



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.



Note Effective Cisco IOS XE Dublin 17.11.1, IPv6 configurations are supported on the management interface.

Starting from Cisco IOS XE Dublin 17.12.1, the IPv6 configuration for access-list, neighbor, route, and unicast routing are supported in the global configuration mode.

- 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 192.0.2.0 255.255.255.0
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

    10.0.0.0/32 is subnetted, 1 subnets
O       10.0.0.1 [110/2] via 192.168.13.4, 1d01h, BDI210
        [110/2] via 192.0.2.4, 1d01h, BDI111
    10.0.0.1/32 is subnetted, 1 subnets
C       10.6.6.6 is directly connected, Loopback0
```

```

10.0.0.2/32 is subnetted, 1 subnets
O   10.8.8.8 [110/2] via 192.168.13.1, 1d01h, BDI210
    [110/2] via 192.0.2.1, 1d00h, BDI111
10.0.0.0/32 is subnetted, 1 subnets
O   192.0.2.0 [110/2] via 192.168.13.2, 03:20:31, BDI210
    [110/2] via 192.0.2.2, 03:20:29, BDI111
192.0.2.0/24 is variably subnetted, 2 subnets, 2 masks
C   192.0.2.0/24 is directly connected, BDI111
L   192.0.2.3/32 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

