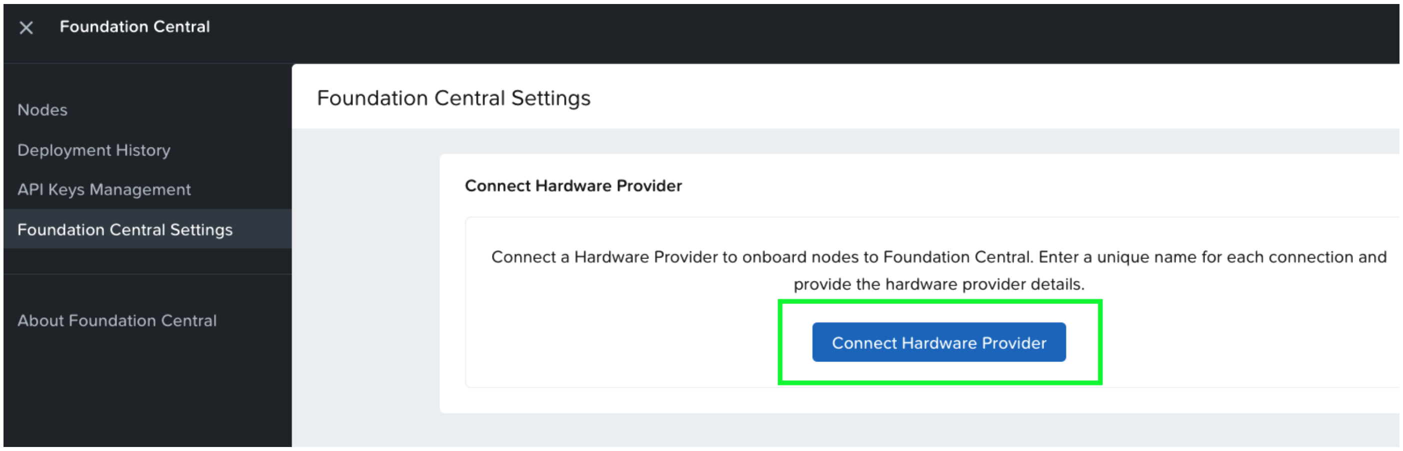
The key's value will be generated automatically for you.

Once the key is added, it will never expire, and its alias or value cannot be changed. It can be deleted when it is not being used by any active deployment.

It is recommended that a distinct API key be created for each remote site. This will later allow you to group discovered nodes by site.

The API key displays. It will be added during the Nutanix cluster creation through Foundation Central.

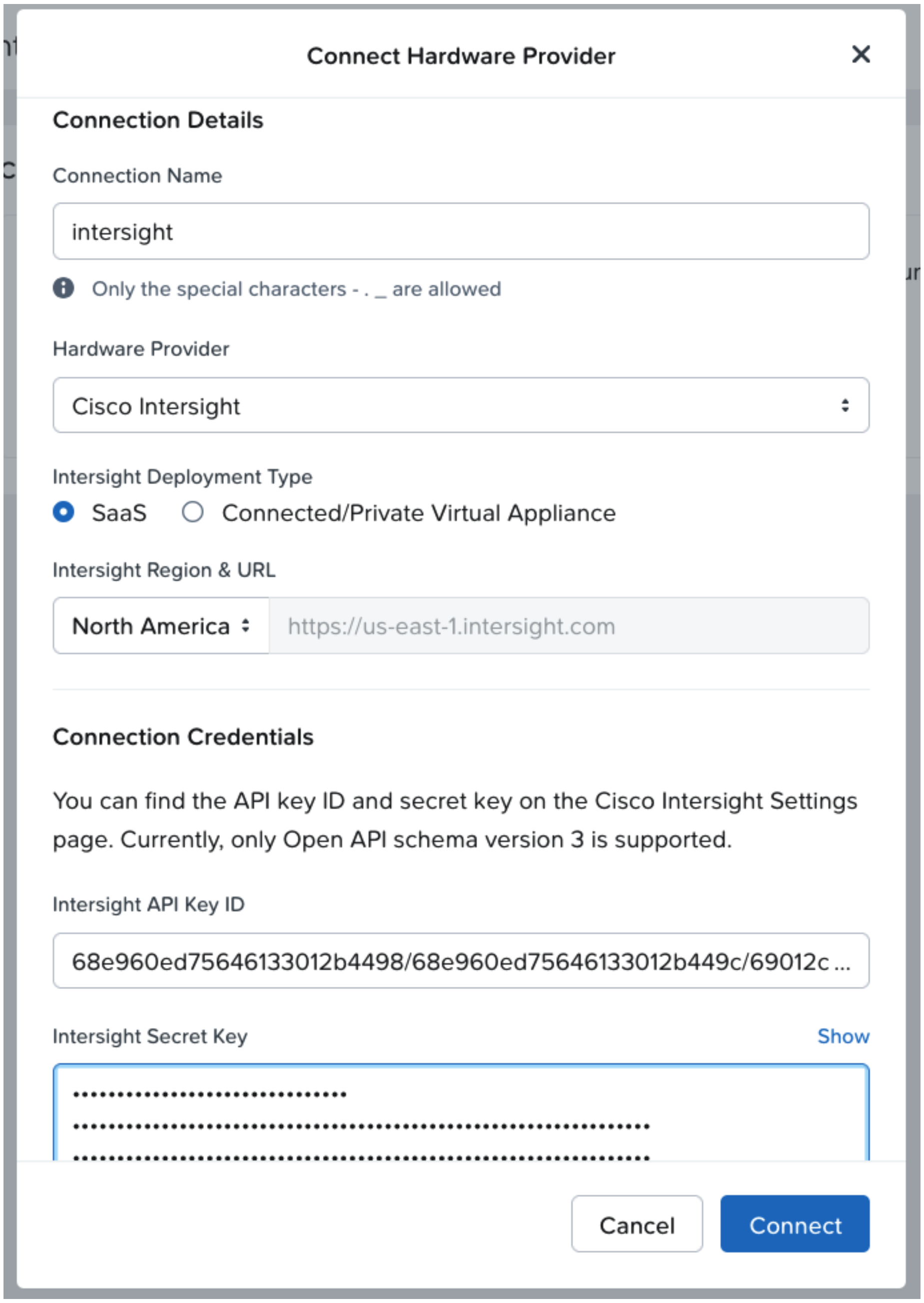
Step 3. Go to the Foundation Central Settings and Connect Hardware Provider. This procedure allows the connection of Foundation Central to Cisco Intersight through the Cisco Intersight API key created in the Intersight configuration. This allows Foundation Central to discover nodes claimed on Cisco Intersight.


Foundation Central
Nodes
Deployment History
API Keys Management
Foundation Central Settings
About Foundation Central
Foundation Central Settings
Connect Hardware Provider

Connect a Hardware Provider to onboard nodes to Foundation Central. Enter a unique name for each connection and provide the hardware provider details.

Connect Hardware Provider

Step 4. Enter the Connection Name, Intersight Deployment Type, Intersight API Key ID, Intersight Secret Key and then click on Connect. Intersight URL is automatically displayed as per the region configured in Foundation Central.



Connect Hardware Provider

Connection Details

Connection Name

intersight

Only the special characters - . _ are allowed

Hardware Provider

Cisco Intersight

Intersight Deployment Type

● SaaS ○ Connected/Private Virtual Appliance

Intersight Region & URL

North America https://us-east-1.intersight.com

Connection Credentials

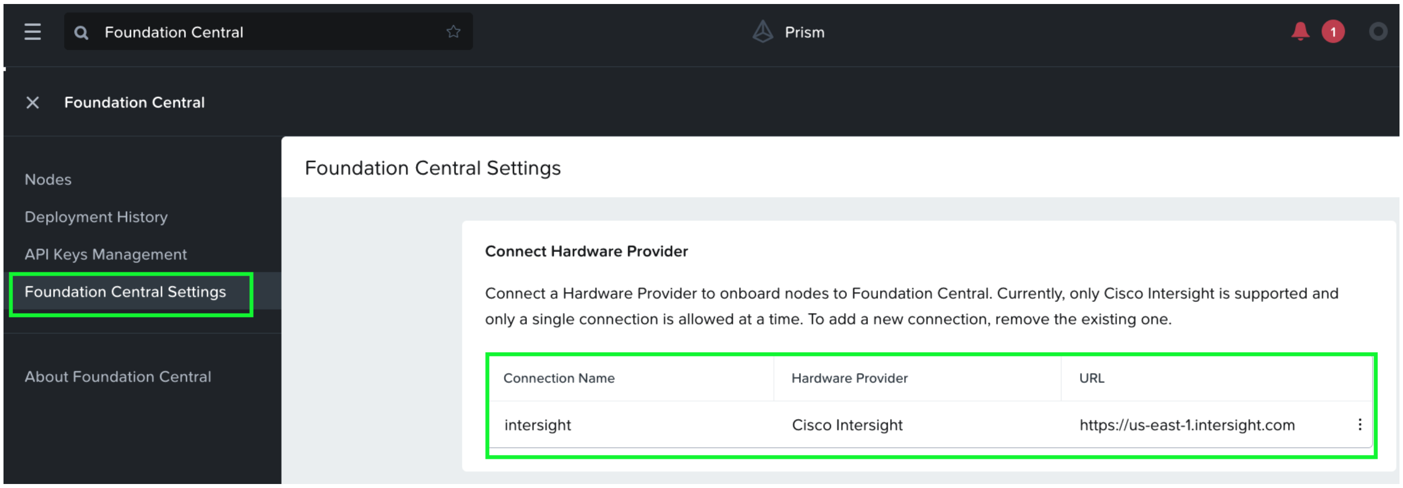
You can find the API key ID and secret key on the Cisco Intersight Settings page. Currently, only Open API schema version 3 is supported.

Intersight API Key ID

68e960ed75646133012b4498/68e960ed75646133012b449c/69012c ...

Intersight Secret Key

When the authentication to Intersight succeeds, the connection displays under FC settings.



Foundation Central Settings

Connect Hardware Provider

Connect a Hardware Provider to onboard nodes to Foundation Central. Currently, only Cisco Intersight is supported and only a single connection is allowed at a time. To add a new connection, remove the existing one.

Connection Name	Hardware Provider	URL
intersight	Cisco Intersight	https://us-east-1.intersight.com

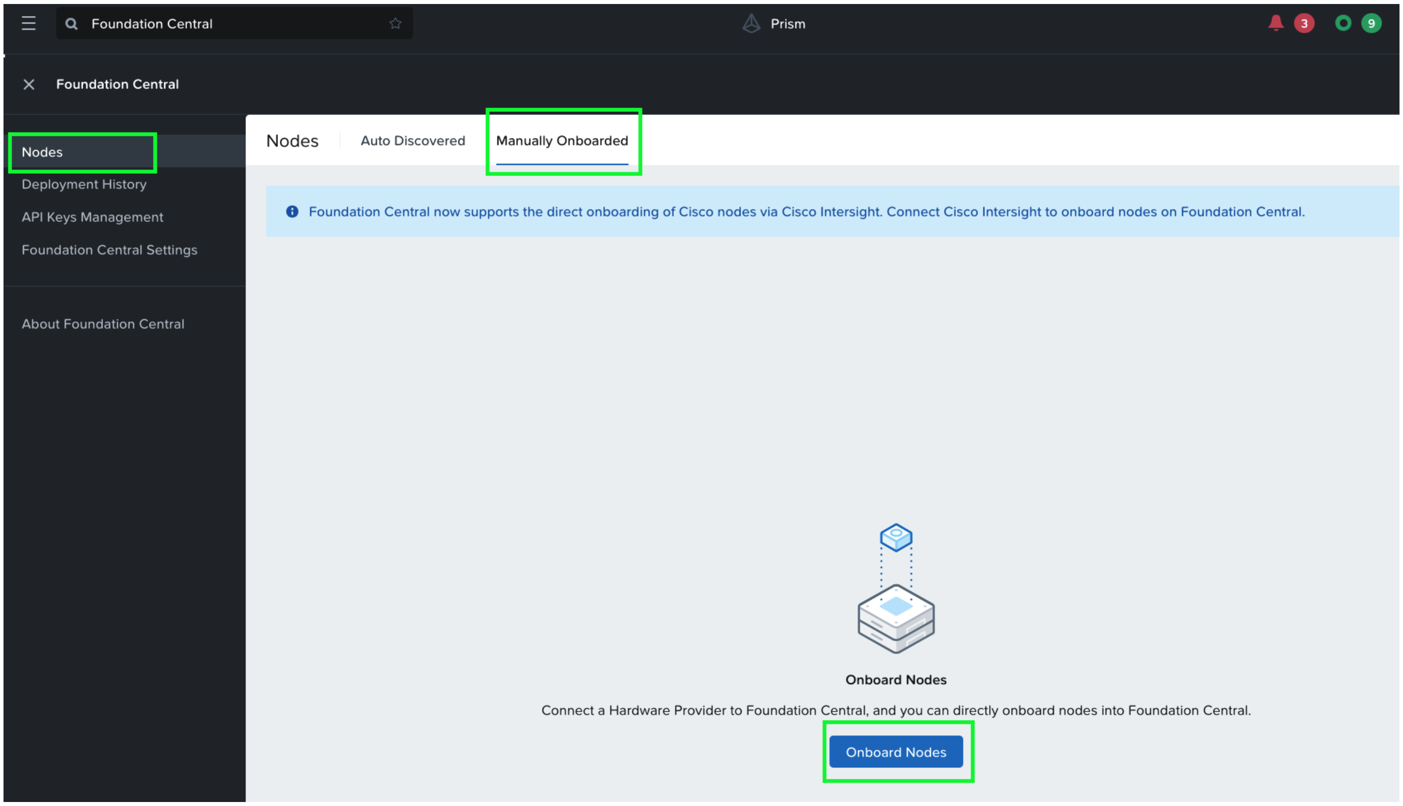
Nutanix Cluster Creation

This section provides the procedures to onboard the nodes on Foundation Central and thereafter create the cluster for Cisco UCS X-Series nodes managed in Intersight Managed Mode (IMM).

