Network Project

Team Renew

황준서

박소정

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권 택

RENEW

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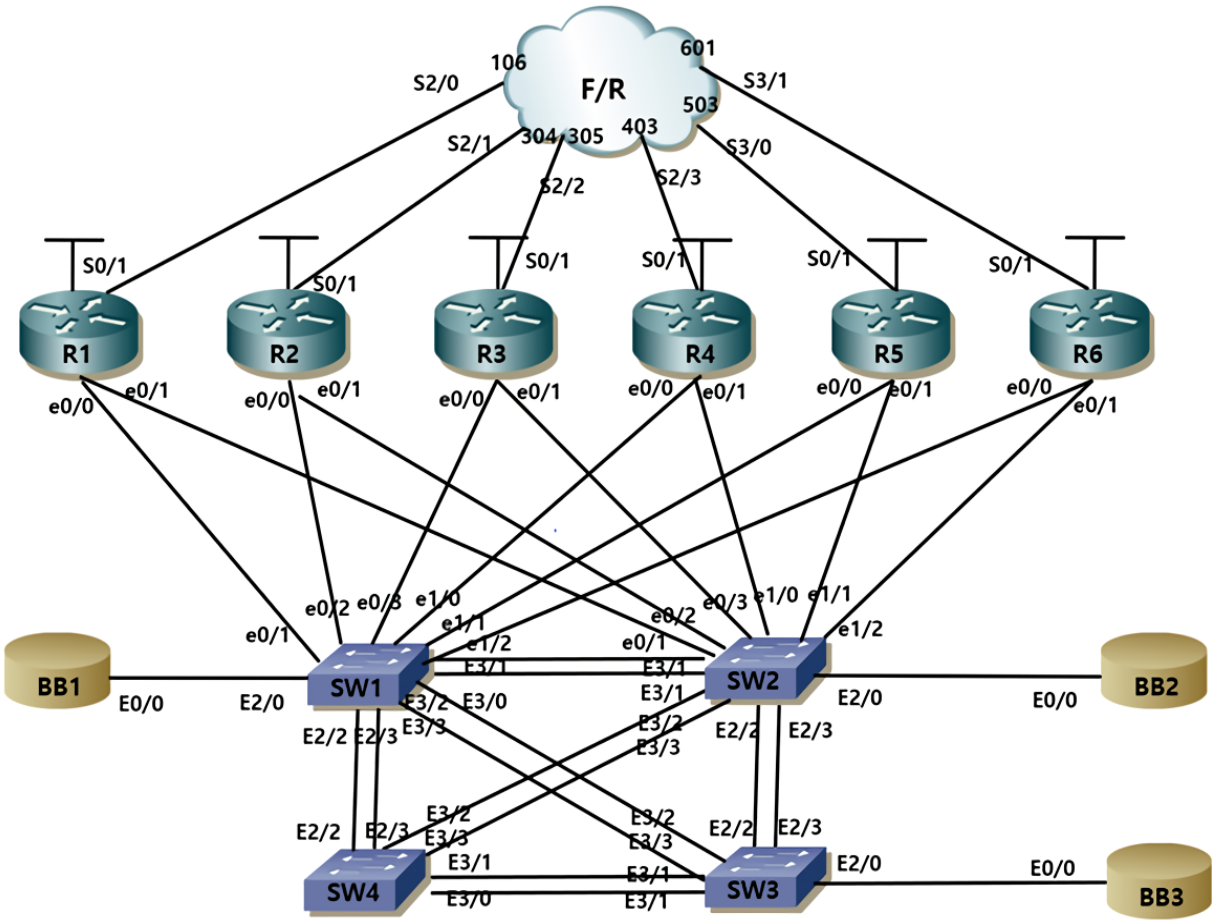
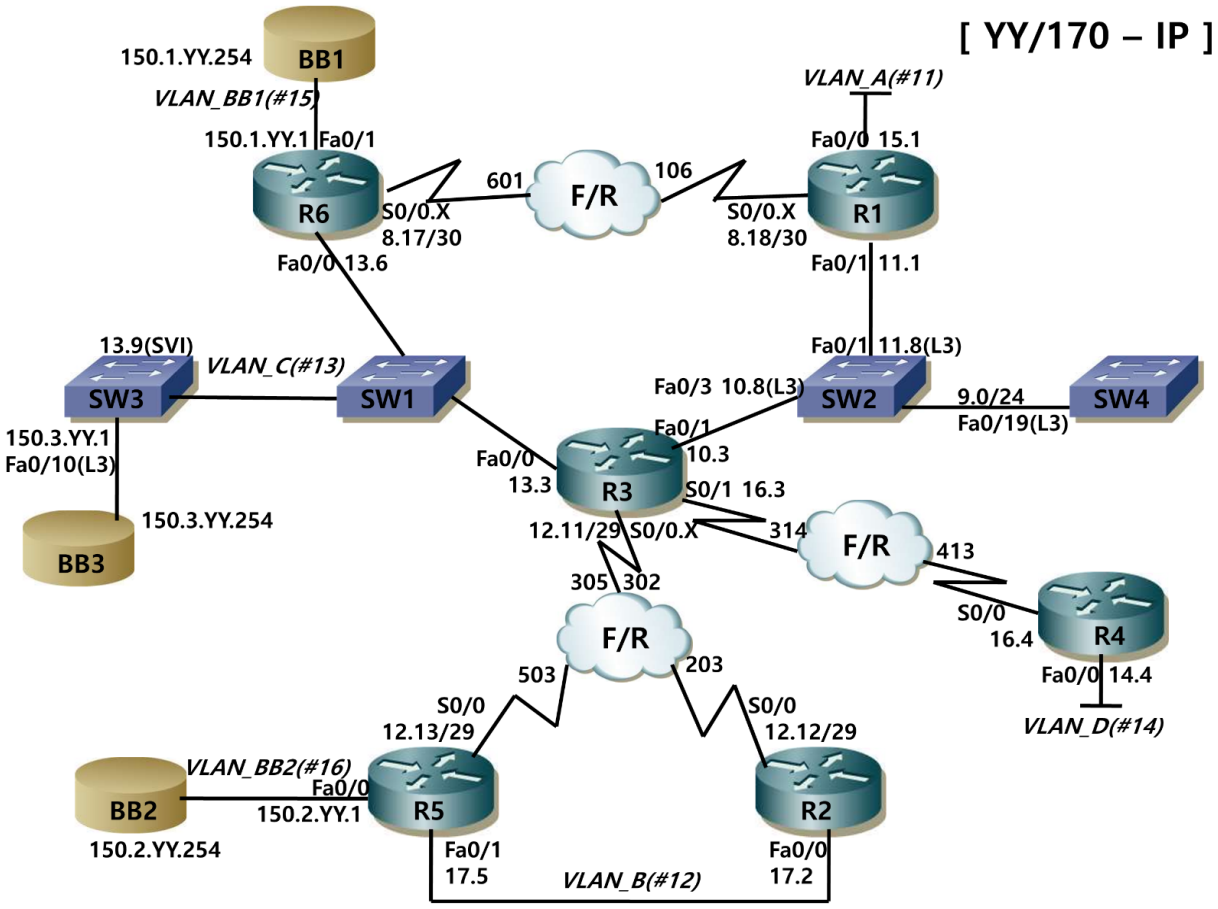
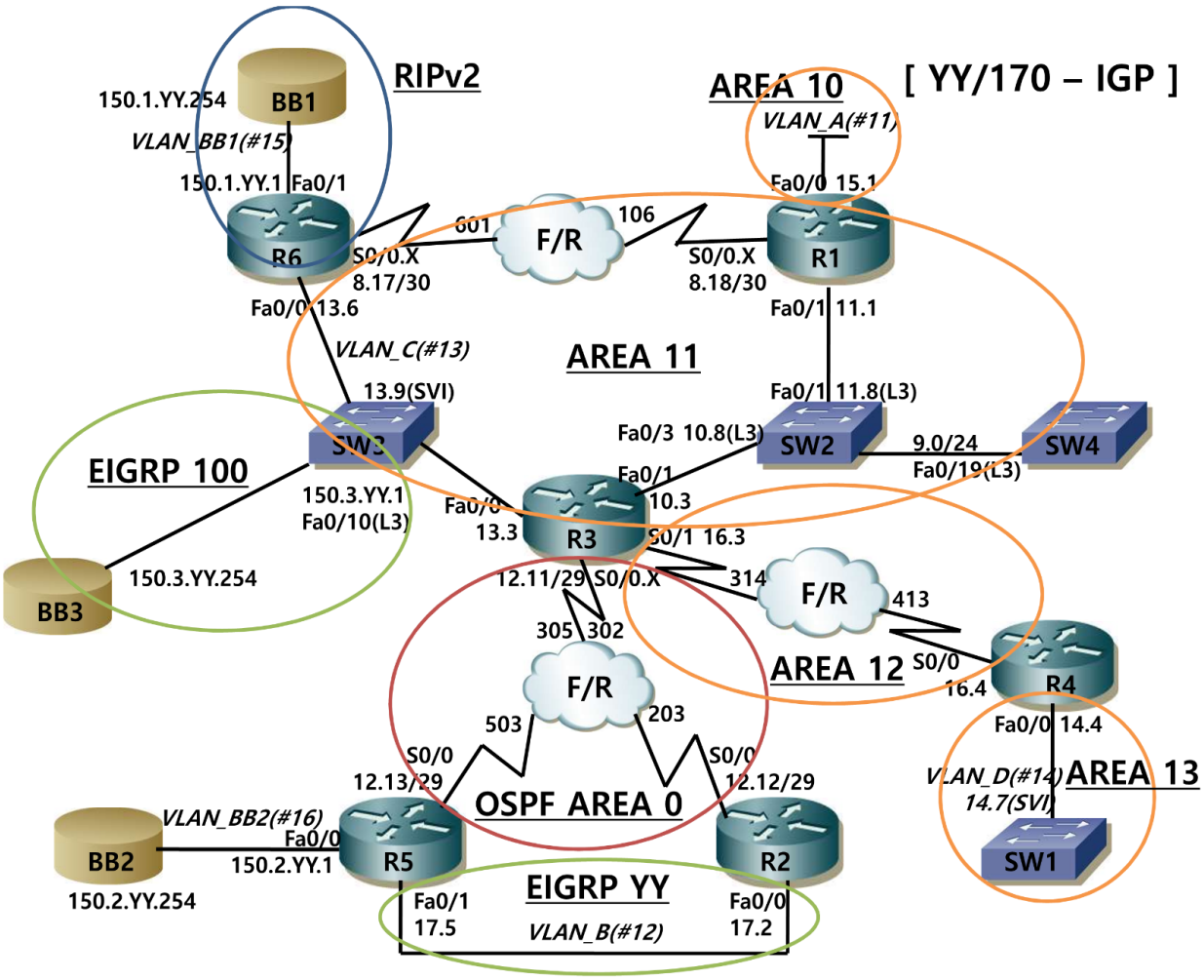
1. 물리적 구성도


