
Preventing Unauthorized Calls on the Quadro



Revision: 1.4

Abstract: This document explains how to properly secure the Quadro and prevent unauthorized calls.

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Document Revision History

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1.0	10-Jul-07	Initial Version	4.0.x	All Quadros
1.1	13-Aug-07	New examples added to section 5	4.0.x	All Quadros
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1 Introduction

As with any business system, security is a top concern. This document explains how to protect your investment and ensure that your Quadro is secure from unauthorized callers. It contains instructions on how to prevent unwanted incoming and outgoing calls and how to restrict calls to authorized users only.

VoIP in particular offers a wide range of communication possibilities to businesses and any VoIP system, from any vendor is susceptible to abuse. The recommendations in this document can be applied to any system.

This document is applicable to all Quadro models running 4.0.x software version and higher.

2 Functional Description

Each Quadro system has very powerful and secure call routing capabilities. However, a poorly configured system may allow unauthorized callers to place fraudulent calls, causing extra traffic and toll charges.

The following will provide details on how to secure the Quadro to prevent unwanted callers from using the system.

3 Secure the System

The default Quadro password needs to be changed. It may seem like a simple and logical thing to do but most systems that Epygi has worked with are on a public IP address with a default password. The concern with an IP PBX is that if someone can access the system they could remotely register an IP phone and alter Call Routing tables to allow calls to proceed.

Local and Remote IP phones require a User Name and Password to successfully register to the Quadro. In addition, before any call can proceed the IP Phone must present a valid User Name and Password to the Quadro. For phones that Plug and Play on the Quadro a unique and random password is created and it is not visible to any user. It is very secure and it is suggested that it should be used. IP Phones should not use easily guessable User Names and Passwords to register (ie. Extn/Extn such as 7004/7004, Extn/1234, etc.). A remote user could guess the User Name and Password and register an IP Phone to make calls.

4 Securing Calls on Auto Attendant

By default, the Quadro is secured from unwanted calls through the use of the Auto Attendant. Only local PBX extensions are allowed to use the call routing rules for dialling to PSTN and IP networks. By default, external callers are unable to use the call routing rules for dialling PSTN and IP destinations when calling through the Quadro's Auto Attendant.

4.1 Control of the Dialed Digits on Auto Attendant

Control of the dialed digits when reaching the Auto Attendant is one of the options to secure your Quadro.

The Auto Attendant has a digit-parsing feature that can be enabled. This option can provide a lot of flexibility and dialling options for customers but it should be used with care. When the digit-parsing feature is enabled, all digits dialled by the caller while listening to the Auto Attendant will be sent directly to the Call Routing table to determine the intended destination. With this option enabled the entries in the Call Routing table need to be properly secured.

By default, this option is disabled on the Quadro and all incoming calls to the Auto Attendant are limited to ONLY being able to dial PBX extensions.

The control for the digit-parsing feature is implemented via the “**Send AA Digits to Routing Table**” checkbox in the Auto Attendant settings. To check or change the status for this feature, follow the steps below:

1. Login as an Administrator to Quadro’s Web Management.
2. Go to **Users** and then the **Extensions Management** menu.
3. Click on the Auto Attendant extension.
4. Select the **Attendant Scenario** link (Fig.1).

Fig. 1 Attendant Scenario page

Please Note: The Auto Attendant can be used in either the Default or Custom scenario type. This figure shows that the digit-parsing feature has been enabled via the “Send AA Digits to Routing Table” option for a **Default** scenario type. If a **Custom** Auto Attendant scenario has been configured, then all digits are controlled by the custom XML script.

4.2 Using Call Relay on Auto Attendant

Even with the “**Send AA Digits to Routing Table**” option disabled there is still a possibility to send dialed digits directly to the Call Routing Table. It is done via the **Call Relay** menu, accessible by dialling ***2** when the Auto Attendant is reached. After dialling ***2** an authentication will be required - the extension number and the extension’s password. Once successfully entered, the caller can dial using entries in the Call Routing table. This is also a powerful option but it needs to be secured so that it is **ONLY** used by authorized callers.

The Call Relay option is enabled/disabled on a per extension basis. When enabling an extension to use **Call Relay** care should be taken to ensure a proper password is provided for

the extension. The Call Relay feature cannot be used on the Quadro if it is not enabled on at least one of the extensions.

By default, **Call Relay** is disabled on ALL extensions. In addition, if **Call Relay** has been enabled and the extension password has not been set, a warning message will be displayed.

To check or change the status for the Call Relay service on an extension, follow the steps below:

1. Login as an Administrator to Quadro's Web Management.
2. Go to **Users** and then the **Extensions Management** menu.
3. Choose the extension, click on the checkbox beside the extension number and press **Edit**.
4. Select the **General Settings** (Fig.2).

Fig. 2 Extension's General Settings page

Please Note: This figure shows extn 11 has been enabled to use the Call Relay option. This page also shows where to change the numerical password for the extn. When **“Send AA Digits to Routing Table”** is disabled and the Call Relay service has NOT been enabled on any extension, then incoming calls to the Auto Attendant can ONLY call to extensions.

5 Securing Call Routing rules from unwanted SIP calls

The external callers can potentially use call routing rules on the Quadro not only from Auto Attendant. Unlike PSTN calls, SIP calls by default reach Call Routing table directly, bypassing the Auto Attendant. Therefore, it is a high priority to secure the routing rules on the Quadro from unwanted external SIP calls.