Procedure 1. Onboard nodes on Foundation Central

Step 1. Go to Foundation Central, select the Nodes tab and select the Manually Onboarded tab.

Step 2. Click Onboard Nodes.

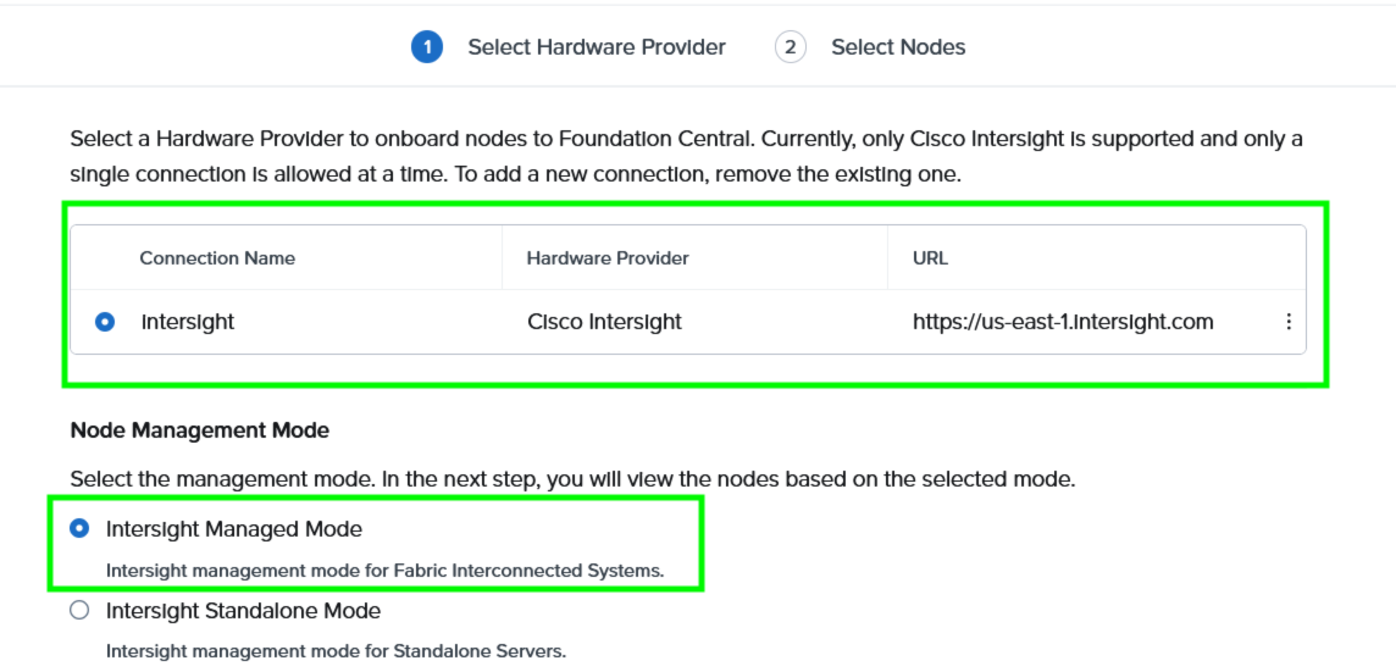


Foundation Central now supports the direct onboarding of Cisco nodes via Cisco Intersight. Connect Cisco Intersight to onboard nodes on Foundation Central.

Onboard Nodes

Connect a Hardware Provider to Foundation Central, and you can directly onboard nodes into Foundation Central.

Step 3. The screen displays the connection details configured for Cisco Intersight. Click Next.



Select a Hardware Provider to onboard nodes to Foundation Central. Currently, only Cisco Intersight is supported and only a single connection is allowed at a time. To add a new connection, remove the existing one.

	Connection Name	Hardware Provider	URL
●	Intersight	Cisco Intersight	https://us-east-1.intersight.com

Node Management Mode

Select the management mode. In the next step, you will view the nodes based on the selected mode.

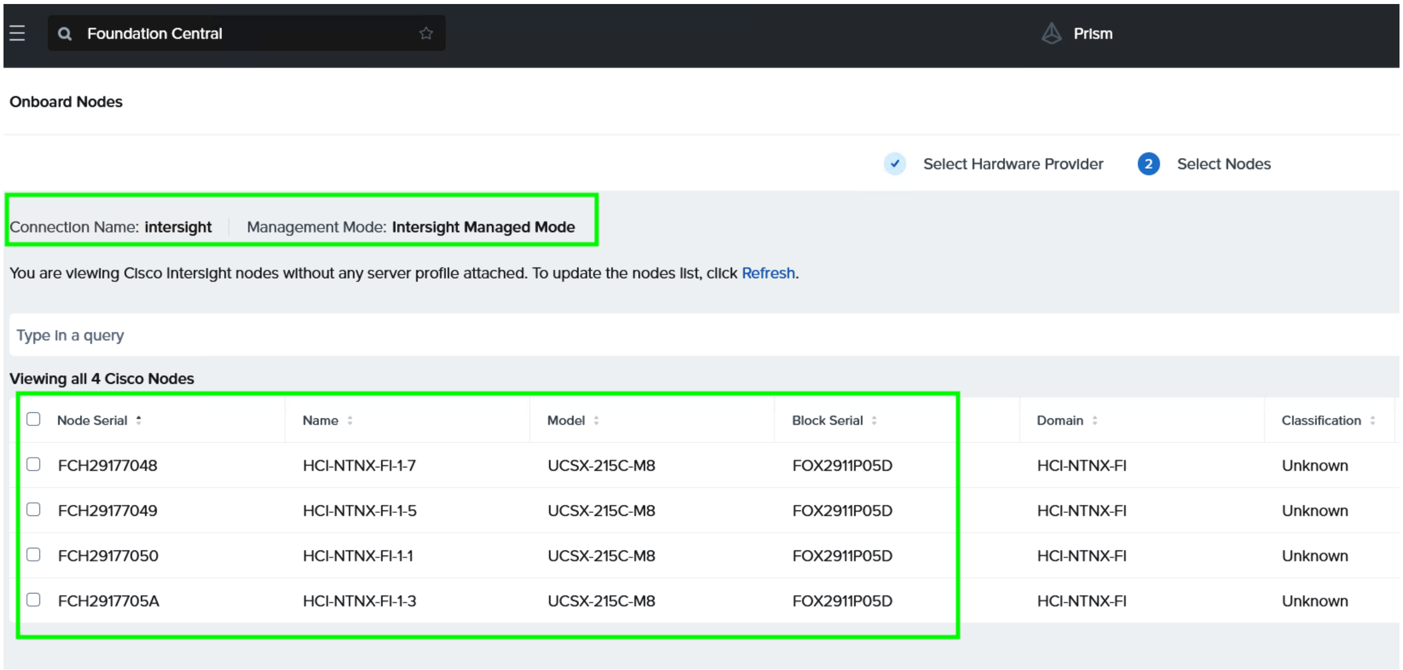
● Intersight Managed Mode

Intersight management mode for Fabric Interconnected Systems.

○ Intersight Standalone Mode

Intersight management mode for Standalone Servers.

Step 4. Foundation Central connects to Cisco Intersight and displays all the unconfigured nodes existing in Intersight. Select the nodes provisioned for Nutanix and click Onboard.



Connection Name: **intersight** Management Mode: **Intersight Managed Mode**

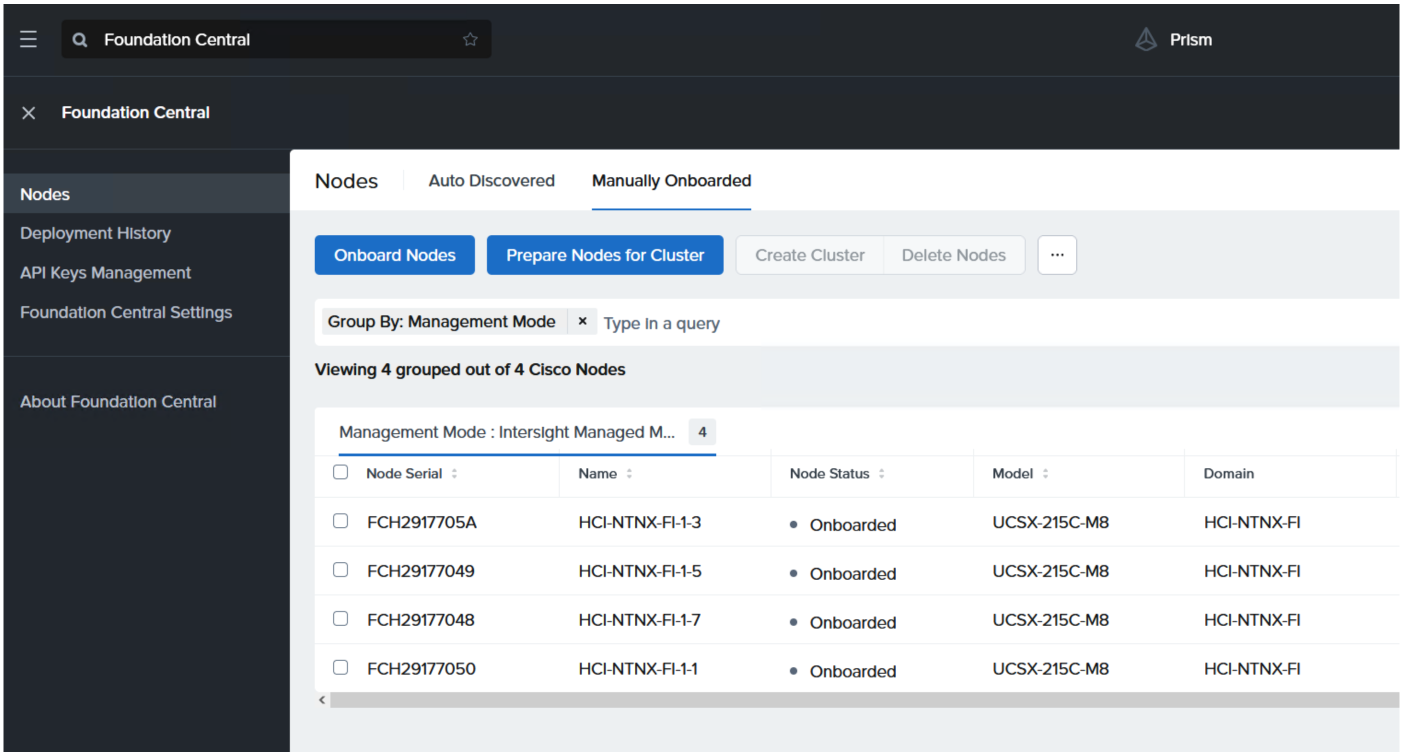
You are viewing Cisco Intersight nodes without any server profile attached. To update the nodes list, click Refresh.

Type in a query

Viewing all 4 Cisco Nodes

□	Node Serial	Name	Model	Block Serial	Domain	Classification
□	FCH29177048	HCI-NTNX-FI-1-7	UCSX-215C-M8	FOX2911P05D	HCI-NTNX-FI	Unknown
□	FCH29177049	HCI-NTNX-FI-1-5	UCSX-215C-M8	FOX2911P05D	HCI-NTNX-FI	Unknown
□	FCH29177050	HCI-NTNX-FI-1-1	UCSX-215C-M8	FOX2911P05D	HCI-NTNX-FI	Unknown
□	FCH2917705A	HCI-NTNX-FI-1-3	UCSX-215C-M8	FOX2911P05D	HCI-NTNX-FI	Unknown

Three Nutanix nodes are onboarded on Foundation Central as shown below:



