

# 在Cisco Nexus交换机上配置BGP中的disable-peer-as-check

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## 简介

本文档介绍运行NX-OS操作系统的Cisco Nexus系列交换机的边界网关协议(BGP)中的disable-peer-as-check命令。

## 先决条件

### 要求

Cisco 建议您了解以下主题：

- Nexus NX-OS 软件。
- BGP路由协议。

### 使用的组件

本文档中的信息基于以下软件和硬件版本：

- Cisco Nexus 7000
- NXOS版本7.3(0)D1(1)

本文档不限于特定软件和硬件版本。本文档中的信息是从特定实验环境中的设备创建的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

## 配置

当网络前缀通告给eBGP对等体时，其自治系统(AS)始终在BGP的AS\_PATH属性列表的最后一个前面附加。

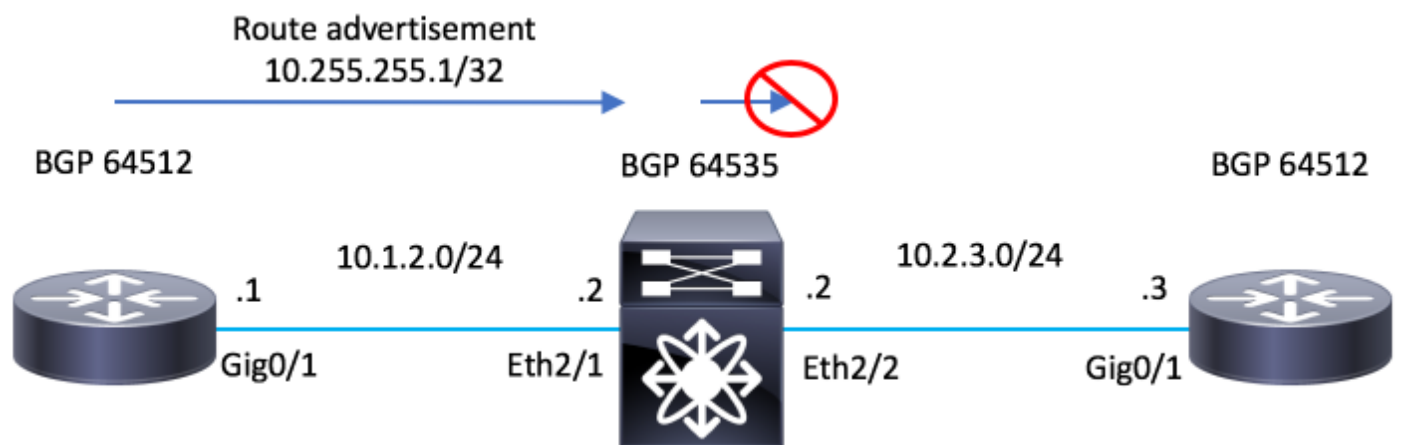
默认情况下，基于Cisco Nexus NX-OS的交换机不向eBGP对等体通告网络前缀，其AS在BGP的网络前缀AS\_PATH属性中已找到最后一个。

此行为与基于Cisco IOS®(和基于Cisco IOS®-XE)的路由器和交换机不同，即使对等体的AS已在网络前缀AS\_PATH属性中，网络前缀仍会通告给eBGP对等体。

在这种情况下，BGP环路预防机制会丢弃接收方对等体上的网络前缀（默认）并触发类似于“由于以下原因而拒绝”的错误消息：AS-PATH仅在启用适当的调试时包含我们自己的AS”。

**注意：**默认情况下，基于Cisco IOS® XR的路由器的行为与NX-OS类似。在Cisco IOS® XR中，**as-path-loopcheckout disable**命令可用于修改此行为。

## 网络图



## 配置

### R1 - Cisco IOS®

```
configure terminal
!
hostname R1
!
interface Loopback0
 ip address 10.255.255.1 255.255.255.255
!
interface GigabitEthernet0/1
 ip address 10.1.2.1 255.255.255.0
 no shutdown
!
router bgp 64512
 bgp log-neighbor-changes
 network 10.255.255.1 mask 255.255.255.255
 neighbor 10.1.2.2 remote-as 65535
!
end
```

## N7K-2 - Nexus NX-OS

```
configure terminal
!
hostname N7K-2
!
feature bgp
!
interface Ethernet2/1
  no switchport
  ip address 10.1.2.2/24
  no shutdown

interface Ethernet2/2
  no switchport
  ip address 10.2.3.2/24
  no shutdown
!
router bgp 65535
  address-family ipv4 unicast
  neighbor 10.1.2.1
  remote-as 64512
  address-family ipv4 unicast
  neighbor 10.2.3.3
  remote-as 64512
  address-family ipv4 unicast
!
end
```

