

HACETTEPE UNIVERSITY DEPARTMENT OF
COMPUTER ENGINEERING
BBM 453 LAB EXPERIMENT

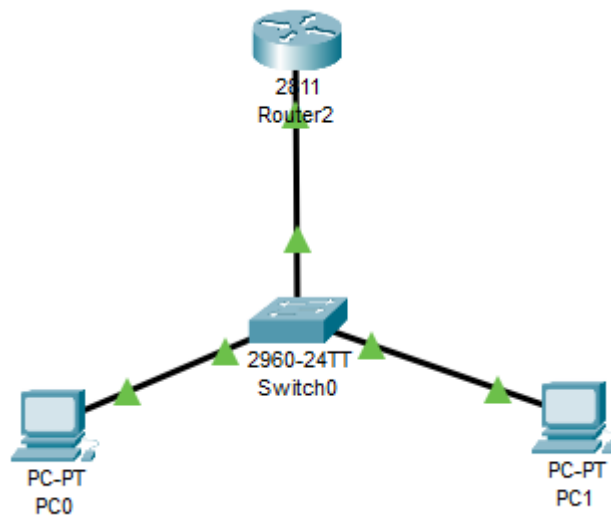


Mehmet Taha USTA – 21527472

Çağlar USLU – 21808388

Group No: 4

1. You should use one router, one switch and at least one PC for your group, and plug required cables and activate required connections. So you are going to create your own local area network with Router as a gateway. In the next lab, you're going to connect your groups and create a WAN (wide area network) as seen in Figure-2.



All connections have been made correctly. All connections are green lights.

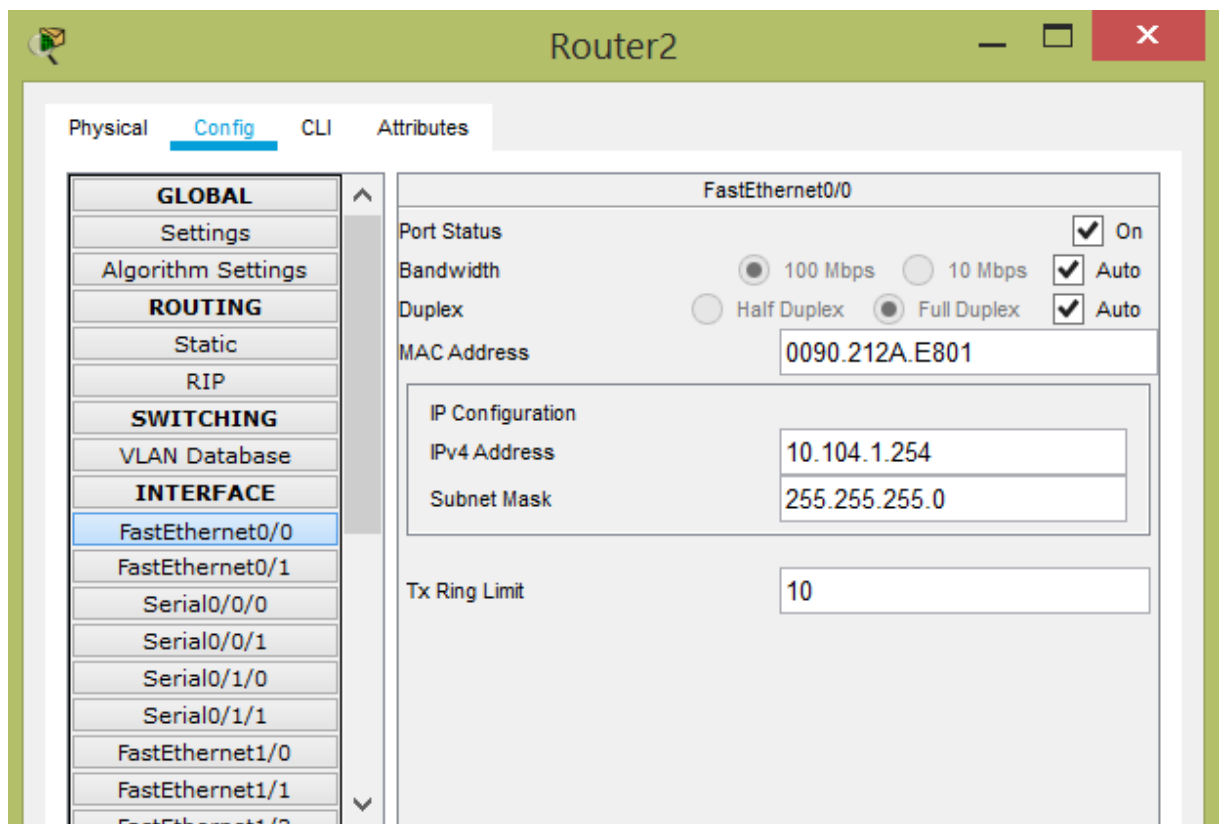
2. You should enter enable mode if you want to configure anything on router. Show commands can be used in user or enable mode (outside of config mode). You can also use ? symbol for displaying usable commands in that mode and their simple explanations.

