

Terminating V.120 Sessions on the NextPort DSP

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Introduction

This document describes how to terminate V.120 sessions on the NextPort Digital Signal Processor (DSP).

Note: Modem ISDN Channel Aggregation (MICA) does not support this feature. This is applicable to NextPort only.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on these software and hardware versions:

- Cisco NAS with NextPort modems (AS5350, AS5400, AS5800, AS5850).
- Cisco IOS® Software Release 12.2 XB, and 12.2(11)T or later.

Use the Software Advisor (registered customers only) to accurately determine the Cisco IOS Software version or feature set that supports V.120. Within the Software Advisor tool, select **ISDN and V.120 Support For NextPort DSPs**. If you need additional features, select them as required.

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

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Background Information

The International Telecommunication Union Telecommunication Standardization Sector (ITU-T) Recommendation V.120 allows for reliable transport of synchronous, asynchronous, or bit-transparent data over ISDN bearer channels. Cisco Access Servers have long supported V.120. However, it is necessary to do a bit conversion between the V.120 stream and PPP for every bit. Therefore, it is very processor intensive to terminate many V.120 calls on the Network Access Server (NAS).

Due to the CPU-intensive nature of V.120, a new feature was created to off-load V.120 calls to the modem DSP. As of Cisco IOS Software Release 12.2 XB (and 12.2(11)T and later), it is now possible to terminate V.120 calls on the NextPort DSP instead of the CPU.

Where You Can Use V.120 DSP Termination

You can use V.120, for example, if you utilize a Global System for Mobile Communication (GSM) High Speed Circuit-Switched Data (HSCSD) in your network.

HSCSD is the evolution of circuit-switched data within the GSM environment. HSCSD enables the transmission of data over a GSM link at speeds of up to 57.6 kbps. To achieve this, concatenate, or add together, consecutive GSM time slots, where each time slot has the capability to support 14.4 kbps. You can use up to four GSM time slots for the transmission of HSCSD. This allows theoretical speeds of up to 57.6 kbps. This is broadly equivalent to providing the same transmission rate as that available over one ISDN B Channel.

The concatenation occurs on the radio link. The access server does not see four links, but only one link of 57,600 bps. It is up to the Mobile Switching Center (MSC) to make a decision about which protocol to use. In the example of HSCSD, V.120 can be used since the termination path of V.120 is 64,000 bps (which allows for the $4 * 14,400 \text{ bps} = 57,600 \text{ bps}$ stream). The calling Customer Premises Equipment (CPE) must define the protocol it uses to the MSC when call setup is in progress, so that the MSC can configure its Interworking Unit to conduct proper framing towards the Public Switched Telephone Network (PSTN).

Types of V.120 Calls

The NAS can terminate V.120 calls on the DSP if the calls are properly announced in the ISDN Q.931 messages.

The two types of V.120 calls are:

- Clearly identified V.120 calls Octet 5 (user information Layer 1 [L1] protocol) in the bearer capability (bearer cap) or the Lower Layer Compatibility (LLC), or both, of the setup messages are set to 0x28, to indicate V.120. The router can terminate the call on the DSP.
- Unidentified or unadvertised V.120 calls The information found in the clearly identified calls is missing. The router must automatically detect V.120 packets, and terminate the call on the ISDN framer or CPU (where you assume that the **isdn all-incoming-v120** command is not configured).

Terminate V.120 Calls on the DSP

This section describes two scenarios on how to terminate V.120 call on the NextPort DSP.

Unidentified V.120 Calls

This is an example of a V.120 call that does not identify itself as such. This means there is no protocol identifier in the bearer cap or the LLC. Hence, when you assume that the **isdn all-incoming-calls-v120** command is not configured, the only way to terminate this call is to automatically detect it and terminate it on the ISDN framer. However, if you still want to terminate this kind of unannounced V.120 call on the DSP, choose to terminate all calls on the DSP. To do so, issue the **isdn all-incoming-calls-v120** command under the serial interface. This means all calls are terminated as V.120 calls, regardless of whether they are actually V.120 or not. See the Termination on the NextPort DSP Chip Set section of this document for a configuration example. Here is a debug output that shows an example of this situation:

```
Jul 15 15:23:41.365: ISDN Se1/0:15: RX <- SETUP pd = 8 callref = 0x7EF5
Jul 15 15:23:41.365: Sending Complete
Jul 15 15:23:41.365: Bearer Capability i = 0x8890

!--- The Bearer Capability indicates that this is a 64K call.

Jul 15 15:23:41.365: Channel ID i = 0xA1839F
Jul 15 15:23:41.365: Calling Party Number i = 0xA1, '8150', Plan:ISDN,
Jul 15 15:23:41.481: V120: Autodetect trying to detect V120 mode on Se1/0:30

!--- The call is terminated as a V.120 call.

Jul 15 15:23:41.481: V120 sampled pkt: 3 bytes: 8 1 7F

!--- The beginning of the first data packet is sniffed to see if it is
!--- a V.120 packet.
!--- The Cisco IOS Software looks for a Set Asynchronous Balanced Mode
!--- Extended (SABME) frame in an unnumbered information packet.
!--- In a three-byte packet, this data looks like "0x08 0x01 0x7f".
```

