Southeast University

Department of Computer Science and Engineering

Assignment on Computer Networking Lab

Course Title: Computer Networking Lab

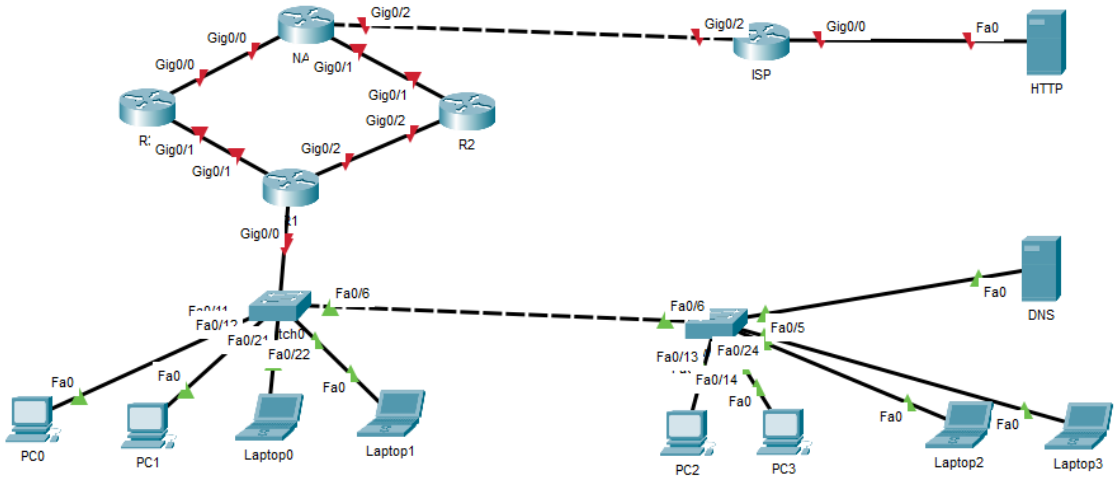
Course Code: CSE342

Section: 1

Mohammad Sadiqur Rahman

Batch: 13 (weekend), ID: 2022000011006

Primary Architecture:



Vlan:

Switch 0

Switch>
Switch>en
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name vlan10
Switch(config-vlan)#ex
Switch(config)#vlan 20
Switch(config-vlan)#name vlan20
Switch(config-vlan)#ex
Switch(config)#inte
Switch(config)#interface range fas
Switch(config)#interface range fastEthernet 0/11-12
Switch(config-if-range)#swit
Switch(config-if-range)#switchport mode acc
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#swi
Switch(config-if-range)#switchport acce
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#ex
Switch(config)#interface range fastEthernet 0/21-22
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#ex
Switch(config)#ex
Switch#

%SYS-5-CONFIG_I: Configured from console by console

Switch#show vlan

VLAN Name Status Ports
---- ------------------------------ --------- -------------------------------
1 default active Fa0/1, Fa0/2, Fa0/3, Fa0/4
Fa0/5, Fa0/6, Fa0/7, Fa0/8
Fa0/9, Fa0/10, Fa0/13, Fa0/14
Fa0/15, Fa0/16, Fa0/17, Fa0/18
Fa0/19, Fa0/20, Fa0/23, Fa0/24
Gig0/1, Gig0/2
10 vlan10 active Fa0/11, Fa0/12
20 vlan20 active Fa0/21, Fa0/22
1002 fddi-default active
1003 token-ring-default active
1004 fddinet-default active
1005 trnet-default active

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1 enet 100001 1500 - - - - - 0 0
10 enet 100010 1500 - - - - - 0 0
20 enet 100020 1500 - - - - - 0 0
1002 fddi 101002 1500 - - - - - 0 0
1003 tr 101003 1500 - - - - - 0 0
1004 fdnet 101004 1500 - - - ieee - 0 0
1005 trnet 101005 1500 - - - ibm - 0 0

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

Remote SPAN VLANs

Primary Secondary Type Ports
------- --------- ----------------- --
Switch#

```
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                Fa0/9, Fa0/10, Fa0/13, Fa0/14
                                                Fa0/15, Fa0/16, Fa0/17, Fa0/18
                                                Fa0/19, Fa0/20, Fa0/23, Fa0/24
                                                Gig0/1, Gig0/2
10   vlan10                           active    Fa0/11, Fa0/12
20   vlan20                           active    Fa0/21, Fa0/22
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
20   enet  100020     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

Remote SPAN VLANs
------------------------------------------------------------------------------

Primary Secondary Type              Ports
------- --------- ----------------- ------------------------------------------
Switch#
```

Switch1

Switch>
Switch>
Switch>en
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name vlan10
Switch(config-vlan)#ex
Switch(config)#vlan 20
Switch(config-vlan)#name vlan20
Switch(config-vlan)#ex
Switch(config)#inter
Switch(config)#interface range fast
Switch(config)#interface range fastEthernet 0/13-14
Switch(config-if-range)#switch
Switch(config-if-range)#switchport mode acc
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#swit

```
Switch(config-if-range)#switchport acc
Switch(config-if-range)#switchport access vlan10
^
% Invalid input detected at '^' marker.
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#ex
Switch(config)#interface range fastEthernet 0/23-24
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#ex
Switch(config)#interface fastEthernet 0/05
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#ex
Switch(config)#ex
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show vlan

VLAN Name Status Ports
---- -------------------------------- --------- -------------------------------
1 default active Fa0/1, Fa0/2, Fa0/3, Fa0/4
Fa0/6, Fa0/7, Fa0/8, Fa0/9
Fa0/10, Fa0/11, Fa0/12, Fa0/15
Fa0/16, Fa0/17, Fa0/18, Fa0/19
Fa0/20, Fa0/21, Fa0/22, Gig0/1
Gig0/2
10 vlan10 active Fa0/5, Fa0/13, Fa0/14
20 vlan20 active Fa0/23, Fa0/24
1002 fddi-default active
1003 token-ring-default active
1004 fddinet-default active
1005 trnet-default active

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1 enet 100001 1500 - - - - - 0 0
10 enet 100010 1500 - - - - - 0 0
20 enet 100020 1500 - - - - - 0 0
1002 fddi 101002 1500 - - - - - 0 0
1003 tr 101003 1500 - - - - - 0 0
1004 fdnet 101004 1500 - - - ieee - 0 0
1005 trnet 101005 1500 - - - ibm - 0 0

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

Remote SPAN VLANs
------------------------------------------------------------------------------
```

Primary Secondary Type Ports
------- --------- ---------------- --
Switch#
Switch#

```
Switch#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                Fa0/6, Fa0/7, Fa0/8, Fa0/9
                                                Fa0/10, Fa0/11, Fa0/12, Fa0/15
                                                Fa0/16, Fa0/17, Fa0/18, Fa0/19
                                                Fa0/20, Fa0/21, Fa0/22, Gig0/1
                                                Gig0/2
10   vlan10                           active    Fa0/5, Fa0/13, Fa0/14
20   vlan20                           active    Fa0/23, Fa0/24
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
20   enet  100020     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
```

Inter Vlan

Switch1 Trunk:

