

ACEBC

Course Description

The *Cisco ACE Boot Camp* is a 4-day, instructor-led, lecture/lab course. In this course, you will learn how to deploy and configure the Cisco Catalyst 6500 Application Control Engine (ACE) module and the Cisco ACE 4710 appliance.

This course covers all of the key features of the ACE module and appliance, including resource virtualization and management, server load balancing (Layer 2-4 and Layer 7), SSL termination and offload, security features like application-layer inspection and fixups, and application optimization features.

Who Should Attend

This course is designed for systems engineers and network architects who need to design or deploy server load-balancing solutions using the Cisco ACE module or appliance.

Recommended Prerequisites

You will gain the most from this course if you have a basic understanding of the following topics:

- TCP/IP protocol
- HTTP and SSL protocols
- N-tier application architecture
- Server load-balancing

What's Covered

This course includes the following topics:

- Describe IP traffic flows in n-tier web applications
- Describe the key hardware and software features of the ACE module and appliance
- Design and configure integration of the ACE into the network topology, including bridged, routed, and one-arm modes
- Design and configure multiple ACE contexts to virtualize network services
- Manage allocation of resources to virtual contexts
- Describe the methods used to manage the ACE module and appliance
- Use the Cisco Modular Policy CLI to configure ACE features
- Configure IP application-based security
- Configure Layer 4-7 load balancing
- Configure health monitoring
- Configure Layer 7 protocol processing options
- Configure SSL protocol processing
- Configure the web application acceleration features on the ACE appliance
- Configure the ACE module or appliance for high availability to provide reliable application networking services
- Apply a methodology for designing an end-to-end ACE configuration that integrates multiple feature sets



Cisco ACE Boot Camp

Course Outline

Module 1: Data Center Application Services Overview

Lesson 1: IP-Based Data Center Applications

- IP Protocol Stack Review
- IP Application Review
- Web Technology Overview

Lesson 2: Introducing Cisco ACE Family Solutions

- Multitier Applications
- Application Delivery Products

Lesson 3: Deploying the Cisco ACE Appliance and Service Module

- Connecting ACE to the Network
- Network Topologies
- Cisco ACE 4710 Installation Procedure
- Cisco ACE Appliance GUI
- Virtualization
- Resource Management
- Authorizing Management Users
- Configuring Interfaces
- Configuration Management

Module 2: Implementing Server Load Balancing

Lesson 1: Modular Policy CLI

- Class Maps
- Policy Maps
- Applying Policy Maps

Lesson 2: Managing the Cisco ACE Appliance and Service Module

- Permitting Management Traffic
- Remote Management
- SNMP Manageability
- XML Management API
- Application Networking Manager

Lesson 3: Security Features

- IP Access Control Lists
- ACL Object Groups
- TCP/IP Fragmentation/Reassembly

Lesson 3 (continued)

- TCP/IP Normalization
- SYN Cookies (2.0 Feature)
- Network Address Translation

Lesson 4: Layer 4 Load Balancing

- Load Balancing Concepts
- Load Balancing Algorithms
- Configuring Layer 4 Load Balancing
- Traffic Rate-Limiting
- Firewall Load Balancing

Lesson 5: Health Monitoring

- Health Monitoring Overview
- Active Health Probes
- HTTP Error Code Monitoring
- Using TCL Scripting
- Route Health Injection
- Backup Servers/Server Farms
- KAL-AP Integration

Lesson 6: Layer 7 Protocol Processing

- Configuring HTTP Layer 7 Load Balancing
- Persistent and Pipelined HTTP Extensions
- Server Reuse
- HTTP Modifications
- Session Persistence
- Protocol Inspection
- HTTP Inspection
- FTP Protocol Processing
- RDP Protocol Processing (2.0 Feature)
- RADIUS Protocol Processing (2.0 Feature)
- RTSP Protocol Processing
- SIP Protocol Processing (2.0 Feature)
- Generic Protocol Parsing (2.0 Feature)
- Other Inspected Protocols

Lesson 7: Processing Secure Connections

- Digital Encryption Technologies
- SSL Service Options
- Configuring a Public Key Infrastructure
- Configuring SSL Proxy Services
- SSL Session Reuse
- SSL Queue Delay
- SSL Client Authentication



Learning Solutions



Cisco ACE Boot Camp

Course Outline

Lesson 8: Web Application Acceleration Overview

- Web Application Performance Factors
- Web Application Acceleration Architecture
- FlashForward
- Delta Optimization
- Single-Request Optimizations
- Compression Overview
- Configuring Compression

Lesson 9: High Availability

- Redundancy
- Object Tracking
- Failover
- State Replication
- Fault-Tolerance Configuration
- Displaying Fault-Tolerance Information

Lesson 10: Integrating Multiple Features

- Analyzing Network Requirements
- Designing Cisco ACE Contexts
- Designing Cisco ACE Features
- Configuring Multiple Integrated Features

Appendix A: Troubleshooting Case Study 1: Common SLB Configuration Errors

Appendix B: Troubleshooting Case Study 2: Common Layer 7 SLB Configuration Errors

Lab 1: Implementing Virtualization

Lab 2: Using Network Address Translation

Lab 3: Configuring Server Load Balancing

Lab 4: Implementing Health Monitoring

Lab 5: Configuring Layer 7 Load Balancing

Lab 6: Enabling Sticky Connections

Lab 7: Enabling Protocol Inspection

Lab 8: Configuring SSL Termination

Lab 9: Cisco ACE Appliance HTTP Optimizations

Lab 10: Integrating Multiple Features



Learning Solutions