

# Configuring PPP Callback over ISDN with an AAA Provided Callback String

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## [Introduction](#)

Este documento fornece um exemplo de configuração para o retorno de chamada PPP entre dois roteadores Cisco.

## [Prerequisites](#)

## [Requirements](#)

Não existem requisitos específicos para este documento.

## [Componentes Utilizados](#)

As informações neste documento são baseadas nestas versões de software e hardware:

- Software Cisco IOS® versão 12.0(3)T ou posterior.

**Observação:** para configurar o retorno de chamada PPP com a ajuda de uma string de retorno de chamada atribuída a um servidor AAA, você precisa usar o comando **dialer aaa**, que está disponível no Cisco IOS Software Release 12.0(3)T ou posterior. No entanto, nas versões 12.1(4)T, 12.2(1)T e posteriores do Cisco IOS, esse comando não é necessário para o retorno de chamada PPP com uma string de retorno de chamada atribuída ao servidor AAA.

**Observação:** o comando `dialer aaa` só é suportado com o DDR legado (como mostrado na [figura 1](#)).

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

## [Conventions](#)

Para obter mais informações sobre convenções de documento, consulte as [Convenções de dicas técnicas Cisco](#).

## [Informações de Apoio](#)

O TACACS+ (servidor AAA) é usado para fornecer a string de discagem de retorno para o servidor de retorno de chamada. No entanto, você também pode usar RADIUS para fornecer a sequência de chamada de retorno. Para configurar o retorno de chamada PPP com autenticação, autorização e contabilização (AAA) locais, consulte [Configurando o retorno de chamada PPP sobre ISDN](#).

Nesta configuração de exemplo, o retorno de chamada usa o PPP e os recursos especificados no RFC 1570. O retorno de chamada PPP através do circuito ISDN é concluído nesta ordem:

1. O cliente de retorno de chamada inicia e ativa uma conexão ISDN ao roteador do servidor de retorno de chamada.
2. O cliente de retorno de chamada e o servidor de retorno negociam o protocolo de controle de enlace (LCP - Link Control Protocol) PPP. Na negociação do LCP, o retorno de chamada é solicitado, negociado e acordado.
3. O cliente de retorno de chamada e o servidor de retorno autenticam-se com o PPP Password Authentication Protocol (PAP) ou Challenge Handshake Authentication Protocol (CHAP). No entanto, você pode configurar o cliente de retorno de chamada para não autenticar o servidor de retorno de chamada, por meio do comando [ppp authentication chap callin](#).
4. O servidor de retorno de chamada obtém os atributos de retorno de chamada necessários, como a série de discagem de retorno (o número de telefone do cliente) do servidor AAA.
5. Ambos os roteadores descartam a conexão ISDN.
6. O servidor de retorno de chamada inicia o retorno de chamada para o cliente. Quando a chamada se conecta, os roteadores se autenticam e o link é estabelecido.

## [Configurar](#)

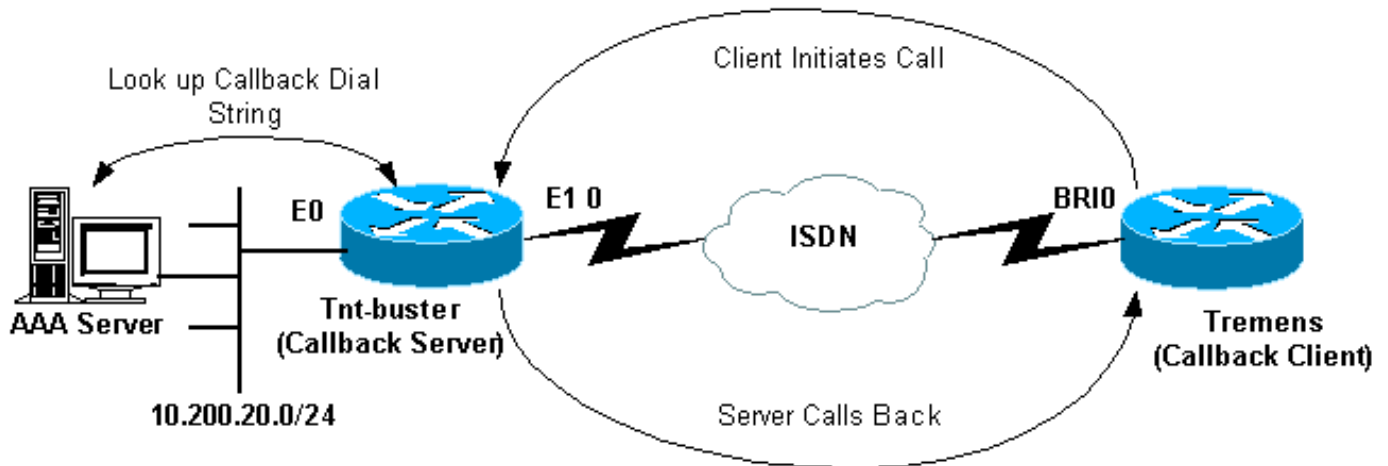
Nesta seção, você encontrará informações para configurar os recursos descritos neste documento.

**Observação:** para encontrar informações adicionais sobre os comandos usados neste documento, use a [ferramenta Command Lookup Tool](#) (somente clientes [registrados](#)).

