R2 | PC5 | PC4 | R1

```
Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2019 02:42:20
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Press '?' to get help.

Executing the startup file


PC5> dhcp
DDORA IP 192.168.14.4/24 GW 192.168.14.1

PC5> sh ip

NAME        : PC5[1]
IP/MASK     : 192.168.14.4/24
GATEWAY     : 192.168.14.1
DNS         : 192.168.14.1
DHCP SERVER : 192.168.14.1
DHCP LEASE  : 863929, 864000/432000/756000
MAC         : 00:50:79:66:68:04
LPORT       : 10034
RHOST:PORT  : 127.0.0.1:10035
MTU:        : 1500

PC5> ping 192.168.14.5
84 bytes from 192.168.14.5 icmp_seq=1 ttl=64 time=0.765 ms
84 bytes from 192.168.14.5 icmp_seq=2 ttl=64 time=0.874 ms
84 bytes from 192.168.14.5 icmp_seq=3 ttl=64 time=0.735 ms
84 bytes from 192.168.14.5 icmp_seq=4 ttl=64 time=0.804 ms
84 bytes from 192.168.14.5 icmp_seq=5 ttl=64 time=0.792 ms

PC5> ping 192.168.14.1
84 bytes from 192.168.14.1 icmp_seq=1 ttl=255 time=30.955 ms
84 bytes from 192.168.14.1 icmp_seq=2 ttl=255 time=15.958 ms
84 bytes from 192.168.14.1 icmp_seq=3 ttl=255 time=15.523 ms
84 bytes from 192.168.14.1 icmp_seq=4 ttl=255 time=15.393 ms
84 bytes from 192.168.14.1 icmp_seq=5 ttl=255 time=15.411 ms

PC5>
```

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R2 PC5 PC4

```
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Press '?' to get help.

Executing the startup file


PC4> dhcp
DDORA IP 192.168.14.5/24 GW 192.168.14.1

PC4> sh ip

NAME        : PC4[1]
IP/MASK     : 192.168.14.5/24
GATEWAY     : 192.168.14.1
DNS         : 192.168.14.1
DHCP SERVER : 192.168.14.1
DHCP LEASE  : 863979, 864000/432000/756000
MAC         : 00:50:79:66:68:03
LPORT       : 10032
RHOST:PORT  : 127.0.0.1:10033
MTU:        : 1500

PC4>
```

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R2 | PC5 | PC4

```
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For more information, please visit wiki.freecode.com.cn.

Press '?' to get help.

Executing the startup file


PC5> dhcp
DDORA IP 192.168.14.4/24 GW 192.168.14.1

PC5> sh ip

NAME        : PC5[1]
IP/MASK     : 192.168.14.4/24
GATEWAY     : 192.168.14.1
DNS         : 192.168.14.1
DHCP SERVER : 192.168.14.1
DHCP LEASE  : 863929, 864000/432000/756000
MAC         : 00:50:79:66:68:04
LPORT       : 10034
RHOST:PORT  : 127.0.0.1:10035
MTU:        : 1500

PC5>
```

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R2 PC5 PC4 R1 PC6

```
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Press '?' to get help.

Executing the startup file


PC6> request ip
Bad command: "request ip". Use ? for help.

PC6> dhcp
DDD
Can't find dhcp server

PC6>
```

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R2 | PC5 | PC4 | R1

```
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Press '?' to get help.

Executing the startup file


PC5> dhcp
DDORA IP 192.168.14.4/24 GW 192.168.14.1

PC5> sh ip

NAME        : PC5[1]
IP/MASK     : 192.168.14.4/24
GATEWAY     : 192.168.14.1
DNS         : 192.168.14.1
DHCP SERVER : 192.168.14.1
DHCP LEASE  : 863929, 864000/432000/756000
MAC         : 00:50:79:66:68:04
LPORT       : 10034
RHOST:PORT  : 127.0.0.1:10035
MTU:        : 1500

PC5> ping 192.168.14.5
84 bytes from 192.168.14.5 icmp_seq=1 ttl=64 time=0.765 ms
84 bytes from 192.168.14.5 icmp_seq=2 ttl=64 time=0.874 ms
84 bytes from 192.168.14.5 icmp_seq=3 ttl=64 time=0.735 ms
84 bytes from 192.168.14.5 icmp_seq=4 ttl=64 time=0.804 ms
84 bytes from 192.168.14.5 icmp_seq=5 ttl=64 time=0.792 ms

PC5> ping 192.168.14.1
84 bytes from 192.168.14.1 icmp_seq=1 ttl=255 time=30.955 ms
84 bytes from 192.168.14.1 icmp_seq=2 ttl=255 time=15.958 ms
84 bytes from 192.168.14.1 icmp_seq=3 ttl=255 time=15.523 ms
84 bytes from 192.168.14.1 icmp_seq=4 ttl=255 time=15.393 ms
84 bytes from 192.168.14.1 icmp_seq=5 ttl=255 time=15.411 ms

PC5> ping 192.168.12.2
*192.168.14.1 icmp_seq=1 ttl=255 time=30.408 ms (ICMP type:3, code:1, Destination host unreachable)
*192.168.14.1 icmp_seq=2 ttl=255 time=14.954 ms (ICMP type:3, code:1, Destination host unreachable)
*192.168.14.1 icmp_seq=3 ttl=255 time=30.347 ms (ICMP type:3, code:1, Destination host unreachable)
*192.168.14.1 icmp_seq=4 ttl=255 time=30.484 ms (ICMP type:3, code:1, Destination host unreachable)
*192.168.14.1 icmp_seq=5 ttl=255 time=31.252 ms (ICMP type:3, code:1, Destination host unreachable)

PC5>
```

