QX1000

The IP PBXs

Manual I:
Installation Guide

for QX1000
SW Version 5.2.x

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This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the back of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ###TXXXX, made out to HX7OT00BHX70100. If requested, this number must be provided to the telephone company.

Any plug or jack that is used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ATCA.

The Ringer Equivalence Number is an indicator of the maximum number of devices allowed for connection to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirements that the sum of the RENs of all the devices does not exceed five. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming line. The REN for this product is part of the product identifier that has the format US:AAAEQ###TXXX, made out to HX7OT00BHX70100. The digits represented by ### are the REN without a decimal point (in this case 00B is a REN of 0.0B.)

If the Quadro causes harm to the telephone network, the telephone company will notify you in advance that a temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice for you to make the necessary modifications to maintain uninterrupted service.

Connection to a party line service is subject to state tariffs. Contact the state public utility commission, public service commission or the corporation commission for information.

If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of the Quadro does not disable your alarm equipment. If you have any questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

Electrical Safety Advisory

To reduce the risk of damaging power surges, we recommend you install an AC surge arrestor in the AC outlet from which the Quadro is powered.

Industry Canada Statement

This product meets the applicable Industry Canada technical specifications.

Safety Information

Before using the Quadro, please review and ensure the following safety instructions are adhered to:

- To prevent fire or shock hazard, do not expose your Quadro to rain or moisture.
- To avoid electrical shock, do not open the Quadro. Refer servicing to qualified personnel only.
- Never install wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specified for wet locations.
- Never touch uninsulated telephone wire or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying cable or telephone lines.
- Avoid using your Quadro during an electrical storm.
- Do not use your Quadro or telephone to report a gas leak in the vicinity of the leak.
- An electrical outlet should be as close as possible to the unit and easily accessible.

Emergency Services

The Quadro SIP Service is intended to function as a secondary telephone service. This service is made available through the Internet and therefore is dependent upon a constant source of electricity and network availability. If a power outage occurs, the Quadro SIP Service automatically will be disabled. User understands in the event of a power or network outage, the Quadro SIP Service will not support 911 emergency services, and further, such services only will be available via the user's regular telephone line that is not connected to the Quadro. User further acknowledges that any interruption in the supply or delivery of electricity or network availability is beyond Epygi's control and Epygi shall have no responsibility for losses arising from such interruption.

Table of Contents

Manual I: Installation Guide

About This Installation Guide 5
Requirements 6
Hardware Overview 7
The Connectors Panel of QX1000 7
QX1000's Front Panel LEDs 8
Step 1: Installing the QX1000 9
Networking Overview 9
Network Connection 9
Connecting the Hardware 10
Step 2: Configuring the QX1000 11
Step 2.1: Logging in to QX1000 12
Step 2.2: System Configuration Wizard 13
System Configuration 13
DHCP Settings for the LAN Interface 14
Regional Settings 14
Emergency and PSTN Access Code Settings 15
Finishing the System Configuration Wizard 15
Step 2.3: Uplink Configuration Wizard 16
Uplink Configuration 17
Ethernet IP Configuration 18
DNS Settings 19
Finishing the Uplink Configuration Wizard 19
Step 2-A: Using IP Lines 20
Supported SIP Phones 23
Tested SIP Phones 23
Step 2-B: Using Receptionist 25
Step 3: Registering on Epygi's Technical Support 25
Appendix: Changing the Admin Password 26
Appendix: Configuring NAT Traversal 28
Appendix: Registering on Epygi's SIP Server 30
Appendix: Checking the Connections 34

Manual II: see Administrator's Guide

This guide describes in detail the menus available for administrators only. Furthermore, it includes all the system's default values at a glance.

Manual III: see Extension User's Guide

This guide describes in detail the menus available for extension users. Furthermore, it includes all the call codes at a glance.

About This Installation Guide

This Installation Guide explains the installation of the QX1000. It gives step-by-step instructions to provision the QX1000 and configure the phone extensions. After successfully configuring the QX1000, a user will be able to make SIP and local PBX calls, as well as access the Internet from devices connected to the WAN.

This Installation Guide does not provide advanced configuration information. For these features, refer to the Administrator's and Extension User's Guides.

This Installation Guide also does not provide any information about how to secure your QX1000 from unauthorized usage. For this feature, refer to the **Preventing Unauthorized Calls on the Quadro** document at **http://www.epygi.com/**.

Step 1: Installing the QX1000 explains the connection of cables and devices to the QX1000.

Step 2: Configuring the QX1000 describes the configuration steps necessary to integrate the QX1000 into your network environment.

Step 2-A: Using IP Lines explains how to configure IP lines on the QX1000 and to connect IP phones.

Step 2-B: Using Receptionist refers to the document describing Receptionist's configuration on the QX1000.

Step 3: Registering on Epygi's Technical Support shows you how to access the Epygi Technical Support Center and the Epygi SIP Server.

Appendix: Changing the Admin Password explains how to change the default administrator password.

Appendix: Configuring NAT Traversal explains configuration of the QX1000 if it is placed behind a NAT enabled router.

Appendix: Registering on Epygi's SIP Server explains how to register on Epygi's powerful SIP server.

Appendix: Checking the Connections gives hints on solving common problems.

Requirements

- One 120/240 VAC power outlet in close proximity to the QX1000.
- One RJ45 Ethernet 10/100/1000 broadband Internet connection.
- At least one IP phone with CAT5e cable with RJ45 connector.
- One CAT5e Ethernet cable with RJ45 connector to connect to the QX1000's Ethernet port.
- One PC with a 10/100/1000 Mbps Ethernet card or adapter installed.
- TCP/IP network protocol installed on each PC.
- Internet Explorer, Netscape Navigator, Mozilla Firefox or Opera browser is recommended.

Please Note: The QX1000 is shipped with one straight RJ45 CAT5e cable. Other cables are added according to the different connectivity requirements of the QX1000.

Hardware Overview

The Connectors Panel of QX1000

The illustration below includes the connector's panel of QX1000.

Fig. I-1: QX1000's Connectors Panel

Fig. I-2: QX1000's Back Panel

1 Two USB ports to enable the connectivity of USB flash drive.

2 The main power switch is used to apply or remove power from the power supply to the system. Turning off system power with this button removes the main power but keeps standby power supplied to the system. Therefore, you must unplug system before servicing.

3 The reset button is used to reboot the system.

4 DVD-ROM is used for emergency recovery.

5 ETH RJ45 interface to attach the QX1000 to the router. This interface is placed in the back panel of QX1000.

6 ETH RJ45 interface to attach the QX1000 to the router. This Interface is reserved and is not used currently.

QX1000's Front Panel LEDs

Fig. I-3: QX1000's Front Panel LEDs

1.	**Power LED** Status of the Power Supply	**on**: power supply ok **off**: no power supply or device is still booting
2.	**Hard drive activity LED** Status of the Hard Drive	**off**: no hard drive activity **on or blinking**: DVD-ROM drive activity when flashing.
3.	**Two Network activity LEDs** Status of the Ethernet interface	**on**: device is booting **off**: no information **blinking**: indicates network activity when flashing
4.	**System Overheat LED** Status of the Overheat	**on**: indicates an overheat condition, which may be caused by cables obstructing the airflow in the system or the ambient room temperature being too warm. **off**: no overheat **flickering**: indicates a fan failure

Step 1: Installing the QX1000

Networking Overview

The QX1000 has two Ethernet ports. The first port from the left (see Fig. I-2) is used to connect it to the switch, while the second one is reserved and is not used currently. Those ports are able to transmits and receive up to 1000 Mbps traffic.

Every device within an IP network requires a unique IP address to identify itself. Since the QX1000 connects to the Ethernet, it has to be part of network, and must have IP address.

QX1000 should have static IP address configured, which is a fixed, manually assigned IP address that remains valid until changed.

