

BATCH: A3

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```

*Mar 1 00:00:07.191: %LINEPROTO-5-UPDOWN: Line protocol on Interface IPv6-mpls, changed state to up
*Mar 1 00:00:07.371: %SYS-5-CONFIG-I: Configured from memory by console
*Mar 1 00:00:07.639: %SYS-5-RESTART: System restarted --
Cisco IOS Software, 3700 Software (C3745-ADVIPSERVICESK9-M), Version 12.4(25d), RELEASE SOFTWARE (fc6)
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Compiled Wed 18-Aug-10 08:18 by prod_rel_team

*Mar 1 00:00:07.647: %SNMP-5-COLDSTART: SNMP agent on host R2 is undergoing a cold start
*Mar 1 00:00:07.667: %LINK-5-CHANGED: Interface FastEthernet0/1, changed state to administratively down
*Mar 1 00:00:07.711: %LINK-5-CHANGED: Interface FastEthernet0/0, changed state to administratively down
*Mar 1 00:00:08.667: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
*Mar 1 00:00:08.711: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to down

R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#int f0/0
R2(config-if)#ip addr 14.24.74.126 255.255.255.128
R2(config-if)#no shutdown
R2(config-if)#

*Mar 1 00:04:00.411: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 00:04:01.411: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

R2(config)#exit
R2(config)#int f0/1
R2(config-if)#ip addr 10.10.10.1 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#exit
R2(config)#

*Mar 1 00:04:24.339: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up
*Mar 1 00:04:25.339: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

R2(config)#do wr
Building configuration...

[OK]

R2(config)#ip route 20.20.20.0 255.255.255.0 10.10.10.3
R2(config)#ip route 30.30.30.0 255.255.255.0 10.10.10.3
R2(config)#ip route 14.24.74.192 255.255.255.240 10.10.10.3
R2(config)#ip route 14.24.74.208 255.255.255.248 10.10.10.3
R2(config)#ip route 14.24.74.128 255.255.255.192 10.10.10.2
R2(config)#

```

```

e to up
*Mar 1 00:00:06.927: %LINEPROTO-5-UPDOWN: Line protocol on Interface IPv6-mpls, changed state to up
*Mar 1 00:00:07.131: %SYS-5-CONFIG-I: Configured from memory by console
*Mar 1 00:00:07.475: %SYS-5-RESTART: System restarted --
Cisco IOS Software, 3700 Software (C3745-ADVIPSERVICESK9-M), Version 12.4(25d), RELEASE SOFTWARE (fc6)
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*Mar 1 00:00:07.483: %SNMP-5-COLDSTART: SNMP agent on host R3 is undergoing a cold start
*Mar 1 00:00:07.507: %LINK-5-CHANGED: Interface FastEthernet0/0, changed state to administratively down
*Mar 1 00:00:07.507: %LINK-5-CHANGED: Interface FastEthernet0/1, changed state to administratively down
*Mar 1 00:00:08.503: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to down
*Mar 1 00:00:08.507: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down

