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## 简介

本文为呼叫在使用的远程用户提供一配置示例其中一以下方法。使用V.110呼叫，在每个案件中，回拨被执行。

- 连接3640通过GSM和请求回拨的用户。
- 连接3640通过调制解调器和请求回拨的用户。
- 连接3640通过ISDN (数据)和请求回拨的用户。

**注意：**默认情况下验证、授权和统计(AAA)在路由器配置。您应该也创建用户登陆。

在本例中，我们也设置呼入和拨出的点对点协议(PPP)验证。我们更改脚本一直配置V.110的调制解调器和允许用户选择他们的方法(调制解调器或GSM)。根据选择的方法，用户应该：

- 请使用ZDTxxx在回拨号码(调制解调器)。
- 请使用DIxxxx在回拨号码(GSM)。

## 先决条件

### 要求

本文档没有任何特定的要求。

### 使用的组件

本文档中的信息基于以下软件和硬件版本：

- V.110回叫功能是可用的在罗莎IOS ?? 软件版本12.2(5.2)T和以上。
- 调制解调器软件版本2.7.3.0。

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。如果您使用的是真实网络,请确保您已经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](#)。

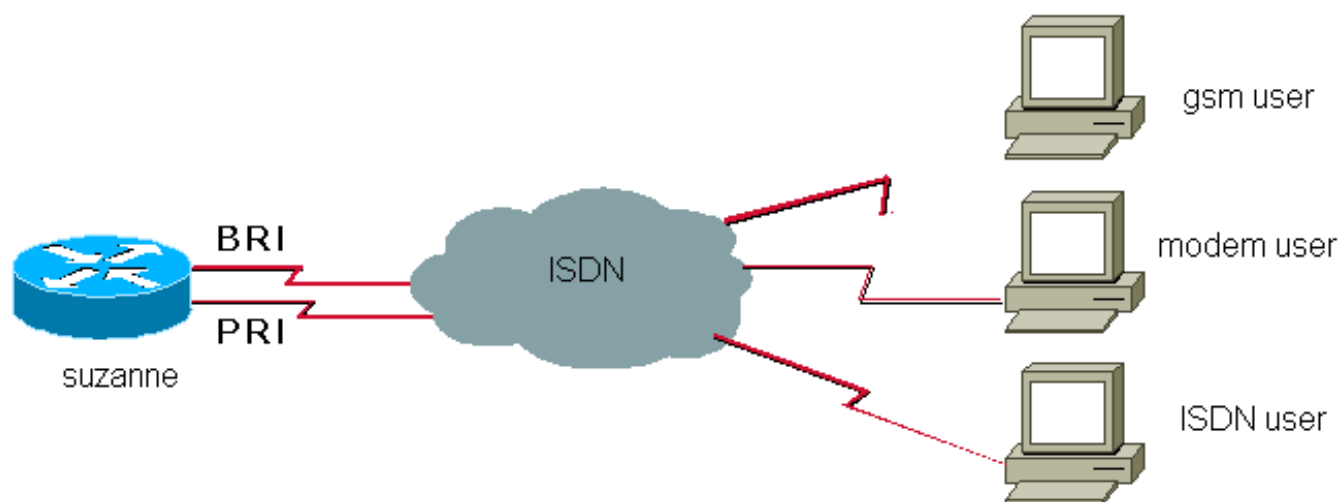
## 配置

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

本文档使用以下配置:

- 苏珊娜

### 苏珊娜

```
suzanne#show running-config! version 12.2 service
internal!hostname suzanne!aaa new-model!aaa
authentication login default localaaa authentication ppp
default localaaa authorization network default local aaa
session-id common !username ww password 0 username
alainisdn password 0 username alaingsm callback-
dialstring "" password 0username alainmod callback-
dialstring "" password 0 !modem country mica belgium !
isdn switch-type primary-net5isdn voice-call-failure
0chat-script offhook "" "ATH1" OKchat-script callback
ABORT ERROR ABORT BUSY "" "AT&F" OK "ATX3DT \T" TIMEOUT
90 \cchat-script callback1analog ABORT ERROR ABORT BUSY
"" "AT&F" OK "ATDT \T" TIMEOUT 90 CONNECT \cchat-script
```

```
callback2gsm ABORT ERROR ABORT BUSY "" "AT&F" OK
"ATS29=8" OK "AT \T" TIMEOUT 90 CONNECT \c!controller E1
1/0pri-group timeslots 1-31!interface Ethernet0/0ip
address 172.17.243.105 255.255.255.0!interface
Serial1/0:15description E1 0451/39920no ip
addressencapsulation pppdialer rotary-group 1isdn
switch-type primary-net5isdn incoming-voice modemisdn
outgoing-voice info-transfer-capability 3.1kHz-audiono
cdp enableppp authentication chap callin !interface
BRI3/1description belgacom 027202094no ip
addressencapsulation pppisdn switch-type basic-net3isdn
incoming-voice modemno cdp enable! interface Group-
Async1ip unnumbered Dialer1encapsulation pppdialer in-
banddialer callback-securedialer-group 1asyn dynamic
routingasyn mode interactivepeer default ip address
pool poolppp callback acceptppp authentication papgroup-
range 65 94!interface Dialer1description Dial-In Userip
address 172.31.1.1 255.255.0.0ip helper-address
90.100.48.38ip helper-address 90.100.60.202encapsulation
pppdialer in-banddialer callback-securedialer map ip
172.31.1.2 name alainisdn class callback 6136peer
default ip address pool poolno cdp enableppp callback
acceptppp authentication chap callin !map-class dialer
callbackdialer callback-server usernamedialer-list 1
protocol ip permit!line con 0exec-timeout 0
0passwordline 65 94script dialer callback2gsmscript
callback callback2gsmmodem InOuttransport input
telnettransport output pad v120 lapb-ta telnet rlogin
udptnautoselect during-loginautoselect pppstopbits
1flowcontrol hardwareline aux 0passwordline vty 0 4exec-
timeout 0 0password !end
```

