

Обратный вызов между маршрутизатором Cisco 3640 и удаленным пользователем в режиме V.110

Содержание

[Введение](#)

[Предварительные условия](#)

[Требования](#)

[Используемые компоненты](#)

[Условные обозначения](#)

[Настройка](#)

[Схема сети](#)

[Конфигурации](#)

[Проверка](#)

[Устранение неполадок](#)

[Пример результата отладки](#)

[Обратный вызов GSM с помощью V.110](#)

[Обратный вызов модем с помощью V.110](#)

[Функция обратного вызова ISDN с использованием V.110](#)

[Дополнительные сведения](#)

Введение

В этом документе предлагается образец конфигурации для удаленных пользователей, выполняющих вызов с помощью одного из следующих методов. В каждом случае обратный вызов осуществляется с помощью вызова V.110.

- Пользователи, подключающиеся к 3640 посредством GSM и запрашивающие обратный вызов.
- Пользователи, подключающие 3640 через модем и запрашивающие обратный вызов.
- Пользователи, подключающие 3640 через ISDN (данные) и запрашивающие обратный вызов.

Примечание: Аутентификация, авторизация и учет (AAA) настроена на маршрутизаторе по умолчанию. Необходимо также создать пользователя для входа в систему.

В данном примере мы также установили аутентификацию Протокола PPP для вызова и выноски. Мы изменили сценарий, чтобы настроить модем для V.110 все время и позволить пользователям выбирать свой метод (модем или GSM). В зависимости от выбранного способа должны пользователи:

- используйте ZDTxxx в номере обратного вызова (для модема).

- используйте D1xxxx в номере обратного вызова (для GSM).

Предварительные условия

Требования

Для этого документа отсутствуют особые требования.

Используемые компоненты

Сведения, содержащиеся в данном документе, касаются следующих версий программного обеспечения и оборудования:

- Характеристика обратного вызова V.110 доступна на IOS Розы?? Выпуск ПО 12.2 (5.2) T и выше.
- Программное обеспечение модема версии 2.7.3.0.

Сведения, представленные в этом документе, были получены от устройств, работающих в специальной лабораторной среде. Все устройства, описанные в этом документе, были запущены с чистой (стандартной) конфигурацией. В рабочей сети необходимо изучить потенциальное воздействие всех команд до их использования.

Условные обозначения

[Дополнительные сведения об условных обозначениях в документах см. Cisco Technical Tips Conventions.](#)

Настройка

В этом разделе содержатся сведения о настройке функций, описанных в этом документе.

Примечание: [Поиск дополнительной информации о командах в данном документе можно выполнить с помощью средства "Command Lookup" \(Поиск команд\) \(только для зарегистрированных клиентов\).](#)

Схема сети

В этом документе используются настройки сети, показанные на данной диаграмме.

Конфигурации

В данном документе используется следующая конфигурация:

- suzanne

```
suzanne
-----
suzanne#show running-config
!
version 12.2
service internal
```

```
!  
hostname suzanne  
!  
aaa new-model  
!  
aaa authentication login default local  
aaa authentication ppp default local  
aaa authorization network default local  
aaa session-id common  
!  
username ww password 0  
username alainisdn password 0  
username alaingsm callback-dialstring "" password 0  
username alainmod callback-dialstring "" password 0  
!  
modem country mica belgium  
!  
isdn switch-type primary-net5  
isdn voice-call-failure 0  
chat-script offhook "" "ATH1" OK  
chat-script callback ABORT ERROR ABORT BUSY "" "AT&F"  
OK "ATX3DT \T" TIMEOUT 90 \c  
chat-script callbacklanalog ABORT ERROR ABORT BUSY ""  
"AT&F"  
OK "ATDT \T" TIMEOUT 90 CONNECT \c  
chat-script callback2gsm ABORT ERROR ABORT BUSY ""  
"AT&F"  
OK "ATS29=8" OK "AT \T" TIMEOUT 90 CONNECT \c  
!  
controller E1 1/0  
pri-group timeslots 1-31  
!  
interface Ethernet0/0  
ip address 172.17.243.105 255.255.255.0  
!  
interface Serial11/0:15  
description E1 0451/39920  
no ip address  
encapsulation ppp  
dialer rotary-group 1  
isdn switch-type primary-net5  
isdn incoming-voice modem  
isdn outgoing-voice info-transfer-capability 3.1kHz-  
audio  
no cdp enable  
ppp authentication chap callin  
!  
interface BRI3/1  
description belgacom 027202094  
no ip address  
encapsulation ppp  
isdn switch-type basic-net3  
isdn incoming-voice modem  
no cdp enable  
!  
interface Group-Async1  
ip unnumbered Dialer1  
encapsulation ppp  
dialer in-band  
dialer callback-secure  
dialer-group 1  
async dynamic routing  
async mode interactive  
peer default ip address pool pool
```

```
ppp callback accept
ppp authentication pap
group-range 65 94
!
interface Dialer1
description Dial-In User
ip address 172.31.1.1 255.255.0.0
ip helper-address 90.100.48.38
ip helper-address 90.100.60.202
encapsulation ppp
dialer in-band
dialer callback-secure
dialer map ip 172.31.1.2 name alainisdn class callback
6136
peer default ip address pool pool
no cdp enable
ppp callback accept
ppp authentication chap callin
!
map-class dialer callback
dialer callback-server username
dialer-list 1 protocol ip permit
!
line con 0
exec-timeout 0 0
password
line 65 94
script dialer callback2gsm
script callback callback2gsm
modem InOut
transport input telnet
transport output pad v120 lapb-ta telnet rlogin udptn
autoselect during-login
autoselect ppp
stopbits 1
flowcontrol hardware
line aux 0
password
line vty 0 4
exec-timeout 0 0
password
!
end
```

Проверка

В этом разделе содержатся сведения, которые помогают убедиться в надлежащей работе конфигурации.

Некоторые команды **show** поддерживаются Средством интерпретации выходных данных(только зарегистрированные клиенты), которое позволяет просматривать аналитику выходных данных команды **show**.

- **show ip route???** отображает содержание таблицы IP-маршрутизации

Устранение неполадок

В этом разделе описывается процесс устранения неполадок конфигурации.