Switch(config)#no ip domain loopup
^
% Invalid input detected at '^' marker.
Switch(config)#ex
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#no ip domamin loopup
^
% Invalid input detected at '^' marker.
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#no ip domain lookup

```
Switch(config)#interface fas
Switch(config)#interface fastEthernet 0/6
Switch(config-if)#swi
Switch(config-if)#switchport mode acc
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to
down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to
up

Switch(config-if)#swi
Switch(config-if)#switchport trunk allowed vlan 10,20
Switch(config-if)#
Switch(config-if)#
Switch(config-if)#ex
Switch(config)#do wr
Building configuration...
[OK]
Switch(config)#
```

Switch0 Trunk:

```
Switch>
Switch>
Switch>en
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#inter
Switch(config)#interface fast
Switch(config)#interface fastEthernet 0/6
Switch(config-if)#switch
Switch(config-if)#switchport mode trunk
Switch(config-if)#swi
Switch(config-if)#switchport trunk allowed vlan 10,20
Switch(config-if)#ex
Switch(config)#interface fastEthernet 0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan 10,20
Switch(config-if)#ex
Switch(config)#do wr
Building configuration...
[OK]
Switch(config)#
```

R1 (Gateway) Router Configuration:

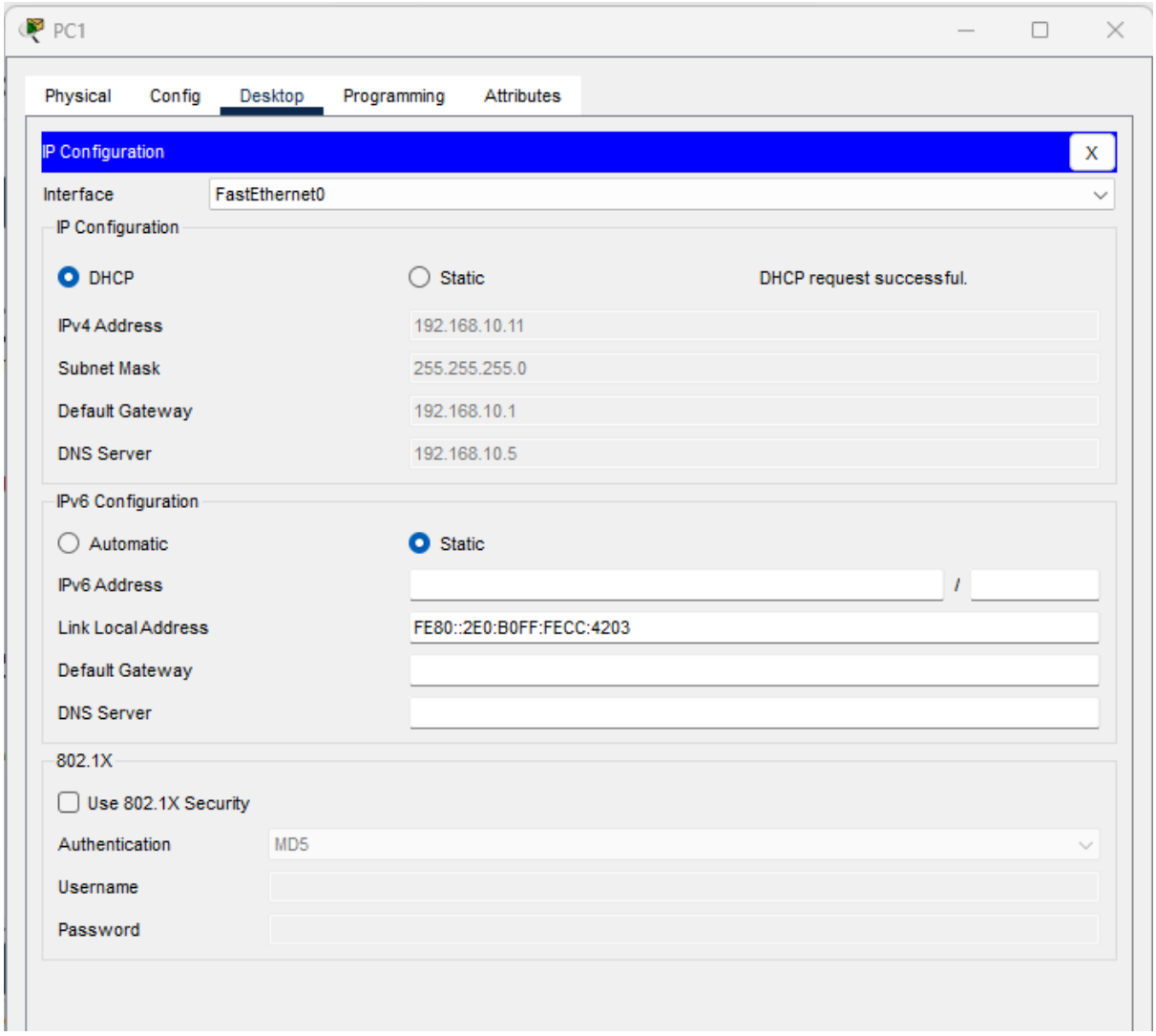
```
Router>
Router>
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R1
R1(config)#interfa
R1(config)#interface gig
R1(config)#interface gigabitEthernet 0/0
R1(config-if)#no shutdown

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state
to up

R1(config-if)#ex
R1(config)#interface gigabitEthernet 0/0.10
R1(config-subif)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0.10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.10, changed
state to up

R1(config-subif)#encap
R1(config-subif)#encapsulation do
R1(config-subif)#encapsulation dot1Q 10
R1(config-subif)#ip address 192.168.10.1 255.255.255.0
R1(config-subif)#ex
R1(config)#do wr
Building configuration...
[OK]
R1(config)#no ip domain lookup
R1(config)#interface gigabitEthernet 0/0.20
R1(config-subif)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0.20, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.20, changed
state to up

R1(config-subif)#encapsulation dot1Q 20
R1(config-subif)#ip address 192.168.20.1 255.255.255.0
R1(config-subif)#ex
R1(config)#do wr
```

```
Building configuration...
[OK]
R1(config)#
R1(config)#
R1(config)#interface GigabitEthernet0/1
R1(config-if)#ip address 192.168.30.1 255.255.255.0
R1(config-if)#ip address 192.168.30.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

R1(config-if)#exit
R1(config)#interface GigabitEthernet0/2
R1(config-if)#ip address 192.168.31.1 255.255.255.0
R1(config-if)#no ip address
R1(config-if)#ip address 192.168.31.1 255.255.255.0
R1(config-if)#ip address 192.168.31.1 255.255.255.252
R1(config-if)#no shutdown
R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

R1(config-if)#exit
R1(config)#interface GigabitEthernet0/1
R1(config-if)#ip address 192.168.30.1 255.255.255.252
R1(config-if)#shutdown
R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to administratively down
no shutdown
R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

R1(config-if)#
R1(config-if)#ex
R1(config)#do wr
Building configuration...
[OK]
R1(config)#
```

