

Software version IL1.1.2

MARCH 2015



CISCO TELEPRESENCE ISDN LINK

API REFERENCE GUIDE

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

Introduction	3	Connecting to the ISDN Link.....	82
About this guide	4	Connect to the ISDN Link through the serial port	82
User documentation overview	4	Connect to the ISDN Link through SSH	82
Technical specification.....	4	Connect to the ISDN Link through the endpoint's web interface	82
Support and software download.....	4	Finding the IP address	83
What's new in this version	5	Finding the IP address by connecting to the ISDN Link serial port	83
New settings.....	5	Finding the IP address from the endpoint's web interface	83
About ISDN Link	6	Factory reset.....	84
Supported software versions	6	Factory resetting the ISDN Link.....	84
Automatic pairing mode	6	Factory reset during boot through the serial port	84
Manual pairing mode.....	6	Unpairing the ISDN Link.....	85
Changing the password	6	Persistent pairing.....	85
Manual pairing mode	7	Unpairing from the TelePresence endpoint's web interface.....	85
About the API	8	Forced unpairing	85
User commands overview	9	Software upgrade	86
About xConfiguration	10	Software upgrade from IL1.0 to IL1.1.....	86
About xCommand	11	Checking the software version	86
About xStatus.....	12	Installing the software from an URL	86
Value types and formats	13	The SCP upgrade method	86
Case sensitivity	13	Configuration examples	87
Using the search options	14	Configuration example with ISDN PRI E1 mode.....	87
Description of the xConfiguration commands	15	Configuration example with ISDN PRI T1 mode.....	88
Description of the xConfiguration commands	16	Configuration example with ISDN BRI Euro type.....	89
Description of the xCommand commands	43	Configuration example with External Network	90
Description of the xCommand commands	44	Configuration example with full IP infrastructure and VCS	91
Description of the xStatus commands	47	Making a call from the command line interface on the endpoint.....	92
Description of the xStatus commands.....	48	Making a call when in manual pairing mode	92
Appendices	80	Making a call when in automatic pairing mode	92
Password protection.....	81	The log command	93
Password management.....	81	About the log command	93
Changing the system password.....	81	The systemtools commands	94
Setting a root password	81	About systemtools commands	94
		Description of the systemtools commands	94



Introduction

About this guide

The main objective with this guide is to describe how to manage Cisco TelePresence ISDN Link when connecting to the unit through the serial port, or over the network through SSH. The command line interface can be reached while using the ISDN Link in both automatic and manual pairing mode.

The ISDN Link must be running software version IL1.1 or later, and the TelePresence endpoint must be running TC6.0 or later.

When using the ISDN Link in *automatic pairing mode* the recommended way to manage the ISDN Link is from the TelePresence endpoint's web interface. For details see the [ISDN Link Administrator Guide](#).

When using the ISDN Link in *manual pairing mode* you can connect through the serial port or, if you know the IP address, over the network through SSH. For details see the [Appendices](#) section in this guide.

User documentation overview

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

Installation guide:

Install and Upgrade | Install and Upgrade Guides

Administrator guide:

Maintain and Operate | Maintain and Operate Guides

API reference guide:

Reference Guides | Command references

Regulatory compliance and safety information:

Install and Upgrade | Install and Upgrade Guides

Software release notes:

Software Downloads, Release and General Information | Release Notes

Licensing information:

Software Downloads, Release and General Information | Licensing Information

Technical specification

Information about the technical specification is found on our web site: [▶Cisco TelePresence ISDN Link Data Sheet](#)

Support and software download

You can download the software for the ISDN Link from our web site: [▶http://www.cisco.com/cisco/web/support](http://www.cisco.com/cisco/web/support)

1. Click the *Download* tab.
2. Type "ISDN Link" in the search field.
3. Click the *Download* button. To download the software, you must log in with your Cisco.com user ID.

What's new in this version

This section provides an overview of the new and changed settings and new features in the IL1.1.2 software version.

Support for G.728 and G.729 audio protocols

ISDN Link supports the G.728 and G.729 audio protocols. These protocols can only be used if they are supported by both ISDN Link and the endpoint that ISDN Link is paired to.

The following endpoints support these protocols in TC7.2:

- G.729: All endpoints that support ISDN Link
- Full G.728 support: C90, SX20, MX200 G2 and MX300 G2
- G.728 support only in point-to-point calls: C40, C60 and EX90

New settings

- xConfiguration H320 Downspeed
- xConfiguration ISDN PRI Interface 1 TestClockmode
- xConfiguration ISDN PRI Interface 1 TestLoopmode
- xConfiguration ISDN PRI Interface 1 TestShutdown
- xConfiguration ISDN BRI Interface [1..4] TestLoopmode
- xConfiguration ISDN BRI Interface [1..4] TestPattern

About ISDN Link

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. It can be used as main connection or a back up connection. Support for up to four Basic Rate Interface (BRI) or one Primary Rate Interface (PRI) ISDN ports and external networks (cable standards V.35, RS530, RS449, and RS366).

Refer to the [Cisco TelePresence ISDN Link Data Sheet](#) for information about which endpoints support use of ISDN Link.

Pairing mode

We highly recommend to use **automatic pairing mode**. Automatic pairing mode is supported in software version IL1.1. The TC software on the endpoint must be TC6.0 or later.

You should use **manual pairing mode** only if you have to use software version IL1.0 or if your endpoint has software version TC5.x.

NOTE: Endpoints that are paired to ISDN Link do not support Far End Camera Control (FECC).

Changing the password

The ISDN Link is delivered with a default user account with no password set. This user has full access rights to configuration of the system. The password can not be set via the TelePresence endpoint's web interface.

NOTE: We strongly recommend that you set a password to restrict access to system configuration.

For details see "[Password protection](#)" on page 81

Manual pairing mode

When using the ISDN Link in manual pairing mode you can connect to the ISDN Link through the serial port or, if you know the address, through SSH over the network.

See the section [“Connecting to the ISDN Link”](#) on page 82

Before you start using the system, make sure the ISDN Link has the latest software version installed. See the ISDN Link Software Release Notes for references.

See the section [“Support and software download”](#) on page 4.

See the section [“Software upgrade”](#) on page 86.

We have provided a couple of configuration examples based on some common user scenarios.

See the section [“Configuration example with ISDN PRI E1 mode”](#) on page 87

See the section [“Configuration example with ISDN PRI T1 mode”](#) on page 88

See the section [“Configuration example with ISDN BRI Euro type”](#) on page 89

See the section [“Configuration example with External Network”](#) on page 90

See the section [“Configuration example with full IP infrastructure and VCS”](#) on page 91

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

See the section [“Making a call from the command line interface on the endpoint”](#) on page 92.

About the API

User commands overview

Connect to the serial port and log in to the ISDN Link as described in “[Connecting to the ISDN Link](#)” on page 82.

Getting help

To get a list of all supported root commands you can type help or ?.

Tab completion

TIP: When typing a command you can use the tabulator (TAB) key to auto-complete the name. For example:

- Type xcon and press the TAB key to auto-complete xconfiguration.
- Then type netw and press the TAB key to auto-complete network;
- Or type networks and press the TAB key to auto-complete networkservices.

```
?
- User Commands -
help          xcommand      xconfiguration xfeedback      xgetxml
xpreferences  xstatus       bye            echo           log
systemtools
OK
```

xConfiguration

Refer to “[About xConfiguration](#)” on page 10

xCommand

Refer to “[About xCommand](#)” on page 11

xStatus

Refer to “[About xStatus](#)” on page 12

Log

Refer to “[The log command](#)” on page 93

SystemTools

Refer to “[The systemtools commands](#)” on page 94

Help

To get a list of all supported root commands you can type help or ?.

Bye

Run the bye command to end the session and close the command line interface.

Echo

The echo command is set to On/Off to determine whether the key inputs should be displayed or not when entering text in the command line interface.

Other commands

Other commands listed in the - User Commands - overview are not used with the ISDN Link and will not be documented in this guide.

About xConfiguration

Configurations are settings that are persistent across boots.

- Enter `xConfiguration ?` to list all the top level commands.
- Enter `xConfiguration ??` to view the complete list of commands and their value space.
- Enter `xConfiguration` lists all configurations and their current values. To list out only parts of the configuration, write `xConfiguration` followed by one or more parts of the configuration paths.

Example: Setting the H320 net type.

```
xConfiguration H320 NetType: PRI
```

Example: Reading which H320 net type is set.

```
xConfiguration H320 NetType
*c xConfiguration H320 NetType: PRI
** end

OK
```

```
xConfiguration ?
- User Configurations -
E1                H320                Security           Time
Experimental      ISDN                SIP
ExternalNetwork   Network             SystemUnit
Gateway           NetworkServices    T1

OK
```

```
xconfiguration ??

*? xConfiguration E1 Interface [1..1] CRC4: <Off/On>
*? xConfiguration ExternalNetwork Interface [1..1] DtrPulse: <Off/On>
*? xConfiguration ExternalNetwork Interface [1..1] Clocking: <Dual/Single>
*? xConfiguration ExternalNetwork Interface [1..1] CallControl: <Manual/RS366/RS366AdtranIMUX/RS366CustomIMUX/LeasedLine>
*? xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw64 Prefix: <S: 0, 12>
*? xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw64 Suffix: <S: 0, 12>
*? xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw64R Prefix: <S: 0, 12>
*? xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw64R Suffix: <S: 0, 12>
.
.
.

OK
```

About xCommand

Commands instruct the ISDN Link to execute actions.

- Enter `xCommand ?` to list all the top level commands.
- Enter `xCommand ??` to view the complete list of commands and their parameters.
- Command arguments are key-value pairs. The (r) behind the argument name indicates that the argument is required for the command.

Example: List the pair restart command.

```
xCommand PairRestart
Confirm(r): <Yes>
```

- `xCommand` is the command prefix.
- The command to be executed is `PairRestart`.
- The example contains one argument, Confirm: Yes, where `Confirm` is the key and `Yes` is its value. The key/value pair is separated with ':'.

Example: Run the pair restart command.

```
xCommand PairRestart Confirm: Yes
```

```
xCommand ?
- User Commands -
Boot          PairRestart  Security     SystemUnit

OK
```

```
xCommand ??
xCommand Boot
xCommand PairRestart
    Confirm(r): <Yes>
xCommand Security FipsMode Activate
    Confirm(r): <Yes>
xCommand SystemUnit AdminPassword Set
    Password(r): <S: 0, 64>
xCommand SystemUnit DateTime Set
    Year: <2008..2037>
    Month: <1..12>
    Day: <1..31>
    Hour: <0..23>
    Minute: <0..59>
    Second: <0..59>
.
.
.
OK
```

About xStatus

A status contains the current state of the ISDN Link.

- Enter `xStatus ?` or `xStatus ??` to list all the top level commands.
- Enter `xStatus` to lists all statuses and their current values.
- To list out only some of the statuses, write `xstatus` followed by the relevant part of the status path.

```
xStatus ?
- Status -
Call[...]          H320          MediaChannels     SIP
ExternalNetwork   ISDN          Network[1..1]     SystemUnit

OK
```

```
xStatus
*s H320 NetType: PRI
*s ISDN PRI Interface 1 Status: Ready
*s ISDN PRI Interface 1 BChansFree: 30
*s ISDN PRI Interface 1 BChansTotal: 30
*s ISDN PRI Interface 1 Layer1Status: Sync
*s ISDN PRI Interface 1 Channel 1 Type: BChannel
*s ISDN PRI Interface 1 Channel 1 Status: Idle
*s ISDN PRI Interface 1 Channel 2 Type: BChannel
*s ISDN PRI Interface 1 Channel 2 Status: Idle
*s ISDN PRI Interface 1 Channel 3 Type: BChannel
*s ISDN PRI Interface 1 Channel 3 Status: Idle
*s ISDN PRI Interface 1 Channel 4 Type: BChannel
*s ISDN PRI Interface 1 Channel 4 Status: Idle
.
.
.
OK
```

Value types and formats

The system supports the following value types (see example 1).

- **Integer values:** <x..y>
Defines the valid range for an integer input. x = min value, y = max value.
- **Literal values:** <X/Y/./Z>
Defines the possible values for a given configuration.
- **String values:** <S: x, y>
Defines that the valid input for this configuration is a string with minimum length of x and maximum length of y characters. Strings can have rules that further specify their format and length.

Case sensitivity

All commands are case-insensitive. All of the following commands will work. (See example 2).

The parameter may, or may not be case-insensitive, depending on its use.

Example 1: Value types and formats

```
*? xConfiguration Network [1..1] MTU: <576..1500>           Integer values
*? xConfiguration Network [1..1] IPStack: <IPv4/IPv6>       Literal values
*? xConfiguration Network [1..1] IPv4 Gateway: <S: 0, 64>   String values
```

Example 2: Case insensitivity

```
xConfiguration SystemUnit Name: "anyname"
xconfiguration systemunit name: "anyname"
XCONFIGURATION SYSTEMUNIT NAME: "anyname"
```

Using the search options

You can use `//` to search for elements anywhere in the status or configuration hierarchy (see example 1).

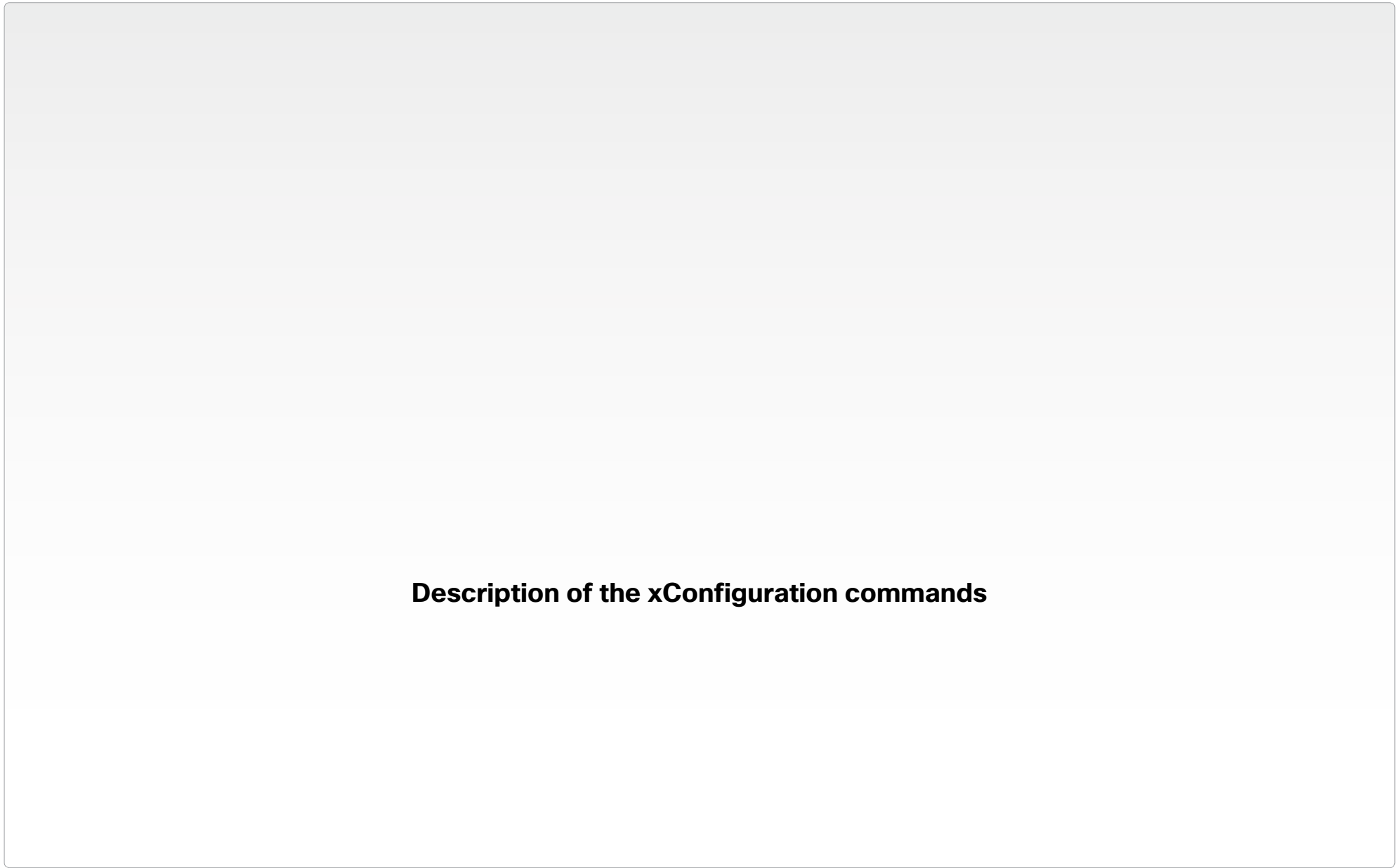
You can also combine multiple `//`'s (see example 2).

Example 1: List all *configurations* that include words with *PRI*:

```
xconfiguration //pri
*c xConfiguration ISDN PRI SwitchType: Euro
*c xConfiguration ISDN PRI InitialRestart: On
*c xConfiguration ISDN PRI Alert: Off
*c xConfiguration ISDN PRI ChanId: Off
*c xConfiguration ISDN PRI L2WindowSize: 7
*c xConfiguration ISDN PRI NSFTelephony Mode: Off
*c xConfiguration ISDN PRI NSFTelephony Number: 0
*c xConfiguration ISDN PRI NSFVideoTelephony Mode: Off
*c xConfiguration ISDN PRI NSFVideoTelephony Number: 0
*c xConfiguration ISDN PRI Interface 1 MaxChannels: 30
*c xConfiguration ISDN PRI Interface 1 HighChannel: 31
*c xConfiguration ISDN PRI Interface 1 LowChannel: 1
*c xConfiguration ISDN PRI Interface 1 Search: High
*c xConfiguration ISDN PRI Interface 1 NumberRangeStart: "8000"
*c xConfiguration ISDN PRI Interface 1 NumberRangeStop: "8000"
** end
OK
```

Example 2: Get all status that include words with *ISDN* and *status*:

```
xstatus //isdn//status
*s ISDN PRI Interface 1 Status: Ready
*s ISDN BRI Interface 1 Status: Off
*s ISDN BRI Interface 2 Status: Off
*s ISDN BRI Interface 3 Status: Off
*s ISDN BRI Interface 4 Status: Off
** end
OK
```



Description of the xConfiguration commands

Description of the xConfiguration commands

In the following pages you will find a complete list of the xConfiguration commands. The examples shows either the default value or an example of a value.

E1 configuration

xConfiguration E1 Interface [1..1] CRC4

E1 CRC-4 (Cyclic Redundancy Check 4-bit) is used for most E1-PRI configurations.

