

AS5300 以 ISDN/异步方式拨出 (出站 DDR)

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简介

此配置具有带有四个主速率接口 (PRI) 且支持 96 次调制解调器呼叫或大量 ISDN 呼叫的 AS5300。配置有四个 PRI 以允许异步和 ISDN 出站连接。每个 ISDN/Async 连接的拨号端均配置了静态拨号映射。连接的两端都采用了静态 IP 路由，以避免不必要的动态路由协议开销。添加远程位置将需要为拨号端的新目标添加拨号映射、用户名和静态路由。所有的远程节点都有固定的 IP 地址。

开始使用前

规则

有关文档规则的详细信息，请参阅 [Cisco 技术提示规则](#)。

先决条件

第 1 步 - 配置拨出客户端并确认拨出客户端设置正确。

拨出配置 - 作为 AS5300 拨出对象的设备：

- PRI：使用 PRI 配置接入服务器以传出异步和 ISDN 呼叫 - 使用本文档中提供的中心站点 AS5300 系列路由器 (主机名 AS5300) 配置。

- 用于从 AS5300 接收传入呼叫的 BRI：使用拨号配置文件配置 ISDN 按需拨号路由 (DDR) - 使用本档中提供的客户端站点思科 2503 路由器 (主机名 remotelSDN01) 配置。
- 用于从 AS5300 接收传入呼叫的异步接口：使用拨号配置文件配置异步接口组 - 使用本档中提供的客户端站点思科 2511 路由器 (主机名 remoteAsync01) 配置。

第 2 步 - 确认电话公司电路正常工作。 您可以使用 `show isdn status` 命令验证 BRI 或 PRI 电路是否正常工作。请参阅文档[使用 show isdn status 命令进行 BRI 故障排除以获得详细信息](#)。您必须同时启用用于出站呼叫的 T1/E1 PRI 电路。请与电话公司联系以验证此信息。

使用的组件

本文档中的信息基于以下软件和硬件版本。

- 思科 AS5300、思科 2511 和思科 2503
- Cisco IOS® 软件版本 12.2(10b)
- 外部异步调制解调器

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。如果您是在真实网络上操作，请确保您在使用任何命令前已经了解其潜在影响。

背景理论

在某些情况下，可能需要使用 T1/E1 PRI 电路进行拨出连接。这有助于确保作为 T1/E1 PRI 电路拨出对象的客户端或分支机构为安全标识，而不是使用重复的网络用户名和密码拨入的未知用户。

相关产品

此配置可用于任何具有 T1 或 PRI 卡的路由器。因此，任何具有 T1 或 PRI 卡的 AS5xxx 系列路由器都能使用此配置。思科 2600 及 3600 系列路由器也可以配置为使用 T1/PRI WAN 接口卡 (WIC) 或网络模块拨出 ISDN 呼叫。

也可以修改该配置，与 E1 或 PRI 端口结合使用。为 E1 控制器配置 Telco 提供的线性编码、成帧及其他物理特性。D 信道配置 (E1 的接口串行 x:15) 和这里显示的类似。

配置

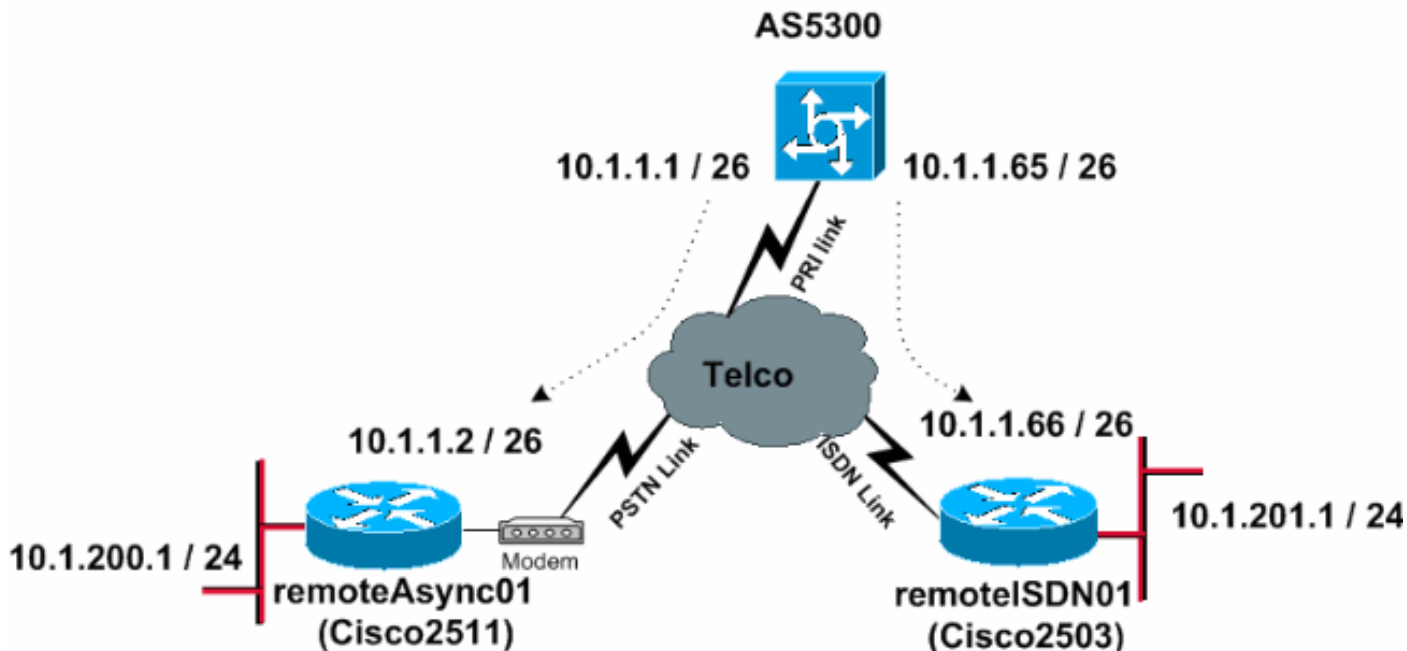
本部分提供有关如何配置本文档所述功能的信息。对于此网络，您需要以下信息：

- PRI 交换机类型，组帧和线路编码。
- 您将拨入的所有远程节点的用户名和密码。即使您稍后会添加 TACACS+ 或 RADIUS，此时也请向路由器中添加一些名称，以测试线路。
- IP 寻址方案。

