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# Configuring Quadro with Kebu.it

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Revision: 1.0

**Abstract:** This document describes how to configure the Quadro to use the IP-PSTN service from Kebu.it.

## Document Revision History

Revision	Date	Description	Valid for SW	Valid for models
1.0	2-Feb-2012	Initial release	5.2.x or higher	Quadro IP PBXs

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# 1 Introduction

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This document describes how to configure the Quadro to use the IP-PSTN service from Kebu.it SIP Server. The Quadro IP PBX is capable of making IP-PSTN calls via Kebu.it SIP Server. This solution allows Quadro IP PBX users to make cost-saving calls to global destinations.

**Please Note:** Security issues and rates are beyond the scope of this document.

## 2 Scenario

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Provider:

- Kebu.it SIP Server.
- Kebu.it SIP Server offers outbound and inbound calls.
- Kebu.it SIP Server allows parallel outbound calls to be made from one account.
- Kebu.it SIP Server allows parallel calls to be received to one account.

Customer:

- The customer will be making PSTN calls through Kebu.it SIP Server.

### 2.1 Requirements and Preparations

- The Quadro IP PBX is connected to the network and all network settings are properly configured.
- The Quadro IP PBX is running software 5.2.x or higher.

### 2.2 Account Information from Kebu.it

Kebu.it will provide the customer with the following data (all provided below information are samples):

- Service Address: sip.provider.com (it also can be a IP address of Kebu.it SIP server)
- Account number: Kebu\_account1, Kebu\_account2 (sample)
- Telephone Number (DID): (+39) 066870219, 081870220 (sample)

## 3 Configuration

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The sections below describe the configurations required on the Quadro to allow the users to

- Make outgoing calls through Kebu.it SIP Server.
- Receive incoming calls through Kebu.it SIP Server.

### 3.1 Making Outgoing Calls through Kebu.it

First of all, provided account should be registered. For creating a new extension and registering it on Kebu.it SIP Server, go to **Telephony->VoIP Carrier Wizard** page, pass through this wizard and enter the following parameters:

- VoIP Carrier – Manual;
- Description – Kebu;
- Press **Next** (Figure 1).

