

Lesson Plan Router Config with Docs to go and Questions with EdWin

Subject Area: Cisco

Grade Level 10 and 11

- 1) What do I want my students to learn?
 - a) How to configure a router
 - b) Proper procedure during the configuration
 - c) Common mistakes
 - d) Short cuts
- 2) What standards will be met?
 - a) There are to my knowledge no standards for Cisco.
- 3) What is my goal?
 - a) Have the students learn and understand the Cisco Curriculum.
- 4) How will I assess the learning that took place?
 - a) Hands on building of computer networks.
 - b) Observation
 - c) Quizzing
 - d) Testing
- 5) How will I know when the desired learning has taken place?
 - a) When the students can design and build a network they way I ask them to.
- 6) How will the lessons be taught? (instructional approaches/strategies engage students)
 - a) Teacher
 - i) I will demonstrate.
 - ii) I will lecture.
 - iii) I will drill.
 - iv) I will assist
 - v) I will watch
 - vi) I will test
 - b) Individual
 - i) The student will watch
 - ii) The student will listen
 - iii) The student will practice
 - iv) The student will watch
 - v) The student will test
 - vi) The student will be responsible for part of a network.
 - c) Whole Class
 - i) Students will configure their router as part of a larger network and then get them talking to one another.
 - ii) The students will do the above multiple times with changes on protocols and subnets and filters
 - d) Team
 - i) Teamwork will be needed throughout the above processes.
- 7) What material and/or equipment including software will be necessary
 - a) Computers, routers, hubs, switches, cables, Cisco IOS etc
 - b) Procedure

How to initially configure a router from scratch (NOT using the auto install feature that prompts you through all the commands). This configuration is complete for **LAB_A**. Although you don't need to exit and do a copy run start after every group of commands, it seems easier to understand (and remember!) in sections.

These are global configurations – the router won't like that you're entering the same password and secret, but ignore it you're the emperor, after all.

```
Router> enable
Router# config t
Router(config)# hostname LAB_A
Lab_A(config)# enable secret cisco (cisco is the password to enter the privileged mode)
Lab_A(config)# enable password cisco
Lab_A(config)# ip routing
Lab_A(config)# exit
Lab_A# copy run start
Lab_A# exit
```

Here we are configuring each individual router interface; first ethernet 0

```
Lab_A> enable
Password: cisco
Lab_A# config t
Lab_A(config)# int e0
Lab_A(config-if)# ip address 192.5.5.1 255.255.255.0
```

```
Lab_A(config-if)# no shutdown
Lab_A(config-if)# exit
Lab_A(config)# exit
Lab_A# copy run start
```

Next we configure interface ethernet 1 (if present)

```
Lab_A# config t
Lab_A(config)# int e1
Lab_A(config-if)# ip address 205.7.5.1 255.255.255.0
Lab_A(config-if)# no shutdown
Lab_A(config-if)# exit
Lab_A(config)# exit
Lab_A# copy run start
```

Next we configure interface serial 0 – where we attach the DCE cable – remember to set the clock rate!

```
Lab_A# config t
Lab_A(config)# int s0
Lab_A(config-if)# ip address 201.100.11.1 255.255.255.0
Lab_A(config-if)# no shutdown
Lab_A(config-if)# clock rate 56000
Lab_A(config-if)# exit
Lab_A(config)# exit
Lab_A# copy run start
```

Next we configure interface serial 1 – where we attach the DTE cable

```
Lab_A# config t
Lab_A(config)# int s1
Lab_A(config-if)# no shutdown
Lab_A(config-if)# exit
Lab_A(config)# exit
Lab_A# copy run start
```

Now we're configuring the routing protocol – RIP – we only designate the networks that our router directly touches

```
Lab_A# config t
Lab_A(config)# router rip
Lab_A(config-router)# network 192.5.5.0
Lab_A(config-router)# network 205.7.5.0
Lab_A(config-router)# network 201.100.11.0
Lab_A(config-router)# exit
Lab_A(config)# exit
Lab_A# copy run start
```

This is a convenience – a “name service” of sorts that maps the host name to each of its interface IP addresses.

```
LAB_A# config t
LAB_A(config)# ip host LAB_A 201.100.11.1 192.5.5.1 205.7.5.1
LAB_A(config)# ip host LAB_B 201.100.11.2 219.17.100.1 199.6.13.1
LAB_A(config)# ip host LAB_C 204.204.7.1 223.8.151.1 199.6.13.2
LAB_A(config)# ip host LAB_D 204.204.7.2 210.93.105.1
LAB_A(config)# ip host LAB_E 210.93.105.2
LAB_A(config)# exit
LAB_A# copy run start
```

Here we are configuring the lines through which a person “enters” the router – the first is the direct console line, the second is the virtual, or telnet, line(s), 0 – 4

```
Lab_A# config t
Lab_A(config)# line con 0
Lab_A(config-line)# login
Lab_A(config-line)# password cisco
Lab_A(config-line)# exit
Lab_A(config)# exit
Lab_A# copy run start
```

```
Lab_A# config t
Lab_A(config)# line vty 0 4
Lab_A(config-line)# login
Lab_A(config-line)# password cisco
Lab_A(config-line)# exit
Lab_A(config)# exit
Lab_A# copy run start
```

Now ping all interfaces; issue the command “show ip route” to see all your networks.

Questions to Ask
Does it work?