Routing and switching (TI40122)

April Rustianto, S.Komp, M.T, CCIE-IA, JNCIP-SP, MTCINE, MTCTCE, MTCUME, MTCWE, MTCIPv6E, MTCSE, ITILv3, COA, UEWA, UBWA, UBRSA, NSE2, AWS CCP

Manipulasi routing pada protocol bgp (lanjutan)

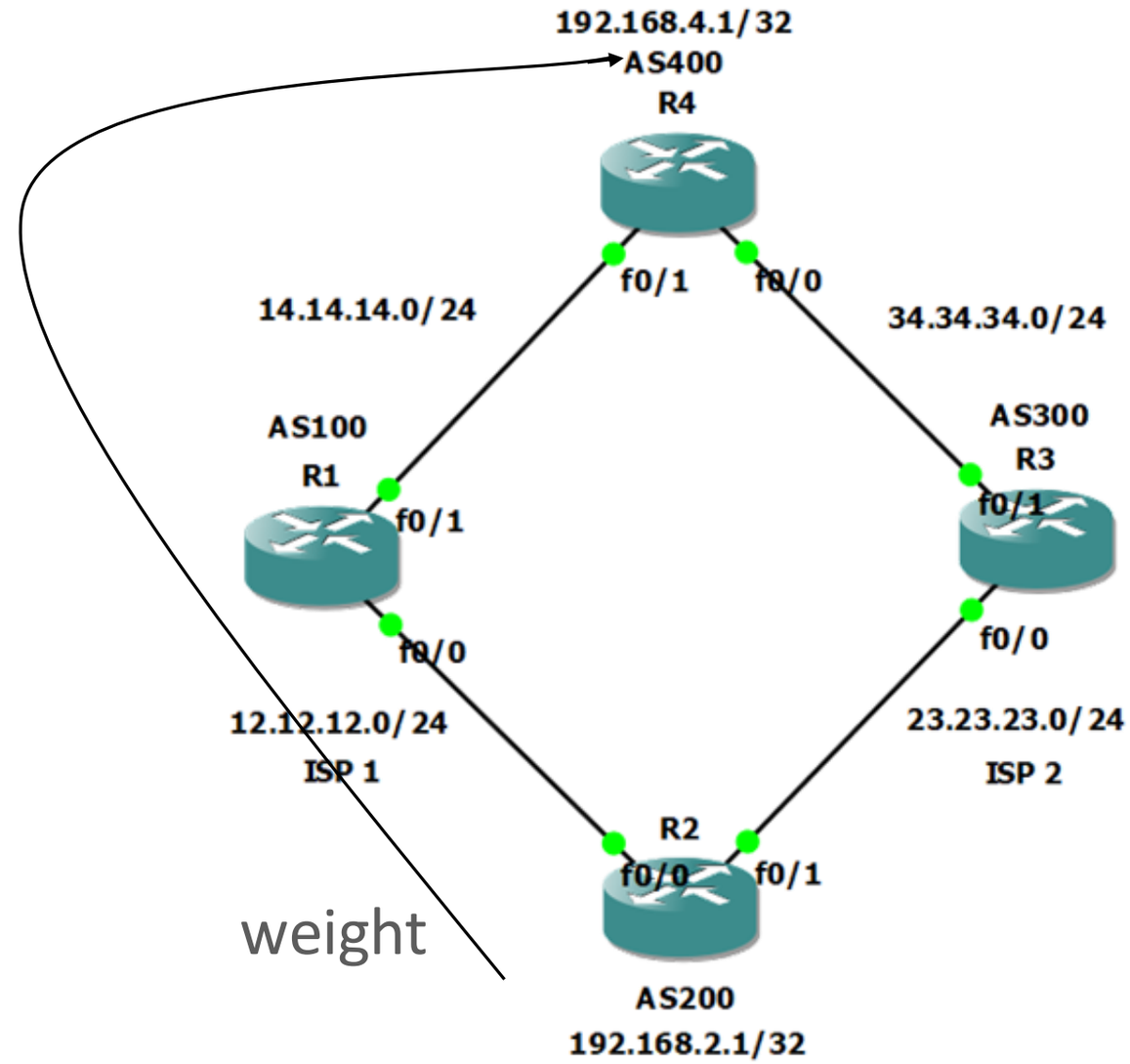

IN
THE END
WE ONLY
REGRET
THE
CHANCES
WE DIDN'T
TAKE
TLCFORCOACHES.COM

Manipulasi Routing pada BGP

- Manipulasi routing pada protokol BGP bisa dilakukan dengan melakukan modifikasi parameter-parameter pada BGP.
- Parameter-parameter pada BGP yang bisa digunakan untuk melakukan manipulasi route adalah:
  - Weight
  - Local preference
  - AS-Path
  - MED
  - Community
- Studi kasus berikutnya yang akan di praktekan adalah:
  - BGP failover
  - BGP load balance

