

## Course Description

**Zero-to-Hero-UCS (Z2H-UCS)** is a five-session workshop exploring the fundamentals of the Unified Computing System (UCS). The course teaches UCS LAN and SAN fundamentals, the physical and logical architecture of the Cisco UCS, and NX1000v virtual switch.

You will learn to install Cisco UCS fabric interconnects and blade chassis, upgrade firmware, create identity and physical resource pools, create Service Profile templates and policies, and deploy servers in a stateless computing environment to include installation of the logical components of the Nexus 1000v, and the tasks necessary to provide advanced cisco networking features to any hosted virtualization environment (the course will focus on VMware vSphere).

Z2H-UCS features an introduction to Cisco UCS Central 1.1(2a) and UCS PowerTools 1.2.1, including performance of day-to-day operations, from monitoring logs to performing back-ups in addition to extensive fault isolation and troubleshooting procedures related to the general UCS product line.

The course will teach basic to advanced concepts, practiced on a mixture of physical and virtual equipment, ensuring a reliable and effective learning environment.

### Who should attend this course:

This course is design for any student that wants to learn everything necessary to design, deploy, troubleshoot and maintain the Cisco Unified Computing System in a data center environment. **Topics covered in this course are applicable to both CCNP and CCIE level** of study with special emphasis in being ready to take the CCIE Data Center Written Exam while simultaneously preparing students to get the most out of our 80% hands-on lab focused **CCIE Data Center Boot Camp**.

### Course Delivery Method:

This boot camp is delivered online via Webex. Sessions will be recorded and made available to watch online, videos will be available for up to 30 days after the course has been completed. **Lab access will last for the duration of the course (5 weeks of unlimited access).**

### Students Will Receive:

Implementing Cisco Data Center Unified Computing (DCUCI) Student kits and lab guide, and VPN access via Cisco AnyConnect to dedicated equipment for the duration of the course.

### Boot Camp Date and Hours:

The class starts on Saturday 2<sup>nd</sup> of April, 2016  
Saturdays Only 8:00 AM – 4:00 PM Central Standard Time

**Cost:**

Regular price: ~~\$2995~~

Introductory offer: \$1750

## Outline

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### Week One

#### Lesson 1: Cisco Unified Computing System

- Data Center Bridging
- Cisco UCS 5100 Series Blade Server Chassis
- Cisco UCS B-Series Fabric Components
- Cisco UCS B-Series Models and Options
- Cisco UCS C-Series Models and Options
- Cisco UCS Virtual Interface Cards
- Cisco UCS M-Series Servers
- Cisco UCS Mini
- Cisco UCS Manager
- Cisco UCS Manager Command Line
- Power Requirements of Cisco UCS B-Series
- Supported Configurations

#### Lesson 2: HA Clusters

- High-Availability Cluster Connection Requirements for Cisco UCS B-Series
- Cluster Initial Setup from the Fabric Interconnect Console
- Server Management IP Address in Cisco UCS
- Inter-cluster Communications and Synchronization of the Cisco UCS Manager Database
- Discovery Process and Monitoring Using FSM Output
- How Cisco UCS 5108 SEEPROM Resolves Split-Brain Issues in the High-Availability Cluster

#### Lesson 3: Managing and Upgrading Cisco UCS B-Series Firmware

- Cisco UCS Software Packages
- Upgrading Cisco UCS B-Series Firmware
- Direct Firmware Upgrades of Cisco IMC, IOM, and Mezzanine Adapters
- Firmware Updates Using a Service Profile
- Hardware Capability Catalogs

#### Lesson 4: Cisco UCS Manager Backup and Restore Operations

- Supported Backup Types and Functions and Import and Disaster Recovery Restore Operations

- Backup Creation, Execution, and Scheduling
- Configuring an Import Job to Restore the AAA User Database
- Configuring Cisco UCS Fabric Interconnects for a Disaster Recovery Restore Operation

