



Manual-I: Installation Guide for QX IP PBXs

This manual is effective for QX IP PBXs: QX20, QX50, QX200, QX500, QX2000, QX3000, QX5000 and QXISDN4+.

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Epygi Technologies, LLC.

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, LLC.

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 QX or Quadro is powered.

Industry Canada Statement

This product meets the applicable Industry Canada technical specifications.

Safety Information

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

- To prevent fire or shock hazard, do not expose your QX or Quadro to rain or moisture.
- To avoid electrical shock, do not open the QX or 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 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 QX or Quadro during an electrical storm.
- Do not use your QX, 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 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 QX or Quadro 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 QX or Quadro. 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.

Music on Hold Copyright

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

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Document Edition History

Revision	Date	Description	Valid for Models	Valid for FW
1.0	24-Mar-17	Initial Release	QX IP PBXs	6.1.45 and higher
1.1	16-Jun-17	Added a new licensable feature - Calling Cost Control . Updated.	QX IP PBXs	6.1.50 and higher
1.2	11-Dec-17	Updated for the new QX3000.	QX20, QX50, QX200, QX500, QX2000 QX3000 and QXISDN4+	6.2.1 and higher
1.3	31-May-18	Updated	QX20, QX50, QX200, QX500, QX2000 QX3000 and QXISDN4+	6.2.11 and higher
1.4	14-Feb-20	Updated	QX20, QX50, QX200, QX500, QX2000 QX3000, QX5000 and QXISDN4+	6.3.1 and higher

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1 About Installation Guide

This guide is intended for administrators as an aid to install, configure and operate QX IP PBXs (herein QX). The configuration of QXs as well as references to other guides, manuals and complementary resources are described in this guide.

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 unique setup and scenarios.

2 Accessories

- AC power cable should be connected to the **100-240V 50/60Hz** AC power outlet.
- The **CAT5**, **CAT5E** and **CAT6** ethernet cables with **RJ45** connectors can be used to connect LAN/WAN ports to your network and Internet.
- The telephone cables with **RJ11** connectors can be used to connect analog (FXS) phones to QX and FXO ports to **Central Office (CO)**.
- The **CAT5**, **CAT5E** and **CAT6** ethernet cables with **RJ45** connectors can be used to connect ISDN ports to CO.

Note: Refer to the contents sheet included in the box to verify all items have been shipped.

3 Hardware Overview

- **QX20** has **1** Ethernet WAN port, **1** Ethernet LAN port and **1** Ethernet Backup port (TBD).
- **QX50** has **2** FXO ports, **2** FXS ports, **1** Ethernet WAN port and **1** Ethernet LAN port.
- **QX200** has **4** FXO ports, **2** FXS ports, **1** Ethernet WAN port and **1** Ethernet LAN port.
- **QX500** has **1** Ethernet WAN port, **1** Ethernet LAN port and **1** Ethernet Backup port (TBD).
- **QX2000** has **1** Ethernet LAN port and **1** Ethernet Backup port.
- **QX3000** has **1** Ethernet LAN port and **1** Ethernet Backup port.
- **QX5000** has **1** Ethernet LAN port and **1** Ethernet Backup port.
- **QXISDN4+** has **4** ISDN ports, **1** Ethernet WAN port and **1** Ethernet LAN port.

3.1 Panels of QX50/QX200/QXISDN4+

Below are presented the front and back panels:

1. **Ethernet WAN port** is used to connect QX to company's network or Internet.
2. **Ethernet LAN port** is used to connect IP phones to QX using switch. Connect this port to PC for initial setup.
3. **AUDIO IN port** is used to connect QX to the radio or any other audio resource to be used for hold music.
4. **AUDIO OUT port** is used to connect QX to a speaker to be used for **Paging Group** service.
5. **Reset pin** may be used in two ways:
 - Pressing for an instant to initiate a normal restart.
 - Pressing and holding down for **5** seconds or more to carry out a factory reset. This will clear all configurations, saved data (call recordings, voice mails, call history, etc.) and license keys. The default configuration will be restored.
6. **FXS ports** are used to connect analog phones to QX.
7. **FXO ports** are used to connect QX to the PSTN network using standard analog phone service.
8. **ISDN ports** are used to connect QXISDN4+ to the PSTN network using ISDN service.