## 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 ip route ? ? ?** 显示IP路由表的内容

## 故障排除

本部分提供的信息可用于对配置进行故障排除。

**注意：** 在您发出调试指令前，参考[关于调试指令的重要信息](#)。

- **debug modem ?** 观察在接入服务器的调制解调器线路活动。
- **debug dialer events ?** 显示关于在拨号接口接收的数据包的调试信息。
- **debug ppp authentication ?** 显示认证协议消息，包括质询验证协议(CHAP)信息包交换和密码认证协议交换。
- **debug ppp cbcp ?** 显示协议错误和统计信息关联与PPP连接协商使用微软回叫控制协议(MSCB)。
- **debug isdn q931 ?** 显示关于呼叫建立及拆线的信息ISDN网络连接(在本地路由器(用户端)和网络之间的层3)。

- **debug chat** ? 验证对话脚本正常运行。
- **debug callback** ? 当路由器使用一个调制解调器和一个对话脚本呼叫在终端线路时的上一步显示回拨事件。

## 调试输出示例

### 使用 V.110 的 GSM 回叫

```
suzanne#01:03:00: ISDN BR3/1: RX <- SETUP pd = 8 callref = 0x2F01:03:00: Sending
Complete01:03:00: Bearer Capability i = 0x9090A301:03:00: Channel ID i = 0x8901:03:00: Calling
Party Number i = 0x21, 0x83, '478681006', Plan:ISDN, Type:National01:03:00: Called Party Number
i = 0xA1, '27202094', Plan:ISDN, Type:National01:03:00: ISDN BR3/1: Event: Received a VOICE call
from 478681006 on B1 at 64 Kb/s01:03:00: ISDN BR3/1: Event: Accepting the call id 0x1901:03:00:
%ISDN-6-LAYER2UP: Layer 2 for Interface BR3/1, TEI 70 changed to up01:03:00: ISDN BR3/1: TX ->
CALL_PROC pd = 8 callref = 0xAF01:03:00: Channel ID i = 0x8901:03:00: ISDN BR3/1: TX -> ALERTING
pd = 8 callref = 0xAF01:03:00: ISDN BR3/1: TX -> CONNECT pd = 8 callref = 0xAF01:03:01: ISDN
BR3/1: RX <- CONNECT_ACK pd = 8 callref = 0x2F01:03:01: Modem 2/12 Mica: configured for Answer
mode, with Null signaling,0x0 tone detection.01:03:01: Modem 2/12 Mica: in modem state
CALL_SETUP01:03:02: Modem 2/12 Mica: in modem state CONNECT01:03:06: Modem 2/12 Mica: in modem
state LINK01:03:07: %ISDN-6-CONNECT: Interface BRI3/1:1 is now connected to 478681006
01:03:15: Modem 2/12 Mica: in modem state TRAINUP01:03:17: Modem 2/12 Mica: in modem state
EC_NEGOTIATING01:03:18: Modem 2/12 Mica: in modem state STEADY01:03:18: Modem 2/12 Mica: CONNECT
at 31200/31200 (Tx/Rx), V34+, LAPM, None01:03:19: TTY77: DSR came up01:03:19: tty77: Modem:
IDLE->(unknown)01:03:19: TTY77: EXEC creation01:03:19: TTY77: set timer type 10, 30
seconds01:03:19: TTY77: Autoselect(2) sample 7E01:03:19: TTY77: Autoselect(2) sample
7EFF01:03:19: TTY77: Autoselect(2) sample 7EFF7D01:03:19: TTY77: Autoselect(2) sample
7EFF7D2301:03:19: TTY77 Autoselect cmd: ppp negotiate01:03:19: TTY77: EXEC creation01:03:19:
TTY77: create timer type 1, 600 seconds01:03:19: TTY77: destroy timer type 101:03:19: TTY77: no
timer type 0 to destroy01:03:19: As77 DDR: Dialer received incoming call from <unknown>01:03:21:
%LINK-3-UPDOWN: Interface Async77, changed state to up01:03:21: As77 DDR: Dialer statechange to
up01:03:21: As77 DDR: Dialer received incoming call from <unknown>01:03:21: As77 PPP: Treating
connection as a callin01:03:21: As77 PPP: Authorization required01:03:22: Modem 2/12 Mica: PPP
escape_map: Tx map = FFFFFFFF, Rx map = 001:03:22: As77 PPP: Authorization required01:03:27:
Modem 2/12 Mica: PPP escape_map: Tx map = A0000, Rx map = 001:03:27: As77 MCB:
Initialize01:03:27: MCB: Flush01:03:27: Modem 2/12 Mica: Bad RX Frame: control = 0xE007, length
= 0xD, buffer = 0x3BC6E5401:03:30: As77 PAP: I AUTH-REQ id 2 len 16 from "alaingsm"01:03:30:
As77 PAP: Authenticating peer alaingsm01:03:30: As77 PPP: Sent PAP LOGIN Request to AAA01:03:30:
As77 PPP: Received LOGIN Response from AAA = PASS01:03:30: As77 DDR: Remote name for
alaingsm01:03:30: As77 DDR: Authenticated host alaingsm with no matching dialer map01:03:30:
As77 PAP: O AUTH-ACK id 2 len 501:03:30: As77 MCB: Start01:03:30: As77 MCB: User alaingsm
Callback Number - Client ANY01:03:30: As77 MCB: Newstate 0-INIT -> 2-WAIT_RESPONSE01:03:30: As77
MCB: O Request Id 1 Callback Type Client-Num delay 001:03:32: As77 MCB: Timeout in state
WAIT_RESPONSE sending new Request 201:03:32: As77 MCB: O Request Id 2 Callback Type Client-Num
delay 001:03:34: As77 MCB: Timeout in state WAIT_RESPONSE sending new Request 301:03:34: As77
MCB: O Request Id 3 Callback Type Client-Num delay 001:03:35: Async77 PPP: I MCB Response(2) id
1 len 2201:03:35: Async77 MCB: I 2 1 0 16 2 12 F 1 44 49 30 30 34 37 38 36 38 31 30 30 36 0
01:03:35: As77 MCB: Received response01:03:35: As77 MCB: Resp ignored. ID Expected 3, got id
101:03:36: As77 MCB: Timeout in state WAIT_RESPONSE sending new Request 401:03:36: As77 MCB: O
Request Id 4 Callback Type Client-Num delay 001:03:36: Async77 PPP: I MCB Response(2) id 4 len
2201:03:36: Async77 MCB: I 2 4 0 16 2 12 F 1 44 49 30 30 34 37 38 36 38 31 30 30 36 0 01:03:36:
As77 MCB: Received response !--- You can see here that "DI00478681006" was entered at the user
PC. 01:03:36: As77 MCB: Response CBK-Client-Num 2 18 15, addr 1-DI0047868100601:03:36: As77 MCB:
O Ack Id 5 Callback Type Client-Num delay 1501:03:36: As77 MCB: Negotiated MCB with
peer01:03:36: As77 MCB: Newstate 2-WAIT_RESPONSE -> 3-WAIT_TERMINATE01:03:37: As77 MCB: Peer
terminating the link01:03:37: As77 MCB: Newstate 3-WAIT_TERMINATE -> 5-WAIT_LINKDOWN01:03:37:
As77 MCB: Link terminated by peer, Callback Needed01:03:37: As77 MCB: Newstate 5-WAIT_LINKDOWN -
-> 6-CALLING01:03:37: As77 MCB: Initiate Callback for ^->o`iB@ at DI00478681006 using Async
DDR01:03:37: As77 DDR: PPP callback Callback server starting to alaingsm DI0047868100601:03:37:
As77 MCB: Dialer callback started !--- Call is disconnected.01:03:38: Modem 2/12 Mica: in modem
state SS_RETRAINING01:03:38: ISDN BR3/1: RX <- DISCONNECT pd = 8 callref = 0x2F01:03:38: Cause i
```

