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Learning Style: Virtual Classroom

Provider: Cisco

Difficulty: Intermediate

Course Duration: 3 Days

Cisco HyperFlex Implementation and Administration v3.5 (HXICA)

About this course:

HyperFlex Implementation and Administration (HXICA) v3.5 provides an introduction to hyper-converged infrastructure and presents the Cisco HyperFlex (HX) hardware and software architecture. HX use cases and solutions based on

Cisco Validated Designs (CVD) are presented as well as performance advantages of the HX platform over competing vendors. Pre-installation requirements, best practices and post installation requirements are delivered in conjunction with the HX Data Platform Installer as a utility to streamline cluster creation and validation. Additional topics include troubleshooting and upgrading HX, creating HyperFlex stretched clusters and installing HX within Hyper-V environments.

Course Objective:

After completing this course, the learner will be able to meet these overall objectives:

- Understand the concept of Software Defined Storage in Hyperconverged Infrastructure
- Describe the architecture, components, features and operation of Cisco HyperFlex Systems
- Describe the Cisco HyperFlex Systems configuration options and bundles
- Describe the Cisco HyperFlex Systems solution competitive information
- Describe the Cisco HyperFlex Systems Use Cases

Audience:

The primary audience for this course is as follows:

- Channel Partners
- Sale Engineers needing to position HyperFlex
- Engineers and Architects interested in HyperFlex

Prerequisite:

The knowledge and skills that the learner should have before attending this course are as follows:

- Familiarity with implementation of Cisco Data Center Storage Server/Compute and network Virtualization Infrastructure
- Familiarity with implementing and configuring of Cisco UCS systems
- Basic understanding of Private/Public/Hybrid Cloud infrastructure
- Basic understanding of Data Center management and cloud automation tools.

Course Outline:

Lesson 1: Introduction to Hyper-converged Infrastructure (HCI)

- Identify the components of a Hyper-converged Infrastructure (HCI)
- Understand the challenges that are being addresses by Hyper-converged Infrastructure
- Explain the benefits of an HCI solution

- Compare First Generation HCI solutions with Cisco HyperFlex
- Present the components and physical topology of the Cisco HyperFlex with Application Centric Infrastructure (ACI) solution

Lesson 2: Cisco HyperFlex Systems Hardware and Software Architecture

- Present the New Features available with the Cisco HX Release 3.5
- Understand the capabilities and functionality of the HyperFlex All-Flash server platform
- Present the Cisco HyperFlex HX Data Platform hardware components
- Describe the Cisco HyperFlex system architecture
- Understand the advanced storage features and performance enhancements of the HyperFlex cluster
- Identify the hardware functionality of the Hyperflex HX server nodes
- Describe the management and connectivity details for various HyperFlex HX cluster deployments

Lesson 3: Cisco HyperFlex Systems Use Cases, Solutions and Performance

- Introduce the Cisco Validated Design (CVD) guides that are available for the HyperFlex HX Data Platform solution
- Describe the Cisco HyperFlex All-Flash Systems for Deploying Microsoft SQL Server Database validated design details
- Present the Cisco HyperFlex M5 All-Flash Hyperconverged System with up to 600 Citrix XenDesktop Users validated design details
- Identify and compare the performance advantages of the Cisco HyperFlex HCI solution with other vendors for Oracle OLTP, SQL Server and mixed workload operating environments

Lesson 4: HyperFlex Pre-installation Requirements

- Review the software requirements for VMware ESXi
- Describe the physical requirements for successful HX cluster deployment
- Present the network requirements for HX Data Platform installation
- Define the port requirements for VMware ESXi and vCenter
- Identify the HyperFlex external connections
- Provide the deployment information and variables required when using the HX Data Platform installer

Lesson 5: HyperFlex HX Data Platform Installation Best Practices

- Confirm the configuration requirements of the northbound switches that are connected to the HyperFlex cluster
- Present the Cisco UCS configuration parameters required for the HyperFlex Data Installer utility
- Describe the VMware vCenter host, licensing and networking parameters that support successful of the HX Data Platform

Lesson 6: Installing Cisco HyperFlex Systems Using the HX Installer

- Present the benefits of the HX Data Platform automation function to streamline Cisco UCS and VMware vCenter configuration
- Describe the HyperFlex factory pre-installed hardware and software options
- Identify the steps required to install, deploy and launch the HX Data Platform Installer
- Describe HyperFlex cluster creation validation using UCS Manager and VMware vSphere Client/Web Client

Lesson 7: Post-Installation Requirements for HX Data Platform

- Describe the post installation capabilities of the HX Installer command line interface
- Present the post install script as a streamlined to perform cluster administrative functions such as Auto Support, email alerts and password changes
- Identify the HX vSphere Plug-in and the HX Connect utility as two methods to create and manage HyperFlex cluster datastores
- Explain the use of the HX vSphere Plug-in to create snapshots and ReadyClone VM clones

Lesson 8: Troubleshooting HX Data Platform Installation and Upgrades

- Present issues that are commonly encountered during HX cluster creation and upgrade activities
- Describe troubleshooting steps to validate and correct network connectivity problems due to misconfiguration of VLAN, frame size and quality of service parameters across vCenter, UCS and northbound switch platforms
- Identify issues that cause virtual machine migration (vMotion) failure
- Present the issues that prevent successful completion of HX cluster and node upgrades and provide corrective measures to complete the operations

Lesson 9: Upgrading the HX Data Platform

- Present the upgrade features for HX Data Platform v3.5(1a)
- Describe the HX Data Platform upgrade guidelines and recommendations
- Identify the Cisco HX Data Platform upgrade matrix including Cisco UCS manager and VMware ESXi
- Present the upgrade validations, pre-installation checks and pre-upgrade procedures
- Describe the process to upgrade the Cisco UCS Infrastructure using UCS Manager
- Describe the process to upgrade the HX Data Platform, Cisco UCS Server and VMware ESXi using the HX Connect utility

Lesson 10: HyperFlex Stretched Cluster Overview and Configuration

- Introduce the HyperFlex Stretched Cluster architecture and pre-installation checklist requirements
- Describe the process to download the witness VM installation image file and complete the configuration and deployment within vCenter

- Present the process to create the Stretched Cluster Sites and run the Configure Site workflow for Sites A and B
- Explain the required steps to create the HyperFlex Stretched Cluster and run the Create Stretch Cluster workflow

Lesson 11: HX Data Platform for the Hyper-V Environment

- Describe the hardware, software network services and port requirements that support the installation of the HX Data Platform for the Hyper-V environment
- Present the guidelines and limitations for creating the HyperFlex cluster using the HX Data Installer as well as DNS and Active Directory
- Present the process to download the HX Data Installer VM and install the image onto a Hyper-V server
- Define the steps required to deploy the HyperFlex cluster for Hyper-V using the HX Data Installer

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