

用 NM-8AM 或 NM-16AM 模拟调制解调器模块配置拨入

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简介

本文为拨入提供一配置示例使用调制解调器以NM xAM模拟调制解调器网络模块。在此方案中，一个路由器用NM-8AM调制解调器模块作为拨入的一远程接入服务器到公司网络。

注意： 使用拨出的，NM-8AM或NM-16AM本文不包括。对于这样示例，参考[配置与NM-8AM或NM-16AM模拟调制解调器模块的本文拨出](#)。

先决条件

要求

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](#)。

NM-AM模块要求将插入的各自的模拟普通旧式电话服务线路端口。请保证POTS线路通过连接电话对线路和测试它正常运行进入和出去的呼叫的在把它插入前NM-AM端口。

- 单个端口有各自的电话号码(在本例中我们使用八个其他电话编号)，或者能有全部八在有一个拨入号码的一个搜索组中(电话供应商需要执行此)。使用第一个选项，用户获得占线信号一前期呼叫是否在该特定号码仍然连接。使用第二个选项，呼叫自动地滚动到下个可用端口。
- 是绝对肯定使用正确接地的电源Cisco 2600及3600路由器用NM-AM模块;否则，NM-AM调制解调器呼叫有表明自己作为差或失败的连接的一个杂音。参考[安装在Cisco 2600系列的接地接线](#)

片和Cisco 3600系列路由器欲知更多信息的本文。

- 推荐有在NM-AMs的最新的固件版本。请使用**show modem version**命令检查此。

使用的组件

本文档中的信息基于以下软件和硬件版本：

- 有NM-8AM卡运行Cisco IOS软件版本12.2(8)T的一个Cisco 3640路由器。
- 调制解调器固件版本1.2.8。**注意：**调制解调器固件版本1.2.8被捆绑到Cisco IOS。
- Cisco IOS软件版本12.1(5)T和12.2。它不是解开的联机。
- 有Microsoft Windows 2000 OS的PC。