Value space: <Off/On>

Off: Some manufactures do not support this feature. By setting E1 CRC4 to Off this functionality will be disabled.

On: When set to On, the Cyclic Redundancy Check is enabled. The default value is On.

Example: `xConfiguration E1 Interface 1 CRC4: On`

ExternalNetwork configuration

xConfiguration ExternalNetwork Interface [1..1] CallControl

Configure the dialling sheme which is compatible with the external equipment.

Value space: <Manual/RS366/RS366AdtranIMUX/RS366CustomIMUX/LeasedLine>

Manual: Select Manual used when no handshake signals are available and the external equipment requires a constantly connected line.

RS366: This is the only dialling protocol supported and would normally be used together with Dual network clocking when the external equipment uses RS366 ports.

RS366AdtranIMUX: This setting offers extra usability when dialling RS366 via an ADTRAN IMUX. This dialling scheme will map the call type and bandwidth selection to ADTRAN IMUX specific suffixes to the dialled number. Should only be used when connected to an ADTRAN IMUX. The Adtran IMUX uses the following suffixes: <Number>#C#R.

#C = Call Type

#2 = audio (telephony)

#3 = 56kbps (restricted)

#4 = 64kbps (unrestricted)

#R = Channel Rate

#0 = 2xh221 (2x56/64kbps)

#n, where n is one of [1, 2, 3, 4, 5, 6, 8, 12, 18, 23, 30]; ie n*64kbps

RS366CustomIMUX: Uses a custom prefix/suffix table which describes the available bandwidths. The system administrator shall be able to specify the IMUX prefix/suffix table for the following bandwidths (kbps): 64, 64 Restrict, 128, 128 Restrict, 192, 192 Restrict, 256, 256 Restrict, 320, 320 Restrict, 384, 384 Restrict, 512, 512 Restrict, 768, 768 Restrict, 1152, 1152 Restrict, 1472, 1472 Restrict, 1920.

LeasedLine: Leased Line is a non-dialling protocol and should be used when two codecs are connected in a point-to-point connection. Use Leased Line when the handshaking signals DTR and CD are available. DTR and CD correspond to the X.21 network's C and I signals.

Example: `xConfiguration ExternalNetwork Interface 1 CallControl: RS366`

xConfiguration ExternalNetwork Interface [1..1] Clocking

Configure the clocking signal which is compatible with the external equipment.

Value space: <Dual/Single>

Dual: (RS449/V35 Compatible) Use this setting when the external equipment provides two clock signals, one for transmit and one for receive. The difference between RS449 and V35 lies solely in the cable.

Single: (X21 Compatible) Use this setting when the external equipment provides a common clock signal for both transmit and receive.

Example: `xConfiguration ExternalNetwork Interface 1 Clocking: Dual`

xConfiguration ExternalNetwork Interface [1..1] DtrPulse

Configures the DTR signal on the External Network port (Net).

Value space: <Off/On>

Off: The DTR pulse will stay low.

On: The DTR signal will give a low pulse lasting for 5 seconds.

Example: `xConfiguration ExternalNetwork Interface 1 DtrPulse: Off`

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw64 Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: `xConfiguration ExternalNetwork Interface 1 CustomIMUX bw64 Prefix: ""`

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw64 Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: `xConfiguration ExternalNetwork Interface 1 CustomIMUX bw64 Suffix: ""`

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw64R Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: `xConfiguration ExternalNetwork Interface 1 CustomIMUX bw64R Prefix: ""`

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw64R Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: `xConfiguration ExternalNetwork Interface 1 CustomIMUX bw64R Suffix: ""`

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw128 Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: `xConfiguration ExternalNetwork Interface 1 CustomIMUX bw128 Prefix: ""`

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw128 Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: `xConfiguration ExternalNetwork Interface 1 CustomIMUX bw128 Suffix: ""`

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw128R Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw128R
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw128R Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw128R
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw192R Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw192R
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw192R Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw192R
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw192R Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw192R
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw192R Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw192R
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw256R Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw256R
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw256R Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw256R
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw256R Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw256R
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw256R Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw256R
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw320 Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw320
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw320 Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw320
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw320R Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw320R
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw320R Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw320R
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw384 Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw384
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw384 Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw384
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw384R Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw384R
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw384R Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw384R
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw512 Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw512
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw512 Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw512
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw512R Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw512R
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw512R Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw512R
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw768 Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw768
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw768 Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw768
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw768R Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw768R
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw768R Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw768R
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw1152 Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw1152
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw1152 Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw1152
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw1152R Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw1152R
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw1152R Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw1152R
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw1472 Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth..

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw1472
Prefix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw1472 Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: xConfiguration ExternalNetwork Interface 1 CustomIMUX bw1472
Suffix: ""

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw1472R Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: `xConfiguration ExternalNetwork Interface 1 CustomIMUX bw1472R
Prefix: ""`

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw1472R Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: `xConfiguration ExternalNetwork Interface 1 CustomIMUX bw1472R
Suffix: ""`

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw1920 Prefix

Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: `xConfiguration ExternalNetwork Interface 1 CustomIMUX bw1920
Prefix: ""`

xConfiguration ExternalNetwork Interface [1..1] CustomIMUX bw1920 Suffix

Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth.

Value space: <S: 0, 12>

Format: String with a maximum of 12 characters.

Example: `xConfiguration ExternalNetwork Interface 1 CustomIMUX bw1920
Suffix: ""`

Gateway configuration

xConfiguration Gateway PairingMode

Configure the ISDN Link to operate in automatic or manual pairing mode. Pairing is a process in which the ISDN Link and endpoint communicate with each other in order to establish a connection. When pairing is completed the ISDN Link is dedicated to the endpoint it has been paired with. The automatic pairing mode provides an improved user experience, but requires that the endpoint supports this feature.

Value space: <Auto/Manual>

Auto: Set to Auto (default) to enable the ISDN Link to be discovered by a TelePresence endpoint. In automatic pairing mode the ISDN Link can be managed from the TelePresence endpoint's web interface.

Manual: In manual pairing mode the ISDN Link is managed from a command line interface through the serial interface, or over the network through SSH.

Example: `xConfiguration Gateway PairingMode: Auto;`

xConfiguration Gateway SIP PeerHost

NOTE: Only applicable when in manual pairing mode.

Set the IP address of the peer SIP codec using the ISDN link. Only one SIP codec can use the ISDN link, and it must be on the same subnet as the ISDN link. This IP address must correspond to the IP address type (IPv4 or IPv6) that the codec is configured to use for SIP calls.

The address is used for:

- 1) Verification of the SIP remote media transport addresses (if there is a mismatch, the call will be rejected/disconnected).
- 2) System status monitoring, indicating alarm etc if specified codec is not reachable.
- 3) If not SIP registered, this address is used to call the SIP codec for incoming H.320 side calls.

Value space: <S: 0, 64>

Format: Compact string with a maximum of 64 characters.

Example: `xConfiguration Gateway SIP PeerHost: "10.0.0.100"`

xConfiguration Gateway SIP PeerUri

NOTE: Only applicable when in manual pairing mode.

Set the address be used to reach the peer codec for incoming H.320 side calls when SIP registered mode is used. It should hold the same setting as the peer codec uses to register itself. If SIP registered mode is not used, this setting is not used.

Value space: <S: 0, 256>

Format: Compact string with a maximum of 256 characters.

Example: `xConfiguration Gateway SIP PeerUri: "sip-codec@domain.com"`

H320 configuration

xConfiguration H320 DefaultCall Restrict

A restricted call uses 56 kbps channels rather than the default unrestricted 64 kbps channels. Some older networks (primarily in the USA) do not support 64 kbps channels and require the use of restricted 56 kbps calls. By default, the system will dial an unrestricted call and downspeed to 56 kbps if necessary. Restricted mode can be selected when making a call.

Value space: <Off/On>

Off: Set to Off to disable restricted calls by default.

On: Set to On to force restricted (56 kbps) calls by default.

Example: `xConfiguration H320 DefaultCall Restrict: Off`

xConfiguration H320 Encryption

Set the encryption mode for the communication between the endpoint and the H.320 side interface (PRI/BRI/NET). The endpoint encryption status does ONLY reflect the encryption status for the SIP transport leg between the endpoint and the ISDN Link. For more details on encryption, see the "About audio and video encryption" section in the Appendices.

Value space: <Off/On/BestEffort>

Off: The system will never use encryption on H.320 side.

On: The system will always use encryption H.320 side. No audio/video media is conveyed until encryption with peer H.320 device is established.

BestEffort: The system will use encryption on H.320 side whenever possible. A call will start without encryption, and if an encryption session with peer H.320 device is established, it will switch automatically to encrypting media traffic.

Example: `xConfiguration H320 Encryption: BestEffort`

xConfiguration H320 NetType

Defines the network type to use for H.320 calls.

Value space: <BRI/PRI/External/G703>

BRI: Select BRI for the BRI network.

PRI: Select PRI for the PRI network.

External: Select External for the external network (Net/V.35).

G703: For test purpose only.

Example: xConfiguration H320 NetType: BRI

xConfiguration H320 Bonding Rebonding

Rebonding is used to re-establish H.320 calls if corrupted data is received for a longer period (10 - 15 sec).

Value space: <Off/On>

Off: Some manufactures do not support this feature. By setting Rebonding to Off this functionality will be disabled.

On: Set to On to enable rebonding. The default value is On.

Example: xConfiguration H320 Bonding Rebonding: On

xConfiguration H320 Bonding Timer

Relaxed bonding timer is used when B channels requires additional time before they can become transparent.

Value space: <Normal/Relaxed>

Normal: The default value is Normal.

Relaxed: Relaxed bonding timing should be used with applications where the B channels use some additional time before they become transparent, like external encryption devices etc.

Example: xConfiguration H320 Bonding Timer: Normal

xConfiguration H320 Downspeed

Select if ISDN Link can downspeed current calls when all available bandwidth is in use, and another outgoing call is requested from paired codec. Default value: On.

Value space: <On/Off>

On: Downspeed available.

Off: Downspeed ot available.

Example: xConfiguration H320 Downspeed: On

ISDN configuration

xConfiguration ISDN CliNumbPlan

Value to be used for calling party number field Plan in the ISDN setup message. If the value is set to 1, the numbering plan in the setup message will signal ISDN. This is required in the UAE (United Arab Emirates).

Value space: <0..14>

Range: Select a value between 0 and 14.

Example: `xConfiguration ISDN CliNumbPlan: 0`

xConfiguration ISDN CliNumbSpec

Select if calling party numbers should be enabled. Explicitly specify Calling Party Number fields Type/Plan to be used in outgoing calls in the ISDN setup message.

Value space: <Off/On>

Off: When set to Off, default values are used.

On: When set to on, the system will use the values set by "ISDN CliNumPlan" and "ISDN CliNumbType".

Example: `xConfiguration ISDN CliNumbSpec: Off`

xConfiguration ISDN CliNumbType

Value to be used for calling party number field Type. If the value is set to 2, the number type in the setup message will be set to National. This is required in the UAE (United Arab Emirates).

Value space: <0..6>

Range: Select a value between 0 and 6.

Example: `xConfiguration ISDN CliNumbType: 0`

xConfiguration ISDN HLC

Select if HLC (Higher Level Capability) information should be included in the setup message (video calls only).

Value space: <Off/On>

Off: When set to Off, no HLC information will be sent.

On: When set to On, the system will signal the type of call i.e. video call, telephony or data. HLC must be enabled to work with some PRI networks in Italy.

Example: `xConfiguration ISDN HLC: Off`

xConfiguration ISDN MSN

The use of MSN (Multiple Subscriber Number) enables the system to attach different ISDN terminals, with different numbers, to the same physical ISDN telephone line. This service can be ordered from your telephone company.

Value space: <Off/On>

Off: When set to Off, only calls to numbers specified for the specific ISDN interfaces will be answered.

On: Set to On to enable MSN on the video system when you have subscribed to a MSN service from your telephone company.

Example: `xConfiguration ISDN MSN: Off`

xConfiguration ISDN ParallelDial

Select if the channels in bonding calls should be connected in parallel or one by one.

Value space: <Off/On>

Off: When set to Off, channels will be dialled one by one, which may increase the dialling time.

On: When set to On, channels will be dialled and connected in parallel when setting up a bonding call.

Example: `xConfiguration ISDN ParallelDial: On`

xConfiguration ISDN SendComplete

Select if the ISDN message should contain sending complete information.

Value space: <Off/On>

Off: If set to Off The system will not send Sending Complete.

On: If set to On the system will send the ISDN message information element Sending Complete.

Example: `xConfiguration ISDN SendComplete: Off`

xConfiguration ISDN SendNumber

Select if the system should send its own number to the far end.

Value space: <Off/On>

Off: When set to Off, the system will not send its own numbers to the far end. Note that the network may still send your numbers to the far end.

On: When set to On, the system will send its own numbers to the far end.

Example: `xConfiguration ISDN SendNumber: On`

xConfiguration ISDN SpeechTimers

Select if speech timers should be active for ISDN Layer 3, telephony calls.

Value space: <Off/On>

Off: When set to Off, there will be no speech timers.

On: Set to On to enable speech timers (T310, T304, T301).

Example: `xConfiguration ISDN SpeechTimers: On`

xConfiguration ISDN SubAddress

Using a sub address enables you to connect up to eight ISDN terminals to the same ISDN telephone number and line. The terminals are addressed by using different sub addresses. To call a terminal with a sub address, separate the ISDN telephone number and the sub address with a * (asterisk). Note that this service has limited access on some ISDN networks.

Value space: <S: 0, 20>

Format: String with a maximum of 20 characters.

Example: `xConfiguration ISDN SubAddress: ""`

xConfiguration ISDN SubAddressSend

Using a sub address enables you to connect up to eight ISDN terminals to the same ISDN telephone number and line. The terminals are addressed by using different sub addresses. To call a terminal with a sub address, separate the ISDN telephone number and the sub address with a * (asterisk). Note that this service has limited access on some ISDN networks.

Value space: <Off/On>

Off: Set to Off to disable use of sub addresses.

On: When set to on, the system will use the values set by "ISDN SubAddress".

Example: `xConfiguration ISDN SubAddressSend: On`

xConfiguration ISDN BRI Alert

Select if the system should respond with an alert message to all incoming setup messages, or to the first incoming channel only.

Value space: <Off/On>

Off: When set to Off (default) the system will respond with an alert message only to the incoming setup message related to the initial channel. Note that if the PBX requires this signalling you will only get connected on the first incoming channel.

On: When set to On, the system will respond with an alert message to all incoming setup messages.

Example: `xConfiguration ISDN BRI Alert: Off`

xConfiguration ISDN BRI AutoActivation

Set the auto activation mode of the BRI interface (ISDN Layer 1).

Set AutoActivation to Off when connecting ISDN Link BRI lines to equipment that enforces deactivation of BRI lines that are not in use (power saving). This ensures that the ISDN Link does not keep trying to reactivate the BRI lines when they are unused. The BRI lines will be activated when making an outgoing call.

The ISDN Link will not report any layer 1 faults when AutoActivation is Off, since it cannot distinguish between a layer 1 fault caused by link deactivation of the attached equipment, and a real layer 1 fault.

If AutoActivation is not set to Off, and attached equipment enforces BRI deactivation, one may experience cyclic BRI errors, and not being able to make outgoing calls when those cyclic errors are active.

Value space: <Off/Selected/All>

Off: When set to Off, no interfaces will be activated.

Selected: When set to Selected, the system will activate the interfaces which are already on.

All: When set to All, the system will activate all interfaces regardless of status.

Example: `xConfiguration ISDN BRI AutoActivation: All`

xConfiguration ISDN BRI ChanId

Select if BRI Channel ID information should be sent to the PBX.

Value space: <Off/On>

Off: When set to Off, Channel ID information is not sent. Default setting is Off.

On: When set to On, the system will signal to the PBX which BRI channels is used for the call.
NOTE: This setting must be set to On, to work with an Ericsson MD110 PBX.

Example: `xConfiguration ISDN BRI ChanId: Off`

xConfiguration ISDN BRI InterfaceSearch

Selects whether to start searching for available B-channels from the highest numbered interface or from the lowest numbered interface.

Value space: <High/Low>

High: When set to High, the system will start searching for available B-channels from the highest numbered interface.

Low: When set to Low, the system will start searching for available B-channels from the lowest numbered interface.

Example: `xConfiguration ISDN BRI InterfaceSearch: High`

xConfiguration ISDN BRI MaxDeactiveTime

Set the maximum duration for Layer 1 in de-active state before auto activation (re)starts.

Value space: <1..60>

Range: Select a value between 1 and 60 seconds.

Example: `xConfiguration ISDN BRI MaxDeactiveTime: 5`

xConfiguration ISDN BRI SwitchType

Select the type of BRI switch the system is connected to.

Value space: <NI/ATT/Euro/Japan/1TR6/Australia/FETEX>

NI: Select NI if the switch is a National ISDN switch type.

ATT: Select ATT if the switch is an AT&T (for the U.S.) ISDN switch type.

Euro: Select Euro if the switch is an Euro (UK and others) ISDN switch type.

Japan: Select Japan if the switch is a Japanese ISDN switch type.

1TR6: Select 1TR6 if the switch is an 1TR6 switch type.

Australia: Select Australia if the switch is an Australian ISDN switch type.

FETEX: Select FETEX if the switch is a FETEX ISDN switch type.

Example: `xConfiguration ISDN BRI SwitchType: Euro`

xConfiguration ISDN BRI Interface [1..4] DirectoryNumber [1..2] Number

Configure the Directory Numbers for the various BRI interfaces.

Value space: <S: 0, 24>

Format: String with a maximum of 24 characters.

Example: `xConfiguration ISDN BRI Interface 1 DirectoryNumber 1 Number: ""`

xConfiguration ISDN BRI Interface [1..4] Mode

Select BRI interface 1 to 4, and set the BRI interface mode.

Value space: <Off/On>

Off: Set to Off to disable the selected BRI interface.

On: Set to On to enable the selected BRI interface.

Example: `xConfiguration ISDN BRI Interface 1 Mode: Off`

xConfiguration ISDN BRI Interface [1..4] SPID [1..2] Number

Configure the SPID Numbers for the various BRI interfaces.

Value space: <S: 0, 20>

Format: String with a maximum of 20 characters.

Example: `xConfiguration ISDN BRI Interface 1 SPID 1 Number: ""`

xConfiguration ISDN BRI Interface [1..4] TestLoopmode

Select BRI line test mode. This configuration should only be used in test scenarios. It is not persistent, and will restore to default setting after a restart. TestLoopmode is only effective if BRI is the active network.

Value space: <Off/Line/LineBChan>

Off: Normal operation (default).

Line: Loop BRI line back to the network.

LineBChan: Loop BRI B-channels back to the network.

