

# Sync–Async Ports for Async Modem Dial–in On Cisco 1600, 1700, 2600, and 3600 Platforms

Document ID: 19065

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## Introduction

This document provides a sample configuration for using sync and async ports for modem dial–in on Cisco 1600, 1700, 2600, and 3600 routers. The following configuration enables you to connect the sync and async interfaces of a router to external client modems that are attached to the router with DB–60 to RS–232 cables.

**Note:** If you have USR sportster modems, only dip switches 3 and 8 should be down.

## Before You Begin

### Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

### Prerequisites

There are no specific prerequisites for this document.

### Components Used

The information in this document is based on the software version below.

- Cisco IOS® Software Release 12.1

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you are working in a live network, ensure that you understand the potential impact of any command before using it.

# Configure

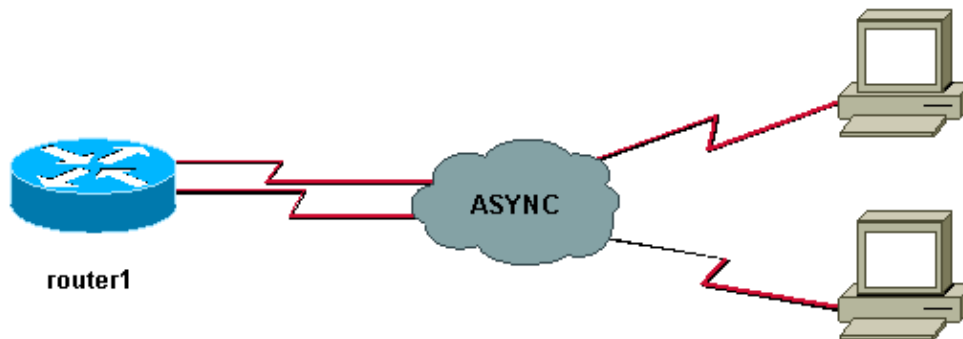
In this section, you are presented with the information to configure the features described in this document.

**Note:** To find additional information on the commands used in this document, use the Command Lookup Tool (registered customers only) .

For more information on installing network modules and port numbering, refer to Connecting Serial Network Modules.

## Network Diagram

This document uses the network setup shown in the diagram below.



## Configurations

This document uses the configuration shown below.

Router 1
<pre>show running-config  ! version 12.1 service timestamps debug datetime msec no service password-encryption ! hostname router1 ! boot system slot1:c3640-i-mz.121-20 ! username test password 0 test  !--- Local database entries for authentication.  ! memory-size iomem 10 ip subnet-zero ! ! interface Loopback0  ip address 1.1.1.1 255.255.255.0 ! interface Ethernet0/0  ip address 10.10.10.1 255.255.255.0 !</pre>

```
interface Serial3/0
  no ip address
!
interface Serial3/1
  no ip address
  shutdown
!
interface Serial3/2
  no ip address
  shutdown
!
interface Serial3/3
  no ip address
  shutdown
!
interface Serial3/4
  no ip address
  shutdown
!
interface Serial3/5
  no ip address
  shutdown
!
interface Serial3/6
  no ip address
  shutdown
!
interface Serial3/7

!--- Interface attached to modem.

physical-layer async

!--- Put the interface into async mode.
!--- A line appears at the bottom of the configuration.
!--- All the other serial ports on this module are in sync mode.

ip unnumbered Loopback0

!--- IP address for the interface.

encapsulation ppp
async mode interactive

!--- Allow both EXEC and PPP sessions.

peer default ip address pool default

!--- Assign IP address to client.

ppp authentication chap

!--- Authenticate using Challenge Handshake
!--- Authentication Protocol (CHAP).

!
ip local pool default 1.1.1.2

!--- Local IP pool of one IP address for client connect
!--- on the external modem connected to serial3/7.

ip classless
ip route 0.0.0.0 0.0.0.0 10.10.10.100
ip default-gateway
ip http server
```

```

!
line con 0
line 104

!--- Line 104 associated with serial 3/7.

modem InOut

!--- Modem attached to line.

modem autoconfigure discovery

!--- We are hoping that the modem is a standard hayes
!--- compatible modem. The configuration worked fine.

transport input all
autoselect during-login
autoselect ppp
transport input all
speed 115200

line aux 0
  password <removed>
  login
line vty 0 4
  password <removed>
  login
!
end
router1#

