

用 NM-8AM 或 NM-16AM 模拟调制解调器模块配置拨出

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简介

使用一个调制解调器用NM-AM模拟调制解调器网络模块，本文显示如何配置拨出。在此方案中，一个路由器用NM-8AM调制解调器模块拨号主速率接口中心站点路由器。

本文假设您有一好了解多种问题关联与调制解调器配置。如果需要关于这些问题的更多信息，请参考[调制解调器-路由器连接指南](#)。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

此配置使用下面软件和硬件版本被开发并且被测试：

- 有NM-8AM卡运行Cisco IOS软件版本12.1(5)T的一个Cisco 3640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](#)。

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：要查找有关本文档中所使用命令的其他信息，请使用 [命令查询工具](#) ([仅限注册用户](#))。

网络图

本文档使用下图所示的网络设置。

配置

本文档使用如下所示的配置。

路由器1 (Cisco 3640)

```
Current configuration : 1676 bytes
!
version 12.1
no service single-slot-reload-enable
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname router1
!
enable password ww
!
username router2 password 0 ww
!--- username for remote router (Router 2) and shared
secret !--- shared secret(used for CHAP authentication)
must be the same on both sides ip subnet-zero ! chat-
script async "" "AT" OK "ATDT\T" TIMEOUT 30 CONNECT \c
!--- chat script "async" used for the dialout connection
!! interface Ethernet2/0 ip address 10.200.20.51
255.255.255.0 half-duplex ! interface Async104 !---
async interface corresponding to the modem !--- This was
determined using the show line command.

ip address 10.10.0.2 255.255.255.252
!--- IP address of this async interface encapsulation
ppp dialer in-band dialer wait-for-carrier-time 180
dialer map ip 10.10.0.1 name router2 modem-script async
8214 !--- dialer map statements for the remote router !-
-- The name must match the one used by the remote router
to identify itself. !--- use modem chat script "async"
for this connection

dialer-group 1
!--- apply interesting traffic definition from dialer-
list 1
async mode dedicated
!--- Place the line into dedicated asynchronous network
mode. !--- This interface is now automatically
configured for PPP connections. ppp authentication chap
```

```

!--- use chap authentication ! ip classless ip route
10.10.0.0 255.255.0.0 10.10.0.1 !--- Traffic for the
10.10.0.0/16 network uses a next hop of 10.10.0.1 ip
route 10.10.0.1 255.255.255.255 Async104 !--- the next
hop for 10.10.0.1/32 (which is also the next hop for the
!--- previous route) is interface Async104. ! dialer-
list 1 protocol ip permit !--- All IP traffic is defined
interesting. !--- This is applied to Async104 using
dialer-group 1.

!
!
line con 0
  exec-timeout 0 0
  password ww transport input none
line 33 38
line 97 103
  modem InOut transport input all
line 104
!--- line interface configuration for Async 104 modem
InOut !--- allow incoming and outgoing modem calls on
this line transport input all transport output lat pad
v120 lapb-ta telnet rlogin udptn flowcontrol hardware
line aux 0 line vty 0 4 password ww login ! end

```

在此3600个机箱中，NM-8AM卡是在指异步线路如何的slot 3.安装在Cisco 3600系列路由器文档被编号，我们查明slot3有线路保留的97至128。要确定哪个特定异步接口您应该配置，请使用**show line**命令发现可用的线路。在此配置中，请注意仅线路97-104 (8条线路)在该范围内是可用的。因此，配置在卡的第一个调制解调器请配置线路97 (和接口async97)，当最后调制解调器是line/async104时。

