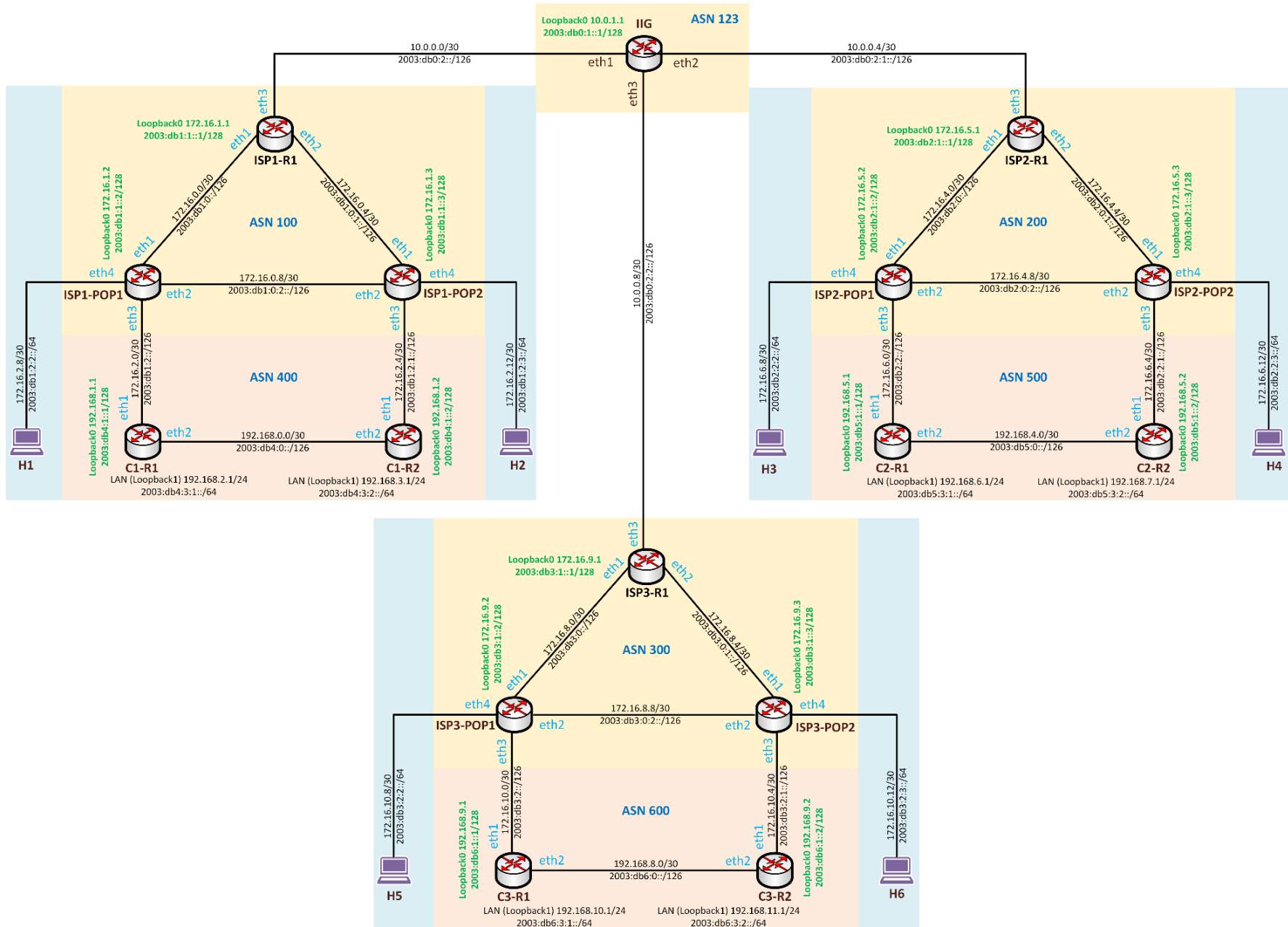


bdNOG11 IPv6 Routing Workshop on MikroTik RouterOS – LAB Topology



IP Address Allocation

Organizations hold below number resources from RIR			
	ASN	IPv4	IPv6
IIG	123	10.0.0.0/22	2003:db0::/32
ISP1	100	172.16.0.0/22	2003:db1::/32
ISP2	200	172.16.4.0/22	2003:db2::/32
ISP3	300	172.16.8.0/22	2003:db3::/32
C1	400	192.168.0.0/22	2003:db4::/32
C2	500	192.168.4.0/22	2003:db5::/32
C3	600	192.168.8.0/22	2003:db6::/32

