



Experiment 9

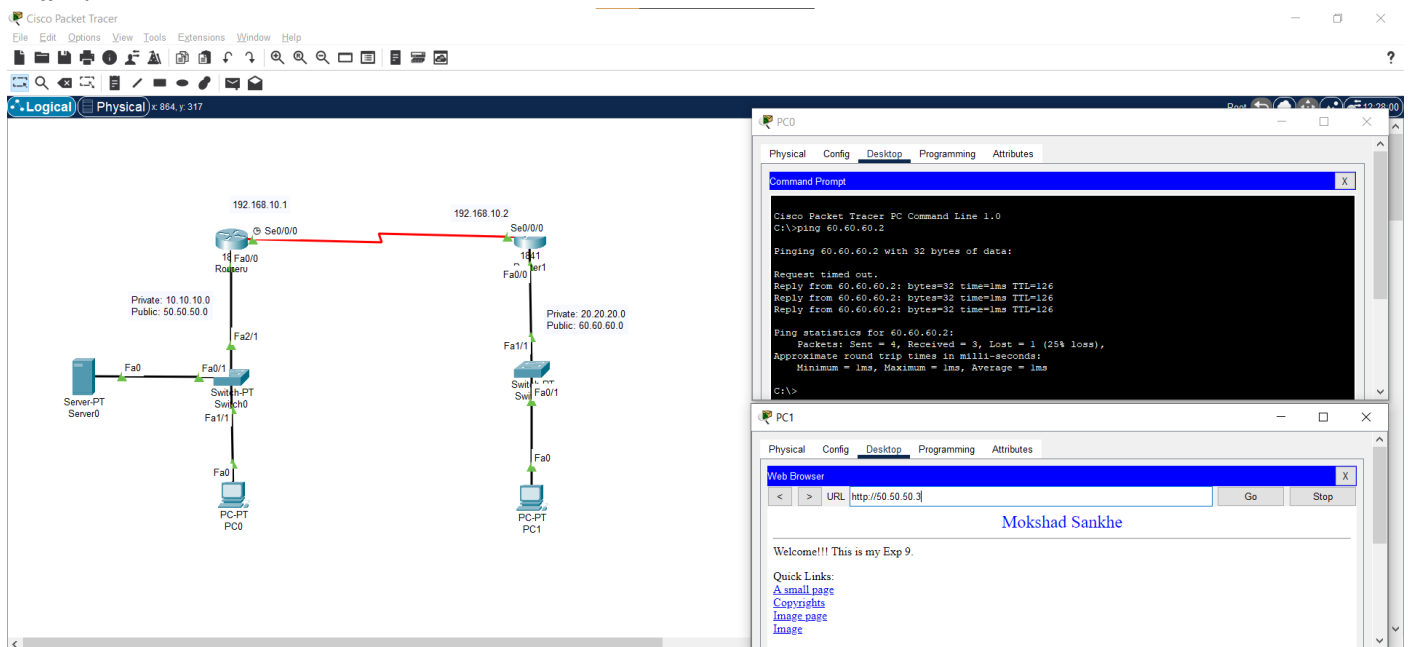
Aim: To configure and verify Static NAT translation

Theory:

