

Implementing Cisco SD-WAN Solutions Training Course

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Overview

Implementing Cisco SD-WAN Solutions Training Course is a one-week course for network engineers and infrastructure architects who require operational competence in deploying software-defined wide area network architectures. Enterprise networks experience high transit latency, policy configuration sprawl across distributed branches, and security governance gaps during direct cloud breakout implementations. This course resolves these challenges through structured deployment of control plane orchestration, application-aware routing policies, and secure data plane segmentation aligned with MEF 70.1 service attributes and NCA ECC-2:2024 controls. Agile Leaders Training Center delivers the Implementing Cisco SD-WAN Solutions Training Course.

Who Should Attend

- Network engineers responsible for enterprise routing infrastructure and wide area network fabric operations.
- Infrastructure architects designing hybrid transport overlays and branch office connectivity solutions.
- Systems administrators deploying automated network provisioning workflows and edge routing policies.
- Cybersecurity professionals overseeing direct internet access traffic inspection and regulatory transport compliance.
- Network operations specialists managing overlay telemetry, link quality monitoring, and incident containment.

The course assumes participants actively manage enterprise IP routing protocols and basic firewall rules, and it leaves out fundamental subnetting tutorials and introductory networking concepts.

Departments and Industries

The course draws operational deployment scenarios from enterprise organizations managing distributed branch footprints across critical utility grids and digital commerce environments.

- Enterprise network operations and corporate infrastructure engineering
- Commercial banking data centers and digital financial services
- Energy transmission networks and utility monitoring operations
- Retail supply chain logistics and distributed branch distribution systems
- Healthcare provider communications and patient information networks

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Learning Objectives

By the end of this course, participants will be able to:

- Apply control plane orchestration across Cisco Catalyst SD-WAN vBond, vSmart, and vManage platforms.
- Build secure data plane overlay tunnels using IPsec and Bidirectional Forwarding Detection telemetry.
- Configure application-aware routing policies to steer mission-critical traffic across multi-transport fabrics.
- Analyze network segmentation across virtual private networks adhering to MEF 70.1 service definitions.
- Prioritize direct internet access security policies aligned with NCA ECC-2:2024 network controls.
- Diagnose overlay routing anomalies and transport link degradation across hybrid WAN architectures.

Course Agenda

Day 1: Controller Deployment and Fabric Architecture

- Cisco Catalyst SD-WAN architecture and control components involving vManage, vBond, and vSmart
- Underlay Connectivity Services deployment across MPLS, LTE/5G, and Direct Internet Access circuits
- Zero-Touch Provisioning onboarding workflows for cEdge and vEdge routing platforms
- Hardware onboarding verification under CST Type Approval technical regulations for edge devices
- Overlay Management Protocol peering, routing tables, and transport locator distribution

Day 2: Data Plane Overlays and Dynamic Transport Engineering

- IPsec and GRE data tunnel establishment across disparate Underlay Connectivity Services
- Bidirectional Forwarding Detection configuration for real-time jitter, loss, and latency measurement
- Color-based transport routing policies and Tunnel Virtual Connections adhering to MEF 70
- Multi-transport failover mechanisms balancing traffic between private circuits and public broadband
- Service-level agreement profile definitions for enterprise voice, video, and mission-critical payloads

Day 3: Policy Architecture and Application-Aware Routing

- Centralized control policy formulation within vSmart for localized topology manipulation
- Application-aware routing configuration matching application signatures against real-time path health
- Data policy creation for traffic shaping, rate limiting, and selective packet forwarding
- Direct Internet Access breakout architecture using Cloud OnRamp for SaaS applications
- Cloud data boundary controls adhering to CST Cloud Computing Services Provisioning Regulations Version 4

Day 4: Network Segmentation and Regulatory Security Controls

- End-to-end segmentation design isolating traffic using Virtual Routing and Forwarding instances
- Application-based security perimeter integration following MEF 70.1 service specifications
- Direct internet breakout security mapping to NCA ECC-2:2024 subdomain 4-2 controls
- Continuous security monitoring integration with CST Cybersecurity Regulatory Framework protocols
- Cisco Catalyst Center telemetry analysis and automated event logging for operational audits

Day 5: Operational Simulations and Integrated Fabric Capstone

- Exercise: execute zero-touch device onboarding and controller certificate validation
- Exercise: configure application-aware routing policies responding to synthetic link degradation
- Exercise: enforce multi-tenant segmentation and secure direct internet access filtering
- Exercise: audit overlay encryption and transport compliance against NCA ECC-2:2024 controls
- Capstone exercise: formulate an enterprise Cisco Catalyst SD-WAN implementation and policy design portfolio

Practical Exercises

The course uses practical network configuration scenarios and architectural design files drawn from production enterprise environments.

- Suggested activity: Deploy Cisco Catalyst SD-WAN controllers and provision cEdge routing endpoints using automated onboarding templates.
- Suggested activity: Formulate application-aware routing policies that dynamically steer traffic based on measured latency thresholds.
- Suggested activity: Design an isolated multi-VRF segmentation topology supporting secure direct cloud breakouts under regional compliance frameworks.
- Suggested activity: Execute a simulated failover exercise evaluating Bidirectional Forwarding Detection convergence during circuit outages.

FAQs

Who suits the Implementing Cisco SD-WAN Solutions Training Course?

The Implementing Cisco SD-WAN Solutions Training Course suits network engineers, infrastructure architects, and security administrators managing enterprise transport networks. The course assumes active familiarity with IP routing protocols, access control lists, and basic transport architectures, leaving out foundational IP subnetting drills and introductory network operations training.

How does this course differ from general enterprise routing courses?

General routing courses focus on static routing, basic OSPF or BGP topologies, and localized command-line configurations. This course focuses specifically on centralized software-defined orchestration, automated zero-touch provisioning, overlay fabrics, application-aware dynamic path selection, and regulatory alignment with NCA ECC-2:2024 controls and MEF 70.1 standards.

How does Cisco Catalyst SD-WAN enforce application-aware routing?

Cisco Catalyst SD-WAN tracks underlay circuit health using continuous Bidirectional Forwarding Detection probes measuring latency, jitter, and packet loss. When circuit quality degrades below defined service-level agreements, the vSmart controller dynamically shifts application traffic to compliant alternate tunnels without disrupting active user sessions.

Why is regulatory alignment essential when deploying SD-WAN Direct Internet Access?

Direct Internet Access routes branch traffic directly to cloud services, bypassing centralized corporate data centers. Establishing compliant breakout architectures requires enforcing NCA ECC-2:2024 controls and CST Cloud Computing Services Provisioning Regulations Version 4, ensuring restricted public sector data remains within sovereign boundaries and traffic meets rigorous encryption standards.

Conclusion

Participants take back an enterprise Cisco Catalyst SD-WAN implementation and policy design portfolio that establishes validated deployment standards across their wide area network infrastructure. This blueprint replaces brittle manual router configurations with centralized orchestration, predictable application performance, and verified multi-transport failover policies. Organizations achieve operational agility, reduced transit costs, and systematic compliance across regulated network boundaries.

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