Example: `xConfiguration ISDN BRI Interface 1 TestLoopmode: Off`

xConfiguration ISDN BRI Interface [1..4] TestPattern

Select whether a test pattern is sent. This configuration should only be used in test scenarios. It is not persistent, and will restore to default setting after a restart. TestPattern is only effective if BRI is the active network.

Value space: <Off/INFO1>

Off: Normal operation, no test pattern sent (default).

INFO1: Send INFO1 (00111111) test pattern.

Example: `xConfiguration ISDN BRI Interface 1 TestPattern: Off`

xConfiguration ISDN PRI Alert

Select if the system should respond with an alert message to all incoming setup messages, or to the first incoming channel only.

Value space: <Off/On>

Off: When set to Off (default) the system will respond with an alert message only to the incoming setup message related to the initial channel. Note that if the PBX requires this signalling you will only get connected on the first incoming channel.

On: When set to On, the system will respond with an alert message to all incoming setup messages.

Example: `xConfiguration ISDN PRI Alert: Off`

xConfiguration ISDN PRI ChanId

Select if PRI Channel ID information should be sent to the PXB.

Value space: <Off/On>

Off: When set to Off, Channel ID information is not sent. Default setting is Off.

On: When set to On, the system will signal to the PBX which PRI channels is used for the call. NOTE: This setting must be set to On, to work with an Ericsson MD110 PBX.

Example: `xConfiguration ISDN PRI ChanId: Off`

xConfiguration ISDN PRI InitialRestart

Select if the system should re-initialize the PRI interfaces after the system has been restarted.

Value space: <Off/On>

Off: When set to Off, the PRI interface will not be re-initialized after restart.

On: When set to On, the PRI interfaces will be re-initialized after restart of the system.

Example: `xConfiguration ISDN PRI InitialRestart: On`

xConfiguration ISDN PRI L2WindowSize

Set Layer 2 window size (ISDN Layer 2).

Value space: <1..7>

Range: Select a value between 1 and 7.

Example: `xConfiguration ISDN PRI L2WindowSize: 7`

xConfiguration ISDN PRI SwitchType

Selects the type of PRI switch the system is connected to.

Value space: <NI/ATT/Euro/Japan>

NI: Select NI if the switch is a National ISDN switch type.

ATT: Select ATT if the switch is an AT&T (for the U.S.) ISDN switch type.

Euro: Select Euro if the switch is an Euro (UK and others) ISDN switch type.

Japan: Select Japan if the switch is a Japanese ISDN switch type.

Example: `xConfiguration ISDN PRI SwitchType: NI`

xConfiguration ISDN PRI Interface [1..1] HighChannel

Set the highest numbered B-channel that may be used by the system when selecting channels for outgoing calls.

Value space: <1..31>

Range: Select a value between 1 and 31.

Example: `xConfiguration ISDN PRI Interface 1 HighChannel: 31`

xConfiguration ISDN PRI Interface [1..1] LowChannel

Set the lowest numbered B-channel that may be used by the system when selecting channels for outgoing calls.

Value space: <1..31>

Range: Select a value between 1 and 31.

Example: `xConfiguration ISDN PRI Interface 1 LowChannel: 1`

xConfiguration ISDN PRI Interface [1..1] MaxChannels

Set the maximum number of channels the system may use at any given time.

Value space: <1..30>

Range: Select a value between 1 and 30.

Example: `xConfiguration ISDN PRI Interface 1 MaxChannels: 23`

xConfiguration ISDN PRI Interface [1..1] NumberRangeStart

If the PRI line has a range of numbers, the first number in the range should be entered in the Number Range Start field.

Value space: <S: 0, 24>

Format: String with a maximum of 24 characters.

Example: `xConfiguration ISDN PRI Interface 1 NumberRangeStart: ""`

xConfiguration ISDN PRI Interface [1..1] NumberRangeStop

If the PRI line has a range of numbers, the last number in the range is entered in the Number Range Stop field.

Value space: <S: 0, 24>

Format: String with a maximum of 24 characters.

Example: `xConfiguration ISDN PRI Interface 1 NumberRangeStop: ""`

xConfiguration ISDN PRI Interface [1..1] Search

Selects whether to start searching for available B-channels from the highest numbered channel or from the lowest numbered channel.

Value space: <High/Low>

High: When set to High, the system will start searching for available B-channels from the highest numbered channel.

Low: When set to Low, the system will start searching for available B-channels from the lowest numbered channel.

Example: `xConfiguration ISDN PRI Interface 1 Search: High`

xConfiguration ISDN PRI NSFTelephony Mode

Configure the NSF (Network Service Facility) mode for telephony.

Value space: <Off/On>

Off: Set to Off to disable Network Service Facility for telephony.

On: Set to On, to enable Network Service Facility for telephony.

Example: `xConfiguration ISDN PRI NSFTelephony Mode: Off`

xConfiguration ISDN PRI NSFTelephony Number

Defines what Service Facility to use for telephony. Requires the NSFTelephony Mode set to On.

Service profiles for AT&T (ref. 1):

NSF Service

0 Disable

1 SDN (including GSDN)

2 Toll Free Megacom (800)

3 Megacom

6 ACCUNET Switched Digital Service (including Switched Digital International)

7 Long Distance Service (including AT&T World Connect)

8 International Toll Free Service (I800)

16 AT&T MultiQuest

23 Call Redirection Service

Service profiles for Sprint (ref. 2):

NSF Service

0 Reserved

1 Private

2 Inwatts

3 Outwatts

4 FX

5 TieTrunk

Service profiles for MCI (ref. 3):

NSF Service

1 VNET/Vision

2 800

3 PRISM1, PRISMII, WATS

4 900

5 DAL

Value space: <0..31>

Range: Select a value between 0 and 31.

Example: `xConfiguration ISDN PRI NSFTelephony Number: 0`

xConfiguration ISDN PRI NSFVideoTelephony Mode

Configure the NSF (Network Service Facility) mode for video telephony.

Value space: <Off/On>

Off: Set to Off, to disable Network Service Facility for video telephony.

On: Set to On, to enable Network Service Facility for video telephony.

Example: `xConfiguration ISDN PRI NSFVideoTelephony Mode: Off`

xConfiguration ISDN PRI NSFVideoTelephony Number

Defines what Service Facility to use for video telephony. Requires NSFVideoTelephony Mode set to On.

Value space: <0..31>

Range: Select a value between 0 and 31.

Example: `xConfiguration ISDN PRI NSFVideoTelephony Number: 0`

xConfiguration ISDN PRI Interface 1 TestClockmode

Set the PRI line to use either an external or an internal clock. This configuration should only be used in test scenarios. It is not persistent, and will restore to default setting after a restart. TestClockmode is only effective if PRI is the active network.

Value space: <External/Internal>

External: Synchronize on external clock from network (default).

Internal: Synchronize on internal clock.

Example: `xConfiguration ISDN PRI Interface 1 TestClockmode: External`

xConfiguration ISDN PRI Interface 1 TestLoopmode

Select PRI test loop mode. This configuration should only be used in test scenarios. It is not persistent, and will restore to default setting after a restart. TestLoopmode is only effective if PRI is the active network.

Value space: <Off/Line/LineBChan/LinePayload/Internal>

Off: Normal operation (default).

Line: Loop PRI line back unmodified to the network.

LineBChan: Loop PRI B-channels back to the network.

LinePayload: Loop PRI-B/D-channels back to the network .

Internal: Loop PRI TX line back to the RX line internally, in effect receiving the same as transmitting. Transmitted data on PRI interface is still sent to the network.

Example: `xConfiguration ISDN PRI Interface 1 TestLoopmode: Off`

xConfiguration ISDN PRI Interface 1 TestShutdown

Enable or disable shutdown of the PRI interface. This configuration should only be used in test scenarios. It is not persistent, and will restore to default setting after a restart. TestShutdown is only effective if PRI is the active network.

Value space: <Off/On>

Off: Normal operation (default).

On: Activate shutdown, i.e. send AIS (blue alarm) towards the network.

Example: `xConfiguration ISDN PRI Interface 1 TestShutdown: Off`

Network configuration

xConfiguration Network [1..1] Assignment

Define how the system will obtain its IPv4 address and the default gateway address. This setting only applies to systems on IPv4.

Value space: <Static/DHCP>

Static: Set the network assignment to Static and configure the static IPv4 settings (IP Address, Gateway, SubnetMask).

DHCP: The systems addresses are automatically assigned by the DHCP server.

Example: `xConfiguration Network 1 Assignment: DHCP`

xConfiguration Network [1..1] IPStack

Select which internet protocols the system will support.

NOTE: Even if IPv4 is selected, the ISDN Link will use IPv6 link for local traffic with the paired codec when operating in auto pairing mode (default). It is important that the paired codec also allows IPv6 link for local traffic, otherwise it will fail to pair with the ISDN Link.

Value space: <IPv4/IPv6>

IPv4: IP version 4 is supported.

IPv6: IP version 6 is supported, and the IPv4 settings (IP Address, IP Subnet Mask and Gateway) will be disabled.

Example: `xConfiguration Network 1 IPStack: IPv4`

xConfiguration Network [1..1] MTU

Set the Ethernet MTU (Maximum Transmission Unit).

NOTE: When operating in auto pairing mode (default), MTU size must not be set below 1280. This is due to use of IPv6, which requires minimum MTU to be 1280 bytes.

Value space: <576..1500>

Range: Select a value from 576 to 1500 bytes.

Example: `xConfiguration Network 1 MTU: 1500`

xConfiguration Network [1..1] RemoteAccess Allow

Filter IP addresses for access.

NOTE: When operating in auto pairing mode, ssh is used for communication between the codec and ISDN Link (pairing and web access from codec). This communication takes place with IPv4 and/or IPv6 and IPv6 link local addresses. If remote access is configured incorrectly or there are changes to the network infrastructure, you may need to connect to the serial port to regain remote access.

Value space: <S: 0, 255>

Format: String with a maximum of 255 characters, space separated IP addresses or an IP range.

Example: `xConfiguration Example 1: Limiting remote access to one codec in a static environment.`

Network 1 RemoteAccess Allow: "192.168.0.1 2001:420:44ff:fd2d:c267:afff:fe58:86e2/64 fe80::c267:afff:fe58:86e2/64"

Example 2: Limiting remote access to the local network, for example when using DHCP.

Network 1 RemoteAccess Allow: "192.168.0.0/24 2001:420:44ff::/48 fe80::/10"

xConfiguration Network [1..1] DNS Domain Name

DNS Domain Name is the default domain name suffix which is added to unqualified names.

Example: If the DNS Domain Name is "domain.com" and the name to lookup is "MyVideoSystem", this will result in the DNS lookup "MyVideoSystem.domain.com".

Value space: <S: 0, 64>

Format: String with a maximum of 64 characters.

Example: `xConfiguration Network 1 DNS Domain Name: ""`

xConfiguration Network [1..1] DNS Server [1..3] Address

Define the network addresses for DNS servers. Up to 3 addresses may be specified. If the network addresses are unknown, contact your administrator or Internet Service Provider.

Value space: <S: 0, 64>

Format: String with a maximum of 64 characters.

Example: `xConfiguration Network 1 DNS Server 1 Address: ""`

xConfiguration Network [1..1] IPv4 Address

Enter the static IPv4 network address for the system. Only applicable if the Network Assignment is set to Static.

Value space: <S: 0, 64>

Format: Only the valid IP address format is accepted. Any IP address that contains letters (192.a.2.0) or unvalid IP addresses (192.0.1234.0) will be rejected.

Example: `xConfiguration Network 1 IPv4 Address: "192.168.0.1"`

xConfiguration Network [1..1] IPv4 Gateway

Define the IPv4 network gateway. Only applicable if the Network Assignment is set to Static.

Value space: <S: 0, 64>

Format: Compact string with a maximum of 64 characters.

Example: `xConfiguration Network 1 IPv4 Gateway: "192.168.1.0"`

xConfiguration Network [1..1] IPv4 SubnetMask

Define the IPv4 network subnet mask. Only applicable if the Network Assignment is set to Static.

Value space: <S: 0, 64>

Format: Compact string with a maximum of 64 characters.

Example: `xConfiguration Network 1 IPv4 SubnetMask: "255.255.255.0"`

xConfiguration Network [1..1] IPv6 Address

Enter the static IPv6 network address for the system. Only applicable if the Network IPv6 Assignment is set to Static.

Value space: <S: 0, 64>

Format: The IPv6 address of host name.

Example: `xConfiguration Network 1 IPv6 Address: "ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff"`

xConfiguration Network [1..1] IPv6 Assignment

Define how the system will obtain its IPv6 address and the default gateway address. This setting only applies to systems on IPv6.

Value space: <Static/DHCPv6/Autoconf>

Static: The codec and gateway IP-addresses must be configured manually using the Network IPv6 Address and Network IPv6 Gateway settings. The options, for example NTP and DNS server addresses, must either be set manually or obtained from a DHCPv6 server. The Network IPv6 DHCPOptions setting determines which method to use.

DHCPv6: All IPv6 addresses, including options, will be obtained from a DHCPv6 server. See RFC3315 for a detailed description. The Network IPv6 DHCPOptions setting will be ignored.

Autoconf: Enable IPv6 stateless autoconfiguration of the IPv6 network interface. See RFC4862 for a detailed description. The options, for example NTP and DNS server addresses, must either be set manually or obtained from a DHCPv6 server. The Network IPv6 DHCPOptions setting determines which method to use.

Example: `xConfiguration Network 1 IPv6 Assignment: Autoconf`

xConfiguration Network [1..1] IPv6 Dhchoptions

Retrieves a set of DHCP options from a DHCPv6 server.

Value space: <Off/On>

Off: Set to Off when the IPv6 Assignment setting is set to Static.

On: Enable the retrieval of a selected set of DHCP options from a DHCPv6 server.

Example: `xConfiguration Network 1 IPv6 Dhchoptions: On`

xConfiguration Network [1..1] IPv6 Gateway

Define the IPv6 network gateway address. Only applicable if the Network IPv6 Assignment is set to Static.

Value space: <S: 0, 64>

Format: The IPv6 address of host name.

Example: `xConfiguration Network 1 IPv6 Gateway: "ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff"`

xConfiguration Network [1..1] Link Endpoint

Set the Ethernet link speed for the Endpoint PHY port on ISDN Link.

Value space: <Auto/10half/10full/100half/100full/1000full>

Auto: Autonegotiate link speed.

10half: Force link to 10 Mbps half-duplex.

10full: Force link to 10 Mbps full-duplex.

100half: Force link to 100 Mbps half-duplex.

100full: Force link to 100 Mbps full-duplex.

1000full: Force link to 1 Gbps full-duplex.

Example: `xConfiguration Network 1 Link Endpoint: Auto`

xConfiguration Network [1..1] Link Network

Set the Ethernet link speed for the LAN PHY port on ISDN Link.

Value space: <Auto/10half/10full/100half/100full/1000full>

Auto: Autonegotiate link speed.

10half: Force link to 10 Mbps half-duplex.

10full: Force link to 10 Mbps full-duplex.

100half: Force link to 100 Mbps half-duplex.

100full: Force link to 100 Mbps full-duplex.

1000full: Force link to 1 Gbps full-duplex.

Example: `xConfiguration Network 1 Link Network: Auto`

xConfiguration Network [1..1] QoS Mode

The QoS (Quality of Service) is a method which handles the priority of audio, video, data, etc. in the network. The QoS settings must be supported by the infrastructure. Diffserv (Differentiated Services) is a computer networking architecture that specifies a simple, scalable and coarse-grained mechanism for classifying, managing network traffic and providing QoS priorities on modern IP networks.

Value space: <Off/Diffserv>

Off: No QoS method is used.

Diffserv: When you set the QoS Mode to Diffserv you must configure the Diffserv sub menu settings (Audio, Data, Signalling, Video, ICMPv6 and NTP).

Example: `xConfiguration Network 1 QoS Mode: Diffserv`

xConfiguration Network [1..1] QoS Diffserv Audio

The Diffserv Audio defines which priority Audio packets should have in an IP network. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.

Value space: <0..63>

Range: Select a value from 0 to 63. A recommended value for Audio packets is Diffserv Code Point (DSCP) AF41, which equals the value 34. If in doubt, contact your network administrator.

Example: `xConfiguration Network 1 QoS Diffserv Audio: 0`

xConfiguration Network [1..1] QoS Diffserv Data

The Diffserv Data defines which priority Data packets should have in an IP network. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.

Value space: <0..63>

Range: Select a value from 0 to 63. A recommended value for Data packets is Diffserv Code Point (DSCP) AF23, which equals the value 22. If in doubt, contact your network administrator.

Example: `xConfiguration Network 1 QoS Diffserv Data: 0`

xConfiguration Network [1..1] QoS Diffserv ICMPv6

The Diffserv ICMPv6 defines which priority ICMPv6 packets should have in an IP network. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.

Value space: <0..63>

Range: Select a value from 0 to 63. A recommended value for ICMPv6 packets is Diffserv Code Point (DSCP) CS7, which equals the value 56. If in doubt, contact your network administrator.

Example: `xConfiguration Network 1 QoS Diffserv ICMPv6: 0`

xConfiguration Network [1..1] QoS Diffserv NTP

The Diffserv NTP defines which priority NTP packets should have in an IP network. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.

Value space: <0..63>

Range: Select a value from 0 to 63. A recommended value for NTP packets is Diffserv Code Point (DSCP) CS7, which equals the value 56. If in doubt, contact your network administrator.

Example: `xConfiguration Network 1 QoS Diffserv NTP: 0`

xConfiguration Network [1..1] QoS Diffserv Signalling

The Diffserv Signalling defines which priority Signalling packets should have in an IP network. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.

Value space: <0..63>

Range: Select a value from 0 to 63. A recommended value for Signalling packets is Diffserv Code Point (DSCP) AF31, which equals the value 26. If in doubt, contact your network administrator.

Example: `xConfiguration Network 1 QoS Diffserv Signalling: 0`

xConfiguration Network [1..1] QoS Diffserv Video

The Diffserv Video defines which priority Video packets should have in an IP network. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.

Value space: <0..63>

Range: Select a value from 0 to 63. A recommended value for Video packets is Diffserv Code Point (DSCP) AF41, which equals the value 34. If in doubt, contact your network administrator.

Example: `xConfiguration Network 1 QoS Diffserv Video: 0`

xConfiguration Network [1..1] VLAN Voice Mode

Set the VLAN voice mode.

NOTE: The ISDN Link and the TelePresence endpoint must be configured for the same VLAN. First configure the ISDN Link, then configure the endpoint. If done opposite, or if configured to different VLANs, the two devices will lose contact and you will need to connect to the ISDN Link through the serial interface to complete the VLAN configuration. When set to Auto on both devices, the CDP provisioner on the network, if present, will take care of the VLAN configuration.