注：要查找有关本文档中使用的命令的其他信息，请使用命令[查找工具](#)([仅注册客户](#))。

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。

- [AS5300](#)
- [remoteAsync01](#)
- [remoteISDN01](#)

```

AS5300
!
version 12.2
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname AS5300
!
!
username remoteISDN01 password 0 xxxx
username remoteAsync01 password 0 xxxx
!--- Usernames for local authentication of the call. !---
!--- The client presents the username/password !--- and the
AS5300 authenticates the peer. !--- This local database
of usernames and passwords are !--- compared when chap
PPP authentication is negotiated !--- between the AS5300
and remoteISDN01, remoteAsync01 routers. ! isdn switch-
type primary-5ess !--- Switch-type for this AS5300.
Obtain this information from the Telco. chat-script
kelly "" "atdt\t" TIMEOUT 60 CONNECT \c !--- A chat
script is a string of text that defines the handshaking
!--- that occurs between the router and the modem to
sucessfully !--- handshake with the destination. !--- In
this chat-script, "kelly" is the chat-script name. !---
The expect string "" is the null from the destination.
!--- And the send string "ATDT\t" is to instruct the
modem !--- to dial the telephone number in the dialer
string command, !--- which is 9996200 in the Interface
dialer 1 !--- TIMEOUT 60 CONNECT \C - waits up to 60

```

```
seconds for the input string "CONNECT", !--- and \C is
an escape sequence to end the chat-script. !--- Refer to
the Modem-Router Connection Guide and Chat-script for
more information. ! controller T1 0 !--- T1 PRI physical
controller configuration. framing esf !--- Framing for
this T1 is Extended Super Frame (ESF). !--- Obtain this
information from the Telco. clock source line primary !-
-- T1 0 is the primary clock source for this AS5300. !--
- Clock source must be specified for the timing !--- and
synchronization of the T1 carrier. linecode b8zs !---
Linecoding for this T1. Obtain this information from the
Telco. pri-group timeslots 1-24 !--- For T1 PRI
scenarios, all 24 T1 timeslots are assigned !--- as ISDN
PRI channels. The router will now automatically create
the !--- corresponding D-channel: interface Serial 0:23.
! controller T1 1 framing esf clock source line
secondary 1 linecode b8zs pri-group timeslots 1-24 !
controller T1 2 framing esf clock source line secondary
linecode b8zs pri-group timeslots 1-24 ! controller T1 3
framing esf clock source line secondary linecode b8zs
pri-group timeslots 1-24 ! interface Ethernet0 ip
address 171.68.186.54 255.255.255.240 no ip directed-
broadcast ! interface Serial0:23 !--- D-channel
configuration for T1 0. no ip address no ip directed-
broadcast encapsulation ppp dialer rotary-group 2 !---
T1 0 is a member of rotary group 2. !--- The rotary
group configuration is in interface Dialer2. !--- This
rotary group command enables the Dialin and Dialout for
ISDN calls. isdn switch-type primary-5ess isdn incoming-
voice modem !--- All incoming ISDN analog modem calls
that come in !--- on an ISDN PRI receive signaling
information !--- from the ISDN D channel. The D channel
is used for !--- circuit-switched data calls and analog
modem calls. !--- This enables all incoming ISDN voice
calls to access the call !--- switch module and
integrated modems. !--- Calls are passed to the modem
and the call negotiates the !--- appropriate connection
with the far-end modem. no cdp enable ! interface
Serial1:23 no ip address no ip directed-broadcast
encapsulation ppp dialer rotary-group 2 isdn switch-type
primary-5ess isdn incoming-voice modem no cdp enable !
interface Serial2:23 no ip address no ip directed-
broadcast encapsulation ppp dialer rotary-group 2 isdn
switch-type primary-5ess isdn incoming-voice modem no
cdp enable ! interface Serial3:23 no ip address no ip
directed-broadcast encapsulation ppp dialer rotary-group
2 isdn switch-type primary-5ess isdn incoming-voice
modem no cdp enable ! interface FastEthernet0 no ip
address no ip directed-broadcast shutdown ! interface
Group-Async1 !--- This interface is configured for Async
Dialin and Dialout in the T1 PRI. !--- Without this
interface, Async calls cannot be made. no ip address no
ip directed-broadcast async mode interactive dialer in-
band dialer rotary-group 1 !--- Group-Async 1 is a
member of the rotary group. !--- The rotary group
configuration is in interface Dialer 1. no cdp enable
group-range 1 96 !--- Group-range indicates the
asynchronous interfaces !--- which come under the Group-
Async interface. ! interface Dialer1 ip address 10.1.1.1
255.255.255.192 no ip directed-broadcast encapsulation
ppp dialer in-band dialer idle-timeout 600 !--- Set an
idle-timeout to hold the ISDN line. !--- Idle timeout
for outgoing calls is 600 seconds (10 minutes). !--- If
the ISDN link is idle for more than 600 seconds, it will
```

```

be dropped. dialer map ip 10.1.1.2 name remoteAsync01
modem-script kelly broadcast 9996200
!--- Dialer map statements for the remote router
remoteAsync01. !--- The name must match the one used by
the remote router to identify itself. !--- Use the modem
chat script "kelly" for this connection.

dialer-group 1
!--- Apply interesting traffic definition from the
dialer-list 1. ppp authentication chap ! interface
Dialer2 !--- The dialer rotary-group 2 command in Int
s0:23 activates the interface !--- Dialer2 for inbound
and outbound ISDN calls.

ip address 10.1.1.65 255.255.255.192
no ip directed-broadcast
encapsulation ppp
dialer in-band
dialer idle-timeout 600
dialer map ip 10.1.1.66 name remoteISDN01 broadcast
9996100
dialer-group 1
ppp authentication chap
!
no ip http server
ip classless

ip route 10.1.200.0 255.255.255.0 10.1.1.2
!--- Static route for the 10.1.200.0/24 network. !---
Interesting Traffic for that network !--- will be sent
to interface Dialer1 and the router !--- will initiate
the outbound call for Asynchronous connectivity.

ip route 10.1.201.0 255.255.255.0 10.1.1.66
!--- Static route for the 10.1.201.0/24 network. !---
Interesting traffic for that network !--- will be sent
to interface Dialer2 and the router !--- will initiate
the outbound call for ISDN BRI connectivity.

!
dialer-list 1 protocol ip permit
!--- Interesting traffic is defined by the Protocol IP.
!--- This is applied to interface Dialer1 and Dialer2
using the dialer-group 1 command. !--- The specified
dialer-list number must be the same !--- as the dialer-
group number; in this example, defined to be "1."

!
line con 0
transport input none
line 1 96

script dialer kelly
!--- Enables the chat script kelly configured globally.

modem InOut
transport preferred none
transport output none
line aux 0
line vty 0 4
login
!
end

