

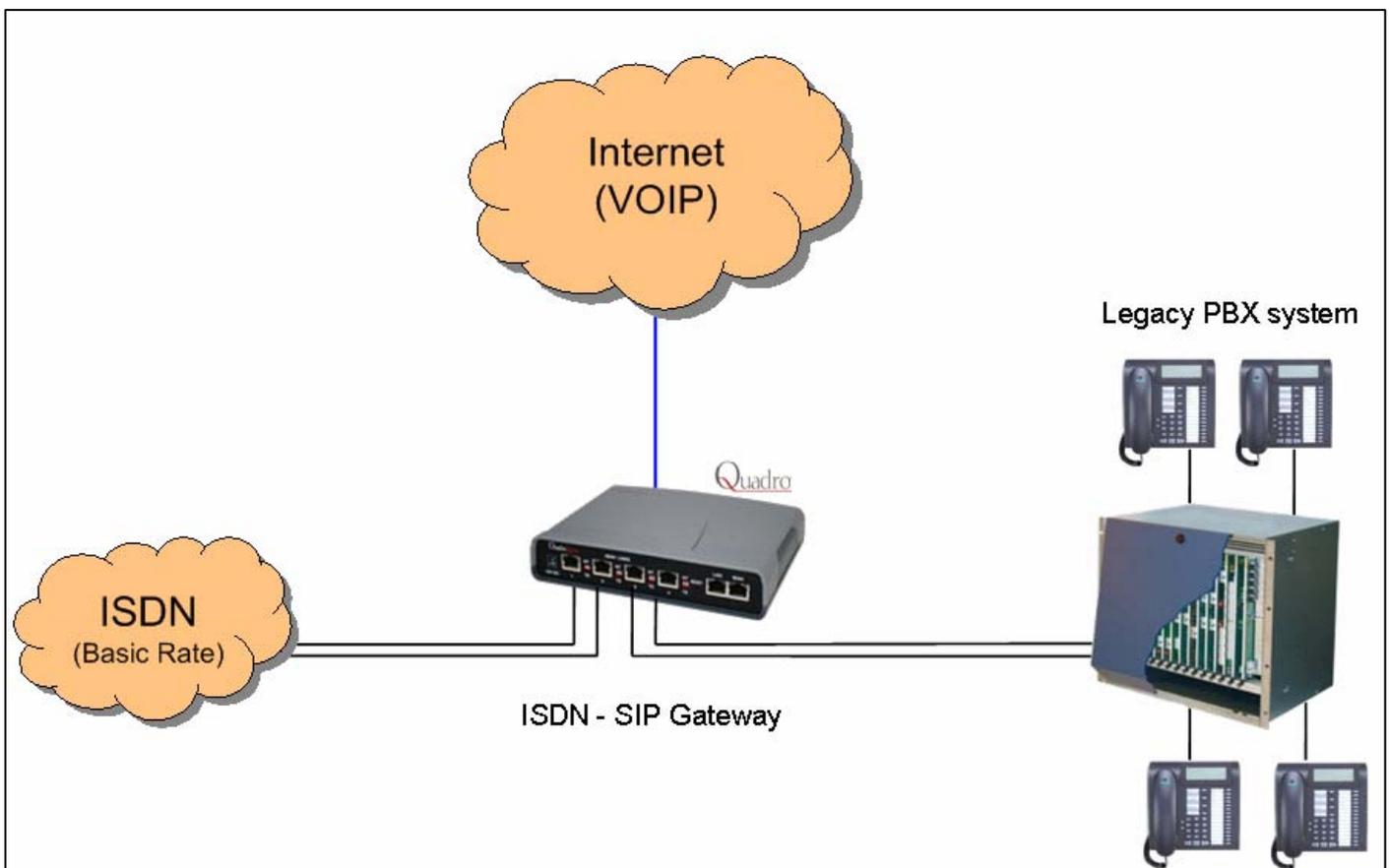
Topic / Issue: QuadroISDN – Traditional PBX/PABX Integration

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QuadroISDN – Traditional PBX/PABX integration

This document describes the configuration of the QuadroISDN gateway for interfacing to a standard PBX that supports ISDN.

Using this configuration, Traditional (non VOIP) PBX systems can make calls via the internet using a VOIP carrier.



Configuration discussed will be based on the diagram which shows that the QuadroISDN is situated between the ISDN service and the PBX. 2 of the BRI's (Basic Rate Interface) on Quadro ISDN are connected to NT device and 2 are connected to the PBX BRI's.

Part 1: QuadrolSDN connected to Telstra / Optus NT1.

*The configuration described in part 1 also applies where the QuadrolSDN is used in 'Shared Lines' mode with a Quadro PBX to provide ISDN connectivity.

Set the dip switches next to BRI 1 & BRI 2 into TE (Terminal Endpoint) mode.

To view ISDN Trunk info go to Telephony > ISDN Settings to view the ISDN Trunks. Select a Trunk by clicking on it's hyperlink.

