Software version IL1.0
JUNE 2012

Administrator guide

Cisco TelePresence ISDN Link

What's in this guide?

The top menu bar and the entries in the Table of Contents are all hyperlinks, just click on them to go to the topic.

We recommend you visit our web site regularly for updated versions of the user documentation. Go to: ► http://www.cisco.com/go/isdnlink-docs

Table of Contents

www.cisco.com

About this guide

This document provides you with the information required to administrate your product at an advanced level.

User documentation overview

User documentation for Cisco TelePresence ISDN Link can be found on http://www.cisco.com/go/isdnlink-docs.

Document categories

For each product you will find the documents under the following categories:

Installation guides:

Install and Upgrade | Install and Upgrade Guides

Administrator guides:

Maintain and Operate | Maintain and Operate Guides

API reference guides:

Reference Guides | Command references

Regulatory compliance and safety information:

Install and Upgrade | Install and Upgrade Guides

Software release notes:

Release and General Information | Release Notes

Software licensing information:

Release and General Information | Licensing Information

Technical specification

Information about the technical specification is found in the Cisco TelePresence ISDN Link Data Sheet on our web site.

Software download

You can download the software for your product from the Cisco web site.

Go to: ► http://www.cisco.com/cisco/software/navigator.html

Cisco support

For any support issues visit the Cisco web site.

Go to: ► http://www.cisco.com/cisco/web/support

Chapter 2

Getting started

www.cisco.com

Front panel

The LED indicators are located on the front panel of the unit.

PWR	BRI	PRI	NET	LAN	Video System
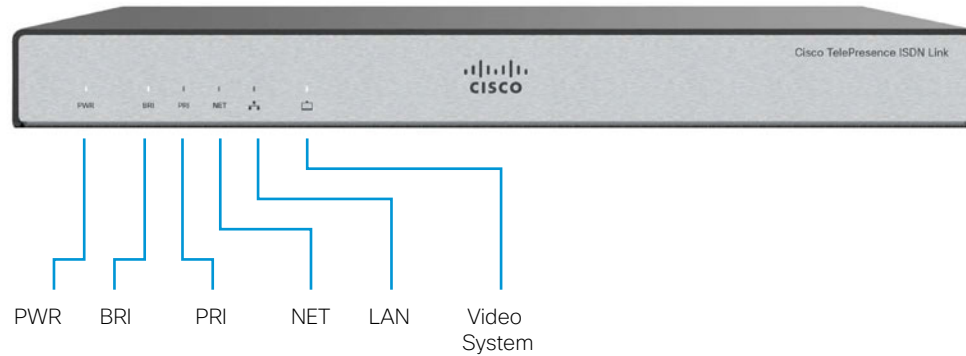
Power	The LED lights up and remains lit when the ISDN Link is powered up.
	The LED typically turns red when there is an error with the selected interface (BRI/PRI/NET) or possibly other system errors that require attendance.
BRI/PRI/NET	When the unit is configured for BRI/PRI/NET the corresponding LED is lit. The LED blinks while there is call activity on the selected line.
LAN	The LED flickers when there is activity on the LAN network.
Video System	The LED flickers when there is activity between the ISDN Link and the video system.

Rear panel

The connectors are located on the rear panel.
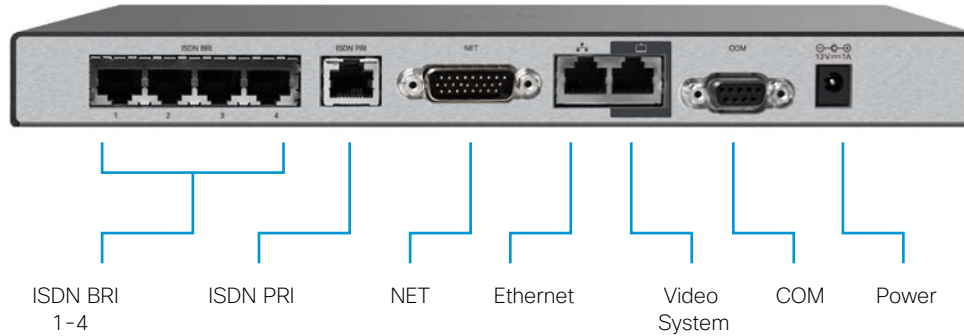
Select one of the three options:

- ISDN BRI S/T (RJ45) 512 kbps (4 × 128 kbps)
- ISDN PRI (RJ45) 1920 kbps (E1) / 1472 kbps (T1)
- NET (External Network, V.35/RS449/RS366/RS530) 1920 kbps

Ethernet/LAN (RJ45):

Connect to the IP network.

Video System (RJ45):

Connect to the video system (endpoint).

COM/Serial port (RS-232):

Connect to a PC/laptop for configuration. Use: 115200 bps, 8 data bits, 1 stop bit, no parity.

Power:

External power adapter with 12 V/1.25 A DC output supports 100/240 VAC and 50/60 Hz inputs.

CAUTION: Always use the AC-DC adapter shipped with the product.

www.cisco.com

Installation

Connect the cables as described in steps A to D.

CAUTION: Always use the AC-DC adapter shipped with the product.

A Select **one** of the three options for line connection:

- Connect the ISDN cable(s) between the ISDN BRI port(s) and the ISDN line,
- or connect the ISDN cable between the ISDN PRI port and the ISDN line,
- or connect the V.35 cable between the NET port and the external network line.

B For system configuration:

- Connect a Category 5 Ethernet cable between the Ethernet port and the LAN network (if available).
- Connect a RS-232 Serial cable (not included) between the COM port and the PC/laptop.
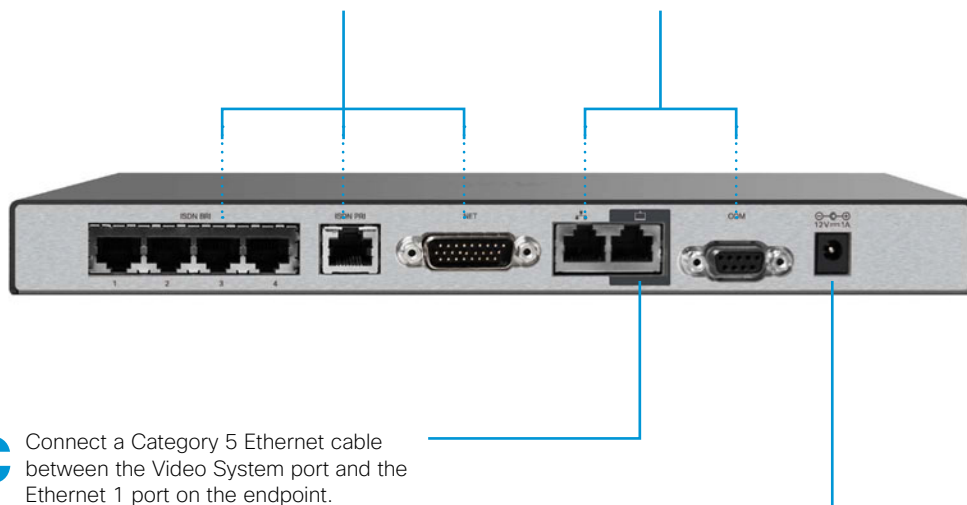
C Connect a Category 5 Ethernet cable between the Video System port and the Ethernet 1 port on the endpoint.

