Supporting Cisco Routing and Switching Network Devices v3.0 (100-490)

Exam Description: The Supporting Cisco Routing and Switching Network Devices v3.0 (RSTECH 100-490) is a 90-minute, 60-70 question exam associated with Cisco Certified Technician Routing and Switching certification. The course, Supporting Cisco Routing and Switching Network Devices v3.0, helps candidates prepare for this exam.

Cisco Certified Technician Routing and Switching certification focuses on the skills required for onsite support and maintenance of Cisco routers, switches, and operating environments. Technicians in this area must be able to identify Cisco router and switch models, accessories, cabling, and interfaces; understand the Cisco IOS software operating modes and identify commonly found software; and be able to use the Cisco Command Line Interface (CLI) to connect and service products. Achieving Cisco Certified Technician Routing and Switching certification is considered the best foundation for supporting other Cisco devices and systems. The exam is closed book and no outside reference materials are allowed.

The following topics are general guidelines for the content likely to be included on the exam. However, other related topics may also appear on any specific delivery of the exam. To better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

25% 1.0 General Networking Knowledge

- 1.1 Use the OSI and TCP/IP models and their associated protocols to explain how data flows in a network
- 1.2 Describe the basic functionality and key differences of this hardware: LAN switch, router, and wireless access points
- 1.3 Differentiate between these Layer 2 technologies: Ethernet, Fast Ethernet, Gigabit Ethernet, Serial, and Optical
- 1.4 Describe LAN cabling
- 1.5 Describe the function of CSU/DSU
- 1.6 Describe Telco termination point
- 1.7 Describe an IPv4 and IPv6 address and subnet
- 1.8 Describe the function of FTP, TFTP and PING
- 1.9 Describe the function of Telnet and SSH

20% 2.0 Cisco Equipment and Related Hardware

- 2.1 Identify the Cisco equipment including the Cisco Nexus 9000 Series, Nexus 7000 Series, Nexus 3000 Series, MDS 9000 Series, Catalyst 9000 Series, Catalyst 6800 Series, Catalyst 6500 E-Series, Catalyst 3850, 3650, 2960, 1000 Series and Meraki switches and Cisco 8000 Series, Cisco ASR 9000 Series, Cisco ASR 1000 Series, NCS 5500 Series ,NCS 5000 Series routers and Cisco 4000, 1100, 900, 800 Series Integrated Service routers.
- 2.2 Identify Cisco products by logo marking and model number (including, but not limited to, locations on chassis, line card, module, or adapter)

2.3 Identify Cisco Transceiver Modules
2.4 Identify and locate the serial number of Cisco products (including, but not limited to, locations on chassis, line card, module, or adapter)
2.5 Identify and describe commonly used components
2.6 Describe hardware memory common terms and their use in Cisco routers and switches
2.7 Identify the cabling on Cisco equipment
2.8 Identify tools for hardware installation and replacement
2.9 Identify the different loop-back plugs (RJ45 Ethernet, T1, 56K)

29% 3.0 Cisco IOS Software Operation

3.1 Describe the key role of Cisco IOS, IOS-XE, IOS-XR and NX-OS software
3.2 Navigate between different operating modes
3.3 Determine the current mode of a device
3.4 Copy and paste a configuration file from/to a router or switch
3.5 Use and interpret the basic Cisco IOS Software commands
3.6 Describe the location and process to change the configuration register parameter
3.7 Identify a configuration file from a Cisco device
3.8 Describe the licensing process on different platforms
3.10 Describe Bundle Mode/Install Mode IOS-XE

26% 4.0 Service-Related Knowledge

4.1 Locate and use a text editor such as, Notepad
4.2 Locate and use the Windows command prompt
4.3 Locate, configure, and use Terminal Emulation (Tera Term, Putty)
4.4 Configure networks settings for Ethernet port on laptop (IP address, subnet mask and default gateway) and establish a connection with Ethernet ports on Cisco equipment using correct cable
4.5 Make a physical connection from laptop to Cisco console port
4.6 Connect, configure, and verify operation status of a device interface
4.7 Configure and use TFTP and FTP servers (TFTP d32/64, FIlezilla)
4.8 Perform software upgrade or downgrade using TFTP, FTP, xmodem, tftpdnld, or USB Storage
4.9 Manage configurations via the TCP/IP network
4.10 Perform password recovery on a Cisco device
4.11 Identify and correct common network problems at Layers 1 and 2
- 4.11.a Serial or ether interface status
- 4.11.b Ethernet layer 2 (full and half duplex, speed issues)
- 4.11.c WAN serial loopback test (T1, 56K and Telco assisted loopback)