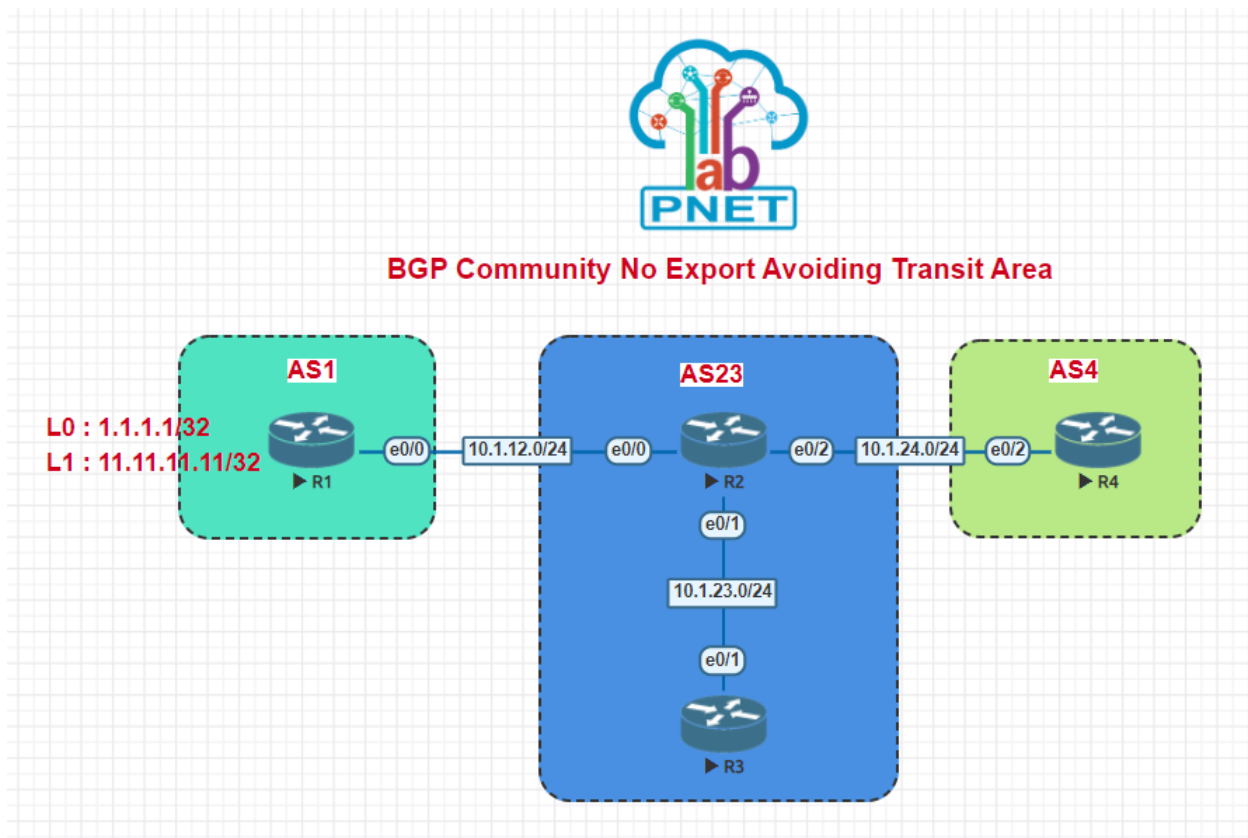


BGP Community No Export Avoiding Transit AS

Lab Topology:

Please use the following topology to complete this lab exercise:



Lab Objective:

The objective of this lab exercise is for you to learn and understand how can you configure BGP Community No Export to avoid transit AS.

Task list:

Task 1: Configure the hostname and IP address for the interface for Routers as topo. Check the reachability between Routers.

Task 2: Configure BGP (IBGP, EBGP) at all Router. R1 advertise L0, L1 interface to BGP. Check the status of bgp table at the others Router.

Task 3: Config Community BGP at R1 so that R1 tell R2 will not export prefix to other EBGP Router (R4)

Task 4: Check BGP Table on R2, R3 and R4 to verify the configuration at Task 3.

**SOLUTION:**

Task 1: Configure the hostname and IP address for the interface for Routers as topo. Check the reachability between Routers.

