Current Technologies Computer Learning Centers

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WHERE GREAT TRAINING HAPPENS EVERYDAY!

ADV Cisco SD-WAN Design, Troubleshoot, Topology, Configuration & Policy Groups, & Features

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This 5-day Advanced Cisco SD-WAN training course, is tailored specifically for Enterprise networks, provides an in-depth exploration of the SD-WAN 20.18 / IOS-XE 17.18 platforms. Designed for engineers seeking expertise in complex SD-WAN environments, the course covers advanced feature, device, and CLI template design, configuration groups, and policy implementation. Participants will deploy and troubleshoot enhanced QoS features such as Forward Error Correction (FEC), TCP Optimization, and DRE, while configuring overlay and service-side routing protocols including OMP, BGP, OSPF, and Multicast. Security integration with Cisco Umbrella, SASE, and on-premise firewalls is emphasized, alongside Catalyst SD-WAN clustering and high availability strategies. The course culminates in multi-region fabric design and comprehensive SD-WAN migration strategies from vEdge to cEdge, offering students hands-on expertise in scaling, securing, and modernizing SD-WAN infrastructures.

How you'll benefit

This class will help you:

- Build on the SDWAN class. Focuses on Advanced Features (Routing, Templates, Configuration Groups, Policies, SASE Security, Thousand Eyes Integration, Advanced QoS)
- Enhance voice integration and configuration expertise
- Prepare for the 300-415 ENSDWI Certification Between SDWAN and ADVANCED SDWAN

Why Attend with Current Technologies CLC

- Our Instructors are in the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

Who Should Attend

The primary audience for this course is as follows:

- Network Engineers
- System Administrators
- IT Professionals
- Technical Support Staff
- Cisco Certified Professionals

Course Duration
5 days
Course Price
$4,395.00 or 43 CLCs
Methods of Delivery
- Instructor Led
- Virtual ILT
- On-Site

Prerequisites

- Installing, Configuring, Monitoring and Troubleshooting Cisco Catalyst (SDWAN) v20.18

Course Outline

Module 0: Introductions

Module 1: Cisco Catalyst SD-WAN Platform Review
- Lesson 1: Catalyst SD-WAN Control Plane Overview
- Lesson 2: Catalyst SD-WAN Platform
- Lesson 3: Potential issues within SD-WAN Fabric

Module 2: Advanced SDWAN Control Component Deployment
- Lesson 1: On-Prem Controller Deployment
- Lesson 2: Create Manager VM Instance on ESXi or KVM
- Lesson 3: Initial SD-WAN Manager Setup
- Lesson 4: Create Validator (vBond) VM Instance on ESXi
- Lesson 5: Create Controller (vSmart) VM Instance on ESXi
- Lesson 6: Add Control Components to Manager
- Lesson 7: Enterprise CA Configuration
- Lesson 8: Controller High Availability
- Lesson 9: Verify Control Plane
- Lesson 10: Manager Day-0 Settings Guided Task Flow (20.18)

Module 3: Design Considerations, Scaling & Advanced Settings
- Lesson 1: Feature Summary by Version
- Lesson 2: Design and Plan Topology
- Lesson 3: Offline Licensing
- Lesson 4: SD-WAN Scaling
- Lesson 5: SD-WAN Configuration and Settings
- Lesson 6: Ether Channel Support (20.6)
- Lesson 7: LTE Design and Deployment Options
- Lesson 8: C1100TG Terminal Gateway (20.16)

Module 4: High Availability
- Lesson 1: SD-WAN High Availability
- Lesson 2: Active Manager, Backup Inactive Manager/
- Lesson 3: SD-WAN Disaster Recovery
- Lesson 4: Troubleshooting Cluster Operation
- Lesson 5: LACP Configuration

Module 5: Templates and Configuration Groups Optimization
- Lesson 1: SD-WAN Device Configuration
- Lesson 2: Using Python to Import / Export Templates
- Lesson 3: Parsing JSON with Python
- Lesson 4: Create / Delete / Import / Export of Templates
- Lesson 5: Configuration Groups Overview
- Lesson 6: Creating Configuration Groups
- Lesson 7: Deploy Configuration Group Workflow
- Lesson 8: View/Edit Configuration Groups
- Lesson 9: Configuration Groups vs Templates
- Lesson 10: Tagging
- Lesson 11: Configuration Catalog

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- Lesson 12: Control Components Settings (20.18)

Module 6: Application Quality of Experience
- Lesson 1: Application Quality of Experience (AppQoE)
- Lesson 2: SD-AVC
- Lesson 3: Application Classification From 20.10
- Lesson 4: Custom Application Identification
- Lesson 5: Application Catalog Enhancements (20.16)
- Lesson 6: Bidirectional Forwarding Detection (BFD)
- Lesson 7: Cloud onRamp for SaaS for Office 365
- Lesson 8: QoS Design
- Lesson 9: Per Tunnel QOS
- Lesson 10: Adaptive QOS
- Lesson 11: SD-WAN 17.6/20.6 - Per VPN QOS
- Lesson 12: Upstream and Downstream Throttle (20.18)
- Lesson 13: TCP Optimization
- Lesson 14: Service Nodes for AppQoE
- Lesson 15: Forward Error Correction (FEC)
- Lesson 16: Packet Duplication
- Lesson 17: QoS Queueing Statistics (20.18)

Module 7: Bridging
- Lesson 1: Transparent Bridging
- Lesson 2: cEdge Bridging Template Configuration
- Lesson 3: vEdge Bridging Template Configuration