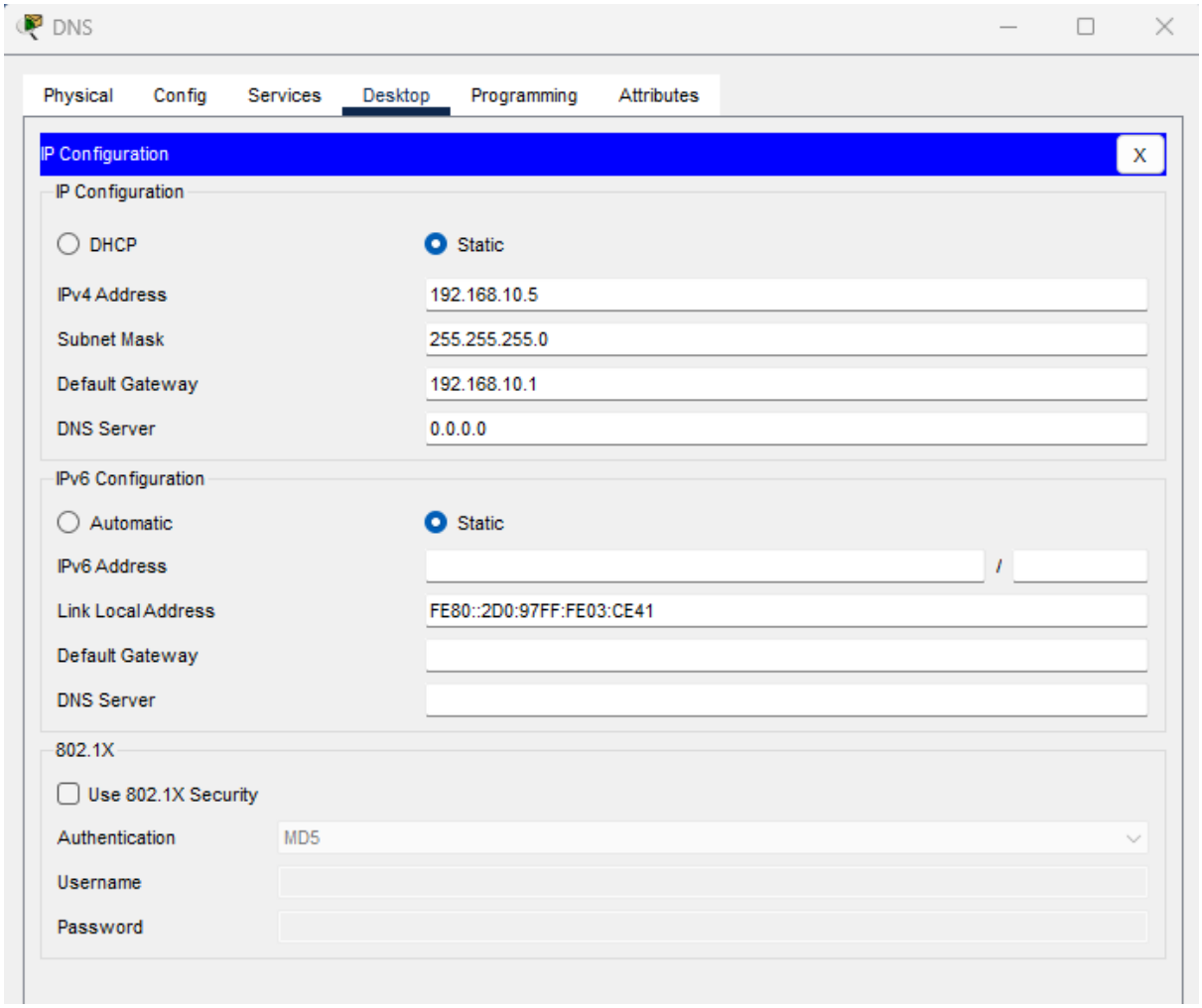
R1 (Gateway) Router DHCP Configuration:

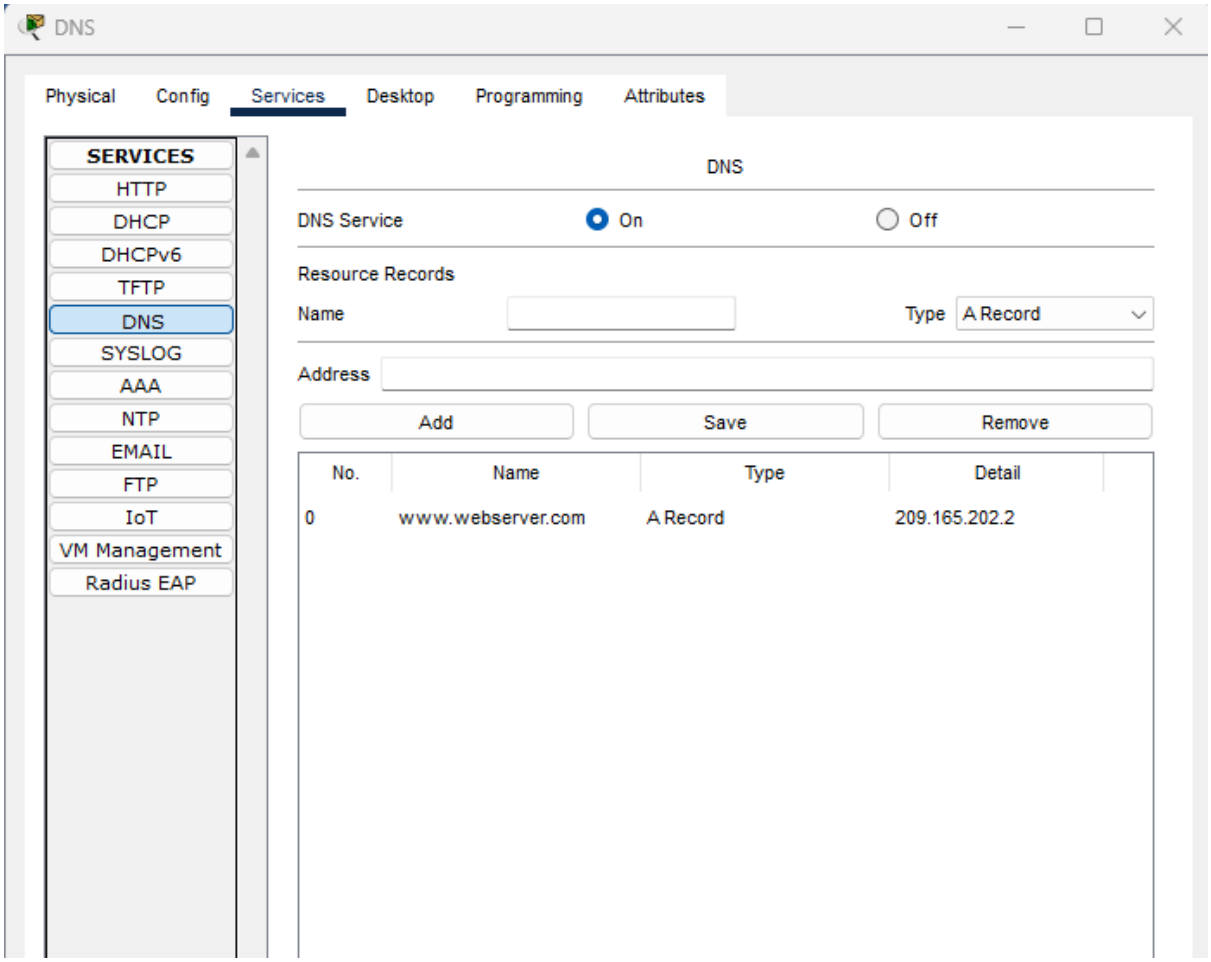
```
R1#
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip dhcp pool v10
R1(dhcp-config)#net
R1(dhcp-config)#network 192.168.10.0 255.255.255.0
R1(dhcp-config)#def
R1(dhcp-config)#default-router 192.168.10.1
R1(dhcp-config)#dns
```

```
R1(dhcp-config)#dns-server 192.168.10.5
R1(dhcp-config)#ip dhcp excl
R1(dhcp-config)#ip dhcp excluded-a
R1(dhcp-config)#ip dhcp excluded-address
R1(dhcp-config)#ip dhcp excluded-address 192.168.10.1 192.168.10.9
R1(config)#ip dhcp pool v20
R1(dhcp-config)#network 192.168.20.0 255.255.255.0
R1(dhcp-config)#default-router 192.168.20.1
R1(dhcp-config)#dns-server 192.168.10.5
R1(dhcp-config)#ip dhcp excluded-address 192.168.20.1 192.168.20.9
R1(config)#do wr
Building configuration...
[OK]
R1(config)#
```