Viewing 4 grouped out of 4 Cisco Nodes

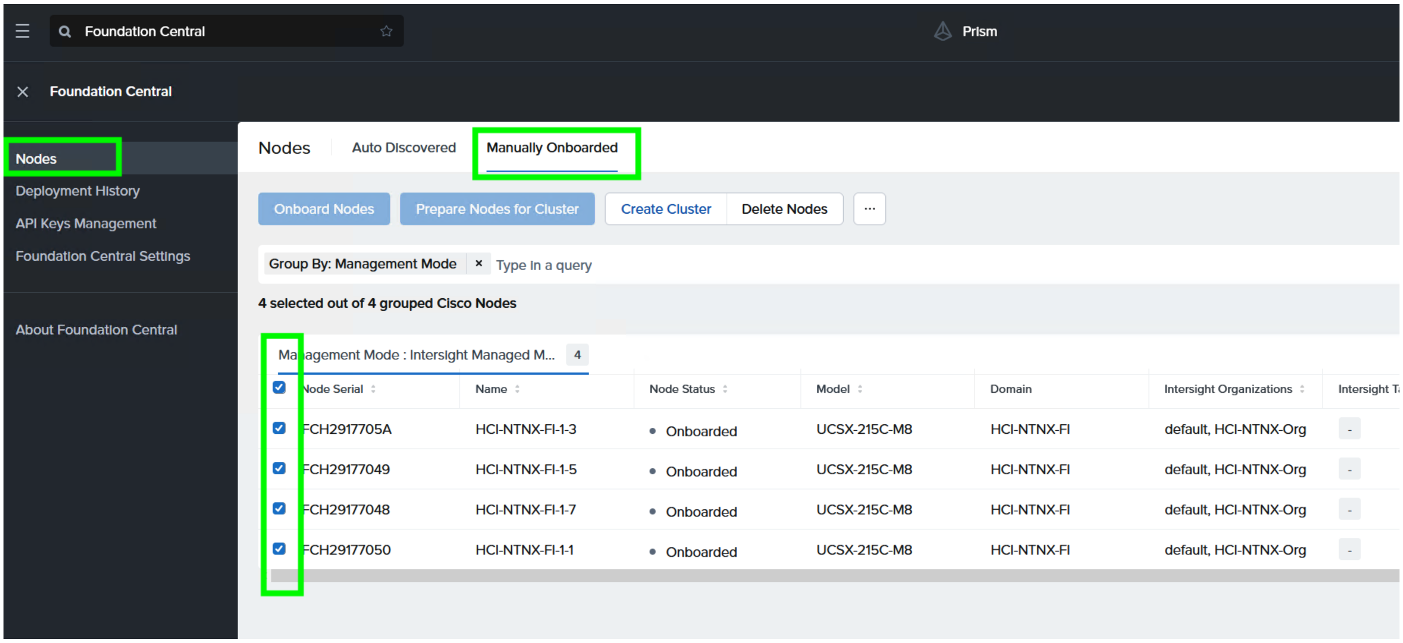
Management Mode : Intersight Managed M... 4

☐	Node Serial	Name	Node Status	Model	Domain
☐	FCH2917705A	HCI-NTNX-FI-1-3	● Onboarded	UCSX-215C-M8	HCI-NTNX-FI
☐	FCH29177049	HCI-NTNX-FI-1-5	● Onboarded	UCSX-215C-M8	HCI-NTNX-FI
☐	FCH29177048	HCI-NTNX-FI-1-7	● Onboarded	UCSX-215C-M8	HCI-NTNX-FI
☐	FCH29177050	HCI-NTNX-FI-1-1	● Onboarded	UCSX-215C-M8	HCI-NTNX-FI

Procedure 2. Setup Nutanix Cluster

Step 1. Go to Foundation Central, then select the Nodes tab and select the Manually Onboarded tab.

Step 2. Select Onboard Nodes. The Cisco UCS X-Series nodes onboarded for Nutanix Cluster creation display.



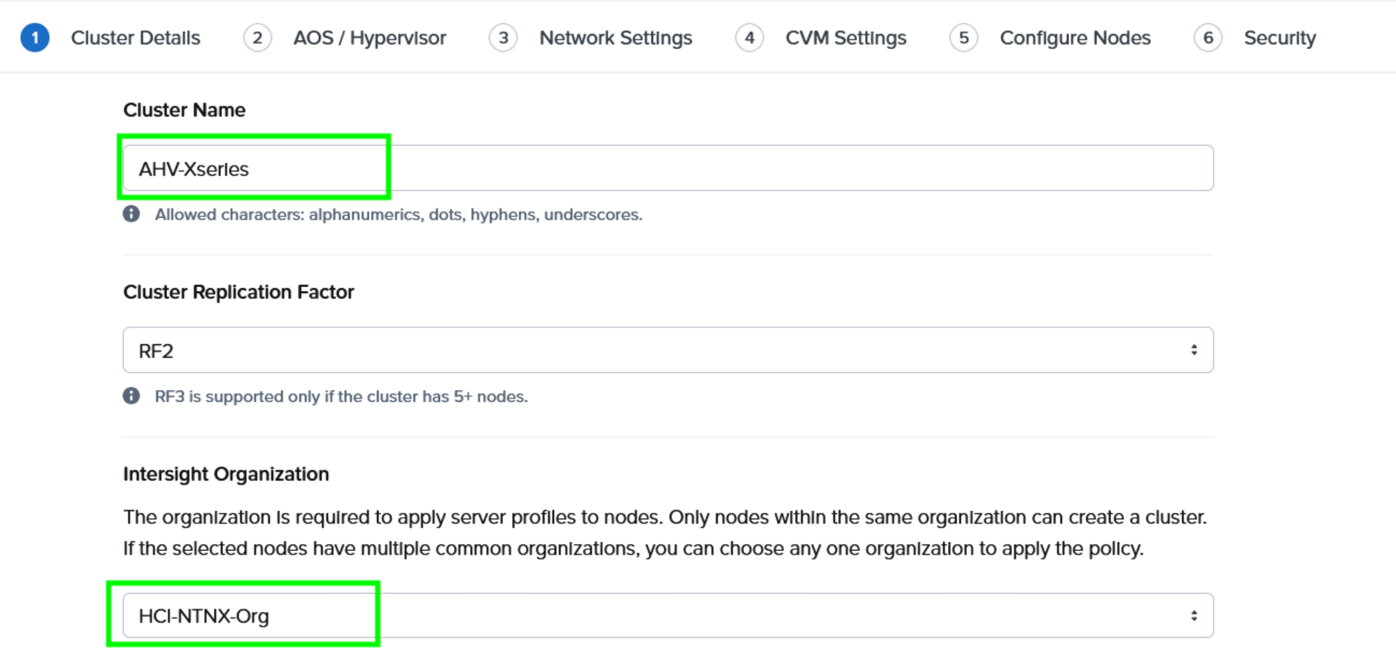
4 selected out of 4 grouped Cisco Nodes

Management Mode : Intersight Managed M... 4

☑	Node Serial	Name	Node Status	Model	Domain	Intersight Organizations	Intersight T
☑	FCH2917705A	HCI-NTNX-FI-1-3	● Onboarded	UCSX-215C-M8	HCI-NTNX-FI	default, HCI-NTNX-Org	-
☑	FCH29177049	HCI-NTNX-FI-1-5	● Onboarded	UCSX-215C-M8	HCI-NTNX-FI	default, HCI-NTNX-Org	-
☑	FCH29177048	HCI-NTNX-FI-1-7	● Onboarded	UCSX-215C-M8	HCI-NTNX-FI	default, HCI-NTNX-Org	-
☑	FCH29177050	HCI-NTNX-FI-1-1	● Onboarded	UCSX-215C-M8	HCI-NTNX-FI	default, HCI-NTNX-Org	-

Step 3. Click Create Cluster under the Actions tab.

Step 4. Enter a cluster name, since there are four nodes, the replication factor (RF) of cluster would be RF2, select the Intersight organization in which the servers had been claimed. Click Next.



Cluster Name

AHV-Xseries

Allowed characters: alphanumerics, dots, hyphens, underscores.

Cluster Replication Factor

RF2

RF3 is supported only if the cluster has 5+ nodes.

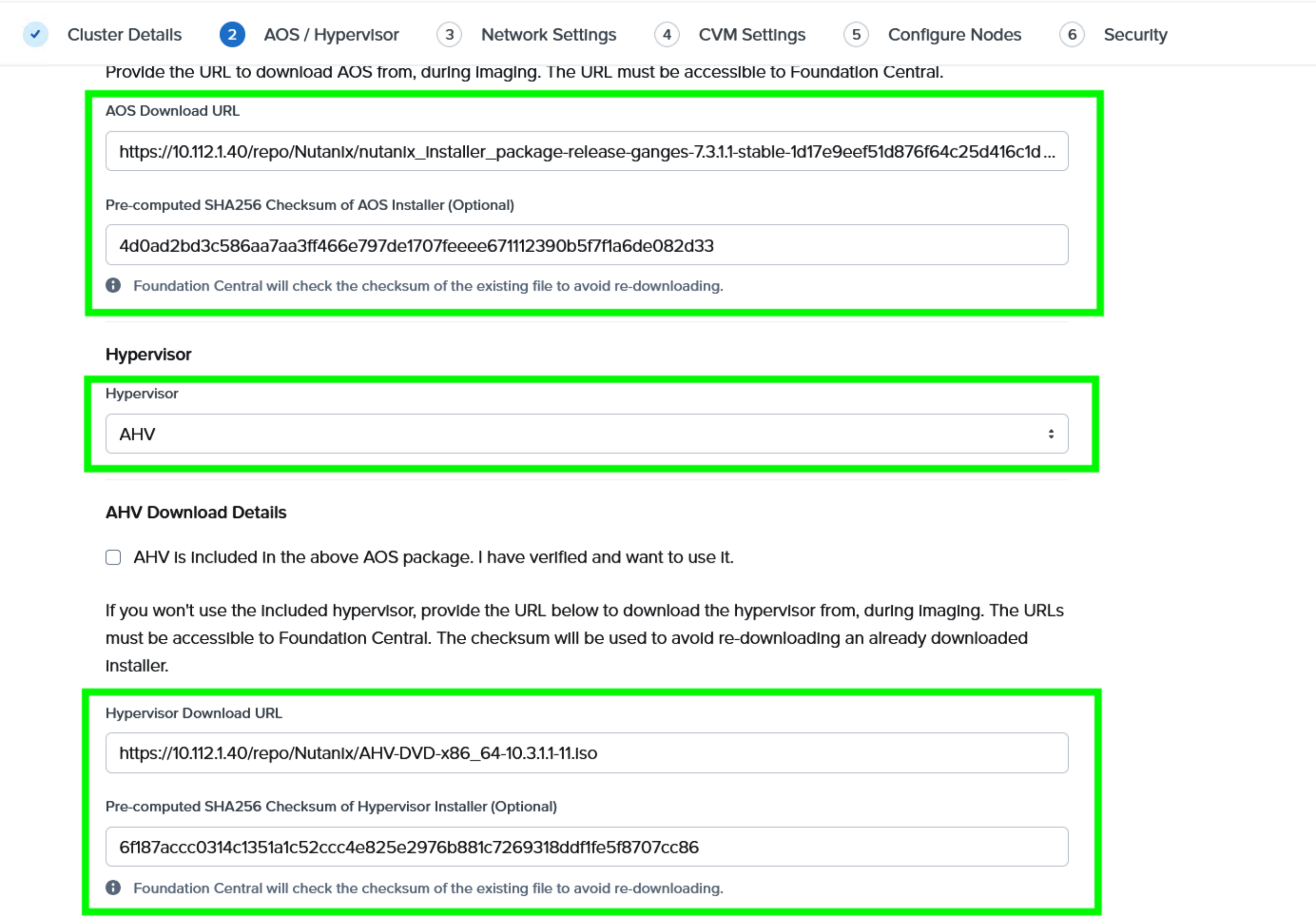
Intersight Organization

The organization is required to apply server profiles to nodes. Only nodes within the same organization can create a cluster. If the selected nodes have multiple common organizations, you can choose any one organization to apply the policy.

HCI-NTNX-Org

Step 5. Choose **I want to image all nodes with AOS and hypervisor Installers**. Enter the AOS download URL. You are required to host the Nutanix AOS on a http/https web server. The web server should be reachable from Cisco IMC network. The AOS Download URL and AOS Metadata file URL must be provided, then select AHV as the hypervisor.

Step 6. Provide the Download URL for the AHV installation ISO. You must also provide the SHA256 checksum for the hypervisor installation file being used.



Provide the URL to download AOS from, during imaging. The URL must be accessible to Foundation Central.

AOS Download URL

https://10.112.1.40/repo/Nutanix/nutanix_installer_package-release-ganges-7.3.1.1-stable-1d17e9eef51d876f64c25d416c1d…

Pre-computed SHA256 Checksum of AOS Installer (Optional)

4d0ad2bd3c586aa7aa3ff466e797de1707feeee671112390b5f7f1a6de082d33

Foundation Central will check the checksum of the existing file to avoid re-downloading.

Hypervisor

Hypervisor

AHV

AHV Download Details

□ AHV is included in the above AOS package. I have verified and want to use it.

If you won't use the included hypervisor, provide the URL below to download the hypervisor from, during imaging. The URLs must be accessible to Foundation Central. The checksum will be used to avoid re-downloading an already downloaded installer.

