

## Course Outline

### Implementing Cisco Application Centric Infrastructure with Virtual Reality Course DCACI: 5 days Instructor Led

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#### About this course

This hands-on lab, virtual reality-enabled course immerses learners to ACI (Application Centric Infrastructure) in its latest 5.x release and discusses architecture, functionality, and new features for EN, Service Provider, Multi-cloud, 5G, and IoT. Learners will examine how ACI is implemented greenfield and in parallel with traditional networks. You will also learn to analyze and leverage metrics to demonstrate and recognize the value of operational efficiency at scale.

Also included with this course: FREE Oculus Quest VR Headset

#### Audience profile

- System Architects
- System Engineers
- Technical Decision Makers

#### At course completion

After completing this course, students will be able to:

- Explain and configure the ACI Fabric
- Describe and configure the APIC (ACI Controller) and Cloud (cAPIC)
- Configure tenants and contracts underlying policy-driven ACI spine and leaf architecture
- Explain and configure APIC hypervisor integration
- Explain and configure L2 and L3 border leaf connectivity to external networks
- Discuss configuration of Layer 4 through 7 service integration with ACI
- Understand new features of ACI 5.x
  - Service provider enhancements (automate, security, visibility)
  - Multi-Cloud deployments ACI-Anywhere (AWS, Azure)
  - Built in Network Management Applications such as Nexus Dashboard & Insights
  - Updated Wizards for Initial Fabric configuration

#### Course Outline:

##### The Business Case for ACI

- What is ACI and What does it solve?
- ACI Concepts, Fundamentals, and Principles
- Policy vs. The Network and how they work together
- Application Logic Defined Through Policy
- Advantages and Benefits of Policy-Driven Data Center Design
- What's New in ACI 5.x
- VR Lab: Exploring the virtual reality environment

##### The ACI Fabric Architecture

## Course Outline

- Leaf and Spine Single-Site Topology
- Multi-Site ACI Architecture
- ACI Anywhere
- Introducing Nexus Dashboard and Insights
- Fabric Initialization and Discovery Using LLDP
- The Use of Overlays in ACI
- Unicast Forwarding
- Multicast Forwarding
- Flowlet Dynamic Load-Balancing
- Health Scores
- Faults and Events
  - VR Lab: designing Single Fabric ACI
  - GUI Lab: Accessing the Remote Lab Environment and navigating the APIC

### Operating ACI with the APIC Controller

- What is the APIC
- Configuration of Endpoint Groups and Endpoints
- Application Profiles
- Configuration of Contracts, Subjects, and Filters
- Tenants
- Contexts
- Bridge Domains
  - VR Lab: Server Room ACI Fabric racking
  - GUI Lab: Configure Basic Network Constructs with the APIC

### Operationalizing ACI Policy

- Contracts
- Subjects
- Filters
- Preferred Groups
- Micro-segmentation
  - VR Lab: design session: Data Center ACI Multiple Fabric (Multi-Site/Multi-Pod)
  - GUI Lab: Create a Two-Tier Application Profile

### Hypervisor Integration with ACI

- Policy Coordination
- VMM integration
- Management Networks (Mgmt. Tenant)
- Configuring ACI Integration with VMware
  - VR Lab: Server Room Fabric Compute and Network cabling
  - GUI Lab: Create the Virtual Machine Manager Domain and Configure the Application Profile

### ACI Connectivity to External Networks

- Inside and Outside Network Policies
- Configuring a Layer 3 Connection Outside the Network
- Configuring a Layer 2 Connection Outside the Network

## Course Outline

- Migration from External Networks to ACI
  - VR Lab: Server Room TOR L3 Devices racking and cabling (IPN/ISN connectivity)
  - GUI Lab: Configure External Layer 3 to Internal ACI Communication
  - GUI Lab: Attach Internal Compute Resources and Create Access to the External Network

### Layer 4 Through Layer 7 Services

- Service Insertion and Redirection
- Implementation of Service Graphs
- Configuring Application Profiles Specific to Layer 4 to Layer 7 Services
- ACI Programmability Options of Layer 4 to Layer 7 Services
  - VR Lab: Server Room Service Appliances racking (ASA, FTD, Load Balancer) and cabling

### Introduction to ACI Programmability

- API Exploration
- Use Cases
- Automating Data Center Operations with ACI
- Intersight Services for Terraform
  - GUI Lab: Deploy a Tenant/App Profile with REST/POSTMAN