

NT-INTUCSX: Administering Cisco UCS X-Series Solutions with Intersight

Course Code: NT-INTUCSX

Duration: 5 days

Instructor-led Training (ILT) | Virtual Instructor-led Training (VILT)

OVERVIEW

This deep-dive training covers Cisco UCS X-Series server family and how Intersight can be the enablement platform for all UCS servers.

We will cover Intersight features such as IWOM, IST, ICO, and programmability either On-Prem or in the Cloud. Attendees will learn the breadth of the physical X-Series (pools, policies, firmware, so much more) platform as well as maintaining existing infrastructure with Intersight Infrastructures Services. Also covered is how to manage physical, virtual, cloud platforms and deploy to any or all

SKILLS COVERED

Upon completion of this course, the student will be able to meet these overall objectives:

- Understand, describe, and configure Cisco Intersight (on prem and SaaS models)
- Understand, describe, and configure Intersight Advanced features (IST, ICO, IWOM)
- Understand, describe, and configure IMM and UMM mode for UCS
- Understand, describe, and configure Cisco X-Series (FI, IFM, X210c Server, Adv Fabric Module)
- Create Intersight Pools, Policies, and Management for X-Series

WHO SHOULD ATTEND?

- Server Administrators
- Systems Engineers
- Storage Administrators
- Technical Solutions Architects
- Integrators and Partners
- Consulting Systems Engineers
- Network Administrators
- Network Engineers
- Network Managers
- Architects

PREREQUISITES

There are no prerequisites required to attend this course.

MODULES

Module 1: Intersight Foundations

Objective: Gain a foundational understanding of Cisco Intersight architecture and deployment models, and learn to navigate the Intersight storage dashboard.

- Lesson 1: Intersight Architecture
- Lesson 2: Flexible Deployment Models
- Lesson 3: Infrastructure Services Licensing
- Lesson 4: Intersight Dashboards

Module 2: Monitoring and Maintaining UCS Infrastructure with Intersight

Objective: Develop skills in monitoring UCS device health, managing standalone UCS C-Series servers, and understanding server compatibility and firmware upgrade processes via Intersight.

- Lesson 1: Device Health and Monitoring

- Lesson 2: Standalone Management for UCS C-Series Servers
- Lesson 3: Server Compatibility (HCL), Advisories (CVEs), and Contract Status
- Lesson 4: Firmware Upgrades

Module 3: Operationalizing Cisco Compute Hyperconverged Solutions with Nutanix

Objective: Learn to implement and manage Nutanix solutions within Cisco UCS environments using Intersight, focusing on integration in vSphere environments.

- Lesson 1: Implementing Nutanix Solutions in Cisco UCS Environments
- Lesson 2: Managing Cisco Nutanix Solutions in vSphere Environment
- Lesson 3: Migration from HX
- Lesson 4: Use Cases and Workloads

Module 4: Cisco UCS X Series Overview and Configuration

Objective: Acquire comprehensive knowledge of Cisco UCS M6, and X Series, including their deployment, power and cooling efficiency, and advanced processor technologies.

- Lesson 1: Cisco UCS X-Series 5th Generation
 - Architecture
 - X-Series Fabric Interconnects (Gen 5, Gen 4)
 - Compute X-Series (x210c M6,7, x410c M7)
 - X-Series Direct
- Lesson 2: Power/Cooling Efficiency
 - Cooling Capacity, Airflow, Thermal Policies, Future-Proof Cooling, Power Policies
- Lesson 3: Advanced Processor Technologies in UCS Platforms
 - Intel 4th Gen Intel® Xeon® SP Sapphire Rapids, AMD EPYC Processors

- Lesson 4: UCS Compute Series
 - Architecture, GPU Offerings for X-Series
 - 7th Generation C245 M8 Servers
 - Adapters and GPU offerings for M8
 - Rack Servers M6, M7 Models GPUs
 - Management Options for Rack Servers

Module 5: Designing Cisco UCS LAN and SAN Connectivity

Objective: Master the design of LAN and SAN connectivity for Cisco UCS, including configuring VSANs and understanding fibre channel switching modes.