Hypervisor Download URL

https://10.112.1.40/repo/Nutanix/AHV-DVD-x86_64-10.3.1.1-11.iso

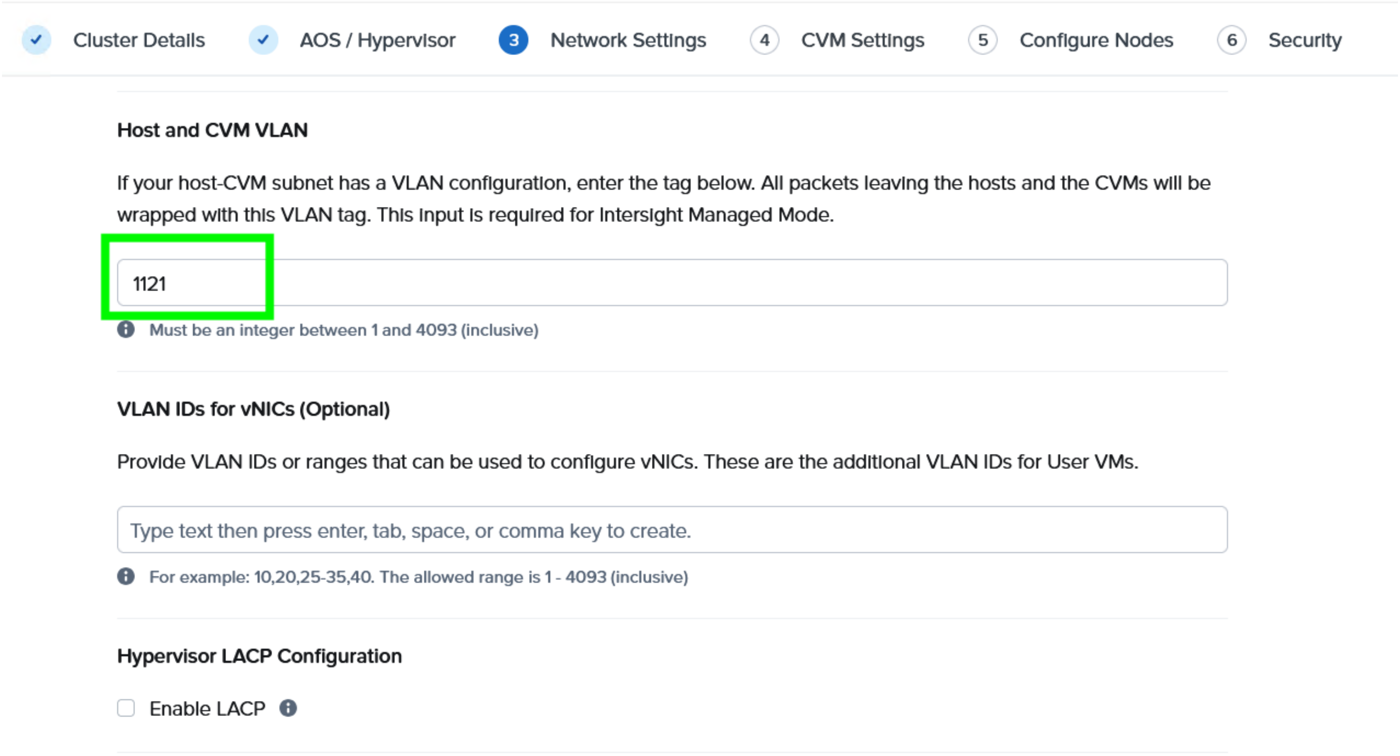
Pre-computed SHA256 Checksum of Hypervisor Installer (Optional)

6f187accc0314c1351a1c52ccc4e825e2976b881c7269318ddf1fe5f8707cc86

Foundation Central will check the checksum of the existing file to avoid re-downloading.

Step 7. Enter the Host and CVM VLAN, then select MAC Pool and IMC Access Configuration previously configured.

Note: You have a choice to enable LACP with AHV. Default mode is active-backup. For more details, go to: https://portal.nutanix.com/page/documents/solutions/details?targetId=BP-2071-AHV-Networking:bp-ahv-networking-best-practices.html. Enable LACP after cluster configuration and is supported only during re-imaging of nodes.



Host and CVM VLAN

If your host-CVM subnet has a VLAN configuration, enter the tag below. All packets leaving the hosts and the CVMs will be wrapped with this VLAN tag. This input is required for Intersight Managed Mode.

1121

Must be an integer between 1 and 4093 (inclusive)

VLAN IDs for vNICs (Optional)

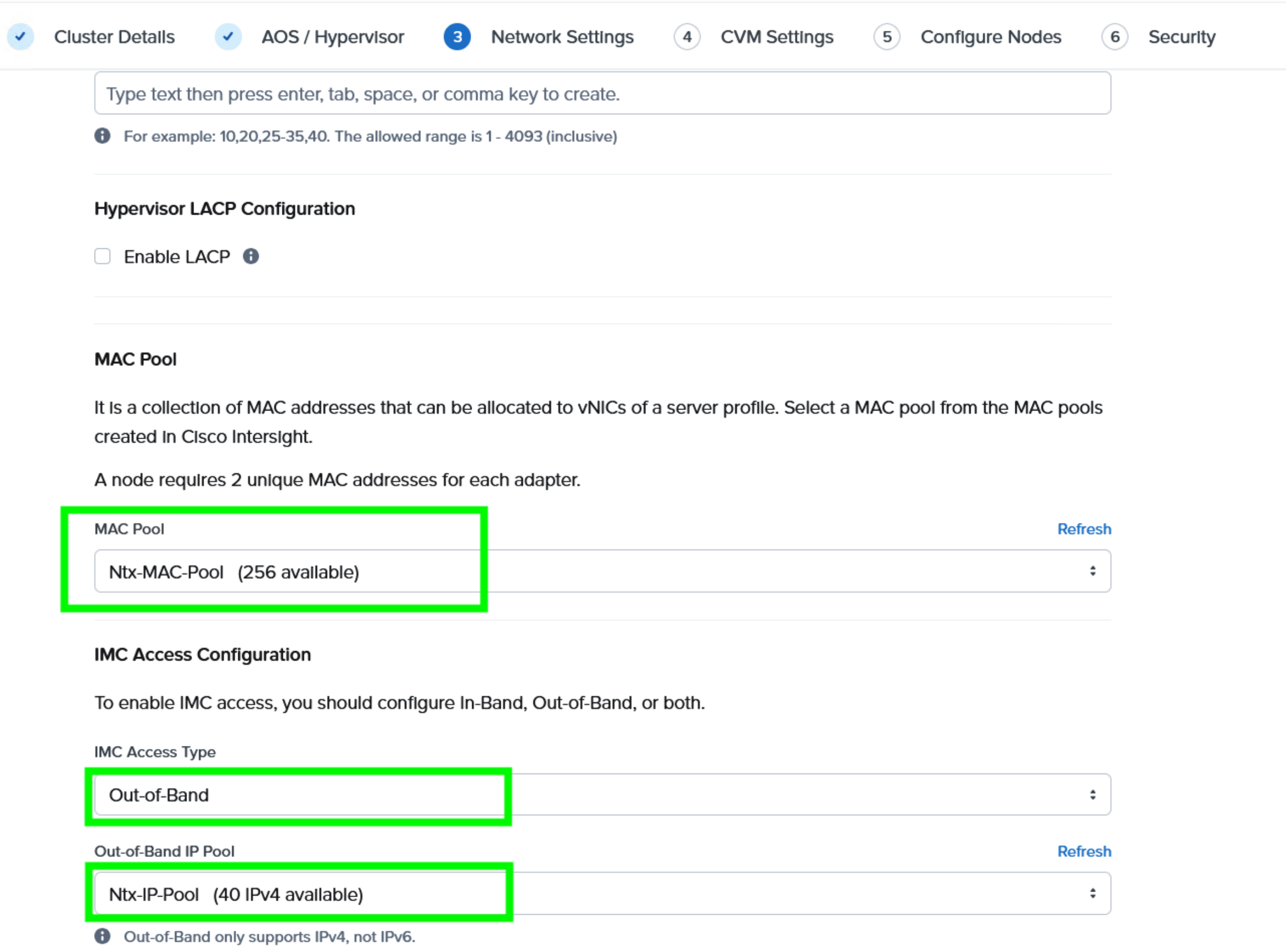
Provide VLAN IDs or ranges that can be used to configure vNICs. These are the additional VLAN IDs for User VMs.

Type text then press enter, tab, space, or comma key to create.

For example: 10,20,25-35,40. The allowed range is 1 - 4093 (inclusive)

Hypervisor LACP Configuration

□ Enable LACP



Type text then press enter, tab, space, or comma key to create.

For example: 10,20,25-35,40. The allowed range is 1 - 4093 (inclusive)

Hypervisor LACP Configuration

□ Enable LACP

MAC Pool

It is a collection of MAC addresses that can be allocated to vNICs of a server profile. Select a MAC pool from the MAC pools created in Cisco Intersight.

A node requires 2 unique MAC addresses for each adapter.

MAC Pool: Ntx-MAC-Pool (256 available)

IMC Access Configuration

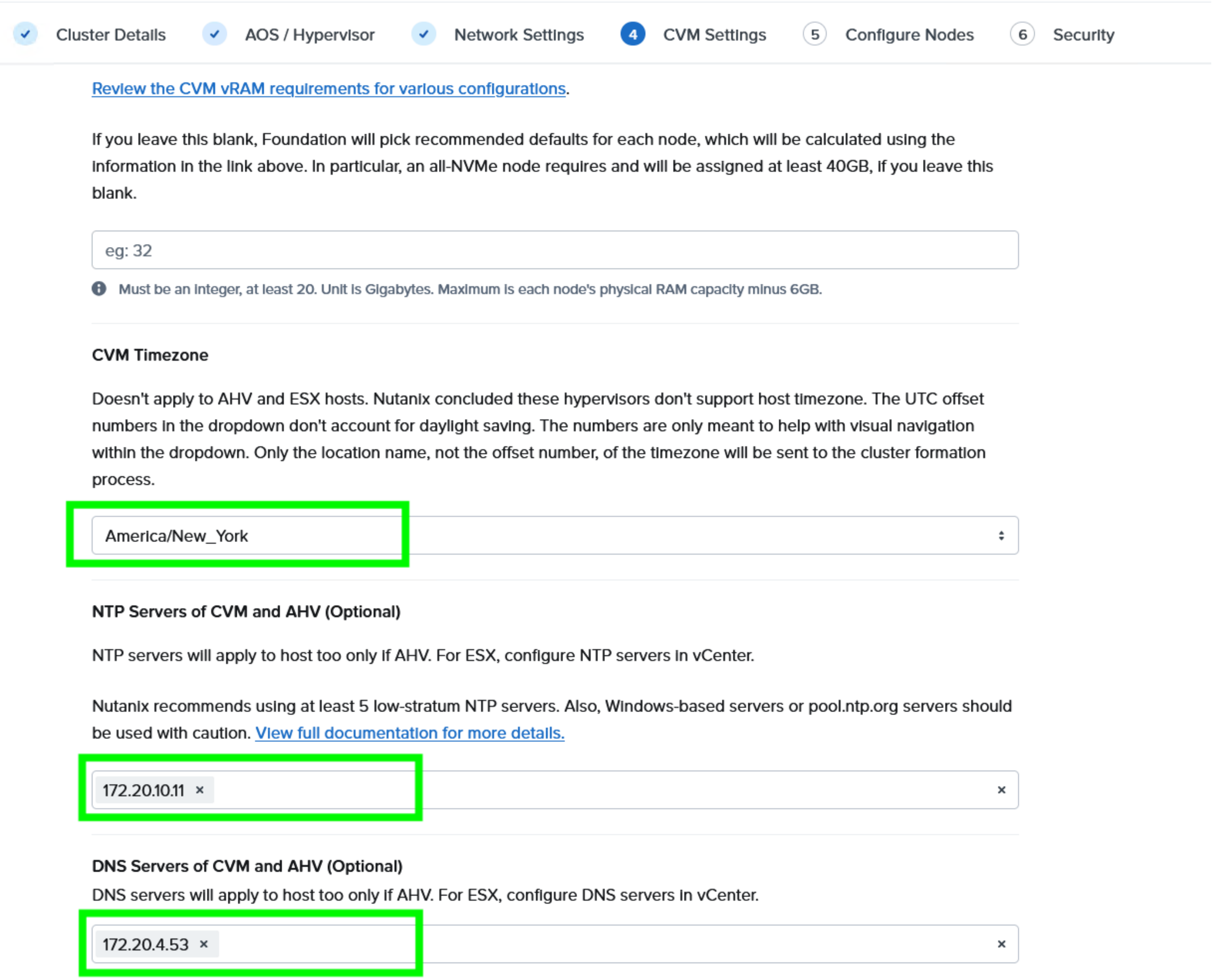
To enable IMC access, you should configure In-Band, Out-of-Band, or both.

IMC Access Type: Out-of-Band

Out-of-Band IP Pool: Ntx-IP-Pool (40 IPv4 available)

Out-of-Band only supports IPv4, not IPv6.

Step 8. Enter the Timezone, DNS and NTP server configuration.



Review the CVM vRAM requirements for various configurations.

If you leave this blank, Foundation will pick recommended defaults for each node, which will be calculated using the information in the link above. In particular, an all-NVMe node requires and will be assigned at least 40GB, if you leave this blank.

eg: 32

Must be an integer, at least 20. Unit is Gigabytes. Maximum is each node's physical RAM capacity minus 6GB.

CVM Timezone

Doesn't apply to AHV and ESX hosts. Nutanix concluded these hypervisors don't support host timezone. The UTC offset numbers in the dropdown don't account for daylight saving. The numbers are only meant to help with visual navigation within the dropdown. Only the location name, not the offset number, of the timezone will be sent to the cluster formation process.

America/New_York

NTP Servers of CVM and AHV (Optional)

NTP servers will apply to host too only if AHV. For ESX, configure NTP servers in vCenter.

Nutanix recommends using at least 5 low-stratum NTP servers. Also, Windows-based servers or pool.ntp.org servers should be used with caution. View full documentation for more details.