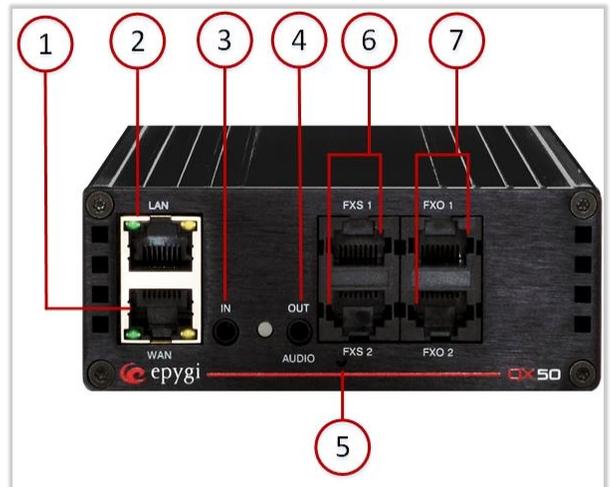


Figure 1: QX50 Front Panel

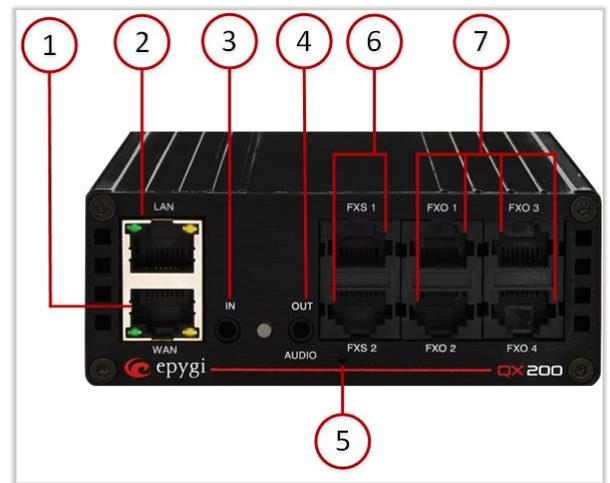


Figure 2: QX200 Front Panel



Figure 3: QXISDN4+ Front Panel

9. **AUX PWR** (DC Power) is used to connect two units together. The first unit will power the second by using 12V DC power connector.
10. **AC Power Supply** is used to connect a power cable.
11. **SD card slot** is used to insert an SD card and expand the memory size of device for voice mails, custom messages and call recordings. **Warning:** Power down the QX before inserting/removing SD memory card.



Figure 4: QX50/QX200 Back Panel



Figure 5: QXISDN4+ Back Panel

3.2 Panels of QX20/QX500

Below are presented the front and back panels:

1. **Ethernet WAN port** is used to connect QX to company's network or Internet.
2. **Ethernet LAN port** is used to connect IP phones to QX using switch. Connect this port to PC for initial setup.
3. **AUDIO IN port** is used to connect QX to the radio or any other audio resource to be used for hold music.
4. **AUDIO OUT port** is used to connect QX to a speaker to be used for **Paging Group** service.
5. **USB1** – TBD later.
6. **SD card slot** is used to insert a **micro SD card** and expand the memory size of device for voice mails, custom messages and call recordings.
Warning: Power down the QX before inserting/removing the micro SD memory card.
7. **ETH port** – TBD later.
8. **USB2** – TBD later.
9. **Reset pin** can be used in two ways:
 - Pressing for an instant to initiate a normal restart.
 - Pressing and holding down for **10** seconds or more to carry out a factory reset. This will clear all configurations, saved data (call recordings, voice mails, call history, etc.) and license keys. The default configuration will be restored.
10. **AC Power Supply** is used to connect a power cable.
11. **5V DC Power supply** is used to connect a power cable.

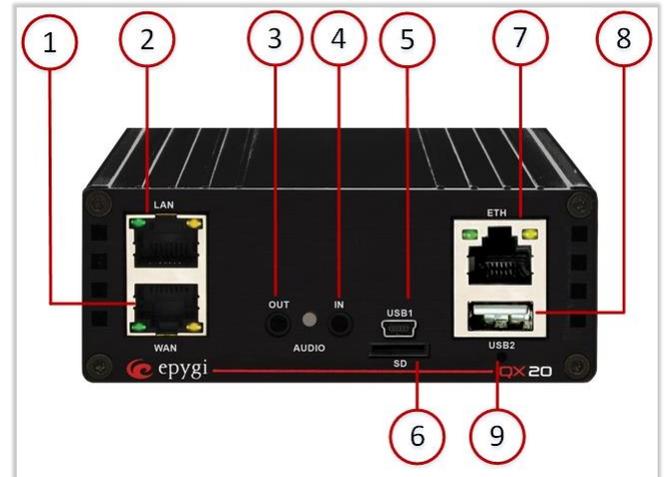


Figure 6: QX20 Front Panel



Figure 7: QX20/QX500 Back Panel

3.3 Panels of QX2000/QX3000/QX5000

1. Two USB ports enable connectivity of a 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. DVD-ROM is used for emergency recovery.
4. Two ETH RJ45 interfaces attach the QX to the router. These interfaces are placed in the back panel of the QX.



