



Cisco TelePresence ISDN Link

Software Release Notes IL1.1.6

D1498108

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Document Revision History

| Revision | Date | Description |
|----------|-------------------------------|--|
| 08 | 14 th June 2016 | Release of IL1.1.6 security patches |
| 07 | 23 rd June 2015 | Release of IL1.1.5 security patches / FIPS fix |
| 06 | 22 nd October 2014 | Release of IL1.1.4 for Shellshock |
| 05 | 16 th July 2014 | Release of IL1.1.3 |
| 04 | 27 th June 2014 | Release of IL1.1.2 |
| 03 | 2 nd May 2014 | Release of IL1.1.1, fix for OpenSSL "Heartbleed" issue |
| 02 | 7 th February 2013 | Release of IL1.1.0 |
| 01 | 23 rd July 2012 | Initial release of IL1.0.0 |

Introduction IL1.1.6

These release notes describe the features and capabilities included in the Cisco TelePresence ISDN Link software IL 1.1.6 released on 14th June 2016.

Introduction IL1.1.5

These release notes describe the features and capabilities included in the Cisco TelePresence ISDN Link software IL 1.1.5 released on 23rd June 2015.

Introduction IL1.1.4

These release notes describe the features and capabilities included in the Cisco TelePresence ISDN Link software IL 1.1.4 released on 22nd October 2014.

Introduction IL1.1.3

These release notes describe the features and capabilities included in the Cisco TelePresence ISDN Link software IL 1.1.3 released on 16th July 2014.

Introduction IL1.1.2

These release notes describe the features and capabilities included in the Cisco TelePresence ISDN Link software IL 1.1.2 released on 27th June 2014.

IL1.1.2 is recommended to be used with TC7.2.0 on the paired codec. TC7.2.0 will be released in August 2014.

Introduction IL1.1.1

There are no new features or bug fixes from IL1.1.0 apart from a fix for the openssl “Heartbleed” issue.



NOTE – Customers previously provided with IL1.1.1 Pre-Alpha 1 with a fix for third party interoperability issues please note the fix in the pre-alpha is **not included** in this release. The interoperability issues will be addressed in the next release (IL1.1.2) to be released shortly.

Introduction IL1.1.0

These release notes describe the features and capabilities included in the Cisco TelePresence ISDN Link software IL 1.1.0 released on 7th February 2013.



IL1.1.0 is recommended for use with TC6. It can still be used with older software using the previous manual pairing method but it is highly recommended to use it with TC6.0 (with new pairing method) to obtain the benefits of the new features providing enhanced usability and managability. Please see Page - 21 if you are already using an ISDN Link with IL1.0.



For automatic pairing discovery and general operation the ISDN Link must be on the same network segment as the endpoint it will pair to. Recommended installation is for the endpoint that is to be used with the ISDN Link to be cabled directly into the ISDN Link via the dedicated port on the ISDN Link for the endpoint.



The new pairing method with TC6.0 and IL1.1 is known as automatic pairing as opposed to the previous pairing method known as manual pairing. If using a previous release you must upgrade and re-pair the ISDN Link and endpoint using the new method to obtain the benefits of all the new features. You can still use the ISDN Link in manual pairing mode.

New features and functionality in IL1.1.6

There are no new features in this release. This is primarily a security release.

New features and functionality in IL1.1.5

There are no new features in this release. This is primarily a security release.

New features and functionality in IL1.1.4

There are no new features in this release. This release is to primarily deal with the Shellshock Bash vulnerabilities CVE-2014-6271 and CVE-2014-7169.

New features and functionality in IL1.1.3

Added support for H.264 Sample Aspect Ratio signalling.

New features and functionality in IL1.1.2

Support for G.728 and G.729

G.728 and G.729 audio protocols support added in ISDN Link. The protocols must also be supported by the paired codec.

G.729 is supported by all codecs running TC 6.1.0 and later.

G.728 is supported by the following list of codecs running TC 7.2.0 and later:

- C90, SX20, MX200 G2, MX300 G2: Full support
- C40, C60, EX90: Only for point-to-point calls (not multisite)

Down Speeding of Outgoing Calls

New configuration of xConfiguration H320 Downspeed: On/Off. This selects if ISDN Link can down speed current call(s) if all available bandwidth is in use, and another outgoing call is requested from paired codec. The default setting is ON.