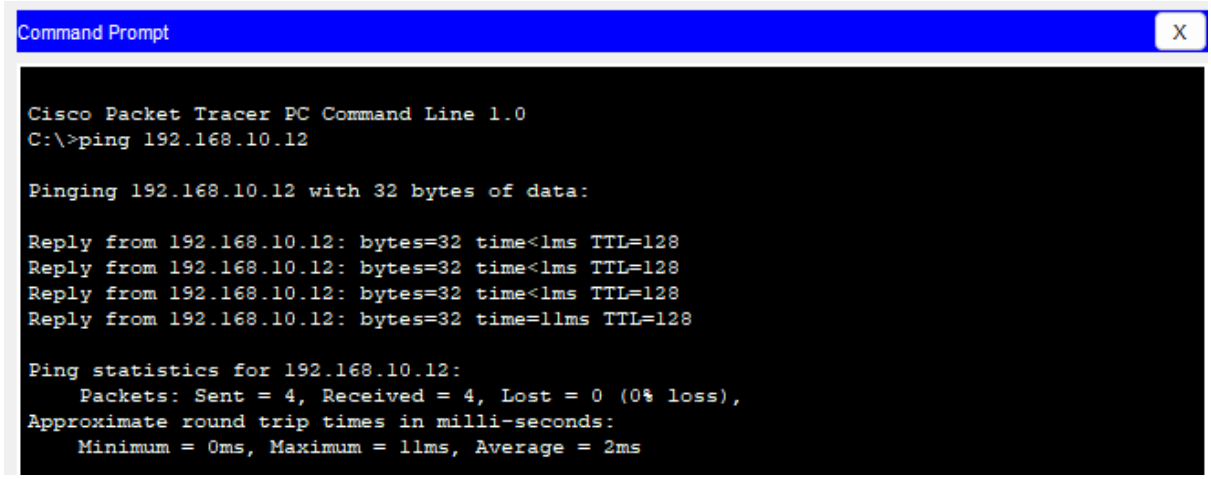
DNS Configuration:





Inter vlan network and DNS Checking:

From Vlan 10 (192.168.10.10) to Vlan 10 (192.168.10.12)



From Vlan 10 (192.168.10.10) to Vlan 20 (192.168.20.12)

```
C:\>ping 192.168.20.12

Pinging 192.168.20.12 with 32 bytes of data:

Reply from 192.168.20.12: bytes=32 time<1ms TTL=127
Reply from 192.168.20.12: bytes=32 time<1ms TTL=127
Reply from 192.168.20.12: bytes=32 time<1ms TTL=127
Reply from 192.168.20.12: bytes=32 time=3ms TTL=127

Ping statistics for 192.168.20.12:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 3ms, Average = 0ms

C:\>
```

From Vlan 10 (192.168.10.10) to DNS Server (192.168.10.5)

```
C:\>ping 192.168.10.5

Pinging 192.168.10.5 with 32 bytes of data:

Reply from 192.168.10.5: bytes=32 time=1ms TTL=128
Reply from 192.168.10.5: bytes=32 time<1ms TTL=128
Reply from 192.168.10.5: bytes=32 time<1ms TTL=128
Reply from 192.168.10.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

R2 Router Configuration:

Router>
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R2
R2(config)#
R2(config)#
R2(config)#interface GigabitEthernet0/2
R2(config-if)#ip address 192.168.31.2 255.255.255.0
R2(config-if)#ip address 192.168.31.2 255.255.255.252

```
R2(config-if)#no shutdown
R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state
to up

R2(config-if)#exit
R2(config)#interface GigabitEthernet0/1
R2(config-if)#
R2(config-if)#exit
R2(config)#interface GigabitEthernet0/2
R2(config-if)#ip address 192.168.31.2 255.255.255.252
R2(config-if)#
R2(config-if)#exit
R2(config)#interface GigabitEthernet0/1
R2(config-if)#ip address 192.168.33.1 255.255.255.0
R2(config-if)#ip address 192.168.33.1 255.255.255.252
R2(config-if)#no shutdown
R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
ex
R2(config)#do wr
Building configuration...
[OK]
R2(config)#
```

R3 Router Configuration:

```
Router>
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R3
R3(config)#
R3(config)#
R3(config)#interface GigabitEthernet0/1
R3(config-if)#ip address 192.168.30.2 255.255.255.0
R3(config-if)#ip address 192.168.30.2 255.255.255.252
R3(config-if)#no shutdown
R3(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state
to up

R3(config-if)#exit
R3(config)#interface GigabitEthernet0/0
```

```
R3(config-if)#ip address 192.168.32.1 255.255.255.0
R3(config-if)#ip address 192.168.32.1 255.255.255.252
R3(config-if)#no shutdown
R3(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

R3(config-if)#
R3(config-if)#ex
R3(config)#do wr
Building configuration...
[OK]
R3(config)#
```

NAT Router Configuration:

```
Router>
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname NAT
NAT(config)#
NAT(config)#
NAT(config)#interface GigabitEthernet0/0
NAT(config-if)#ip address 192.168.32.2 255.255.255.0
NAT(config-if)#ip address 192.168.32.2 255.255.255.252
NAT(config-if)#no shutdown
NAT(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state
to up
ex
NAT(config)#do wr
Building configuration...
[OK]
NAT(config)#
NAT(config)#
NAT(config)#interface GigabitEthernet0/0
NAT(config-if)#ip address 192.168.32.2 255.255.255.252
NAT(config-if)#
NAT(config-if)#exit
NAT(config)#interface GigabitEthernet0/1
NAT(config-if)#ip address 192.168.33.2 255.255.255.0
NAT(config-if)#ip address 192.168.33.2 255.255.255.252
NAT(config-if)#no shutdown
NAT(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
```

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

NAT(config-if)#exit
NAT(config)#interface GigabitEthernet0/2
NAT(config-if)#ip address 209.165.201.18 255.255.255.0
NAT(config-if)#ip address 209.165.201.18 255.255.255.252
NAT(config-if)#no shutdown
NAT(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

NAT(config-if)#ex
NAT(config)#do wr
Building configuration...
[OK]
NAT(config)#
NAT#

RIP Configuration:

R1:

R1>
R1>en
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#router rip
R1(config-router)#version 2
R1(config-router)#network 192.168.10.0
R1(config-router)#network 192.168.20.0
R1(config-router)#network 192.168.30.0
R1(config-router)#network 192.168.31.0
R1(config-router)#ex
R1(config)#ex
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#show rip ip database
^
% Invalid input detected at '^' marker.
R1#show ip rip database
192.168.10.0/24 auto-summary
192.168.10.0/24 directly connected, GigabitEthernet0/0.10
192.168.20.0/24 auto-summary
192.168.20.0/24 directly connected, GigabitEthernet0/0.20
192.168.30.0/30 auto-summary
192.168.30.0/30 directly connected, GigabitEthernet0/1
192.168.31.0/30 auto-summary
192.168.31.0/30 directly connected, GigabitEthernet0/2

