

LAB7: BGP – IPv4

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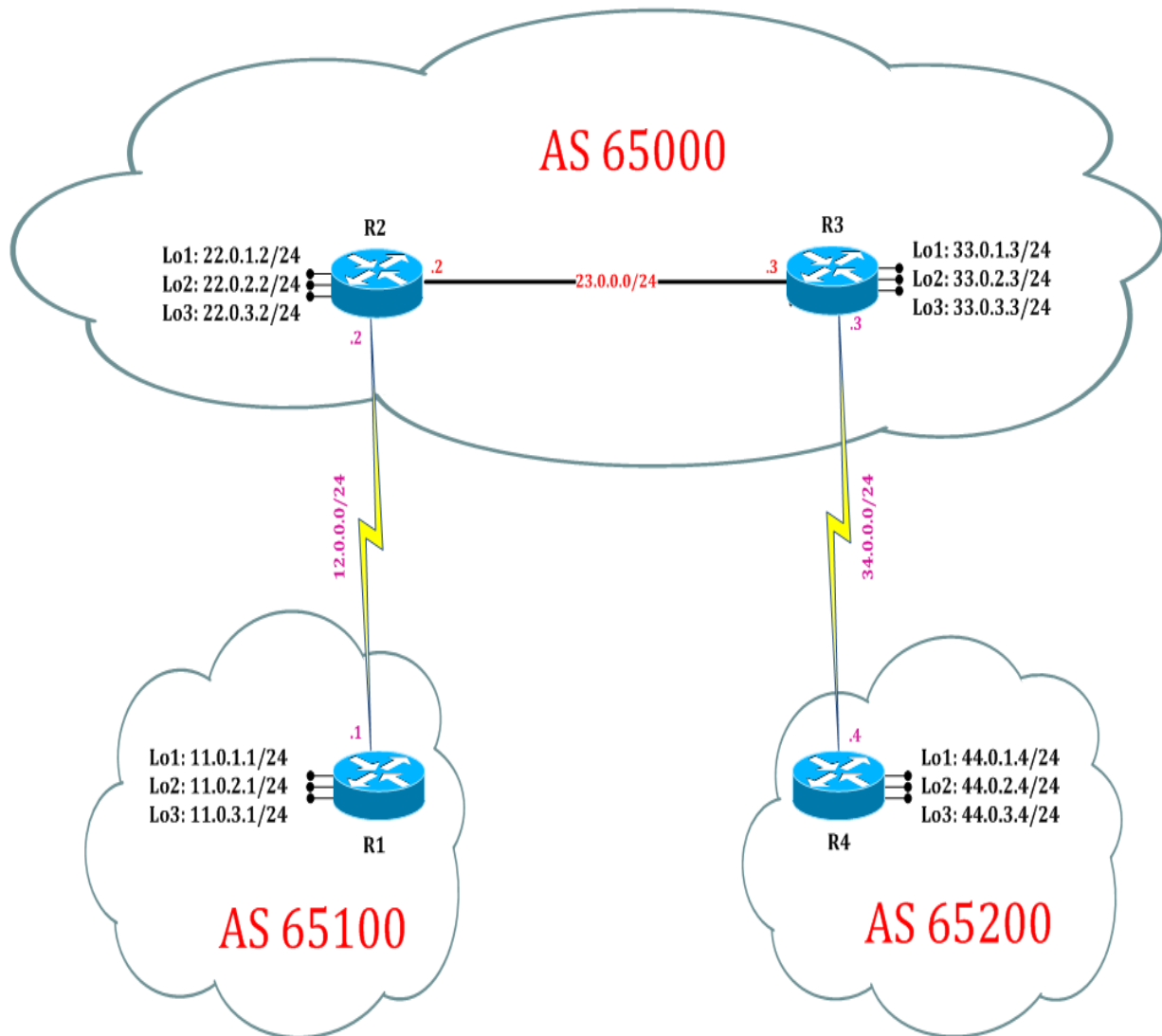
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BGP: Community String

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LAB 7: Diagram

Note: This Lab was developed on Cisco IOS Version 15.2(4) M1 ADVENTERPRISEK9-M.