规则

有关文档规则的详细信息，请参阅 [Cisco 技术提示规则](#)。

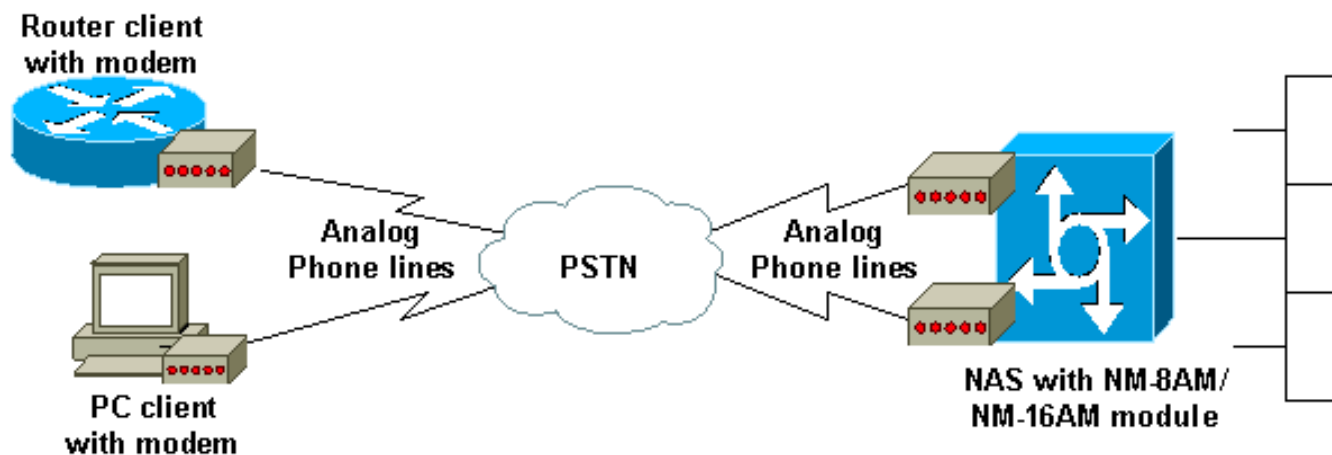
配置

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

本文档使用以下网络设置：



配置

本文档使用以下配置：

远程接入服务器(Cisco 3640路由器)

```
Current configuration : 1251 bytes
!
version 12.2
service timestamps debug datetime msec
service timestamps log uptime
```

```

no service password-encryption
!
hostname cisco3640
!
boot system flash:c3640-i-mz.122-8.T
enable secret 5 <deleted>
!
username abc password 0 abc
! -- Usernames for local authentication of the call. !
-- The client presents the username/password and the NAS
! -- authenticates the peer. ip subnet-zero ! no ip
domain-lookup ip domain-name cisco.com ! async-bootp
dns-server 5.5.5.1 5.5.5.2 ! -- Specifies (for async
clients) the IP address of domain name server. !!
interface Loopback0 ip address 1.1.1.1 255.255.255.0 !
interface Ethernet2/0 ip address 20.20.20.1
255.255.255.0 half-duplex !! <--Unused interface
configuration omitted. ! interface Group-Async1 ! --
This group-async interface is the configuration template
for all modems. ! -- Individual async interface do not
have to be configured since they ! -- can be cloned from
one managed copy. ip unnumbered Loopback0
encapsulation ppp dialer in-band dialer idle-timeout
600 ! -- Sets Idle timer to 600 seconds (10 minutes).
dialer-group 1 !--- Apply interesting traffic
definition from dialer-list 1. ! -- Note: The specified
dialer-group number must be the same as ! -- the dialer-
list number; in this example, defined to be "1". ! --
Interesting traffic specifies the packets that should
reset the idle timer. async mode interactive ! -- If
the async interface is to answer different connection
types ! -- (exec,ppp,slip), use this command in
conjunction with autoselect ppp ! -- under the line
configuration to auto detect the connection type. ! --
To prevent users from establishing an "EXEC session" to
the router. ! -- use the command async modem dedicated
instead. peer default ip address pool DIALIN ! --
Clients are assigned addresses from the ip address pool
named "DIALIN". ppp authentication chap group-range 1
8 ! -- Modems/lines 1 to 8 are members of this group
async interface. ! -- If you want, for example, only 4
modems for incoming and the rest ! -- for outgoing then
configure the group range for any set of ! -- four
consecutive modems in the module. ! -- Note: this range
must be included within the line configuration below. !
ip local pool DIALIN 10.1.1.1 10.1.1.10 ! -- IP address
pool for dialin clients. ip classless ip route 0.0.0.0
0.0.0.0 20.20.20.100 ip http server ip pim bidir-enable
!! dialer-list 1 protocol ip permit ! -- Specifies all
IP traffic as interesting. Interesting traffic ! --
specifies the packets that should reset the idle timer.
! -- This is applied to interface Group-Async 1 using
dialer-group 1. ! -- Note: The specified dialer-list
number must be the same as the ! -- dialer-group number;
in this example, defined to be "1". ! line con 0
password abc line 1 8 ! -- TTY lines for the NM-8AM
Modems. ! -- Note the line number range matched the
group-range ! -- under the group-async config. modem
InOut ! -- Support incoming and outgoing modem calls.
transport input all autoselect ppp ! -- Launch PPP if
PPP packets are detected. This is used in conjunction !
-- with async mode interactive under the group-async
configuration. flowcontrol hardware line aux 0 line vty
0 4 login !! end

```

注意：在此3600个路由器机箱中，NM-8AM卡在slot0安装。我们能参考[异步线路如何在Cisco 3600系列路由器被编号](#)确定slot 1有线路保留的1到32。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1到8 (八条线路)在该范围内是可用的。要配置在卡的第一个调制解调器，请配置线路1 (和接口异步1)，当最后调制解调器是线路8/接口异步8.时。

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 diag** —要显示路由器的硬件信息，请使用**show diag**命令在特权EXEC模式。特别有用的在线路号或接口号依靠的模块化路由器哪slot NM或WIC插入。
- **show modem version** —此命令为验证调制解调器固件运行版本是有用的在系统的在调制解调器固件升级前后。

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 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 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协商打开LCP状态，然后首先验证和终于协商NCP。