Studi Kasus BGP Fail Over

- Topologi



Studi Kasus BGP Fail Over

- Konfigurasi bgp peer

```
R1(config)#router bgp 100
R1(config-router)#neigh 12.12.2.2 remote-as 200
R1(config-router)#neigh 14.14.14.2 remote-as 400

R2(config)#router bgp 200
R2(config-router)#neigh 12.12.2.1 remote-as 100
R2(config-router)#neigh 23.23.23.2 remote-as 300
R2(config-router)#net 192.168.2.1 mask 255.255.255.255

R3(config)#router bgp 300
R3(config-router)#neigh 23.23.23.1 remote-as 200
R3(config-router)#neigh 34.34.34.2 remote-as 400

R4(config)#router bgp 400
R4(config-router)#neigh 34.34.34.1 remote-as 300
R4(config-router)#neigh 14.14.14.1 remote-as 100
R4(config-router)#net 192.168.4.1 mask 255.255.255.255
```

Studi Kasus BGP Fail Over

- Konfigurasi BGP Fail Over (weight)

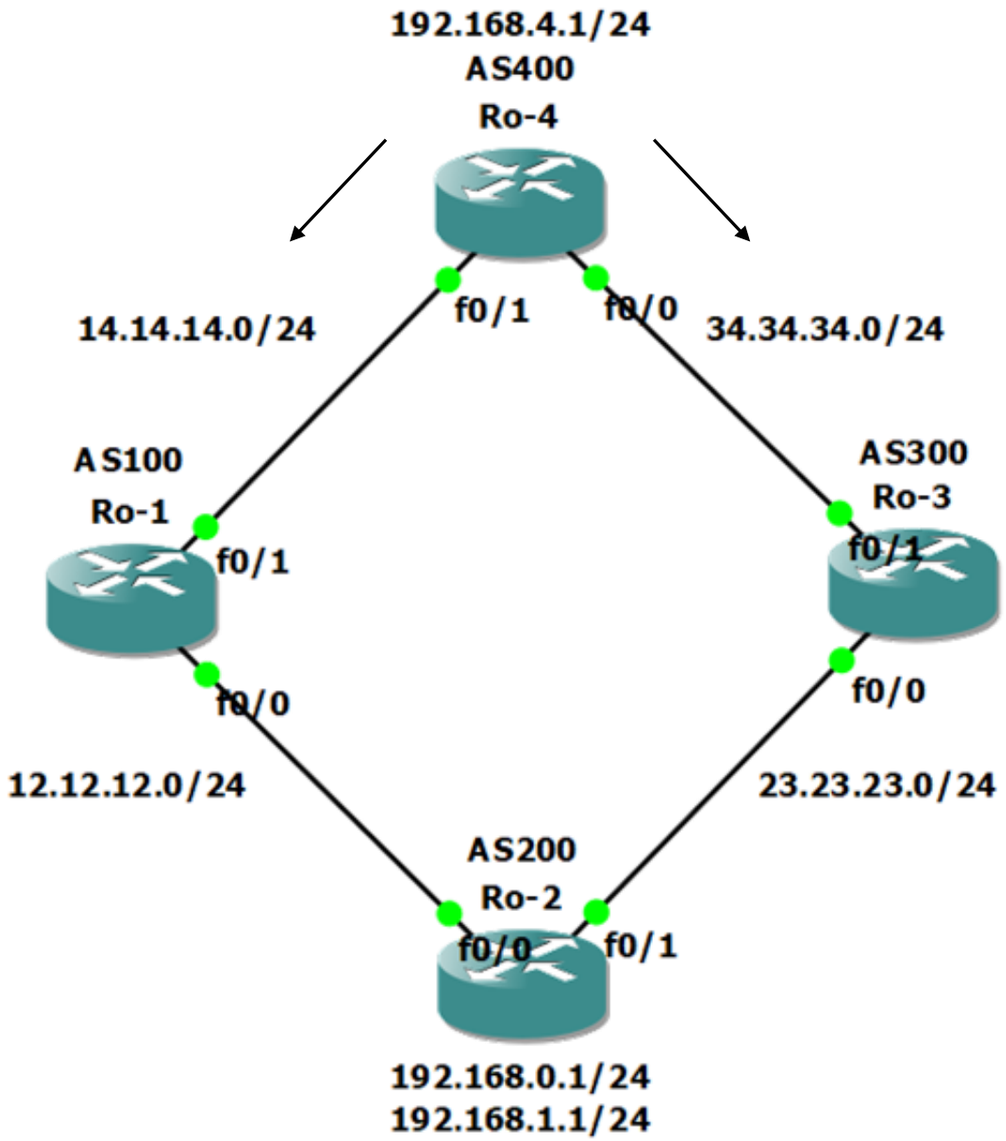
  R2(config)#router bgp 200
  R2(config-router)#neigh 12.12.2.1 weight 200
  R2(config-router)#do clear ip bgp *

```
R2#sh ip bg
BGP table version is 3, local router ID is 192.168.2.1
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
              r RIB-failure, S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete

   Network          Next Hop            Metric LocPrf Weight Path
*> 192.168.2.1/32   0.0.0.0                  0         32768 i
*  192.168.4.1/32   23.23.23.2                             0 300 400 i
*>                  12.12.12.1                           200 100 400 i
R2#trace 192.168.4.1 source 192.168.2.1

Type escape sequence to abort.
Tracing the route to 192.168.4.1

  1 12.12.12.1 20 msec 32 msec 8 msec
  2 14.14.14.2 24 msec 28 msec 24 msec
```