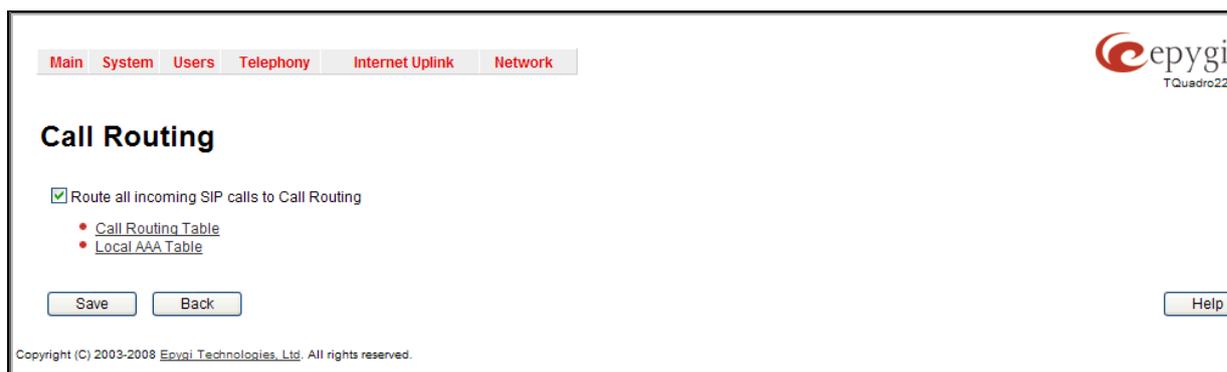


Fig. 3 Call Routing page

Attention: Regardless whether the **Route all incoming SIP calls to Call Routing** checkbox is selected or not, SIP calls from external callers go to the Call Routing table, so any unprotected routing rule can be misused. That is why it is strongly recommended to secure the rules in the Call Routing table by setting the filtering (see [Using Filters on Call Routing Rules](#)) or authentication options (see [Using Local Authentication on Call Routing Rules](#)). The best and the most secure way will be to use both options at the same time.

The **Route all incoming SIP calls to Call Routing** checkbox on the **Call Routing** page can be misleading. Disabling the **Route all incoming SIP calls to Call Routing** checkbox does not secure the Quadro. By default, this option is not selected and for each incoming SIP call, the Quadro will scan the extensions in the Extensions Management table to find the dialed SIP number. If the SIP number matches an extension, the call will go to that extension. If there are no matches in the Extensions Management table, the Call Routing table will then be scanned for the dialed SIP number. When this checkbox is selected, the Call Routing table will be scanned directly, bypassing the Extensions Management table.

6 Using Local Authentication on Call Routing Rules

Using local authentication on the Call Routing rules can also be a way of securing the Quadro from all unwanted calls: from external callers on Auto Attendant, as well as internal PBX users. You may create a local table of trusted users (see Local AAA Table Configuration section below), for whom the corresponding Call Routing rule will be available.

A caller (local PBX user or external caller using digit-parsing from the Auto Attendant) trying to use a routing rule that has local authentication enabled, will need to pass the authorization on the pre-configured Local AAA Table. The authentication can be automatic by detecting the caller ID or it can be done manually by having the caller enter a specified login from the handset (username and password).

If the authentication is successful, the caller will be able to use the call routing rule.

6.1 Local AAA Table Configuration

To configure the **Local AAA Table**, follow the instructions below:

1. Login as an Administrator to Quadro's Web Management.
2. Go to **Telephony** and then the **Call Routing** menu.
3. Select the **Local AAA Table** link.
4. Press **Add** to create a new authentication entry (or press **Edit** to change the settings of an existing entry). Local AAA Table – **Add Entry** page appears (Fig.4):