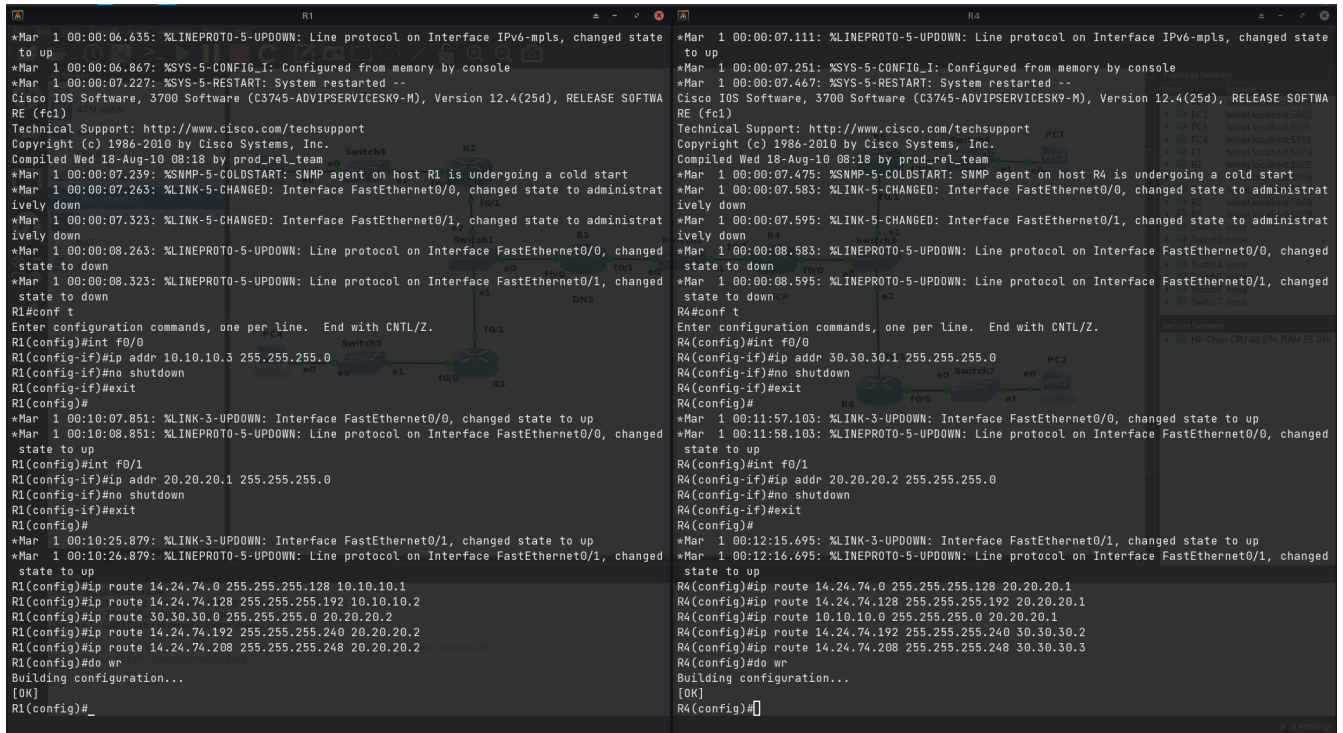
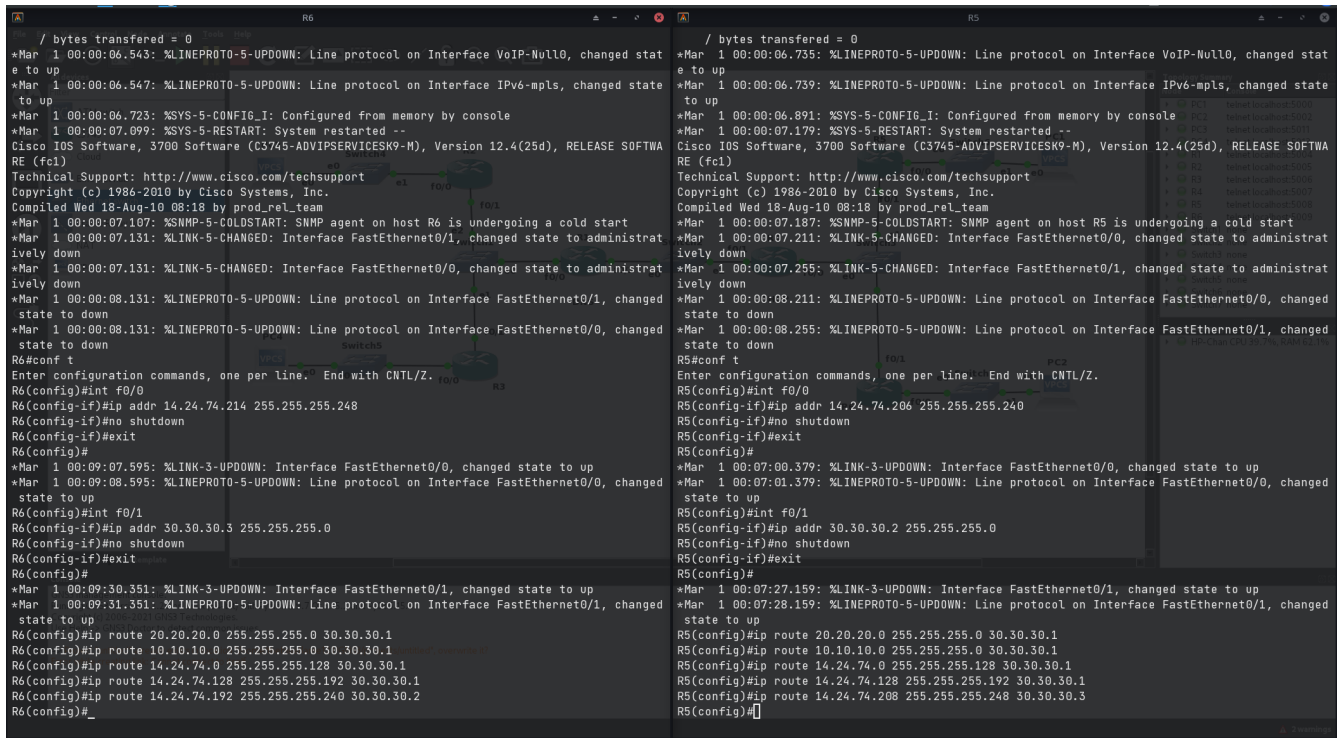
R3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#int f0/0
R3(config-if)#ip addr 14.24.74.190 255.255.255.192#
R3(config-if)#no shutdown
R3(config-if)#exit
R3(config)#

