



Manual-I: Installation Guide for QX Gateways

This manual is effective for all QX Gateways: QXE1T1, QXFX04, QXISDN4, and QXFXS24.

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Epygi Technologies, LTD.

2233 Lee Road Suite 201 Winter Park, Florida 32789

Administrative Council for Terminal Attachments (ACTA) Customer Information

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. Located on the equipment is a label that contains, among other information, the ACTA registration number and ringer equivalence number (REN). If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive REN's on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total REN's contact the telephone company to determine the maximum REN for the calling area.

This equipment cannot be used on the telephone company-provided coin service. Connection to Party Line Service is subject to State Tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. 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 in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please contact EPYGI TECHNOLOGIES, LTD.

If the trouble is causing harm to the telephone network, the telephone company may request you to remove the equipment from the network until the problem is resolved.

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 or QX is powered.

Industry Canada Statement

This product meets the applicable Industry Canada technical specifications.

Safety Information

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

- To prevent fire or shock hazard, do not expose your Quadro or QX to rain or moisture.
- To avoid electrical shock, do not open the Quadro or QX. 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 non-insulated 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 or QX during an electrical storm.
- Do not use your Quadro, QX 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 use of VoIP telephony is made available through IP networks such as the Internet and is dependent upon a constant source of electricity, network availability and proper operation of the equipment. If a power outage, network disruption or equipment failure occurs, the VoIP telephony service could be disabled. User understands that in any of those events the Quadro or QX may not be able to support 911 emergency services, and further, such services may only be available via the user's regular telephone line or mobile lines that are not connected to the Quadro or QX. User further acknowledges that any interruption in the supply or delivery of electricity, network availability or equipment failure is beyond Epygi's control and Epygi shall have no responsibility for losses arising from such interruption.

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The default Music on Hold on the Quadro or QX is a 22 second fragment from Chopin's *Nocturne Op.9 #2* performed by Marina Vardanyan and kindly provided to Epygi Technologies, LTD. The recording is royalty free.

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Document Edition History

Revision	Date	Description	Valid for Models	Valid for FW
1.0	27-May-16	Initial Release	QX Gateways	6.1.17 and higher
1.1	24-Mar-17	Updated	QXFXO4, QXISDN4, QXE1T1	6.1.17 and higher
			QXFXS24	6.1.40 and higher
1.2	11-Dec-17	Updated	QXE1T1, QXFXO4, QXISDN4 and QXFXS24	6.2.1 and higher

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1 About Installation Guide

This guide is intended for administrators who need to prepare for, install, configure and operate QX Gateways (herein QX). In this guide, we describe the configuration of QXs as well as references to other guides, manuals and complementary resources. After successfully configuring the QX, a user will be able to make SIP and PSTN calls and access the Internet from devices connected to the Local Area Network (LAN).

This guide contains many example screen illustrations. Since QXs offer a wide variety of features and functionality, the example screenshots shown may not appear exactly the same for your particular QX as they appear in this manual. The example screenshots are for illustrative and explanatory purposes, and should not be construed to represent your own unique environment.

2 System Requirements

- One 100-240 VAC power outlet in close proximity to the QX.
- One RJ45 Ethernet 10/100 broadband Internet connection.
- For QXFXS24 at least one analog phone, RJ21 connector (F) with cable and distributed panel.
- One CAT 5 Ethernet cable with RJ45 connector to connect to the QX LAN port.
- One PC with a 10/100 Mbps Ethernet card.
- TCP/IP network protocol installed on each PC.
- Internet Explorer, Mozilla Firefox, Google Chrome or Opera browser is recommended.

3 Hardware Overview

- QXFXO4 has 4 FXO ports, 1 Ethernet WAN and 1 Ethernet LAN ports.
- QXISDN4 has 4 ISDN ports, 1 Ethernet WAN and 1 Ethernet LAN ports.
- QXE1T1 has 1 E1T1 port, 1 Ethernet WAN and 1 Ethernet LAN ports.
- QXFXS24 has 24 phone ports (FXS), 1 Ethernet WAN and 1 Ethernet LAN ports.

3.1 The Panel of QX Gateways

Below are presented the front and back panels:

1. WAN RJ45 socket to attach the Internet Uplink (WAN) via an Ethernet CAT5 cable.
2. LAN RJ45 socket to attach the IP phone to the QX's LAN via an Ethernet CAT5 cable. Use a switch to connect multiple IP phones.
3. The reset button may be used in two ways:
 - Pressing for an instant to initiate a normal restart.
 - Pressing and holding down for three seconds or more to carry out a factory reset. This will clear all settings, including the QX IP address and the changed admin password, and restore the default configuration.
4. Line sockets to connect the QXFXO4 to the PSTN network using standard analog phone service. These are Foreign Exchange Office (FXO) analog ports.

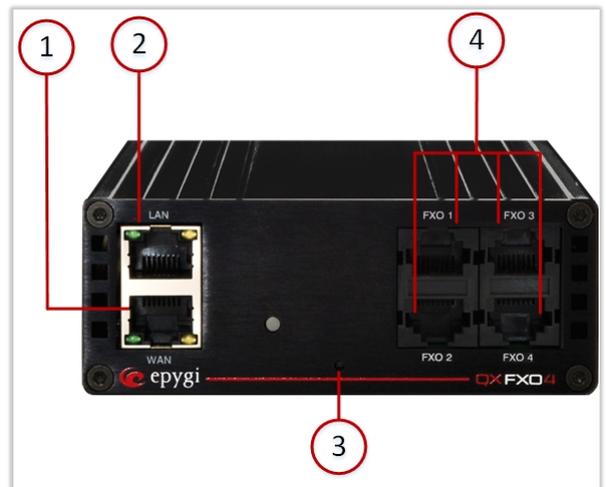


Figure 1: QXFXO4's Front Panel



Figure 2: QXE1T1's Front Panel

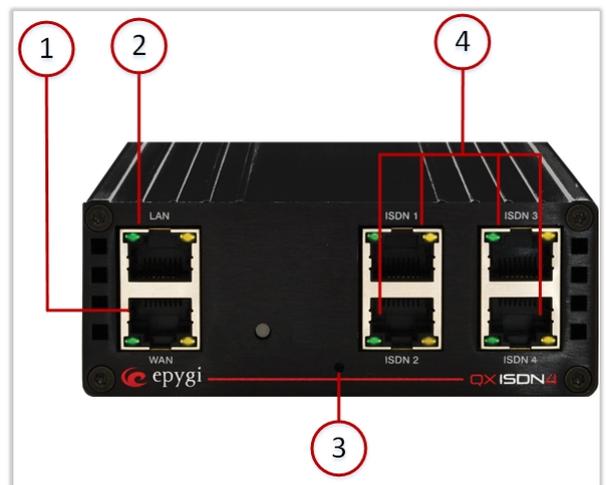


Figure 3: QXISDN4's Front Panel

5. Line sockets to connect QXISDN4 to the PSTN network using ISDN service. These are Integrated Services Digital Network (ISDN) trunks.
6. Line socket to connect QXE1T1 to the PSTN network using E1T1 trunk.
7. RJ21 line socket to connect the FXS cables to analog phones.
8. AUX PWR (DC Power) connector to connect two units together. The first unit will power the second by using 12V DC power connector.
9. AC Power supply socket to connect a power cable.



Figure 4: QXFX04/QXE1T1/QXISDN4's Back Panel



Figure 5: QXFXS24's Back Panel

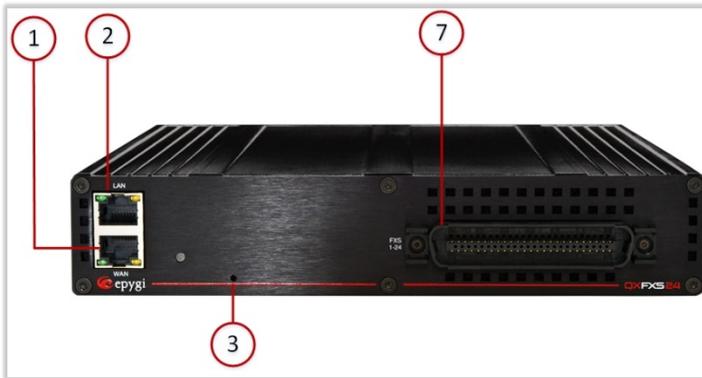


Figure 6: QXFXS24's Front Panel

3.2 QX Gateways Front Panel LEDs

System Status	LED Color	State Description
Busy	GREEN	Blinking: normal activity
Info	ORANGE	Blinking: an event occurred; details specified in the System Event section of the Management interface
Fault	Red	On: steady red, system unusable

Table 1: Front Panel LEDs

ETH Interface Status	LED Color	State Description
WAN	GREEN	On: link ok Off: no link Flickering: traffic on the link
LAN	ORANGE	On: full duplex mode Off: half duplex mode

Table 2: Interface LEDs

LED indication during a firmware update or reboot

1. Power ON – steady GREEN LED for about 3 seconds.
2. Bootstrap loading – steady RED LED for about 3 seconds.
3. Steady ORANGE LED for about 15 seconds.
4. During Reboot – RED/GREEN LEDs are blinking.
5. After Reboot – Slow blinking GREEN LED (normal activity).

LED indication during emergency firmware update

1. Power ON – steady GREEN LED for about 3 seconds.
2. Bootstrap loading – steady RED LED for about 1 second.
3. Steady ORANGE LED for about 5 seconds.
4. RED LED blinking for about 1 second.
5. Steady ORANGE LED for about 1 minute.
6. Fast blinking ORANGE LED for about 5 second.
7. Reset the board and see the LED indication steps described for firmware update or reboot.

LED indication during emergency firmware update failure

1. Power ON – steady GREEN LED for about 3 seconds.
2. Bootstrap loading – steady RED LED for about 1 second.
3. Steady ORANGE LED for about 5 seconds.
4. RED LED blinking for about 1 second.
5. Steady ORANGE LED for about 1 minute.
6. Fast blinking RED LED for about 5 second.
7. Steady ORANGE LED for about 15 seconds.

4 Installing the QX Gateways

4.1 Networking Overview

To establish connections between the PSTN (or the legacy PBX) and the Internet, a gateway is needed. The QX gateway, used as a stand-alone device, will perform the task of connecting the PSTN (or PBX) to a Private Data Network or the Internet. The QX gateway will process and regulate the voice traffic between these networks according to specified dial plan.

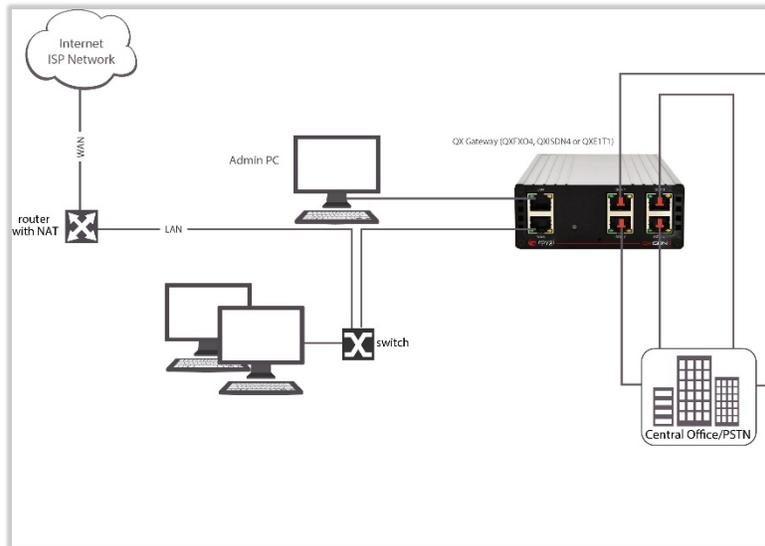


Figure 7: Stand-alone gateway (QXFXO4, QXE1T1 or QXISDN4): Connection overview

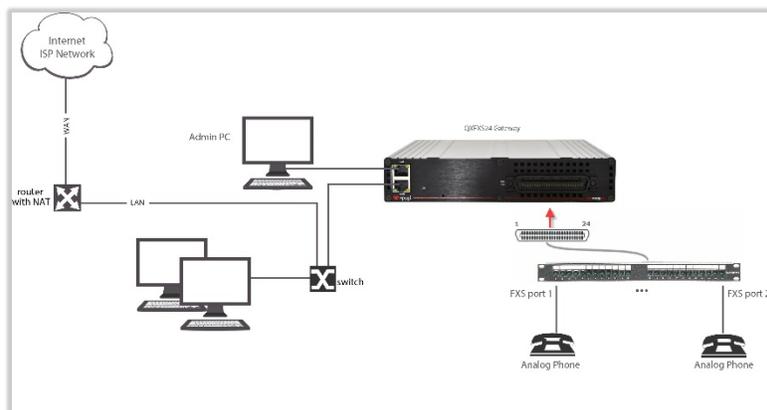


Figure 8: Stand-alone gateway (QXFXS24): Connection overview

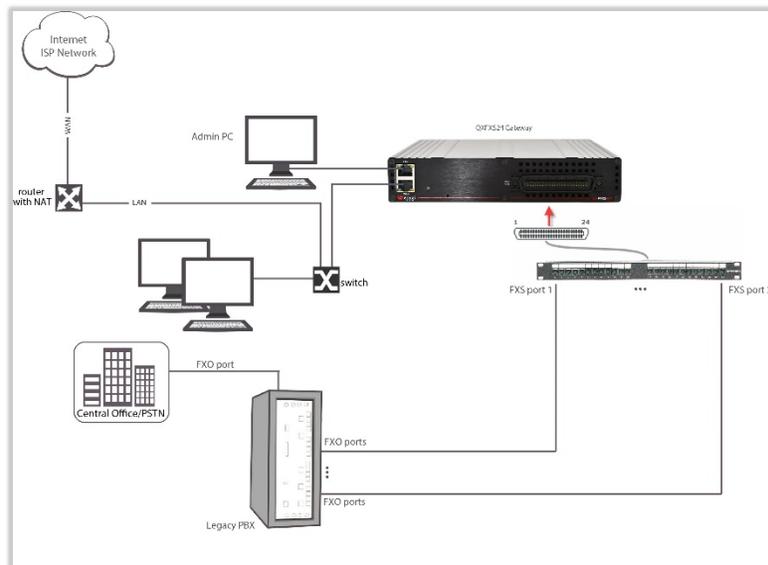


Figure 9: Stand-alone gateway with Legacy PBX (QXFXS24): Connection overview

Every device within an IP network requires a unique IP address to identify itself. Since the QX gateway, used as a stand-alone gateway, connects to both the LAN (Admin PC) and the WAN (Private Data Network or Internet), it has to be part of both networks, and must have two IP addresses: one for the WAN side and one for the LAN side. The QX gateway's integrated firewall/NAT functionality will hide the LAN IP address from the WAN side.

