COMPUTER NETWORKS PRACTICUM

PRACTICUM 9

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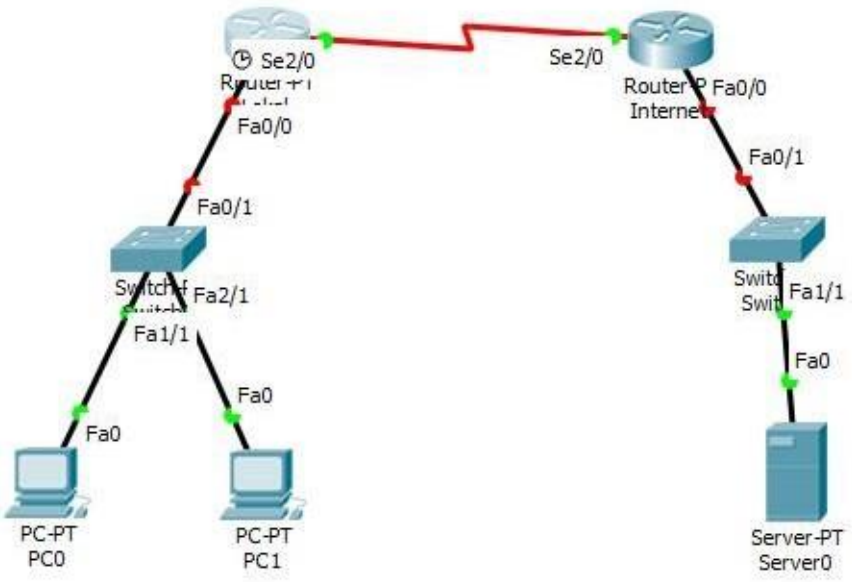
1. **Activity**



Device	Interface	IP	Keterangan
Router - Internet	Serial 0	20.0.0.2	Koneksi ke Router - Local
	Ethernet 0	10.0.0.1	Koneksi ke WEb Server
Router - Lokal	Serial 0	20.0.0.1	Koneksi ke Router - Internet
	Ethernet 0	30.0.0.1	Koneksi ke PC - lokal
Web Server	Ethernet 0	10.0.0.2	Koneksi ke Router - Internet
PC - Lokal	Ethernet 0	30.0.0.2	Koneksi ke Router - Lokal

```
Router>enable
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 30.0.0.0 255.255.255.0 20.0.0.1
Router(config)#ip nat inside source static 10.0.0.2 50.0.0.1
Router(config)#interface fastethernet 0/0
Router(config-if)#ex
Router(config)#interface serial2/0
Router(config-if)#ip nat inside
Router(config-if)#ex
Router(config)#
```

Ctrl+F6 to exit CLI focus

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```
Router>enable
Router#conf term
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 50.0.0.0 255.255.255.0 20.0.0.2
Router(config)#ex
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#
```

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```
C:\>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 30.0.0.1: Destination host unreachable.
Reply from 30.0.0.1: Destination host unreachable.
Reply from 30.0.0.1: Destination host unreachable.
Request timed out.

Ping statistics for 10.0.0.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

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```
C:\>ping 50.0.0.1

Pinging 50.0.0.1 with 32 bytes of data:

Reply from 50.0.0.1: bytes=32 time=4ms TTL=126
Reply from 50.0.0.1: bytes=32 time=1ms TTL=126
Reply from 50.0.0.1: bytes=32 time=1ms TTL=126
Reply from 50.0.0.1: bytes=32 time=1ms TTL=126

Ping statistics for 50.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 4ms, Average = 1ms

C:\>
```

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2. Assignment

a. Static routing without NAT

Static routing (Static Routing) is a router that has a static routing table that is set manually by network administrators. Static routing The simplest routing settings that can be done on a computer network. Using pure static routing in a network means filling in every entry in the forwarding table on every router on the network.

The use of static routing in a small network is certainly not aproblem, just a few entries that need to be filled in the forwarding table on each router. But you certainly can imagine what if you have to complete the forwarding table in each router that is not small in a large network.

Static routing using next hop is suitable for multi-access networks or point-to-multipoint networks, while for point-to-point networks, it is suitable for using the exit interface in configuring static routes.

Recursive route lookup is the process that occurs in the routing table to determine which exit interface to use when forwarding packets to their destination.

b. Configurating NAT

NAT is a method for connecting more than one computer to the internet using one IP address. The many uses of this method are due to the limited availability of IP addresses, the need for security (Security), ease and flexibility in network administration. Which is also one of the protocols in a network system, NAT allows a network with IP or internet protocol that is private. IP has not been registered on the internet network to access the internet, this means that an IP address can access the internet using a Private IP or not using Public IP, NAT is usually embedded in a router, NAT is also often used to combine or connect two different networks, and translate or translate Private IPs in internal networks into legal network networks so that they have the right to access data in a network.

So, NAT is a method of translating private IP into public IP. In order to communicate with the Internet we must register using a public IP.