SR TP3

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Partie I – Mise en place et analyse de RIPv1

1)

R1(config)#router rip
R1(config-router)#network 172.1.0.0
R1(config-router)#

Lorsqu'on ajoute les adresses 1.2.0.0 et 4.1.0.0 le routage RIP les transforme pour passer ce réseau de *classless* a *classfull*. 1.2.0.0 devient 1.0.0.0 et 4.1.0.0 devient 4.0.0.0

La méthode RIP regarde la classe de l'adresse reçu (classe A, classe B, ...) et ne garde que les

octets utiles pour identifier le réseau (les octets utilisés pour identifier les machines du réseau

sont remplacés par des 0). Donc pour les adresses de type A (comme les 2 routeurs) on ne

garde que le premier octet alors que les adresses de type B (LAN) on garde les 2 premiers

octets.

4)a)

L'adresse de diffusion ici est l'addresse dite broadcast utilisée pour envoyer le paquet a toute les machines

B)

RIP v.1

0 4 8 16 19 31		
CMD: 0x2	VER: 0x1	0000 0000 0000 0000
ADDR FAMILY: 0x2		0000 0000 0000 0000
NETWORK: 2.0.0.0		
0000 0000 0000 0000		
NEXT HOP: 0.0.0.0		
METRIC: 0x1		
ADDR FAMILY: 0x2		0000 0000 0000 0000
NETWORK: 3.0.0.0		
0000 0000 0000 0000		
NEXT HOP: 0.0.0.0		
METRIC: 0x2		
ADDR FAMILY: 0x2		0000 0000 0000 0000
NETWORK: 172.2.0.0		
0000 0000 0000 0000		
NEXT HOP: 0.0.0.0		
METRIC: 0x1		

Non le masque de réseau n'est pas ici présent.

5)

```
PC>ping 172.3.0.3

Pinging 172.3.0.3 with 32 bytes of data:

Request timed out.
Reply from 172.3.0.3: bytes=32 time=7ms TTL=125
Reply from 172.3.0.3: bytes=32 time=3ms TTL=125
Reply from 172.3.0.3: bytes=32 time=2ms TTL=125

Ping statistics for 172.3.0.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 7ms, Average = 4ms
```

Le ping fonctionne

6)

```
Gateway of last resort is not set

     1.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       1.2.0.0/28 is directly connected, Serial0/0/0
L       1.2.0.2/32 is directly connected, Serial0/0/0
     2.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       2.3.0.0/28 is directly connected, Serial0/0/1
L       2.3.0.2/32 is directly connected, Serial0/0/1
R    3.0.0.0/8 [120/1] via 2.3.0.3, 00:00:04, Serial0/0/1
R    4.0.0.0/8 [120/1] via 1.2.0.1, 00:00:10, Serial0/0/0
R    172.1.0.0/16 [120/1] via 1.2.0.1, 00:00:10, Serial0/0/0
     172.2.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.2.0.0/24 is directly connected, GigabitEthernet0/0
L       172.2.0.10/32 is directly connected, GigabitEthernet0/0
R    172.3.0.0/16 [120/1] via 2.3.0.3, 00:00:04, Serial0/0/1
R    172.4.0.0/16 [120/2] via 2.3.0.3, 00:00:04, Serial0/0/1
                  [120/2] via 1.2.0.1, 00:00:10, Serial0/0/0
```

A)

Il y a deux route vers 172.4.0.0 parce que on peut acceder a la LAN4 en passant soit par R1 soit par R3.

La valeur metrique correspond au nombre de saut pour arriver au réseau souhaité.

Le routeur a appliqué un masque de /16 parce que c’est celui par défaut sachant qu’il ne sait pas que le réseaux final a un masque de /24

B)

3.4.0.0 -> 3.0.0.0

4.1.0.0 -> 4.0.0.0

Ceci est normal car la destination est un reseau et non un terminal, les addresse de terminaux ont donc été transformé en addresse de réseau.

7)

Dans le cas de réseaux discontinus.

Partie II – Passage en RIPv2 et différences avec RIPv1

3)

A)

L’addresse de destionation est celle du multicast. (224.0.0.9)

B)

ADDR FAMILY: 0x2	ROUTE TAG: 0x0
NETWORK: 1.2.0.0	
SUBNET: 255.255.255.240	
NEXT HOP: 2.3.0.2	
METRIC: 0x1	

ADDR FAMILY: 0x2	ROUTE TAG: 0x0
NETWORK: 4.1.0.0	
SUBNET: 255.255.255.240	

Il y a maintenant le masque.

