

Computer Networks Lab 3

Configuration of default routes to Router and ping

Observation

15/10/24

AIM: To demonstrate the configuration of default routes to the router

To configure 4 networks i.e. 10.0.0.0, 20.0.0.0, 30.0.0.0, 40.0.0.0.

Step 1: make sure all the devices are configured with the network id, ip address & gateway.

Router 0: Has knowledge of 10.0.0.0 & 20.0.0.0

Router 3: Has knowledge of 30.0.0.0 & 40.0.0.0

To make sure network Router 0 knows the other network 30.0.0.0 & 40.0.0.0 & similarly Router 3 to know 10.0.0.0 & 20.0.0.0 network

In Router 0, CLI

```

> enable
> config
    
```

To set the route to other networks

```

> ip route (destination network id)
  (subnet mask) (next hop)

> ip route 10.0.0.0 255.0.0.0 20.0.0.2
> ip route 30.0.0.0 255.0.0.0 20.0.0.2
    
```

Check the route

```

# show ip route
    
```

In Router 3, CLI

```

> enable
> config

> ip route 10.0.0.0 255.0.0.0 30.0.0.1
> ip route 20.0.0.0 255.0.0.0 30.0.0.1

# show ip route /display connections
    
```

Now the network route of Router 0, 1 & 3 are set, to ping from PC0 to PC1.

In PC0, command prompt

```

ping 40.0.0.2
    
```

The packets are sent with 0% Loss.

ip route for Router 1

```

# show ip route.

S 10.0.0.0/8 [1/0] via 20.0.0.1
C 20.0.0.0/8 is directly connected, Serial12/0
C 30.0.0.0/8 is directly connected, Serial3/0
S 40.0.0.0/8 [1/0] via 30.0.0.2
    
```

Ping message from PC0 to PC1

```

> ping 40.0.0.2
    
```

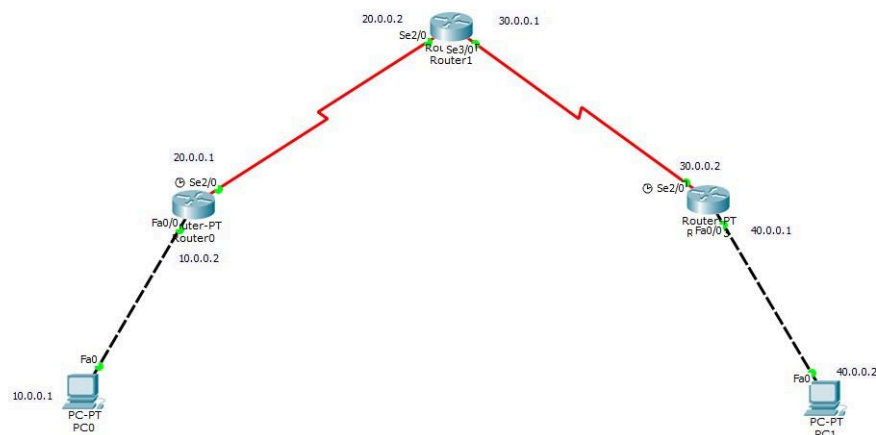
Pinging 40.0.0.2 with 32 bytes of data:

```

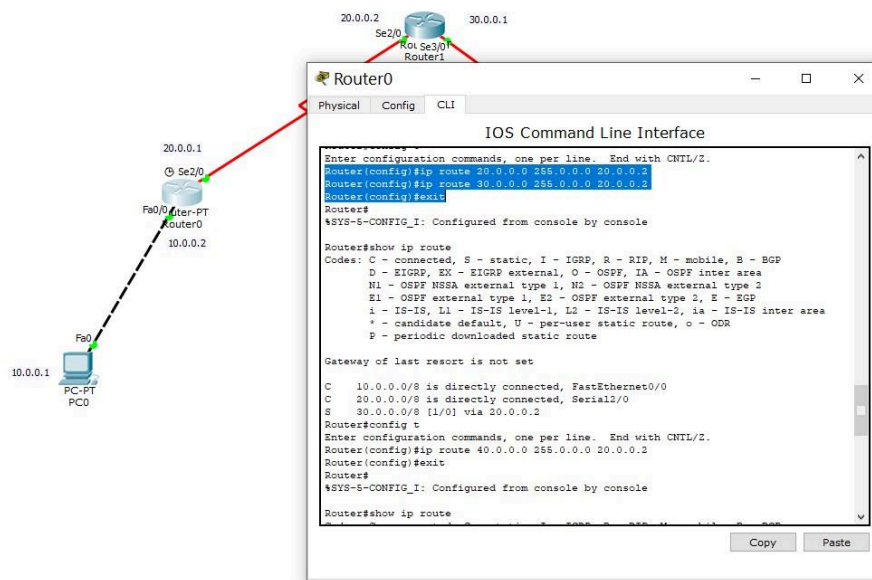
Reply from 40.0.0.2: bytes=32 time=18ms TTL=128
Reply from 40.0.0.2: bytes=32 time=18ms TTL=128
Reply from 40.0.0.2: bytes=32 time=18ms TTL=128
Reply from 40.0.0.2: bytes=32 time=9ms TTL=128

Packet: Sent = 4, Received = 4, Lost = 0
    
```