Identified V.120 Calls

Here is an example of a V.120 call that identifies itself with the appropriate LLC message. The V.120 call is properly detected and terminated on the DSP. Most Terminal Adapters (TAs) disable LLC by default (refer to the S-register documentation of the client TA for information on how to enable LLC on the TA).

```
Jul 16 09:39:16.520: ISDN Se1/0:15: RX <- SETUP pd = 8 callref = 0x3D6E
Jul 16 09:39:16.520: Sending Complete
Jul 16 09:39:16.520: Bearer Capability i = 0x8890
Jul 16 09:39:16.520: Channel ID i = 0xA18394
Jul 16 09:39:16.520: Calling Party Number i = 0xA1, '8150', Plan:ISDN,
Type:National
Jul 16 09:39:16.520: Called Party Number i = 0x81, '214', Plan:ISDN,
Type:Unknown
Jul 16 09:39:16.520: Low Layer Compat i = 0x8890285072BB

!--- The LLC indicates the call is V.120.

Jul 16 09:39:16.524: ISDN Se1/0:15: llc valid, speed 64, call type is V.120
speed:16 async:Y header:Y multiframe:Y mode 1

!--- The call is recognized as a V.120 call.

Jul 16 09:39:16.524: stop 1 data 3 parity 3
```

Examples

This section includes examples of the various methods to terminate V.120 calls on the NAS. The first example shows a V.120 call that is terminated on the CPU, while the second and third examples show a V.120 call terminated on the DSP.

Termination on the CPU

The configuration and debug output in this section indicate how a V.120 call that does not have the appropriate LLC or bearer cap is terminated on the ISDN framer or CPU, but not on the DSP. For more information, refer to Access Server Dial-In IP/PPP Configuration With Dedicated V.120 PPP.

NAS Configuration

```
username ww password 0 <deleted>
dial-tdm-clock priority 1 1/1
spe country belgium
!
vty-async

!--- This configures all virtual terminal lines on a router to
!--- support asynchronous protocol features.
!--- The vty-async parameters are required for async V.120.

vty-async virtual-template 1

!--- Use virtual-template 1 for V.120 calls.

isdn switch-type primary-net5
modemcap entry test:MSC=&F&D2S62=3S63=3S29=12S10=50
controller E1 1/0
  pri-group timeslots 1-31
interface Loopback0
  ip address 12.12.12.1 255.255.255.0
interface Serial1/0:15

!--- This is the D-channel configuration for E1 1/0.

ip unnumbered Loopback0
  encapsulation ppp
  ip mroute-cache
  autodetect encapsulation ppp v120

!--- This configures automatic detection of encapsulation type on the
!--- specified interface.

!--- This interface automatically detects whether the call is normal PPP
!--- or V.120, if the calling V.120 TA correctly signals V.120 in the Q.931.

!--- If low-level compatibility field or bearer cap are set up, automatic
!--- detect encapsulation is not needed.
!--- Unfortunately, many TAs fail to set these up.

no snmp trap link-status
isdn switch-type primary-net5
isdn incoming-voice modem
peer default ip address pool bidir_dial_pool
no cdp enable
ppp authentication chap pap
```

```

!
interface Virtual-Template1

!--- This is the virtual-template interface used for the vty-async.

ip unnumbered Loopback0
 peer default ip address pool test
 ppp authentication chap pap
!
interface Group-Async0
 ip unnumbered Loopback0
 encapsulation ppp
 dialer idle-timeout 3600 either
 async mode dedicated
 no snmp trap link-status
 peer default ip address pool test
 ppp authentication chap ms-chap
 no cdp enable
 group-range 2/00 2/107
!
ip local pool test 12.12.12.2 12.12.12.5
ip classless
no ip http server

line con 0
 exec-timeout 0 0
line aux 0
line vty 0 4

!--- This is the vty used for administrative purposes.

 exec-timeout 0 0
 password cisco
 transport input telnet
line vty 5 100

!--- The V.120 call is terminated on vtys 5 through 100.

!--- If your router does not support more than five vtys, refer
!--- to the Components Used section.

transport input v120

!--- Allow only V.120 connections into these vtys.

autoselect during-login
autoselect ppp
line 2/00 2/107
 no motd-banner
 no flush-at-activation
 modem InOut
 modem autoconfigure type test
 rotary 1
 transport preferred none
 transport input all
 transport output none
 autoselect during-login
 autoselect ppp
!
scheduler allocate 10000 400

end

