DEFAULT ROUTING

RA

S0
20.0.0.1

S0
20.0.0.2

**INTERNET
(ISP)**

E0
10.0.0.1
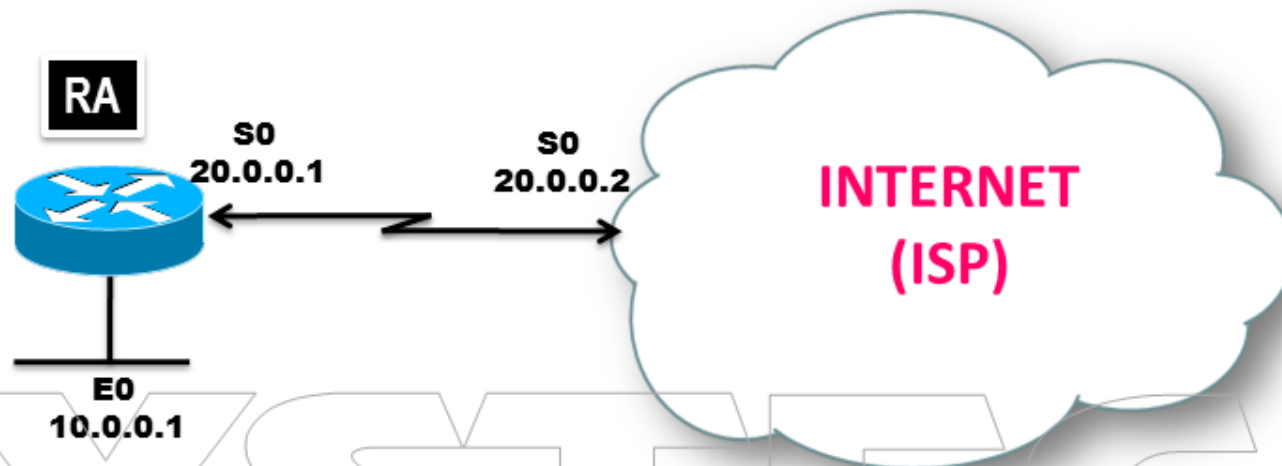
- ✓ Default route is used for unknown destination
- ✓ It is the last preferred route, hence it is the bottom of Routing table
- ✓ Administrative Distance 255
- ✓ Used for internet access

RA # configure terminal

RA # ip routing

RA # ip route 0.0.0.0 0.0.0.0 20.0.0.2

RA # show ip route

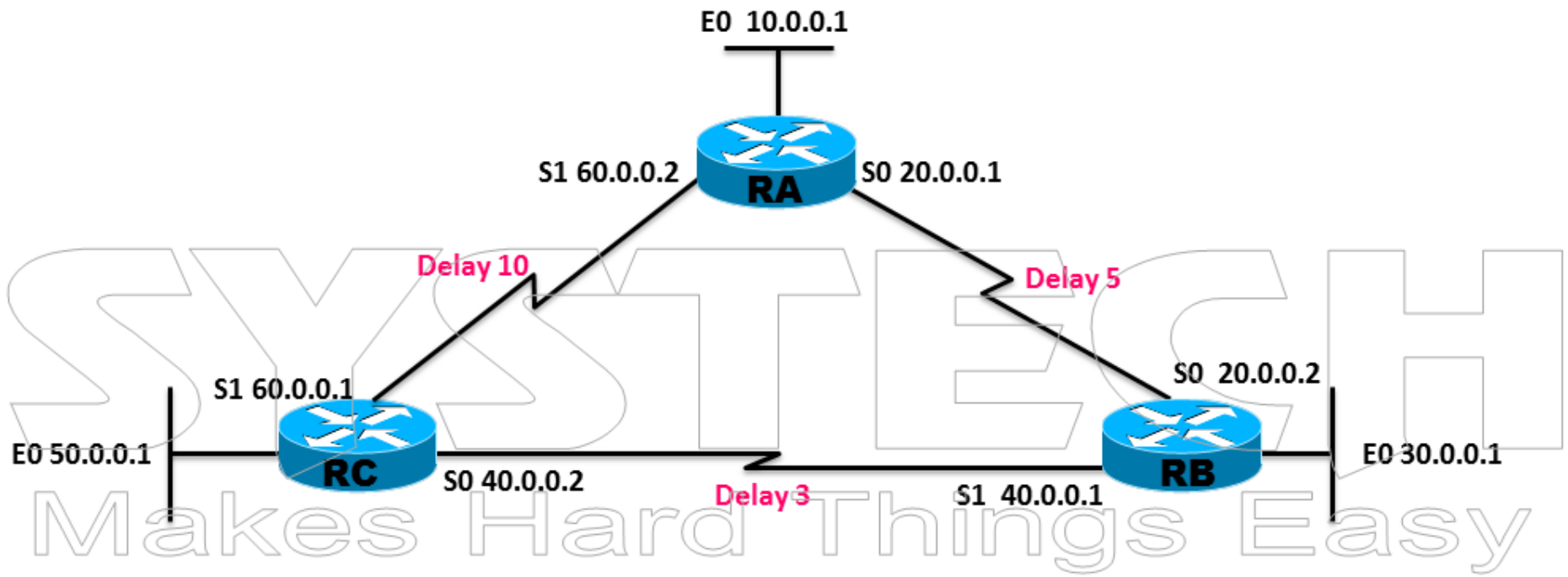**"S* " represents Static Default route**