Примечание: Перед запуском команд отладки обратитесь к [разделу Важные сведения о командах отладки](#).

- **debug modem** – наблюдать операции линии модема относительно сервера доступа.
- **debug dialer events** — вывод отладочной информации о пакетах, полученных в интерфейсе номеронабирателя.
- команда **"debug ppp authentication"** отображает сообщения протокола проверки подлинности, включая информацию об обмене пакетами протокола проверки подлинности запроса CHAP и обмене по протоколу проверки подлинности по паролю (PAP).
- **debug ppp cbcp** — ошибки протокола показов и статистика связались с согласованиями PPP - подключения с помощью Протокола управления управления обратными вызовами Microsoft (MSCB)..
- **debug isdn q931** - отображение сведений об установлении соединения и освобождении канала в сети ISDN (третий уровень модели OSI) между локальным маршрутизатором (на стороне пользователя) и сетью.
- **debug chat** – , что сценарий диалогового взаимодействия функционирует должным образом.
- **debug callback** — события обратного вызова показов, когда маршрутизатор использует модем и сценарий диалогового взаимодействия к обратному вызову на абонентской линии.

Пример результата отладки

Обратный вызов GSM с помощью V.110

```
suzanne#
01:03:00: ISDN BR3/1: RX <- SETUP pd = 8 callref = 0x2F
01:03:00: Sending Complete
01:03:00: Bearer Capability i = 0x9090A3
01:03:00: Channel ID i = 0x89
01:03:00: Calling Party Number i = 0x21, 0x83, '478681006', Plan:ISDN,
Type:National
01:03:00: Called Party Number i = 0xA1, '27202094', Plan:ISDN, Type:National
01:03:00: ISDN BR3/1: Event: Received a VOICE call from 478681006 on B1 at 64 Kb/s
01:03:00: ISDN BR3/1: Event: Accepting the call id 0x19
01:03:00: %ISDN-6-LAYER2UP: Layer 2 for Interface BR3/1, TEI 70 changed to up
01:03:00: ISDN BR3/1: TX -> CALL_PROC pd = 8 callref = 0xAF
01:03:00: Channel ID i = 0x89
01:03:00: ISDN BR3/1: TX -> ALERTING pd = 8 callref = 0xAF
01:03:00: ISDN BR3/1: TX -> CONNECT pd = 8 callref = 0xAF
01:03:01: ISDN BR3/1: RX <- CONNECT_ACK pd = 8 callref = 0x2F
01:03:01: Modem 2/12 Mica: configured for Answer mode,
with Null signaling,0x0 tone detection.
01:03:01: Modem 2/12 Mica: in modem state CALL_SETUP
01:03:02: Modem 2/12 Mica: in modem state CONNECT
01:03:06: Modem 2/12 Mica: in modem state LINK
01:03:07: %ISDN-6-CONNECT: Interface BRI3/1:1 is now connected to 478681006
01:03:15: Modem 2/12 Mica: in modem state TRAINUP
01:03:17: Modem 2/12 Mica: in modem state EC_NEGOTIATING
01:03:18: Modem 2/12 Mica: in modem state STEADY
01:03:18: Modem 2/12 Mica: CONNECT at 31200/31200 (Tx/Rx), V34+, LAPM, None
01:03:19: TTY77: DSR came up
01:03:19: tty77: Modem: IDLE->(unknown)
```

01:03:19: TTY77: EXEC creation
01:03:19: TTY77: set timer type 10, 30 seconds
01:03:19: TTY77: Autoselect(2) sample 7E
01:03:19: TTY77: Autoselect(2) sample 7EFF
01:03:19: TTY77: Autoselect(2) sample 7EFF7D
01:03:19: TTY77: Autoselect(2) sample 7EFF7D23
01:03:19: TTY77 Autoselect cmd: ppp negotiate
01:03:19: TTY77: EXEC creation
01:03:19: TTY77: create timer type 1, 600 seconds
01:03:19: TTY77: destroy timer type 1
01:03:19: TTY77: no timer type 0 to destroy
01:03:19: As77 DDR: Dialer received incoming call from <unknown>
01:03:21: %LINK-3-UPDOWN: Interface Async77, changed state to up
01:03:21: As77 DDR: Dialer statechange to up
01:03:21: As77 DDR: Dialer received incoming call from <unknown>
01:03:21: As77 PPP: Treating connection as a callin
01:03:21: As77 PPP: Authorization required
01:03:22: Modem 2/12 Mica: PPP escape_map: Tx map = FFFFFFFF, Rx map = 0
01:03:22: As77 PPP: Authorization required
01:03:27: Modem 2/12 Mica: PPP escape_map: Tx map = A0000, Rx map = 0
01:03:27: As77 MCB: Initialize
01:03:27: MCB: Flush
01:03:27: Modem 2/12 Mica: Bad RX Frame: control = 0xE007, length = 0xD,
buffer = 0x3BC6E54
01:03:30: As77 PAP: I AUTH-REQ id 2 len 16 from "alaingsm"
01:03:30: As77 PAP: Authenticating peer alaingsm
01:03:30: As77 PPP: Sent PAP LOGIN Request to AAA
01:03:30: As77 PPP: Received LOGIN Response from AAA = PASS
01:03:30: As77 DDR: Remote name for alaingsm
01:03:30: As77 DDR: Authenticated host alaingsm with no matching dialer map
01:03:30: As77 PAP: O AUTH-ACK id 2 len 5
01:03:30: As77 MCB: Start
01:03:30: As77 MCB: User alaingsm Callback Number - Client ANY
01:03:30: As77 MCB: Newstate 0-INIT -> 2-WAIT_RESPONSE
01:03:30: As77 MCB: O Request Id 1 Callback Type Client-Num delay 0
01:03:32: As77 MCB: Timeout in state WAIT_RESPONSE sending new Request 2
01:03:32: As77 MCB: O Request Id 2 Callback Type Client-Num delay 0
01:03:34: As77 MCB: Timeout in state WAIT_RESPONSE sending new Request 3
01:03:34: As77 MCB: O Request Id 3 Callback Type Client-Num delay 0
01:03:35: Async77 PPP: I MCB Response(2) id 1 len 22
01:03:35: Async77 MCB:
I 2 1 0 16 2 12 F 1 44 49 30 30 34 37 38 36 38 31 30 30 36 0
01:03:35: As77 MCB: Received response
01:03:35: As77 MCB: Resp ignored. ID Expected 3, got id 1
01:03:36: As77 MCB: Timeout in state WAIT_RESPONSE sending new Request 4
01:03:36: As77 MCB: O Request Id 4 Callback Type Client-Num delay 0
01:03:36: Async77 PPP: I MCB Response(2) id 4 len 22
01:03:36: Async77 MCB:
I 2 4 0 16 2 12 F 1 44 49 30 30 34 37 38 36 38 31 30 30 36 0
01:03:36: As77 MCB: Received response