调试输出示例

```
cisco3640#show debug General OS: Modem control/process activation debugging is on PPP: PPP
protocol negotiation debugging is on cisco3640# *Mar 1 00:14:05.479: CSM_ANALOG_MODEM_IDLE:
MODEM_STARTING_CONNECT at slot 0, port 0 ! -- Incoming call *Mar 1 00:14:05.479: Modem 0/0
Mcom: in modem state 'Dialing/Answering' ! -- Modem answers the call *Mar 1 00:14:06.131:
ANALOG_CONNECT_INITIATED: MODEM_ANALOG_CALL_IN at slot 0, port 0 *Mar 1 00:14:06.131: Modem 0/0
Mcom: in modem state 'Incoming ring' *Mar 1 00:14:08.403: Modem 0/0 Mcom: in modem state
'Waiting for Carrier' *Mar 1 00:14:19.807: Modem 0/0 Mcom: in modem state 'Connected' ! --
Modem trainup complete. Note the 10+ seconds the modems took to trainup *Mar 1 00:14:20.363:
ANALOG_CONNECT_INITIATED: MODEM_CONNECTED at slot 0, port 0 *Mar 1 00:14:20.363: Call Handle
failed for Modem 0/0 *Mar 1 00:14:20.363: Modem 0/0 Mcom: CONNECT at 26400/26400(Tx/Rx), V34,
LAPM, V42bis, Answer ! -- Modem speeds, modulation, framing protocol,compression for this ! --
connection are displayed *Mar 1 00:14:21.187: TTY1: DSR came up *Mar 1 00:14:21.187: tty1:
Modem: IDLE->(unknown) *Mar 1 00:14:21.187: TTY1: Autoselect started *Mar 1 00:14:21.187:
TTY1: create timer type 0, 120 seconds *Mar 1 00:14:22.559: TTY1: Autoselect sample 7E *Mar 1
00:14:22.559: TTY1: Autoselect sample 7EFF *Mar 1 00:14:22.559: TTY1: Autoselect sample 7EFF7D
*Mar 1 00:14:22.559: TTY1: Autoselect sample 7EFF7D23 ! -- The router has received a PPP
```