```

Debugs

Enable the following **debug** commands:

```
debug ppp negotiation
debug v120 events
debug isdn q931
```

Issue the **show debug** command to verify that the debugs are active.

```
PPP:
PPP protocol negotiation debugging is on
v120:
V120 events debugging is on
ISDN:
ISDN Q931 packets debugging is on
ISDN Q931 packets debug DSLs. (On/Off/No DSL:1/0/-)
DSL 0 -- 31
1 1 - - - - -

nada#
Jul 15 15:23:41.365: ISDN Se1/0:15: RX <- SETUP pd = 8 callref = 0x7EF5

!--- This is the incoming setup message.

Jul 15 15:23:41.365: Sending Complete
Jul 15 15:23:41.365: Bearer Capability i = 0x8890

!--- The Bearer Capability indicates that this is a 64k call.

Jul 15 15:23:41.365: Channel ID i = 0xA1839F
Jul 15 15:23:41.365: Calling Party Number i = 0xA1, '8150', Plan:ISDN,
Type:National
Jul 15 15:23:41.365: Called Party Number i = 0x81, '214', Plan:ISDN,
Type:Unknown
Jul 15 15:23:41.369: ISDN Se1/0:15: TX - CALL_PROC pd = 8 callref = 0xFE5F
Jul 15 15:23:41.369: Channel ID i = 0xA9839F

!--- An LLC was not included in the setup message.
!--- This call must be terminated on the ISDN framer.

Jul 15 15:23:41.369: ISDN Se1/0:15: TX - CONNECT pd = 8 callref = 0xFE5F
Jul 15 15:23:41.369: Channel ID i = 0xA9839F
Jul 15 15:23:41.453: ISDN Se1/0:15: RX <- CONNECT_ACK pd = 8 callref = 0x7EF5
Jul 15 15:23:41.453: ISDN Se1/0:15: CALL_PROGRESS: CALL_CONNECTED call id 0x23,
bchan 30, dsl 0
Jul 15 15:23:41.481: V120: Autodetect trying to detect V120 mode on Se1/0:30

!--- The call is autodetected as a V.120 call by the ISDN framer.

Jul 15 15:23:41.481: V120 sampled pkt: 3 bytes: 8 1 7F

!--- The beginning of the first data packet is sniffed to see if it is
!--- a V.120 packet. The Cisco IOS Software looks for a SABME frame in
!--- an unnumbered information packet.
!--- In a three-byte packet, this data looks like "0x08 0x01 0x7f".

Jul 15 15:23:41.485: Se1/0:30-v120 started - Setting default V.120 parameters
Jul 15 15:23:41.485: V120established handle = 5
Jul 15 15:23:41.981: Vi1 PPP: Phase is DOWN, Setup

!--- The PPP negotiation begins.

Jul 15 15:23:41.989: Vi1 PPP: Treating connection as a dedicated line
Jul 15 15:23:41.989: Vi1 PPP: Phase is ESTABLISHING, Active Open
```

```

Jul 15 15:23:41.989: Vi1 LCP: O CONFREQ [Closed] id 1 len 25
Jul 15 15:23:41.989: Vi1 LCP: ACCM 0x000A0000 (0x0206000A0000)
Jul 15 15:23:41.989: Vi1 LCP: AuthProto CHAP (0x0305C22305)
Jul 15 15:23:41.989: Vi1 LCP: MagicNumber 0x015263E2 (0x0506015263E2)
Jul 15 15:23:41.989: Vi1 LCP: PFC (0x0702)
Jul 15 15:23:41.989: Vi1 LCP: ACFC (0x0802)
Jul 15 15:23:42.545: Vi1 LCP: I CONFACK [REQsent] id 1 len 25
Jul 15 15:23:42.545: Vi1 LCP: ACCM 0x000A0000 (0x0206000A0000)
Jul 15 15:23:42.545: Vi1 LCP: AuthProto CHAP (0x0305C22305)
Jul 15 15:23:42.545: Vi1 LCP: MagicNumber 0x015263E2 (0x0506015263E2)
Jul 15 15:23:42.545: Vi1 LCP: PFC (0x0702)
Jul 15 15:23:42.545: Vi1 LCP: ACFC (0x0802)
...
...
...
Jul 15 15:23:45.341: Vi1 IPCP: State is Open
Jul 15 15:23:45.341: Vi1 IPCP: Install route to 12.12.12.3
Jul 15 15:23:45.341: Vi1 IPCP: Add link info for cef entry 12.12.12.3

!--- The PPP negotiation is complete.