D Connect the supplied power adapter between the power connector and an electrical outlet.

Wall mounting

If you want to mount the ISDN Link on a wall, follow the instructions below. Mount the unit with the front panel facing up.

It is of great importance that the wall mount unit is safely installed, that the wall is able to support the product and that the screws or mounting means used are suitable for the wall and the weight of the product.

This type of equipment is to be installed by the submittor's/dealer's qualified installer. Installer is responsible for obtaining safety inspection of the structural integrity of the installation by the local authority/inspection department.

Table stand

Mount the the four foot bumpers on its feets if you would like to place the ISDN Link on a table.

180 mm / 7.1 in

Front panel facing up.

110 mm / 4.3 in

Bottom view of the unit.

Connectors facing down.
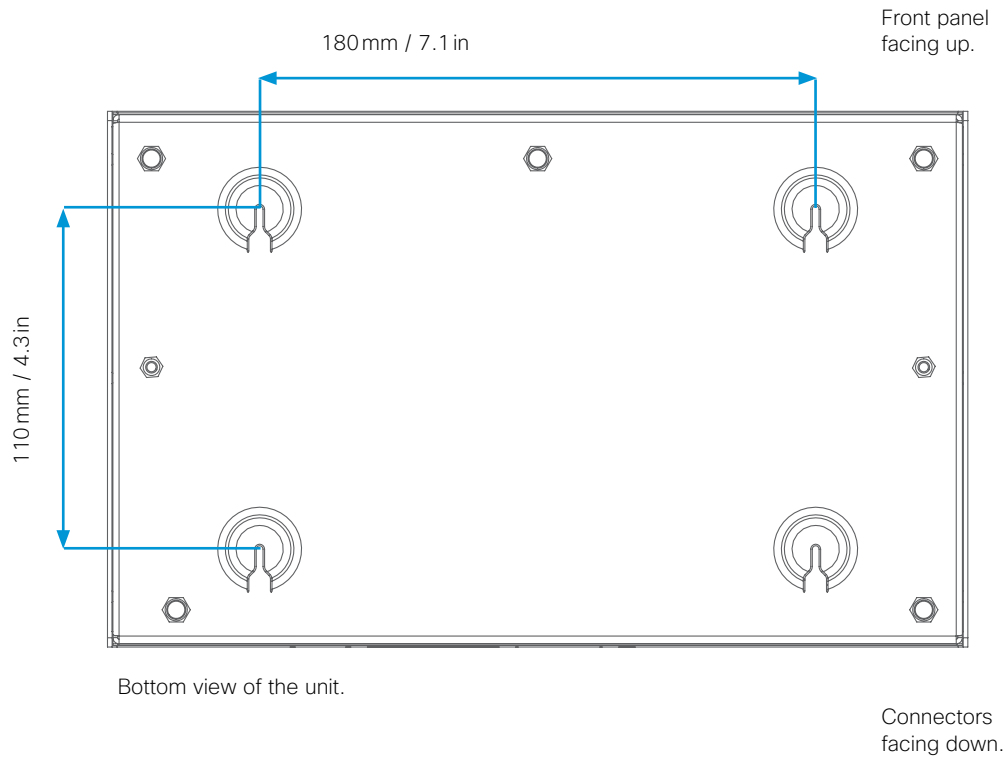
Connecting to the unit

The unit can be configured through the serial port or over the network.

Connect to the ISDN Link through the serial port

1. Use a standard serial cable and connect the cable between ISDN Link serial port and PC/laptop.

2. Use a terminal program to connect to the ISDN Link (115200, 8, 1, none)

3. Login as `admin`.

Connect to the ISDN Link over the network

When you know the IP Address of your ISDN Link unit an SSH over IP connection can be established.

In order to find the IP address this is best done by using the serial port (See "Connect to the ISDN Link through the serial port" on page 10above) and run the following command: `xStatus Network`

1. Connect the network cable between ISDN Link Ethernet port and LAN network.

2. Use a PC/laptop connected to the same LAN network and open a command line interface, e.g. PuTTY. Enter the IP Address and select Connection Type SSH.

3. Login as `admin`.

Troubleshooting

Alarm status

Whenever the PWR LED turns red, it is an indication of something wrong, most likely causing problems for normal use.

Checking the system unit status

Use the following command to get some basic indication of the problem:

`xStatus SystemUnit State Status`

In case of multiple errors, only the error with the highest priority is shown, and must be solved before lower priority error is shown.

Upgrading the software

Before you start using the system, make sure that the ISDN Link has the latest software version installed. Go to: http://www.cisco.com/go/isdnlink-docs, and select **Download Software** to check which is the latest software version.

The ISDN Link can be upgraded from a command line interface.

Checking the software version

To check software version, run the command:

```
xStatus SystemUnit Software Version
```

Downloading and installing the software

If you have Internet access; initiate a software upgrade by fetching the software on a given URL. If the FTP site requires username and password, these parameters must be included.

1. Software is available from the following URL:
   http://ftp.tandberg.com/pub/software/endpoints

   ```
   xCommand SystemUnit SoftwareUpgrade URL: "http://ftp.tandberg.com/pub/
   software/endpoints/isdnlink/<filename>" UserName: "" Password: ""
   ```

   ```
   *r SoftwareUpgradeResult (Status=OK)
   ```

2. When finished loading and installing the software, the unit will reboot.

Alternative method for software upgrading

If you do not have Internet access, follow the SCP upgrade method.

SCP Upgrade Method

1. Download the software to your computer. Software is available from the following URL:
   http://ftp.tandberg.com/pub/software/endpoints

2. Root access needs to be enabled on ISDN Link (See "Setting a root password" on page 21)

3. Copy the file to the ISDN Link using SCP, ensuring that the file is placed in folder `/appl` and is named `installsw`:

   i. If using SCP from the command line of your computer enter:

   ```
   scp filetoupload.pkg root@ip.of.isdn.link:/appl/installsw
   ```

   ii. If using WinSCP then connect to the ISDN Link as `root` and copy the file into `/appl` folder.