```

remoteAsync01

```
!  
version 12.2  
service timestamps debug datetime msec  
service timestamps log datetime msec  
!  
hostname remoteAsync01  
!  
!  
username AS5300 password 0 xxxx  
!  
modemcap entry default  
!--- A modemcap named "default" will be applied !--- to  
lines one through eight of Async interfaces. ! interface  
Ethernet0 ip address 10.1.200.1 255.255.255.0 no ip  
directed-broadcast ! interface Serial0 no ip address no  
ip directed-broadcast shutdown ! interface Serial1 no ip  
address no ip directed-broadcast shutdown ! interface  
Async1 ip address 10.1.1.2 255.255.255.192 no ip  
directed-broadcast encapsulation ppp dialer idle-timeout  
600 async mode interactive !--- Enables the slip and ppp  
EXEC commands.  
  
    ppp authentication chap  
!  
no ip http server  
ip classless  
  
ip route 0.0.0.0 0.0.0.0 10.1.1.1  
!--- Default static route for the outgoing packets. !  
line con 0 transport input none line 1 8 login local  
modem InOut modem autoconfigure type default !--- Apply  
the modemcap "default" (configured globally) to  
initialize the modem. !--- Refer to the Modem-Router  
Connection Guide for more information. transport input  
all autoselect during-login autoselect ppp speed 38400  
flowcontrol hardware line aux 0 line vty 0 4 ! end
```

remoteISDN01

```
!  
version 12.2  
service timestamps debug datetime msec  
service timestamps log datetime msec  
!  
hostname remoteISDN01  
!  
!  
username AS5300 password 0 xxxx  
!--- Usernames for local authentication of the call. !--  
- The client presents the username/password !--- and the  
AS5300 authenticates the peer. !--- This local database  
of usernames and passwords are !--- compared when chap  
PPP authentication is negotiated !--- between the AS5300  
and remoteISDN01 routers. ! isdn switch-type basic-5ess  
!--- Switch-type for this 2503. Obtain this information  
from the Telco. . ! interface Ethernet0 ip address  
10.1.201.1 255.255.255.0 no ip directed-broadcast !  
interface Serial0 no ip address no ip directed-broadcast
```

```
shutdown ! interface Serial1 no ip address no ip
directed-broadcast shutdown ! interface BRI0 ip address
10.1.1.66 255.255.255.192 no ip directed-broadcast
encapsulation ppp dialer idle-timeout 600 dialer-group 1
isdn switch-type basic-5ess ppp authentication chap ! no
ip http server ip classless ip route 0.0.0.0 0.0.0.0
10.1.1.65 !--- Default static route for the outgoing
packets. ! dialer-list 1 protocol ip permit ! line con 0
transport input none line aux 0 line vty 0 4 ! 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 isdn status - 确保路由器与 ISDN 交换机正常通信。** 在输出中，验证第1层状态是否为活跃状态，是否第2层状态=MULTIPLE_FRAME_ESTABLISHED出现。此指令也显示活动的呼叫的数量。
- **show ppp multilink - 显示关于处于活动状态的多链路捆绑的信息。** 应使用本命令来检查多链路连接。
- **show dialer [interface type number] - 显示为 DDR 配置的接口的常规诊断信息。** 如果拨号程序正常启动，则应出现 Dialer state is data link layer up 消息。如果physical layer up出现，则线路通信协议表现出来，但是网络控制协议(NCP)没有。启动拨号的数据包的源地址和目标地址显示在 Dial reason line 中。此show指令也显示计时器的配置和连接超时前的时间。
- **show caller user username detail -显示特定用户参数，如分配的IP地址、PPP和PPP捆绑参数等。** 如果您的Cisco IOS版本软件不支持此指令，请使用show users命令。
- **show dialer map - 显示已配置的动态和静态 Dialer Maps。** 此指令可以被用于发现动态拨号映射是否被创建了。没有dialer map，您不能路由数据包。
- **show isdn service - 用于检查 B 通道的状态。** (此命令仅适用于支持 PRI/T1 控制器的接入服务器。)
- **show users - 用于显示当前连接的异步/同步用户。**

以下是确保成功呼叫的一些显示命令输出。注意在输出和备注中的粗体部分。比较您得到与如下所示的结果的输出。

以下输出是在建立与 remoteISDN01 和 remoteAsync01 路由器的连接之前获取。

```
AS5300#show ip route
Codes: 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

    171.68.0.0/28 is subnetted, 1 subnets
C      171.68.186.48 is directly connected, Ethernet0
    10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C      10.1.1.0/26 is directly connected, Dialer1
```

```
C    10.1.1.64/26 is directly connected, Dialer2
S    10.1.201.0/24 [1/0] via 10.1.1.66
S    10.1.200.0/24 [1/0] via 10.1.1.2
```

以下输出是在建立与 remoteISDN01 和 remoteAsync01 路由器的连接之后获取。

```
AS5300#show ip route
```

```
Codes: 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
```

```
    171.68.0.0/28 is subnetted, 1 subnets
C    171.68.186.48 is directly connected, Ethernet0
    10.0.0.0/8 is variably subnetted, 6 subnets, 3 masks
C    10.1.1.2/32 is directly connected, Dialer1
C    10.1.1.0/26 is directly connected, Dialer1
C    10.1.1.66/32 is directly connected, Dialer2
C    10.1.1.64/26 is directly connected, Dialer2
S    10.1.201.0/24 [1/0] via 10.1.1.66
S    10.1.200.0/24 [1/0] via 10.1.1.2
```

```
AS5300#show ip route connected
```

```
    171.68.0.0/28 is subnetted, 1 subnets
C    171.68.186.48 is directly connected, Ethernet0
    10.0.0.0/8 is variably subnetted, 6 subnets, 3 masks
C    10.1.1.2/32 is directly connected, Dialer1
C    10.1.1.0/26 is directly connected, Dialer1
C    10.1.1.66/32 is directly connected, Dialer2
C    10.1.1.64/26 is directly connected, Dialer2
```

```
AS5300#show controllers t1 0
```

```
T1 0 is up.
```

```
  Applique type is Channelized T1
  Cablelength is long gain36 0db
No alarms detected.
  alarm-trigger is not set
  Version info of slot 0: HW: 4, PLD Rev: 0
```

```
Manufacture Cookie Info:
```

```
  EEPROM Type 0x0001, EEPROM Version 0x01, Board ID 0x42,
  Board Hardware Version 1.32, Item Number 800-2540-02,
  Board Revision A0, Serial Number 11493161,
  PLD/ISP Version 0.0, Manufacture Date 12-Dec-1998.
```

```
Framing is ESF, Line Code is B8ZS, Clock Source is Line Primary.
```

```
  Data in current interval (197 seconds elapsed):
  0 Line Code Violations, 0 Path Code Violations
  0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
  0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
```

