SDWADV - CISCO SD-WAN DAY-N ADVANCED MONITORING AND TROUBLESHOOTING

Course Code: 101133

SDWADV is a 4-day Cisco SD-WAN training targeted to engineers and technical personnel involved in deploying, implementing, operating and optimizing Cisco SD-WAN solution

Cisco SD-WAN training targeted to engineers and technical personnel involved in deploying, implementing, operating and optimizing Cisco SD-WAN solution, both in enterprise and Service Provider environments, including advanced features for centralized AAR/Data policies, QoS, application performance routing, configuration templates, control policies and troubleshooting common and advanced operating issues. The Cisco SD-WAN course is lab-intensive, and objectives are accomplished mainly through hands on learning. Students taking this Cisco SD-WAN training course should be familiar with Wide Area Networks (WANs) in a variety of ways. Ideal candidates for this course include engineering and planning teams who evaluate WAN evolution and personnel involved in SD-WAN Design, Implementation and Operation.

What You'll Learn

Upon completing this course, the learner will be able to meet these overall objectives:

- Understand Cisco SD-WAN Architecture SD-WAN Day-N Advanced Monitoring and Troubleshooting2of 7A company built for engineers by engineers
- Monitor Day-N SD-WAN Operations
- In-depth Troubleshooting of the SD-WAN Fabric
- Explore Advanced SD-WAN Policy Configuration
- Identify Insights into Software-Defined Application Visibility Control

Who Needs to Attend

The primary audience for this course is as follows:

- Systems Engineers
- Technical Solutions Architects
- Field Engineers

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VIRTUAL CLASSROOM LIVE	$3,395 USD	3 Day

Virtual Classroom Live Outline

Module 1: Cisco SD-WAN Introduction

- High-level Cisco SD-WAN Deployment models
- Application-level SD-WAN solution
- Cisco SDWAN plan for HA and Scalability
- Cisco SD-WAN solution components: vManage NMS, vSmart Controller, vBond Orchestrator
- Edge Routers
- Cloud Based Deployment vs On-Premises Deployment

Module 2: Zero Touch Provisioning

- Overview
- User Input Required for the ZTP Automatic Authentication Process
- Authentication between the vBond Orchestrator and WAN Edges
- Authentication between the Edge Routers and the vManage NMS
- Authentication between the vSmart Controller and the Edge Routers

Module 3: Cisco SD-WAN Solution

- Overlay Management Protocol (OMP)
- Cisco SDWAN Circuit Aggregation Capabilities
- Secure Connectivity in Cisco SD-WAN
- Performance Tracking Mechanisms
- Application Discovery
- Dynamic Path Selection

- Performance Based Routing
- Direct Internet Access
- Cisco SD-WAN In-built Security features: App Aware FW, Talos IPS, URL Filtering, Umbrella Integration & Advanced Malware Protection
- Dynamic Cloud Access: Cloud On-Ramp for SaaS and IaaS (AWS, Azure & GPC)

Module 4: Operations Best Practices

- Config: Test Configuration Changes Before Committing
- NAT: Secure Routers Acting as NATs
- Edge Routers: Connect to the Console Port
- vManage Operational Commands
- SD WAN Devices: Site ID Naming Conventions
- SD WAN Devices: Using the System IP Address
- vManage NMS: Disaster Recovery
- Disaster Recovery –Cluster failover scenarios
- vManage Disaster Recovery Checklist
- How to configure Disaster Recovery

Module 5: Application Monitoring (Including SD-AVC)

- vManage –Application Monitoring
- How to enable DPI on SD-WAN cEdge Routers
- Monitoring Application traffic per device/site
- How to enable SD-AVC on vManage and push to routers.
- Configuring application log collection parameters.
- vAnalytics
- vAnalytics dashboard walk-through
- vAnalyticsNetwork Health
- vAnalytics Network Availability
- vAnalytics Applications
- Ecosystem Partner Solutions