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ISDN Trunk Settings

[Start](#) [Stop](#) [Restart](#) [Copy to Trunk\(s\)](#) [Restore Default Settings](#) [Select all](#) [Inverse Selection](#)

	Trunks	Interface Type	Connection Type	Stats
<input type="checkbox"/>	Trunk 1	User	PTMP(Point To Multi Point)	ISDN Stats
<input type="checkbox"/>	Trunk 2	User	PTMP(Point To Multi Point)	ISDN Stats
<input type="checkbox"/>	Trunk 3	User	PTMP(Point To Multi Point)	ISDN Stats
<input type="checkbox"/>	Trunk 4	User	PTMP(Point To Multi Point)	ISDN Stats

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ISDN Wizard

ISDN Settings

Trunk: 1

Interface Type

Connection Type

- PTP(Point To Point)
- PTMP(Point To Multi Point)

Leave the Interface Type set to User (default). Leave the Connection Type as Point to Multi Point (PTMP). PTMP is supported by standard Australian carriers.

For this scenario MSN is not required so configuration can be simplified by selecting No MSN.

ISDN Wizard

ISDN PTMP Settings

Trunk: 1

Service Type

- MSN
- No MSN

Set the trunk to Route Incoming Calls to: Routing with inbound destination number.

If 'Use Default outgoing Caller ID' is enabled then the Default outgoing MSN setting takes priority over any other "Modify Caller ID" setting in call routing configuration.

When "Use Default outgoing MSN" is enabled:

A blank entry = Hide Caller ID.

A valid number for this ISDN service = number as entered

An invalid number entry = Default MSN number as configured at the exchange.

When "Use Default outgoing MSN" is NOT enabled:

Caller ID can be controlled via the "Modify Caller ID" parameter on outbound call route entries.

Selecting Advanced Settings will allow changes to be made to the Layer 2 & Layer 3 settings.

ISDN Wizard

Routing Settings

Trunk : 1

Route Incoming Call to Routing with inbound destination number

Use Default outgoing Caller ID

Default outgoing Caller ID 95612300

Advanced Settings

- Select basic_net3 switch type
- Alternative Disconnection Mode can be disabled to allow faster detection of remote PSTN hang-up.

ISDN Wizard

L2 & L3 Settings

Trunk: 1

Excessive Ack. Delay T200	4000 (500...9999) msec.	Switch Type	basic_net3
Idle Timer T203	12000 (1000...99999) msec.	Channel Selection	preferred
T302 Timer	4000 (0...15000) msec.	Bearer Establishment Procedure	on progress indication with in-band information
T309 Timer	0 (0...90000) msec.	Called Party Type of Number	Unknown
T310 Timer	60000 (1000...120000) msec.	Calling Party Type of Number	Unknown
Alert Guard Timeout	150 (0...500) msec.	Called Party Numbering Plan	ISDN/telephony numbering plan
Coding Type	a-law	Calling Party Numbering Plan	ISDN/telephony numbering plan
		Incoming Called Digits Size	0 (0...255)

Passive Mode

Enable TEI Remove Procedure

Generate Progress Tone to IP

Generate Progress Tone to PSTN/PBX

Enable CLIR Service

Alternative Disconnection Mode

B1 Channel

B2 Channel

Previous Next Cancel Help

If Passive mode is not enabled then you may see the link toggle between up and down in the event log. But during a call the ISDN will be OK.

Advise Passive Mode.

Select the ISDN stats Hyperlink on the right to verify ISDN connection

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ISDN Trunk Settings

[Start](#) [Stop](#) [Restart](#) [Copy to Trunk\(s\)](#) [Restore Default Settings](#) [Select all](#) [Inverse Selection](#)

	Trunks	Interface Type	Connection Type	Stats
<input type="checkbox"/>	Trunk 1	User	PTMP(Point To Multi Point)	ISDN Stats
<input type="checkbox"/>	Trunk 2	User	PTMP(Point To Multi Point)	ISDN Stats
<input type="checkbox"/>	Trunk 3	User	PTMP(Point To Multi Point)	ISDN Stats
<input type="checkbox"/>	Trunk 4	User	PTMP(Point To Multi Point)	ISDN Stats

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ISDN Status - Trunk 1

Link	Frame Synch.
Up	Yes

HDLC Receive :	10190	HDLC Transmit :	9548
HDLC CRC Error :	408	HDLC Octet Count :	486
HDLC Packet Abort :	55393		

ISDN BRI Layer 2

TEI Value:	69
L2 State:	MultiFrameEstablish

- Link should report as **Up**
- Frame Synch should be **Yes**
- ISDN BRI Layer 2 should be **Established**

Part 2: QuadrolSDN providing ISDN to PBX

Set the dip switches next to BRI 3 & BRI 4 into NT (Network Terminator) mode.