## [Diagrama de Rede](#)

Este documento utiliza a seguinte configuração de rede:

Figura 1 – Diagrama da Rede



## Configurações

Este documento utiliza as seguintes configurações:

- Configuração do Freeware TACACS+
- Configuração de RADIUS
- Configuração RADIUS alternativa
- Configuração do Tnt-buster (Servidor de Retorno de Chamada)
- Configuração de Tremens (Cliente de Retorno de Chamada)

### Configuração do Freeware TACACS+

```
user = tremens {  
  default service = permit  
  login = cleartext "cisco"  
  chap = cleartext "cisco"  
  !--- CHAP password. service = ppp protocol = lcp {  
  callback-dialstring = "6083" !--- Number to callback.  
  send-secret = "cisco" } }
```

Você também pode usar o RADIUS como servidor AAA para fornecer os atributos de retorno de chamada em vez de TACACS+. Um exemplo da configuração RADIUS é fornecido aqui:

### Configuração de RADIUS

```
tremens          Auth-Type = Local, Password = "cisco"  
                 Service-Type = Framed-User,  
  !--- Service-Type(6) is Framed User(4). Cisco-AVPair =  
  "lcp:callback-dialstring=6083", Cisco-AVPair =  
  "lcp:send-secret=cisco"
```

**Observação:** na configuração RADIUS mostrada acima, o Cisco AVPair `lcp:send-secret=cisco` é necessário no momento da autenticação do retorno de chamada. Se não incluir este AVPair, você deve configurar o nome de usuário e a senha CHAP do roteador remoto localmente no servidor de chamada de retorno.

**Observação:** este documento trata principalmente do TACACS+. As depurações fornecidas neste documento não mostram um retorno de chamada iniciado por RADIUS.

**Observação:** na versão 12.1(7) do Cisco IOS, é possível usar o atributo 19 RADIUS da Internet Engineering Task Force (IETF) para o retorno de chamada da Microsoft analógico e ISDN. Nesse caso, não é necessário usar os Cisco AVPairs, mostrados na configuração anterior. Consulte o exemplo de configuração RADIUS alternativo mostrado aqui:

### Configuração RADIUS alternativa

```
tremens          Auth-Type = Local, Password = "cisco"
                 Service-Type = callback framed
                 !--- Service-Type (6) is callback
                 framed (4). !--- Callback framed is also known as !---
                 Dialback-Framed-User. Callback =6083 !--- IETF RADIUS
                 Callback attribute (19) with the phone !--- number for
                 the callback.
```

**Observação:** as depurações RADIUS mostrarão o atributo 19 RADIUS IETF retornado ao servidor de chamada de retorno.

As configurações para os dois roteadores usados neste exemplo são mostradas aqui:

### Tnt-buster (servidor de retorno de chamada)

```
version 12.1
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Tnt-buster
!
boot system flash flash:c5300-i-mz.121-4
logging buffered 1000000 debugging
aaa new-model
aaa authentication login none none
aaa authentication ppp default group tacacs+ local
!--- AAA methods for PPP authentication. aaa
authorization network default group tacacs+ !--- AAA
authorization methods for RADIUS implementation. !---
Replace TACACS+ with RADIUS in the statements above. !
spe 1/0 1/23 firmware location
system:/ucode/microcom_firmware ! resource-pool disable
! ip subnet-zero no ip domain-lookup ! isdn switch-type
primary-net5 ! controller E1 0 !--- E1 interface that
accepts the initial call and performs the callback.
clock source line primary pri-group timeslots 1-31 ! !
!--- irrelevant output has been omitted. ! interface
Loopback0 ip address 2.2.2.2 255.255.255.255 ! interface
Ethernet0 ip address 10.200.20.42 255.255.255.0 !
interface Serial0:15 !--- D-channel for controller E1 0.
no ip address encapsulation ppp dialer rotary-group 1 !-
-- Assign E1 0 to rotary-group 1 (which is necessary for
dialout). !--- Rotary-group properties are defined in
interface Dialer 1. isdn switch-type primary-net5 no cdp
enable ! ! !--- irrelevant output has been omitted. ! !
interface Dialer1 !--- This is the interface for the
dialer rotary-group 1 configuration. ip unnumbered
Loopback0 encapsulation ppp dialer in-band dialer aaa !-
```

```

-- This allows AAA to retrieve the callback dial string
via AAA servers. !--- This command is required for
callback attributes to be obtained !--- from the AAA
server. dialer idle-timeout 60 dialer enable-timeout 5
!--- The time (in seconds) between initial call
disconnect and callback !--- initiation. dialer hold-
queue 20 !--- This holds 20 packets destined for the
remote destination until the !--- connection is made.
dialer-group 1 no peer default ip address !--- The peer
is not given an IP address from a pool. !--- IP pool can
be defined if necessary. ppp callback accept !--- Allows
the interface to accept a callback request from a remote
host. ppp authentication chap callin ! ip route 0.0.0.0
0.0.0.0 10.200.20.1 no ip http server ! dialer-list 1
protocol ip permit tacacs-server host 10.200.20.134 key
cisco !--- The IP address and key of the TACACS+ server.
! line con 0 exec-timeout 0 0 length 30 transport input
none line 1 24 line aux 0 line vty 0 4 no exec-banner
exec-timeout 0 0 login authentication none ! end