!--- You can see here that "DI00478681006" was entered at the user PC. 01:03:36: As77 MCB:
Response CBK-Client-Num 2 18 15, addr 1-DI00478681006 01:03:36: As77 MCB: O Ack Id 5 Callback
Type Client-Num delay 15 01:03:36: As77 MCB: Negotiated MCB with peer 01:03:36: As77 MCB:
Newstate 2-WAIT_RESPONSE -> 3-WAIT_TERMINATE 01:03:37: As77 MCB: Peer terminating the link
01:03:37: As77 MCB: Newstate 3-WAIT_TERMINATE -> 5-WAIT_LINKDOWN 01:03:37: As77 MCB: Link
terminated by peer, Callback Needed 01:03:37: As77 MCB: Newstate 5-WAIT_LINKDOWN -> 6-CALLING
01:03:37: As77 MCB: Initiate Callback for ^->o`iB@ at DI00478681006 using Async DDR 01:03:37:
As77 DDR: PPP callback Callback server starting to alaingsm DI00478681006 01:03:37: As77 MCB:
Dialer callback started *!---* Call is disconnected. 01:03:38: Modem 2/12 Mica: in modem state
SS_RETRAINING 01:03:38: ISDN BR3/1: RX <- DISCONNECT pd = 8 callref = 0x2F 01:03:38: Cause i =
0x8090 - Normal call clearing 01:03:38: Progress Ind i = 0x8088 - In-band info or appropriate
now available 01:03:38: %ISDN-6-DISCONNECT: Interface BRI3/1:1 disconnected from 478681006, call
lasted 37 seconds 01:03:38: ISDN BR3/1: TX -> RELEASE pd = 8 callref = 0xAF 01:03:38: Cause i =

0x8090 - Normal call clearing 01:03:38: Modem 2/12 Mica: in modem state TERMINATING 01:03:38: ISDN BR3/1: RX <- RELEASE_COMP pd = 8 callref = 0x2F 01:03:39: TTY77: Async Int reset: Dropping DTR 01:03:39: Modem 2/12 Mica: PPP escape_map: Tx map = FFFFFFFF, Rx map = 0 01:03:39: As77 PPP: Authorization required 01:03:40: Modem 2/12 Mica: in modem state IDLE 01:03:40: Modem 2/12 Mica: DISCONNECT after 00:00:38, due to reason (0xDF00) Host Disconnect. 01:03:40: TTY77: DSR was dropped 01:03:40: tty77: Modem: READY->(unknown) 01:03:41: TTY77: dropping DTR, hanging up 01:03:41: tty77: Modem: HANGUP->(unknown) 01:03:41: %LINK-5-CHANGED: Interface Async77, changed state to reset 01:03:42: TTY77: cleanup pending. Delaying DTR 01:03:43: TTY77: cleanup pending. Delaying DTR 01:03:44: TTY77: cleanup pending. Delaying DTR 01:03:44: TTY77: no timer type 0 to destroy 01:03:44: TTY77: no timer type 1 to destroy 01:03:44: TTY77: no timer type 3 to destroy 01:03:44: TTY77: no timer type 4 to destroy 01:03:44: TTY77: no timer type 2 to destroy 01:03:44: Async77: allowing modem_process to continue hangup 01:03:45: TTY77: restoring DTR 01:03:46: %LINK-3-UPDOWN: Interface Async77, changed state to down 01:03:53: %ISDN-6-LAYER2DOWN: Layer 2 for Interface BR3/1, TEI 70 changed to down **!--- Callback is started.** 01:03:56: As77 DDR: re-enable timeout 01:03:56: DDR: callback triggered by dialer_timers 01:03:56: As77 DDR: beginning callback to alaingsm DI00478681006 01:03:56: As77 DDR: Attempting to dial DI00478681006 01:03:56: CHAT77: Attempting async line dialer script 01:03:56: CHAT77: Dialing using Modem script: callback2gsm & System script: none 01:03:56: CHAT77: process started 01:03:56: CHAT77: Asserting DTR 01:03:56: CHAT77: Chat script callback2gsm started 01:03:56: CHAT77: Sending string: AT&F 01:03:56: CHAT77: Expecting string: OK 01:03:56: CHAT77: Completed match for expect: OK 01:03:56: CHAT77: Sending string: AT529=8 01:03:56: CHAT77: Expecting string: OK 01:03:56: CHAT77: Completed match for expect: OK **!--- We send DI00478681006** 01:03:56: CHAT77: Sending string: AT \T<DI00478681006> 01:03:56: CHAT77: Expecting string: CONNECT 01:03:56: Modem 2/12 Mica: configured for Originate mode, with Null signaling, 0x1 tone detection. 01:03:56: Modem 2/12 Mica: received dialstring 00478681006 01:03:56: ISDN Se1/0:15: TX -> SETUP pd = 8 callref = 0x000E 01:03:56: Bearer Capability i = 0x8890214846BB 01:03:56: Channel ID i = 0xA9839F 01:03:56: Called Party Number i = 0x81, '00478681006', Plan:ISDN, Type:Unknown 01:03:56: Low Layer Compat i = 0x8890214846BB 01:03:56: ISDN Se1/0:15: RX <- CALL_PROC pd = 8 callref = 0x800E 01:03:56: Channel ID i = 0xA9839F 01:03:56: Modem 2/12 Mica: in modem state CALL_SETUP 01:04:02: ISDN Se1/0:15: RX <- ALERTING pd = 8 callref = 0x800E 01:04:03: ISDN Se1/0:15: RX <- CONNECT pd = 8 callref = 0x800E 01:04:03: ISDN Se1/0:15: TX -> CONNECT_ACK pd = 8 callref = 0x000E 01:04:03: Modem 2/12 Mica: in modem state CONNECT 01:04:03: Modem 2/12 Mica: in modem state LINK 01:04:03: Modem 2/12 Mica: in modem state TRAINUP 01:04:03: Modem 2/12 Mica: in modem state EC_NEGOTIATING 01:04:03: Modem 2/12 Mica: in modem state STEADY 01:04:03: CHAT77: Completed match for expect: CONNECT 01:04:03: CHAT77: Sending string: \c 01:04:03: CHAT77: Chat script callback2gsm finished, status = Success 01:04:03: TTY77: no timer type 1 to destroy 01:04:03: TTY77: no timer type 0 to destroy 01:04:03: Modem 2/12 Mica: CONNECT at 9600/9600 (Tx/Rx), V110, V.110, None 01:04:04: As77 PPP: Treating connection as a callout 01:04:04: Modem 2/12 Mica: PPP escape_map: Tx map = FFFFFFFF, Rx map = 0 01:04:04: As77 PPP: Authorization required 01:04:04: %LINK-3-UPDOWN: Interface Async77, changed state to up 01:04:04: As77 DDR: Dialer statechange to up 01:04:04: As77 DDR: Copying MS callback dialstring DI00478681006 to ddb 01:04:04: DDR: Freeing callback to alaingsm DI00478681006 01:04:04: As77 DDR: Dialer call has been placed 01:04:08: Modem 2/12 Mica: PPP escape_map: Tx map = A0000, Rx map = 0 01:04:08: As77 MCB: Initialize 01:04:08: Modem 2/12 Mica: Bad RX Frame: control = 0xE007, length = 0xD, buffer = 0x3BC6E54 01:04:09: %ISDN-6-CONNECT: Interface Serial1/0:30 is now connected to 00478681006 01:04:11: As77 PAP: I AUTH-REQ id 2 len 16 from "alaingsm" 01:04:11: As77 PAP: Authenticating peer alaingsm 01:04:11: As77 PPP: Sent PAP LOGIN Request to AAA 01:04:11: As77 PPP: Received LOGIN Response from AAA = PASS 01:04:11: As77 DDR: Remote name for alaingsm 01:04:11: As77 DDR: Authenticated host alaingsm with no matching dialer map 01:04:11: As77 PAP: O AUTH-ACK id 2 len 5 01:04:13: As77 DDR: dialer protocol up **suzanne#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 172.17.243.1 to network 0.0.0.0

