

# 在 BGP 对等体之间进行 MD5 认证的配置示例

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## 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。

本文档中显示的命令输出来源于运行 IOS® 版本 12.4(15)T14 的 3660 系列路由器。

### 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，这意味着在这些对等体之间的 TCP 连接上发

送的每个分段都将经过验证。在两个 BGP 对等体上必须使用同一个口令配置 MD5 身份验证；否则，不会在它们之间建立连接。配置 MD5 身份验证将导致 Cisco IOS 软件生成和检查在 TCP 连接上发送的每个分段的 MD5 摘要。

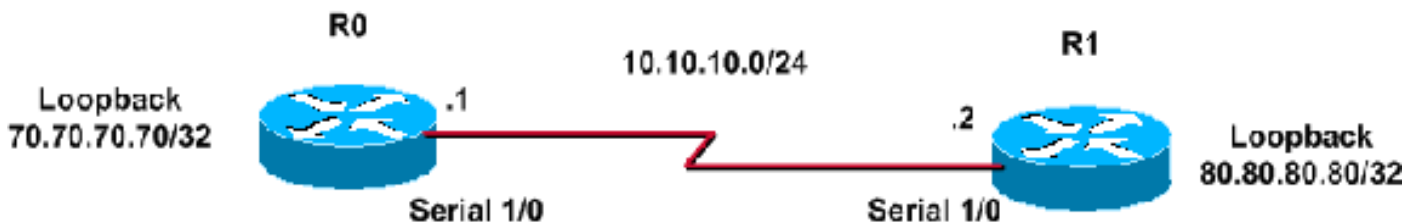
## 配置

本部分提供有关如何配置本文档所述功能的信息。

**注意：** 使用[命令查找工具](#) ( [仅限注册用户](#) ) 可获取有关本部分所使用命令的详细信息。

## 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 70.70.70.70
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 80.80.80.80 remote-as 400 !--- iBGP
Configuration using Loopback Address neighbor
80.80.80.80 password cisco !--- Invoke MD5
authentication on a TCP connection to a BGP peer
neighbor 80.80.80.80 update-source Loopback70 no auto-
summary ! ip route 80.80.80.80 255.255.255.255
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 80.80.80.80
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 70.70.70.70 remote-as 400 !--- iBGP
Configuration using Loopback Address neighbor
70.70.70.70 password cisco !--- Invoke MD5
authentication on a TCP connection to a BGP peer
neighbor 70.70.70.70 update-source Loopback80 no auto-
summary ! ip route 70.70.70.70 255.255.255.255
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 * R0#
*Mar 1 01:02:17.523: %BGP-5-ADJCHANGE: neighbor 80.80.80.80 Down User reset
R0#debug ip bgp
BGP debugging is on for address family: IPv4 Unicast
*Mar 1 01:03:58.159: BGP: 80.80.80.80 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: 80.80.80.80 open active, local address 70.70.70.70
*Mar 1 01:04:00.039: %TCP-6-BADAUTH: No MD5 digest from 80.80.80.80(179) to
  70.70.70.70(64444)
*Mar 1 01:04:00.807: %TCP-6-BADAUTH: No MD5 digest from 80.80.80.80(33358)
  to 70.70.70.70(179)
*Mar 1 01:04:01.991: %TCP-6-BADAUTH: No MD5 digest from 80.80.80.80(179) to
  70.70.70.70(64444)
*Mar 1 01:04:01.995: %TCP-6-BADAUTH: No MD5 digest from 80.80.80.80(179) to
  70.70.70.70(64444)
*Mar 1 01:04:05.995: %TCP-6-BADAUTH: No MD5 digest from 80.80.80.80(179) to
  70.70.70.70(64444)
*Mar 1 01:04:06.015: %TCP-6-BADAUTH: No MD5 digest from 80.80.80.80(179) to
  70.70.70.70(64444)
*Mar 1 01:04:14.023: %TCP-6-BADAUTH: No MD5 digest from 80.80.80.80(179) to
  70.70.70.70(64444)
*Mar 1 01:04:14.023: %TCP-6-BADAUTH: No MD5 digest from 80.80.80.80(179) to
  70.70.70.70(64444)
*Mar 1 01:04:29.947: BGP: 80.80.80.80 open failed: Connection timed out;
  remote host not responding, open active delayed 3932ms (4000ms max, 28%
  jitter)
*Mar 1 01:04:33.879: BGP: 80.80.80.80 open active, local address 70.70.70.70
*Mar 1 01:04:33.983: BGP: 80.80.80.80 went from Active to OpenSent
*Mar 1 01:04:33.983: BGP: 80.80.80.80 sending OPEN, version 4, my as: 400,
  hold time 180 seconds
*Mar 1 01:04:33.987: BGP: 80.80.80.80 send message type 1, length (incl.
  header ) 45
*Mar 1 01:04:34.091: BGP: 80.80.80.80 rcv message type 1, length (excl.
  header) 26
*Mar 1 01:04:34.091: BGP: 80.80.80.80 rcv OPEN, version 4, holdtime 180 seconds
*Mar 1 01:04:34.091: BGP: 80.80.80.80 rcv OPEN w/ OPTION parameter len: 16
*Mar 1 01:04:34.095: BGP: 80.80.80.80 rcvd OPEN w/ optional parameter type 2
  (Capability) len 6
*Mar 1 01:04:34.095: BGP: 80.80.80.80 OPEN has CAPABILITY code: 1, length 4
*Mar 1 01:04:34.095: BGP: 80.80.80.80 OPEN has MP_EXT CAP for afi/safi: 1/1
*Mar 1 01:04:34.095: BGP: 80.80.80.80 rcvd OPEN w/ optional parameter type 2
  (Capability) len 2
*Mar 1 01:04:34.095: BGP: 80.80.80.80 OPEN has CAPABILITY code: 128, length 0
*Mar 1 01:04:34.099: BGP: 80.80.80.80 OPEN has ROUTE-REFRESH capability(old)
  for all address-families
*Mar 1 01:04:34.099: BGP: 80.80.80.80 rcvd OPEN w/ optional parameter type 2
  (Capability) len 2
*Mar 1 01:04:34.099: BGP: 80.80.80.80 OPEN has CAPABILITY code: 2, length 0
*Mar 1 01:04:34.099: BGP: 80.80.80.80 OPEN has ROUTE-REFRESH capability(new)
  for all address-families
BGP: 80.80.80.80 rcvd OPEN w/ remote AS 400
*Mar 1 01:04:34.103: BGP: 80.80.80.80 went from OpenSent to OpenConfirm
*Mar 1 01:04:34.103: BGP: 80.80.80.80 went from OpenConfirm to Established
*Mar 1 01:04:34.103: %BGP-5-ADJCHANGE: neighbor 80.80.80.80 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。

- [R0#show ip bgp neighbors](#) | 包含 BGP BGP neighbor is 80.80.80.80, remote AS 400, internal link

```
BGP version 4, remote router ID 80.80.80.80  
BGP state = Established, up for 00:08:26  
BGP table version 1, neighbor version 1/0
```

- [R0#show ip bgp summary](#) BGP router identifier 70.70.70.70, 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  
80.80.80.80   4   400      75      75        1    0    0 00:08:52      0
```

- [R1#show ip bgp summary](#) BGP router identifier 80.80.80.80, 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  
70.70.70.70   4   400      76      76        1    0    0 00:09:27      0
```

## 故障排除

目前没有针对此配置的故障排除信息。

## 相关信息

- [思科 IOS IP 路由：BGP 命令参考](#)
- [IP 路由支持页](#)
- [技术支持和文档 - Cisco Systems](#)