Course Outline of SD-Access and Catalyst 9k Programmability Workshop (SDA9KPW)

Module 1: Positioning SD-Access and Overview

- What is end-to-end segmentation
- Simple, automated work flows
- Open and Programmable APIs
- Intelligent network fabric
- Use Cases
  - Security and segmentation
  - User mobility
  - Guest access
  - IoT integration
  - Monitoring and troubleshooting
- Cisco Catalyst 9000 Series Programmability
- Components
  - DNA Center
  - Catalyst 9000 Switches
  - APIC-EM
  - ISE
  - Network Data Platform
- Key concepts of Integrations
  - IP Address Management (IPAM)
  - Network Orchestrators
  - Policy Orchestrators
  - Security Analytics
  - Firewalls
  - Public and Private Cloud Integration
  - IT Services Management (ITSM)

Module 2: Cisco DNA Programming Basics

- IOS XE
- Understanding REST API
- Python and IOS XE
- Cisco Python Module
- Use cases
  - Automated Provisioning
  - A glance at common errors
- High level overview: REST API

Module 3: Catalyst 9000 Automation

- NETCONF with SDN controllers
- OpenConfig
- YANG data models
- Guest Shell Linux Containers (LXCs)
- Cisco network plug-and-play
- Zero-touch provisioning
- Python scripting and custom libraries
- Use Cases
  - IT Operations
  - Analytics
  - PCI Compliance

Module 4: Software Defined Networks

- SD-Access
- VXLANs
- MP-BGP EVPN
- Use Cases
  - Extending Layer to Branch Offices
  - Business Continuance

Module 5: APIC-EM

- SD-Access and APIC-EM
- Use Cases
  - Network Threat Defense
  - Granular Control
  - Smart Routing
- Catalyst 9000 Integration
- APIC-EM Automation
- APIC-EM APIs

Module 6: Cisco DNA Center to Manage Your Network

- Components
- Benefits
- Automation

Module 7: Cisco SD Access Programming

- Network Fabric
- Cisco SD-Access
- Use Cases
    - Network Deployment
    - End-to-End Segmentation
    - Simple, Automated Workflows
    - Intelligent Network Fabric
- Cisco SD-Access Hardware and Software Platform Requirements
- Centralized Control and Management Plane

Module 8: SD-Access Wireless and WAN Programming

- Visibility of Wireless Traffic for Consistency
- Centralized Control/Management
- Intelligent Services Automation (Application Visibility & Control, EasyQoS)
- Network Embedded Threat/Anomaly Detection and Mitigation
- Intelligent WAN
- Use Cases
    - Accelerate Wireless Deployment
    - Enable Secure Access
    - Deploy branch offices quickly
    - Reduce costs and mitigate risks