There are two types of IP addresses:

- **Static** – a fixed, manually assigned IP address that remains valid until changed. If you plan to use the QX as your router, contact your Internet Service Provider (ISP) to find out if a static IP address is assigned to your account. If so, you will need this static IP address when configuring the QX device.
- **Dynamic** – a temporary address that is automatically assigned by your ISP and will change periodically. If your ISP offers a dynamic IP address, the QX will act as a DHCP client and will receive a new IP address from the ISP's DHCP server or PPPoE feature.

Note: A DHCP client is a service that requests an IP address from a DHCP server. A DHCP server assigns on request a unique IP address to a device. The QX, like many routers, acts as a DHCP client on its WAN interface and as a DHCP server on its LAN interface.

Besides acting as a stand-alone device, QX gateways may serve as a PSTN LINE expansion for QX IP PBXs. In this case, the QX gateway gets a WAN IP address from the DHCP server of the connected QX IP PBX.

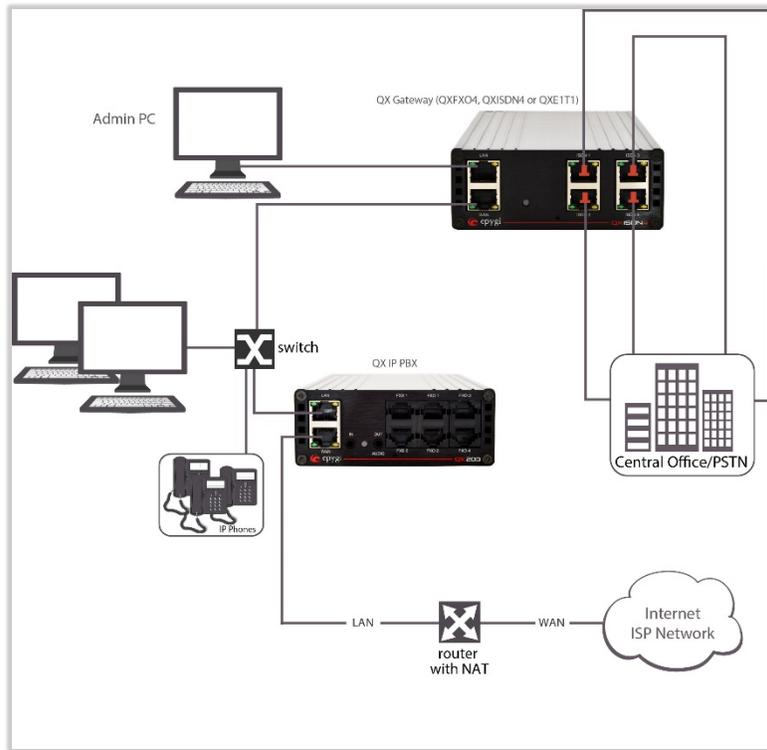


Figure 10: QX gateway (QXFXO4, QXE1T1 or QXISDN4) in shared mode: Connection overview

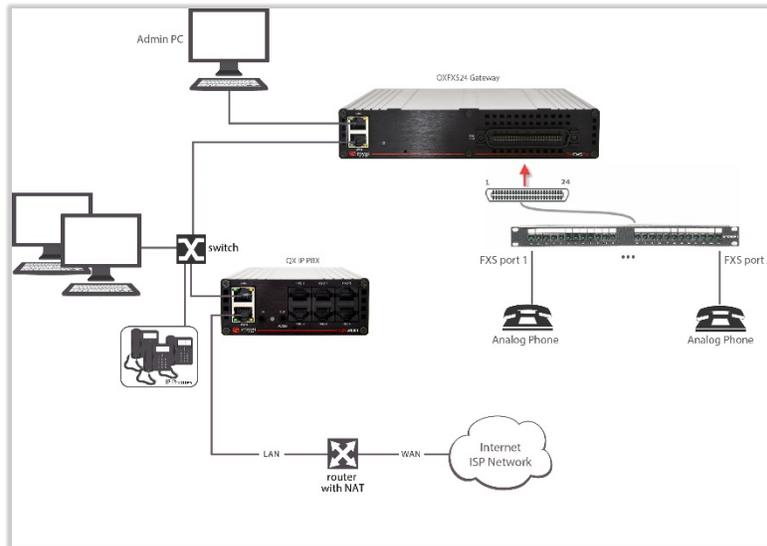


Figure 11: QXFXS24 in shared mode: Connection overview

4.2 Connecting the Hardware

Verify the product package contents are complete. Refer to the contents sheet included in the packaging to determine if all the items were shipped in the box.

1. Connect the Ethernet port on your PC via a straight CAT 5 cable with an RJ45 connector to the LAN socket of the QX.
2. Connect PSTN Lines to FXO, E1T1 or ISDN interface ports on the QX.
3. Connect the LAN port on your PC via a straight CAT 5 cable with an RJ45 connector to the LAN socket of the QX.
4. Connect the WAN port of the QX to the ISP network.
5. Connect the power cable to a power strip with surge protection and a UPS.
6. Power up any hub or switch followed by any PC and other devices on the LAN side.
7. Check the LEDs: The green WAN LED will blink when cables are connected to these ports and all devices are powered up. If the green WAN LED does not blink, verify cabling and ensure that all devices are powered up.

Note: CAT 5 cables can be faulty without any visual indication. The LAN and WAN LEDs verify that the Ethernet connection is established between the end points. If these LEDs are not illuminated, there is a connection problem between the QX and the other device.

5 QX Configuration (Stand-alone Mode)

Verify functionality of both IP and PSTN calls:

- **PSTN telephony:** If the QX is connected to the PSTN network via the E1/T1, FXO or ISDN interface, verify the functionality of PSTN calls:
 - Make an outbound PSTN call by dialing PSTN number.
 - Arrange to receive an incoming call. The incoming PSTN calls will be routed to the Auto Attendant by default.
- **Bandwidth** – to regulate the number of calls allowed by the QX 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 QX is located outside the United States, it is important to properly configure your line connections to the PSTN in your location.

5.1 Logging in to QX Gateway

1. Start a browser (Google Chrome, Opera, Mozilla Firefox, etc.) on a PC connected to the QX.
2. Since **Firewall** is disabled on the QX by default, you may connect the Web GUI either from WAN or LAN side of the QX. To connect the QX's Web GUI from the WAN side, enter **http://xxx.xxx.xxx.xxx** (IP address assigned by the company's DHCP server) in the address field of your browser. If the PC is connected to the QX's LAN side, enter the **172.28.0.1** address in the address field of your browser.
3. The **Login** page of the QX will be displayed.

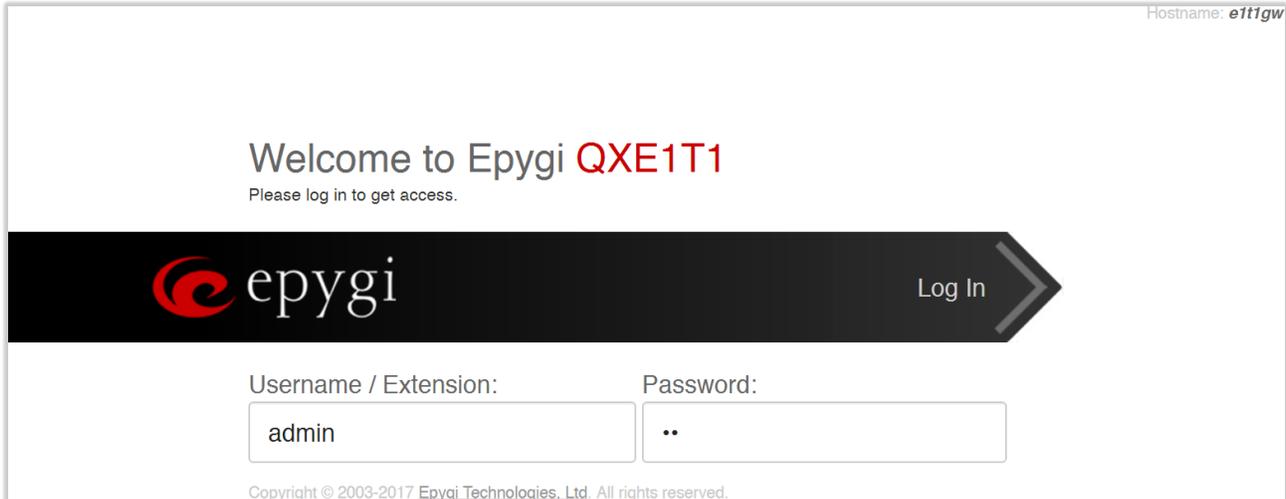


Figure 12: Login page

4. Enter the default credentials (Username: **admin** and Password: **19**) to log into the QX WEB GUI as an administrator. **Note:** If you consecutively enter a wrong password and/or username for five times the device will be unavailable for login for five minutes.