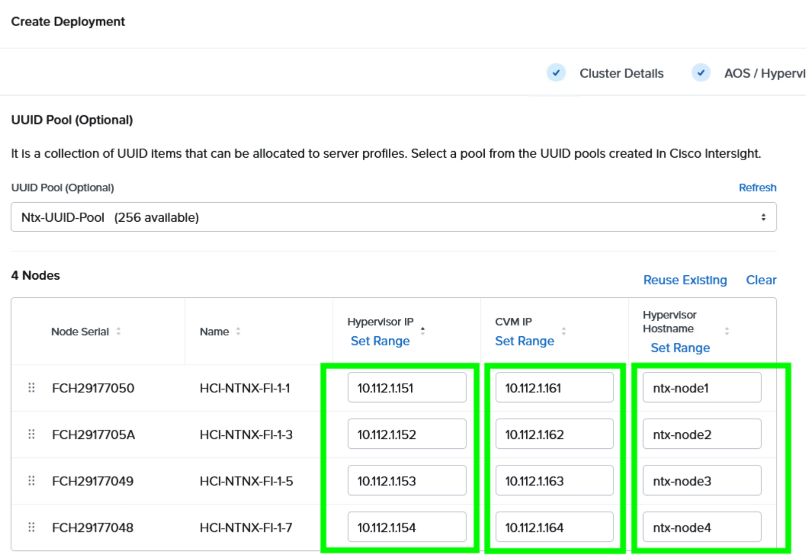
172.20.10.11 ×

DNS Servers of CVM and AHV (Optional)

DNS servers will apply to host too only if AHV. For ESX, configure DNS servers in vCenter.

172.20.4.53 ×

Step 9. Enter the Hypervisor IP, CVM IP, and hostnames for all the nodes configured for cluster and click Next.



UUID Pool (Optional)

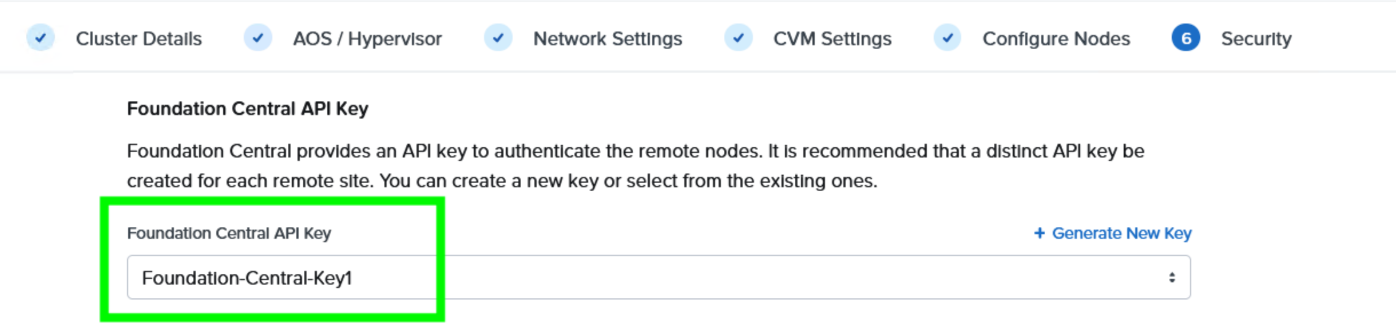
It is a collection of UUID items that can be allocated to server profiles. Select a pool from the UUID pools created in Cisco Intersight.

UUID Pool (Optional): Ntx-UUID-Pool (256 available)

4 Nodes

Node Serial	Name	Hypervisor IP	CVM IP	Hypervisor Hostname
FCH29177050	HCI-NTNX-FI-1-1	10.112.1.151	10.112.1.161	ntx-node1
FCH2917705A	HCI-NTNX-FI-1-3	10.112.1.152	10.112.1.162	ntx-node2
FCH29177049	HCI-NTNX-FI-1-5	10.112.1.153	10.112.1.163	ntx-node3
FCH29177048	HCI-NTNX-FI-1-7	10.112.1.154	10.112.1.164	ntx-node4

Step 10. Select the Foundation Central API key as created under FC configuration. Click Submit.

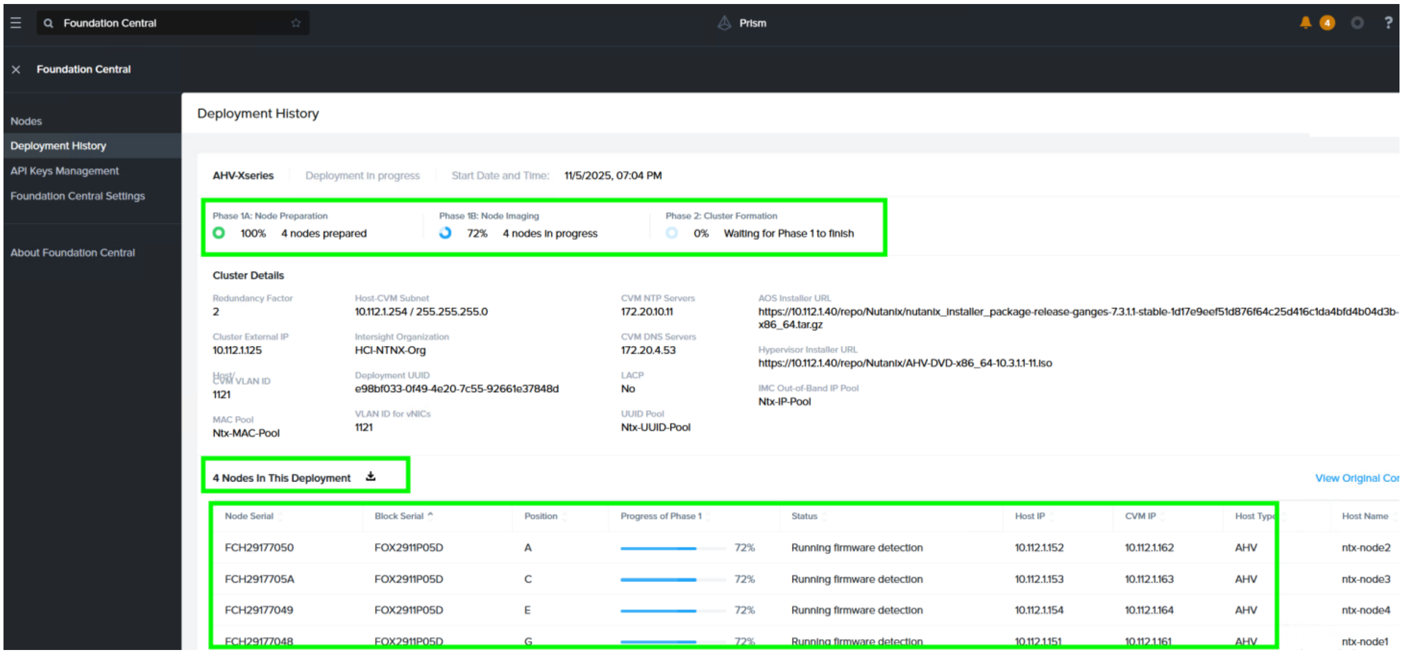


Foundation Central API Key

Foundation Central provides an API key to authenticate the remote nodes. It is recommended that a distinct API key be created for each remote site. You can create a new key or select from the existing ones.

Foundation Central API Key: Foundation-Central-Key1

Step 11. Monitor the cluster creation process.



Deployment History

AHV-Xseries | Deployment in progress | Start Date and Time: 11/5/2025, 07:04 PM

Phase 1A: Node Preparation: 100% 4 nodes prepared
Phase 1B: Node Imaging: 72% 4 nodes in progress
Phase 2: Cluster Formation: 0% Waiting for Phase 1 to finish

Cluster Details

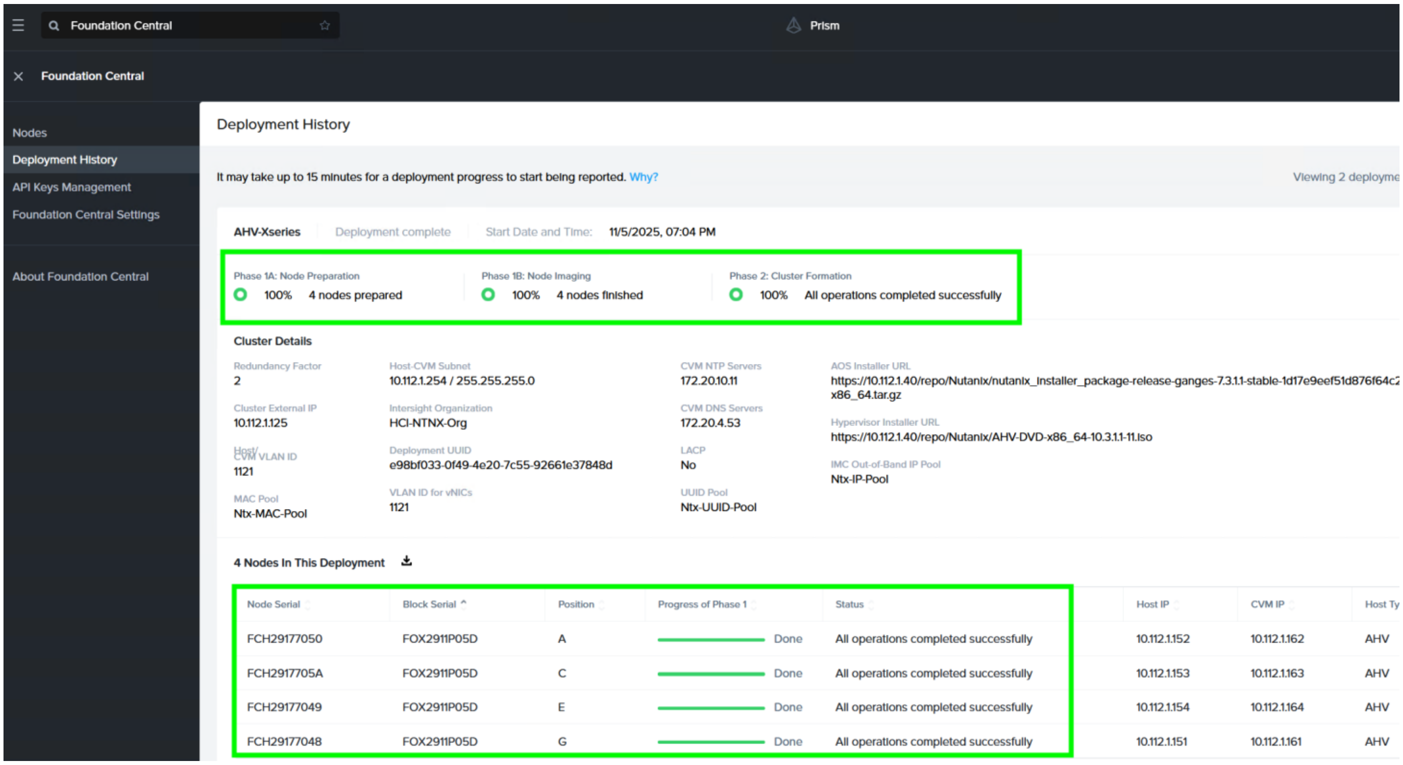
Redundancy Factor: 2
Cluster External IP: 10.112.1.125
Host/CVM VLAN ID: 1121
MAC Pool: Ntx-MAC-Pool
Host-CVM Subnet: 10.112.1.254 / 255.255.255.0
Intersight Organization: HCI-NTNX-Org
Deployment UUID: e98bf033-0f49-4e20-7c55-92661e37848d
VLAN ID for vNICs: 1121
CVM NTP Servers: 172.20.10.11
CVM DNS Servers: 172.20.4.53
LACP: No
UUID Pool: Ntx-UUID-Pool
AOS Installer URL: https://10.112.1.40/repo/Nutanix/nutanix_installer_package-release-ganges-7.3.1.1-stable-1d17e9eef51d876f64c25d416c1da4bfd4b04d3b-x86_64.tar.gz
Hypervisor Installer URL: https://10.112.1.40/repo/Nutanix/AHV-DVD-x86_64-10.3.1.1-11.iso
IMC Out-of-Band IP Pool: Ntx-IP-Pool

4 Nodes In This Deployment

View Original Cor

Node Serial	Block Serial	Position	Progress of Phase 1	Status	Host IP	CVM IP	Host Typ	Host Name
FCH29177050	FOX2911P05D	A	72%	Running firmware detection	10.112.1.152	10.112.1.162	AHV	ntx-node2
FCH2917705A	FOX2911P05D	C	72%	Running firmware detection	10.112.1.153	10.112.1.163	AHV	ntx-node3
FCH29177049	FOX2911P05D	E	72%	Running firmware detection	10.112.1.154	10.112.1.164	AHV	ntx-node4
FCH29177048	FOX2911P05D	G	72%	Running firmware detection	10.112.1.151	10.112.1.161	AHV	ntx-node1

Step 12. When the cluster is created successfully, go to the cluster VIP, and complete the post cluster creation task such as configuration of Storage containers, High availability reservation, iSCSI Data IP configuration, VM network configuration, and address any warnings displayed during NCC checks.



Deployment History

It may take up to 15 minutes for a deployment progress to start being reported. Why?

