Cisco TelePresence ISDN GW 3241

Getting started

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General information

About the Cisco TelePresence ISDN GW 3241

The Cisco TelePresence ISDN GW 3241 (ISDN GW 3241) is a high performance video gateway which enables ISDN network connectivity for Cisco TelePresence IP-based video infrastructure products as well as IP-based endpoints.

Package contents

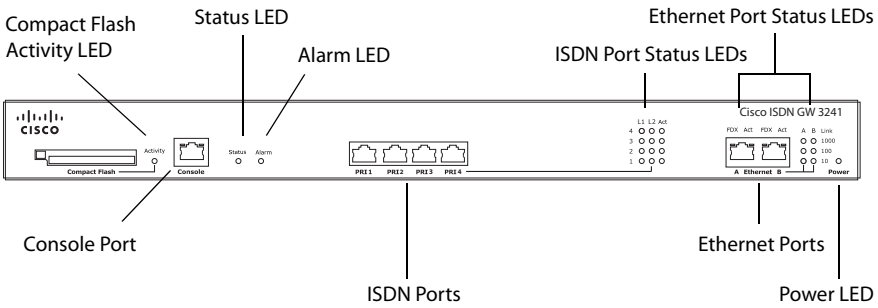
The following items are included with the ISDN GW 3241. Verify that you have these items before installing the device:

- Cisco TelePresence ISDN GW 3241
- Console cable (blue)
- Power cable
- Rack mounting kit

Port and LED location

Figure 1 shows the position of ports and LEDs on the ISDN GW 3241.

Figure 1: ISDN GW 3241 front panel



LED behavior

Table 1 describes the behavior of the LEDs.

Table 1: ISDN GW 3241 LED behavior

LED	Color	Indicates
Compact Flash Activity	Flashing green	One of: ▸ the device is booting ▸ a configuration change has been made ▸ the configuration is being transferred by FTP
Status	Green	The unit is operating normally
Alarm	Red	The device is booting or has developed a fault, for example: ▸ temperature is outside normal limits ▸ fan failure ▸ battery failure of the internal clock Refer to the web interface for more information about the problem (go to **Status > Health**)
ISDN Port Status, for each ISDN port:		
L1	Off	There is no connection on this port, or the device is not receiving framing (also known as Red Alarm)
	Flashing green	The device is receiving framing, but the far end is not receiving framing (also known as Yellow Alarm)
	Green	The port is connected to the far end
L2	Green	Layer 2 connectivity has been achieved with the ISDN network from this port. This means that D-channel signaling has been established with the network
Act	Green	At least one active call is using this port. Data is currently being received on this port

Table 1: ISDN GW 3241 LED behavior (continued)

LED		Color	Indicates
Ethernet Port Status, for each Ethernet port:			
	FDX	Green	The link has been negotiated as a full-duplex link
	Act	Green	Packets are being transmitted on this port
	Link	Green	The speed of the link from this port, which is either 10, 100, or 1000 Mbps
Power		Blue	The device is receiving power

Connecting the ISDN GW 3241

Before you start



IMPORTANT: Before installing the ISDN GW 3241, you must read the safety information at http://www.cisco.com/go/telepresence/safety.

Your ISDN connection



To reduce the risk of fire, use only 26 AWG or larger telecommunication line cord.

Outside North America

Check with your network provider to ensure that your incoming ISDN PRI line is terminated in an NTU/CSU (Network Termination Unit/ Channel Service Unit). If it is not, then seek their advice regarding the provisioning of such a device. Do not connect the ISDN GW 3241 directly to an external ISDN line.

Within North America

If your network provider has not terminated all of your incoming ISDN PRI lines with an NTU/CSU, Cisco recommends that you install a suitably approved CSU to protect the ISDN GW 3241 from damage by surges on your ISDN PRI lines.



If you do not install a CSU between the incoming ISDN PRI lines and the ISDN GW 3241, then the ISDN GW 3241 must be installed in a restricted location as defined by EN, IEC and UL60950. This is defined as an area intended for qualified or trained personal only with access controlled by a locking mechanism such as a key.



