



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.

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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 and HSRP protocols are not supported.



Note Effective Cisco IOS XE Gibraltar 16.12.1 and later, VRRP and HSRP protocols are supported on the Cisco NCS 520 router.

- 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 when 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