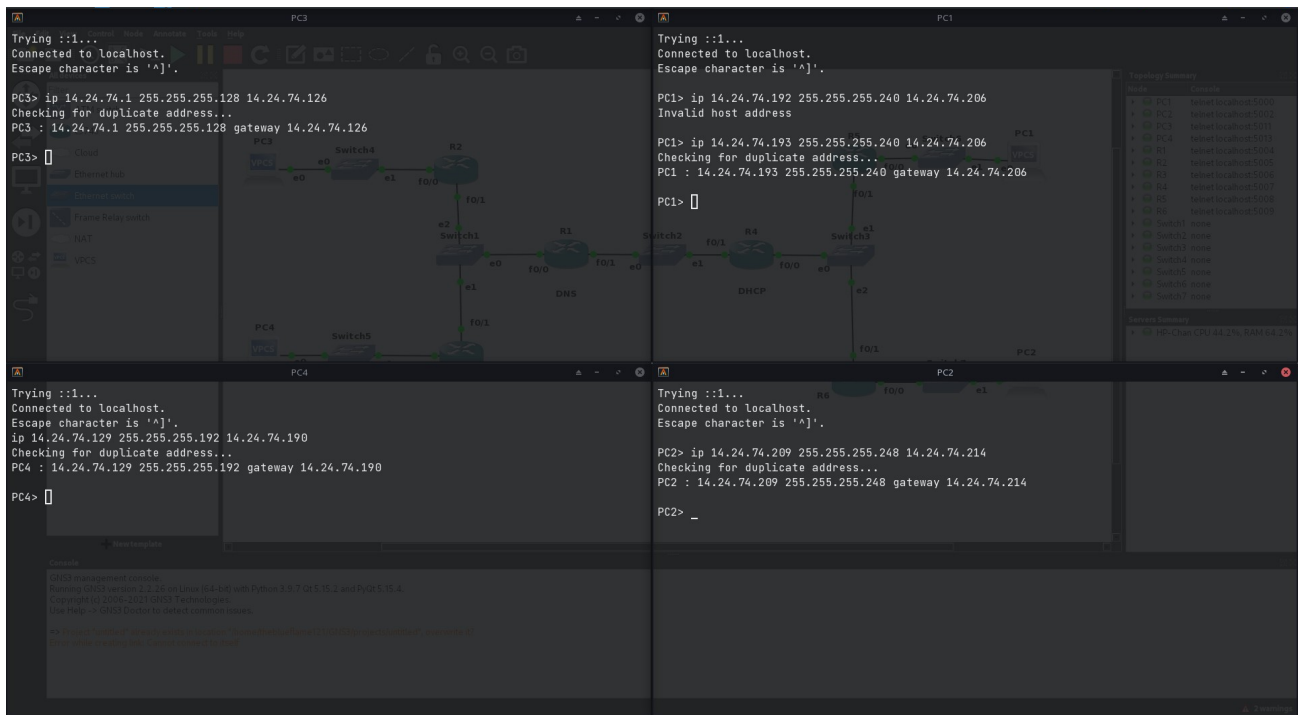
*Mar 1 00:05:50.687: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 00:05:51.687: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R3(config)#int f0/1
R3(config-if)#ip addr 10.10.10.2 255.255.255.0
R3(config-if)#no shutdown
R3(config-if)#exit
R3(config)#do wr
Building configuration...