The QX1000 must be visible to the Internet to be able to receive and send VoIP calls. When the QX1000 is placed in a private network, typically behind existing routers, it will by default attempt to pass through the NAT of this router with its STUN (Simple Traversal of UDP over NAT) feature. STUN will work without user configuration with the majority of basic routers. In some scenarios, port forwarding on the router is required to make the QX1000 accessible to other QX1000 devices and the Epygi SIP Server on the Internet.

Network Connection

- **A QX1000 should be always connected behind a router, which is connected to a cable or xDSL modem. IP phones are placed on the same network with QX1000.**

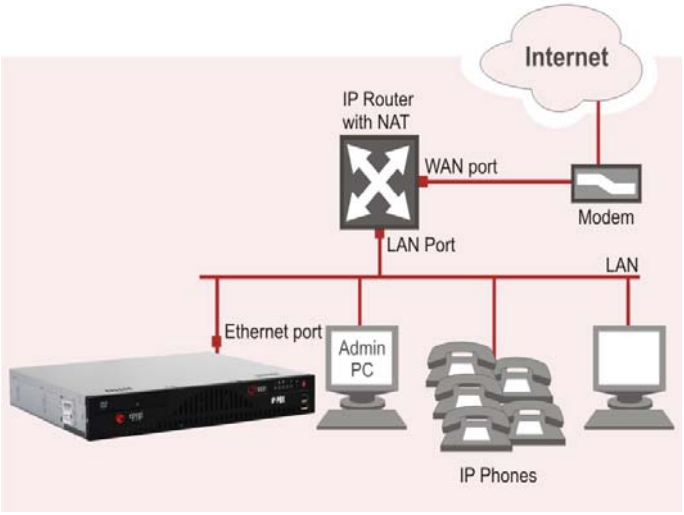

Fig. I-4: Configuration: QX1000 behind a router with IP phones on the same network

Connecting the Hardware

- **QX1000 behind a router with IP phones connected to the same network**

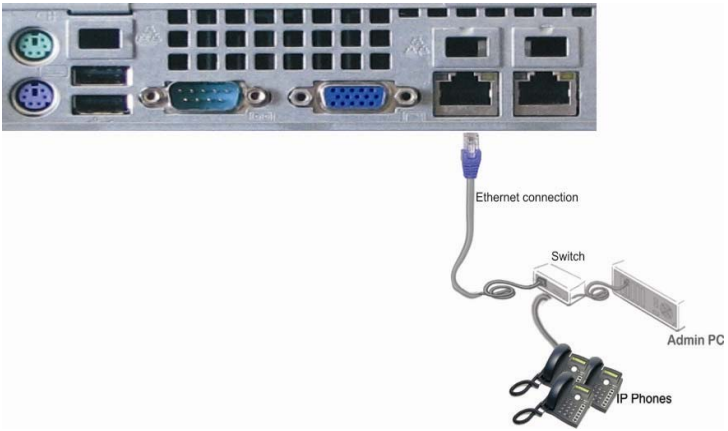

Fig. I-5: Installation: QX1000 behind a router with IP phones on the same network

Step 2: Configuring the QX1000

Verify functionality of IP calls:

- **IP telephony:** Dial **899#** and you will hear a voice message that confirms you have successfully established an IP call. If this call is not successful, go to Appendix: Checking the Connections for troubleshooting.

You may customize the following settings by logging in to the QX1000's Web Management (see Step 2.1):

- **Bandwidth** - to regulate the number of calls allowed by the QX1000 to avoid degradation in low bandwidth conditions.
- **Time/Date** - to ensure the correct time and time zone are used for call records.
- **Regional Settings** - if your QX1000 is located outside the United States, it is important to properly configure your line connections to the PSTN in your location.
- **Firewall** - if your QX1000 is connected behind a router with its own firewall service running, disable the firewall to make QX1000 accessible for management purposes.

Step 2.1: Logging in to QX1000

- Start a browser (MS Internet Explorer, Netscape, Opera, Mozilla Firefox, etc.) on a PC connected to the QX1000 via the WAN interface.
- Since Firewall is disabled on the QX1000 by default, you may connect the Web GUI remotely. To connect the QX1000's Web GUI, enter **http://192.168.0.200** (QX1000's default IP address) in the address field of your browser.
- The **Login** page of the QX1000 will be displayed (see Fig. I-6).

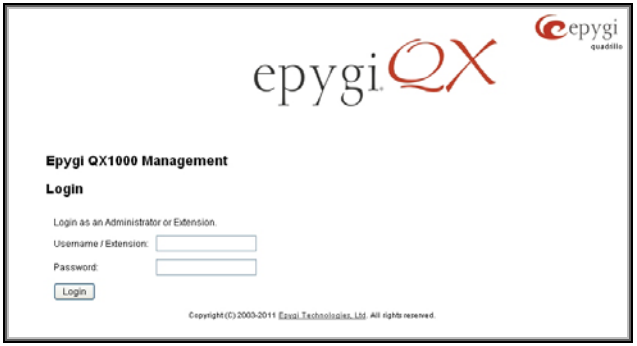

Fig. I-6: Login page

Enter **admin** as the Username and **19** as the password to log in as the administrator. Once you log in, you will enter into the QX1000 Management Menu.

Please Note: If you consecutively enter a wrong password and/or username for five times the device will be unavailable for login for five minutes.

After log in, the **QX1000 Management** page will be displayed.

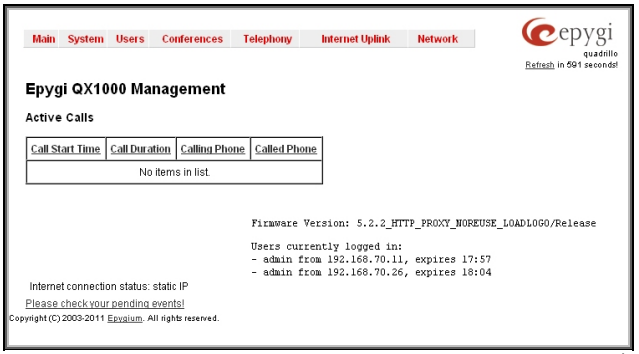

Fig. I-7: QX1000 Management page

Step 2.2: System Configuration Wizard

Select the **System Configuration Wizard** from the **System** menu. The **System Configuration Wizard** is a tool for the administrator to define the QX1000's Local Area Network settings and to specify regional configuration settings to make QX1000 operational in its LAN. **The System Configuration Wizard must be run upon QX1000 first startup.**

For the basic configuration, some pages in this wizard may be skipped and left default for the basic configuration.

Please Note: It is strongly recommended that factory default settings are left unchanged if their meanings are not completely understandable to the party administrating the QX1000.

System Configuration

The first page of System Configuration Wizard shows all items to be configured. Click the **Next** button to start. Enter into the **Host Name** field the unique name (top right corner, under Epygi logo) for the QX1000 device. The **Domain Name** text field requires the LAN side domain name which the QX1000 belongs to.

For a basic configuration, the **LAN IP address** does not need to be changed, but if you must change it (for example, to integrate the device into an existing LAN), record the new LAN IP address and have it handy. You'll need it for subsequent access to QX1000's management.

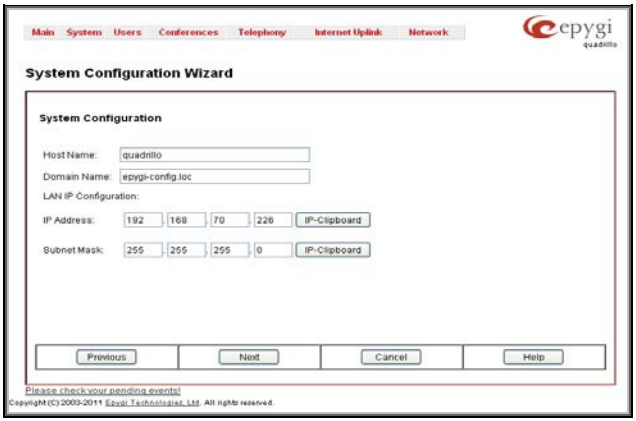

Fig. I-8: System Configuration page

Clicking **Next** shows the page **DHCP Settings for the LAN Interface**.

