

INFOSOFT IT SOLUTIONS

Training | Projects | Placements

Revathi Apartments, Ameerpet, 1st Floor, Opposite Annapurna Block,

Infosoft It solutions, Software Training & Development Institute, **9059683947 | 9182540872**

Cisco CCIE Service Provider

Service Provider Architecture and Technologies

- Overview of service provider network architectures
- MPLS (Multiprotocol Label Switching) fundamentals
- BGP (Border Gateway Protocol) in service provider networks

MPLS Layer 3 VPNs

- MPLS VPN architecture and components
- Configuration and deployment of MPLS VPNs

MPLS Layer 2 VPNs

- MPLS L2VPN technologies (VPWS, VPLS)
- Configuration and deployment of MPLS L2VPNs
- Interworking and migration strategies

Internet Routing and Peering

- BGP routing policies and best practices
- Inter-AS MPLS VPN options (Option A, Option B)
- Implementing Internet peering and transit

Quality of Service (QoS) in Service Provider Networks

- QoS requirements and mechanisms (DSCP, PHB)
- Implementing QoS on Cisco IOS XR and IOS XE platforms
- Traffic shaping, policing, and congestion management

Service Provider Security

- Security challenges in service provider networks
- Implementing BGP and MPLS VPN security
- DDoS mitigation and threat detection

Service Provider Multicast

- Multicast protocols and fundamentals (PIM, IGMP, MSDP)
- Implementing multicast distribution trees
- Multicast VPN (mVPN) and multicast in MPLS networks

Segment Routing (SR)

- SR architecture and benefits in service provider networks
- MPLS Segment Routing (SR-MPLS) deployment
- SR policies and traffic engineering

IPv6 in Service Provider Networks

- IPv6 addressing and deployment considerations
- Dual-stack IPv4/IPv6 implementations
- IPv6 transition mechanisms (6PE, 6VPE)

Network Automation and Programmability

- Network automation tools and frameworks (Python, Ansible)
- YANG data models and NETCONF/RESTCONF protocols
- Cisco NSO (Network Services Orchestrator) for service automation

Service Provider Network Management

- Service provider network monitoring and management platforms
- Telemetry and analytics for network visibility
- Configuration management and compliance auditing

Service Provider Network Resiliency and High Availability

- High availability design considerations
- Fast convergence and redundancy protocols (MPLS FRR, BFD)
- Disaster recovery planning and strategies

Service Provider Metro Ethernet

- Metro Ethernet standards and architectures
- Implementing Ethernet Virtual Private Line (EVPL) services
- Metro Ethernet Access (MEA) and Ethernet over MPLS (EoMPLS)

Case Studies and Real-World Scenarios

- Real-world service provider deployment challenges and solutions
- Industry-specific case studies
- Design considerations for specific business requirements