F/R
106
601
503
403
304
305
S2/0
S2/1
S2/2
S2/3
S3/1
S3/0
R1
R2
R3
R4
R5
R6
S0/1
e0/0
e0/1
SW1
SW2
SW3
SW4
BB1
BB2
BB3
E0/0
E2/0
E2/2
E2/3
E3/0
E3/1
E3/2
E3/3
e1/0
e1/1
e1/2

2. IP 구성도


[YY/170 – IP]
150.1.YY.254
BB1
VLAN_BB1(#15)
150.1.YY.1 Fa0/1
R6
601
F/R
106
R1
VLAN_A(#11)
Fa0/0 15.1
S0/0.X
8.17/30
S0/0.X
8.18/30
Fa0/0 13.6
Fa0/1 11.1
13.9(SVI)
VLAN_C(#13)
SW3
SW1
Fa0/1 11.8(L3)
Fa0/3 10.8(L3)
SW2
9.0/24
Fa0/19(L3)
SW4
150.3.YY.1
Fa0/10(L3)
Fa0/0
13.3
Fa0/1
10.3
R3
S0/1 16.3
150.3.YY.254
BB3
12.11/29 S0/0.X
314
F/R
413
305 302
S0/0
16.4
R4
F/R
503
203
Fa0/0 14.4
VLAN_D(#14)
S0/0
12.13/29
S0/0
12.12/29
VLAN_BB2(#16)
Fa0/0
BB2
150.2.YY.1
R5
R2
150.2.YY.254
Fa0/1
17.5
VLAN_B(#12)
Fa0/0
17.2

3. IGP 구성도


[YY/170 – IGP]
RIPv2
AREA 10
VLAN_A(#11)
150.1.YY.254
BB1
VLAN_BB1(#15)
150.1.YY.1 Fa0/1
Fa0/0 15.1
R6
601
F/R
106
R1
S0/0.X
8.17/30
S0/0.X
8.18/30
Fa0/0 13.6
Fa0/1 11.1
VLAN_C(#13)
AREA 11
13.9(SVI)
Fa0/1 11.8(L3)
SW3
Fa0/3 10.8(L3)
SW2
9.0/24
Fa0/19(L3)
SW4
EIGRP 100
150.3.YY.1
Fa0/10(L3)
Fa0/1
10.3
Fa0/0
13.3
R3
S0/1 16.3
150.3.YY.254
BB3
12.11/29 S0/0.X
314
F/R
413
305
302
AREA 12
S0/0
16.4
R4
F/R
Fa0/0 14.4
503
203
S0/0
12.13/29
S0/0
12.12/29
VLAN_D(#14)
14.7(SVI)
AREA 13
OSPF AREA 0
VLAN_BB2(#16)
Fa0/0
BB2
150.2.YY.1
R5
R2
SW1
150.2.YY.254
Fa0/1
17.5
EIGRP YY
VLAN_B(#12)
Fa0/0
17.2

4. 설정

170-MAP

Ⅰ. Bridging and Switching

1. Configure IP across your frame relay network

[Frame-relay]

[a. R1,R3,R6 을 제외한 나머지 라우터에서는 Sub-interface 를 사용 할 수 없다.]

[b. R1 과 R6 에서는 Point-to-point sub-interface 를 사용하여 frame-relay 구간 설정.]

[c. R3 는 multipoint sub-interface 를 사용하여 frame-relay 구간 설정.]