```

Notice that after physical-layer async is configured on an interface, a new line number appears in the configuration which needs to be configured (in this example 104). If you do not know which line number is associated with which interface, issue a **show line EXEC** command to view the mappings. After all of this is configured and all hardware is installed, you must reverse Telnet to the modems to lock data terminal equipment (DTE) speed between the two devices. To do this, Telnet to any IP address on the box which is in an up/up state (loopback interfaces are great for this) with the port number 2000+x where x is the line number the modem is attached to. In this example, the modem is on line 104, so Telnet to the loopback address (1.1.1.1) port 2104. You can then issue an **AT** command at the blank line and the modem should echo back 'OK'. To disconnect, hit **Ctrl-Shift-6** and then **x** to get back to the router prompt and then type in **disconnect** to close the connection.

**Note:** Make sure you close the connection or it will not work.

For example:

```

router1#telnet 1.1.1.1 2104
Trying 1.1.1.1, 2104 ... Open
at
OK
router1#disconnect
Closing connection to 1.1.1.1 [confirm]
router1#

```

Sometimes you need to issue the command **at&b0&w0** to the modem before the DTE speed is locked completely. After the reverse Telnet is complete, dial into the router with a hyperterminal (or other ASCII program) and see if you can get a router prompt. The settings should be 8N1. If this works, then PPP connectivity should work also.

# Verify

This section provides information you can use to confirm any cabling issue. Below is a cabling diagram for the sync/async card. Also, please make sure that your modem hardware states under the line (104) are similar to what is explained below.

Sync/async port(DB60 female)<----- ( CAB-232MT=, Part# 72-0793-01)----->External Modem

**Note:** The CAB-232MT cable is a DTE cable, which makes the router act as a DTE device. You need it to connect to a modem (DCE device). If you are connecting sync/async ports to a terminal device (DTE), you need to use DCE cable (CAB-232FC=) which makes the router act as a DCE device.

Certain **show** commands are supported by the Output Interpreter Tool (registered customers only) , which allows you to view an analysis of **show** command output.

- **show diag** – Displays diagnostic information about the controller, interface processor, and port adapters for a networking device.
- **show interfaces serial** – Displays information about a serial interface.
- **show line** – Displays the parameters of a terminal line.

```
router1#show diag
Slot 0:
....
....
<snipped>
....
Slot 3:
  Sync/Async Port adapter, 8 ports
  Port adapter is analyzed
  Port adapter insertion time unknown
  EEPROM contents at hardware discovery:
  Hardware revision 1.0           Board revision H0
  Serial number 10532987         Part number 800-01225-02
  Test history 0x0              RMA number 00-00-00
  EEPROM format version 1
  EEPROM contents (hex):
    0x20: 01 25 01 00 00 A0 B8 7B 50 04 C9 02 00 00 00 00
    0x30: 88 00 00 00 98 10 23 17 FF FF FF FF FF FF FF FF
```

```
router1#show interfaces serial 3/7
Serial3/7 is down, line protocol is down
  Hardware is CD2430 in async mode
  MTU 1500 bytes, BW 9 Kbit, DLY 100000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
....
```

```
router1#show interfaces serial 3/0
Serial3/0 is down, line protocol is down
  Hardware is CD2430 in sync mode
  MTU 1500 bytes, BW 128 Kbit, DLY 20000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
```

```
router1#show line
  Tty Typ Tx/Rx A Modem Roty Acc0 AccI Uses Noise Overruns Int
* 0 CTY - - - - - 0 0 0/0 -
I 104 TTY 115200/115200 - inout - - - 0 0 0/0 Se3/7
129 AUX 9600/9600 - - - - - 0 0 0/0 -
130 VTY - - - - - - - 0 0 0/0 -
131 VTY - - - - - - - 0 0 0/0 -
132 VTY - - - - - - - 0 0 0/0 -
133 VTY - - - - - - - 0 0 0/0 -
```