Video Loopback modes

It is now possible for special test scenarios to enable video loopback on the PRI and BRI circuits. Please see the admin guide for more information. These modes are non-persistent, so after a restart of the ISDN Link they will be disabled.

New features and functionality in IL1.1.1

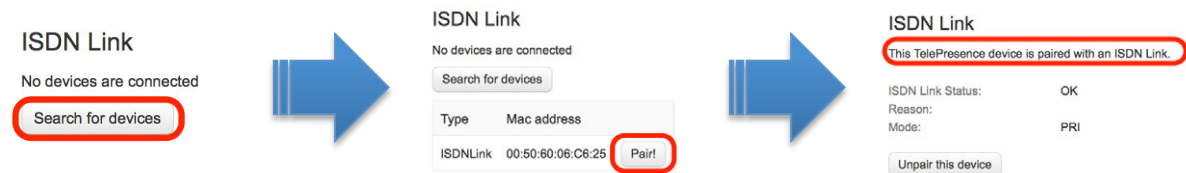
No new functionality; only fix from IL1.1.0 is for openssl “Heartbleed” bug.

New features and functionality in IL1.1.0

Automatic Pairing of ISDN Link and Endpoint (Requires TC6.0)

Previously there was a fair amount of manual configuration from the serial interface in order to setup the ISDN Link.

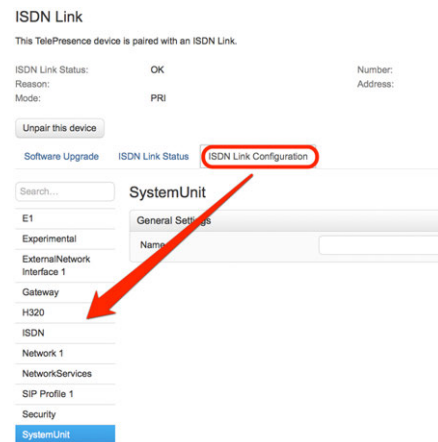
With IL1.1 and TC6.0 you can now connect an unconfigured ISDN Link and from the web interface of the endpoint search and pair with the ISDN Link (see [ISDN Link Installation Guide 1.1](#) for more details)



Configuration of ISDN Link from the Endpoint (Requires TC6.0)

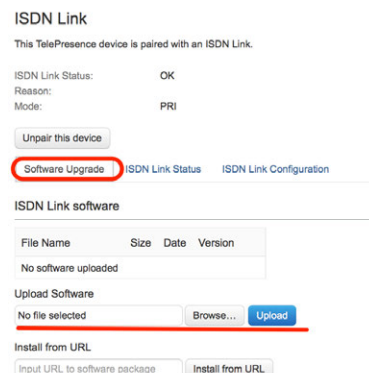
Once you have paired the device with an endpoint you will now be able to configure the device from the web page of the endpoint.

Please see the [ISDN Link Installation Guide](#) for some typical examples of settings for various configurations.



Software Upgrade Via Web Interface of Paired Endpoint (Requires TC6.0)

The ISDN Link can now be easily upgraded from the paired endpoint, using the web interface of the paired endpoint.



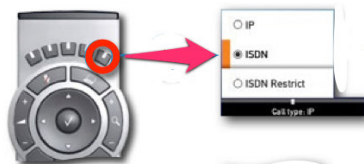
Better Call Integration (Requires TC6.0)

With IL1.0/TC5.x you had to enter a complicated dial string in order to dial ISDN calls. With IL1.1 and TC6.0 you now just enter the ISDN number to dial and then select the call as ISDN and the call rate and press call.



If primarily dialing through the ISDN Link you can set your default call to H.320 and default call rate to that desired on the endpoint web interface, then all you need to do is enter the number to dial and press Call.

See [ISDN Link Installation Guide](#) for more details on how to place calls.



AAC-LD

AAC-LD is now supported with the ISDN Link in this release.

Encryption

Encryption is now supported in this release.

Favourites

Frequently dialled numbers can be stored in the favourites list.

Upgrading to IL1.1.6

Use the web interface of the paired endpoint to upload and apply the new software to the ISDN Link.

Login to the codec as admin then proceed to Configuration -> Peripherals -> Manage ISDN Link. Look for the Upload Software section on the webpage, then browse to the ISDN Link 1.1.6 package (S51500IL_1_1_6.pkg) and press upload. Once the package is uploaded press the Install button and the ISDN Link will install the software and reboot to apply the upgrade. This can take a couple of minutes so please wait for the message saying the ISDN Link was successfully upgraded.

