



## Lab 4: BASIC CISCO IOS COMMAND & ROUTINGS

### Basic CISCO IOS Command References

1. You must understand various configuration modes. Most beginners got confused with various router modes. You must understand the following.
  - a) which configuration mode you are currently in
  - b) Which configuration mode you need to go to for certain commands and how to get there. E.g. Let said you want to configure the Ethernet Interface. You should go to privilege mode then to global configuration mode then to Interface configuration Mode.

Mode Description	Mode Prompt	Purposes
User Exec Mode	Router>	Can execute basic command to show some basic output like routing table etc
Privileged Exec Mode	Router#	Can executed privileged command to show certain output, save, erase config file
Global Configuration Mode	Router(config)#	Initial steps to configure everything
Router Configuration Mode	Router(config-router)#	Configure routing
Interface Configuration Mode	Router(config-if)#	Configure a particular interface
Sub-Interface Configuration Mode	Router(config-ifsub)#	Configure a particular sub-interface

Command is written in ***bold italic***.

Mode Prompt	How to get there
Router>	Normal login or enter password upon telnet
Router#	<b>Router&gt; enable</b> Then enter password <b>Router#</b>
Router(config)#	<b>Router#configure terminal</b> <b>Router(config)#</b>
Router(config-router)#	<b>Router(config) # router rip</b> <b>Router(Config-router)#</b>
Router(config-if)#	<b>Router(config)# interface fastethernet 0/0</b> Interface type slot port <b>Router(config-if)#</b>
Router(config-ifsub)#	<b>Router(config-if)#+</b> ... find out yourself. Let me know when U R successful

## 2. Basic IOS Command Input

IOS has an intelligent command interpreter.

Let said you don't know a particular command and available options, all you need to do is type ? and ? until you get the right command.

e.g. show ip route

a) show ?

b) show ip ?

c) show ip route

Sometimes, you will get a ^ symbols which point to the location of the errors. All you need to do is change the ^ symbol to ? so that all the available options are shown.

For some commands, there is no need for you to enter the whole command, a string that can uniquely identified the command will be sufficient

E.g instead of typing

*Router# configure terminal*

You can type

*Router# config term*

### 3. What is the command to show the current configuration?

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### 4. What is the command to show the startup configuration?

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### 5. What is the command to show the list of interface available in the router?

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### 6. Saving Cisco configuration file

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### 7. Configure Router Name, Hostname = LABA

LAB\_A>

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8. Turn off name services. Sometimes when U type something wrong, it turns out to be translating xyz.... domain etc on the Cisco console screen. (A total waste of time)

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9. What is the specific keys stroke to terminate this time consuming “Translating xxxx”?

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10. Login banner message. Display the login banner. Add a login Banner " Welcome to TSN2201 class" into the router

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11. Assign enable password to router

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The next time, when you type **Router>enable** , it will prompt you for a password

### **Interface configuration.**

12. Configure Router Ethernet Interface

; sometimes it is better to do **Router#show interface** command first to get the correct interface number  
; before you proceed to configure a particular interface

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13. Configure Router Serial Interface

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14. Configure Router loopback interface

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## Understanding Routing Using Packet Tracer

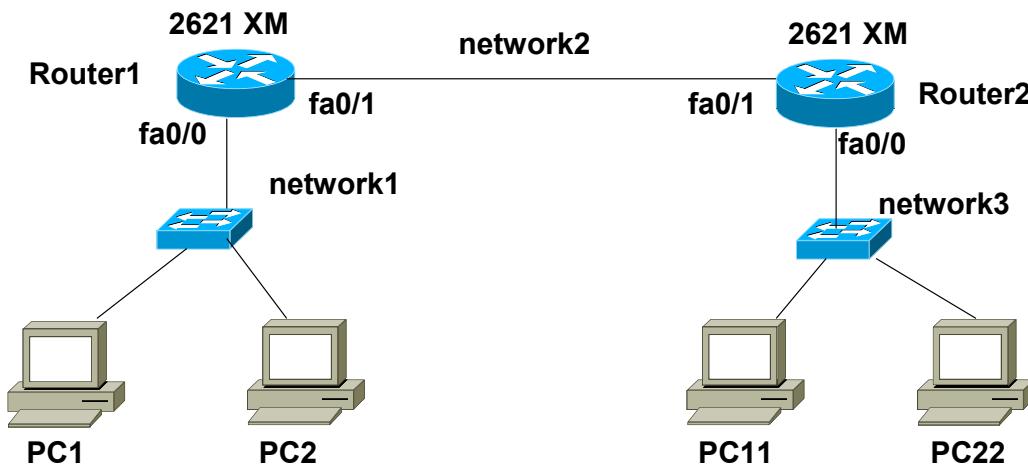
15. The network mask is 255.255.255.0

### i). Steps

To configure the IP Address & routing on the router.

- Double-click the router. A pop-up window will come up
- Select the middle sub-menu (config)
- To configure IP address, select the interfaces
- To configure routing, select routing

16. Use packet tracer to draw and simulate the following network below



Fill in the blank to provide your own addressing

No	Name	Value	
1	Network Mask (for the whole network)	255.255.255.0	
2	Network 1 Address		
3	Network 2 Address		
4	Network 3 Address		

## 17. Static Routing

- Give your own IP addressing for the above network.
- Configure static routing on Router1 and Router2
- Make sure that every station including the router can ping every other station. Then, you configuration is correct.
- After all PC can ping each other, double-click each router and go to CLI Menu on each Router and do type "show ip route"  
Record the output

Router1# show ip route

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Router2 # show ip route

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### **18. Default Routing**

- a) Give your own IP addressing for the above network.
- b) Configure static routing on Router1 and default route on Router2
- c) Make sure that every station including the router can ping every other station. Then, you configuration is correct.
- d) After all PC can ping each other, double-click each router and go to CLI Menu on each Router and do type “show ip route”  
Record the output

Router1# show ip route

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Router2 # show ip route

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### **19. Dynamic Routing. RIP**

- a) Give your own IP addressing for the above network.
- b) Configure RIP routing on Router1 and Router2
- c) Make sure that every station including the router can ping every other station. Then, you configuration is correct.
- d) After all PC can ping each other, double-click each router and go to CLI Menu on each Router and do type “show ip route”  
Record the output

Router1# **show ip route**

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Router2 # show ip route

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### **Reflection questions**

1. Why routing important in computer networking?

2. Name the three different types of routing that you have executed.

3. When do we usually use the default route?

**End of lab.**