[d. Sub-interface 를 사용하는 모든 라우터에서는 Sub-interface name 을 Serial1/0.X 로 설정. X=장비번호]

R1	**R2**
int lo0 ip add 14.14.1.1 255.255.255.255 int e0/1 no sh ip add 14.14.11.1 255.255.255.0	int lo0 ip add 14.14.2.2 255.255.255.255 int e0/0 no sh ip add 14.14.17.2 255.255.255.0

int e0/0
no sh
ip add 14.14.15.1 255.255.255.0

int s1/0
encapsulation frame-relay
no frame-relay inverse-arp
no sh

int s1/0.1 point
ip add 14.14.8.18 255.255.255.252
frame inter 106

R3

int lo0
ip add 14.14.3.3 255.255.255.255

int e0/1
no sh
ip add 14.14.10.3 255.255.255.0

int e0/0
no sh
ip add 14.14.13.3 255.255.255.0

int s1/0
int s1/0
enc frame
no frame inver
no sh
ip add 14.14.12.2 255.255.255.248
frame map ip 14.14.12.3 203 br
frame map ip 14.14.12.5 203 br

R5

int lo0
ip add 14.14.5.5 255.255.255.255

int e0/1
no sh
ip add 14.14.17.5 255.255.255.0

int s1/0
encapsulation frame-relay
no frame-relay inverse-arp
no sh
ip add 14.14.12.5 255.255.255.248
frame map ip 14.14.12.2 503 broad

frame map ip 14.14.12.3 503 broad

encapsulation frame-relay
no frame-relay inverse-arp
no sh

int s1/0.16 p
ip add 14.14.16.3 255.255.255.0
fram int 304

int s1/0.3 m
ip add 14.14.12.3 255.255.255.248
frame map ip 14.14.12.5 305 broad
frame map ip 14.14.12.2 302 broad

R4

int lo0
ip add 14.14.4.4 255.255.255.255

int e0/0
no sh
ip add 14.14.14.4 255.255.255.0

int s1/0
en fram
no fram inv
no sh
int s1/0.16 p

R6

int lo0
ip add 14.14.6.6 255.255.255.255

int e0/1
no sh
ip add 150.1.14.1 255.255.255.0

int e0/0
no sh
ip add 14.14.13.6 255.255.255.0

int s1/0
encapsulation frame-relay
no frame-relay inverse-arp
no sh

int s1/0.6 point
ip add 14.14.8.17 255.255.255.252
frame inter 601

ip add 14.14.16.4 255.255.255.0 fram int 403	

2. Cat3550 Switch Setup

2.1 Default Configuration

SW1	**SW2**
int range e2/2 - 3 shutdown int e3/3 shutdown	int range e2/2 - 3 shutdown int e3/3 shutdown int e3/2 no sw

SW3	**SW4**
int range e3/0 - 1 shutdown int range e2/2 - 3 shutdown int e3/3 shutdown	int range e3/0 - 1 shutdown int range e2/2 - 3 shutdown int e3/3 shutdown int e3/2 no sw

2.1 VTP Configuration

[모든 SW 에서 VTP 및 DTP broadcast 트래픽이 모든 포트에서 흘러 다니지 않도록 하라]

SW1 - **SW4**
vtp mode transparent vtp domain renew.com vtp password renew vtp ver 2

2.2 Trunk Port

[SW1,SW2 사이에 ISL trunk 구성하라.]

SW1

```
int range e3/0 - 1
switch trunk encap dot
switch mode trunk

int e3/2
switch trunk encap dot
switch mode trunk
```

SW2

```
int range e3/0 - 1
switch trunk encap dot
switch mode trunk
```

SW3

```
int e3/2
switch trunk encap dot
switch mode trunk
```

2.3 VLAN Configuration

[다음에 보여지는 것과 같이 VLAN 을 assign 하시오. 모든 설정이 완료된 후, SW1,2,3 에서 모든 VLAN 이 보여야됨]

SW1, **SW3**	**SW1**
no vlan 10-100	int e0/1
	sw mode acc
vlan 11	sw acc vlan 11
name VLAN_A	int e0/2
vlan 12	sw mod acc
name VLAN_B	sw acc vlan 11
vlan 13	sw mod acc
name VLAN_C	sw acc vlan 12
vlan 14	int e0/3
name VLAN_D	sw mod acc
vlan 15	sw acc vlan 13
name VLAN_BB1	int e1/0
vlan 16	sw mod acc
name VLAN_BB2	sw acc vlan 14
	int e1/1
SW2	sw mod acc
	sw acc vlan 16
no vlan 10-100	int e1/2
	sw mod acc
	sw acc vlan 13

vlan 11
name VLAN_A
vlan 12
name VLAN_B
vlan 13
name VLAN_C
vlan 14
name VLAN_D
vlan 15
name VLAN_BB1
vlan 16
name VLAN_BB

int e3/2
no sw
ip add 14.14.9.8 255.255.255.0

int e2/0
sw mod acc
sw acc vlan 15

SW2

int e0/1
no sw
ip add 14.14.11.8 255.255.255.0
int e0/3
no sw
ip add 14.14.10.8 255.255.255.0
int e1/1
sw mod acc
sw acc vlan 12
int e1/2
sw mod acc
sw acc vlan 15
int e2/0
sw mod acc
sw acc vlan 16

SW3	**SW4**
int e2/0 no sw ip add 150.3.14.1 255.255.255.0 int vlan 13 no sh ip add 14.14.13.9 255.255.255.0	int e3/2 no sw ip add 14.14.9.10 255.255.255.0

2.4 Load Balancing

(홀수-odd VLAN 은 e3/0 , 짝수-even VLAN 은 e3/1) SW1,2 에 설정

[홀수 VLAN 은 e3/0 , 짝수 VLAN 은 e3/1 흘러 다니게 하라. 사용하는 VLAN 만 흘러다녀야 한다.]

SW1, **SW2**
int e3/0 swit trunk allowed vlan 11,13,15 int e3/1 swit trunk allowed vlan 12,14,16

2.5 Management Interface

(아래 단계에서는 up down 상태, 2.7 설정 후 up up 상태 됨)

SW1 에서 OSPF 포함될 YY.YY.14.7/24 IP 를 설정하며 VLAN_D 에 대해서 SW1 이 root 가 되도록 설정하라.