```

### Tremens (Cliente de Retorno de Chamada)

```

version 12.1
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname tremens
!
username tnt-buster password 0 cisco
!--- Username and shared secret password used for CHAP
authentication. !--- The AAA server must have this
router hostname (tnt-buster) and !--- shared secret
(cisco) configured. ! ip subnet-zero no ip finger no ip
domain-lookup ! isdn switch-type basic-net3 ! interface
Loopback0 ip address 3.3.3.3 255.255.255.255 ! interface
Ethernet0 ip address 10.200.16.54 255.255.255.0 !
interface BRI0 !--- The interface used for dialin and
dialout. no ip address encapsulation ppp dialer pool-
member 1 !--- Assign BRI0 as member of dialer pool 1. !-
-- Dialer pool 1 is specified in interface Dialer 1.
isdn switch-type basic-net3 ppp authentication chap !
interface Dialer1 ip unnumbered Loopback0 encapsulation
ppp dialer pool 1 !--- Defines dialer pool 1. !--- BRI 0
is a member of this pool. dialer idle-timeout 60 dialer
string 8211 !--- The number to dial when dialing out for
the initial call. dialer hold-queue 20 !--- This holds
20 packets destined for the remote destination until the
!--- connection is made. dialer-group 1 no peer default
ip address no fair-queue no cdp enable ppp callback
request !--- Request PPP callback from the server. ppp
authentication chap ! ip route 2.2.2.2 255.255.255.255
Dialer1 !--- IP route for the dialer interface. no ip
http server ! dialer-list 1 protocol ip permit ! line
con 0 exec-timeout 0 0 transport input none line aux 0
line vty 0 4 exec-timeout 0 0 login ! end

```

## Verificar

Esta seção fornece informações que você pode usar para confirmar se sua configuração está funcionando adequadamente.

A [Output Interpreter Tool \(somente clientes registrados\) oferece suporte a determinados comandos show, o que permite exibir uma análise da saída do comando show.](#)

- **show dialer *interface type number***—exibe informações gerais de diagnóstico para interfaces configuradas para DDR (dial-on-demand routing). Os endereços de origem e destino do pacote que iniciou a discagem são mostrados na linha de razão de discagem. Esse comando também exibe os temporizadores de conexão.
- **show isdn status** —permite que você assegure que o roteador se comunique corretamente com o switch ISDN. Na saída, verifique se o status da camada 1 está ATIVO e se o estado de status da camada 2 = MULTIPLE\_FRAME\_ESTABLISHED é exibido. Esse comando exibe também o número de chamadas ativas.

## Troubleshoot

Esta seção fornece informações que podem ser usadas para o troubleshooting da sua configuração.

Consulte [Referência de Comando de Depuração do Cisco IOS versão 12.0](#) para obter mais informações sobre comandos debug.

### Comandos de Troubleshooting (Opcional)

A [Output Interpreter Tool \(somente clientes registrados\) oferece suporte a determinados comandos show, o que permite exibir uma análise da saída do comando show.](#)

**Observação:** antes de inserir o comando **debug**, consulte [Informações importantes sobre os comandos debug](#).

- **debug isdn q931**—mostra a configuração de chamada e o desligamento da conexão de rede ISDN (Camada 3).
- **debug dialer [events / packets ]**—exibe informações de depuração DDR sobre os pacotes recebidos em uma interface de discador.
- **debug aaa authentication** — exibe informações sobre autenticação AAA.
- **debug aaa authorization** — exibe informações sobre a autorização AAA.
- **debug tacacs** —exibe informações detalhadas de depuração associadas ao TACACS+.
- **debug ppp negotiation** —exibe informações sobre o tráfego e as trocas PPP enquanto a negociação dos componentes PPP está em andamento, incluindo o LCP (Link Control Protocol), a autenticação e o NCP. Uma negociação de PPP bem-sucedida abrirá primeiramente o estado do LCP e, em seguida, autenticará e, finalmente, negociará o NCP.
- **debug ppp authentication** —exibe as mensagens do protocolo de autenticação PPP, incluindo as trocas de pacotes CHAP (Challenge Authentication Protocol Protocolo de Autenticação de Desafio) e PAP (Password Authentication Protocol Protocolo de Autenticação de Senha). Se você observar uma falha, verifique se o nome de usuário e a senha do CHAP estão configurados corretamente.
- **debug callback** —exibe eventos de retorno de chamada quando o roteador usa um modem e um script de bate-papo para retornar a chamada em uma linha de terminal. Como esse comando é para modems e scripts de bate-papo, ele não é usado nessa configuração.

## Exemplo de saída de depuração

tnt-buster#**show debug**

General OS:

TACACS access control debugging is on

AAA Authentication debugging is on

AAA Authorization debugging is on

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 - - - - -

tnt-buster#

\*Oct 16 08:59:26.403: ISDN Se0:15: RX <- SETUP pd = 8 callref = 0x4880

*!--- incoming ISDN call setup message.* \*Oct 16 08:59:26.403: Sending Complete \*Oct 16

08:59:26.403: Bearer Capability i = 0x8890 \*Oct 16 08:59:26.403: Channel ID i = 0xA1839A \*Oct 16

08:59:26.403: Calling Party Number i = 0xA1, '6083', Plan:ISDN, Type:National *!--- Calling Party*

*Number is configured in the callback string on !--- the AAA server.* \*Oct 16 08:59:26.403: Called

Party Number i = 0x81, '211', Plan:ISDN, Type:Unknown \*Oct 16 08:59:26.407: Locking Shift to

Codeset 6 \*Oct 16 08:59:26.407: Codeset 6 IE 0x28 i = 'ISDN-EDU-4' \*Oct 16 08:59:26.407: ISDN

Se0:15: TX -> CALL\_PROC pd = 8 callref = 0xC880 \*Oct 16 08:59:26.411: Channel ID i = 0xA9839A

\*Oct 16 08:59:26.415: %LINK-3-UPDOWN: Interface Serial0:25, changed state to up \*Oct 16

08:59:26.419: Se0:25 PPP: Treating connection as a callin \*Oct 16 08:59:26.419: Se0:25 PPP:

Phase is ESTABLISHING, Passive Open \*Oct 16 08:59:26.419: Se0:25 LCP: State is Listen \*Oct 16

08:59:26.419: ISDN Se0:15: TX -> CONNECT pd = 8 callref = 0xC880 \*Oct 16 08:59:26.419: Channel