NOTE: If configuring the TelePresence endpoint for provisioning to CUCM, note that the VLAN Voice Mode is automatically set to Auto on the endpoint when the Provisioning Mode is set to CUCM. In cases like this: First set the VLAN Voice Mode to Auto on ISDN Link, then configure the TelePresence endpoint for provisioning to CUCM.

Value space: <Auto/Manual/Off>

Auto: The Cisco Discovery Protocol (CDP), if available, assigns an id to the voice VLAN. If CDP is not available, VLAN is not enabled.

Manual: If the ISDN Link is paired with a TelePresence endpoint; first set the VLAN Voice VlanId, then set the VLAN Voice Mode to Manual. The VLAN Voice ID is set manually using the Network VLAN Voice VlanId setting. If CDP is available, the manually set value will be overruled by the value assigned by CDP.

Off: VLAN is not enabled.

Example: `xConfiguration Network 1 VLAN Voice Mode: Off`

xConfiguration Network [1..1] VLAN Voice VlanId

Set the VLAN voice ID. This setting will only take effect if VLAN Voice Mode is set to Manual.

Value space: <1..4094>

Range: Select a value from 1 to 4094.

Example: `xConfiguration Network 1 VLAN Voice VlanId: 1`

NetworkServices configuration

xConfiguration NetworkServices SSH Mode

SSH (or Secure Shell) protocol can provide secure encrypted communication between the codec and your local computer.

Value space: <Off/On>

Off: If disabling SSH Mode and operating in automatic pairing mode, it will no longer be possible to manage the ISDN Link via the TelePresence endpoint's web interface.

On: The SSH mode is enabled.

Example: `xConfiguration NetworkServices SSH Mode: On`

xConfiguration NetworkServices NTP Address

Enter the NTP Address to define the network time protocol server address. This address will be used if NTP Mode is set to Manual, or if set to Auto and no address is supplied by a DHCP server.

Value space: <S: 0, 64>

Format: String with a maximum of 64 characters.

Example: `xConfiguration NetworkServices NTP Address: "0.tandberg.pool.ntp.org"`

xConfiguration NetworkServices NTP Mode

The Network Time Protocol (NTP) is used to synchronize the time of the system to a reference time server.

Value space: <Off/Auto/Manual>

Off: The system will not use an NTP server.

Auto: The system will use the NTP server, by which address is supplied from the DHCP server in the network. If no DHCP server is used, or the DHCP server does not provide the system with a NTP server address, the system will use the static defined NTP server address specified by the user.

Manual: The system will always use the static defined NTP server address specified by the user.

Example: `xConfiguration NetworkServices NTP Mode: Manual`

Security configuration

xConfiguration Security Session InactivityTimeout

NOTE: Changing this parameter does not take effect for users that are already logged in.

Determines how long the system will accept inactivity from the user before the user is automatically logged out.

Value space: <0..10000>

Range: Select a value from 0 to 10000 minutes. 0 means that inactivity will not enforce automatically logout.

Example: `xConfiguration Security Session InactivityTimeout: 0`

SIP configuration

xConfiguration SIP Profile [1..1] DefaultTransport

NOTE: Only applicable when used in manual pairing mode.

Select the transport protocol to be used over the LAN.

Value space: <UDP/TCP/Tls/Auto>

UDP: The system will always use UDP as the default transport method.

TCP: The system will always use TCP as the default transport method.

Tls: The system will always use TLS as the default transport method.

Auto: The system will try to connect using transport protocols in the following order: TLS, TCP, UDP.

Example: `xConfiguration SIP Profile 1 DefaultTransport: Auto`

xConfiguration SIP Profile [1..1] Outbound

NOTE: Only applicable when used in manual pairing mode.

The client initiated connections mechanism for firewall traversal, connection reuse and redundancy. The current version supports <http://tools.ietf.org/html/draft-ietf-sip-outbound-20>.

Value space: <Off/On>

Off: Connect to the single proxy configured first in Proxy Address list.

On: Set up multiple outbound connections to servers in the Proxy Address list.

Example: `xConfiguration SIP Profile 1 Outbound: Off`

xConfiguration SIP Profile [1..1] Type

NOTE: Only applicable when used in manual pairing mode.

Enables SIP extensions and special behaviour for a vendor or provider.

Value space: <Standard/Alcatel/Avaya/Cisco/Microsoft/Nortel/Broadsoft>

Standard: To be used when registering to standard SIP Proxy (tested with Cisco TelePresence VCS and Broadsoft)

Alcatel: To be used when registering to Alcatel-Lucent OmniPCX Enterprise. NOTE: This mode is not fully supported.

Avaya: To be used when registering to Avaya Communication Manager. NOTE: This mode is not fully supported.

Cisco: To be used when registering to Cisco Unified Communication Manager.

Microsoft: To be used when registering to Microsoft LCS or OCS. NOTE: This mode is not fully supported.

Nortel: To be used when registering to Nortel MCS 5100 or MCS 5200 PBX. NOTE: This mode is not fully supported.

Broadsoft: To be used when registering to Broadsoft.

Example: `xConfiguration SIP Profile 1 Type: Standard`

xConfiguration SIP Profile [1..1] URI

NOTE: Only applicable when used in manual pairing mode.

The SIP URI or number is used to address the system. This is the URI that is registered and used by the SIP services to route inbound calls to the system. A Uniform Resource Identifier (URI) is a compact string of characters used to identify or name a resource.

Value space: <S: 0, 255>

Format: Compact string with a maximum of 255 characters.

Example: `xConfiguration SIP Profile 1 URI: "sip:firstname.lastname@domain.com"`

xConfiguration SIP Profile [1..1] Authentication [1..1] LoginName

NOTE: Only applicable when used in manual pairing mode.

This is the user name part of the credentials used to authenticate towards the SIP proxy.

Value space: <S: 0, 128>

Format: String with a maximum of 128 characters.

Example: `xConfiguration SIP Profile 1 Authentication 1 LoginName: ""`

xConfiguration SIP Profile [1..1] Authentication [1..1] Password

NOTE: Only applicable when used in manual pairing mode.

This is the password part of the credentials used to authenticate towards the SIP proxy.

Value space: <S: 0, 128>

Format: String with a maximum of 128 characters.

Example: `xConfiguration SIP Profile 1 Authentication 1 Password:`

xConfiguration SIP Profile [1..1] Proxy [1..4] Address

NOTE: Only applicable when used in manual pairing mode.

The Proxy Address is the manually configured address for the outbound proxy. It is possible to use a fully qualified domain name, or an IP address. The default port is 5060 for TCP and UDP but another one can be provided. If Outbound is enabled, multiple proxies can be addressed.

Value space: <S: 0, 255>

Format: Compact string with a maximum of 255 characters. An IP address that contains letters (192.a.2.0) or invalid IP addresses (192.0.1234.0) will be rejected.

Example: `xConfiguration SIP Profile 1 Proxy 1 Address: ""`

xConfiguration SIP Profile [1..1] Proxy [1..4] Discovery

NOTE: Only applicable when used in manual pairing mode.

Select if the SIP Proxy address is to be obtained manually or by using Dynamic Host Configuration Protocol (DHCP).

Value space: <Auto/Manual>

Auto: When Auto is selected, the SIP Proxy address is obtained using Dynamic Host Configuration Protocol (DHCP).

Manual: When Manual is selected, the manually configured SIP Proxy address will be used.

Example: `xConfiguration SIP Profile 1 Proxy 1 Discovery: Manual`

SystemUnit configuration

xConfiguration SystemUnit Name

Enter the name of the unit. Is used to identify the unit in various scenarios.

Value space: <S: 0, 50>

Format: String with a maximum of 50 characters.

Example: `xConfiguration SystemUnit Name: "ISDN Link"`

T1 configuration

xConfiguration T1 Interface [1..1] CableLength

Specifies the length of the cable connected to the T1 interface.

Value space: <Range1/Range2/Range3/Range4/Range5>

Range1: 0-133 ft (0-40 m)

Range2: 133-266 ft (40-81 m)

Range3: 266-399 ft (81-122 m)

Range4: 399-533 ft (122-162 m)

Range5: 533-655 ft (162-200 m)

Example: xConfiguration T1 Interface 1 CableLength: Range1;

Time configuration

xConfiguration Time Zone

Set the time zone where the system is located, using Windows time zone description format.

Value space: See the following list:

GMT-12:00 (International Date Line West)

GMT-11:00 (Midway Island, Samoa)

GMT-10:00 (Hawaii)

GMT-09:00 (Alaska)

GMT-08:00 (Pacific Time (US & Canada); Tijuana)

GMT-07:00 (Arizona)

GMT-07:00 (Mountain Time (US & Canada))

GMT-07:00 (Chihuahua, La Paz, Mazatlan)

GMT-06:00 (Central America)

GMT-06:00 (Saskatchewan)

GMT-06:00 (Guadalajara, Mexico City, Monterrey)

GMT-06:00 (Central Time (US & Canada))

GMT-05:00 (Indiana (East))

GMT-05:00 (Bogota, Lima, Quito)

GMT-05:00 (Eastern Time (US & Canada))

GMT-04:30 (Caracas)

GMT-04:00 (La Paz)

GMT-04:00 (Santiago)

GMT-04:00 (Atlantic Time (Canada))

GMT-03:30 (Newfoundland)

GMT-03:00 (Buenos Aires, Georgetown)

GMT-03:00 (Greenland)

GMT-03:00 (Brasilia)

GMT-02:00 (Mid-Atlantic)

GMT-01:00 (Cape Verde Is.)
 GMT-01:00 (Azores)
 GMT (Casablanca, Monrovia)
 GMT (Coordinated Universal Time)
 GMT (Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London)
 GMT+01:00 (West Central Africa)
 GMT+01:00 (Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna)
 GMT+01:00 (Brussels, Copenhagen, Madrid, Paris)
 GMT+01:00 (Sarajevo, Skopje, Warsaw, Zagreb)
 GMT+01:00 (Belgrade, Bratislava, Budapest, Ljubljana, Prague)
 GMT+02:00 (Harare, Pretoria)
 GMT+02:00 (Jerusalem)
 GMT+02:00 (Athens, Istanbul, Minsk)
 GMT+02:00 (Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius)
 GMT+02:00 (Cairo)
 GMT+02:00 (Bucharest)
 GMT+03:00 (Nairobi)
 GMT+03:00 (Kuwait, Riyadh)
 GMT+03:00 (Moscow, St. Petersburg, Volgograd)
 GMT+03:00 (Baghdad)
 GMT+03:30 (Tehran)
 GMT+04:00 (Abu Dhabi, Muscat)
 GMT+04:00 (Baku, Tbilisi, Yerevan)
 GMT+04:30 (Kabul)
 GMT+05:00 (Islamabad, Karachi, Tashkent)
 GMT+05:00 (Ekaterinburg)
 GMT+05:30 (Chennai, Kolkata, Mumbai, New Delhi)
 GMT+05:45 (Kathmandu)
 GMT+06:00 (Sri Jayawardenepura)

GMT+06:00 (Astana, Dhaka)
 GMT+06:00 (Almaty, Novosibirsk)
 GMT+06:30 (Rangoon)
 GMT+07:00 (Bangkok, Hanoi, Jakarta)
 GMT+07:00 (Krasnoyarsk)
 GMT+08:00 (Perth)
 GMT+08:00 (Taipei)
 GMT+08:00 (Kuala Lumpur, Singapore)
 GMT+08:00 (Beijing, Chongqing, Hong Kong, Urumqi)
 GMT+08:00 (Irkutsk, Ulaan Bataar)
 GMT+09:00 (Osaka, Sapporo, Tokyo)
 GMT+09:00 (Seoul)
 GMT+09:00 (Yakutsk)
 GMT+09:30 (Darwin)
 GMT+09:30 (Adelaide)
 GMT+10:00 (Guam, Port Moresby)
 GMT+10:00 (Brisbane)
 GMT+10:00 (Vladivostok)
 GMT+10:00 (Hobart)
 GMT+10:00 (Canberra, Melbourne, Sydney)
 GMT+11:00 (Magadan, Solomon Is., New Caledonia)
 GMT+12:00 (Fiji, Kamchatka, Marshall Is.)
 GMT+12:00 (Auckland, Wellington)
 GMT+13:00 (Nuku alofa)

Range: Select a time zone from the listed time zones. If using a command line interface watch up for typos.

Example: xConfiguration Time Zone: "GMT (Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London)"



Experimental configuration

The Experimental commands are for testing only and should not be used unless agreed with Cisco. These settings are not documented and WILL change in later releases.

Description of the xCommand commands

Description of the xCommand commands

In the following pages you will find a complete list of the xCommand commands. The examples shows either the default value or an example of a value.

Boot commands

xCommand Boot

Run the command to reboot (restart) the ISDN Link.

Example:

```
xCommand Boot
*r BootResult (status=OK):
** end

OK

CUIL reboot request, restarting.
```

PairRestart commands

xCommand PairRestart

Reset the pairing between the ISDN Link and the endpoint (codec). If using the ISDN Link in automatic pairing mode, and you need to enforce a restart of the automatic pairing process, you can connect through the serial port or, if you know the IP address, over Ethernet using SSH.

The command is non-tab completable, requiring confirmation in order to execute.

Parameters:

Confirm(r): <Yes>

Example:

```
xCommand PairRestart Confirm: "Yes"
OK
*r PairRestartResult (status=OK)
** end
```

Security commands

xCommand Security FIPSMODE Activate

Run the command to activate FIPS (140-2) mode. The ISDN Link will automatically restart after the command has been issued, and when up and running again the ISDN Link is in FIPS mode.

NOTE: When the ISDN Link is in FIPS mode it will not be possible to log in to the unit, or manage from the TelePresence endpoint's web interface. Software cannot be uploaded and system configuration cannot be changed. To exit FIPS mode a factory reset must be performed. This will reset all settings to factory defaults and files uploaded to the ISDN Link will be deleted. The ISDN Link must be fully reconfigured after a factory reset. For details on factory reset see the "How to factory reset the ISDN Link" in the Appendices.

The command is non-tab completable, requiring confirmation in order to execute.

Parameters:

Confirm(r): <Yes>

Example:

```
xCommand Security FIPSMODE Activate Confirm: "Yes"
OK
*r SecurityFIPSMODEActivateResult (status=OK)
** end
```

SystemUnit commands

xCommand SystemUnit AdminPassword Set

Set an administrator password to restrict access to the ISDN Link.

Parameters:

Password(r): <S: 0, 64>

Example:

```
xCommand SystemUnit AdminPassword Set Password: ""
*r SystemUnitAdminPasswordSetResult (status=OK):
** end
```

xCommand SystemUnit DateTime Set

Set the date and time for the system, if not available from NTP (Network Time Protocol). See the xConfiguration NetworkServices NTP Mode

Parameters:

Year: <2008..2037>

Month: <1..12>

Day: <1..31>

Hour: <0..23>

Minute: <0..59>

Second: <0..59>

Example:

```
xCommand SystemUnit DateTime Set Year:2012 Month:7 Day:1 Hour:12 Minute:0
Second:0
*r SystemUnitDateTimeSetResult (status=OK):
** end
```

xCommand SystemUnit DateTime Get

Read the time and date from the system.

Example:

```
xCommand SystemUnit DateTime get
*r SystemUnitDateTimeGetResult (status=OK):
  Year: 2012
  Month: 7
  Day: 1
  Hour: 12
  Minute: 0
  Second: 0
** end
```

xCommand SystemUnit FactoryReset

Run the command to factory reset the ISDN Link. The ISDN Link will automatically restart after the command has been issued. NOTE: The call logs will be deleted and all system parameters will be reset to default values. All files that have been uploaded to the ISDN Link will be deleted. For details on factory reset see the "How to factory reset the ISDN Link" in the Appendices.

The command is non-tab completable, requiring confirmation in order to execute.

Parameters:

Confirm(r): <Yes>

Example:

```
xCommand SystemUnit FactoryReset Confirm: Yes
*r SystemUnitFactoryResetResult (status=OK):
** end
```

xCommand SystemUnit SoftwareUpgrade

Initiate a software upgrade by fetching the software on a given URL. If the server requires username and password these parameters must be included.

Parameters:

URL(r): <S: 0, 255>

UserName: <S: 0, 255>

Password: <S: 0, 255>

Example:

```
xCommand SystemUnit SoftwareUpgrade URL: "http://<ip.address.
of.server>/<filename>" UserName: "" Password: ""
*r SystemUnitSoftwareUpgradeResult (status=OK):
** end
```

Description of the xStatus commands

Description of the xStatus commands

In the following pages you will find a complete list of the xStatus commands. The examples shows either the default value or an example of a value.

Call status

ISDN Link operates as a gateway between a Caller and a Callee. Thus xStatus referring to "Caller" is about the calling party or the connection between the calling party and the ISDN Link. Similarly xStatus referring to "Callee" is about the called party or the connection between the ISDN Link and the called party.

xStatus Call [1..n] Status

Shows the status of a call.

Idle: The system is in idle status.

Initializing: The call is initializing.

Accepted: The call has been accepted.

Active: The call is active.

Disconnecting: The call is disconnecting.

Example:

```
xStatus Call 20 Status
*s Call 20 Status: Active
** end
```

xStatus Call [1..n] CallType

Shows the call type of the incoming or outgoing call.

Video: The call type is video.

Audio: The call type is audio.

Example:

```
xStatus Call 20 CallType
*s Call 20 CallType: Video
** end
```

xStatus Call [1..n] Duration

Shows the duration of a call (in seconds).

Format: Integer.

Example:

```
xStatus Call 20 Duration
*s Call 20 Duration: 2354
** end
```

xStatus Call [1..n] Caller Status

xStatus Call [1..n] Callee Status

Shows the call status between the calling party and the ISDN Link (Caller Status) or between the ISDN Link and the called party (Callee Status).

Idle: The system is in idle status.

Dialling: The system is dialling.

Ringing: The system is ringing.

Connecting: The system is connecting.

Connected: The system is connected.

Disconnecting: The system is disconnecting.

Unknown: The call status is unknown.

Example:

```
xStatus Call 20 Caller Status
*s Call 20 Caller Status: Connected
** end
```


xStatus Call [1..n] Caller Protocol

xStatus Call [1..n] Callee Protocol

Shows the call protocol being used between the calling party and the ISDN Link (Caller Protocol) or between the ISDN Link and the called party (Callee Protocol). In a command line interface, you can find the call identity by running the xStatus Call command.

Format: String.

Example:

```
xStatus Call 20 Callee Protocol
*s Call 20 Callee Protocol: "H320"
** end
```

xStatus Call [1..n] Caller RemoteNumber

xStatus Call [1..n] Callee RemoteNumber

Shows the number or URI of the calling party (Caller RemoteNumber) or called party (Callee RemoteNumber).

Format: String.