SW1

```
int vlan 14
no sh
ip add 14.14.14.7 255.255.255.0

spanning-tree vlan 14 priority 0
```

SW3

```
int vlan 13
no sh
ip add 14.14.13.9 255.255.255.0
```

2.6 Packet Monitor

SW3

```
monitor session 1 source interface f0/18

monitor session 1 destination interface f0/17
```

2.7 BPDU Attack

SW1
int e2/0
spanning-tree bpdufilter enable

SW2
int e2/0
spanning-tree bpdufilter enable

2.8 Spanning-tree Tuning

SW1
spanning-tree vlan 14 root primary
spanning-tree vlan 14 hello-time 2
spanning-tree vlan 14 max-age 16
spanning-tree vlan 14 forward-time 14

2.9 UDLD

(UTP 케이블은 aggressive 에서 동작)

SW1
int e3/0
udld port aggressive

SW2
int e3/1
udld port aggressive

2.10 Errdisable

SW1
Errdisable recovery cause udld
Errdisable recovery interval 600

Ⅱ. IP IGP Protocols

1. RIP

1.1 RIPv2 Configuration

[구성도-B 를 참조하여 **R6** 의 e0/1 port 만 포함하고 version 2 정보를 BB1 과 주고 받을 수 있도록 하라]

R6
router rip
ver 2
no au
net 150.1.0.0
passive-interface default
no passive-interface e0/1

1.2 Adjust Received Update

R6
ip access-list standard RIP_IN
permit 199.172.0.0 0.0.11.0

```
router rip
distribute-list RIP_IN in e0/1
```

1.3 Route Redistribution (OSPF 설정 후 적용 및 확인)

[R6 에서 RIP OSPF 상호 재분배 하라. BB1 으로는 YY.YY.0.0/16 만 보내라]

R6

```
router rip
redistribute ospf 1 metric 3
distribute-list prefix R6=>BB1 out e0/1
int e0/1
ip summary-address rip 14.14.0.0 255.255.0.0
ip prefix-list R6=>BB1 permit 14.14.0.0/16

router ospf 1
redistribute rip subnets
```

2. OSPF (OSPF Router-id X.X.X.X X: router number)

2.1 Basic OSPF Configuration

[a. 아래 조건을 참조하여 OSPF 를 구성하시오]

Area 10	R1 fa0/0

Area 11	R1 fa0/1 S0/0 , R3 fa0/0 fa0/1 , R6 fa0/0 S0/0 , SW2 , SW3 , SW4
Area 12	R3 S0/1 , R4 S0/0
Area 13	R4 fa0/0 , SW1

[b. 위 조건에 만족하여 OSPF 를 구성하되 area 10 과 area 13 에 대한 reachable 를 보장하시오.=virtual link]

[c. OSPF AREA 12 를 구성할 때 Hello interval 10 초 , Dead interval 40 초가 되도록 조정하고자 한다.

(단 설정을 하는 동안 interval(time)과 직접 관련된 명령어는 사용할 수 없다.)]

[d. OSPF AREA 0 구성 시 ip ospf network 관련 명령어 사용 금지. R2-R3-R5 사이에 구성]

R1

router ospf 1

router-id 1.1.1.1

network 14.14.1.1 0.0.0.0 area 11

network 14.14.15.1 0.0.0.0 area 10

network 14.14.11.1 0.0.0.0 area 11

network 14.14.8.18 0.0.0.0 area 11

R2

router ospf 1

router-id 2.2.2.2

network 14.14.2.2 0.0.0.0 area 0

network 14.14.12.2 0.0.0.0 area 0

int s1/0

ip ospf priority 0

R3

router ospf 1

router-id 3.3.3.3

network 14.14.3.3 0.0.0.0 area 0

network 14.14.13.3 0.0.0.0 area 11

network 14.14.10.3 0.0.0.0 area 11

network 14.14.16.3 0.0.0.0 area 12

network 14.14.12.3 0.0.0.0 area 0

neighbor 14.14.12.5

neighbor 14.14.12.2

int s1/0

ip ospf network point-to-point

R4

router ospf 1

router-id 4.4.4.4

network 14.14.4.4 0.0.0.0 area 13

network 14.14.16.4 0.0.0.0 area 12

network 14.14.14.4 0.0.0.0 area 13

int s1/0

ip ospf network point-to-point

R5

router ospf 1

router-id 5.5.5.5

network 14.14.5.5 0.0.0.0 area 0

network 14.14.12.5 0.0.0.0 area 0

int s1/0

ip ospf priority 0

R6

router ospf 1

router-id 6.6.6.6

network 14.14.6.6 0.0.0.0 area 11

network 14.14.13.6 0.0.0.0 area 11

network 14.14.8.17 0.0.0.0 area 11

SW1

router ospf 1

router-id 7.7.7.7

network 14.14.7.7 0.0.0.0 area 13

network 14.14.14.7 0.0.0.0 area 13

SW2

router ospf 1

router-id 8.8.8.8

network 14.14.8.8 0.0.0.0 area 11

network 14.14.11.8 0.0.0.0 area 11

network 14.14.10.8 0.0.0.0 area 11

network 14.14.9.8 0.0.0.0 area 11

SW3

router ospf 1

router-id 9.9.9.9

network 14.14.9.9 0.0.0.0 area 11

network 14.14.13.9 0.0.0.0 area 11

SW4

router ospf 1

router-id 10.10.10.10

network 14.14.10.10 0.0.0.0 area 11

network 14.14.9.10 0.0.0.0 area 11

2.1 - 1 virtual-link

R1

router ospf 1

area 11 virtual-link 3.3.3.3

R3

router ospf 1

area 11 virtual-link 1.1.1.1

area 12 virtual-link 4.4.4.4

R4

router ospf 1

area 12 virtual-link 3.3.3.3

2.2 OSPF Stub AREA

R4

router ospf 1

area 13 stub no-summary

area 13 default-cost 18

SW1

area 13 stub

2.3 OSPF Route Reduction (## 기존 area 11 => area 13 변경 축약)

OSPF AREA 13 에 포함되는 경로에 대해 summary 를 수행하여 다른 OSPF domain 에서 하나의 경로로 보이게 하라.

R4

```
router ospf 1
area 13 range 14.14.0.0 255.255.240.0
area 13 range 14.14.4.4 255.255.255.255
area 13 range 14.14.7.7 255.255.255.255
```

3. EIGRP

[BB3 에서 4.1.1.0/24, 128.28.2.0/24, 198.198.1.0/24 만 받아라. 이 정보는 모든 라우터에서 확인이 가능해야 하며 OSPF 에서 metric 값이 누적되면서 전달되어야 한다.]

3.1 EIGRP 100 Configuration

SW3

```
router eigrp 100
eigrp router-id 9.9.9.9
no auto-summary
network 150.3.14.1 0.0.0.0
distribute-list prefix BB3=>SW3 in e2/0
```

```
redistribute ospf 1 metric 1544 2000 255 1 1500


ip prefix-list BB3=>SW3 permit 4.1.1.0/24

ip prefix-list BB3=>SW3 permit 128.28.2.0/24

ip prefix-list BB3=>SW3 permit 198.198.1.4/30


router ospf 1

redistribute eigrp 100 subnets route-map CH-TYPE


route-map CH-TYPE

(config-route-map)#match ip address prefix-list BB3=>SW3

(config-route-map)#set metric-type type-1

route-map CH-TYPE 20
```

3.2 EIGRP YY Configuration

```
R2

router eigrp 14

eigrp router-id 2.2.2.2
```

no auto-summary

network 14.14.17.2 0.0.0.0

R5

router eigrp 14

eigrp router-id 5.5.5.5

no auto-summary

network 14.14.17.5 0.0.0.0

3.3 EIGRP Contingency

[R2 와 R5 에서 eigrp 와 ospf 재분배를 수행하되 아래 조건에 만족하게끔 구성을 하라.

R2 는 Connected interface 를 제외한 모든 경로에 대해 VLAN_B 를 통하여 확인이 가능하도록 구성하라.]