验证

当前没有可用于此配置的验证过程。

排除模拟连接故障

完成这些步骤为了排除故障拨出连接：

1. 检查调制解调器配置。验证调制解调器的配置。您应该检查line configuration与调制解调器相应以及接口异步。
2. 对调制解调器的反向telnet和启动拨出。反向telnet调制解调器的端口，和使用AT命令集拨号和连接到远程设备。这可以用于验证调制解调器硬件和电话线路作用。在本例中，因为调制解调器端口在线路104，请倒转telnet到路由器的端口2104。关于反向telnet的更多信息，参考[建立一反向远程登录会话对调制解调器](#)。

```

router1#telnet 10.200.20.51 2104
Trying 10.200.20.51, 2104 ... Open
User Access Verification
Username: admin
Password:
!--- Authentication performed by local router for the reverse telnet at OK atdt 81690
!--- The modem dials (81690) and connects. !--- This takes approximately 30-45 seconds.
CONNECT 31200/ARQ/V34/LAPM/V42BIS !--- Connect speed and protocols that were negotiated
User Access Verification Username: admin Password: !--- Authentication performed by remote
router for the incoming call router2> !--- Remote router's prompt

```

您能也适用其他AT命令为了验证调制解调器设置。参考[AT命令集和寄存器汇总模拟调制解调](#)

[器网络模块](#)的关于AT命令联机的更多信息模拟调制解调器模块的。

3. 手工激活对话脚本并且启动拨号。请使用[start-chat命令](#)为了激活对话脚本和启动拨号。**启动对话命令**要求您指定对话脚本将激活的，拨打的电话号码和调制解调器接口的名称拨出。
4. 验证有路由对异步接口。请使用[show ip route命令](#)为了证实是否有路由对异步接口。如果没有路由，请创建静态路由。示例显示：

```
router1#telnet 10.200.20.51 2104
Trying 10.200.20.51, 2104 ... Open
User Access Verification
Username: admin
Password:
!--- Authentication performed by local router for the reverse telnet at OK atdt 81690
!--- The modem dials (81690) and connects. !--- This takes approximately 30-45 seconds.
CONNECT 31200/ARQ/V34/LAPM/V42BIS !--- Connect speed and protocols that were negotiated
User Access Verification Username: admin Password: !--- Authentication performed by remote
router for the incoming call router2> !--- Remote router's prompt
```

5. 生成为下一跳网络注定的ping指定在步骤4。远程路由器的一ping，指定使用从步骤4的下一跳网络，造成路由器拨号远程设备。

```
router1#ping 10.10.0.1
```

参考[排除故障呼出](#)关于如何排除故障您的连接的更多信息。

常见错误

- 验证对话脚本名称是相同的到在拨号映射语句指定的那个。并且请验证拨打的电话号码正确地指定。
- 确认关注数据流正确地定义。关注数据流用[dialer-list命令](#)指定。
- 保证触发数据流定义应用对异步接口。使用[dialer-group命令](#)，这执行，其中组编号必须匹配用[dialer-list命令](#)指定的触发数据流定义。
- 验证用户名和密码PAP/CHAP验证的正确。
- 检查确保，拨号映射语句有拨号正确名称、IP地址和的电话号码。

debug 命令

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

- **debug dialer** - 用于显示关于拨号接口上接收的数据包的调试信息。当按需拨号路由(DDR)在接口时启用，信息关于所有呼叫的原因(呼叫拨号原因)也显示。欲知更多信息，请参阅在[调试指令](#)文档的[debug dialer](#)信息。
- **debug modem** -显示调制解调器线路活动、调制解调器控制和进程激活消息在路由器。
- **debug chat** -监控对话脚本的执行，当async/POTS拨号启动。请参阅[拨号技术：故障排除技术](#)。
- **debug ppp协商**-显示关于PPP流量和交换的信息，当协商PPP组件包括链路控制协议(LCP)、验证和网络控制协议时(NCP)。成功的PPP协商将打开LCP状态，然后首先验证和终于协商NCP。
- **debug ppp authentication** -显示PPP认证协议消息，包括质询验证协议(CHAP)信息包交换和密码认证协议交换。

调试输出示例

router1#show debug

General OS:

Modem control/process activation debugging is on

Dial on demand:

Dial on demand events debugging is on

Generic IP:

ICMP packet debugging is on

PPP:

PPP protocol negotiation debugging is on

Chat Scripts:

Chat scripts activity debugging is on

router1#

router1#ping 10.10.0.1

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 10.10.0.1, timeout is 2 seconds:

*Mar 1 00:22:58.663: As104 DDR: **Dialing cause** ip (s=10.10.0.2, d=10.10.0.1)

