Route Summarization

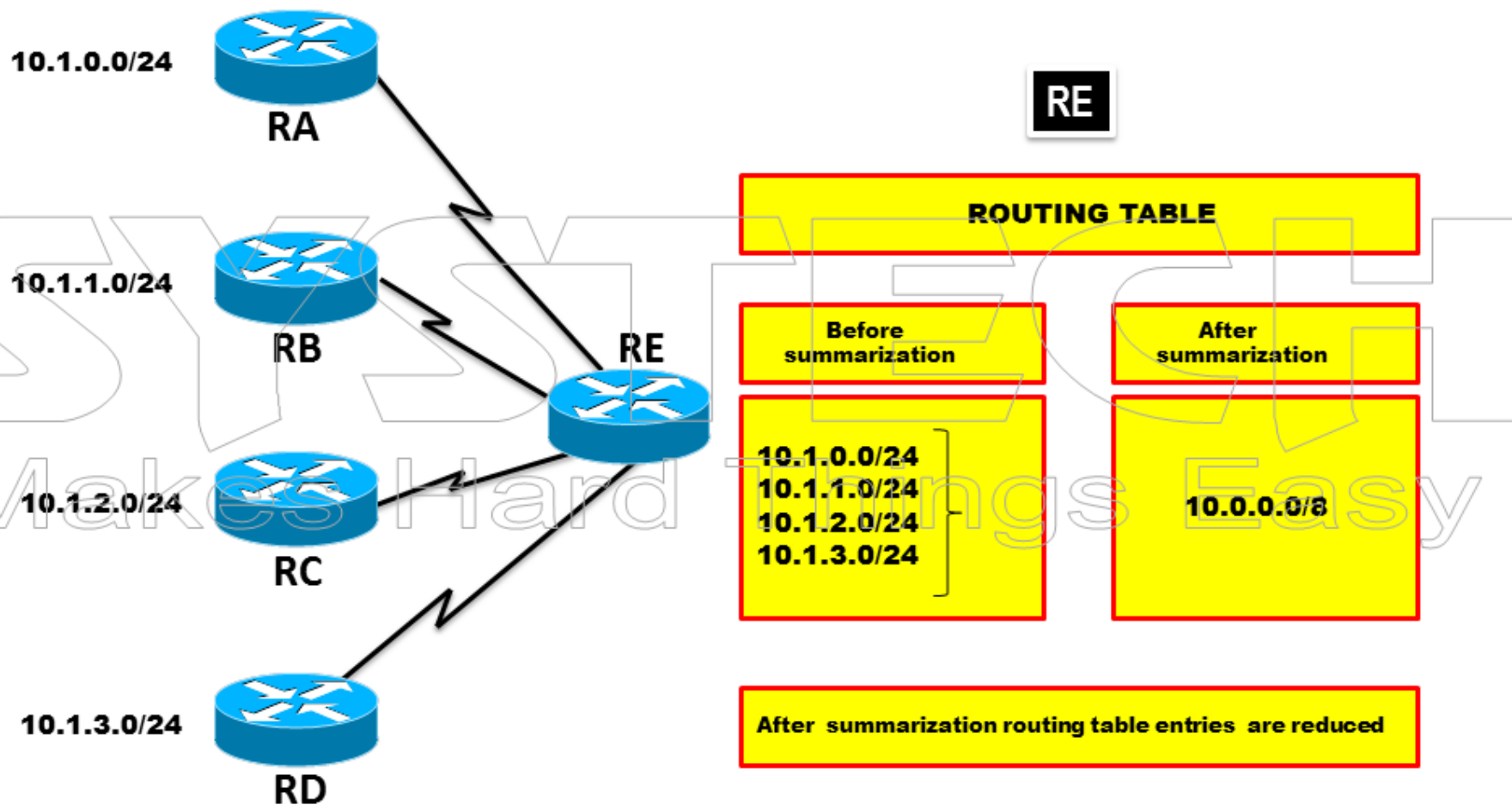✓ Combining contagious address into one single address

Advantages:
✓ Minimizing the routing table entries
✓ Less use of memory, processor and bandwidth
✓ Less number of updates

Types :
✓ Auto summary
✓ Manual summary

Supported by RIPV2, EIGRP, BGP v4

Activate Windows
Go to PC settings to

Route Summarization

10.1.0.0/24 **RA**

10.1.1.0/24 **RB**

RE

10.1.2.0/24 **RC**

10.1.3.0/24 **RD**

RE

ROUTING TABLE	
Before summarization	**After summarization**
10.1.0.0/24 10.1.1.0/24 10.1.2.0/24 10.1.3.0/24	10.0.0.0/8

After summarization routing table entries are reduced

Activate Windows
Go to PC settings to

TYPE:1

128	64	32	16	8	4	2	1

10 .10.1.0	=	**10.10.**	0	0	0	0	0	0	0	1	.0
10.10.2.0	=	**10.10.**	0	0	0	0	0	0	1	0	.0
10.10.3.0	=	**10.10.**	0	0	0	0	0	0	1	1	.0