= 0x8090 - Normal call clearing01:03:38: Progress Ind i = 0x8088 - In-band info or appropriate now available 01:03:38: %ISDN-6-DISCONNECT: Interface BRI3/1:1 disconnected from 478681006, call lasted 37 seconds01:03:38: ISDN BR3/1: TX -> RELEASE pd = 8 callref = 0xAF01:03:38: Cause i = 0x8090 - Normal call clearing01:03:38: Modem 2/12 Mica: in modem state TERMINATING01:03:38: ISDN BR3/1: RX <- RELEASE\_COMP pd = 8 callref = 0x2F01:03:39: TTY77: Async Int reset: Dropping DTR01:03:39: Modem 2/12 Mica: PPP escape\_map: Tx map = FFFFFFFF, Rx map = 001:03:39: As77 PPP: Authorization required01:03:40: Modem 2/12 Mica: in modem state IDLE01:03:40: Modem 2/12 Mica: DISCONNECT after 00:00:38, due to reason (0xDF00) Host Disconnect.01:03:40: TTY77: DSR was dropped01:03:40: tty77: Modem: READY->(unknown)01:03:41: TTY77: dropping DTR, hanging up01:03:41: tty77: Modem: HANGUP->(unknown)01:03:41: %LINK-5-CHANGED: Interface Async77, changed state to reset01:03:42: TTY77: cleanup pending. Delaying DTR01:03:43: TTY77: cleanup pending. Delaying DTR01:03:44: TTY77: cleanup pending. Delaying DTR01:03:44: TTY77: no timer type 0 to destroy01:03:44: TTY77: no timer type 1 to destroy01:03:44: TTY77: no timer type 3 to destroy01:03:44: TTY77: no timer type 4 to destroy01:03:44: TTY77: no timer type 2 to destroy01:03:44: Async77: allowing modem\_process to continue hangup01:03:45: TTY77: restoring DTR01:03:46: %LINK-3-UPDOWN: Interface Async77, changed state to down01:03:53: %ISDN-6-LAYER2DOWN: Layer 2 for Interface BR3/1, TEI 70 changed to down!--- *Callback is started.*01:03:56: As77 DDR: re-enable timeout01:03:56: DDR: callback triggered by dialer\_timers01:03:56: As77 DDR: beginning callback to alaingsm DI0047868100601:03:56: As77 DDR: Attempting to dial DI0047868100601:03:56: CHAT77: Attempting async line dialer script01:03:56: CHAT77: Dialing using Modem script: callback2gsm & System script: none01:03:56: CHAT77: process started01:03:56: CHAT77: Asserting DTR01:03:56: CHAT77: Chat script callback2gsm started01:03:56: CHAT77: Sending string: AT&F01:03:56: CHAT77: Expecting string: OK01:03:56: CHAT77: Completed match for expect: OK01:03:56: CHAT77: Sending string: ATS29=801:03:56: CHAT77: Expecting string: OK 01:03:56: CHAT77: Completed match for expect: OK!--- *We send DI00478681006*01:03:56: CHAT77: Sending string: AT \T<DI00478681006>01:03:56: CHAT77: Expecting string: CONNECT01:03:56: Modem 2/12 Mica: configured for Originate mode, with Null signaling, 0x1 tone detection.01:03:56: Modem 2/12 Mica: received dialstring 0047868100601:03:56: ISDN Se1/0:15: TX -> SETUP pd = 8 callref = 0x000E01:03:56: Bearer Capability i = 0x8890214846BB01:03:56: Channel ID i = 0xA9839F01:03:56: Called Party Number i = 0x81, '00478681006', Plan:ISDN, Type:Unknown01:03:56: Low Layer Compat i = 0x8890214846BB01:03:56: ISDN Se1/0:15: RX <- CALL\_PROC pd = 8 callref = 0x800E01:03:56: Channel ID i = 0xA9839F01:03:56: Modem 2/12 Mica: in modem state CALL\_SETUP01:04:02: ISDN Se1/0:15: RX <- ALERTING pd = 8 callref = 0x800E01:04:03: ISDN Se1/0:15: RX <- CONNECT pd = 8 callref = 0x800E01:04:03: ISDN Se1/0:15: TX -> CONNECT\_ACK pd = 8 callref = 0x000E01:04:03: Modem 2/12 Mica: in modem state CONNECT01:04:03: Modem 2/12 Mica: in modem state LINK01:04:03: Modem 2/12 Mica: in modem state TRAINUP01:04:03: Modem 2/12 Mica: in modem state EC\_NEGOTIATING01:04:03: Modem 2/12 Mica: in modem state STEADY01:04:03: CHAT77: Completed match for expect: CONNECT01:04:03: CHAT77: Sending string: \c01:04:03: CHAT77: Chat script callback2gsm finished, status = Success01:04:03: TTY77: no timer type 1 to destroy01:04:03: TTY77: no timer type 0 to destroy01:04:03: Modem 2/12 Mica: CONNECT at 9600/9600 (Tx/Rx), V110, V.110, None01:04:04: As77 PPP: Treating connection as a callout01:04:04: Modem 2/12 Mica: PPP escape\_map: Tx map = FFFFFFFF, Rx map = 001:04:04: As77 PPP: Authorization required01:04:04: %LINK-3-UPDOWN: Interface Async77, changed state to up01:04:04: As77 DDR: Dialer statechange to up01:04:04: As77 DDR: Copying MS callback dialstring DI00478681006 to ddb01:04:04: DDR: Freeing callback to alaingsm DI0047868100601:04:04: As77 DDR: Dialer call has been placed01:04:08: Modem 2/12 Mica: PPP escape\_map: Tx map = A0000, Rx map = 001:04:08: As77 MCB: Initialize01:04:08: Modem 2/12 Mica: Bad RX Frame: control = 0xE007, length = 0xD, buffer = 0x3BC6E5401:04:09: %ISDN-6-CONNECT: Interface Serial1/0:30 is now connected to 00478681006 01:04:11: As77 PAP: I AUTH-REQ id 2 len 16 from "alaingsm"01:04:11: As77 PAP: Authenticating peer alaingsm01:04:11: As77 PPP: Sent PAP LOGIN Request to AAA01:04:11: As77 PPP: Received LOGIN Response from AAA = PASS01:04:11: As77 DDR: Remote name for alaingsm01:04:11: As77 DDR: Authenticated host alaingsm with no matching dialer map01:04:11: As77 PAP: O AUTH-ACK id 2 len 501:04:13: As77 DDR: dialer protocol up susanne#**show ip route**Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGPD - 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 - EGPi - 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 - ODRP - periodic downloaded static route Gateway of last resort is 172.17.243.1 to network 0.0.0.0172.17.0.0/24 is subnetted, 1 subnetsC 172.17.243.0 is directly connected, Ethernet0/0172.31.0.0/16 is variably subnetted, 2 subnets, 2 masksC 172.31.1.28/32 is directly connected, Async77C 172.31.0.0/16 is directly connected, Dialer1S\* 0.0.0.0/0 [1/0] via 172.17.243.1 susanne#**ping 172.31.1.28**Type escape sequence to abort.Sending 5, 100-byte ICMP Echos to 172.31.1.28, timeout is 2 seconds:!!!!Success rate is 100 percent (5/5), round-trip min/avg/max = 784/858/880 ms susanne#01:04:49: ISDN Se1/0:15: RX <- DISCONNECT pd = 8 callref

