# AS5300: chiamata in uscita con ISDN/Async (DDR in uscita)

## Sommario

## Introduzione

Questa configurazione dispone di un AS5300 con quattro PRI (Primary Rate Interfaces) e supporto per 96 chiamate modem o un numero elevato di chiamate ISDN. È configurato con quattro PRI per consentire connessioni in uscita Async e ISDN. Le mappe dialer statiche sono configurate dal lato della composizione per ciascuna connessione ISDN/Async. Le route IP statiche vengono utilizzate a entrambe le estremità della connessione per evitare l'inutile sovraccarico di un protocollo di routing dinamico. L'aggiunta di una località remota richiede l'aggiunta di una mappa dialer, un nome utente e una route statica per la nuova destinazione sul lato della composizione. Tutti i nodi remoti dispongono di indirizzi IP fissi.

## Operazioni preliminari

### Convenzioni

Per ulteriori informazioni sulle convenzioni usate, consultare il documento [Cisco sulle convenzioni nei suggerimenti tecnici](#).

### Prerequisiti

**Passaggio 1** - Configurare e verificare che i client di connessione remota siano configurati correttamente.

**Configurazioni dialout - Dispositivo utilizzato da AS5300 per effettuare le chiamate in uscita:**

- PRI: Configurazione di un server di accesso con PRI per le chiamate Async e ISDN in uscita - Utilizzare la configurazione del router serie AS5300 del sito centrale (nome host AS5300) fornita nel documento.
- BRI per ricevere la chiamata in arrivo da AS5300: Configurazione del routing DDR (Dial-on-Demand Routing) ISDN con profili dialer - Utilizzare la configurazione del router Cisco 2503 (hostname remoteISDN01) del sito client fornita nel documento.
- Asincrono per la ricezione della chiamata in arrivo da AS5300: Configurazione dell'interfaccia Group-Async con i profili Dialer - Utilizzare la configurazione del router Cisco 2511 (hostname remoteAsync01) del sito client fornita nel documento

2. Verificare che i circuiti Telco funzionino correttamente. È possibile utilizzare il comando **show isdn status** per verificare che il circuito BRI o PRI funzioni correttamente. Per ulteriori informazioni, consultare il documento Uso del comando show isdn status per la risoluzione dei problemi BRI. È inoltre necessario abilitare il circuito PRI T1/E1 per le chiamate in uscita. Contattare la sede italiana di Telco per verificare queste informazioni.

## Componenti usati

Le informazioni fornite in questo documento si basano sulle versioni software e hardware riportate di seguito.

- Cisco AS5300, Cisco 2511 e Cisco 2503
- Cisco IOS® Software Release 12.2 (10b)
- Un modem asincrono esterno

Le informazioni discusse in questo documento fanno riferimento a dispositivi usati in uno specifico ambiente di emulazione. Su tutti i dispositivi menzionati nel documento la configurazione è stata ripristinata ai valori predefiniti. Se la rete è operativa, valutare attentamente eventuali conseguenze derivanti dall'uso dei comandi.

## Nozioni di base

In alcuni casi, potrebbe essere necessario utilizzare il circuito T1/E1 PRI per le connessioni di uscita. In questo modo, il client o la filiale a cui il circuito T1/E1 PRI chiama è protetto e non un utente sconosciuto che accede alla rete con il nome utente e la password duplicati.

## Prodotti correlati

Questa configurazione può essere utilizzata con qualsiasi router dotato di schede T1 o PRI. Pertanto, qualsiasi router serie AS5xxx con una scheda T1 o PRI può utilizzare questa configurazione. I router Cisco serie 2600 e 3600 possono anche essere configurati per effettuare chiamate ISDN con un T1/PRI WAN Interface Card (WIC) o Network Module.