To confirm the new software is applied again use the web interface of the paired codec and go to Configuration -> Peripherals and under ISDN Link you will see the software version. It should now be:

Software Version: IL1.1.6 a337554

Upgrading to IL1.1.2

Use the web interface of the paired endpoint to upload and apply the new software to the ISDN Link.

Login to the codec as admin then proceed to Configuration -> Peripherals -> Manage ISDN Link. Look for the Upload Software section on the webpage, then browse to the ISDN Link 1.1.2 package (S51500IL1_1_2.pkg) and press upload. Once the package is uploaded press the Install button and the ISDN Link will install the software and reboot to apply the upgrade. This can take a couple of minutes so please wait for the message saying the ISDN Link was successfully upgraded.

To confirm the new software is applied again use the web interface of the paired codec and go to Configuration -> Peripherals and under ISDN Link you will see the software version. It should now be:

Software Version: IL1.1.2.5c0564b

Upgrading to IL1.1.1

Use the web interface of the paired endpoint to upload and apply the new software to the ISDN Link.

Login to the codec as admin then proceed to Configuration -> Peripherals -> Manage ISDN Link. Look for the Upload Software section on the webpage, then browse to the ISDN Link 1.1.1 package (S51500IL1_1_1.pkg) and press upload. Once the package is uploaded the ISDN Link will reboot and will be upgraded.

To confirm the new software is applied again use the web interface of the paired codec and go to Configuration -> Peripherals and under ISDN Link you will see the software version. It should now be:

Software Version: IL1.1.1.2c65b7d

Upgrading from Release IL1.0.0/TC5.x to IL1.1.0/TC6.0

Note – for new installations please refer to the [ISDN Link Installation Guide](#) for pairing and configuration examples, this procedure is for previous installations using TC5.x and IL1.0.

The recommended method of upgrading from TC5/IL1.0 would be as follows:

1. Upgrade endpoint to TC6.0 (license key required)
2. Upgrade the ISDN Link from IL1.0 to IL1.1
 - a. If your ISDN Link has IP connectivity to Internet then you can login as admin and enter the command:
 - i. **xcom SystemUnit SoftwareUpgrade URL:**
"http://ftp.tandberg.com/pub/software/endpoints/isdnlink/il1/s51500il1_1_0.pkg" UserName: "" password:""
 - ii. Nothing should happen while the file is downloaded, then the ISDN Link will restart.
 - iii. Confirm that the ISDN Link has been updated when it restarts, login as admin and enter **xstat sys soft** and confirm you have IL1.1.
 - b. If no Internet access you can download the file to a local computer and use scp to copy the file onto the ISDN Link:
 - i. You need to enable root if not already enabled. Login as admin on ISDN Link and enter **systemtools rootsettings on [PASSWORD]** where PASSWORD is the password you want – Please set a password!
 - ii. use WinSCP or scp to copy the IL1.1 file to /appl/installsw
 - example for scp
 - a. **scp s51500il1_1_0.pkg root@ip.address.of.isdnlink:/appl/installsw**
 - Using WinSCP (Windows)
 - a. Connect as root using SCP to ISDN Link
 - b. Drag and drop the file from local(left) drive into the /appl folder on the ISDN Link
 - c. You will now get a dialogue box saying **/appl/*.*** change the *.* to **installsw** so you see this -> **/appl/installsw**
 - d. You will be asked to confirm to overwrite file

- e. When finishes you will get an error message. Press OK. The file has been copied OK even though file size is 0.
 - iii. reboot the ISDN Link (**reboot** as root or **xcom boot** as admin)
 - iv. Confirm the ISDN Link has been updated to IL1.1, by logging in as admin after it restarts and enter **xstat sys soft**
 - v. You can now disable root access on ISDN Link by logging in as admin and using command **systemtools rootsettings off**
 3. Now the ISDN Link will be on IL1.1 and endpoint on TC6.0 but still in manual pairing mode.
 4. To enable the auto pairing mode (will give you access to the new feature allowing for easy dialing and management from TC6 endpoint) login to ISDN Link as admin and enter the command **xConfiguration Gateway PairingMode: Auto**
 5. You will get a red alarm on the ISDN Link (it now has lost connection to endpoint)
 6. Now follow the steps shown in the [ISDN Installation Guide for IL1.1](#) for information on how to pair the endpoint and ISDN Link and how to place calls.