```

Issue the **show user** command to verify that the call is connected.

```

nada# show user
   Line      User      Host(s)      Idle      Location
*  2 vty 0           idle         00:00:00  admin_user.cisco.com
  7 vty 5      ww        Virtual-Access1  00:00:04  Serial1/0:30

```

!--- The incoming call (user ww) is on vty 5 (part of the V.120 vty range).

Termination on the NextPort DSP Chip Set

It is understood that the previous user does not use the right bearer cap or LLC to indicate that it is a V.120 call. Therefore, you must issue the **isdn all-incoming-calls-v120** command to terminate the call on the DSP. Remember that this terminates all incoming calls as V.120 calls, regardless of whether or not they are V.120.

This configuration is useful if you offer dedicated V.120 services and V.120 calls are not advertised through the LLC or bearer.

Add the **isdn all-incoming-calls-v120** command under the D-channel configuration, as shown here:

```

nada(config-if)# isdn all-incoming-calls-v120

```

The appropriate section of the configuration is shown here:

```

interface Serial1/0:15
 ip unnumbered Loopback0
 encapsulation ppp
 ip mroute-cache
 autodetect encapsulation ppp v120
 no snmp trap link-status
 isdn switch-type primary-net5
 isdn incoming-voice modem
 isdn all-incoming-calls-v120

```

!--- All incoming calls are terminated on the DSP as V.120 calls.

```

peer default ip address pool bidir_dial_pool
 no cdp enable
 ppp authentication chap ms-chap

```

Debugs

Enable the following **debug** commands:

```
debug ppp negotiation
debug v120 events
debug isdn q931
```

```
Jul 15 15:26:14.298: ISDN Sel/0:15: RX <- SETUP pd = 8 callref = 0x0245
Jul 15 15:26:14.298: Sending Complete
Jul 15 15:26:14.298: Bearer Capability i = 0x8890
Jul 15 15:26:14.298: Channel ID i = 0xA18382
Jul 15 15:26:14.298: Calling Party Number i = 0xA1, '8150', Plan:ISDN,
Type:National
Jul 15 15:26:14.298: Called Party Number i = 0x81, '214', Plan:ISDN,
Type:Unknown
Jul 15 15:26:14.302: PM_ST_DIGITAL-V120(2/1):
digital call_duration_started = 1193
```

!--- The incoming call is terminated as V.120 on the DSP (modem 2/1).

```
Jul 15 15:26:14.302: ISDN Sel/0:15: TX - CALL_PROC pd = 8 callref = 0x8245
Jul 15 15:26:14.302: Channel ID i = 0xA98382
Jul 15 15:26:14.302: Response sent through Callback (Port 2/1)
Jul 15 15:26:14.302: PM_ST_DIGITAL: Incoming digital calling number: 8150
Jul 15 15:26:14.302: PM_ST_DIGITAL: Incoming digital called number: 214
Jul 15 15:26:14.310: ISDN Sel/0:15: TX - CONNECT pd = 8 callref = 0x8245
Jul 15 15:26:14.314: Channel ID i = 0xA98382
Jul 15 15:26:14.358: ISDN Sel/0:15: RX <- CONNECT_ACK pd = 8 callref = 0x0245
Jul 15 15:26:14.358: ISDN Sel/0:15: CALL_PROGRESS: CALL_CONNECTED call id 0x25,
bchan 1, dsl 0
Jul 15 15:26:14.398: As2/01 PPP: Treating connection as a callin
```

