AS5300使用ISDN/非同步撥出（出站DDR）

目錄

簡介

此配置有一個AS5300，具有四個主速率介面(PRI)，支援96個數據機呼叫或大量ISDN呼叫。它配置了四個PRI以允許非同步和ISDN出站連線。在撥號端，為每個ISDN/非同步連線配置靜態撥號器對映。靜態IP路由在連線的兩端使用，以避免動態路由協定不必要的開銷。新增遠端位置需要在撥號端為新目標新增撥號器對映、使用者名稱和靜態路由。所有遠端節點都有固定的IP地址。

開始之前

慣例

如需文件慣例的詳細資訊，請參閱思科技術提示慣例。

必要條件

第1步 — 配置並驗證撥出客戶端設定是否正確。

撥出配置 — 此AS5300撥出到的裝置：

- PRI:為傳出非同步和ISDN呼叫配置具有PRI的訪問伺服器 — 使用文檔中提供的中心站點AS5300系列路由器（主機名AS5300）配置。

- BRI接收來自AS5300的來電：使用撥號程式配置檔案配置ISDN按需撥號路由(DDR) — 使用文檔中提供的客戶端站點Cisco 2503路由器(hostname remoteISDN01)配置。
- 非同步接收來自AS5300的來電：使用撥號程式配置檔案配置介面組非同步 — 使用文檔中提供的客戶端站點思科2511路由器（主機名remoteAsync01）配置

步驟2 — 檢驗電信電路是否工作正常。您可以使用**show isdn status**命令驗證BRI或PRI電路是否正常工作。如需詳細資訊，請參閱[使用show isdn status命令進行BRI疑難排解](的檔案。您還必須為出站呼叫啟用T1/E1 PRI電路。請與您的電話公司聯絡以驗證此資訊。

採用元件

本檔案中的資訊是根據以下軟體和硬體版本。

- Cisco AS5300、Cisco 2511和Cisco 2503
- Cisco IOS®軟體版本12.2(10b)
- 外部非同步數據機

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除（預設）的組態來啟動。如果您在即時網路中工作，請確保在使用任何命令之前瞭解其潛在影響。

背景理論

在某些情況下，可能需要使用T1/E1 PRI電路進行撥出。這有助於確保T1/E1 PRI電路撥號到的客戶端或分支機構是安全的標識，而不是使用重複的使用者名稱和密碼撥入網路的未知使用者。

相關產品

此配置可用於具有T1或PRI卡的任何路由器。因此，任何帶T1或PRI卡的AS5xxx系列路由器都可以使用此配置。Cisco 2600和3600系列路由器還可以配置為使用T1/PRI WAN介面卡(WIC)或網路模組撥出ISDN呼叫。

也可以修改此配置以用於E1或PRI埠。為E1控制器配置Telco提供的線路編碼、成幀和其他物理特性。D通道配置（E1的介面Serial x:15）類似於此處所示的配置。
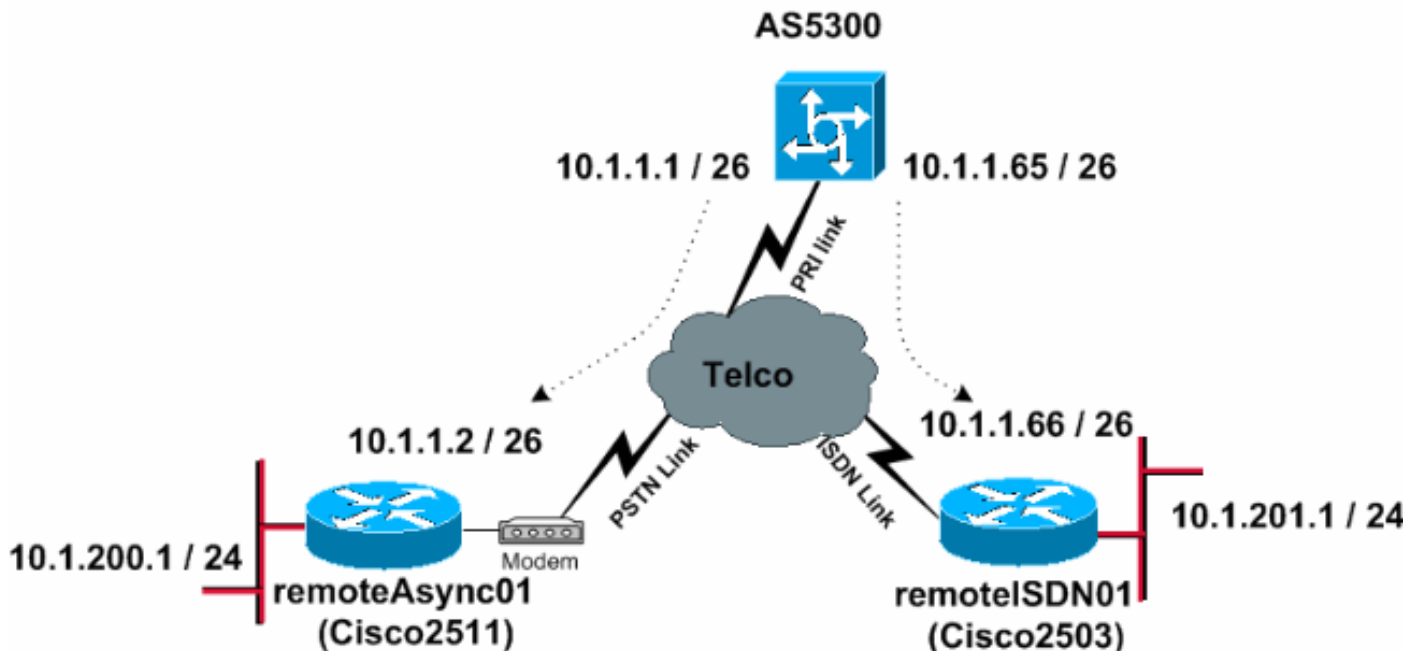
設定