172.17.0.0/24 is subnetted, 1 subnets
C 172.17.243.0 is directly connected, Ethernet0/0
172.31.0.0/16 is variably subnetted, 2 subnets, 2 masks

```
C 172.31.1.28/32 is directly connected, Async77
C 172.31.0.0/16 is directly connected, Dialer1
S* 0.0.0.0/0 [1/0] via 172.17.243.1
```

```
suzanne#ping 172.31.1.28
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 172.31.1.28, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 784/858/880 ms
```

```
suzanne#
```

```
01:04:49: ISDN Se1/0:15: RX <- DISCONNECT pd = 8 callref = 0x800E
01:04:49: Cause i = 0x8090 - Normal call clearing
01:04:49: %ISDN-6-DISCONNECT: Interface Serial1/0:30 disconnected from
00478681006, call lasted 46 seconds
01:04:49: ISDN Se1/0:15: TX -> RELEASE pd = 8 callref = 0x000E
01:04:49: Modem 2/12 Mica: in modem state TERMINATING
01:04:49: ISDN Se1/0:15: RX <- RELEASE_COMP pd = 8 callref = 0x800E
01:04:49: Modem 2/12 Mica: in modem state IDLE
01:04:49: Modem 2/12 Mica: DISCONNECT after 00:00:46,
due to reason (0xDF00) Host Disconnect.
01:04:50: TTY77: DSR was dropped
01:04:50: tty77: Modem: READY->(unknown)
01:04:51: TTY77: Async Int reset: Dropping DTR
01:04:51: Modem 2/12 Mica: PPP escape_map: Tx map = FFFFFFFF, Rx map = 0
01:04:51: As77 PPP: Authorization required
01:04:51: TTY77: dropping DTR, hanging up
01:04:51: tty77: Modem: HANGUP->(unknown)
01:04:52: TTY77: cleanup pending. Delaying DTR
01:04:53: %LINK-5-CHANGED: Interface Async77, changed state to reset
01:04:53: TTY77: cleanup pending. Delaying DTR
01:04:54: TTY77: cleanup pending. Delaying DTR
01:04:55: TTY77: cleanup pending. Delaying DTR
01:04:56: TTY77: no timer type 0 to destroy
01:04:56: TTY77: no timer type 1 to destroy
01:04:56: TTY77: no timer type 3 to destroy
01:04:56: TTY77: no timer type 4 to destroy
01:04:56: TTY77: no timer type 2 to destroy
01:04:56: Async77: allowing modem_process to continue hangup
01:04:56: TTY77: restoring DTR
01:04:58: %LINK-3-UPDOWN: Interface Async77, changed state to down
01:05:08: As77 DDR: re-enable timeout
```