= 0x800E01:04:49: Cause i = 0x8090 - Normal call clearing01:04:49: %ISDN-6-DISCONNECT: Interface Serial1/0:30 disconnected from 00478681006, call lasted 46 seconds01:04:49: ISDN Se1/0:15: TX -> RELEASE pd = 8 callref = 0x000E01:04:49: Modem 2/12 Mica: in modem state TERMINATING01:04:49: ISDN Se1/0:15: RX <- RELEASE\_COMP pd = 8 callref = 0x800E01:04:49: Modem 2/12 Mica: in modem state IDLE01:04:49: Modem 2/12 Mica: DISCONNECT after 00:00:46, due to reason (0xDF00) Host Disconnect.01:04:50: TTY77: DSR was dropped01:04:50: tty77: Modem: READY->(unknown)01:04:51: TTY77: Async Int reset: Dropping DTR01:04:51: Modem 2/12 Mica: PPP escape\_map: Tx map = FFFFFFFF, Rx map = 001:04:51: As77 PPP: Authorization required01:04:51: TTY77: dropping DTR, hanging up01:04:51: tty77: Modem: HANGUP->(unknown)01:04:52: TTY77: cleanup pending. Delaying DTR01:04:53: %LINK-5-CHANGED: Interface Async77, changed state to reset01:04:53: TTY77: cleanup pending. Delaying DTR01:04:54: TTY77: cleanup pending. Delaying DTR01:04:55: TTY77: cleanup pending. Delaying DTR01:04:56: TTY77: no timer type 0 to destroy01:04:56: TTY77: no timer type 1 to destroy01:04:56: TTY77: no timer type 3 to destroy01:04:56: TTY77: no timer type 4 to destroy01:04:56: TTY77: no timer type 2 to destroy01:04:56: Async77: allowing modem\_process to continue hangup01:04:56: TTY77: restoring DTR01:04:58: %LINK-3-UPDOWN: Interface Async77, changed state to down01:05:08: As77 DDR: re-enable timeout