Module 8: Routing Protocols
- Lesson 1:SD-WAN Routing
- Lesson 2: Static Routes
- Lesson 3: VRRP Enhancements
- Lesson 4: HSRP Standby Router
- Lesson 5: OMP Routing
- Lesson 6: Border Gateway Protocol (BGP)
- Lesson 7: BGP Review
- Lesson 8: BGP Templates
- Lesson 9: BGP Lists
- Lesson 10: BGP Local Route Policies
- Lesson 11: BGP Troubleshooting
- Lesson 12: Open Shortest Path First (OSPF)
- Lesson 13: SD-WAN OSPF
- Lesson 14: OSPF Templates
- Lesson 15: OSPF Local Policies
- Lesson 16: OSPF Monitoring
- Lesson 17: OSPF Troubleshooting
- Lesson 18: Enhanced Interior Gateway Routing Protocol (EIGRP)
- Lesson 19: EIGRP Template Configuration
- Lesson 20: EIGRP Monitoring and Troubleshooting
- Lesson 21: SD-WAN On-Demand Tunnels
- Lesson 22: Route Leaking
- Lesson 23: SD-WAN 17.7
- Lesson 24: Service VPN Route Leaking

Module 9: Multicast
- Lesson 1: Multicast Overview
- Lesson 2: vEdge SupportQoE / QoS Challenges

Module 10: Direct Internet Access (DIA)
- Lesson 1: Direct Internet Access (DIA)
- Lesson 2: Direct Internet Access (DIA) Design
- Lesson 3: Deploying DIA
- Lesson 4: Central Data Policy
- Lesson 5: NAT DIA Route
- Lesson 6: DIA NAT Troubleshooting

Module 11: SD-WAN Voice Configuration
- Lesson 1: SD-WAN UC Support
- Lesson 2: Voice Card Feature Template
- Lesson 3: Call Routing Feature Template
- Lesson 4: Survivable Remote Site Telephony (SRST)
- Lesson 5: Voice Policy
- Lesson 6: Create a Voice Port Policy
- Lesson 7: Voice Port Translation Profile
- Lesson 8: FXO Supervisory Disconnect
- Lesson 9: Webex Calling Local Survivability Gateway (20.16)

Module 12: SDWAN Security
- Lesson 1: Security Overview
- Lesson 2: Fabric Security
- Lesson 3: On-Prem Security
- Lesson 4: Snort/IPS
- Lesson 5: Custom IPS Signatures (20.18)
- Lesson 6: Advanced Malware Protection/AMP
- Lesson 7: URL Filtering
- Lesson 8: TLS/SSL Decryption
- Lesson 9: Unified Logging
- Lesson 10: Cloud Security
- Lesson 11: Secure Internet Gateway (SIG)
- Lesson 12: Cisco and ZScalar SIG
- Lesson 13: Manager ZScaler Workflow for
- Lesson 14: ZScaler Workflow
- Lesson 15: L7 Health Check Inside ZScaler
- Lesson 16: Secure Access Service Edge (SASE)

Module 13: SDWAN Local Policies
- Lesson 1: Localized Policies Overview
- Lesson 2: Local Control Policies
- Lesson 3: Local Data Policies
- Lesson 4: Local Data Policy - QoS
- Lesson 5: Configure Local Policies

Module 14: SD-WAN Central Policies
- Lesson 1: Centralized Policies Overview
- Lesson 2: Central Policy Functionality
- Lesson 3: Centralized Policies
- Lesson 4: Centralized Control Policies

- Lesson 5: Service Chains
- Lesson 6: Centralized Data Policies
- Lesson 7: Application Aware Routing
- Lesson 8: Central Data Policies - Cflowd
- Lesson 9: Control Policy - VPN Membership Policy
- Lesson 10: Policy Construction
- Lesson 11: Policy Troubleshooting
- Lesson 12: Centralized Control Policy
- Lesson 13: Control Policies & Troubleshooting Workflow
- Lesson 14: Centralized Data & AAR Policies Troubleshooting

Module 15: SD-WAN Policy Groups
- Lesson 1: What are Policy Groups?
- Lesson 2: Groups of Interest (Policy Objects)
- Lesson 3: Application Priority and SLA
- Lesson 4: NGFW
- Lesson 5: SIG/SSE and DNS Security
- Lesson 6: Policy Group Creation
- Lesson 7: Associate and Deploy Policy Groups
- Lesson 8: UX 2.0 Topology

Module 16: Multi-Region Fabric
- Lesson 1: Multi-Region Fabric

Module 17: Network-Wide Path Insights (NWPI)
- Lesson 1: NWPI
- Lesson 2: NWPI Enhancements (20.16-20.18)

Module 18: Cisco SD-WAN (Viptela) Migration Strategies
- Lesson 1: Secure Automated WAN
- Lesson 2: Migration and Deployment Models
- Lesson 3: vEdge to cEdge
- Lesson 4: Controllers Design
- Lesson 5: DC and Branches Design
- Lesson 6: Migration and Onboarding Strategy
- Lesson 7: Implementing Automated WAN
- Lesson 8: UX Conversion ToolSD-WAN Troubleshooting Overview

Lab Outline

Lab 0: Lab Access

Lab 1: Controller Verfication

Lab 2: Modify Controller Settings

Lab 3: NYC-DC1 Device Template

Lab 4: Create EMEA-DC2 Configuration Group

Lab 5: Editing the EMEA DC2 Configuration Group

Lab 6: Deploying the Configuration Group for DC2

Lab 7: Create BR-West-Coast Configuration Group

Lab 8: Editing the BR-West-Coast Configuration Group

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Lab 9: Deploying the BR-West-Coast Configuration Group

Lab 10: Security Policy Lists Configuration

Lab 11: Security Policy Configuration

Lab 12: Local Policy List Configuration

Lab 13: Localized Policy Configuration

Lab 14: Central Policy List Configuration

Lab 15: Centralized Policy Configuration

Lab 16: Template Backup and Restore

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