*Mar 1 00:06:11.335: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up
*Mar 1 00:06:12.399: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up[OK]

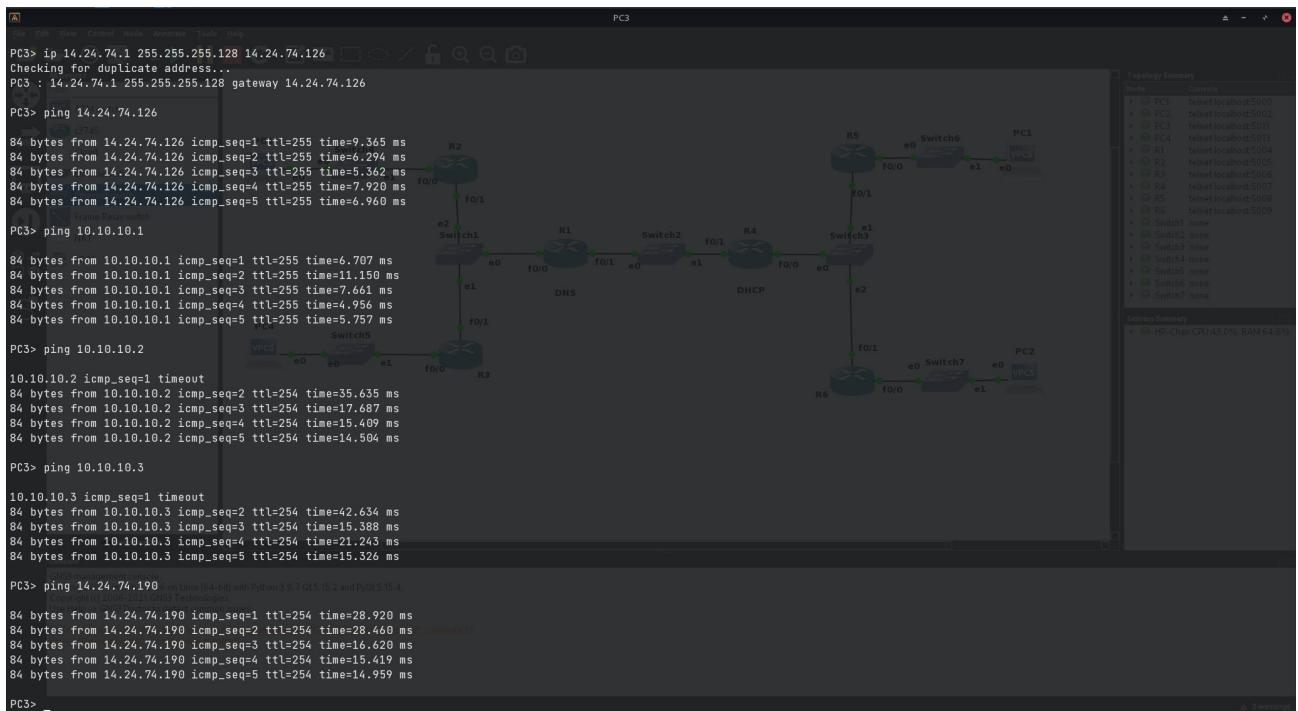
R3(config)#ip route 20.20.20.0 255.255.255.0 10.10.10.3
R3(config)#ip route 30.30.30.0 255.255.255.0 10.10.10.3
R3(config)#ip route 14.24.74.192 255.255.255.240 10.10.10.3
R3(config)#ip route 14.24.74.208 255.255.255.248 10.10.10.3
R3(config)#ip route 14.24.74.0 255.255.255.128 10.10.10.1
R3(config)#_

```





//Pinging Everything from PC3 to ensure connectivity



