

show run

```
Current configuration : 1532 bytes

version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption

hostname POP_Carrier2_ISP2

boot-start-marker
boot-end-marker

no logging buffered
no logging console
no logging monitor

no aaa new-model

resource policy

ip cef

voice-card 0

interface Loopback0
ip address 2.3.4.5 255.255.255.255

interface FastEthernet0/0
description TO-Carrier2
ip address 10.2.0.2 255.255.255.0
duplex auto
speed auto

interface FastEthernet0/1
description TO-ISP_UPC
ip address 172.17.0.2 255.255.255.252
duplex auto
speed auto

interface Serial0/1/0
no ip address
shutdown
clock rate 2000000

interface Serial0/1/1
no ip address
shutdown
clock rate 2000000

router bgp 20
no synchronization
bgp log-neighbor-changes
network 172.17.0.0 mask 255.255.255.252
neighbor 1.2.3.4 remote-as 20
neighbor 1.2.3.4 update-source Loopback0
neighbor 3.4.5.6 remote-as 20
neighbor 3.4.5.6 update-source Loopback0
neighbor 200.1.1.1 remote-as 200
neighbor 200.1.1.1 ebgp-multihop 10
neighbor 200.1.1.1 update-source Loopback0
neighbor 200.1.1.1 next-hop-self
no auto-summary

ip route 1.2.3.4 255.255.255.255 FastEthernet0/0
ip route 3.4.5.6 255.255.255.255 FastEthernet0/0
ip route 200.1.1.1 255.255.255.255 FastEthernet0/1

no ip http server
no ip http secure-server

control-plane

line con 0
line aux 0
```

```
line vty 0 4
login

scheduler allocate 20000 1000
end
```

sh ip route

Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route

Gateway of last resort is not set

```
1.0.0.0/32 is subnetted, 1 subnets
S 1.2.3.4 is directly connected, FastEthernet0/0
2.0.0.0/32 is subnetted, 1 subnets
C 2.3.4.5 is directly connected, Loopback0
3.0.0.0/32 is subnetted, 1 subnets
S 3.4.5.6 is directly connected, FastEthernet0/0
200.1.1.0/32 is subnetted, 1 subnets
S 200.1.1.1 is directly connected, FastEthernet0/1
172.17.0.0/30 is subnetted, 3 subnets
B 172.17.0.8 [200/0] via 3.4.5.6, 00:41:27
B 172.17.0.4 [200/0] via 1.2.3.4, 00:37:22
C 172.17.0.0 is directly connected, FastEthernet0/1
10.0.0.0/24 is subnetted, 1 subnets
C 10.2.0.0 is directly connected, FastEthernet0/0
B 209.225.254.0/24 [20/0] via 200.1.1.1, 00:53:37
```

sh ip bgp

```
BGP table version is 17, local router ID is 2.3.4.5
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
*> 172.17.0.0/30 0.0.0.0 0 32768 i
*>i172.17.0.4/30 1.2.3.4 0 100 0 i
*>i172.17.0.8/30 3.4.5.6 0 100 0 i
* i209.225.100.0 200.2.2.2 0 100 0 200 i
*> 209.225.254.0 200.1.1.1 0 0 200 i
```