!--- The PPP negotiation begins.

```
Jul 15 15:26:14.398: As2/01 PPP: Phase is ESTABLISHING, Passive Open
Jul 15 15:26:14.398: As2/01 LCP: State is Listen
Jul 15 15:26:14.474: As2/01 LCP: I CONFREQ [Listen] id 0 len 50
Jul 15 15:26:14.474: As2/01 LCP: ACCM 0x00000000 (0x020600000000)
Jul 15 15:26:14.474: As2/01 LCP: MagicNumber 0x565623B2 (0x0506565623B2)
Jul 15 15:26:14.474: As2/01 LCP: PFC (0x0702)
Jul 15 15:26:14.474: As2/01 LCP: ACFC (0x0802)
Jul 15 15:26:14.474: As2/01 LCP: Callback 6 (0x0D0306)
Jul 15 15:26:14.474: As2/01 LCP: MRRU 1614 (0x1104064E)
Jul 15 15:26:14.474: As2/01 LCP: EndpointDisc 1 Local
Jul 15 15:26:14.474: As2/01 LCP: (0x131701EA7FE824C2E24DA881E48B3385)
Jul 15 15:26:14.474: As2/01 LCP: (0xEADFE900000000)
```

```
...
...
...
```

```
Jul 15 15:26:16.290: As2/01 IPCP: State is Open
Jul 15 15:26:16.290: As2/01 IPCP: Install route to 12.12.12.3
Jul 15 15:26:16.290: As2/01 IPCP: Add link info for cef entry 12.12.12.3
```

!--- The PPP negotiation is complete.

```
nada#
```

```
nada# show user
```

```
Line User Host(s) Idle Location
* 2 vty 0 idle 00:00:00 bru-cse-058.cisco.com
tty 2/01 ww Async interface 00:00:01 PPP: 12.12.12.3
```

V.120 TA With the Help of Advertised LLC/Bearer Cap in Q.931

In this example, the configuration is similar to the example shown in the Termination on the CPU section (without the **isdn all-incoming-calls-v120** command). The incoming Q.931 message indicates that the call is V.120, so the NAS terminates the call on the DSP.

Configuration

```
interface Serial1/0:15
 ip unnumbered Loopback0
 encapsulation ppp
 ip mroute-cache
 autodetect encapsulation ppp v120
 no snmp trap link-status
 isdn switch-type primary-net5
 isdn incoming-voice modem
 peer default ip address pool bidir_dial_pool
 no cdp enable
 ppp authentication chap pap
```

This is an example of a V.120 call that identifies itself (through the LLC). This way the call is detected and terminated on the DSP.

