Implementing Cisco HyperFlex (DCIHX) v1.2 - On Demand

Modality: On Demand

Duration: 40 Hours

CLC: 10 Units

Course Information

About this course:

This course will build skills to deploy and use the Cisco HyperFlex™ data platform which will help you to support multi-cloud workloads.

You will be skilled to support highly scalable and resilient multi-cloud implementations by installing, designing, managing, and troubleshooting Cisco HyperFlex. With hands-on practical learning experience the course focuses on installation, management, maintenance, and native replication, while allowing you to explore cluster technologies as well as Cisco Intersight™.

Course Objective:

After taking this course, you should be able to:

- 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 it is different from a standard cluster
- Describe a HyperV-based cluster and how it is different from an ESXi-based cluster
- Design a multicloud datacenter with Cisco HyperFlex
- Describe hyperconvergence, 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 and expand Regular vSphere Cisco HyperFlex
- Manage your Cisco HyperFlex VMware ESXi-based cluster
- Describe an Edge cluster and how is it different from a standard cluster
- Perform basic troubleshooting tasks and explain Cisco Intersight
- Explain Cisco HyperFlex releases beyond 4.0(1a)

Audience:

- Cisco integrators and partners
- Data center engineers

Prerequisite:

You should have the following knowledge to fully benefit from this course:

- Familiarity with VMware vCenter and ESXi
- Familiarity with Microsoft Server 2016 and Hyper-V
- Cisco CCNA®–level knowledge about data center architecture and products technologies (network, compute, storage network)

Following Cisco learning offerings are recommended to help you meet these prerequisites:

- Introducing Cisco Data Center Technologies (DCICT) 6.x
- Implementing Cisco Data Center Unified Computing (DCUCI) 6.x
- Introducing Cisco Data Center Networking (DCICN) 6.x

Course Outline:

Introducing Hyperconvergence and Cisco HyperFlex

- Traditional Data Center Design
- What Is Hyperconvergence?
- What Is Cisco HyperFlex?
- Cisco HyperFlex Primer
- Evolution of Cisco HyperFlex

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

Describing Cisco HyperFlex Software Components

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

Describing Cisco HyperFlex Hardware Components

- HX UCS M4 and M5
- Introducing Cisco HyperFlex Servers

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- Storage Technologies in Cisco HyperFlex
- Storage Components of Cisco HyperFlex Converged Nodes
- Non-Storage Components of Cisco HyperFlex Converged Nodes
- Cisco UCS Fabric Interconnects3
- Compute-Only Nodes

Installing and Expanding Standard ESXi Cisco HyperFlex

- Installation Summary
- Software Prerequisites
- Hardware Prerequisites
- Cisco HyperFlex Networking
- Required Deployment Information
- Installing Physical Components
- Configure Upstream Switches
- Prepare Fabric Interconnects
- Deploy the Installer Virtual Machine (VM)
- HyperFlex Installation
- Post-Installation Script
- Cluster Expanison
- Additional Installation Options

Managing Cisco HyperFlex in vSphere Environment

- Management Interfaces Overview
- Cisco HyperFlex Plugin for vCenter
- Cisco HyperFlex Connect
- Storage Command Line Interface
- Representational State Transfer (REST) API Overview
- ReadyClones
- Cisco HyperFlex Snapshots

Maintaining Cisco HyperFlex

- Cisco HyperFlex Upgrade Overview
- Cisco HyperFlex Online Upgrade
- Cisco HyperFlex Offline Upgrade
- HX Maintenance Mode
- ESXi Upgrade
- Moving Cisco Hyperflex Storage Cluster to Another vCenter

Designing Cisco HyperFlex

- Cluster Resiliency: VM-Level
- Cluster Resiliency: HXDP-Level
- Cisco HyperFlex Cluster Scalability
- Cluster Capacity
- Multiple Clusters on One Cisco UCS Domain

- Cisco HyperFlex and External Storages
- Licensing Tiers
- Smart Licensing
- Cisco HyperFlex Positioning
- Graphical Processing Units and Cisco HyperFlex

Protecting Your Data

- Disaster Recovery Overview
- Third-Party Data Restore Solutions
- Cisco HyperFlex Native Replication Solution
- Configuring Native Replication
- Protecting Your VMs with Native Replication
- Restoring Your VMs with Native Replication
- Data at Rest Encryption
- D@RE: Remote Key Management

Introducing Stretched Cluster

- Stretched Cluster Overview
- Prerequisites
- Data Distribution
- Datastores and VM Affinity
- Installation Process
- Maintenance and Monitoring

Introducing EDGE Cluster

- Cisco HyperFlex EDGE Cluster Overview
- Prerequisites and Recommendations
- Installation Process
- Management and Monitoring
- Upgrades and Maintenance

Introducing HyperV-Based Standard Cluster

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

Designing Multicloud Data Center with Cisco HyperFlex

- Cisco UCS Director Overview
- Cisco CloudCenter Overview
- Cisco Workload Optimization Manager (CWOM) Overview

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- Cisco HyperFlex with Kubernetes and Cisco Container Platform
- Cisco Intersight Overview
- HyperFlex: Releases Beyond 3.5(1a)

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