sh ip bgp nei

```
BGP neighbor is 1.2.3.4, remote AS 20, internal link
BGP version 4, remote router ID 1.2.3.4
BGP state = Established, up for 00:38:57
Last read 00:00:57, last write 00:00:57, hold time is 180, keepalive interval is 60 seconds
Neighbor capabilities:
Route refresh: advertised and received(old & new)
Address family IPv4 Unicast: advertised and received
Message statistics:
InQ depth is 0
OutQ depth is 0
Sent Rcvd
Opens: 4 4
Notifications: 0 0
Updates: 4 8
Keepalives: 104 104
Route Refresh: 0 0
Total: 112 116
Default minimum time between advertisement runs is 0 seconds
```

```
For address family: IPv4 Unicast
BGP table version 17, neighbor version 17/0
Output queue size : 0
Index 1, Offset 0, Mask 0x2
1 update-group member
Sent Rcvd
Prefix activity: ---- ----
Prefixes Current: 2 2 (Consumes 104 bytes)
Prefixes Total: 2 2
Implicit Withdraw: 2 0
Explicit Withdraw: 0 0
Used as bestpath: n/a 1
Used as multipath: n/a 0
```

```
Outbound Inbound
Local Policy Denied Prefixes: -----
Bestpath from this peer: 1 n/a
Bestpath from iBGP peer: 1 n/a
Total: 2 0
Number of NLRI in the update sent: max 1, min 1
```

```
Connections established 4; dropped 3
Last reset 00:38:58, due to Peer closed the session
Connection state is ESTAB, I/O status: 1, unread input bytes: 0
Connection is ECN Disabled, Mininum incoming TTL 0, Outgoing TTL 255
Local host: 2.3.4.5, Local port: 179
Foreign host: 1.2.3.4, Foreign port: 51110
Connection tableid (VRF): 0
```

```
Enqueued packets for retransmit: 0, input: 0 mis-ordered: 0 (0 bytes)
```

```
Event Timers (current time is 0x68280C):
Timer Starts Wakeups Next
Retrans 41 0 0x0
TimeWait 0 0 0x0
AckHold 43 40 0x0
SendWnd 0 0 0x0
KeepAlive 0 0 0x0
GiveUp 0 0 0x0
PmtuAger 0 0 0x0
DeadWait 0 0 0x0
Linger 0 0 0x0
ProcessQ 0 0 0x0
```

```
iss: 178368608 snduna: 178369548 sndnxt: 178369548 sndwnd: 15985
irs: 1399737640 rcvnxt: 1399738580 rcvwnd: 15985 delrcvwnd: 399
```

```
SRTT: 299 ms, RTTO: 310 ms, RTV: 11 ms, KRTT: 0 ms
minRTT: 0 ms, maxRTT: 300 ms, ACK hold: 200 ms
Status Flags: passive open, gen tcbs
Option Flags: nagle
IP Precedence value : 6
```

```
Datagrams (max data segment is 536 bytes):
Rcvd: 47 (out of order: 0), with data: 43, total data bytes: 939
```

```
Sent: 83 (retransmit: 0, fastretransmit: 0, partialack: 0, Second Congestion: 0), with
data: 41, total data bytes: 939
Packets received in fast path: 0, fast processed: 0, slow path: 0
fast lock acquisition failures: 0, slow path: 0

BGP neighbor is 3.4.5.6, remote AS 20, internal link
BGP version 4, remote router ID 3.4.5.6
BGP state = Established, up for 01:28:27
Last read 00:00:27, last write 00:00:27, hold time is 180, keepalive interval is 60 seconds
Neighbor capabilities:
Route refresh: advertised and received(old & new)
Address family IPv4 Unicast: advertised and received
Message statistics:
InQ depth is 0
OutQ depth is 0
Sent Rcvd
Opens: 3 3
Notifications: 0 0
Updates: 2 7
Keepalives: 101 101
Route Refresh: 0 0
Total: 106 111
Default minimum time between advertisement runs is 0 seconds

For address family: IPv4 Unicast
BGP table version 17, neighbor version 17/0
Output queue size : 0
Index 1, Offset 0, Mask 0x2
1 update-group member
Sent Rcvd
Prefix activity: ---- ----
Prefixes Current: 2 1 (Consumes 52 bytes)
Prefixes Total: 2 4
Implicit Withdraw: 0 0
Explicit Withdraw: 0 3
Used as bestpath: n/a 1
Used as multipath: n/a 0

Outbound Inbound
Local Policy Denied Prefixes: -----
Bestpath from this peer: 4 n/a
Bestpath from iBGP peer: 4 n/a
Total: 8 0
Number of NLRI in the update sent: max 1, min 1

Connections established 3; dropped 2
Last reset 01:28:30, due to Peer closed the session
Connection state is ESTAB, I/O status: 1, unread input bytes: 0
Connection is ECN Disabled, Minimum incoming TTL 0, Outgoing TTL 255
Local host: 2.3.4.5, Local port: 179
Foreign host: 3.4.5.6, Foreign port: 54988
Connection tableid (VRF): 0

Enqueued packets for retransmit: 0, input: 0 mis-ordered: 0 (0 bytes)

Event Timers (current time is 0x683154):
Timer Starts Wakeups Next
Retrans 93 0 0x0
TimeWait 0 0 0x0
AckHold 98 26 0x0
SendWnd 0 0 0x0
KeepAlive 0 0 0x0
GiveUp 0 0 0x0
PmtuAger 0 0 0x0
DeadWait 0 0 0x0
Linger 0 0 0x0
ProcessQ 0 0 0x0

iss: 1438857477 snduna: 1438859367 sndnxt: 1438859367 sndwnd: 16137
irs: 402406831 rcvnxt: 402408914 rcvwnd: 15947 delrcvwnd: 437

SRTT: 300 ms, RTTO: 303 ms, RTV: 3 ms, KRTT: 0 ms
minRTT: 0 ms, maxRTT: 300 ms, ACK hold: 200 ms
Status Flags: passive open, gen tcbs
Option Flags: nagle
IP Precedence value : 6
```

```
Datagrams (max data segment is 536 bytes):
Rcvd: 172 (out of order: 0), with data: 98, total data bytes: 2082
Sent: 122 (retransmit: 0, fastretransmit: 0, partialack: 0, Second Congestion: 0), with
data: 92, total data bytes: 1889
Packets received in fast path: 0, fast processed: 0, slow path: 0
fast lock acquisition failures: 0, slow path: 0

BGP neighbor is 200.1.1.1, remote AS 200, external link
BGP version 4, remote router ID 200.1.1.1
BGP state = Established, up for 00:53:47
Last read 00:00:30, last write 00:00:47, hold time is 180, keepalive interval is 60 seconds
Neighbor capabilities:
Route refresh: advertised and received(old & new)
Address family IPv4 Unicast: advertised and received
Message statistics:
InQ depth is 0
OutQ depth is 0
Sent Rcvd
Opens: 1 1
Notifications: 0 0
Updates: 11 2
Keepalives: 56 60
Route Refresh: 0 0
Total: 68 63
Default minimum time between advertisement runs is 30 seconds

For address family: IPv4 Unicast
BGP table version 17, neighbor version 17/0
Output queue size : 0
Index 2, Offset 0, Mask 0x4
2 update-group member
NEXT_HOP is always this router
Sent Rcvd
Prefix activity: ---- ----
Prefixes Current: 3 1 (Consumes 52 bytes)
Prefixes Total: 7 1
Implicit Withdraw: 0 0
Explicit Withdraw: 4 0
Used as bestpath: n/a 1
Used as multipath: n/a 0

Outbound Inbound
Local Policy Denied Prefixes: -----
Bestpath from this peer: 1 n/a
Total: 1 0
Number of NLRI's in the update sent: max 1, min 0

Connections established 1; dropped 0
Last reset never
External BGP neighbor may be up to 10 hops away.
Connection state is ESTAB, I/O status: 1, unread input bytes: 0
Connection is ECN Disabled, Mininum incoming TTL 0, Outgoing TTL 10
Local host: 2.3.4.5, Local port: 14565
Foreign host: 200.1.1.1, Foreign port: 179
Connection tableid (VRF): 0

Enqueued packets for retransmit: 0, input: 0 mis-ordered: 0 (0 bytes)

Event Timers (current time is 0x6843DC):
Timer Starts Wakeups Next
Retrans 68 1 0x0
TimeWait 0 0 0x0
AckHold 60 56 0x0
SendWnd 0 0 0x0
KeepAlive 0 0 0x0
GiveUp 0 0 0x0
PmtuAger 0 0 0x0
DeadWait 0 0 0x0
Linger 0 0 0x0
ProcessQ 0 0 0x0

iss: 3261912160 snduna: 3261913711 sndnxt: 3261913711 sndwnd: 15928
irs: 1999758509 rcvnxt: 1999759782 rcvwnd: 16213 delrcvwnd: 171

SRTT: 300 ms, RTTO: 303 ms, RTV: 3 ms, KRTT: 0 ms
minRTT: 0 ms, maxRTT: 300 ms, ACK hold: 200 ms
Status Flags: active open
```