Group id is 4, we set the IP's again.

From 10.100.1.254 to 10.104.1.254

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
```

```
Router-Group-4(config)#interface FastEthernet0/0
Router-Group-4(config-if)#ip address 10.104.1.254 255.255.255.0
Router-Group-4(config-if)#no shutdown
Router-Group-4(config-if)#^Z
Router-Group-4#
```



3. If there is any configuration settings stored in your Router, which may be left from previous lab sessions, you have to reset your router to factory default setting according to Cisco procedures documented in files in FTP directory of the course.

All necessary adjustments have been made from scratch.

4. First you have to give appropriate names to your Router, according to your section/group number using hostname command

Our group id is 4.

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Router-Group-4
Router-Group-4(config)#^Z
Router-Group-4#
```

Global Settings	
Display Name	<input type="text" value="Router-Group-4"/>
Hostname	<input type="text" value="Router-Group-4"/>
NVRAM	<input type="button" value="Erase"/> <input type="button" value="Save"/>
Startup Config	<input type="button" value="Load..."/> <input type="button" value="Export..."/>
Running Config	<input type="button" value="Export..."/> <input type="button" value="Merge..."/>

5. In this step, each group runs simple show commands, snapshot and discuss the results.

Show version:

```
Router-Group-4#show version
Cisco IOS Software, 2800 Software (C2800NM-ADVIPSERVICESK9-M), Version 12.4(15)T1, RELEASE SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Wed 18-Jul-07 06:21 by pt_rel_team

ROM: System Bootstrap, Version 12.1(3r)T2, RELEASE SOFTWARE (fc1)
Copyright (c) 2000 by cisco Systems, Inc.

System returned to ROM by power-on
System image file is "c2800nm-advipservicesk9-mz.124-15.T1.bin"

This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

cisco 2811 (MPC860) processor (revision 0x200) with 60416K/5120K bytes of memory
Processor board ID JAD05190MT2 (4292891495)
M860 processor: part number 0, mask 49
18 FastEthernet/IEEE 802.3 interface(s)
4 Low-speed serial(sync/async) network interface(s)
239K bytes of NVRAM.
62720K bytes of processor board System flash (Read/Write)

Configuration register is 0x2102
```