[Обратный вызов модем с помощью V.110](#)

```
!--- Modem callback using default of MICA (modem dialing US robotics). suzanne# 01:06:21: ISDN
Se1/0:15: RX <- SETUP pd = 8 callref = 0x6D73 01:06:21: Sending Complete 01:06:21: Bearer
Capability i = 0x9090A3 01:06:21: Channel ID i = 0xA18387 01:06:21: Progress Ind i = 0x8183 -
Origination address is non-ISDN 01:06:21: Calling Party Number i = 0xA1, '6020', Plan:ISDN,
Type:National 01:06:21: Called Party Number i = 0x81, '214', Plan:ISDN, Type:Unknown 01:06:21:
ISDN Se1/0:15: TX -> CALL_PROC pd = 8 callref = 0xED73 01:06:21: Channel ID i = 0xA98387
01:06:21: ISDN Se1/0:15: TX -> ALERTING pd = 8 callref = 0xED73 01:06:21: ISDN Se1/0:15: TX ->
CONNECT pd = 8 callref = 0xED73 01:06:21: ISDN Se1/0:15: RX <- CONNECT_ACK pd = 8 callref =
0x6D73 01:06:21: ISDN Se1/0:15: CALL_PROGRESS: CALL_CONNECTED call id 0x1A, bchan 6, dsl 0
01:06:21: Modem 2/13 Mica: configured for Answer mode, with Null signaling, 0x0 tone detection.
01:06:21: Modem 2/13 Mica: in modem state CALL_SETUP 01:06:22: Modem 2/13 Mica: in modem state
CONNECT 01:06:26: Modem 2/13 Mica: in modem state LINK 01:06:27: %ISDN-6-CONNECT: Interface
Serial1/0:6 is now connected to 6020 01:06:34: Modem 2/13 Mica: in modem state TRAINUP 01:06:36:
Modem 2/13 Mica: in modem state EC_NEGOTIATING 01:06:36: Modem 2/13 Mica: in modem state STEADY
01:06:36: Modem 2/13 Mica: CONNECT at 9600/9600 (Tx/Rx), V34+, LAPM, None 01:06:37: TTY78: DSR
came up 01:06:37: tty78: Modem: IDLE->(unknown) 01:06:37: TTY78: EXEC creation 01:06:37: TTY78:
```


set timer type 10, 30 seconds 01:06:40: TTY78: Autoselect(2) sample 7E 01:06:40: TTY78:
Autoselect(2) sample 7EFF 01:06:40: TTY78: Autoselect(2) sample 7EFF7D 01:06:40: TTY78:
Autoselect(2) sample 7EFF7D23 01:06:40: TTY78 Autoselect cmd: ppp negotiate 01:06:40: TTY78:
EXEC creation 01:06:40: TTY78: create timer type 1, 600 seconds 01:06:40: TTY78: destroy timer
type 1 01:06:40: TTY78: no timer type 0 to destroy 01:06:40: As78 DDR: Dialer received incoming
call from <unknown> 01:06:42: %LINK-3-UPDOWN: Interface Async78, changed state to up 01:06:42:
As78 DDR: Dialer statechange to up 01:06:42: As78 DDR: Dialer received incoming call from
<unknown> 01:06:42: As78 PPP: Treating connection as a callin 01:06:42: As78 PPP: Authorization
required 01:06:43: Modem 2/13 Mica: PPP escape_map: Tx map = FFFFFFFF, Rx map = 0 01:06:43: As78
PPP: Authorization required 01:06:47: Modem 2/13 Mica: PPP escape_map: Tx map = A0000, Rx map =
0 01:06:47: As78 MCB: Initialize 01:06:47: MCB: Flush 01:06:47: Modem 2/13 Mica: Bad RX Frame:
control = 0xE007, length = 0xE, buffer = 0x3BC9014 01:06:50: As78 PAP: I AUTH-REQ id 2 len 16
from "alainmod" 01:06:50: As78 PAP: Authenticating peer alainmod 01:06:50: As78 PPP: Sent PAP
LOGIN Request to AAA 01:06:50: As78 PPP: Received LOGIN Response from AAA = PASS 01:06:50: As78
DDR: Remote name for alainmod 01:06:50: As78 DDR: Authenticated host alainmod with no matching
dialer map 01:06:50: As78 PAP: O AUTH-ACK id 2 len 5 01:06:50: As78 MCB: Start 01:06:50: As78
MCB: User alainmod Callback Number - Client ANY 01:06:50: As78 MCB: Newstate 0-INIT -> 2-
WAIT_RESPONSE 01:06:50: As78 MCB: O Request Id 1 Callback Type Client-Num delay 0 01:06:52: As78
MCB: Timeout in state WAIT_RESPONSE sending new Request 2 01:06:52: As78 MCB: O Request Id 2
Callback Type Client-Num delay 0 01:06:54: As78 MCB: Timeout in state WAIT_RESPONSE sending new
Request 3 01:06:54: As78 MCB: O Request Id 3 Callback Type Client-Num delay 0 01:06:54: Async78
PPP: I MCB Response(2) id 1 len 17 01:06:54: Async78 MCB: I 2 1 0 11 2 D F 1 5A 44 54 20 36 30
32 30 0 01:06:54: As78 MCB: Received response 01:06:54: As78 MCB: Resp ignored. ID Expected 3,
got id 1 01:06:56: As78 MCB: Timeout in state WAIT_RESPONSE sending new Request 4 01:06:56: As78
MCB: O Request Id 4 Callback Type Client-Num delay 0 01:06:56: Async78 PPP: I MCB Response(2) id
4 len 17 01:06:56: Async78 MCB: I 2 4 0 11 2 D F 1 5A 44 54 20 36 30 32 30 0 01:06:56: As78 MCB:
Received response 01:06:56: As78 MCB: Response CBK-Client-Num 2 13 15, addr 1-ZDT 6020 01:06:56:
As78 MCB: O Ack Id 5 Callback Type Client-Num delay 15 01:06:56: As78 MCB: Negotiated MCB with
peer 01:06:56: As78 MCB: Newstate 2-WAIT_RESPONSE -> 3-WAIT_TERMINATE 01:06:56: As78 MCB: Peer
terminating the link 01:06:56: As78 MCB: Newstate 3-WAIT_TERMINATE -> 5-WAIT_LINKDOWN 01:06:56:
As78 MCB: Link terminated by peer, Callback Needed 01:06:56: As78 MCB: Newstate 5-WAIT_LINKDOWN
-> 6-CALLING 01:06:56: As78 MCB: Initiate Callback for ^->o`iB@ at ZDT 6020 using Async DDR
01:06:56: As78 DDR: PPP callback Callback server starting to alainmod ZDT 6020 01:06:56: As78
MCB: Dialer callback started 01:06:57: Modem 2/13 Mica: in modem state TERMINATING 01:06:57:
Modem 2/13 Mica: in modem state IDLE 01:06:57: %ISDN-6-DISCONNECT: Interface Serial1/0:6
disconnected from 6020, call lasted 36 seconds 01:06:57: ISDN Se1/0:15: TX -> DISCONNECT pd = 8
callref = 0xED73 01:06:57: Cause i = 0x8090 - Normal call clearing 01:06:57: Modem 2/13 Mica:
DISCONNECT after 00:00:35, due to reason (0x8220) EC rcvd DISC frame. 01:06:57: TTY78: DSR was
dropped 01:06:57: tty78: Modem: READY->(unknown) 01:06:57: ISDN Se1/0:15: RX <- RELEASE pd = 8
callref = 0x6D73 01:06:57: ISDN Se1/0:15: TX -> RELEASE_COMP pd = 8 callref = 0xED73 01:06:58:
TTY78: dropping DTR, hanging up 01:06:58: TTY78: Async Int reset: Dropping DTR 01:06:58: tty78:
Modem: HANGUP->(unknown) 01:06:59: TTY78: cleanup pending. Delaying DTR 01:06:59: Modem 2/13
Mica: PPP escape_map: Tx map = FFFFFFFF, Rx map = 0 01:06:59: As78 PPP: Authorization required
01:07:00: %LINK-5-CHANGED: Interface Async78, changed state to reset 01:07:00: TTY78: cleanup
pending. Delaying DTR 01:07:01: TTY78: cleanup pending. Delaying DTR 01:07:02: TTY78: cleanup
pending. Delaying DTR 01:07:03: TTY78: no timer type 0 to destroy 01:07:03: TTY78: no timer type
1 to destroy 01:07:03: TTY78: no timer type 3 to destroy 01:07:03: TTY78: no timer type 4 to
destroy 01:07:03: TTY78: no timer type 2 to destroy 01:07:03: Async78: allowing modem_process to
continue hangup 01:07:03: TTY78: restoring DTR 01:07:05: %LINK-3-UPDOWN: Interface Async78,
changed state to down 01:07:15: As78 DDR: re-enable timeout *!--- Callback start.* 01:07:15: DDR:
callback triggered by dialer_timers 01:07:15: As78 DDR: beginning callback to alainmod ZDT 6020
01:07:15: As78 DDR: Attempting to dial ZDT 6020 01:07:15: CHAT78: Attempting async line dialer
script 01:07:15: CHAT78: Dialing using Modem script: callback2gsm & System script: none
01:07:15: CHAT78: process started 01:07:15: CHAT78: Asserting DTR 01:07:15: CHAT78: Chat script
callback2gsm started 01:07:15: CHAT78: Sending string: AT&F 01:07:15: CHAT78: Expecting string:
OK 01:07:15: CHAT78: Completed match for expect: OK 01:07:15: CHAT78: Sending string: AT\$29=8
01:07:15: CHAT78: Expecting string: OK 01:07:15: CHAT78: Completed match for expect: OK *!--- The
user entered "ZDT 6020". This is what we send:* 01:07:15: CHAT78: Sending string: AT \T<ZDT 6020>
01:07:15: CHAT78: Expecting string: CONNECT 01:07:15: Modem 2/13 Mica: configured for Originate
mode, with Null signaling, 0x1 tone detection. 01:07:15: Modem 2/13 Mica: received dialstring
6020 01:07:15: ISDN Se1/0:15: TX -> SETUP pd = 8 callref = 0x000F 01:07:15: Bearer Capability i
= 0x9090A3 01:07:15: Channel ID i = 0xA9839F 01:07:15: Called Party Number i = 0x81, '6020',
Plan:ISDN, Type:Unknown 01:07:15: ISDN Se1/0:15: RX <- CALL_PROC pd = 8 callref = 0x800F
01:07:15: Channel ID i = 0xA9839F 01:07:15: ISDN Se1/0:15: RX <- ALERTING pd = 8 callref =