```
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#do wr
Building configuration...
[OK]
R1(config)#
```

R2:

```
R2(config)#
R2(config)#router rip
R2(config-router)#version 2
R2(config-router)#network 192.168.31.0
R2(config-router)#network 192.168.32.0
R2(config-router)#ex
R2(config)#do wr
Building configuration...
[OK]
R2(config)#ex
R2#
%SYS-5-CONFIG_I: Configured from console by console

R2#show ip rip database
192.168.10.0/24 auto-summary
192.168.10.0/24
[1] via 192.168.31.1, 00:00:10, GigabitEthernet0/2
192.168.20.0/24 auto-summary
192.168.20.0/24
[1] via 192.168.31.1, 00:00:10, GigabitEthernet0/2
192.168.30.0/24 auto-summary
192.168.30.0/24
[1] via 192.168.31.1, 00:00:10, GigabitEthernet0/2
192.168.31.0/30 auto-summary
192.168.31.0/30 directly connected, GigabitEthernet0/2
R2#
```

R3:

```
R3(config-if)#router rip
R3(config-router)#version 2
R3(config-router)#network 192.168.30.0
R3(config-router)#network 192.168.32.0
R3(config-router)#ex
R3(config)#do wr
Building configuration...
[OK]
R3(config)#ex
R3#
%SYS-5-CONFIG_I: Configured from console by console
```

```
R3#show ip rip database
192.168.10.0/24 auto-summary
192.168.10.0/24
[1] via 192.168.30.1, 00:00:06, GigabitEthernet0/1
192.168.20.0/24 auto-summary
192.168.20.0/24
[1] via 192.168.30.1, 00:00:06, GigabitEthernet0/1
192.168.30.0/30 auto-summary
192.168.30.0/30 directly connected, GigabitEthernet0/1
192.168.31.0/24 auto-summary
192.168.31.0/24
[1] via 192.168.30.1, 00:00:06, GigabitEthernet0/1
192.168.32.0/30 auto-summary
192.168.32.0/30 directly connected, GigabitEthernet0/0
R3#
```

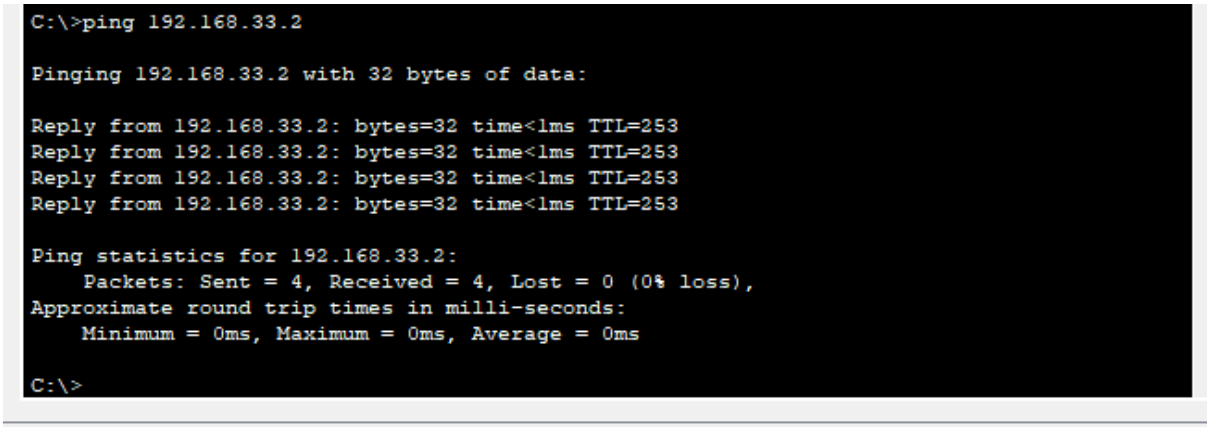
NAT:

```
NAT#
NAT#conf t
Enter configuration commands, one per line. End with CNTL/Z.
NAT(config)#router rip
NAT(config-router)#version 2
NAT(config-router)#network 192.168.32.0
NAT(config-router)#network 192.168.33.0
NAT(config-router)#network 209.165.201.18
NAT(config-router)#ex
NAT(config)#do wr
Building configuration...
[OK]
NAT(config)#ex
NAT#
%SYS-5-CONFIG_I: Configured from console by console