!--- Dialing reason is the ping for 10.10.10.1 !--- The dialout is using Async104. *Mar 1

00:22:58.663: As104 DDR: **Attempting to dial 8214**

!--- Phone number to be dialed *Mar 1 00:22:58.663: CHAT104: Attempting async line dialer script

*Mar 1 00:22:58.663: CHAT104: **Dialing using Modem script: async** & System script: none

!--- Use chat script named "async" *Mar 1 00:22:58.663: CHAT104: process started *Mar 1

00:22:58.667: CHAT104: Asserting DTR *Mar 1 **00:22:58.667: CHAT104: Chat script async started**

!--- Chat-script "async" is started. *Mar 1 00:22:58.667: CHAT104: Sending string: AT *Mar 1

00:22:58.667: CHAT104: Expecting string: OK *Mar 1 00:22:58.739: CHAT104: Completed match for

expect: OK *Mar 1 00:22:58.739: CHAT104: Sending string: ATDT\T<8214> *Mar 1 00:22:58.739:

CHAT104: Expecting string: CONNECT *Mar 1 00:22:58.751: Modem 3/7 Mcom: in modem state

'Dialing/Answering' *Mar 1 00:23:10.775: Modem 3/7 Mcom: in modem state 'Waiting for Carrier'

*Mar 1 00:23:21.903: Modem 3/7 Mcom: in modem state 'Connected' *Mar 1 00:23:22.323: Modem 3/7

Mcom: CONNECT at 26400/24000(Tx/Rx), V34, LAPM, V42bis, Originate *!--- Connect speeds, protocols*

and so forth, and so on negotiated for the connection !--- Note that the modem used is 3/7 which

is equivalent to line 104. !--- Refer to [How Async Lines are Numbered in Cisco 3600 Series](#)

Routers. *Mar 1 00:23:22.375: CHAT104: Completed match for expect: CONNECT *Mar 1 00:23:22.375:

CHAT104: Sending string: \c *Mar 1 **00:23:22.375: CHAT104: Chat script async finished, status =**

Success

!--- Chat script is successful. Notice the Expect/Send attributes and the time elapsed. *Mar 1

00:23:22.375: Modem 3/7 Mcom: switching to PPP mode *Mar 1 00:23:22.379: TTY104: no timer type 1

to destroy *Mar 1 00:23:22.379: TTY104: no timer type 0 to destroy *Mar 1 00:23:22.379: As104

IPCP: Install route to 10.10.0.1 *Mar 1 00:23:24.379: %LINK-3-UPDOWN: Interface Async104,

changed state to up *Mar 1 00:23:24.379: As104 DDR: Dialer statechange to up *Mar 1

00:23:24.379: As104 DDR: Dialer call has been placed *Mar 1 00:23:24.379: **As104 PPP:** Treating

connection as a callout

!--- PPP negotiation begins. *Mar 1 00:23:24.379: As104 PPP: Phase is ESTABLISHING, Active Open

[0 sess, 0 load] *Mar 1 00:23:24.379: Modem 3/7 Mcom: PPP escape map: Tx map = FFFFFFFF, Rx map

= 0 *Mar 1 00:23:24.379: As104 **LCP: O CONFREQ** [Closed] id 17 len 25

*Mar 1 00:23:24.379: As104 LCP: ACCM 0x000A0000 (0x0206000A0000)

*Mar 1 00:23:24.379: As104 LCP: AuthProto CHAP (0x0305C22305)

*Mar 1 00:23:24.379: As104 LCP: MagicNumber 0x1090720F (0x05061090720F)

*Mar 1 00:23:24.379: As104 LCP: PFC (0x0702)

*Mar 1 00:23:24.379: As104 LCP: ACFC (0x0802)

*Mar 1 00:23:24.543: As104 **LCP: I CONFREQ** [REQsent] id 1 len 25

*Mar 1 00:23:24.543: As104 LCP: ACCM 0x000A0000 (0x0206000A0000)

*Mar 1 00:23:24.543: As104 LCP: AuthProto CHAP (0x0305C22305)

