



HXICA: HyperFlex Implementation and Administration

Course ID #: 1575-102-01-W

Hours: 21

Course Content

Course Description:

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.

At Course Completion:

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

Target Student:

This course is intended for:

- 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.

Deliver Method:

This course is delivered through a mix of instructor-led training (ILT) and hands-on labs.



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Topics:

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 Bundles 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



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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



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- 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