From this release onwards (once you have re-paired the ISDN Link and endpoint) you will now upgrade the software on the ISDN Link using the web interface of the paired endpoint – no more need for SCP.

Resolved Issues in IL1.1.6

You can use the Bug Search Tool to find information about caveats (bugs) for this release, including a description of the problems and available workarounds. The Bug Search Tool lists both open and resolved caveats.

To access the Bug Search Tool, you need the following items:

- Internet connection
- Web browser
- Cisco.com user ID and password

To use the Bug Search Tool, follow these steps:

Step 1 To access the Bug Search Tool, go to <http://www.cisco.com/cisco/psn/bssprt/bss>

Step 2 Log in with your Cisco.com user ID and password.

Step 3 To look for information about a specific problem, enter the bug ID number in the

Search for bug ID field, then click **Go**.

ISDN Link

| CDETS ID | Summary |
|------------|--|
| CSCuz52446 | OpenSSL issues - CVE-2016-2108 CVE-2016-2107 CVE-2016-2105 CVE-2016-2106 CVE-2016-2109 CVE-2016-2176 |
| CSCuy34865 | Vulnerability in as glibc and identified by CVE-2015-7547 |
| CSCux95136 | NTPd security vulnerabilities affecting all versions of NTPd 4.x |
| CSCva05478 | Codec takes around 60 seconds to restore video after hold/resume |

Resolved Issues in IL1.1.5

You can use the Bug Search Tool to find information about caveats (bugs) for this release, including a description of the problems and available workarounds. The Bug Search Tool lists both open and resolved caveats.

To access the Bug Search Tool, you need the following items:

- Internet connection
- Web browser
- Cisco.com user ID and password

To use the Bug Search Tool, follow these steps:

Step 1 To access the Bug Search Tool, go to <http://www.cisco.com/cisco/psn/bssprt/bss>

Step 2 Log in with your Cisco.com user ID and password.

Step 3 To look for information about a specific problem, enter the bug ID number in the

Search for bug ID field, then click **Go**.

ISDN Link

| CDETS ID | Summary |
|------------|--|
| CSCut45963 | Fix for CVE-2015-0204 and CVE-2015-0286. |
| CSCus42828 | Fix for CVE-2015-0205. |
| CSCus31382 | OpenSSL security fix CVE-2014-3567 |
| CSCus27280 | NTPd.org Vulnerabilities |
| CSCuu97161 | Enabling FIPS mode causes cyclic reboot |

Related Fix in TC7.3.3

| CDETS ID | Summary |
|------------|---|
| CSCut79607 | Codec in FIPS mode will not pair with ISDN Link |

Resolved Issues in IL1.1.4

You can use the Bug Search Tool to find information about caveats (bugs) for this release, including a description of the problems and available workarounds. The Bug Search Tool lists both open and resolved caveats.

To access the Bug Search Tool, you need the following items:

- Internet connection
- Web browser
- Cisco.com user ID and password

To use the Bug Search Tool, follow these steps:

Step 1 To access the Bug Search Tool, go to <http://www.cisco.com/cisco/psn/bssprt/bss>

Step 2 Log in with your Cisco.com user ID and password.

Step 3 To look for information about a specific problem, enter the bug ID number in the

Search for bug ID field, then click **Go**.

ISDN Link

| CDETS ID | Summary |
|------------|---|
| CSCur05025 | Fix for Shellshock - CVE-2014-6271 and CVE-2014-7169 |
| CSCuq01874 | Callee change audio codec on session refresh with ISDN Link (low bandwidth calls) |

Resolved Issues in IL1.1.3

You can use the Bug Search Tool to find information about caveats (bugs) for this release, including a description of the problems and available workarounds. The Bug Search Tool lists both open and resolved caveats.

To access the Bug Search Tool, you need the following items:

- Internet connection
- Web browser
- Cisco.com user ID and password

To use the Bug Search Tool, follow these steps:

Step 1 To access the Bug Search Tool, go to <http://www.cisco.com/cisco/psn/bssprt/bss>

Step 2 Log in with your Cisco.com user ID and password.

Step 3 To look for information about a specific problem, enter the bug ID number in the

Search for bug ID field, then click **Go**.

