N Commands

This chapter describes the Cisco NX-OS unicast routing commands that begin with the letter N.

neighbor

To configure a BGP neighbor (router, vrf) and enter the neighbor configuration mode, use the **neighbor** router BGP configuration mode command. To remove an entry, use the **no** form of this command.

neighbor {*ip-addr* | *ip-prefix/length* | *ipv6-addr* | *ipv6-prefix/length*} [**remote-as** *as-num*[**.***as-num*]

no neighbor {*ip-addr* | *ip-prefix/length* | *ipv6-addr* | *ipv6-prefix/length*} [**remote-as** *as-num*[**.***as-num*]

Syntax Description

ip-addr	IP address of the neighbor in this format: A.B.C.D.
ip-prefix/length	IP prefix and the length of the IP prefix. The length of the IPv6 prefix is a decimal value that indicates how many of the high-order contiguous bits of the address comprise the prefix (the network portion of the address). A slash mark must precede the decimal value. Use this format: A.B.C.D/length.
ipv6-addr	IPv6 address of the neighbor in this format: A:B::C:D.
ipv6-prefix/length	IPv6 prefix and the length of the IPv6 prefix for neighbors. Use this format: A:B::C:D/*length*.
remote-as	(Optional) Specifies the Autonomous System Number of the neighbor.
as-num	Number of an autonomous system that identifies the router to other BGP routers and tags the routing information passed along; valid values are from 1 to 65535.
.*as-num*	(Optional) Number of an autonomous system that identifies the router to other BGP routers and tags the routing information passed along; valid values are from 0 to 65535.

Command Default

This command has no default settings.

Command Modes

Neighbor address-family configuration
Router bgp configuration

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Use the **neighbor** command to enter the BGP neighbor configuration mode. When you enter the **neighbor** command, the prompt changes to `switch(config-router-neighbor)#`.

From the BGP neighbor configuration mode, you can perform the following actions:

- **address-family**—Configure an address-family (router, neighbor, vrf). See the **address-family (BGP)** command for information.
- **description** *description*—Describes the neighbor. You can enter up to 80 characters including spaces.
- **disable-connected-check**—Disables the connection verification for the directly connected peer. The **disable-connected-check** command is used to disable the connection verification process for eBGP peering sessions that are reachable by a single hop but are configured on a loopback interface or otherwise configured with a non-directly connected IP address.

  This command is required only when the **neighbor ebgp-multihop** command is configured with a TTL value of 1. The address of the single-hop eBGP peer must be reachable. The neighbor update-source command must be configured to allow the BGP routing process to use the loopback interface for the peering session.
- **dont-capability-negotiate**—Turns off the negotiate capability with this neighbor.
- **dynamic-capability**—Enables the dynamic capability.
- **ebgp-multihop**—Accepts and attempts BGP connections to external peers that reside on networks that are not directly connected.

Note You should enter this command under the guidance of Cisco technical support staff only.

- **exit**—Exits from the current command mode.
- **inherit peer-session** *session-name*—Configures a peer-session template to inherit the configuration from another peer-session template, use the **peer-session** keywords. To remove an inherit statement from a peer-session template, use the **no** form of this command.
- **no**—Negate a command or set its defaults.
- **transport connection-mode passive**—Allows passive connection setup only. To remove the restriction, use the no form of this command.
- **remove-private-as**—Removes the private AS number from the outbound updates.
- **shutdown**—Administratively shuts down this neighbor.

- **timers** *keepalive-time*—Configures keepalive and hold timers in seconds. Range: 0 to 3600. Default: 60.
- **update-source** {**ethernet** *mod/port* | **loopback** *virtual-interface* | **port-channel** *number*[**.***sub-interface*]}—Specifies the source of the BGP session and updates. Range: *virtual-interface* is 0 to 1023; *number* is 0 to 4096; (optional) **.***sub-interface* is 1 to 4093.

  To have the Cisco NX-OS software allow Border Gateway Protocol (BGP) sessions to use any operational interface for TCP connections, use the **update-source** command in router configuration mode. To restore the interface assignment to the closest interface, which is called the best local address, use the **no** form of this command.

  If you specify a BGP peer group by using the *peer-group-name* argument, all the members of the peer group will inherit the characteristic configured with this command.

  The **update-source** command must be used to enable IPv6 link-local peering for internal or external BGP sessions.

Examples

In the following example, a single-hop eBGP peering session is configured between two BGP peers that are reachable on the same network segment through a local loopback interfaces on each router:

BGP Peer 1

```
switch(config)# interface loopback 1
switch(config-if)# ip address 10.0.0.100 255.255.255
switch(config-if)# exit
switch(config)# router bgp 64512
switch(config-router)# neighbor 192.168.0.200 remote-as 65534
switch(config-router)# neighbor 192.168.0.200 ebgp-multihop 1
switch(config-router)# neighbor 192.168.0.200 update-source loopback 2
switch(config-router)# neighbor 192.168.0.200 disable-connected-check
switch(config-router)#
```