4)

```
Gateway of last resort is not set

     1.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       1.2.0.0/28 is directly connected, Serial0/0/0
L       1.2.0.2/32 is directly connected, Serial0/0/0
     2.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       2.3.0.0/28 is directly connected, Serial0/0/1
L       2.3.0.2/32 is directly connected, Serial0/0/1
     3.0.0.0/28 is subnetted, 1 subnets
R       3.4.0.0/28 [120/1] via 2.3.0.3, 00:00:14, Serial0/0/1
     4.0.0.0/28 is subnetted, 1 subnets
R       4.1.0.0/28 [120/1] via 1.2.0.1, 00:00:16, Serial0/0/0
     172.1.0.0/24 is subnetted, 1 subnets
R       172.1.0.0/24 [120/1] via 1.2.0.1, 00:00:16, Serial0/0/0
     172.2.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.2.0.0/24 is directly connected, GigabitEthernet0/0
L       172.2.0.10/32 is directly connected, GigabitEthernet0/0
     172.3.0.0/24 is subnetted, 1 subnets
R       172.3.0.0/24 [120/1] via 2.3.0.3, 00:00:14, Serial0/0/1
     172.4.0.0/24 is subnetted, 1 subnets
R       172.4.0.0/24 [120/2] via 1.2.0.1, 00:00:16, Serial0/0/0
                     [120/2] via 2.3.0.3, 00:00:14, Serial0/0/1
```

Partie III – Propagation par RIP de routes par défaut

2)

```
Gateway of last resort is 1.2.0.1 to network 0.0.0.0

     1.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       1.2.0.0/28 is directly connected, Serial0/0/0
L       1.2.0.2/32 is directly connected, Serial0/0/0
     2.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       2.3.0.0/28 is directly connected, Serial0/0/1
L       2.3.0.2/32 is directly connected, Serial0/0/1
     3.0.0.0/28 is subnetted, 1 subnets
R       3.4.0.0/28 [120/1] via 2.3.0.3, 00:00:12, Serial0/0/1
     4.0.0.0/28 is subnetted, 1 subnets
R       4.1.0.0/28 [120/1] via 1.2.0.1, 00:00:22, Serial0/0/0
     172.1.0.0/24 is subnetted, 1 subnets
R       172.1.0.0/24 [120/1] via 1.2.0.1, 00:00:22, Serial0/0/0
     172.2.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.2.0.0/24 is directly connected, GigabitEthernet0/0
L       172.2.0.10/32 is directly connected, GigabitEthernet0/0
     172.3.0.0/24 is subnetted, 1 subnets
R       172.3.0.0/24 [120/1] via 2.3.0.3, 00:00:12, Serial0/0/1
     172.4.0.0/24 is subnetted, 1 subnets
R       172.4.0.0/24 [120/2] via 1.2.0.1, 00:00:22, Serial0/0/0
                     [120/2] via 2.3.0.3, 00:00:12, Serial0/0/1
R*   0.0.0.0/0 [120/1] via 1.2.0.1, 00:00:22, Serial0/0/0
```

Il y a une nouvelle route qui a été créé vers le réseau 0.0.0.0 qui passe par R1.

Routeur 3 :

```
Gateway of last resort is 2.3.0.2 to network 0.0.0.0

     1.0.0.0/28 is subnetted, 1 subnets
R       1.2.0.0/28 [120/1] via 2.3.0.2, 00:00:08, Serial0/0/0
     2.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       2.3.0.0/28 is directly connected, Serial0/0/0
L       2.3.0.3/32 is directly connected, Serial0/0/0
     3.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       3.4.0.0/28 is directly connected, Serial0/0/1
L       3.4.0.3/32 is directly connected, Serial0/0/1
     4.0.0.0/28 is subnetted, 1 subnets
R       4.1.0.0/28 [120/1] via 3.4.0.4, 00:00:16, Serial0/0/1
     172.1.0.0/24 is subnetted, 1 subnets
R       172.1.0.0/24 [120/2] via 2.3.0.2, 00:00:08, Serial0/0/0
                     [120/2] via 3.4.0.4, 00:00:16, Serial0/0/1
     172.2.0.0/24 is subnetted, 1 subnets
R       172.2.0.0/24 [120/1] via 2.3.0.2, 00:00:08, Serial0/0/0
     172.3.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.3.0.0/24 is directly connected, GigabitEthernet0/0
L       172.3.0.10/32 is directly connected, GigabitEthernet0/0
     172.4.0.0/24 is subnetted, 1 subnets
R       172.4.0.0/24 [120/1] via 3.4.0.4, 00:00:16, Serial0/0/1
R*   0.0.0.0/0 [120/2] via 2.3.0.2, 00:00:08, Serial0/0/0
               [120/2] via 3.4.0.4, 00:00:16, Serial0/0/1
```

Une nouvelle route et la aussi crée:

R1>R2+R4>R3

3)

```
C:\>ping 64.100.0.10

Pinging 64.100.0.10 with 32 bytes of data:

Request timed out.
Reply from 64.100.0.10: bytes=32 time=3ms TTL=124
Reply from 64.100.0.10: bytes=32 time=3ms TTL=124
Reply from 64.100.0.10: bytes=32 time=3ms TTL=124

Ping statistics for 64.100.0.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 3ms, Maximum = 3ms, Average = 3ms
```

Le ping fonctionne

Partie IV – Suppression d’annonces de routage RIP inutiles

2)Il n’y a pas eut de changement dut au RIP sur la LAN

3)Cette commande permet de moins charger le reseau et de reduire le risque de faille de sécrité.