DHCP Settings for the LAN Interface

If the DHCP server is enabled, the QX1000 will automatically assign dynamic IP addresses to the stations connected to its LAN port.

If you didn't change the default LAN IP address of the QX1000, you also may leave the default values for the **IP Address Range**. Make sure your connected LAN devices belong to the same network as the LAN port of your QX1000.

Please Note: Make sure there is only one DHCP server on the LAN, otherwise, unpredictable network behavior can occur.

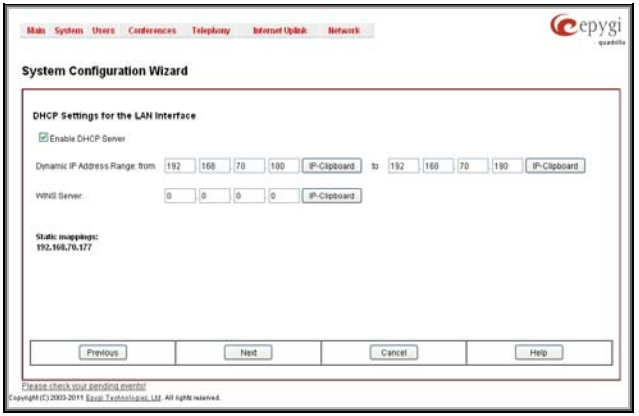

Fig. I-9: DHCP Settings for the LAN Interface page

Click on **Next** to display the **Regional Settings** page.

Regional Settings

If your QX1000 is located outside of the United States, it is important to properly configure your line connections to the PSTN in your location.

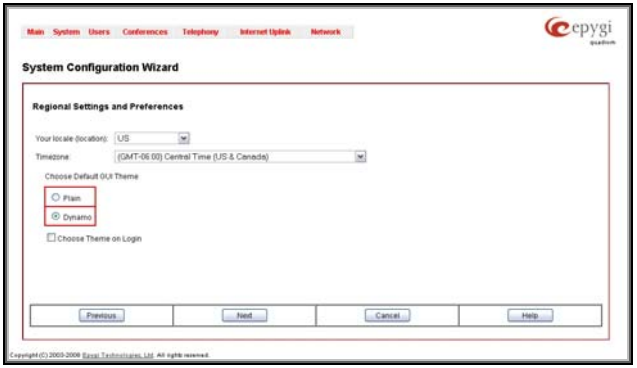

Fig. I-10: Regional Settings page

Proper configuration of **Regional Settings** is important for the functionality of the voice subsystem. The **Regional Settings** determine the proper telephony parameters on the LINE and PHONE ports of the QX1000 for the specified country. Select the country where the QX1000 is located. If you do not find your country in the list, pick the closest in your timezone.

The QX1000 obtains the correct time automatically over the Internet from a time server. If

you are not located in the US/Central standard time zone, you will need to change the **Timezone** to your region.

Click on **Next** to display the **Emergency and PSTN Access Code Settings** page.

Emergency and PSTN Access Code Settings

Fig. I-11: Emergency and PSTN Access Code Settings page

You may enter your local specific emergency codes into the appropriate field. For example, in the United States the emergency number is 911, whereas in Germany it is 112, 110. In case of an emergency you can then pick up any FXS phone and dial your configured emergency code without any prefixes for PSTN calls.

The PSTN Access Code is the prefix number you choose to dial to tell the QX1000 to "make this call over PSTN". Users in the United States will usually choose 9 here. European users usually would want to enter zero (0). If you do not enter anything into this field, the PSTN Access Code configuration should be done manually from the Call Routing table.

Click on **Next** to display the **Summary Page**.

Finishing the System Configuration Wizard

Fig. I-12: System Configuration Wizard finishing page

Click on **Finish** to complete the System Configuration Wizard. The QX1000 will then stop internal functions and apply the changes made in the Wizard.

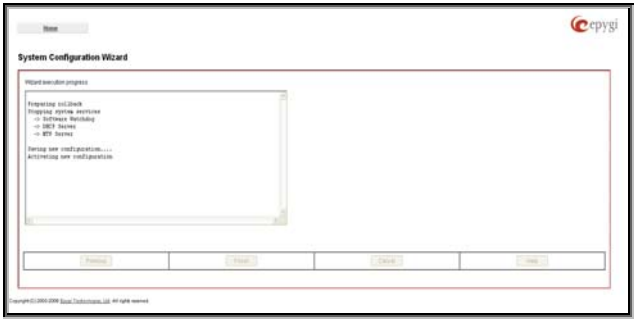

Fig. I-13: Wizard Execution Progress page

After this is complete, the QX1000 will reply with the **Confirm Settings** page requesting confirmation of the changes. Press on **OK** to confirm the settings.

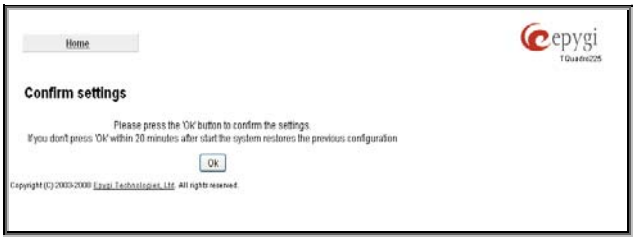

Fig. I-14: Confirm Settings page

Please Note: You must confirm the settings within 20 minutes. Otherwise the device will **revert back to the previous configuration and reboot**.

Please Note: If you do not use DHCP for your LAN and you have changed your LAN settings, make sure that the IP address of the PC connected to QX1000 is still within the specified IP address range, otherwise your PC may not establish a connection to QX1000.

If you changed the network configuration of the LAN, restart your LAN connection to receive a new IP address from the new network. Then you can access the Web Management of the QX1000 on the new IP address you've assigned to the QX1000.

Step 2.3: Uplink Configuration Wizard

Open the **Uplink Configuration Wizard** by selecting the corresponding menu item on the **System** menu. The **Uplink Configuration Wizard** is a tool for the administrator to configure the WAN settings and to adjust QX1000's connectivity in the global network. It must be run if QX1000 is desired to be connected to the Internet.

The page **Getting Started** will be displayed:

Fig. I-15: Uplink Configuration Wizard

This first page of the **Uplink Configuration Wizard** is for informational purposes only and lists the items to be configured, Click on the **Next** button for the **Uplink Configuration** page.

Before configuring the WAN port to the Internet, you need to get the following information from your internet service provider:

- **Bandwidth** - how much is available upstream and downstream?
- **WAN IP Configuration** - is DHCP supported? If yes, no more information is needed. If DHCP is not supported, the following data is needed: the WAN IP address, the subnet mask, the IP address of the standard gateway and the IP address of the Domain Name Server (DNS).
- **MAC address** - needed when the ISP requires a specific MAC address for the WAN.

Uplink Configuration

Select the desired **Interface Type** and enter the **WAN Interface Bandwidth** to assure the quality of IP calls.

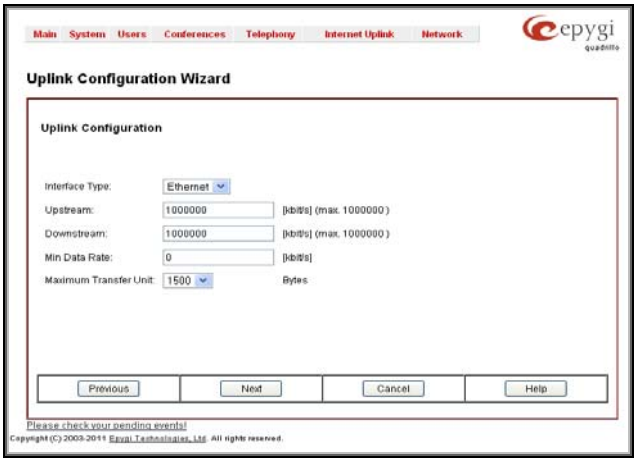

Fig. I-16: Uplink Configuration

If the available bandwidth is used to the point where the quality of an additional IP call would suffer, then new IP calls are rejected.