Figure 8: QX3000 Front Panel

3.4 Front Panel LEDs of QX20/QX50/QX200/QX500/QXISDN4+

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 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.

3.5 Front Panel LEDs of QX2000/QX3000/QX5000

LED Name	State Description
Power LED	On: power supply ok Off: no power supply or device is still booting
Hard drive activity LED	Off: no hard drive activity On or Blinking: indicates DVD-ROM drive activity when flashing
Two Network activity LEDs	On: device is booting Off: no information Blinking: indicates network activity when flashing
System Overheat LED	On: indicates an overheat condition, caused either by cables obstructing the airflow in the system or the ambient room temperature being too warm Off: no overheat Flickering: indicates a fan failure

Table 3: QX2000/QX3000 Front Panel LEDs

4 QX Installation

4.1 Connection Scenarios for QX20/QX50/QX200/QX500/QXISDN4+

Scenario 1: QX behind a router with IP phones on WAN side

QX is connected to the company's router via WAN interface. IP phones are placed on the WAN side of QX.

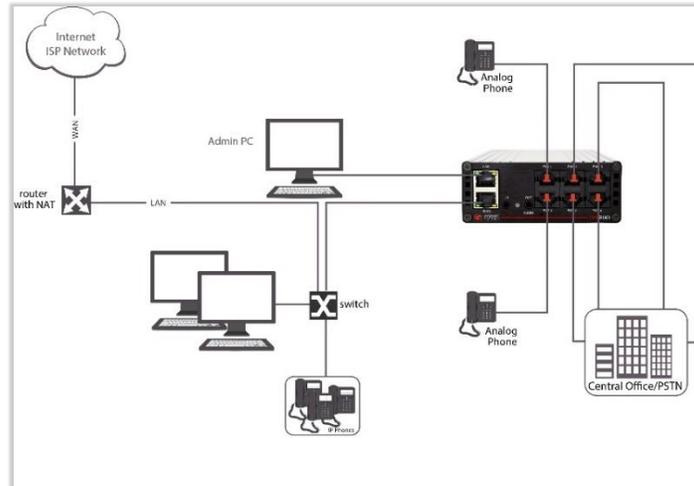


Figure 9: QX behind a router with IP phones on WAN side

In this configuration, the router typically acts as a DHCP server for the LAN and assigns IP addresses to PCs and other devices. QX is connected through its WAN port to one of the ports of the switch and will get an IP address from the router. The IP phones and PCs are also connected to the switch. The Admin PC can be connected to the QX LAN or WAN port to access the QX WEB GUI. **Note:** Since QX uses STUN by default, it will work with most basic routers without any further configuration.

Scenario 2: QX behind a router with IP phones on LAN side

QX is connected to the company's router via WAN interface. IP phones are placed on the LAN side of QX.

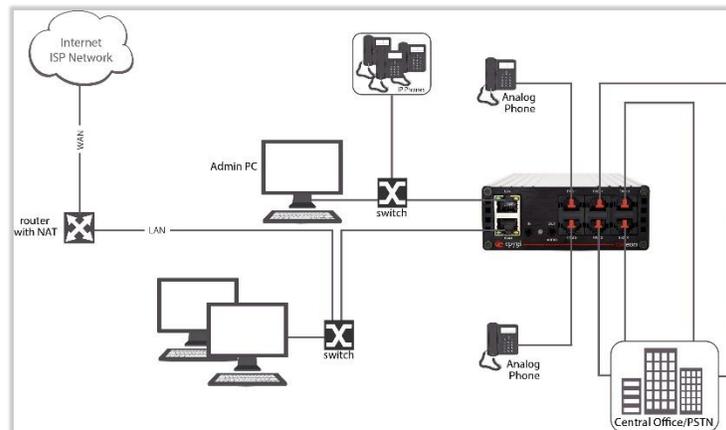


Figure 10: QX behind a router with IP phones on LAN side

This configuration is identical to the previous one, with the difference that IP phones are connected to the QX LAN port. QX can be configured as a DHCP server to provide network parameters to devices on its LAN. The Admin PC can be connected to the QX LAN or WAN port to access the QX WEB GUI.

