

Testing Async DDR into the San Jose Dial-in Lab

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Introduction

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Introduction

Note: The information in this document is based on Cisco IOS® Software Release 12.0 running on a Cisco 3620.

To make sure that your router's async outbound Dial-on-Demand Routing (DDR) is working correctly, use the following procedure:

1. Configure outbound async DDR into the San Jose dial-in lab.
2. Use a separate terminal to dial into the San Jose dial-in lab to watch the DDR call. (This step is optional.)
3. Bring up the DDR link and verify that it works properly.

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

This document is not restricted to specific software and hardware versions.

Configuring Outbound Async DDR

In this example, configure outbound async DDR on line 33:

```
interface Async33
  ip address negotiated
  encapsulation ppp
  dialer in-band
```

```

dialer string 14085703932
dialer hold-queue 10 timeout 40
dialer-group 1
peer default ip address 10.1.1.1
no cdp enable
ppp authentication chap callin
ppp chap hostname cisco
ppp chap password 0 cisco
!
ip route 10.1.1.0 255.255.255.0 Async33 permanent
!
dialer-list 1 protocol ip permit
!
line 33
modem InOut
transport input telnet
speed 115200
flowcontrol hardware
databits 8
parity none
stopbits 1

```

Dial into the San Jose Lab

From a terminal window, dial in to the San Jose lab. Log in as "cisco" with the password "cisco," and turn on interesting debugs:

```

ATDT 5703932
CONNECT
Username: cisco
Password: cisco

access-3>debug isdn q931
access-3>debug modem csm
access-3>debug modem
access-3>debug ppp negotiation
access-3>terminal monitor

```

Bring up the DDR Link

On the originating router, turn on interesting debugs and the issue the **ping** command to bring up the link:

```

c3620#debug dialer
c3630#debug chat line 33
c3620#debug modem
c3620#debug modem csm

!-- Used for internal modems only.

c3620#debug ppp negotiation
c3620#debug ip icmp

c3620#ping
Protocol [ip]:
Target IP address: 10.1.1.1
Repeat count [5]:
Datagram size [100]:
Timeout in seconds [2]: 10
Extended commands [n]:
Sweep range of sizes [n]:
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.1.1, timeout is 10 seconds:
...!!