IP Address Breakdown Plan

IIG	2003:db0::/32	10.0.0.0/22	
	Infra P2P	2003:db0:0::/48	10.0.0.0/24
	Infra Loopback	2003:db0:1::/48	10.0.1.0/24
	PE-CE	2003:db0:2::/48	10.0.2.0/24
	CE LAN	2003:db0:3::/48	10.0.3.0/24

ISP1	2003:db1::/32	172.16.0.0/22	
	Infra P2P	2003:db1:0::/48	172.16.0.0/24
	Infra Loopback	2003:db1:1::/48	172.16.1.0/24
	PE-CE	2003:db1:2::/48	172.16.2.0/24
	CE LAN	2003:db1:3::/48	172.16.3.0/24

C1	2003:db4::/32	192.168.0.0/22	
	Infra P2P	2003:db4:0::/48	192.168.0.0/24
	Infra Loopback	2003:db4:1::/48	192.168.1.0/24
	PE-CE	2003:db4:2::/48	192.168.2.0/24
	CE LAN	2003:db4:3::/48	192.168.3.0/24

ISP2	2003:db2::/32	172.16.4.0/22	
	Infra P2P	2003:db2:0::/48	172.16.4.0/24
	Infra Loopback	2003:db2:1::/48	172.16.5.0/24
	PE-CE	2003:db2:2::/48	172.16.6.0/24
	CE LAN	2003:db2:3::/48	172.16.4.0/24

C2	2003:db5::/32	192.168.4.0/22	
	Infra P2P	2003:db5:0::/48	192.168.4.0/24
	Infra Loopback	2003:db5:1::/48	192.168.5.0/24
	PE-CE	2003:db5:2::/48	192.168.6.0/24
	CE LAN	2003:db5:3::/48	192.168.7.0/24

ISP3	2003:db3::/32	172.16.8.0/22	
	Infra P2P	2003:db3:0::/48	172.16.8.0/24
	Infra Loopback	2003:db3:1::/48	172.16.9.0/24
	PE-CE	2003:db3:2::/48	172.16.10.0/24
	CE LAN	2003:db3:3::/48	172.16.11.0/24

C3	2003:db6::/32	192.168.8.0/22	
	Infra P2P	2003:db6:0::/48	192.168.8.0/24
	Infra Loopback	2003:db6:1::/48	192.168.9.0/24
	PE-CE	2003:db6:2::/48	192.168.10.0/24
	CE LAN	2003:db6:3::/48	192.168.11.0/24