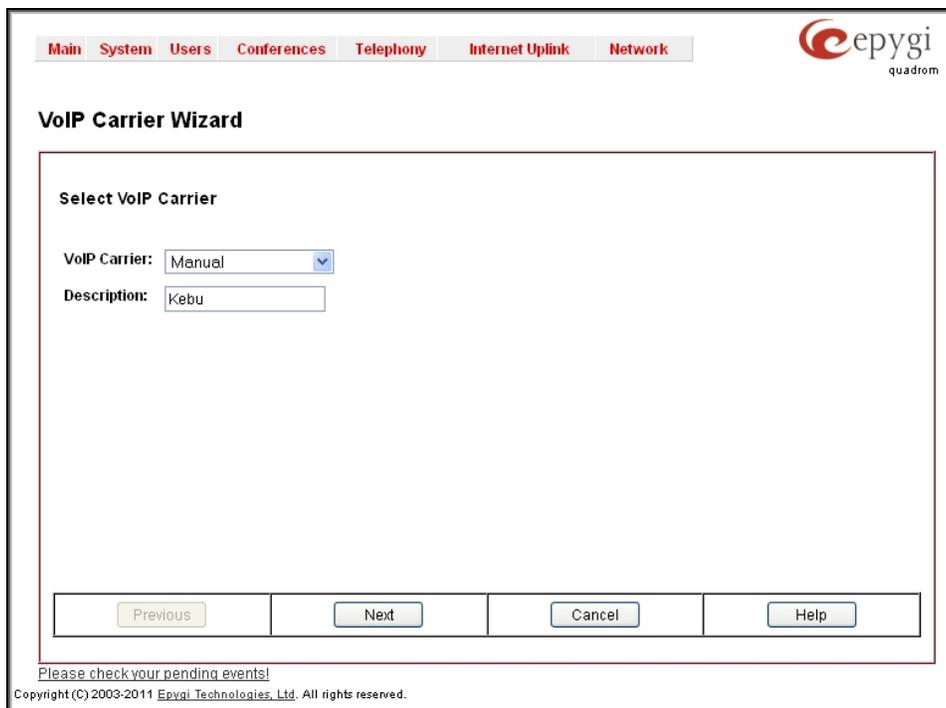
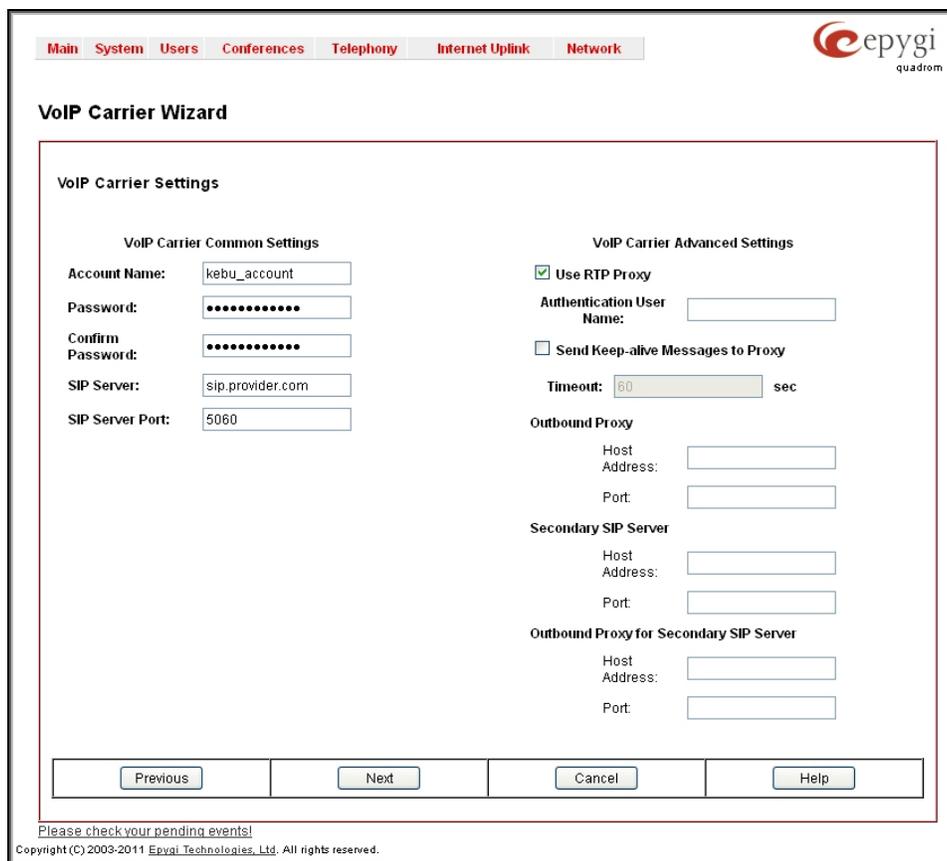


Figure 1- VoIP Carrier Wizard- Page 1

In the next opened page, enter the following parameters:

- **Account Name** – Kebu\_account;
- Put provided password in the **Password** and **Confirm Password** fields;
- **SIP Server** – sip.provider.com;
- **SIP Server Port** – 5060;
- Enable **Use RTP Proxy** service and press **Next** (Figure 2).



**VoIP Carrier Wizard**

**VoIP Carrier Settings**

**VoIP Carrier Common Settings**

Account Name:

Password:

Confirm Password:

SIP Server:

SIP Server Port:

**VoIP Carrier Advanced Settings**

Use RTP Proxy

Authentication User Name:

Send Keep-alive Messages to Proxy

Timeout:  sec

**Outbound Proxy**

Host Address:

Port:

**Secondary SIP Server**

Host Address:

Port:

**Outbound Proxy for Secondary SIP Server**

Host Address:

Port:

Please check your pending events!