0x800F 01:07:15: Modem 2/13 Mica: in modem state CALL_SETUP 01:07:16: Modem 2/13 Mica: Detected Dial tone 01:07:17: ISDN Se1/0:15: RX <- CONNECT pd = 8 callref = 0x800F 01:07:17: Progress Ind i = 0x8182 - Destination address is non-ISDN 01:07:17: Connected Number i = 0xA136303230 01:07:17: ISDN Se1/0:15: TX -> CONNECT_ACK pd = 8 callref = 0x000F 01:07:17: Modem 2/13 Mica: in modem state CONNECT 01:07:19: Modem 2/13 Mica: in modem state LINK 01:07:23: %ISDN-6-CONNECT: Interface Serial1/0:30 is now connected to 6020 01:07:26: Modem 2/13 Mica: in modem state TRAINUP 01:07:28: Modem 2/13 Mica: in modem state EC_NEGOTIATING 01:07:28: Modem 2/13 Mica: in modem state STEADY 01:07:28: CHAT78: Completed match for expect: CONNECT 01:07:28: CHAT78: Sending string: \c 01:07:28: CHAT78: Chat script callback2gsm finished, status = Success 01:07:28: TTY78: no timer type 1 to destroy 01:07:28: TTY78: no timer type 0 to destroy 01:07:28: Modem 2/13 Mica: CONNECT at 33600/31200 (Tx/Rx), V34+, LAPM, None 01:07:28: As78 PPP: Treating connection as a callout 01:07:28: Modem 2/13 Mica: PPP escape_map: Tx map = FFFFFFFF, Rx map = 0 01:07:28: As78 PPP: Authorization required 01:07:28: %LINK-3-UPDOWN: Interface Async78, changed state to up 01:07:28: As78 DDR: Dialer statechange to up 01:07:28: As78 DDR: Copying MS callback dialstring ZDT 6020 to ddb 01:07:28: DDR: Freeing callback to alainmod ZDT 6020 01:07:28: As78 DDR: Dialer call has been placed 01:07:29: Modem 2/13 Mica: PPP escape_map: Tx map = A0000, Rx map = 0 01:07:29: As78 MCB: Initialize 01:07:29: As78 PAP: I AUTH-REQ id 1 len 16 from "alainmod" 01:07:29: As78 PAP: Authenticating peer alainmod 01:07:29: As78 PPP: Sent PAP LOGIN Request to AAA 01:07:29: As78 PPP: Received LOGIN Response from AAA = PASS 01:07:29: As78 DDR: Remote name for alainmod 01:07:29: As78 DDR: Authenticated host alainmod with no matching dialer map 01:07:29: As78 PAP: O AUTH-ACK id 1 len 5 01:07:29: As78 DDR: dialer protocol up 01:07:29: %LINEPROTO-5-UPDOWN: Line protocol on Interface Async78, changed state to up
suzanne#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 172.17.243.1 to network 0.0.0.0
172.17.0.0/24 is subnetted, 1 subnets
C 172.17.243.0 is directly connected, Ethernet0/0
172.31.0.0/16 is variably subnetted, 2 subnets, 2 masks
C 172.31.1.19/32 is directly connected, Async78
C 172.31.0.0/16 is directly connected, Dialer1
S* 0.0.0.0/0 [1/0] via 172.17.243.1