Viewing 2 deployme

AHV-Xseries | Deployment complete | Start Date and Time: 11/5/2025, 07:04 PM

Phase 1A: Node Preparation: 100% 4 nodes prepared
Phase 1B: Node Imaging: 100% 4 nodes finished
Phase 2: Cluster Formation: 100% All operations completed successfully

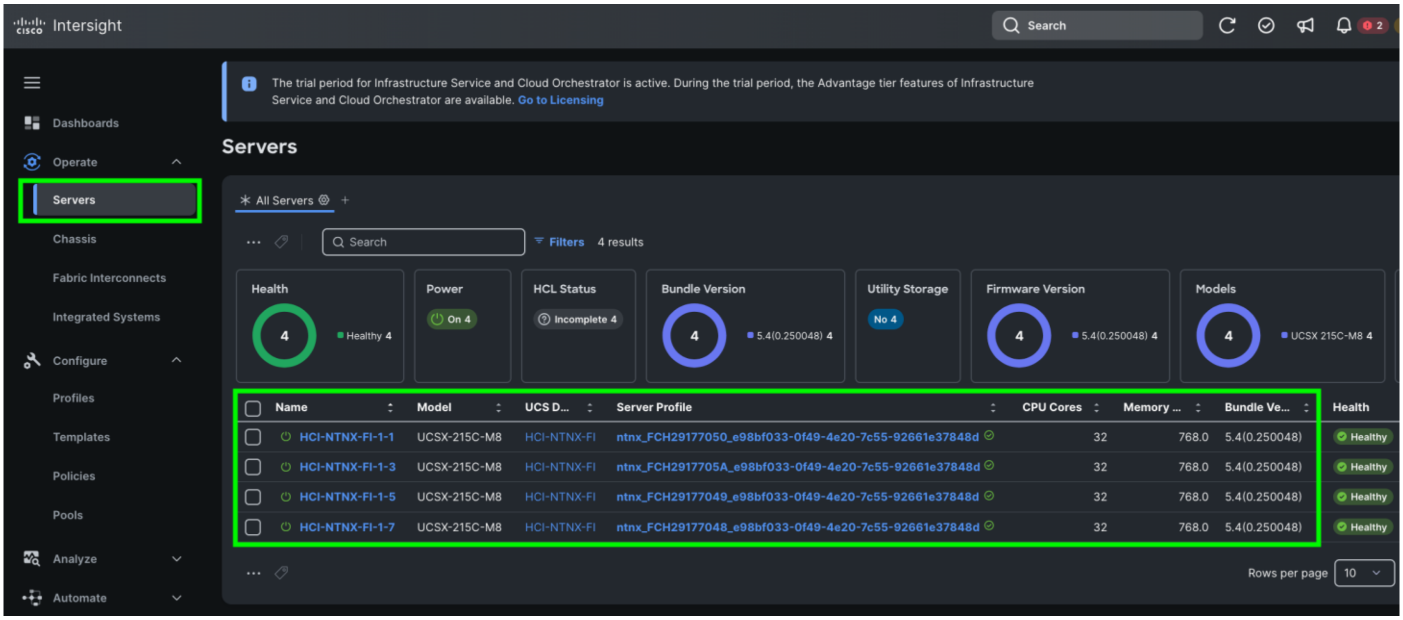
Cluster Details

Redundancy Factor: 2
Cluster External IP: 10.112.1.125
Host/CVM VLAN ID: 1121
MAC Pool: Ntx-MAC-Pool
Host-CVM Subnet: 10.112.1.254 / 255.255.255.0
Intersight Organization: HCI-NTNX-Org
Deployment UUID: e98bf033-0f49-4e20-7c55-92661e37848d
VLAN ID for vNICs: 1121
CVM NTP Servers: 172.20.10.11
CVM DNS Servers: 172.20.4.53
LACP: No
UUID Pool: Ntx-UUID-Pool
AOS Installer URL: https://10.112.1.40/repo/Nutanix/nutanix_installer_package-release-ganges-7.3.1.1-stable-1d17e9eef51d876f64c2 x86_64.tar.gz
Hypervisor Installer URL: https://10.112.1.40/repo/Nutanix/AHV-DVD-x86_64-10.3.1.1-11.iso
IMC Out-of-Band IP Pool: Ntx-IP-Pool

4 Nodes In This Deployment

Node Serial	Block Serial	Position	Progress of Phase 1	Status	Host IP	CVM IP	Host Ty
FCH29177050	FOX2911P05D	A	Done	All operations completed successfully	10.112.1.152	10.112.1.162	AHV
FCH2917705A	FOX2911P05D	C	Done	All operations completed successfully	10.112.1.153	10.112.1.163	AHV
FCH29177049	FOX2911P05D	E	Done	All operations completed successfully	10.112.1.154	10.112.1.164	AHV
FCH29177048	FOX2911P05D	G	Done	All operations completed successfully	10.112.1.151	10.112.1.161	AHV

Step 13. Go to Cisco Intersight to view the Server Profile created as part of Day 0 deployment.



The trial period for Infrastructure Service and Cloud Orchestrator is active. During the trial period, the Advantage tier features of Infrastructure Service and Cloud Orchestrator are available. Go to Licensing

Servers

All Servers

Search | Filters | 4 results

Health: 4 Healthy 4 | Power: On 4 | HCL Status: Incomplete 4 | Bundle Version: 4 5.4(0.250048) 4 | Utility Storage: No 4 | Firmware Version: 4 5.4(0.250048) 4 | Models: 4 UCSX 215C-M8 4

Name	Model	UCS D...	Server Profile	CPU Cores	Memory ...	Bundle Ve...	Health
HCI-NTNX-FI-1-1	UCSX-215C-M8	HCI-NTNX-FI	ntnx_FCH29177050_e98bf033-0f49-4e20-7c55-92661e37848d	32	768.0	5.4(0.250048)	Healthy
HCI-NTNX-FI-1-3	UCSX-215C-M8	HCI-NTNX-FI	ntnx_FCH2917705A_e98bf033-0f49-4e20-7c55-92661e37848d	32	768.0	5.4(0.250048)	Healthy
HCI-NTNX-FI-1-5	UCSX-215C-M8	HCI-NTNX-FI	ntnx_FCH29177049_e98bf033-0f49-4e20-7c55-92661e37848d	32	768.0	5.4(0.250048)	Healthy
HCI-NTNX-FI-1-7	UCSX-215C-M8	HCI-NTNX-FI	ntnx_FCH29177048_e98bf033-0f49-4e20-7c55-92661e37848d	32	768.0	5.4(0.250048)	Healthy

Rows per page 10

Post Cluster Creation Task

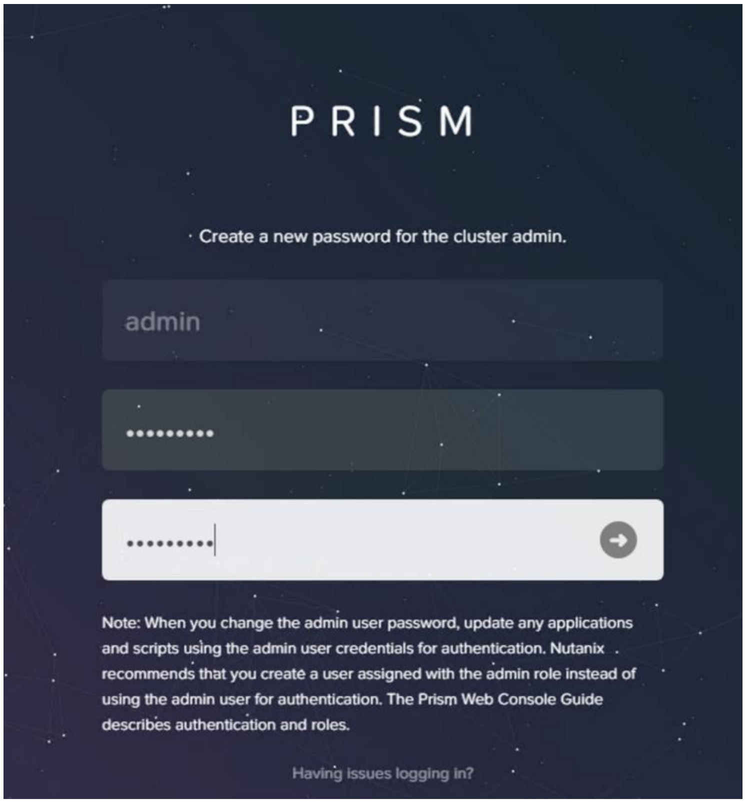
This procedure describes the recommended post cluster creation steps.

Procedure 1. Post Cluster Creation task

Step 1. Access Prism Element (the built-in version of Prism) at the cluster IP address or an individual controller VM IP address, using HTTPS at port 9440.

Step 2. Default username: admin and password (case sensitive): Nutanix/4u

Note: Password must be changed on first login.



PRISM

Create a new password for the cluster admin.

admin

•••••••••

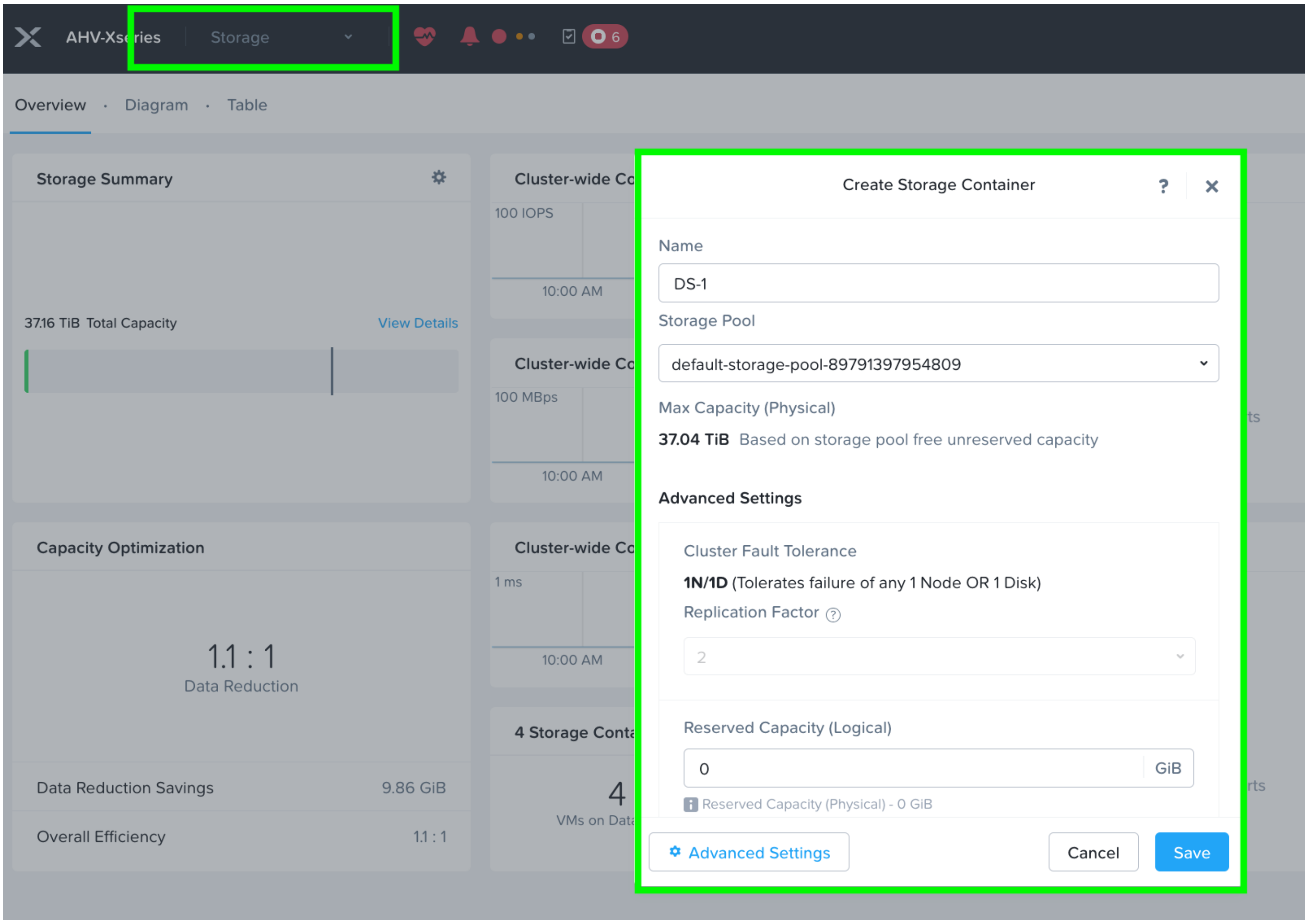
•••••••••

Note: When you change the admin user password, update any applications and scripts using the admin user credentials for authentication. Nutanix recommends that you create a user assigned with the admin role instead of using the admin user for authentication. The Prism Web Console Guide describes authentication and roles.

Having issues logging in?

Step 3. Accept EULA and Enable Pulse.

Step 4. Go to the Storage tab and create the storage container. Click Save.