Final IP Plan

P2P IP				Loopback		LAN Block
Link Between		IPv4 Block	IPv6 Block	Router	IPv4 / IPv6	IPv4 / IPv6
IIG	ISP1-R1	10.0.0.0/30	2003:db0:2::/126	IIG	10.0.1.1	N/A
IIG	ISP2-R1	10.0.0.4/30	2003:db0:2:1::/126		2003:db0:1::1/128	N/A
IIG	ISP3-R1	10.0.0.8/30	2003:db0:2:2::/126			
ISP1-R1	ISP1-POP1	172.16.0.0/30	2003:db1:0::/126	ISP1-R1	172.16.1.1	N/A
ISP1-R1	ISP1-POP2	172.16.0.4/30	2003:db1:0:1::/126		2003:db1:1::1/128	N/A
ISP1-POP1	ISP1-POP2	172.16.0.8/30	2003:db1:0:2::/126	ISP1-POP1	172.16.1.2	N/A
ISP1-POP1	C1-R1	172.16.2.0/30	2003:db1:2::/126		2003:db1:1::2/128	N/A
ISP1-POP2	C1-R2	172.16.2.4/30	2003:db1:2:1::/126	ISP1-POP2	172.16.1.3	N/A
ISP1-POP1	H1	172.16.2.8/30	2003:db1:2:2::/64		2003:db1:1::3/128	N/A
ISP1-POP2	H2	172.16.2.12/30	2003:db1:2:3::/64			
ISP2-R1	ISP2-POP1	172.16.4.0/30	2003:db2:0::/126	ISP2-R1	172.16.5.1	N/A
ISP2-R1	ISP2-POP2	172.16.4.4/30	2003:db2:0:1::/126		2003:db2:1::1/128	N/A
ISP2-POP1	ISP2-POP2	172.16.4.8/30	2003:db2:0:2::/126	ISP2-POP1	172.16.5.2	N/A
ISP2-POP1	C2-R1	172.16.6.0/30	2003:db2:2::/126		2003:db2:1::2/128	N/A
ISP2-POP2	C2-R2	172.16.6.4/30	2003:db2:2:1::/126	ISP2-POP2	172.16.5.3	N/A
ISP2-POP1	H3	172.16.6.8/30	2003:db2:2:2::/64		2003:db2:1::3/128	N/A
ISP2-POP2	H4	172.16.6.12/30	2003:db2:2:3::/64			

P2P IP				Loopback		LAN Block
Link Between		IPv4 Block	IPv6 Block	Router	IPv4 / IPv6	IPv4 / IPv6
ISP3-R1	ISP3-POP1	172.16.8.0/30	2003:db3:0::/126	ISP3-R1	172.16.9.1	N/A
ISP3-R1	ISP3-POP2	172.16.8.4/30	2003:db3:0:1::/126		2003:db3:1::1/128	N/A
ISP3-POP1	ISP3-POP2	172.16.8.8/30	2003:db3:0:2::/126	ISP3-POP1	172.16.9.2	N/A
ISP3-POP1	C3-R1	172.16.10.0/30	2003:db3:2::/126		2003:db3:1::2/128	N/A
ISP3-POP2	C3-R2	172.16.10.4/30	2003:db3:2:1::/126	ISP3-POP2	172.16.9.3	N/A
ISP3-POP1	H5	172.16.10.8/30	2003:db3:2:2::/64		2003:db3:1::3/128	N/A
ISP3-POP2	H6	172.16.10.12/30	2003:db3:2:3::/64			
C1-R1	C1-R2	192.168.0.0/30	2003:db4:0::/126	C1-R1	192.168.1.1	192.168.2.1/24
					2003:db4:1::1/128	2003:db4:3:1::/64
				C1-R2	192.168.1.2	192.168.3.1/24
					2003:db4:1::2/128	2003:db4:3:2::/64
C2-R1	C2-R2	192.168.4.0/30	2003:db5:0::/126	C2-R1	192.168.5.1	192.168.6.1/24
					2003:db5:1::1/128	2003:db5:3:1::/64
				C2-R2	192.168.5.2	192.168.7.1/24
					2003:db5:1::2/128	2003:db5:3:2::/64
C3-R1	C3-R2	192.168.8.0/30	2003:db6:0::/126	C3-R1	192.168.9.1	192.168.10.1/24
					2003:db6:1::1/128	2003:db6:3:1::/64
				C3-R2	192.168.9.2	192.168.11.1/24
					2003:db6:1::2/128	2003:db6:3:2::/64

Task-7: Configure RR Based iBGP for IPv4 (ISP1, ISP2 and ISP3)

