

CCNA Skill Mastery

The Aim

The CCNA test is at least as focused on what you can do as it is on what you know. Therefore you will need to spend a significant amount of time mastering the skills you learned in lab. It is not enough to have a general understanding of these Cisco commands. On the test you will be assigned a variety of configuration tasks. You must be able to complete these tasks without the aide of documentation.

The Approach

The best way to master router and switch configuration is by configuring routers and switches again and again! In the movie "The Karate Kid" the character Daniel LaRusso wants to learn karate from Mr. Miyagi. When the young student is assigned tasks like painting the fence and waxing the car he is soon frustrated and disappointed. Only later does he realize that the actions of painting the fence and waxing the car are the same movements needed in karate. Because he has repeated these actions over and over he is on his way to mastering karate.

You will need to configure your switch and router multiple times until the commands are seared into your memory. There is no special trick to this. Just do it again and again!

The Apparatus

I suggest three ways to get all the lab time you could want or need.

I think the best option is to set up your own lab (either your own or your companies). The equipment is not very expensive. I suggest two 2950 switches and three 2611 routers. The current test is based on IOS 15. However IOS 12.2 and above is adequate for most of the commands you will be practicing.

If you purchase this equipment on eBay the total cost (including shipping) is likely to be less than \$200. If you set up your own lab it will always be available to you and you will learn a great deal in the process of setting up the lab.

If you do not wish to (or cannot) set up your own lab then I believe that your next best option is to rent some Cisco routers and switches online. At www.mindtechcom.com you can rent four switches and five routers for only \$1.50 an hour (as of May 2013).



The least attractive option (in my opinion) is some kind of router/switch simulator like Boson's NetSim and Cisco' Packet Tracer.

These simulators have the advantage of being available to you at all times. Unfortunately, simulators do not support every command available in a real device and may not, in every circumstance, respond like a real Cisco device.

Ultimately, your choice of lab environment comes down to a personal preference.

Now that you know your goal, understand how you will achieve that goal and have acquired the equipment you will need, you are ready to look at the skills you must master. **These items are taken from your lab book. This is a study guide and study strategy – not a replacement for your lab book!** Refer to your lab book for the step-by-step details of how to perform each task listed here.

FROM LAB 1

Clear and erase a switch

Examine the status of a switch interface

Set up the basics on a switch: set up a hostname, set the clock, turn up interfaces, set interface speed and duplex mode, create a management vlan, configure the history and timeout on the line console port

FROM LAB 3

Configure an IP address on an interface

Examine the status of a layer 3 interface

Configure a description on an interface

Set a default gateway on a switch

Configure the "logging synchronous" and "no ip domain-lookup" commands.

Use CDP to examine neighboring Cisco devices



FROM LAB 4

Set up a router interface as a DHCP client

Configure a static route

Configure a default route

Configure static IP NAT

Configure dynamic NAT

Configure PAT

FROM LAB 5

Configure user mode, privileged mode VTY passwords

Configure a login banner

Configure SSH

Limit access to telnet and SSH with an access control list

Suspend and resume a telnet session

FROM LAB 6

Configure port security on a switch

Identify ports that have experienced a violation

Clear err-disabled status on a port

Turn off CDP

Configure NTP (Network time protocol)



FROM LAB 7

Configure an ACL (access control list) to block ping and telnet

FROM LAB 9

Turn on IPv6

Assign an IPv6 address to an interface

Use ping, traceroute, telnet and SSH with IPv6 addresses

FROM LAB 10

Configure IPv6 stateless autoconfiguration on an interface

FROM LAB 11

Configure an IPv6 Static Route

FROM LAB 12

Create VLANs

Apply VLANs to switch ports

Remove access control lists from interfaces

Create a VLAN trunk

Limit the number of VLANs that can travel across the trunk

Configure "router on a stick" for inter-VLAN routing



FROM LAB 13

Configure a router as a DHCP server

Trace an IP address assignment to a specific host by using the "show ip arp" and "show ip dhcp binding" commands on the router and the "show mac address-table" command on the switch

Configure an interface as a DHCP relay agent

FROM LAB 15

Understand and interpret the show spanning-tree summary and show spanning-tree commands

Configure a switch as the spanning-tree root or secondary root for a particular VLAN

Configure port fast, BPDU guard and rapid spanning tree

FROM LAB 16

Configure an etherchannel connection between two switches

FROM LAB 18

Configure HDLC on a serial interface

Configure PPP on a serial interface

Configure CHAP authentication

FROM LAB 19

Examine the inverse ARP table, LMI type, and frame-relay pvc with the appropriate show commands

Configure a frame-relay point-to-point sub-interface



FROM LAB 20

Configure and verify a GRE tunnel between two routers

FROM LAB 21

Configure EIGRP on a router

Verify using the appropriate show commands

Use “debug EIGRP neighbors” to understand EIGRP operations

FROM LAB 23

Configure EIGRP for IPv6 on routers

Verify using the appropriate show commands

FROM LAB 24

Configure a single area OSPF network on a router

Verify OSPF using the appropriate show commands

FROM LAB 25

Configure a multi area OSPF network

Verify OSPF using the appropriate show commands

FROM LAB 27

Configure a multi area OSPFv3 network on a router

Verify OSPF using the appropriate show commands



FROM LAB 28

Configure a router as an SNMP client

Configure a router to send debugging information to a syslog server

FROM LAB 29

Perform password recovery on a Cisco router

Back up the IOS image of a Cisco router

View and understand licensing information on Cisco router

