在BGP对等体之间配置MD5身份验证

目录

简介

本文档描述如何在两个 BGP 对等体之间的 TCP 连接上配置 Message Digest5 (MD5) 身份验证。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

本文档不限于特定的软件和硬件版本。

本文档中的信息基于运行Cisco IOS®版本12.4(15)T14的3600系列路由器的命令输出。

本文档中的信息都是基于特定实验室环境中的设备编写的。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。

规则

有关文档规则的详细信息，请参阅 Cisco 技术提示规则。

背景信息

您可以在两个BGP对等体之间配置MD5身份验证，这意味着将对对等体之间的TCP连接上发送的每个数据段进行验证。MD5身份验证必须在两个BGP对等体上配置相同的密码；否则，无法建立它们

之间的连接。配置MD5身份验证时，会使Cisco IOS软件生成并检查TCP连接上发送的每个数据段的MD5摘要。

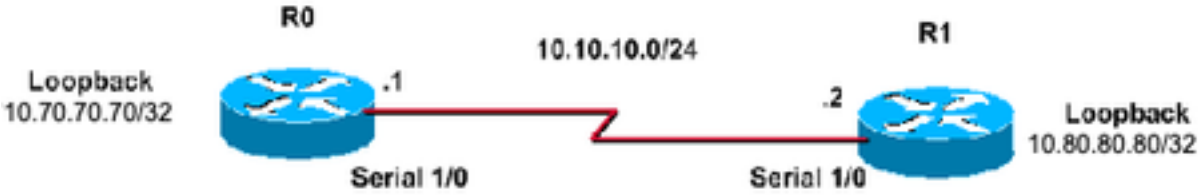
配置

本节介绍配置本文档所述功能的信息。

> **注意**：使用Cisco CLI分析器获取有关本节所用命令的详细信息。只有注册的思科用户才能访问思科内部工具和信息。

网络图

本文档使用以下网络设置：



配置

本文档使用以下配置：

路由器 0 配置

```
R0#
!
interface Loopback70
 ip address 10.70.70.70 255.255.255.255
!
interface Serial1/0
 ip address 10.10.10.1 255.255.255.0
 serial restart-delay 0
!
router bgp 400
 no synchronization
 bgp log-neighbor-changes
 neighbor 10.80.80.80 remote-as 400

!--- iBGP Configuration using Loopback Address  neighbor 10.80.80.80 password cisco

!--- Invoke MD5 authentication on a TCP connection to a BGP peer  neighbor 10.80.80.80 update-source
Loopback70
 no auto-summary
!
ip route 10.80.80.80 255.255.255.255 10.10.10.2

!--- This static route ensures that the remote peer address used for peering is reachable.
```

路由器 1 配置

```
R1#
!
interface Loopback80
 ip address 10.80.80.80 255.255.255.255
```

```
!
interface Serial1/0
 ip address 10.10.10.2 255.255.255.0
 serial restart-delay 0
!
router bgp 400
 no synchronization
 bgp log-neighbor-changes
 neighbor 10.70.70.70 remote-as 400

!--- iBGP Configuration using Loopback Address  neighbor 10.70.70.70 password cisco

!--- Invoke MD5 authentication on a TCP connection to a BGP peer  neighbor 10.70.70.70 update-source
Loopback80
 no auto-summary
!
ip route 10.70.70.70 255.255.255.255 10.10.10.1

!--- This static route ensures that the remote peer address used for peering is reachable.
```