Scenario 3: QX acting as a Router

QX is acting as a router. QX Ethernet WAN port is directly connected to ISP. The Admin PC, other devices and IP phones are connected to the switch which is connected to the QX LAN port. QX can be configured as a DHCP server to provide network parameters to devices on its LAN.

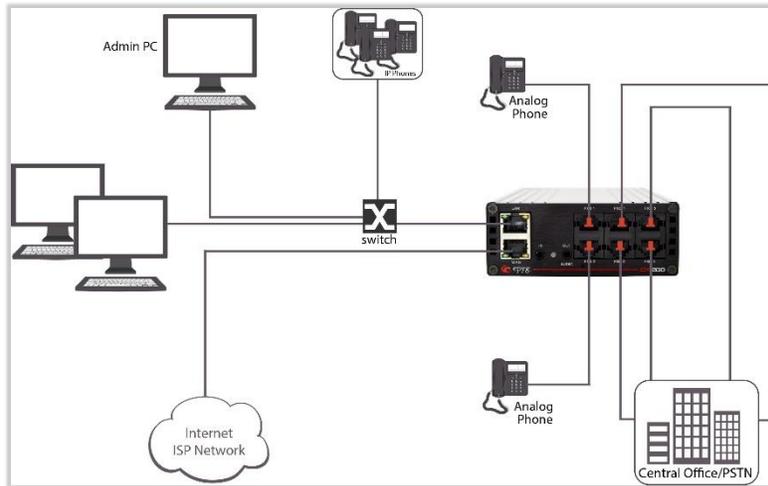


Figure 11: QX acting as a Router

4.1.2 Connection Scenario for QX2000/QX3000/QX5000

QX is connected to the company's router via LAN interface (Ethernet port). IP phones are placed on the LAN side of QX. The Admin PC, other devices and IP phones are connected to the switch which is connected to the QX Ethernet port. **Note:** Since QX uses STUN by default, it will work with most basic routers without any further configuration.

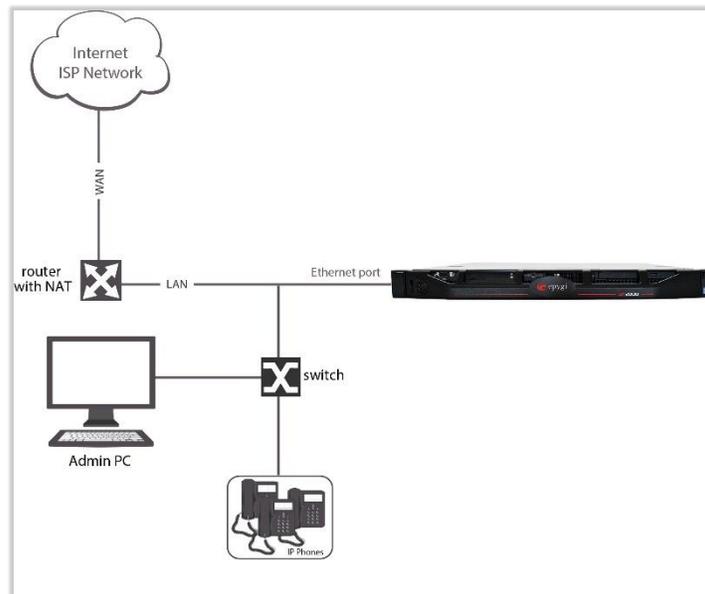


Figure 12: QX behind a router with IP phones on the same network

5 QX Configuration

5.1 Logging in to QX

1. Start a browser (Google Chrome, Opera, Mozilla Firefox, etc.) on PC connected to QX.
2. Since **Firewall** is disabled on QX by default, you may connect the QX WEB GUI either from WAN or LAN side of QX.
 - To access from the WAN side, enter **http://xxx.xxx.xxx.xxx** (the IP address assigned by company's DHCP server) in the address field of your browser.
 - To access from the LAN side, enter the default IP address in the address field of your browser.
 - ◆ **172.30.0.1** is the default LAN IP address for QX20/QX50/QX200/QX500 and QXISDN4+.
 - ◆ **192.168.0.200** is the default LAN IP address for QX2000/QX3000/QX5000.
3. The QX Login page will be displayed.