134 VTY - - - - - 0 0 0/0 -

Line(s) not in async mode -or- with no hardware support:  
1-96, 98-128

router1#show line 104

Tty	Typ	Tx/Rx	A	Modem	Roty	AccO	AccI	Uses	Noise	Overruns	Int
I 104	TTY	115200/115200-		inout	-	-	-	0	0	0/0	Se3/7

Line 104, Location: "", Type: ""  
Length: 24 lines, Width: 80 columns  
Baud rate (TX/RX) is 115200/115200, no parity, 2 stopbits, 8 databits  
Status: No Exit Banner  
Capabilities: Modem Callout, Modem RI is CD,  
Line usable as async interface  
Modem state: Idle  
**Modem hardware state: noCTS noDSR DTR RTS**

*!--- External connected modem is off.*

Special Chars:	Escape	Hold	Stop	Start	Disconnect	Activation
	^^x	none	-	-	none	
Timeouts:	Idle EXEC	Idle Session	Modem Answer	Session	Dispatch	
	00:10:00	never		none	not set	
		Idle Session Disconnect Warning				
		never				
		Login-sequence User Response				
		00:00:30				
		Autoselect Initial Wait				
		not set				

Modem type is unknown.  
Session limit is not set.  
Time since activation: never  
Editing is enabled.  
History is enabled, history size is 10.  
DNS resolution in show commands is enabled  
Full user help is disabled  
Allowed input transports are pad v120 lapb-ta telnet rlogin udptn.  
Allowed output transports are pad v120 lapb-ta telnet rlogin.  
Preferred transport is telnet.  
No output characters are padded  
No special data dispatching characters  
router1#

router1#show line 104

Tty	Typ	Tx/Rx	A	Modem	Roty	AccO	AccI	Uses	Noise	Overruns	Int
104	TTY	115200/115200-		inout	-	-	-	0	0	0/0	Se3/7

Line 104, Location: "", Type: ""  
Length: 24 lines, Width: 80 columns  
Baud rate (TX/RX) is 115200/115200, no parity, 2 stopbits, 8 databits  
Status: No Exit Banner, CTS Raised  
Capabilities: Modem Callout, Modem RI is CD  
Modem state: Idle  
**Modem hardware state: CTS noDSR DTR RTS**

*!--- External connected modem is ON, without any call on it.*

Special Chars:	Escape	Hold	Stop	Start	Disconnect	Activation
	^^x	none	-	-	none	
Timeouts:	Idle EXEC	Idle Session	Modem Answer	Session	Dispatch	
	00:10:00	never		none	not set	
		Idle Session Disconnect Warning				
		never				
		Login-sequence User Response				
		00:00:30				

Autoselect Initial Wait  
not set

Modem type is unknown.  
Session limit is not set.  
Time since activation: never  
Editing is enabled.  
History is enabled, history size is 10.  
DNS resolution in show commands is enabled  
Full user help is disabled  
Allowed input transports are pad v120 lapb-ta telnet rlogin udptn.  
Allowed output transports are pad v120 lapb-ta telnet rlogin.  
Preferred transport is telnet.  
No output characters are padded  
No special data dispatching characters  
routel#

routel#show line 104

Tty	Typ	Tx/Rx	A	Modem	Roty	AccO	AccI	Uses	Noise	Overruns	Int
* 104	TTY	115200/115200	-	inout	-	-	-	0	1	0/0	Se3/7

Line 104, Location: "", Type: ""  
Length: 24 lines, Width: 80 columns  
Baud rate (TX/RX) is 115200/115200, no parity, 2 stopbits, 8 databits  
Status: PSI Enabled, Ready, Active, No Exit Banner, CTS Raised  
Automore On  
Capabilities: Modem Callout, Modem RI is CD  
Modem state: Ready  
Modem hardware state: CTS DSR DTR RTS

*!-- External connected modem is ON, with an active EXEC call on it.*

Special Chars:	Escape	Hold	Stop	Start	Disconnect	Activation
	^^x	none	-	-	none	
Timeouts:	Idle EXEC	Idle Session	Modem Answer	Session	Dispatch	
	00:10:00	never	never	none	not set	
		Idle Session Disconnect Warning				
		never				
		Login-sequence User Response				
		00:00:30				
		Autoselect Initial Wait				
		not set				

