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CISCO CERTIFIED CCNP ENCOR 350-401

Chapter 1 Infrastructure

1.1 Layer 2:

1.1.a Troubleshoot static and dynamic 802.1q trunking protocols.

1.1.b Troubleshoot static and dynamic Ether-Channels.

1.1.c Configure and verify common Spanning Tree Protocols (RSTP and MST).

1.2 Layer 3:

1.2.a Compare routing concepts of EIGRP and OSPF.
(advanced distance vector vs linked state, load balancing, path selection, path operations, metrics).

1.2.b Configure and verify simple OSPF environments.
including multiple normal areas, summarization, and filtering (neighbor adjacency, point-to-point and broadcast network types, and passive interface).

1.2.c Configure and verify eBGP between directly connected neighbors.
(best path selection algorithm and neighbor relationships).

1.2.d Differentiate hardware and software switching mechanisms:

1.1.d.1 Process and CEF.

1.1.d.2 MAC address table and TCAM.

1.1.d.3 FIB vs. RIB.

1.2.d Configure and verify data path virtualization technologies:

1.2.d.1 VRF.

1.2.d.2 GRE and IPsec tunneling.

1.3 Describe network virtualization concepts:

1.3.a LISP.

1.3.b VXLAN.

1.4 IP Services:

1.4.a Configure first hop redundancy protocols, such as HSRP and VRRP.

1.4.b Describe multicast protocols, such as PIM and IGMP v2/v3.

Chapter 2 Network Assurance

2.1 Diagnose network problems using tools such as debugs, conditional debugs, trace route, ping, SNMP, and syslog.

2.2 Configure and verify device monitoring using syslog for remote logging.

2.3 Configure and verify NetFlow and Flexible NetFlow.

2.4 Configure and verify SPAN/RSPAN/ERSPAN.

2.5 Configure and verify IPSLA.

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Chapter 3 Security

3.1 Configure and verify device access control:
3.1.a Lines and password protection.
3.1.b Authentication and authorization using AAA.
3.2 Configure and verify infrastructure security features:
3.2.a ACLs.
3.2.b CoPP.
3.4 Describe the components of network security design:
3.4.a Threat defense.
3.4.b Endpoint security.
3.4.c Next-generation firewall.
3.4.d TrustSec, MACsec.
3.4.e Network access control with 802.1X, MAB, and Web-Auth.

Chapter 4 Wi-Fi

4.1Analyze design principles of a WLAN deployment:
4.1.a Wireless deployment models (centralized, distributed, controller-less, controller based, cloud, remote branch).
4.2.b Location services in a WLAN design.
4.2 Wireless:
4.2.a Describe Layer 1 concepts, such as RF power, RSSI, SNR, interference noise, band and channels, and wireless client devices capabilities.
4.2.b Describe AP modes and antenna types.

4.2.c Describe access point discovery and join process (discovery algorithms, WLC selection process).
4.2.d Describe the main principles and use cases for Layer 2 and Layer 3 roaming.
4.3 Configure and verify wireless security features:
4.3.a EAP.
4.3.b WebAuth.
4.3.c PSK.

Chapter 5 Architecture

5.1 Explain the working principles of the Cisco SD-WAN solution:
5.1.a SD-WAN control and data planes elements.
5.1.b Traditional WAN and SD-WAN solutions.
5.2 Explain the working principles of the Cisco SD-Access solution:
5.2.a SD-Access control and data planes elements.
5.2.b Traditional campus interoperating with SD-Access.
5.2.c Describe Cisco DNA Center workflows to apply network configuration, monitoring, and management.
5.3 Describe concepts of QoS:
5.3.a QoS components.
5.3.b QoS policy.

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Chapter 6 Automation

6.1 Interpret basic Python components and scripts.
6.2 Construct valid JSON encoded file.
6.3 Describe the high-level principles and benefits of a data modeling language, such as YANG.
6.4 Configure and verify NETCONF and RESTCONF.
6.5Describe APIs for Cisco DNA Center and vManage.
6.6 Interpret REST API response codes and results in payload using Cisco DNA Center and RESTCONF.
6.7 Describe REST API security.
6.8 Construct EEM applet to automate configuration, troubleshooting, or data collection.
6.9 Compare agent vs. agentless orchestration tools, such as Chef, Puppet, Ansible, and SaltStack.

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