```
PC3> ping 14.24.74.129
84 bytes from 14.24.74.129 icmp_seq=2 ttl=254 time=28.460 ms
84 bytes from 14.24.74.129 icmp_seq=3 ttl=254 time=16.620 ms
84 bytes from 14.24.74.129 icmp_seq=4 ttl=254 time=15.419 ms
84 bytes from 14.24.74.129 icmp_seq=5 ttl=254 time=14.959 ms

PC3> ping 14.24.74.129
14.24.74.129 icmp_seq=1 timeout
84 bytes from 14.24.74.129 icmp_seq=2 ttl=62 time=39.061 ms
84 bytes from 14.24.74.129 icmp_seq=3 ttl=62 time=28.124 ms
84 bytes from 14.24.74.129 icmp_seq=4 ttl=62 time=25.862 ms
84 bytes from 14.24.74.129 icmp_seq=5 ttl=62 time=26.969 ms

PC3> ping 20.20.20.1
84 bytes from 20.20.20.1 icmp_seq=1 ttl=254 time=31.567 ms
84 bytes from 20.20.20.1 icmp_seq=2 ttl=254 time=16.365 ms
84 bytes from 20.20.20.1 icmp_seq=3 ttl=254 time=16.835 ms
84 bytes from 20.20.20.1 icmp_seq=4 ttl=254 time=26.130 ms
84 bytes from 20.20.20.1 icmp_seq=5 ttl=254 time=24.985 ms

PC3> ping 20.20.20.2
20.20.20.2 icmp_seq=1 timeout
84 bytes from 20.20.20.2 icmp_seq=2 ttl=253 time=55.676 ms
84 bytes from 20.20.20.2 icmp_seq=3 ttl=253 time=24.863 ms
84 bytes from 20.20.20.2 icmp_seq=4 ttl=253 time=28.321 ms
84 bytes from 20.20.20.2 icmp_seq=5 ttl=253 time=29.611 ms

PC3> ping 30.30.30.1
84 bytes from 30.30.30.1 icmp_seq=1 ttl=253 time=39.991 ms
84 bytes from 30.30.30.1 icmp_seq=2 ttl=253 time=33.837 ms
84 bytes from 30.30.30.1 icmp_seq=3 ttl=253 time=35.019 ms
84 bytes from 30.30.30.1 icmp_seq=4 ttl=253 time=28.066 ms
84 bytes from 30.30.30.1 icmp_seq=5 ttl=253 time=25.526 ms

PC3> ping 30.30.30.2
30.30.30.2 icmp_seq=1 timeout
84 bytes from 30.30.30.2 icmp_seq=2 ttl=252 time=84.898 ms
84 bytes from 30.30.30.2 icmp_seq=3 ttl=252 time=57.925 ms
84 bytes from 30.30.30.2 icmp_seq=4 ttl=252 time=38.860 ms
84 bytes from 30.30.30.2 icmp_seq=5 ttl=252 time=44.005 ms

PC3> _
```

Device	IP Address
PC1	14.24.74.129
PC2	20.20.20.1
PC3	30.30.30.1
R1	10.10.10.1
R2	10.10.10.2
R3	10.10.10.3
R4	10.10.10.4
R5	10.10.10.5
R6	10.10.10.6
Switch1	10.10.10.7
Switch2	10.10.10.8
Switch3	10.10.10.9
Switch4	10.10.10.10
Switch5	10.10.10.11
Switch6	10.10.10.12
Switch7	10.10.10.13