   IMPORTANT: When you see the copy dialogue box showing `/appl/*.*` change this to `/appl/installsw` so that the filename is changed to `installsw`. When file is copied using WinSCP you may get some errors - these can be ignored.

4. Once the file has been uploaded to ISDN Link the unit needs to be restarted in order to use the new software.

   i. If logged in as `root` enter `reboot`.

   ii. If logged in as `admin` enter `xCommand Boot`.

5. You can check the software version by logging in as `admin`. The software version is displayed when logging on to the unit, or you can run the command `xStatus SystemUnit` and look for the Software Version.

Chapter 3

Configuration examples

Typical user scenarios

The Cisco TelePresence® ISDN Link is a compact appliance for in-room ISDN and external network connectivity.

The ISDN Link provides direct connectivity for IP-to-ISDN or IP-to-V.35 networks (E-, EX-, MX-, C- and SX-series). It can be used as main connection, back up connection or for external calls. The ISDN network can be combined with an IP network. Support for up to 4 Basic Rate Interface (BRI) or 1 Primary Rate Interface (PRI) ISDN ports and external networks (cable standards V.35, RS530, RS449, and RS366).
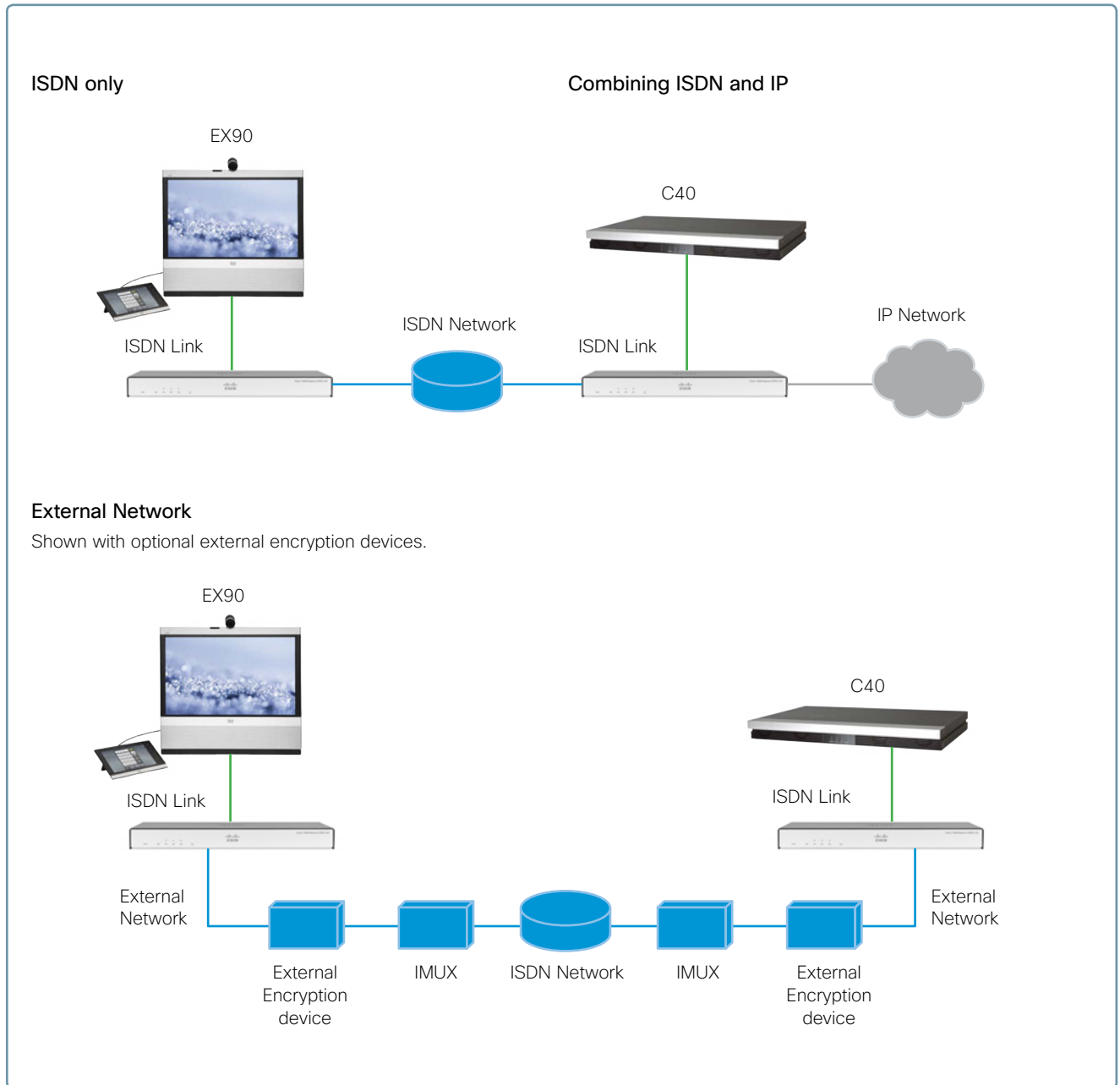
For configuration examples, see the following pages.

NOTE: When connecting PRI to an ADTRAN switch, you MUST disable parallel dialing used in bonding calls, due to internal ADTRAN capacity problems. Otherwise, outgoing calls (especially higher rates) may take a long time, or even fail.

```
xConfiguration ISDN ParallelDial: Off
```

For other PBXs, you should be able to allow parallel dialing:

```
xConfiguration ISDN ParallelDial: On
```

ISDN only

EX90

ISDN Link

ISDN Network

Combining ISDN and IP

C40

ISDN Link

IP Network

External Network

Shown with optional external encryption devices.

EX90

C40

ISDN Link

ISDN Link

External Network

External Network

External Encryption device

IMUX

ISDN Network

IMUX

External Encryption device

www.cisco.com

About SIP URI options

HINT: Defining options and numbers for reaching a user on the ISDN/NET network is more convenient if you first define the user in the endpoint address book.

Dialling from the endpoint

Dialling from the endpoint is done using the SIP protocol. In order to inform the ISDN Link about destination number to call etc, the following optional SIP parameters must be used. Each option key or value is preceded with a semicolon, ";":

```
x-h320number=NUMBER
```

Replace NUMBER with the destination number to call, normally consisting of digits. Please notice that when dialling an ISDN network destination which requires sub-addressing, the sub-address number is provided in the following format:

```
x-h320number=NUMBER*SUBADDRESS
```

When using the NET (External) interface, providing a number may not be required, and this option can be skipped in those cases.