Modem type is unknown.  
Session limit is not set.  
Time since activation: 00:01:17  
Editing is enabled.  
History is enabled, history size is 10.  
DNS resolution in show commands is enabled  
Full user help is disabled  
Allowed input transports are pad v120 lapb-ta telnet rlogin udptn.  
Allowed output transports are pad v120 lapb-ta telnet rlogin.  
Preferred transport is telnet.  
No output characters are padded  
No special data dispatching characters

routel#show interfaces serial 3/7

Serial3/7 is down, line protocol is down

*!-- External connected modem is ON, with an active call in EXEC mode.*

Hardware is CD2430 in async mode  
Interface is unnumbered. Using address of Loopback0 (10.10.10.10)  
MTU 1500 bytes, BW 115 Kbit, DLY 100000 usec,  
reliability 255/255, txload 1/255, rxload 1/255  
Encapsulation PPP, loopback not set  
Keepalive not set  
DTR is pulsed for 5 seconds on reset

```

LCP Closed
Closed: IPCP
Last input 00:50:32, output 00:51:29, output hang never
Last clearing of "show interface" counters 00:00:38
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)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
  0 packets output, 0 bytes, 0 underruns
  0 output errors, 0 collisions, 0 interface resets
  0 output buffer failures, 0 output buffers swapped out
  0 carrier transitions
router1#

```

## Troubleshoot

The verification section above provides most of the information as far as cable connection and async communication control signals (CTS DSR DTR RTS ) are concerned. With the above configuration of Router 1, the user should be able to dial.

- **EXEC Mode** – In EXEC mode, the user can dial from a modem using a serial terminal utility (like hyperterm/procomm) to the external modem connected to sync/async port. After successful trainup between modems, a user should get a router1 prompt . All of the above **show** commands in verification section are collected during EXEC connection to the router.
- **PPP Mode** – In PPP mode, a user can dial from a modem using Windows dialup networking to the external modem connected on the sync/async port. If dialing in EXEC mode is working, PPP should also work without any issue. Please make sure the configuration is exactly the same as mentioned above. To troubleshoot PPP mode, dialin using the following **debug** commands which are needed to turn on along with the milliseconds time stamping. Follow the debug lines which are in bold to see how far you are going in the debugs. Please use the following PPP Troubleshooting Flowchart if you need further information.

## Troubleshooting Commands

Certain **show** commands are supported by the Output Interpreter Tool (registered customers only) , which allows you to view an analysis of **show** command output.

**Note:** Before issuing **debug** commands, please see Important Information on Debug Commands.

- **service timestamps debug datetime msec** – Used to turn on millisecond time stamping for debugs.
- **debug modem** – Used to observe modem line activity on an access server.
- **debug ppp negotiation** – Used to see if a client is passing PPP negotiation.
- **debug ppp authentication** – Used to see if a client is passing authentication.
- **debug chat** – Used to display chat script activity.
- **debug confmodem** – Used to display information associated with the discovery and configuration of the modem attached to the router.
- **show debugging** – Used to display information about the types of debugging that are enabled for your router.
- **show users** – Used to display information about the active lines on the router.

Please see the command output below for troubleshooting command examples.



```
router1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
router1(config)#service timestamps debug datetime msec
```

*!--- Turned on millisecond time stamping for debugs.*

```
router1(config)#end
router1#
router1#debug modem
router1#debug ppp negotiation
router1#debug ppp authentication
router1#debug chat
router1#debug confmodem
```

```
router1#show debugging
General OS:
  Modem control/process activation debugging is on
PPP:
  PPP authentication debugging is on
  PPP protocol negotiation debugging is on
Chat Scripts:
  Chat scripts activity debugging is on
router1#
```