If you do not install a CSU between the incoming ISDN PRI lines and the ISDN GW 3241, then you are required to connect the unit to a protective earth as follows:

Connect a protective earth cable (not supplied) to the terminals on the rear of the chassis marked with the earth symbol .

Connect the other end of this cable to a true earth.



The earth terminal accepts two M4 screws on a 16mm (5/8") spacing for use with a two hole copper lug (such as the Panduit LCD10-10A-L).

Step one: Connect power

Connect the power connector on the rear of the unit to the power supply using the supplied power cable. (There is no On/Off switch.)

Step two: Connect to Ethernet Port A

Connect an Ethernet cable from Ethernet Port A to an Ethernet switch (rather than a hub, to minimize interference from other devices on the network). The Ethernet port is a 10/100/1000 Mbps auto-sensing connection.



Only connect to Ethernet Port A, as all initial configuration must be done on this port. Do not connect anything to Ethernet Port B.

Step three: Connect to the ISDN ports

The ISDN GW 3241 uses a standard RJ48C ISDN interface for each PRI port. Use a single straight-through STP patch cable to connect each PRI port on the ISDN GW 3241 to your ISDN connection.

For information about the behavior of the ISDN port LEDs, refer to Table 1, ISDN GW 3241 LED behavior, on page 4.



For D-channel signaling to be established, the ISDN GW 3241 must have found and synchronized with the ISDN network clock. In some installations, you may have to explicitly request your ISDN provider to enable the network clock before the link will be established.

Initial configuration

Step one: Connect to the console port

1 Ensure power is connected to the ISDN GW 3241 and the Status LED is green.

2 Connect the console port of the ISDN GW 3241 to the serial port of your PC using the blue RJ45 to DB9 console cable supplied.

3 Use a serial terminal program, such as Secure CRT or HyperTerminal, to connect to the ISDN GW 3241. Set your terminal software to the following settings:

- Baud rate: 38400
- Data bits: 8
- Parity: none
- Stop bits: 1
- Flow control: none

4 Press Enter and the following command prompt appears on the terminal:
`ISDN-GW:>`

Step two: Configure Ethernet Port A settings

The default setting for the ISDN GW 3241 Ethernet ports is auto-sensing mode. If the switch ports to which you connect the ISDN GW 3241 are not also set to auto-sensing mode, then you need to configure the ISDN GW 3241 Ethernet ports to use the same speed and duplex mode.



Only connect to Ethernet Port A, as all initial configuration must be done on this port. Do not connect anything to Ethernet Port B.



Both ends of the Ethernet connection must be configured in the same way. For example, either configure both ends of the link to be auto-sensing or configure both ends to operate at the same speed and duplex.



To establish a 1000 Mbps connection, both ends of the link must be configured as auto-sensing.

1 To configure Ethernet Port A, enter the following for auto-sensing mode:
`ethertype A auto`
or to configure a speed and duplex, use the following command:
`ethertype A <10|100> <half|full>`

2 To display the current configuration and status of the Ethernet ports, enter:
`status`

For example, to configure a full-duplex 100 Mbps link, enter:

`ethertype A 100 full`



To establish a 1000 Mbps connection, both ends of the link must be configured as auto-sensing.

Step three: Assign an IP address to the ISDN GW 3241 (optional)

The default setting for the ISDN GW 3241 is to use DHCP to obtain an IP address. You can assign a static IP address if you prefer or if a DHCP server is not available. If you want the IP address of the ISDN GW 3241 to be assigned by your DHCP server, omit this step.



From version 2.1, ISDN GW 3241 software supports IPv4 and IPv6 addressing. Default setting: Port A is configured to assign an IPv4 address using DHCP; IPv6 on Port A is disabled.

From Version 2.1:

- To assign a static IPv4 address to Port A, use the following command:
  `static A <IP address> <netmask> [<default gateway address>]`

  For example, to assign an address of 192.168.1.2 where the default gateway is at 192.168.1.1, enter:
  `static A 192.168.1.2 255.255.255.0 192.168.1.1`

- To set DNS manually, use this command:
  `dns <DNS server address> [<secondary DNS server>][<domain>]`

- To return to using DHCP after setting a static IPv4 address, use the following command:
  `dhcp -4 A`



For information on assigning a static IPv6 address type **`help static`**, for information on assigning an automatic IPv6 address type **`help dhcp`** or else refer to the online help.