BGP Peer 2

```
switch(config)# interface loopback 2
switch(config-if)# ip address 192.168.0.200 255.255.255
switch(config-if)# exit
switch(config)# router bgp 65534
switch(config-router)# neighbor 10.0.0.100 remote-as 64512
switch(config-router)# neighbor 10.0.0.100 ebgp-multihop 1
switch(config-router)# neighbor 10.0.0.100 update-source loopback 1
switch(config-router)# neighbor 10.0.0.100 disable-connected-check
switch(config-router)#
```

The following example sources BGP TCP connections for the specified neighbor with the IP address of the loopback interface rather than the best local address:

```
switch(config)# router bgp 110
switch(config-router)# network 172.16.0.0
switch(config-router)# remote-as 110
switch(config-router)# update-source Loopback0
```

The following example sources IPv6 BGP TCP connections for the specified neighbor in autonomous system 110 with the global IPv6 address of loopback interface 0 and the specified neighbor in autonomous system 120 with the link-local IPv6 address of ethernet interface 0/0:

```
switch(config)# router bgp 110
switch(config-router)# neighbor 3ffe::3 remote-as 110
switch(config-router)# neighbor 3ffe::3 update-source Loopback0
switch(config-router)# neighbor fe80::2 remote-as 120
```

```
switch(config-router)# neighbor fe80::2 update-source FastEthernet 0/0
switch(config-router)# address-family ipv6
switch(config-router-af)# neighbor 3ffe::3 activate
switch(config-router-af)# neighbor fe80::2 activate
switch(config-router-af)#
```

Related Commands

net

To configure an Intermediate System-to-Intermediate System (IS-IS) network entity (NET) for the routing process, use the **net** command in global configuration mode. To remove a NET, use the **no** form of this command.

net *net*

no net *net*

Syntax Description

net	NET network services access point (NSAP) name or address for the IS-IS routing process; see the "Usage Guidelines" section for additional information about valid values.

Command Default

The defaults are as follows:

- No NET is configured.
- The IS-IS process is disabled.

Command Modes

Router configuration
VRF configuration

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

An IS (intermediate system) is identified by an address known as a network access point (NASAP). The NSAP is divided up into three parts as specified by ISO/AI 10589:

- Area address—This field is of variable length, composed of high order octets, and it excludes the System ID and N-selector (NSEL) fields. This area address is associated with a single area within the routing domain.
- System ID—This field is 6 octets long and should be set to a unique value with level-1 and level 2. The system IS defines an end system (ES) or an IS in an area. You configure the area address and the system ID with the NET command. You can display the system ID with the show isis topology command.
- NSEL—This field is called the N-selector, also referred to as the NSAP, and it specifies the upper-layer protocol. The NSEL is the last byte of the NSAP and identifies a network service user. A network service user is a transport entity or the IS network entity itself. When the N-selector is set to zero, the entire NSAP is called a network entity title (NET).

A NET is an NSAP where the last byte is always the n-selector and is always zero. A NET can be from 8 to 20 bytes in length. The NET is formatted as follows: XX.AAAA.AAAA.AAAA[.AAAA].XX.

Under most circumstances, you should configure one NET only. It is possible to configure two or three NETs, but you should not configure more than one NET except for the following unusual circumstances:

- A network configuration has multiple areas that are merged.
- One area in the IS-IS process is being split into multiple areas.

Configuring multiple NETs in these two circumstances can be temporarily useful because multiple area addresses enable you to renumber an area individually as needed.

If you are using IS-IS to perform IP routing only (no connectionless network service routing is enabled), you must configure a NET to define the router ID and area ID.

Examples

The following example shows how to configure a router with a NET which consists of the system ID 0000.0c11.1110 and area address 47.0004.0(1)04d.0001:

```
switch(config)# router isis firstcompany
switch(config-router)# net 47.0004.0(1)04d.0001.00
```

Related Commands

Command	Description
feature isis	Enables IS-IS on the router.
router isis	Enables IS-IS.

network

To configure an IP prefix to advertise, use the **network** address family configuration mode command. To remove the IP prefix to advertise, use the **no** form of this command.

network *ip-addr* | *ip-prefix/length* **mask** *mask-num* [**route-map** *name*]

no network *ip-network* | *ip-prefix/length* **mask** *mask-num* [**route-map** *name*]

Syntax Description

ip-addr	IP network address to advertise; use the following format: A.B.C.D.
ip-prefix/length	IP prefix and the length of the IP prefix. The length of the IPv6 prefix is a decimal value that indicates how many of the high-order contiguous bits of the address comprise the prefix (the network portion of the address). A slash mark must precede the decimal value. Use the following format: A.B.C.D/length.
mask *mask-num*	Configures the mask of the IP prefix to advertise in dotted 4-octet format.
route-map *name*	(Optional) Specifies the name of the route-map to modify attributes.

Command Default

This command has no default settings.

Command Modes

Neighbor address-family configuration
Router bgp configuration

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

IP prefix to advertise is considered for bestpath and advertisement to peers only if a route of equal or more specificity is present in the routing table.

Examples

The following example shows how to configure an IP prefix to advertise:

```
switch(config-router-af)# network 2.2.2.2 mask 3.3.3.3 route-map test
switch(config-router-af)#
```