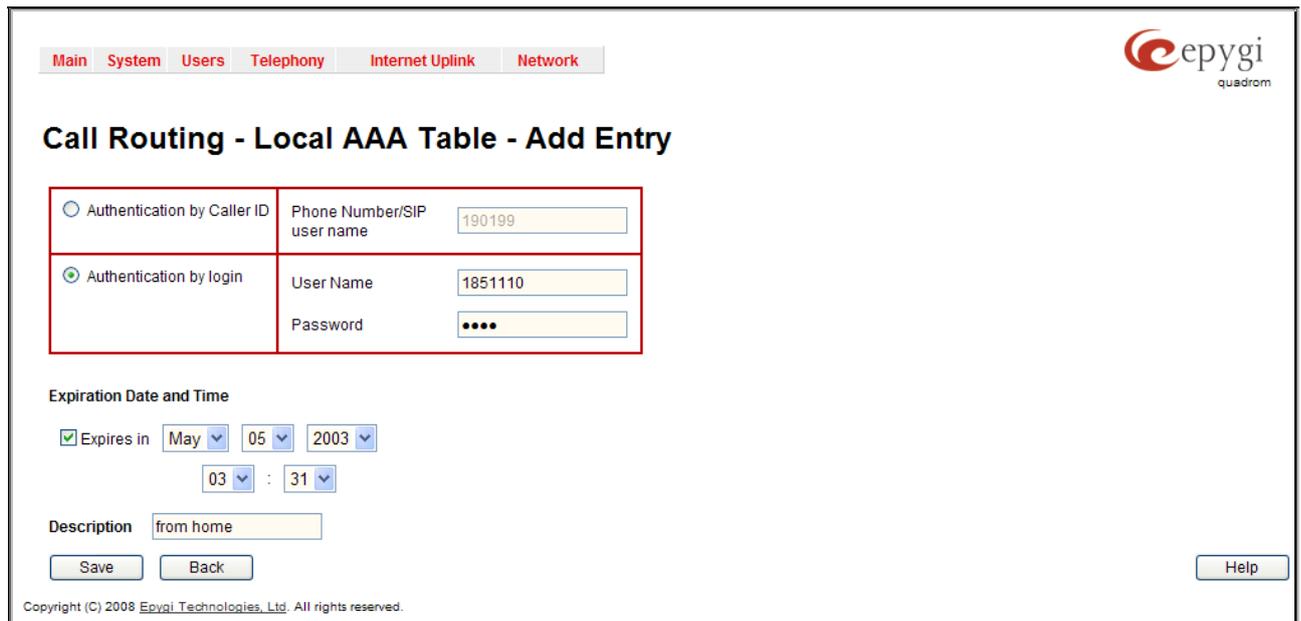


Fig. 4 Local AAA Table – Add Entry page

Here you may choose the authentication type required for using the Call Routing rules (those rules that have the **Local Authentication** option enabled):

- **Authentication by Caller ID** – this is an automated method of authentication; it does not require any actions from the caller. When this type of authentication is chosen, the system will retrieve the caller ID (PSTN number or SIP username) of the caller and compare it with the number defined in the **Phone Number/SIP username** field on this page. If matched, the call will be allowed.
 - **Authentication by Login** – this method of authentication requires the Username and the Password to be dialed by the caller. With this option selected, a Username and a Password needs to be defined in the corresponding fields. When the caller tries to use a Call Routing rule that requires a local authentication, he will be prompted to dial the Username and a Password. If the dialed authentication parameters match the ones inserted in this field, the user will be authenticated and the call will be allowed.
5. Choose **Expiration Date and Time** options, if needed. This option is used to limit the registration parameters for a certain time frame. If you wish to use this option, click on the **Expires in** checkbox first and then define the date and time of the expiration from the corresponding drop down lists.
 6. The **Description** text field is used to insert some optional information regarding the entry.
 7. Press **Save** to add the registration with the provided parameters.

Please Note: The Username and Password defined in the Local AAA Table – **Add Entry** page are unique and are not connected to any other Username and Password defined on the Quadro.

6.2 Enabling local authentication on the Call Routing rules

To enable local authentication on a Call Routing rule, follow the instructions below:

1. Login as an Administrator to Quadro's Web Management.
2. Go to **Telephony** and then the **Call Routing** menu.
3. Select the **Call Routing Table** link.

4. Press **Add** functional button to create a new rule (or select an existing rule and press **Edit** to change the settings). **Call Routing Wizard** is launched:
5. On the second page of the wizard under **AAA Required** select Local Authentication checkbox (Fig.5).

Main
System
Users
Telephony
Internet Uplink
Network



Call Routing Wizard

Routing Call Settings - Add Entry

Use Extension Settings: ▼ Keep Original Caller ID

Add Remote Party ID

Destination Host:

Destination Port:

Display Name:

Remove Display Name

Username:

Password:

Enable Activity Timeout

Activity Timeout:

Use RTP Proxy

AAA Required:

Local Authentication

RADIUS Authentication and Authorization

RADIUS Accounting

Client Code Identification

Check with 3PCC

Failover Reason(s)

None

Failover Reason(s)

Busy Wrong Number

Network Failure System Failure

Other

Any

Transport Protocol for SIP messages

UDP

TCP

SIP Privacy

Default Privacy

Disable Privacy

Enable Privacy

Session Header

User ID

Require Privacy

Previous
Next
Cancel
Help

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Fig. 5 Call Routing Wizard – Page 2

6. Proceed as needed in the wizard and finish it. The new/edited entry with local authentication will appear on the **Call Routing Table** (Fig.6).

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	15421		SIP 192.168.75.121:5068	None	Loc.Auth. Users List				URP: No	10	

NDS - Number of Discarded Symbols
UES - Use Extension Settings
ML - Multiple Logons
URP - Use RTP Proxy
AAA - Authentication, Authorization, Accounting
DT - Date/Time

Back Help

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Fig. 6 Call Routing Table with newly created record

- On the **Call Routing Table**, press the **Users List** link in the **Local Authentication** column of the newly created/edited routing record. The **Users List** page for the corresponding routing record appears:

Users List (pattern - 15421)

Enable Disable Select all Inverse Selection

	State	Caller ID/User Name	Expiration Date and Time	Description
<input type="checkbox"/>	Disabled	User Name : 181819	02/08/2007 04:15	from home
<input type="checkbox"/>	Enabled	Caller ID : 375200210	02/30/2007 22:40	from mobile phone
<input type="checkbox"/>	Disabled	User Name : 90110	01/01/2008 04:17	from PSTN

Back Help

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Fig. 7 Call Routing Table – Users List

This table contains all of the trusted users that have been entered in the Local AAA table.

- From the **Users List** table choose those trusted users that can use the corresponding routing rule, select the checkboxes beside the chosen users and press the **Enable** functional button. Or select a **User Name** under **CallerID/User Name** and press the **Enable** functional button.

Now, the created routing rule will be available for the callers enabled in the Users List table. The caller who doesn't match the enabled CallerID will be asked for authorization by login (username/password).