Furthermore, when using the NET interface, the NUMBER may consist of digits, * and #. In the rare situation that a # is required in the number, it must be encoded as %23. So to dial 123#* on the NET interface, NUMBER must be set to 123%23*.

Using restricted mode

```
x-h320restrict=true|false
```

Some networks (generally only applicable to North-America) only support restricted mode (ie 56kbps per channel instead of 64kbps per channel). By default, unrestricted mode is assumed. Notice that the default restrict mode assumption can be changed with the following configuration:

```
xConfiguration H320 DefaultCall Restrict
```

Making audio calls

```
x-h320tlph=true|false
```

This option is used when making a simple audio only telephony call to an ordinary telephone destination. Please notice that the x-h320restrict option has no meaning with this option, and must not be used.

Example with ISDN PRI E1 mode

In this example the ISDN type is PRI and European type, the number is 8000, and the endpoint is connected directly to the ISDN Link. There is no IP infrastructure and the endpoint must not be registered to VCS when using this configuration.
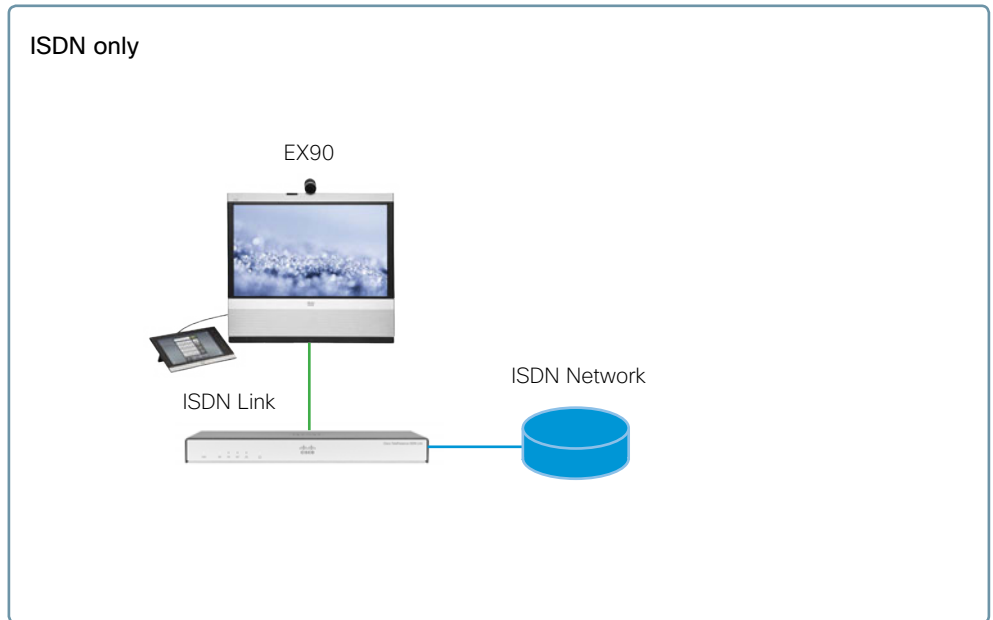
Endpoint configuration

Use the Remote Control or Touch panel to configure.

Network 1 > Assignment = Manual

Network 1 > IPv4 > Address = 192.168.1.100

Network 1 > IPv4 > SubnetMask = 255.255.255.0

Network 1 > IPv4 > Gateway = 192.168.1.1

Conference 1 > DefaultCall > Protocol = SIP

Conference 1 > DefaultCall > Rate: 1920 (Euro PRI 30 channels @ 64 kbps)

ISDN Link configuration

Use the serial port to configure.

```
xConfiguration Network 1 Assignment: Static
```
(Set Static IP)

```
xConfiguration Network 1 IPv4 Address: "192.168.1.101"
```
(Set the IP address of the ISDN Link)

```
xConfiguration Network 1 IPv4 SubnetMask: "255.255.255.0"
```
(Set the subnet mask of the ISDN Link)

```
xConfiguration Gateway SIP PeerHost : "192.168.1.100"
```
(Set the IP address of the endpoint)

```
xConfiguration H320 NetType: PRI
```
(Set type of ISDN)

```
xConfiguration ISDN PRI SwitchType: Euro
```
(Set the ISDN switch type)

```
xConfiguration ISDN PRI Interface 1 MaxChannels: 30
```
(Set the MaxChannels to the number of channels you have)

```
xConfiguration ISDN PRI Interface 1 HighChannel: 31
```
(Set the HighChannel to the number of the highest channel)

```
xConfiguration ISDN PRI Interface 1 NumberRangeStart: "8000"
xConfiguration ISDN PRI Interface 1 NumberRangeStop: "8000"
```
(Enter your PRI number range, this MUST be according to the ISDN network configuration.)

ISDN only

Dialling from the endpoint

From the endpoint you should now be able to dial an ISDN number using the following format:

Format: <ip address>;x-h320number=XXXX

- Where XXXX is the ISDN number you wish to call.
- In this case, with no IP infrastructure, we use the IP Address to identify the ISDN Link.

Example: 192.168.1.101;x-h320number=1234
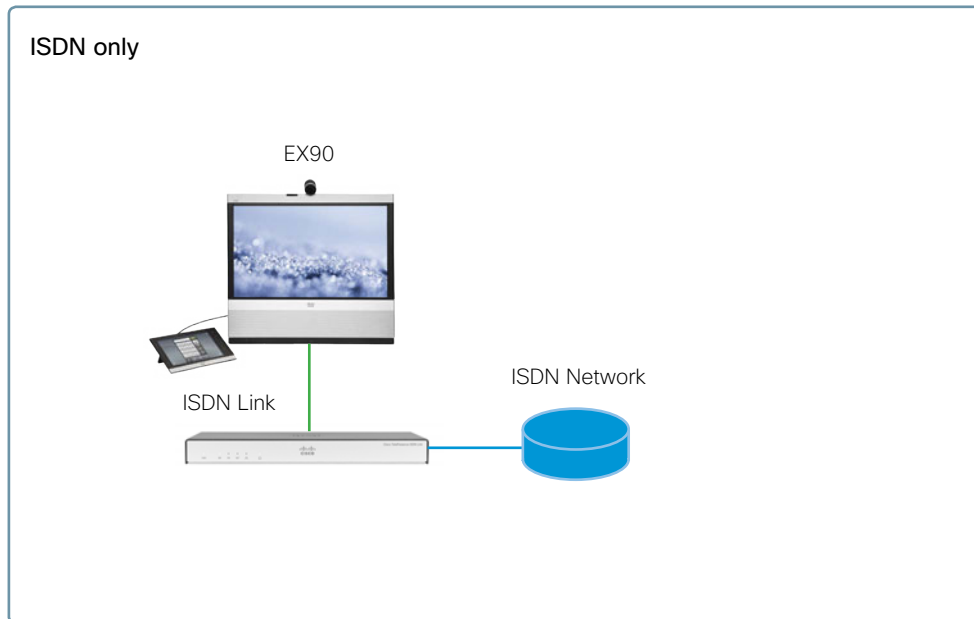
Example with ISDN PRI T1 mode