Step four: Discover the IP address of the ISDN GW 3241

1 To display the current status of the IP address, enter: **`status`**
If you have DHCP enabled on your network and you are allowing the ISDN GW 3241 to acquire its address using DHCP, the IP address that has been acquired by Ethernet Port A will be shown; if you have assigned a static IP address, that is the address that will be shown.

2 Make a note of the IP address. You will use this to access the web interface of the unit.

Configuring the ISDN GW 3241

Step one: Log in to the ISDN GW 3241

All administration of the ISDN GW 3241 is performed via the web interface.

To log in to the ISDN GW 3241:

1 Use your browser to navigate to the IP address of the ISDN GW 3241 (to discover the IP address, refer to the previous section).

2 Click **Log in** and enter the user name **admin** with no password. The **Login information page** is displayed.



Cisco recommends that you change the admin account to use a password as soon as possible. To do that, click **Change password** on the **Login information** page or go to **Users**, click the **admin** link, and provide the required user information.

Step two: Allocate port licences

Port licenses must be allocated to the ISDN GW 3241 from the Supervisor's **Port licenses** page. Refer to the online help for assistance.

Step three: Set up the ISDN interfaces

1 In the web interface, go to **Settings > ISDN**.

2 Select the **ISDN interface type** to match that of your installation; E1 is typically used in the UK and mainland Europe, T1 (USA and Canada) in North America, and T1 (Japan) in Japan.

3 Complete the other settings as required by your network, referring to the online help for further information.

4 Click **Apply changes** to save any changes you have made to the configuration.

5 Restart the ISDN GW 3241 (this is only necessary if you changed the ISDN configuration). To do this:

   i Go to **Settings > Shutdown**, and click **Shut down ISDN GW**.

   ii Confirm that you want to shut down the ISDN GW 3241.

   iii Click **Restart ISDN GW**.

6 When the ISDN GW 3241 has restarted, log in to the web interface again, and go to **Settings > ISDN ports**.

7 Complete the settings for ISDN Port 1 as required by your network, referring to the online help for further information. Note that all ISDN ports on the ISDN GW 3241 are enabled by default.

8 Click **Apply changes** to save your configuration changes to the ISDN port.

9 Complete the settings for other ISDN ports as required by your network, referring to the online help for further information.

Step four: Configure an H.323 gatekeeper

If you have H.323 endpoints, using an H.323 gatekeeper can make it easier for callers to make their call. You can configure the ISDN GW 3241 to use an external gatekeeper or its own built-in gatekeeper.

To configure the use of an H.323 gatekeeper, go to **Settings > H.323**. Typically you may want to add a Dial plan prefix for voice calls (for example, 9) and another for video calls (for example, 8).

For more information refer to the online help topic: "Configuring gatekeeper settings".

Step five: Configure the dial plan

The default behavior of the ISDN GW 3241 is to reject all calls. You must configure a dial plan to allow permitted calls to be placed.

Below are some simple configurations for dial plan rules. Refer to the online help for more information on dial plan rule syntax.

IP to ISDN dial plan setup

This example allows IP codecs to dial (via a gatekeeper) the 'phone number of the destination endpoint, using a prefix of 9 for audio calls and 8 for video calls. It assumes that you require both video and voice calls to be made from your IP network to ISDN and that you have set up dial plan prefixes 8 and 9 on the **Settings > H.323** page for the ISDN GW 3241.

1 In the web interface, go to **Dial plan > IP to ISDN** and click **Add rule**.

2 For **Condition**, select **Called number matches** and enter the correct match for example 9(D*).

3 For **Action**, select **Call this number** and enter $1.

4 For **Call type**, select **Telephone**.

5 Leave the other values unchanged. Click **Add rule** to add the rule to the dial plan.

6 Repeat steps 1 to 5 to create a second dial plan to accept and forward the video calls with the correct format in **Called number matches**, for example 8(D*) and for **Call type**, select **Video**.

