

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

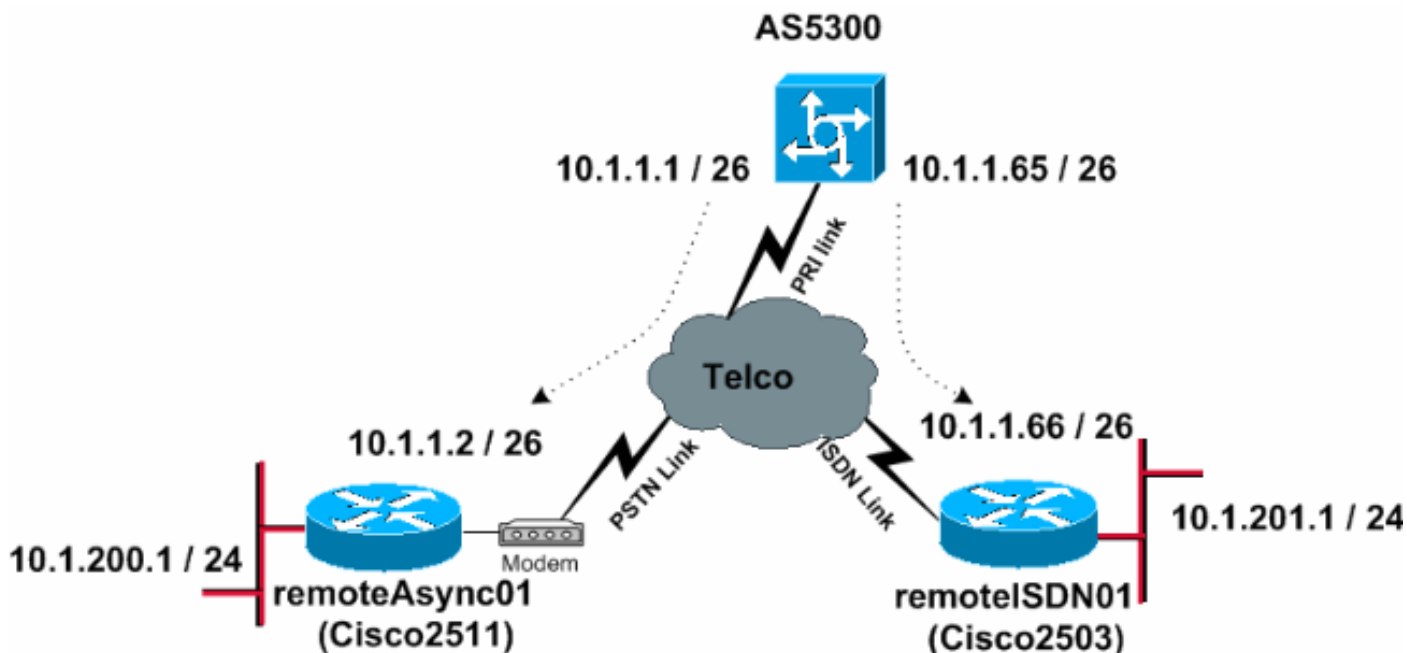
本部分提供有关如何配置本文档所述功能的信息。对于此网络，您需要以下信息：

- 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 Calling
Called Remote Seconds Seconds Seconds Charges Type Number Number Name Used Left Idle
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 Calling
Called Remote Seconds Seconds Seconds Charges Type Number Number Name Used Left Idle
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: 0x801FFFFF 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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 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 Avg Hold Inc calls Out calls Busied Failed No Succ
Mdm Time Succ Fail Succ Fail Out Dial Answer Pct. 1/0 00:00:00 0 0 0 0 0 0 0 0 0% 1/1 00:00:00 0 0
0 0 0 0 0 0 0 0% 1/2 00:00:00 0 0 0 0 0 0 0 0 0% 1/3 00:00:00 0 0 0 0 0 0 0 0 0% 1/4 00:00:00 0 0 0 0 0
0 0 0 0 0% 1/5 00:00:00 0 0 0 0 0 0 0 0 0% 1/6 00:00:00 0 0 0 0 0 0 0 0 0% 1/7 00:00:00 0 0 0 0 0 0 0 0 0%
1/8 00:00:00 0 0 0 0 0 0 0 0 0% 1/9 00:00:00 0 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 0% 1/13 00:00:00 0 0 0 0 0 0 0 0 0%
1/14 00:00:00 0 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 PROTREQ [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 CDP: I CONFREQ [Not negotiated] id 25 len 4 Dec 30 17:58:55: As1 LCP: O
PROTREQ [Open] id 54 len 10 protocol CDP (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, changed state to up
```

从 AS5300 到 remoteISDN01 路由器的调试拔出

```
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 CDP: I CONFREQ [Not negotiated] id 36 len 4 Dec
30 18:12:43.291: Se0:21 LCP: O PROTREQ [Open] id 26 len 10 protocol CDP (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: BR0:1 **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](#)
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