ISP1-R1

```
/routing bgp instance set default as=100 router-id=172.16.1.1
/routing bgp peer add name=POP1 remote-address=172.16.1.2 remote-as=100 \
  update-source=loopback0 nexthop-choice=force-self route-reflect=yes \
  default-originate=if-installed
/routing bgp peer add name=POP2 remote-address=172.16.1.3 remote-as=100 \
  update-source=loopback0 nexthop-choice=force-self route-reflect=yes \
  default-originate=if-installed

/routing bgp peer print
```

```
[ISP1-R1] > /ip route print where bgp
#      DST-ADDRESS    PREF-SRC  GATEWAY      DISTANCE
0 ADb  172.16.2.0/30      172.16.1.2 200
1 ADb  172.16.2.4/30      172.16.1.3 200
```

ISP1-POP1

```
/routing bgp instance set default as=100 router-id=172.16.1.2
/routing bgp peer add name=R1 remote-address=172.16.1.1 remote-as=100 \
  update-source=loopback0 nexthop-choice=force-self
/routing bgp network add network=172.16.2.0/30 synchronize=yes
/routing bgp network add network=172.16.2.8/30 synchronize=yes

/routing bgp peer print
/ip route print where bgp
```

ISP1-POP2

```
/routing bgp instance set default as=100 router-id=172.16.1.3
/routing bgp peer add name=R1 remote-address=172.16.1.1 remote-as=100 \
  update-source=loopback0 nexthop-choice=force-self
/routing bgp network add network=172.16.2.4/30 synchronize=yes
/routing bgp network add network=172.16.2.12/30 synchronize=yes

/routing bgp peer print
/ip route print where bgp
```

ISP2-R1

```
/routing bgp instance set default as=200 router-id=172.16.5.1

/routing bgp peer add name=POP1 remote-address=172.16.5.2 remote-as=200 \
  update-source=loopback0 nexthop-choice=force-self route-reflect=yes \
  default-originate=if-installed
/routing bgp peer add name=POP2 remote-address=172.16.5.3 remote-as=200 \
  update-source=loopback0 nexthop-choice=force-self route-reflect=yes \
  default-originate=if-installed

/routing bgp peer print
```

```
[ISP2-R1] > /ip route print where bgp
```

#	DST-ADDRESS	PREF-SRC	GATEWAY	DISTANCE
0	ADb 172.16.6.0/30		172.16.5.2	200
1	ADb 172.16.6.4/30		172.16.5.3	200

ISP2-POP1

```
/routing bgp instance set default as=200 router-id=172.16.5.2
/routing bgp peer add name=R1 remote-address=172.16.5.1 remote-as=200 \
  update-source=loopback0 nexthop-choice=force-self

/routing bgp network add network=172.16.6.0/30 synchronize=yes
/routing bgp network add network=172.16.6.8/30 synchronize=yes

/routing bgp peer print
/ip route print where bgp
```

ISP2-POP2

```
/routing bgp instance set default as=200 router-id=172.16.5.3
/routing bgp peer add name=R1 remote-address=172.16.5.1 remote-as=200 \
  update-source=loopback0 nexthop-choice=force-self

/routing bgp network add network=172.16.6.4/30 synchronize=yes
/routing bgp network add network=172.16.6.12/30 synchronize=yes

/routing bgp peer print
/ip route print where bgp
```

ISP3-R1

```
/routing bgp instance set default as=300 router-id=172.16.9.1
/routing bgp peer add name=POP1 remote-address=172.16.9.2 remote-as=300 \
  update-source=loopback0 nexthop-choice=force-self route-reflect=yes \
  default-originate=if-installed
/routing bgp peer add name=POP2 remote-address=172.16.9.3 remote-as=300 \
  update-source=loopback0 nexthop-choice=force-self route-reflect=yes \
  default-originate=if-installed

/routing bgp peer print
```

```
[ISP3-R1] > /ip route print where bgp
```

#	DST-ADDRESS	PREF-SRC	GATEWAY	DISTANCE
0	ADb 172.16.10.0/30		172.16.9.2	200
1	ADb 172.16.10.4/30		172.16.9.3	200

ISP3-POP1

```
/routing bgp instance set default as=300 router-id=172.16.9.2
/routing bgp peer add name=R1 remote-address=172.16.9.1 remote-as=300 \
  update-source=loopback0 nexthop-choice=force-self

/routing bgp network add network=172.16.10.0/30 synchronize=yes
/routing bgp network add network=172.16.10.8/30 synchronize=yes

/routing bgp peer print
/ip route print where bgp
```

