

# DCIHX (IMPLEMENTING CISCO HYPERFLEX) 1.2

## Objetivo

After taking this course, you should be able to:

- 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) 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 multicloud datacenter with Cisco HyperFlex;
- Perform basic troubleshooting tasks and explain Cisco Intersight;
- Explain Cisco HyperFlex releases beyond 3.5(1a).

## Público Alvo

Technical and professionals who implement, configure, support and manage data center environments using Cisco Hyperflex Solutions.

## Pré-requisitos

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

- 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.

## Carga Horária

32 horas (4 dias).

## Conteúdo Programático

### Course Introduction

Course Outline

Course Goals & Objectives

### 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  
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 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 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

Datstores 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  
Design your HyperFlex cluster to run Cisco Container Platform and Kubernetes  
Cisco Intersight Overview  
HyperFlex: Releases Beyond 4.0(1a)

### **Introducing Edge Cluster**

Describe the Edge cluster and how is it different from a standard cluster  
Cisco HyperFlex Edge Cluster Overview  
Describe prerequisites and recommendations to deploy your HyperFlex Edge cluster  
Deploy Cisco HyperFlex Edge  
Manage your Cisco HyperFlex Edge cluster  
Upgrade and maintain your Cisco HyperFlex Edge cluster

### **Troubleshooting Cisco HyperFlex**

Troubleshoot any issue that arises on a HyperFlex cluster  
Troubleshooting Guidelines  
Troubleshoot deployment issues (install, upgrade, expansion)  
Generating Tech Support Bundles  
Describe how you would collect HyperFlex support bundles  
Troubleshoot most common HyperFlex issues

### **Lab/Practical Outline**

#### **Discovery 1: Investigate Software Components of HyperFlex**

Discover basic components of standard HyperFlex cluster  
Task 1: Explore vCenter  
Task 2: Explore HyperFlex Connect

#### **Discovery 2: Investigate Cisco UCS Part of HyperFlex**

Discover basic components of standard HyperFlex cluster as related to Cisco UCS  
Task 1: Investigate a Server in Cisco UCS Manager  
Task 2: Investigate a Fabric Interconnect  
Task 3: Investigate a Server Service Profile  
Task 4: Investigate a LAN Configuration  
Task 5: Investigate an Upstream Switch Configuration

### **Discovery 3: Install Cisco HyperFlex**

Install HyperFlex

- Task 1: Get Acquainted with the Virtual Environment
- Task 2: Prepare Preinstallation Information
- Task 3: Perform Preinstallation Tests
- Task 4: Install the Cisco HyperFlex Data Platform
- Task 5: Perform Post-Installation Tasks
- Task 6: Expand Cluster B
- Task 7: Run Postinstall Script Again

### **Discovery 4: Manage Cisco HyperFlex**

Manage a Cisco HyperFlex cluster

- Task 1: Review the Status of Cisco HyperFlex Clusters in vCenter
- Task 2: Manage Cisco Hyperflex Cluster Using vSphere Client
- Task 3: Compare Cisco HyperFlex and vSphere Native Cloning and Snapshotting
- Task 4: Manage Cisco Hyperflex Cluster Using HX Connect
- Task 5: Connect the HyperFlex Cluster to a remote Syslog Server
- Task 6: Explore the Storage Controller CLI
- Task 7: Manage the Cisco Hyperflex Cluster Using the REST API

### **Discovery 5: Protect Your HyperFlex VMs**

Protect virtual machines on your HyperFlex cluster using native replication protection mechanisms

- Task 1: Configure Replication Network and Pair the Clusters
- Task 2: Protect a VM from Cluster B on Cluster A
- Task 3: Perform Test Recovery of a VM

### **Discovery 6: Investigate Stretched Cluster**

Discover basic components of stretched HyperFlex cluster

- Task 1: Investigate vCenter Configuration
- Task 2: Investigate HX Connect Configuration
- Task 3: Investigate Both Cisco UCS Managers

### **Discovery 7: Install and Manage Stretched Cluster**

Install and manage stretch cluster

- Task 1: Pre-Installation Tasks and Workflow Selection
- Task 2: Configure Site A
- Task 3: Configure Site B
- Task 4: Install the Stretched Cluster
- Task 5: Perform Post-Installation Tasks
- Task 6: Explore Stretched Cluster Specifics

### **Discovery 8: Investigate Hyper-V Cluster**

Discover basic components of HyperV-based HyperFlex cluster

- Task 1: Investigate Cisco UCS Manager of the Hyper-V HyperFlex
- Task 2: Investigate the Hyper-V HyperFlex Connect

### **Discovery 9: Investigate Cisco Intersight**

Discover Cisco Intersight

Task 1: Discover Cisco Intersight

Task 2: Explore Administrator Level Features of Intersight

**Discovery 10: Investigate HyperFlex Edge**

Discover basic components of Edge HyperFlex cluster

Task 1: Investigate vCenter Configuration

Task 2: Investigate Cisco IMC Configuration

Task 3: Investigate the HyperFlex Connect of an Edge Cluster