*Mar 1 00:23:24.543: As104 LCP: MagicNumber 0x41B616FF (0x050641B616FF)

*Mar 1 00:23:24.543: As104 LCP: PFC (0x0702)

*Mar 1 00:23:24.543: As104 LCP: ACFC (0x0802)

*Mar 1 00:23:24.543: As104 **LCP: O CONFACK** [REQsent] id 1 len 25

*Mar 1 00:23:24.543: As104 LCP: ACCM 0x000A0000 (0x0206000A0000)

*Mar 1 00:23:24.543: As104 LCP: AuthProto CHAP (0x0305C22305)

*Mar 1 00:23:24.543: As104 LCP: MagicNumber 0x41B616FF (0x050641B616FF)

*Mar 1 00:23:24.543: As104 LCP: PFC (0x0702)

*Mar 1 00:23:24.543: As104 LCP: ACFC (0x0802)

*Mar 1 00:23:24.555: As104 **LCP: I CONFACK** [ACKsent] id 17 len 25

*Mar 1 00:23:24.555: As104 LCP: ACCM 0x000A0000 (0x0206000A0000)

*Mar 1 00:23:24.555: As104 LCP: AuthProto CHAP (0x0305C22305)

```
*Mar 1 00:23:24.559: As104 LCP: MagicNumber 0x1090720F (0x05061090720F)
*Mar 1 00:23:24.559: As104 LCP: PFC (0x0702)
*Mar 1 00:23:24.559: As104 LCP: ACFC (0x0802)
*Mar 1 00:23:24.559: As104 LCP: State is Open
!--- LCP negotiation is complete. *Mar 1 00:23:24.559: Modem 3/7 Mcom: PPP escape map: Tx map =
A0000, Rx map = 0 *Mar 1 00:23:24.559: As104 PPP: Phase is AUTHENTICATING, by both [0 sess, 0
load]
!--- Two-way PPP authentication begins. *Mar 1 00:23:24.559: As104 CHAP: O CHALLENGE id 4 len 28
from "router1" *Mar 1 00:23:24.691: As104 CHAP: I CHALLENGE id 1 len 28 from "router2" *Mar 1
00:23:24.691: As104 CHAP: O RESPONSE id 1 len 28 from "router1" *Mar 1 00:23:24.707: As104 CHAP:
I RESPONSE id 4 len 28 from "router2" *Mar 1 00:23:24.707: As104 CHAP: O SUCCESS id 4 len 4
*Mar 1 00:23:24.815: As104 CHAP: I SUCCESS id 1 len 4
!--- Incoming and outgoing CHAP authentication is successful. *Mar 1 00:23:24.815: As104 PPP:
Phase is UP [0 sess, 0 load] *Mar 1 00:23:24.819: As104 IPCP: O CONFREQ [Closed] id 6 len 10
*Mar 1 00:23:24.819: As104 IPCP: Address 10.10.0.2 (0x03060A0A0002) *Mar 1 00:23:24.835: As104
IPCP: I CONFREQ [REQsent] id 1 len 10 *Mar 1 00:23:24.835: As104 IPCP: Address 10.10.0.1
(0x03060A0A0001) *Mar 1 00:23:24.839: As104 IPCP: O CONFACK [REQsent] id 1 len 10 *Mar 1
00:23:24.839: As104 IPCP: Address 10.10.0.1 (0x03060A0A0001) *Mar 1 00:23:24.931: As104 IPCP: I
CONFACK [ACKsent] id 6 len 10 *Mar 1 00:23:24.931: As104 IPCP: Address 10.10.0.2
(0x03060A0A0002) *Mar 1 00:23:24.931: As104 IPCP: State is Open
!--- IP Control Protocol (IPCP) negotiation is complete. *Mar 1 00:23:24.931: As104 DDR: dialer
protocol up *Mar 1 00:23:25.379: %LINEPROTO-5-UPDOWN: Line protocol on Interface Async104,
changed state to up
!--- Interface is up.
```

[相关信息](#)

- [调制解调器与路由器连接指南](#)
- [拨号技术支持页面](#)
- [技术支持和文档 - Cisco Systems](#)