

Experiment 3:

Default Routing

Multi Router (Default ip routing)

Aim: Demonstrate data transfer in a network through router using default routing

Topology

Procedure

- Place 2 end device and 3 routers on the logical interface
- Configure an ip address with network id 10 for PC0 and network id 10 for PC1
- Configure ip address for different ports of the routers.

Type the following commands to configure Router0

```
> enable
> config t
> interface fastethernet0/0
> ip address 10.0.0.10
> no shut
> exit
> interface serial 2/0
```

> ip address 20.0.0.10 255.0.0.0
> no shut
> exit
> exit
> ip route 0.0.0.0 0.0.0.0 20.0.0.20

Type the following commands for Router1

> enable
> config t
> interface serial 2/0
> ip address 20.0.0.20 255.0.0.0
> no shut
> exit
> interface serial 3/0
> ip address 30.0.0.10 255.0.0.0
> no shut
> exit
> exit
> ip route 10.0.0.0 255.0.0.0 20.0.0.10
> ip route 40.0.0.0 255.0.0.0 30.0.0.20
> exit

Type the following commands for Router2

> enable
> config t
> interface fastethernet 0/0
> ip address 40.0.0.10 255.0.0.0
> exit
> interface serial 2/0
> ip address 30.0.0.20 255.0.0.0
> exit
> ip route 0.0.0.0 0.0.0.0 30.0.0.10
> exit.

- Connect the devices using serial wire
- Configure gateways on end devices
- Ping message from PC0 to PC1

Output:

Ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data

Request timed out

Reply from 40.0.0.1: bytes = 32 time = 20ms TTL = 125

Reply from 40.0.0.1: bytes = 32 time = 9ms TTL = 125

Reply from 40.0.0.1: bytes = 32 time = 21ms TTL = 125

Ping statistics for 40.0.0.1:

Packets Sent = 4, Received = 3, Lost = 1 (25% Loss),

Approximate round trip times in milliseconds:

Min = 9ms, Max = 21ms, Avg = 16ms

Observation:

① Same as last experiment

② If a router has only one pathway to go, it can use default routing to send packets of any destination to its adjacent neighbours. This was the case with Router 0 & Router 1.

③ whereas in the other 2 routers, we do usual static routing.

Topology and output screenshots:

Simulation Panel

Vis.	Time(sec)	Last De	At Dev	Type	Info
	48.151	--	Router...	CDP	
	48.152	Router2	PC1	CDP	
	48.152	Router2	Router...	CDP	
	50.458	--	Router...	CDP	
	50.458	--	Router...	CDP	

Reset Simulation ☒ Constant Delay Captured to: 50.458 s

Play Controls: Back Auto Capture / Play Capture / Forward

Event List Filters - Visible Events
 ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTB, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, LACP, NBP, NETFLOW, NTP, OSPF, OSPFv6, PAP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP

Edit Filters Show All/None

Time: 00:01:10.037 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Scenario 0
 New Delete
 Toggle PDU List Window

Fire Last Status Source Destination Type Color Time(Period Num Edit Delete
 Failed PC0 PC1 IC... 0.000 N 0 (ed... (delete)

PC0

Physical Config Desktop Custom Interface

Command Prompt

```

Packet Tracer PC Command Line 1.0
PC>ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data:

Reply from 40.0.0.1: bytes=32 time=10ms TTL=125
Reply from 40.0.0.1: bytes=32 time=17ms TTL=125
Reply from 40.0.0.1: bytes=32 time=18ms TTL=125
Reply from 40.0.0.1: bytes=32 time=3ms TTL=125

Ping statistics for 40.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 18ms, Average = 12ms

PC>
  
```

Time: 00:01:24 Power Cycle Devices Fast Forward Time

Scenario 0
 New Delete
 Toggle PDU List Window

Fire Last Status Source Destination Type Color Time(Period Num Edit Delete
 Failed PC0 PC1 IC... 0.000 N 0 (ed... (delete)