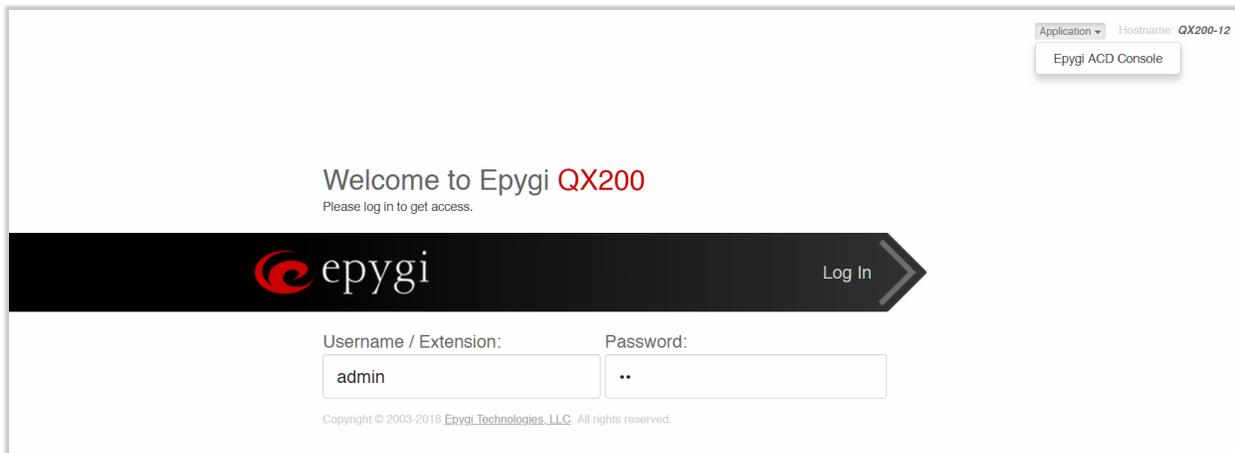


Figure 13: Login page

4. Enter the default credentials (Username: **admin** and Password: **19**) to log into the WEB GUI as an administrator. **Note:** If you consecutively enter a wrong password and/or username for **5** times you will not be able to log in for five minutes.

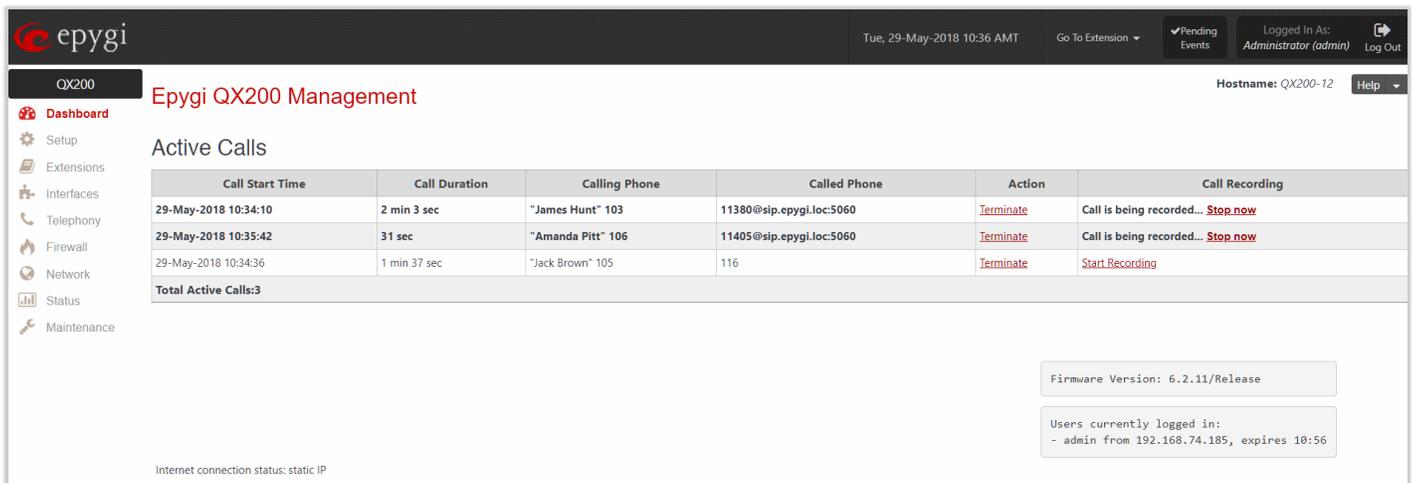


Figure 14: Dashboard menu

5.2 Configuring Network Parameters

The **System Configuration Wizard** and **Internet Configuration Wizard** are used to configure network parameters of QX. These wizards should be run upon the first startup of QX.