```
!--- Output suppressed. AS5300#show int s0:23
```

```
Serial0:23 is up, line protocol is up (spoofing)
```

```
  Hardware is DSX1
  MTU 1500 bytes, BW 64 Kbit, DLY 20000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation PPP, loopback not set
```


DTR is pulsed for 1 seconds on reset
 Last input 00:00:06, output 00:00:06, output hang never
 Last clearing of "show interface" counters 11:43:21
 Input queue: 0/75/0/0 (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 48 kilobits/sec
 5 minute input rate 0 bits/sec, 0 packets/sec
 5 minute output rate 0 bits/sec, 0 packets/sec
 5075 packets input, 25767 bytes, 0 no buffer
 Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
 2 input errors, 0 CRC, 1 frame, 0 overrun, 0 ignored, 1 abort
 5073 packets output, 25904 bytes, 0 underruns
 0 output errors, 0 collisions, 13 interface resets
 0 output buffer failures, 0 output buffers swapped out
 2 carrier transitions
 Timeslot(s) Used:24, Transmitter delay is 0 flags

AS5300#show users

Line	User	Host(s)	Idle	Location
* 0 con 0		idle	00:00:00	
11 tty 11	remoteAsyn	Async interface	00:05:40	PPP: 10.1.1.2

Interface	User	Mode	Idle	Peer Address
Se0:21	remoteISDN	Sync PPP	00:06:12	PPP: 10.1.1.66

remoteAsync01#show users

Line	User	Host(s)	Idle	Location
* 0 con 0		idle	00:00:00	
1 tty 1	AS5300	Async interface	00:07:27	PPP: 10.1.1.1
2 tty 2		Modem Autoconfigure	00:00:00	
3 tty 3		Modem Autoconfigure	00:00:00	
4 tty 4		Modem Autoconfigure	00:00:01	
5 tty 5		Modem Autoconfigure	00:00:00	
6 tty 6		Modem Autoconfigure	00:00:00	
7 tty 7		Modem Autoconfigure	00:00:00	

Interface	User	Mode	Idle	Peer Address
-----------	------	------	------	--------------

remoteISDN01#show users

Line	User	Host(s)	Idle	Location
* 0 con 0		idle	00:00:00	

Interface	User	Mode	Idle	Peer Address
BR0:1	AS5300	Sync PPP	00:09:09	PPP: 10.1.1.65

AS5300#show isdn history

 ISDN CALL HISTORY

Call History contains all active calls, and a maximum of 100 inactive calls.
 Inactive call data will be retained for a maximum of 15 minutes.

Call Type	Calling Number	Called Number	Remote Name	Seconds Used	Seconds Left	Seconds Idle	Charges Units/Currency
Out	---N/A---	9996200	+oteAsync01	187			0
Out	---N/A---	9996200	+oteAsync01	56			0
Out	---N/A---	9996200	+oteAsync01	469	305	294	0
Out	---N/A---	9996100	+moteISDN01	105	509	90	0

AS5300#show isdn active

ISDN ACTIVE CALLS

Call Type	Calling Number	Called Number	Remote Name	Seconds Used	Seconds Left	Seconds Idle	Charges Units/Currency
Out	---N/A---	9996100	+moteISDN01	152	449	150	0
Out	---N/A---	9996200	+oteAsync01	133	491	108	0

AS5300#show isdn status

Global ISDN Switchtype = primary-5ess

ISDN Serial0:23 interface

dsl 0, interface ISDN Switchtype = primary-5ess

Layer 1 Status:

ACTIVE

Layer 2 Status:

TEI = 0, Ces = 1, SAPI = 0, **State = MULTIPLE_FRAME_ESTABLISHED**

Layer 3 Status:

2 Active Layer 3 Call(s)

CCB:callid=809E, sapi=0, ces=0, **B-chan=23, calltype=VOICE**

CCB:callid=809F, sapi=0, ces=0, **B-chan=22, calltype=DATA**

Active dsl 0 CCBs = 2

The Free Channel Mask: 0x801FFFFFF

Number of L2 Discards = 1, L2 Session ID = 10

!--- Output suppressed. AS5300#Ping 10.1.201.1

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 10.1.201.1, timeout is 2 seconds:

!!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 32/33/36 ms

AS5300#Ping 10.1.200.1

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 10.1.200.1, timeout is 2 seconds:

!!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 128/141/148 ms

AS5300#show isdn service

PRI Channel Statistics:

ISDN Se0:23, Channel [1-24]

Configured Isdn Interface (dsl) 0

Channel State (0=Idle 1=Proposed 2=Busy 3=Reserved 4=Restart 5=Maint_Pend)

Channel : 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4

State : 0 2 2 3

Service State (0=Inservice 1=Maint 2=Outofservice)

Channel : 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4

State : 0 2

!--- Output suppressed. AS5300#show modem

Codes:

* - Modem has an active call

C - Call in setup

T - Back-to-Back test in progress

R - Modem is being Reset

p - Download request is pending and modem cannot be used for taking calls

D - Download in progress

B - Modem is marked bad and cannot be used for taking calls

b - Modem is either busied out or shut-down

d - DSP software download is required for achieving K56flex connections

! - Upgrade request is pending

Mdm	Avg Hold Time	Inc calls		Out calls		Busied Out	Failed Dial	No Answer	Succ Pct.
		Succ	Fail	Succ	Fail				
1/0	00:00:00	0	0	0	0	0	0	0	0%
1/1	00:00:00	0	0	0	0	0	0	0	0%
1/2	00:00:00	0	0	0	0	0	0	0	0%
1/3	00:00:00	0	0	0	0	0	0	0	0%
1/4	00:00:00	0	0	0	0	0	0	0	0%
1/5	00:00:00	0	0	0	0	0	0	0	0%
1/6	00:00:00	0	0	0	0	0	0	0	0%
1/7	00:00:00	0	0	0	0	0	0	0	0%
1/8	00:00:00	0	0	0	0	0	0	0	0%
1/9	00:00:00	0	0	0	0	0	0	0	0%
* 1/10	00:02:21	0	0	5	5	0	0	0	50%
1/11	00:03:11	0	0	23	6	0	0	0	79%
1/12	00:00:00	0	0	0	0	0	0	0	0%
1/13	00:00:00	0	0	0	0	0	0	0	0%
1/14	00:00:00	0	0	0	0	0	0	0	0%

!--- Output suppressed.

故障排除

本部分提供的信息可用于对配置进行故障排除。

故障排除资源

- [传入 ISDN 呼叫故障排除 - 用于 ISDN 呼叫失败故障排除。](#)
- [PRI ISDN 呼入 - 包含有关对 ISDN 呼叫失败进行故障排除的其他信息。](#)
- [T1故障排除流程图——如果怀疑T1电路没有正常运行，则使用此流程图。](#)
- [T1 PRI 故障排除 - ISDN PRI 电路的故障排除过程](#)
- [T1/56K 线路的环回测试 - 用于确认路由器上的 T1 端口工作正常。](#)
- [使用 show isdn status 命令进行 BRI 故障排除 - 使用本文档进行 BRI 故障排除。](#)
- [使用 debug isdn q931 命令对 ISDN BRI 第 3 层进行排除故障 - 使用本文档对 ISDN 第 3 层进行故障排除。](#)

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 dialer - 在接口上启用 DDR 时，使用此命令可显示与任何呼叫的原因相关的信息（称为拨号原因）。
- debug isdn q931 - 用于检查作为出站呼叫的 ISDN 连接是否启动。
- debug ppp negotiation - 用于查看客户端是否通过 PPP 协商。大量的并发 PPP 协商可能会使路由器 CPU 过载。
- debug ppp authentication -看见客户端是否可以是否通过认证。如果您使用的是 Cisco IOS 11.2 版本之前的版本，请使用 debug ppp chap 命令代替。
- 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。

调制解调器故障排除命令

- debug chat - 用于查看发起呼叫时聊天脚本的执行情况。
- debug modem - 用于查看路由器从调制解调器接收的信号是否正确。
- debug modem csm - 用于启用调制解调器管理呼叫交换模块 (CSM) 调试模式。

故障排除输出

以下是成功传出呼叫的调试输出。注意在输出和备注中的粗体部分。比较您得到与如下所示的结果的输出。

从 AS5300 T1 PRI 到 remoteAsync01 路由器的调试拨出连接