EIGRP (Enhanced Interior Gateway Routing Protocol)

- ✔ Advanced Distance vector routing protocol.
- ✓ It is sometimes referred as Hybrid Routing Protocol.
- ✓ EIGRP is used in very large network.
- ✓ EIGRP is Cisco Proprietary Protocol.
- ✓ It will work in Cisco Router only.
- ✓ It do not support other vendors.
- ✓ It supports class Less Routing protocol.
- ✓ EIGRP support VLSM and Discontiguous network.
- ✓ EIGRP Administrative distance is 90.
- ✓ EIGRP Metric
  - 1)Bandwidth.   -K1
  - 2)Load.   -K2
  - 3)Delay.   -K3
  - 4)Reliability.   -K4
  - 5)MTU (maximum transmission unit) –k5
- ✓ It has topology table.
- ✓ Autonomous system number is used in EIGRP. (Range 1-65535).
- ✓ In EIGRP Router sends specific update only, when the topology changes occur.
- ✓ Best path is selected via Diffusing update Algorithm. it's commonly called as DUAL.
- ✓ It use RTP protocol to share communication of messages.
- ✓ It will not send update unless there is any changes in N/W.(no update time).

- ✓ AD 90 (internal) 170 (external)
- ✓ Updates are sent as multicast (224.0.0.10) or unicast
- ✓ Incremental /triggered update
- ✓ Fast convergence
- ✓ Max hops = 224 (default = 100)
- ✓ Load balancing on 4 equal cost (default)
    - Max 16 paths (equal or unequal)
- ✓ supports multiple routed protocols
- ✓   - (IP,IPX, Apple Talk)
- ✓ supports ipv4 & ipv6
- ✓ EIGRP uses protocol no 88
- ✓ Neighbor discovery
- ✓   - EIGRP sends hello message every 5 sec to discover neighbours
- ✓ Reliable Transport Protocol (RTP)
- ✓   - Guaranteed delivery of updates to its neighbour
- ✓ Dual Algorithm
- ✓   - it selects best path and also remembers alternate path if any exists

EIGRP (Enhanced Interior Gateway Routing Protocol)

RA — E0 10.0.0.1, S1 60.0.0.2, S0 20.0.0.1

RC — S1 60.0.0.1, E0 50.0.0.1, S0 40.0.0.2

RB — S0 20.0.0.2, E0 30.0.0.1, S1 40.0.0.1

Delay 10, Delay 5, Delay 3

Directly connected code: C   EIGRP Code: D   Administrative Distance: 90

Enable Interface in RA,RB,RC

RA

Router >	Enable
Router #	Configure Terminal
Router(config)#	router eigrp 100
Router(config-router)#	network 10.0.0.0
Router(config-router)#	network 20.0.0.0
Router(config-router)#	network 60.0.0.0

RB

Router >	Enable
Router #	Configure Terminal
Router(config)#	router eigrp 100
Router(config-router)#	network 20.0.0.0
Router(config-router)#	network 30.0.0.0
Router(config-router)#	network 40.0.0.0

RC

Router >	Enable
Router #	Configure Terminal
Router(config)#	router eigrp 100
Router(config-router)#	network 40.0.0.0
Router(config-router)#	network 50.0.0.0
Router(config-router)#	network 60.0.0.0

sh ip eigrp topology.

sh ip eigrp neighbor.

To Change Metric (To check only Delay)

Router >	Enable
Router #	Configure Terminal
Router(config)#	router eigrp 100
Router(config-router)	Metric weights 0 0 0 1 0 0
	K1 K2 K3 K4 K5

RA

Router >	Enable
Router #	Configure Terminal
Router(config)#	Interface serial0
Router(config-if)#	delay 5
Router(config)#	interface serial 1
Router(config-if)#	delay 10

RB

Router >	Enable
Router #	Configure Terminal
Router(config)#	Interface serial0
Router(config-if)#	delay 5
Router(config)#	interface serial 1
Router(config-if)#	delay 3

RC

Router >	Enable
Router #	Configure Terminal
Router(config)#	Interface serial0
Router(config-if)#	delay 3
Router(config)#	interface serial 1
Router(config-if)#	delay 10

Password To Console Mode

Router >
Router #
Router(config)#
Router(config-line)#
Router(config-line)#

Enable
Configure Terminal
Line console 0
login
password 123

Password To Telnet

Enable
Configure Terminal
Line vty 0 4

(virtual tele type,

5 members can access)

Login

password abc

Password To Privilege Mode

Router >
Router #
Router(config)#

Enable
Configure Terminal
Enable password 1234

Secret Password

Router >
Router #
Router(config)#

Enable
Configure Terminal
Enable secret 12345