Show running-config:

```
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router-Group-4
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface FastEthernet0/0
 ip address 10.104.1.254 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial0/0/0
 no ip address
 clock rate 2000000
 shutdown
!
```

```
interface Serial0/0/1
  no ip address
  clock rate 2000000
  shutdown
!
interface Serial0/1/0
  no ip address
  clock rate 2000000
  shutdown
!
interface Serial0/1/1
  no ip address
  clock rate 2000000
  shutdown
!
interface FastEthernet1/0
  switchport mode access
  shutdown
!
interface FastEthernet1/1
  switchport mode access
  shutdown
!
interface FastEthernet1/2
  switchport mode access
  shutdown
!
interface FastEthernet1/3
  switchport mode access
  shutdown
!
interface FastEthernet1/4
  switchport mode access
  shutdown
!
interface FastEthernet1/5
  switchport mode access
  shutdown
!
interface FastEthernet1/6
  switchport mode access
  shutdown
!
interface FastEthernet1/7
  switchport mode access
  shutdown
!
interface FastEthernet1/8
  switchport mode access
  shutdown
!
interface FastEthernet1/9
  switchport mode access
  shutdown
!
interface FastEthernet1/10
  switchport mode access
  shutdown
!
```

```

interface FastEthernet1/11
  switchport mode access
  shutdown
!
interface FastEthernet1/12
  switchport mode access
  shutdown
!
interface FastEthernet1/13
  switchport mode access
  shutdown
!
interface FastEthernet1/14
  switchport mode access
  shutdown
!
interface FastEthernet1/15
  switchport mode access
  shutdown
!
interface Vlan1
  no ip address
  shutdown
!
router rip
!
ip classless
!
ip flow-export version 9
!
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
  login
!
!
!
end

```

Show startup-config:

```

Router-Group-4#show startup-config
startup-config is not present
Router-Group-4#show start
startup-config is not present
Router-Group-4#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]

```

```
Router-Group-4#show startup-config
Using 1862 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router-Group-4
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface FastEthernet0/0
 ip address 10.104.1.254 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial0/0/0
 no ip address
 clock rate 2000000
 shutdown
!
interface Serial0/0/1
 no ip address
 clock rate 2000000
 shutdown
!
```



```
interface Serial0/1/0
  no ip address
  clock rate 2000000
  shutdown
!
interface Serial0/1/1
  no ip address
  clock rate 2000000
  shutdown
!
interface FastEthernet1/0
  switchport mode access
  shutdown
!
interface FastEthernet1/1
  switchport mode access
  shutdown
!
interface FastEthernet1/2
  switchport mode access
  shutdown
!
interface FastEthernet1/3
  switchport mode access
  shutdown
!
interface FastEthernet1/4
  switchport mode access
  shutdown
!
interface FastEthernet1/5
  switchport mode access
  shutdown
!
interface FastEthernet1/6
  switchport mode access
  shutdown
!
interface FastEthernet1/7
  switchport mode access
  shutdown
!
interface FastEthernet1/8
  switchport mode access
  shutdown
!
interface FastEthernet1/9
  switchport mode access
  shutdown
!
interface FastEthernet1/10
  switchport mode access
  shutdown
!
interface FastEthernet1/11
  switchport mode access
  shutdown
!
```

```

interface FastEthernet1/12
  switchport mode access
  shutdown
!
interface FastEthernet1/13
  switchport mode access
  shutdown
!
interface FastEthernet1/14
  switchport mode access
  shutdown
!
interface FastEthernet1/15
  switchport mode access
  shutdown
!
interface Vlan1
  no ip address
  shutdown
!
router rip
!
ip classless
!
ip flow-export version 9
!
!
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
  login
!
!
!
end

```

Show users:

```

Router-Group-4#show users

```

Line	User	Host(s)	Idle	Location
* 0 con 0		idle	00:00:00	

Interface	User	Mode	Idle	Peer Address
-----------	------	------	------	--------------

dir all-file systems:

```

Router-Group-4#dir all-file systems
%Error opening flash:/all-file systems (File Not Found)

```

```
Router-Group-4#show file systems
```

```
File Systems:
```

	Size(b)	Free(b)	Type	Flags	Prefixes
*	64016384	12822561	flash	rw	flash:
	29688	23590	nvr	rw	nvr

```
Router-Group-4#dir
```

```
Directory of flash:/
```