NAT#show ip rip database
192.168.10.0/24 auto-summary
192.168.10.0/24
[2] via 192.168.32.1, 00:00:02, GigabitEthernet0/0
192.168.20.0/24 auto-summary
192.168.20.0/24
[2] via 192.168.32.1, 00:00:02, GigabitEthernet0/0
192.168.30.0/24 auto-summary
192.168.30.0/24
[1] via 192.168.32.1, 00:00:02, GigabitEthernet0/0
192.168.31.0/24 auto-summary
192.168.31.0/24
[2] via 192.168.32.1, 00:00:02, GigabitEthernet0/0
```

192.168.32.0/30 auto-summary
192.168.32.0/30 directly connected, GigabitEthernet0/0
192.168.33.0/30 auto-summary
192.168.33.0/30 directly connected, GigabitEthernet0/1

RIP Checking:

From Vlan 10 (192.168.10.10) to Vlan 10 (192.168.33.2)



NAT Router & ISP Router Configuration For NAT:

ISP:

Router>
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname ISP
ISP(config)#
ISP(config)#
ISP(config)#interface GigabitEthernet0/2
ISP(config-if)#ip address 209.165.201.17 255.255.255.0
ISP(config-if)#ip address 209.165.201.17 255.255.255.252
ISP(config-if)#no shutdown
ISP(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up

ISP(config-if)#exit
ISP(config)#interface GigabitEthernet0/0
ISP(config-if)#ip address 209.165.202.1 255.255.255.0