The bandwidth provided by your ISP must be specified for both **Upstream** and **Downstream** fields**.** The default entry in both fields is **1000000,** the maximum bandwidth of the 1000 MB uplink module. For basic DSL and cable modem service in the United States, typical values are **300** for Upstream and **1500** for Downstream.

The **Min Data Rate** text field is used to specify the amount of bandwidth reserved for data applications. The value entered here needs to be smaller that the value specified for **Upstream Bandwidth**.

Specify the **WAN Interface Type** by choosing between available WAN interface Types: **Ethernet** or **VLAN** (if configured). Use Ethernet for DHCP or static IP.

For **Ethernet**, clicking **Next** will display the **Ethernet IP Configuration** page**.** If **VLAN** is the selected WAN Interface Type**,** the next page will be **VLAN IP Configuration** (for details, see Manual II – Administrator's Guide).

Ethernet IP Configuration

Your Internet Service Provider (ISP) should provide this information:

- **IP Address** requires the IP address for the QX1000 WAN interface.
- **Subnet Mask** requires the subnet mask for the QX1000 device WAN interface.
- **Default Gateway** requires the IP address of the router where all packets are to be sent to, for example, to the router of the provider.

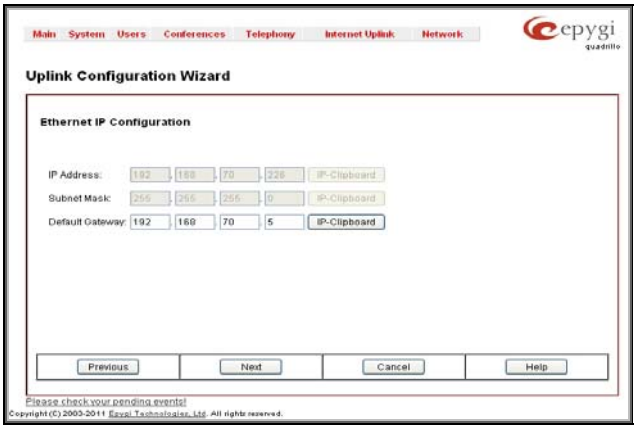

Fig. I-17: Ethernet IP Configuration page

Click on **Next** to display the **DNS Settings** page.

DNS Settings

The **DNS Settings** page provides the option of setting up a name server for the QX1000. It offers the following components:

- The **Nameserver** text field requires the IP address of an external name server.
- The **Alternative Nameserver** text field requires the IP address of the secondary name server. The **Alternative Nameserver** is used if the main name server cannot be accessed.

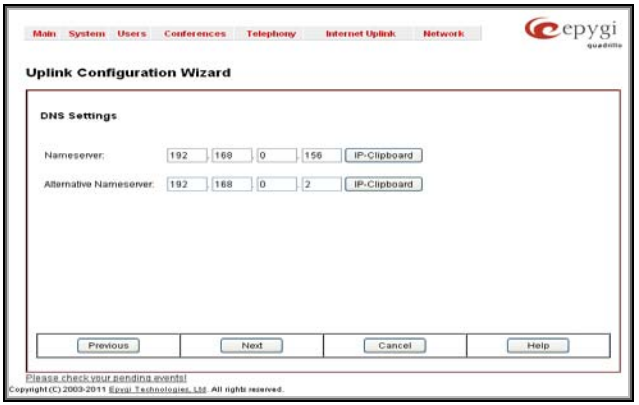

Fig. I-18: DNS Settings page

Clicking **Next** shows the summary page of the Uplink Configuration Wizard.

Finishing the Uplink Configuration Wizard

Fig. I-19: Uplinkt Configuration Wizard Summary page

Click the **Finish** button to complete the Uplink Configuration Wizard. The QX1000 will then stop internal functions and apply the changes made in the Wizard. After this is complete, the QX1000 will display the **Confirm Settings** page requesting confirmation of the changes. Press the **OK** button to confirm the settings.

Please Note: The settings should be confirmed within 20 minutes; otherwise, the device will **revert back to the previous configuration and reboot**.

Step 2-A: Using IP Lines

Before starting the IP Lines specific configuration, the appropriate IP Phone (the list of SIP phones supported and tested by QX1000 is presented below) should be connected to the QX1000 through its WAN port (see Fig.I-20).

Each IP line should be configured individually from the **Telephony** menu, **Line Settings** page, **IP Line Settings** tab.

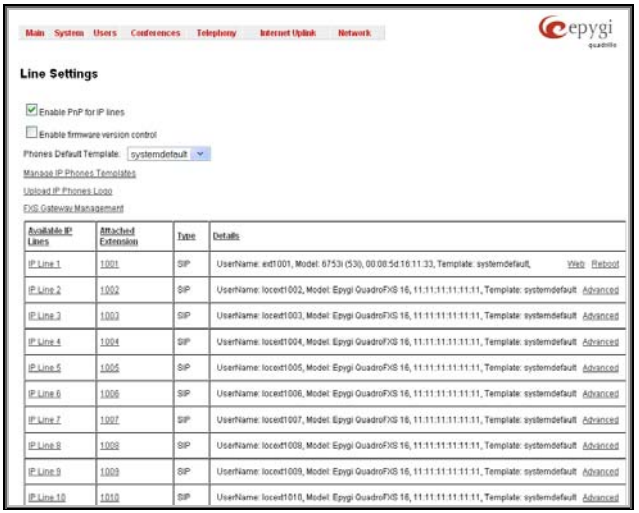

Fig. I-20: Line Settings page

Click on the IP Line number to enter the **IP Lines Settings** page.

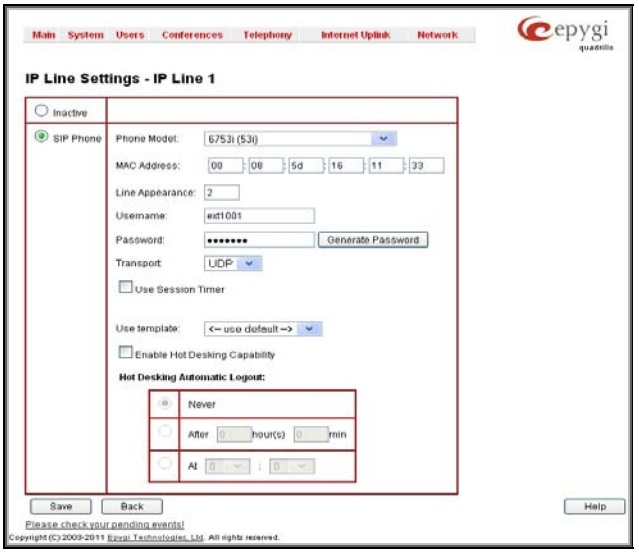

Fig. I-21: IP Line Settings page

Select the **SIP Phone** radio button. Select the SIP IP phone model from the **Phone Model** drop down list. Insert the SIP Phone's **MAC address** in the corresponding fields. The MAC address of an IP phone is usually printed on the back of the phone's base unit.

In the **Line Appearances** text box, enter the number for simultaneous calls supported by the SIP IP phone – which is the sum of the number of active and held calls. For example, if this field is set to **1**, only one active call is possible to have on the phone and making or accepting a second call while the other is on hold will not be allowed. Note, that this number depends on the phone brand and model, and cannot exceed the number of simultaneous calls supported by the phone.

To simplify the configuration procedure, QX1000 generates unique identification parameters (see **Username** and **Password**). You may use either these values or specify new ones. The **Password** field is checked against its strength and you may see how strong is your inserted password right below that field. A well protected, strong password has a minimum of 8 characters of letters in upper and lower case, symbols and numbers. If you are unable to define a strong password, press **Generate Password** to use one of the system defined strong passwords.

The **Transport** drop down list is used to select the SIP protocol transport layer - UDP, TCP or TLS. For TLS you may activate the TLS certificate update mechanism from IP Phone to obtain the latest certificate generated by the QX1000.