On R1

```
!  
interface Loopback0  
  ip address 1.1.1.1 255.255.255.255  
!  
interface Loopback1  
  ip address 11.11.11.11 255.255.255.255  
!  
interface Ethernet0/0  
  ip address 10.1.12.1 255.255.255.0  
!
```

On R2

```
!  
interface Ethernet0/0  
  ip address 10.1.12.2 255.255.255.0  
!  
interface Ethernet0/1  
  ip address 10.1.23.2 255.255.255.0  
!  
interface Ethernet0/2  
  ip address 10.1.24.2 255.255.255.0  
!
```

On R3

```
!  
interface Ethernet0/1  
  ip address 10.1.23.3 255.255.255.0  
!
```

On R4

```
!  
interface Ethernet0/2  
  ip address 10.1.24.4 255.255.255.0  
!
```

Verification:

R2#ping 10.1.12.1

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 10.1.12.1, timeout is 2 seconds:

!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms

R2#ping 10.1.23.3





Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 10.1.23.3, timeout is 2 seconds:

!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/2 ms

R2#ping 10.1.24.4

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 10.1.24.4, timeout is 2 seconds:

!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/2 ms

Task 2: Configure BGP (IBGP, EBGP) at all Router. R1 advertise L0, L1 interface to BGP. Check the status of bgp table at the others Router.

On R1

!

router bgp 1

bgp log-neighbor-changes

network 1.1.1.1 mask 255.255.255.255

network 11.11.11.11 mask 255.255.255.255

neighbor 10.1.12.2 remote-as 23

!

On R2

!

router bgp 23

bgp log-neighbor-changes

neighbor 10.1.12.1 remote-as 1

neighbor 10.1.23.3 remote-as 23

neighbor 10.1.24.4 remote-as 4

!

On R3

!

router bgp 23

bgp log-neighbor-changes

neighbor 10.1.23.2 remote-as 23

!

On R4

!

router bgp 4

bgp log-neighbor-changes

neighbor 10.1.24.2 remote-as 23

!

Verification:

R2#show ip bgp

	Network	Next Hop	Metric	LocPrf	Weight	Path
*>	1.1.1.1/32	10.1.12.1	0		0	1 i
*>	11.11.11.11/32	10.1.12.1	0		0	1 i



R3#show ip bgp

	Network	Next Hop	Metric	LocPrf	Weight	Path
* i	1.1.1.1/32	10.1.12.1	0	100	0 1	i
* i	11.11.11.11/32	10.1.12.1	0	100	0 1	i

R4#show ip bgp

	Network	Next Hop	Metric	LocPrf	Weight	Path
*>	1.1.1.1/32	10.1.24.2				0 23 1 i
*>	11.11.11.11/32	10.1.24.2				0 23 1 i

//Every Router have the prefix advertised by R1. That is normal.

Task 3: Config Community BGP at R1 so that R1 tell R2 will not export prefix to other EBG Router (R4)

On R1

```
!
route-map NO_EXPORT permit 10
  set community no-export
!
router bgp 1
  neighbor 10.1.12.2 send-community
  neighbor 10.1.12.2 route-map NO_EXPORT out
!
```

//Create Route-map to set community no-export

//Configure bgp neighbor with R2 but specify we will send 1 community with note that R2 don't advertise to other EBG Router.

//After configuration, please use command "clear ip bgp * soft" in both R1 and R2.

Task 4: Check BGP Table on R2, R3 and R4 to verify the configuration at Task 3.

On R2

R2#show ip bgp 1.1.1.1

BGP routing table entry for 1.1.1.1/32, version 4

Paths: (1 available, best #1, table default, not advertised to EBG peer)

Advertised to update-groups:

6

Refresh Epoch 2

1

10.1.12.1 from 10.1.12.1 (11.11.11.11)

Origin IGP, metric 0, localpref 100, valid, external, best

Community: no-export

rx pathid: 0, tx pathid: 0x0

R2#show ip bgp 11.11.11.11

BGP routing table entry for 11.11.11.11/32, version 5



Paths: (1 available, best #1, table default, not advertised to EBG
peer)

Advertised to update-groups:

6

Refresh Epoch 2

1

10.1.12.1 from 10.1.12.1 (11.11.11.11)

Origin IGP, metric 0, localpref 100, valid, external, best

Community: no-export

rx pathid: 0, tx pathid: 0x0

R3#show ip bgp

	Network	Next Hop	Metric	LocPrf	Weight	Path
* i	1.1.1.1/32	10.1.12.1	0	100	0 1	i
* i	11.11.11.11/32	10.1.12.1	0	100	0 1	i

R4#show ip bgp

//So we will recognize that, in R2 and R3, it still get the prefix 1.1.1.1/32 & 11.11.11.11/32 but R2 will not advertise to other EBG Router (R4). This thing avoids AS 23 to be Transit AS.