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R2 PC5 PC4 R1

```
ation error: call = ifs_open/read / code = 3588 (No device available)
    / bytes transfered = 0
*Mar  1 00:00:01.939: %SYS-5-CONFIG_I: Configured from memory by console
*Mar  1 00:00:02.139: %SYS-5-RESTART: System restarted --
Cisco IOS Software, 3700 Software (C3725-ADVSECURITYK9-M), Version 12.4(3), RELE
ASE SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Fri 22-Jul-05 02:27 by hqluong
*Mar  1 00:00:02.151: %SNMP-5-COLDSTART: SNMP agent on host R1 is undergoing a c
old start
*Mar  1 00:00:02.883: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state t
o up
*Mar  1 00:00:02.923: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state t
o up
*Mar  1 00:00:02.955: %LINK-3-UPDOWN: Interface FastEthernet1/0, changed state t
o up
*Mar  1 00:00:02.963: %LINK-5-CHANGED: Interface FastEthernet2/0, changed state
to administratively down
*Mar  1 00:00:03.883: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to up
*Mar  1 00:00:03.923: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/1, changed state to up
*Mar  1 00:00:03.955: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et1/0, changed state to up
*Mar  1 00:00:03.963: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et2/0, changed state to down
R1#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#interface f2/0
R1(config-if)#ip address dhcp
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#
*Mar  1 00:17:24.355: %LINK-3-UPDOWN: Interface FastEthernet2/0, changed state to up
*Mar  1 00:17:25.355: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/0, changed state to up
R1(config)#exit
R1#
*Mar  1 00:24:32.163: %SYS-5-CONFIG_I: Configured from console by console
R1#sh ip int br
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        192.168.12.1    YES NVRAM  up                    up
FastEthernet0/1        192.168.11.1    YES NVRAM  up                    up
FastEthernet1/0        192.168.13.2    YES NVRAM  up                    up
FastEthernet2/0        unassigned      YES DHCP   up                    up
R1#sh dhcp lease
Temp IP addr: 0.0.0.0  for peer on Interface: FastEthernet2/0
Temp  sub net mask: 0.0.0.0
   DHCP Lease server: 0.0.0.0, state: 9 Purging
   DHCP transaction id: 37D
   Lease: 0 secs,  Renewal: 0 secs,  Rebind: 0 secs
   Next timer fires after: 00:00:13
   Retry count: 0   Client-ID: cisco-c201.4b3c.0020-Fa2/0
   Client-ID hex dump: 636973636F2D633230312E346233632E
                       303032302D4661322F30
   Hostname: R1
R1#
```

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R2 | PC5 | PC4 | R1

```
% Invalid input detected at '^' marker.

R2(config)#ip dhcp pool mypool
R2(dhcp-config)#network 192.168.14.0 255.255.255.0
R2(dhcp-config)#default-router 192.168.14.1
R2(dhcp-config)#dns-server 192.168.14.1
R2(dhcp-config)#lease 10
R2(dhcp-config)#exit
R2(config)#ip dhcp exclude-address 192.168.14.1 192.168.14.3
                                  ^
% Invalid input detected at '^' marker.

R2(config)#ip exclude address 192.168.14.1 192.168.14.3
                 ^
% Invalid input detected at '^' marker.

R2(config)#ip dhcp exclude address 192.168.14.1 192.168.14.3
                                  ^
% Invalid input detected at '^' marker.

R2(config)#ip dhcp excluded-address 192.168.14.1 192.168.14.3
R2(config)#exit
R2#
*Mar  1 00:12:16.651: %SYS-5-CONFIG_I: Configured from console by console
R2#wr
Building configuration...
[OK]
R2#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R2#sh ip int br
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        192.168.14.1    YES manual up                    up
FastEthernet0/1        unassigned      YES unset  administratively down down
FastEthernet1/0        unassigned      YES unset  administratively down down
FastEthernet2/0        unassigned      YES unset  administratively down down
R2#sh ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.14.0/24 is directly connected, FastEthernet0/0
R2#sh ip dhcp binding
Bindings from all pools not associated with VRF:
IP address          Client-ID/              Lease expiration        Type
                    Hardware address/
                    User name
192.168.14.4        0100.5079.6668.04       Mar 11 2002 12:14 AM    Automatic
192.168.14.5        0100.5079.6668.03       Mar 11 2002 12:15 AM    Automatic
R2#
```

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*lab6.pdf
File | C:/Users/ASUS/Desktop/Computer%20Networks/Lab/lab6.pdf
Draw Ask Copilot 27 of 32

- Sh ip int br

Questions

- Can PC5 PING PC1? NO
  - If yes, why?
  - If not how to solve it? By making R1 the Deafult Gateway
- Add another PC6 in LAN 2.

