ZOOM
TECHNOLOGIES

CCNP Enterprise Training (ENCOR 350-401 + ENARSI 300-410)

The CCNP Enterprise training combines ENCOR 350-401 and ENARSI 300-410 to provide comprehensive knowledge of enterprise networking. ENCOR covers enterprise architecture, high availability, SD-WAN, virtualization, Layer 2 and Layer 3 technologies, OSPF, EIGRP, BGP, IP services, network assurance, and security. ENARSI focuses on advanced routing and troubleshooting, including route redistribution, route maps, VRF-Lite, BFD, EIGRP, OSPF, BGP, MPLS, DMVPN, and advanced network security. Overall, the course provides strong theoretical knowledge and hands-on practical skills to design, configure, troubleshoot, and secure enterprise networks.

Key Topics:

- Enterprise Architecture & High Availability
- VLAN, STP & EtherChannel
- OSPF, EIGRP & BGP
- Route Redistribution & Route Maps
- VRF-Lite & BFD
- MPLS & DMVPN
- SD-WAN & Network Virtualization
- IP Services & Network Security
- Network Assurance & Automation
- Advanced Routing & Troubleshooting

+91 7893399822 priya@zoomgroup.com www.zoomgroup.com

CCNP Enterprise Training (ENCOR 350-401 + ENARSI 300-410)

ENCORE (350-401)

Architecture

- Explain the different design principles used in an enterprise network
  - 1.1.a High-level enterprise network design such as 2-tier, 3-tier
  - 1.1.b High availability techniques such as redundancy, FHRP, and SSO
- Explain the working principles of the Cisco Catalyst SD-WAN solution

Virtualization

- Describe device virtualization technologies
  - 2.1.a Hypervisor type 1 and 2
  - 2.1.b Virtual machine
  - 2.1.c Virtual switching
- Configure and verify data path virtualization technologies
  - 2.2.a VRF
  - 2.2.b GRE and IPsec tunneling
- Describe network virtualization concepts
  - 2.3.a LISP
  - 2.3.b VXLAN

Infrastructure

- Layer 2
  - 3.1.a Troubleshoot static and dynamic 802.1q trunking protocols
  - 3.1.b Troubleshoot static and dynamic EtherChannels
  - 3.1.c Configure and verify common Spanning Tree Protocols (RSTP, MST) and Spanning Tree enhancements such as root guard and BPDU guard
- Layer 3
  - 3.2.a Compare routing concepts of EIGRP and OSPF (Advanced distance vector vs. link state, load balancing, path selection, path operations, metrics, and area types)
  - 3.2.b Configure simple OSPFv2/v3 environments, including multiple normal areas, summarization, and filtering (neighbor adjacency, point-to-point, and broadcast network types, and passive-interface)
  - 3.2.c Configure and verify eBGP between directly connected neighbors (best path selection algorithm and neighbor relationships)
  - 3.2.d Describe policy-based routing
- IP Services
  - 3.3.a Interpret network time protocol configurations such as NTP and PTP
  - 3.3.b Configure NAT/PAT
  - 3.3.c Configure first hop redundancy protocols, such as HSRP, VRRP

Network Assurance

- Diagnose network problems using such as debugs, conditional debugs, traceroute, ping, SNMP, and syslog
- Configure and verify IPSLA
- Configure and verify device access control
  - 4.3.a Lines and local user authentication
  - 4.3.b Authentication and authorization using AAA
- Configure and verify infrastructure security features
- ACLs
- Describe the components of network security design
  - 4.6.a Threat defence
  - 4.6.b Endpoint security
  - 4.6.c Next-generation firewall

ENARSI (300-401)

Layer 3 Technologies

- Troubleshoot administrative distance (all routing protocols)
- Troubleshoot route map for any routing protocol (attributes, tagging, filtering)
- Troubleshoot loop prevention mechanisms (filtering, tagging, split horizon, route poisoning)
- Troubleshoot redistribution between any routing protocols or routing sources
- Troubleshoot manual and auto-summarization with any routing protocol

- Configure and verify policy-based routing
- Configure and verify VRF-Lite
- Describe Bidirectional Forwarding Detection
- Troubleshoot EIGRP (classic and named mode; VRF and global)
  - 1.9.a Address families (IPv4, IPv6)
  - 1.9.b Neighbor relationship and authentication
  - 1.9.c Loop-free path selections (RD, FD, FC, successor, feasible successor, stuck in active)
  - 1.9.d Stubs
  - 1.9.e Load balancing (equal and unequal cost)
  - 1.9.f Metrics
- Troubleshoot OSPF (v2/v3)
  - 1.10.a Address families (IPv4, IPv6)
  - 1.10.b Neighbor relationship and authentication
  - 1.10.c Network types, area types, and router types
  - 1.10.c (i) Point-to-point, multipoint, broadcast, nonbroadcast
  - 1.10.c (ii) Area type: backbone, normal, transit, stub, NSSA, totally stub
  - 1.10.c (iii) Internal router, backbone router, ABR, ASBR
  - 1.10.c (iv) Virtual link
  - 1.10.d Path preference
- Troubleshoot BGP (Internal and External; unicast and VRF-lite)
  - 1.11.a Address families (IPv4, IPv6)
  - 1.11.b Neighbor relationship and authentication (next-hop, mulithop, 4- byte AS, private AS, route refresh, synchronization, operation, peer group, states and timers)
  - 1.11.c Path preference (attributes and best-path)
  - 1.11.d Route reflector (excluding multiple route reflectors, confederations, dynamic peer)
  - 1.11.e Policies (inbound/outbound filtering, path manipulation)

VPN Technologies

- Describe MPLS operations (LSR, LDP, label switching, LSP)
- Describe MPLS Layer 3 VPN
- Configure and verify DMVPN (single hub)
  - 2.3.a GRE/mGRE
  - 2.3.b IPsec
  - 2.3.c Dynamic neighbor
  - 2.3.d Spoke-to-spoke

Infrastructure Security

- Troubleshoot device security using IOS AAA (TACACS+, RADIUS, local database)
- Troubleshoot router security features
  - 3.1.a IPv4 access control lists (standard, extended, time-based)
  - 3.1.b IPv6 traffic filter
  - 3.1.c Unicast reverse path forwarding (uRPF)
- Troubleshoot control plane policing (CoPP) (Telnet, SSH, HTTP(S), SNMP, EIGRP, OSPF, BGP)
- Describe IPv6 First Hop security features (RA guard, DHCP guard, binding table, ND inspection/snooping, source guard)

Infrastructure Services

- Troubleshoot device management
  - 4.1.a Console and VTY
  - 4.1.b Telnet, HTTP, HTTPS, SSH, SCP
  - 4.1.c (T)FTP
- Troubleshoot SNMP (v2c, v3)
- Troubleshoot network problems using logging (local, syslog, debugs, conditional debugs, timestamps, telemetry)
- Troubleshoot IPv4 and IPv6 DHCP (DHCP client, IOS DHCP server, DHCP relay, DHCP options)
- Troubleshoot network performance issues using IP SLA (jitter, tracking objects, delay, connectivity)