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Figure 2- VoIP Carrier Wizard- Page 2

On the third page of VoIP Carrier Wizard, you can define the Access Code which will be used in the Call Routing Table. Let's say it is *01*. You can also define the extension, on which you will receive the incoming calls from Kebu.it SIP Server. Let's say it *102* (you can also receive the incoming calls from Kebu.it SIP Server on Quadro Auto Attendant – extension 00).

- **Access Code** - 01;
- **Emergency Code** – leave the default value or put your country emergency call;
- **Route Incoming Calls to** – 102;

If you want the calls failover through onboard FXO line, you can enable the **Failover to PSTN** service too and press the **Next** button (Figure 3).

Figure 3- VoIP Carrier Wizard- Page 3

Confirm entered settings on the last page of VoIP Carrier Wizard page and press the **Finish** (Figure 4).

Figure 4- VoIP Carrier Wizard- Page 4

Now the provided account is registered, and you can make outgoing calls through Kebu.it SIP Server using 01 prefix (appropriate **Call Routing rule** with **01\*** pattern is automatically added on the **Call Routing table** – see Figure 5).

**Call Routing Table**

Show Detailed View >>> Hide disabled records

Enable	Disable	Add	Edit	Duplicate	Delete	Select all	Inverse Selection	Move Up	Move Down	Move To				
<input type="checkbox"/>	9	Enabled	900	NDS: 1	E1/T1 trunk: E1/T1 Trunk1, Timeslots: 1-23	None	No	*		PBX			15	
<input type="checkbox"/>	10	Enabled	910	NDS: 1	E1/T1 trunk: E1/T1 Trunk1, Timeslots: 1-15,17-31	None	No	*		PBX			12	
<input type="checkbox"/>	11	Enabled	9*	NDS: 1	E1/T1 trunk: E1/T1 Trunk1, Timeslots: 1-15,17-31	None	No	*		PBX			10	
<input type="checkbox"/>	12	Enabled	33*	NDS: 2	PBX-Voicemail	None	No	*		PBX			10	
<input type="checkbox"/>	13	Enabled	26*	NDS: 2	PBX	None	Loc.Auth. Users List	*		PBX			10	
<input type="checkbox"/>	14	Enabled	01**	NDS: 3	IP-PSTN sip.provider.com:5060, RNSC: No	None	No	*		PBX	UES: 998 URP: Yes		10	Kebu

**NDS** - Number of Discarded Symbols    **UES** - Use Extension Settings    **RNSC** - Restrict the Number of Simultaneous Calls  
**URP** - Use RTP Proxy    **AAA** - Authentication, Authorization, Accounting    **DT** - Date/Time

Back Help

Please check your pending events!

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Figure 5- Call Routing Table page

### 3.2 Receiving Inbound Calls from Kebu.it

For receiving incoming calls from Kebu.it SIP Server, you already created the needed configuration during the **VoIP Carrier Wizard**, so now you can receive all incoming calls from Kebu.it SIP Server on extension 102 (Figure 6).

**Main** **Voice Mail** **Your Extension** **Supplementary Services**

**Caller ID Based Services for Any Address**

**Extension: 998**

[Hiding Caller Information](#)  
[Incoming Call Blocking](#)  
[Outgoing Call Blocking](#)  
[Distinctive Ringing](#)  
[Call Hunting](#)  
[Many Extension Ringing](#)  
**[Unconditional Call Forwarding](#)**  
[Busy Call Forwarding](#)  
[No Answer Call Forwarding](#)  
[Unregistered/Inaccessible Call Forwarding](#)  
[Find Me / Follow Me](#)  
[Intercom](#)  
[Emergency Interrupt](#)

**Enable Service**  
[Enable/Disable](#) [Add](#) [Edit](#) [Delete](#) [Select all](#) [Inverse Selection](#)

	State	Forward to
<input type="checkbox"/>	Enabled	PBX-102

Send Notification Via SMS  
 Mobile Number

Send E-mail  
 E-mail Address

Toggle from Handset

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Figure 6- Unconditional Call Forwarding page

