IPv4 Routing

The IPv4 routing is supported only on BDI interfaces. The device supports Layer 3 functionality, where packets are routed across various bridge domain interfaces.

Limitations for IPv4 Routing

- The IPv4 routing is supported only on BDI interfaces, and not supported on physical interfaces (1G, 10G) and port channel interfaces.

- IP addresses cannot be configured on the physical and the port channel interface.

- The maximum number of IPv4 routes that can be learnt is 12,000.

- BDI level IP ACLs are not supported.

- VRRP or HSRP protocols are not supported.

- The maximum number of VRF lite sessions supported are 128.

- BDI statistics is supported only for CPU bounded traffic, for data traffic going over BDI interface will be shown on respective underlying EFP statistics.

- For adding static ARP, it is mandatory that you specify the static MAC address. For example, to configure static ARP, specify the following commands:

  - **arp*<ip-add>* *<mac-add>* arpa** under the **config** mode.

    mac static address *<mac>* under the **config-if-srv** mode.

- The router sends Gratuitous ARP only whenb the BDI interface is brought up, and processes the Gratuitous ARP if it is of the request type.

- IPv6 is not supported.

- IPv4 multicast is not supported.

- IPv4 MIBs are not supported.

- IP-FRR, LFA, segment routing, and policy-based routing are not supported.

- BFD is not supported.

- IP unnumbered is not supported.

- MPLS is not supported.

Configuring IP Address on BDI Interface

To configure IP address on BDI interface, enter the following commands:

```
interface BDI10
ip address 10.10.10.10 255.255.255.0
end
```

Verifying IPv4 Routing

Use the **show ip route** and **show ip route summary** commands to verify IP address on BDI interface:

```
router#show ip route
Codes: L - local, 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, m - OMP
       n - NAT, Ni - NAT inside, No - NAT outside, Nd - NAT DIA
       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
       H - NHRP, G - NHRP registered, g - NHRP registration summary
       o - ODR, P - periodic downloaded static route, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

      1.0.0.0/32 is subnetted, 1 subnets
O        1.1.1.1 [110/2] via 192.168.13.4, 1d01h, BDI210
                 [110/2] via 192.168.12.4, 1d01h, BDI111
      6.0.0.0/32 is subnetted, 1 subnets
C        6.6.6.6 is directly connected, Loopback0
      8.0.0.0/32 is subnetted, 1 subnets
O        8.8.8.8 [110/2] via 192.168.13.1, 1d01h, BDI210
                 [110/2] via 192.168.12.1, 1d00h, BDI111
      10.0.0.0/32 is subnetted, 1 subnets
O        10.10.10.10 [110/2] via 192.168.13.2, 03:20:31, BDI210
                      [110/2] via 192.168.12.2, 03:20:29, BDI111
      192.168.12.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.12.0/24 is directly connected, BDI111
L        192.168.12.3/32 is directly connected, BDI111
      192.168.13.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.13.0/24 is directly connected, BDI210
L        192.168.13.3/32 is directly connected, BDI210


router#show ip route summary
IP routing table name is default (0x0)
IP routing table maximum-paths is 32
```

```
Route Source     Networks     Subnets     Replicates  Overhead    Memory (bytes)
application      0            0           0           0           0
connected        0            5           0           560         1560
static           0            0           0           0           0
ospf 30          0            3           0           576         948
   Intra-area: 3 Inter-area: 0 External-1: 0 External-2: 0
   NSSA External-1: 0 NSSA External-2: 0
isis 1           0            0           0           0           0
   Level 1: 0 Level 2: 0 Inter-area: 0
bgp 1            0            0           0           0           0
   External: 0 Internal: 0 Local: 0
internal         6                                                2792
Total            6            8           0           1136        5300
```