```

Success rate is 40 percent (2/5), round-trip min/avg/max = 168/216/264 ms

Debugs from the Originating Router

```
*Mar 12 19:21:06.993: As33 DDR: Dialing cause ip (s=10.22.33.1, d=10.1.1.1)
*Mar 12 19:21:06.993: As33 DDR: Attempting to dial 14085703932
*Mar 12 19:21:06.997: CHAT33: Attempting async line dialer script
*Mar 12 19:21:06.997: CHAT33: no matching chat script found for 14085703932

*Mar 12 19:21:06.997: CHAT33: Dialing using Modem script: d0efault-d0ials0cript & System s
*Mar 12 19:21:06.997: CHAT33: process started
*Mar 12 19:21:06.997: CHAT33: Asserting DTR
*Mar 12 19:21:06.997: CHAT33: Chat script d0efault-d0ials0cript started
*Mar 12 19:21:06.997: CHAT33: Sending string: ATZ
*Mar 12 19:21:07.001: CHAT33: Expecting string: OK
*Mar 12 19:21:08.513: CHAT33: Input mismatch expecting: OK :: ATZ\015\015\012
*Mar 12 19:21:08.513: CHAT33: Input match for: OK:: OK
*Mar 12 19:21:08.513: CHAT33: Completed match for expect: OK
*Mar 12 19:21:08.513: CHAT33: Sending string: AT
*Mar 12 19:21:08.513: CHAT33: Expecting string: OK
*Mar 12 19:21:08.513: CHAT33: Input mismatch expecting: OK :: \015\012AT\015\015\012
*Mar 12 19:21:08.589: CHAT33: Input match for: OK:: OK
*Mar 12 19:21:08.589: CHAT33: Completed match for expect: OK
*Mar 12 19:21:08.589: CHAT33: Sending string: ATDT\T<14085703932>
*Mar 12 19:21:08.589: CHAT33: Expecting string: CONNECT
*Mar 12 19:21:08.589: CHAT33: Input mismatch expecting: CONNECT :: \015\012
*Mar 12 19:21:08.605: CSM_ANALOG_MODEM_IDLE: MODEM_STARTING_CONNECT at slot 1, port 0

*Mar 12 19:21:08.609: Modem 1/0 Mcom: in modem state 'Dialing/Answering'ATDT14085703932\01
*Mar 12 19:21:20.613: Modem 1/0 Mcom: in modem state 'Waiting for Carrier'
*Mar 12 19:21:31.681: Modem 1/0 Mcom: in modem state 'Connected'
*Mar 12 19:21:32.153: ANALOG_CONNECT_INITIATED: MODEM_CONNECTED at slot 1, port 0

*Mar 12 19:21:32.157: Modem 1/0 Mcom: CONNECT at 26400/26400(Tx/Rx), V34, LAPM, V42bis, Or
*Mar 12 19:21:32.205: CHAT33: Input match for: CONNECT:: CONNECT
*Mar 12 19:21:32.205: CHAT33: Completed match for expect: CONNECT
*Mar 12 19:21:32.205: CHAT33: Chat script d0efault-d0ials0cript finished, status = Success
*Mar 12 19:21:32.209: Modem 1/0 Mcom: switching to PPP mode
*Mar 12 19:21:32.209: TTY33: destroy timer type 1
*Mar 12 19:21:32.209: TTY33: destroy timer type 0
*Mar 12 19:21:34.209: %LINK-3-UPDOWN: Interface Async33, changed state to upDialer statech
has been placed Async33
*Mar 12 19:21:34.209: As33 PPP: Treating connection as a callout
*Mar 12 19:21:34.213: As33 PPP: Phase is ESTABLISHING, Active Open
*Mar 12 19:21:34.213: Modem 1/0 Mcom: PPP escape map: Tx map = FFFFFFFF, Rx map = 0
*Mar 12 19:21:34.213: As33 PPP: No remote authentication for call-out
*Mar 12 19:21:34.213: As33 LCP: O CONFREQ [Closed] id 41 len 20
*Mar 12 19:21:34.213: As33 LCP: ACCM 0x000A0000 (0x0206000A0000)
*Mar 12 19:21:34.213: As33 LCP: MagicNumber 0x4D487924 (0x05064D487924)
*Mar 12 19:21:34.213: As33 LCP: PFC (0x0702)
*Mar 12 19:21:34.213: As33 LCP: ACFC (0x0802)
*Mar 12 19:21:34.545: As33 LCP: I CONFREQ [REQsent] id 4 len 37
*Mar 12 19:21:34.545: As33 LCP: ACCM 0x000A0000 (0x0206000A0000)
*Mar 12 19:21:34.545: As33 LCP: AuthProto CHAP (0x0305C22305)
*Mar 12 19:21:34.545: As33 LCP: MagicNumber 0x635DAA5A (0x0506635DAA5A)
*Mar 12 19:21:34.545: As33 LCP: PFC (0x0702)
*Mar 12 19:21:34.549: As33 LCP: ACFC (0x0802)
*Mar 12 19:21:34.549: As33 LCP: MRRU 1524 (0x110405F4)