ID i = 0xA9839A \*Oct 16 08:59:26.459: ISDN Se0:15: RX <- CONNECT\_ACK pd = 8 callref = 0x4880

\*Oct 16 08:59:26.463: ISDN Se0:15: CALL\_PROGRESS: CALL\_CONNECTED call id 0x28, bchan 25, dsl 0

\*Oct 16 08:59:26.551: Se0:25 LCP: I CONFREQ [Listen] id 126 len 18 *!--- PPP LCP negotiation*

*begins.* \*Oct 16 08:59:26.555: Se0:25 LCP: AuthProto CHAP (0x0305C22305) \*Oct 16 08:59:26.555:

Se0:25 LCP: MagicNumber 0x3E7BCBD2 (0x05063E7BCBD2) \*Oct 16 08:59:26.555: Se0:25 LCP: Callback 0

(0x0D0300) \*Oct 16 08:59:26.555: Se0:25 AAA/AUTHOR/FSM: (0): LCP succeeds trivially \*Oct 16

08:59:26.555: Se0:25 LCP: O CONFREQ [Listen] id 1 len 15 \*Oct 16 08:59:26.555: Se0:25 LCP:

AuthProto CHAP (0x0305C22305) \*Oct 16 08:59:26.555: Se0:25 LCP: MagicNumber 0xE06953E4

(0x0506E06953E4) \*Oct 16 08:59:26.555: Se0:25 LCP: O CONFACK [Listen] id 126 len 18 \*Oct 16

08:59:26.555: Se0:25 LCP: AuthProto CHAP (0x0305C22305) \*Oct 16 08:59:26.555: Se0:25 LCP:

MagicNumber 0x3E7BCBD2 (0x05063E7BCBD2) \*Oct 16 08:59:26.555: Se0:25 LCP: Callback 0 (0x0D0300)

*!--- Callback option is acknowledged (CONFACKed).* \*Oct 16 08:59:26.587: Se0:25 LCP: I CONFACK

[ACKsent] id 1 len 15 \*Oct 16 08:59:26.587: Se0:25 LCP: AuthProto CHAP (0x0305C22305) \*Oct 16

08:59:26.587: Se0:25 LCP: MagicNumber 0xE06953E4 (0x0506E06953E4) \*Oct 16 08:59:26.587: Se0:25

LCP: State is Open \*Oct 16 08:59:26.587: Se0:25 PPP: Phase is AUTHENTICATING, by both *!--- PPP*

*Authentication begins.* \*Oct 16 08:59:26.587: Se0:25 CHAP: O CHALLENGE id 1 len 31 from "tnt-

buster" \*Oct 16 08:59:26.611: Se0:25 CHAP: I CHALLENGE id 93 len 28 from "tremens" \*Oct 16

08:59:26.611: Se0:25 CHAP: Waiting for peer to authenticate first \*Oct 16 08:59:26.623: Se0:25

CHAP: I RESPONSE id 1 len 28 from "tremens" \*Oct 16 08:59:26.623: AAA: parse name=Serial0:25 idb

type=13 tty=-1 \*Oct 16 08:59:26.623: AAA: name=Serial0:25 flags=0x51 type=1 shelf=0 slot=0

adapter=0 port=0 channel=25 \*Oct 16 08:59:26.623: AAA: parse name= idb type=-1 tty=-1 \*Oct 16

08:59:26.623: AAA/MEMORY: create\_user (0x6126C0AC) user='tremens' ruser='' port='Serial0:25'

rem\_addr='6083/211' authen\_type=CHAP service=PPP priv=1 \*Oct 16 08:59:26.623: AAA/AUTHEN/START

(199889519): port='Serial0:25' list='' action=LOGIN service=PPP \*Oct 16 08:59:26.623:

AAA/AUTHEN/START (199889519): using "default" list \*Oct 16 08:59:26.623: AAA/AUTHEN/START

(199889519): Method=tacacs+ (tacacs+) *!--- Use TACACS+ as AAA method for the default list.* \*Oct

16 08:59:26.623: TAC+: send AUTHEN/START packet ver=193 id=199889519 \*Oct 16 08:59:26.623: TAC+:

Using default tacacs server-group "tacacs+" list. \*Oct 16 08:59:26.623: TAC+: Opening TCP/IP to

10.200.20.134/49 timeout=5 \*Oct 16 08:59:26.627: TAC+: Opened TCP/IP handle 0x610C4D40 to

10.200.20.134/49 \*Oct 16 08:59:26.627: TAC+: 10.200.20.134 (199889519) AUTHEN/START/LOGIN/CHAP

queued \*Oct 16 08:59:26.827: TAC+: (199889519) AUTHEN/START/LOGIN/CHAP processed \*Oct 16

08:59:26.827: TAC+: ver=193 id=199889519 received AUTHEN status = PASS \*Oct 16 08:59:26.827:

AAA/AUTHEN (199889519): status = PASS *!--- AAA authentication succeeds.* \*Oct 16 08:59:26.827:

TAC+: Closing TCP/IP 0x610C4D40 connection to 10.200.20.134/49 \*Oct 16 08:59:26.827: Se0:25  
AAA/AUTHOR/LCP: Authorize LCP \*Oct 16 08:59:26.827: Se0:25 AAA/AUTHOR/LCP (4028243213):  
Port='Serial0:25' list='' service=NET \*Oct 16 08:59:26.827: AAA/AUTHOR/LCP: Se0:25 (4028243213)  
user='tremens' \*Oct 16 08:59:26.827: Se0:25 AAA/AUTHOR/LCP (4028243213): send AV service=ppp  
\*Oct 16 08:59:26.827: Se0:25 AAA/AUTHOR/LCP (4028243213): send AV protocol=lcp \*Oct 16  
08:59:26.827: Se0:25 AAA/AUTHOR/LCP (4028243213): found list "default" \*Oct 16 08:59:26.827:  
Se0:25 AAA/AUTHOR/LCP (4028243213): Method=tacacs+ (tacacs+) \*Oct 16 08:59:26.827:  
AAA/AUTHOR/TAC+: (4028243213): user=tremens \*Oct 16 08:59:26.827: AAA/AUTHOR/TAC+: (4028243213):  
send AV service=ppp \*Oct 16 08:59:26.827: AAA/AUTHOR/TAC+: (4028243213): send AV protocol=lcp  
\*Oct 16 08:59:26.827: TAC+: using previously set server 10.200.20.134 from group tacacs+ \*Oct 16  
08:59:26.827: TAC+: Opening TCP/IP to 10.200.20.134/49 timeout=5 \*Oct 16 08:59:26.831: TAC+:  
Opened TCP/IP handle 0x61269588 to 10.200.20.134/49 \*Oct 16 08:59:26.831: TAC+: Opened  
10.200.20.134 index=1 \*Oct 16 08:59:26.831: TAC+: 10.200.20.134 (4028243213) AUTHOR/START queued  
\*Oct 16 08:59:27.031: TAC+: (4028243213) AUTHOR/START processed \*Oct 16 08:59:27.031: TAC+:  
(4028243213): received author response status = PASS\_ADD \*Oct 16 08:59:27.031: TAC+: Closing  
TCP/IP 0x61269588 connection to 10.200.20.134/49 \*Oct 16 08:59:27.031: Se0:25 AAA/AUTHOR  
(4028243213): Post authorization status = PASS\_ADD \*Oct 16 08:59:27.031: Se0:25 AAA/AUTHOR/LCP:  
Processing AV service=ppp \*Oct 16 08:59:27.031: Se0:25 AAA/AUTHOR/LCP: Processing AV  
protocol=lcp \*Oct 16 08:59:27.031: Se0:25 AAA/AUTHOR/LCP: Processing AV callback-dialstring=  
6083 *!--- Callback dial string sent from the AAA server.* \*Oct 16 08:59:27.031: Se0:25  
AAA/AUTHOR/LCP: Processing AV send-secret=cisco \*Oct 16 08:59:27.031: Se0:25 CHAP: O SUCCESS id  
1 len 4 \*Oct 16 08:59:27.031: Se0:25 CHAP: Processing saved Challenge, id 93 \*Oct 16  
08:59:27.031: Se0:25 DDR: Authenticated host tremens with no matching dialer map \*Oct 16  
08:59:27.031: AAA: parse name=Serial0:25 idb type=13 tty=-1 \*Oct 16 08:59:27.031: AAA:  
name=Serial0:25 flags=0x51 type=1 shelf=0 slot=0 adapter=0 port=0 channel=25 \*Oct 16  
08:59:27.031: AAA: parse name= idb type=-1 tty=-1 \*Oct 16 08:59:27.031: AAA/MEMORY: create\_user  
(0x610DD96C) user='tremens' ruser='' port='Serial0:25' rem\_addr='6083/211' authen\_type=CHAP  
service=PPP priv=1 \*Oct 16 08:59:27.035: AAA/AUTHEN/START (4099567767): port='Serial0:25'  
list='' action=SENDAUTH service=PPP \*Oct 16 08:59:27.035: AAA/AUTHEN/START (4099567767): using  
"default" list \*Oct 16 08:59:27.035: AAA/AUTHEN/START (4099567767): Method=tacacs+ (tacacs+)  
\*Oct 16 08:59:27.035: TAC+: Look for cached secret first for sendauth \*Oct 16 08:59:27.035:  
AAA/AUTHEN/SENDAUTH (4099567767): found cached secret for tremens \*Oct 16 08:59:27.035:  
AAA/AUTHEN (4099567767): status = PASS \*Oct 16 08:59:27.035: AAA/MEMORY: free\_user (0x610DD96C)  
user='tremens' ruser='' port='Serial0:25' rem\_addr='6083/211' authen\_type=CHAP service=PPP  
priv=1 \*Oct 16 08:59:27.035: Se0:25 CHAP: O RESPONSE id 93 len 31 from "tnt-buster" \*Oct 16  
08:59:27.055: Se0:25 CHAP: I SUCCESS id 93 len 4 *!--- CHAP is successful.* \*Oct 16 08:59:27.055:  
FA0: Same state, 0 \*Oct 16 08:59:27.055: DSES FA0: Session create \*Oct 16 08:59:27.055:  
AAA/MEMORY: dup\_user (0x61069398) user='tremens' ruser='' port='Serial0:25' rem\_addr='6083/211'  
authen\_type=CHAP service=PPP priv=1 source='create callback' \*Oct 16 08:59:27.055: Se0:25 DDR:  
PPP callback Callback server starting to tremens 6083 *!--- DDR starts PPP callback procedures.*  
\*Oct 16 08:59:27.055: Se0:25 DDR: disconnecting call *!--- Call is disconnected.* \*Oct 16  
08:59:27.059: ISDN Se0:15: TX -> DISCONNECT pd = 8 callref = 0xC880 \*Oct 16 08:59:27.059: Cause  
i = 0x8090 - Normal call clearing \*Oct 16 08:59:27.071: Se0:25 IPCP: PPP phase is  
AUTHENTICATING, discarding packet \*Oct 16 08:59:27.091: ISDN Se0:15: RX <- RELEASE pd = 8  
callref = 0x4880 \*Oct 16 08:59:27.091: ISDN Se0:15: TX -> RELEASE\_COMP pd = 8 callref = 0xC880  
\*Oct 16 08:59:27.103: %LINK-3-UPDOWN: Interface Serial0:25, changed state to down \*Oct 16  
08:59:27.103: Se0:25 PPP: Phase is TERMINATING \*Oct 16 08:59:27.103: Se0:25 LCP: State is Closed  
\*Oct 16 08:59:27.103: Se0:25 PPP: Phase is DOWN \*Oct 16 08:59:27.103: Se0:25 DDR: disconnecting  
call \*Oct 16 08:59:32.055: DDR: Callback timer expired *!--- Callback timer (5 seconds) expires.*  
*!--- This is configured through the dialer enable-timeout 5* command.