Please Note: The trusted users should be enabled in the Users List table each time any of the authentication settings are changed on the existing Call Routing rule.

7 Using Filters on Call Routing Rules

Setting up filters on each call routing rule is one of the most effective and easiest methods to secure the Quadro from unwanted incoming and outgoing calls. For any outgoing call, the Call Routing table is used to determine the call path. Securing the long distance call routing entries is the single best way to prevent unauthorized calls.

When a filter is enabled on a Call Routing rule, only callers matching the filtering criteria will be allowed the use of that rule. This option directly restricts callers

To configure filters on the Call Routing rules, follow the instructions below:

1. Login as an Administrator to Quadro's Web Management.
2. Go to **Telephony** and then the **Call Routing** menu.
3. Select the **Call Routing Table** link. The Call Routing Table appears.
4. Press **Add** functional button to create a new routing rule (or press **Edit** to change the settings of an existing call routing rule). **Call Routing Wizard** is launched (Fig.8):

The screenshot shows the 'Call Routing Wizard' interface. At the top, there are navigation tabs: Main, System, Users, Telephony, Internet Uplink, and Network. The 'Telephony' tab is selected. The main heading is 'Call Routing Wizard'. Below it, the form is titled 'Routing Call Type - Add Entry'. The form contains several input fields and checkboxes:

- Pattern:** 15421 (wildcard supported)
- Number of Discarded Symbols:** (empty field)
- Prefix:** (empty field)
- Suffix:** (empty field)
- Call Type:** SIP (dropdown menu)
- Metric:** 10
- Description:** (empty field)
- Filter on Caller / Call Type / Modify Caller ID**
- Set Date/Time Period(s)**
- Require Authorization for Enabling/Disabling**
- Enabler Key:** (empty field)
- Disabler Key:** (empty field)

At the bottom of the form, there are four buttons: Previous, Next, Cancel, and Help. The 'Next' button is highlighted in blue. At the very bottom of the page, there is a small copyright notice: 'Copyright (C) 2007 Epygi Technologies, Ltd. All rights reserved.'

Fig. 8 Call Routing Wizard – Page 1

5. Select the **Filter on Caller/Call Type/Modify Caller ID** checkbox.
6. Define the Call Routing rule as needed and press **Next** to move to the second page of the wizard.
7. Define the parameters on the second page of the Call Routing Wizard as needed and press **Next** to move to the third page of the wizard (Fig.9).
8. This page of the Call Routing Wizard appears only when the **Filter on Caller/Call Type/Modify Caller ID** checkbox has been previously selected on the first page of the wizard. This page is used to define the **Inbound Call Type** and other settings pertaining to the originator of the call.
9. The **Inbound Caller Pattern** field requires the caller ID for which the Call Routing rule is applicable. Extensions, SIP usernames or PSTN numbers are applicable for this field. Letters, digits and any characters supported in the SIP username are allowed for this field. Wildcard symbols are also allowed - "*" stands for any number of digits, "?"

stands for one digit only. "[", "]" , ",", "-", "{", "}" are used to define a range or a quantity of numbers, "!" is used for exclusion.

The screenshot shows a web-based form titled "Call Routing Wizard" with a sub-section "Inbound Call Type - Add Entry". The form includes the following fields:

- Inbound Caller Pattern:** A text input field containing "11" with a "(wildcard supported)" note.
- Inbound Number of Discarded Symbols:** An empty text input field.
- Inbound Prefix:** An empty text input field.
- Inbound Call Type:** A dropdown menu currently showing "PBX".

At the bottom of the form, there are four buttons: "Previous", "Next", "Cancel", and "Help". The Epygi logo is visible in the top right corner of the page.

Fig. 9 Call Routing Wizard – Page 3

Examples:

The pattern 2[3,7] makes this rule available for callers with caller ID as 23 or 27,

The pattern {11, 15, 23, 38, 45} makes this rule available for callers with caller ID as 11, 15, 23, 38 or 45,

The pattern 2{15-30,!17} makes this rule available for callers with caller ID in the range: 215 to 230, with the exception of caller ID 217,

The pattern 083??????? makes this rule available for callers with caller ID starting with 083 and followed by seven digits.

10. Choose the **Call Type** from the drop down list to determine which category of callers the routing entry will be applicable to.
 - Any – means that the routing entry is allowed to be used by any originating call type.
 - PBX - means that the routing entry is ONLY allowed to be used by local Quadro extensions.
 - SIP – means that the routing entry is ONLY allowed to be used by SIP originated callers.
 - PSTN – means that the routing entry is ONLY allowed to be used by PSTN originated callers.

Please Note: Pay particular attention when choosing "Any" for the Call Type since the Quadro may not correctly determine that the caller ID is an extension, a PSTN number or a SIP username.

Other fields on this page are used to change the caller ID but they are not important to securing the use of Call Routing entries.

11. Proceed next as needed in the wizard and finish it.

Now the corresponding Call Routing rule will only be applicable to the caller whose caller ID will match to the number inserted into the **Inbound Caller Pattern** text field. In the example shown in the Fig.9, the selected routing rule will only be available for PBX extension 11 on the Quadro.

7.1 Using Date/Time Limitations on Call Routing Rules

You may also secure Call Routing rules by limiting their availability for a certain time frame. When the caller attempts to use the specific Call Routing rule outside of the configured time frame, he will be denied access.