ISDN Link

| CDETS ID | Summary |
|------------|--|
| CSCup91619 | Added support for h.264 SampleAspectRatio signalling for ISDN Link |

Resolved Issues in IL1.1.2

You can use the Bug Search Tool to find information about caveats (bugs) for this release, including a description of the problems and available workarounds. The Bug Search Tool lists both open and resolved caveats.

To access the Bug Search Tool, you need the following items:

- Internet connection
- Web browser
- Cisco.com user ID and password

To use the Bug Search Tool, follow these steps:

Step 1 To access the Bug Search Tool, go to <http://www.cisco.com/cisco/psn/bssprt/bss>

Step 2 Log in with your Cisco.com user ID and password.

Step 3 To look for information about a specific problem, enter the bug ID number in the

Search for bug ID field, then click **Go**.

ISDN Link

| CDETS ID | Summary |
|------------|---|
| CSCup63973 | No Video received from Skopia MCU/Radvision B40 GW |
| CSCui42670 | Customer has to enable capset filter to get access to RMX conference |
| CSCuo23422 | ISDN Link feature for BRI/PRI E1/T1 loopback for trouble-shooting |
| CSCup64012 | Not allowing to make outgoing BRI call unless one (or more) interfaces are active on L1 |
| CSCue73049 | Enabling SIP outbound cause registration failure |
| CSCug68580 | Add capability to down speed the call |
| CSCup64029 | Add support for G.729 audio protocol |
| CSCuo04038 | Unmute on ISDN call can take up to 8 seconds to hear audio |

| CDETS ID | Summary |
|------------|---|
| CSCun68244 | Presentation Issues between SX20 - ISDN Link to Polycom VSX |
| CSCup64059 | SIP log output could be incomplete |
| CSCup23978 | Fix latest vulnerabilities in OpenSSL |
| CSCuo41275 | BFCP Token Issue - Presentation not seen or sent in main |

Resolved Issues in IL1.1.1

You can use the Bug Search Tool to find information about caveats (bugs) for this release, including a description of the problems and available workarounds. The Bug Search Tool lists both open and resolved caveats.

To access the Bug Search Tool, you need the following items:

- Internet connection
- Web browser
- Cisco.com user ID and password

To use the Bug Search Tool, follow these steps:

Step 1 To access the Bug Search Tool, go to <http://www.cisco.com/cisco/psn/bssprt/bss>

Step 2 Log in with your Cisco.com user ID and password.

Step 3 To look for information about a specific problem, enter the bug ID number in the

Search for bug ID field, then click **Go**.

ISDN Link

| CDETS ID | Summary |
|------------|---|
| CSCuo26686 | The Cisco TelePresence ISDN Link includes a version of openssl that is affected by the vulnerability identified by the Common Vulnerability and Exposures (CVE) ID CVE-2014-0160 aka "Heartbleed" |

Resolved Issues in IL1.1.0

You can use the Bug Search Tool to find information about caveats (bugs) for this release, including a description of the problems and available workarounds. The Bug Search Tool lists both open and resolved caveats.

To access the Bug Search Tool, you need the following items:

- Internet connection
- Web browser
- Cisco.com user ID and password

To use the Bug Search Tool, follow these steps:

Step 1 To access the Bug Search Tool, go to <http://www.cisco.com/cisco/psn/bssprt/bss>

Step 2 Log in with your Cisco.com user ID and password.

Step 3 To look for information about a specific problem, enter the bug ID number in the

Search for bug ID field, then click **Go**.

ISDN Link

| CDETS ID | Summary |
|------------|---|
| CSCud31836 | Incoming calls with microphone muted on calling system caused a crash on ISDN Link |
| CSCub66283 | Noise during negotiation with Polycom RMX bridge |
| CSCub78084 | Video refresh, freeze, and black screen calling through ISDN GW |
| CSCuc76025 | Incoming call from a mobile one way audio (inbound to ISDN Link) only – Requires IL1.1/TC6.0 |

