NETLOGIC TRAINING CENTER

Course Training

CCNP Troubleshooting and Maintaining Cisco IP Networks – CCNP Troubleshooting (300-135 TSHOOT)

version 2.0

Course Content

TSHOOT v2.0, 5 day ILT, includes major updates and follows an updated blueprint. However, note that this course does not cover all items listed on the blueprint. Some older topics have been removed or simplified, while several new IPv6 routing topics have been added. Course content has been adapted to Cisco IOS Software Release 15 and technically updated. Course also introduces new type of labs, called discovery labs. Discovery labs are instructor guided lab through which student explores new topics in an interactive way. All labs are developed only as virtual labs. To get the full course experience, you should cover everything, including Introduction, Discovery labs, Summary, and Module Self-Check.

Course Objective

Upon completing this course, the learner will be able to meet these overall objectives:

- Describe the troubleshooting tools and methodologies that are used to identify and resolve issues in complex enterprise networks
- Isolate and fix the network issues that your company, SECHNIK Networking Ltd., is facing
- Isolate and fix the network issues that your customer, TINC Garbage Disposal Ltd., is facing
- Isolate and fix the network issues that your customer, PILE Forensic Accounting Ltd., is facing
- Isolate and fix the network issues that your customer, Bank of POLONA Ltd., is facing
- Isolate and fix the network issues that your customer, RADULKO Transport Ltd., is facing

Course Prerequisite

Prior to attending this course students should have the knowledge of and experience with the implementation and verification of enterprise routing and switching technologies as offered by the Implementing Cisco Switched Networks (SWITCH) v2.0 and Implementing Cisco IP Routing (ROUTE) v2.0 courses or equivalent skills and knowledge. This includes knowledge and experience of the following technologies:

- Layer 2 switching
- VLANs, VLAN access control lists, port security
- Switch security issues
- Link aggregation protocols
- Spanning Tree Protocol (STP)
- Inter-VLAN routing solutions
- First Hop Redundancy Protocols (FHRPs) - HSRP, VRRP, and GLBP
- Branch office operations
- Enhanced Interior Gateway Routing Protocol (EIGRP)
- Open Shortest Path First (OSPF)
- Layer 3 path control
- Redistribution
- Internal and External Border Gateway Protocol (BGP)
- IPv6 Networking

Course Pre-Test

Not Required

Course Details

Day 1

Item	Subject	Details	Personal Lab and devices	Workgroup Lab and devices
1	Network Principles	• Use Cisco IOS troubleshooting tools a Debug, conditional debug b Ping and trace route with extended options • Apply troubleshooting methodologies a Diagnose the root cause of networking issues (analyze symptoms, identify and describe root cause) b Design and implement valid solutions c Verify and monitor resolution	Theory and Lecture	
		Break		
2	Layer 2 Technologies	• Troubleshoot switch administration a SDM templates b Managing MAC address table c Troubleshoot Err-disable recovery • Troubleshoot Layer 2 protocols a CDP, LLDP b UDLD	Theory and Lecture	
	Summary challenge advance lab for factory default and basic cisco IOS troubleshooting tools	Lab 1 - factory default network device for new configuration Lab 2 - Used cisco IOS tool for troubleshooting such as extended ping, trace route with extend option Lab 3 - Troubleshooting CDP , LLDP and UDLD	(Lab 1 and Lab 3) **Real Device** ISR router 4321 1 Unit Catalyst 2960 1 Unit Catalyst 3560-CX 1 Unit	(Lab 2 and Lab 3) **Real Device** ISR router 4321 1 Unit Catalyst 2960 1 Unit Catalyst 3560-CX 1 Unit

Day 2

Item	Subject	Details	Trainee Lab and devices	Workgroup Lab and devices
2	Layer 2 Technologies	• Troubleshoot VLANs a Access ports b VLAN database c Normal, extended VLAN, voice VLAN • Troubleshoot trunking a VTPv1, VTPv2, VTPv3, VTP pruning b dot1Q c Native VLAN d Manual pruning • Troubleshoot EtherChannels a LACP, PAgP, manual b Layer 2, Layer 3 c Load balancing d EtherChannel misconfiguration guard	Theory and Lecture	
		Break		
		• Troubleshoot spanning tree a PVST+, RPVST +, MST b Switch priority, port priority, path cost, STP timers c PortFast, BPDUguard, BPDUfilter d Loopguard, Rootguard • Troubleshoot other LAN switching technologies a SPAN, RSPAN • Troubleshoot chassis virtualization and aggregation technologies a Stackwise	Theory and Lecture	
	Summary challenge advance lap for VLAN , VTP , Etherchannel STP and Port mirror	Lab 1 - Troubleshooting STP , STP Feature with error-disable state Lab 2 - Troubleshooting VLAN, VTP and Etherchannel misconfigure Lab 3 - Troubleshooting SPAN and RSPAN	(Lab 1 and Lab 2) **Real Device** ISR router 4321 1 Unit Catalyst 2960 1 Unit Catalyst 3560-CX 1 Unit	(Lab 3) **Real Device** ISR router 4321 1 Unit Catalyst 2960 1 Unit Catalyst 3560-CX 1 Unit

