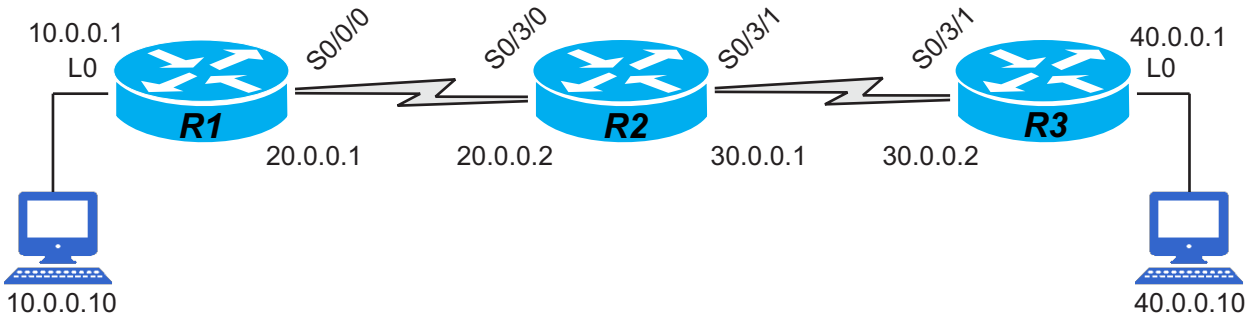
IP SOFTWARE SOLUTION

CCNA

ROUTING & SWITCHING

Static Routing

Topology Diagram:



Objectives :

This Lab topology would make the student understand the following concepts.

1. Understanding the interface configuration.
2. Configuration of Loopback Interface
3. Enabling the TCP/IP processing on the router and on the Interface.
4. Monitoring the Routing table changes.
5. Configuring the static routers.

Lab Exercises:

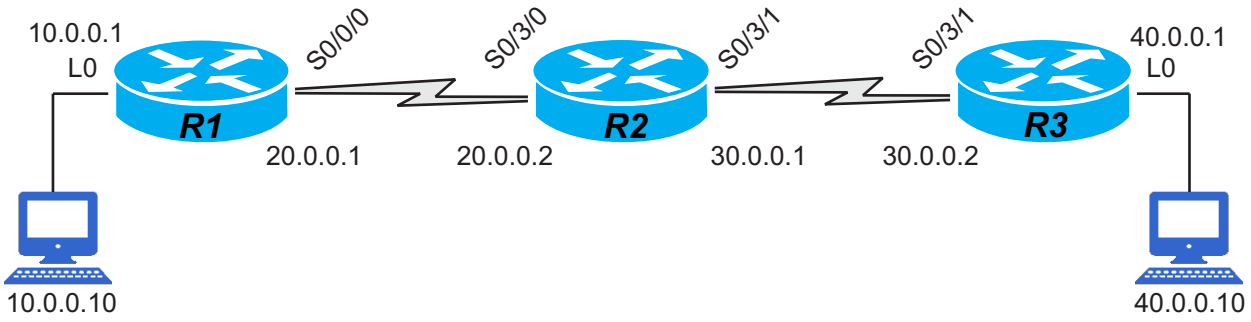
1. Assigning the IP addresses and making the interfaces administratively up.
2. Understanding the routing table.
3. Understanding the importance of keepalive.
4. Importance of clock rate command.
5. Adding a static route by defining the next hop address
6. Adding a static route by defining the exit interface
7. Refreshing the IP process.

Commands:

Show Interfaces	Interface serial 0
Interface loopback 0	Interface serial 1
Show IP interface brief	Show IP interface
Show protocols	IP Routing
No IP Routing	Show IP Route
Show IP route connected	Show IP Route static
Ping	Keepalive/No keepalive

IP Route <NID> <SNM> <Gateway>
Ip route <NID> <SNM>Exit interface
Clear IP route *

Topology Diagram:



Objectives :

This Lab topology would make the student understand the following concepts.

1. Understanding the routing logic by debugging.
2. Trouble shooting the routing problems.
3. Understanding the output of different debug commands.
4. Usage of the Extended PING commands.
5. Configuration of default routing.
6. Disabling IP routing on the router.
7. CDP (Cisco Discovery Protocol).

Lab Exercises:

1. Understanding the importance of extended ping command.
2. Understanding the messages
   a. Unroutable
   b. Forward
   c. Sending, Received
   d. Encapsulation failed
3. Understanding the importance of debug IP ICMP command.
4. Configuring the router act a host or disabling IP routing.

Commands:

Terminal monitor
Show interfaces serial 0
Show protocols
Show IP Route
Show IP Route static
Debug IP ICMP
Clear arp-cache
IP Route <NID> <SNM> <Gateway>
IP Route <NID> <SNM> <Interface>
IP Route 0.0.0.0 0.0.0.0 <Gateway>
IP Routing
Ip default-gateway A.B.C.D
show CDP interface

Show IP interface brief
Show IP interface
Show IP route connected
Debug IP Routing
Debug IP packet
debug arp
Extended PING

no ip routing
show CDP neighbors detail
Traceroute A.B.C.D