

IPv6 WAN Interface POP1 Router10 Conf:

```
config t
interface fa0/0
ipv6 address 2406:6400:0028:0000::1/64
ipv6 enable
exit
exit
wr
```

Verify Configuration:

```
ping 2406:6400:0028:0000::1      [!!!!]
ping 2406:6400:0028:0000::2      [!!!!]
```

IPv4 WAN Interface POP2 Router12 Conf:

```
config t
interface fa0/0
description Customer WAN R12-CBR4
no ip redirects
no ip directed-broadcast
no ip unreachable
no cdp enable
ip address 172.16.11.225 255.255.255.252
no shutdown
exit
exit
wr
```

Verify Configuration:

```
ping 172.16.11.225      [!!!!]
ping 172.16.11.226      [!!!!]
```

IPv6 WAN Interface POP2 Router12 Conf:

```
config t
interface fa0/0
ipv6 address 2406:6400:002c:0000::1/64
ipv6 enable
exit
exit
wr
```

Verify Configuration:

```
ping 2406:6400:002c:0000::1      [!!!!!]
ping 2406:6400:002c:0000::2      [!!!!!]
```

IPv4 eBGP POP1 Router10 Conf:

```
config t
router bgp 17821
address-family ipv4
neighbor IPV4-eBGP-CUSTOMER-REG4-POP1 peer-group
neighbor 172.16.11.194 remote-as 65007
neighbor 172.16.11.194 peer-group IPV4-eBGP-CUSTOMER-REG4-POP1
neighbor IPV4-eBGP-CUSTOMER-REG4-POP1 default-originate
exit
exit
exit
wr
```

Verify Configuration:

```
sh bgp ipv4 unicast summary      [Number of prefixes received from peers]
sh bgp ipv4 unicast              [Any new prefix?]
sh ip route bgp                  [Any new prefix?]
sh bgp ipv4 unicast neighbors [Customer Router] received-routes/routes
sh ip route
ping 172.16.28.1                [!!!!!]
```

IPv6 eBGP POP1 Router10 Conf:

```
config t
router bgp 17821
address-family ipv6
neighbor IPV6-eBGP-CUSTOMER-REG4-POP1 peer-group
neighbor 2406:6400:0028:0000::2 remote-as 65007
neighbor 2406:6400:0028:0000::2 peer-group IPV6-eBGP-CUSTOMER-
REG4-POP1
neighbor IPV6-eBGP-CUSTOMER-REG4-POP1 default-originate
exit
exit
exit
wr
```

Verify Configuration:

```
sh bgp ipv6 unicast summary      [Number of prefixes received from peers]
sh bgp ipv6 unicast             [Any new prefix?]
sh ipv6 route bgp               [Any new prefix?]
sh bgp ipv6 unicast neighbors [Customer Router] received-routes/routes
sh ipv6 route
ping 2406:6400:e000::1          [!!!!!!]
```

IPv4 eBGP POP2 Router12 Conf:

```
config t
router bgp 17821
address-family ipv4
neighbor IPV4-eBGP-CUSTOMER-REG4-POP2 peer-group
neighbor 172.16.11.226 remote-as 65008
neighbor 172.16.11.226 peer-group IPV4-eBGP-CUSTOMER-REG4-POP2
neighbor IPV4-eBGP-CUSTOMER-REG4-POP2 default-originate
exit
exit
exit
wr
```

Verify Configuration:

```
sh bgp ipv4 unicast summary      [Number of prefixes received from peers]
sh bgp ipv4 unicast             [Any new prefix?]
sh ip route bgp                 [Any new prefix?]
sh bgp ipv4 unicast neighbors [Customer Router] received-routes/routes
sh ip route
ping 172.16.30.1                [!!!!!!]
```

IPv6 eBGP POP2 Router12 Conf:

```
config t
router bgp 17821
address-family ipv6
neighbor IPV6-eBGP-CUSTOMER-REG4-POP2 peer-group
neighbor 2406:6400:002c:0000::2 remote-as 65008
neighbor 2406:6400:002c:0000::2 peer-group IPV6-eBGP-CUSTOMER-REG4-POP2
neighbor IPV6-eBGP-CUSTOMER-REG4-POP2 default-originate
exit
exit
exit
wr
```

Verify Configuration:

```
sh bgp ipv6 unicast summary      [Number of prefixes received from peers]
sh bgp ipv6 unicast             [Any new prefix?]
sh ipv6 route bgp               [Any new prefix?]
sh bgp ipv6 unicast neighbors [Customer Router] received-routes/routes
sh ipv6 route
ping 2406:6400:f800::1          [!!!!!!]
```

IPV4 WAN Interface POP1 Router19 Conf:

```
config t
interface fa0/1
description Upstream WAN r19-CAR4-R10
no ip redirects
no ip directed-broadcast
no ip unreachable
ip address 172.16.11.194 255.255.255.252
no cdp enable
no shutdown
exit
exit
wr
```