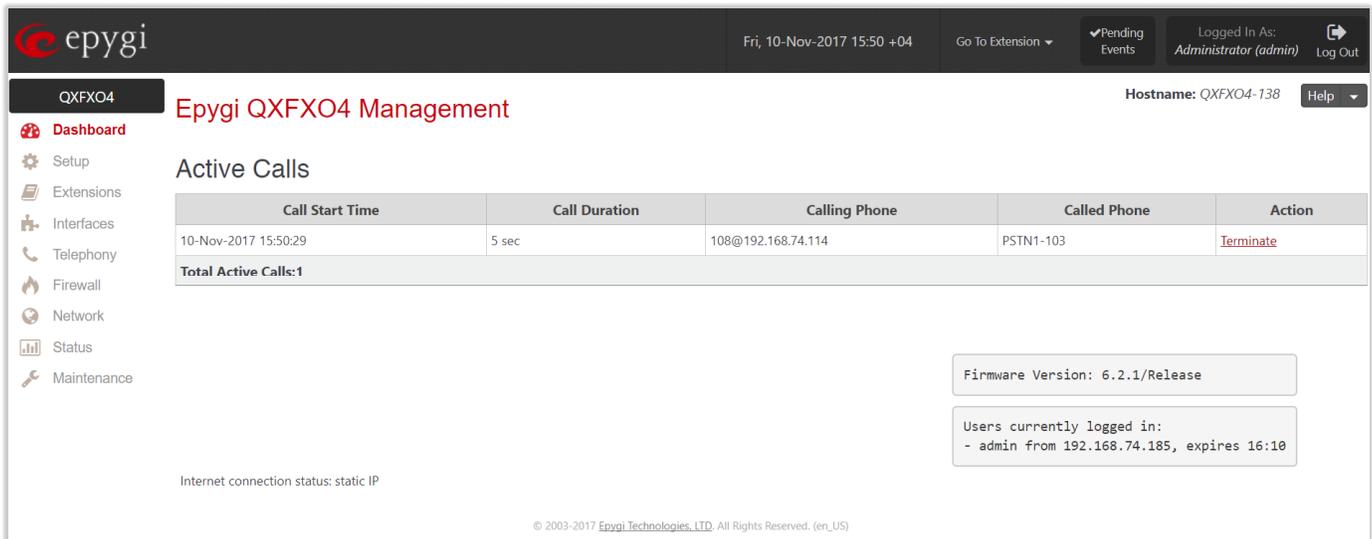


Figure 13: Dashboard page

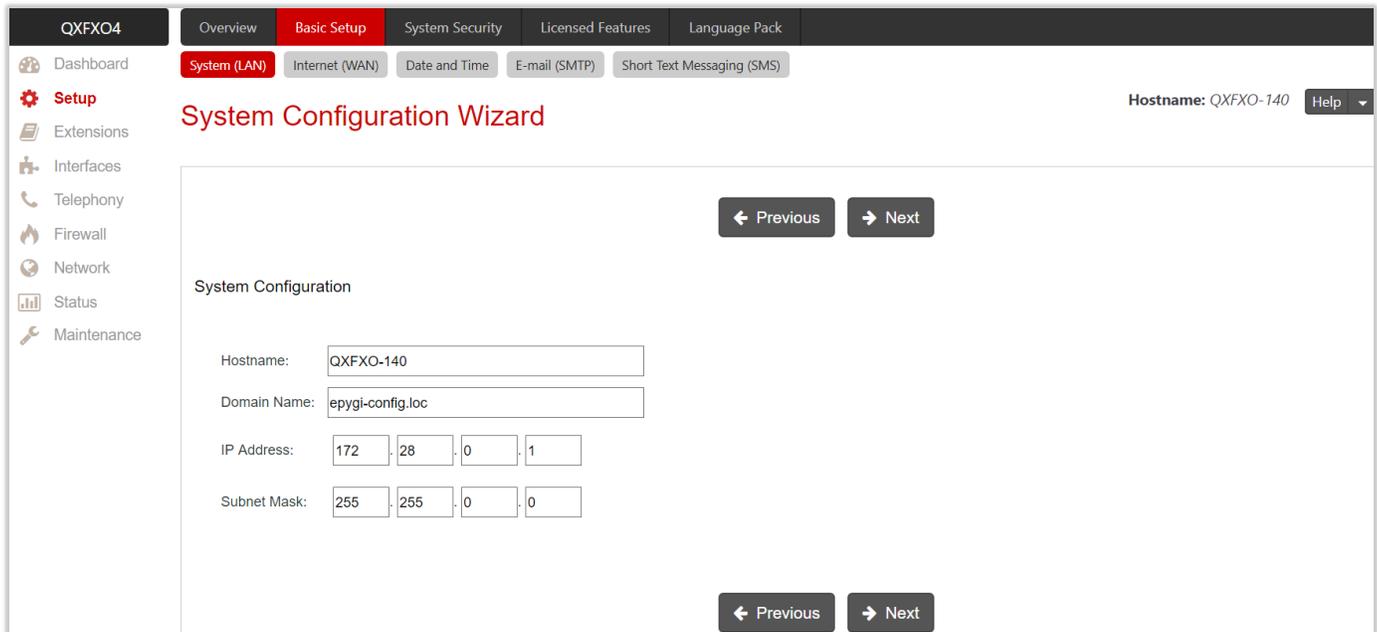
5.2 Basic Setup - System (LAN)

Navigate to the **Setup**→**Basic Setup**→**System (LAN)**. The **System Configuration Wizard** defines the QX's LAN settings and specifies regional configuration. The **System Configuration Wizard** must be run upon QX first startup. Some sections in this wizard may be skipped and left default for the basic configuration.

Note: It is strongly recommended to leave the factory default settings unchanged if their meanings are not completely understandable to the party administrating the QX.

System Configuration

Enter the unique name into the **Hostname** field and the LAN side domain name (to which the QX belongs to) into the **Domain Name** text field. The **LAN IP Address** doesn't need to be changed for a basic configuration. For more advanced configuration, record a new **LAN IP Address** and keep it handy, you will need it for subsequent access to the QX's WEB GUI.



The screenshot displays the 'System Configuration Wizard' in the QX Gateway web interface. The navigation menu on the left includes Dashboard, Setup (selected), Extensions, Interfaces, Telephony, Firewall, Network, Status, and Maintenance. The main content area is titled 'System Configuration Wizard' and shows the following configuration fields:

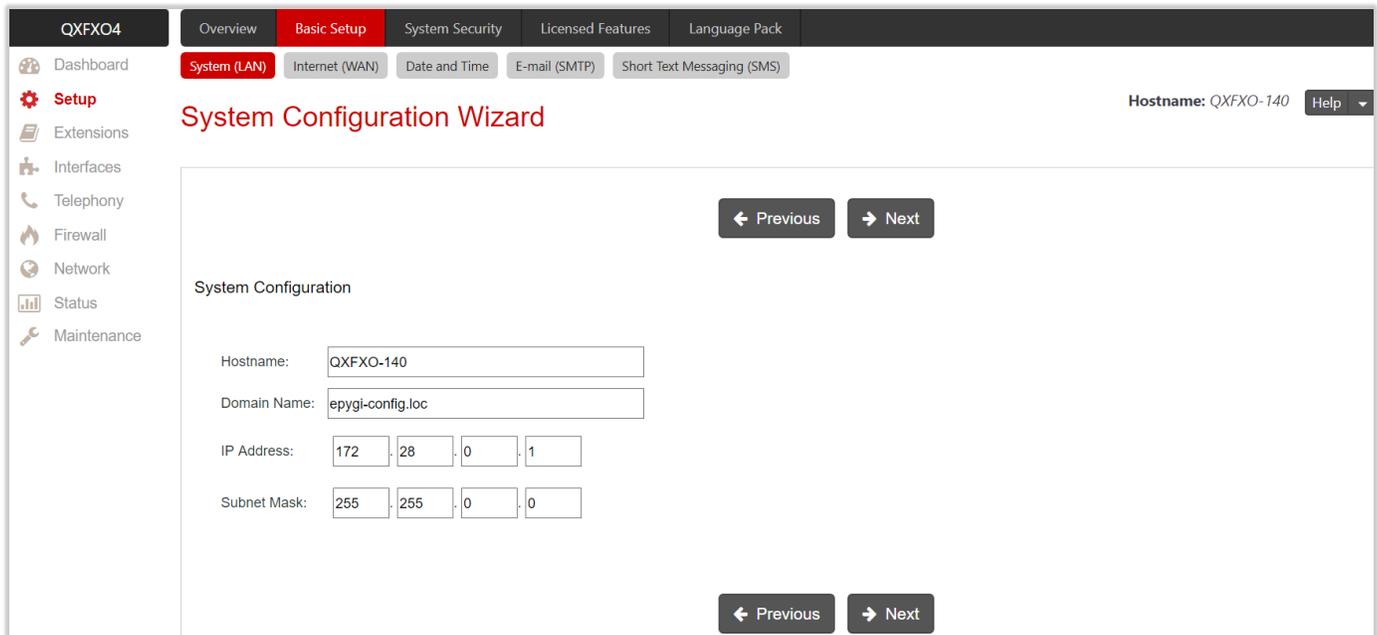
- Hostname: QXFXO-140
- Domain Name: epygi-config.loc
- IP Address: 172.28.0.1
- Subnet Mask: 255.255.0.0

Navigation buttons for 'Previous' and 'Next' are located above and below the configuration fields.

Figure 14: System Configuration section

DHCP Settings for the LAN Interface

Enabled DHCP server allows the QX automatically assign dynamic IP addresses to the devices on its LAN side. If you haven't changed the default LAN IP address of the QX, you also may leave the default values for the **IP Address Range**. **TIP:** Make sure your connected LAN devices belong to the same network as the LAN port of your QX. Make sure there is only one DHCP server on the LAN, otherwise, unpredictable network behavior can occur.



QXFXO4 Overview **Basic Setup** System Security Licensed Features Language Pack

Dashboard **System (LAN)** Internet (WAN) Date and Time E-mail (SMTP) Short Text Messaging (SMS)

Setup **System Configuration Wizard** Hostname: QXFXO-140 Help

← Previous → Next

System Configuration

Hostname: QXFXO-140

Domain Name: epygi-config.loc

IP Address: 172 28 0 1

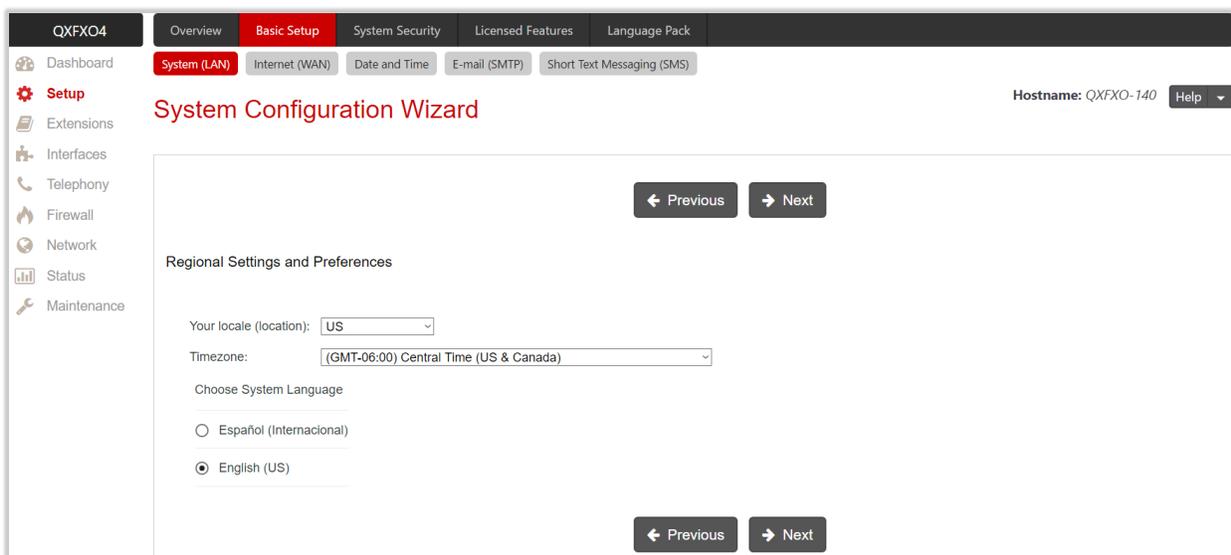
Subnet Mask: 255 255 0 0

← Previous → Next

Figure 15: DHCP Settings for the LAN Interface section

Regional Settings and Preferences

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



QXFXO4 Overview **Basic Setup** System Security Licensed Features Language Pack

Dashboard **System (LAN)** Internet (WAN) Date and Time E-mail (SMTP) Short Text Messaging (SMS)

Setup **System Configuration Wizard** Hostname: QXFXO-140 Help

← Previous → Next

Regional Settings and Preferences

Your locale (location): US

Timezone: (GMT-06:00) Central Time (US & Canada)

Choose System Language

Español (Internacional)

English (US)

← Previous → Next

Figure 16: Regional Settings and Preferences section

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

Summary Page

- Finish the wizard and click "**OK**" to apply the changes made in any section of the wizard. You must confirm the settings within **20** minutes. Otherwise the device will return back to the previous configuration and reboot.
- 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 QX is still within the specified IP address range, otherwise your PC may not establish a connection to QX.
- 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 QX on the new IP address you've assigned to the QX.

5.3 Internet (WAN)

Go to the **Setup**→**Basic Setup**→**Internet (WAN)** to configure the network parameters for the WAN interface and adjust QX's connectivity to an external network. The **Internet Configuration Wizard** defines WAN settings and adjusts QX's connectivity to the global network. It must be run if QX is desired to be connected to the Internet.

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

- **Bandwidth** – the 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 default 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.

Additionally, for Point-to-Point Protocol over Ethernet (PPPoE) WAN interface, you need to get the following information from your internet service provider:

- **PPP Configuration** – does your ISP use a dynamic or fixed WAN IP address? If the WAN IP address is dynamic, no more information is needed. If the WAN IP address is fixed, you will have to enter it.
- **Authentication** – does your ISP require authentication? If authentication is required, information about the corresponding method (PAP, CHAP or MSCHAP) is needed including the username and password of the PPPoE account.

This information will be needed to be inserted in the Internet Configuration Wizard.

Uplink Configuration

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

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 **100000**, the maximum bandwidth of the 100 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 than the value specified for **Upstream Bandwidth**.

Select the **WAN Interface Protocol** by choosing between available WAN interface protocols: **PPPoE** (Point to Point over Ethernet), **PPTP** (Point to Point Tunneling Protocol), **Ethernet** and **VLAN**.

Based on this selection the wizard's configuration pages may differ.