R2

router eigrp 14

redistribute ospf 1 metric 1544 2000 255 1 1500

distance eigrp 90 95

route-map TO_OSPF deny 10

(config-route-map)#match tag 100

route-map TO_OSPF permit 20

router ospf 1

redistribute eigrp 14 subnets route-map TO_OSPF

R5

router eigrp 14

redistribute ospf 1 metric 1544 200 255 1 1500 route-map TO_EIGRP

router ospf 1

redistribute eigrp 14 subnets

route-map TO_EIGRP

set tag 100

Ⅲ. IOS/IP Feature

1. NTP

R3

```
ntp authentication-key 1 md5 cisco
ntp authenticate
ntp trusted-key 1
ntp source Loopback0
ntp master 2
```

R4

```
ntp server 14.14.3.3 key 1
ntp authentication-key 1 md5 cisco
ntp authenticate
ntp trusted-key 1
ntp source Loopback0
```

SW2

ntp server 14.14.3.3 key 1

ntp authentication-key 1 md5 cisco

ntp authenticate

ntp trusted-key 1

ntp source Loopback0

2. HSRP

R2

interface Ethernet0/0

standby 1 ip 14.14.17.1

standby 1 preempt

R5

Interface Ethernet0/1

standby 1 ip 14.14.17.1

standby 1 priority 150

standby 1 preempt

standby 1 track Serial0/0 100

3. SYSLOG

R5

logging on

logging trap critical

logging facility local6

logging source-interface Loopback0

logging host 150.2.14.250

IV. Security

1. Catalyst 3550 Switch Security (맨 마지막 적용)

[R2 와 R5 가 연결된 SW 에 설정하여 두 라우터의 MAC 만이 허용되도록 한다.

이 정책에 위반하면 traffic 은 Log 를 남기도록 하라. SW 가 재시작 되는 경우에도 이에 대한 설정은 남아 있도록 하라

HSRP 의 use-bia , mac-address 는 사용해서는 안된다.]

R2

int e0/0

standby 1 mac-address 0000.0000.2222

SW1

int e0/2

switchport port-security maximum 2

switchport port-security mac-address 0000.0000.2222

switchport port-security

R5

int e0/1

standby 1 mac-address 0000.0000.0005

SW2

int e1/1

switchport port-security maximum 2

switchport port-security mac-address 0000.0000.0005

switchport port-security

2. Telnet Feature

SW2

access-list 99 permit 150.1.0.0 0.0.255.255

access-list 99 permit 14.14.0.0 0.0.255.255

line vty 0 15

access-class 99 in

3. Dynamic Access-list

[텔넷 연결은 최대 10 분 이상 지속될 수 없고, telnet 의 idle 이 허용되는 시간은 최대 2 분이다.]

R4

username ccie password 0 cisco

ip access-list extended LOCK
permit tcp 14.14.14.0 0.0.0.255 host 14.14.14.4 eq telnet
dynamic LK timeout 10 permit tcp 14.14.14.0 0.0.0.255 any eq telnet
deny tcp 14.14.14.0 0.0.0.255 any eq telnet
permit ip any any

line vty 0 4
password cisco
login local
autocommand access-enable host timeout 2

```
int e0/0
ip access-group LOCK in
```

5. 결과

Ⅰ. 라우팅 테이블 확인

Router 2 재분배 전

```
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, + - replicated route

Gateway of last resort is not set

      14.0.0.0/8 is variably subnetted, 22 subnets, 4 masks
O IA     14.14.1.1/32 [110/85] via 14.14.12.3, 00:03:32, Serial1/0
C        14.14.2.2/32 is directly connected, Loopback0
O        14.14.3.3/32 [110/65] via 14.14.12.3, 00:03:32, Serial1/0
O IA     14.14.4.4/32 [110/129] via 14.14.12.3, 00:03:32, Serial1/0
O        14.14.5.5/32 [110/65] via 14.14.12.5, 00:03:32, Serial1/0
O IA     14.14.6.6/32 [110/75] via 14.14.12.3, 00:03:32, Serial1/0
O IA     14.14.7.7/32 [110/139] via 14.14.12.3, 00:03:32, Serial1/0
O IA     14.14.8.8/32 [110/75] via 14.14.12.3, 00:03:32, Serial1/0
O IA     14.14.8.16/30 [110/138] via 14.14.12.3, 00:03:32, Serial1/0
O IA     14.14.9.0/24 [110/84] via 14.14.12.3, 00:03:32, Serial1/0
O IA     14.14.9.9/32 [110/75] via 14.14.12.3, 00:03:32, Serial1/0
O IA     14.14.10.0/24 [110/74] via 14.14.12.3, 00:03:32, Serial1/0
O IA     14.14.10.10/32 [110/85] via 14.14.12.3, 00:03:33, Serial1/0
O IA     14.14.11.0/24 [110/84] via 14.14.12.3, 00:03:33, Serial1/0
C        14.14.12.0/29 is directly connected, Serial1/0
L        14.14.12.2/32 is directly connected, Serial1/0
O IA     14.14.13.0/24 [110/74] via 14.14.12.3, 00:03:33, Serial1/0
O IA     14.14.14.0/24 [110/138] via 14.14.12.3, 00:03:33, Serial1/0
O IA     14.14.15.0/24 [110/94] via 14.14.12.3, 00:03:33, Serial1/0
O IA     14.14.16.0/24 [110/128] via 14.14.12.3, 00:03:33, Serial1/0
C        14.14.17.0/24 is directly connected, Ethernet0/0
L        14.14.17.2/32 is directly connected, Ethernet0/0
```

Router 2 재분배 후

```
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, + - replicated route

Gateway of last resort is not set

      14.0.0.0/8 is variably subnetted, 22 subnets, 4 masks
D EX     14.14.1.1/32 [95/1734656] via 14.14.17.5, 00:00:49, Ethernet0/0
C        14.14.2.2/32 is directly connected, Loopback0
D EX     14.14.3.3/32 [95/1734656] via 14.14.17.5, 00:00:49, Ethernet0/0
D EX     14.14.4.4/32 [95/1734656] via 14.14.17.5, 00:00:49, Ethernet0/0
D EX     14.14.5.5/32 [95/1734656] via 14.14.17.5, 00:00:49, Ethernet0/0
D EX     14.14.6.6/32 [95/1734656] via 14.14.17.5, 00:00:49, Ethernet0/0
D EX     14.14.7.7/32 [95/1734656] via 14.14.17.5, 00:00:49, Ethernet0/0
D EX     14.14.8.8/32 [95/1734656] via 14.14.17.5, 00:00:49, Ethernet0/0
D EX     14.14.8.16/30 [95/1734656] via 14.14.17.5, 00:00:49, Ethernet0/0
D EX     14.14.9.0/24 [95/1734656] via 14.14.17.5, 00:00:49, Ethernet0/0
D EX     14.14.9.9/32 [95/1734656] via 14.14.17.5, 00:00:49, Ethernet0/0
D EX     14.14.10.0/24 [95/1734656] via 14.14.17.5, 00:00:49, Ethernet0/0
D EX     14.14.10.10/32 [95/1734656] via 14.14.17.5, 00:00:50, Ethernet0/0
D EX     14.14.11.0/24 [95/1734656] via 14.14.17.5, 00:00:50, Ethernet0/0
C        14.14.12.0/29 is directly connected, Serial1/0
L        14.14.12.2/32 is directly connected, Serial1/0
D EX     14.14.13.0/24 [95/1734656] via 14.14.17.5, 00:00:50, Ethernet0/0
D EX     14.14.14.0/24 [95/1734656] via 14.14.17.5, 00:00:50, Ethernet0/0
D EX     14.14.15.0/24 [95/1734656] via 14.14.17.5, 00:00:50, Ethernet0/0
D EX     14.14.16.0/24 [95/1734656] via 14.14.17.5, 00:00:50, Ethernet0/0
C        14.14.17.0/24 is directly connected, Ethernet0/0
L        14.14.17.2/32 is directly connected, Ethernet0/0
      150.1.0.0/24 is subnetted, 1 subnets
D EX     150.1.14.0 [95/1734656] via 14.14.17.5, 00:00:18, Ethernet0/0
      150.3.0.0/24 is subnetted, 1 subnets
D EX     150.3.14.0 [95/1734656] via 14.14.17.5, 00:00:50, Ethernet0/0
```