In this example the ISDN type is PRI and National ISDN type, the number is 8000, and the endpoint is connected directly to the ISDN Link. There is no IP infrastructure and the endpoint must not be registered to VCS when using this configuration.
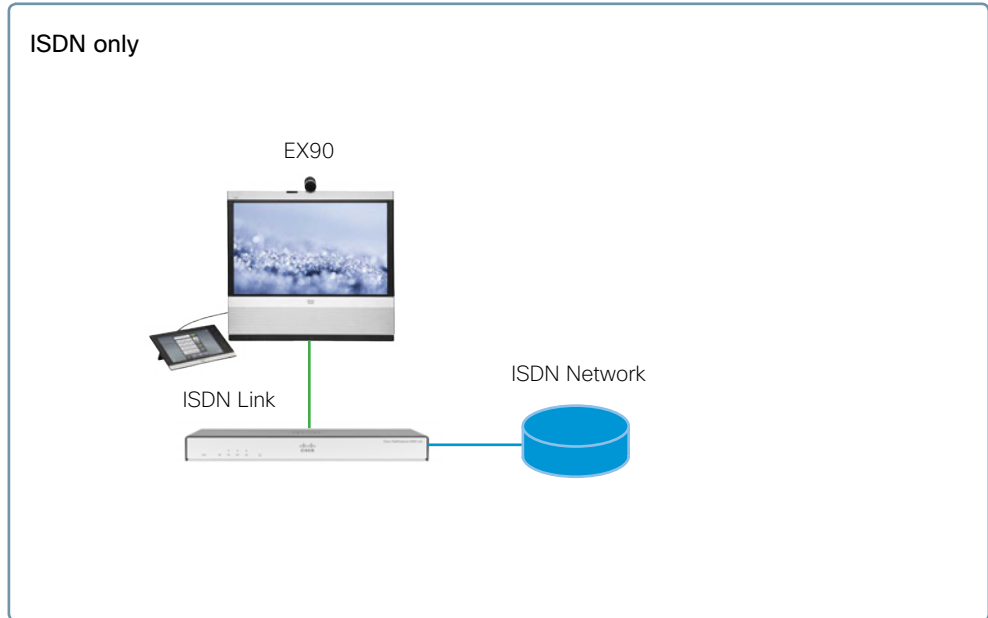
Endpoint configuration

Use the Remote Control or Touch panel to configure.

    Network 1 > Assignment = Manual

    Network 1 > IPv4 > Address = 192.168.1.100

    Network 1 > IPv4 > SubnetMask = 255.255.255.0

    Network 1 > IPv4 > Gateway = 192.168.1.1

    Conference 1 > DefaultCall > Protocol = SIP

    Conference 1 > DefaultCall > Rate: 1472 (NI PRI 23 channels @ 64 kbps)

ISDN Link configuration

Use the serial port to configure.

```
xConfiguration Network 1 Assignment: Static
```
(Set Static IP)

```
xConfiguration Network 1 IPv4 Address: "192.168.1.101"
```
(Set the IP address of the ISDN Link)

```
xConfiguration Network 1 IPv4 SubnetMask: "255.255.255.0"
```
(Set the subnet mask of the ISDN Link)

```
xConfiguration Gateway SIP PeerHost: "192.168.1.100"
```
(Set the IP address of the endpoint)

```
xConfiguration H320 NetType: PRI
```
(Set type of ISDN)

```
xConfiguration ISDN PRI SwitchType: NI
```
(Set the ISDN switch type)

```
xConfiguration ISDN PRI Interface 1 MaxChannels: 23
```
(Set the MaxChannels to the number of channels you have)

```
xConfiguration ISDN PRI Interface 1 HighChannel: 23
```
(Set the HighChannel to the number of the highest channel)

```
xConfiguration ISDN PRI Interface 1 NumberRangeStart: "8000"
xConfiguration ISDN PRI Interface 1 NumberRangeStop: "8000"
```
(Enter your PRI number range, this MUST be according to the ISDN network configuration.)

ISDN only

EX90

ISDN Network

ISDN Link

**Dialling from the endpoint**

From the endpoint you should now be able to dial an ISDN number using the following format:

Format: <ip address>;x-h320number=XXXX

· Where XXXX is the ISDN number you wish to call.

· In this case, with no IP infrastructure, we use the IP Address to identify the ISDN Link.

Example: 192.168.1.101;x-h320number=1234

Example with ISDN BRI Euro type

In this example the ISDN type is BRI and European type, the number is 8001-8004, and the endpoint is connected directly to the ISDN Link. There is no IP infrastructure and the endpoint must not be registered to VCS when using this configuration.

Endpoint configuration

Use the Remote Control or Touch panel to configure.

    Network 1 > Assignment = Manual

    Network 1 > IPv4 > Address = 192.168.1.100

    Network 1 > IPv4 > SubnetMask = 255.255.255.0

    Network 1 > IPv4 > Gateway = 192.168.1.1

    Conference 1 > DefaultCall > Protocol = SIP

    Conference 1 > DefaultCall > Rate: 512 (Euro BRI 4 channels @ 128 kbps)

ISDN Link configuration

Use the serial port to configure.

```
xConfiguration Network 1 Assignment: Static
```
(Set Static IP)
```
xConfiguration Network 1 IPv4 Address: "192.168.1.101"
```
(Set the IP address of the ISDN Link)
```
xConfiguration Network 1 IPv4 SubnetMask: "255.255.255.0"
```
(Set the subnet mask of the ISDN Link)
```
xConfiguration Gateway SIP PeerHost: "192.168.1.100"
```
(Set the IP address of the endpoint)
```
xConfiguration H320 NetType: BRI
```
(Set type of ISDN)
```
xConfiguration ISDN BRI SwitchType: Euro
```
(Set the ISDN switch type; must match switch type in Adtran)
```
xConfiguration ISDN BRI Interface 1 Mode: On
xConfiguration ISDN BRI Interface 2 Mode: On
xConfiguration ISDN BRI Interface 3 Mode: On
xConfiguration ISDN BRI Interface 4 Mode: On
```
(Enable the BRI interfaces)
```
xConfiguration ISDN BRI Interface 1 DirectoryNumber 1 Number: "8001"
xConfiguration ISDN BRI Interface 2 DirectoryNumber 1 Number: "8002"
xConfiguration ISDN BRI Interface 3 DirectoryNumber 1 Number: "8003"
xConfiguration ISDN BRI Interface 4 DirectoryNumber 1 Number: "8004"
```
(Enter your BRI numbers, this MUST be according to the ISDN network configuration.)