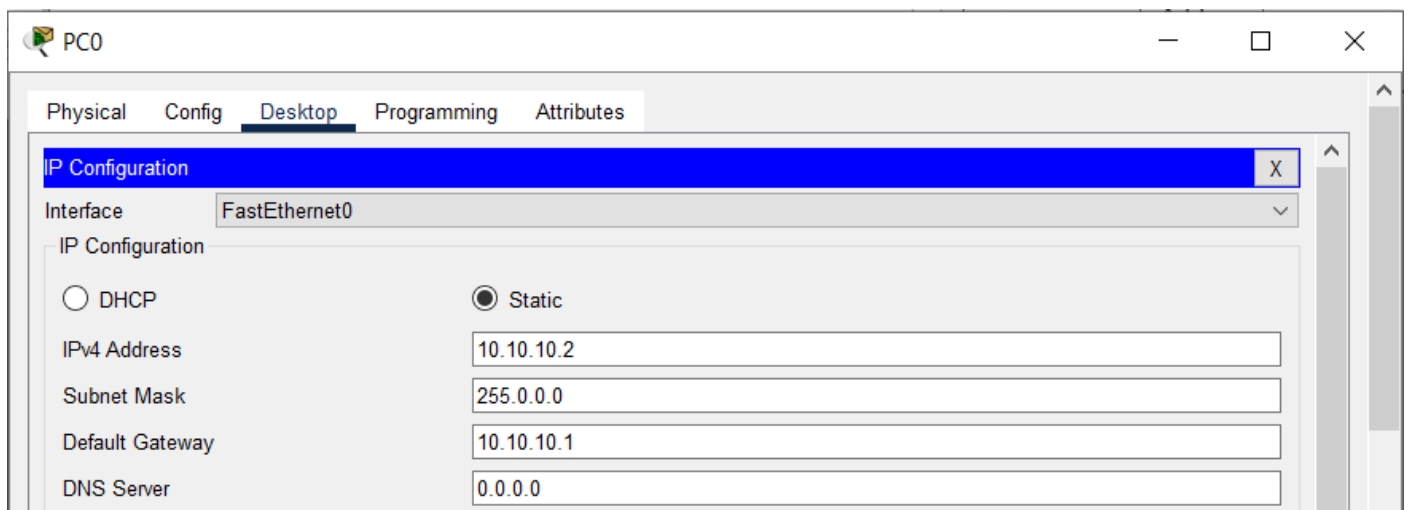
Network address translation (NAT) is a method of mapping an IP address space into another by modifying network address information in the IP header of packets while they are in transit across a traffic routing device. The technique was originally used to bypass the need to assign a new address to every host when a network was moved, or when the upstream Internet service provider was replaced, but could not route the networks address space. Create a network topology as shown below in Cisco packet tracer.

Output:

Main:



PC IPv4 Configuration:





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PC1

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 20.20.20.2

Subnet Mask 255.0.0.0

Default Gateway 20.20.20.1

DNS Server 0.0.0.0

PC1 IPv4 Configuration: Router0 CLI Configuration:

Router0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 10.10.10.1 255.0.0.0
Router(config-if)#ip address 10.10.10.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#interface Serial10/0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial10/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial10/0/0, changed state to up

Router(config-if)#exit
Router(config)#ip nat inside source static 10.10.10.2 50.50.50.2
Router(config)#ip nat inside source static 10.10.10.3 50.50.50.3
Router(config)#int fa0/0
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#int fa0/1
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#int fa1/1
%Invalid interface type and number
Router(config)#int fa1/1
%Invalid interface type and number
Router(config)#int serial 0/0/0
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#ip route 60.60.60.0 255.0.0.0 192.168.10.2
%Inconsistent address and mask
Router(config)#ip route 60.0.0.0 255.0.0.0 192.168.10.2
Router(config)#exit
```



Router1 CLI Configuration:

```
Router1
Physical Config CLI Attributes
IOS Command Line Interface

Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 20.20.20.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#interface Serial0/0/0
Router(config-if)#ip address 192.168.10.2 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

Router(config-if)#exit
Router(config)#ip nat inside source static 20.20.20.2 60.60.60.2
Router(config)#int fa0/0
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#int serial /00/0
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#ip route 50.0.0.0 255.0.0.0 192.168.10.1
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#
```

Server Configuration:

Server0

Physical Config Services Desktop Programming Attributes

IP Configuration X

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 10.10.10.3

Subnet Mask 255.0.0.0

Default Gateway 10.10.10.1

DNS Server 0.0.0.0



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Server HTTP Service:

Server0

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

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)

Server0

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

File Name:

```
<html>
<center><font size='+2' color='blue'>Mokshad Sankhe</font></center>
<hr>Welcome!!! This is my Exp 9.

<p>Quick Links:
<br><a href='helloworld.html'>A small page</a>
<br><a href='copyrights.html'>Copyrights</a>
<br><a href='image.html'>Image page</a>
<br><a href='cscoptlogo177x111.jpg'>Image</a>
</html>
```

Conclusion: