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简介

使用外置调制解调器，本文说明点对点协议(PPP)拨入配置。

先决条件

要求

您需要配置您要能拨号的每个用户的一个用户名和密码，因为此配置没有一个终端接入控制器访问控制器系统(TACACS+)或远程验证拨入用户服务(RADIUS)服务器。所有IP地址被递交给从池的客户端。

对于此配置，您需要以下：

- 用户名和密码您希望客户端使用(即使您是去的后添加TACACS+或的RADIUS，添加一些名称到路由器测试线路)。
- IP编址方案创建的池和静态路由的。

使用的组件

本文档中的信息基于以下软件和硬件版本。

- 在清除配置实验室环境的一Cisco2511。
- 在路由器的Cisco IOS版本12.2(10b)。
- 外部异步调制解调器四个编号。

本文档中的信息都是基于特定实验室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。如果您使用的是真实网络，请确保您在使用任何命令前已经了解其潜在影响。

相关产品

此配置还可用于以下硬件和软件版本：

- 有异步接口和serial interfaces的路由器能够配置异步接口。
- 可以使用WIC-2A/S，8或者16异步端口serial interfaces。

规则

有关文档规则的详细信息，请参阅 [Cisco 技术提示规则](#)。

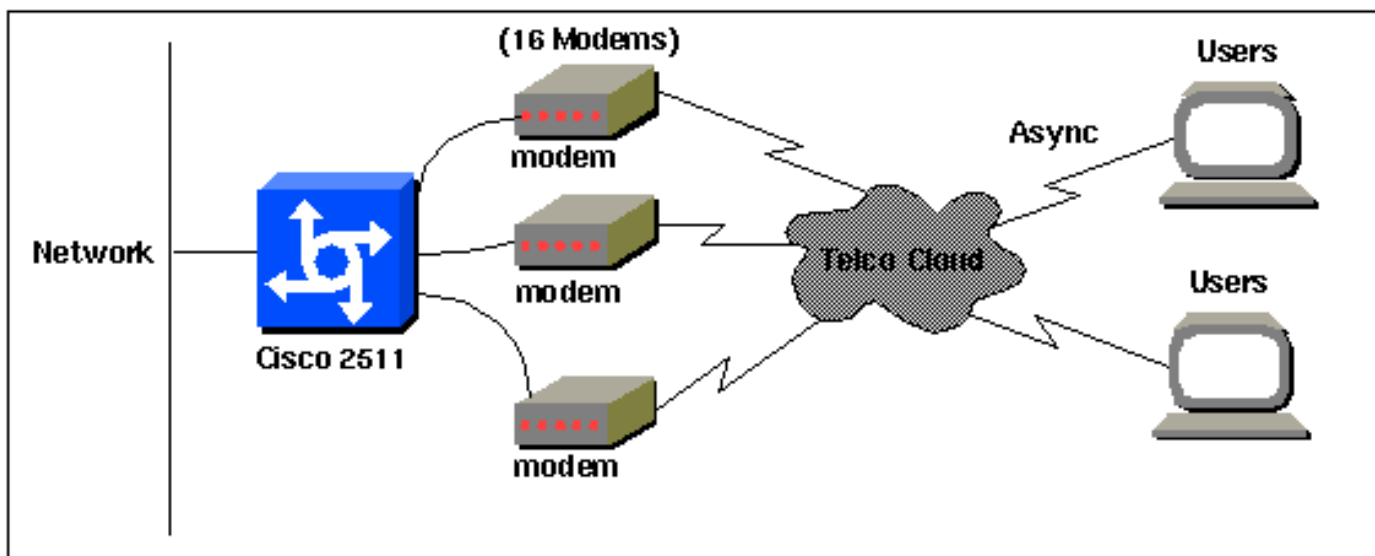
配置

本部分提供有关如何配置本文档所述功能的信息。

注意：要查找本文档所用命令的其他信息，请使用[命令查找工具](#)（[仅限注册用户](#)）。

网络图

本文档使用此图所示的网络设置。



配置

本文档使用如下所示的配置。

此配置是在一个2511系列路由器的测试的使用Cisco IOS软件版本12.2(10b)。相同的配置概念将适用于一个相似的路由器结构或其他Cisco IOS版本从11.0(3)开始或以后。

Cisco 2511

对于远程用户要随机连接到他们的短长时间的中心局间隔，此种拨号连接提供一更加便宜的解决方案。在上述配置中用户拨号从他的在调制解调器的桌面和设立一PPP连接到中心局通过PSTN网络。

要实施此配置，您必须进行以下配置：

- 异步接口。
- 异步线路。
- IP地址的池在全局配置模式的。
- 调制解调器参数- [modemcap项](#)和[调制解调器-路由器连接指南](#)。
- 拨号网络在主机必须配置。

验证

本部分所提供的信息可用于确认您的配置是否正常工作。

[命令输出解释程序工具 \(仅限注册用户 \)](#) 支持某些 **show** 命令，使用此工具可以查看对 **show** 命令输出的分析。

- **show users**
- **show interface**
- **show line**
- **show ip route**

```
router1#show usersLine          User          Host(s)          Idle          Location* 0 con 0
idle          00:00:00      1 tty 1      jason          Async interface 00:00:34 PPP:
192.168.39.2403 tty 3          Modem Autoconfigure 00:00:00      4 tty 4
Modem Autoconfigure 00:00:00      5 tty 5          Modem Autoconfigure 00:00:00      6
tty 6          Modem Autoconfigure 00:00:01      7 tty 7          Modem
Autoconfigure 00:00:01      8 tty 8          Modem Autoconfigure 00:00:01      9 tty 9
Modem Autoconfigure 00:00:01      10 tty 10       Modem Autoconfigure 00:00:01      11
tty 11         Modem Autoconfigure 00:00:01      12 tty 12       Modem
Autoconfigure 00:00:00      13 tty 13       Modem Autoconfigure 00:00:00      14 tty 14
Modem Autoconfigure 00:00:01      15 tty 15       Modem Autoconfigure 00:00:01      16
tty 16         Modem Autoconfigure 00:00:00      Interface User Mode Idle Peer
Addressrouter1#show interface asynchronous 1Async1 is up, line protocol is up Hardware is
Async Serial Interface is unnumbered. Using address of Ethernet0 (192.168.39.1) MTU 1500
bytes, BW 115 Kbit, DLY 100000 usec, reliability 255/255, txload 1/255, rxload 1/255
Encapsulation PPP, loopback not set Keepalive not set DTR is pulsed for 5 seconds on reset
LCP Open Open: IPCP Last input 00:00:28, output 00:00:43, output hang never Last clearing of
"show interface" counters 00:29:49 Input queue: 1/75/0/0 (size/max/drops/flushes); Total output
drops: 0 Queueing strategy: weighted fair Output queue: 0/1000/64/0 (size/max
total/threshold/drops) Conversations 0/1/16 (active/max active/max total) Reserved
Conversations 0/0 (allocated/max allocated) Available Bandwidth 86 kilobits/sec 5
minute input rate 0 bits/sec, 0 packets/sec 5 minute output rate 0 bits/sec, 0 packets/sec
34 packets input, 3147 bytes, 0 no buffer Received 0 broadcasts, 0 runts, 0 giants, 0
throttles 2 input errors, 2 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 16 packets
output, 383 bytes, 0 underruns 0 output errors, 0 collisions, 1 interface resets 0
output buffer failures, 0 output buffers swapped out 0 carrier transitionsrouter1#show line
Tty Typ Tx/Rx A Modem Roty AccO AccI Uses Noise Overruns Int* 0 CTY
- - - - 0 0 0/0 -A 1 TTY 115200/115200- inout - - 0 0
- 1 1 0/0 -* 2 TTY 38400/38400 - inout - - 0 0
0/0 -* 3 TTY 300/300 - inout - - 0 0
TTY 300/300 - inout - - 0 0
inout - - 0 0
- 0 0 0/0 -* 7 TTY 300/300 - inout - - 0 0
0/0 -* 8 TTY 300/300 - inout - - 0 0
TTY 1200/1200 - inout - - 0 0
inout - - 0 0
- 0 0 0/0 -* 12 TTY 115200/115200- inout - - 0 0
0/0 -* 13 TTY 115200/115200- inout - - 0 0
- - 0 0
```

```

TTY 300/300 - inout - - - 0 0 0/0 -* 15 TTY 300/300 -
inout - - - 0 0 0/0 -* 16 TTY 300/300 - inout - -
- 0 0 0/0 - 17 AUX 9600/9600 - - - - 0 0
0/0 - 18 VTY - - - - - 0 0 0/0 - 19
VTY - - - - - 0 0 0/0 - 20 VTY - - - -
- - - - 0 0 0/0 - 21 VTY - - - -
0 0 0/0 -router1#show line 1 Tty Typ Tx/Rx A Modem Roty AccO AccI
Uses Noise Overruns IntA 1 TTY 115200/115200- inout - - - 1 1
0/0 -Line 1, Location: "PPP: 192.168.39.240", Type: ""Length: 24 lines, Width: 80
columnsBaud rate (TX/RX) is 115200/115200, no parity, 1 stopbits, 8 databitsStatus: Ready,
Active, No Exit Banner, Async Interface Active Modem Detected, CTS RaisedCapabilities: Hardware
Flowcontrol In, Hardware Flowcontrol Out Modem Callout, Modem RI is CD, Line usable as async
interface Modem AutoconfigureModem state: ReadyGroup codes: 0Line is running PPP for address
192.168.39.240. 0 output packets queued, 1 input packets. Async Escape map is
00000000000000000000000000000000Modem hardware state: CTS DSR DTR RTS, Modem ConfiguredSpecial
Chars: Escape Hold Stop Start Disconnect Activation ^x none - - none Timeouts: Idle EXEC Idle
Session Modem Answer Session Dispatch 00:10:00 never none not set Idle Session Disconnect
Warning never router1#show ip routeCodes: C - connected, S - static, I - IGRP, R - RIP, M -
mobile, B - BGP D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area N1 -
OSPF NSSA external type 1, N2 - OSPF NSSA external type 2 E1 - OSPF external type 1, E2 -
OSPF external type 2, E - EGP i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-
IS inter area * - candidate default, U - per-user static route, o - ODR P - periodic
downloaded static route Gateway of last resort is not set C 192.168.39.0/24 is directly
connected, Ethernet0

```

在Windows 2000服务器主机上

设置在Windows 2000主机的拨号连接。配置用户名、密码和电话号码并且拨号连接。



在拨号连接建立后，IP地址从在路由器配置的拨号池分配。我们能通过发出在主机上的ipconfig命令验证那。它显示作为在主机的一台PPP适配器。

```

C:\Documents and Settings\Administrator>ipconfig
Windows 2000 IP Configuration
Ethernet adapter Local Area Connection: Media State . . . . . : Cable Disconnected
PPP adapter Dial-up Connection: Connection-specific DNS Suffix . :
IP Address. . . . . :
192.168.39.240 Subnet Mask . . . . . : 255.255.255.255 Default Gateway . . . .
. . . . : 192.168.39.240

```

要验证从Windows 2000服务器主机的连接建立到Cisco 2511路由器，您能从主机ping到路由器以太

网端口和验证连接建立。这里，192.168.39.1是路由器的以太网端口IP地址。

```
C:\Documents and Settings\Administrator>ping 192.168.39.1
Pinging 192.168.39.1 with 32 bytes of data:
Reply from 192.168.39.1: bytes=32 time=170ms TTL=255
Reply from 192.168.39.1: bytes=32 time=111ms TTL=255
Reply from 192.168.39.1: bytes=32 time=110ms TTL=255
Reply from 192.168.39.1: bytes=32 time=100ms TTL=255
Ping statistics for 192.168.39.1:    Packets: Sent = 4,
Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 100ms, Maximum = 170ms, Average = 122ms
```

故障排除

本部分提供的信息可用于对配置进行故障排除。

故障排除命令

[命令输出解释程序工具](#) ([仅限注册用户](#)) 支持某些 **show** 命令，使用此工具可以查看对 **show** 命令输出的分析。

注意： 在发出 **debug** 命令之前，请参阅[有关 Debug 命令的重要信息](#)。

- **debug ppp negotiation** - 用于查看客户端是否通过 PPP 协商。这是您检查地址协商的时候。
- **debug ppp authentication** - 看见客户端是否可以认证。
- **debug ppp error** - 显示和PPP连接协商与操作相关的协议错误以及统计错误。
- **debug modem** - 用于查看路由器从调制解调器接收的信号是否正确。
- **show line [- tty line]** - 正在寻找调制解调器硬件状态。

以下输出从Cisco 2511路由器得到了。显示Windows 2000服务器拨号对PSTN Cisco2511的链路和建立PPP连接的他们。

```
router1#debug ppp negotiationPPP protocol negotiation debugging is onrouter1#debug
vtemplateVirtual Template debugging is onrouter1#show debugPPP: PPP protocol negotiation
debugging is onDec 10 18:43:59.079: As1 LCP: I CONFREQ [Closed] id 1 len 50Dec 10 18:43:59.083:
As1 LCP: ACCM 0x00000000 (0x020600000000)Dec 10 18:43:59.087: As1 LCP: MagicNumber
0x59F402A1 (0x050659F402A1)Dec 10 18:43:59.087: As1 LCP: PFC (0x0702)Dec 10 18:43:59.091: As1
LCP: ACFC (0x0802)Dec 10 18:43:59.091: As1 LCP: Callback 6 (0x0D0306)Dec 10 18:43:59.095:
As1 LCP: MRRU 1614 (0x1104064E)Dec 10 18:43:59.099: As1 LCP: EndpointDisc 1 LocalDec 10
18:43:59.099: As1 LCP: (0x131701714C44F0EC8F45BABDC596D14B)Dec 10 18:43:59.103: As1 LCP:
(0x79DB5300000000)Dec 10 18:43:59.107: As1 LCP: Lower layer not up, Fast StartingDec 10
18:43:59.107: As1 PPP: Treating connection as a dedicated lineDec 10 18:43:59.111: As1 PPP:
Phase is ESTABLISHING, Active Open [0 sess, 0 load]Dec 10 18:43:59.115: As1 LCP: O CONFREQ
[Closed] id 3 len 25Dec 10 18:43:59.119: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)Dec 10
18:43:59.123: As1 LCP: AuthProto CHAP (0x0305C22305)Dec 10 18:43:59.127: As1 LCP:
MagicNumber 0x002AF05C (0x0506002AF05C)Dec 10 18:43:59.127: As1 LCP: PFC (0x0702)Dec 10
18:43:59.131: As1 LCP: ACFC (0x0802)Dec 10 18:43:59.135: As1 LCP: O CONFREQ [REQsent] id 1
len 11Dec 10 18:43:59.139: As1 LCP: Callback 6 (0x0D0306)Dec 10 18:43:59.139: As1 LCP:
MRRU 1614 (0x1104064E)Dec 10 18:43:59.155: %LINK-3-UPDOWN: Interface Async1, changed state to
upDec 10 18:43:59.263: As1 LCP: I CONFACK [REQsent] id 3 len 25Dec 10 18:43:59.267: As1 LCP:
ACCM 0x000A0000 (0x0206000A0000)Dec 10 18:43:59.267: As1 LCP: AuthProto CHAP
(0x0305C22305)Dec 10 18:43:59.271: As1 LCP: MagicNumber 0x002AF05C (0x0506002AF05C)Dec 10
18:43:59.275: As1 LCP: PFC (0x0702)Dec 10 18:43:59.275: As1 LCP: ACFC (0x0802)Dec 10
18:43:59.279: As1 LCP: I CONFREQ [ACKrcvd] id 2 len 43Dec 10 18:43:59.283: As1 LCP: ACCM
0x00000000 (0x020600000000)Dec 10 18:43:59.287: As1 LCP: MagicNumber 0x59F402A1
(0x050659F402A1)Dec 10 18:43:59.287: As1 LCP: PFC (0x0702)Dec 10 18:43:59.291: As1 LCP:
ACFC (0x0802)Dec 10 18:43:59.291: As1 LCP: EndpointDisc 1 LocalDec 10 18:43:59.295: As1 LCP:
(0x131701714C44F0EC8F45BABDC596D14B)Dec 10 18:43:59.299: As1 LCP: (0x79DB5300000000)Dec 10
18:43:59.303: As1 LCP: O CONFACK [ACKrcvd] id 2 len 43Dec 10 18:43:59.307: As1 LCP: ACCM
0x00000000 (0x020600000000)Dec 10 18:43:59.311: As1 LCP: MagicNumber 0x59F402A1
(0x050659F402A1)Dec 10 18:43:59.311: As1 LCP: PFC (0x0702)Dec 10 18:43:59.315: As1 LCP:
ACFC (0x0802)Dec 10 18:43:59.315: As1 LCP: EndpointDisc 1 LocalDec 10 18:43:59.319: As1 LCP:
```

(0x131701714C44F0EC8F45BABDC596D14B)Dec 10 18:43:59.323: As1 LCP: (0x79DB5300000000)Dec 10 18:43:59.327: **As1 LCP: State is Open**Dec 10 18:43:59.327: **As1 PPP: Phase is AUTHENTICATING, by this end [0 sess, 1 load]**Dec 10 18:43:59.331: As1 CHAP: O CHALLENGE id 2 len 25 from "router1"Dec 10 18:43:59.459: As1 LCP: I IDENTIFY [Open] id 3 len 18 magic 0x59F402A1 MSRASV5.00Dec 10 18:43:59.463: As1 LCP: I IDENTIFY [Open] id 4 len 28 magic 0x59F402A1 MSRAS-1-LAB-WIN2K-PCDec 10 18:43:59.467: As1 CHAP: I RESPONSE id 2 len 26 from "jason"Dec 10 18:43:59.479: As1 CHAP: O SUCCESS id 2 len 4Dec 10 18:43:59.483: As1 PPP: Phase is UP [0 sess, 1 load]Dec 10 18:43:59.487: As1 IPCP: O CONFREQ [Closed] id 1 len 10Dec 10 18:43:59.491: **As1 IPCP: Address 192.168.39.1** (0x0306C0A82701)Dec 10 18:43:59.567: As1 CCP: I CONFREQ [Not negotiated] id 5 len 10Dec 10 18:43:59.571: As1 CCP: MS-PPC supported bits 0x00000001 (0x120600000001)Dec 10 18:43:59.575: As1 LCP: O PROTREJ [Open] id 4 len 16 protocol CCP (0x80FD0105000A120600000001)Dec 10 18:43:59.599: As1 IPCP: I CONFREQ [REQsent] id 6 len 40Dec 10 18:43:59.603: As1 IPCP: CompressType VJ 15 slots CompressSlotID (0x0206002D0F01)Dec 10 18:43:59.607: As1 IPCP: Address 0.0.0.0 (0x030600000000)Dec 10 18:43:59.611: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)Dec 10 18:43:59.615: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)Dec 10 18:43:59.615: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)Dec 10 18:43:59.619: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)Dec 10 18:43:59.623: As1 IPCP: O CONFREQ [REQsent] id 6 len 34Dec 10 18:43:59.627: As1 IPCP: CompressType VJ 15 slots CompressSlotID (0x0206002D0F01)Dec 10 18:43:59.631: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)Dec 10 18:43:59.635: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)Dec 10 18:43:59.639: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)Dec 10 18:43:59.643: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)Dec 10 18:43:59.647: As1 IPCP: I CONFACK [REQsent] id 1 len 10Dec 10 18:43:59.651: As1 IPCP: Address 192.168.39.1 (0x0306C0A82701)Dec 10 18:43:59.735: As1 IPCP: I CONFREQ [ACKrcvd] id 7 len 10Dec 10 18:43:59.739: As1 IPCP: Address 0.0.0.0 (0x030600000000)Dec 10 18:43:59.743: As1 IPCP: O CONFNAK [ACKrcvd] id 7 len 10Dec 10 18:43:59.747: **As1 IPCP: Address 192.168.39.240** (0x0306C0A827F0)Dec 10 18:43:59.835: As1 IPCP: I CONFREQ [ACKrcvd] id 8 len 10Dec 10 18:43:59.839: As1 IPCP: Address 192.168.39.240 (0x0306C0A827F0)Dec 10 18:43:59.843: As1 IPCP: O CONFACK [ACKrcvd] id 8 len 10Dec 10 18:43:59.847: As1 IPCP: Address 192.168.39.240 (0x0306C0A827F0)Dec 10 18:43:59.851: **As1 IPCP: State is Open**Dec 10 18:43:59.863: **As1 IPCP: Install route to 192.168.39.240**Dec 10 18:44:00.483: %LINEPROTO-5-UPDOWN: **Line protocol on Interface Async1, changed state to up**

相关信息

- [接入拨号技术支持页](#)
- [modemcap项](#)
- [调制解调器与路由器连接指南](#)
- [技术支持 - Cisco Systems](#)