本節提供用於設定本文件中所述功能的資訊。對於此網路，您需要以下資訊：

- PRI交換機型別、成幀和線路編碼。
- 要撥入的所有遠端節點的使用者名稱和密碼。即使以後要新增TACACS+或RADIUS，也要在路由器上新增幾個名稱以測試線路。
- IP編址方案。

注意：要查詢有關本文檔中使用的命令的其他資訊，請使用[命令查詢工具]([僅限註]冊客戶)。

網路圖表

本文檔使用下圖所示的網路設定。

組態

本文檔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
```

驗證

本節提供的資訊可用於確認您的組態是否正常運作。

輸出直譯器工具(僅供註冊客戶使用)支援某些show命令，此工具可讓您檢視show命令輸出的分析。

- **show isdn status** — 確保路由器與ISDN交換機正確通訊。在輸出中，驗證第1層狀態是否為 ACTIVE，以及是否顯示第2層狀態狀態= MULTIPLE_FRAME_ESTABLISHED。此命令還顯示 活動呼叫的數量。
- **show ppp multilink** -顯示有關處於活動狀態的多鏈路捆綁包的資訊。應使用此命令驗證多鏈路 連線。
- **show dialer [interface type number]** — 顯示為DDR配置的介面的常規診斷資訊。如果撥號器正 常啟動，應顯示「撥號器狀態為資料鏈路層啟動」消息。如果出現物理層啟動，則線路協定啟 動，但網路控制協定(NCP)未啟動。發起撥號的資料包的源地址和目的地址顯示在撥號原因行 中。此show命令還會顯示計時器的配置和連線超時前的時間。
- **show caller user username detail** — 顯示特定使用者的引數，例如分配的IP地址、PPP和 PPP捆綁引數等。如果您的Cisco IOS軟體版本不支援此命令，請使用show user命令。
- **show dialer map** — 顯示已配置的動態和靜態撥號器對映。此命令可用於檢視是否建立了動態 撥號器對映。如果沒有撥號器對映，則無法路由資料包。
- **show isdn service** — 檢查B通道的狀態。（此命令僅適用於支援PRI/T1控制器的訪問伺服器。 ）
- **show user** — 顯示當前連線的非同步/同步使用者。

下面是成功呼叫的一些show命令輸出。注意產出中的粗體部分和評論。將您獲得的輸出與下面顯示 的結果進行比較。

在與remoteISDN01和remoteAsync01路由器建立連線之前，將獲得以下輸出。

```
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
```
建立與remoteISDN01和remoteAsync01路由器的連線後，將獲得以下輸出。

```
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 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%
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.
```

疑難排解

本節提供的資訊可用於對組態進行疑難排解。

疑難排解資源

- 傳入ISDN呼叫故障排除 — 用於ISDN呼叫故障排除。
- PRI ISDN呼入 — 包含有關疑難排解ISDN呼叫失敗的其他資訊。
- T1故障排除流程圖 — 如果您懷疑T1電路工作不正常，請使用此流程圖。
- T1 PRI故障排除- ISDN PRI電路的故障排除過程
- T1/56K線路的環回測試 — 用於驗證路由器上的T1埠是否正常工作。
- 使用show isdn status命令進行BRI故障排除 — 使用本文檔進行BRI故障排除。
- 使用debug isdn q931命令排除ISDN BRI第3層故障 — 使用本文檔進行ISDN第3層故障排除。

疑難排解指令

輸出直譯器工具(僅供註冊客戶使用)支援某些show命令，此工具可讓您檢視show命令輸出的分析。

注意：發出debug指令之前，請先參閱有關Debug指令的重要資訊。

- debug dialer — 在介面上啟用DDR時，此命令顯示有關任何呼叫原因（稱為撥號原因）的資訊。
- debug isdn q931 -在發起出站呼叫時檢查ISDN連線。
- debug ppp negotiation — 檢視客戶端是否正在傳遞PPP協商。大量併發PPP協商可能會使路由器CPU不堪重負。
- debug ppp authentication — 檢視客戶端是否通過身份驗證。如果您使用的是Cisco IOS 11.2之前的版本，請改用debug ppp chap命令。
- debug ppp error — 顯示與PPP連線協商和操作相關的協定錯誤和錯誤統計資訊。

資料機疑難排解指令

- debug chat — 在呼叫發起時檢視聊天指令碼的執行。
- debug modem — 檢視路由器是否從數據機接收正確的訊號。
- debug modem csm — 啟用數據機管理呼叫交換模組(CSM)調試模式。

故障排除輸出

下面是成功傳出呼叫的調試輸出。注意產出中的粗體部分和評論。將您獲得的輸出與下面顯示的結果進行比較。

調試從AS5300 T1 PRI到remoteAsync01路由器的撥出連線

```
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 PROTREJ [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

調試從AS5300到遠端ISDN01路由器的撥出


```
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
```

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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
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!--- 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
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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
```

相關資訊

- [為傳入非同步和ISDN呼叫配置具有PRI的訪問伺服器](#)
- [在相同的T1/E1 PRI電路上配置撥入和撥出](#)