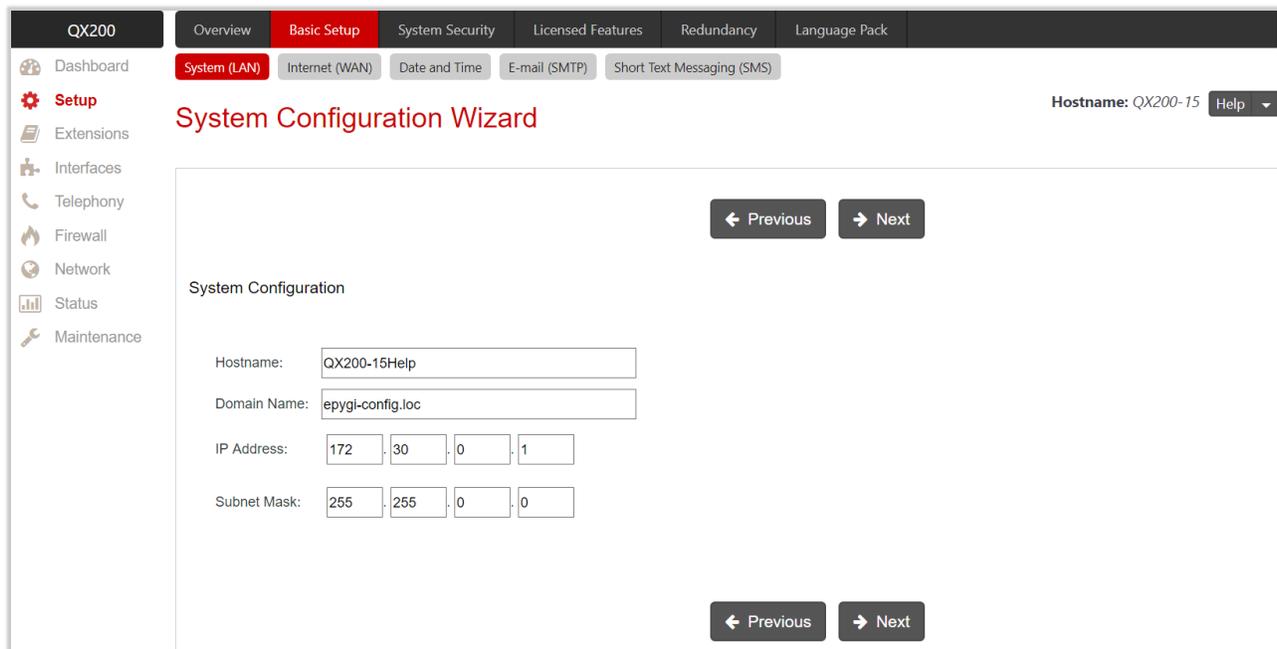
5.2.1 System Configuration Wizard

The **System Configuration Wizard** is used to adjust the network parameters for the LAN interface and configure **Regional Settings**. **Note:** It is strongly recommended to leave the factory default settings unchanged if their meanings are not fully clear to you.

The **System Configuration Wizard** consists of the following sections:

- [System Configuration](#)
- [DHCP Settings for the LAN Interface](#)
- [Regional Settings and Preferences](#)
- [Emergency Codes and PSTN Access Code Settings](#)
- [Call Alert Settings](#)
- [Summary](#)

System Configuration



The screenshot displays the 'System Configuration Wizard' in the QX200 web interface. The interface includes a top navigation bar with tabs for Overview, Basic Setup (selected), System Security, Licensed Features, Redundancy, and Language Pack. A secondary navigation bar shows options for System (LAN), Internet (WAN), Date and Time, E-mail (SMTP), and Short Text Messaging (SMS). The main content area is titled 'System Configuration Wizard' and features a 'System Configuration' section with the following fields:

- Hostname: QX200-15Help
- Domain Name: epygi-config.loc
- IP Address: 172.30.0.1
- Subnet Mask: 255.255.0.0

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

Figure 15: System Configuration section

The **System Configuration** section is used to configure the following settings (options):

