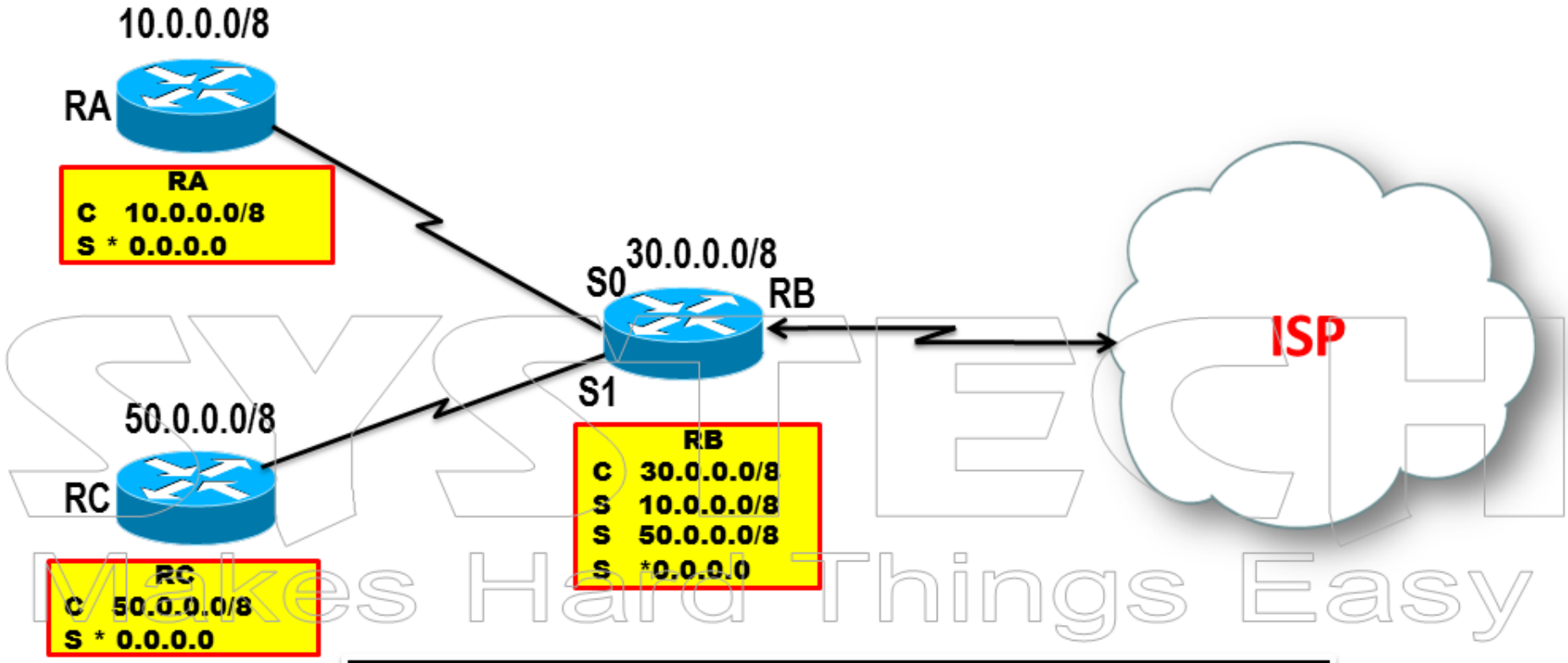
CCNP-ROUTING

300-101

STATIC & DEFAULT ROUTING

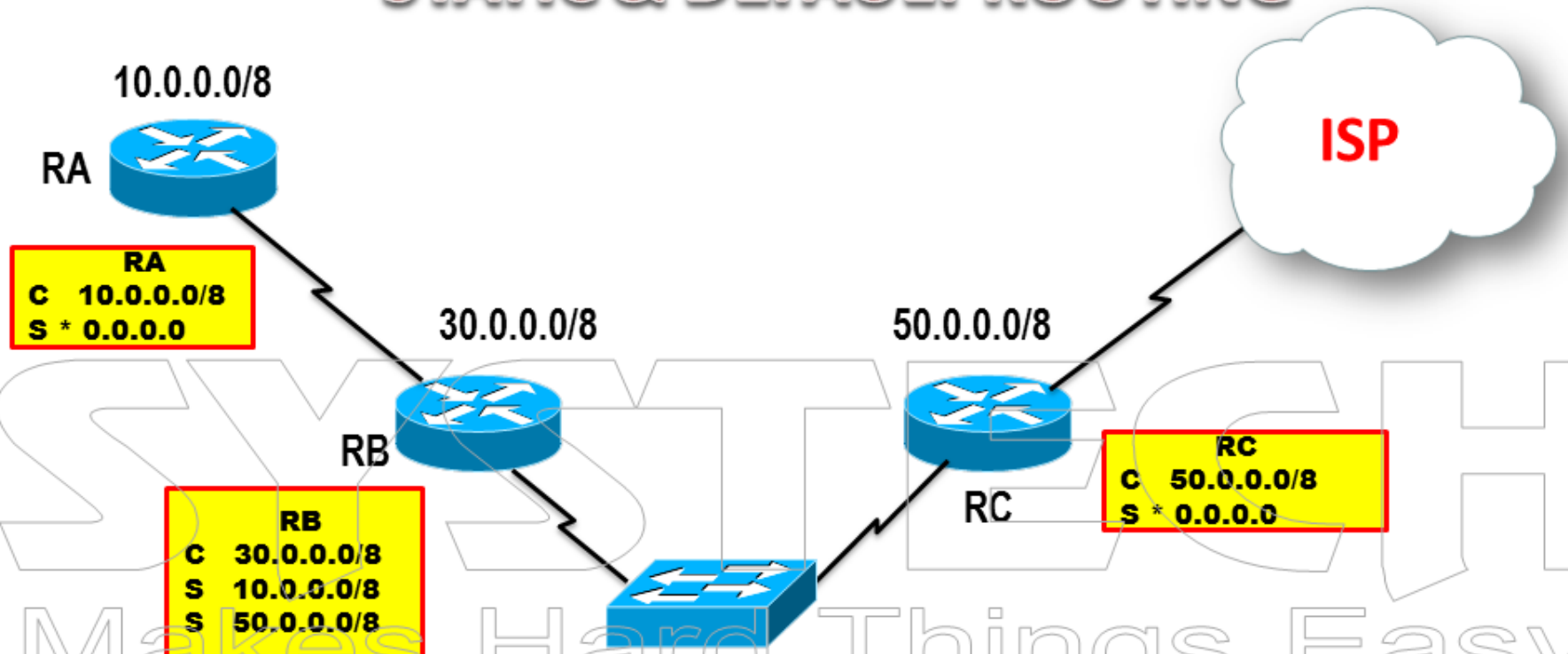


Static is not needed in RA & RC because they are stub routers

If RA N/W fails then RB will search for that network and if it is not in the routing table then it will send update to ISP because default routing is configured in RB so use permanent command

```
RB#ip route 10.0.0.0 255.0.0.0 Serial 0 permanent
RB#ip route 50.0.0.0 255.0.0.0 Serial 1 permanent
```