## 4 Additional Notes

### 4.1 Sending Music on Hold to Remote Parties

Each extension of the Quadro IP PBX can be configured to send its own hold music to remote parties on hold (PSTN, IP, or IP-PSTN destinations). While sending the extensions' music on hold (MOH) to PSTN parties does not require any configuration on the Quadro, certain configurations are needed when the remote party is an IP or IP-PSTN destination. The following steps describe how to configure an extension to send its own MOH to remote IP parties:

1. Login to the Quadro as an extension user.
2. Open the **Supplementary Services**→**Basic Services**→**Hold Music Settings** page (see Figure 7)
3. Select the **Send Hold Music to remote IP party** checkbox and press **Save**.

**Basic Services - Hold Music Settings**  
Extension: 102

Send Hold Music to remote IP party

Listen Hold Music: Own\_Music

File  Restore default Hold Music file

Upload new Hold Music file

RTP Channel Choose Channel: stream

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Figure 7- Basic Services – Hold Music Settings page

If the Quadro is configured with an ITSP that does not support remote MOH (the ITSP closes the *received* audio stream when receiving an SIP re-INVITE message with the *c=IN IP4 0.0.0.0, a=sendonly* media attributes), please follow these steps to complete the configuration:

1. Log into the Quadro as an administrator.
2. Type "generalconfig.cgi" in the address field of the browser to open the **General Configuration** page (see Figure 8).
3. On this page, select the **Force Hold Music** checkbox and click **Save**.

The screenshot shows the 'General Configuration' page in the Epygi Quadro web interface. The page is divided into several sections:

- General Configuration:** Contains various timeout and cache settings.
 

Max Number of Records in DB cache	32	secs
DNS cache MAX size	32	secs
DNS cache cleanup timeout	6	hours
Flash timeout	2	sec
Call progress notification timeout	10	sec
IP line registration timeout maximum	3600	sec
IP line registration timeout minimum	120	sec
Play user friendly voice messages instead of tones	default	
- IP phones settings:**

SIP registration timeout	3600	sec
SIP subscription timeout	3600	sec
SIP session refresh timeout	600	sec
- Templates for Caller ID:**

IP call	%a	(%a%d%u/%s)
PBX call	%a	(%a%d%u)
PSTN call	%a	(%a%d%u)
- Presence:**

Subscription limitation	140	
-------------------------	-----	--
- Checkboxes:**
  - Accept stray SIP requests
  - Change SIP Error Code to Busy Here
  - Ignore To header in incoming SIP INVITE requests
  - Use Rport
  - Enable IP Loop
  - Force Hold Music
  - Do Not Send External RE-INVITE
  - Do Not Send REFER
  - Callback through Routing
- VM Silence Disconnect:**
  - Enable VM silence disconnect
  - Disconnect timeout: 5

At the bottom, there are 'Save', 'Back', and 'Help' buttons, along with a warning message: 'Please check your pending events!'. A copyright notice for Epygi Technologies Ltd is also visible.

Figure 8- General Configuration page

**Please Note:** Please inform your system administrator before making any other changes on this page.

## 4.2 Sending and Receiving Faxes through Kebu.it

Following steps describe how to configure an extension to send and receive FAX messages through Kebu.it SIP Server.

If the virtual (without attached line) extension is used, please go to **Supplementary Services** page of chosen extension and activate the **Unconditional Call Forwarding** service to one of the active (with attached line) extensions, i.e. extension 102.

1. Choose the **Users→Extensions Management** page (see Figure 9).
2. On the **Extensions Management** page, click on the **Codecs** link of *extension 102*.
3. On the **Extension Codecs** page select the **Enable T.38 FAX** and **Enable Pass Through FAX** checkboxes (see Figure 10).
4. Press **Save**.