Day 3

Item	Subject	Details	Trainee Lab and devices	Workgroup Lab and devices
3	Layer 3 Technologies	• Troubleshoot IPv4 addressing and subnetting a Address types (Unicast, broadcast, multicast, and VLSM) b ARP c DHCP relay and server d DHCP protocol operations • Troubleshoot IPv6 addressing and subnetting a Unicast b EUI-64 c ND, RS/RA d Autoconfig (SLAAC) e DHCP relay and server f DHCP protocol operations • Troubleshoot static routing • Troubleshoot default routing • Troubleshoot administrative distance • Troubleshoot passive interfaces	Theory and Lecture	
		Break		
		• Troubleshoot VRF lite • Troubleshoot filtering with any protocol • Troubleshoot between any routing protocols or routing sources • Troubleshoot manual and auto-summarization with any routing protocol • Troubleshoot policy-based routing • Troubleshoot suboptimal routing • Troubleshoot loop prevention mechanisms a Route tagging, filtering b Split-horizon c Route poisoning • Troubleshoot RIPv2	Theory and Lecture	
	Summary challenge advance lap for Route-map, Policy-Base Routing (PBR), RIPv2	Lab 1 - Troubleshooting Rout-map Lab 2 - Troubleshooting PBR Lab 3 - Troubleshooting RIPv2	(Lab 1, 2, 3 and Lab 4) **Real Device** ISR router 4321 1 Unit Catalyst 2960 1 Unit Catalyst 3560-CX 1 Unit	(Lab 1, 2, 3 and Lab 4) **Real Device** ISR router 4321 1 Unit Catalyst 2960 1 Unit Catalyst 3560-CX 1 Unit

Day 4

Item	Subject	Details	Trainee Lab and devices	Workgroup Lab and devices
3	Layer 3 Technologies	• Troubleshoot EIGRP neighbor relationship and authentication • Troubleshoot loop free path selection a RD, FD, FC, successor, feasible successor • Troubleshoot EIGPR operations a Stuck in active • Troubleshoot EIGRP stubs • Troubleshoot EIGRP load balancing a Equal cost b Unequal cost • Troubleshoot EIGRP metrics • Troubleshoot EIGRP for IPv6 • Troubleshoot OSPF neighbor relationship and authentication	Theory and Lecture	
		Break		
		• Troubleshoot network types, area types, and router types a Point-to-point, multipoint, broadcast, nonbroadcast b LSA types, area type: backbone, normal, transit, stub, NSSA, totally stub c Internal router, backbone router, ABR, ASBR d Virtual link • 3.24 Troubleshoot OSPF path preference • 3.25 Troubleshoot OSPF operations • 3.26 Troubleshoot OSPF for IPv6 • 3.27 Troubleshoot BGP peer relationships and authentication a Peer group b Active, passive c States and timers • 3.28 Troubleshoot eBGP a eBGP b 4-byte AS number c Private AS	Theory and Lecture	
4	VPN Technologies	• Troubleshoot GRE	Theory and Lecture	
	Summary challenge advance lap for OSPF and EIGRP	Lab 1 - Troubleshooting OSPF – 1 - Troubleshooting OSPF – 2 - Troubleshooting OSPF – 3 Lab 2 - Troubleshooting EIGRP	(Lab 1 and Lab 2) **Real Device** ISR router 4321 1 Unit Catalyst 2960 1 Unit Catalyst 3560-CX 1 Unit	(Lab 1 Lab 2) **Real Device** ISR router 4321 1 Unit Catalyst 2960 1 Unit Catalyst 3560-CX 1 Unit

Day 5

Item	Subject	Details	Trainee Lab and devices	Workgroup Lab and devices
5	Infrastructure Security	• Troubleshoot IOS AAA using local database • Troubleshoot device access control a Lines (VTY, AUX, console) b Management plane protection c Password encryption • Troubleshoot router security features a IPv4 access control lists (standard, extended, time-based) b IPv6 traffic filter c Unicast reverse path forwarding	Theory and Lecture	
		Break		
4	Infrastructure Services	• Troubleshoot device management a Console and VTY b Telnet, HTTP, HTTPS, SSH, SCP c (T) FTP • Troubleshoot SNMP a v2 b v3 • Troubleshoot logging • a Local logging, syslog, debugs, conditional debugs b Timestamps • Troubleshoot Network Time Protocol(NTP) a NTP master, client, version 3, version 4 b NTP authentication Troubleshoot IPv4 and IPv6 DHCP a DHCP client, IOS DHCP server, DHCP relay b DHCP options (describe) • Troubleshoot IPv4 Network Address Translation (NAT) a Static NAT, Dynamic NAT, PAT • Troubleshoot SLA architecture • Troubleshoot tracking objects a Tracking objects b Tracking different entities (for example, interfaces, IPSLA results)	Theory and Lecture	
	Summary challenge advance lap for BGP and network services	Lab 1 - Troubleshooting BGP Lab 2 - Troubleshooting DHCP and IP SLA	(Lab 1 and Lab 2) **Real Device** ISR router 4321 1 Unit Catalyst 2960 1 Unit Catalyst 3560-CX 1 Unit	(Lab 1 and Lab 2) **Real Device** ISR router 4321 1 Unit Catalyst 2960 1 Unit Catalyst 3560-CX 1 Unit

Course Post-Test

Not Required

Course Materials

Not include in this class training (but you can requested from sale team)

Course Devices Training (Per 1 Person)

Cisco Catalyst 3560-CX

Cisco Catalyst 2960

Cisco Router ISR 4321

CISCO
CCNP