STATIC & DEFAULT ROUTING



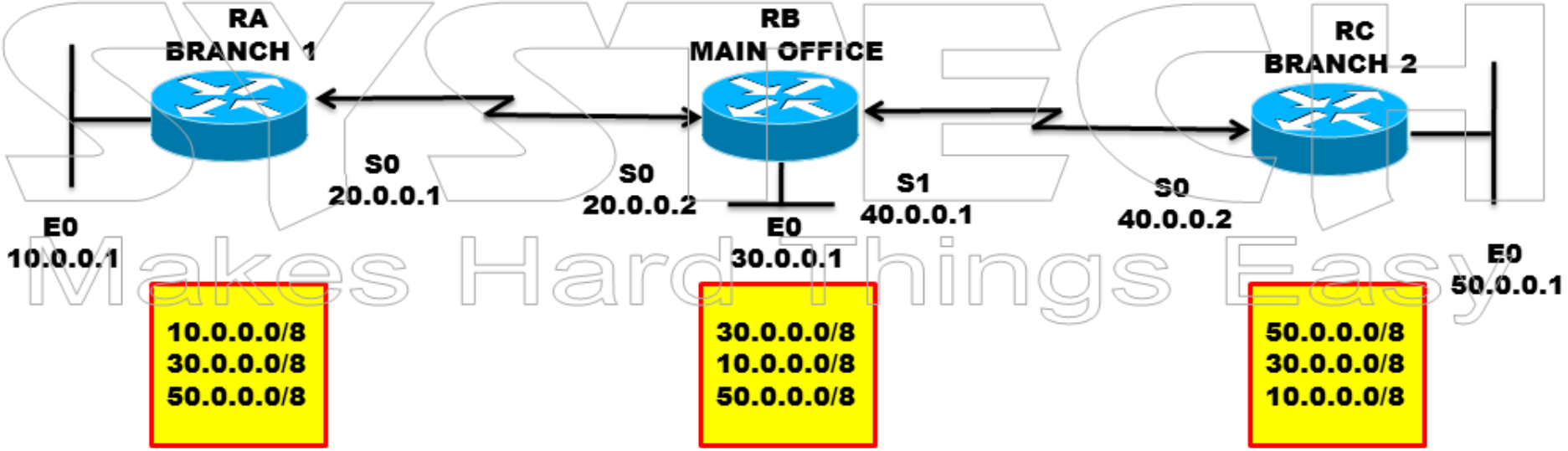
If the connection between RA & RB is down then their will be loop between RB & RC (because switch will broadcast)
So to solve this we have to use permanent command

RB # ip route 10.0.0.0 255.0.0.0 Serial 0 permanent

Permanent command must be given only in directly connected router

DISTRIBUTE LIST

- ✓ Distribute list is used to control routing updates either coming to your router or leaving from your router.
- ✓ Distribute-lists use Cisco IOS Access-Lists, you can define what routes must be sent out of the router, or received into the router.



RULE :

- ✓ Main office (RB) must communicate with branch offices (RA & RC), But branch offices must not communicate with each other.

We can use access list but it will block data packets not update packets.
when RA wants to communicate with RC ,it will send update to RB and then RB checks access list and cancel the update which has to be sent to RC.
So bandwidth is wasted between RA & RB. so to overcome this problem we have to use distribute list.

Enable interface and configure EIGRP 100 in RA RB RC

Router B

```
Router(config)#          access-list 10 permit 30.0.0.0 0.255.255.255
Router(config)#          router eigrp 100
Router(config-router)#   distribute-list 10 out s0
Router(config-router)#   distribute-list 10 out s1
```


Router A & C

```
Router #                 sh ip route
```

Now RB will send only 30 n/w to RA & RC so RA & RC will not communicate with each other