```
AS5300#debug isdn q931
ISDN Q931 packets debugging is on
AS5300#debug chat
Chat scripts activity debugging is on
AS5300#debug dialer events
Dial on demand events debugging is on
AS5300#show debug
Dial on demand:
  Dial on demand events debugging is on
PPP:
  PPP protocol negotiation debugging is on
ISDN:
  ISDN Q931 packets debugging is on
  ISDN Q931 packets debug DSLs. (On/Off/No DSL:1/0/-)
  DSL  0 --> 7
  1 1 1 1 - - - -

Chat Scripts:
Chat scripts activity debugging is on

AS5300#ping 10.1.200.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.200.1, timeout is 2 seconds:

Dec 30 17:59:16.675: As12 DDR: rotor dialout [priority]
Dec 30 17:59:16.675: As12 DDR: Dialing cause ip (s=10.1.1.1, d=10.1.200.1)
!--- The dialing cause is a ping for 10.1.200.1. !--- ICMP is tagged as interesting. Dec 30
17:59:16.675: As12 DDR: Attempting to dial 9996200 Dec 30 17:59:16.675: CHAT12: Attempting async
line dialer script Dec 30 17:59:16.675: CHAT12: Dialing using Modem script: kelly
& System script: none
!--- Uses the Chat script kelly to Dialout.

Dec 30 17:59:16.675: CHAT12: process started
Dec 30 17:59:16.675: CHAT12: Asserting DTR
Dec 30 17:59:16.675: CHAT12: Chat script kelly started
Dec 30 17:59:16.675: CHAT12: Sending string: atdt\T<9996200>
!--- The Chat script kelly uses the Telephone no in Interface Dialer 1 to Dialout. Dec 30
17:59:16.675: CHAT12: Expecting string: CONNECT Dec 30 17:59:16.755: ISDN Se0:23: TX -> SETUP pd
= 8 callref = 0x00B1
!--- Outgoing ISDN Q.931 SETUP message. Dec 30 17:59:16.755: Bearer Capability i = 0x8090A2 Dec
30 17:59:16.755: Channel ID i = 0xA98397 Dec 30 17:59:16.759: Called Party Number i = 0xA1,
'9996200', Plan:ISDN, Type:National Dec 30 17:59:16.823: ISDN Se0:23: RX <- CALL_PROC pd = 8
callref = 0x80B1 Dec 30 17:59:16.823: Channel ID i = 0xA98397 Dec 30 17:59:17.023: ISDN Se0:23:
RX <- ALERTING pd = 8 callref = 0x80B1..... Success rate is 0 percent (0/5) AS5300# Dec 30
17:59:26.115: ISDN Se0:23: RX <- CONNECT pd = 8 callref = 0x80B1
```

!--- Received Q.931 CONNECT message. Dec 30 17:59:26.119: ISDN Se0:23: TX -> CONNECT_ACK pd = 8
callref = 0x00B1 Dec 30 17:59:32.119: %ISDN-6-CONNECT: Interface Serial0:22 is now connected to
9996200 Dec 30 17:59:49.347: CHAT12: Completed match for expect: CONNECT Dec 30 17:59:49.347:
CHAT12: Sending string: \c Dec 30 17:59:49.347: CHAT12: Chat script kelly finished, status =
Success Dec 30 17:59:49.351: **Di1 IPCP: Install route to 10.1.1.2**
!--- A route to the peer is installed. Dec 30 17:59:51.351: %LINK-3-UPDOWN: Interface Async12,
changed state to up
Dec 30 17:59:51.351: As12 DDR: Dialer statechange to up
Dec 30 17:59:51.351: As12 DDR: Dialer call has been placed
Dec 30 17:59:51.351: As12 PPP: Treating connection as a callout
Dec 30 17:59:51.351: As12 PPP: Phase is ESTABLISHING, Active Open [0 sess, 1 load]
Dec 30 17:59:51.351: As12 LCP: O CONFREQ [Closed] id 149 len 25
Dec 30 17:59:51.351: As12 LCP: ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:59:51.351: As12 LCP: AuthProto CHAP (0x0305C22305)
Dec 30 17:59:51.351: As12 LCP: MagicNumber 0x4A997A3A (0x05064A997A3A)
Dec 30 17:59:51.351: As12 LCP: PFC (0x0702)
Dec 30 17:59:51.351: As12 LCP: ACFC (0x0802)
Dec 30 17:59:53.351: As12 LCP: TIMEOUT: State REQsent
Dec 30 17:59:53.351: As12 LCP: O CONFREQ [REQsent] id 150 len 25
Dec 30 17:59:53.351: As12 LCP: ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:59:53.351: As12 LCP: AuthProto CHAP (0x0305C22305)
Dec 30 17:59:53.351: As12 LCP: MagicNumber 0x4A997A3A (0x05064A997A3A)
Dec 30 17:59:53.351: As12 LCP: PFC (0x0702)
Dec 30 17:59:53.351: As12 LCP: ACFC (0x0802)
Dec 30 17:59:53.511: As12 LCP: I CONFREQ [REQsent] id 53 len 25
Dec 30 17:59:53.511: As12 LCP: ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:59:53.511: As12 LCP: AuthProto CHAP (0x0305C22305)
Dec 30 17:59:53.511: As12 LCP: MagicNumber 0x67B12AE8 (0x050667B12AE8)
Dec 30 17:59:53.511: As12 LCP: PFC (0x0702)
Dec 30 17:59:53.511: As12 LCP: ACFC (0x0802)
Dec 30 17:59:53.511: As12 LCP: O CONFACK [REQsent] id 53 len 25
Dec 30 17:59:53.511: As12 LCP: ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:59:53.511: As12 LCP: AuthProto CHAP (0x0305C22305)
Dec 30 17:59:53.511: As12 LCP: MagicNumber 0x67B12AE8 (0x050667B12AE8)
Dec 30 17:59:53.511: As12 LCP: PFC (0x0702)
Dec 30 17:59:53.511: As12 LCP: ACFC (0x0802)
Dec 30 17:59:53.543: As12 LCP: I CONFACK [ACKsent] id 150 len 25
Dec 30 17:59:53.543: As12 LCP: ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:59:53.543: As12 LCP: AuthProto CHAP (0x0305C22305)
Dec 30 17:59:53.543: As12 LCP: MagicNumber 0x4A997A3A (0x05064A997A3A)
Dec 30 17:59:53.543: As12 LCP: PFC (0x0702)
Dec 30 17:59:53.543: As12 LCP: ACFC (0x0802)
Dec 30 17:59:53.543: As12 LCP: State is Open
!--- LCP negotiation is complete. Dec 30 17:59:53.543: As12 PPP: Phase is AUTHENTICATING, by both
[0 sess, 1 load] Dec 30 17:59:53.543: As12 CHAP: O CHALLENGE id 25 len 27 from "AS5300" Dec 30
17:59:53.655: As12 CHAP: I CHALLENGE id 27 len 34 from "remoteAsync01" Dec 30 17:59:53.655: As12
CHAP: O RESPONSE id 27 len 27 from "AS5300" Dec 30 17:59:53.671: As12 CHAP: I RESPONSE id 25 len
34 from "remoteAsync01" Dec 30 17:59:53.671: As12 CHAP: O SUCCESS id 25 len 4 Dec 30
17:59:53.783: As12 CHAP: I SUCCESS id 27 len 4 *!--- Two-way CHAP authentication is successful.*
Dec 30 17:59:53.783: As12 PPP: Phase is UP [0 sess, 1 load] Dec 30 17:59:53.783: As12 IPCP: O
CONFREQ [Closed] id 25 len 10 Dec 30 17:59:53.783: As12 IPCP: Address 10.1.1.1 (0x03060A010101)
Dec 30 17:59:53.783: As12 CDPCP: O CONFREQ [Closed] id 25 len 4 Dec 30 17:59:53.783: As12 IPCP:
I CONFREQ [REQsent] id 27 len 10 Dec 30 17:59:53.783: As12 IPCP: Address 10.1.1.2
(0x03060A010102) Dec 30 17:59:53.783: As12 IPCP: O CONFACK [REQsent] id 27 len 10 Dec 30
17:59:53.783: As12 IPCP: Address 10.1.1.2 (0x03060A010102) Dec 30 17:59:53.911: As12 IPCP: I
CONFACK [ACKsent] id 25 len 10 Dec 30 17:59:53.911: As12 IPCP: Address 10.1.1.1 (0x03060A010101)
Dec 30 17:59:53.911: As12 IPCP: State is Open Dec 30 17:59:53.911: As12 DDR: dialer protocol up
Dec 30 17:59:53.927: As12 LCP: I PROTREJ [Open] id 54 len 10 protocol CDPCP (0x820701190004) Dec
30 17:59:53.927: As12 CDPCP: State is Closed Dec 30 17:59:54.783: %LINEPROTO-5-UPDOWN: Line
protocol on Interface Async12, changed state to up Dec 30 17:59:54.783: As12 PPP: Outbound cdp
packet dropped, CDPCP is Closed [starting negotiations] Dec 30 17:59:54.783: As12 CDPCP: State
is Closed Dec 30 17:59:54.783: As12 PPP: Outbound cdp packet dropped, CDPCP is Closed [starting
negotiations] Dec 30 17:59:54.783: As12 CDPCP: State is Closed Dec 30 17:59:54.783: As12 PPP:
Outbound cdp packet dropped, CDPCP is Closed [starting negotiations] Dec 30 17:59:54.783: As12

