IOS-XE IBGP local-as dual-as

The IOS-XE IBGP local-as dual-as feature establishes an iBGP session using either the locally configured ASN or globally configured ASN. This feature allows migrating the global Autonomous System Number (ASN) of different BGP speakers that belong to the same Autonomous System (AS), while maintaining their iBGP session, and configuring one speaker at a time.

Restrictions for IOS-XE IBGP local-as dual-as

- You must not group the peers configured with this feature in the same update group of regular internal BGP (iBGP) peers or iBGP local-AS peers.
- BGP sessions might flap.

Information About IOS-XE IBGP local-as dual-as

IOS-XE IBGP local-as dual-as

The IOS-XE IBGP local-as dual-as feature allows an internal Border Gateway Protocol (iBGP) speaker to establish an iBGP session using either the locally configured ASN or globally configured ASN. This feature allows for a gradual and less service-impacting migration from the globally configured legacy ASN to the new globally configured ASN. IOS-XE iBGP local-as dual-as feature permits the coexistence of the legacy and new ASN in a network, allowing for uniform BGP path selection among all routers within the network.

The behavior of the system configured with this feature depends on whether the TCP session is active or passive. For TCP active session, the ASN sent in the BGP OPEN message alternates between globally configured ASN and locally configured ASN. For TCP passive session, the system responds with the same ASN (either globally configured ASN or locally configured ASN) received in the BGP OPEN message. In both the cases, the iBGP session is established only if the two ASNs involved in TCP negotiation are the same.

Use the **dual-as** keyword in the **neighbor** command interface to configure this feature. **dual-as** keyword can be used without the optional keywords **no-prepend replace-as**. Remote-AS and local-AS can be configured to be the same.

How to Configure IOS-XE IBGP local-as dual-as

Configuring IOS-XE IBGP local-as dual-as

Before You Begin

Note The IOS-XE IBGP local-as dual-as feature gets enabled if **remote-as** and **local-as** are the same.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router bgp** *autonomous-system-number*
4. **neighbor** *ip-address* **remote-as** *autonomous-system-number*
5. **neighbor** *ip-address* **local-as** *autonomous-system-number* **dual-as**
6. **end**
7. **show ip bgp neighbors** [*neighbor-address*] [**received-routes** | **routes** | **advertised-routes** | **paths** *regexp* | **dampened-routes** | **received** *prefix-filter*]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.

	Command or Action	Purpose
Step 3	**router bgp** *autonomous-system-number* **Example:** `Device(config)# router bgp 100`	Enters router configuration mode, and creates a BGP routing process.
Step 4	**neighbor** *ip-address* **remote-as** *autonomous-system-number* **Example:** `Device(config-router)# neighbor 10.0.0.1 remote-as 200`	Establishes a peering session with a BGP neighbor.
Step 5	**neighbor** *ip-address* **local-as** *autonomous-system-number* **dual-as** **Example:** `Device(config-router)# neighbor 10.0.0.1 local-as 200 dual-as`	Enables the established peering session to accept the real ASN and the local ASN. **Note** The IOS-XE IBGP local-as dual-as feature gets enabled if **remote-as** and **local-as** are the same.
Step 6	**end** **Example:** `Device(config-router)# end`	Exits router configuration mode and enters privileged EXEC mode.
Step 7	**show ip bgp neighbors** [*neighbor-address*] [**received-routes** | **routes** | **advertised-routes** | **paths** *regexp* | **dampened-routes** | **received** *prefix-filter*] **Example:** `Device# show ip bgp neighbors`	Displays information about the AS (locally configured AS or globally configured AS) used for peering.

Example

The configuration of the IOS-XE IBGP local-as dual-as feature can be verified with the **show ip bgp neighbors** command. In the following examples, the configuration value used for global-AS is 100 and local-AS is 200.

The following is sample output from the **show ip bgp neighbors** command, when peering is established with global-AS.

```
Device# show ip bgp neighbors 10.0.0.1
BGP neighbor is 10.0.0.1,  remote AS 200,  local AS 200 dual-as using our real AS, internal
 link
   BGP version 4, remote router ID 1.1.1.1
   BGP state = Established, up for 00:00:26
   Last read 00:00:26, last write 00:00:26, hold time is 180, keepalive interval is 60
seconds
```

The following is sample output from the **show ip bgp neighbors** command, when peering is established with local-AS.

```
Device# show ip bgp neighbors 10.0.0.1
BGP neighbor is 10.0.0.1,  remote AS 200,  local AS 200 dual-as using our local AS, internal
 link
```

```
   BGP version 4, remote router ID 1.1.1.1
   BGP state = Established, up for 00:00:09
   Last read 00:00:08, last write 00:00:09, hold time is 180, keepalive interval is 60
seconds
```

Configuration Examples for IOS-XE IBGP local-as dual-as

Example: Configuring IOS-XE IBGP local-as dual-as

The following example shows how to migrate the global ASN of each peer in an AS (one peer at a time), without interrupting the peering arrangements.

Router 1 Initial Configuration

```
router bgp 100
 neighbor 10.0.0.1 remote-as 100
```

Router 2 Initial Configuration

```
router bgp 100
 neighbor 10.0.0.2 remote-as 100
```

Configuring Router 1 with Global ASN 100

```
router bgp 100
 neighbor 10.0.0.1 remote-as 200
 neighbor 10.0.0.1 local-as 200 dual-as
```

After the configuration, session is established with ASN 100.

Configuring Router 2 with Global ASN 100

```
router bgp 100
 neighbor 10.0.0.2 remote-as 200
 neighbor 10.0.0.2 local-as 200 dual-as
```

After the configuration, session is established with either ASN 100 or ASN 200.

Changing Global ASN of Router 1

```
router bgp 200
 neighbor 10.0.0.2 remote-as 200
```

After the configuration, session is established with ASN 200.

Changing Global ASN of Router 2

```
router bgp 200
 neighbor 10.0.0.2 remote-as 200
```

After the configuration, session is still established with ASN 200.

Additional References for IOS-XE IBGP local-as dual-as

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Command List, All Releases
BGP commands	*Cisco IOS IP Routing: BGP Command Reference*

Technical Assistance

Description	Link
The Cisco Support and Documentation provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/c/en/us/support/index.html

Feature Information for IOS-XE IBGP local-as dual-as

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1: Feature Information for IOS-XE IBGP local-as dual-as

Feature Name	Releases	Feature Information
IOS-XE IBGP local-as dual-as	Cisco IOS XE Release 15.6(1)S	The IOS-XE IBGP local-as dual-as feature establishes an iBGP session using either the locally configured ASN or globally configured ASN. This feature allows migrating the global Autonomous System Number (ASN) of different BGP speakers that belong to the same Autonomous System (AS), while maintaining their iBGP session, and configuring one speaker at a time. The following commands were introduced or modified: **neighbor**, **show ip bgp neighbor**