ISDN Trunk Settings				
Start Stop Restart Copy to Trunk(s) Restore Default Settings Select all Inverse Selection				
	Trunks	Interface Type	Connection Type	Stats
<input type="checkbox"/>	Trunk 1	User	PTMP(Point To Multi Point)	ISDN Stats
<input type="checkbox"/>	Trunk 2	User	PTMP(Point To Multi Point)	ISDN Stats
<input type="checkbox"/>	Trunk 3	Network	PTMP(Point To Multi Point)	ISDN Stats
<input type="checkbox"/>	Trunk 4	Network	PTMP(Point To Multi Point)	ISDN Stats

Set trunks 3 & 4 into Network mode by selecting the trunks and completing the Wizard with the following settings.

ISDN Wizard

ISDN Settings

Trunk : 3

Interface Type

Connection Type

<input type="radio"/>	PTP(Point To Point)
<input checked="" type="radio"/>	PTMP(Point To Multi Point)

ISDN Wizard

Routing Settings

Trunk : 3

Route Incoming Call to

Use Default outgoing Caller ID

Default outgoing Caller ID

Advanced Settings

Set the trunk to Route Incoming Calls to: Routing with inbound destination number.

As outbound calls will typically route out via the internet which will use the VOIP number as the outbound Caller ID, The "Default outgoing Caller ID" settings will only apply when the call uses the ISDN service, for example a failover situation where the calls cannot connect via the Internet.

Do not enable the Power Source setting.

ISDN Wizard

ISDN Low Level Settings

Trunk: 3

Power Source

ISDN Wizard

L2 & L3 Settings

Trunk: 3

Excessive Ack. Delay T200: 4000 (500..9999) msec.

Idle Timer T203: 12000 (1000..99999) msec.

T302 Timer: 4000 (0..15000) msec.

T309 Timer: 0 (0..90000) msec.

T310 Timer: 60000 (1000..120000) msec.

No Answer Disconnect Timer: 0 (0..200000) msec.

Alert Guard Timeout: 150 (0..500) msec.

Coding Type: a-law

Passive Mode

Switch Type: basic_net3

Channel Selection: preferred

Bearer Establishment Procedure: on progress indication with in-band information

Called Party Type of Number: Unknown

Calling Party Type of Number: Unknown

Called Party Numbering Plan: ISDN/telephony numbering plan

Calling Party Numbering Plan: ISDN/telephony numbering plan

Incoming Called Digits Size: 0 (0..255)

Generate Progress Tone to IP

Generate Progress Tone to PSTN/PBX

Enable OLIR Service

Alternative Disconnection Mode

B1 Channel

B2 Channel

➤ Generate Progress Tone to IP will generate the progress tone to IP if there is no early media from ISDN side i.e. no "Ring, Ring". Some PBX systems may signal an "ALERT/PROGRESS" with "progress indication with in-band information" but not provide this in-band information.

➤ Generate Progress Tone to PSTN/PBX Quadro gateway generates progress tone towards the ISDN during incoming call.

Mainly applies to 2-stage dialing mode to play false ring back tone to PSTN/PBX.

ISDN Status - Trunk 1

Link	Frame Synch.
Up	Yes

HDLC Receive :	10190	HDLC Transmit :	9548
HDLC CRC Error :	408	HDLC Octet Count :	486
HDLC Packet Abort :	55393		

ISDN BRI Layer 2

TEI Value:	69
L2 State:	MultiFrameEstablish

Select the ISDN stats Hyperlink on the right to verify ISDN connection

- Link should report as **Up**
- Frame Synch should be **Yes**
- ISDN BRI Layer 2 should be **Established**

Call Routing must be configured to pass calls between QuadroISDN and PBX. Go to Telephony > Call Routing > Call Routing Table.

In the Call Routing Table shown there are 3 routes.

- 1) This is for passing inbound ISDN calls to BRI 1 & 2 to the PBX via BRI 3 & 4. The example assumes ISDN services connected to BRI 1&2 have 100 numbers (95612300–95612399). Incoming ISDN calls match the pattern for this routing entry.
- 2) This is for making outbound calls through the VOIP provider account. Numbers dialed from the PBX phones match this entry and the calls are made over the internet. Fail Reason is set to 'Any'
- 3) In the case where the outbound call cannot be established over the internet, this route will automatically place the call via ISDN service.

Call Routing Table

Show Detailed View >>>

[Enable](#)
[Disable](#)
[Add](#)
[Edit](#)
[Duplicate](#)
[Delete](#)
[Select all](#)
[Inverse Selection](#)
[Move Up](#)
[Move Down](#)
[Move To](#)

	ID	State	Pattern	Pattern Modification	Call Settings	Fail Reason	Local Authentication	Inbound Pattern/Modification	Inbound Settings	DT	UES / URP	Metric	Description
<input type="checkbox"/>	1	Enabled	956123??		ISDN trunk: Any Port(Network)	None	No					10	out
<input type="checkbox"/>	2	Enabled	*		IP-PSTN voip.phonet.com.au:5060, ML: Yes	Any	No				UES: 99 URP: No	10	Phonet
<input type="checkbox"/>	3	Enabled	*		ISDN trunk: Any Port(User)	None	No					10	Failover to ISDN