128+ 64 + 32 + 16 + 8 + 4 = 252

6 bits

255.255.252.0

10.10.0.0/22 - 10.10.3.255/22
10.10.4.0/22 - 10.10.7.255/22
10.10.8.0/22 - 10.10.11.255/22

Ans:10.10.0.0/22

Activate Windows
Go to PC settings to a

2) 50 .80.41.0 /24	50.80.42.0/24	50.80.43.0/24

128	64	32	16	8	⭐4	2	1

50 .80.41.0	= 50.80.	0	0	1	0	1	0	0	1	.0
50.80.42.0	= 50.80.	0	0	1	0	1	0	1	0	.0
50.80.43.0	= 50.80.	0	0	1	0	1	0	1	1	.0

128+ 64 + 32 + 16 + 8 + 4 = 252

6 bits

255.255.252.0

50.80.40.0/22 - 50.80.43.255/22
50.80.44.0/22 - 50.80.47.255/22

Ans:50.80.40.0/22

128	64	32	16	8 ⭐	4	2	1

100.99.0.0	=	100 .	0	1	1	0	0	0	1	1	.0.0
100.101.0.0	=	100 .	0	1	1	0	0	1	0	1	.0.0
100.97.0.0	=	100 .	0	1	1	0	0	0	0	1	.0.0
100.103.0.0	=	100 .	0	1	1	0	0	1	1	1	.0.0
100.100.0.0	=	100 .	0	1	1	0	0	1	0	0	.0.0
100.102.0.0	=	100 .	0	1	1	0	0	1	1	0	.0.0

128+ 64 + 32 + 16 + 8 = 248

5 bits , 255.248.0.0

Ans:100.96.0.0/13

SYSTECH
HARDWARE & NETWORKING ACADEMY
www.systechacademy.com
www.facebook.com/systechacademy

4) 100.99.0.0/16 , 100.101.0.0/16 , 100.97.0.0/16 , 100.103.0.0/16 , 100.100.0.0/16 ,100.102.0.0/16

TYPE:2

There are 6 Network so 2^3 = 8

Take 8 subnet and keep on adding

100.8.0.0
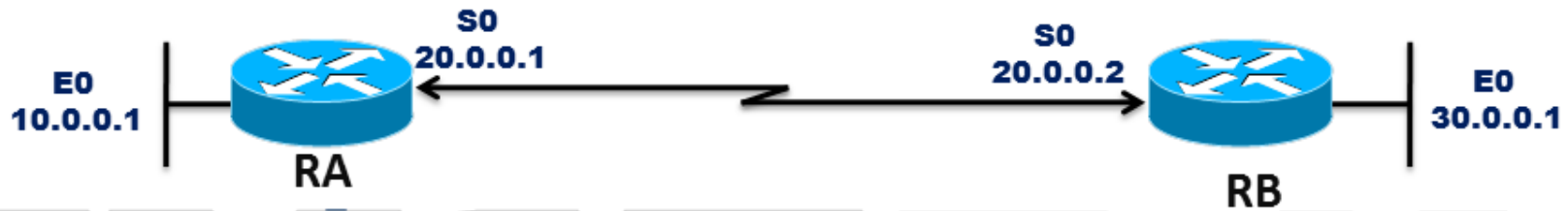100.16.0.0
100.24.0.0
.
.
.
100.80.0.0
100.88.0.0
100.96.0.0
100.104.0.0

100.96.0.1 100.103.255.254 100.103.255.255

Ans:100.96.0.0/13

Route Summarization With EIGRP

S0
20.0.0.1

S0
20.0.0.2

E0
10.0.0.1

E0
30.0.0.1

RA

RB

EIGRP

Loop back address
Loop back 0   172.168.0.1
Loop back 1   172.168.1.1
Loop back 2   172.168.2.1   Subnet mask   255.255.255.0
Loop back 3   172.168.3.1
Loop back 4   172.168.4.1

ENABLE INTERFACE AND LOOPBACK

Activate Window
Go to PC settings to a

Router A

```
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 172.168.0.0
Router(config-router)#  network 172.168.1.0
Router(config-router)#  network 172.168.2.0
Router(config-router)#  network 172.168.3.0
Router(config-router)#  network 172.168.4.0
```

Router B

```
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 B

```
# Sh ip route
```

Router A&B

```
# router eigrp 100
# no auto-summary
```

Router B

```
# Sh ip route
```

Router A

```
Router(config)#     interface S0
Router(config-if)#  ip summary-address eigrp 100 172.168.0.0 255.255.248.0
```

Router B

```
# Sh ip route
172.168.0.0 network is summarized
```

Activate Window
Go to PC settings to a