

# ENARSI Study Guide

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**OCG**

**section**

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## **1.0 Layer 3 Technologies**

### **1.1 Troubleshoot administrative distance (all routing protocols)**

### **1.2 Troubleshoot route map for any routing protocol (attributes, tagging, filtering)**

### **1.3 Troubleshoot EIGRP (classic and named mode; VRF and global)**

- 1.3.a Address families (IPv4, IPv6)

### **1.4 Troubleshoot OSPF (v2/v3)**

- 1.4.a Network types, area types, and router types
  - 1.4.a.i Point-to-point, multipoint, broadcast, nonbroadcast

## **2.0 Layer 2 Technologies**

### **2.1 Troubleshoot VLANs and trunking**

### **2.2 Troubleshoot STP (Spanning Tree Protocol)**

- 2.2.a STP Root Bridge Election
- 2.2.b STP Path Selection
- 2.2.c STP Port Roles

### **2.3 Troubleshoot EtherChannel**

- 2.3.a Configuration and Troubleshooting of Static and Dynamic EtherChannel

## **3.0 IP Services**

### **3.1 Troubleshoot HSRP, VRRP, and GLBP**

- 3.1.a HSRP Authentication, VRRP Priority, and GLBP

### **3.2 Troubleshoot NAT (Network Address Translation)**

- 3.2.a Static NAT, Dynamic NAT, PAT

### **3.3 Troubleshoot DHCP (Dynamic Host Configuration Protocol)**

- 3.3.a DHCP Snooping and Relay

## **4.0 Security and Network Services**

### **4.1 Troubleshoot ACLs (Access Control Lists)**

### **4.2 Troubleshoot NTP (Network Time Protocol)**

### **4.3 Troubleshoot SNMP (Simple Network Management Protocol)**

### **4.4 Troubleshoot QoS (Quality of Service)**

- 4.4.a Traffic Policing
- 4.4.b Traffic Shaping
- 4.4.c Congestion Management

## **5.0 WAN Technologies**

**5.1 Troubleshoot MPLS (Multiprotocol Label Switching)**

**5.2 Troubleshoot DMVPN (Dynamic Multipoint VPN)**

**5.3 Troubleshoot PPPoE (Point-to-Point Protocol over Ethernet)**

**5.4 Troubleshoot Frame Relay**

**5.5 Troubleshoot GRE (Generic Routing Encapsulation)**

## **6.0 Automation and Programmability**

**6.1 Troubleshoot Network Automation Tools (Ansible, Python, NetFlow, etc.)**

**6.2 Troubleshoot RESTful API and JSON**

- 6.2.a RESTful API Requests (GET, POST, PUT, DELETE)

**6.3 Troubleshoot Network Management Protocols**

- 6.3.a NetFlow, SNMPv3, and Syslog