LAB 7: BGP Community String

Task 1: Configure IPv4 BGP Community String

Step 1 In the configuration mode of router configure Community String Attributes by following command:

```
R1:
router bgp 65100
address-family ipv4
neighbor 22.0.1.2 send-community
neighbor 22.0.1.2 route-map aaa out
exit
route-map aaa permit 10
set community 8888
exit
```

Step 2 Verify receipt of route in neighbor router's by following command

```
R2#show ip bgp community
```

```
BGP table version is 13, local router ID is 22.0.3.2
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
               r RIB-failure, S Stale, m multipath, b backup-path, f RT-Filter,
               x best-external, a additional-path, c RIB-compressed,
Origin codes: i - IGP, e - EGP, ? - incomplete
RPKI validation codes: V valid, I invalid, N Not found
```

	Network	Next Hop	Metric	LocPrf	Weight	Path
*>	11.0.1.0/24	11.0.1.1	0		0	65100 i
*>	11.0.2.0/24	11.0.1.1	0		0	65100 i
*>	11.0.3.0/24	11.0.1.1	0		0	65100 i

```
R2#show ip bgp community 8888
```

```
BGP table version is 13, local router ID is 22.0.3.2
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
               r RIB-failure, S Stale, m multipath, b backup-path, f RT-Filter,
               x best-external, a additional-path, c RIB-compressed,
Origin codes: i - IGP, e - EGP, ? - incomplete
RPKI validation codes: V valid, I invalid, N Not found
```

	Network	Next Hop	Metric	LocPrf	Weight	Path
*>	11.0.1.0/24	11.0.1.1	0		0	65100 i
*>	11.0.2.0/24	11.0.1.1	0		0	65100 i
*>	11.0.3.0/24	11.0.1.1	0		0	65100 i

```
R2#show ip bgp 11.0.1.0
```

```
BGP routing table entry for 11.0.1.0/24, version 2
Paths: (1 available, best #1, table default)
Advertised to update-groups:
2
Refresh Epoch 1
65100, (received & used)
11.0.1.1 (metric 65) from 11.0.1.1 (11.0.3.1)
Origin IGP, metric 0, localpref 100, valid, external, best
Community: 8888
```

(11 network is tagged 8888 community.)

Task 2: Configure IPv4 BGP Community String Manipulation

Step 1 In the configuration mode of router configure Community String Manipulation by following command:

```
R2:
router bgp 65000
address-family ipv4
neighbor 11.0.1.1 route-map bbb in
exit
ip community-list 1 permit 8888
route-map bbb permit 10
match community 1
set weight 9999
exit
```

Step 2 Verify receipt of route in neighbor router's bgp table by following command

```
R2#show ip bgp community
```

```
BGP table version is 16, local router ID is 22.0.3.2
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
               r RIB-failure, S Stale, m multipath, b backup-path, f RT-Filter,
               x best-external, a additional-path, c RIB-compressed,
Origin codes: i - IGP, e - EGP, ? - incomplete
RPKI validation codes: V valid, I invalid, N Not found
```

Network	Next Hop	Metric	LocPrf	Weight	Path
*> 11.0.1.0/24	11.0.1.1	0		9999	65100 i
*> 11.0.2.0/24	11.0.1.1	0		9999	65100 i
*> 11.0.3.0/24	11.0.1.1	0		9999	65100 i

```
R2#show ip bgp
```

BGP table version is 16, local router ID is 22.0.3.2

Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,

r RIB-failure, S Stale, m multipath, b backup-path, f RT-Filter,

x best-external, a additional-path, c RIB-compressed,

Origin codes: i - IGP, e - EGP, ? - incomplete

RPKI validation codes: V valid, I invalid, N Not found

Network	Next Hop	Metric	LocPrf	Weight	Path
*> 11.0.1.0/24	11.0.1.1	0		9999	65100 i
*> 11.0.2.0/24	11.0.1.1	0		9999	65100 i
*> 11.0.3.0/24	11.0.1.1	0		9999	65100 i
*> 22.0.1.0/24	0.0.0.0	0		32768	i
*> 22.0.2.0/24	0.0.0.0	0		32768	i
*> 22.0.3.0/24	0.0.0.0	0		32768	i
*>i 33.0.1.0/24	33.0.1.3	0	100	0	i
*>i 33.0.2.0/24	33.0.1.3	0	100	0	i
*>i 33.0.3.0/24	33.0.1.3	0	100	0	i
*>i 44.0.1.0/24	44.0.1.4	0	100	0	65200 i
*>i 44.0.2.0/24	44.0.1.4	0	100	0	65200 i
*>i 44.0.3.0/24	44.0.1.4	0	100	0	65200 i

(Policy is called to match only 8888 community and will change weight attribute to 9999. Hence manipulation is achieved with the help of Community String.)