Module 6: General Troubleshooting

- Check Application-Aware Routing Traffic
- Collect Device Data to Send to Customer Support
- Monitor Alarms and Events
- Monitor TCP Optimization
- Ping an SD WAN Device
- Run a Traceroute
- Simulate Flows
- Troubleshoot Cellular Interfaces
- Troubleshoot Device Bringup

- Use Syslog Messages
- Tunnel Health

Module 7: Troubleshooting: Data Plane Issues

- BFD Session Information and Troubleshooting a BFD Session
- Cflowd Issues
- Data Policies
- DPI Issues
- Symptom: Site Cannot Reach Applications in Datacenter
- Symptom: vManage Showing Edge Router or Interface Down
- Symptom: Site-Wide Loss of Connectivity (Blackout)
- Symptom: Poor Application Performance (Brownout)
- Issue Severity Assessment

Module 8: Troubleshooting: Routing Issues

- Troubleshooting NAT Issues for Control and Data connections
- BGP Information
- Multicast Information
- OMP Information
- OSPF Information
- PIM Information
- Symptom: Some or All Routes Missing from Edge Routing table
- Symptom: Data Traffic Using Suboptimal Path
- Symptom: Data Traffic Not Using All Transports

Module 9: Monitoring and Troubleshooting Application-Aware Routing

- Application Performance with Cloud-Express Service
- Tunnel Latency Statistics
- Tunnel Loss Statistics

Module 10: Troubleshooting Policy Related Issues

- Checking configuration
- For Localized Policies
- For Centralized Policies
- How to check if FIA is enabled
- Confirming and troubleshooting TCAM Issues
- Enabling Various Policy Level Logs
- FPM Logs
- EPBR Logs
- FNF Logs during config
- Collecting Log Files

- How to deal with too many logs

Module 11: Network Operations

- Check Alarms and Events
- Check User Accounts and Permissions
- Deploy the SD WAN Overlay Network
- Determine the Status of Network Sites
- Control Connections
- Data Connections
- OMP Status
- Enabling Embedded Packet Captures and Packet Trace on Cisco cEdges

Module 12: Security Certificate Troubleshooting

- Generate a Certificate Signing Request
- Issues when installing a certificate
- Using Cisco Signed Certificates vs 3rd Party Signed Certificates
- Upload the Edge Serial Number File

Module 13: SD WAN Devices Maintenance

- Decommission a vEdge Cloud Router
- Determine the Status of a Network Device
- Migrate a Controller's Virtual Machine Using vMotion
- Remove an Edge Router's Serial Number from the vManage NMS
- Replace an Edge Router
- Restore the vManage NMS
- Set Up User Accounts to Access SD-WAN Devices
- Validate or Invalidate an Edge Router
- Software Versions Installed on a Device
- Troubleshooting platform crash issues

Module 14: SD-WAN Device Operation and Troubleshooting

- Determine Changes to a Configuration Template
- Determine Why a Device Rejects a Template
- Alarm Severity Levels
- Hardware Alarms
- Checking Alarms and Notifications
- LEDs
- Additional Information
- Restore an Edge Router
- Remove Edge Router Components

Virtual Classroom Live Labs

- Lab 1: Deploy and configure the Cisco SD-WAN Fabric
  - Configure and Deploy Control-Plane Connectivity
  - Configure and Deploy an Overlay Network
  - Provision and Deploy vManage Templates
  - Provision and Deploy vManage
- Policies Lab 2: Operational Best Practices
- Lab 3: Installing SD-AVC and monitoring CFlowD & DPI
- Lab 4: Cisco SD-WAN Control Plan Troubleshooting
- Lab 5: Cisco SD-WAN Data Plane Troubleshooting
- Lab 6: Cisco SD-WAN Troubleshoot Routing Issues
  - Basic route troubleshooting on the SD-WAN XE Image
  - Debugs on the Cisco SD-WAN XE Image
- Lab 7: Troubleshooting Cisco SD-WAN Policies
- Lab 8: Configuring a vManasge Disaster Recovery Backup
- Lab 9: Troubleshooting platform crash files

Dec 15 - 18, 2025 | 10:00 AM - 6:00 PM EST

Feb 2 - 5, 2026 | 10:00 AM - 6:00 PM EST

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