## 使用 V.110 的调制解调器回叫

!--- Modem callback using default of MICA (modem dialing US robotics).suzanne#01:06:21: ISDN Se1/0:15: RX <- SETUP pd = 8 callref = 0x6D7301:06:21: Sending Complete01:06:21: Bearer Capability i = 0x9090A301:06:21: Channel ID i = 0xA1838701:06:21: Progress Ind i = 0x8183 - Origination address is non-ISDN 01:06:21: Calling Party Number i = 0xA1, '6020', Plan:ISDN, Type:National01:06:21: Called Party Number i = 0x81, '214', Plan:ISDN, Type:Unknown01:06:21: ISDN Se1/0:15: TX -> CALL\_PROC pd = 8 callref = 0xED7301:06:21: Channel ID i = 0xA9838701:06:21: ISDN Se1/0:15: TX -> ALERTING pd = 8 callref = 0xED7301:06:21: ISDN Se1/0:15: TX -> CONNECT pd = 8 callref = 0xED7301:06:21: ISDN Se1/0:15: RX <- CONNECT\_ACK pd = 8 callref = 0x6D7301:06:21: ISDN Se1/0:15: CALL\_PROGRESS: CALL\_CONNECTED call id 0x1A, bchan 6, dsl 001:06:21: Modem 2/13 Mica: configured for Answer mode, with Null signaling, 0x0 tone detection.01:06:21: Modem 2/13 Mica: in modem state CALL\_SETUP01:06:22: Modem 2/13 Mica: in modem state CONNECT01:06:26: Modem 2/13 Mica: in modem state LINK01:06:27: %ISDN-6-CONNECT: Interface Serial1/0:6 is now connected to 6020 01:06:34: Modem 2/13 Mica: in modem state TRAINUP01:06:36: Modem 2/13 Mica: in modem state EC\_NEGOTIATING01:06:36: Modem 2/13 Mica: in modem state STEADY01:06:36: Modem 2/13 Mica: CONNECT at 9600/9600 (Tx/Rx), V34+, LAPM, None01:06:37: TTY78: DSR came up01:06:37: tty78: Modem: IDLE->(unknown)01:06:37: TTY78: EXEC creation01:06:37: TTY78: set timer type 10, 30 seconds01:06:40: TTY78: Autoselect(2) sample 7E01:06:40: TTY78: Autoselect(2) sample 7EFF01:06:40: TTY78: Autoselect(2) sample 7EFF7D01:06:40: TTY78: Autoselect(2) sample 7EFF7D2301:06:40: TTY78 Autoselect cmd: ppp negotiate01:06:40: TTY78: EXEC creation01:06:40: TTY78: create timer type 1, 600 seconds01:06:40: TTY78: destroy timer type 101:06:40: TTY78: no timer type 0 to destroy01:06:40: As78 DDR: Dialer received incoming call from <unknown>01:06:42: %LINK-3-UPDOWN: Interface Async78, changed state to up01:06:42: As78 DDR: Dialer statechange to up01:06:42: As78 DDR: Dialer received incoming call from <unknown>01:06:42: As78 PPP: Treating connection as a callin01:06:42: As78 PPP: Authorization required01:06:43: Modem 2/13 Mica: PPP escape\_map: Tx map = FFFFFFFF, Rx map = 001:06:43: As78 PPP: Authorization required01:06:47: Modem 2/13 Mica: PPP escape\_map: Tx map = A0000, Rx map = 001:06:47: As78 MCB: Initialize 01:06:47: MCB: Flush01:06:47: Modem 2/13 Mica: Bad RX Frame: control = 0xE007, length = 0xE, buffer = 0x3BC901401:06:50: As78 PAP: I AUTH-REQ id 2 len 16 from "alainmod"01:06:50: As78 PAP: Authenticating peer alainmod01:06:50: As78 PPP: Sent PAP LOGIN Request to AAA01:06:50: As78 PPP: Received LOGIN Response from AAA = PASS01:06:50: As78 DDR: Remote name for alainmod01:06:50: As78 DDR: Authenticated host alainmod with no matching dialer map01:06:50: As78 PAP: O AUTH-ACK id 2 len 501:06:50: As78 MCB: Start01:06:50: As78 MCB: User alainmod Callback Number - Client ANY01:06:50: As78 MCB: Newstate 0-INIT -> 2-WAIT\_RESPONSE01:06:50: As78 MCB: O Request Id 1 Callback Type Client-Num delay 001:06:52: As78 MCB: Timeout in state WAIT\_RESPONSE sending new Request 201:06:52: As78 MCB: O Request Id 2 Callback Type Client-Num delay 001:06:54: As78 MCB: Timeout in state WAIT\_RESPONSE sending new Request 301:06:54: As78 MCB: O Request Id 3 Callback Type Client-Num delay 001:06:54: Async78 PPP: I MCB Response(2) id 1 len 1701:06:54: Async78 MCB: I 2 1 0 11 2 D F 1 5A 44 54 20 36 30 32 30 0 01:06:54: As78 MCB: Received response01:06:54: As78 MCB: Resp ignored. ID Expected 3, got id 101:06:56: As78 MCB: Timeout in state WAIT\_RESPONSE sending new Request 401:06:56: As78 MCB: O Request Id 4 Callback Type Client-Num delay 001:06:56: Async78 PPP: I MCB Response(2) id 4 len 1701:06:56: Async78 MCB: I 2 4 0 11 2 D F 1 5A 44 54 20 36 30 32 30 0 01:06:56: As78 MCB: Received response01:06:56: As78 MCB: Response CBK-Client-Num 2 13 15, addr 1-ZDT 602001:06:56: As78 MCB: O Ack Id 5 Callback Type Client-Num delay 1501:06:56: As78 MCB: Negotiated MCB with peer01:06:56: As78 MCB: Newstate 2-WAIT\_RESPONSE -> 3-WAIT\_TERMINATE01:06:56: As78 MCB: Peer terminating the link01:06:56: As78 MCB: Newstate 3-