Can this PC request a dynamic IP address?

No. We have to create a pool for Lan 2 (with changing the data to fit it), then we need to make a relay agent

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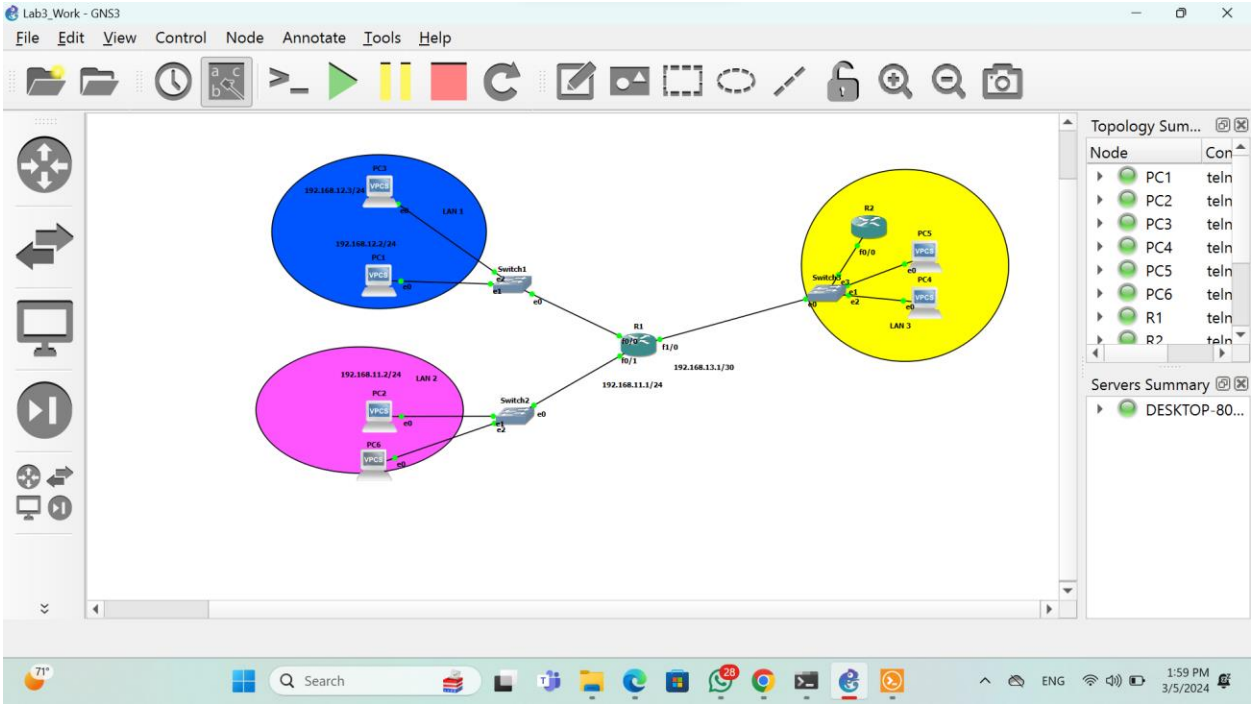
*lab6.pdf
File | C:/Users/ASUS/Desktop/Computer%20Networks/Lab/lab6.pdf
Draw Ask Copilot 29 of 32

Questions?

- On which router/interface should we configure a DHCP relay agent? R1 on F0/1
- Can PC6 now request an address? Still NO
  - If yes, why?
  - If no, how will you solve it?

R2 only sees Lan 3, we have to do Static Routing, Go to R2 and command it to go to the next hup interface

Search ENG 2:11 PM 3/5/2024


Lab3_Work - GNS3
File Edit View Control Node Annotate Tools Help
PC3
192.168.12.3/24
LAN 1
192.168.12.2/24
PC1
Switch1
e2
e1
e0
R1
f0/0
f1/0
192.168.13.1/30
192.168.11.1/24
192.168.11.2/24
LAN 2
PC2
PC6
Switch2
R2
PC5
PC4
LAN 3
Topology Sum...
Node
PC1
PC2
PC3
PC4
PC5
PC6
R1
Servers Summary
DESKTOP-80...
Search
ENG
1:59 PM
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