ISDN only

EX90

ISDN Link

ISDN Network

Dialling from the endpoint

From the endpoint you should now be able to dial an ISDN number using the following format:

Format: <ip address>;x-h320number=XXXX

- Where XXXX is the ISDN number you wish to call.
- In this case, with no IP infrastructure, we use the IP Address to identify the ISDN Link.

Example: 192.168.1.101;x-h320number=1234

Example with External Network

In this example the endpoint is connected directly to the ISDN Link. There is no IP infrastructure and the endpoint must not be registered to VCS when using this configuration.

Endpoint configuration

Use the Remote Control or Touch panel to configure.

    Network 1 > Assignment = Manual
    Network 1 > IPv4 > Address = 192.168.1.100
    Network 1 > IPv4 > SubnetMask = 255.255.255.0
    Network 1 > IPv4 > Gateway = 192.168.1.1
    Conference 1 > DefaultCall > Protocol = SIP
    Conference 1 > DefaultCall > Rate: 1472

ISDN Link configuration

Use the serial port to configure.

`xConfiguration H320 NetType: External`
(Set network type)

`xConfiguration ExternalNetwork Interface 1 DtrPulse: On`
(If using RS530, set DTRPulse to On; else set to Off)

`xConfiguration ExternalNetwork Interface 1 Clocking: Dual`
(Set clocking mode)

`xConfiguration ExternalNetwork Interface 1 CallControl: RS366`
(Set call control mode)

Dialling from the endpoint

From the endpoint you should now be able to dial an ISDN number using the following format from the endpoint.

Format: `<ip address>;x-h320number=XXXX`
- Where XXXX is the ISDN number you wish to call.
- In this case, with no IP infrastructure, we use the IP Address to identify the ISDN Link.

Example: `192.168.1.101;x-h320number=1234`

External Network
Shown with optional external excryption devices.
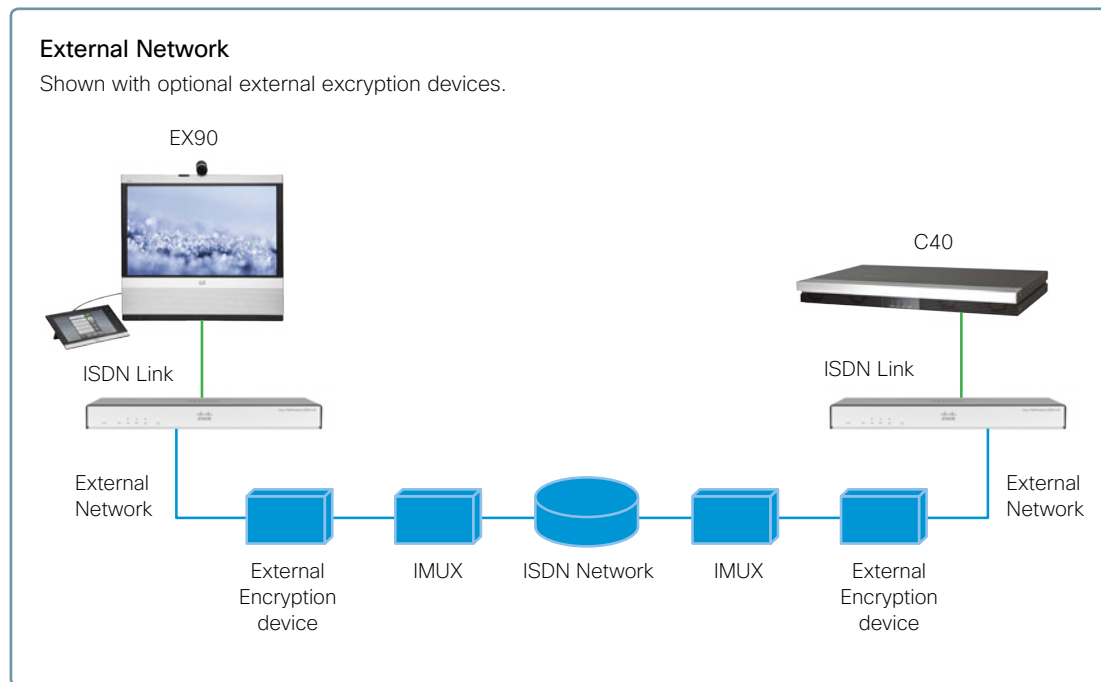
Example with full IP infrastructure and VCS

In this example the ISDN type is Euro BRI with four BRI lines (4 x 128 kbps), the number range is 8001-8004, and the endpoint is set-up and registered to a VCS*.

Endpoint configuration

Use the Remote Control or Touch panel to configure.

    Network 1 > Assignment = DHCP

    SIP Profile 1 > URI 1 = endpoint.name@domain.com

    SIP Profile 1 > Proxy 1 > Address: "sip.registrar.domain.com"

    Conference 1 > DefaultCall > Protocol = SIP

    Conference 1 > DefaultCall > Rate: 512 (Euro BRI 4 lines @ 128 kbps)

ISDN Link configuration

Use the serial port or SSH to configure.

```
xConfiguration H320 NetType: BRI
(Set network type)

xConfiguration Network 1 Assignment: DHCP
(Set network assignment)

xConfiguration Gateway SIP PeerHost: "192.168.1.100"
(Set the IP address of the endpoint)

xConfiguration ISDN BRI SwitchType: Euro
(Set the ISDN switch type)

xConfiguration ISDN BRI Interface 1 Mode: On
xConfiguration ISDN BRI Interface 2 Mode: On
xConfiguration ISDN BRI Interface 3 Mode: On
xConfiguration ISDN BRI Interface 4 Mode: On
(Enable the BRI interfaces)

xConfiguration ISDN BRI Interface 1 DirectoryNumber 1 Number: "8001"
xConfiguration ISDN BRI Interface 2 DirectoryNumber 1 Number: "8002"
xConfiguration ISDN BRI Interface 3 DirectoryNumber 1 Number: "8003"
xConfiguration ISDN BRI Interface 4 DirectoryNumber 1 Number: "8004"
(Enter your BRI numbers, this MUST be according to the ISDN network configuration.)

xConfiguration Gateway SIP PeerUri: "c40@domain.com"
(Set URI for the endpoint)

xConfiguration SIP Profile 1 URI: "isdnlink@domain.com"
(Set URI for ISDN Link. The ISDN Link must be SIP registered)
```

Combining ISDN and IP


```
xConfiguration SIP Profile 1 Proxy 1 Address: "sip.registrar.domain.com"
(Set address of SIP registrar)
```

Confirm that the ISDN Link is SIP registered

· ```xStatus SIP```

Dialling from the endpoint

From the endpoint you should now be able to dial an ISDN number using the following format:

Format: <sip uri>;x-h320number=XXXX

· Where XXXX is the ISDN number you wish to call.