To configure date/time limitations on the Call Routing rules, follow the instructions below:

1. Login as an Administrator to Quadro's Web Management.
2. Go to **Telephony** and then the **Call Routing** menu.
3. Select the **Call Routing Table** link. The Call Routing Table appears.
4. Press **Add** functional button to create a new authentication entry (or press **Edit** to change the settings of an existing call routing rule). **Call Routing Wizard** is launched (Fig.10):

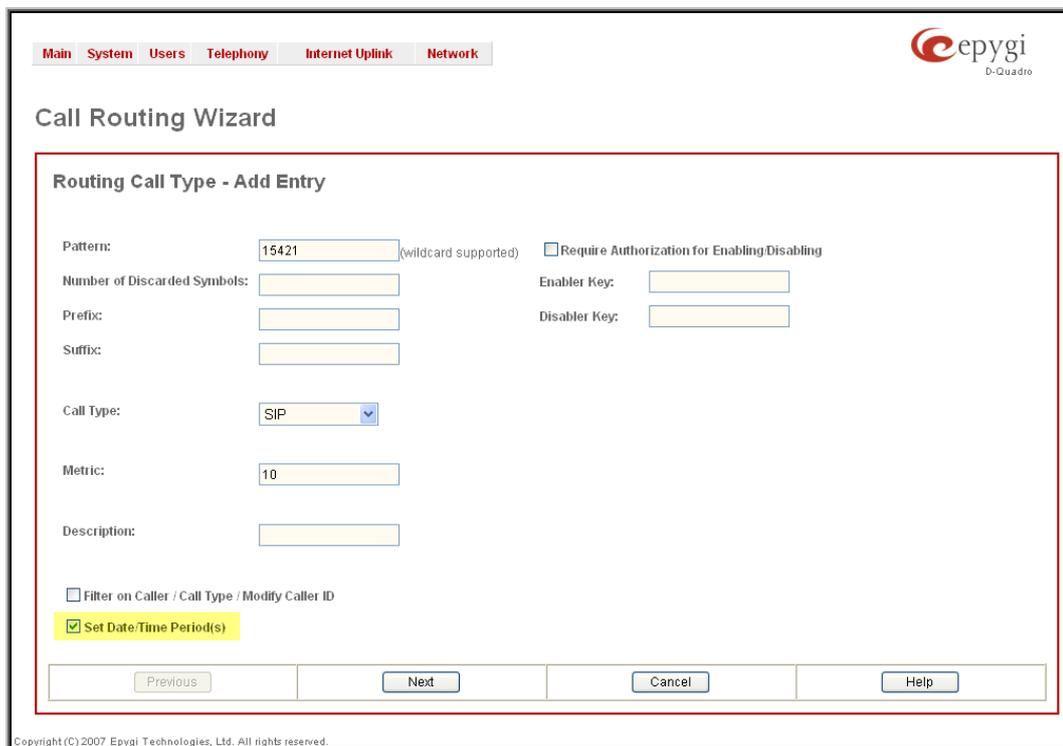


Fig. 10 Call Routing Wizard – Page 1

5. Select the **Set Date/Time Period(s)** checkbox.
6. Define the Call Routing rule as needed and press **Next** to move to the second page of the wizard.
7. Define the parameters on the next page of the Call Routing Wizard as needed and move forward until the **Date/Time Rules** page is reached.

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Fig. 11 Call Routing Wizard – Page 5

8. On the **Date/Time Rules** page you may define the validity period(s) of the selected Call Routing rule. You may choose between **Typical** and **Custom** time/date definitions.

The **Typical** selection contains a group of radio buttons that are used to select the frequency that the corresponding routing pattern will be in effect:

- **Daily**
- **Weekly** - the preferred weekday(s) should be selected for this option.
- **Monthly** - the calendar day should be selected for this option.
- **Annually** - the calendar day and month should be selected for this option.

In **Available Time Period** drop down lists, the time range of the pattern validation should be defined. The time selected in this field will be in relation to the Quadro's Time/Date Settings.

Custom selection provides a possibility to manually define the validity period(s). Use the following format to insert pattern date/time rule(s): [Month,Month-Month,...][Day-Day,Day,...][hh:mm-hh:mm,...]; ...

9. Proceed next as needed in the wizard and finish it.

Now the corresponding Call Routing rule will only be applicable in the defined time frame. In the example shown in Fig.11, the selected routing rule will be available weekly, every Wednesday from 9PM to 11PM.

7.1.1 Examples

This section provides examples on configuring the Time/Date limitations on the Call Routing entries with an explanation on how it is used.

Example 1

Purpose - User plans to configure the Quadro so all incoming FXO calls during working hours (from 9:00 to 18:00) will ring on all available extensions. After working hours (from 18:00 to 9:00) and on the weekends, all incoming FXO calls will be forwarded to the Auto Attendant.

What to do – Two routing rules should be created in the Call Routing table. One of the routing rules should have a Time/Date limitation service configured. The Many Extension Ringing service should be enabled to allow the call to ring on all extensions at the same time.