**Extensions Management**

Add Edit Delete Select all Inverse Selection Hide extensions attached to disabled IP lines Use Epygi SIP server

Extension	Display Name	Attached Line	SIP Address	Percentage of System Memory	External Access	Codecs
<input type="checkbox"/> 00	Attendant		21010@sip.epygi.loc:5060	5% (20 min 35 sec)		PCMU...
<input type="checkbox"/> 11			21011@sip.epygi.loc:5060	1% (4 min 7 sec)		PCMU...
<input type="checkbox"/> 101		Line 1	101	5% (20 min 35 sec)	None	PCMU...
<input type="checkbox"/> 102	FAX	Line 2	066870219@sip.epygi.loc:5060	5% (20 min 35 sec)	None	PCMU...
<input type="checkbox"/> 103		IP Line 1	103	0.4% (1 min 38 sec)	None	PCMU...
<input type="checkbox"/> 104		IP Line 2	210104@sip.epygi.loc:5060	0.4% (1 min 38 sec)	None	PCMU...
<input type="checkbox"/> 105		IP Line 3	105	0.4% (1 min 38 sec)	None	PCMU...

Upload Universal Extension Recordings

Add Multiple Extensions

Back Help

Please check your pending events!

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Figure 9- Extension Management page

If the virtual (without attached line) extension is used, enable the **Enable T.38 FAX** and **Enable Pass Through FAX** services for the virtual extension as well.

**Extension 102 Codecs**

Enable/Disable Select all Inverse Selection Move Up Move Down Make preferred

Audio Codecs	State
<input type="checkbox"/> G.729a (CS-ACELP speech coding at 8 kbit/s rate) (preferred)	Enabled
<input type="checkbox"/> iLBC (Internet Low Bit Rate Coder at 13,33 kbit/s rate)	Enabled
<input type="checkbox"/> G.711u (PCM audio coding standard, 8 kHz sample rate, 8 bits, 64 kbit/s data rate)	Enabled
<input type="checkbox"/> G.711a (PCM audio coding standard, 8 kHz sample rate, 8 bits, 64 kbit/s data rate)	Enabled
<input type="checkbox"/> G.726-16 (ADPCM speech coding at 16 kbit/s rate)	Enabled
<input type="checkbox"/> G.726-24 (ADPCM speech coding at 24 kbit/s rate)	Enabled
<input type="checkbox"/> G.726-32 (ADPCM speech coding at 32 kbit/s rate)	Enabled
<input type="checkbox"/> G.726-40 (ADPCM speech coding at 40 kbit/s rate)	Enabled
<input type="checkbox"/> G.722 (HD audio coding at 48-64 kbit/s data rate, 16 kHz sample rate)	Disabled
<input type="checkbox"/> G.722.1 (HD audio coding at 24-32 kbit/s data rate, 16 kHz sample rate)	Disabled
<input type="checkbox"/> TDVC (Time Domain Voicing Cutoff at 1,95 kbit/s rate)	Disabled
Video Codecs	State
<input type="checkbox"/> H.263 (Video coding for low bit rate communication) (preferred)	Enabled
<input type="checkbox"/> H.264 (Advanced video coding for low bit rate communication)	Enabled
<input type="checkbox"/> H.263+ (Video coding for low bit rate communication)	Enabled

Out of Band DTMF Transport

Enable T.38 FAX

Enable Pass Through FAX

Enable Pass Through Modem

Force Self Codecs Preference for Inbound Calls

Secure RTP Settings

SRTP Policy: Make insecure calls, accept anything

Save Back Help

Figure 10- Codecs page for extension 102

## 5 References

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The following documents can be helpful for further configuration of the Quadro IP PBX. They can be downloaded from Epygi's WEB portal at [www.epygi.com](http://www.epygi.com):

- Quadro Manual I – Installation Guide
- Quadro Manual II – Administrator's Guide
- Preventing Unauthorized Calls on the Quadro
- User Access Privileges on the Quadro
- Quadro with generic IP-PSTN service

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