\*Oct 16 08:59:32.055: Di1 DDR: beginning callback to tremens 6083  
\*Oct 16 08:59:32.055: Se0:15 DDR: rotor dialout [priority]  
\*Oct 16 08:59:32.055: Se0:15 DDR: Dialing cause dialer session 0xFA0  
\*Oct 16 08:59:32.055: Se0:15 DDR: Attempting to dial 6083  
*!--- Callback number dialed.* \*Oct 16 08:59:32.055: ISDN Se0:15: TX -> SETUP pd = 8 callref =  
0x0005 \*Oct 16 08:59:32.055: Bearer Capability i = 0x8890 \*Oct 16 08:59:32.055: Channel ID i =  
0xA9839F \*Oct 16 08:59:32.055: Called Party Number i = 0x81, '6083', Plan:ISDN, Type:Unknown  
\*Oct 16 08:59:32.095: ISDN Se0:15: RX <- CALL\_PROC pd = 8 callref = 0x8005 \*Oct 16 08:59:32.095:  
Channel ID i = 0xA9839F \*Oct 16 08:59:32.311: ISDN Se0:15: RX <- CONNECT pd = 8 callref = 0x8005  
*!--- Call is connected.* \*Oct 16 08:59:32.311: Connected Number i = 0xA136303833 \*Oct 16  
08:59:32.315: Locking Shift to Codeset 6 \*Oct 16 08:59:32.315: Codeset 6 IE 0x28 i = 'ISDN-EDU-  
4' \*Oct 16 08:59:32.323: %LINK-3-UPDOWN: Interface Serial0:30, changed state to up \*Oct 16  
08:59:32.323: AAA/MEMORY: dup\_user (0x612B7F70) user='tremens' ruser='' port='Serial0:25'