WAIT\_TERMINATE -> 5-WAIT\_LINKDOWN01:06:56: As78 MCB: Link terminated by peer, Callback  
Needed01:06:56: As78 MCB: Newstate 5-WAIT\_LINKDOWN -> 6-CALLING01:06:56: As78 MCB: Initiate  
Callback for ^->o`iB@ at ZDT 6020 using Async DDR01:06:56: As78 DDR: PPP callback Callback  
server starting to alainmod ZDT 602001:06:56: As78 MCB: Dialer callback started01:06:57: Modem  
2/13 Mica: in modem state TERMINATING01:06:57: Modem 2/13 Mica: in modem state IDLE01:06:57:  
%ISDN-6-DISCONNECT: Interface Serial1/0:6 disconnected from 6020, call lasted 36  
seconds01:06:57: ISDN Se1/0:15: TX -> DISCONNECT pd = 8 callref = 0xED7301:06:57: Cause i =  
0x8090 - Normal call clearing01:06:57: Modem 2/13 Mica: DISCONNECT after 00:00:35, due to reason  
(0x8220) EC rcvd DISC frame. 01:06:57: TTY78: DSR was dropped01:06:57: tty78: Modem: READY-  
>(unknown)01:06:57: ISDN Se1/0:15: RX <- RELEASE pd = 8 callref = 0x6D7301:06:57: ISDN Se1/0:15:  
TX -> RELEASE\_COMP pd = 8 callref = 0xED7301:06:58: TTY78: dropping DTR, hanging up01:06:58:  
TTY78: Async Int reset: Dropping DTR01:06:58: tty78: Modem: HANGUP->(unknown)01:06:59: TTY78:  
cleanup pending. Delaying DTR01:06:59: Modem 2/13 Mica: PPP escape\_map: Tx map = FFFFFFFF, Rx  
map = 001:06:59: As78 PPP: Authorization required01:07:00: %LINK-5-CHANGED: Interface Async78,  
changed state to reset01:07:00: TTY78: cleanup pending. Delaying DTR01:07:01: TTY78: cleanup  
pending. Delaying DTR01:07:02: TTY78: cleanup pending. Delaying DTR01:07:03: TTY78: no timer  
type 0 to destroy01:07:03: TTY78: no timer type 1 to destroy01:07:03: TTY78: no timer type 3 to  
destroy01:07:03: TTY78: no timer type 4 to destroy01:07:03: TTY78: no timer type 2 to  
destroy01:07:03: Async78: allowing modem\_process to continue hangup01:07:03: TTY78: restoring  
DTR01:07:05: %LINK-3-UPDOWN: Interface Async78, changed state to down01:07:15: As78 DDR: re-  
enable timeout!--- *Callback start.*01:07:15: DDR: callback triggered by dialer\_timers01:07:15:  
As78 DDR: beginning callback to alainmod ZDT 602001:07:15: As78 DDR: Attempting to dial ZDT  
602001:07:15: CHAT78: Attempting async line dialer script01:07:15: CHAT78: Dialing using Modem  
script: callback2gsm & System script: none01:07:15: CHAT78: process started01:07:15: CHAT78:  
Asserting DTR01:07:15: CHAT78: Chat script callback2gsm started01:07:15: CHAT78: Sending string:  
AT&F01:07:15: CHAT78: Expecting string: OK01:07:15: CHAT78: Completed match for expect:  
OK01:07:15: CHAT78: Sending string: AT529=801:07:15: CHAT78: Expecting string: OK01:07:15:  
CHAT78: Completed match for expect: OK *!--- The user entered "ZDT 6020". This is what we  
send:*01:07:15: CHAT78: Sending string: AT \T<ZDT 6020> 01:07:15: CHAT78: Expecting string:  
CONNECT01:07:15: Modem 2/13 Mica: configured for Originate mode, with Null signaling, 0x1 tone  
detection.01:07:15: Modem 2/13 Mica: received dialstring 602001:07:15: ISDN Se1/0:15: TX ->  
SETUP pd = 8 callref = 0x000F01:07:15: Bearer Capability i = 0x9090A301:07:15: Channel ID i =  
0xA9839F01:07:15: Called Party Number i = 0x81, '6020', Plan:ISDN, Type:Unknown01:07:15: ISDN  
Se1/0:15: RX <- CALL\_PROC pd = 8 callref = 0x800F01:07:15: Channel ID i = 0xA9839F01:07:15: ISDN  
Se1/0:15: RX <- ALERTING pd = 8 callref = 0x800F01:07:15: Modem 2/13 Mica: in modem state  
CALL\_SETUP01:07:16: Modem 2/13 Mica: Detected Dial tone01:07:17: ISDN Se1/0:15: RX <- CONNECT pd  
= 8 callref = 0x800F01:07:17: Progress Ind i = 0x8182 - Destination address is non-ISDN  
01:07:17: Connected Number i = 0xA13630323001:07:17: ISDN Se1/0:15: TX -> CONNECT\_ACK pd = 8  
callref = 0x000F01:07:17: Modem 2/13 Mica: in modem state CONNECT01:07:19: Modem 2/13 Mica: in  
modem state LINK01:07:23: %ISDN-6-CONNECT: Interface Serial1/0:30 is now connected to 6020  
01:07:26: Modem 2/13 Mica: in modem state TRAINUP01:07:28: Modem 2/13 Mica: in modem state  
EC\_NEGOTIATING01:07:28: Modem 2/13 Mica: in modem state STEADY01:07:28: CHAT78: Completed match  
for expect: CONNECT01:07:28: CHAT78: Sending string: \c01:07:28: CHAT78: Chat script  
callback2gsm finished, status = Success01:07:28: TTY78: no timer type 1 to destroy01:07:28:  
TTY78: no timer type 0 to destroy01:07:28: Modem 2/13 Mica: CONNECT at 33600/31200 (Tx/Rx),  
V34+, LAPM, None01:07:28: As78 PPP: Treating connection as a callout01:07:28: Modem 2/13 Mica:  
PPP escape\_map: Tx map = FFFFFFFF, Rx map = 001:07:28: As78 PPP: Authorization required01:07:28:  
%LINK-3-UPDOWN: Interface Async78, changed state to up01:07:28: As78 DDR: Dialer statechange to  
up01:07:28: As78 DDR: Copying MS callback dialstring ZDT 6020 to ddb01:07:28: DDR: Freeing  
callback to alainmod ZDT 602001:07:28: As78 DDR: Dialer call has been placed01:07:29: Modem 2/13  
Mica: PPP escape\_map: Tx map = A0000, Rx map = 001:07:29: As78 MCB: Initialize01:07:29: As78  
PAP: I AUTH-REQ id 1 len 16 from "alainmod"01:07:29: As78 PAP: Authenticating peer  
alainmod01:07:29: As78 PPP: Sent PAP LOGIN Request to AAA01:07:29: As78 PPP: Received LOGIN  
Response from AAA = PASS01:07:29: As78 DDR: Remote name for alainmod01:07:29: As78 DDR:  
Authenticated host alainmod with no matching dialer map01:07:29: As78 PAP: O AUTH-ACK id 1 len  
501:07:29: As78 DDR: dialer protocol up01:07:29: %LINEPROTO-5-UPDOWN: Line protocol on Interface  
Async78, changed state to up **suzanne#show ip route**Codes: C - connected, S - static, I - IGRP, R  
- RIP, M - mobile, B - BGPD - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area N1 -  
OSPF NSSA external type 1, N2 - OSPF NSSA external type 2E1 - OSPF external type 1, E2 - OSPF  
external type 2, E - EGPI - 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 - ODRP - periodic downloaded static  
routeGateway of last resort is 172.17.243.1 to network 0.0.0.0/172.17.0.0/24 is subnetted, 1  
subnetsC 172.17.243.0 is directly connected, Ethernet0/0172.31.0.0/16 is variably subnetted, 2  
subnets, 2 masksC 172.31.1.19/32 is directly connected, Async78C 172.31.0.0/16 is directly