ISP3-POP2

```
/routing bgp instance set default as=300 router-id=172.16.9.3
/routing bgp peer add name=R1 remote-address=172.16.9.1 remote-as=300 \
  update-source=loopback0 nexthop-choice=force-self

/routing bgp network add network=172.16.10.4/30 synchronize=yes
/routing bgp network add network=172.16.10.12/30 synchronize=yes

/routing bgp peer print
/ip route print where bgp
```

Task-8: Configure RR Based iBGP for IPv6 (ISP1, ISP2 and ISP3)

ISP1-R1

```
/routing bgp peer add name=POP1-v6 address-families=ipv6 remote-address=2003:db1:1::2 remote-as=100 \  
  update-source=loopback0 nexthop-choice=force-self route-reflect=yes default-originate=if-installed  
  
/routing bgp peer add name=POP2-v6 address-families=ipv6 remote-address=2003:db1:1::3 remote-as=100 \  
  update-source=loopback0 nexthop-choice=force-self route-reflect=yes default-originate=if-installed  
  
/routing bgp peer print  
/ipv6 route print where bgp
```

```
[ISP1-R1] > /ipv6 route print where bgp  
#      DST-ADDRESS      GATEWAY      DISTANCE  
0 Db  2003:db1:2::/127    2003:db1:1::2    200  
1 Db  2003:db1:2:1::/127  2003:db1:1::3    200
```

ISP1-POP1

```
/routing bgp peer add name=R1-v6 address-families=ipv6 remote-address=2003:db1:1::1 remote-as=100 \  
  update-source=loopback0 nexthop-choice=force-self  
  
/routing bgp network add network=2003:db1:2::/126 synchronize=yes  
/routing bgp network add network=2003:db1:2:2::/64 synchronize=yes  
  
/routing bgp peer print  
/ipv6 route print where bgp
```

ISP1-POP2

```
/routing bgp peer add name=R1-v6 address-families=ipv6 remote-address=2003:db1:1::1 remote-as=100 \  
  update-source=loopback0 nexthop-choice=force-self  
  
/routing bgp network add network=2003:db1:2:1::/126 synchronize=yes  
/routing bgp network add network=2003:db1:2:3::/64 synchronize=yes  
  
/routing bgp peer print  
/ipv6 route print where bgp
```


ISP2-R1

```
/routing bgp peer add name=POP1-v6 address-families=ipv6 remote-address=2003:db2:1::2 remote-as=200 \  
  update-source=loopback0 nexthop-choice=force-self route-reflect=yes default-originate=if-installed  
  
/routing bgp peer add name=POP2-v6 address-families=ipv6 remote-address=2003:db2:1::3 remote-as=200 \  
  update-source=loopback0 nexthop-choice=force-self route-reflect=yes default-originate=if-installed  
  
/routing bgp peer print  
/ipv6 route print where bgp
```

```
[ISP2-R1] > /ipv6 route print where bgp  
#      DST-ADDRESS      GATEWAY      DISTANCE  
0 Db  2003:db2:2::/127    2003:db2:1::2    200  
1 Db  2003:db2:2:1::/127   2003:db2:1::3    200
```

ISP2-POP1

```
/routing bgp peer add name=R1-v6 address-families=ipv6 remote-address=2003:db2:1::1 remote-as=200 \  
  update-source=loopback0 nexthop-choice=force-self  
  
/routing bgp network add network=2003:db2:2::/126 synchronize=yes  
/routing bgp network add network=2003:db2:2:2::/64 synchronize=yes  
  
/routing bgp peer print  
/ipv6 route print where bgp
```

ISP2-POP2

```
/routing bgp peer add name=R1-v6 address-families=ipv6 remote-address=2003:db2:1::1 remote-as=200 \  
  update-source=loopback0 nexthop-choice=force-self  
  
/routing bgp network add network=2003:db2:2:1::/126 synchronize=yes  
/routing bgp network add network=2003:db2:2:3::/64 synchronize=yes  
  
/routing bgp peer print  
/ipv6 route print where bgp
```