```
CDPCP: State is Closed Dec 30 17:59:54.787: As12 CDPCP: TIMEout: State Closed Dec 30
17:59:54.787: As12 CDPCP: State is Listen remoteAsync01#debug ppp negotiation
PPP protocol negotiation debugging is on
remoteAsync01#
Dec 30 17:58:54: As1 LCP: I CONFREQ [Closed] id 150 len 25
Dec 30 17:58:54: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:58:54: As1 LCP: AuthProto CHAP (0x0305C22305)
Dec 30 17:58:54: As1 LCP: MagicNumber 0x4A997A3A (0x05064A997A3A)
Dec 30 17:58:54: As1 LCP: PFC (0x0702)
Dec 30 17:58:54: As1 LCP: ACFC (0x0802)
Dec 30 17:58:54: As1 LCP: Lower layer not up, Fast Starting
Dec 30 17:58:54: As1 PPP: Treating connection as a dedicated line
Dec 30 17:58:54: As1 PPP: Phase is ESTABLISHING, Active Open [0 sess, 0 load]
Dec 30 17:58:54: As1 LCP: O CONFREQ [Closed] id 53 len 25
Dec 30 17:58:54: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:58:54: As1 LCP: AuthProto CHAP (0x0305C22305)
Dec 30 17:58:54: As1 LCP: MagicNumber 0x67B12AE8 (0x050667B12AE8)
Dec 30 17:58:54: As1 LCP: PFC (0x0702)
Dec 30 17:58:54: As1 LCP: ACFC (0x0802)
Dec 30 17:58:54: As1 LCP: O CONFACK [REQsent] id 150 len 25
Dec 30 17:58:54: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:58:54: As1 LCP: AuthProto CHAP (0x0305C22305)
Dec 30 17:58:54: As1 LCP: MagicNumber 0x4A997A3A (0x05064A997A3A)
Dec 30 17:58:54: As1 LCP: PFC (0x0702)
Dec 30 17:58:54: As1 LCP: ACFC (0x0802)
Dec 30 17:58:54: %LINK-3-UPDOWN: Interface Async1, changed state to up
Dec 30 17:58:55: As1 LCP: I CONFACK [ACKsent] id 53 len 25
Dec 30 17:58:55: As1 LCP: ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:58:55: As1 LCP: AuthProto CHAP (0x0305C22305)
Dec 30 17:58:55: As1 LCP: MagicNumber 0x67B12AE8 (0x050667B12AE8)
Dec 30 17:58:55: As1 LCP: PFC (0x0702)
Dec 30 17:58:55: As1 LCP: ACFC (0x0802)
Dec 30 17:58:55: As1 LCP: State is Open
```

```
!--- LCP negotiation is complete. Dec 30 17:58:55: As1 PPP: Phase is AUTHENTICATING, by both [0
sess, 0 load] Dec 30 17:58:55: As1 CHAP: O CHALLENGE id 27 len 34 from "remoteAsync01" Dec 30
17:58:55: As1 CHAP: I CHALLENGE id 25 len 27 from "AS5300" Dec 30 17:58:55: As1 CHAP: O RESPONSE
id 25 len 34 from "remoteAsync01" Dec 30 17:58:55: As1 CHAP: I RESPONSE id 27 len 27 from
"AS5300" Dec 30 17:58:55: As1 CHAP: I SUCCESS id 25 len 4 Dec 30 17:58:55: As1 CHAP: O SUCCESS
id 27 len 4 !--- Two-way CHAP authentication is successful. Dec 30 17:58:55: As1 PPP: Phase is
UP [0 sess, 1 load] Dec 30 17:58:55: As1 IPCP: O CONFREQ [Closed] id 27 len 10 Dec 30 17:58:55:
As1 IPCP: Address 10.1.1.2 (0x03060A010102) Dec 30 17:58:55: As1 IPCP: I CONFREQ [REQsent] id 25
len 10 Dec 30 17:58:55: As1 IPCP: Address 10.1.1.1 (0x03060A010101) Dec 30 17:58:55: As1 IPCP: O
CONFACK [REQsent] id 25 len 10 Dec 30 17:58:55: As1 IPCP: Address 10.1.1.1 (0x03060A010101) Dec
30 17:58:55: As1 CDPCP: I CONFREQ [Not negotiated] id 25 len 4 Dec 30 17:58:55: As1 LCP: O
PROTREQ [Open] id 54 len 10 protocol CDPCP (0x820701190004) Dec 30 17:58:55: As1 IPCP: I CONFACK
[ACKsent] id 27 len 10 Dec 30 17:58:55: As1 IPCP: Address 10.1.1.2 (0x03060A010102) Dec 30
17:58:55: As1 IPCP: State is Open Dec 30 17:58:55: As1 IPCP: Install route to 10.1.1.1
```