suzanne#ping 172.31.1.19

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 172.31.1.19, timeout is 2 seconds:

!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 356/372/396 ms

suzanne#

01:08:08: Modem 2/13 Mica: in modem state TERMINATING

01:08:08: Modem 2/13 Mica: in modem state IDLE

01:08:08: Modem 2/13 Mica: DISCONNECT after 00:00:51, due to reason (0x8220)

EC rcvd DISC frame.

01:08:08: %ISDN-6-DISCONNECT: Interface Serial1/0:30 disconnected from 6020, call lasted 51 seconds

01:08:08: ISDN Se1/0:15: TX -> DISCONNECT pd = 8 callref = 0x000F

01:08:08: Cause i = 0x8090 - Normal call clearing

01:08:08: ISDN Se1/0:15: RX <- RELEASE pd = 8 callref = 0x800F

01:08:08: ISDN Se1/0:15: TX -> RELEASE_COMP pd = 8 callref = 0x000F

01:08:09: TTY78: DSR was dropped

01:08:09: tty78: Modem: READY->(unknown)

01:08:09: %LINEPROTO-5-UPDOWN: Line protocol on Interface Async78, changed state to down

01:08:10: TTY78: dropping DTR, hanging up

01:08:10: TTY78: Async Int reset: Dropping DTR

01:08:10: tty78: Modem: HANGUP->(unknown)

01:08:10: Modem 2/13 Mica: PPP escape_map: Tx map = FFFFFFFF, Rx map = 0

01:08:10: As78 PPP: Authorization required
01:08:11: TTY78: cleanup pending. Delaying DTR
01:08:12: %LINK-5-CHANGED: Interface Async78, changed state to reset
01:08:12: TTY78: cleanup pending. Delaying DTR
01:08:13: TTY78: cleanup pending. Delaying DTR
01:08:14: TTY78: cleanup pending. Delaying DTR
01:08:15: TTY78: no timer type 0 to destroy
01:08:15: TTY78: no timer type 1 to destroy
01:08:15: TTY78: no timer type 3 to destroy
01:08:15: TTY78: no timer type 4 to destroy
01:08:15: TTY78: no timer type 2 to destroy
01:08:15: Async78: allowing modem_process to continue hangup
01:08:15: TTY78: restoring DTR
01:08:17: %LINK-3-UPDOWN: Interface Async78, changed state to down
01:08:27: As78 DDR: re-enable timeout