ISP3-R1

```
/routing bgp peer add name=POP1-v6 address-families=ipv6 remote-address=2003:db3:1::2 remote-as=300 \  
  update-source=loopback0 nexthop-choice=force-self route-reflect=yes default-originate=if-installed  
  
/routing bgp peer add name=POP2-v6 address-families=ipv6 remote-address=2003:db3:1::3 remote-as=300 \  
  update-source=loopback0 nexthop-choice=force-self route-reflect=yes default-originate=if-installed  
  
/routing bgp peer print
```

```
[ISP3-R1] > /ipv6 route print where bgp
```

#	DST-ADDRESS	GATEWAY	DISTANCE
0	Db 2003:db3:2::/127	2003:db3:1::2	200
1	Db 2003:db3:2:1::/127	2003:db3:1::3	200

ISP3-POP1

```
/routing bgp peer add name=R1-v6 address-families=ipv6 remote-address=2003:db3:1::1 remote-as=300 \  
  update-source=loopback0 nexthop-choice=force-self  
  
/routing bgp network add network=2003:db3:2::/126 synchronize=yes  
/routing bgp network add network=2003:db3:2:2::/64 synchronize=yes  
  
/routing bgp peer print  
/ipv6 route print where bgp
```

ISP3-POP2

```
/routing bgp peer add name=R1-v6 address-families=ipv6 remote-address=2003:db3:1::1 remote-as=300 \  
  update-source=loopback0 nexthop-choice=force-self  
  
/routing bgp network add network=2003:db3:2:1::/126 synchronize=yes  
/routing bgp network add network=2003:db3:2:3::/64 synchronize=yes  
  
/routing bgp peer print  
/ipv6 route print where bgp
```

ISP1-R1

```
/ipv6 route add dst-address=2003:db1:1::2/128 gateway=2003:db1:0::2 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db1:1::2/128 gateway=2003:db1:0:1::2 \  
  distance=20 check-gateway=ping  
  
/ipv6 route add dst-address=2003:db1:1::3/128 gateway=2003:db1:0:1::2 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db1:1::3/128 gateway=2003:db1:0::2 \  
  distance=20 check-gateway=ping
```

ISP1-POP1

```
/ipv6 route add dst-address=2003:db1:1::1/128 gateway=2003:db1:0::1 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db1:1::1/128 gateway=2003:db1:0:2::2 \  
  distance=20 check-gateway=ping  
  
/ipv6 route add dst-address=2003:db1:1::3/128 gateway=2003:db1:0:2::2 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db1:1::3/128 gateway=2003:db1:0::1 \  
  distance=20 check-gateway=ping
```

ISP1-POP2

```
/ipv6 route add dst-address=2003:db1:1::1/128 gateway=2003:db1:0:1::1 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db1:1::1/128 gateway=2003:db1:0:2::1 \  
  distance=20 check-gateway=ping  
  
/ipv6 route add dst-address=2003:db1:1::2/128 gateway=2003:db1:0:2::1 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db1:1::2/128 gateway=2003:db1:0:1::1 \  
  distance=20 check-gateway=ping
```

```
/ipv6 route print where bgp
```

As MikroTik Router doesn't support recursive next-hop if gateway is link local address.

So, our temporary solution is to put static routes to reach the neighbors loopbacks and then to get the iBGP prefixes reachable.