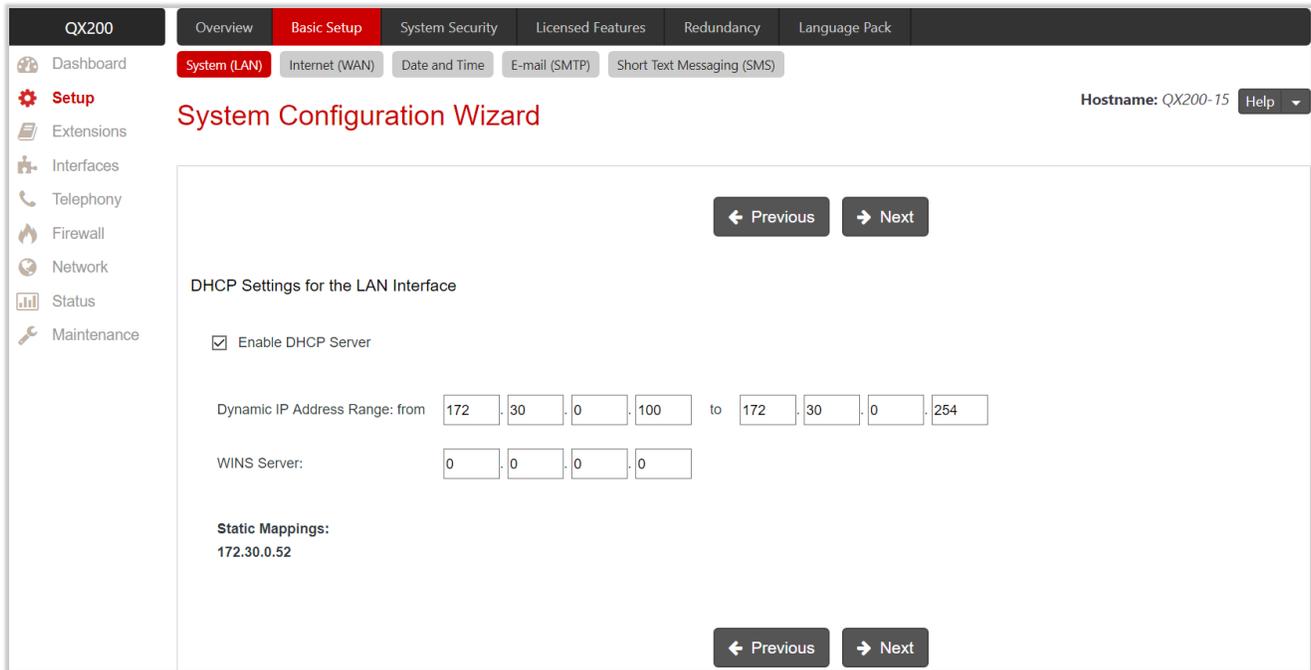
- Hostname
- Domain Name
- IP Address
- Subnet Mask

DHCP Settings for the LAN Interface

The DHCP Settings for the LAN Interface section is used to configure the following settings (options):

- Enable DHCP Server is used to activate DHCP server on QX.
- Dynamic IP Address Range is used to set the IP address pool.
- WINS Server is used to set the IP address for the WINS server.

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



The screenshot shows the 'System Configuration Wizard' interface for a QX200 device. The 'Basic Setup' tab is active, and the 'System (LAN)' sub-tab is selected. The main content area is titled 'DHCP Settings for the LAN Interface'. It includes a 'Previous' and 'Next' navigation bar at the top. The settings are as follows:

- Enable DHCP Server
- Dynamic IP Address Range: from to
- WINS Server:
- Static Mappings:
172.30.0.52

Navigation buttons 'Previous' and 'Next' are located at the bottom of the configuration area.

Figure 16: DHCP Settings for the LAN Interface section

Regional Settings and Preferences

Regional Settings are important for the functionality of QX voice subsystem. If your QX is located outside the United States, it is important to properly configure your line connections to the PSTN in your location.