```
PC3> ping 30.30.30.3
84 bytes from 30.30.30.3 icmp_seq=2 ttl=252 time=84.898 ms
84 bytes from 30.30.30.3 icmp_seq=3 ttl=252 time=57.925 ms
84 bytes from 30.30.30.3 icmp_seq=4 ttl=252 time=38.860 ms
84 bytes from 30.30.30.3 icmp_seq=5 ttl=252 time=44.005 ms

PC3> ping 14.24.74.206
30.30.30.3 icmp_seq=1 timeout
84 bytes from 14.24.74.206 icmp_seq=2 ttl=252 time=64.378 ms
84 bytes from 14.24.74.206 icmp_seq=3 ttl=252 time=46.122 ms
84 bytes from 14.24.74.206 icmp_seq=4 ttl=252 time=38.400 ms
84 bytes from 14.24.74.206 icmp_seq=5 ttl=252 time=53.774 ms

PC3> ping 14.24.74.193
14.24.74.193 icmp_seq=1 timeout
84 bytes from 14.24.74.193 icmp_seq=2 ttl=60 time=62.416 ms
84 bytes from 14.24.74.193 icmp_seq=3 ttl=60 time=46.145 ms
84 bytes from 14.24.74.193 icmp_seq=4 ttl=60 time=67.461 ms
84 bytes from 14.24.74.193 icmp_seq=5 ttl=60 time=69.464 ms

PC3> ping 14.24.74.214
84 bytes from 14.24.74.214 icmp_seq=1 ttl=252 time=50.643 ms
84 bytes from 14.24.74.214 icmp_seq=2 ttl=252 time=44.802 ms
84 bytes from 14.24.74.214 icmp_seq=3 ttl=252 time=33.798 ms
84 bytes from 14.24.74.214 icmp_seq=4 ttl=252 time=62.912 ms
84 bytes from 14.24.74.214 icmp_seq=5 ttl=252 time=35.399 ms

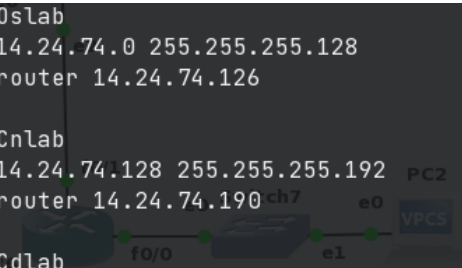
PC3> ping 14.24.74.209
14.24.74.209 icmp_seq=1 timeout
84 bytes from 14.24.74.209 icmp_seq=2 ttl=60 time=49.511 ms
84 bytes from 14.24.74.209 icmp_seq=3 ttl=60 time=45.152 ms
84 bytes from 14.24.74.209 icmp_seq=4 ttl=60 time=44.258 ms
84 bytes from 14.24.74.209 icmp_seq=5 ttl=60 time=44.160 ms