Create Storage Container

Name: DS-1

Storage Pool: default-storage-pool-89791397954809

Max Capacity (Physical)

37.04 TiB Based on storage pool free unreserved capacity

Advanced Settings

Cluster Fault Tolerance

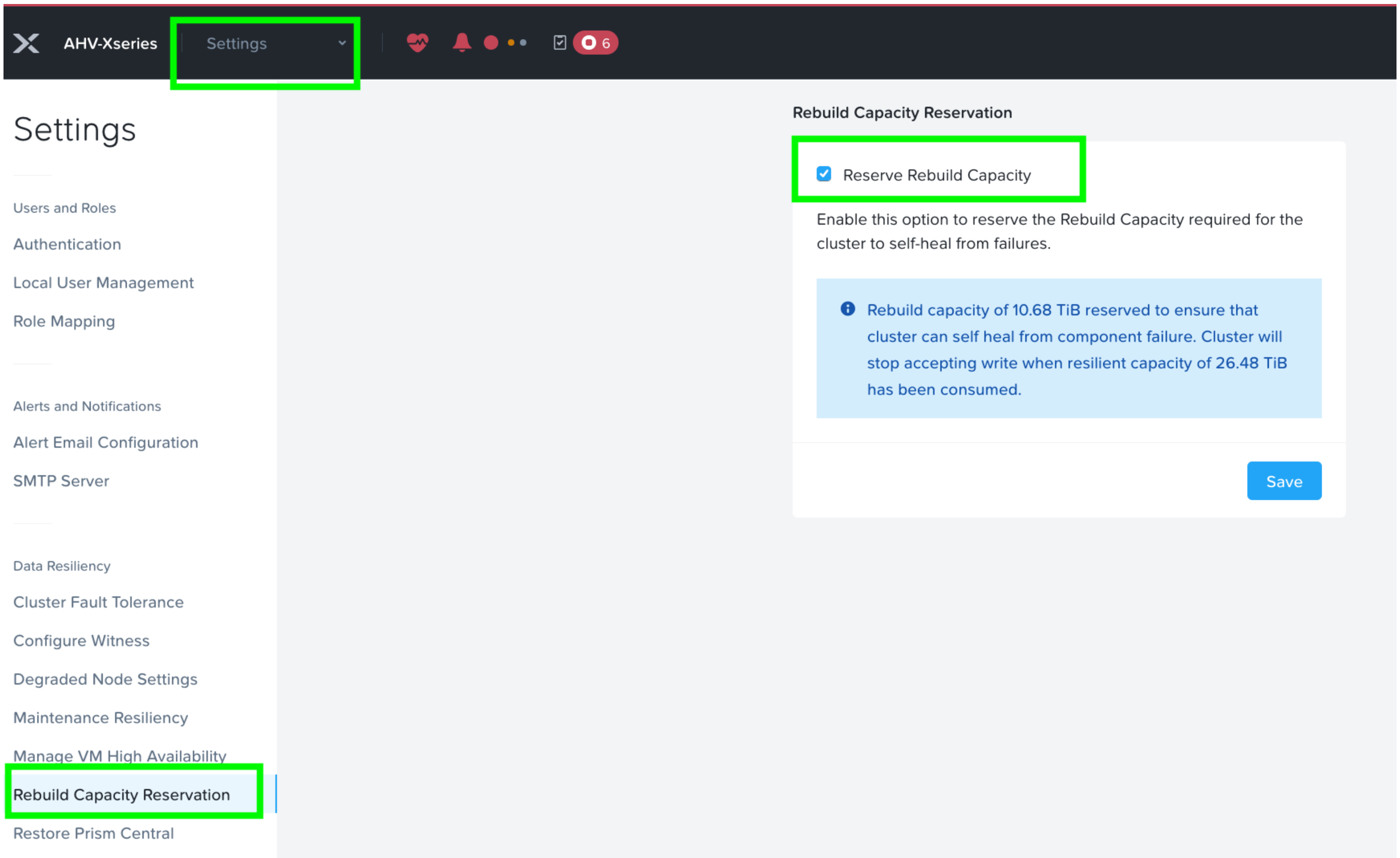
1N/1D (Tolerates failure of any 1 Node OR 1 Disk)

Replication Factor: 2

Reserved Capacity (Logical): 0 GiB

Reserved Capacity (Physical) - 0 GiB

Step 5. Enable Rebuild Capacity Reservation for cluster self-healing from failures. Without this setting enabled, cluster will accept incoming writes even if all blocks cannot completely heal during failures. After enabling, cluster will refuse new writes if they cannot be fully protected during failures.



Rebuild Capacity Reservation

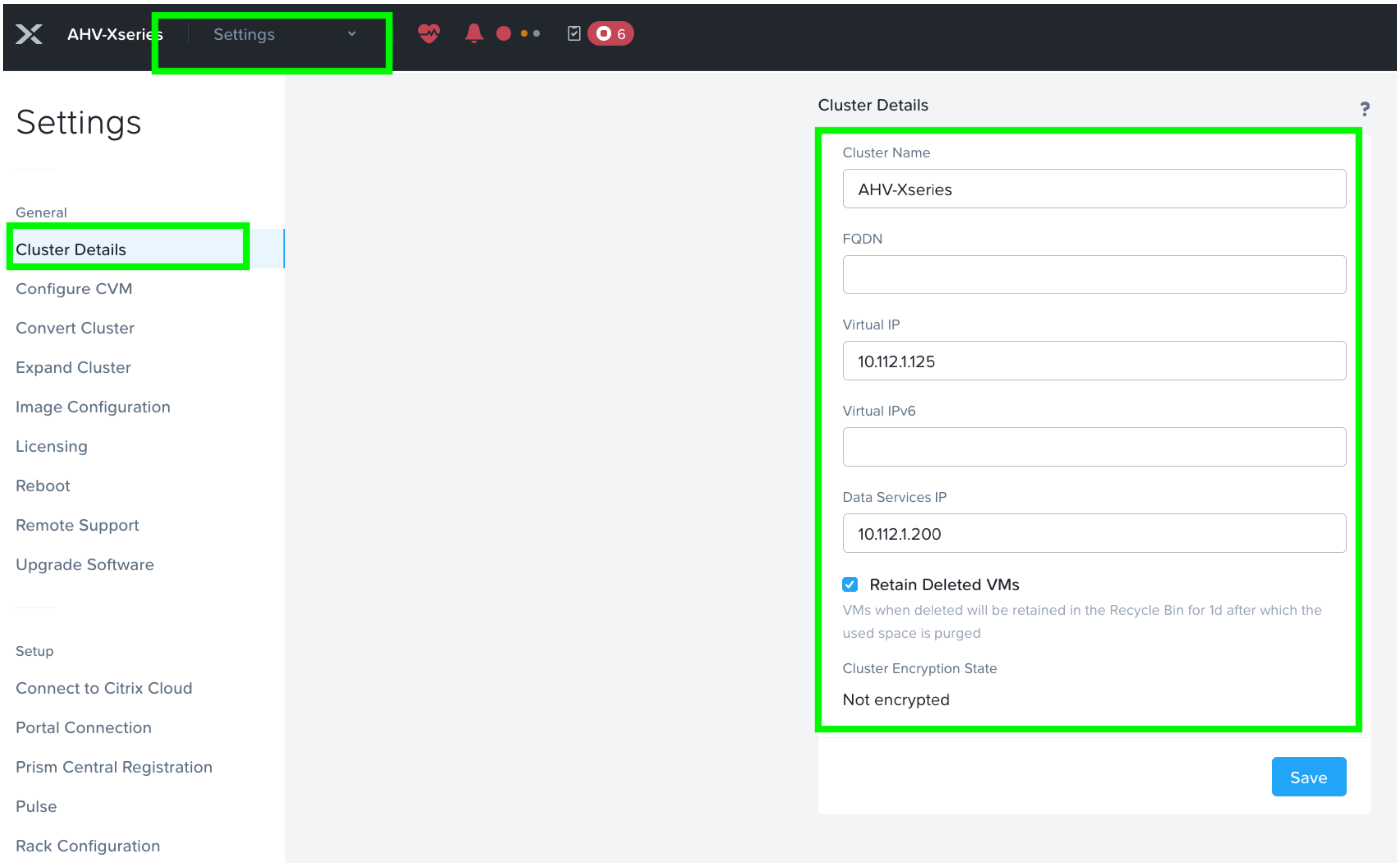
☑ Reserve Rebuild Capacity

Enable this option to reserve the Rebuild Capacity required for the cluster to self-heal from failures.

Rebuild capacity of 10.68 TiB reserved to ensure that cluster can self heal from component failure. Cluster will stop accepting write when resilient capacity of 26.48 TiB has been consumed.

Step 6. Set iSCSI Data Services IP Address. This is an additional clustered IP address for enabling iSCSI Data Services, which is required to install Prism Central.

Step 7. Go to Cluster details and enter iSCSI data services IP and enable Retain Deleted VMs for 1 day. Click Save.



Cluster Details

Cluster Name: AHV-Xseries

FQDN:

Virtual IP: 10.112.1.125

Virtual IPv6:

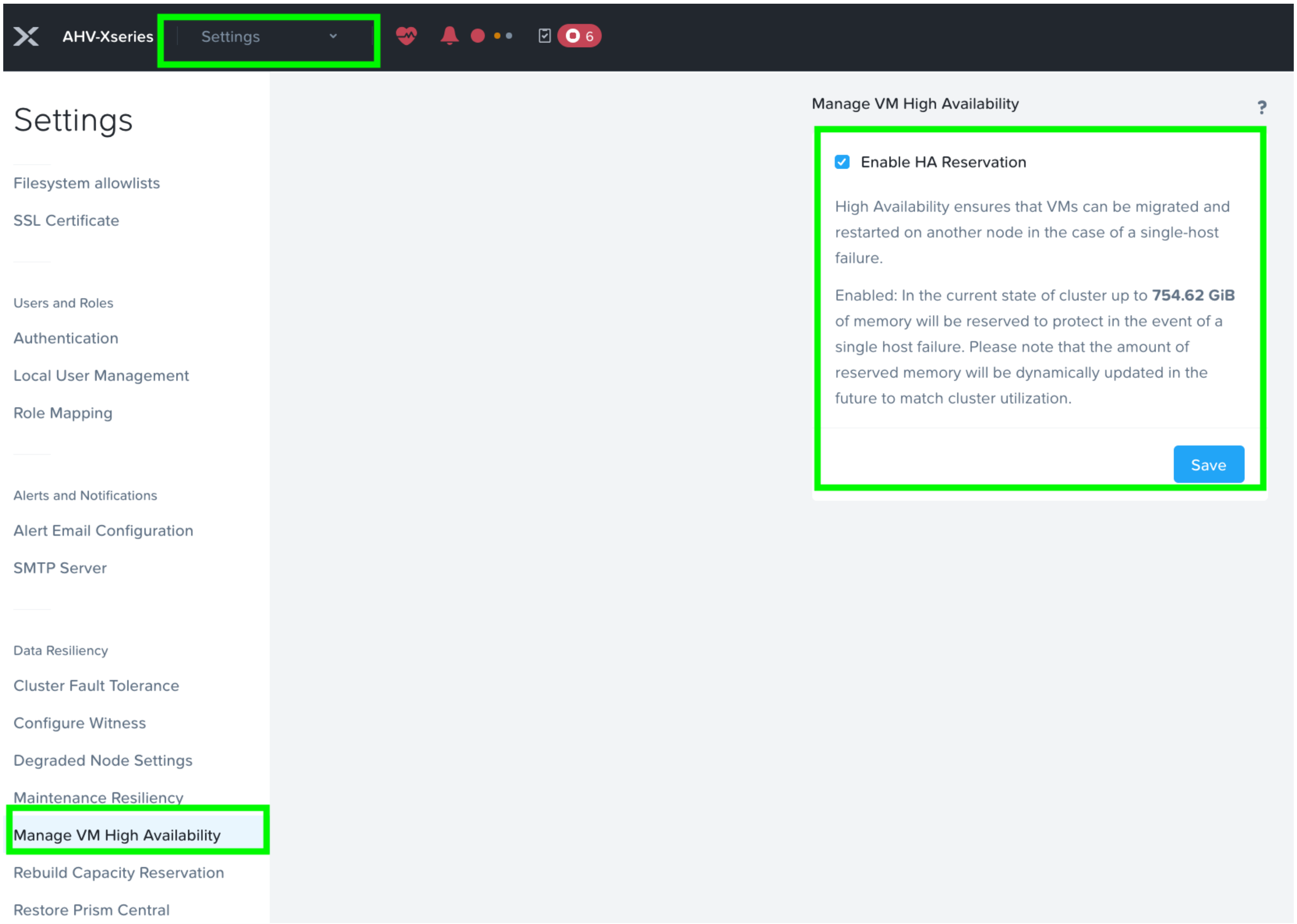
Data Services IP: 10.112.1.200

☑ Retain Deleted VMs

VMs when deleted will be retained in the Recycle Bin for 1d after which the used space is purged

Cluster Encryption State: Not encrypted

Step 8. Enable VM High Availability Reservation. Go to Settings > Manage VM High Availability and select Enable HA Reservation. Click Save.



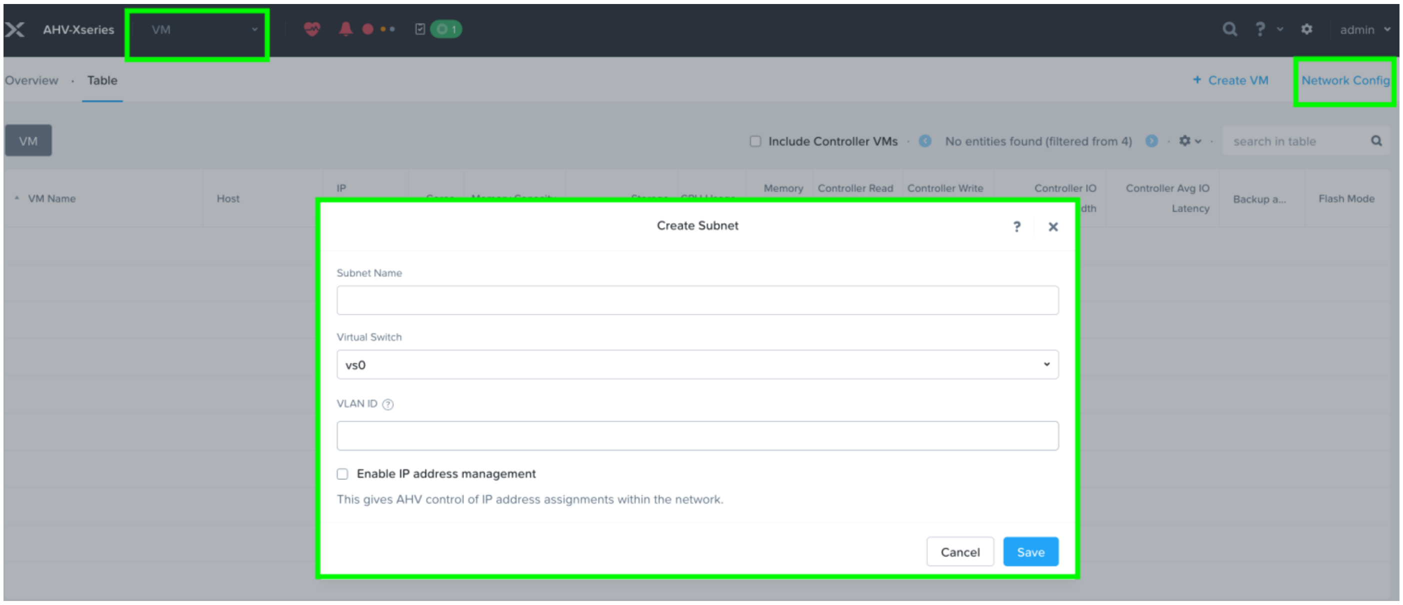
Manage VM High Availability

☑ Enable HA Reservation

High Availability ensures that VMs can be migrated and restarted on another node in the case of a single-host failure.