connected, Dialer1S\* 0.0.0.0/0 [1/0] via 172.17.243.1 suzanne#ping 172.31.1.19Type escape  
sequence to abort.Sending 5, 100-byte ICMP Echos to 172.31.1.19, timeout is 2  
seconds:!!!!Success rate is 100 percent (5/5), round-trip min/avg/max = 356/372/396 ms  
suzanne#01:08:08: Modem 2/13 Mica: in modem state TERMINATING01:08:08: Modem 2/13 Mica: in modem  
state IDLE01:08:08: Modem 2/13 Mica: DISCONNECT after 00:00:51, due to reason (0x8220) EC rcvd  
DISC frame.01:08:08: %ISDN-6-DISCONNECT: Interface Serial1/0:30 disconnected from 6020, call  
lasted 51 seconds01:08:08: ISDN Se1/0:15: TX -> DISCONNECT pd = 8 callref = 0x000F01:08:08:  
Cause i = 0x8090 - Normal call clearing01:08:08: ISDN Se1/0:15: RX <- RELEASE pd = 8 callref =  
0x800F01:08:08: ISDN Se1/0:15: TX -> RELEASE\_COMP pd = 8 callref = 0x000F01:08:09: TTY78: DSR  
was dropped01:08:09: tty78: Modem: READY->(unknown)01:08:09: %LINEPROTO-5-UPDOWN: Line protocol  
on Interface Async78, changed state to down01:08:10: TTY78: dropping DTR, hanging up01:08:10:  
TTY78: Async Int reset: Dropping DTR01:08:10: tty78: Modem: HANGUP->(unknown)01:08:10: Modem  
2/13 Mica: PPP escape\_map: Tx map = FFFFFFFF, Rx map = 001:08:10: As78 PPP: Authorization  
required01:08:11: TTY78: cleanup pending. Delaying DTR01:08:12: %LINK-5-CHANGED: Interface  
Async78, changed state to reset01:08:12: TTY78: cleanup pending. Delaying DTR01:08:13: TTY78:  
cleanup pending. Delaying DTR01:08:14: TTY78: cleanup pending. Delaying DTR01:08:15: TTY78: no  
timer type 0 to destroy01:08:15: TTY78: no timer type 1 to destroy01:08:15: TTY78: no timer type  
3 to destroy01:08:15: TTY78: no timer type 4 to destroy01:08:15: TTY78: no timer type 2 to  
destroy01:08:15: Async78: allowing modem\_process to continue hangup01:08:15: TTY78: restoring  
DTR01:08:17: %LINK-3-UPDOWN: Interface Async78, changed state to down01:08:27: As78 DDR: re-  
enable timeout