3	-rw-	50938004	<no date>	c2800nm-advipservicesk9-mz.
124-15.T1.bin				
2	-rw-	28282	<no date>	sigdef-category.xml
1	-rw-	227537	<no date>	sigdef-default.xml

```
64016384 bytes total (12822561 bytes free)
```

```
Router-Group-4#dir nvram
```

```
Directory of nvram:/
```

238	-rw-	1703	<no date>	startup-config
-----	------	------	-----------	----------------

```
1703 bytes total (237588 bytes free)
```

Show interfaces:

```
Router-Group-4#Show interfaces
```

```
FastEthernet0/0 is up, line protocol is up (connected)
```

```
Hardware is Lance, address is 0090.212a.e801 (bia 0090.212a.e801)
```

```
Internet address is 10.104.1.254/24
```

```
MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,  
reliability 255/255, txload 1/255, rxload 1/255
```

```
Encapsulation ARPA, loopback not set
```

```
Full-duplex, 100Mb/s, media type is RJ45
```

```
ARP type: ARPA, ARP Timeout 04:00:00,
```

```
Last input 00:00:08, output 00:00:05, output hang never
```

```
Last clearing of "show interface" counters never
```

```
Input queue: 0/75/0 (size/max/drops); Total output drops: 0
```

```
Queueing strategy: fifo
```

```
Output queue :0/40 (size/max)
```

```
5 minute input rate 0 bits/sec, 0 packets/sec
```

```
5 minute output rate 0 bits/sec, 0 packets/sec
```

```
21 packets input, 2688 bytes, 0 no buffer
```

```
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
```

```
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
```

```
0 input packets with dribble condition detected
```

```
33 packets output, 2936 bytes, 0 underruns
```

```
0 output errors, 0 collisions, 3 interface resets
```

```
0 babbles, 0 late collision, 0 deferred
```

```
--More--
```

Show ip interface brief:

```
Router-Group-4#Show ip interface brief
Interface          IP-Address      OK? Method Status      Protocol
FastEthernet0/0    10.104.1.254   YES manual  up          up
FastEthernet0/1    unassigned      YES unset   administratively down down
Serial0/0/0         unassigned      YES unset   administratively down down
Serial0/0/1         unassigned      YES unset   administratively down down
Serial0/1/0         unassigned      YES unset   administratively down down
Serial0/1/1         unassigned      YES unset   administratively down down
FastEthernet1/0     unassigned      YES unset   administratively down down
FastEthernet1/1     unassigned      YES unset   administratively down down
FastEthernet1/2     unassigned      YES unset   administratively down down
FastEthernet1/3     unassigned      YES unset   administratively down down
FastEthernet1/4     unassigned      YES unset   administratively down down
FastEthernet1/5     unassigned      YES unset   administratively down down
FastEthernet1/6     unassigned      YES unset   administratively down down
FastEthernet1/7     unassigned      YES unset   administratively down down
FastEthernet1/8     unassigned      YES unset   administratively down down
FastEthernet1/9     unassigned      YES unset   administratively down down
FastEthernet1/10    unassigned      YES unset   administratively down down
FastEthernet1/11    unassigned      YES unset   administratively down down
FastEthernet1/12    unassigned      YES unset   administratively down down
FastEthernet1/13    unassigned      YES unset   administratively down down
FastEthernet1/14    unassigned      YES unset   administratively down down
FastEthernet1/15    unassigned      YES unset   administratively down down
Vlan1               unassigned      YES unset   administratively down down
```