Example:

```
xStatus Call 20 Callee RemoteNumber
*s Call 20 Callee RemoteNumber: "1234"
** end
```

xStatus Call [1..n] Caller CallbackNumber

xStatus Call [1..n] Callee CallbackNumber

Shows the number or URI that ISDN Link shall use when calling back to the calling party (Caller CallbackNumber) or called party (Callee CallbackNumber).

Format: String.

Example:

```
xStatus Call 20 Callee CallbackNumber
*s Call 20 Callee CallbackNumber: "h320:1234"
** end
```

xStatus Call [1..n] Caller LocalNumber

Shows the number called to reach the ISDN Link. For SIP callers this would be the number and parameters needed to reach the callee.

Format: String.

xStatus Call [1..n] Callee LocalNumber

Shows the number from which the ISDN Link is calling. This number is the callback number for the called party. For SIP callee's this would include the number and parameters to perform callback to the caller side.

Format: String.

xStatus Call [1..n] Caller TransmitCallRate

xStatus Call [1..n] Callee TransmitCallRate

Shows the transmit bandwidth used between the calling party and the ISDN Link (Caller TransmitCallRate) or between the ISDN Link and the called party (Callee TransmitCallRate). The bandwidth is in kilobits per second (kbps).

Format: Integer.

Example:

```
xStatus Call 20 Caller TransmitCallRate
*s Call 20 Caller TransmitCallRate: 768
** end
```

xStatus Call [1..n] Caller ReceiveCallRate

xStatus Call [1..n] Callee ReceiveCallRate

Shows the receive bandwidth used between the calling party and the ISDN Link (Caller ReceiveCallRate) or between the ISDN Link and the called party (Callee ReceiveCallRate). The bandwidth is in kilobits per second (kbps).

Format: Integer.

Example:

```
xStatus Call 20 Caller ReceiveCallRate
*s Call 20 Caller ReceiveCallRate: 1920
** end
```

xStatus Call [1..n] Caller Encryption Type

xStatus Call [1..n] Callee Encryption Type

Shows the encryption type used between the calling party and the ISDN Link (Caller Encryption Type) or between the ISDN Link and the called party (Callee Encryption Type).

"None": The call is not encrypted.

"Aes-128": The encryption type for the call is AES-128.

Example:

```
xStatus Call 20 Caller Encryption Type
*s Call 20 Caller Encryption Type: "Aes-128"
** end
```

ExternalNetwork status

xStatus ExternalNetwork Interface [1..1] Status

Shows the status of the External Network interface.

Ready: The external network is ready to relay calls.

NotReady: The external network is not ready for use, e.g. when clock is missing or the line is broken.

Off: The external network is not enabled (i.e. xConfiguration H320 NetType is not set to External).

Example:

```
xStatus ExternalNetwork Interface 1 Status
*s ExternalNetwork Interface 1 Status: Ready
** end
```

xStatus ExternalNetwork Interface [1..1] ClockRate

Shows the clock rate (in kbps) used for synchronous communication on the external network. This clock is provided by the attached equipment.

Format: Integer.

Example:

```
xStatus ExternalNetwork Interface 1 ClockRate
*s ExternalNetwork Interface 1 ClockRate: 1920
** end
```

xStatus ExternalNetwork Interface [1..1] Channel [1..n] Status

Gives information about the call progress in a channel on the external interface. The information indicates the various stages each channel goes through whilst establishing a connection. The channel status is available for the current call (when active) or the last call.

Idle: The channel is idle. This state is normally only seen if the channel has never been used.

Calling: The network has acknowledged an incoming call, but the connection is not yet established.

Answering: The network has acknowledged an outgoing call, but the connection is not yet established.

Connect: The connection is established.

Disconnecting: Waiting for the network to confirm the termination of the incoming or outgoing call.

Disconnected: The network has acknowledged the termination of the call. The channel is available for a new call.

Example:

```
xStatus ExternalNetwork Interface 1 Channel 1 Status
*s ExternalNetwork Interface 1 Channel 1 Status: Disconnected
** end
```

xStatus ExternalNetwork Interface [1..1] Channel [1..n] Call [1..n] CallingNumber

Shows the number of the system initiating a call on the external network. The channel status is available for the current call (when active) or the last call.

Format: String.

Example:

```
xStatus ExternalNetwork Interface 1 Channel 1 Call 10 CallingNumber
*s ExternalNetwork Interface 1 Channel 1 Call 10 CallingNumber: "1234"
** end
```

xStatus ExternalNetwork Interface [1..1] Channel [1..n] Call [1..n] CauseLocation

Shows where the disconnection of a call on the external network is originated. The location codes are specified in ITU-T Recommendation Q.850 (the Q.931 Cause information element). The channel status is available for the current call (when active) or the last call.

Format: Integer.

Example:

```
xStatus ExternalNetwork Interface 1 Channel 1 Call 10 CauseLocation
*s ExternalNetwork Interface 1 Channel 1 Call 10 CauseLocation: 0
** end
```

xStatus ExternalNetwork Interface [1..1] Channel [1..n] Call [1..n] ChannelCause

Shows the reason why a call on the external network is disconnected. The cause values are specified in ITU-T Recommendation Q.850 (the Q.931 Cause information element). The channel status is available for the current call (when active) or the last call.

Some common cause values are listed below; ITU-T Q.850 contains the complete list.

- 1: Unallocated (unassigned) number
- 2: No route to specified transit network
- 16: Normal call clearing
- 17: User busy
- 18: No user responding
- 21: Call rejected
- 28: Invalid number format (address incomplete)
- 29: Facility rejected
- 31: Normal, unspecified
- 34: No circuit/channel available
- 41: Temporary failure
- 58: Bearer capability not presently available
- 65: Bearer capability not implemented
- 69: Requested facility not implemented
- 81: Invalid call reference value
- 88: Incompatible destination
- 100: Invalid information element contents
- 102: Recovery on timer expiry
- 127: Interworking, unspecified
- 128-255: Cisco specific codes

Example:

```
xStatus ExternalNetwork Interface 1 Channel 1 Call 10 ChannelCause
*s ExternalNetwork Interface 1 Channel 1 Call 10 ChannelCause: 16
** end
```

xStatus ExternalNetwork Interface [1..1] Channel [1..n] Call [1..n] Duration

Shows the duration (in seconds) of a call on the external network for the current call (when active) or the last call.

Format: Integer.

Example:

```
xStatus ExternalNetwork Interface 1 Channel 1 Call 10 Duration
*s ExternalNetwork Interface 1 Channel 1 Call 10 Duration: 771
** end
```

H320 status

xStatus H320 NetType

Shows which communication interface that is enabled on the ISDN Link.

BRI: The ISDN BRI interface is enabled.

PRI: The ISDN PRI interface is enabled.

External: The external network (NET) interface is enabled.

G703: For testing only.

Example:

```
xStatus H320 NetType
*s H320 NetType: PRI
** end
```

ISDN status

xStatus ISDN PRI Interface [1..1] Status

Shows the status of the PRI interface.

Ready: The PRI interface is ready to relay calls.

NotReady: The PRI interface is not ready for use, e.g. when synchronization is missing or the line is broken.

Off: The PRI interface is not enabled (i.e. xConfiguration H320 NetType is not set to PRI).

Example:

```
xStatus ISDN PRI Interface 1 Status
*s ISDN PRI Interface 1 Status: Ready
** end
```

xStatus ISDN PRI Interface [1..1] BChansFree

Shows the number of B channels (bearer channels, 64 kbps) currently available on the PRI interface.

Format: Integer between 0 and 30.

Example:

```
xStatus ISDN PRI Interface 1 BChansFree
*s ISDN PRI Interface 1 BChansFree: 18
** end
```

xStatus ISDN PRI Interface [1..1] BChansTotal

Shows how many B channels (bearer channels, 64 kbps) the PRI interface offers in total.

Format: Integer between 1 and 30.

Example:

```
xStatus ISDN PRI Interface 1 BChansTotal
*s ISDN PRI Interface 1 BChansTotal: 30
** end
```

xStatus ISDN PRI Interface [1..1] Layer1Status

Shows whether there are issues relating to framing information (physical layer).

Sync: The system is receiving framing information and the channels are synchronized.

Yellow: The system is receiving framing information, but the remote system is not receiving the transmitted framing information. This may be caused by a broken connector in the TX part of your PRI cable. It could also indicate a weak or noisy signal in the TX part of the PRI cable.

Red: There is no signal and thus the system receives no framing information from the remote site (this has the same effect as pulling out the PRI cable).

Blue: The network on the far side of the CSU (Channel Services Unit) is unavailable. For example, assume that a system is connected via a CSU (Channel Services Unit) as follows: System-CableA-CSU-CableB-Network. If the CSU loses framing/synchronisation from the network, e.g. due to a bad CableB, it will no longer send valid framing out on CableA towards the system. Instead it transmits "Blue Alarm". Seen from the system receiving the blue alarm, this means that the network on the far side of the CSU is unavailable.

Unknown: The system is not able to determine the layer 1 status.

Example:

```
xStatus ISDN PRI Interface 1 Layer1Status
*s ISDN PRI Interface 1 Layer1Status: Sync
** end
```

xStatus ISDN PRI Interface [1..1] Channel [1..n] Type

Shows the channel type for a channel on the PRI interface. The PRI interface comprises a number of channels, each dedicated to either the primary communication or to control and signalling information.

DChannel: The channel is a data channel (D channel), which carries the control and signalling information in ISDN. The bit rate of the D channel on a PRI interface is 64 kbps.

BChannel: The channel is a bearer channel (B channel), which carries the primary video conference or speech call communication in ISDN. The bit rate of a B channel on a PRI interface is 64 kbps.

Example:

```
xStatus ISDN PRI Interface 1 Channel 1 Type
*s ISDN PRI Interface 1 Channel 1 Type: BChannel
** end
```

xStatus ISDN PRI Interface [1..1] Channel [1..n] Status

Gives information about the call progress in a channel on the PRI interface. The information indicates the various stages each channel goes through whilst establishing a connection.

Idle: The channel is idle. This state is normally only seen if the channel has never been used.

Calling: The network has acknowledged an incoming call, but the connection is not yet established.

Answering: The network has acknowledged an outgoing call, but the connection is not yet established.

Connect: The connection is established.

Disconnecting: Waiting for the network to confirm the termination of the incoming or outgoing call.

Disconnected: The network has acknowledged the termination of the call. The channel is available for a new call.

Example:

```
xStatus ISDN PRI Interface 1 Channel 1 Status
*s ISDN PRI Interface 1 Channel 1 Status: Idle
** end
```

xStatus ISDN PRI Interface [1..1] Channel [1..n] Call [1..n] CallingNumber

Shows the number calling into the ISDN PRI interface (for an incoming call), and the number that ISDN Link is making a call to on the ISDN PRI interface (for an outgoing call).

Format: String.

Example:

```
xStatus ISDN PRI Interface 1 Channel 1 Call 20 CallingNumber
*s ISDN PRI Interface 1 Channel 1 Call 20 CallingNumber: "1234"
** end
```

xStatus ISDN PRI Interface [1..1] Channel [1..n] Call [1..n] CauseLocation

Shows where the disconnection of a call on the PRI interface is originated. . The location codes are specified in ITU-T Recommendation Q.850 (the Q.931 Cause information element).

Format: Integer.

Example:

```
xStatus ISDN PRI Interface 1 Channel 1 Call 20 CauseLocation
*s ISDN PRI Interface 1 Channel 1 Call 20 CauseLocation: 0
** end
```

xStatus ISDN PRI Interface [1..1] Channel [1..n] Call [1..n] ChannelCause

Shows the reason why a call on the PRI interface is disconnected. The cause values are specified in ITU-T Recommendation Q.850 (the Q.931 Cause information element).

Some common cause values are listed below; ITU-T Q.850 contains the complete list.

- 1:** Unallocated (unassigned) number
- 2:** No route to specified transit network
- 16:** Normal call clearing
- 17:** User busy
- 18:** No user responding
- 21:** Call rejected
- 28:** Invalid number format (address incomplete)
- 29:** Facility rejected
- 31:** Normal, unspecified
- 34:** No circuit/channel available
- 41:** Temporary failure
- 58:** Bearer capability not presently available
- 65:** Bearer capability not implemented
- 69:** Requested facility not implemented
- 81:** Invalid call reference value
- 88:** Incompatible destination
- 100:** Invalid information element contents
- 102:** Recovery on timer expiry
- 127:** Interworking, unspecified
- 128-255:** Cisco specific codes

Example:

```
xStatus ISDN PRI Interface 1 Channel 1 Call 20 ChannelCause
*s ISDN PRI Interface 1 Channel 1 Call 20 ChannelCause: 16
** end
```

xStatus ISDN PRI Interface [1..1] Channel [1..n] Call [1..n] Duration

Shows the duration (in seconds) of a call on the PRI interface.

Format: Integer.

Example:

```
xStatus ISDN PRI Interface 1 Channel 1 Call 20 Duration
*s ISDN PRI Interface 1 Channel 1 Call 20 Duration: 210
** end
```

xStatus ISDN BRI Interface [1..4] Status

Shows the status of the BRI interface.

Ready: The BRI interface is ready to relay calls.

NotReady: The BRI interface is not ready for use, e.g. when synchronization is missing or the line is broken.

Off: The BRI interface is not enabled (i.e. xConfiguration H320 NetType is not set to BRI).

Example:

```
xStatus ISDN BRI Interface 1 Status
*s ISDN BRI Interface 1 Status: Ready
** end
```

xStatus ISDN BRI Interface [1..4] Layer1Alarm

Shows whether or not there are any alarms related to the physical layer, e.g. cable not properly connected to switch.

On: Layer 1 alarm.

Off: No alarm.

Example:

```
xStatus ISDN BRI Interface 1 Layer1Alarm
*s ISDN BRI Interface 1 Layer1Alarm: Off
** end
```

xStatus ISDN BRI Interface [1..4] Layer2Alarm

Shows whether there are any alarms related to the data-link layer.

On: Layer 2 alarm.

Off: No alarm.

Example:

```
xStatus ISDN BRI Interface 1 Layer2Alarm
*s ISDN BRI Interface 1 Layer2Alarm: Off
** end
```

xStatus ISDN BRI Interface [1..4] Channel [1..3] Type

Shows the channel type for a channel on a BRI interface. A BRI interface comprises two channels for the primary communication and one channel for control and signalling information.

DChannel: The channel is a data channel (D channel), which carries the control and signalling information in ISDN. The bit rate of the D channel of a BRI interface is 16 kbps.

BChannel: The channel is a bearer channel (B channel), which carries the primary video conference or speech call communication in ISDN. The bit rate of a B channel on a BRI interface is 64 kbps.

Example:

```
xStatus ISDN BRI Interface 1 Channel 1 Type
*s ISDN BRI Interface 1 Channel 1 Type: BChannel
** end
```


xStatus ISDN BRI Interface [1..4] Channel [1..3] Status

Gives information about the call progress in a channel on a BRI interface. The information indicates the various stages each channel goes through whilst establishing a connection.

Idle: The channel is idle. This state is normally only seen if the channel has never been used.

Calling: The network has acknowledged an incoming call, but the connection is not yet established.

Answering: The network has acknowledged an outgoing call, but the connection is not yet established.

Connect: The connection is established.

Disconnecting: Waiting for the network to confirm the termination of the incoming or outgoing call.

Disconnected: The network has acknowledged the termination of the call. The channel is available for a new call.

Example:

```
xStatus ISDN BRI Interface 1 Channel 1 Status
*s ISDN BRI Interface 1 Channel 1 Status: Connect
** end
```

xStatus ISDN BRI Interface [1..4] Channel [1..3] Call [1..n] CallingNumber

Shows the number calling into the ISDN BRI interface (for an incoming call), and the number that ISDN Link is making a call to on the ISDN BRI interface (for an outgoing call).

Format: String.

Example:

```
xStatus ISDN BRI Interface 1 Channel 1 Call 30 CallingNumber
*s ISDN BRI Interface 1 Channel 1 Call 30 CallingNumber: "1234"
** end
```

xStatus ISDN BRI Interface [1..4] Channel [1..3] Call [1..n] CauseLocation

Shows where the disconnection of a call on the BRI interface is originated. . The location codes are specified in ITU-T Recommendation Q.850 (the Q.931 Cause information element).

Format: Integer.

Example:

```
xStatus ISDN BRI Interface 1 Channel 1 Call 30 CauseLocation
*s ISDN BRI Interface 1 Channel 1 Call 30 CauseLocation: 0
** end
```

xStatus ISDN BRI Interface [1..4] Channel [1..3] Call [1..n] ChannelCause

Shows the reason why a call on the BRI interface is disconnected. The cause values are specified in ITU-T Recommendation Q.850 (the Q.931 Cause information element).

Some common cause values are listed below; ITU-T Q.850 contains the complete list.

- 1: Unallocated (unassigned) number
- 2: No route to specified transit network
- 16: Normal clearing
- 17: User busy
- 18: No user responding
- 21: Call rejected
- 28: Invalid number format (address incomplete)
- 29: Facility rejected
- 31: Normal, unspecified
- 34: No circuit/channel available
- 41: Temporary failure
- 58: Bearer capability not presently available
- 65: Bearer capability not implemented
- 69: Requested facility not implemented
- 81: Invalid call reference value
- 88: Incompatible destination
- 100: Invalid information element contents
- 102: Recovery on timer expiry
- 127: Interworking, unspecified
- 128-255: Cisco specific codes

Example:

```
xStatus ISDN BRI Interface 1 Channel 1 Call 30 ChannelCause
*s ISDN BRI Interface 1 Channel 1 Call 30 ChannelCause: 16
** end
```

xStatus ISDN BRI Interface [1..4] Channel [1..3] Call [1..n] Duration

Shows the duration (in seconds) of a call. Applies to calls on a BRI interface channel only.

Format: Integer.

Example:

```
xStatus ISDN BRI Interface 1 Channel 1 Call 30 Duration
*s ISDN BRI Interface 1 Channel 1 Call 30 Duration: 270
** end
```

MediaChannels status

ISDN Link operates as a gateway between a Caller and a Callee. Thus xStatus referring to "Caller" is about the calling party or the connection between the calling party and the ISDN Link. Similarly xStatus referring to "Callee" is about the called party or the connection between the ISDN Link and the called party.

xStatus MediaChannels Call [1..n] Caller IncomingAudioChannel [1..n] Encryption Status

xStatus MediaChannels Call [1..n] Caller OutgoingAudioChannel [1..n] Encryption Status

xStatus MediaChannels Call [1..n] Callee IncomingAudioChannel [1..n] Encryption Status

xStatus MediaChannels Call [1..n] Callee OutgoingAudioChannel [1..n] Encryption Status

Shows the encryption status on the incoming or outgoing audio channel, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

On: Encryption on the audio channel is enabled.