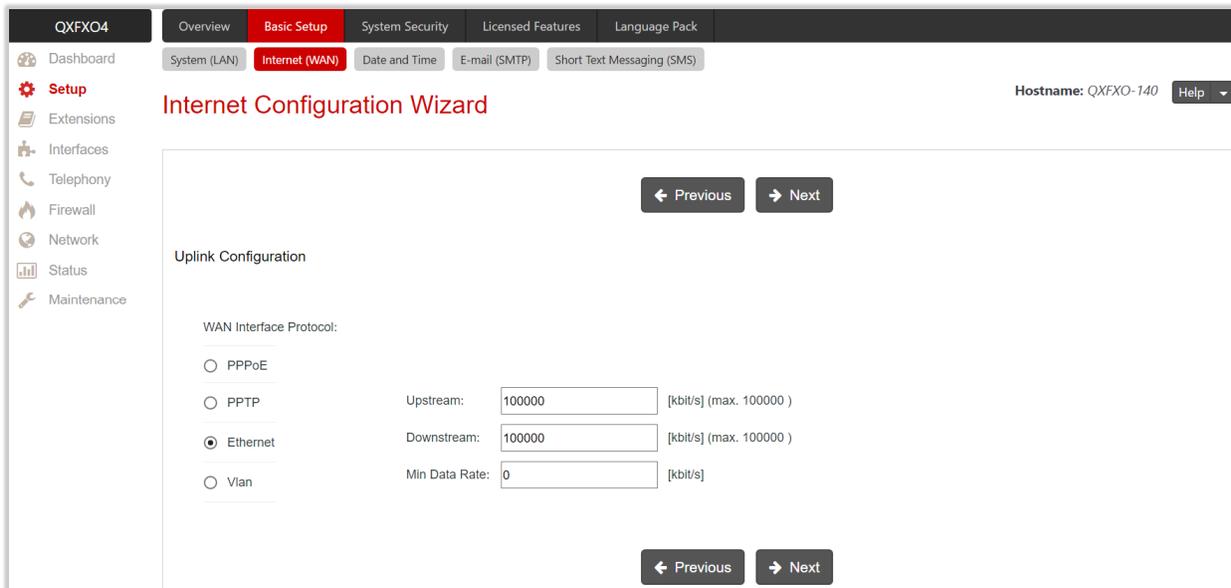


Figure 17: Uplink Configuration section

PPPoE

- **Keep Connection Alive** – keeps the connection alive by sending control packets for the link state verification.
- **Authentication Settings** – insert the authentication parameters (Username and Password) to register on the ISP server.
- **Dial Behavior** – select the Dial Behavior type.
 - **Dial manually** – if selected, a button will be displayed in the top WEB management window to switch the connection on/off.
 - **Always connected** – if selected, the QX will always stay connected.
- **IP Address Assignment** – select the IP Address assignment type for the PPPoE interface:
 - **Obtain an IP Address automatically** – with this option QX will get an IP address dynamically.
 - **Use the following IP Address** – set the IP address manually.

PPTP

- **Obtain an IP Address automatically** – with this option selected, QX will use DHCP to get an available IP address from your local network or ISP.
- **Use the following IP Address** – if selected, manually provide the settings for the WAN interface.

Click **Next** to continue the configuration of the **PPP/ PPTP** settings:

- **PPTP Server** – enter the IP address of the PPTP server.
- **Encryption** – select the encryption for the traffic over the PPTP interface.
- **Keep Connection Alive** – keeps the connection alive by sending control packets for the link state verification.
- **Authentication Settings** – insert the authentication parameters (Username and Password) to register on the ISP server.
- **Dial Behavior** – select the Dial Behavior type.
 - **Dial manually** – if selected, a button will be displayed in the top WEB management window to switch the connection on/off.
 - **Always connected** – if selected, the QX will always stay connected.

- **IP Address Assignment** – select the IP Address assignment type for the PPPoE interface:
 - **Obtain an IP Address automatically** – with this option QX will get an IP address dynamically.
 - **Use the following IP Address** – set the IP address manually.

Ethernet

- **Obtain an IP Address automatically** – with this option selected, QX will use DHCP to get an available IP address from your local network or ISP.
- **Use the following IP Address** – if selected, manually provide the settings for the WAN interface.

VLAN

- **VLAN ID** – select VLAN ID from the configured VLAN list.

Click **Next** to continue the configuration of the **VLAN IP Configuration** settings.

- **Obtain an IP Address automatically** – with this option selected, QX will use DHCP to get an available IP address from your local network or ISP.
- **Use the following IP Address** – if selected, manually provide the settings for the VLAN interface.

WAN Interface Configuration

If your ISP requires a specific MAC address (e.g. for authentication purposes), it can be entered on this page. The required MAC address can be entered into the **User-defined** field. If a specific MAC address is not required, leave the default selection **This device** selected.

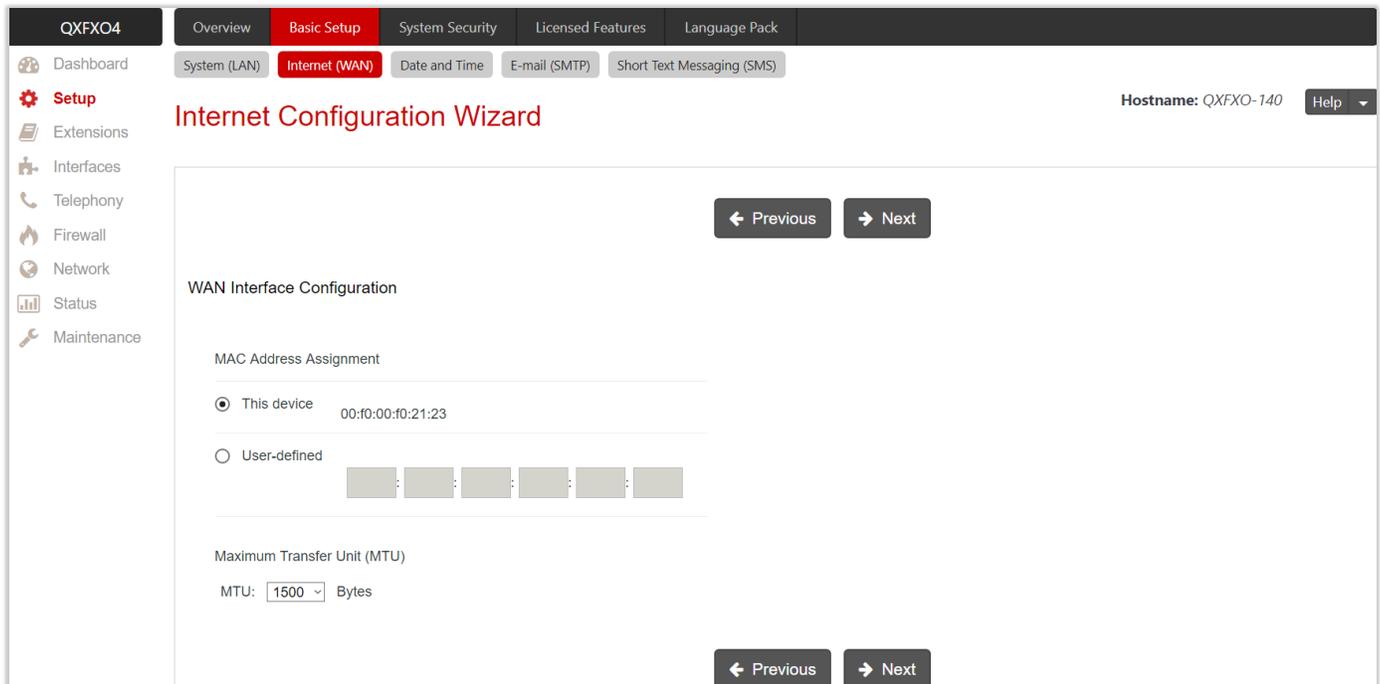


Figure 18: WAN Interface Configuration section

Use the **MTU** drop-down list to select the maximum size of packet that can be sent in a packet or frame-based network such as the Internet. QX supports packet fragmentation. **TIP:** The default MTU size is 1500 Bytes for Ethernet protocol and 1400 Bytes for PPPoE.

DNS Settings

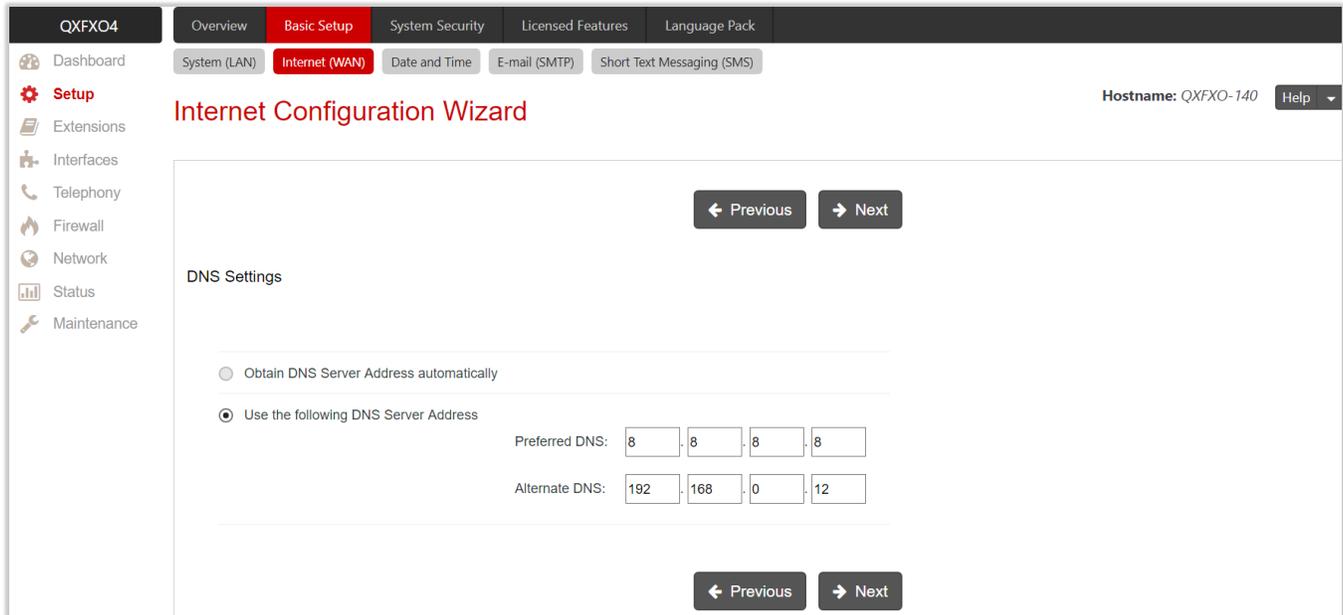


Figure 19: DNS Settings section

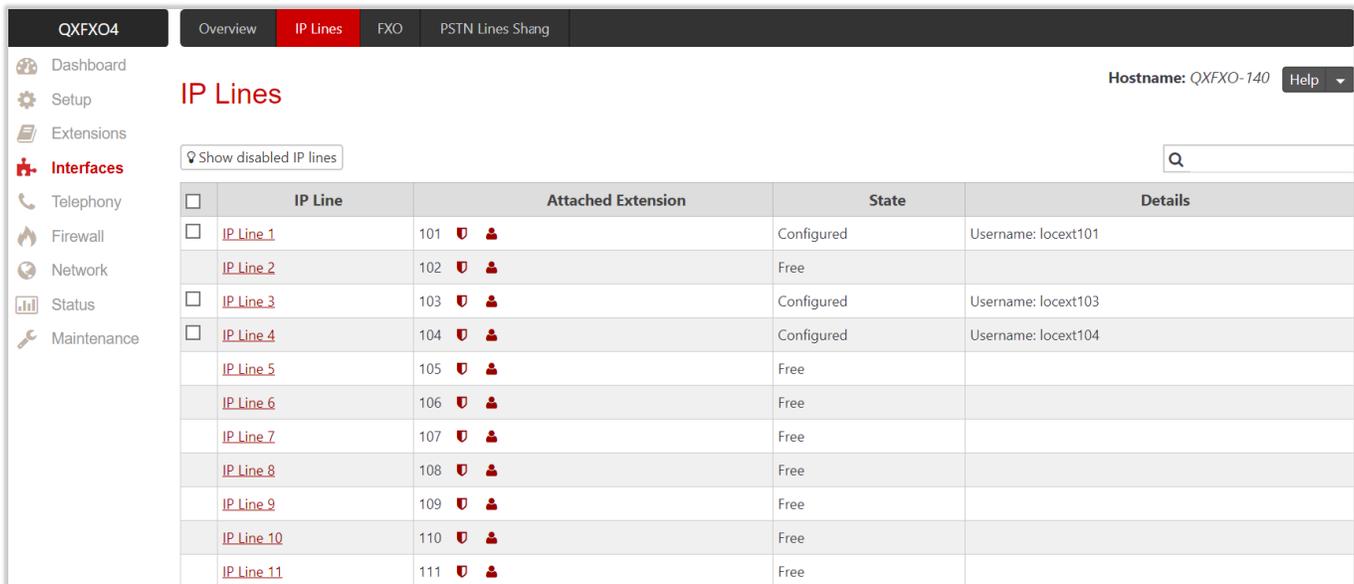
- **Obtain DNS Server Address automatically** – automatically configures the assignment of the name server address from the provider party.
- **Use the following DNS Server Address** – is used to manually assign a name server as follows:
 - **Preferred DNS** – insert the IP address of an external name server.
 - **Alternate DNS** – insert the IP address of the secondary name server that will be used if the main name server cannot be accessed.

Summary Page

- Finish the wizard and click "OK" to apply the changes made in any section of the wizard. You must confirm the settings within **20** minutes. Otherwise the device will return back to the previous configuration and reboot.
- It is strongly recommended to not change the factory default settings if their meanings are not fully clear to you.

6 IP Lines Configuration

The **IP Lines** page is available on the QXFXO4 and QXE1T1 GWs and used to configure the IP lines to connect **IP phones** to QX to support the Hosted PBX Survivability.