*!--- The following is the above mentioned  
!--- debugs log collected from router,  
!--- when a PPP user tried to dialin with a username = test, password = test.*

```
router1#
router1#clear line 104
[confirm]
[OK]
router1#
*Mar 1 00:06:34.563: TTY104: Line reset by "Exec"
*Mar 1 00:06:34.567: TTY104: Modem: IDLE->HANGUP
*Mar 1 00:06:34.567: TTY104: destroy timer type 0
*Mar 1 00:06:34.567: TTY104: destroy timer type 1
*Mar 1 00:06:34.567: TTY104: destroy timer type 3
*Mar 1 00:06:34.567: TTY104: destroy timer type 4
*Mar 1 00:06:34.567: TTY104: destroy timer type 2
*Mar 1 00:06:35.139: TTY104: dropping DTR, hanging up
*Mar 1 00:06:35.139: tty104: Modem: HANGUP->IDLE
*Mar 1 00:06:40.139: TTY104: restoring DTR
*Mar 1 00:06:41.139: TTY104: autoconfigure probe started
*Mar 1 00:06:41.139: TTY104: Modem command: --AT&F&C1&D2S0=1H0--
*Mar 1 00:06:43.675: TTY104: Modem configuration succeeded
*Mar 1 00:06:43.675: TTY104: Detected modem speed 115200
*Mar 1 00:06:43.675: TTY104: Done with modem configuration
router1#
router1#
```