The **Use Session Timer** enables the SIP session timer for the corresponding IP line. This checkbox enables advanced mechanisms for connection activity checking. This option allows both user agents and proxies to determine if the SIP session is still active.

The **Enable Hot Desking Capability** checkbox is used to enable the Hot Desking feature on the corresponding IP line (for details, see Manual II – Administrator's Guide).

The **Hot Desking Automatic Logout** section is used to configure Hot Desking functionality expiration on the corresponding IP line. This may be useful when someone who logged in to the public phone with the extension attached to this line forgot to log out after using it. With this option enabled, once the expiration time arrives, the extension will automatically log out from the public phone.

The following options are available:

- **Never** – the extension will never expire and will remain logged in to the public phone.
- **After the defined period of time** – requires the period after which the extension will automatically log out from the public phone.
- **At the certain moment** – requires the moment (hour and minute) when the extension will automatically log out from the public phone.

Press **Save** to apply the settings for the IP line.

Reset the SIP Phone. After restart, the appropriate configuration will be automatically downloaded from the QX1000 to the SIP Phone.

Please Note: For automatic configuration, some SIP phones may require additional actions to follow the restart. For example, by default the IP Dialog SIP Tone II is in a non-auto-provisioning mode, so it should be manually enabled on the phone. Refer to the user's manual of the corresponding SIP phone for instructions on performing a factory reset or reboot

on any of the supported phones, what additional configurations are required for a specific SIP phone, and how to manipulate with the GUI.

You may also find the detailed installation instructions of the Epygi's supported and tested IP Phones in the "**Configuring Epygi Supported IP Phones**" and "**Configuring Epygi Tested IP Phones**" documents published on Epygi's Web portal.

To make sure the line configuration works properly, do the following:

- Go to **System – Status - IP Line Registration Status** to see if IP Line registration is successful.
- Dial *74 to get the line information.
- Make outgoing and accept incoming calls.

Supported SIP Phones

Below is the list of SIP phones that are officially supported by Epygi and can be configured to work with QX1000 using both Plug and Play and the automatically configuration options, as well as the full set of advanced features, like paging and intercom:

- snom 300 (also supports FVC)
- snom 320 (also supports FVC)
- snom 360 (also supports FVC)
- snom 370 (also supports FVC)
- snom 820 (also supports FVC)
- snom 821 (which is replacement for Snom 820)
- snom 870 (also supports FVC)
- snom MeetingPoint (also supports FVC)
- Aastra 480i (also supports FVC)
- Aastra 480iCT
- Aastra 9112i (also supports FVC)
- Aastra 9133i (also supports FVC)
- Aastra 9143i(33i)(also supports FVC)
- Aastra 9480i(35i)(also supports FVC)
- Aastra 9480iCT
- Aastra 6751i (also supports FVC)
- Aastra 6753i (also supports FVC)
- Aastra 6755i (also supports FVC)
- Aastra 6757i(57i) (also supports FVC)
- Aastra 6757iCT (57iCT) (also supports FVC)
- Aastra 6730i (also supports FVC)
- Aastra 6731i (also supports FVC)
- Aastra 6739i (also supports FVC)

Tested SIP Phones

Below is the list of SIP phones that are tested and can be configured to work with QX1000 using the automatically configuration option. Some QX1000 supported features like Paging, Intercom, etc. may be missing in these SIP phones.

- CISCO 7960
- CISCO SPA525G2
- CISCO SPA303
- CISCO SPA501G
- CISCO SPA509G
- IpDialog SipTone II
- Polycom SoundPoint IP 300SIP
- Polycom SoundPoint IP 330SIP
- Polycom SoundPoint IP 331SIP
- Polycom SoundPoint IP 335SIP
- Polycom SoundPoint IP 450SIP
- Polycom SoundPoint IP 501SIP
- Polycom SoundPoint IP 550SIP
- Polycom SoundPoint IP 601SIP
- Polycom SoundPoint IP 650SIP
- Berkshire (ATL) 5000
- Grandstream BT100
- Grandstream BT200
- Grandstream GXP2000
- Grandstream GXP2100
- Grandstream GXP2110
- Grandstream GXP2120
- Grandstream GXV3175
- Grandstream HT286
- Grandstream HT386
- Grandstream GXV3140
- Linksys SPA921
- Linksys SPA922
- Linksys SPA941
- Linksys SPA942

- Polycom SoundStation IP 6000
- POLYCOM VVX 1500
- POLYCOM KIRK wireless server300
- SIPUra SPA 841
- Snom 190
- Snom 200
- Snom 220
- Snom M3
- Snom PA1
- Swissvoice IP 10S
- Thomson ST2030S
- Linksys SPA2002
- Linksys PAP2T
- Yealink SIP-T20P
- Yealink SIP-T22P
- Yealink SIP-T26P
- Yealink SIP-T28P
- Yealink VP-2009/VP-2009P
- Aastra MBU400
- Telematrix IP550 Spectrum Plus
- Telematrix IP 3300
- Telematrix IP9600 MWD5

To use Plug and Play (PnP) option for supported IP phones, connect them to the WAN for the QX1000 and power up. If the phone is in default settings then it will automatically select a free IP line and attach to an extension. If not, reset the phone to factory defaults manually.

Please Note: To use PnP the appropriate option should be selected in the IP line settings.

Step 2-B: Using Receptionist

If you wish to use the Receptionist's features, the Receptionist should be set up on the QX1000. The QX1000's basic configuration should be done in the same way as described in the Step 2.

The Receptionist related setup, with detailed instructions on how to configure the QX1000 and the attached IP Phones, is described in the "**Receptionist Setup on QX1000**" document, which you can find at the Epygi's Web portal.

Step 3: Registering on Epygi's Technical Support

It is recommended that you register your QX1000 on the Epygi Technical Support web page. Registration will give you access to the Technical Support Database. There, you can submit requests concerning technical problems as well as refer to the Frequently Asked Questions (FAQ) section. In addition, the technical support page allows users to download new firmware, manuals and other information. You can access the support section only if you are registered. Additionally, registration at Epygi's Technical Support web page gives you the username and password to login to the Epygi SIP Server.

To register, you need to know the serial number of your QX1000, which is located on a label on the bottom of QX1000. You will also need the date of purchase. Next, open the Epygi home page (www.epygi.com), select **Support** and click on **Registration Form**. The online registration page will appear:

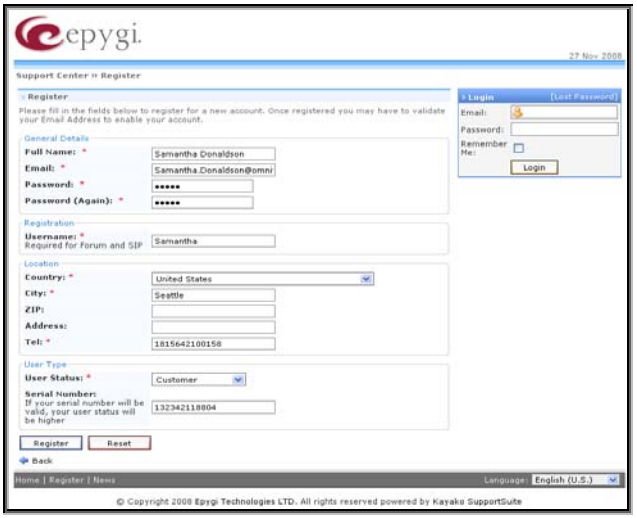

Fig. I-22: Registration form

Complete all fields and record the **Login Name** and **Password** in a safe place. You will need it for the SIP server.

Please Note: In some cases, the QX1000 units will be shipped preconfigured from the factory with the Support login and password already set up. In this case, an information sheet is included in the packaged contents indicating the username and password to access Epygi's Online Support and the Epygi SIP Server.

Appendix: Changing the Admin Password

For security reasons, it is recommended that you change the default admin password. The username of the administrator (**admin**) cannot be changed.

To change the administrator password, go to the **System** menu, **User Rights Management**.