- Lesson 1: LAN Connectivity Overview Gen 4/5
 - End Host Mode, VLAN Configuration in UCS Manager
- Lesson 2: Configuring Compute Node SAN Connectivity
- Lesson 3: Fibre Channel Switching
 - Fibre Channel Operating Modes, EHM and N-Port Virtualization
- Lesson 4: Configuring VSANs in Cisco UCS Manager

Module 6: Configuring Cisco UCS-X in IMM Mode

Objective: Understand how to configure Cisco UCS-X in IMM mode, focusing on domain profiles, policy concepts, server profiles, and transition tools.

- Lesson 1: IMM and Domain Profiles
- Lesson 2: Domain Policy Concepts and Usage
- Lesson 3: Cisco Intersight Server Profiles
- Lesson 4: Cisco IMM Transition Tool

- Lesson 5: Thermal and Power Policies in IMM Mode

Module 7: Implementing Cisco UCS-X Firmware Updates

Objective: Learn the intricacies of firmware operations in Cisco UCS-X using Intersight, including managing firmware bundles and standalone firmware management.

- Lesson 1: Intersight Platform Firmware Operations Overview
- Lesson 2: Intersight Firmware Bundles
- Lesson 3: Cisco Stand-Alone Firmware Management

Module 8: Intersight Workload Optimizer (IWO)

Objective: Gain insights into Intersight Workload Optimizer, its delivery, tiers, and value proposition in UCS environments.

- Lesson 1: Intersight Workload Optimizer Overview
- Lesson 2: IWO Delivery and Tiers
- Lesson 3: IWO Value Proposition and Market

Module 9: AI-Powered Forecasting; Workload and Systems Optimization with IMM and Intersight

Objective: Leverage AI-powered tools within Cisco Intersight to forecast IT workload demands and optimize system performance using Integrated Management Module (IMM).

- Lesson 1: Introduction to AI in Cisco Intersight
- Lesson 2: Predictive Analytics and Forecasting
- Lesson 3: Cisco Nvidia Partnership for AI

Module 10: Intersight Cloud Orchestrator (ICO) with Automation Tools

Objective: Master ICO for workflow design and execution, emphasizing Terraform, Ansible, Python, and PowerShell.

- Lesson 1: Workflow Designer
- Lesson 2: Validate and Execute Workflows
- Lesson 3: ICO Overview
- Lesson 4: Validate workflow with ICO
- Lesson 5: Advanced Scripting for ICO with Powershell, Python, Terraform and Ansible

Module 11: Intersight API and Advanced Automation Techniques

Objective: Achieve proficiency in using Intersight APIs and automation tools, including SDKs, Ansible modules, and practical use case implementations.

- Lesson 1: Intersight API Integration with Automation Tools
- Lesson 2: Developing Custom Automation Solutions with Intersight SDKs
- Lesson 3: Use Case Demonstrations

Lab Outline

Labs are designed to assure learners a whole practical experience, through the following practical activities:

Lab 0: Connecting to the Lab Environment

- Basics of accessing and setting up the lab environment for Intersight and IMM exercises.

Lab 1: Exploring Cisco Intersight Interface

- Familiarize with the Intersight dashboard and basic navigation.

Lab 2: Setting Up IMM in Cisco Intersight

- Implement IMM and understand its role in UCS management.

Lab 3: Implementing and Troubleshooting RBAC using the Intersight API

- Setting up role-based access control and integrating with Active Directory using IMM best practices.

Lab 4: Nutanix Integration in Cisco UCS

- Configure and manage Nutanix solutions within a Cisco UCS setup.

Lab 5: Cisco UCS X-Series Configuration with Intersight

- Deploy and configure the UCS X-Series using Intersight, focusing on IMM features.

Lab 6: Designing LAN and SAN Connectivity for UCS

- Set up and validate LAN and SAN connectivity configurations in a UCS environment.

Lab 7: Managing UCS-X in IMM Mode

- Configure and manage UCS-X in IMM mode, including server profiles and policies.

Lab 8: Firmware Management in Cisco UCS-X with Intersight

- Perform firmware updates in UCS-X using Intersight, applying IMM methodologies.

Lab 9: Utilizing Intersight Workload Optimizer (IWO)

Explore and apply the Intersight Workload Optimizer in UCS management scenarios.

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