INFOSOFT IT SOLUTIONS

Training | Projects | Placements

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CCNP TRAINING COURSE CONTENT

Architecture

- **Enterprise Network**

Understand design principles used in an enterprise network.

1. Tier 2 and Tier 3 planning
2. Fabric Capacity planning
3. High availability techniques (FHRP, SSO, Redundancy)

- **WLAN deployment**

You will understand the characteristics of network topology architectures.

1. Wireless deployment models
2. Location services in a WLAN design
3. Difference between on-premises & cloud infrastructure deployments

- **Cisco SD-WAN solutions**

Explain the working principles of the Cisco SD-WAN solution.

1. SD-WAN control plane elements
2. SD-WAN data plane elements
3. Traditional WAN
4. SD-WAN solutions

- **Cisco SD-Access solution**

Explain the working principles of the Cisco SD-Access solution.

1. SD-Access control plane element
2. SD-Access data plane elements
3. Interoperating SD-Access

- **Wireless QoS**

Describe concepts of wired and wireless QoS.

1. QoS components
2. QoS policy

- **Switching mechanisms**

Differentiate hardware and software switching mechanisms.

1. Process and CEF
2. MAC address table and TCAM
3. FIB vs RIB

Virtualization

- **Virtualization technologies**

Describe device virtualization technologies.

1. Hypervisor types 1 and 2
2. Virtual machine
3. Virtual Switching

- **Path Virtualization technologies**

Configure and verify data path virtualization technologies.

1. VRF
2. GRE Tunneling
3. IPsec Tunneling

- **Virtualization concepts**

Describe network virtualization concepts.

1. LISP
2. VXLAN

Infrastructure

- **Layer 2**

Learn to troubleshoot and configure the following.

1. Static and dynamic trunking protocols
2. Static and dynamic EtherChannels
3. Spanning Tree Protocols (RSTP and MST)

- **Layer 3**

Learn routing concepts, and configure and verify OSPF environments and BGP.

1. Compare EIGRP and OSPF
2. Configure and verify multiple areas
3. Summarization
4. Filtering
5. Best path selection algorithm
6. Neighbour relationship

- **Wireless**

Describe Layer 1 concepts, access point discovery, and join process.

1. RF power, RSSI, SNR
2. AP modes
3. Antenna types
4. Interference noise
5. Band channels
6. Wireless client devices capabilities
7. Troubleshoot WLAN configuration

- **IP Services**

Describe, configure and verify related protocols.

1. Network Time Protocol (NTP)
2. NAT/PAT
3. First-hop redundancy protocols (HDRP & VRRP)
4. Multicast protocols (PIM & IGMP v2/v3)

Network Assurance

- **Network Assurance**

Diagnose network problems using various tools.

1. Debugs, conditional debugs
2. Trace route
3. Ping, SNMP, Syslog
4. Configure and verify:

- SPAN/RSPAN/ERSPA
- IPSLA
- NETCONF & RESTCONF

Module 5: Security

- **Configure and verify device access control**

1. Lines and password protection
2. Authentication and authorization using AAA

- **Configure and verify infrastructure security features**

1. ACLs
2. CoPP

- **Describe REST API Security**

- **Configure and verify wireless security**

1. EAP
2. WebAuth
3. PSK

- **Components of network security**

1. Threat defence
2. Endpoint security
3. Next-generation firewall
4. TrustSec
5. MACsec
6. Network access control

Automation

- **Automation**

1. Python components &. scripts
2. Construct JSON-encoded file
3. Data modelling language benefits (YANG)
4. APIs
5. Interpret REST API response code
6. Construct EEM applet
7. Compare agent vs Agentless orchestration tools (Chef, Ansible, Puppet