*Mar 12 19:21:34.549: As33 LCP: EndpointDisc 1 Local (0x130801535441434B)
*Mar 12 19:21:34.549: As33 LCP: O CONFREQ [REQsent] id 4 len 16
*Mar 12 19:21:34.549: As33 LCP: MRRU 1524 (0x110405F4)
*Mar 12 19:21:34.549: As33 LCP: EndpointDisc 1 Local (0x130801535441434B)
*Mar 12 19:21:34.557: As33 LCP: I CONFACK [REQsent] id 41 len 20
*Mar 12 19:21:34.557: As33 LCP: ACCM 0x000A0000 (0x0206000A0000)
```

```

*Mar 12 19:21:34.557: As33 LCP: MagicNumber 0x4D487924 (0x05064D487924)
*Mar 12 19:21:34.557: As33 LCP: PFC (0x0702)
*Mar 12 19:21:34.557: As33 LCP: ACFC (0x0802)
*Mar 12 19:21:34.717: As33 LCP: I CONFREQ [ACKrcvd] id 5 len 25
*Mar 12 19:21:34.717: As33 LCP: ACCM 0x000A0000 (0x0206000A0000)
*Mar 12 19:21:34.717: As33 LCP: AuthProto CHAP (0x0305C22305)
*Mar 12 19:21:34.717: As33 LCP: MagicNumber 0x635DAA5A (0x0506635DAA5A)
*Mar 12 19:21:34.717: As33 LCP: PFC (0x0702)
*Mar 12 19:21:34.717: As33 LCP: ACFC (0x0802)
*Mar 12 19:21:34.717: As33 LCP: O CONFACK [ACKrcvd] id 5 len 25
*Mar 12 19:21:34.717: As33 LCP: ACCM 0x000A0000 (0x0206000A0000)
*Mar 12 19:21:34.717: As33 LCP: AuthProto CHAP (0x0305C22305)
*Mar 12 19:21:34.717: As33 LCP: MagicNumber 0x635DAA5A (0x0506635DAA5A)
*Mar 12 19:21:34.717: As33 LCP: PFC (0x0702)
*Mar 12 19:21:34.717: As33 LCP: ACFC (0x0802)
*Mar 12 19:21:34.721: As33 LCP: State is Open
*Mar 12 19:21:34.721: Modem 1/0 Mcom: PPP escape map: Tx map = A0000, Rx map = 0
*Mar 12 19:21:34.721: As33 PPP: Phase is AUTHENTICATING, by the peer
*Mar 12 19:21:34.877: As33 CHAP: I CHALLENGE id 2 len 26 from "STACK"
*Mar 12 19:21:34.877: As33 CHAP: Using alternate hostname cisco
*Mar 12 19:21:34.877: As33 CHAP: Username STACK: lookup failure
*Mar 12 19:21:34.877: As33 CHAP: Using default password
*Mar 12 19:21:34.881: As33 CHAP: O RESPONSE id 2 len 26 from "cisco"
*Mar 12 19:21:35.029: As33 CHAP: I SUCCESS id 2 len 4
*Mar 12 19:21:35.033: As33 PPP: Phase is UP
*Mar 12 19:21:35.033: As33 IPCP: O CONFREQ [Closed] id 7 len 10
*Mar 12 19:21:35.033: As33 IPCP: Address 0.0.0.0 (0x030600000000)
*Mar 12 19:21:35.045: As33 IPCP: I CONFREQ [REQsent] id 3 len 10
*Mar 12 19:21:35.045: As33 IPCP: Address 10.1.1.1 (0x03060A010101)
*Mar 12 19:21:35.045: As33 IPCP: O CONFACK [REQsent] id 3 len 10
*Mar 12 19:21:35.045: As33 IPCP: Address 10.1.1.1 (0x03060A010101)
*Mar 12 19:21:35.053: As33 NBFPCP: I CONFREQ [Not negotiated] id 2 len 4
*Mar 12 19:21:35.053: As33 LCP: O PROTREJ [Open] id 42 len 10 protocol NBFPCP (0x803F010200)
*Mar 12 19:21:35.197: As33 IPCP: I CONFNAK [ACKsent] id 7 len 10
*Mar 12 19:21:35.197: As33 IPCP: Address 10.1.1.31 (0x03060A01011F)
*Mar 12 19:21:35.197: As33 IPCP: O CONFREQ [ACKsent] id 8 len 10
*Mar 12 19:21:35.197: As33 IPCP: Address 10.1.1.31 (0x03060A01011F)
*Mar 12 19:21:35.349: As33 IPCP: I CONFACK [ACKsent] id 8 len 10
*Mar 12 19:21:35.353: As33 IPCP: Address 10.1.1.31 (0x03060A01011F)
*Mar 12 19:21:35.353: As33 IPCP: State is Open
*Mar 12 19:21:35.353: As33 IPCP: Install negotiated IP interface address 10.1.1.31
*Mar 12 19:21:35.353: As33 IPCP: Remove route to 10.1.1.1
*Mar 12 19:21:35.357: As33 DDR: dialer protocol up
*Mar 12 19:21:35.357: As33 DDR: Call connected, 3 packets unqueued, 3 transmitted, 0 discards
*Mar 12 19:21:35.361: As33 IPCP: Install route to 10.1.1.1
*Mar 12 19:21:37.257: ICMP: echo reply rcvd, src 10.1.1.1, dst 10.1.1.31
*Mar 12 19:21:37.425: ICMP: echo reply rcvd, src 10.1.1.1, dst 10.1.1.31