Debugs

Enable the following **debug** commands:

```
debug ppp negotiation
 debug v120 events
 debug isdn q931
 debug isdn events
 debug modem csm
```

```
Jul 16 09:39:16.520: ISDN Se1/0:15: RX <- SETUP pd = 8 callref = 0x3D6E
```

```
!-- This is the incoming Q.931 setup message.
```

```
Jul 16 09:39:16.520: Sending Complete
Jul 16 09:39:16.520: Bearer Capability i = 0x8890
Jul 16 09:39:16.520: Channel ID i = 0xA18394
Jul 16 09:39:16.520: Calling Party Number i = 0xA1, '8150', Plan:ISDN,
Type:National
Jul 16 09:39:16.520: Called Party Number i = 0x81, '214', Plan:ISDN,
Type:Unknown
Jul 16 09:39:16.520: Low Layer Compat i = 0x8890285072BB
```

```
!-- The LLC indicates that the call is a V.120.
```

```
Jul 16 09:39:16.524: ISDN Se1/0:15: llc valid, speed 64, call type is V.120
speed:16 async:Y header:Y multiframe:Y mode
```

```
!-- The call is recognized as a V.120.
```

```
Jul 16 09:39:16.524: stop 1 data 3 parity 3
Jul 16 09:39:16.524: VDEV_ALLOCATE: 2/5 is allocated
Jul 16 09:39:16.524: EVENT_FROM_ISDN: dchan_idb=0x63330C70, call_id=0x36,
ces=0x0, bchan=0x13, event=0x1, cause=0x0
Jul 16 09:39:16.524: dev in call to isdn : set dnis_collected & fap_notify
Jul 16 09:39:16.524: EVENT_FROM_ISDN:(0036): DEV_INCALL at slot 2 and port 5
Jul 16 09:39:16.524: EVENT_FROM_ISDN: decode:calling oct3 0xA1, called oct3
0x81, oct3a 0x0,mask 0x25
Jul 16 09:39:16.524: EVENT_FROM_ISDN: csm_call_info:calling oct3 0xA1, called
```

```

    oct3 0x81, oct3a 0x0,mask 0x25
Jul 16 09:39:16.524: PM_ST_DIGITAL-V120(2/5): digital call_duration_started
    = 66776

!--- The V.120 call is terminated on the DSP (modem 2/5).

Jul 16 09:39:16.524: CSM_PROC_IDLE: CSM_EVENT_ISDN_CALL at slot 2, port 5
Jul 16 09:39:16.524: CSM_DSPLIB(2/5): np_prepare_digital_modem
Jul 16 09:39:16.524: csm_connect_pri_vdev: TS allocated at bp_stream 0, bp_Ch
    5, vdev_common 0x62A4F988 2/5
Jul 16 09:39:16.524: ISDN Sel/0:15: TX - CALL_PROC pd = 8 callref = 0xBD6E
Jul 16 09:39:16.528: Channel ID i = 0xA98394
Jul 16 09:39:16.528: Response sent through Callback (Port 2/5)
Jul 16 09:39:16.528: PM_ST_DIGITAL: Incoming digital calling number: 8150
Jul 16 09:39:16.528: PM_ST_DIGITAL: Incoming digital called number: 214
Jul 16 09:39:16.532: CSM_DSPLIB(2/5):DSPLIB_DIGITAL_INIT: Session transition
    to IDLE
Jul 16 09:39:16.532: np_dsplib_set_ddsm_v120_running_params slot 2 port 5
Jul 16 09:39:16.536: CSM_DSPLIB(2/5):DSPLIB_DIGITAL_WAIT_ACTIVE:
    Session transition to ACTIVE
Jul 16 09:39:16.536: CSM_DSPLIB(2/5): Modem went offhook
Jul 16 09:39:16.536: CSM_PROC_IC2_RING: CSM_EVENT_MODEM_OFFHOOK at slot 2,
    port 5
Jul 16 09:39:16.540: ISDN Sel/0:15: TX - CONNECT pd = 8 callref = 0xBD6E
Jul 16 09:39:16.540: Channel ID i = 0xA98394
Jul 16 09:39:16.576: ISDN Sel/0:15: RX <- CONNECT_ACK pd = 8 callref = 0x3D6E
Jul 16 09:39:16.576: ISDN Sel/0:15: CALL_PROGRESS: CALL_CONNECTED call id 0x36,
    bchan 19, dsl 0
Jul 16 09:39:16.576: EVENT_FROM_ISDN: dchan_idb=0x63330C70, call_id=0x36,
    ces=0x0, bchan=0x13, event=0x4, cause=0x0
Jul 16 09:39:16.576: EVENT_FROM_ISDN:(0036): DEV_CONNECTED at slot 2 and
    port 5
Jul 16 09:39:16.576: CSM_PROC_IC6_WAIT_FOR_CONNECT: CSM_EVENT_ISDN_CONNECTED
    at slot 2, port 5
Jul 16 09:39:16.576: CSM_DSPLIB(2/5): np_dsplib_call_accept
Jul 16 09:39:16.612: CSM_DSPLIB(2/5): Modem state changed to (STEADY_STATE)
Jul 16 09:39:16.624: As2/05 PPP: Treating connection as a callin

!--- The PPP negotiation begins.

Jul 16 09:39:16.624: As2/05 PPP: Phase is ESTABLISHING, Passive Open
Jul 16 09:39:16.624: As2/05 LCP: State is Listen
...
...
...
Jul 16 09:39:21.528: As2/05 IPCP: State is Open
Jul 16 09:39:21.532: As2/05 IPCP: Install route to 12.12.12.2
Jul 16 09:39:21.532: As2/05 IPCP: Add link info for cef entry 12.12.12.2

!--- The PPP negotiation is complete.

```

Additional Debugging

You can also issue the **debug v120 packet** command (in addition to the **debug v120 event** command) to obtain general information on all incoming and outgoing V.120 packets. The command shows every packet on the V.120 session. You can use this information to determine whether incompatibilities exist between the V.120 implementation of Cisco, and the V.120 implementations by other vendors.

Related Information

- [Access Server Dial-In IP/PPP Configuration With Dedicated V.120 PPP](#)
 - [Accepting V.120 and PPP Incoming Calls Using AAA](#)
 - [Configuring V.120 Access](#)
 - [Dial Technology Support Pages](#)
 - [Technical Support – Cisco Systems](#)
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