PC3> _
```

Device	IP Address
PC1	14.24.74.129
PC2	20.20.20.1
PC3	30.30.30.1
R1	10.10.10.1
R2	10.10.10.2
R3	10.10.10.3
R4	10.10.10.4
R5	10.10.10.5
R6	10.10.10.6
Switch1	10.10.10.7
Switch2	10.10.10.8
Switch3	10.10.10.9
Switch4	10.10.10.10
Switch5	10.10.10.11
Switch6	10.10.10.12
Switch7	10.10.10.13

//DHCP Setup

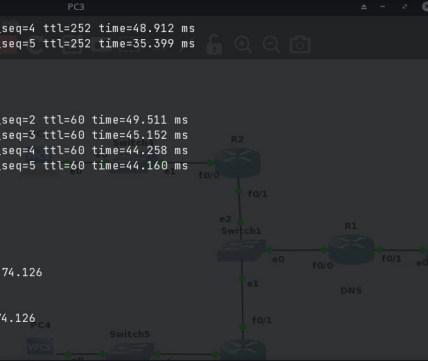
```
R4(config)#ip dhcp pool Oslab
R4(dhcp-config)#network 14.24.74.0 255.255.255.128
R4(dhcp-config)#default-router 14.24.74.126
R4(dhcp-config)#exit
R4(config)#ip dhcp pool Cnlab
R4(dhcp-config)#network 14.24.74.128 255.255.255.192
R4(dhcp-config)#default-router 14.24.74.190
R4(dhcp-config)#exit
R4(config)#ip dhcp pool Cdlab
R4(dhcp-config)#network 14.24.74.192 255.255.255.240
R4(dhcp-config)#default-router 14.24.74.206
R4(dhcp-config)#exit
R4(config)#ip dhcp pool Dslab
R4(dhcp-config)#network 14.24.74.208 255.255.255.248
R4(dhcp-config)#default-router 14.24.74.214
R4(dhcp-config)#exit
R4(config)#
*Mar 1 00:50:29.247: %DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged 14.24.74.1
.
R4(config)#
*Mar 1 00:52:14.991: %DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged 14.24.74.1
29.
R4(config)#
*Mar 1 00:52:24.851: %DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged 14.24.74.1
93.
R4(config)#
*Mar 1 00:52:34.243: %DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged 14.24.74.2
09.
R4(config)#_
```



Servers Summary

- HP-Chan CPU 44.2%, RAM 64.3%

//Getting new ips via DHCP



PC3> ping 14.24.74.209

```
14.24.74.209 icmp_seq=1 timeout
84 bytes from 14.24.74.209 icmp_seq=2 ttl=60 time=49.511 ms
84 bytes from 14.24.74.209 icmp_seq=3 ttl=60 time=45.152 ms
84 bytes from 14.24.74.209 icmp_seq=4 ttl=60 time=44.258 ms
84 bytes from 14.24.74.209 icmp_seq=5 ttl=60 time=44.160 ms
```

PC3> dhcp

```
DDO
Can't find dhcp server
```

PC3> dhcp

```
DDORA IP 14.24.74.2/25 GW 14.24.74.126
```

PC3> dhcp

```
DORA IP 14.24.74.2/25 GW 14.24.74.126
```

PC3>

PC4> Trying ::1...
Connected to localhost.
Escape character is '^J'.
ip 14.24.74.129 255.255.255.192 14.24.74.190
Checking for duplicate address...
PC4 : 14.24.74.129 255.255.255.192 gateway 14.24.74.190

PC4> dhcp

```
DDORA IP 14.24.74.130/26 GW 14.24.74.190
```

PC4>

PC1> Trying ::1...
Connected to localhost.
Escape character is '^J'.
ip 14.24.74.192 255.255.255.240 14.24.74.206
Invalid host address
PC1> ip 14.24.74.193 255.255.255.240 14.24.74.206
Checking for duplicate address...
PC1 : 14.24.74.193 255.255.255.240 gateway 14.24.74.206

PC1> dhcp

```
DDO
Can't find dhcp server
```

PC1> dhcp

```
DDORA IP 14.24.74.194/28 GW 14.24.74.206
```

PC1>

PC2> Trying ::1...
Connected to localhost.
Escape character is '^J'.
ip 14.24.74.209 255.255.255.248 14.24.74.214
Checking for duplicate address...
PC2 : 14.24.74.209 255.255.255.248 gateway 14.24.74.214

PC2> dhcp

```
DDORA IP 14.24.74.210/29 GW 14.24.74.214
```

PC2>

GDNS management console:
Running GDNS version 2.2.20 on Linux (i686) with Python 3.0.7 Qt 5.15.2 and PyQ 5.15.4
Copyright (c) 2006-2021 GDNS Technologies
Use Help -> GDNS Doctor to detect common issues.

//Setting Up DNS server

```
R1(config)#ip dns server
R1(config)#ip nhost oslab.com 14.24.74.2 blueflame
R1(config)#ip nhost cnlab.com 14.24.74.130
R1(config)#ip nhost cdlab.com 14.24.74.194
R1(config)#ip nhost dclab.com 14.24.74.210
R1(config)#_
```

//Pinging using DNS

The screenshot displays a network simulation environment with four terminal windows and a network diagram.

PC3 Terminal:

```
Trying ::1...
Connected to localhost.
Escape character is '^]'.