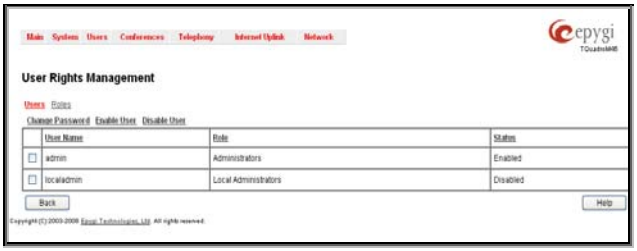

Fig. I-23: User Right Management page

Choose **admin** from the list and press the **Change Password** functional button from the **User Right Management** page toolbar.

For **Administrator** account the page contains two parts - one for **GUI Access Password**, the other one for **Phone Access Password**.

Fig. I-24: Change Password page

The **GUI Access Password** offers the following components:

- The **Old Password** field requires the current password of the **Administrator**. An error message prevents entering the wrong password.
- The **New Password** field requires a new password for the **Administrator**. Reentering the new password in the **Confirm New Password** field will confirm the new password. Up to twenty (0-20) digits and symbols are allowed.

The **Phone Access Password** offers the following components:

- The **Old Password** field requires the current password of the **Administrator**. An error message prevents entering the wrong password.
- The **New Password** field requires a new password for the **Administrator**. Reentering the new password in the **Confirm New Password** field will confirm the new password. The password can consist of numeric values only. Up to twenty

(0-20) digits are allowed. A corresponding warning appears if any other symbols are inserted.

Please Note: If **Administrator** is changing the **Local Administrator** or **Extension** passwords or **Local Administrator** is changing the **Extension** password then the **Old Password** field is not displaying.

Attention: It is highly recommended to define a proper and non-empty password on this page if the extension is being used for the Call Relay service from the QX1000's Auto Attendant.

Write down the password somewhere and keep it in a secure place. If the password is lost, a factory reset will be required on the unit (see Administrator's Guide, Hardware Overview). All settings are lost after a factory reset. After a factory reset the default password (19) will be restored.

Appendix: Configuring NAT Traversal

NAT or Network Address Translation is a common feature used to expand the use of connected PCs and other networked devices without having to use multiple global Internet public IP addresses. Most ISP's will assign one public IP address to each customer that is connected to the Internet. The customer can use a router to provide NAT capability and create a private network of PCs and other devices not visible from the Internet. This method offers security and also eliminates the need to assign global Internet public IP addresses to each device on the LAN.

The QX1000 initiates and receives SIP calls from the Internet (or the network connected to the WAN port). To receive SIP calls, the QX1000 must be able to receive packets from the SIP server or any other device that is trying to make an incoming call. If the QX1000 is placed behind a router with NAT, like most basic routers on the market today, the QX1000 will not be able to receive calls. To resolve this issue, either STUN must be enabled on the QX1000 or SIP NAT traversal must be set up in the router and in the QX1000 to route the incoming calls properly.

Please Note: NAT traversal only works with Internet connections that have static IP addresses. Verify from your provider that this is the case for your Internet connection. Some ISPs provide dynamic IP addresses that may change from time to time, and are not appropriate for SIP NAT traversal.

Please Note: If you have more than one router in series between the QX1000 and the Internet, the same port forwarding setup must be configured on each router.

NAT Traversal Setup

- Install the QX1000 behind the router. If the QX1000 is configured with its factory default settings, it is already configured for DHCP and will obtain an IP address automatically from the router.
- Connect a PC to the QX1000 LAN port and power it up.
- Verify the QX1000 can connect to the Internet by opening a browser window and browsing to a familiar WEB site. If the QX1000 cannot reach the Internet, verify the WAN LEDs and the cabling. Verify the QX1000 is set up for DHCP on the WAN and that the router has the DHCP server enabled for the devices behind it.
- Find the address of the router and log into the router. Refer to the router's user manual on how to open the router configuration.
- Set up port forwarding on the router to forward UDP ports 5060, 6000-6099 to the IP address assigned to the QX1000. You can see the IP address of the QX1000 in the **System** menu under **Status**, submenu **Network Status.** The IP address will be listed as the WAN IP address. Your router also may indicate the IP address assigned to the QX1000.
- Find out the public Internet address (WAN IP address) of the router. To do so, open a browser and go to www.whatismyip.com. The site will return your public Internet IP address. Record this IP address.

- From the **Telephony** menu of the QX1000 Management go to the **NAT Traversal Settings** page, go to **General Settings** and set the enable **NAT Traversal for SIP** radio buttons selection to **Force**. **Save** the selection.

Fig. I-25: NAT Traversal Settings – General Settings

Go to **SIP Parameters** page.

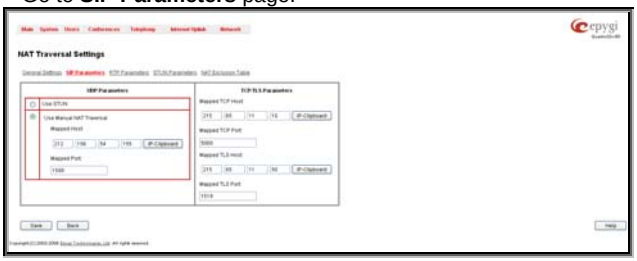

Fig. I-26: NAT Traversal Settings - SIP Parameters

Select **Use Manual NAT Traversal** and enter the WAN IP address of the router into the **Mapped Host** text field. For **Mapped Port**, enter the router's corresponding port number, in this case **5060**. **Save** the entries.

- Go to the **RTP Parameters** page and select **Use Manual NAT Traversal.**

Fig. I-27: NAT Traversal Settings - RTP Parameters

- Enter the WAN IP address of the router into the **Mapped Host** text field. Set the **Mapped RTP/RTCP Port Range** according to the values specified on the router, in this case to **6000 (Min)** and **6199 (Max),** respectively. Click the **Save** button to save the contents.

The QX1000 will activate the settings and register the extensions on the Epygi SIP Server after a few minutes. You can verify the settings from the main **QX1000 Management** menu under **Status** in the **SIP Registration Status** section.

Appendix: Registering on Epygi's SIP Server

Epygi maintains a SIP Server that can be used to call between QX1000 devices. QX1000 extensions may already be defaulted to register to the SIP Server. To create additional registrations you may login directly to Epygi's SIP Server if you have registered your QX1000 at Epygi's Technical Support Center. If you have not registered with Epygi Technical Support, you cannot login to the Epygi SIP Server.

Log in to the Epygi SIP Server at www.epygi.com.Click on **SIP Server Login.** Use the same login name and password you used for Epygi Support for Customer Login.

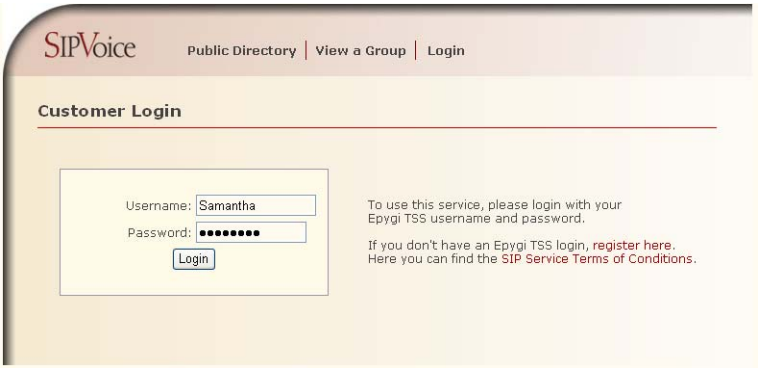

Fig. I-28: SIP Services Login page

Read the **SIP Service Terms and Conditions** and accept it to proceed. The displayed page now welcomes you and allows you to **Subscribe a New Extension**.