ISP(config-if)#ip address 209.165.202.1 255.255.255.0
ISP(config-if)#no shutdown
ISP(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

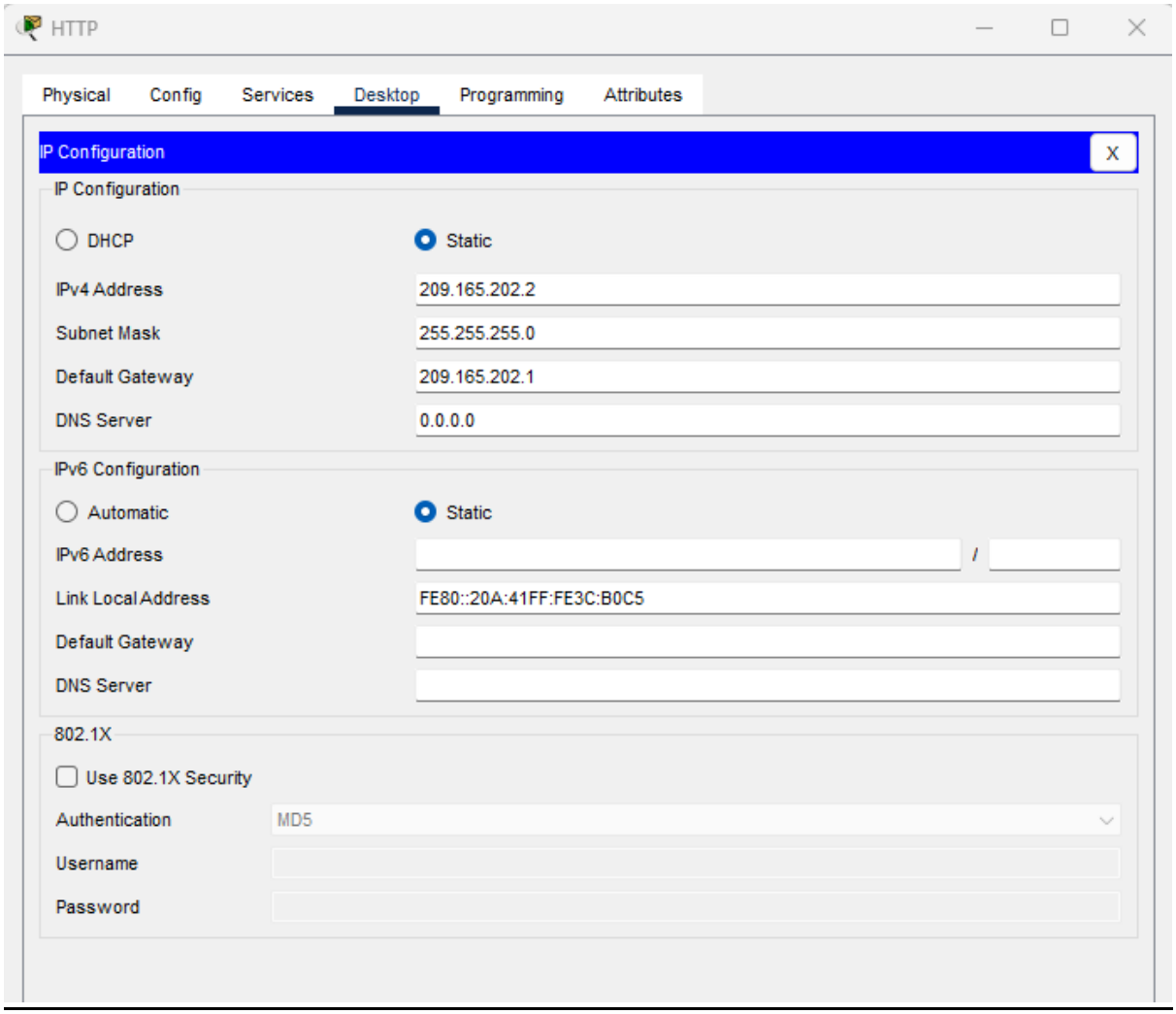
ISP(config-if)#
ISP(config-if)#exit
ISP(config)#interface GigabitEthernet0/0
ISP(config-if)#
ISP(config-if)#exit
ISP(config)#
ISP(config)#ip route 209.165.200.224 255.255.255.248 209.165.201.18
ISP(config)#do wr
Building configuration...
[OK]
ISP(config)#

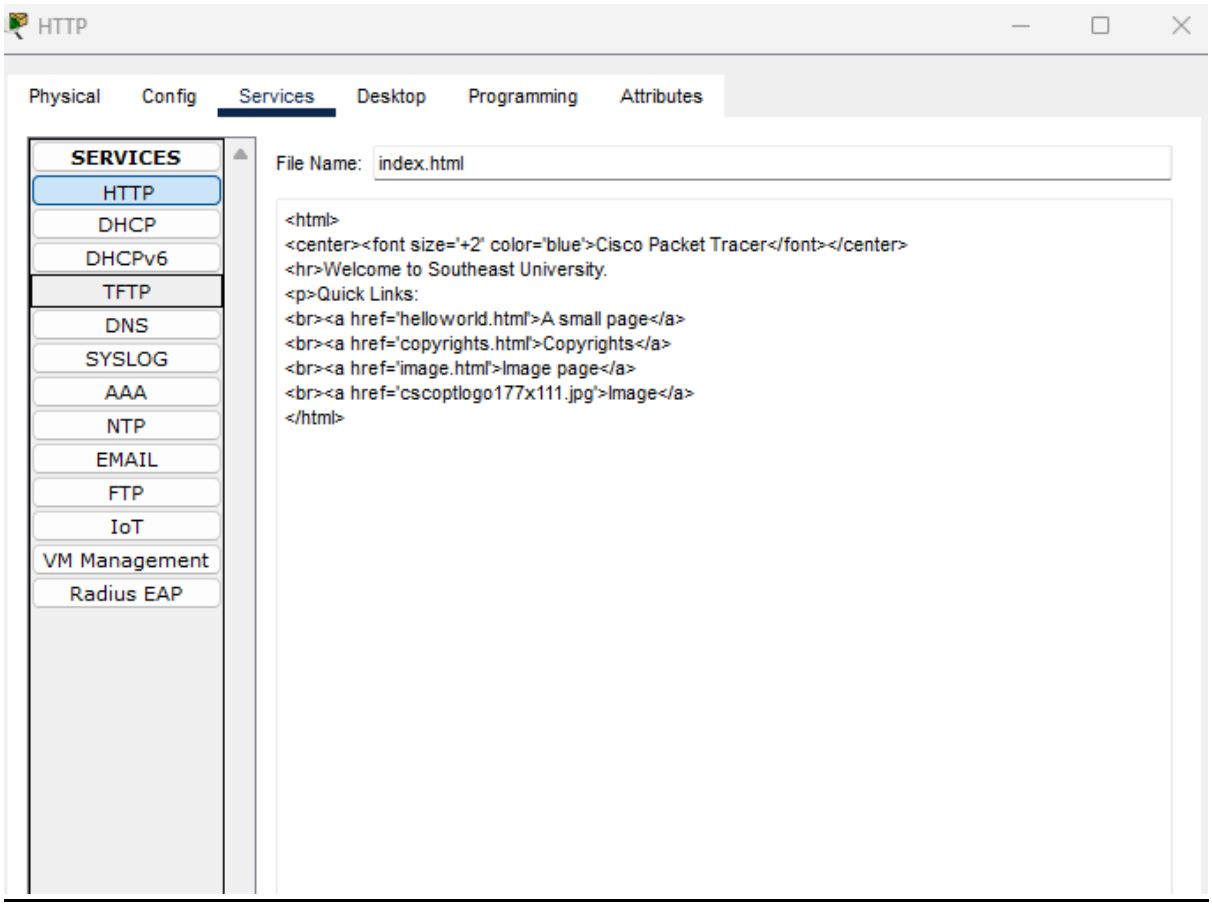
NAT:

NAT#
NAT#conf t
Enter configuration commands, one per line. End with CNTL/Z.
NAT(config)#
NAT(config)#
NAT(config)#
NAT(config)#ip route 0.0.0.0 0.0.0.0 209.165.201.17
NAT(config)#access-
NAT(config)#access-list permi
NAT(config)#access-list 1 permit 192.168.10.0 0.0.0.255
NAT(config)#ip nat pool public_access 209.165.200.225 209.165.200.230 netmask 255.255.255.248
NAT(config)#ip nat inside source list 1 pool public_access overload
NAT(config)#inter
NAT(config)#interface gig
NAT(config)#interface gigabitEthernet 0/1
NAT(config-if)#ip nat inside
NAT(config-if)#interface gigabitEthernet 0/0
NAT(config-if)#ip nat inside
NAT(config-if)#interface gigabitEthernet 0/2