<input type="checkbox"/>	IP Line	Attached Extension	State	Details
<input type="checkbox"/>	IP Line 1	101  	Configured	Username: locext101
<input type="checkbox"/>	IP Line 2	102  	Free	
<input type="checkbox"/>	IP Line 3	103  	Configured	Username: locext103
<input type="checkbox"/>	IP Line 4	104  	Configured	Username: locext104
<input type="checkbox"/>	IP Line 5	105  	Free	
<input type="checkbox"/>	IP Line 6	106  	Free	
<input type="checkbox"/>	IP Line 7	107  	Free	
<input type="checkbox"/>	IP Line 8	108  	Free	
<input type="checkbox"/>	IP Line 9	109  	Free	
<input type="checkbox"/>	IP Line 10	110  	Free	
<input type="checkbox"/>	IP Line 11	111  	Free	

Figure 20: IP Lines page

The **IP Lines** table lists all IP lines available on QX with specific details for each:

- **Attached Extension** – shows the QX extension attached to the IP line. **TIP:** "None" is displayed if there is no extension attached to that line.
 - Click the **Admin Settings** icon to go the extension's admin settings.
 - Click the **User Settings** icon to go the extension's user settings.
- **State** – shows whether the IP line is **Disabled**, **Configured** or **Free**.
- **Details** – displays the settings for the IP phone configured on the corresponding line, such as the authorization credentials.

IP Line Settings – IP Line # page is used to configure the IP Line with a phone.

- **Inactive** – if selected, changes the IP line state from **Configured** to **Free**.
- **IP Phone** – if selected, activates the IP line to configure with the IP phone as follows:
 - **Username** and **Password** – define the authentication parameters to register the IP phone on the QX. **TIP:** Set the same **Username** and **Password** as SIP registrar, SIP proxy, SIP authentication values on the IP phone for successful registration.
 - **Transport** – select the transport protocol for SIP messages – **UDP**, **TCP** or **TLS**. For TLS, you may activate the TLS certificate update mechanism from an IP Phone to obtain the latest certificate generated by the QX.
 - **Use Session Timer** – enable the SIP session timer for the corresponding IP line. This option allows both user agents and proxies to check and determine if the SIP session is still active.
 - **Symmetric RTP** – must be selected when the IP phone attached to the IP Line is located behind the NAT router.

The screenshot shows the 'IP Line Settings - IP Line 1' page. The left sidebar contains navigation options: Dashboard, Setup, Extensions, Interfaces (highlighted), Telephony, Firewall, Network, Status, and Maintenance. The main content area has a 'Go Back' button and a dropdown menu set to 'IP Line 1'. Below this, there are radio buttons for 'Inactive' and 'IP Phone' (selected). The 'IP Phone' section includes:

- Username: locext101
- Password: masked with dots, with a 'Generate Password' button
- Transport: UDP (dropdown)
- Use Session Timer: unchecked checkbox
- Symmetric RTP: unchecked checkbox
- Hot Desking section:
 - Enable Hot Desking: unchecked checkbox
 - Hot Desking Automatic Logout:
 - Never: selected radio button
 - After: 0 hr, 0 min. (radio button unselected)
 - At: 0 : 0 (radio button unselected)

 A 'Save' button is at the bottom.

Figure 21: IP Line Settings – IP Line # page

The **Hot Desking** section is used to enable and configure the Hot Desking service on the IP Line as follows:

- **Enable Hot Desking** – enable the **Hot Desking** on the corresponding IP line.
- **Hot Desking Automatic Logout** – with this option enabled, QX will control the extension login timeout. Once the predefined expiration time arrives, the currently logged in extension will automatically log out and make available the public phone for other extensions. The following options are available:
 - **Never** – if selected, the **Hot Desking** will never expire for the extension.
 - **After** – if selected, extension will automatically log out from the public phone after the defined period.
 - **At** – if selected, extension will automatically log out from the public phone at the defined moment (hour and minute).

6.1 Hosted PBX Survivability feature on QX

QXE1T1 and QXFXO4 gateways support the Hosted PBX Survivability (HS). This feature can be helpful in the scenario when using a Hosted PBX, but cannot make calls due to loss of the broadband connection. Using QXE1T1 and QXFXO4 gateways with HS allow IP phones to work, even when the broadband link or Hosted PBX are down. Users can also use the HS feature to provide access to remote phones in a branch office.

Generally, IP phones register on the Hosted PBX, where they make and receive calls, as a primary SIP proxy server. Additionally, IP phones register on the QX Gateway as a secondary SIP proxy server. When the broadband link or Hosted PBX fail, the QX Gateway takes control of the IP phone calls, connecting them to the PSTN. Transition from the Hosted PBX to the QX via the HS is transparent to users. This list of IP phones configured and tested to work properly with QXE1T1 and QXFXO4, supporting most of Epygi telephony features and HS, is provided in the table below.

Vendor	Model	SW/FW Version
Aastra	6757iCT(57iCT)	3.3.1.2256-SIP
Aastra	9480iCT(35iCT)	3.3.1.2256-SIP
Grandstream	GXP1100	1.0.8.6
Grandstream	GXP1105	1.0.8.6
Grandstream	GXP1160	1.0.8.6
Grandstream	GXP1165	1.0.8.6
Grandstream	GXP1400	1.0.8.6
Grandstream	GXP1405	1.0.8.6
Grandstream	GXP1450	1.0.8.6
Grandstream	GXP1610	1.0.2.27
Grandstream	GXP1620/GXP1625	1.0.2.27
Grandstream	GXP2100	1.0.8.6
Grandstream	GXP2110	1.0.8.6
Grandstream	GXP2120	1.0.8.6
Grandstream	GXP2124	1.0.8.6
Grandstream	GXP2130	1.0.7.99
Grandstream	GXP2140	1.0.7.99
Grandstream	GXP2160	1.0.7.99
Grandstream	GXP2200	1.0.3.27
Grandstream	GXV3140	1.0.7.80
Grandstream	GXV3175	1.0.3.76
Grandstream	GXV3240	1.0.3.62
Grandstream	GXV3275	1.0.3.62
Mitel (Aastra)	6730	3.3.1.4305-SIP
Mitel (Aastra)	6731	3.3.1.4305-SIP
Mitel (Aastra)	6735	3.3.1.8140-SIP
Mitel (Aastra)	6737	3.3.1.8140-SIP
Mitel (Aastra)	6739	3.3.1.4305-SIP
Mitel (Aastra)	6753	3.3.1.4305-SIP
Mitel (Aastra)	6755	3.3.1.4305-SIP
Mitel (Aastra)	6757	3.3.1.4305-SIP
Mitel (Aastra)	9143	3.3.1.4305-SIP
Mitel (Aastra)	9480	3.3.1.4305-SIP
Mitel	6863	4.2.0.2023-SIP
Mitel	6865	4.2.0.2023-SIP
Mitel	6867	4.2.0.2023-SIP
Polycom	SoundPoint IP 330SIP	3.3.5.0247
Polycom	SoundPoint IP 331SIP	3.3.5.0247
Polycom	SoundPoint IP 335SIP	3.3.5.0247
Polycom	SoundPoint IP 450SIP	3.3.5.0247
Polycom	SoundPoint IP 550SIP	3.3.5.0247
Polycom	SoundPoint IP 650SIP	3.3.5.0247
Polycom	SoundPoint IP 670SIP	3.3.5.0247
Polycom	SoundStation IP 5000	3.3.5.0247
Polycom	SoundStation IP 6000	3.3.5.0247

Vendor	Model	SW/FW Version
Polycom	VWX 1500	3.3.5.0247
Polycom	VWX 300/310	4.1.7.1210
Polycom	VWX 400/410	4.1.7.1210
Polycom	VWX 500	4.1.7.1210
Polycom	VWX 600	4.1.7.1210
Yealink	CP860	37.80.0.30
Yealink	SIP-T19P	31.72.0.1
Yealink	SIP-T19P E2	53.80.0.130
Yealink	SIP-T20P	9.72.0.1
Yealink	SIP-T21P	34.72.0.1
Yealink	SIP-T21P E2	52.81.0.25
Yealink	SIP-T22P	7.72.0.1
Yealink	SIP-T23G(P)	44.81.0.25
Yealink	SIP-T26P	6.72.0.1
Yealink	SIP-T27G	69.81.0.25
Yealink	SIP-T27P	45.81.0.25
Yealink	SIP-T28P	2.72.0.1
Yealink	SIP-T29G	46.81.0.25
Yealink	SIP-T32G	32.70.0.130
Yealink	SIP-T38G	38.70.0.125
Yealink	SIP-T40P	54.81.0.25
Yealink	SIP-T41P	36.81.0.25
Yealink	SIP-T41S	66.81.0.25
Yealink	SIP-T42G	29.81.0.25
Yealink	SIP-T42S	66.81.0.25
Yealink	SIP-T46G	28.81.0.25
Yealink	SIP-T46S	66.81.0.25
Yealink	SIP-T48G	35.81.0.25
Yealink	SIP-T48S	66.81.0.25
Yealink	SIP VP-T49G	51.80.0.100
Yealink	VP-530	23.70.0.40
Yealink	W52P	25.30.0.20

Table 3: Tested IP Phones

7 Configuring Extensions

Navigating to the **Extensions Management** page for the first time after the QX initial start or configuration restore you will be prompted to choose the extensions length applicable to all QX default extensions.

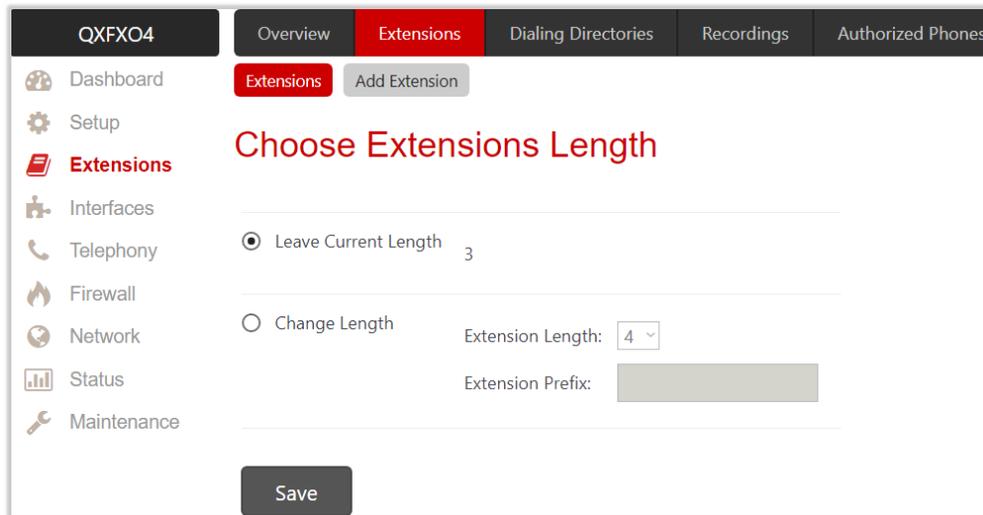


Figure 22: Choose Extensions Length page

The following options are available:

- **Leave Current Length** – keep the current length of QX extensions unchanged. By default, the extension's length is **3** on the QXFXO4, QXE1T1 and is **2** on QXISDN4 and QXFXS24. In front of this selection, the actual configured length of extensions is displayed.
- **Change Length** – change the length of extensions as follows:
 - **Extension Length** – select the length of extensions. It will be applied for all existing extensions on the QX. The length of the extension can be 2, 3, 4.
 - **Extension Prefix** – define the prefix the existing extensions as well as the newly created extensions should start with. The prefix cannot start with the digits 0 or 9.

Attention:

- By saving the settings on the **Choose Extensions Length** page, all existing extensions will lose the custom voice messages. The device will be rebooted. The **Choose Extensions Length** page will not appear again unless the default configuration settings will not be restored on the QX.
- QXFXS24 and QXISDN4 is limited to **200**, QXFXO4 and QXE1T1 to **400** extensions in total.

To add a new extension:

1. Click **Add Extension**.
 - Enter the **extension number**.
 - Select the **extension type**. The following types are available: **Attendant** and **User Extension**.
2. Click **Save** to add the new extension to the **Extension Management** table.

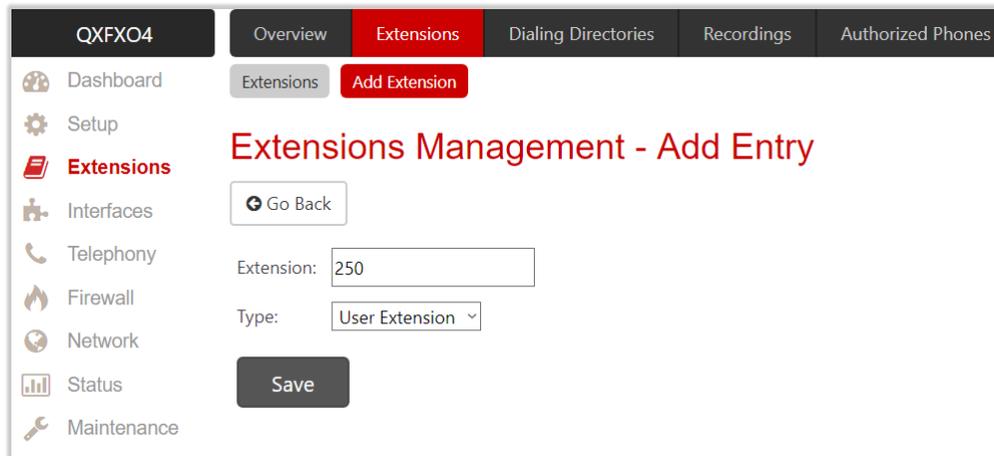


Figure 23: Extensions Management – Add Entry page

Two types of user extensions, **active** and **inactive**, can be created on the QX.