```

Debugs From the Answer Side (SJ Dial-in Lab)

```

*May 16 19:41:06.952: ISDN Se0:23: RX <- SETUP pd = 8 callref = 0x16
*May 16 19:41:06.956: Bearer Capability i = 0x8090A2
*May 16 19:41:06.956: Channel ID i = 0xA98395
*May 16 19:41:06.956: Progress Ind i = 0x8283 - Origination address is non-ISDN
*May 16 19:41:06.956: Calling Party Number i = '!', 0x83, '5555557145'
*May 16 19:41:06.956: Called Party Number i = 0xC1, '4085703932'
*May 16 19:41:06.956: EVENT_FROM_ISDN::dchan_idb=0x617B1AC4, call_id=0x1B8, ces=0x1
    bchan=0x14, event=0x1, cause=0x0

*May 16 19:41:06.956: VDEV_ALLOCATE: 1/6 is allocated from pool mica_v90_dialin
*May 16 19:41:06.956: csm_get_vdev_for_isdn_call: fax_call=0
*May 16 19:41:06.956: EVENT_FROM_ISDN:(01B8): DEV_INCALL at slot 1 and port 6
*May 16 19:41:06.956: CSM_PROC_IDLE: CSM_EVENT_ISDN_CALL at slot 1, port 6
*May 16 19:41:06.956: Mica Modem(1/6): Configure(0x1 = 0x0)
*May 16 19:41:06.956: Mica Modem(1/6): Configure(0x23 = 0x0)