Reference Link:

<https://forum.mikrotik.com/viewtopic.php?t=134546>

ISP2-R1

```
/ipv6 route add dst-address=2003:db2:1::2/128 gateway=2003:db2:0::2 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db2:1::2/128 gateway=2003:db2:0:1::2 \  
  distance=20 check-gateway=ping  
  
/ipv6 route add dst-address=2003:db2:1::3/128 gateway=2003:db2:0:1::2 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db2:1::3/128 gateway=2003:db2:0::2 \  
  distance=20 check-gateway=ping
```

ISP2-POP1

```
/ipv6 route add dst-address=2003:db2:1::1/128 gateway=2003:db2:0::1 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db2:1::1/128 gateway=2003:db2:0:2::2 \  
  distance=20 check-gateway=ping  
  
/ipv6 route add dst-address=2003:db2:1::3/128 gateway=2003:db2:0:2::2 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db2:1::3/128 gateway=2003:db2:0::1 \  
  distance=20 check-gateway=ping
```

ISP2-POP2

```
/ipv6 route add dst-address=2003:db2:1::1/128 gateway=2003:db2:0:1::1 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db2:1::1/128 gateway=2003:db2:0:2::1 \  
  distance=20 check-gateway=ping  
  
/ipv6 route add dst-address=2003:db2:1::2/128 gateway=2003:db2:0:2::1 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db2:1::2/128 gateway=2003:db2:0:1::1 \  
  distance=20 check-gateway=ping
```

```
/ipv6 route print where bgp
```

ISP3-R1

```
/ipv6 route add dst-address=2003:db3:1::2/128 gateway=2003:db3:0::2 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db3:1::2/128 gateway=2003:db3:0:1::2 \  
  distance=20 check-gateway=ping  
  
/ipv6 route add dst-address=2003:db3:1::3/128 gateway=2003:db3:0:1::2 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db3:1::3/128 gateway=2003:db3:0::2 \  
  distance=20 check-gateway=ping
```

ISP3-POP1

```
/ipv6 route add dst-address=2003:db3:1::1/128 gateway=2003:db3:0::1 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db3:1::1/128 gateway=2003:db3:0:2::2 \  
  distance=20 check-gateway=ping  
  
/ipv6 route add dst-address=2003:db3:1::3/128 gateway=2003:db3:0:2::2 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db3:1::3/128 gateway=2003:db3:0::1 \  
  distance=20 check-gateway=ping
```

ISP3-POP2

```
/ipv6 route add dst-address=2003:db3:1::1/128 gateway=2003:db3:0:1::1 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db3:1::1/128 gateway=2003:db3:0:2::1 \  
  distance=20 check-gateway=ping  
  
/ipv6 route add dst-address=2003:db3:1::2/128 gateway=2003:db3:0:2::1 \  
  distance=10 check-gateway=ping  
/ipv6 route add dst-address=2003:db3:1::2/128 gateway=2003:db3:0:1::1 \  
  distance=20 check-gateway=ping
```

```
/ipv6 route print where bgp
```

Task-9: Configure iBGP for IPv4 (C1, C2 and C3)

C1-R1

```
/routing bgp instance set default as=400

/routing bgp peer add name=C1-R2 remote-address=192.168.1.2 remote-as=400 \
  update-source=loopback0 nexthop-choice=force-self

/routing bgp network add network=192.168.2.0/24 synchronize=yes

/routing bgp peer print
/ip route print where bgp
```

C1-R2

```
/routing bgp instance set default as=400

/routing bgp peer add name=C1-R1 remote-address=192.168.1.1 remote-as=400 \
  update-source=loopback0 nexthop-choice=force-self

/routing bgp network add network=192.168.3.0/24 synchronize=yes

/routing bgp peer print
/ip route print where bgp
```

C2-R1

```
/routing bgp instance set default as=500

/routing bgp peer add name=C2-R2 remote-address=192.168.5.2 remote-as=500 \
  update-source=loopback0 nexthop-choice=force-self

/routing bgp network add network=192.168.6.0/24 synchronize=yes

/routing bgp peer print
/ip route print where bgp
```

C2-R2

```
/routing bgp instance set default as=500

/routing bgp peer add name=C2-R1 remote-address=192.168.5.1 remote-as=500 \
  update-source=loopback0 nexthop-choice=force-self

/routing bgp network add network=192.168.7.0/24 synchronize=yes

/routing bgp peer print
/ip route print where bgp
```