## R3 - Cisco IOS®

```
configure terminal
!
hostname R3
!
interface GigabitEthernet0/1
  ip address 10.2.3.3 255.255.255.0
  no shutdown
!
router bgp 64512
  bgp log-neighbor-changes
  neighbor 10.2.3.2 remote-as 65535
!
end
```

## 验证

使用本部分可确认配置能否正常运行。

由于R3的AS(64512)在AS\_PATH属性中最后找到，因此缺少**disable-peer-as-check**命令会阻止运行NX-OS的N7K-2向路由器R3通告前缀10.255.255.1/32。

**注意：**默认情况下，在配置中禁用**disable-peer-as-check**命令。必须手动添加命令才能启用该功能。

当N7K-2将10.255.255.1/32通告给R3时，它在AS\_PATH属性中最后包含AS 64512。

此AS 64512与R3中配置的AS相同。

## N7K-2 - Nexus NX-OS

```
N7K-2# show bgp ipv4 unicast
BGP routing table information for VRF default, address family IPv4 Unicast
BGP table version is 17, local router ID is 10.1.2.2
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-i
njected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup
```

Network	Next Hop	Metric	LocPrf	Weight	Path
*>e10.255.255.1/32	10.1.2.1	0		0	64512 i

```
N7K-2#
```

观察在R3上，debug命令**debug bgp ipv4 unicast**已启用。

为了进一步确认未收到路由，执行命令**clear bgp ipv4 unicast \* soft**以强制再次交换路由。R3路由不接收该路由。

## R3 - Cisco IOS®

```
R3#debug bgp ipv4 unicast
BGP debugging is on for address family: IPv4 Unicast
R3#
R3#clear bgp ipv4 unicast * soft R3# *Jul 15 19:22:36.427: BGP: 10.2.3.2 sending REFRESH_REQ(5) for afi
1/1, refresh code is 0 R3#
```

必须在N7K-2上启用**disable-peer-as-check**命令，以便它可以向R3通告网络前缀。

## N7K-2 - Nexus NX-OS

```
N7K-2# conf t
Enter configuration commands, one per line. End with CNTL/Z.
N7K-2(config)# router bgp 65535
N7K-2(config-router)# neighbor 10.2.3.3
N7K-2(config-router-neighbor)# address-family ipv4 unicast
N7K-2(config-router-neighbor-af)# disable-peer-as-check
N7K-2(config-router-neighbor-af)#
```

在N7K-2上启用**disable-peer-as-check**后，路由将通告给R3，但被预期的BGP环路预防机制丢弃。

观察“由于以下原因而被拒绝：AS-PATH包含我们自己的AS”，在调试输出中可见。

## R3 - Cisco IOS®

```
R3#
*Jul 15 19:29:06.440: BGP(0): 10.2.3.2 rcv UPDATE w/ attr: nexthop 10.2.3.2, origin i, originator 0.0.0
```

```
merged path 65535 64512, AS_PATH , community , extended community , SSA attribute
*Jul 15 19:29:06.442: BGPSSA ssacount is 0
*Jul 15 19:29:06.442: BGP(0): 10.2.3.2 rcv UPDATE about 10.255.255.1/32 -- DENIED due to: AS-PATH conta
our own AS;
R3#
```

**注意：**如果在AS\_PATH属性中未找到R3的AS，则N7K-2不需要命令来通告路由。

在本例中，另一个AS在AS\_PATH属性中的最后一个前置，并使用route-map和set as-path prepend命令进行。现在，在R3的AS之前，AS\_PATH中还有另一个AS。

AS\_PATH列出65300 64512。

## N7K-2 - Nexus NX-OS

```
configure terminal
!
route-map TEST permit 10
  set as-path prepend 65300
!

N7K-2# conf t
Enter configuration commands, one per line.  End with CNTL/Z.
N7K-2(config)# router bgp 65535
N7K-2(config-router)# neighbor 10.1.2.1
N7K-2(config-router-neighbor)# address-family ipv4 unicast
N7K-2(config-router-neighbor-af)# route-map TEST in
N7K-2(config-router-neighbor-af)#
N7K-2#

N7K-2# show bgp ipv4 unicast
BGP routing table information for VRF default, address family IPv4 Unicast
BGP table version is 18, local router ID is 10.1.2.2
Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, >-best
Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist, I-injected
Origin codes: i - IGP, e - EGP, ? - incomplete, | - multipath, & - backup

   Network          Next Hop          Metric      LocPrf      Weight Path
*>e10.255.255.1/32  10.1.2.1          0                   0 65300 64512 i

N7K-2#
```