Off: Encryption on the audio channel is disabled.

Example:

```
xStatus MediaChannels Call 20 IncomingAudioChannel 1 Encryption Status
*s MediaChannels Call 20 IncomingAudioChannel 1 Encryption Status: On
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingAudioChannel [1..n] Audio Protocol

xStatus MediaChannels Call [1..n] Caller OutgoingAudioChannel [1..n] Audio Protocol

xStatus MediaChannels Call [1..n] Callee IncomingAudioChannel [1..n] Audio Protocol

xStatus MediaChannels Call [1..n] Callee OutgoingAudioChannel [1..n] Audio Protocol

Shows the audio algorithm for the incoming or outgoing audio channel, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

G722: The G.722 algorithm is an ITU-T standard.

G7221: The G.722.1 algorithm is a licensed royalty-free ITU-T standard.

G711Mu: The G.711 Mu-law compression algorithm is used in North America and Japan.

G711A: The G.711 A-law compression algorithm is used in Europe and the rest of the world.

Example:

```
xStatus MediaChannels Call 20 IncomingAudioChannel 1 Audio Protocol
*s MediaChannels Call 20 IncomingAudioChannel 1 Audio Protocol: G722
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingAudioChannel [1..n] Audio Mute

xStatus MediaChannels Call [1..n] Callee IncomingAudioChannel [1..n] Audio Mute

Audio mute status of incoming audio on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

True: Audio is muted.

False: Audio is not muted.

Example:

```
xStatus MediaChannels Call 20 IncomingAudioChannel 1 Audio Mute
*s MediaChannels Call 20 IncomingAudioChannel 1 Audio Mute: False
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingAudioChannel [1..n] Audio Channels

xStatus MediaChannels Call [1..n] Caller OutgoingAudioChannel [1..n] Audio Channels

xStatus MediaChannels Call [1..n] Callee IncomingAudioChannel [1..n] Audio Channels

xStatus MediaChannels Call [1..n] Callee OutgoingAudioChannel [1..n] Audio Channels

Shows the number of incoming or outgoing audio channels, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: Integer.

Example:

```
xStatus MediaChannels Call 20 IncomingAudioChannel 1 Audio Channels
*s MediaChannels Call 20 IncomingAudioChannel 1 Audio Channels: 1
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingAudioChannel [1..n] Transport RTP Local IpAddress
 xStatus MediaChannels Call [1..n] Caller OutgoingAudioChannel [1..n] Transport RTP Local IpAddress
 xStatus MediaChannels Call [1..n] Callee IncomingAudioChannel [1..n] Transport RTP Local IpAddress
 xStatus MediaChannels Call [1..n] Callee OutgoingAudioChannel [1..n] Transport RTP Local IpAddress

Shows the local IP address of the Real-time Transport Protocol (RTP) port for the incoming or outgoing audio, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: String.

Example:

```
xStatus MediaChannels Call 20 IncomingAudioChannel 1 Transport RTP Local IpAddress
*s MediaChannels Call 20 IncomingAudioChannel 1 Transport RTP Local IpAddress: "192.0.2.54"
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingAudioChannel [1..n] Transport RTP Local Port
 xStatus MediaChannels Call [1..n] Caller OutgoingAudioChannel [1..n] Transport RTP Local Port
 xStatus MediaChannels Call [1..n] Callee IncomingAudioChannel [1..n] Transport RTP Local Port
 xStatus MediaChannels Call [1..n] Callee OutgoingAudioChannel [1..n] Transport RTP Local Port

Shows the local UDP port number of the Real-time Transport Protocol (RTP) port for the incoming or outgoing audio, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: Integer.

Example:

```
xStatus MediaChannels Call 20 IncomingAudioChannel 1 Transport RTP Local Port
*s MediaChannels Call 20 IncomingAudioChannel 1 Transport RTP Local Port: 2326
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingAudioChannel [1..n] Transport RTP Remote IpAddress
xStatus MediaChannels Call [1..n] Caller OutgoingAudioChannel [1..n] Transport RTP Remote IpAddress
xStatus MediaChannels Call [1..n] Callee IncomingAudioChannel [1..n] Transport RTP Remote IpAddress
xStatus MediaChannels Call [1..n] Callee OutgoingAudioChannel [1..n] Transport RTP Remote IpAddress

Shows the remote IP address of the Real-time Transport Protocol (RTP) port for the incoming or outgoing audio, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: String.

Example:

```
xStatus MediaChannels Call 20 IncomingAudioChannel 1 Transport RTP Remote IpAddress
*s MediaChannels Call 20 IncomingAudioChannel 1 Transport RTP Remote IpAddress: "192.0.2.181"
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingAudioChannel [1..n] Transport RTP Remote Port
xStatus MediaChannels Call [1..n] Caller OutgoingAudioChannel [1..n] Transport RTP Remote Port
xStatus MediaChannels Call [1..n] Callee IncomingAudioChannel [1..n] Transport RTP Remote Port
xStatus MediaChannels Call [1..n] Callee OutgoingAudioChannel [1..n] Transport RTP Remote Port

Shows the remote UDP port number of the Real-time Transport Protocol (RTP) port for the incoming or outgoing audio, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: Integer.

Example:

```
xStatus MediaChannels Call 20 IncomingAudioChannel 1 Transport RTP Remote Port
*s MediaChannels Call 20 IncomingAudioChannel 1 Transport RTP Remote Port: 2366
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingAudioChannel [1..n] Transport RTCP Local IpAddress
xStatus MediaChannels Call [1..n] Caller OutgoingAudioChannel [1..n] Transport RTCP Local IpAddress
xStatus MediaChannels Call [1..n] Callee IncomingAudioChannel [1..n] Transport RTCP Local IpAddress
xStatus MediaChannels Call [1..n] Callee OutgoingAudioChannel [1..n] Transport RTCP Local IpAddress

Shows the local IP address of the Real-time Transport Control Protocol (RTCP) port for the incoming or outgoing audio, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: String.

Example:

```
xStatus MediaChannels Call 20 IncomingAudioChannel 1 Transport RTCP Local IpAddress
*s MediaChannels Call 20 IncomingAudioChannel 1 Transport RTCP Local IpAddress: "192.0.2.54"
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingAudioChannel [1..n] Transport RTCP Local Port
xStatus MediaChannels Call [1..n] Caller OutgoingAudioChannel [1..n] Transport RTCP Local Port
xStatus MediaChannels Call [1..n] Callee IncomingAudioChannel [1..n] Transport RTCP Local Port
xStatus MediaChannels Call [1..n] Callee OutgoingAudioChannel [1..n] Transport RTCP Local Port

Shows the local UDP port number of the Real-time Transport Control Protocol (RTCP) port for the incoming or outgoing audio, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: Integer.

Example:

```
xStatus MediaChannels Call 20 IncomingAudioChannel 1 Transport RTCP Local Port
*s MediaChannels Call 20 IncomingAudioChannel 1 Transport RTCP Local Port: 2327
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingAudioChannel [1..n] Transport RTCP Remote IpAddress
xStatus MediaChannels Call [1..n] Caller OutgoingAudioChannel [1..n] Transport RTCP Remote IpAddress
xStatus MediaChannels Call [1..n] Callee IncomingAudioChannel [1..n] Transport RTCP Remote IpAddress
xStatus MediaChannels Call [1..n] Callee OutgoingAudioChannel [1..n] Transport RTCP Remote IpAddress

Shows the remote IP address of the Real-time Transport Control Protocol (RTCP) port for the incoming or outgoing audio, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: String.

Example:

```
xStatus MediaChannels Call 20 IncomingAudioChannel 1 Transport RTCP Remote IpAddress
*s MediaChannels Call 20 IncomingAudioChannel 1 Transport RTCP Remote IpAddress: "192.0.2.181"
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingAudioChannel [1..n] Transport RCTP Remote Port
xStatus MediaChannels Call [1..n] Caller OutgoingAudioChannel [1..n] Transport RTCP Remote Port
xStatus MediaChannels Call [1..n] Callee IncomingAudioChannel [1..n] Transport RTCP Remote Port
xStatus MediaChannels Call [1..n] Callee OutgoingAudioChannel [1..n] Transport RTCP Remote Port

Shows the remote UDP port number of the Real-time Transport Control Protocol (RTCP) port for the incoming or outgoing audio, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: Integer.

Example:

```
xStatus MediaChannels Call 20 IncomingAudioChannel 1 Transport RTCP Remote Port
*s MediaChannels Call 20 IncomingAudioChannel 1 Transport RTCP Remote Port: 2367
** end
```


xStatus MediaChannels Call [1..n] Caller IncomingVideoChannel [1..n] Encryption Status

xStatus MediaChannels Call [1..n] Caller OutgoingVideoChannel [1..n] Encryption Status

xStatus MediaChannels Call [1..n] Callee IncomingVideoChannel [1..n] Encryption Status

xStatus MediaChannels Call [1..n] Callee OutgoingVideoChannel [1..n] Encryption Status

Shows the encryption status on the incoming or outgoing video channel, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

On: Encryption on the video channel is enabled.

Off: Encryption on the video channel is disabled.

Example:

```
xStatus MediaChannels Call 20 IncomingVideoChannel 2 Encryption Status
*s MediaChannels Call 20 IncomingVideoChannel 2 Encryption Status: On
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingVideoChannel [1..n] Encryption Type

xStatus MediaChannels Call [1..n] Callee IncomingVideoChannel [1..n] Encryption Type

Shows the encryption type used between the calling party and the ISDN Link (Caller Encryption Type) or between the ISDN Link and the called party (Callee Encryption Type).

"None": The call is not encrypted.

"Aes-128": The encryption type for the call is AES-128.

Example:

```
xStatus MediaChannels Call 20 Caller IncomingVideoChannel 2 Encryption Type
*s MediaChannels Call 20 IncomingVideoChannel 2 Encryption Type: "Aes-128"
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingVideoChannel [1..n] ChannelRole
xStatus MediaChannels Call [1..n] Caller OutgoingVideoChannel [1..n] ChannelRole
xStatus MediaChannels Call [1..n] Callee IncomingVideoChannel [1..n] ChannelRole
xStatus MediaChannels Call [1..n] Callee OutgoingVideoChannel [1..n] ChannelRole

Shows whether the incoming or outgoing channel is the main video channel, presentation channel or legacy (Y/Composite and C connectors). The status is for the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee)

Main: Main video on video channel.

Presentation: Presentation on the video channel.

Legacy: Legacy (Composite) on the video channel.

Example:

```
xStatus MediaChannels Call 20 IncomingVideoChannel 2 ChannelRole
*s MediaChannels Call 20 IncomingVideoChannel 2 ChannelRole: Main
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingVideoChannel [1..n] Video Protocol
xStatus MediaChannels Call [1..n] Caller OutgoingVideoChannel [1..n] Video Protocol
xStatus MediaChannels Call [1..n] Callee IncomingVideoChannel [1..n] Video Protocol
xStatus MediaChannels Call [1..n] Callee OutgoingVideoChannel [1..n] Video Protocol

Shows the video algorithm for the incoming or outgoing video channel, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

H264: The H.264 algorithm is an ITU-T standard for video compression.

H263pp: The H.263pp algorithm is an ITU-T standard for video compression.

H263: The H.263 algorithm is an ITU-T standard for video compression.

H261: The H.261 algorithm is an ITU-T standard for video compression.

Example:

```
xStatus MediaChannels Call 20 IncomingVideoChannel 2 Video Protocol
*s MediaChannels Call 20 IncomingVideoChannel 2 Video Protocol: H264
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingVideoChannel [1..n] Transport RTP Local IpAddress

xStatus MediaChannels Call [1..n] Caller OutgoingVideoChannel [1..n] Transport RTP Local IpAddress

xStatus MediaChannels Call [1..n] Callee IncomingVideoChannel [1..n] Transport RTP Local IpAddress

xStatus MediaChannels Call [1..n] Callee OutgoingVideoChannel [1..n] Transport RTP Local IpAddress

Shows the local IP address of the Real-time Transport Protocol (RTP) port for the incoming or outgoing video, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: String.

Example:

```
xStatus MediaChannels Call 20 IncomingVideoChannel 2 Transport RTP Local IpAddress
*s MediaChannels Call 20 IncomingVideoChannel 2 Transport RTP Local IpAddress: "192.0.2.54"
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingVideoChannel [1..n] Transport RTP Local Port

xStatus MediaChannels Call [1..n] Caller OutgoingVideoChannel [1..n] Transport RTP Local Port

xStatus MediaChannels Call [1..n] Callee IncomingVideoChannel [1..n] Transport RTP Local Port

xStatus MediaChannels Call [1..n] Callee OutgoingVideoChannel [1..n] Transport RTP Local Port

Shows the local UDP port number of the Real-time Transport Protocol (RTP) port for the incoming or outgoing video, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: Integer.

Example:

```
xStatus MediaChannels Call 20 IncomingVideoChannel 2 Transport RTP Local Port
*s MediaChannels Call 20 IncomingVideoChannel 2 Transport RTP Local Port: 2342
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingVideoChannel [1..n] Transport RTP Remote IpAddress
 xStatus MediaChannels Call [1..n] Caller OutgoingVideoChannel [1..n] Transport RTP Remote IpAddress
 xStatus MediaChannels Call [1..n] Callee IncomingVideoChannel [1..n] Transport RTP Remote IpAddress
 xStatus MediaChannels Call [1..n] Callee OutgoingVideoChannel [1..n] Transport RTP Remote IpAddress

Shows the remote IP address of the Real-time Transport Protocol (RTP) port for the incoming or outgoing video, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: String.

Example:

```
xStatus MediaChannels Call 20 IncomingVideoChannel 2 Transport RTP Remote IpAddress
*s MediaChannels Call 20 IncomingVideoChannel 2 Transport RTP Remote IpAddress: "192.0.2.181"
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingVideoChannel [1..n] Transport RTP Remote Port
 xStatus MediaChannels Call [1..n] Caller OutgoingVideoChannel [1..n] Transport RTP Remote Port
 xStatus MediaChannels Call [1..n] Callee IncomingVideoChannel [1..n] Transport RTP Remote Port
 xStatus MediaChannels Call [1..n] Callee OutgoingVideoChannel [1..n] Transport RTP Remote Port

Shows the remote UDP port number of the Real-time Transport Protocol (RTP) port for the incoming or outgoing video, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: Integer.

Example:

```
xStatus MediaChannels Call 20 IncomingVideoChannel 2 Transport RTP Remote Port
*s MediaChannels Call 20 IncomingVideoChannel 2 Transport RTP Remote Port: 2368
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingVideoChannel [1..n] Transport RTCP Local IpAddress
 xStatus MediaChannels Call [1..n] Caller OutgoingVideoChannel [1..n] Transport RTCP Local IpAddress
 xStatus MediaChannels Call [1..n] Callee IncomingVideoChannel [1..n] Transport RTCP Local IpAddress
 xStatus MediaChannels Call [1..n] Callee OutgoingVideoChannel [1..n] Transport RTCP Local IpAddress

Shows the local IP address of the Real-time Transport Control Protocol (RTCP) port for the incoming or outgoing video, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: String.

Example:

```
xStatus MediaChannels Call 20 IncomingVideoChannel 2 Transport RTCP Local IpAddress
*s MediaChannels Call 20 IncomingVideoChannel 2 Transport RTCP Local IpAddress: "192.0.2.54"
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingVideoChannel [1..n] Transport RTCP Local Port
 xStatus MediaChannels Call [1..n] Caller OutgoingVideoChannel [1..n] Transport RTCP Local Port
 xStatus MediaChannels Call [1..n] Callee IncomingVideoChannel [1..n] Transport RTCP Local Port
 xStatus MediaChannels Call [1..n] Callee OutgoingVideoChannel [1..n] Transport RTCP Local Port

Shows the local UDP port number of the Real-time Transport Control Protocol (RTCP) port for the incoming or outgoing video, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: Integer.

Example:

```
xStatus MediaChannels Call 20 IncomingVideoChannel 2 Transport RTCP Local Port
*s MediaChannels Call 20 IncomingVideoChannel 2 Transport RTCP Local Port: 2343
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingVideoChannel [1..n] Transport RTCP Remote IpAddress
xStatus MediaChannels Call [1..n] Caller OutgoingVideoChannel [1..n] Transport RTCP Remote IpAddress
xStatus MediaChannels Call [1..n] Callee IncomingVideoChannel [1..n] Transport RTCP Remote IpAddress
xStatus MediaChannels Call [1..n] Callee OutgoingVideoChannel [1..n] Transport RTCP Remote IpAddress

Shows the remote IP address of the Real-time Transport Control Protocol (RTCP) port for the incoming or outgoing video, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: String.

Example:

```
xStatus MediaChannels Call 20 IncomingVideoChannel 2 Transport RTCP Remote IpAddress
*s MediaChannels Call 20 IncomingVideoChannel 2 Transport RTCP Remote IpAddress: "192.0.2.181"
** end
```

xStatus MediaChannels Call [1..n] Caller IncomingVideoChannel [1..n] Transport RCTP Remote Port
xStatus MediaChannels Call [1..n] Caller OutgoingVideoChannel [1..n] Transport RTCP Remote Port
xStatus MediaChannels Call [1..n] Callee IncomingVideoChannel [1..n] Transport RTCP Remote Port
xStatus MediaChannels Call [1..n] Callee OutgoingVideoChannel [1..n] Transport RTCP Remote Port

Shows the remote UDP port number of the Real-time Transport Control Protocol (RTCP) port for the incoming or outgoing video, on the connection between the ISDN Link and the calling party (Caller) or between the ISDN Link and the called party (Callee).

Format: Integer.

Example:

```
xStatus MediaChannels Call 20 IncomingVideoChannel 2 Transport RTCP Remote Port
*s MediaChannels Call 20 IncomingVideoChannel 2 Transport RTCP Remote Port: 2369
** end
```

Network status

xStatus Network [1..1] Ethernet MacAddress

Shows the MAC (Media Access Control) address for the ISDN Link.

Format: String.

Example:

```
xStatus Network 1 Ethernet MacAddress
*s Network 1 Ethernet MacAddress: "00:50:60:70:80:90"
** end
```

xStatus Network [1..1] Ethernet Link Network

Shows the Ethernet link status for the LAN port on ISDN Link. This port is used for connecting the ISDN Link to the network (LAN).

"No LAN": There is no connection.

"10half": The Ethernet speed is 10 Mbps half-duplex.

"10full": The Ethernet speed is 10 Mbps full-duplex.

"100half": The Ethernet speed is 100 Mbps half-duplex.

"100full": The Ethernet speed is 100 Mbps full-duplex.

"1000full": The Ethernet speed is 1 Gbps full-duplex.

Example:

```
xStatus Network 1 Ethernet Link Network
*s Network 1 Ethernet Link Network: "No LAN"
** end
```

xStatus Network [1..1] Ethernet Link Endpoint

Shows the Ethernet link status for the Endpoint port on ISDN Link. This port is used for connecting the ISDN Link to a TelePresence endpoint.

"No LAN": There is no connection.

"10half": The Ethernet speed is 10 Mbps half-duplex.

"10full": The Ethernet speed is 10 Mbps full-duplex.

"100half": The Ethernet speed is 100 Mbps half-duplex.

"100full": The Ethernet speed is 100 Mbps full-duplex.

"1000full": The Ethernet speed is 1 Gbps full-duplex.

Example:

```
xStatus Network 1 Ethernet Link Endpoint
*s Network 1 Ethernet Link Endpoint: "1000full"
** end
```

xStatus Network [1..1] IPv4 Address

Shows the IPv4 address that uniquely identifies this system.

Format: String.

Example:

```
xStatus Network 1 IPv4 Address
*s Network 1 IPv4 Address: "192.0.2.149"
** end
```

xStatus Network [1..1] IPv4 SubnetMask

Shows the subnet mask which determines which subnet an IPv4 address belongs to.

Format: String.

Example:

```
xStatus Network 1 IPv4 SubnetMask
*s Network 1 IPv4 SubnetMask: "255.255.255.0"
** end
```

xStatus Network [1..1] IPv4 Gateway

Shows the address of the IPv4 gateway.

Format: String.

Example:

```
xStatus Network 1 IPv4 Gateway
*s Network 1 IPv4 Gateway: "192.0.2.10"
** end
```

xStatus Network [1..1] IPv4 DNS Domain Name

Shows the domain name.

Format: String.

Example:

```
xStatus Network 1 IPv4 DNS Domain Name
*s Network 1 IPv4 DNS Domain Name: "www.example.com www.example.int"
** end
```

xStatus Network [1..1] IPv4 DNS Server [1..3] Address

Shows the IP address of the DNS server.

Format: String.

Example:

```
xStatus Network 1 IPv4 DNS Server 1 Address
*s Network 1 IPv4 DNS Server 1 Address: "192.0.2.60"
** end
```

xStatus Network [1..1] IPv6 Address

Shows the IPv6 address that uniquely identifies this system.

Format: String.

Example:

```
xStatus Network 1 IPv6 Address
*s Network 1 IPv6 Address: "2001:DB8::1234"
** end
```

xStatus Network [1..1] IPv6 Gateway

Shows the address of the IPv6 gateway.

Format: String.

Example:

```
xStatus Network 1 IPv6 Gateway
*s Network 1 IPv6 Gateway: "2001:DB8::0001"
** end
```

xStatus Network [1..1] MTU

Shows the MTU (Maximum Transmission Unit) size for the network.

Format: Integer.

Example:

```
xStatus Network 1 MTU
*s Network 1 MTU: 1500
** end
```

xStatus Network [1..1] VLAN Voice VlanId

The feedback will show the VLAN Voice ID, or Off if the VLAN Voice Mode is not enabled.

"Off": VLAN Voice mode is not enabled.

"1".."4094": Displays the VLAN Voice ID when VLAN is enabled.

Example:

```
xStatus Network 1 VLAN Voice VlanId
*s Network 1 VLAN Voice VlanId: "Off"
** end
```

xStatus Network [1..1] VLAN Native VlanId

Identifies the VLAN associated with any untagged traffic between the switch and the endpoint. For more information see documentation for the IEEE 802.1Q protocol.

Example:

```
xStatus Network 1 VLAN Native VlanId
*s Network 1 VLAN Native VlanId: "200"
** end
```


xStatus Network [1..1] CDP Platform

Returns the hardware platform name of the switch that ISDN Link is connected to (if the network switch supports CDP).

Format: String.

Example:

```
xStatus Network 1 CDP Platform
*s Network 1 CDP Platform: "cisco WS-C3750X-48P"
** end
```

xStatus Network [1..1] CDP Version

Returns information about the software release version running on the switch that ISDN Link is connected to (if the network switch supports CDP).

Format: String.

Example:

```
xStatus Network 1 CDP Version
*s Network 1 CDP Version: "Cisco IOS Software, C3750E Software (C3750E-
UNIVERSALK9-M), Version 15.0(1)SE2, RELEASE SOFTWARE (fc3)*Technical Support:
http://www.cisco.com/techsupport*Copyright (c) 1986-2011 by Cisco Systems,
Inc.*Compiled Thu 22-Dec-11 00:05 by prod_rel_team"
** end
```

xStatus Network [1..1] CDP Capabilities

Describes the functional capability for the switch that ISDN Link is connected to (if the network switch supports CDP) in form of a device type. See documentation for CDP (Cisco Discovery Protocol) protocol on our web site for more information.

Format: String.

Example:

```
xStatus Network 1 CDP Capabilities
*s Network 1 CDP Capabilities: "0x0029"
** end
```

xStatus Network [1..1] CDP DeviceId

Identifies the name of the switch that ISDN Link is connected to (if the network switch supports CDP) in the form of a character string.

Format: String.

Example:

```
xStatus Network 1 CDP DeviceId
*s Network 1 CDP DeviceId: "123456.company.com"
** end
```

xStatus Network [1..1] CDP PortID

Identification that the switch uses for the port the ISDN Link is connected to (if the network switch supports CDP).

Format: String.

Example:

```
xStatus Network 1 CDP PortID
*s Network 1 CDP PortID: "GigabitEthernet1/0/23"
** end
```

xStatus Network [1..1] CDP Duplex

Indicates status (duplex configuration) of CDP broadcast interface. Used by network operators to diagnose connectivity problems between adjacent network elements (if the network switch supports CDP).

Format: String.

Example:

```
xStatus Network 1 CDP Duplex
*s Network 1 CDP Duplex: "Full"
** end
```

xStatus Network [1..1] CDP VTPMgmtDomain

Returns information about the VTP management domain name-string as configured in the switch that ISDN Link is connected to (if the network switch supports CDP).

Format: String.

Example:

```
xStatus Network 1 CDP VTPMgmtDomain
*s Network 1 CDP VTPMgmtDomain: "anyplace"
** end
```

xStatus Network [1..1] CDP Address

Returns the first network address of both the receiving and the sending devices (if the network switch supports CDP).

Format: String.

Example:

```
xStatus Network 1 CDP Address
*s Network 1 CDP Address: "192.0.1.20"
** end
```

xStatus Network [1..1] CDP PrimaryMgmtAddress

Returns the management address used to configure and monitor the switch that ISDN Link is connected to (if the network switch supports CDP).

Format: String.

Example:

```
xStatus Network 1 CDP PrimaryMgmtAddress
*s Network 1 CDP PrimaryMgmtAddress: "10.1.1.2"
** end
```

xStatus Network [1..1] CDP SysName

Returns the SysName as configured in the switch that ISDN Link is connected to (if the network switch supports CDP).

Format: String.

Example:

```
xStatus Network 1 CDP SysName
*s Network 1 CDP SysName: ""
** end
```

xStatus Network [1..1] CDP SysObjectID

Returns the SysObjectID as configured in the switch that ISDN Link is connected to (if the network switch supports CDP).

Format: String.

Example:

```
xStatus Network 1 CDP SysObjectID
*s Network 1 CDP SysObjectID: ""
** end
```

xStatus Network [1..1] CDP VoIPApplianceVlanID

Returns the VoIPApplianceVlanID as configured in the switch that ISDN Link is connected to (if the network switch supports CDP).

Format: String.

Example:

```
xStatus Network 1 CDP VoIPApplianceVlanID
*s Network 1 CDP VoIPApplianceVlanID: ""
** end
```

SIP status

xStatus SIP Profile [1..1] Proxy [1..1] Status

Shows the status of the communication between the endpoint and the SIP Proxy server.

Active: The communication between the endpoint and the SIP Proxy is active.

DNSFailed: The attempt to establish communication to the DNS server failed.

Off: There is no communication between the endpoint and the SIP Proxy.

Timeout: The attempt to establish communication to the SIP Proxy timed out.

UnableTCP: The system is unable to use TCP as the transport method.

UnableTLS: The system is unable to use TLS as the transport method.

Unknown: The status of the communication is not known.

Example:

```
xStatus SIP Profile 1 Proxy 1 Status
*s SIP Profile 1 Proxy 1 Status: Active
** end
```

xStatus SIP Profile [1..1] Proxy [1..1] Address

Shows the address of the SIP Proxy that the system communicates with.

Format: String.

Example:

```
xStatus SIP Profile 1 Proxy 1 Address
*s SIP Profile 1 Proxy 1 Address: "192.0.2.50"
** end
```

xStatus SIP Profile [1..1] Secure

Shows the encryption status of the signalling with the SIP Proxy server.

True: Encryption is enabled.

False: Encryption is disabled.

Example:

```
xStatus SIP Profile 1 Secure
*s SIP Profile 1 Secure: True
** end
```

xStatus SIP Profile [1..1] Verified

The result returned for this command will always be False.

xStatus SIP Profile [1..1] Authentication

Shows which authentication mechanism is used when registering to the SIP Proxy Server.

Digest: Uses the Digest access authentication method, as specified by RFC 2069.

NTLM: Uses the NTLM authentication method, which is a Microsoft authentication protocol.

Off: No authentication mechanism is used.

Example:

```
xStatus SIP Profile 1 Authentication
*s SIP Profile 1 Authentication: Off
** end
```

xStatus SIP Profile [1..1] Registration [1..n] Status

Shows the status of the registration to the SIP Proxy Server.

Deregister: The system is in the process of de-registering to the SIP Proxy.

Failed: The system failed to register to the SIP Proxy.

Inactive: The system is not registered to any SIP Proxy.

Registered: The system is registered to the SIP Proxy.

Registering: The system is in the process of registering to the SIP Proxy.

Example:

```
xStatus SIP Profile 1 Registration 1 Status
*s SIP Profile 1 Registration 1 Status: Registered
** end
```

xStatus SIP Profile [1..1] Registration [1..n] Reason

Shows a message to explain the reason why the SIP registration failed.

Format: String.

Example:

```
xStatus SIP Profile 1 Registration 1 Reason
*s SIP Profile 1 Registration 1 Reason: ""
** end
```

xStatus SIP Profile [1..1] Registration [1..n] URI

Shows the URI used for registration to the SIP Proxy server.

Format: String.

Example:

```
xStatus SIP Profile 1 Registration 1 URI
*s SIP Profile 1 Registration 1 URI: "isdn-link1@company.com"
** end
```

SystemUnit status

xStatus SystemUnit ProductType

Shows the product type.

Format: String.

Example:

```
xStatus SystemUnit ProductType
*s SystemUnit ProductType: "Cisco TelePresence ISDN link"
** end
```

xStatus SystemUnit Uptime

Shows the number of seconds since the last restart of the system.

Format: Integer.

Example:

```
xStatus SystemUnit Uptime
*s SystemUnit Uptime: 2158
** end
```

xStatus SystemUnit Software Version

Shows the software version installed on the system.

Format: String.

Example:

```
xStatus SystemUnit Software Version
*s SystemUnit Software Version: "ILn.n.n"
** end
```

xStatus SystemUnit Software Name

Shows the name of the software that is installed on the system.

Format: String.

Example:

```
xStatus SystemUnit Software Name
*s SystemUnit Software Name: "s51500"
** end
```

xStatus SystemUnit Software ReleaseDate

Shows the release date of the software installed on the system.

Format: String.

Example:

```
xStatus SystemUnit Software ReleaseDate
*s SystemUnit Software ReleaseDate: "2012-05-30"
** end
```

xStatus SystemUnit Software BootStage1

Shows the version of boot stage 1 loader.

Format: String.

Example:

```
xStatus SystemUnit Software BootStage1
*s SystemUnit Software BootStage1: "U-boot Stage1 2010.06-4"
** end
```

xStatus SystemUnit Software BootStage2

Shows the version of the boot stage 2 loader.

Format: String.

Example:

```
xStatus SystemUnit Software BootStage2
*s SystemUnit Software BootStage2: "U-boot Stage2 2010.06-14"
** end
```

xStatus SystemUnit Software MaxVideoCalls

Shows the maximum number of simultaneous video calls that is supported by the software installed. May vary depending of the selected network interface type and other configuration.

Format: Integer.

Example:

```
xStatus SystemUnit Software MaxVideoCalls
*s SystemUnit Software MaxVideoCalls: 3
** end
```

xStatus SystemUnit Software MaxAudioCalls

Shows the maximum number of simultaneous audio calls that is supported by the software installed.

Format: Integer.

Example:

```
xStatus SystemUnit Software MaxAudioCalls
*s SystemUnit Software MaxAudioCalls: 3
** end
```

xStatus SystemUnit Hardware Module SerialNumber

Shows the serial number of the system.

Format: String.

Example:

```
xStatus SystemUnit Hardware Module SerialNumber
*s SystemUnit Hardware Module SerialNumber: "FTT1234567V"
** end
```

xStatus SystemUnit Hardware Module Identifier

Shows the revision of the system.

Format: String.

Example:

```
xStatus SystemUnit Hardware Module Identifier
*s SystemUnit Hardware Module Identifier: "01"
** end
```

xStatus SystemUnit Hardware MainBoard SerialNumber

Shows the serial number of the main board in the system.

Format: String.

Example:

```
xStatus SystemUnit Hardware MainBoard SerialNumber
*s SystemUnit Hardware MainBoard SerialNumber: "F0999989"
** end
```

xStatus SystemUnit Hardware MainBoard Identifier

Shows the revision of the main board in the system.

Format: String.

Example:

```
xStatus SystemUnit Hardware MainBoard Identifier
*s SystemUnit Hardware MainBoard Identifier: "102030-1 [00]"
** end
```

xStatus SystemUnit Hardware MainBoard CPLDFirmware

Shows the version of installed CPLD firmware.

Format: String.

Example:

```
xStatus SystemUnit Hardware MainBoard CPLDFirmware
*s SystemUnit Hardware MainBoard CPLDFirmware: "s01770-6"
** end
```

xStatus SystemUnit Hardware MainBoard Temperature

Shows the temperature (in degrees Celsius) of the system's main board.

Format: String.

Example:

```
xStatus SystemUnit Hardware MainBoard Temperature
*s SystemUnit Hardware MainBoard Temperature: "33.5"
** end
```

xStatus SystemUnit State Status

Shows the system state, i.e. whether there are any errors or warnings issued.

Initializing: The system is initializing and not yet ready for use.

OK: The system is ready for use.

OKWithWarning: The system can be used for making calls, but there are warnings issued that might influence its behavior.

Error: The system is in an erroneous state and cannot be used for making calls.

Example:

```
xStatus SystemUnit State Status
*s SystemUnit State Status: Error
** end
```

xStatus SystemUnit State StatusCode

Shows the type of error or warning that is issued for the system (if any).

OK: The system is ready for use.

EthLinkDown: There is no Ethernet connection, and thus the ISDN Link cannot be used.

BRIWarning: A warning is issued for the BRI interface.

BRIError: There is an error on the BRI interface.

PRIError: There is an error on the PRI interface.

ExtNetError: There is an error on the external network interface (NET).

Initializing: The system is initializing and not yet ready for use.

Example:

```
xStatus SystemUnit State StatusCode
*s SystemUnit State StatusCode: BRIError
** end
```

xStatus SystemUnit State StatusText

Textual description of the system state, e.g. type of alarm if in an erroneous state.

Format: String.

Example:

```
xstatus SystemUnit State StatusText
*s SystemUnit State StatusText: "BRI1: [L1 Alarm] BRI2: [L1 Alarm] BRI3: [L1
Alarm] BRI4: [L1 Alarm]"
** end
```

xStatus SystemUnit State H320Number

Shows the number that can be used to dial in on the ISDN BRI/PRI interface in order to reach this ISDN Link and subsequently the endpoint associated with the ISDN Link. This requires that numbers have been assigned to the BRI or PRI interfaces respectively.

Not applicable when using the external network (NET) interface.

Format: String.

Example:

```
xstatus SystemUnit State H320Number
*s SystemUnit State H320Number: "5678"
** end
```

xStatus SystemUnit State MaxNumberOfCalls

Shows the maximum number of simultaneous calls supported, with the current configuration. The normal value is 3, with the following exceptions:

- 1) When using the External (V.35) interface, only one call is possible.
- 2) When H.320 side encryption is enabled, maximum 2 calls are supported on the PRI interface.

Format: Integer between 1 and 3.

Example:

```
xstatus SystemUnit State MaxNumberOfCalls
*s SystemUnit State MaxNumberOfCalls: 3
** end
```

xStatus SystemUnit State NumberOfActiveCalls

Shows the number of active calls.

Format: Integer between 0 and 3.

Example:

```
xStatus SystemUnit State NumberOfActiveCalls
*s SystemUnit State NumberOfActiveCalls: 1
** end
```

xStatus SystemUnit State NumberOfSuspendedCalls

Shows the number of suspended calls.

Format: Integer between 0 and 3.

Example:

```
xStatus SystemUnit State NumberOfSuspendedCalls
*s SystemUnit State NumberOfSuspendedCalls: 0
** end
```

xStatus SystemUnit State NumberOfInProgressCalls

Shows the number of calls in progress.

Format: Integer between 0 and 3.

Example:

```
xStatus SystemUnit State NumberOfInProgressCalls
*s SystemUnit State NumberOfInProgressCalls: 0
** end
```

Appendices

Password protection

NOTE: Although password is optional we strongly recommend that a password is set.

The ISDN Link is protected in the following ways:

- You always need to enter a user name to sign in to the command line interface. If a password is set, you need to enter the password.
- 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.
- In addition, the following is applicable if using automatic pairing mode: When logging in to the ISDN Link, through the TelePresence endpoint's web interface, the access to the ISDN Link is handled by the protection mechanisms of the endpoint itself. In addition, the above mentioned protection mechanisms for accessing the ISDN Link directly still apply.

Password management

Make sure to keep a record of the password in a secure place. If you have forgotten the password and cannot access the system, you need to do a factory reset via the boot monitor. For details see "[Factory reset during boot through the serial port](#)" on page 84.

Changing the system password

The ISDN Link is delivered with a default user account with user name `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.

Please notice that the password on the ISDN Link cannot be set via the web interface. It must be set from a command line interface. Connect to the ISDN Link from the serial port, or over the network by SSH.

Perform the following steps to change the password:

- Connect to the ISDN Link over the network (SSH) or serial port. See "[Connecting to the ISDN Link](#)" on page 82.
- Run the following command:

```
systemtools passwd
```
- Follow the instructions on screen.

When prompted enter the current password and the new password, and confirm the new password. If no password has been set, the current password is blank.

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

Setting a root password

If you sign in to the ISDN Link 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 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:

- Connect to the ISDN Link through the network over SSH or through the serial port.
- Sign in to the system with the user name (`admin`) and password.
- Run the command:

```
systemtools rootsettings on [password]
```

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

Perform the following steps to disable access for the root user on all ports.

- Run the command:

```
systemtools rootsettings off
```

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

Connecting to the ISDN Link

You can connect to the ISDN Link through the serial port, or if you know the IP address you can connect over the network through SSH. When using the ISDN Link in *automatic pairing mode* you can connect to the ISDN Link from the TelePresence endpoint's web interface.

Connect to the ISDN Link through the serial port

1. Use a standard serial cable and connect the cable between ISDN Link serial (COM) port and a computer.
2. Use a terminal program to connect to the ISDN Link (115200, 8, 1, none)
3. Login as `admin` and, if a password is set, enter the password.

Connect to the ISDN Link through SSH

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

1. Connect the network cable between ISDN Link Ethernet (LAN) port and the network.
2. Use a computer and open a command line interface, e.g. PuTTY. Enter the URI or IP address of the ISDN Link and select Connection Type SSH.
3. Login as `admin` and, if a password is set, enter the password.

Connect to the ISDN Link through the endpoint's web interface

When the ISDN Link is used in *automatic pairing mode* you can connect to the ISDN Link from the TelePresence endpoint's web interface. This requires that the ISDN Link and endpoint have been successfully paired.

1. Open a web browser and enter the address (IP address or URI) of the Telepresence endpoint.
2. Sign in with your username and, if a password is set, enter the password.

Finding the IP address

When the ISDN Link is used in *automatic pairing mode* you can find the IP address of the ISDN Link on the TelePresence endpoint's web interface, else you must connect through the serial port of the ISDN Link.

Finding the IP address by connecting to the ISDN Link serial port

Finding the IP address by connecting through the serial port.

1. Connect to the ISDN Link through the serial port.
2. Run the following command:

```
xStatus Network
```

Finding the IP address from the endpoint's web interface

When the ISDN Link is used in *automatic pairing mode* you can find the IP address of the ISDN Link on the TelePresence endpoint's web interface.

1. Connect to the ISDN Link through the TelePresence endpoint's web interface.
2. Navigate to: *Configuration > Peripherals* and press the **Manage ISDN Link** button.
3. Navigate to: *ISDN Link Status > Network > IPv4 > Address*.

Factory reset

NOTE: When running the factory reset command the ISDN Link will be reset to factory defaults. The call logs will be deleted and all system parameters will be reset to default values.

The ISDN Link will automatically restart after the factory reset.

Factory resetting the ISDN Link

The ISDN Link can be reset to factory defaults using a command line interface.

1. Connect to the ISDN Link over the network (SSH) or serial port.
See [“Connecting to the ISDN Link”](#) on page 82.
2. Run the command: `xCommand SystemUnit FactoryReset Confirm: Yes`

Factory reset during boot through the serial port

The ISDN Link can be reset to factory defaults through the serial interface during boot:

3. Connect to the ISDN Link through the serial port.
See [“Connecting to the ISDN Link”](#) on page 82.
4. While power cycling the unit, press the 'b' key (use lower case) to halt the boot process.
5. When the boot process is halted you should see the following text:

```
Press 'b' to enter u-boot prompt
```

```
Press 'c' to stop autoboot: 5
```

6. Press 'c' (use lower case) within 5 seconds.
7. When boot prompt is shown, run the factory reset command:

```
factrst
```

Unpairing the ISDN Link

When the ISDN Link is used in automatic pairing mode, unpairing of the ISDN Link and TelePresence endpoint can be done from the endpoint's web interface. This requires both the ISDN Link and the endpoint to be operational in order to reset pairing information on both units.

NOTE: Unpairing should always be done before replacing either the endpoint or the ISDN Link.

Persistent pairing

Pairing between the ISDN Link and the endpoint is persistent, which means that the two devices will remain paired until they are unpaired.

If the power is unplugged the ISDN Link will remain paired when the power is reconnected.

The endpoint and ISDN Link must be on the same subnet. If the endpoint and/or ISDN Link are assigned new IP addresses they will remain paired as long as they are kept in the same subnet.

NOTE: The pairing information is unique to the endpoint / ISDN Link entity. As a consequence, once paired, only those two units can interwork. Unpairing is required in order to change to another endpoint.

Unpairing from the TelePresence endpoint's web interface

When the ISDN Link is used in automatic pairing mode, unpairing of the ISDN Link and TelePresence endpoint can be done from the endpoint's web interface.

1. Open a web browser on your computer, enter the address (IP address or host name) of the TelePresence endpoint in the address bar, and login.
2. From the top menu, go to *Configuration > Peripherals*, and on the Peripherals page click the Manage ISDN Link button.
3. Click the Unpair this device button. This will clear the pairing information on both the endpoint and the ISDN Link.

Forced unpairing

When the ISDN Link is used in manual pairing mode, unpairing the ISDN Link is done from a command line interface.

There are some situations where the ISDN Link may not have been unpaired. In these situations you must force unpairing by manually unpair the ISDN Link in order to be able to restart pairing.

- The TelePresence endpoint was replaced without being unpaired.
- The ISDN Link was moved to another endpoint without unpairing prior to moving.

Follow the steps:

1. Connect to the ISDN Link over the network (SSH) or serial port.
See "[Connecting to the ISDN Link](#)" on page 82.
2. Run the command: `xCommand PairRestart Confirm: Yes`

Software upgrade

When the ISDN Link is used in automatic pairing mode you can upgrade the ISDN Link software from the TelePresence endpoint's web interface. See the [ISDN Link Administrator Guide](#) for details.

Software upgrade from IL1.0 to IL1.1

If upgrading the software from IL1.0 to IL1.1 you must connect to the ISDN Link through the serial port, or if you know the IP address you can connect over the network through SSH.

Checking the software version

To see which software version is installed on the ISDN Link, run the command:

```
xStatus SystemUnit Software Version
```

Installing the software from an URL

You can install the software from a local HTTP server if required.

1. Obtain the software package from Cisco.com (no contract required).
2. Install the software package on your HTTP server.
3. Enter the following command, inserting the IP address of your server and username and password:
 - `xCommand Systemunit Softwareupgrade Url: "http://ip.address.of.server/<filename>" UserName: "XXX" Password: "YYY"`
4. When successful you should see `*r SoftwareUpgradeResult (Status=OK)`.
5. The ISDN Link should restart after successful installation.

The SCP upgrade method

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

1. Obtain the software package from Cisco.com (no contract required).
2. Install the software package on your computer.
3. Using this method requires root access to be enabled on the ISDN Link. For details, see ["systemtools rootsettings"](#) on page 95.
4. Install software by copying the file to `/appl/installsw` on the ISDN Link:
 - If using SCP from the command line of your computer enter:


```
scp filetoupload.pkg root@ip.of.isdn.link:/appl/installsw
```
 - 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.
5. Once the file has been uploaded to ISDN Link the unit needs to be restarted in order to use the new software.
 - If logged in as `root` enter `reboot`.
 - If logged in as `admin` enter `xCommand Boot`.
6. The software version is displayed when logging on to the unit; or you can run the command `xStatus SystemUnit` and check for the Software Version.
7. It is strongly recommended to disable root access after installing the new software. For details, see the ["systemtools rootsettings"](#) on page 95.

Configuration examples

Configuration example with ISDN PRI E1 mode

User scenario: In the example the ISDN type is PRI, the switch type is European, the number is 8000, and the endpoint is connected directly to the ISDN Link. There is no IP infrastructure.

TelePresence 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.)
```

Dialing from the TelePresence 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

Configuration example with ISDN PRI T1 mode

User scenario: In the example the ISDN type is PRI, the switch type is National ISDN, the number is 8000, and the endpoint is connected directly to the ISDN Link. There is no IP infrastructure.

TelePresence 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 T1 switch type to National ISDN or choose the switch type provided by the ISDN Carrier)

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.)
```

Dialing from the TelePresence 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

Configuration example with ISDN BRI Euro type

User scenario: In the example the ISDN type is BRI, the switch type is European, the number is 8001-8004, and the endpoint is connected directly to the ISDN Link. There is no IP infrastructure.

TelePresence 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.)
```

Dialing from the TelePresence 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

NOTE: Please refer to xConfiguration ISDN BRI AutoActivation, if connected to equipment enforcing BRI line deactivation when BRI lines are not in use.

Configuration example with External Network

In this example the endpoint is connected directly to the ISDN Link. There is no IP infrastructure.

TelePresence 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)
```

Dialing from the TelePresence 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

Configuration example with full IP infrastructure and VCS

User scenario: In the example the ISDN type is BRI, switch type is Euro, there are four BRI lines (4 x 128 kbps), the number range is 8001-8004, and the endpoint is registered to a VCS*.

TelePresence endpoint configuration

Use the Remote Control or Touch panel to configure.

```
Network 1 > Assignment = DHCP
SIP Profile 1 > URI 1 = endpoint.name@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)

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
```

Dialing from the TelePresence 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

Making a call from the command line interface on the endpoint

In order to make a call from the command line interface on the TelePresence endpoint, see the dialing examples on this page.

About <ip address>

The <ip address> is the IP Address of the ISDN Link.

Replace the IP address used in the example (192.168.0.1) with the IP address of your ISDN Link.

About <number>

The <number> is the number to the far end endpoint (for example an MXP codec). Please notice that when dialing an ISDN network destination which requires sub-addressing, the sub-address number is provided in the following format:

<number>*<subaddress>

Replace the number used in the example (8000) with the number you want to call.

About 2xh221

If using 2xh221 the isdn number must be extended with a second number "<1st-number>**<2nd-number>".

Dialing on the NET interface

When using the NET (External) interface providing a number may not be required.

Furthermore, when using the NET interface, the <number> may consist of digits, * and #. In the rare situation that a # is required in the number, the # character must be encoded as %23. So to dial 1234#* on the NET interface, <number> must be set to 1234%23*.

Making a call when in manual pairing mode

Simple dialing

xCommand Dial Number:sip:<ip address>;x-h320number=<number>

Example: xCommand Dial Number:sip:192.168.0.1;x-h320number=8000

Dialing with a non-default call rate

xCommand Dial Number:sip:<ip address>;x-h320number=<number> CallRate:1920

Example: xCommand Dial Number:sip:192.168.0.1;x-h320number=8000 CallRate:1920

Dialing in restricted networks

xCommand Dial Number:sip:<ip address>;x-h320number=<number>;x-h320restrict=true

Example: xCommand Dial Number:sip:192.168.0.1;x-h320number=8000;x-h320restrict=true

NOTE: The ISDN Link can be configured whether to use restricted call type as default or not. If set to use restricted by default, then unrestricted calls can be made by using "x-h320restrict=false" (ie "x-h320restrict=true" is not required to make restricted calls).

Dialing a phone call (an audio only call)

xCommand Dial Number:sip:<ip address>;x-h320number=<number>;x-h320tlph=true CallRate:64 CallType:Audio

Example: xCommand Dial Number:sip:192.168.0.1;x-h320number=8000;x-h320tlph=true CallRate:64 CallType:Audio

Making a call when in automatic pairing mode

See the [ISDN Link Administrator Guide](#) for information about automatic pairing mode.

The log command

The log command is used to enable advanced logs. It is used for debugging the system, mainly in co-operation with support. Do not subscribe to unnecessary feedback.

Log printout is always sent to one of the log files captured by the system. This is done whether the log console output is enabled or not for a console. The log settings are not persistent, and will be reset after a system restart.

NOTE: Enabling too much or wrong logging types may affect operation.

About the log command

To get an overview of the supported commands, or to see the usage of a command, type a question mark after the command you would like to investigate.

- Required parameters in angle brackets: <text>
- Optional parameters in square brackets: [text]

Example

```
log ?
usage:
  log ctx <CTX|*> debug <N> - Set debug level N (0..9) for one or more
                             contexts (space separated list or * (all)).
                             Contexts may be wildcarded at end, eg. 'Test*'

  log list                    - Lists registered contexts

  log output <on|off>        - Output log to this console

OK
```

log output

```
log output <on|off>
  On: Output log to this console.
  Off: Do not output log.
```

Example: log output off

The systemtools commands

The systemtools command is used for administrative control of the ISDN Link and is only available from a command line interface.

About systemtools commands

To get an overview of the supported commands, or to see the usage of a command, type a question mark after the command you would like to investigate.

- Required parameters in angle brackets: <text>
- Optional parameters in square brackets: [text]

Example:

```
systemtools ?
boothalt
calltrace
dumph221
license
network
passwd
rootsettings
securitysettings
securitystatus
showlog
OK
```

Example:

```
systemtools license ?
usage: license list | show <name>
OK
```

Description of the systemtools commands

systemtools boothalt

systemtools boothalt allow

- *Allow*: Allow the user to stop the system during the boot loader startup sequence using a serial console.

systemtools boothalt prevent

- *Prevent*: Prevent the user from stopping the system during the boot loader startup sequence using a serial console.

systemtools boothalt status

- *Status*: Show whether or not the system can be stopped during a boot loader startup sequence.

systemtools calltrace

systemtools calltrace on

systemtools calltrace off

Enable/disable a suite of log entities that may be useful when debugging call related problems. Logging is typically sent to the application log file, but can be enabled for a console by enabling 'log' output, see separate command for this. Please notice that enabling log may interfere with real-time characteristics, and increases the chance of losing H320 side traffic data.

systemtools dumph221

systemtools dumph221 [inst]

- Dump the H.221 internal information. Used for debugging purposes.
- *Inst*: H.221 call instance (0-2), defaults to 0.

systemtools dumph221 [inst] toggle

- *Inst*: H.221 call instance (0-2), defaults to 0.
- *Toggle*: Toggle continuous dump on/off.

systemtools dumph221 reset

- *Reset*: Reset dump buffer(s).

systemtools license

systemtools license list

- *List*: Lists all the open source licenses for the ISDN Link.

systemtools license show <name>

- *Show*: Shows the content of a license file.
- *Name(r)*: The name of the license file to show.

systemtools network

systemtools network ping <hostname>

- *ping*: Network debug command.
- *hostname(r)*: The IP address or URL of the host.

systemtools network traceroute <hostname>

- *traceroute*: Network debug command.
- *hostname(r)*: The IP address or URL of the host.

systemtools network netstat

- *netstat*: Network debug command.

systemtools network addr

- *addr*: Network debug command.

systemtools passwd

Usage: `systemtools passwd`

Change the password for the `admin` user on ISDN Link. When prompted enter the current password and the new password, and confirm the new password. Use `""` as password to clear the `admin` password.

NOTE: If logged in as `root` user, this command cannot be used to set the password, see `systemtools rootsettings` to control root user.

systemtools rootsettings

`systemtools rootsettings on [password]`

- *On*: Enable access for the root user on all ports..
- *Password*: The root user password. Use `""` as password to clear root password.

`systemtools rootsettings serial [password]`

- *Serial*: Enable access for the root user on the serial port only.
- *Password*: The root user password. Use `""` as password to clear root password.

`systemtools rootsettings off`

- *Off*: Disable access for the root user on all ports.

`systemtools rootsetting never`

- *Never*: The root user is permanently turned off.

NOTE: When the root user is permanently turned off the ISDN Link must be reset to factory defaults to enable control of the root user availability.

`systemtools rootsettings get`

- *Get*: Obtain the current setting for the root user access.

systemtools securitystatus

Shows the security status for the ISDN Link.

Usage: `systemtools securitystatus`

Shows the security status for this device.

systemtools showlog

`systemtools showlog`

- List the available active logs and archived logs.

`systemtools showlog *`

- ***: Show all the active logs.

`systemtools showlog logname`

- *logname*: Show one specific active log (`all/application/console/dmesg/kern/main/messages`). Replace `[logname]` with one of the logs listed in brackets.

`systemtools showlog n`

- *n*: Show the select archived log, where `n=1` is the most recent.

systemtools securitysettings

See details overleaf.

systemtools securitysettings

`systemtools securitysettings isjitc`

- *isjitc*: Check if the current settings are JITC compliant.

`systemtools securitysettings jitc`

- *jitc*: Set up security requirements so they meet JITC.

`systemtools securitysettings ask`

- *ask*: Query for the separate configurations. When issuing this command you will see and respond to each policy separately. See *Table 1* for an overview of the configurations.
 - The default value “0” indicates no restrictions.
 - Press enter to keep the current value.
 - Type a number and press enter to change the given policy.

`systemtools securitysettings default`

- *default*: Revert to default security settings.

Table 1: The systemtools securitysettings configurations.

systemtools securitysettings ask	Description
Max failed login attempts [0]?	Number of failed log ins until a user is set inactive.
Suspend-time after max failed login attempts (minutes) [0]?	Number of minutes the user is set inactive after maximum failed login attempts have been exceeded.
Max simultaneous sessions total [0]?	Maximum number of users that can be logged in simultaneous to web and maximum number of users that can be logged in simultaneous to ssh.
Max simultaneous sessions per user [0]?	Maximum number of simultaneous sessions per user.
Number of passwords to remember [0]?	Number of previous passwords that the new password must differ from.
Number of PINs to remember [0]?	Number of previous PINs that the new PIN must differ from.
Maximum time between password renewals (days) [0]?	If the user has not changed the password within the renewal time the user will be set inactive.
Minimum time between password renewals (hours) [0]?	The user can only change password once within this limit.
Maximum time between PIN renewals (days) [0]?	If the user has not changed the PIN within the renewal time the user will be set inactive.
Minimum time between PIN renewals (hours) [0]?	The user can only change PIN once within this limit.
Maximum time between logins (days) [0]?	If the user has not logged in within this limit the user will be set inactive.
Max consecutive equal digits in PINs [0]?	Maximum consecutive equal digits in PINs.
Minimum number of digits in PINs [0]?	Minimum number of digits in PINs.
Maximum number of digits in PINs [0]?	Maximum number of digits in PINs.
Minimum number of character changed from previous PIN [0]?	Minimum number of character changed from previous PIN.
Max consecutive identical characters in passwords [0]?	Maximum consecutive identical characters in passwords.
Minimum number of characters in passwords [0]?	Minimum number of characters in passwords.
Maxmum number of characters in passwords [0]?	Maximum number of characters in passwords.
Minimum number of lower-case letters in passwords [0]?	Minimum number of lower-case letters in passwords.
Minimum number of upper-case letters in passwords [0]?	Minimum number of upper-case letters in passwords.
Minimum number of numerical characters in passwords [0]?	Minimum number of numerical characters in passwords.
Minimum number of special characters in passwords [0]?	Minimum number of special characters in passwords.
Minimum number of character groups in passwords [0]?	Minimum number of character groups in passwords.
Minimum number of character changed from previous password [0]?	Minimum number of character changed from previous password.



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