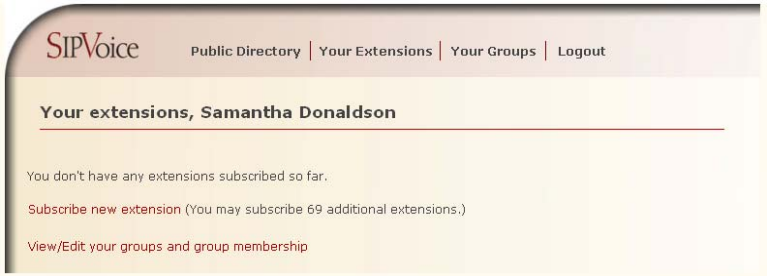

Fig. I-29: SIP Services Welcome page

Selecting **Subscribe a New Extension** leads you to a page where you can enter the user information as shown below. The **Extension Nr.** is the eight-digit SIP number assigned to your extension. The first five are fixed by the SIP Server and cannot be changed and the last three are user defined. Notice the check box to enable this extension to be shown in the Epygi **Public SIP Directory**.

Please Note: If you enable this extension to be shown in the Epygi **Public SIP Directory**, all information related to this extension will be published in the Public SIP Directory, which is accessible by anyone from the Internet. To maintain privacy, do not check this box.

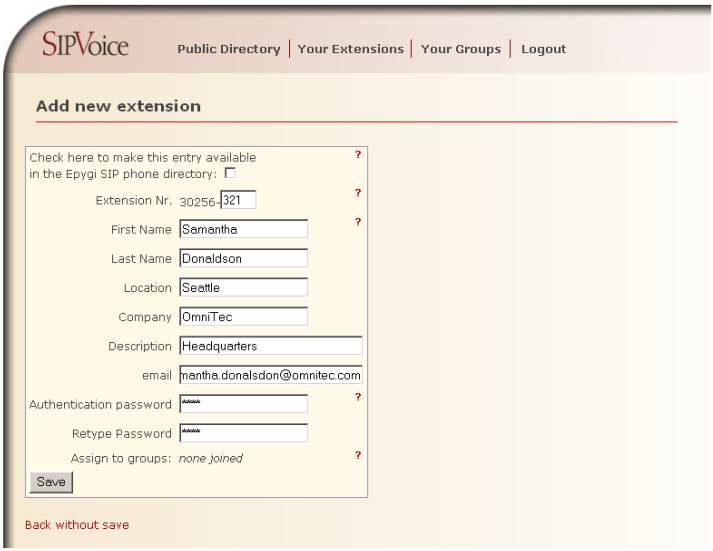

Fig. I-30: SIP Services Add New Extension page

The **Authentication password** validates the entry and must match the password entered on the QX1000 later. Make sure to record the name, Authentication Password and SIP extension number for entry into the QX1000 later.

Save will store the entered information and conclude the basic SIP registration. The following page then will be displayed:

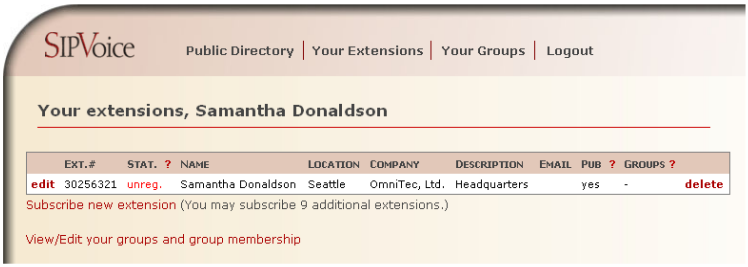

Fig. I-31: SIP Services Your Extension page

This table shows **unreg.** in the **Stat**. column. This entry will change to **reg**. when the required settings in the QX1000 are complete and the QX1000 successfully registers on the SIP Server.

Repeat this for all four extensions on the QX1000 and the Auto Attendant.

Configuring QX1000 Extensions

Once the SIP server has the created extensions with the user information, create these extensions in the QX1000 devices. Once they are entered in the QX1000, they will be registered and can then be used.

Login to the QX1000 and go to **Extensions Management**.

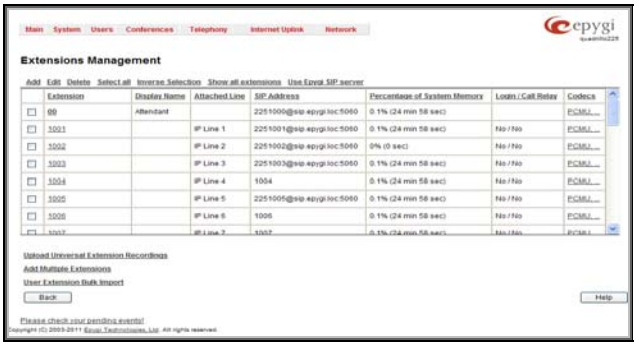

Fig. I-32: Extensions Management page

Select the first extension to change by clicking the appropriate checkbox and press **Edit** functional button. The **Extensions Management – Edit Entry** page will be displayed.

Go to the **General Settings** page and adjust the **Display Name** as needed.

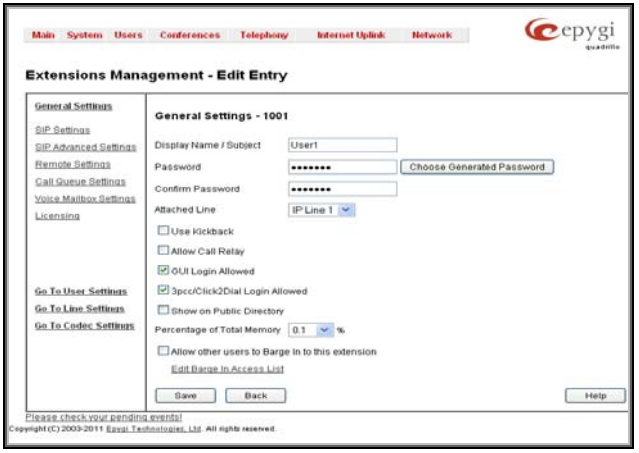

Fig. I-33: Extensions Management - Edit Entry – General Settings page

Go to the **SIP Settings** page to enter the **SIP Registration Settings** you received from the Epygi SIP server.

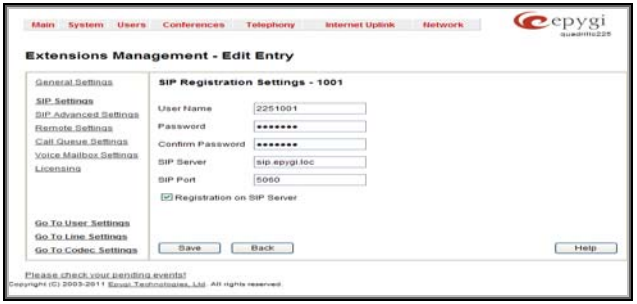

Fig. I-34: Extensions Management - Edit Entry – SIP Settings page

- Enter the SIP registration number displayed in the column **Ext#** into the text field **Registration User Name**.
- In the **Password** field, enter the password you specified when registering at the SIP server and confirm it in the field below.
- In **Registration SIP Server,** the selected SIP server address must be entered. If you use the Epygi SIP server, you may enter **sip.epygi.com**.
- Most SIP server providers, including Epygi, use port 5060 as the **Registration SIP Port**. You may leave the default entry as is.
- Select **Registration on SIP Server** if you want to establish and receive IP calls.
- Click the **Save** button to activate the settings.

Other settings of the extension might be also modified from **Extensions Management – Edit Entry** page (refer to the Manual II - Administrator's Guide).

Your settings will be verified, then after a few seconds the **Extensions Management** page is updated with the changes as shown in the below example, Fig. I-35.