rem\_addr='6083/211' authen\_type=CHAP service=PPP priv=1 source='callback dialout' \*Oct 16 08:59:32.323: DDR: Freeing callback to tremens 6083 \*Oct 16 08:59:32.323: DDR: removing callback, 0 packets unqueued and discarded \*Oct 16 08:59:32.323: AAA/MEMORY: free\_user (0x61069398) user='tremens' ruser='' port='Serial0:25' rem\_addr='6083/211' authen\_type=CHAP service=PPP priv=1 \*Oct 16 08:59:32.323: Se0:30 PPP: Treating connection as a callout *!--- PPP negotiation begins.* \*Oct 16 08:59:32.323: Se0:30 PPP: Phase is ESTABLISHING, Active Open \*Oct 16 08:59:32.323: Se0:30 PPP: No remote authentication for callback \*Oct 16 08:59:32.327: Se0:30 AAA/AUTHOR/FSM: (0): LCP succeeds trivially \*Oct 16 08:59:32.327: Se0:30 LCP: O CONFREQ [Closed] id 5 len 10 \*Oct 16 08:59:32.327: Se0:30 LCP: MagicNumber 0xE0696A6F (0x0506E0696A6F) \*Oct 16 08:59:32.327: ISDN Se0:15: TX -> CONNECT\_ACK pd = 8 callref = 0x0005 \*Oct 16 08:59:32.351: Se0:30 LCP: I CONFREQ [REQsent] id 127 len 15 \*Oct 16 08:59:32.351: Se0:30 LCP: AuthProto CHAP (0x0305C22305) \*Oct 16 08:59:32.351: Se0:30 LCP: MagicNumber 0x3E7BE27C (0x05063E7BE27C) \*Oct 16 08:59:32.355: Se0:30 LCP: O CONFACK [REQsent] id 127 len 15 \*Oct 16 08:59:32.355: Se0:30 LCP: AuthProto CHAP (0x0305C22305) \*Oct 16 08:59:32.355: Se0:30 LCP: MagicNumber 0x3E7BE27C (0x05063E7BE27C) \*Oct 16 08:59:32.359: Se0:30 LCP: I CONFACK [ACKsent] id 5 len 10 \*Oct 16 08:59:32.359: Se0:30 LCP: MagicNumber 0xE0696A6F (0x0506E0696A6F) \*Oct 16 08:59:32.359: Se0:30 LCP: State is Open \*Oct 16 08:59:32.359: Se0:30 PPP: Phase is AUTHENTICATING, by the peer *!--- Authentication begins.* \*Oct 16 08:59:32.359: Se0:30 AAA/AUTHOR/LCP: Authorize LCP \*Oct 16 08:59:32.359: Se0:30 AAA/AUTHOR/LCP (190918816): Port='Serial0:25' list='' service=NET \*Oct 16 08:59:32.359: AAA/AUTHOR/LCP: Se0:30 (190918816) user='tremens' \*Oct 16 08:59:32.359: Se0:30 AAA/AUTHOR/LCP (190918816): send AV service=ppp \*Oct 16 08:59:32.359: Se0:30 AAA/AUTHOR/LCP (190918816): send AV protocol=lcp \*Oct 16 08:59:32.359: Se0:30 AAA/AUTHOR/LCP (190918816): found list "default" \*Oct 16 08:59:32.359: Se0:30 AAA/AUTHOR/LCP (190918816): Method=tacacs+ (tacacs+) \*Oct 16 08:59:32.363: AAA/AUTHOR/TAC+: (190918816): user=tremens \*Oct 16 08:59:32.363: AAA/AUTHOR/TAC+: (190918816): send AV service=ppp \*Oct 16 08:59:32.363: AAA/AUTHOR/TAC+: (190918816): send AV protocol=lcp \*Oct 16 08:59:32.363: TAC+: using previously set server 10.200.20.134 from group tacacs+ \*Oct 16 08:59:32.363: TAC+: Opening TCP/IP to 10.200.20.134/49 timeout=5 \*Oct 16 08:59:32.363: TAC+: Opened TCP/IP handle 0x612B6A1C to 10.200.20.134/49 \*Oct 16 08:59:32.363: TAC+: Opened 10.200.20.134 index=1 \*Oct 16 08:59:32.363: TAC+: 10.200.20.134 (190918816) AUTHOR/START queued \*Oct 16 08:59:32.563: TAC+: (190918816) AUTHOR/START processed \*Oct 16 08:59:32.563: TAC+: (190918816): received author response status = PASS\_ADD \*Oct 16 08:59:32.563: TAC+: Closing TCP/IP 0x612B6A1C connection to 10.200.20.134/49 \*Oct 16 08:59:32.563: Se0:30 AAA/AUTHOR (190918816): Post authorization status = PASS\_ADD \*Oct 16 08:59:32.563: Se0:30 AAA/AUTHOR/LCP: Processing AV service=ppp \*Oct 16 08:59:32.563: Se0:30 AAA/AUTHOR/LCP: Processing AV protocol=lcp \*Oct 16 08:59:32.563: Se0:30 AAA/AUTHOR/LCP: Processing AV callback-dialstring= 6083 \*Oct 16 08:59:32.563: Se0:30 AAA/AUTHOR/LCP: Processing AV send-secret=cisco \*Oct 16 08:59:32.563: Se0:30 CHAP: I CHALLENGE id 94 len 28 from "tremens" *!--- An incoming CHAP challenge is received.* \*Oct 16 08:59:32.563: AAA: parse name=Serial0:30 idb type=13 tty=-1 \*Oct 16 08:59:32.563: AAA: name=Serial0:30 flags=0x51 type=1 shelf=0 slot=0 adapter=0 port=0 channel=30 \*Oct 16 08:59:32.563: AAA: parse name= idb type=-1 tty=-1 \*Oct 16 08:59:32.563: AAA/MEMORY: create\_user (0x612B8098) user='tremens' ruser='' port='Serial0:30' rem\_addr='6083/6083' authen\_type=CHAP service=PPP priv=1 \*Oct 16 08:59:32.567: AAA/AUTHEN/START (763006247): port='Serial0:30' list='' action=SENDAUTH service=PPP \*Oct 16 08:59:32.567: AAA/AUTHEN/START (763006247): using "default" list \*Oct 16 08:59:32.567: AAA/AUTHEN/START (763006247): Method=tacacs+ (tacacs+) \*Oct 16 08:59:32.567: TAC+: Look for cached secret first for sendauth \*Oct 16 08:59:32.567: AAA/AUTHEN/SENDAUTH (763006247): found cached secret for tremens \*Oct 16 08:59:32.567: AAA/AUTHEN (763006247): status = PASS \*Oct 16 08:59:32.567: AAA/MEMORY: free\_user (0x612B8098) user='tremens' ruser='' port='Serial0:30' rem\_addr='6083/6083' authen\_type=CHAP service=PPP priv=1 \*Oct 16 08:59:32.567: Se0:30 CHAP: O RESPONSE id 94 len 31 from "tnt-buster" \*Oct 16 08:59:32.587: Se0:30 CHAP: I SUCCESS id 94 len 4 *!--- Authentication is successful.* \*Oct 16 08:59:32.587: Se0:30 PPP: Phase is UP \*Oct 16 08:59:32.587: Se0:30 AAA/AUTHOR/FSM: (0): Can we start IPCP? \*Oct 16 08:59:32.587: Se0:30 AAA/AUTHOR/FSM (3211893880): Port='Serial0:25' list='' service=NET \*Oct 16 08:59:32.587: AAA/AUTHOR/FSM: Se0:30 (3211893880) user='tremens' \*Oct 16 08:59:32.587: Se0:30 AAA/AUTHOR/FSM (3211893880): send AV service=ppp \*Oct 16 08:59:32.587: Se0:30 AAA/AUTHOR/FSM (3211893880): send AV protocol=ip \*Oct 16 08:59:32.587: Se0:30 AAA/AUTHOR/FSM (3211893880): found list "default" \*Oct 16 08:59:32.587: Se0:30 AAA/AUTHOR/FSM (3211893880): Method=tacacs+ (tacacs+) \*Oct 16 08:59:32.587: AAA/AUTHOR/TAC+: (3211893880): user=tremens \*Oct 16 08:59:32.587: AAA/AUTHOR/TAC+: (3211893880): send AV service=ppp \*Oct 16 08:59:32.587: AAA/AUTHOR/TAC+: (3211893880): send AV protocol=ip \*Oct 16 08:59:32.587: TAC+: using previously set server 10.200.20.134 from group tacacs+ \*Oct 16 08:59:32.587: TAC+: Opening TCP/IP to 10.200.20.134/49 timeout=5 \*Oct 16 08:59:32.591: TAC+: Opened TCP/IP handle 0x612B6C80 to 10.200.20.134/49 \*Oct 16 08:59:32.591: TAC+: Opened 10.200.20.134 index=1 \*Oct 16 08:59:32.591: TAC+: 10.200.20.134 (3211893880) AUTHOR/START queued \*Oct 16 08:59:32.791: TAC+: (3211893880) AUTHOR/START processed \*Oct 16

