

Implementing Cisco HyperFlex (DCIHX)

COURSE OVERVIEW:

The Implementing Cisco HyperFlex (DCIHX) v1.1 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, manage and troubleshoot Cisco HyperFlex to support highly scalable and resilient multi-cloud implementations. You will also gain hands-on experience focused on installation, management, maintenance, and native replication, and you will explore cluster technologies as well as Cisco Intersight.™

WHO WILL BENEFIT FROM THIS COURSE?

- Data center engineers
- Cisco integrators and partners

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:

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

COURSE OBJECTIVES:

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) and HX maintenance mode work
- Describe the physical components of Cisco HyperFlex
- Install and expand Regular vSphere Cisco HyperFlex
- Manage your Cisco HyperFlex VMware ESXi-based cluster
- Describe how to maintain Cisco HyperFlex
- Design a Cisco HyperFlex solution and explain third-party data restore solutions
- 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 data center with Cisco HyperFlex
- Perform basic troubleshooting tasks and explain Cisco Intersight
- Explain Cisco HyperFlex releases beyond 3.5(1a)

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

- Introducing Cisco HyperFlex Servers
- Storage Technologies in Cisco HyperFlex
- Storage Components of Cisco HyperFlex Converged Nodes
- Non-Storage Components of Cisco HyperFlex Converged Nodes
- Cisco UCS Fabric Interconnects
- 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 Expansion
- 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 Storage
- 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
- Cisco HyperFlex with Kubernetes and Cisco Container Platform
- Cisco Intersight Overview
- HyperFlex: Releases Beyond 3.5(1a)

Troubleshooting Cisco HyperFlex

- Troubleshooting Guidelines
- Generating Tech Support Bundles
- Common Troubleshooting Issues

Lab outline

- Investigate Software Components of HyperFlex
- Investigate Cisco UCS Part of HyperFlex
- Install Cisco HyperFlex
- Manage Cisco HyperFlex
- Protect Your HyperFlex VMs
- Install and Manage Stretched Cluster
- Investigate Edge Cluster
- Investigate Hyper-V Cluster
- Investigate Cisco Intersight

SUNSET LEARNING INSTITUTE (SLI) DIFFERENTIATORS:

Sunset Learning Institute (SLI) has been an innovative leader in developing and delivering authorized technical training since 1996. Our goal is to help our customers optimize their cloud technology investments by providing convenient, high quality technical training that our customers can rely on. We empower students to master their desired technologies for their unique environments.

What sets SLI apart is not only our immense selection of trainings options, but our convenient and consistent delivery system. No matter how complex your environment is or where you are located, SLI is sure to have a training solution that you can count on!

Premiere World Class Instruction Team

- All SLI instructors have a four-year technical degree, instructor level certifications and field consulting work experience.
- Sunset Learning has won numerous Instructor Excellence and Instructor Quality Distinction awards since 2012

Enhanced Learning Experience

- The goal of our instructors during class is ensure students understand the material, guide them through our labs and encourage questions and interactive discussions.

Convenient and Reliable Training Experience

- You have the option to attend classes at any of our established training facilities or from the convenience of your home or office with the use of our HD-ILT network (High Definition Instructor Led Training)
- All Sunset Learning Institute classes are guaranteed to run – you can count on us to deliver the training you need when you need it!

Outstanding Customer Service

- Dedicated account manager to suggest the optimal learning path for you and your team
- Enthusiastic Student Services team available to answer any questions and ensure a quality training experience