```

*May 16 19:41:06.956: Mica Modem(1/6): Call Setup
*May 16 19:41:06.956: Enter csm_connect_pri_vdev function
*May 16 19:41:06.956: csm_connect_pri_vdev:tdm_allocate_bp_ts() call. BP TS allocated at bp_stream2, bp_Ch28,vdev_common 0x613B00A8
*May 16 19:41:06.960: ISDN Se0:23: TX -> CALL_PROC pd = 8 callref = 0x8016!
*May 16 19:41:06.960: Channel ID i = 0xA98395
*May 16 19:41:06.960: ISDN Se0:23: TX -> ALERTING pd = 8 callref = 0x8016
*May 16 19:41:07.056: Mica Modem(1/6): State Transition to Call Setup
*May 16 19:41:07.056: Mica Modem(1/6): Went offhook
*May 16 19:41:07.056: CSM_PROC_IC2_RING: CSM_EVENT_MODEM_OFFHOOK at slot 1, port 6
*May 16 19:41:07.056: ISDN Se0:23: TX -> CONNECT pd = 8 callref = 0x8016
*May 16 19:41:07.112: ISDN Se0:23: RX <- CONNECT_ACK pd = 8 callref = 0x16
*May 16 19:41:07.116: EVENT_FROM_ISDN::dchan_idb=0x617B1AC4, call_id=0x1B8, ces=0x1 bchan=0x14, event=0x4, cause=0x0
*May 16 19:41:07.116: EVENT_FROM_ISDN:(01B8): DEV_CONNECTED at slot 1 and port 6
*May 16 19:41:07.116: CSM_PROC_IC4_WAIT_FOR_CARRIER: CSM_EVENT_ISDN_CONNECTED at slot 1, port 6
*May 16 19:41:07.116: Mica Modem(1/6): Link Initiat
*May 16 19:41:08.256: Mica Modem(1/6): State Transition to Connect
*May 16 19:41:12.700: Mica Modem(1/6): State Transition to Link
*May 16 19:41:21.288: Mica Modem(1/6): State Transition to Trainup
*May 16 19:41:23.392: Mica Modem(1/6): State Transition to EC Negotiating
*May 16 19:41:24.472: Mica Modem(1/6): State Transition to Steady State
*May 16 19:41:25.120: TTY31: DSR came up
*May 16 19:41:25.120: tty31: Modem: IDLE->(unknown)
*May 16 19:41:25.120: TTY31: EXEC creation
*May 16 19:41:25.124: TTY31: set timer type 10, 30 seconds
*May 16 19:41:26.688: TTY31: Autoselect(2) sample 7E
*May 16 19:41:26.692: TTY31: Autoselect(2) sample 7EFF
*May 16 19:41:26.692: TTY31: Autoselect(2) sample 7EFF7D
*May 16 19:41:26.692: TTY31: Autoselect(2) sample 7EFF7D23
*May 16 19:41:26.692: TTY31 Autoselect cmd: ppp negotiate
*May 16 19:41:26.692: TTY31: EXEC creation
*May 16 19:41:26.692: TTY31: create timer type 1, 600 seconds
*May 16 19:41:26.824: TTY31: destroy timer type 1 (OK)
*May 16 19:41:26.824: TTY31: destroy timer type 0
*May 16 19:41:26.824: As31 LCP: I CONFREQ [Closed] id 41 len 20
*May 16 19:41:26.824: As31 LCP: ACCM 0x000A0000 (0x0206000A0000)
*May 16 19:41:26.824: As31 LCP: MagicNumber 0x4D487924 (0x05064D487924)
*May 16 19:41:26.824: As31 LCP: PFC (0x0702)
*May 16 19:41:26.824: As31 LCP: ACFC (0x0802)
*May 16 19:41:26.824: Unthrottle 31
*May 16 19:41:26.824: As31 LCP: Lower layer not up, Fast Starting
*May 16 19:41:26.824: As31 PPP: Treating connection as a dedicated line
*May 16 19:41:26.824: As31 PPP: Phase is ESTABLISHING, Active Open
*May 16 19:41:26.824: As31 LCP: O CONFREQ [Closed] id 4 len 37
*May 16 19:41:26.824: As31 LCP: ACCM 0x000A0000 (0x0206000A0000)
*May 16 19:41:26.824: As31 LCP: AuthProto CHAP (0x0305C22305)
*May 16 19:41:26.824: As31 LCP: MagicNumber 0x635DAA5A (0x0506635DAA5A)
*May 16 19:41:26.824: As31 LCP: PFC (0x0702)
*May 16 19:41:26.824: As31 LCP: ACFC (0x0802)
*May 16 19:41:26.824: As31 LCP: MRRU 1524 (0x110405F4)
*May 16 19:41:26.824: As31 LCP: EndpointDisc 1 Local (0x130801535441434B)
*May 16 19:41:26.828: As31 LCP: O CONFACK [REQsent] id 41 len 20