Функция обратного вызова ISDN с использованием V.110

```
!--- Receive call. suzanne# 01:09:00: ISDN Sel/0:15: RX <- SETUP pd = 8 callref = 0x6F28
01:09:00: Sending Complete 01:09:00: Bearer Capability i = 0x8890 01:09:00: Channel ID i =
0xA18388 01:09:00: Calling Party Number i = 0xA1, '6136', Plan:ISDN, Type:National 01:09:00:
Called Party Number i = 0x81, '214', Plan:ISDN, Type:Unknown 01:09:00: %LINK-3-UPDOWN: Interface
Serial1/0:7, changed state to up 01:09:00: ISDN Sel/0:15: TX -> CALL_PROC pd = 8 callref =
0xEF28 01:09:00: Channel ID i = 0xA98388 01:09:00: ISDN Sel/0:15: TX -> CONNECT pd = 8 callref =
0xEF28 01:09:00: Channel ID i = 0xA98388 01:09:00: Sel/0:7 PPP: Treating connection as a callin
01:09:00: Sel/0:7 PPP: Authorization required 01:09:00: ISDN Sel/0:15: RX <- CONNECT_ACK pd = 8
callref = 0x6F28 01:09:00: ISDN Sel/0:15: CALL_PROGRESS: CALL_CONNECTED call id 0x1B, bchan 7,
dsl 0 01:09:01: Sel/0:7 PPP: Authorization required 01:09:01: Sel/0:7 MCB: Initialize 01:09:01:
Sel/0:7 CHAP: O CHALLENGE id 1 len 28 from "suzanne" 01:09:01: Sel/0:7 CHAP: I RESPONSE id 1 len
30 from "alainisdn" 01:09:01: Sel/0:7 PPP: Sent CHAP LOGIN Request to AAA 01:09:01: Sel/0:7 PPP:
Received LOGIN Response from AAA = PASS 01:09:01: Sel/0:7 DDR: Remote name for alainisdn
01:09:01: Sel/0:7 CHAP: O SUCCESS id 1 len 4 01:09:01: Sel/0:7 DDR: PPP callback Callback server
starting to alainisdn 6136 01:09:01: Sel/0:7 DDR: disconnecting call 01:09:01: %ISDN-6-CONNECT:
Interface Serial1/0:7 is now connected to 6136 alainisdn 01:09:01: ISDN Sel/0:15: TX ->
DISCONNECT pd = 8 callref = 0xEF28 01:09:01: Cause i = 0x8090 - Normal call clearing 01:09:01:
ISDN Sel/0:15: RX <- RELEASE pd = 8 callref = 0x6F28 01:09:01: %LINK-3-UPDOWN: Interface
Serial1/0:7, changed state to down 01:09:01: ISDN Sel/0:15: TX -> RELEASE_COMP pd = 8 callref =
0xEF28 01:09:01: Sel/0:7 DDR: disconnecting call 01:09:02: ISDN Sel/0:15: RX <- SETUP pd = 8
callref = 0x70DF 01:09:02: Sending Complete 01:09:02: Bearer Capability i = 0x8890 01:09:02:
Channel ID i = 0xA18389 01:09:02: Calling Party Number i = 0xA1, '6136', Plan:ISDN,
Type:National 01:09:02: Called Party Number i = 0x81, '214', Plan:ISDN, Type:Unknown 01:09:02:
%LINK-3-UPDOWN: Interface Serial1/0:8, changed state to up 01:09:02: ISDN Sel/0:15: TX ->
CALL_PROC pd = 8 callref = 0xF0DF 01:09:02: Channel ID i = 0xA98389 01:09:02: ISDN Sel/0:15: TX
-> CONNECT pd = 8 callref = 0xF0DF 01:09:02: Channel ID i = 0xA98389 01:09:02: Sel/0:8 PPP:
Treating connection as a callin 01:09:02: Sel/0:8 PPP: Authorization required 01:09:02: ISDN
Sel/0:15: RX <- CONNECT_ACK pd = 8 callref = 0x70DF 01:09:02: ISDN Sel/0:15: CALL_PROGRESS:
CALL_CONNECTED call id 0x1C, bchan 8, dsl 0 01:09:02: Sel/0:8 PPP: Authorization required
01:09:03: Sel/0:8 MCB: Initialize 01:09:03: Sel/0:8 CHAP: O CHALLENGE id 1 len 28 from "suzanne"
01:09:03: Sel/0:8 CHAP: I RESPONSE id 1 len 30 from "alainisdn" 01:09:03: Sel/0:8 PPP: Sent CHAP
LOGIN Request to AAA 01:09:03: Sel/0:8 PPP: Received LOGIN Response from AAA = PASS 01:09:03:
Sel/0:8 DDR: Remote name for alainisdn 01:09:03: Sel/0:8 CHAP: O SUCCESS id 1 len 4 01:09:03:
Sel/0:8 DDR: callback to alainisdn already started 01:09:03: Sel/0:8 DDR: disconnecting call
01:09:03: %ISDN-6-CONNECT: Interface Serial1/0:8 is now connected to 6136 alainisdn 01:09:03:
ISDN Sel/0:15: TX -> DISCONNECT pd = 8 callref = 0xF0DF 01:09:03: Cause i = 0x8090 - Normal call
clearing 01:09:03: ISDN Sel/0:15: RX <- RELEASE pd = 8 callref = 0x70DF 01:09:03: %LINK-3-
UPDOWN: Interface Serial1/0:8, changed state to down 01:09:03: ISDN Sel/0:15: TX -> RELEASE_COMP
pd = 8 callref = 0xF0DF 01:09:03: Sel/0:8 DDR: disconnecting call !--- Callback Start 01:09:16:
DDR: Callback timer expired 01:09:16: Dil DDR: beginning callback to alainisdn 6136 01:09:16:
Sel/0:15 DDR: rotor dialout [priority] 01:09:16: Sel/0:15 DDR: Attempting to dial 6136 01:09:16:
ISDN Sel/0:15: TX -> SETUP pd = 8 callref = 0x0010 01:09:16: Bearer Capability i = 0x8890
01:09:16: Channel ID i = 0xA9839F 01:09:16: Called Party Number i = 0x81, '6136', Plan:ISDN,
Type:Unknown 01:09:16: ISDN Sel/0:15: RX <- CALL_PROC pd = 8 callref = 0x8010 01:09:16: Channel
ID i = 0xA9839F 01:09:16: ISDN Sel/0:15: RX <- ALERTING pd = 8 callref = 0x8010 01:09:16: ISDN
```

```
Se1/0:15: RX <- CONNECT pd = 8 callref = 0x8010 01:09:16: Connected Number i = 0xA136313336
01:09:16: %LINK-3-UPDOWN: Interface Serial1/0:30, changed state to up 01:09:16: DDR: Freeing
callback to alainisdn 6136 01:09:16: ISDN Se1/0:15: TX -> CONNECT_ACK pd = 8 callref = 0x0010
01:09:16: Se1/0:30 PPP: Treating connection as a callout 01:09:16: Se1/0:30 PPP: Authorization
required 01:09:16: Se1/0:30 MCB: Initialize 01:09:16: Se1/0:30 CHAP: I CHALLENGE id 7 len 30
from "alainisdn" 01:09:16: Se1/0:30 PPP: Sent CHAP SENDAUTH Request to AAA 01:09:16: Se1/0:30
PPP: Received SENDAUTH Response from AAA = PASS 01:09:16: Se1/0:30 CHAP: O RESPONSE id 7 len 28
from "suzanne" 01:09:16: Se1/0:30 CHAP: I SUCCESS id 7 len 4 01:09:16: Se1/0:30 PPP: Sent LCP
AUTHOR Request to AAA 01:09:16: Se1/0:30 PPP: Sent IPCP AUTHOR Request to AAA 01:09:16: Se1/0:30
LCP: Received AAA AUTHOR Response = PASS 01:09:16: Se1/0:30 IPCP: Received AAA AUTHOR Response =
PASS 01:09:16: Se1/0:30 DDR: dialer protocol up 01:09:17: %LINEPROTO-5-UPDOWN: Line protocol on
Interface Serial1/0:30, changed state to up 01:09:22: %ISDN-6-CONNECT: Interface Serial1/0:30 is
now connected to 6136 alainisdn suzanne# suzanne#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 172.17.243.1 to network 0.0.0.0
```

```
172.17.0.0/24 is subnetted, 1 subnets
C 172.17.243.0 is directly connected, Ethernet0/0
172.31.0.0/16 is variably subnetted, 2 subnets, 2 masks
C 172.31.1.2/32 is directly connected, Dialer1
C 172.31.0.0/16 is directly connected, Dialer1
S* 0.0.0.0/0 [1/0] via 172.17.243.1
```

```
suzanne#ping 172.31.1.2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 172.31.1.2, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 32/34/36 ms
```

```
suzanne#
```

[Дополнительные сведения](#)

- [Страница поддержки технологии технологий коммутируемого доступа в сеть](#)
- [Cisco Systems – техническая поддержка и документация](#)