packet. It will now start PPP *Mar 1 00:14:22.559: TTY1 Autoselect cmd: **ppp negotiate ! -- The router kicks off ppp since the command autoselect ppp is ! -- in the line configuration** *Mar 1 00:14:22.559: TTY1: destroy timer type 0 *Mar 1 00:14:22.563: TTY1: EXEC creation *Mar 1 00:14:22.563: TTY1: create timer type 1, 600 seconds *Mar 1 00:14:22.563: TTY1: destroy timer type 1 *Mar 1 00:14:22.563: TTY1: no timer type 0 to destroy *Mar 1 00:14:22.567: As1 IPCP: Install route to 10.1.1.2 *Mar 1 00:14:22.567: As1 IPCP: Add link info for cef entry 10.1.1.2 00:14:24: %LINK-3-UPDOWN: Interface Async1, changed state to up *Mar 1 00:14:24.563: As1 PPP: Treating connection as a callin *Mar 1 00:14:24.563: As1 PPP: Phase is ESTABLISHING, Passive Open *Mar 1 00:14:24.563: As1 **LCP: State is Listen ! -- PPP LCP negotiation begins** *Mar 1 00:14:25.559: As1 LCP: I CONFREQ [Listen] id 2 len 50 *Mar 1 00:14:25.559: As1 LCP: ACCM 0x00000000 (0x020600000000) *Mar 1 00:14:25.559: As1 LCP: MagicNumber 0x7E346973 (0x05067E346973) *Mar 1 00:14:25.559: As1 LCP: PFC (0x0702) *Mar 1 00:14:25.559: As1 LCP: ACFC (0x0802) *Mar 1 00:14:25.559: As1 LCP: Callback 6 (0x0D0306) *Mar 1 00:14:25.559: As1 LCP: MRRU 1614 (0x1104064E) *Mar 1 00:14:25.559: As1 LCP: EndpointDisc 1 Local *Mar 1 00:14:25.559: As1 LCP: (0x1317012531B2C62B044C08A4E6C70075) *Mar 1 00:14:25.563: As1 LCP: (0x69040F00000000) *Mar 1 00:14:25.563: Modem 0/0 Mcom: switching to PPP mode *Mar 1 00:14:25.563: Modem 0/0 Mcom: PPP escape map: Tx map = FFFFFFFF, Rx map = 0 *Mar 1 00:14:25.563: As1 LCP: O CONFREQ [Listen] id 3 len 25 *Mar 1 00:14:25.563: As1 LCP: ACCM 0x000A0000 (0x0206000A0000) *Mar 1 00:14:25.563: As1 LCP: AuthProto CHAP (0x0305C22305) *Mar 1 00:14:25.563: As1 LCP: MagicNumber 0x014F4F18 (0x0506014F4F18) *Mar 1 00:14:25.563: As1 LCP: PFC (0x0702) *Mar 1 00:14:25.563: As1 LCP: ACFC (0x0802) *Mar 1 00:14:25.563: As1 LCP: O CONFREQ [Listen] id 2 len 11 *Mar 1 00:14:25.563: As1 LCP: Callback 6 (0x0D0306) *Mar 1 00:14:25.563: As1 LCP: MRRU 1614 (0x1104064E) *Mar 1 00:14:25.731: As1 LCP: I CONFACK [REQsent] id 3 len 25 *Mar 1 00:14:25.731: As1 LCP: ACCM 0x000A0000 (0x0206000A0000) *Mar 1 00:14:25.731: As1 LCP: AuthProto CHAP (0x0305C22305) *Mar 1 00:14:25.731: As1 LCP: MagicNumber 0x014F4F18 (0x0506014F4F18) *Mar 1 00:14:25.731: As1 LCP: PFC (0x0702) *Mar 1 00:14:25.731: As1 LCP: ACFC (0x0802) *Mar 1 00:14:27.551: As1 LCP: TIMEOUT: State ACKrcvd *Mar 1 00:14:27.551: As1 LCP: O CONFREQ [ACKrcvd] id 4 len 25 *Mar 1 00:14:27.551: As1 LCP: ACCM 0x000A0000 (0x0206000A0000) *Mar 1 00:14:27.551: As1 LCP: AuthProto CHAP (0x0305C22305) *Mar 1 00:14:27.551: As1 LCP: MagicNumber 0x014F4F18 (0x0506014F4F18) *Mar 1 00:14:27.551: As1 LCP: PFC (0x0702) *Mar 1 00:14:27.551: As1 LCP: ACFC (0x0802) *Mar 1 00:14:27.683: As1 LCP: I CONFREQ [REQsent] id 3 len 43 *Mar 1 00:14:27.683: As1 LCP: ACCM 0x00000000 (0x020600000000) *Mar 1 00:14:27.683: As1 LCP: MagicNumber 0x7E346973 (0x05067E346973) *Mar 1 00:14:27.687: As1 LCP: PFC (0x0702) *Mar 1 00:14:27.687: As1 LCP: ACFC (0x0802) *Mar 1 00:14:27.687: As1 LCP: EndpointDisc 1 Local *Mar 1 00:14:27.687: As1 LCP: (0x1317012531B2C62B044C08A4E6C70075) *Mar 1 00:14:27.687: As1 LCP: (0x69040F00000000) *Mar 1 00:14:27.687: As1 LCP: O CONFACK [REQsent] id 3 len 43 *Mar 1 00:14:27.687: As1 LCP: ACCM 0x00000000 (0x020600000000) *Mar 1 00:14:27.687: As1 LCP: MagicNumber 0x7E346973 (0x05067E346973) *Mar 1 00:14:27.687: As1 LCP: PFC (0x0702) *Mar 1 00:14:27.687: As1 LCP: ACFC (0x0802) *Mar 1 00:14:27.687: As1 LCP: EndpointDisc 1 Local *Mar 1 00:14:27.687: As1 LCP: (0x1317012531B2C62B044C08A4E6C70075) *Mar 1 00:14:27.687: As1 LCP: (0x69040F00000000) *Mar 1 00:14:27.691: As1 LCP: I CONFACK [ACKsent] id 4 len 