

Mplify-SDCP: SD-WAN Certified Professional (Blueprint B) eLearning with exam voucher (Mplify-SDCP-SP)

Duration: 365 Days

Course Overview:

This self-paced, eLearning course reviews requirements for an application-aware, over-the-top WAN connectivity service that uses policies to determine how application flows are directed over multiple underlay networks irrespective of the underlay technologies or service providers who deliver them.

Who Should Attend:

The target audience for this class are networking engineers, service provider architect and engineers, and premise technology engineers looking to expand their understanding of SD-WAN and Mplify certification.

Course Objectives:

Upon completion of this course, you will have knowledge and skills to:

- Assess, plan and design scenarios of size and scale, implementations, applications, strategy and business requirements
- Implementation of Mplify 70 related to business requirements, application flow, policy, underlay services, characteristics and migrations strategy
- Lifecycle Service Orchestration (LSO): service impacting issues, diagnostics, performance metrics and troubleshooting
- Components and features: fundamentals and characteristics of SD-WAN solutions, service components and service attributes.
- Transport-independence of the Underlay Network
- Service assurance of SD-WAN connections
- High Availability of SD-WAN Services
- Applying Policy-based Packet Forwarding for SD-WAN

Course Outline:

Module 1 Overview of Basic Networking

- Network Definitions
 - Node
 - Endpoint
 - Local Area Network (LAN)

- MAC Address
- Ethernet
- Ethernet Frame
- Virtual Local Area Network (VLAN)
- IEEE 802.1ad, Q-in-Q
- Wide Area Network (WAN)
- Subscriber
- Service Provider
- Multiprotocol Label Switching (MPLS)
- Routing
- Routing Information Protocol (RIP)
- Border Gateway Protocol (BGP)
- Open Shortest Path First (OSPF)
- Intermediate System – Intermediate System (IS-IS)
- Source Packet Routing in Networking (SPRING)/Segmented Routing (SR)
- Network Robustness
 - Bidirectional Forwarding Detection (BFD)
 - Fast Reroute (FRR)
- Network Failures and Performance Issues
 - Two-Way Active Measurement Protocol (TWAMP)
 - Simple Network Message Protocol (SNMP)
 - Internet Control Message Protocol (ICMP)
 - Internet Control Message Protocol for IPv6 (ICMPv6)
 - Ping
 - Ping6
 - Traceroute
 - Traceroute6
- Traffic Addresses
 - Internet Protocol version 4 (IPv4)
 - IPv4 Address
 - Classless Inter Domain Routing (CIDR)
 - Dynamic Host Configuration Protocol (DHCP)
 - Internet Protocol version 5 (IPv5)
 - Internet Protocol version 6 (IPv6)
 - IPv6 Packet
 - Stateless Address Auto Configuration (SLAAC)

Module 2 Assessing, Planning, and Designing

- Characteristics and Benefits of an SD-WAN Service
- SD-WAN Components
 - SD-WAN UNI
 - Underlay Connectivity Services (UCS)
 - Tunnel Virtual Connection (TVC)
 - SD-WAN Virtual Connection (SWVC)
 - SD-WAN Virtual Connection Endpoint
 - SD-WAN Edge
- Internet Breakout
- SWVC Service Attributes
 - SWVC Identifier Service Attribute
 - SWVC End Point List Service Attribute
 - Service Uptime Objective Service Attribute
 - SWVC Reserved Prefixes Service Attribute
 - SWVC List of Policies Service Attribute
 - SWVC List of Application Flow Groups Service Attribute
 - SWVC List of Application Flows Service Attribute
 - Application Flow Groups and Policies
- SWVC End Point Service Attributes
 - SWVC End Point Identifier Service Attribute
 - SWVC End Point Policy Map Service Attribute
- SD-WAN UNI Service Attributes
 - SD-WAN UNI Identifier Service Attribute
 - SD-WAN UNI L2 Interface Service Attribute
 - SD-WAN UNI L2 Maximum Frame Size Service Attribute
 - SD-WAN UNI IPv4 Connection Addressing Service Attribute
 - SD-WAN UNI IPv6 Connection Addressing Service Attribute
 - SD-WAN UNI Example Scenario
- Application Flows and Groups
- Policies
 - Policy Criteria
- Legacy Migration to SD-WAN
 - SOHO or Small Office Branch Type
 - Medium or Larger Offices Branch Type
 - SD-WAN Use Policies
- Designing and Planning Scenarios

Module 3 Underlay Connectivity Services

- Types of Underlay Connectivity Services
- Characteristics of Underlay Connectivity Services
 - Carrier Ethernet Services
 - IP Services
 - L1 Connectivity Services
 - Public Internet
- Access Methods for Underlay Connectivity Services
 - Copper Access / DSL
 - Synchronous Optical Network (SONET) / Synchronous Digital Hierarchy (SDH)
 - Fiber Access
 - HFC / DOCSIS
 - Packet Radio Access
 - Passive Optical Network
 - PDH Access
 - LTE
- Public versus Private
 - Private UCS
 - Public UCS
 - Backup UCS
- Traffic Requirements and Allocation of Bandwidth across Multiple Underlay Connectivity Services
 - Allocation of Bandwidth
 - BANDWIDTH Policy Effect on Packets
 - BANDWIDTH Policy Application
- UCS Scenarios

Module 4 SD-WAN Components

- Using an SD-WAN Gateway to Interconnect an SD-WAN Service to an External Service
 - Defining an SD-WAN Gateway
 - SD-WAN Gateway Use Case
- Defining the SD-WAN Controller and SD-WAN Orchestrator
 - SD-WAN Controller
 - SD-WAN Service Orchestrator
- Challenge Questions

Appendix A Understanding the Basic Structure of the LSO API

- Benefits of LSO API
- LSOs with existing SDKs
- LSOs without SDKs

Module 5 SD-WAN Security

- Security
 - End-to-End Encryption
 - Security in the SD-WAN Context
- Firewall Usage With SD-WAN
 - Firewalls
 - Firewalls in SD-WAN Context
- Security Protocols
 - Transport Layer Security (TLS)
 - Secure Sockets Layer (SSL)
 - Internet Protocol Security (IPSec)
- Encryption
 - IPSec Cryptographic Algorithms
 - WireGuard
- Security Scenarios