How to do -

1. Go to **Telephony->FXO Settings** page. Set the **Route Incoming FXO calls** parameter to **Routing** for all FXO lines. Insert the Routing pattern that will be also used in Call Routing table (for example: 555).
2. Go to **Telephony->Call Routing->Call Routing Table**. Add a new routing rule with the following parameters:
 - Pattern – 555
 - Number of Discarded Symbols – 3
 - Prefix - 11
 - Call Type - PBX
 - Set Date/Time Period(s) – enable
 - Leave other settings unchanged.
3. Move forward to the **Date/Time Rules** page of the **Call Routing Wizard**. Choose the **Weekly** selection and select only working days (Monday, Tuesday, Wednesday, Thursday and Friday). Select the **Available Time Period** in the interval between 9:00 to 18:00. Finish the Call Routing Wizard.
4. Add another routing rule to the **Call Routing Table** with the following parameters:
 - Pattern – 555
 - Number of Discarded Symbols – 3
 - Prefix - 00
 - Call Type - PBX
 - Leave other settings unchanged. Finish the Call Routing Wizard.
5. Go to the **Supplementary Services** for extension 11 (for the current example) and activate the Many Extensions Ringing service for Any Caller. Enable all extensions in the Many Extension Ringing list.

Result – Weekdays during working hours (from 9:00 to 18:00), all incoming FXO calls will ring on all phones on the Quadro. Whoever shall pick up the call will get it first. After working hours, as well as on weekends (Saturday and Sunday), all incoming FXO calls will be answered by the Auto Attendant.

Example 2

Purpose - User plans to configure the Quadro so all incoming FXO calls during working hours (from 9:00 to 18:00) will ring on extension 11. If extension 11 is unavailable, the call should be forwarded to a mobile number. After working hours (from 18:00 to 9:00) and on weekends, all incoming FXO calls will be directly forwarded to the voice mailbox of extension 11, without ringing.

What to do – Two routing rules should be created in the Call Routing table. One of the routing rules will have a Time/Date limitation service configured. The No Answer Forwarding service should be enabled to allow the call to be forwarded to the mobile phone.

How to do -

1. Go to **Telephony->FXO Settings** page. Set the **Route Incoming FXO calls** parameter to **Routing** for all FXO lines. Insert the Routing pattern that will be also used in the Call Routing table (for example: 333).
2. Go to the **Supplementary Services** for extension 11 (for the current example) and activate the No Answer Forwarding service for the specific FXO caller. The destination address should be the user's PSTN mobile phone number.
3. Go to **Telephony->Call Routing->Call Routing Table**. Add a new routing rule with the following parameters:

Pattern – 333

Number of Discarded Symbols – 3

Prefix - 11

Call Type - PBX

Set Date/Time Period(s) – enable

Leave other settings unchanged.

4. Move forward to the **Date/Time Rules** page of the **Call Routing Wizard**. Choose the **Weekly** selection and select only working days (Monday, Tuesday, Wednesday, Thursday and Friday). Select the **Available Time Period** in the interval between 9:00 to 18:00. Finish the Call Routing Wizard.
5. Add another routing rule to the **Call Routing Table** with the following parameters:

Pattern – 333

Number of Discarded Symbols – 3

Prefix - 11

Call Type – PBX-Voicemail

Leave other settings unchanged. Finish the Call Routing Wizard.

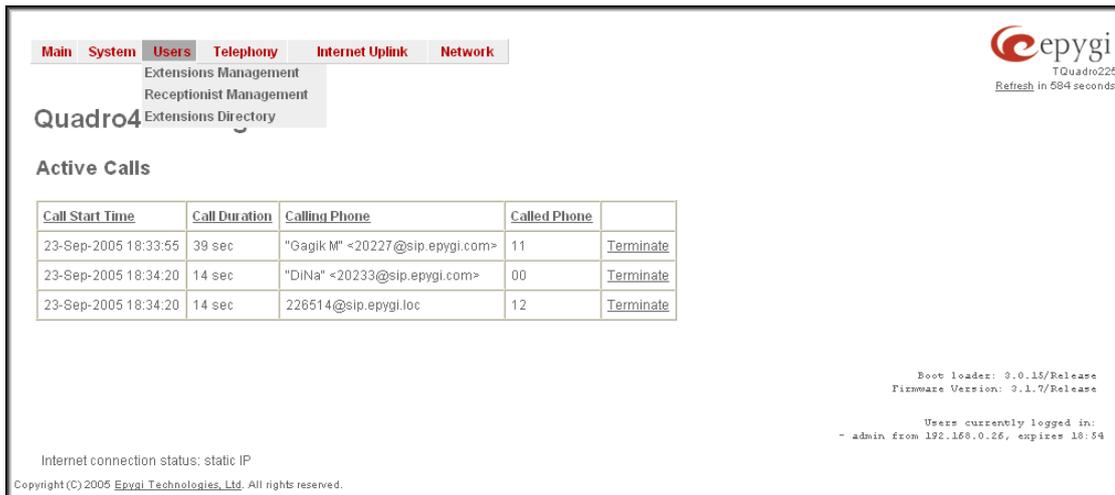
Result – During working hours (from 9:00 to 18:00) on the working days, all incoming FXO calls will ring on extension 11 on the Quadro. If nobody answers, the call will be forwarded to the user's mobile phone number. After working hours, as well as on weekend days (Saturday and Sunday), all incoming FXO calls will go to the voice mailbox of extension 11.

8 Incoming and Outgoing Call Blocking

The Incoming and Outgoing Call Blocking option is configured on each individual extension to block incoming/outgoing calls to specific numbers. It can be configured by the Administrator or by the extension user. The Call Blocking entries created by the Administrator can be protected from access by the extension user.

To access the Call Blocking pages of an extension, the Administrator should perform the following steps:

1. Login to the Quadro's Web Management as Administrator (username "admin").
2. Go to **Extensions Management** at **Users Menu**.