Option Flags: nagle

IP Precedence value : 6

Datagrams (max data segment is 536 bytes):

Rcvd: 129 (out of order: 0), with data: 62, total data bytes: 1272

Sent: 127 (retransmit: 1, fastretransmit: 0, partialack: 0, Second Congestion: 0), with data: 67, total data bytes: 1550

Packets received in fast path: 0, fast processed: 0, slow path: 0

fast lock acquisition failures: 0, slow path: 0

sh ip bgp summ

```
BGP router identifier 2.3.4.5, local AS number 20
BGP table version is 17, main routing table version 17
5 network entries using 645 bytes of memory
5 path entries using 260 bytes of memory
5/3 BGP path/bestpath attribute entries using 620 bytes of memory
1 BGP AS-PATH entries using 24 bytes of memory
0 BGP route-map cache entries using 0 bytes of memory
0 BGP filter-list cache entries using 0 bytes of memory
BGP using 1549 total bytes of memory
BGP activity 9/4 prefixes, 11/6 paths, scan interval 60 secs

Neighbor V AS MsgRcvd MsgSent TblVer InQ OutQ Up/Down State/PfxRcd
1.2.3.4 4 20 117 113 17 0 0 00:39:09 2
3.4.5.6 4 20 111 106 17 0 0 01:28:37 1
200.1.1.1 4 200 63 68 17 0 0 00:53:52 1
```

sh ip int br

```
Interface IP-Address OK? Method Status Protocol
FastEthernet0/0 10.2.0.2 YES manual up up
FastEthernet0/1 172.17.0.2 YES manual up up
Serial0/1/0 unassigned YES NVRAM administratively down down
Serial0/1/1 unassigned YES NVRAM administratively down down
Loopback0 2.3.4.5 YES manual up up
```