- **Active extensions** are those that are attached to a line, can place and receive calls and use available telephony services.
- **Inactive extensions** are those that are not attached to the line. They can use some available telephony services, but cannot place and receive calls.

Note:

- Adjust the routing rules for calling extensions with custom length manually since the call routing rule(s) for calling PBX extensions will not be adjusted automatically.
- A maximum extension length is **20** digits.
- Auto Attendant extension type is **NOT** available on QXFXS24.

8 Configuring NAT Traversal

Network Address Translation (**NAT**) is a common feature to expand the use of connected PCs and other networked devices without having to use multiple public IP addresses. Most ISP's will assign one public IP address to each customer that is connected to the Internet. Third-party routers typically are providing NAT capability and creating a private network of PCs and other devices not visible from the Internet. This method offers security and also eliminates the need to assign public IP addresses to each device on the LAN.

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

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.
- If you have more than one router between the QX and the Internet, the same port forwarding must be configured on each of them.

To use Manual NAT Traversal:

1. Login to the NAT router ahead of QX.
2. Set up port forwarding on the router to forward SIP and RTP ports to the IP address assigned to the QX.
3. Login to the QX WEB GUI.
4. Go to the **Telephony**→**NAT Traversal**→**General** page, select the **Force** option and click **Save** to apply changes.
5. Move to the **SIP Parameters** page, select the **Use Manual NAT Traversal** option. Enter the IP address of NAT router into the **Mapped Host** field. For **Mapped Port**, enter the router's corresponding port number. Configure the manual mappings for TCP and TLS, if needed. Click **Save** to apply changes.
6. Move to the RTP parameters page, select the **Use Manual NAT Traversal** option. Enter the IP address of NAT router into the **Mapped Host** field. For **Mapped RTP/RTCP Port Range**, enter the router's corresponding port range. Click **Save** to apply changes.

The QX will activate the settings and register the extensions on the SIP Server (e.g. sip.epygi.com) after a few minutes. You can verify the settings from the **Status**→**System Status**→**SIP Registration** page.

For more information, how to configure and use NAT Traversal, please refer to the [NAT Traversal withy Epygi QXs](#) guide.

9 Changing Admin Password

For security reasons, it is recommended that you change the default admin password.

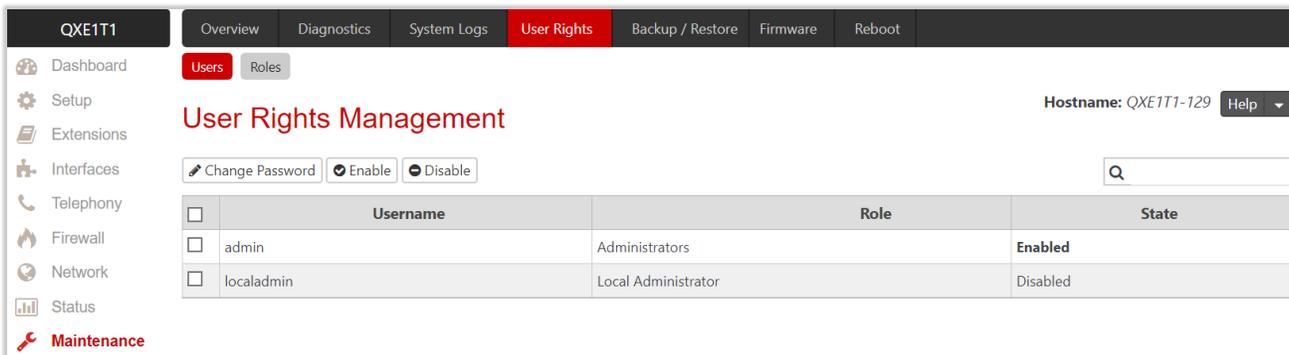


Figure 24: User Rights Management – Users page

To change the GUI Access Password:

1. Go to the **Maintenance**→**User Rights**→**Users** page.
2. Click the checkbox next to the **admin** or **localadmin** entry in the table and click **Change Password**.
3. The **Change Password** page appears for selected user. Select **GUI Access Password** tab.
 - Insert the old password (by default – 19)
 - Insert a new password and then re-enter it to confirm.
4. Click **Save**. The password has now been changed.

The **Phone Access Password** which is required for Administrator Login (*75). The Administrator Login is used to review and modify the Auto Attendant greeting and recurring prompt, as well as the universal extension messages.

To change the Phone Access Password:

1. Click the checkbox next to the **admin** entry in the table and click **Change Password**.
2. The **Change Password** page appears for selected user. Select **Phone Access Password** tab.
 - Insert a new password and then re-enter it to confirm.
3. Click **Save**. The password has now been changed.

Note:

- The GUI access password can consist of lowercase and uppercase alphabetic characters, digits and symbols. A maximum password length is **20** characters.
- The Phone access password can consist of only digits. A maximum password length is **20** characters.
- In order to keep the **Administrator's** password safe, do not write it down in public places and do not share it with other people.

10 Configuring QX Gateways with QX IP PBXs in Sharing Mode

The Epygi QX Gateways provide a modular and cost-effective approach to adding additional outside PSTN lines to a corporate phone system by utilizing any SIP-based PBX. They can also be used to IP-enable the legacy analog PBXs. Integrating QX Gateways with other manufacturer's PBXs should be done using manual configuration on both devices.

Integration for QX Gateways with QX IP PBX is done automatically. You can add multiple gateways of different models to the QX IP PBX, which recognizes each gateway automatically. Epygi QX Gateways configured with QX IP PBXs in the shared mode provide an advanced possibility for QX IP PBX users to use not only the onboard, but also the available shared PSTN lines/trunks. This configuration allows also for the Gateways to be managed through the IP PBX's GUI.

For information on how to configure and use **QX Gateways** with **QX IP PBXs** in **Share mode**, please refer to the [Configuring QX Gateways with QX IP PBXs in Sharing Mode](#) guide.

10.1 Sharing Mode Configuration on the QX IP PBX

The shared mode configuration on the **PBX** allow to use the FXO lines and/or ISDN, E1T1 trunks of the **slave GWs**, as well as to grant authorization to **slaves**. For this purpose:

1. Go to the **Interfaces**→**PSTN Gateways** page.
2. Click **Add** and enter the following information:
 - **Username** and **Password** – are used to define the authentication parameters for each slave device. **TIP:** The **Username** and **Password** should match on both PBX and GW for the successful PSTN Lines sharing.
 - Click **Save**. The new entry will be added to the **Shared PSTN Gateways** table (Figure 26).

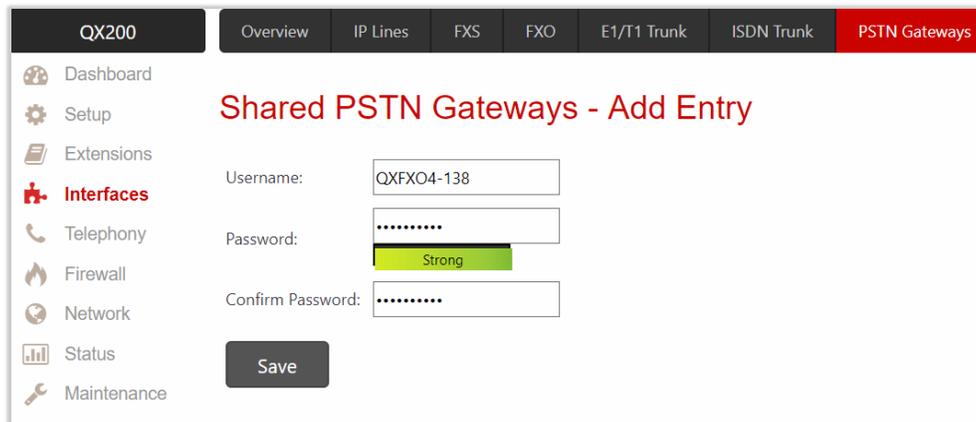


Figure 25: Shared PSTN Gateways – Add Entry page

3. The **PBX** will start listening connection requests from **GWs**. After the slave-master connection successfully established, appropriate routing rules will be created on the **Call Routing Table** for both devices (slave and master) to support PSTN line sharing.

	Username	Slave Device Address	Gateway Type	Communication State
<input type="checkbox"/>	QXISDN4-131	192.168.74.131	QXISDN4	Connected
<input type="checkbox"/>	QXE1T1-127	192.168.74.127	QXE1T1	Connected
<input type="checkbox"/>	Test2			
<input type="checkbox"/>	QXISDN4-130	192.168.74.130	QXISDN4	Connected
<input type="checkbox"/>	QXFXO4-139	192.168.74.139	QXFXO4	Connected
<input type="checkbox"/>	QXFXO4-138			

Figure 26: Shared PSTN Gateways table on QX200

The following functional button are available:

- **Disconnect** – is used to disconnect the slave device from the PBX. **TIP:** The slave device will not be re-connected automatically. You need to manually reconnect the slave device to PBX from slave's WEB GUI. The shared lines/trunks and call routing rules will be automatically removed both on PBX and GW.
- **Add** – is used to create a new entry.
- **Edit** – is used to modify the selected entry.
- **Delete** – is used to delete the selected entry(s).

10.2 Sharing Mode Configuration on the QX Gateway

Sharing mode configuration on the **GW** allows to share the FXO lines, ISDN or E1T1 trunks with the **PBX**. For this purpose:

1. Go to the **Interfaces**→**PSTN Line Sharing**→**PSTN Gateway Operation Mode** page.
2. Select the **Slave mode** option and click **Save** to apply changes.

QXISDN4 Overview ISDN Trunk **PSTN Lines Sharing**

PSTN Gateway Operation Mode PSTN Lines Sharing

PSTN Gateway Operation Mode

Stand-alone Gateway is used as a stand-alone device.

Slave Gateway shares local PSTN lines with other devices.

Master Gateway uses shared PSTN lines of other devices.

Save

Figure 27: PSTN Gateway Operation Mode page

3. Go to the **Interfaces**→**PSTN Line Sharing**→**PSTN Line Sharing** page. Enter the following information:
 - **Username** and **Password** – are used to define the authentication parameters. **TIP:** The **Username** and **Password** should match on both master and slave for the successful PSTN Lines sharing.
 - **Master Device IP** – is used to define the IP address of the master device.

- Click **Connect** to connect the device with the master and start sharing the onboard lines(trunks) with master device. After the slave-master connection successfully established, appropriate routing rules will be created on the **Call Routing Table** for both devices (slave and master) to support PSTN line sharing.

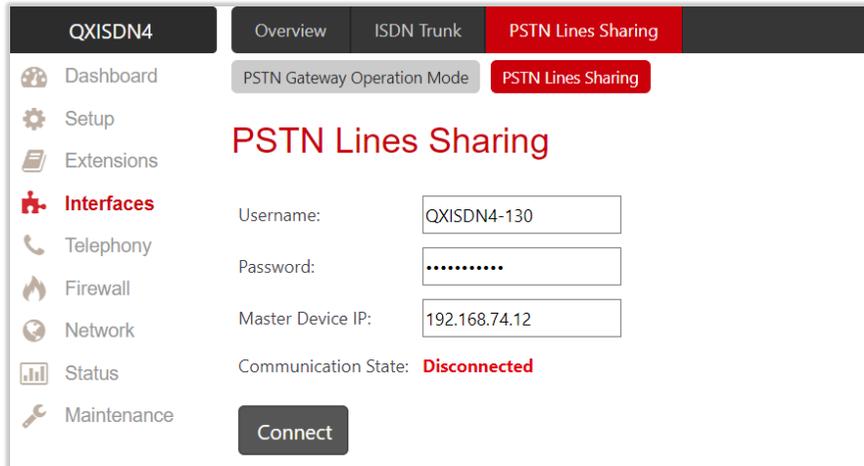


Figure 28: PSTN Lines Sharing page on the Slave QXISDN4

After successful registration, go to the **Interfaces**→**FXO**, **Interfaces**→**E1/T1 Trunk** or **Interfaces**→**ISDN Trunk** page on the **master** to check if the shared lines/trunks are available.