Router 5 재분배 전

```
R5#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, + - replicated route

Gateway of last resort is not set

      14.0.0.0/8 is variably subnetted, 22 subnets, 4 masks
O IA     14.14.1.1/32 [110/85] via 14.14.12.3, 00:05:28, Serial1/0
O        14.14.2.2/32 [110/65] via 14.14.12.2, 00:05:28, Serial1/0
O        14.14.3.3/32 [110/65] via 14.14.12.3, 00:05:28, Serial1/0
O IA     14.14.4.4/32 [110/129] via 14.14.12.3, 00:05:28, Serial1/0
C        14.14.5.5/32 is directly connected, Loopback0
O IA     14.14.6.6/32 [110/75] via 14.14.12.3, 00:05:28, Serial1/0
O IA     14.14.7.7/32 [110/139] via 14.14.12.3, 00:05:28, Serial1/0
O IA     14.14.8.8/32 [110/75] via 14.14.12.3, 00:05:28, Serial1/0
O IA     14.14.8.16/30 [110/138] via 14.14.12.3, 00:05:28, Serial1/0
O IA     14.14.9.0/24 [110/84] via 14.14.12.3, 00:05:28, Serial1/0
O IA     14.14.9.9/32 [110/75] via 14.14.12.3, 00:05:28, Serial1/0
O IA     14.14.10.0/24 [110/74] via 14.14.12.3, 00:05:28, Serial1/0
O IA     14.14.10.10/32 [110/85] via 14.14.12.3, 00:05:29, Serial1/0
O IA     14.14.11.0/24 [110/84] via 14.14.12.3, 00:05:29, Serial1/0
C        14.14.12.0/29 is directly connected, Serial1/0
L        14.14.12.5/32 is directly connected, Serial1/0
O IA     14.14.13.0/24 [110/74] via 14.14.12.3, 00:05:29, Serial1/0
O IA     14.14.14.0/24 [110/138] via 14.14.12.3, 00:05:29, Serial1/0
O IA     14.14.15.0/24 [110/94] via 14.14.12.3, 00:05:29, Serial1/0
O IA     14.14.16.0/24 [110/128] via 14.14.12.3, 00:05:29, Serial1/0
C        14.14.17.0/24 is directly connected, Ethernet0/1
L        14.14.17.5/32 is directly connected, Ethernet0/1
      150.2.0.0/16 is variably subnetted, 2 subnets, 2 masks
C        150.2.14.0/24 is directly connected, Ethernet0/0
L        150.2.14.1/32 is directly connected, Ethernet0/0
```

Router 5 재분배 후

```
R5#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, + - replicated route

Gateway of last resort is not set

      14.0.0.0/8 is variably subnetted, 22 subnets, 4 masks
O IA     14.14.1.1/32 [110/85] via 14.14.12.3, 00:10:46, Serial1/0
O        14.14.2.2/32 [110/65] via 14.14.12.2, 00:10:46, Serial1/0
O        14.14.3.3/32 [110/65] via 14.14.12.3, 00:10:46, Serial1/0
O IA     14.14.4.4/32 [110/129] via 14.14.12.3, 00:10:46, Serial1/0
C        14.14.5.5/32 is directly connected, Loopback0
O IA     14.14.6.6/32 [110/75] via 14.14.12.3, 00:10:46, Serial1/0
O IA     14.14.7.7/32 [110/139] via 14.14.12.3, 00:10:46, Serial1/0
O IA     14.14.8.8/32 [110/75] via 14.14.12.3, 00:10:46, Serial1/0
O IA     14.14.8.16/30 [110/138] via 14.14.12.3, 00:10:46, Serial1/0
O IA     14.14.9.0/24 [110/84] via 14.14.12.3, 00:10:46, Serial1/0
O IA     14.14.9.9/32 [110/75] via 14.14.12.3, 00:10:46, Serial1/0
O IA     14.14.10.0/24 [110/74] via 14.14.12.3, 00:10:46, Serial1/0
O IA     14.14.10.10/32 [110/85] via 14.14.12.3, 00:10:46, Serial1/0
O IA     14.14.11.0/24 [110/84] via 14.14.12.3, 00:10:46, Serial1/0
C        14.14.12.0/29 is directly connected, Serial1/0
L        14.14.12.5/32 is directly connected, Serial1/0
O IA     14.14.13.0/24 [110/74] via 14.14.12.3, 00:10:46, Serial1/0
O IA     14.14.14.0/24 [110/138] via 14.14.12.3, 00:10:46, Serial1/0
O IA     14.14.15.0/24 [110/94] via 14.14.12.3, 00:10:46, Serial1/0
O IA     14.14.16.0/24 [110/128] via 14.14.12.3, 00:10:46, Serial1/0
C        14.14.17.0/24 is directly connected, Ethernet0/1
L        14.14.17.5/32 is directly connected, Ethernet0/1
      150.1.0.0/24 is subnetted, 1 subnets
O E2     150.1.14.0 [110/20] via 14.14.12.3, 00:01:10, Serial1/0
      150.2.0.0/16 is variably subnetted, 2 subnets, 2 masks
C        150.2.14.0/24 is directly connected, Ethernet0/0
L        150.2.14.1/32 is directly connected, Ethernet0/0
      150.3.0.0/24 is subnetted, 1 subnets
O E2     150.3.14.0 [110/20] via 14.14.12.3, 00:02:37, Serial1/0
```

