



Implementing Cisco HyperFlex

DURATION: 4 DAYS

COURSE CODE: DCIHX

FORMAT: LECTURE/LAB

COURSE DESCRIPTION

The Implementing Cisco HyperFlex (DCIHX) v1.0 course shows you how to deploy and use the Cisco® HyperFlex™ data platform to support multi-cloud workloads. You will become familiar with HyperFlex components and learn how to install, design, and manage HyperFlex to support highly scalable and resilient multi-cloud implementations. You will also gain hands-on experience focused on installation, management, and native replication.

WHO SHOULD ATTEND

- Data center engineers
- Cisco integrators and partners

LEARNING OBJECTIVES

This class will help you use Cisco HyperFlex to:

- Enable multi-cloud IT with an adaptive platform that powers any application anywhere with the simplicity of hyper-converged infrastructure
- Gain hands-on experience using Cisco HyperFlex

After taking this course, you should be able to:

- Describe hyper-convergence, Cisco HyperFlex, and the components of Cisco HyperFlex
- Explain the Cisco Unified Computing System™ (Cisco UCS®) and what makes it valuable to business
- Describe how Cisco HyperFlex Data Platform (HXDP) works
- Describe the physical components of Cisco HyperFlex
- Install Regular vSphere Cisco HyperFlex

PREREQUISITES

To fully benefit from this course, you should have the following knowledge:

Cisco CCNA® -level knowledge about data center architecture and products technologies (network, compute, storage network)

Familiarity with VMware vCenter and ESXi

Familiarity with Microsoft Server 2016 and Hyper-V

Recommended Cisco learning offerings that may help you meet these prerequisites:

Cisco Introducing Cisco Data Center Networking (DCICN) 6.x

Cisco Introducing Cisco Data Center Networking Technologies (DCICT) 6.x

Cisco Implementing Cisco Data Center Unified Computing (DCUCI) 6.x

Manage your Cisco HyperFlex VMware ESXi-based cluster

Describe how to maintain Cisco HyperFlex

Design a Cisco HyperFlex solution

Protect the data on your Cisco HyperFlex cluster using replication and data at rest encryption

Describe a stretched cluster and how is it different from a standard cluster

Describe an Edge cluster and how is it different from a standard cluster

Describe a HyperV-based cluster and how is it different from an ESXi-based cluster

Design a multi-cloud datacenter with Cisco HyperFlex

COURSE OUTLINE

1. Introducing Hyper-convergence and HyperFlex

- Traditional Data Center Design
- What Is Hyper-convergence?
- What Is HyperFlex?
- HyperFlex Primer
- Evolution of HyperFlex

2. Describing Cisco UCS: The Foundation of Cisco HyperFlex

- Cisco Server Deployment Models: Standalone Versus Managed
- Cisco UCS Managed Model Benefits
- Cisco UCS M5 Overview
- Cisco UCS M5 Server Types
- Cisco Virtual Interface Cards (VICs) and Their Benefits
- Cisco UCS Fabric Interconnects
- Cisco UCS Manager

3. Describing Cisco HyperFlex Software Components

- Log-Structured File System
- HyperFlex Snapshots Versus VMware Snapshots
- HyperFlex Versus Regular Virtualized Server
- HyperFlex Replicas
- Writing and Reading Process
- Data Optimization Overview
- HyperFlex vs. Other Hyper-Converged Infrastructure (HCI) Solutions

4. Describing Cisco HyperFlex Hardware Components

- HX UCS M4 and M5
- Introducing HyperFlex Converged Nodes
- Hybrid Nodes: HX240M5 and HX220M5
- All-Flash Nodes: HX240M5 and HX220M5
- Difference Between Non-Volatile Memory Express (NVMe) and Serial Attached SCSI (SAS) Types of Cache Solid-State Drive (SSD)
- Interconnects with Focus on G3
- Compute-Only Nodes
- CPU Options
- Compatibility: Server Types

5. Installing Regular ESXi Cisco HyperFlex

- Installation Summary
- Software Prerequisites
- Hardware Prerequisites
- HyperFlex Networking
- Required Deployment Information
- vCenter for HyperFlex
- Installing Physical Components

- Configure Upstream Switches
- Prepare Fabric Interconnects
- Deploy the Installer Virtual Machine (VM)
- HyperFlex Installation
- Post-Installation Tasks
- Add a Converged Node
- Add a Compute-Only Node
- Advanced Installation Option: Nested vCenter

6. Managing Cisco HyperFlex

- Introduction to Management Options
- vCenter and HyperFlex Plug-in
- HyperFlex Connect
- CLI Command Line Interface
- Representational State Transfer (REST) API
- HyperFlex Clones
- HyperFlex Snapshots

7. Maintaining Cisco HyperFlex

- Installer Custom Workflow: Use Cases
- HyperFlex Upgrade Considerations
- HyperFlex Online Upgrade
- HyperFlex Off-line Upgrade
- ESXi Upgrade
- Moving Storage Cluster to Another vCenter

8. Designing Cisco HyperFlex

- Cluster Resiliency: VM-Level
- Cluster Resiliency: HXDP-Level
- HyperFlex Cluster Scalability
- Logical Availability Zones
- Cluster Capacity
- Multiple HyperFlex Clusters on One UCS Domain
- Mixing HyperFlex and Non-HyperFlex Servers
- Cisco HyperFlex and External Storages
- Smart Licensing
- Licensing Tiers
- HyperFlex Positioning
- Graphical Processing Units and HyperFlex

9. Protecting Your Data

- Disaster Recovery (DR)/Replication Overview
- Native Replication: Protect
- Native Replication: Recover
- Data at Rest Encryption

COURSE OUTLINE (CONTINUED)

10. Introducing Stretched Cluster

- Stretched Cluster Overview
- Prerequisites and Recommendations
- Installation Process
- Maintenance and Monitoring

11. Introducing EDGE Cluster

- EDGE Cluster Overview
- Prerequisites and Recommendations
- Installation Process
- Maintenance and Monitoring

12. Introducing HyperV-Based Regular Cluster

- HyperV-Based Standard Cluster Overview
- Prerequisites and Recommendations
- Pre-installation Tasks
- Installation Process
- Post-Installation Process
- Maintenance and Monitoring

13. Designing Multi-cloud Data Center with HyperFlex

- Cisco UCS Director Overview
- Cisco UCS Director: Example Workflow
- Cisco AppDynamics Introduction
- Cisco CloudCenter™ Introduction
- Cisco Workload Optimization Manager (CWOM) Introduction
- Kubernetes and Cisco Container Platform (CCP): Introduction and Use Cases
- Cisco Intersight Overview

DISCOVERY LABS

- 1: HyperFlex Installation
- 2: Basic HyperFlex Management
- 3: Explore Native Replication
- 4: Deeper Into Management of HX