· In this case, with an IP infrastructure in place, we use the SIP URI to identify the ISDN Link.

Example: isdnlink@domain.com;x-h320number=1234

* VCS = Cisco TelePresence Video Communication Server

Chapter 4

Password protection

Password protection

The system is password protected in the following ways:

- The ISDN Link is password protected. You always need to enter a username to sign in to the command line interfaces.
- You can protect the file system of the ISDN Link by setting a password for the `root` user. The root user is disabled by default.

NOTE: Make sure to keep a copy of the password in a safe place. If you have forgotten the password and cannot access the system, you need to do a factory reset via the boot monitor. If you do not know how to do this contact Cisco support.

Changing the system password

The system is delivered with a default user account with username `admin` and no password set. This user has full access rights to configuration of the system.

NOTE: We strongly recommend that you set a password for the `admin` user to restrict access to system configuration.

Changing the password using the command line interface

If a password is currently not set, use a blank current password; to remove a password, leave the new password entries blank.

1. Connect to the ISDN Link through the network or serial port.

2. Sign in to the unit with your current password.

3. Run the following API command and when prompted enter the current password and the new password, and confirm the new password:

    `systemtools passwd`

    The password format is a string with 0–64 characters.

Setting a root password

If you sign in to the command line interface as `root`, you can access the file system on the unit.

The root user is disabled by default. You can check if root is enabled or disabled by entering the following API command:

    `systemtools rootsettings get`

The command will respond with On if already enabled.

Perform the following steps to activate the root user and set a password:

1. Connect to the ISDN Link through the network or serial port.

2. Sign in to the system with the username (`admin`) and password.

3. Run the following API command:

    `systemtools rootsettings on [password]`

    Where `[password]` is the password (optional) you want to set.

    NOTE: Although password is optional we **strongly** recommended that a password is set and some record made of this password. Having no root password, if root user is enabled, poses a serious security risk.

Chapter 5

Appendices

Pin-out schemes

This page gives an overview of the pin-out schemes for the connectors on the ISDN Link.

Pin-out RS-232 COM Port[1]		
Pin	**Signal name**	**Direction2**
1	Carrier detect, CD	From DCE
2	Receive data, RXD	From DCE
3	Transmit data, TXD	To DCE
4	Data terminal ready, DTR	From DCE
5	Signal GND	
6	Data set ready, DSR	From DCE
7	Ready to send, RTS	To DCE
8	Clear to send, CTS	From DCE
9	Ring indicator, RI	From DCE

1) Only RXD, TXD and signal GND are used, the other pins are reserved for possible future use.

2) The ISDN Link is the DCE (Data Circuit-terminating Equipment).

RS-232 9 pin D-SUB pin-out

External view of socket.
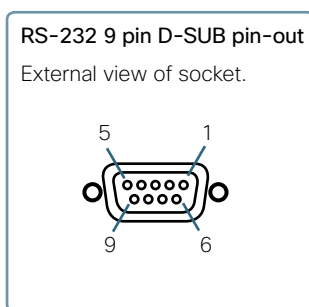
Gigabit Ethernet				
Pin	**Name**	**Description**	**TIA/EIA 568A**	**TIA/EIA 568B**
1	BI_DA+	Bi-directional pair A+ (tranceive)	white/green	white/orange
2	BI_DA–	Bi-directional pair A- (tranceive)	green	orange
3	BI_DB+	Bi-directional pair B+ (receive)	white/orange	white/green
4	BI_DC+	Bi-directional pair C+	blue	blue
5	BI_DC–	Bi-directional pair C-	white/blue	white/blue
6	BI_DB–	Bi-directional pair B- (receive)	orange	green
7	BI_DD+	Bi-directional pair D+	white/brown	white/brown
8	BI_DD–	Bi-directional pair D-	brown	brown

Ethernet interface

2 × Gigabit ethernet (RJ-45). Gigabit Ethernet requires, at least Category 5 cable, but Category 5e or Category 6 cables may also be used and are often recommended. Gigabit Ethernet requires all four pairs to be present.
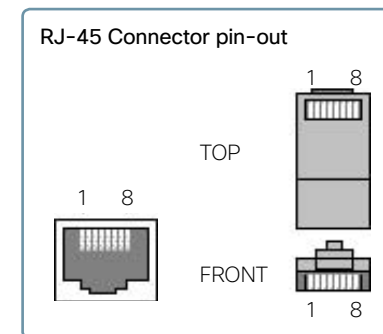
E1/T1 Interface		
PRI	**Pin-Out**	**Crossover PRI cable**
Pin 1	RX+	4
Pin 2	RX–	5
Pin 4	TX+	1
Pin 5	TX–	2

ISDN PRI (E1/T1) interface

1 × PRI (RJ-45 Jack) Primary Rate Interface. Use any standard PRI cable to connect the ISDN Link to PRI.

S/T Interface	
BRI	**Pin-Out**
Pin 3	TX+
Pin 4	RX+
Pin 5	RX–
Pin 6	TX–

ISDN BRI (S/T) interface

4 × ISDN I.420 (RJ-45 Jack) Basic Rate Interface (S/T). Use any standard ISDN BRI cable to connect the ISDN Link to BRI.

RJ-45 Connector pin-out

TOP

FRONT

Pin-out schemes

This page gives an overview of the pin-out schemes for the connectors on the ISDN Link.