Questa configurazione può anche essere modificata per essere utilizzata con le porte E1 o PRI. Configurare il controller E1 con la codifica della linea, il framing e altre caratteristiche fisiche fornite dalla Telco. La configurazione del canale D (interfaccia Serial x:15 per E1) è simile a quella mostrata di seguito.
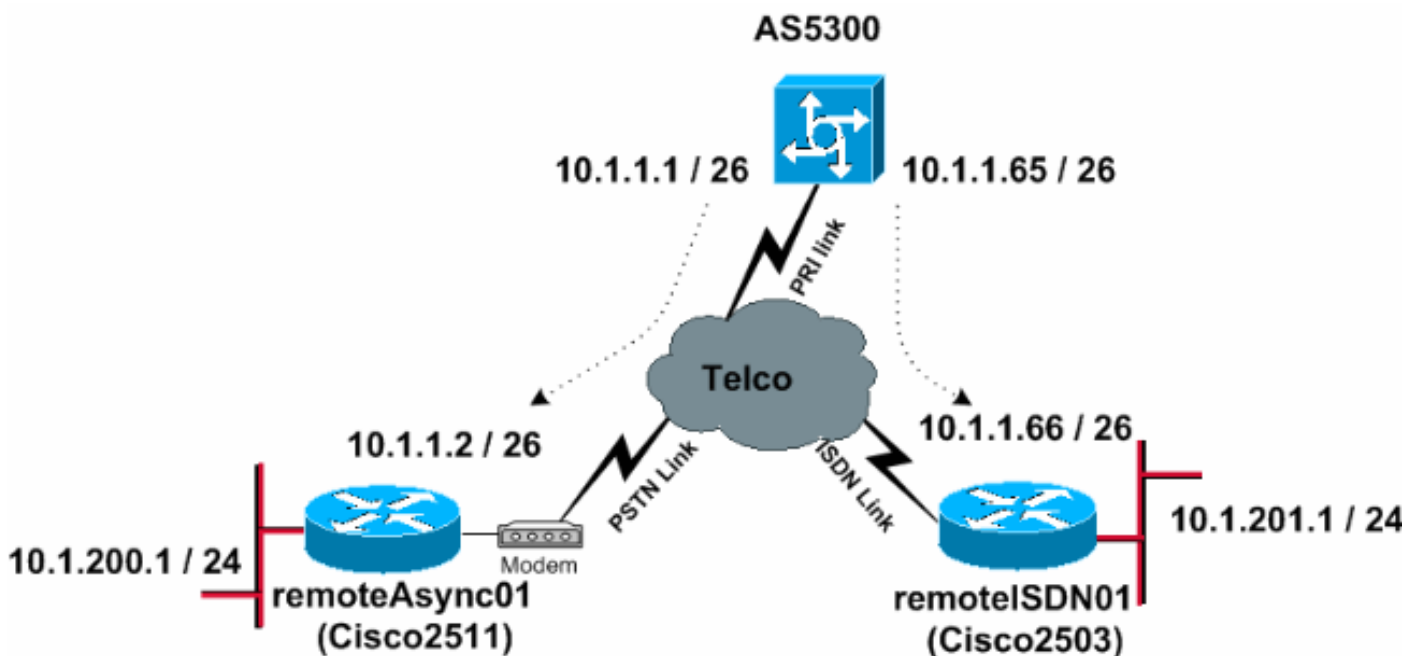
# Configurazione

In questa sezione vengono presentate le informazioni necessarie per configurare le funzionalità descritte più avanti nel documento. Per questa rete, è necessario quanto segue:

- Tipo di switch PRI, frame e codifica della linea.
- I nomi utente e le password di tutti i nodi remoti a cui si effettuerà la chiamata. Anche se si desidera aggiungere TACACS+ o RADIUS in un secondo momento, aggiungere alcuni nomi al router per verificare le linee.
- Lo schema di indirizzamento IP.

Nota: per ulteriori informazioni sui comandi menzionati in questo documento, usare lo strumento di ricerca dei comandi (solo utenti registrati).

# Esempio di rete

Questo documento utilizza le impostazioni di rete mostrate nel diagramma sottostante.



# Configurazioni

Questo documento utilizza le configurazioni mostrate di seguito.

- AS5300
- asincrona01 remota
- ISDN01 remoto

| AS5300 |
| --- |
| <pre>!
version 12.2
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname AS5300</pre> |

```
!
!
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
```

## asincrona01 remota

```
!
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
```

```
ISDN01 remoto

!
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
```

# Verifica

Le informazioni contenute in questa sezione permettono di verificare che la configurazione
funzioni correttamente.

Alcuni comandi **show sono supportati dallo** strumento Output Interpreter (solo utenti registrati); lo
strumento permette di visualizzare un'analisi dell'output del comando **show.**

- **show isdn status**: assicura che il router comunichi correttamente con lo switch ISDN.
  Nell'output, verificate che lo stato del livello 1 sia ATTIVO e che venga visualizzato lo stato
  dello stato del livello 2 = MULTIPLE_FRAME_DEFINED. Questo comando visualizza anche il
  numero di chiamate attive.
- **show ppp multilink**: visualizza le informazioni sui bundle di connessione multipla attivi.
  Utilizzare questo comando per verificare la connessione multipla.
- **show dialer [interface type number]**: visualizza informazioni di diagnostica generali per le
  interfacce configurate per il DDR. Se la connessione è stata attivata correttamente, verrà
  visualizzato il messaggio Stato connessione remota: livello collegamento dati. Se compare il
  livello fisico verso l'alto, allora è apparso il protocollo di linea, ma il Network Control Protocol
  (NCP) non lo ha fatto. Gli indirizzi di origine e di destinazione del pacchetto da cui è stata
  avviata la composizione vengono visualizzati nella riga del motivo della composizione. Questo
  comando show visualizza anche la configurazione del timer e il tempo che deve trascorrere
  prima del timeout della connessione.
- **show caller user username detail**: visualizza i parametri per l'utente specifico, ad esempio

l'indirizzo IP assegnato, i parametri del bundle PPP e PPP e così via. Se la versione del software Cisco IOS in uso non supporta questo comando, utilizzare il comando show user.