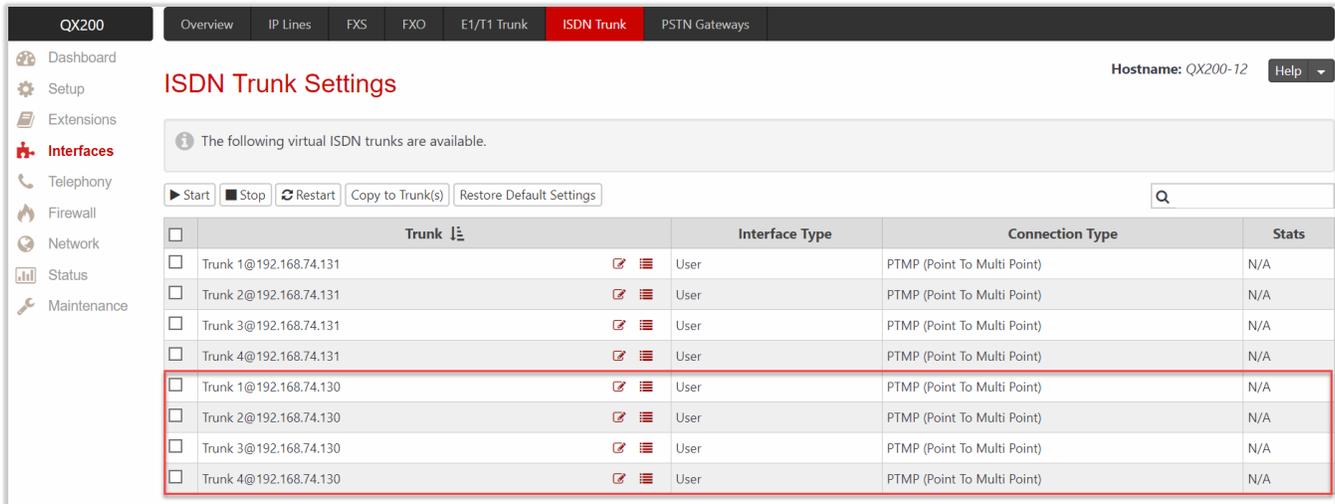


Figure 29: ISDN Trunk Settings page on the QX200

11 Configuring QFXS24 with QX IP PBXs

The Epygi QFXS24 gateway used as a stand-alone device allows connecting analog phones to a VoIP network. The QFXS24 gateway can be installed also with any SIP-compliant IP PBX on the market to be used as an FXS expansion device.

The QFXS24 can be configured with Epygi QX IP PBXs (herein QX) as a FXS expansion device. This is the primary configuration for QFXS24 allowing to use the cheaper analog phones for the most of QX IP PBX telephony features and services that are designed and applicable for IP phones. This document describes how to increase the FXS capability for QX IP PBXs by configuring with QFXS24 gateway as FXS expansion device. There are two modes of QFX24 configuration with QX IP PBX:

- **PnP** – is used to configure the QFXS24 automatically with any available in network QX IP PBX to use it as FXS expansion device. Some extra adjustment in configuration can be done later on manually, if needed.
- **Manual** – is used to configure the QFXS24 manually with the specified QX IP PBX to use it as FXS expansion device.

The **Gateway Operation Mode** page is used to select one of options for QFXS24 operational mode. The following modes are available:

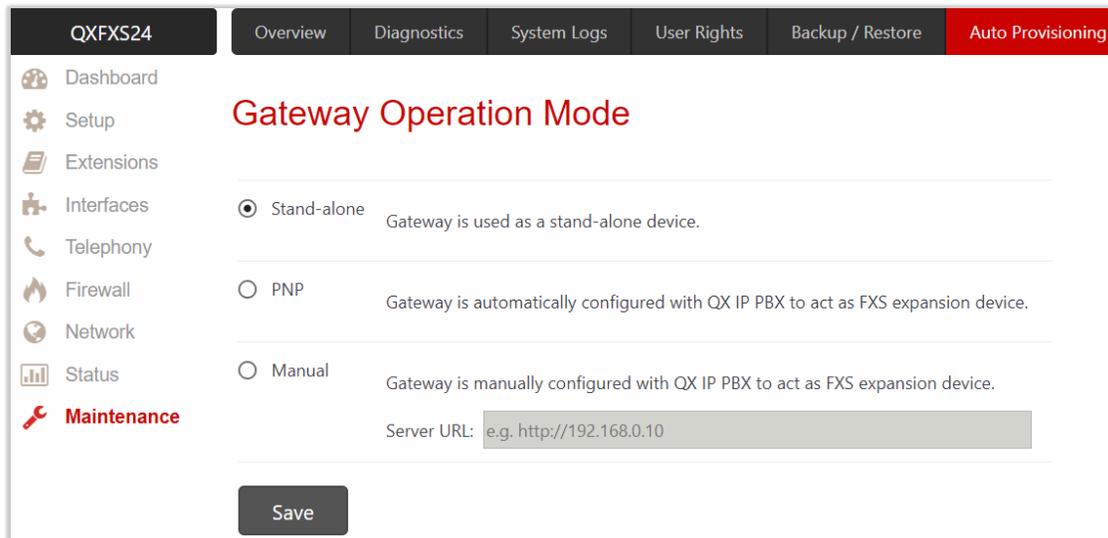


Figure 30: Auto Provisioning page

- **Stand-alone** – select this option to configure the QFXS24 and use it as stand-alone VoIP gateway. You have to configure the device manually using the management GUI.
- **PNP** – select this option to configure the QFXS24 automatically with any available in network QX IP PBX and use it as FXS expansion device. Some extra adjustment in configuration can be done manually, if needed.
- **Manual** – select this option to configure the QFXS24 manually with the specified QX IP PBX and use it as FXS expansion device. **TIP:** The **Server URL** needs to be in the following format <http://xxx.xxx.xxx.xxx>.

For information on how to configure and use QFXS24 with QX IP PBXs, please refer to the [Configuring QFXS24 with QX IP PBXs](#) guide.

12 Registering on Epygi's Support Portal

It is recommended that you register your QX on the Epygi Technical Support Center. Registration with a QX valid serial number will give you access to the **Epygi Support Portal** to download the QX new firmware, manuals and other supplementary information. The **Epygi Support Portal** allows to submit requests concerning technical problems as well as refer to the [Epygi Forum](#) section. Additionally, registration at **Epygi Support Portal** gives you the username and password for login to the Epygi SIP Server.



Figure 31: Device Registration page

For registration, you can use the **Register Your Device in Technical Support Center** page, which appears when administrating the QX first time.

To fill and complete the registration form (Figure 32), you need the serial number of your QX (located on a label on the bottom of QX), as well as the date of purchase. Complete all fields and record the **Username** and **Password** in a safe place. You will need it for accessing the Epygi SIP server.

Note: If you have any issues with registering or have questions about products and services, email sales@epygi.com.



[Home](#)
[Terms of Use](#)
[Register](#)
[News](#)
[Forum](#)

English (U.S.) ▼

[Login](#)

Remember me

[Lost password](#) [Login](#)

HINT: Use plus sign preceding each word or quotes to narrow search. SEARCH

Create a new account

Please fill in the fields below with the end customer's information who will be using the Quadro/OX. This will give the user access to Epygi's monthly updates and technical resources. Once registered the email address will need to be validated before the account is enabled. If you have already created an account and would like to register additional units, please login to the Channel Portal and navigate to My Profile to add multiple serial numbers.

General Information

Full Name:*	<input style="width: 95%;" type="text"/>
Email:*	<input style="width: 95%;" type="text"/>
Phone Number:*	<input style="width: 95%;" type="text"/>
Password:*	<input style="width: 95%;" type="password"/>
Password (repeat):*	<input style="width: 95%;" type="password"/>

Registration

Username:*	<input style="width: 95%;" type="text"/>
------------	--

Required for Forum and SIP

Location

Country:*	<input style="width: 95%;" type="text" value="- Select -"/>
City:*	<input style="width: 95%;" type="text"/>
ZIP:	<input style="width: 95%;" type="text"/>
Address:	<input style="width: 95%;" type="text"/>

User Type

User Status:*	<input style="width: 95%;" type="text" value="Customer"/>
---------------	---

Please select the type of Epygi user that best describes your relationship

Company:	<input style="width: 95%;" type="text"/>
Serial Number:	<input style="width: 95%;" type="text"/>

if your serial number will be valid, your user status will be higher

Usage Terms

Terms of Use:

Check this box to release the 'Register' button:

Privacy and Terms of Use

Privacy Statement

Epygi respects the privacy of its customers and maintains any and all nonpublic personal information it receives from customers in confidence. Epygi only collects nonpublic personal information when customers provide it to Epygi on a voluntary basis. In such cases, the types of nonpublic personal information collected from customers may include the customer's name, address, telephone number, email address and credit card information (including account number and expiration date). Epygi maintains appropriate safeguards to

Please read above Terms of Use carefully before you Register

I agree to the above terms

CAPTCHA Verification

Please check the checkbox below (we use this to prevent automated submissions).

I'm not a robot

Register

Figure 32: Account Registration form

13 Registering on Epygi's SIP Server

Epygi maintains a SIP Server that can be used to call between QX devices. If SIP is enabled on QX, you can make phone calls to other people owning such devices over the Internet (or local network). Calls to subscribed SIP addresses on our server can be made by anyone! You do not need to register with us to call one of our registered customers. Simply make a call to the SIP address over our server.



Figure 33: Epygi's SIP Server

How it works: To subscribe SIP addresses at our server you need to be the owner of one (or more) of our devices. After registering them in our Technical Support System you can login to our SIP server's customer pages. There you will find more information how to create new SIP addresses (subscriptions). This service is free of charge.

To create additional registrations, you may login directly to Epygi's SIP Server if you have registered your QX at [Epygi Support Portal](#). 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 sip.epygi.com. Use the same login **username** and **password** you used for Epygi Support Portal.

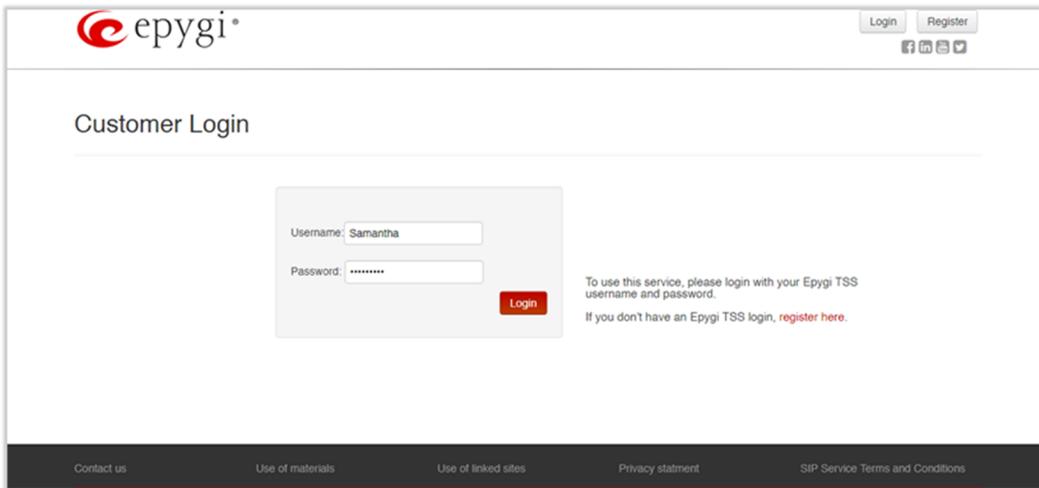


Figure 34: Customer Login page

Add new extension leads you to Add Record window where you can enter the user information for registering a new extension on SIP Server. The **Extension Number** 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.