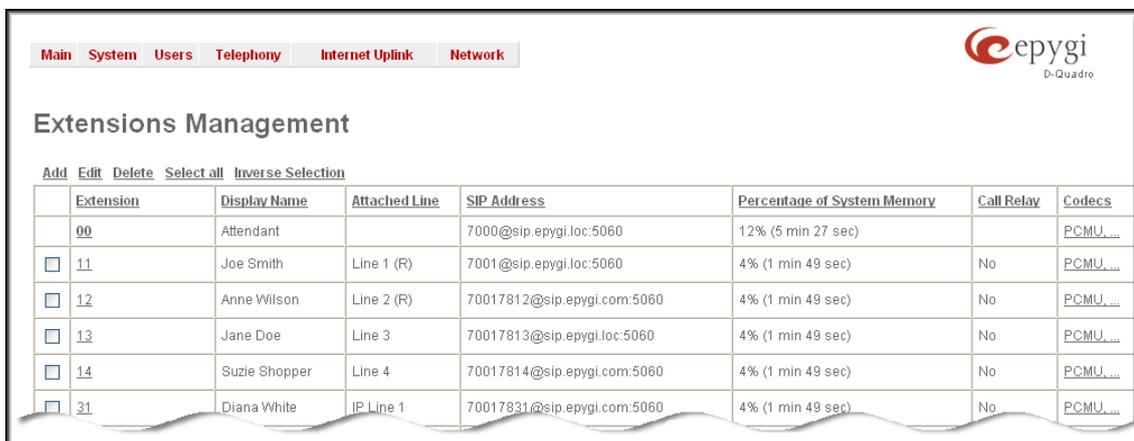
The screenshot shows the 'Users' menu in the Quadro web management interface. The 'Active Calls' section contains the following table:

Call Start Time	Call Duration	Calling Phone	Called Phone	
23-Sep-2005 18:33:55	39 sec	"Gagik M" <20227@sip.epygi.com>	11	Terminate
23-Sep-2005 18:34:20	14 sec	"DiNa" <20233@sip.epygi.com>	00	Terminate
23-Sep-2005 18:34:20	14 sec	226514@sip.epygi.loc	12	Terminate

Additional information visible in the screenshot includes: Boot loader: 2.0.15/Release, Firmware Version: 3.1.7/Release, User: admin from 192.168.0.26, expires 18:54, and Copyright (C) 2005 Epygi Technologies, Ltd. All rights reserved.

Fig. 12 Users Menu of Quadro's Web Management

The **Extensions Management** appears:



The screenshot shows the 'Extensions Management' page in the Quadro web management interface. The table lists the following extensions:

Extension	Display Name	Attached Line	SIP Address	Percentage of System Memory	Call Relay	Codecs
00	Attendant		7000@sip.epygi.loc:5060	12% (5 min 27 sec)		PCMU...
<input type="checkbox"/> 11	Joe Smith	Line 1 (R)	7001@sip.epygi.loc:5060	4% (1 min 49 sec)	No	PCMU...
<input type="checkbox"/> 12	Anne Wilson	Line 2 (R)	70017812@sip.epygi.com:5060	4% (1 min 49 sec)	No	PCMU...
<input type="checkbox"/> 13	Jane Doe	Line 3	70017813@sip.epygi.loc:5060	4% (1 min 49 sec)	No	PCMU...
<input type="checkbox"/> 14	Suzie Shopper	Line 4	70017814@sip.epygi.com:5060	4% (1 min 49 sec)	No	PCMU...
<input type="checkbox"/> 31	Diana White	IP Line 1	70017831@sip.epygi.com:5060	4% (1 min 49 sec)	No	PCMU...

Fig. 13 Extensions Management table

3. Find the needed extension in the list and press on the corresponding extension number. The **Extension Settings** page appears.
4. Go to **Caller ID Based Services** under **Supplementary Services** menu.

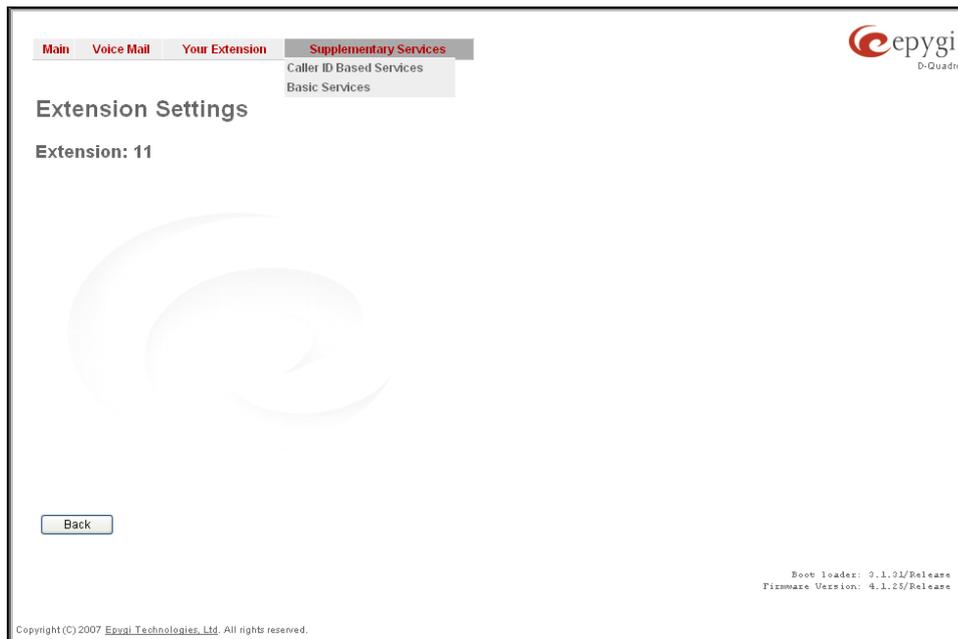


Fig. 14 Supplementary Services menu of Quadro’s Web Management for Extension User