## 使用 V.110 的 ISDN 回叫

!--- Receive call.suzanne#01:09:00: ISDN Se1/0:15: RX <- SETUP pd = 8 callref = 0x6F2801:09:00:  
Sending Complete01:09:00: Bearer Capability i = 0x889001:09:00: Channel ID i = 0xA1838801:09:00:  
Calling Party Number i = 0xA1, '6136', Plan:ISDN, Type:National01:09:00: Called Party Number i =  
0x81, '214', Plan:ISDN, Type:Unknown01:09:00: %LINK-3-UPDOWN: Interface Serial1/0:7, changed  
state to up01:09:00: ISDN Se1/0:15: TX -> CALL\_PROC pd = 8 callref = 0xEF2801:09:00: Channel ID  
i = 0xA9838801:09:00: ISDN Se1/0:15: TX -> CONNECT pd = 8 callref = 0xEF2801:09:00: Channel ID i  
= 0xA9838801:09:00: Se1/0:7 PPP: Treating connection as a callin01:09:00: Se1/0:7 PPP:  
Authorization required01:09:00: ISDN Se1/0:15: RX <- CONNECT\_ACK pd = 8 callref =  
0x6F2801:09:00: ISDN Se1/0:15: CALL\_PROGRESS: CALL\_CONNECTED call id 0x1B, bchan 7, dsl  
001:09:01: Se1/0:7 PPP: Authorization required01:09:01: Se1/0:7 MCB: Initialize01:09:01: Se1/0:7  
CHAP: O CHALLENGE id 1 len 28 from "suzanne"01:09:01: Se1/0:7 CHAP: I RESPONSE id 1 len 30 from  
"alainisdn"01:09:01: Se1/0:7 PPP: Sent CHAP LOGIN Request to AAA01:09:01: Se1/0:7 PPP: Received  
LOGIN Response from AAA = PASS01:09:01: Se1/0:7 DDR: Remote name for alainisdn01:09:01: Se1/0:7  
CHAP: O SUCCESS id 1 len 401:09:01: Se1/0:7 DDR: PPP callback Callback server starting to  
alainisdn 613601:09:01: Se1/0:7 DDR: disconnecting call01:09:01: %ISDN-6-CONNECT: Interface  
Serial1/0:7 is now connected to 6136 alainisdn01:09:01: ISDN Se1/0:15: TX -> DISCONNECT pd = 8  
callref = 0xEF2801:09:01: Cause i = 0x8090 - Normal call clearing01:09:01: ISDN Se1/0:15: RX <-  
RELEASE pd = 8 callref = 0x6F2801:09:01: %LINK-3-UPDOWN: Interface Serial1/0:7, changed state to  
down01:09:01: ISDN Se1/0:15: TX -> RELEASE\_COMP pd = 8 callref = 0xEF2801:09:01: Se1/0:7 DDR:  
disconnecting call01:09:02: ISDN Se1/0:15: RX <- SETUP pd = 8 callref = 0x70DF01:09:02: Sending  
Complete01:09:02: Bearer Capability i = 0x889001:09:02: Channel ID i = 0xA1838901:09:02: Calling  
Party Number i = 0xA1, '6136', Plan:ISDN, Type:National01:09:02: Called Party Number i = 0x81,  
'214', Plan:ISDN, Type:Unknown01:09:02: %LINK-3-UPDOWN: Interface Serial1/0:8, changed state to  
up01:09:02: ISDN Se1/0:15: TX -> CALL\_PROC pd = 8 callref = 0xF0DF01:09:02: Channel ID i =  
0xA9838901:09:02: ISDN Se1/0:15: TX -> CONNECT pd = 8 callref = 0xF0DF01:09:02: Channel ID i =  
0xA9838901:09:02: Se1/0:8 PPP: Treating connection as a callin01:09:02: Se1/0:8 PPP:  
Authorization required01:09:02: ISDN Se1/0:15: RX <- CONNECT\_ACK pd = 8 callref =  
0x70DF01:09:02: ISDN Se1/0:15: CALL\_PROGRESS: CALL\_CONNECTED call id 0x1C, bchan 8, dsl  
001:09:02: Se1/0:8 PPP: Authorization required01:09:03: Se1/0:8 MCB: Initialize01:09:03: Se1/0:8  
CHAP: O CHALLENGE id 1 len 28 from "suzanne"01:09:03: Se1/0:8 CHAP: I RESPONSE id 1 len 30 from  
"alainisdn"01:09:03: Se1/0:8 PPP: Sent CHAP LOGIN Request to AAA01:09:03: Se1/0:8 PPP: Received  
LOGIN Response from AAA = PASS01:09:03: Se1/0:8 DDR: Remote name for alainisdn01:09:03: Se1/0:8  
CHAP: O SUCCESS id 1 len 401:09:03: Se1/0:8 DDR: callback to alainisdn already started01:09:03:  
Se1/0:8 DDR: disconnecting call01:09:03: %ISDN-6-CONNECT: Interface Serial1/0:8 is now connected  
to 6136 alainisdn01:09:03: ISDN Se1/0:15: TX -> DISCONNECT pd = 8 callref = 0xF0DF01:09:03:  
Cause i = 0x8090 - Normal call clearing01:09:03: ISDN Se1/0:15: RX <- RELEASE pd = 8 callref =  
0x70DF01:09:03: %LINK-3-UPDOWN: Interface Serial1/0:8, changed state to down01:09:03: ISDN  
Se1/0:15: TX -> RELEASE\_COMP pd = 8 callref = 0xF0DF01:09:03: Se1/0:8 DDR: disconnecting call!---  
- Callback Start 01:09:16: DDR: Callback timer expired01:09:16: Di1 DDR: beginning callback to  
alainisdn 613601:09:16: Se1/0:15 DDR: rotor dialout [priority]01:09:16: Se1/0:15 DDR: Attempting



```
to dial 613601:09:16: ISDN Se1/0:15: TX -> SETUP pd = 8 callref = 0x001001:09:16: Bearer
Capability i = 0x889001:09:16: Channel ID i = 0xA9839F01:09:16: Called Party Number i = 0x81,
'6136', Plan:ISDN, Type:Unknown01:09:16: ISDN Se1/0:15: RX <- CALL_PROC pd = 8 callref =
0x801001:09:16: Channel ID i = 0xA9839F01:09:16: ISDN Se1/0:15: RX <- ALERTING pd = 8 callref =
0x801001:09:16: ISDN Se1/0:15: RX <- CONNECT pd = 8 callref = 0x801001:09:16: Connected Number i
= 0xA13631333601:09:16: %LINK-3-UPDOWN: Interface Serial1/0:30, changed state to up01:09:16:
DDR: Freeing callback to alainisdn 613601:09:16: ISDN Se1/0:15: TX -> CONNECT_ACK pd = 8 callref
= 0x001001:09:16: Se1/0:30 PPP: Treating connection as a callout01:09:16: Se1/0:30 PPP:
Authorization required01:09:16: Se1/0:30 MCB: Initialize01:09:16: Se1/0:30 CHAP: I CHALLENGE id
7 len 30 from "alainisdn"01:09:16: Se1/0:30 PPP: Sent CHAP SENDAUTH Request to AAA01:09:16:
Se1/0:30 PPP: Received SENDAUTH Response from AAA = PASS01:09:16: Se1/0:30 CHAP: O RESPONSE id 7
len 28 from "suzanne"01:09:16: Se1/0:30 CHAP: I SUCCESS id 7 len 401:09:16: Se1/0:30 PPP: Sent
LCP AUTHOR Request to AAA01:09:16: Se1/0:30 PPP: Sent IPCP AUTHOR Request to AAA01:09:16:
Se1/0:30 LCP: Received AAA AUTHOR Response = PASS01:09:16: Se1/0:30 IPCP: Received AAA AUTHOR
Response = PASS01:09:16: Se1/0:30 DDR: dialer protocol up01:09:17: %LINEPROTO-5-UPDOWN: Line
protocol on Interface Serial1/0:30, changed state to up01:09:22: %ISDN-6-CONNECT: Interface
Serial1/0:30 is now connected to 6136 alainisdnsuzanne# suzanne#show ip routeCodes: C -
connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGPD - EIGRP, EX - EIGRP external, O -
OSPF, IA - OSPF inter area N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2E1 -
OSPF external type 1, E2 - OSPF external type 2, E - EGPi - 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 - ODRP -
periodic downloaded static routeGateway of last resort is 172.17.243.1 to network 0.0.0.0
172.17.0.0/24 is subnetted, 1 subnetsC 172.17.243.0 is directly connected, Ethernet0/0
172.31.0.0/16 is variably subnetted, 2 subnets, 2 masksC 172.31.1.2/32 is directly connected,
Dialer1C 172.31.0.0/16 is directly connected, Dialer1S* 0.0.0.0/0 [1/0] via 172.17.243.1
suzanne#ping 172.31.1.2 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to
172.31.1.2, timeout is 2 seconds: !!!!! Success rate is 100 percent (5/5), round-trip
min/avg/max = 32/34/36 ms suzanne#
```

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