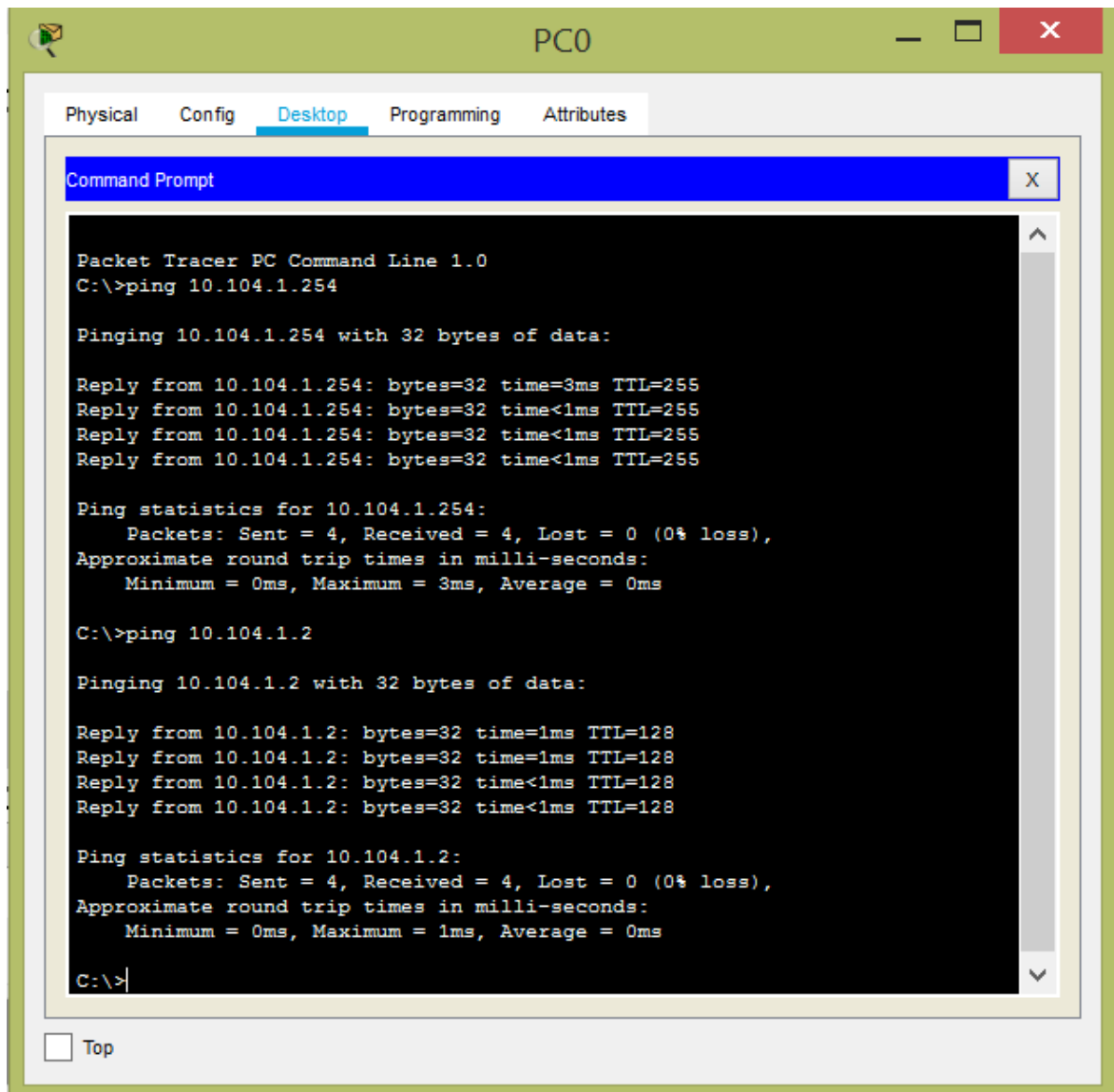
6. Configure IP address of your PC and Router according to Figure 2 - Lab Topology.

```
Router-Group-4(config)#interface FastEthernet0/0
Router-Group-4(config-if)#ip address 10.104.1.254 255.255.255.0
Router-Group-4(config-if)#no shutdown
Router-Group-4(config-if)#^Z
Router-Group-4#
```

7. Finally you are able to ping in both ways (PC to Router, Router to PC), if every cable connections and IP configurations are correct.

Pc0 = 10.104.1.1

Pc1 = 10.104.1.2



Router = 10.104.1.254

```
Router-Group-4#ping 10.104.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.104.1.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/1/3 ms
```