BLACKBIRD FOR TRAINING

Enterprise SD-WAN Design and Implementation Training Course



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Introduction:

This Enterprise SD-WAN Design and Implementation Training Course equips you to architect, configure, and validate resilient wide area networks across one week. You will construct an Enterprise SD-WAN Architecture and Deployment Blueprint containing transport underlay matrices, control plane topologies, application routing policies, and security enforcement templates. You need foundational networking knowledge covering IP routing, BGP, and IPsec tunnels, as this practitioner-level course develops hands-on engineering capabilities. You will practise through lab sessions, configuring virtual controllers, provisioning edge routers, tuning dynamic traffic steering, and verifying failover behaviours.

Course Objectives:

- Draft multi-underlay transport topologies using MEF 70.1 service attributes to establish deterministic wide area network connectivity across public and private circuits.
- Configure software-defined control and management planes using Cisco Catalyst SD-WAN controllers and Fortinet FortiManager to automate secure edge onboarding.
- Map application-aware traffic steering policies using latency, jitter, and packet loss performance SLA probes to optimise enterprise cloud service access.
- Implement zero-trust perimeter segmentation using MEF 88 security service definitions and centralized firewall policies to protect direct internet breakouts.
- Validate high-availability failover paths and data plane resilience using simulated link brownouts to enforce continuous business application uptime.

Target Audience:

- You configure enterprise branch routers, firewalls, and wide area network links to maintain resilient multi-site corporate connectivity.
- You evaluate transport capacity, underlay provider performance, and hybrid cloud interconnects to support corporate data centre migrations.
- You implement enterprise network security policies, IPsec encryption, and traffic segmentation across distributed branch offices and regional hubs.
- You diagnose routing anomalies, tunnel degradation, and application performance bottlenecks across hybrid software-defined infrastructure environments.



Course Outline:

Day 1: Architecting Transport Underlays and Edge Geometries

- Classifying underlay connectivity services using MEF 70.1 framework attributes
- Calculating path capacity using circuit bandwidth and latency metrics
- Evaluating edge device deployment models using dual-homed hardware configurations
- Mapping transport user-to-network interfaces using private and public circuits
- Build: Multi-Underlay Transport Interface and Capacity Allocation Matrix

Day 2: Deploying Control Plane Controllers and Zero-Touch Provisioning

- Provisioning central management controllers using Cisco Catalyst SD-WAN architecture
- Establishing authenticated control plane peering using Overlay Management Protocol
- Automating edge router onboarding using zero-touch provisioning discovery workflows
- Orchestrating central device configuration using Fortinet FortiManager device templates
- Build: Control Plane Controller Topology and Device Onboarding Plan

Day 3: Configuring Application-Aware Routing and Traffic Steering

- Creating real-time path quality thresholds using performance SLA probes
- Steering business application flows using dynamic policy routing tables
- Prioritising voice and collaboration streams using quality-of-service queueing profiles
- Configuring localized breakout paths using direct internet access rules
- Build: Application-Aware Routing Policy and Traffic Steering Matrix

Day 4: Enforcing Security Policies and Edge Threat Protections

- Embedding application security functions using MEF 88 architectural guidelines
- Isolating multi-tenant corporate traffic using network segmentation virtual fabrics
- Deploying next-generation firewall filtering using unified branch security profiles
- Securing control management access using multi-factor authentication administrative mechanisms
- Build: Enterprise Edge Security Enforcement and Segmentation Schedule

Day 5: Executing Lab Integration and Validation Scenarios

- Validating underlay circuit failover using simulated transport degradation labs
- Testing dynamic path steering using live traffic generator tools
- Verifying encrypted overlay connectivity using end-to-end IPsec diagnostic commands
- Consolidating architectural configurations using the earlier project lab outputs
- Build: Enterprise SD-WAN Architecture and Deployment Blueprint



Skills You Will Gain:

- MEF 70.1 Service Attribute Mapping
- Overlay Management Protocol Peering
- Zero-Touch Provisioning Orchestration
- Performance SLA Link Steering
- Direct Internet Access Configuration
- MEF 88 Security Policy Implementation
- Transport Failover Resilience Testing

Why Attend This Course:

- Design robust hybrid WAN topologies that dynamically route business traffic around brownouts and transport outages.
- Automate edge router deployments across branch locations using central orchestration templates and zero-touch workflows.
- Implement granular direct internet access controls to safeguard branch endpoints without backhauling corporate cloud traffic.
- Construct an Enterprise SD-WAN Architecture and Deployment Blueprint to guide multi-site rollout projects across your organisation.

Conclusion:

Returning to your organisation, you will immediately use your Enterprise SD-WAN Architecture and Deployment Blueprint to review your existing branch circuit allocations and overlay topologies. You will present the routing policies, failover parameters, and edge onboarding procedures to your lead network architect and infrastructure operations team for design approval. After executing your initial edge configuration deployment using the blueprint templates, you will check telemetry graphs and SLA probe logs to confirm application traffic dynamically steers across optimal transport links without manual intervention.

Frequently Asked Questions FAQ:

What will you be able to do after the Enterprise SD-WAN Design and Implementation Training Course?

You will be able to design, configure, and troubleshoot enterprise SD-WAN overlays across hybrid transport environments. You will implement automated edge onboarding, tune application-aware routing based on path quality metrics, enforce security segmentation, and validate high-availability failover across multi-vendor software-defined architectures.



What do you need to know before starting the Enterprise SD-WAN Design and Implementation Training Course?

You need solid working knowledge of enterprise IP networking fundamentals, including IPv4 addressing, BGP and OSPF routing protocols, and IPsec tunnel operation. Familiarity with general branch network topologies and basic firewall policies helps you follow the configuration exercises and architecture designs smoothly.

What deliverable do you build during the Enterprise SD-WAN Design and Implementation Training Course?

You build an Enterprise SD-WAN Architecture and Deployment Blueprint. This deliverable incorporates an underlay transport matrix, controller topology schematics, zero-touch provisioning profiles, dynamic SLA steering policies, security segmentation rules, and validation test sheets to direct live enterprise network implementations.

How does the Enterprise SD-WAN Design and Implementation Training Course differ from a basic network management course?

This course focuses directly on designing and engineering software-defined WAN architectures and automated overlay control planes rather than broad day-to-day network monitoring. You construct policy logic, provision orchestrators, implement dynamic path steering, and execute hands-on configuration labs rather than merely inspecting network alerts.