Enabled: In the current state of cluster up to **754.62 GiB** of memory will be reserved to protect in the event of a single host failure. Please note that the amount of reserved memory will be dynamically updated in the future to match cluster utilization.

Step 9. Create VM Subnet(s). Go to the VM tab and then click on Network Config to create VM network subnet.



□ Include Controller VMs · No entities found (filtered from 4)

Create Subnet

Subnet Name

Virtual Switch: vs0

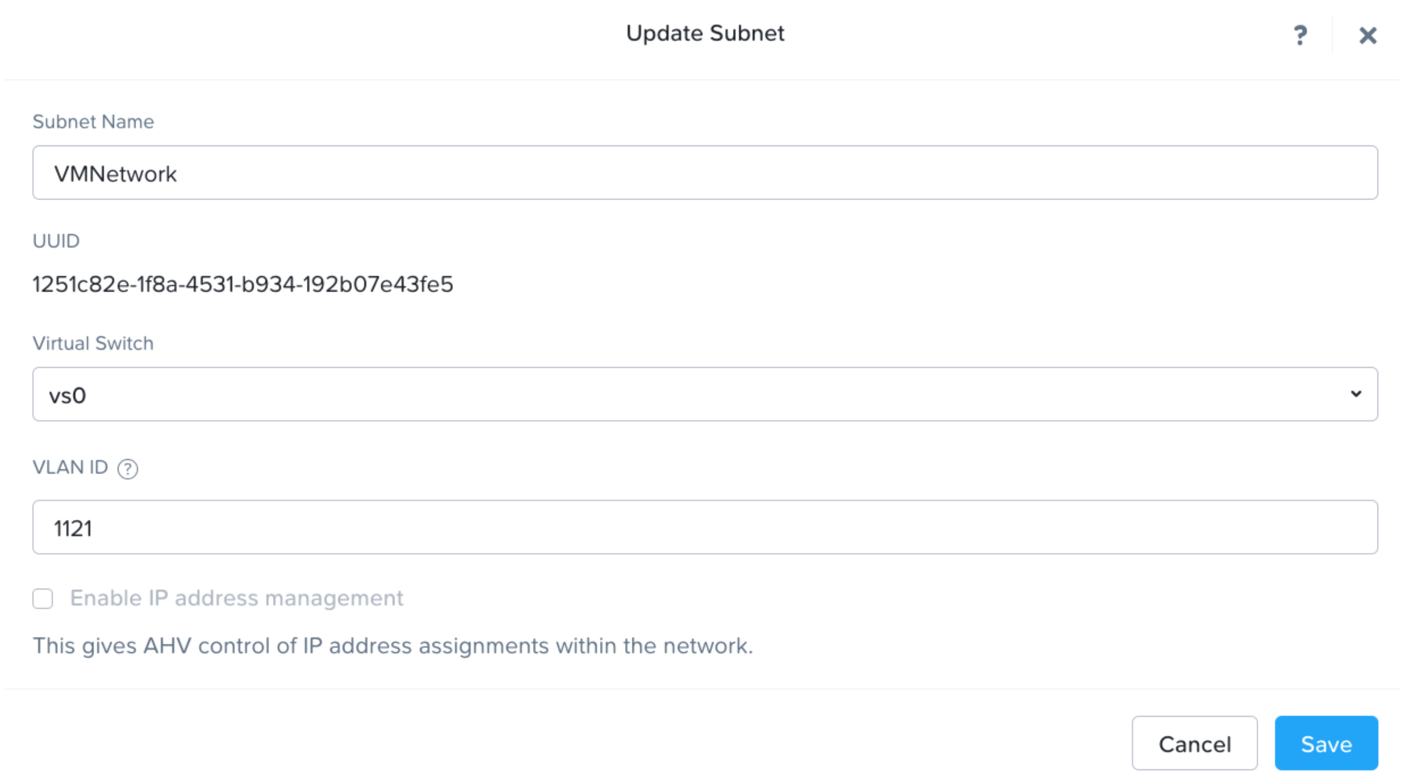
VLAN ID

□ Enable IP address management

This gives AHV control of IP address assignments within the network.

Step 10. Provide the name of Subnet and select Virtual Switch and enter VLAN ID according to your environment.

Note: Do not modify the default virtual switch bond type to Active-Active.



Update Subnet

Subnet Name: VMNetwork

UUID: 1251c82e-1f8a-4531-b934-192b07e43fe5

Virtual Switch: vs0

VLAN ID: 1121

□ Enable IP address management

This gives AHV control of IP address assignments within the network.

Step 11. Run a NCC check and address warnings such as changing AHV and CVM default passwords. Three accounts on AHV must have their passwords reset: root, admin and nutanix.

Note: The NCC health checks default_password_check, pc_default_password_check and file_server_default_password_check verify if there are any CVMs (Controller VMs), hosts, IPMIs, Prism Central (PC) instances, or File Server VMs with the default credentials. For more information, go to https://portal.nutanix.com/page/documents/kbs/details?targetId=kA00e000000LKXcCAO

About the author

Hardikkumar Vyas, Technical Marketing Engineer, Cisco Systems, Inc.

Hardikkumar Vyas is a member of Cisco Systems' Cloud and Compute Engineering Group, where he focuses on converged and hyperconverged infrastructure solutions. He holds a master's degree in electrical engineering and has more than 14 years of experience working with enterprise applications such as Oracle RAC Databases, Splunk, and Nutanix. Hardikkumar has contributed to the design, configuration, implementation, optimization, and validation of infrastructure and best practices for data center applications, with a focus on private and hybrid cloud solutions in Cisco's data center environment.

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- Hardik Patel, Technical Marketing Engineering Leader, Cisco Systems, Inc.
- John George, Technical Marketing Engineering Leader, Cisco Systems, Inc

Appendix

This appendix contains the following:

- Appendix A – Bill of Materials
- Appendix B – References used in this guide

Appendix A – Bill of Materials

Table 2 provides an example of the Bill of Materials used for one (3) node cluster deployed, used in the testing and reference design described in this document.

Table 2. Bill of Materials

Line Number	Part Number	Description	Quantity
1.0	**UCSX-M8-MLB**	UCSX M8 Modular Server and Chassis MLB	1
1.1	DC-MGT-SAAS	Cisco Intersight SaaS	1
1.1.1	DC-MGT-IS-SAAS-AD	Infrastructure Services SaaS/CVA - Advantage	4
1.1.2	SVS-DCM-SUPT-BAS	Cisco Support Standard for DCM	1
1.2	UCSX-9508-D-U	UCS 9508 Chassis Configured	1
1.2.1	UCSX-215C-M8	UCS X215c M8 Compute Node 2S w/o CPU, Memory, storage, Mezz	4
1.2.2	COMPUTE-OTHER	Compute Other Use Case	1
1.2.3	UCSX-I9108-100G-D	UCS 9108-100G IFM for 9508 Chassis	2
1.2.4	UCSX-C-DEBUGCBL-D	UCSX Compute Node Debug Cable	1
1.2.5	UCSX-CHASSIS-SW-D	Platform SW (Recommended) latest release for X9500 Chassis	1
1.2.6	UCSX-9508-CAK-D	UCS 9508 Chassis Accessory Kit	1
1.2.7	UCSX-9508-RBLK-D	UCS 9508 Chassis Active Cooling Module (FEM slot)	2
1.2.8	UCSX-9508-ACPEM-D	UCS 9508 Chassis Rear AC Power Expansion Module	2
1.2.9	UCSX-9508-KEYAC-D	UCS 9508 AC PSU Keying Bracket	1
1.2.10	UCSX-9508-FSBK-D	UCS 9508 Chassis Front Node Slot Blank	4
1.2.11	IMM-MANAGED	Deployment mode for UCS FI connected Servers in IMM mode	4
1.2.12	UCSX-CPU-A9355	AMD 9355 3.55GHz 280W 32C/256MB Cache DDR5 6000MT/s	4
1.2.13	UCSX-	Cisco VIC 15230 2x 100G mLOM X-Series w/Secure Boot	4

Line Number	Part Number	Description	Quantity
	MLV5D200GV2D		
1.2.14	UCSX-M2-480G-D	480GB M.2 SATA SSD	8
1.2.15	UCSX-M2-HWRD-FPS	UCSX Front panel with M.2 RAID controller for SATA drives	4
1.2.16	UCSX-C-SW-LATEST-D	Platform SW (Recommended) latest release XSeries ComputeNode	4
1.2.17	UCSX-TPM2-002D-D	TPM 2.0 FIPS 140-2 MSW2022 compliant AMD M8 servers	4
1.2.18	UCS-DDR5-BLK	UCS DDR5 DIMM Blanks	48
1.2.19	UCSX-M8A-HS-F	Front Heatsink for AMD X series servers	4
1.2.20	UCSX-X10C-PT4F-D	UCS X10c Compute Pass Through Controller (Front)	4
1.2.21	UCSX-MRX64G2RE5	64GB DDR5-6400 RDIMM 2Rx4 (16Gb)	48
1.2.22	UCSX-NVMEG4M1920D	1.9TB 2.5in U.3 15mm P7450 Hg Perf Med End NVMe	24
1.2.23	UCSX-PSU-2800AC-D	UCS 9508 Chassis 2800V AC Dual Voltage PSU Titanium	6
1.2.24	CAB-AC-C6K-TWLK	Power Cord, 250Vac 16A, twist lock NEMA L6-20 plug, US	6
1.3	UCSX-FI-6536-D-U	Fabric Interconnect 6536 for IMM	1
1.3.0.1	CON-L1NCO-UCSX00F6	CX LEVEL 1 8X7XNCDOS Fabric Interconnect 6536 for IMM	1
1.3.1	N10-MGT018-D	UCS Manager v4.2 and Intersight Managed Mode v4.2	1
1.3.2	UCS-FI-6500-SW	Perpetual SW License for the 6500 series Fabric Interconnect	1
1.3.3	UCS-PSU-6536-AC-D	UCS 6536 Power Supply/AC 1100W PSU - Port Side Exhaust	2
1.3.4	CAB-9K12A-NA	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America	2
1.3.5	QSFP-100G-CU3M	100GBASE-CR4 Passive Copper Cable, 3m	16
1.3.6	UCS-ACC-6536-D	UCS 6536 Chassis Accessory Kit	1
1.3.7	UCS-FAN-6536-D	UCS 6536 Fan Module	6

Appendix B – References use in this guide

Cisco Compute Hyperconverged X-Series with Nutanix: https://www.cisco.com/c/en/us/products/hyperconverged-infrastructure/compute-hyperconverged/index.html

Cisco Compute Hyperconverged with Nutanix IMM Field Guide: https://community.cisco.com/t5/unified-computing-system-knowledge-base/cisco-compute-hyperconverged-with-nutanix-imm-field-guide/ta-p/5219852

Cisco Compute Hyperconverged X-Series M8 with Nutanix (CCHC + N) Ordering Guide: https://www.cisco.com/c/en/us/td/docs/HCI-Series/HCI-ordering-guide/hcix_m8_ordering-guide-nutanix-compute.html

Cisco Compute Hyperconverged with Nutanix HCIXNX215c M8 All-NVMe Compute Node: https://www.cisco.com/c/dam/en/us/products/collateral/hyperconverged-infrastructure/compute-hyperconverged-hcixnx215c-m8-specsheet.pdf

Cisco Intersight Saas Help Center: https://intersight.com/help/saas and https://www.cisco.com/c/en/us/products/servers-unified-computing/intersight/index.html

Nutanix reference documentation: https://portal.nutanix.com/

AHV Networking Best Practices: https://portal.nutanix.com/page/documents/solutions/details?targetId=BP-2071-AHV-Networking:bp-ahv-networking-best-practices.html

Cisco Compute Hyperconverged with Nutanix in Intersight Standalone Mode: https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/UCS_CVDs/CCHC_Nutanix_ISM.html

Nutanix Compatibility and Interoperability Matrix: https://portal.nutanix.com/page/compatibility-interoperability-matrix?selectedHardwareVendors=Cisco&selectedHardwares=HCIXNX215C-M8SN&selectedProcessor=Turin&selectedHypervisorTypes=AHV

Nutanix Downloads: https://portal.nutanix.com/page/downloads/list

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