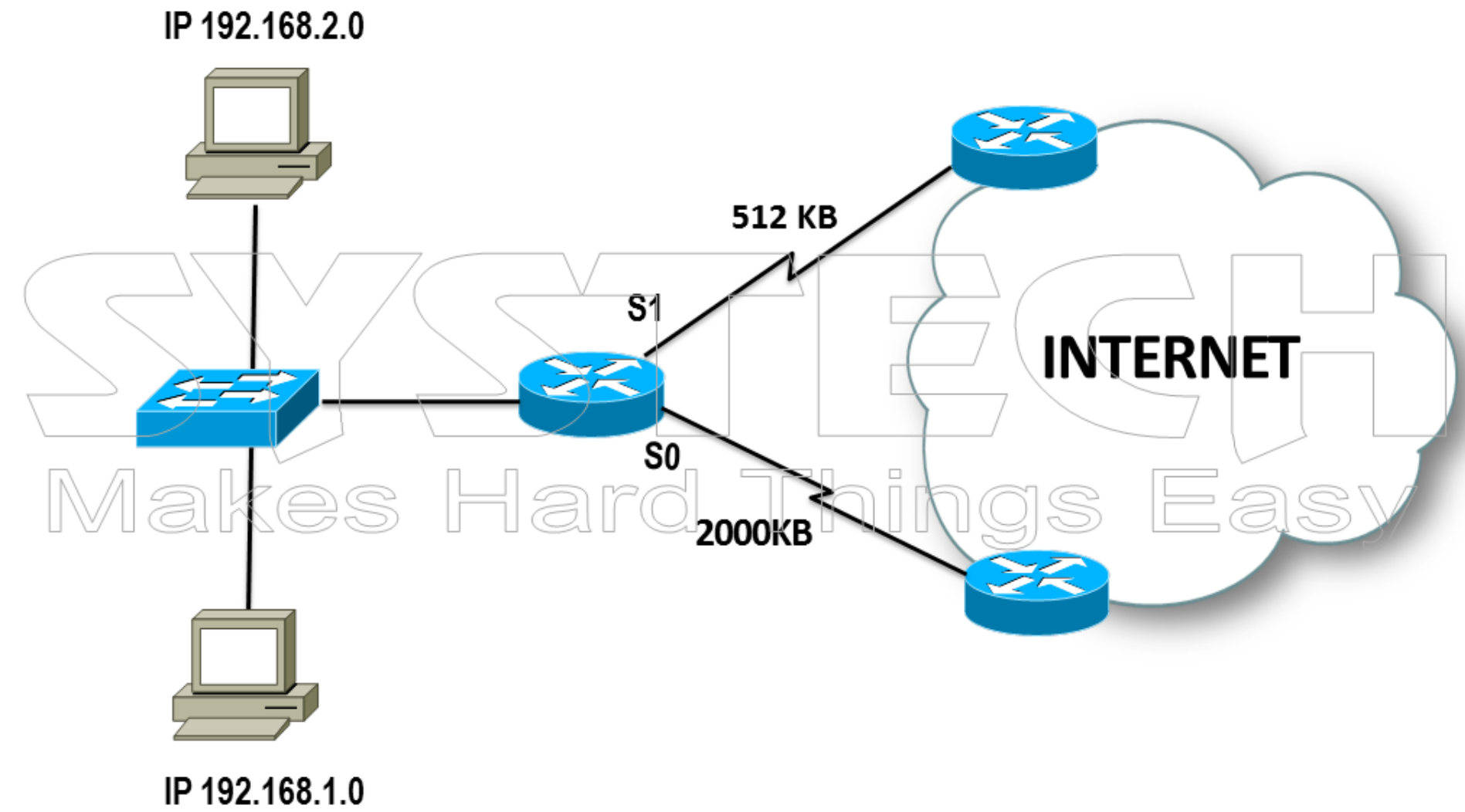
ROUTE MAP

- ✓ Route map works like access-list
- ✓ It works like scripting language
- ✓ It will follow “IF THEN ELSE” criteria

USAGE:

- ✓ Policy based routing
- ✓ BGP policy
- ✓ Redistribution
- ✓ NAT
- ✓ Qos

BEFORE POLICY BASED ROUTING



ROUTE MAP

Rule: 192.168.2.0 must use 512 kbs line
192.168.1.0 must use 2 mbps line

```
#Access-list 5 permit 192.168.1.0  0.0.0.255
#Access-list 6 permit 192.168.2.0  0.0.0.255
#Route-map systech permit 10
#match ip add 5
#set int s0
#exit
#Route-map  systech permit 20
# match ip add 6
#set  int s1
#exit
#int e0
#ip policy route-map systech
```

AFTER POLICY BASED ROUTING