25 *Mar 1 00:14:27.691: As1 LCP: ACCM 0x000A0000 (0x0206000A0000) *Mar 1 00:14:27.691: As1 LCP: AuthProto CHAP (0x0305C22305) *Mar 1 00:14:27.691: As1 LCP: MagicNumber 0x014F4F18 (0x0506014F4F18) *Mar 1 00:14:27.691: As1 LCP: PFC (0x0702) *Mar 1 00:14:27.691: As1 LCP: ACFC (0x0802) *Mar 1 00:14:27.691: As1 **LCP: State is Open ! -- LCP negotiation begins** *Mar 1 00:14:27.691: Modem 0/0 Mcom: PPP escape map: Tx map = 0, Rx map = 0 *Mar 1 00:14:27.691: As1 PPP: Phase is AUTHENTICATING, by this end *Mar 1 00:14:27.691: As1 CHAP: O CHALLENGE id 2 len 30 from "cisco3640" *Mar 1 00:14:27.851: As1 LCP: I IDENTIFY [Open] id 4 len 18 magic 0x7E346973 MSRASV5.00 *Mar 1 00:14:27.863: As1 LCP: I IDENTIFY [Open] id 5 len 28 magic 0x7E346973 MSRAS-W2K *Mar 1 00:14:27.879: As1 CHAP: I RESPONSE id 2 len 24 from "mak" *Mar 1 00:14:27.883: As1 **CHAP: O SUCCESS** id 2 len 4 ! -- CHAP is successful *Mar 1 00:14:27.883: As1 PPP: Phase is UP *Mar 1 00:14:27.883: As1 IPCP: O CONFREQ [Closed] id 2 len 10 *Mar 1 00:14:27.883: As1 IPCP: Address 1.1.1.1 (0x030601010101) *Mar 1 00:14:28.019: As1 CCP: I CONFREQ [Not negotiated] id 6 len 10 *Mar 1 00:14:28.019: As1 CCP: MS-PPC supported bits 0x00000001 (0x120600000001) *Mar 1 00:14:28.019: As1 LCP: O PROTREQ [Open] id 5 len 16 protocol CCP (0x80FD0106000A120600000001) *Mar 1 00:14:28.035: As1 IPCP: I CONFREQ [REQsent] id 7 len 40 *Mar 1 00:14:28.035: As1 IPCP: CompressType VJ 15 slots CompressSlotID (0x0206002D0F01) *Mar 1 00:14:28.035: As1 IPCP: Address 0.0.0.0 (0x030600000000) *Mar 1 00:14:28.035: As1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000) *Mar 1 00:14:28.035: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000) *Mar 1 00:14:28.035: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000) *Mar 1 00:14:28.035: As1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000) *Mar 1 00:14:28.035: As1 IPCP: O CONFREQ [REQsent] id 7 len 22 *Mar 1 00:14:28.035: As1 IPCP: CompressType VJ 15 slots CompressSlotID (0x0206002D0F01) *Mar 1

```
00:14:28.035: As1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000) *Mar 1 00:14:28.039: As1
IPCP: SecondaryWINS 0.0.0.0 (0x840600000000) *Mar 1 00:14:28.039: As1 IPCP: I CONFACK
[REQsent] id 2 len 10 *Mar 1 00:14:28.043: As1 IPCP: Address 1.1.1.1 (0x030601010101) *Mar
1 00:14:28.175: As1 IPCP: I CONFREQ [ACKrcvd] id 8 len 22 *Mar 1 00:14:28.175: As1 IPCP:
Address 0.0.0.0 (0x030600000000) *Mar 1 00:14:28.175: As1 IPCP: PrimaryDNS 0.0.0.0
(0x810600000000) *Mar 1 00:14:28.175: As1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000) *Mar
1 00:14:28.175: As1 IPCP: O CONFNAK [ACKrcvd] id 8 len 22 *Mar 1 00:14:28.175: As1 IPCP:
Address 10.1.1.2 (0x03060A010102) *Mar 1 00:14:28.175: As1 IPCP: PrimaryDNS 5.5.5.1
(0x810605050501) *Mar 1 00:14:28.175: As1 IPCP: SecondaryDNS 5.5.5.2 (0x830605050502) *Mar
1 00:14:28.311: As1 IPCP: I CONFREQ [ACKrcvd] id 9 len 22 *Mar 1 00:14:28.311: As1 IPCP:
Address 10.1.1.2 (0x03060A010102) *Mar 1 00:14:28.311: As1 IPCP: PrimaryDNS 5.5.5.1
(0x810605050501) *Mar 1 00:14:28.311: As1 IPCP: SecondaryDNS 5.5.5.2 (0x830605050502) *Mar
1 00:14:28.311: As1 IPCP: O CONFACK [ACKrcvd] id 9 len 22 *Mar 1 00:14:28.311: As1 IPCP:
Address 10.1.1.2 (0x03060A010102) *Mar 1 00:14:28.311: As1 IPCP: PrimaryDNS 5.5.5.1
(0x810605050501) *Mar 1 00:14:28.311: As1 IPCP: SecondaryDNS 5.5.5.2 (0x830605050502) *Mar
1 00:14:28.311: As1 IPCP: State is Open ! -- IPCP negotiation is complete *Mar 1 00:14:28.311:
As1 IPCP: Add link info for cef entry 10.1.1.2 00:14:28: %LINEPROTO-5-UPDOWN: Line protocol on
Interface Async1, changed state to up
```

[相关信息](#)

- [用 NM-8AM 或 NM-16AM 模拟调制解调器模块配置拨出](#)
- [了解模拟调制解调器网络模块 \(NM-8AM / NM-16AM\)](#)
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