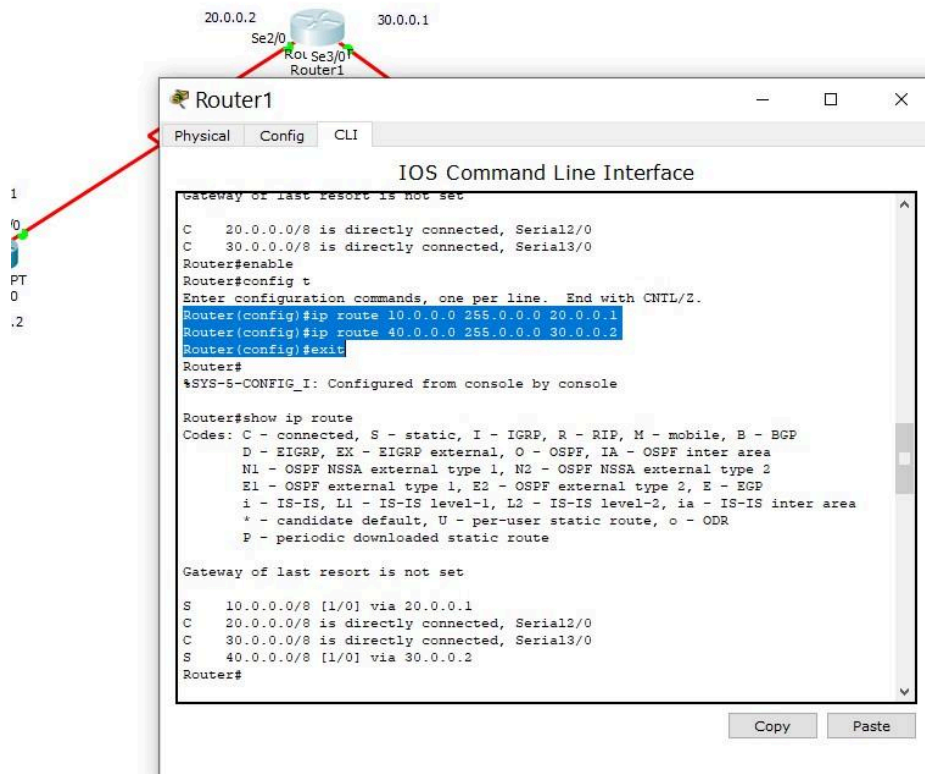
- 1.
2. Topology



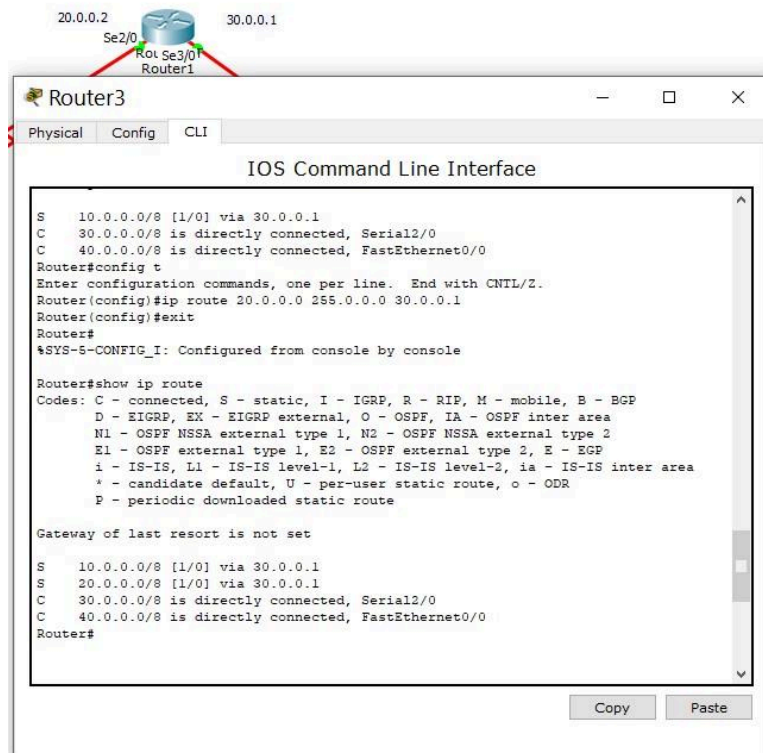
3. Router 0 ip routing



4. Router 1 ip routing



4. Router 3 ip routing



5. Ping to different network device