```
!--- A route to the peer is installed. Dec 30 17:58:56: %LINEPROTO-5-UPDOWN: Line protocol on
Interface Async1,
changedstate to up
```

[从 AS5300 到 remoteISDN01 路由器的调试拨出](#)

```
AS5300#show debug
```

```
Dial on demand:
```

```
Dial on demand events debugging is on
```

```
PPP:
```

```
PPP protocol negotiation debugging is on
```

```
ISDN:
```

ISDN Q931 packets debugging is on
ISDN Q931 packets debug DSLs. (On/Off/No DSL:1/0/-)
DSL 0 --> 7
1 1 1 1 - - - -

Chat Scripts:

Chat scripts activity debugging is on
AS5300#ping 10.1.201.1

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 10.1.201.1, timeout is 2 seconds:

```
Dec 30 18:12:42.811: Se0:23 DDR: rotor dialout [priority]
Dec 30 18:12:42.815: Se0:23 DDR: Dialing cause ip (s=10.1.1.65, d=10.1.201.1)
!--- The dialing cause is a ping for 10.1.201.1. !--- ICMP is tagged as interesting. Dec 30
18:12:42.815: Se0:23 DDR: Attempting to dial 9996100 Dec 30 18:12:42.815: ISDN Se0:23: TX -
>SETUP pd = 8 callref = 0x00B2
!--- Outgoing ISDN Q.931 SETUP message. Dec 30 18:12:42.815: Bearer Capability i = 0x8890 Dec 30
18:12:42.815: Channel ID i = 0xA98396 Dec 30 18:12:42.819: Called Party Number i = 0xA1,
'9996100', Plan:ISDN, Type:National Dec 30 18:12:42.867: ISDN Se0:23: RX <- CALL_PROC pd = 8
callref = 0x80B2 Dec 30 18:12:42.867: Channel ID i = 0xA98396 Dec 30 18:12:43.127: ISDN Se0:23:
RX <- CONNECT pd = 8 callref = 0x80B2 !--- Received Q.931 CONNECT message. Dec 30 18:12:43.135:
%LINK-3-UPDOWN: Interface Serial0:21, changed state to up Dec 30 18:12:43.135: Se0:21 PPP:
Treating connection as a callout Dec 30 18:12:43.135: Se0:21 PPP: Phase is ESTABLISHING, Active
Open [0 sess, 1 load] Dec 30 18:12:43.135: Se0:21 LCP: O CONFREQ [Closed] id 25 len 15 Dec 30
18:12:43.139: Se0:21 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:12:43.139: Se0:21 LCP:
MagicNumber 0x4AA54104 (0x05064AA54104) Dec 30 18:12:43.139: ISDN Se0:23: TX -> CONNECT_ACK pd =
8 callref = 0x00B2 Dec 30 18:12:43.167: Se0:21 LCP: I CONFREQ [REQsent] id 55 len 15 Dec 30
18:12:43.167: Se0:21 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:12:43.167: Se0:21 LCP:
MagicNumber 0x575DC27D (0x0506575DC27D) Dec 30 18:12:43.167: Se0:21 LCP: O CONFACK [REQsent] id
55 len 15 Dec 30 18:12:43.167: Se0:21 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:12:43.167:
Se0:21 LCP: MagicNumber 0x575DC27D (0x0506575DC27D) Dec 30 18:12:43.175: Se0:21 LCP: I CONFACK
[ACKsent] id 25 len 15 Dec 30 18:12:43.175: Se0:21 LCP: AuthProto CHAP (0x0305C22305) Dec 30
18:12:43.175: Se0:21 LCP: MagicNumber 0x4AA54104 (0x05064AA54104) Dec 30 18:12:43.179: Se0:21
LCP: State is Open
!--- LCP negotiation is complete. Dec 30 18:12:43.179: Se0:21 PPP: Phase is AUTHENTICATING, by
both [0 sess, 1!!!! Success rate is 80 percent (4/5), round-trip min/avg/max = 32/33/36
msAS5300# load] Dec 30 18:12:43.179: Se0:21 CHAP: O CHALLENGE id 13 len 27 from "AS5300" Dec 30
18:12:43.227: Se0:21 CHAP: I CHALLENGE id 36 len 33 from "remoteISDN01" Dec 30 18:12:43.227:
Se0:21 CHAP: O RESPONSE id 36 len 27 from "AS5300" Dec 30 18:12:43.251: Se0:21 CHAP: I SUCCESS
id 36 len 4 Dec 30 18:12:43.263: Se0:21 CHAP: I RESPONSE id 13 len 33 from "remoteISDN01" Dec 30
18:12:43.263: Se0:21 CHAP: O SUCCESS id 13 len 4
!--- Two-way CHAP authentication is successful. Dec 30 18:12:43.263: Se0:21 PPP: Phase is UP [0
sess, 1 load] Dec 30 18:12:43.263: Se0:21 IPCP: O CONFREQ [Closed] id 13 len 10 Dec 30
18:12:43.267: Se0:21 IPCP: Address 10.1.1.65 (0x03060A010141) Dec 30 18:12:43.287: Se0:21 IPCP:
I CONFREQ [REQsent] id 36 len 10 Dec 30 18:12:43.287: Se0:21 IPCP: Address 10.1.1.66
(0x03060A010142) Dec 30 18:12:43.287: Se0:21 IPCP: O CONFACK [REQsent] id 36 len 10 Dec 30
18:12:43.287: Se0:21 IPCP: Address 10.1.1.66 (0x03060A010142) Dec 30 18:12:43.287: Se0:21 CDPCP:
I CONFREQ [Not negotiated] id 36 len 4 Dec 30 18:12:43.291: Se0:21 LCP: O PROTREJ [Open] id 26
len 10 protocol CDPCP (0x820701240004) Dec 30 18:12:43.307: Se0:21 IPCP: I CONFACK [ACKsent] id
13 len 10 Dec 30 18:12:43.307: Se0:21 IPCP: Address 10.1.1.65 (0x03060A010141) Dec 30
18:12:43.307: Se0:21 IPCP: State is Open Dec 30 18:12:43.307: Se0:21 DDR: dialer protocol up Dec
30 18:12:43.307: Di2 IPCP: Install route to 10.1.1.66
!--- A route to the peer is installed. Dec 30 18:12:44.263: %LINEPROTO-5-UPDOWN: Line protocol
on Interface Serial0:21,
changed state to up
Dec 30 18:12:49.135: %ISDN-6-CONNECT: Interface Serial0:21 is now connected to
9996100 remoteISDN01
```