PC3> ping Dslab.com
Dslab.com resolved to 14.24.74.209

84 bytes from 14.24.74.209 icmp_seq=1 ttl=60 time=52.098 ms
84 bytes from 14.24.74.209 icmp_seq=2 ttl=60 time=43.027 ms
84 bytes from 14.24.74.209 icmp_seq=3 ttl=60 time=44.723 ms
84 bytes from 14.24.74.209 icmp_seq=4 ttl=60 time=46.237 ms
84 bytes from 14.24.74.209 icmp_seq=5 ttl=60 time=45.355 ms

PC3> 
```

PC1 Terminal:

```
Trying ::1...
Connected to localhost.
Escape character is '^]'.

PC1> ping Dslab.com
Dslab.com resolved to 14.24.74.209

Dslab.com icmp_seq=1 timeout
84 bytes from 14.24.74.209 icmp_seq=2 ttl=62 time=29.550 ms
84 bytes from 14.24.74.209 icmp_seq=3 ttl=62 time=27.148 ms
84 bytes from 14.24.74.209 icmp_seq=4 ttl=62 time=24.215 ms
84 bytes from 14.24.74.209 icmp_seq=5 ttl=62 time=24.784 ms

PC1> 
```

PC4 Terminal:

```
Trying ::1...
Connected to localhost.
Escape character is '^]'.

PC4> ping CdLab.com
CdLab.com resolved to 14.24.74.193

84 bytes from 14.24.74.193 icmp_seq=1 ttl=60 time=60.713 ms
84 bytes from 14.24.74.193 icmp_seq=2 ttl=60 time=56.082 ms
84 bytes from 14.24.74.193 icmp_seq=3 ttl=60 time=55.882 ms
84 bytes from 14.24.74.193 icmp_seq=4 ttl=60 time=54.635 ms
84 bytes from 14.24.74.193 icmp_seq=5 ttl=60 time=64.718 ms

PC4> 
```

PC2 Terminal:

```
Trying ::1...
Connected to localhost.
Escape character is '^]'.

PC2> ping Cnlab.com
Cnlab.com resolved to 14.24.74.129

84 bytes from 14.24.74.129 icmp_seq=1 ttl=60 time=50.382 ms
84 bytes from 14.24.74.129 icmp_seq=2 ttl=60 time=55.069 ms
84 bytes from 14.24.74.129 icmp_seq=3 ttl=60 time=56.141 ms
84 bytes from 14.24.74.129 icmp_seq=4 ttl=60 time=55.134 ms
84 bytes from 14.24.74.129 icmp_seq=5 ttl=60 time=53.827 ms

PC2> 
```

Network Diagram:

The diagram shows a central router R1 connected to four switches: Switch1, Switch2, Switch3, and Switch4. Switch1 is connected to PC3, Switch2 to PC4, Switch3 to PC1, and Switch4 to PC2. A DHCP server is connected to Switch3. The network is labeled with various interfaces like e0, e1, e2, e3, e4, e5, e6, e7, e8, e9, e10, e11, e12, e13, e14, e15, e16, e17, e18, e19, e20, e21, e22, e23, e24, e25, e26, e27, e28, e29, e30, e31, e32, e33, e34, e35, e36, e37, e38, e39, e40, e41, e42, e43, e44, e45, e46, e47, e48, e49, e50, e51, e52, e53, e54, e55, e56, e57, e58, e59, e60, e61, e62, e63, e64, e65, e66, e67, e68, e69, e70, e71, e72, e73, e74, e75, e76, e77, e78, e79, e80, e81, e82, e83, e84, e85, e86, e87, e88, e89, e90, e91, e92, e93, e94, e95, e96, e97, e98, e99, e100.