#### Lesson 5: Logging and Monitoring

- Cisco UCS Manager Interfaces
- Fault Management System and Fault Severity Levels
- Track Administrative Changes in the Cisco UCS Manager Audit Log
- Cisco UCS Manager Operations Subject to FSM Validation
- Logging Options
- System Event Log and Log Policies
- Smart Call Home Feature
- Logs, Events, and Faults
- SPAN for Protocol Analysis

### **Week Two**

#### Lesson 6: Cisco UCS B-Series Physical Connectivity

- Relationship Between I/O Uplinks and Bandwidth Oversubscription with Generation 2 Hardware
- Cisco UCS 2204/2208XP IOM Architecture Including CMC, I/O MUX, and Chassis Management Switch
- Cisco UCS 2nd and 3rd Generation VICs
- Alternate Mezzanine Cards Including M51, M61, M7-Q/E, and Storage Accelerators
- Cisco Integrated Management Controller
- Port Channels from the Cisco UCS 6200 Series Fabric Interconnect to the 2204/2208XP IOM
- Server and Uplink Port Personalities in the Fabric Interconnect
- Chassis Discovery Process and Monitoring using the FSM
- Chassis Discovery Policy

#### Lesson 7: Cisco UCS B-Series LAN Connectivity

- UCS Manager Networking Features
- Ethernet Ports on the Cisco UCS Fabric Interconnect
- Ethernet Port Channels on the UCS Fabric Interconnect
- VLAN and Private VLAN Configuration
- End-Host and Switching Modes
- Automatic Pinning and Recovery from Failure
- Manual Pinning and Recovery from Failure
- Disjointed Layer 2 Domains

#### Lesson 8: Compute Node SAN Connectivity

- UCS Manager Storage Features
- FC Ports on Cisco UCS Fabric Interconnects
- VSANs in the Cisco UCS Manager
- N Port Identifier Virtualization (NPiV) and UCS FC End-Host Mode
- Fibre Channel Switching Mode
- Multipath IO

#### Lesson 9: Resource Pools in Cisco UCS Manager

- Rationale for Creating Identity and Resource Pools
- UUID Resource Pools
- MAC Resource Pools
- WWN Resource Pools
- IQN Resource Pools
- Server Resource Pools
- Provision WWxN Pools
- iSCSI Initiator Pools

#### Lesson 10: Service Profiles, Policies, and Templates in Cisco UCS Manager

- Service Profiles and Policies in UCS Manager
- Service Profile Templates in UCS Manager
- Service Profile Templates and Expert Service Profile Wizards
- Service Profile Associations
- Changes to a Service Profile that Trigger a Cisco UCS Utility Operating System Update
- Service Profile to a New Server Blade in the Event of Hardware Failure
- KVM and Virtual Media
- Supported Operating Systems and Boot Options

### **Week Three**

#### Lesson 11: Upgrading and Troubleshooting the UCS

- Isolating and Repairing Control Plane Issues
- Isolating and Repairing UCS SAN Boot Issues
- Isolating and Repairing UCS iSCSI Boot Issues
- Isolating and Repairing UCS Network Issues
- Isolating and Repairing UCS Hardware Issues
- Fabric Interconnect upgrade and replacement

### **Week Four**

#### Lesson 12: UCS Virtualization

- Install Nexus 1000v VSM/VEMs
- Implement QoS, traffic flow, and IGMP snooping
- Implement network monitoring on Cisco Nexus 1000v

- Understanding and Implementing VXLANs and VXLAN Operations
- Implement Cisco Nexus 1000v port channels
- Configure VLANs, port profiles, DHCP snooping, dynamic ARP inspection, IP source guard, port security, access control lists, and private VLANs
- Switch between L2/L3 control mode
- Diagnose VSM HA issues, VSM/VEM connectivity, and security feature issues

## **Week Five**

### Lesson 13: UCS Management Tools

- UCS Central Cisco
- UCS PowerTools for UCS Manager

### Lesson 14: UCS Lab Exam

- Timed UCS Mock Lab