Router 6 재분배 전

```
R6#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, + - replicated route

Gateway of last resort is not set

      14.0.0.0/8 is variably subnetted, 22 subnets, 4 masks
O        14.14.1.1/32 [110/31] via 14.14.13.3, 00:07:28, Ethernet0/0
O IA     14.14.2.2/32 [110/75] via 14.14.13.3, 00:05:58, Ethernet0/0
O IA     14.14.3.3/32 [110/11] via 14.14.13.3, 00:07:28, Ethernet0/0
O IA     14.14.4.4/32 [110/75] via 14.14.13.3, 00:07:28, Ethernet0/0
O IA     14.14.5.5/32 [110/75] via 14.14.13.3, 00:05:58, Ethernet0/0
C        14.14.6.6/32 is directly connected, Loopback0
O IA     14.14.7.7/32 [110/85] via 14.14.13.3, 00:07:28, Ethernet0/0
O        14.14.8.8/32 [110/21] via 14.14.13.3, 00:07:28, Ethernet0/0
C        14.14.8.16/30 is directly connected, Serial1/0.6
L        14.14.8.17/32 is directly connected, Serial1/0.6
O        14.14.9.0/24 [110/30] via 14.14.13.3, 00:07:28, Ethernet0/0
O        14.14.9.9/32 [110/11] via 14.14.13.9, 00:07:28, Ethernet0/0
O        14.14.10.0/24 [110/20] via 14.14.13.3, 00:07:29, Ethernet0/0
O        14.14.10.10/32 [110/31] via 14.14.13.3, 00:07:29, Ethernet0/0
O        14.14.11.0/24 [110/30] via 14.14.13.3, 00:07:29, Ethernet0/0
O IA     14.14.12.0/29 [110/74] via 14.14.13.3, 00:07:29, Ethernet0/0
C        14.14.13.0/24 is directly connected, Ethernet0/0
L        14.14.13.6/32 is directly connected, Ethernet0/0
O IA     14.14.14.0/24 [110/84] via 14.14.13.3, 00:07:29, Ethernet0/0
O IA     14.14.15.0/24 [110/40] via 14.14.13.3, 00:07:29, Ethernet0/0
O IA     14.14.16.0/24 [110/74] via 14.14.13.3, 00:07:29, Ethernet0/0
O E2     14.14.17.0/24 [110/20] via 14.14.13.3, 00:05:54, Ethernet0/0
      150.1.0.0/16 is variably subnetted, 2 subnets, 2 masks
C        150.1.14.0/24 is directly connected, Ethernet0/1
L        150.1.14.1/32 is directly connected, Ethernet0/1
```

Router 6 재분배 후

```
R6#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, + - replicated route

Gateway of last resort is not set

      14.0.0.0/8 is variably subnetted, 22 subnets, 4 masks
O        14.14.1.1/32 [110/31] via 14.14.13.3, 00:12:38, Ethernet0/0
O IA     14.14.2.2/32 [110/75] via 14.14.13.3, 00:11:08, Ethernet0/0
O IA     14.14.3.3/32 [110/11] via 14.14.13.3, 00:12:38, Ethernet0/0
O IA     14.14.4.4/32 [110/75] via 14.14.13.3, 00:12:38, Ethernet0/0
O IA     14.14.5.5/32 [110/75] via 14.14.13.3, 00:11:08, Ethernet0/0
C        14.14.6.6/32 is directly connected, Loopback0
O IA     14.14.7.7/32 [110/85] via 14.14.13.3, 00:12:38, Ethernet0/0
O        14.14.8.8/32 [110/21] via 14.14.13.3, 00:12:38, Ethernet0/0
C        14.14.8.16/30 is directly connected, Serial1/0.6
L        14.14.8.17/32 is directly connected, Serial1/0.6
O        14.14.9.0/24 [110/30] via 14.14.13.3, 00:12:38, Ethernet0/0
O        14.14.9.9/32 [110/11] via 14.14.13.9, 00:12:38, Ethernet0/0
O        14.14.10.0/24 [110/20] via 14.14.13.3, 00:12:39, Ethernet0/0
O        14.14.10.10/32 [110/31] via 14.14.13.3, 00:12:39, Ethernet0/0
O        14.14.11.0/24 [110/30] via 14.14.13.3, 00:12:39, Ethernet0/0
O IA     14.14.12.0/29 [110/74] via 14.14.13.3, 00:12:39, Ethernet0/0
C        14.14.13.0/24 is directly connected, Ethernet0/0
L        14.14.13.6/32 is directly connected, Ethernet0/0
O IA     14.14.14.0/24 [110/84] via 14.14.13.3, 00:12:39, Ethernet0/0
O IA     14.14.15.0/24 [110/40] via 14.14.13.3, 00:12:39, Ethernet0/0
O IA     14.14.16.0/24 [110/74] via 14.14.13.3, 00:12:39, Ethernet0/0
O E2     14.14.17.0/24 [110/20] via 14.14.13.3, 00:11:04, Ethernet0/0
      150.1.0.0/16 is variably subnetted, 2 subnets, 2 masks
C        150.1.14.0/24 is directly connected, Ethernet0/1
L        150.1.14.1/32 is directly connected, Ethernet0/1
      150.3.0.0/24 is subnetted, 1 subnets
O E2     150.3.14.0 [110/20] via 14.14.13.9, 00:03:05, Ethernet0/0
```

Switch 3 재분배 전

```
SW3#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      14.0.0.0/8 is variably subnetted, 21 subnets, 4 masks
O        14.14.1.1/32 [110/22] via 14.14.13.3, 00:08:35, Vlan13
O IA     14.14.2.2/32 [110/66] via 14.14.13.3, 00:06:30, Vlan13
O IA     14.14.3.3/32 [110/2] via 14.14.13.3, 00:08:35, Vlan13
O IA     14.14.4.4/32 [110/66] via 14.14.13.3, 00:08:25, Vlan13
O IA     14.14.5.5/32 [110/66] via 14.14.13.3, 00:06:30, Vlan13
O        14.14.6.6/32 [110/2] via 14.14.13.6, 00:08:00, Vlan13
O IA     14.14.7.7/32 [110/76] via 14.14.13.3, 00:08:25, Vlan13
O        14.14.8.8/32 [110/12] via 14.14.13.3, 00:08:35, Vlan13
O        14.14.8.16/30 [110/65] via 14.14.13.6, 00:08:00, Vlan13
O        14.14.9.0/24 [110/21] via 14.14.13.3, 00:08:35, Vlan13
C        14.14.9.9/32 is directly connected, Loopback0
O        14.14.10.0/24 [110/11] via 14.14.13.3, 00:08:35, Vlan13
O        14.14.10.10/32 [110/22] via 14.14.13.3, 00:08:35, Vlan13
O        14.14.11.0/24 [110/21] via 14.14.13.3, 00:08:35, Vlan13
O IA     14.14.12.0/29 [110/65] via 14.14.13.3, 00:08:35, Vlan13
C        14.14.13.0/24 is directly connected, Vlan13
L        14.14.13.9/32 is directly connected, Vlan13
O IA     14.14.14.0/24 [110/75] via 14.14.13.3, 00:08:25, Vlan13
O IA     14.14.15.0/24 [110/31] via 14.14.13.3, 00:08:35, Vlan13
O IA     14.14.16.0/24 [110/65] via 14.14.13.3, 00:08:35, Vlan13
O E2     14.14.17.0/24 [110/20] via 14.14.13.3, 00:06:25, Vlan13
      150.3.0.0/16 is variably subnetted, 2 subnets, 2 masks
C        150.3.14.0/24 is directly connected, Ethernet2/0
L        150.3.14.1/32 is directly connected, Ethernet2/0
```