HD D-SUB 26 pin-out

External view of socket.
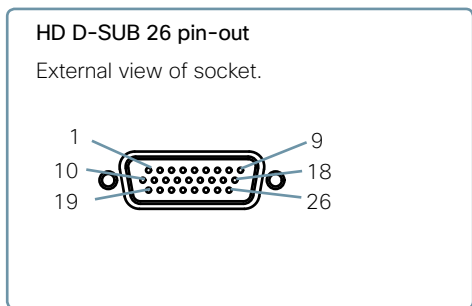
Pin-out V.35 DTE - DCE Port		
Pin	Signal Name	Description
1	FGND	Frame GND on equipment
11	SD(A)	Send Data / Transmit
12	SD(B)	Send Data / Transmit
13	RD(A)	Receive Data
14	RD(B)	Receive Data
15	SCR(A)	Signal Clock Receive
16	SCR(B)	Signal Clock Receive
17	SCT(A)	Signal Clock Transmit
18	SCT(B)	Signal Clock Transmit
19	GND[1]	Signal GND
22	RLSD(CD)	Received Line Signal Detector / Carrier Detect
23	RLSD(GND)[1]	Signal GND
24	RI	Ring Indicator
25	LOS	Loss of Signal (KG194)
26	DTR	Data Terminal Ready

1) These pins are connected to ground for correct operations

Pin-out RS449 DTE - DCE Port		
Pin	Signal Name	Description
1	FGND[1]	Frame GND
11	SD(A)	Send Data
12	SD(B)	Send Data
13	RD(A)	Receive Data
14	RD(B)	Receive Data
15	RT(A)	Receive Timing
16	RT(B)	Receive Timing
17	ST(A)	Send Timing
18	ST(B)	Send Timing
19	GND[2]	GND
20	TR(A)	Terminal Ready
21	TR(B)	Terminal Ready
22	RR(A)	Carrier Detect / Receiver Ready
23	RR(B)	Carrier Detect / Receiver Ready
24	IC	Incoming Call
25	LOS	Loss of Signal (KG194)

1) Frame GND is connected to pin 1 on DTE

2) This pin is connected to ground for correct operations

Pin-out RS366 DTE - DCE Port		
Pin	Signal Name	Description
1	FGND	Frame GND
2	DPR	Digit Present
3	ACR	Abandon Call & Retry
4	CRQ	Call Request
5	PND	Present Next Digit
6	DLO	Data Line Occupied
7	NB1	Digit Bit 1
8	NB2	Digit Bit 2
9	NB4	Digit Bit 4
10	NB8	Digit Bit 8

Pin-out X.21 DTE - DCE Port		
Pin	Signal Name	Description
1	FGND	Frame GND
11	T(A)	Send Data / Transmit
12	T(B)	Send Data / Transmit
13	R(A)	Received Data / Receive
14	R(B)	Received Data / Receive
15	S(A)	Signal Element Timing
16	S(B)	Signal Element Timing
20	C(A)	Terminal Ready / Control
21	C(B)	Terminal Ready / Control
22	I(A)	Carrier Detect
23	I(B)	Carrier Detect

www.cisco.com

Cables

This page gives an overview of the cables available for ISDN Link.

Item Number	Description
CAB-DB26-530366	Cable Specification for Cisco TelePresence DB26 to RS-530 w/RS-366 Interface.
CAB-DB26-KIV7	Cable Specification for Cisco TelePresence DB26 to KIV-7 Interface.
CAB-DB26-530	Cable Specification for Cisco TelePresence DB26 to RS-530 Interface.
CAB-DB26-V35	Cable Specification for Cisco TelePresence DB26 to V.35 Interface.
CAB-DB26-V35366	Cable Specification for Cisco TelePresence DB26 to V.35 w/RS-366 Interface.
CAB-DB26-449366	Cable Specification for Cisco TelePresence DB26 to RS-449 w/RS-366 Interface.

Supported RFCs

The RFC (Request for Comments) series contains technical and organizational documents about the Internet, including the technical specifications and policy documents produced by the Internet Engineering Task Force (IETF).

Current RFCs and drafts supported

- RFC 1889 RTP: A Transport Protocol for Real-time Applications
- RFC 2190 RTP Payload Format for H.263 Video Streams
- RFC 2396 Uniform Resource Identifiers (URI): Generic Syntax
- RFC 2429 RTP Payload Format for the 1998 Version of ITU-T Rec. H.263 Video (H.263+)
- RFC 2460 Internet protocol, version 6 (IPv6) specification
- RFC 2617 Digest Authentication
- RFC 2782 DNS RR for specifying the location of services (DNS SRV)
- RFC 2976 The SIP INFO Method
- RFC 3016 RTP Payload Format for MPEG-4 Audio/Visual Streams
- RFC 3047 RTP Payload Format for ITU-T Recommendation G.722.1
- RFC 3261 SIP: Session Initiation Protocol
- RFC 3262 Reliability of Provisional Responses in SIP
- RFC 3263 Locating SIP Servers
- RFC 3264 An Offer/Answer Model with SDP
- RFC 3311 UPDATE method
- RFC 3361 DHCP Option for SIP Servers
- RFC 3420 Internet Media Type message/sipfrag
- RFC 3515 Refer method
- RFC 3550 RTP: A Transport Protocol for Real-Time Applications
- RFC 3581 Symmetric Response Routing
- RFC 3605 RTCP attribute in SDP
- RFC 3711 The Secure Real-time Transport Protocol (SRTP)
- RFC 3840 Indicating User Agent Capabilities in SIP
- RFC 3890 A Transport Independent Bandwidth Modifier for SDP
- RFC 3960 Early Media
- RFC 4028 Session Timers in SIP
- RFC 4145 TCP-Based Media Transport in the SDP
- RFC 4566 SDP: Session Description Protocol
- RFC 4568 SDP:Security Descriptions for Media Streams
- RFC 4574 The Session Description Protocol (SDP) Label

Attribute
- RFC 4582 The Binary Floor Control Protocol
- RFC 4583 SDP Format for BFCP Streams
- RFC 4585 Extended RTP Profile for RTCP-Based Feedback
- RFC 4587 RTP Payload Format for H.261 Video Streams
- RFC 4629 RTP Payload Format for ITU-T Rec. H.263 Video
- RFC 4796 The SDP Content Attribute
- RFC 4862 IPv6 stateless address autoconfiguration
- RFC 5168 XML Schema for Media Control
- RFC 5626 Managing Client-Initiated Connections in the Session Initiation Protocol (SIP)
- RFC 6184 RTP Payload Format for H.264 Video

Media capabilities supported in SIP

The audio and video media capabilities supported in SIP are the same as for H.323.

Intellectual property rights

Cisco contacts

On our web site you will find an overview of the worldwide Cisco contacts.

Go to: ► http://www.cisco.com/web/siteassets/contacts

Corporate Headquarters

Cisco Systems, Inc.

170 West Tasman Dr.

San Jose, CA 95134 USA