

COURSE OVERVIEW:

Cisco HyperFlex Implementation and Administration (HXICA) is a 3-day training program designed to provide understanding of how Cisco HyperFlex HX-Series combines compute, storage, and networking into an easy-to-use system that brings new levels of speed and efficiency to IT. We recommend students have a familiarity with basic implementation of Cisco Data Center Storage Server/Compute along with network Virtualization Infrastructure (in addition to other suggested prerequisites found below). The Cisco HyperFlex course contains modules that cover Hyperconverged Infrastructure, Cisco HyperFlex Systems Hardware and Software Architecture, and much more. We recommend administrators, engineers, architects, and channel partners look into this position.

WHO SHOULD ATTEND:

- Channel Partners
- Systems Engineers needing to position HyperFlex
- Engineers and Architects interested in HyperFlex
- Administrators needing to manage HyperFlex

PREREQUISITES:

- 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 OBJECTIVES:

After you complete this course you will be able to:

- Understand the concept of Software Defined Storage in Hyperconverged Infrastructure
- Describe the architecture, components, features and operation of Cisco HyperFlex Systems
- Install, configure, manage, monitor, tune and deploy 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

COURSE OUTLINE:

Module 1: Introduction to Hyperconverged Infrastructure

- Architecture of Hyperconverged Infrastructure
 - Software Defined Storage (SDS)
- HyperFlex Systems Positioning:
 - Next Generation Data Platform, part of a Complete Data Center Strategy
 - Enterprise Ready Hyperconverged infrastructure
 - Flexible, Extensible Storage Interfaces
 - Cisco HyperFlex Configurations
 - Benefits and differentiation
 - scale-out, distributed storage via distributed log-structured file system design
 - Computing, storage, networking and hypervisor integration
 - Hyperconverged market and competitive information

Module 2: Cisco HyperFlex Systems Hardware and Software Architecture

- Cisco HyperFlex Systems Hardware components
 - Cisco UCS servers (B-Series, C-Series and HX-Series servers)
 - Cisco UCS Fabric Inteconnects
 - HyperFlex network connectivity
 - Cisco HyperFlex with Cisco ACI
- Cisco HyperFlex Systems Software components
 - Cisco UCS Manager, Cisco UCS Central
 - Cisco UCS Director
 - Cisco Enterprise Cloud Suite (Hybrid Cloud)
 - Cisco HyperFlex HX Data Engine and HX Data Platform
- Cisco HyperFlex Systems Software Modules (Controller VM, VAAI Plugin, IOvisor Module)
 - Cisco HyperFlex Systems hypervisor support
 - Flexible, Extensible Storage Interfaces
 - Workload Software (VDI, etc.)

- Cisco HyperFlex Systems Security
- Cisco HyperFlex Systems Benefits and Differentiation

Module 3: Installing and Upgrading Cisco HyperFlex Systems

- Fast and Easy Installation
- Installation tasks
- HyperFlex Cluster Creation
- Cisco UCS Embedded Automation, Factory Automation
 - Capacity Planning and Software Upgrades
 - Data Platform Installer on Cisco UCS
 - Hardware
 - Supported Topology
 - Requirements (vCenter, datacenter, cluster, vSwitches, OVF Deployments)
 - Storage Cluster Information
 - Importing a configuration via JSON
 - VSphere Web Client PlugIn

Module 4: Cisco HyperFlex Systems Configurations

- Cisco HyperFlex HX-Series Boundels and Configurations
- Hyperconvergence Meets Unified Computing
- Cisco HyperFlex HX-Series
- Cisco HX SmartPlay
- SmartPlaySelect HX-Series Configurations
- Configure to Order
- Cisco HyperFlexHX220c Configuration
- Cisco HyperFlex HX240c Configuration
- Product Specification
- Cisco HyperFlex B200c Configuration

Module 5: Implementing Cisco HyperFlex Systems Features, High-Availability, Scalability and Resiliency

- HyperFlex Systems Scalability
 - Hyperconverged Scale Out and Distributed File System
 - Independent Scaling of Compute and Capacity
 - Efficient Capacity and Network Utilization
 - Capacity Planning

- Dynamic Data Distribution
- High Resiliency, Recovery and Non-disruptive Operations
 - Cluster-self healing
 - Resiliency and Monitoring
 - Data Protection and High Availability
 - Non-disruptive Operations
 - Continuous Data Optimization

Module 6: Implementing Cisco HyperFlex Systems Data Services

- Data virtualization and optimization:
 - Caching
 - Read caching
 - Write Back Caching to SSDs with Mirroring
 - Uniform Space Utilization
 - Inline De-duplication and Compression
- Data Services:
 - Snapshot for Backup
 - Cloning
- ISV Integration
 - vSphere Storage API for Array Integration (VAAI) offload
 - Zerto Replication for Cloud-based Disaster Recovery (DR)
 - Veeam DR and Backup

Module 7: Implementing Cisco HypererFlex Systems Management

- Integrated Management and Data Services
- Cisco UCS Manger and Cisco UCS Central, Cisco UCS Director
- VMware vCenter Server, vSphere Client
 - vCenter plug-in: HX Data Platform Summary
 - vCenter plug-in: DatastoreProvisioning
- HyperFlex with Integrated Enterprise Cloud Suite
- Maintenance Operations
- Capacity Reporting in UI
- Capacity Thresholds and Alerts

Module 8: Implementing Cisco HyperFlex Systems Proactive Cloud Monitoring

- Monitoring, Alarm and Event
- Cloud-based Monitoring and Analytics
- Disk or Node Failure
- Auto-Support
- Alerts through auto-support
- Environment Monitoring via Glassbeam
- Performance Summary

Module 9: Cisco HyperFlex Systems Use Cases and Solutions

- HyperFlex Primary Use Cases
 - Virtual Desktop Infrastructure Use Case and Server Virtualization Use Case
 - VMware ESXi, Microsoft Hyper-V Operating System Environments
 - UCS Director Integration
 - 6200 Series Fabric Interconnect and 4th Gen. UCS Servers, Broadwell Servers
 - High Performance Apps and Analytics Use Case (under development)
 - KVM (Docker) Operating System environment
 - ACI integration
 - UCS Enterprise Cloud Suite / Hybrid Cloud (Amazon or Azure)
 - All-Flash infrastructure
 - Test and Development Use Case
 - ROBO and Private Cloud Use Case (IaaS with CECS -> on roadmap)
- HyperFlex Secondary Use Cases
 - ROBO: applications with persistent storage
 - Campus Small IT: Management Clusters
 - Tier-2 Workloads: Sharepoint, Print Servers, Network Monitoring, Management Clusters
 - Data Applications: MSSQL, my SQL DBs, future: later DBs, File Servers
- Hyperflex Solutions
 - VDI Solutions
 - VDI-VMware View
 - VDI-Citrix XenDesktop
 - Virtual Infrastructure (VSI) Solution

LAB OUTLINE:

- Lab 1: Setting up Virtual VMware Center server
- Lab 2: Creating Cisco HyperFlex Systems HX Cluster
- Lab 3: Configuring Management Interface
- Lab 4: Creating Datastore and Deploying VM
- Lab 5: Managing Cisco HyperFlex Systems Datastore
- Lab 6: Creating and Managing ReadyClones
- Lab 7: Creating and Managing Snapshots
- Lab 8: Monitoring and Alerts
- Lab 9: Troubleshooting Cisco HyperFlex Systems