Switch 3 재분배 후

```
SW3#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      14.0.0.0/8 is variably subnetted, 21 subnets, 4 masks
O        14.14.1.1/32 [110/22] via 14.14.13.3, 00:13:40, Vlan13
O IA     14.14.2.2/32 [110/66] via 14.14.13.3, 00:11:35, Vlan13
O IA     14.14.3.3/32 [110/2] via 14.14.13.3, 00:13:40, Vlan13
O IA     14.14.4.4/32 [110/66] via 14.14.13.3, 00:13:30, Vlan13
O IA     14.14.5.5/32 [110/66] via 14.14.13.3, 00:11:35, Vlan13
O        14.14.6.6/32 [110/2] via 14.14.13.6, 00:13:05, Vlan13
O IA     14.14.7.7/32 [110/76] via 14.14.13.3, 00:13:30, Vlan13
O        14.14.8.8/32 [110/12] via 14.14.13.3, 00:13:40, Vlan13
O        14.14.8.16/30 [110/65] via 14.14.13.6, 00:13:05, Vlan13
O        14.14.9.0/24 [110/21] via 14.14.13.3, 00:13:40, Vlan13
C        14.14.9.9/32 is directly connected, Loopback0
O        14.14.10.0/24 [110/11] via 14.14.13.3, 00:13:40, Vlan13
O        14.14.10.10/32 [110/22] via 14.14.13.3, 00:13:40, Vlan13
O        14.14.11.0/24 [110/21] via 14.14.13.3, 00:13:40, Vlan13
O IA     14.14.12.0/29 [110/65] via 14.14.13.3, 00:13:40, Vlan13
C        14.14.13.0/24 is directly connected, Vlan13
L        14.14.13.9/32 is directly connected, Vlan13
O IA     14.14.14.0/24 [110/75] via 14.14.13.3, 00:13:30, Vlan13
O IA     14.14.15.0/24 [110/31] via 14.14.13.3, 00:13:40, Vlan13
O IA     14.14.16.0/24 [110/65] via 14.14.13.3, 00:13:40, Vlan13
O E2     14.14.17.0/24 [110/20] via 14.14.13.3, 00:11:30, Vlan13
      150.1.0.0/24 is subnetted, 1 subnets
O E2     150.1.14.0 [110/20] via 14.14.13.6, 00:02:04, Vlan13
      150.3.0.0/16 is variably subnetted, 2 subnets, 2 masks
C        150.3.14.0/24 is directly connected, Ethernet2/0
L        150.3.14.1/32 is directly connected, Ethernet2/0
```

Ⅱ. VTP 정보 확인

Switch 1

```
SW1#show vtp status
VTP Version capable             : 1 to 3
VTP version running             : 2
VTP Domain Name                 : renew.com
VTP Pruning Mode                : Disabled
VTP Traps Generation            : Disabled
Device ID                       : aabb.cc00.0700
Configuration last modified by 0.0.0.0 at 11-27-24 09:22:40

Feature VLAN:
--------------
VTP Operating Mode                : Transparent
Maximum VLANs supported locally   : 1005
Number of existing VLANs          : 12
Configuration Revision            : 0
MD5 digest                        : 0x5B 0xAD 0x3C 0xF9 0x28 0x9F 0x16 0x2C
                                    0xCB 0x76 0x5F 0x87 0x9A 0x52 0xC5 0xC0
```

Switch 2

```
SW2#show vtp st
SW2#show vtp status
VTP Version capable             : 1 to 3
VTP version running             : 2
VTP Domain Name                 : renew.com
VTP Pruning Mode                : Disabled
VTP Traps Generation            : Disabled
Device ID                       : aabb.cc00.0800
Configuration last modified by 0.0.0.0 at 11-27-24 09:22:40

Feature VLAN:
--------------
VTP Operating Mode                : Transparent
Maximum VLANs supported locally   : 1005
Number of existing VLANs          : 12
Configuration Revision            : 0
MD5 digest                        : 0x5B 0xAD 0x3C 0xF9 0x28 0x9F 0x16 0x2C
                                    0xCB 0x76 0x5F 0x87 0x9A 0x52 0xC5 0xC0
```

Switch 3

```
SW3#show vtp status
VTP Version capable             : 1 to 3
VTP version running             : 2
VTP Domain Name                 : renew.com
VTP Pruning Mode                : Disabled
VTP Traps Generation            : Disabled
Device ID                       : aabb.cc00.0900
Configuration last modified by 0.0.0.0 at 11-27-24 09:22:40

Feature VLAN:
--------------
VTP Operating Mode                : Transparent
Maximum VLANs supported locally   : 1005
Number of existing VLANs          : 12
Configuration Revision            : 0
MD5 digest                        : 0x5B 0xAD 0x3C 0xF9 0x28 0x9F 0x16 0x2C
                                    0xCB 0x76 0x5F 0x87 0x9A 0x52 0xC5 0xC0
```

Switch 4

```
SW4#show vtp status
VTP Version capable             : 1 to 3
VTP version running             : 2
VTP Domain Name                 : renew.com
VTP Pruning Mode                : Disabled
VTP Traps Generation            : Disabled
Device ID                       : aabb.cc00.0a00
Configuration last modified by 0.0.0.0 at 11-27-24 09:22:40

Feature VLAN:
--------------
VTP Operating Mode                : Transparent
Maximum VLANs supported locally   : 1005
Number of existing VLANs          : 12
Configuration Revision            : 0
MD5 digest                        : 0x5B 0xAD 0x3C 0xF9 0x28 0x9F 0x16 0x2C
                                    0xCB 0x76 0x5F 0x87 0x9A 0x52 0xC5 0xC0
```

Ⅲ. VLAN 정보 확인

Switch 1

```
SW1#show vlan brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Et0/0, Et1/3, Et2/1, Et2/2
                                                Et2/3, Et3/3
11   VLAN_A                           active    Et0/1
12   VLAN_B                           active    Et0/2
13   VLAN_C                           active    Et0/3, Et1/2
14   VLAN_D                           active    Et1/0
15   VLAN_BB1                         active    Et2/0
16   VLAN_BB2                         active    Et1/1
1002 fddi-default                     act/unsup
1003 trcrf-default                    act/unsup
1004 fddinet-default                  act/unsup
1005 trbrf-default                    act/unsup
```

Switch 2

```
SW2#show vlan brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Et0/0, Et0/2, Et1/0, Et1/3
                                                Et2/1, Et2/2, Et2/3, Et3/3
11   VLAN_A                           active
12   VLAN_B                           active    Et1/1
13   VLAN_C                           active
14   VLAN_D                           active
15   VLAN_BB1                         active    Et1/2
16   VLAN_BB2                         active    Et2/0
1002 fddi-default                     act/unsup
1003 trcrf-default                    act/unsup
1004 fddinet-default                  act/unsup
1005 trbrf-default                    act/unsup
```

Switch 3

```
SW3#show vlan brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Et0/0, Et0/1, Et0/2, Et0/3
                                                Et1/0, Et1/1, Et1/2, Et1/3
                                                Et2/1, Et3/3
11   VLAN_A                           active
12   VLAN_B                           active
13   VLAN_C                           active
14   VLAN_D                           active
15   VLAN_BB1                         active
16   VLAN_BB2                         active
1002 fddi-default                     act/unsup
1003 trcrf-default                    act/unsup
1004 fddinet-default                  act/unsup
1005 trbrf-default                    act/unsup
```

Network Project

END

RENEW