Known limitations

| Reference ID | Equipment | Summary |
|--------------|-----------------------------|--|
| CSCun31807 | ISDN Link | The ISDN Link does not support FECC (Far End Camera Control) |
| CSCun95177 | PBX/Service Provider - BRI | BRI Lines need to be configured to Point to Multi-point lines and not Point to Point lines in the PBX or from service provider. |
| NA | Paired Endpoint / ISDN Link | All communication between the ISDN Link and Endpoint is done using IPv6. Do not disable IPv6 on the endpoint. |
| CSCug68580 | ISDN Link | ISDN Link does not downspeed a call. If you place a call at the maximum bandwidth of the ISDN Link then try and place an additional call this will fail. (Resolved in IL1.1.2) |
| NA | ISDN Link / Endpoint | Calls via the ISDN Link will cause a SIP call to be placed from endpoint to the ISDN Link, which is connected immediately. There will be some delay in the ISDN Link establishing the external (ISDN/Net) call. During this period the endpoint will receive no audio/video and just show a black image until connection is established to the far end. This is improved in TC6.0/IL1.1. |
| NA | ISDN Link | With encryption enabled the maximum number of calls possible (video or audio) is reduced from three to two |

| | | |
|----|-----------|--|
| NA | ISDN Link | <p>The dialling method is quite complex with TC5.x/IL1.0.</p> <p>Resolved with TC6.0/IL1.1 in auto-pair mode.</p> |
| NA | ISDN Link | <p>The ISDN Link has no web interface or management functionality.</p> <p>With TC6.0/IL1.1, the ISDN Link is now managed via the web interface of the paired endpoint.</p> |
| | ISDN Link | <p>When enabling FIPS mode on the endpoint please unpair the ISDN Link from the codec first. Enable FIPS on the codec which cause a factory reset. Then setup the codec as required (enable FIPS on the ISDN Link if required) then pair the two together again.</p> |

Interoperability

The systems below have been tested and verified with this software release.

Endpoint Interoperability (Pairing)

| Equipment | Software revision | Protocol | Comments |
|----------------------|-------------------|----------|----------------------------------|
| C Series, EX, SX, MX | TC7.3.6 | SIP | TC7.3.6 recommended with IL1.1.6 |

References and related documents

The following table lists documents and web sites referenced in this document. All product documentation can be found on our [web site](#).

| Name | Document reference |
|---------------------------------------|---|
| Cisco website | http://www.cisco.com |
| Cisco Software Download | http://www.cisco.com/cisco/software/navigator.html?i=lch |
| Cisco TelePresence User Documentation | http://www.cisco.com/go/telepresence/docs |

Software filename

The correct software filename is listed in the following table.

| Cisco ISDN Link | Software for ISDN Link | Release ID | Serial number range |
|-----------------|------------------------|------------|---------------------|
| AES Encryption | S51500IL_1_1_6.pkg | a337554 | All |

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Introduction IL1.0.0

These release notes describe the features and capabilities included in the Cisco TelePresence ISDN Link software IL 1.0.0 released on 23 July 2012.



IL1.0.0 is not recommended. Upgrade to the latest IL release and pair to endpoint to enable better functionality and usability.

New Product Abstract

The Cisco TelePresence ISDN Link is a compact appliance for in-room ISDN and external network connectivity supporting Cisco TelePresence EX, MX, SX, and C Series endpoints.

It provides direct connectivity to ISDN or external networks (V.35) for individual TelePresence endpoints without the need for additional gateways or other infrastructure. The ISDN Link helps ensure that ISDN can be used as the primary, backup, or external connectivity for a high-quality and reliable telepresence experience.

The product provides:

- Smooth connectivity for IP-to-ISDN or IP-to-V.35 networks
- 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)
- ISDN connectivity for one endpoint, eliminating the need to buy an additional gateway.

ISDN Link

Product Specification

| | |
|-------------------------|---|
| Endpoints Supported | C-series-based systems and SX-, MX-, and EX-series endpoints (Not supported with SX10) |
| Bandwidth | 4 BRI up to 512 kbps; 1 PRI up to 1920 kbps; external networks up to 1920 kbps |
| Video Standards/ | H.261, H.263, H.263++, and H.264, depending upon codec support |
| Audio Standards | AAC-LD, G.729, G.728, G.722, G.722.1 and G.711 |
| Dual Stream | BFCP / H.239 |
| Network Interfaces | Four ISDN BRI (RJ-45) S/T interfaces; one E1/T1 (RJ-45) for ISDN PRI; two LAN/Ethernet (RJ-45) 10-/100-/1000-Mb (LAN); and one external network (V.35, RS530, RS449, and RS366) |
| No. of Concurrent Calls | System will support up to 3 video/audio calls (2 if encryption enabled) |
| Dimensions (H x W x D) | 1.18 x 11.02 x 6.69 in. (28 x 3 x 17 cm) |

Figure 1 – Front of ISDN Link

A B C D E F

A - Power/System health status indicator. This should normally be white if there are no problems. If red then there is either a physical interface or configuration error, (check the xstatus for further information)

B - When lit, BRI has been selected as preferred communication method

C - When lit, PRI has been selected as preferred communication method

D - When lit, NET has been selected as preferred communication method

E - Will flicker upon information sent/received from the network.