The **Caller ID Based Services** table appears:



Fig. 15 Caller ID Based Services page

5. Press the **Add** functional button to add a new called (dialled number from the extn.) or caller (caller-Id received from an incoming call) destination on which call-blocking restrictions should take place. This functional button opens **Caller ID Based Services – Add Entry** page:

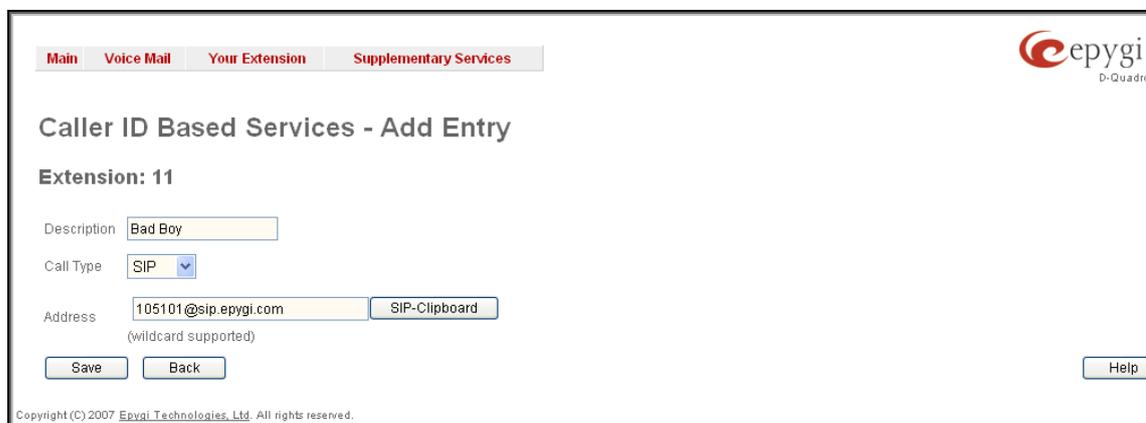


Fig. 16 Caller ID Based Services – Add Entry page

6. Fill in a short description of the address owner into **Description** text field.

7. Choose the **Call Type** from the same named drop-down list:
 - PBX - local Quadro extensions and Auto Attendant.
 - SIP – caller or called destinations reached through a SIP server.
 - PSTN – caller or called destination dialed from or to the PSTN.
 - Auto – used for undefined call types. In this case, for incoming calls from specific address, configuration of caller ID based services will apply either to PBX, SIP or PSTN callers. For outgoing calls, the called destination will be reached through Routing.
8. Type in the destination number into **Address** text field. This text field requires a SIP address, an extension or a PSTN number, for whom supplementary services should be applied. A wildcard is allowed in this field. Entering "*" as PBX or PSTN addresses will block incoming or outgoing calls for all extensions or PSTN users. Two digits should be inserted in the **Address** text field for the PBX call type. The PSTN number length depends on the area code and phone number.
9. Press **Save** to create a new entry with the defined settings. Once saved, a new entry will appear in the **Caller ID Based Services** table.
10. Click on the newly created address in the **Caller ID Based Services** table. A page where supplementary services for the selected address can be configured appears.
11. Go to **Incoming Call Blocking** or **Outgoing Call Blocking** functional link on the left side of the page, dependent on what restriction you wish to configure for the selected extension regarding the newly added address.

The screenshot shows the 'Caller ID Based Services for SIP-105101@sip.epygi.com' configuration page. The page has a navigation menu on the left with links: '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', and 'Intercom'. The main content area is titled 'Extension: 11' and contains the following configuration options:

- Enable Service
- Send Message to Caller Party
- Protect this entry
- Restore default blocking call file
- Upload New Blocking Message File:

At the bottom of the configuration area, there are three buttons: 'Save', 'Back', and 'Help'. The footer of the page reads: 'Copyright (C) 2007 Epygi Technologies, Ltd. All rights reserved.'

Fig. 17 Incoming Call Blocking page

12. Select **Enable Service** checkbox to enable the incoming/outgoing blocking on the extension for the certain address.
13. Choose **Protect this Entry** checkbox if you want this blocking entry to be protected from access by the extension user. When this checkbox is selected, extension user will not see this blocking when accessing the Caller ID Based Service page. The extension user will also be unable to deactivate this blocking entry.
14. Press **Save** to apply configuration.

Please Note: The same steps can be used to block any other incoming or outgoing destinations. The extension user can access the Quadro's Web Management with the extn. Number and password to modify their features, including incoming/outgoing call blocking using steps 4-14.

9 References

Following documents for the corresponding software release:

- Quadro Manual I – Installation Guide,
- Quadro Manual II - Administrators Guide,
- Quadro Manual III – Extension User's Guide.
- Users Right Management on the Quadro