C3-R1

```
/routing bgp instance set default as=600

/routing bgp peer add name=C3-R2 remote-address=192.168.9.2 remote-as=600 \
  update-source=loopback0 nexthop-choice=force-self

/routing bgp network add network=192.168.10.0/24 synchronize=yes

/routing bgp peer print
/ip route print where bgp
```

C3-R2

```
/routing bgp instance set default as=600

/routing bgp peer add name=C3-R1 remote-address=192.168.9.1 remote-as=600 \
  update-source=loopback0 nexthop-choice=force-self

/routing bgp network add network=192.168.11.0/24 synchronize=yes

/routing bgp peer print
/ip route print where bgp
```


Task-10: Configure iBGP for IPv6 (C1, C2 and C3)

C1-R1

```
/routing bgp peer add name=C1-R2-V6 address-families=ipv6 remote-address=2003:db4:1::2 \  
    remote-as=400 update-source=loopback0 nexthop-choice=force-self  
  
/routing bgp network add network=2003:db4:3:1::/64 synchronize=yes  
  
/routing bgp peer print  
/ipv6 route print where bgp
```

C1-R2

```
/routing bgp peer add name=C1-R1-V6 address-families=ipv6 remote-address=2003:db4:1::1 \  
    remote-as=400 update-source=loopback0 nexthop-choice=force-self  
  
/routing bgp network add network=2003:db4:3:2::/64 synchronize=yes  
  
/routing bgp peer print  
/ipv6 route print where bgp
```

C2-R1

```
/routing bgp peer add name=C2-R2-V6 address-families=ipv6 remote-address=2003:db5:1::2 \  
    remote-as=500 update-source=loopback0 nexthop-choice=force-self
```

```
/routing bgp network add network=2003:db5:3:1::/64 synchronize=yes
```

```
/routing bgp peer print
```

```
/ipv6 route print where bgp
```

C2-R2

```
/routing bgp peer add name=C2-R1-V6 address-families=ipv6 remote-address=2003:db5:1::1 \  
    remote-as=500 update-source=loopback0 nexthop-choice=force-self
```

```
/routing bgp network add network=2003:db5:3:2::/64 synchronize=yes
```

```
/routing bgp peer print
```

```
/ipv6 route print where bgp
```

C3-R1

```
/routing bgp peer add name=C3-R2-V6 address-families=ipv6 remote-address=2003:db6:1::2 \  
    remote-as=600 update-source=loopback0 nexthop-choice=force-self
```

```
/routing bgp network add network=2003:db6:3:1::/64 synchronize=yes
```

```
/routing bgp peer print
```

```
/ipv6 route print where bgp
```

C3-R2

```
/routing bgp peer add name=C3-R1-V6 address-families=ipv6 remote-address=2003:db6:1::1 \  
    remote-as=600 update-source=loopback0 nexthop-choice=force-self
```

```
/routing bgp network add network=2003:db6:3:2::/64 synchronize=yes
```

```
/routing bgp peer print
```

```
/ipv6 route print where bgp
```

C1-R1

```
/ipv6 route add dst-address=2003:db4:1::2/128 gateway=2003:db4:0::2
```

C1-R2

```
/ipv6 route add dst-address=2003:db4:1::1/128 gateway=2003:db4:0::1
```

C2-R1

```
/ipv6 route add dst-address=2003:db5:1::2/128 gateway=2003:db5:0::2
```

C2-R2

```
/ipv6 route add dst-address=2003:db5:1::1/128 gateway=2003:db5:0::1
```

C3-R1

```
/ipv6 route add dst-address=2003:db6:1::2/128 gateway=2003:db6:0::2
```

C3-R2

```
/ipv6 route add dst-address=2003:db6:1::1/128 gateway=2003:db6:0::1
```

```
/ipv6 route print where bgp
```

As MikroTik Router doesn't support recursive next-hop if gateway is link local address.

So, our temporary solution is to put static routes to reach the neighbors loopbacks and then to get the iBGP prefixes reachable.

Reference Link:

<https://forum.mikrotik.com/viewtopic.php?t=134546>

** Bug fixing is always welcome at info@mn-lab.net **