Verify Configuration:

```
ping 172.16.11.194      [!!!!!!]
ping 172.16.11.193      [!!!!!!]
```

IPV6 WAN Interface POP1 Router19 Conf:

```
config t
interface fa0/1
ipv6 address 2406:6400:0028:0000::2/64
ipv6 enable
exit
exit
wr
```

Verify Configuration:

```
ping 2406:6400:0028:0000::2      [!!!!!!]
ping 2406:6400:0028:0000::1      [!!!!!!]
```

IPV4 WAN Interface POP2 Router20 Conf:

```
config t
interface fa0/1
description Upstream WAN r20-CBR4-R12
no ip redirects
no ip directed-broadcast
no ip unreachable
ip address 172.16.11.226 255.255.255.252
no cdp enable
no shutdown
exit
exit
wr
```

Verify Configuration:

```
ping 172.16.11.226      [!!!!]
ping 172.16.11.225      [!!!!]
```

IPV6 WAN Interface POP2 Router20 Conf:

```
config t
interface fa0/1
ipv6 address 2406:6400:002c:0000::2/64
ipv6 enable
exit
exit
wr
```

Verify Configuration:

```
ping 2406:6400:002c:0000::2      [!!!!]
ping 2406:6400:002c:0000::1      [!!!!]
```

IPV4 eBGP POP1 Router19 Conf:

```
config t
router bgp 65007
address-family ipv4
no auto-summary
no synchronization
neighbor 172.16.11.193 remote-as 17821
neighbor 172.16.11.193 activate
exit
exit
exit
wr
```

IPv4 eBGP Prefix Announcement POP1 Router19 Conf:

```
config t
router bgp 65007
address-family ipv4
network 172.16.28.0 mask 255.255.255.0
exit
exit
ip route 172.16.28.0 255.255.255.0 null 0 permanent
exit
wr
```

Verify Configuration:

```
sh bgp ipv4 unicast summary      [Number of prefixes received from peers]
sh bgp ipv4 unicast             [Any prefix?]
sh ip route bgp                 [Any prefix?]
sh bgp ipv4 unicast neighbors [POP Router] received-routes/routes
sh ip route
ping 172.16.15.10              [!!!!!!]
```

IPv6 eBGP POP1 Router19 Conf:

```
config t
router bgp 65007
address-family ipv6
no synchronization
neighbor 2406:6400:0028:0000::1 remote-as 17821
neighbor 2406:6400:0028:0000::1 activate
exit
exit
exit
wr
```

IPv6 eBGP Prefix Announcement POP1 Router19 Conf:

```
config t
router bgp 65007
address-family ipv6
network 2406:6400:e000::/48
exit
exit
ipv6 route 2406:6400:e000::/48 null 0
exit
wr
```

Verify Configuration:

```
sh bgp ipv6 unicast summary      [Number of prefixes received from peers]
sh bgp ipv6 unicast             [Any prefix?]
sh ipv6 route bgp               [Any prefix?]
sh bgp ipv6 unicast neighbors [POP Router] received-routes/routes
sh ipv6 route
ping 2406:6400::10             [!!!!!!]
```

IPv4 eBGP POP2 Router20 Conf:

```
config t
router bgp 65008
address-family ipv4
no auto-summary
no synchronization
neighbor 172.16.11.225 remote-as 17821
neighbor 172.16.11.225 activate
exit
exit
exit
wr
```

IPv4 eBGP Prefix Announcement POP2 Router20 Conf:

```
config t
router bgp 65008
address-family ipv4
network 172.16.30.0 mask 255.255.255.0
exit
exit
ip route 172.16.30.0 255.255.255.0 null 0 permanent
exit
wr
```

Verify Configuration:

```
sh bgp ipv4 unicast summary      [Number of prefixes received from peers]
sh bgp ipv4 unicast             [Any prefix?]
sh ip route bgp                 [Any prefix?]
sh bgp ipv4 unicast neighbors [POP Router] received-routes/routes
sh ip route
ping 172.16.15.12              [!!!!!!]
```

IPv6 eBGP POP2 Router20 Conf:

```
config t
router bgp 65008
address-family ipv6
no synchronization
neighbor 2406:6400:002c:0000::1 remote-as 17821
neighbor 2406:6400:002c:0000::1 activate
exit
exit
exit
wr
```

IPv6 eBGP Prefix Announcement POP2 Router20 Conf:

```
config t
router bgp 65008
address-family ipv6
network 2406:6400:f800::/48
exit
exit
ipv6 route 2406:6400:f800::/48 null 0
exit
wr
```

Verify Configuration:

```
sh bgp ipv6 unicast summary      [Number of prefixes received from peers]
sh bgp ipv6 unicast              [Any prefix?]
sh ipv6 route bgp                [Any prefix?]
sh bgp ipv6 unicast neighbors [POP Router] received-routes/routes
sh ipv6 route
ping 2406:6400::12              [!!!!]
```