*May 16 19:41:26.828: As31 LCP: ACCM 0x000A0000 (0x0206000A0000)
*May 16 19:41:26.828: As31 LCP: MagicNumber 0x4D487924 (0x05064D487924)
*May 16 19:41:26.828: As31 LCP: PFC (0x0702)
*May 16 19:41:26.828: As31 LCP: ACFC (0x0802)
*May 16 19:41:27.028: As31 LCP: I CONFREQ [ACKsent] id 4 len 16
*May 16 19:41:27.028: As31 LCP: MRRU 1524 (0x110405F4)
*May 16 19:41:27.028: As31 LCP: EndpointDisc 1 Local (0x130801535441434B)
*May 16 19:41:27.028: As31 LCP: O CONFREQ [ACKsent] id 5 len 25
*May 16 19:41:27.028: As31 LCP: ACCM 0x000A0000 (0x0206000A0000)
*May 16 19:41:27.028: As31 LCP: AuthProto CHAP (0x0305C22305)
*May 16 19:41:27.028: As31 LCP: MagicNumber 0x635DAA5A (0x0506635DAA5A)
*May 16 19:41:27.028: As31 LCP: PFC (0x0702)

```
*May 16 19:41:27.028: As31 LCP: ACFC (0x0802)
*May 16 19:41:27.188: As31 LCP: I CONFACK [ACKsent] id 5 len 25
*May 16 19:41:27.188: As31 LCP: ACCM 0x000A0000 (0x0206000A0000)
*May 16 19:41:27.188: As31 LCP: AuthProto CHAP (0x0305C22305)
*May 16 19:41:27.188: As31 LCP: MagicNumber 0x635DAA5A (0x0506635DAA5A)
*May 16 19:41:27.188: As31 LCP: PFC (0x0702)
*May 16 19:41:27.188: As31 LCP: ACFC (0x0802)
*May 16 19:41:27.188: As31 LCP: State is Open
*May 16 19:41:27.188: As31 PPP: Phase is AUTHENTICATING, by this end
*May 16 19:41:27.188: As31 CHAP: O CHALLENGE id 2 len 26 from "STACK"
*May 16 19:41:27.348: As31 CHAP: I RESPONSE id 2 len 26 from "cisco"
*May 16 19:41:27.348: As31 PPP: Phase is FORWARDING
*May 16 19:41:27.348: As31 PPP: Phase is AUTHENTICATING
*May 16 19:41:27.348: As31 CHAP: O SUCCESS id 2 len 4
*May 16 19:41:27.348: As31 PPP: Phase is UP
*May 16 19:41:27.348: As31 IPCP: O CONFREQ [Closed] id 3 len 10
*May 16 19:41:27.348: As31 IPCP: Address 10.1.1.1 (0x03060A010101)
*May 16 19:41:27.348: As31 NBFCP: O CONFREQ [Closed] id 2 len 4
*May 16 19:41:27.508: As31 IPCP: I CONFREQ [REQsent] id 7 len 10
*May 16 19:41:27.508: As31 IPCP: Address 0.0.0.0 (0x030600000000)
*May 16 19:41:27.508: As31 AAA/AUTHOR/IPCP: Start. Her address 0.0.0.0, we want 10.1.1.31
*May 16 19:41:27.508: As31 AAA/AUTHOR/IPCP: Done. Her address 0.0.0.0, we want 10.1.1.31
*May 16 19:41:27.508: As31 IPCP: O CONFNAK [REQsent] id 7 len 10
*May 16 19:41:27.508: As31 IPCP: Address 10.1.1.31 (0x03060A01011F)
*May 16 19:41:27.508: As31 IPCP: I CONFACK [REQsent] id 3 len 10
*May 16 19:41:27.508: As31 IPCP: Address 10.1.1.1 (0x03060A010101)
*May 16 19:41:27.524: As31 LCP: I PROTREJ [Open] id 42 len 10 protocol NBFCP (0x803F010200)
*May 16 19:41:27.524: As31 NBFCP: State is Closed
*May 16 19:41:27.668: As31 IPCP: I CONFREQ [ACKrcvd] id 8 len 10
*May 16 19:41:27.668: As31 IPCP: Address 10.1.1.31 (0x03060A01011F)
*May 16 19:41:27.668: As31 AAA/AUTHOR/IPCP: Start. Her address 10.1.1.31, we want 10.1.1.1.
*May 16 19:41:27.668: As31 AAA/AUTHOR/IPCP: Reject 10.1.1.31, using 10.1.1.31
*May 16 19:41:27.668: As31 AAA/AUTHOR/IPCP: Done. Her address 10.1.1.31, we want 10.1.1.31
*May 16 19:41:27.668: As31 IPCP: O CONFACK [ACKrcvd] id 8 len 10
*May 16 19:41:27.668: As31 IPCP: Address 10.1.1.31 (0x03060A01011F)
*May 16 19:41:27.668: As31 IPCP: State is Open
*May 16 19:41:27.672: As31 IPCP: Install route to 10.1.1.3
```

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