了解调试

```
R0#clear ip bgp *
*Mar 1 01:02:17.523: %BGP-5-ADJCHANGE: neighbor 10.80.80.80 Down User reset

R0#debug ip bgp
BGP debugging is on for address family: IPv4 Unicast
*Mar  1 01:03:58.159: BGP: 10.80.80.80 open failed: Connection timed out;
    remote host not responding, open active delayed 1782ms (2000ms max, 28%
    jitter)
*Mar  1 01:03:58.415: %SYS-5-CONFIG_I: Configured from console by console
*Mar  1 01:03:59.943: BGP: 10.80.80.80 open active, local address 10.70.70.70
*Mar  1 01:04:00.039: %TCP-6-BADAUTH: No MD5 digest from 10.80.80.80(179) to
    10.70.70.70(64444)
*Mar  1 01:04:00.807: %TCP-6-BADAUTH: No MD5 digest from 10.80.80.80(33358)
    to 10.70.70.70(179)
*Mar  1 01:04:01.991: %TCP-6-BADAUTH: No MD5 digest from 10.80.80.80(179) to
    10.70.70.70(64444)
*Mar  1 01:04:01.995: %TCP-6-BADAUTH: No MD5 digest from 10.80.80.80(179) to
    10.70.70.70(64444)
*Mar  1 01:04:05.995: %TCP-6-BADAUTH: No MD5 digest from 10.80.80.80(179) to
    10.70.70.70(64444)
*Mar  1 01:04:06.015: %TCP-6-BADAUTH: No MD5 digest from 10.80.80.80(179) to
    10.70.70.70(64444)
*Mar  1 01:04:14.023: %TCP-6-BADAUTH: No MD5 digest from 10.80.80.80(179) to
    70. 70.70.70(64444)
*Mar  1 01:04:14.023: %TCP-6-BADAUTH: No MD5 digest from 10.80.80.80(179) to
    10.70.70.70(64444)
*Mar  1 01:04:29.947: BGP: 10.80.80.80 open failed: Connection timed out;
    remote host not responding, open active delayed 3932ms (4000ms max, 28%
    jitter)
*Mar  1 01:04:33.879: BGP: 10.80.80.80 open active, local address 10.70.70.70
*Mar  1 01:04:33.983: BGP: 10.80.80.80 went from Active to OpenSent
*Mar  1 01:04:33.983: BGP: 10.80.80.80 sending OPEN, version 4, my as: 400,
    hold time 180 seconds
*Mar  1 01:04:33.987: BGP: 10.80.80.80 send message type 1, length (incl.
    header ) 45
*Mar  1 01:04:34.091: BGP: 10.80.80.80 rcv message type 1, length (excl.
    header) 26
*Mar  1 01:04:34.091: BGP: 10.80.80.80 rcv OPEN, version 4, holdtime 180 seconds
*Mar  1 01:04:34.091: BGP: 10.80.80.80 rcv OPEN w/ OPTION parameter len: 16
```

```
*Mar  1 01:04:34.095: BGP: 10.80.80.80 rcvd OPEN w/ optional parameter type 2
    (Capability) len 6
*Mar  1 01:04:34.095: BGP: 10.80.80.80 OPEN has CAPABILITY code: 1, length 4
*Mar  1 01:04:34.095: BGP: 10.80.80.80 OPEN has MP_EXT CAP for afi/safi: 1/1
*Mar  1 01:04:34.095: BGP: 10.80.80.80 rcvd OPEN w/ optional parameter type 2
    (Capability) len 2
*Mar  1 01:04:34.095: BGP: 10.80.80.80 OPEN has CAPABILITY code: 128, length 0
*Mar  1 01:04:34.099: BGP: 10.80.80.80 OPEN has ROUTE-REFRESH capability(old)
    for all address-families
*Mar  1 01:04:34.099: BGP: 10.80.80.80 rcvd OPEN w/ optional parameter type 2
    (Capability) len 2
*Mar  1 01:04:34.099: BGP: 10.80.80.80 OPEN has CAPABILITY code: 2, length 0
*Mar  1 01:04:34.099: BGP: 10.80.80.80 OPEN has ROUTE-REFRESH capability(new)
    for all address-families
BGP: 10.80.80.80 rcvd OPEN w/ remote AS 400
*Mar  1 01:04:34.103: BGP: 10.80.80.80 went from OpenSent to OpenConfirm
*Mar  1 01:04:34.103: BGP: 10.80.80.80 went from OpenConfirm to Established
*Mar  1 01:04:34.103: %BGP-5-ADJCHANGE: neighbor 10.80.80.80 Up
```

如果一台路由器为邻居配置了密码，但是该邻居却没有为其配置密码，这种情况下，当这两台路由器尝试在它们之间建立 BGP 会话时，系统将显示如下消息：

```
%TCP-6-BADAUTH: No MD5 digest from [peer's IP address]:11003 to [local
    router's IP address]:179
```

同样地，如果这两个路由器配置了不同的密码，系统将显示如下消息：

```
%TCP-6-BADAUTH: Invalid MD5 digest from [peer's IP address]:11004 to [local
    router's IP address]:179
```

验证

使用本部分可确认配置能否正常运行。

- show ip bgp neighbors | include BGP

```
R0#show ip bgp neighbors| include BGP
BGP neighbor is 10.80.80.80, remote AS 400, internal link
  BGP version 4, remote router ID 10.80.80.80
  BGP state = Established, up for 00:08:26
  BGP table version 1, neighbor version 1/0
```

- show ip bgp summary

```
R0#show ip bgp summary
BGP router identifier 10.70.70.70, local AS number 400
BGP table version is 1, main routing table version 1

Neighbor        V    AS MsgRcvd MsgSent   TblVer  InQ OutQ Up/Down  State/PfxRcd
10.80.80.80 4 400 75 75 1 0 0 00:08:52 0
```

- show ip bgp summary

```
R1#show ip bgp summary
BGP router identifier 10.80.80.80, local AS number 400
BGP table version is 1, main routing table version 1

Neighbor        V    AS MsgRcvd MsgSent   TblVer  InQ OutQ Up/Down  State/PfxRcd
10.70.70.70 4 400 76 76 1 0 0 00:09:27 0
```

故障排除

此配置当前未涵盖任何故障排除信息。

相关信息

- Cisco IOS IP路由：BGP命令参考
- IP 路由 支持页
- 思科技术支持和下载

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