- Jika link down dari sisi 12.12.12.1 akan pindah ke link 14.14.14.2
- Jika link 12.12.12.1 kembali up, main link akan pindah ke 12.12.12.1

Studi Kasus BGP Load Share

- Topologi



Studi Kasus BGP Load Share

- Konfigurasi Bgp Peer

```
R1(config)#router  bgp 100
R1(config-router)#neigh  12.12.2.2 remote-as  200
R1(config-router)#neigh  14.14.14.2 remote-as  400

R2(config)#router  bgp 200
R2(config-router)#neigh  12.12.2.1 remote-as  100
R2(config-router)#neigh  23.23.23.2 remote-as  300
R2(config-router)#net  192.168.0.0 mask 255.255.255.0
R2(config-router)#net  192.168.1.0 mask 255.255.255.0

R3(config)#router  bgp 300
R3(config-router)#neigh  23.23.23.1 remote-as  200
R3(config-router)#neigh  34.34.34.2 remote-as  400

R4(config)#router  bgp 400
R4(config-router)#neigh  34.34.34.1 remote-as  300
R4(config-router)#neigh  14.14.14.1 remote-as  100
R4(config-router)#net  192.168.4.1 mask 255.255.255.255
```

Studi Kasus BGP Load Share

- Konfigurasi BGP Load Share

```
R2(config)#ip prefix-list client1 permit 192.168.0.0/24
R2(config)#ip prefix-list client2 permit 192.168.1.0/24
R2(config)#route-map isp1-out permit 10
R2(config-route-map)#match ip address prefix-list client2
R2(config-route-map)#set as-path prepend 200 200

R2(config)#route-map isp2-out permit 10
R2(config-route-map)#match ip address prefix-list client1
R2(config-route-map)#set as-path prepend 200 200

R2(config)#router bgp 200
R2(config-router)#neighbor 12.12.12.1 route-map isp1-out out
R2(config-router)#neighbor 23.23.23.2 route-map isp2-out out
```

Studi Kasus BGP Load Share

- Konfigurasi BGP Load Share

```
Ro-4#sh ip bgp
BGP table version is 4, local router ID is 192.168.4.1
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
              r RIB-failure, S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete

   Network          Next Hop            Metric LocPrf Weight Path
*> 192.168.0.0      34.34.34.1                             0 300 200 200 200 i
*> 192.168.1.0      14.14.14.1                             0 100 200 200 200 i
*> 192.168.4.0      0.0.0.0                  0         32768 i
Ro-4#
```

```
Ro-4#sh ip route 192.168.0.0
Routing entry for 192.168.0.0/24
  Known via "bgp 400", distance 20, metric 0
  Tag 300, type external
  Last update from 34.34.34.1 00:23:16 ago
  Routing Descriptor Blocks:
  * 34.34.34.1, from 34.34.34.1, 00:23:16 ago
      Route metric is 0, traffic share count is 1
      AS Hops 4
      Route tag 300
```

```
Ro-4#sh ip route 192.168.1.0
Routing entry for 192.168.1.0/24
  Known via "bgp 400", distance 20, metric 0
  Tag 100, type external
  Last update from 14.14.14.1 00:22:56 ago
  Routing Descriptor Blocks:
  * 14.14.14.1, from 14.14.14.1, 00:22:56 ago
      Route metric is 0, traffic share count is 1
      AS Hops 4
      Route tag 100
```

- Verifikasi pada R4
- Terlihat jalur downstream yang menuju 192.168.0.0/24 dan 192.168.1.0/24 menggunakan jalur yang berbeda.


рахмат
danke
謝謝
ngiyabonga
teşekkür ederim
Баярлалаа
mersi
kia ora
barka
welalin
tack
spas
mahalo
tapadh leat
спасибо
faafetai lava
vinaka
спасибі
blagodaram
dank je
misaotra
matondo
paldies
grazzi
kiitos
dankie
nanni
nandri
dhanyavad
thank you
gracias
хвала
asante
manana
obrigada
tenki
bedankt
bayarlalaa
gràcie
hvala
mauruuru
köszönöm
akun
dankon
ačiū
djiere dieuf
tau
mochchakkeram
murakoze
enkosi
dziękuję
дякую
mamnun
chnorakaloutioun
gratias ago
gràcies
sulpáy
taiku
go raibh maith agat
chokrane
sobodi
dēkuji
obrigado
mèsi
didi madloba
sagolun
sukriya
kop khun krap
arigatô
takk
dakujem
trugarez
ありがとう
najis tuke
tanemirt
grazie
rahmet
terima kasih
kam sah hamnida
rahmat
diolch
dhanyavadagalu
shukriya
merce
мерси
ευχαριστώ
xièxie
감사합니다
merci