ISDN to IP dial plan setup

Options 1 and 2 will automatically handle both voice and video calls.

Option 1 - This example assumes that you have a PRI line that has 100 numbers (00 to 99) associated with it and that all your endpoints are registered to a gatekeeper with registrations in the range 5900 - 5999.

1 Go to **Dial plan > ISDN to IP**, and click **Add rule**.

2 For **Condition**, select **Called number matches** and enter the correct match for example D*(DD), which will match the last 2 digits of the dialed number. To match the last 3 digits, use D*(DDD).

3 For **Action**, select **Call this number** and enter 59$1.

4 For **Call type**, select **Video**.

5 Leave the other values unchanged. Click **Add rule** to add the rule to the dial plan.

Option 2 - This example assumes that you have a PRI line which has 1 number associated with it but you require access to multiple endpoints on the IP side. When you dial you will be greeted by the ISDN GW 3241's auto attendant and using TCS-4 or DTMF you can dial the extension of the IP endpoint, if known.

1 Go to **Dial plan > ISDN to IP**, and click **Add rule**.

2 For **Condition**, select **Match any called number**.

3 For **Action**, select **Enter the auto attendant + TCS-4**.

4 For **Call type**, select **Video**.

5 Leave the other values unchanged. Click **Add rule** to add the rule to the dial plan.

There are a number of different ways in which you can use the dial plan. For example, you can use the dial plan to link specific bandwidths to certain prefixes, thereby enabling users to use the correct bandwidth for an IP to ISDN call. You can also use the dial plan to enable the ISDN GW 3241 to join incoming ISDN calls to the correct conference on an MCU. These dial plan configurations — and the dial plan rule syntax — are explained in greater detail and with supporting examples in the online help accessible from the web interface.

Troubleshooting and technical support information

Refer to this section if you are experiencing difficulties with the ISDN GW 3241. Ensure that you have followed the instructions in this guide when installing and configuring the ISDN GW 3241.

Calls fail to complete

If outgoing calls fail to complete, check that you have configured the ISDN GW 3241 and all other equipment correctly, paying particular attention to the number you are trying to call. Remember that endpoints may be busy when you call them.

Using the event log to help solve a problem

You can use the event log to produce debugging information to assist technical support in solving any problems. Event logging capture filter topics are set by default to **Errors, warnings and information**. Do not change the capture filter topic level without the guidance of technical support.

Getting more help

Cisco recommends registering your product at http://www.tandberg.com/services/video-conferencing-product-registration.jsp in order to receive notifications about the latest software and security updates. New feature and maintenance releases are published regularly, and we recommend that the ISDN GW 3241 software is always kept up to date.

If you experience any problems when configuring or using the ISDN GW 3241, consult the online help (available within the UI of your ISDN GW 3241) for an explanation of how its individual features and settings work. If you cannot find the answer you need, check on the web site at http://www.tandberg.com/support to make sure that the ISDN GW 3241 is running the most up-to-date software and for further relevant documentation.

You or your reseller can get help from our support team by raising a case at http://www.tandberg.com/support/video-conferencing-online-support.jsp. Make sure you have the following information ready:

- The serial number and product model number of the unit
- The software build number which can be found on the product user interface
- Your contact email address or telephone number

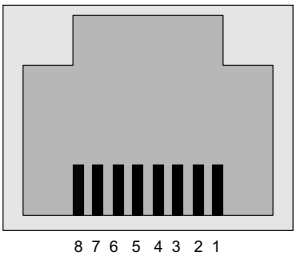
Pin outs

The pin numbering for the PRI ports on the ISDN GW 3241 is shown in Figure 2. The pin assignments for the PRI ports are shown in Table 2:

Table 2: Pin assignments for PRI ports

Pin number	Signal
1	Receive -
2	Receive +
3	Not connected
4	Transmit -
5	Transmit +
6	Not connected
7	Not connected
8	Not connected

Figure 2: Pin numbering for PRI ports



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