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08:59:32.791: TAC+: (3211893880): received author response status = PASS_ADD *Oct 16
08:59:32.791: TAC+: Closing TCP/IP 0x612B6C80 connection to 10.200.20.134/49 *Oct 16
08:59:32.791: Se0:30 AAA/AUTHOR (3211893880): Post authorization status = PASS_ADD *Oct 16
08:59:32.791: Se0:30 AAA/AUTHOR/FSM: We can start IPCP !--- IPCP negotiation begins. *Oct 16
08:59:32.791: Se0:30 IPCP: O CONFREQ [Closed] id 5 len 10 *Oct 16 08:59:32.791: Se0:30 IPCP:
Address 2.2.2.2 (0x030602020202) *Oct 16 08:59:32.791: Se0:30 IPCP: I CONFREQ [REQsent] id 111
len 10 *Oct 16 08:59:32.791: Se0:30 IPCP: Address 3.3.3.3 (0x030603030303) *Oct 16 08:59:32.791:
Se0:30 AAA/AUTHOR/IPCPC: Start. Her address 3.3.3.3, we want 0.0.0.0 *Oct 16 08:59:32.791: Se0:30
AAA/AUTHOR/IPCPC (3713413027): Port='Serial0:25' list='' service=NET *Oct 16 08:59:32.791:
AAA/AUTHOR/IPCPC: Se0:30 (3713413027) user='tremens' *Oct 16 08:59:32.791: Se0:30 AAA/AUTHOR/IPCPC
(3713413027): send AV service=ppp *Oct 16 08:59:32.791: Se0:30 AAA/AUTHOR/IPCPC (3713413027):
send AV protocol=ip *Oct 16 08:59:32.791: Se0:30 AAA/AUTHOR/IPCPC (3713413027): send AV
addr*3.3.3.3 *Oct 16 08:59:32.791: Se0:30 AAA/AUTHOR/IPCPC (3713413027): found list "default"
*Oct 16 08:59:32.791: Se0:30 AAA/AUTHOR/IPCPC (3713413027): Method=tacacs+ (tacacs+) *Oct 16
08:59:32.795: AAA/AUTHOR/TAC+: (3713413027): user=tremens *Oct 16 08:59:32.795: AAA/AUTHOR/TAC+:
(3713413027): send AV service=ppp *Oct 16 08:59:32.795: AAA/AUTHOR/TAC+: (3713413027): send AV
protocol=ip *Oct 16 08:59:32.795: AAA/AUTHOR/TAC+: (3713413027): send AV addr*3.3.3.3 !--- AAA
Attribute Value Pairs. *Oct 16 08:59:32.795: TAC+: using previously set server 10.200.20.134
from group tacacs+ *Oct 16 08:59:32.795: TAC+: Opening TCP/IP to 10.200.20.134/49 timeout=5 *Oct
16 08:59:32.795: TAC+: Opened TCP/IP handle 0x61269588 to 10.200.20.134/49 *Oct 16 08:59:32.795:
TAC+: Opened 10.200.20.134 index=1 *Oct 16 08:59:32.795: TAC+: 10.200.20.134 (3713413027)
AUTHOR/START queued *Oct 16 08:59:32.995: TAC+: (3713413027) AUTHOR/START processed *Oct 16
08:59:32.995: TAC+: (3713413027): received author response status = PASS_ADD *Oct 16
08:59:32.995: TAC+: Closing TCP/IP 0x61269588 connection to 10.200.20.134/49 *Oct 16
08:59:32.995: Se0:30 AAA/AUTHOR (3713413027): Post authorization status = PASS_ADD *Oct 16
08:59:32.995: Se0:30 AAA/AUTHOR/IPCPC: Processing AV service=ppp *Oct 16 08:59:32.995: Se0:30
AAA/AUTHOR/IPCPC: Processing AV protocol=ip *Oct 16 08:59:32.995: Se0:30 AAA/AUTHOR/IPCPC:
Processing AV addr*3.3.3.3 *Oct 16 08:59:32.995: Se0:30 AAA/AUTHOR/IPCPC: Authorization succeeded
*Oct 16 08:59:32.995: Se0:30 AAA/AUTHOR/IPCPC: Done. Her address 3.3.3.3, we want 3.3.3.3 *Oct 16
08:59:32.995: Se0:30 IPCP: O CONFACK [REQsent] id 111 len 10 *Oct 16 08:59:32.995: Se0:30 IPCP:
Address 3.3.3.3 (0x030603030303) *Oct 16 08:59:32.995: Se0:30 IPCP: I CONFACK [ACKsent] id 5 len
10 *Oct 16 08:59:32.995: Se0:30 IPCP: Address 2.2.2.2 (0x030602020202) *Oct 16 08:59:32.995:
Se0:30 IPCP: State is Open *Oct 16 08:59:32.999: Se0:30 DDR: dialer protocol up *Oct 16
08:59:32.999: Se0:30: Call connected, 0 packets unqueued, 0 transmitted, 0 discarded *Oct 16
08:59:32.999: Dil IPCP: Install route to 3.3.3.3 !--- Route is installed to remote device. *Oct
16 08:59:33.587: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0:30, changed state to up
*Oct 16 08:59:38.323: %ISDN-6-CONNECT: Interface Serial0:30 is now connected to 6083 unknown !--
- Call is Connected.
```

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