观察N7K-2在本例中如何通告路由，而无需禁用对等检查。

## N7K-2 - Nexus NX-OS

```
N7K-2# sh run bgp

!Command: show running-config bgp
!Time: Mon Jul 15 21:28:59 2019

version 7.3(0)D1(1)
feature bgp

router bgp 65535
  address-family ipv4 unicast
  neighbor 10.1.2.1
    remote-as 64512
  address-family ipv4 unicast
    route-map TEST in
```

```
neighbor 10.2.3.3
  remote-as 64512
  address-family ipv4 unicast
```

N7K-2#

请注意“由于以下原因而被拒绝：AS-PATH包含我们自己的AS”，如R3的调试输出所示。

## R3 - Cisco IOS®

```
R3#show debug
```

```
IP routing:
```

```
  BGP debugging is on for address family: IPv4 Unicast
```

```
  BGP updates debugging is on for address family: IPv4 Unicast
```

```
R3#
```

```
R3#clear bgp ipv4 unicast * soft
```

```
R3#
```

```
*Jul 15 21:33:11.309: BGP: 10.2.3.2 sending REFRESH_REQ(5) for afi/safi: 1/1, refresh code is 0
```

```
*Jul 15 21:33:12.312: BGP(0): 10.2.3.2 rcv UPDATE w/ attr: nexthop 10.2.3.2, origin i, originator 0.0.0.0, merged path 65535 65300 64512, AS_PATH , community , extended community , SSA attribute
```

```
*Jul 15 21:33:12.313: BGPSSA ssacount is 0
```

```
*Jul 15 21:33:12.313: BGP(0): 10.2.3.2 rcv UPDATE about 10.255.255.1/32 -- DENIED due to: AS-PATH contains our own AS;
```

```
R3#
```

## 故障排除

本部分提供了可用于对配置进行故障排除的信息。

要确认BGP配置需要在NX-OS上使用**disable-peer-as-check**命令，请打开这些调试。

```
debug-filter bgp neighbor <eBGP_NEIGHBOR>
debug-filter bgp prefix <ROUTE_TO_BE_ADVERTISED>
debug bgp updates
debug logfile <FILE_NAME>
```

请注意，类似于“10.2.3.3 10.255.255.1/32 path-id 1”的消息未发送到对等体，原因如下：通告AS”，当有重新发送路由的请求时生成。

## N7K-2 - Nexus NX-OS

```
N7K-2# debug-filter bgp neighbor 10.2.3.3
```

```
N7K-2# debug-filter bgp prefix 10.255.255.1/32
```

```
N7K-2# debug bgp updates
```

```
N7K-2#
```

```
N7K-2# debug logfile bgpdebug.log
```

```
N7K-2# show debug logfile bgpdebug.log
```

```
2019 Jul 15 21:38:12.586085 bgp: 65535 [7848] (default) UPD: [IPv4 Unicast] Continuing update run for peer 10.2.3.3 (#0)
```

```
2019 Jul 15 21:38:12.586129 bgp: 65535 [7848] (default) UPD: [IPv4 Unicast] consider sending 10.255.255.1/32 to peer 10.2.3.3, path-id 1, best-ext is off
```

```
2019 Jul 15 21:38:12.586145 bgp: 65535 [7848] (default) UPD: [IPv4 Unicast] 10.2.3.3 10.255.255.1/32 path-id 1 not sent to peer due to: advertising AS
```

```
2019 Jul 15 21:38:12.586160 bgp: 65535 [7848] (default) UPD: [IPv4 Unicast] 10.2.3.3: walked 0 nodes and
```

```
packed 0/0 prefixes
2019 Jul 15 21:38:12.586177 bgp: 65535 [7848] (default) UPD: [IPv4 Unicast] Found marker dest 0xf35349f
xmitlist for peer 10.2.3.3 (sent prefixes: 0)
2019 Jul 15 21:38:12.586200 bgp: 65535 [7848] (default) UPD: [IPv4 Unicast] Created EOR marker UPDATE m
(len 23) to peer 10.2.3.3 afer sending 0 routes
2019 Jul 15 21:38:12.586213 bgp: 65535 [7848] (default) UPD: [IPv4 Unicast] (#24) Suspending update run
peer 10.2.3.3 (#24)
N7K-2#
```

完成后，使用以下命令禁用调试：

```
undebug all
no debug-filter all
clear debug logfile <FILE_NAME>
```