```
remoteISDN01#debug ppp negotiation
PPP protocol negotiation debugging is on
remoteISDN01#debug isdn q931
ISDN Q931 packets debugging is on
remoteISDN01#show debug
PPP:
```

PPP protocol negotiation debugging is on

ISDN:

ISDN Q931 packets debugging is on

remoteISDN01#

Dec 30 18:13:04: ISDN BR0: RX <- SETUP pd = 8 callref = 0x1B

Dec 30 18:13:04: Bearer Capability i = 0x8890

Dec 30 18:13:04: Channel ID i = 0x89

Dec 30 18:13:04: Signal i = 0x40 - Alerting on - pattern 0

Dec 30 18:13:04: Called Party Number i = 0xA1, '2019996100', Plan:ISDN,

Type:National

Dec 30 18:13:04: ISDN BR0: Event: Received a DATA call from <unknown> on B1 at
64 Kb/s

Dec 30 18:13:04: ISDN BR0: Event: Accepting the call id 0x2D

Dec 30 18:13:04: %LINK-3-UPDOWN: Interface BRI0:1, changed state to up

Dec 30 18:13:04: BR0:1 PPP: Treating connection as a callin

Dec 30 18:13:04: BR0:1 PPP: Phase is ESTABLISHING, Passive Open [0 sess, 1 load]

Dec 30 18:13:04: BR0:1 LCP: State is Listen

Dec 30 18:13:04: **ISDN BR0: TX -> CALL_PROC pd = 8 callref = 0x9B**

!--- Outgoing ISDN Q.931 SETUP message. Dec 30 18:13:04: Channel ID i = 0x89 Dec 30 18:13:04:
ISDN BR0: TX -> CONNECT pd = 8 callref = 0x9B Dec 30 18:13:05: BR0:1 LCP: I CONFREQ [Listen] id
25 len 15 Dec 30 18:13:05: BR0:1 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:13:05: BR0:1 LCP:
MagicNumber 0x4AA54104 (0x05064AA54104) Dec 30 18:13:05: BR0:1 LCP: O CONFREQ [Listen] id 55 len
15 Dec 30 18:13:05: BR0:1 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:13:05: BR0:1 LCP:
MagicNumber 0x575DC27D (0x0506575DC27D) Dec 30 18:13:05: BR0:1 LCP: O CONFACK [Listen] id 25 len
15 Dec 30 18:13:05: BR0:1 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:13:05: BR0:1 LCP:
MagicNumber 0x4AA54104 (0x05064AA54104) Dec 30 18:13:05: ISDN BR0: RX <- CONNECT_ACK pd = 8
callref = 0x1B *!--- Received Q.931 CONNECT message.* Dec 30 18:13:05: Signal i = 0x4F - Alerting
off Dec 30 18:13:05: BR0:1 LCP: I CONFACK [ACKsent] id 55 len 15 Dec 30 18:13:05: BR0:1 LCP:
AuthProto CHAP (0x0305C22305) Dec 30 18:13:05: BR0:1 LCP: MagicNumber 0x575DC27D
(0x0506575DC27D) Dec 30 18:13:05: BR0:1 LCP: State is Open Dec 30 18:13:05: BR0:1 PPP: Phase is
AUTHENTICATING, by both [0 sess, 1 load] Dec 30 18:13:05: BR0:1 CHAP: O CHALLENGE id 36 len 33
from "remoteISDN01" Dec 30 18:13:05: BR0:1 CHAP: I CHALLENGE id 13 len 27 from "AS5300" Dec 30
18:13:05: BR0:1 CHAP: Waiting for peer to authenticate first Dec 30 18:13:05: BR0:1 CHAP: I
RESPONSE id 36 len 27 from "AS5300" Dec 30 18:13:05: BR0:1 CHAP: O SUCCESS id 36 len 4 Dec 30
18:13:05: BR0:1 CHAP: Processing saved Challenge, id 13 Dec 30 18:13:05: BR0:1 CHAP: O RESPONSE
id 13 len 33 from "remoteISDN01" Dec 30 18:13:05: BR0:1 CHAP: I SUCCESS id 13 len 4 *!--- Two-way
CHAP authentication is successful.* Dec 30 18:13:05: BR0:1 PPP: Phase is UP [0 sess, 0 load] Dec
30 18:13:05: BR0:1 IPCP: O CONFREQ [Closed] id 36 len 10 Dec 30 18:13:05: BR0:1 IPCP: Address
10.1.1.66 (0x03060A010142) Dec 30 18:13:05: BR0:1 CDPCP: O CONFREQ [Closed] id 36 len 4 Dec 30
18:13:05: BR0:1 IPCP: I CONFREQ [REQsent] id 13 len 10 Dec 30 18:13:05: BR0:1 IPCP: Address
10.1.1.65 (0x03060A010141) Dec 30 18:13:05: BR0:1 IPCP: O CONFACK [REQsent] id 13 len 10 Dec 30
18:13:05: BR0:1 IPCP: Address 10.1.1.65 (0x03060A010141) Dec 30 18:13:05: BR0:1 IPCP: I CONFACK
[ACKsent] id 36 len 10 Dec 30 18:13:05: BR0:1 IPCP: Address 10.1.1.66 (0x03060A010142) Dec 30
18:13:05: BR0:1 IPCP: State is Open Dec 30 18:13:05: BR0:1 LCP: I PROTREJ [Open] id 26 len 10
protocol CDPCP (0x8207 01240004) Dec 30 18:13:05: BR0:1 CDPCP: State is Closed Dec 30 18:13:05:
BR0 **IPCP: Install route to 10.1.1.65**

!--- A route to the peer is installed. Dec 30 18:13:06: %LINEPROTO-5-UPDOWN: **Line protocol on
Interface BRI0:1,
changed state to up**

Dec 30 18:13:06: BR0:1 PPP: Outbound cdp packet dropped, CDPCP is Closed
[starting negotiations]

Dec 30 18:13:06: BR0:1 CDPCP: State is Closed

Dec 30 18:13:06: BR0:1 PPP: Outbound cdp packet dropped, CDPCP is Closed
[starting negotiations]

Dec 30 18:13:06: BR0:1 CDPCP: State is Closed

Dec 30 18:13:06: BR0:1 PPP: Outbound cdp packet dropped, CDPCP is Closed
[starting negotiations]

Dec 30 18:13:06: BR0:1 CDPCP: State is Closed

Dec 30 18:13:06: BR0:1 CDPCP: TIMEOUT: State Closed

Dec 30 18:13:06: BR0:1 CDPCP: State is Listen

Dec 30 18:13:10: %ISDN-6-CONNECT: **Interface BRI0:1 is now connected to AS5300**

相关信息

- [以 PRI 配置接入服务器，用于流入的异步呼叫与 ISDN 呼叫](#)
- [在相同的 T1/E1 PRI 电路上配置拨入与拨出](#)
- [对基本拨号接入进行NAS配置](#)
- [拨号解决方案配置指南](#)
- [了解 debug isdn q931 断开原因代码](#)
- [拨号技术：故障排除技术](#)
- [T1 PRI 故障排除](#)
- [调制解调器故障排除](#)
- [调制解调器调试命令](#)
- [拨号和接入技术支持](#)
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