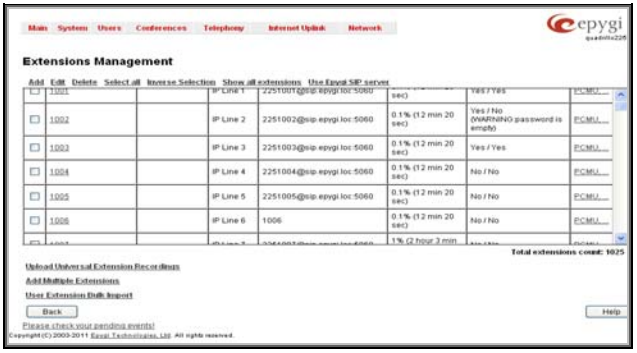

Fig. I-35: Extensions Management page

If you go back to Epygi's SIP Server, you will find the value **reg.** for this number in the column **Stat**. **Reg**. This indicates that the QX1000 has successfully registered the new number. If this does not happen after a few minutes, again verify the SIP Number and passwords.

Appendix: Checking the Connections

If the system doesn't seem to be working properly, even when all the cables are connected properly, it may be helpful to **Start Network Diagnostics:** The WAN link, IP configuration, gateway, DNS server, and STUN-NAT will all be checked.

To start diagnostics, open the **System's** menu item **Diagnostics** and click **Start Network Diagnostics.**

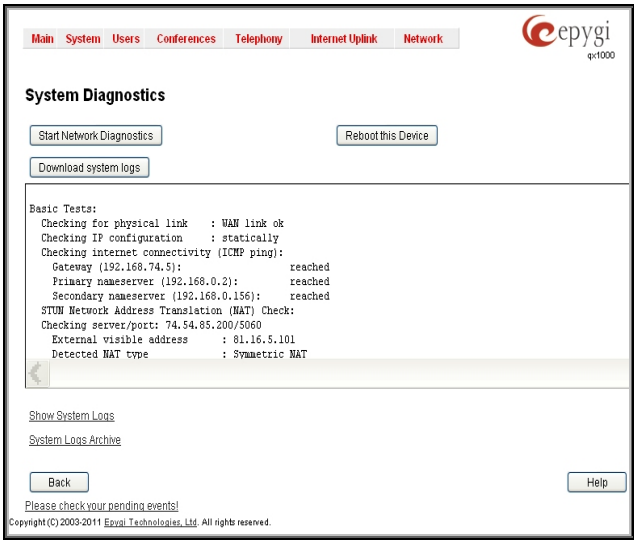

Fig. I-36: System Diagnostics - Network Diagnostics page

If the test passes, the output of the system may look as follows:

```
Basic Tests:
  Checking for physical link     : WAN link ok
  Checking IP configuration      : statically
  Checking internet connectivity (ICMP ping):
    Gateway (192.168.70.5):                    reached
    Primary nameserver (192.168.0.2):          reached
    Secondary nameserver ():                   not configured
  STUN Network Address Translation (NAT) Check:
  Checking server/port: 74.54.85.200/5060
    External visible address       : 81.16.5.101
    Detected NAT type              : Symmetric NAT

  Performing MTU Discovery:
    preparing system
    Sending UDP Datagram of size 1500    got answer
    clean up

  Largest usable MTU size: 1500 Bytes

 Test successful.
```

Depending on where the test is failing, the diagnostic can give some advice on how to solve the problem. See the example below of a failed test:

```
Basic Tests:
  Checking for physical link:                no WAN link
Please check the physical connection of the WAN interface. Cable not
plugged or broken?
Test failed.
```

If diagnostics are successful, but you are still unable to place a call to 899# then check the SIP registration status.

Open the SIP Registration Status page using the QX1000 management **System** menu item **Status**. Besides the SIP registration information for the auto attendant and each connected extension, the **Detected Connection Type** is shown. If QX1000 is placed behind a NAT router and the STUN is enabled, the detected connection type and the IP address of this router's WAN port are displayed.

Fig. I-37: SIP Registration Status page

QX1000 cannot work behind your router if **Detected Connection Type** is one of the following:

- Unknown connection - unexpected error
- Symmetric NAT
- Symmetric Firewall
- Blocked UDP

If you get one of the above mentioned Detected Connection Types, either connect the QX1000 in front of the router, or configure NAT traversal manually as explained in Appendix: Configuring NAT Traversal.

If you are unable to resolve your problems, please send us a technical support request on the **Support** section of **http://www.epygi.com/**. Please prepare a system log file and attach it to your request.

To download the system logs, open the **System Diagnostics** page **System** menu item **Diagnostics** and click **Download System Logs.**

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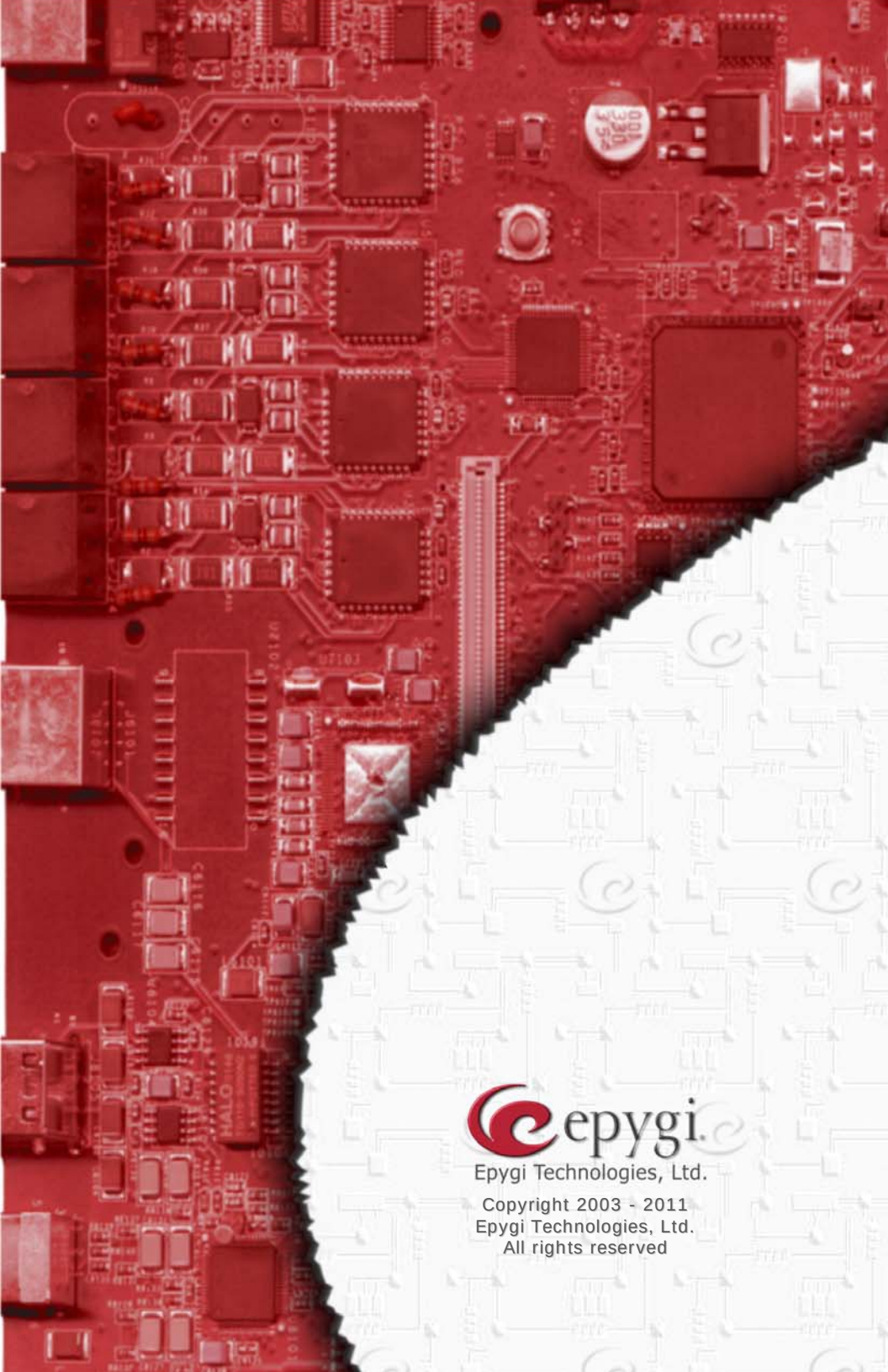

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