*!--- Below are debugs when the PPP user tried to dialin.*

```
*Mar 1 00:08:43.163: TTY104: DSR came up
*Mar 1 00:08:43.163: tty104: Modem: IDLE->(unknown)
*Mar 1 00:08:43.163: TTY104: Autoselect started
*Mar 1 00:08:43.163: TTY104: create timer type 0, 120 seconds
*Mar 1 00:08:44.699: TTY104: Autoselect sample 7E
*Mar 1 00:08:44.699: TTY104: Autoselect sample 7EFF
*Mar 1 00:08:44.699: TTY104: Autoselect sample 7EFF7D
*Mar 1 00:08:44.699: TTY104: Autoselect sample 7EFF7D23
*Mar 1 00:08:44.699: TTY104 Autoselect cmd: ppp negotiate
*Mar 1 00:08:44.699: TTY104: destroy timer type 0 (OK)
*Mar 1 00:08:44.703: TTY104: EXEC creation
```

```
*Mar 1 00:08:44.703: TTY104: create timer type 1, 600 seconds
*Mar 1 00:08:44.707: TTY104: destroy timer type 1 (OK)
*Mar 1 00:08:44.707: TTY104: destroy timer type 0
00:08:46: %LINK-3-UPDOWN: Interface Serial3/7, changed state to up
*Mar 1 00:08:46.707: Se3/7 PPP: Treating connection as a dedicated line
*Mar 1 00:08:46.707: Se3/7 PPP: Phase is ESTABLISHING, Active Open
*Mar 1 00:08:46.707: Se3/7 LCP: O CONFREQ [Closed] id 3 len 25
*Mar 1 00:08:46.707: Se3/7 LCP: ACCM 0x000A0000 (0x0206000A0000)
*Mar 1 00:08:46.707: Se3/7 LCP: AuthProto CHAP (0x0305C22305)
*Mar 1 00:08:46.707: Se3/7 LCP: MagicNumber 0x0014A697 (0x05060014A697)
*Mar 1 00:08:46.707: Se3/7 LCP: PFC (0x0702)
*Mar 1 00:08:46.707: Se3/7 LCP: ACFC (0x0802)
*Mar 1 00:08:46.863: Se3/7 LCP: I CONFACK [REQsent] id 3 len 25
*Mar 1 00:08:46.863: Se3/7 LCP: ACCM 0x000A0000 (0x0206000A0000)
*Mar 1 00:08:46.863: Se3/7 LCP: AuthProto CHAP (0x0305C22305)
*Mar 1 00:08:46.863: Se3/7 LCP: MagicNumber 0x0014A697 (0x05060014A697)
*Mar 1 00:08:46.863: Se3/7 LCP: PFC (0x0702)
*Mar 1 00:08:46.863: Se3/7 LCP: ACFC (0x0802)
*Mar 1 00:08:47.703: Se3/7 LCP: I CONFREQ [ACKrcvd] id 2 len 50
*Mar 1 00:08:47.703: Se3/7 LCP: ACCM 0x00000000 (0x020600000000)
*Mar 1 00:08:47.703: Se3/7 LCP: MagicNumber 0x44B3482A (0x050644B3482A)
*Mar 1 00:08:47.703: Se3/7 LCP: PFC (0x0702)
*Mar 1 00:08:47.703: Se3/7 LCP: ACFC (0x0802)
*Mar 1 00:08:47.703: Se3/7 LCP: Callback 6 (0x0D0306)
*Mar 1 00:08:47.703: Se3/7 LCP: MRRU 1614 (0x1104064E)
*Mar 1 00:08:47.703: Se3/7 LCP: EndpointDisc 1 Local
*Mar 1 00:08:47.703: Se3/7 LCP: (0x131701362F5B168BFB407785EE942EB8)
*Mar 1 00:08:47.703: Se3/7 LCP: (0xEF5D0700000000)
*Mar 1 00:08:47.703: Se3/7 LCP: O CONFREQ [ACKrcvd] id 2 len 11
*Mar 1 00:08:47.703: Se3/7 LCP: Callback 6 (0x0D0306)
*Mar 1 00:08:47.707: Se3/7 LCP: MRRU 1614 (0x1104064E)
*Mar 1 00:08:47.855: Se3/7 LCP: I CONFREQ [ACKrcvd] id 3 len 43
*Mar 1 00:08:47.855: Se3/7 LCP: ACCM 0x00000000 (0x020600000000)
*Mar 1 00:08:47.855: Se3/7 LCP: MagicNumber 0x44B3482A (0x050644B3482A)
*Mar 1 00:08:47.855: Se3/7 LCP: PFC (0x0702)
*Mar 1 00:08:47.855: Se3/7 LCP: ACFC (0x0802)
*Mar 1 00:08:47.855: Se3/7 LCP: EndpointDisc 1 Local
*Mar 1 00:08:47.855: Se3/7 LCP: (0x131701362F5B168BFB407785EE942EB8)
*Mar 1 00:08:47.855: Se3/7 LCP: (0xEF5D0700000000)
*Mar 1 00:08:47.855: Se3/7 LCP: O CONFACK [ACKrcvd] id 3 len 43
*Mar 1 00:08:47.855: Se3/7 LCP: ACCM 0x00000000 (0x020600000000)
*Mar 1 00:08:47.855: Se3/7 LCP: MagicNumber 0x44B3482A (0x050644B3482A)
*Mar 1 00:08:47.855: Se3/7 LCP: PFC (0x0702)
*Mar 1 00:08:47.859: Se3/7 LCP: ACFC (0x0802)
*Mar 1 00:08:47.859: Se3/7 LCP: EndpointDisc 1 Local
*Mar 1 00:08:47.859: Se3/7 LCP: (0x131701362F5B168BFB407785EE942EB8)
*Mar 1 00:08:47.859: Se3/7 LCP: (0xEF5D0700000000)
*Mar 1 00:08:47.859: Se3/7 LCP: State is Open
*Mar 1 00:08:47.859: Se3/7 PPP: Phase is AUTHENTICATING, by this end
*Mar 1 00:08:47.859: Se3/7 CHAP: O CHALLENGE id 2 len 28 from "router1"
*Mar 1 00:08:48.015: Se3/7 LCP: I IDENTIFY [Open] id 4 len 18 magic 0x44B3482A MSRASV5.00
*Mar 1 00:08:48.031: Se3/7 LCP: I IDENTIFY [Open] id 5 len 27 magic 0x44B3482A MSRAS-1-IR
*Mar 1 00:08:48.043: Se3/7 CHAP: I RESPONSE id 2 len 25 from "test"