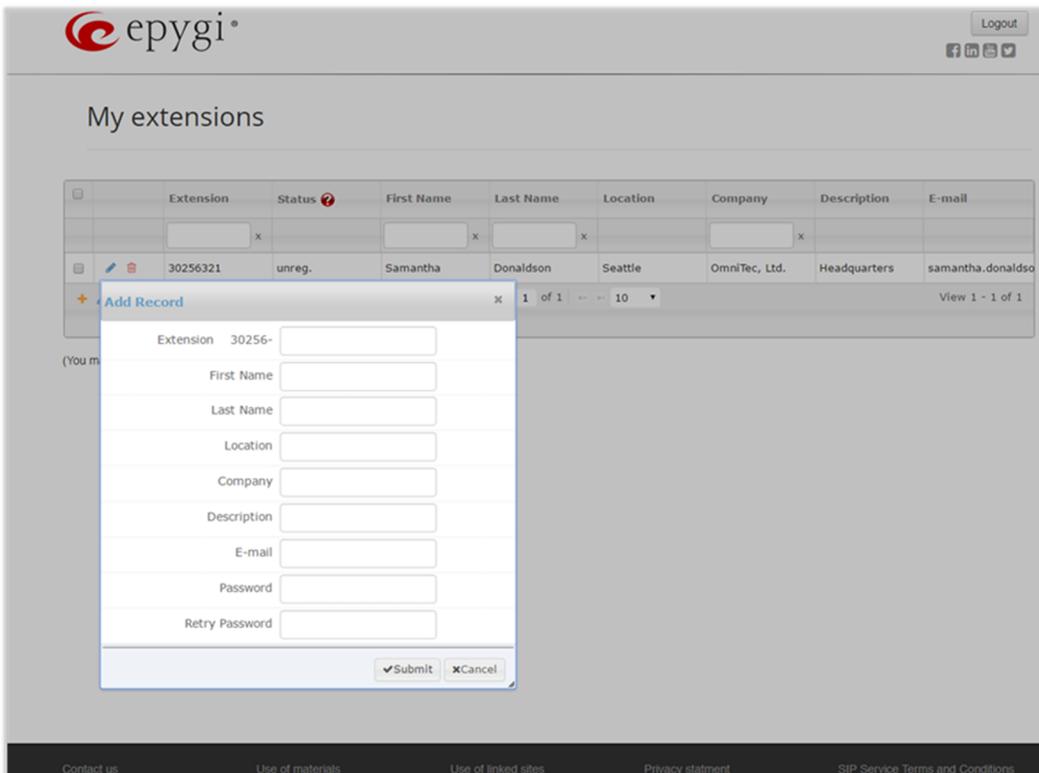


Figure 35: Add New Extension page

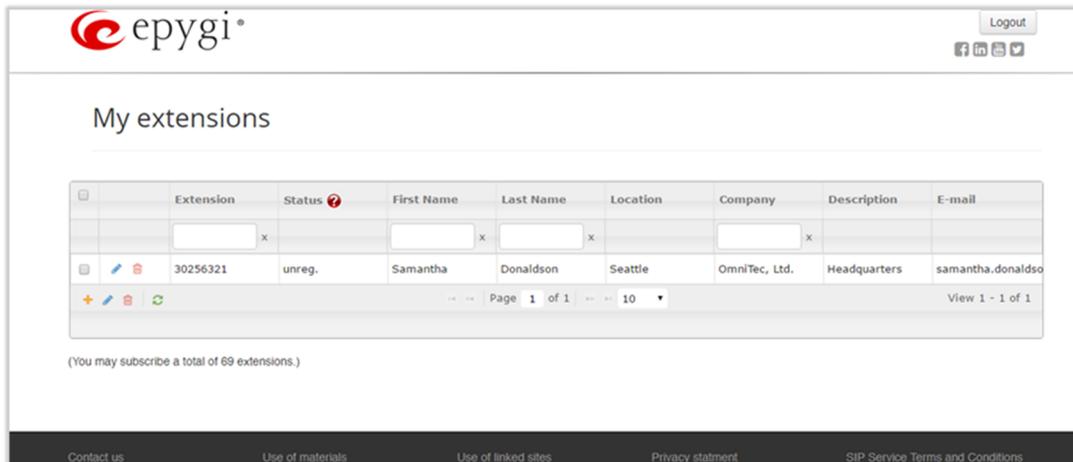


Figure 36: My extension page

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

14 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, go to the **Maintenance**→**Diagnostics** page and click the **Start Network Diagnostics** button.

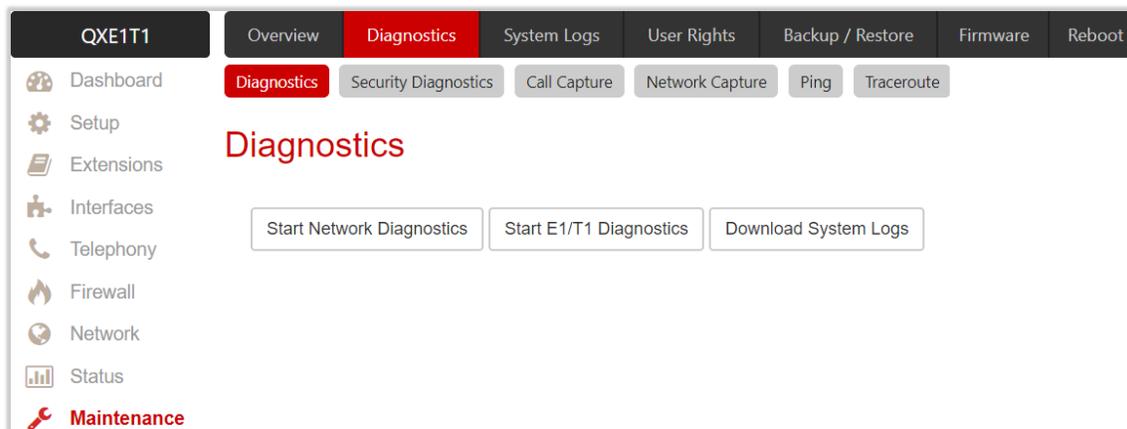
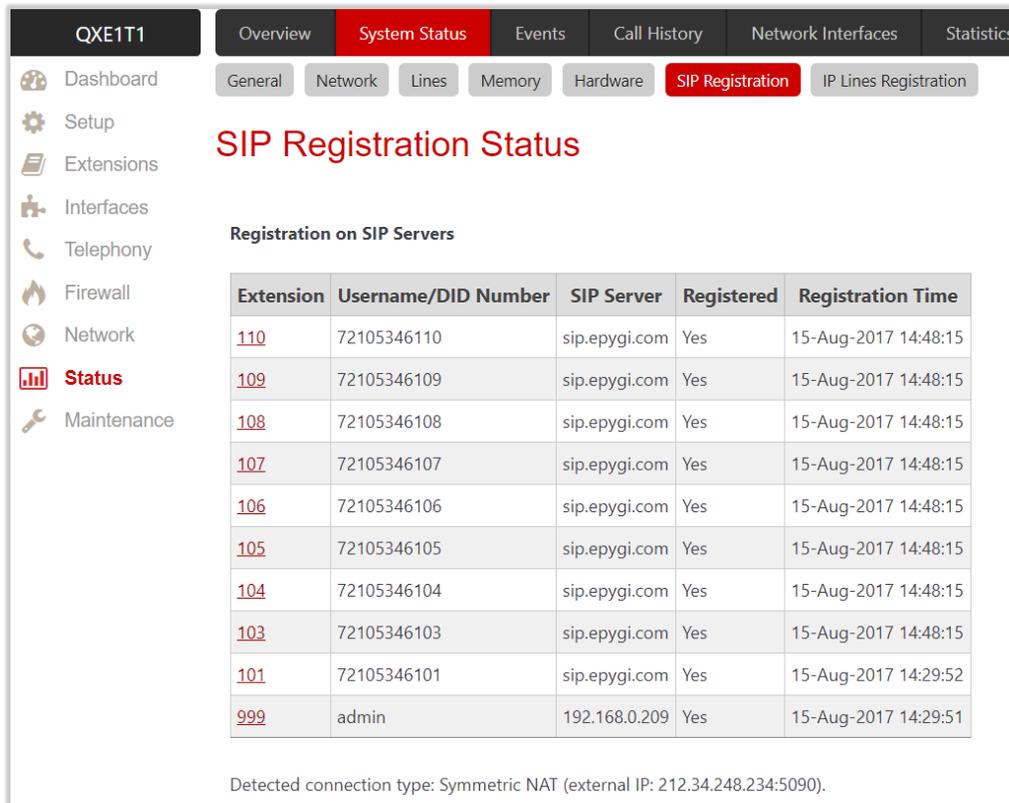


Figure 37: Diagnostics – Start Network Diagnostics page

Go to the **Status**→**System Status**→**SIP Registration Status** page. Besides the SIP registration information for the auto attendant and each connected extension, the **Detected Connection Type** is shown. If QX 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.



SIP Registration Status

Registration on SIP Servers

Extension	Username/DID Number	SIP Server	Registered	Registration Time
110	72105346110	sip.epygi.com	Yes	15-Aug-2017 14:48:15
109	72105346109	sip.epygi.com	Yes	15-Aug-2017 14:48:15
108	72105346108	sip.epygi.com	Yes	15-Aug-2017 14:48:15
107	72105346107	sip.epygi.com	Yes	15-Aug-2017 14:48:15
106	72105346106	sip.epygi.com	Yes	15-Aug-2017 14:48:15
105	72105346105	sip.epygi.com	Yes	15-Aug-2017 14:48:15
104	72105346104	sip.epygi.com	Yes	15-Aug-2017 14:48:15
103	72105346103	sip.epygi.com	Yes	15-Aug-2017 14:48:15
101	72105346101	sip.epygi.com	Yes	15-Aug-2017 14:29:52
999	admin	192.168.0.209	Yes	15-Aug-2017 14:29:51

Detected connection type: Symmetric NAT (external IP: 212.34.248.234:5090).

Figure 38: SIP Registration Status page

QX 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 QX in front of the router, or configure NAT traversal manually as explained in the [Configuring NAT Traversal](#) section. If you are unable to resolve your problems, address to [Epygi Technical Support](#). Please also provide the system logs to determine the problem that has occurred on your QX.

15 Pin Assignment of RJ21

QXFXS 24 additional analog lines connections can be done using the distribution panel or multi-cable (RJ21 - RJ11). Wires are presented in the table below:

Color	Pin (Tip)	Pin (Ring)	Color	FXS Port
White/Blue	26	1	Blue/White	1
White/Orange	27	2	Orange/White	2
White/Green	28	3	Green/White	3
White/Brown	29	4	Brown/White	4
White/Slate	30	5	Slate/White	5
Red/Blue	31	6	Blue/Red	6
Red/Orange	32	7	Orange/Red	7
Red/Green	33	8	Green/Red	8
Red/Brown	34	9	Brown/Red	9
Red/Slate	35	10	Slate/Red	10
Black/Blue	36	11	Blue/Black	11
Black/Orange	37	12	Orange/Black	12
Black/Green	38	13	Green/Black	13
Black/Brown	39	14	Brown/Black	14
Black/Slate	40	15	Slate/Black	15
Yellow/Blue	41	16	Blue/Yellow	16
Yellow/Orange	42	17	Orange/Yellow	17
Yellow/Green	43	18	Green/Yellow	18
Yellow/Brown	44	19	Brown/Yellow	19
Yellow/Slate	45	20	Slate/Yellow	20
Violet/Blue	46	21	Blue/Violet	21
Violet/Orange	47	22	Orange/Violet	22
Violet/Green	48	23	Green/Violet	23
Violet/Brown	49	24	Brown/Violet	24
Violet/Slate	50	25	Slate/Violet	Not Used

16 Pin Assignment of E1/T1

Pin	Signal
1	RXRING
2	RXTIP
3	N.C.
4	TXRING
5	TXTIP
6	N.C.
7	N.C.
8	N.C.

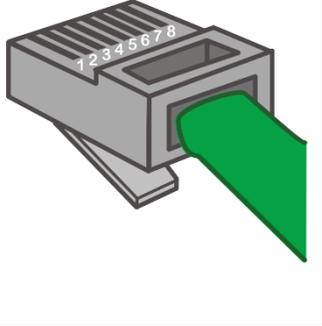


Figure 39: Pin Assignment of E1/T1

17 QXE1T1 PART 68 Certification

5. This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the bottom of this product is a label that contains, among other information, a product identifier in the format US: AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.
6. A plug and jack used to connect this equipment to the premise's wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to connect to a compatible and compliant modular jack. See installation instructions for details.
7. If this equipment [US: HX7DFNANHX70201] causes harm to the telephone network, the telephone company will notify you in advance that 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. In addition, you will be advised of your right to file a complaint with the FCC if you believe it is necessary. The telephone company may also request that you disconnect the equipment until the problem is resolved.
8. 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 in order for you to make necessary modifications to maintain uninterrupted service.
9. If you experience trouble with this product [US: HX7DFNANHX70201], warranty information and repair service can be facilitated through our office at:
 - U.S. Agent Company name: Epygi Technologies, Ltd.
 - Address: 2233 Lee Road Suite 201 Winter Park, Florida 32789, USA
 - Tel: 972-692-1166
 - Fax: 972-265-0081
10. Please follow instructions for repairing if any (e.g. battery replacement section); otherwise do not alter or repair any parts of device except specified. For repair procedures, follow the instructions outlined under the limited warranty.
11. Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.
12. If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this [equipment ID] does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.
13. If the telephone company requests information on what equipment is connected to their lines, inform them of:
14. The ringer equivalence number [NAN]
15. The USOC jack required [RJ48]
16. Facility Interface Codes (FIC) [04DU9.1SN]
17. Service Order Codes (SOC) [6.0Y]
18. The FCC Registration Number US: HX7DFNANHX70201
19. The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For this product, the FCC registration number is [US: HX7DFNANHX70201] and indicates the REN would be NAN.
20. If this product is equipped with a corded or cordless handset, it is hearing aid compatible.

18 References

Refer to the below listed recourses to get more details about the configurations described in this guide:

- Manual-II: Administration Guide for QX Gateways
- System Capacity of QX Gateways
- Licensable Features on QX IP PBXs
- Language Packs Overview for Epygi QX Line
- Call Detail Records on the QX IP PBXs
- Firmware Update Service on Epygi QX Line

Find the above listed documents on [Epygi Support Portal](#).

19 Appendix: Software License Agreement

EPYGI TECHNOLOGIES, LTD. Software License Agreement

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13. **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the state of Texas, without regard to the choice of law provisions that would cause the application of the law of another jurisdiction.
14. **Attorneys' Fees.** In the event of any litigation or other dispute arising as a result of or by reason of this Agreement, the prevailing party in any such litigation or other dispute shall be entitled to, in addition to any other damages assessed, its reasonable attorneys' fees, and all other costs and expenses incurred in connection with settling or resolving such dispute.

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