- **show dialer map** - Visualizza le mappe dialer dinamiche e statiche configurate. Questo comando consente di verificare se è stata creata una mappa dialer dinamica. Senza una mappa dialer, non è possibile indirizzare i pacchetti.
- **show isdn service** - Per controllare lo stato dei canali B. (Questo comando è solo per i server di accesso che supportano i controller PRI/T1.)
- **show user** - Per visualizzare gli utenti asincroni/sincronizzati attualmente connessi.

Di seguito sono riportati alcuni output del comando show per le chiamate riuscite. Fare attenzione alle sezioni in grassetto e ai commenti forniti negli output. Confrontare l'output ottenuto con il risultato mostrato di seguito.

L'output seguente viene ottenuto prima di stabilire la connessione con i router remoteISDN01 e remoteAsync01.

```
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
```

L'output seguente viene generato dopo aver stabilito la connessione con i router remoteISDN01 e remoteAsync01.

```
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 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.*

# Risoluzione dei problemi

Le informazioni contenute in questa sezione permettono di risolvere i problemi relativi alla configurazione.

# Risorse per la risoluzione dei problemi

- [Risoluzione dei problemi relativi alle chiamate ISDN in arrivo](#): da utilizzare per la risoluzione dei problemi relativi agli errori delle chiamate ISDN.
- [PRI ISDN Callin](#) - Contiene informazioni aggiuntive sulla risoluzione dei problemi relativi agli errori delle chiamate ISDN.
- [Diagramma di flusso per la risoluzione dei problemi T1](#): utilizzare questo diagramma di flusso se si sospetta che il circuito T1 non funzioni correttamente.
- [T1 PRI Troubleshooting](#) - Procedura di risoluzione dei problemi per i circuiti PRI ISDN
- [Test di loopback per linee T1/56K](#): da utilizzare per verificare che la porta T1 sul router funzioni correttamente.
- [Uso del comando show isdn status per la risoluzione dei problemi BRI](#) - Utilizzare questo documento per la risoluzione dei problemi BRI.
- [Risoluzione dei problemi di ISDN BRI layer 3 con il comando debug isdn q931](#) - Utilizzare questo documento per la risoluzione dei problemi di ISDN layer 3.

## Comandi per la risoluzione dei problemi

Alcuni comandi **show sono supportati dallo** [strumento Output Interpreter (solo utenti registrati); lo strumento permette di visualizzare un'analisi dell'output del comando](#) **show.**

**Nota:** prima di usare i comandi di **debug**, consultare le [informazioni importanti sui comandi di debug](#).

- **debug dialer**: quando sull'interfaccia è abilitato il DDR, questo comando visualizza informazioni sulla causa di qualsiasi chiamata (detta causa di composizione).
- **debug isdn q931** - Per controllare le connessioni ISDN come inizializzate le chiamate in uscita.
- **debug ppp negotiation**: per verificare se un client sta passando una negoziazione PPP. Un numero elevato di negoziazioni PPP simultanee può sovraccaricare la CPU del router.
- **debug ppp authentication**: consente di verificare se un client sta passando l'autenticazione. Se si usa una versione precedente a Cisco IOS versione 11.2, usare il comando debug ppp chap.
- **debug ppp error**: consente di visualizzare gli errori di protocollo e le statistiche sugli errori associate alla negoziazione e al funzionamento della connessione PPP.

## Comandi per la risoluzione dei problemi del modem

- **debug chat**: per visualizzare l'esecuzione dello script di chat quando viene avviata una chiamata.
- **debug modem**: per verificare se il router riceve i segnali corretti dal modem.
- **debug modem csm** - Per abilitare la modalità di debug del modulo CSM (Call Switching Module) di gestione del modem.

## Output della risoluzione dei problemi

Di seguito sono riportati gli output del comando debug per una chiamata in uscita completata. Fare attenzione alle sezioni in grassetto e ai commenti forniti negli output. Confrontare l'output ottenuto con il risultato mostrato di seguito.

# Debug della connessione di uscita da AS5300 T1 PRI a remoteAsync01 Router

```
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**

## Debug di Dialout da AS5300 a remote ISDN01 Router

```
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**
```

# Informazioni correlate

- Configurazione di un server di accesso con PRI per le chiamate asincrone e ISDN in arrivo
- Configurazione di ingresso e uscita sugli stessi circuiti PRI T1/E1
- Configurazione del server NAS per Basic Dial Access
- Guida alla configurazione delle soluzioni di composizione
- Informazioni sui codici causa di disconnessione debug isdn q931
- Tecnologia Dialup: Tecniche di risoluzione dei problemi
- Risoluzione dei problemi di T1 PRI

- [Risoluzione dei problemi dei modem](#)
- [Comandi di debug per il modem](#)
- [Supporto tecnico per Dial and Access](#)
- [Documentazione e supporto tecnico – Cisco Systems](#)