NAT(config-if)#ip nat outside
NAT(config-if)#ex

NAT(config)#do wr
Building configuration...
[OK]
NAT(config)#

HTTP Server:



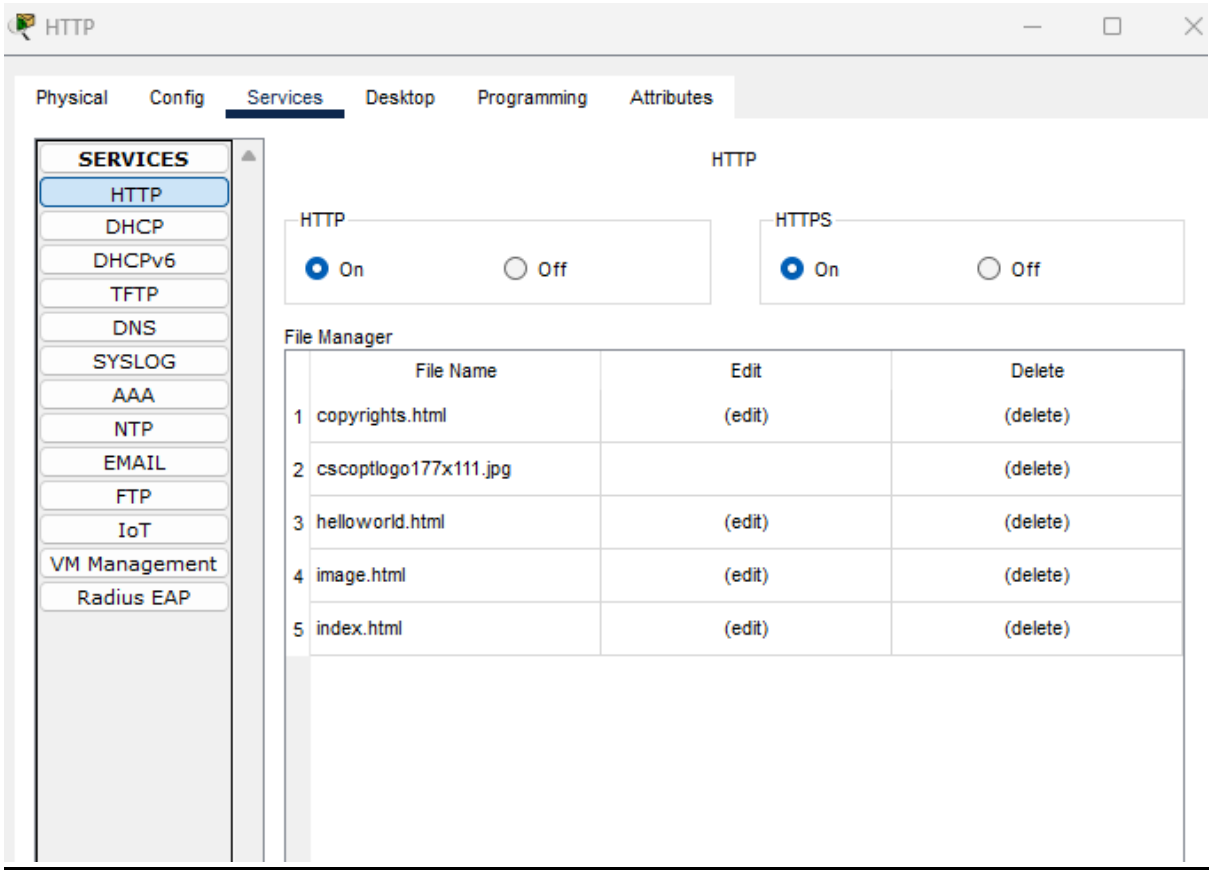

HTTP
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
File Name: index.html
<html>
Cisco Packet Tracer
<hr>Welcome to Southeast University.
<p>Quick Links:

A small page

Copyrights

Image page

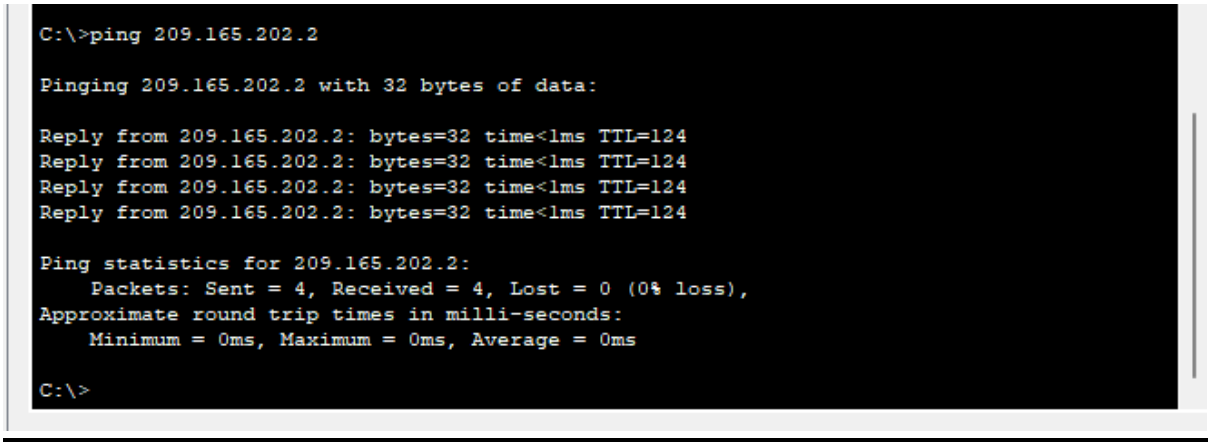
Image
</html>

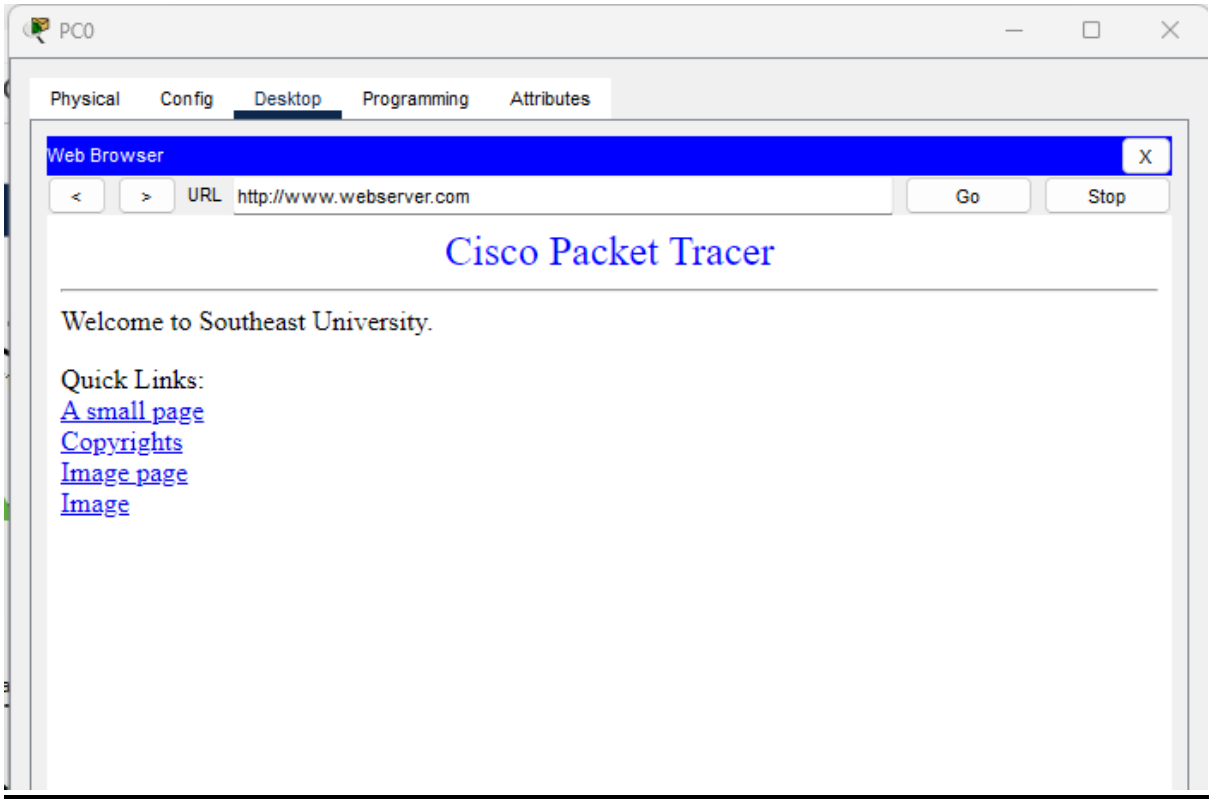

HTTP
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
HTTP
HTTP
On
Off
HTTPS
On
Off
File Manager
File Name
Edit
Delete
1 copyrights.html (edit) (delete)
2 cscoptlogo177x111.jpg (delete)
3 helloworld.html (edit) (delete)
4 image.html (edit) (delete)
5 index.html (edit) (delete)

NAT:

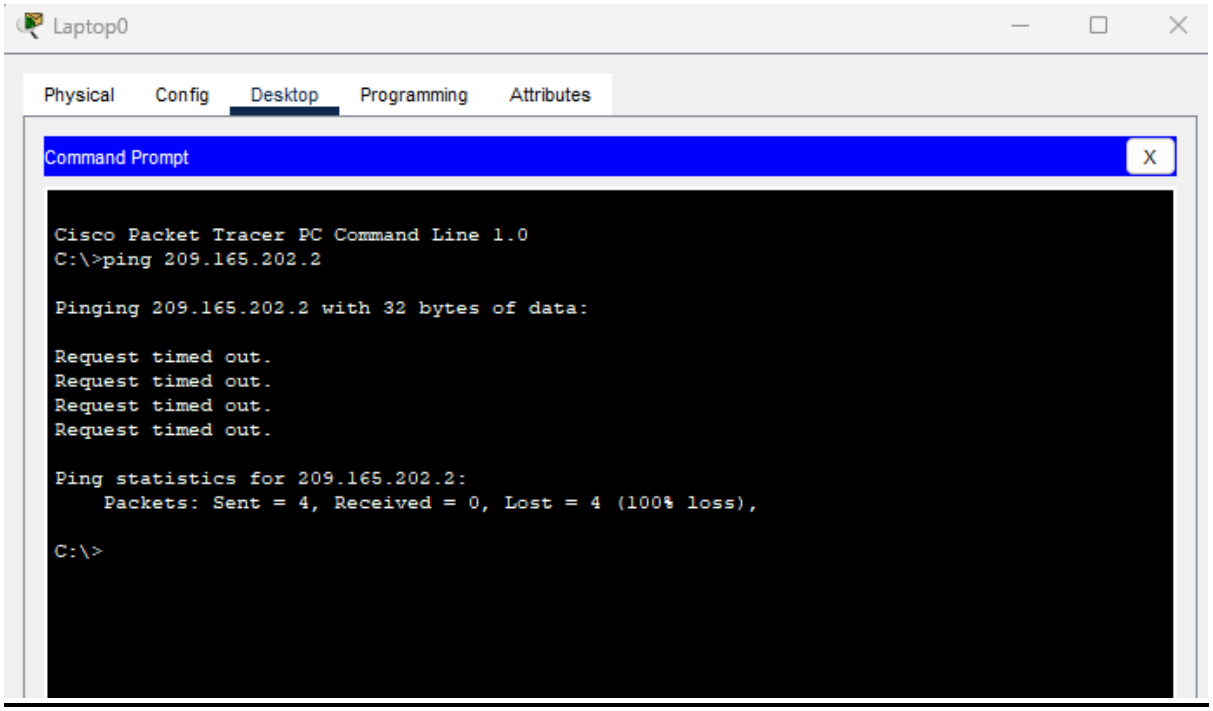
NAT(config)#router rip
NAT(config-router)#redistri
NAT(config-router)#redistribute static
NAT(config-router)#ex
NAT(config)#do wr
Building configuration...
[OK]
NAT(config)#

Vlan 10 to HTTP Server Checking:

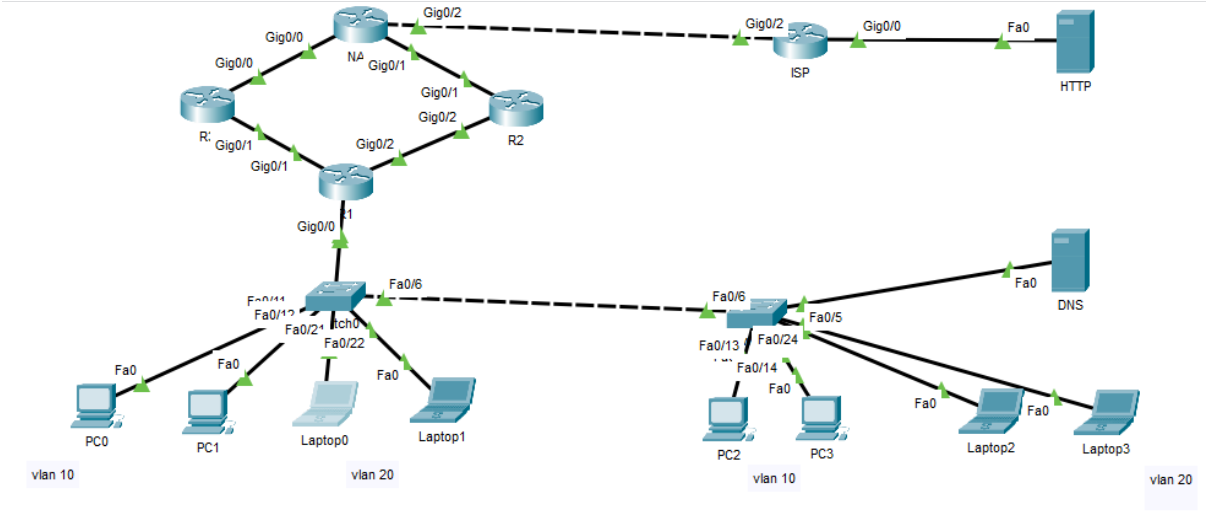




From Vlan 20 (192.168.20.10) to HTTP SERVER (209.165.202.2) : **NOT Reachable**



Final Network Architecture:



-- END --