F - Will flicker upon information sent/received from the endpoint.

Figure 2 – Rear of ISDN Link

A B C D E F G

A - 4 x BRI Interfaces

B - 1 x PRI Interface

C - NET/V.35 Interface

D - Network Interface (Connect to IP Network)

E - Endpoint Interface (Connect to EX, MX, SX, and C Series endpoint)

F - Serial/RS-232 Interface

G - Power

Software Upgrade

Method 1 - ISDN Link has IP connection and Internet connectivity

- SSH to ISDN Link as admin

xCommand SystemUnit SoftwareUpgrade URL: "ftp://ftp.tandberg.com/pub/software/endpoints/isdnlink/s51500il1_0_0.pkg" UserName: "anonymous" Password: ""

Method 2 - ISDN Link has no IP connectivity (Direct Upload)

- Download the file
- Give your PC/Laptop same IP address range as ISDN Link(static)
- Connect ISDN Link and Laptop to switch or use crossover cable
- Ensure you have root access to ISDN Link(test *ssh root@isdnlink.ip.address*)

If you do not have access you will have to enable using the command

Systemtools rootsettings on <passwd>

Where <passwd> is required password for root account

Please ensure a password is set on the root account

- Use SCP or WINSCP to copy the file to *root@isdnlink.ip.address:/appl/installsw* e.g.
scp s51500il1_0_0.pkg root@192.168.1.100:/appl/installsw
- Wait for the file to transfer then power off (reboot/xcom boot) and on the ISDN Link to reload new software
- Confirm successful by logging in as admin and enter the command
xstat sys

Option Keys / Release Keys

No keys are required for the product, all bandwidth and functionality is enabled by default.

Known limitations

| Reference ID | Equipment | Summary |
|--------------|----------------------|---|
| NA | Endpoint | In this release the paired endpoint must have a known static address. Please ensure the endpoint has static IP or DHCP reserved address. |
| NA | ISDN Link / Endpoint | A non-IP call from the endpoint via the ISDN Link will cause a SIP call to be placed to the ISDN Link, which is connected immediately. There will be some delay in the ISDN Link establishing the external (ISDN/Net) call. During this period the endpoint will receive no audio/video and just show a black image until connection is established to the far end. |
| NA | ISDN Link | The ISDN Link does not currently support VLANs. This will be implemented in a future release. |
| NA | ISDN Link | The dialling method is quite complex. This will be addressed in future releases of software (TC6/TE 7 and IL1.1). |
| NA | ISDN Link | AAC-LD is currently not supported. This will be addressed in a future release. |
| NA | ISDN Link | The ISDN Link has no web interface or management functionality. Its management will be integrated into the endpoint software in future releases. |

Interoperability

The systems below have been tested and verified with this software release.

SIP Registrars/Proxies

| Equipment | Software revision | Comments |
|--|----------------------|----------|
| Cisco TelePresence System Video Communication Server (VCS) | X6.1, X7.0.x, X7.1.0 | |

Endpoint Interoperability (Pairing)

| Equipment | Software revision | Protocol | Comments |
|----------------------|-------------------|----------|----------|
| C Series, EX, SX, MX | TC5.1.x | SIP | |

References and related documents

The following table lists documents and web sites referenced in this document. All product documentation can be found on our [web site](#)

| Name | Document reference |
|---------------------------------------|---|
| Cisco website | http://www.cisco.com |
| Cisco Software Download | http://www.cisco.com/cisco/software/navigator.html?i=lch |
| Cisco TelePresence User Documentation | http://www.cisco.com/go/telepresence/docs |

Software filenames

The correct software filename is listed in the following table.

| Cisco ISDN Link | Software for ISDN Link | Release ID | Serial number range |
|-----------------|------------------------|------------|---------------------|
| AES Encryption | S51500IL1_0_0.pkg | 291516 | All |

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