*Mar 1 00:08:48.043: Se3/7 CHAP: O SUCCESS id 2 len 4
*Mar 1 00:08:48.047: Se3/7 PPP: Phase is UP
*Mar 1 00:08:48.047: Se3/7 IPCP: O CONFREQ [Closed] id 2 len 10
*Mar 1 00:08:48.047: Se3/7 IPCP: Address 10.10.10.10 (0x03060A0A0A0A)
*Mar 1 00:08:48.175: Se3/7 CCP: I CONFREQ [Not negotiated] id 6 len 10
*Mar 1 00:08:48.175: Se3/7 CCP: MS-PPC supported bits 0x00000001 (0x120600000001)
*Mar 1 00:08:48.175: Se3/7 LCP: O PROTREQ [Open] id 4 len 16 protocol CCP (0x80FD0106000A)
*Mar 1 00:08:48.191: Se3/7 IPCP: I CONFREQ [REQsent] id 7 len 40
*Mar 1 00:08:48.191: Se3/7 IPCP: CompressType VJ 15 slots CompressSlotID (0x0206002D0F)
*Mar 1 00:08:48.191: Se3/7 IPCP: Address 0.0.0.0 (0x030600000000)
*Mar 1 00:08:48.191: Se3/7 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
*Mar 1 00:08:48.195: Se3/7 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
*Mar 1 00:08:48.195: Se3/7 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
```

```

*Mar 1 00:08:48.195: Se3/7 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
*Mar 1 00:08:48.195: Se3/7 IPCP: O CONFREJ [REQsent] id 7 len 34
*Mar 1 00:08:48.195: Se3/7 IPCP: CompressType VJ 15 slots CompressSlotID (0x0206002D0F
*Mar 1 00:08:48.195: Se3/7 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
*Mar 1 00:08:48.195: Se3/7 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
*Mar 1 00:08:48.195: Se3/7 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
*Mar 1 00:08:48.195: Se3/7 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
*Mar 1 00:08:48.199: Se3/7 IPCP: I CONFACK [REQsent] id 2 len 10
*Mar 1 00:08:48.199: Se3/7 IPCP: Address 10.10.10.10 (0x03060A0A0A0A)
*Mar 1 00:08:48.343: Se3/7 IPCP: I CONFREQ [ACKrcvd] id 8 len 10
*Mar 1 00:08:48.343: Se3/7 IPCP: Address 0.0.0.0 (0x030600000000)
*Mar 1 00:08:48.343: Se3/7 IPCP: O CONFNAK [ACKrcvd] id 8 len 10
*Mar 1 00:08:48.343: Se3/7 IPCP: Address 1.1.1.2 (0x030601010102)
*Mar 1 00:08:48.483: Se3/7 IPCP: I CONFREQ [ACKrcvd] id 9 len 10
*Mar 1 00:08:48.483: Se3/7 IPCP: Address 1.1.1.2 (0x030601010102)
*Mar 1 00:08:48.483: Se3/7 IPCP: O CONFACK [ACKrcvd] id 9 len 10
*Mar 1 00:08:48.483: Se3/7 IPCP: Address 1.1.1.2 (0x030601010102)
*Mar 1 00:08:48.487: Se3/7 IPCP: State is Open
*Mar 1 00:08:48.487: Se3/7 IPCP: Install route to 1.1.1.2
00:08:49: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/7,
changed state to up
router1#

```

```

router1#show interfaces serial 3/7
Serial3/7 is up, line protocol is up
  Hardware is CD2430 in async mode
  Interface is unnumbered. Using address of Loopback0 (10.10.10.10)
  MTU 1500 bytes, BW 115 Kbit, DLY 100000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation PPP, loopback not set
  Keepalive not set
  DTR is pulsed for 5 seconds on reset
  LCP Open
  Open: IPCP
  Last input 00:00:00, output 00:00:09, output hang never
  Last clearing of "show interface" counters 00:08:42
  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)
  5 minute input rate 0 bits/sec, 1 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    157 packets input, 10790 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    2 input errors, 2 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    26 packets output, 975 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 output buffer failures, 0 output buffers swapped out
    0 carrier transitions

```

```

router1#show users

```

Line	User	Host(s)	Idle	Location
* 0 con 0		idle	00:00:00	
104 tty 104	test	Async interface	00:00:01	PPP: 1.1.1.2

```


```

Interface	User	Mode	Idle	Peer Address
-----------	------	------	------	--------------

```

router1#ping 1.1.1.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 156/163/172 ms
router1#

```

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Updated: Feb 04, 2010

Document ID: 19065

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