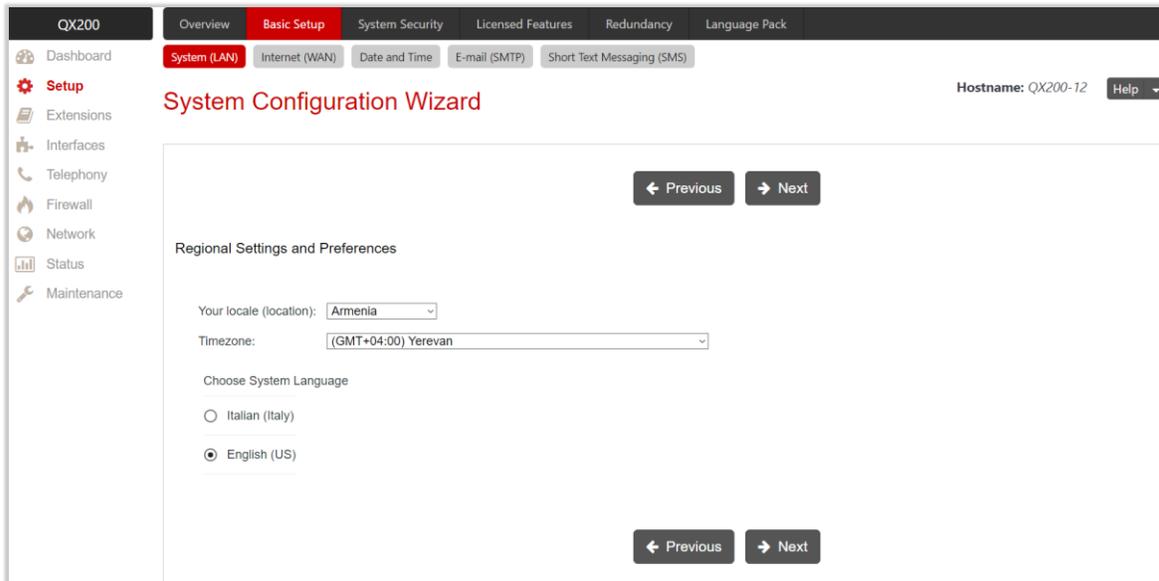


Figure 17: Regional Settings and Preferences section

The **Regional Settings and Preferences** section is used to configure the following settings (options):

- **Your Locale (location)** is used to select the location and time zone of QX.
- **Timezone** is used to select the proper time zone so QX can display the correct time. **TIP:** QX supports **Daylight Savings (DST)** correction if it is available for the selected time zone.
- **Choose System Language** is used to select the language for system voice messages: **custom** or **default English**. **TIP:** This selection is available when a custom **Language Pack** has been uploaded.

Emergency Codes and PSTN Access Code Settings

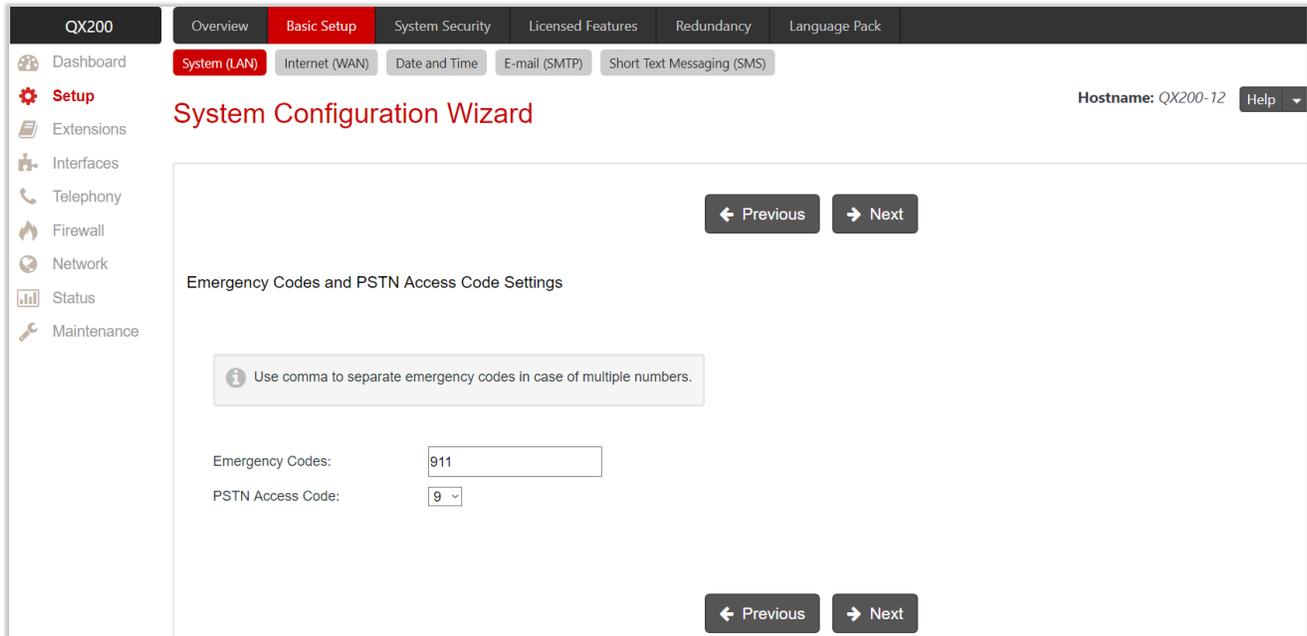


Figure 18: Emergency Codes and PSTN Access Code Settings section

The **Emergency Codes and PSTN Access Code Settings** section is used to configure the following settings (options):

- **Emergency Codes** is used to set PSTN number(s) of emergency service(s). For each emergency code, a routing pattern will be generated in the **Call Routing Table**, allowing faster and easier calls to emergency services. **TIP:** Use commas to separate emergency codes in case of multiple numbers.
- **PSTN Access Code** is used to select prefix code for accessing PSTN line through routing table.

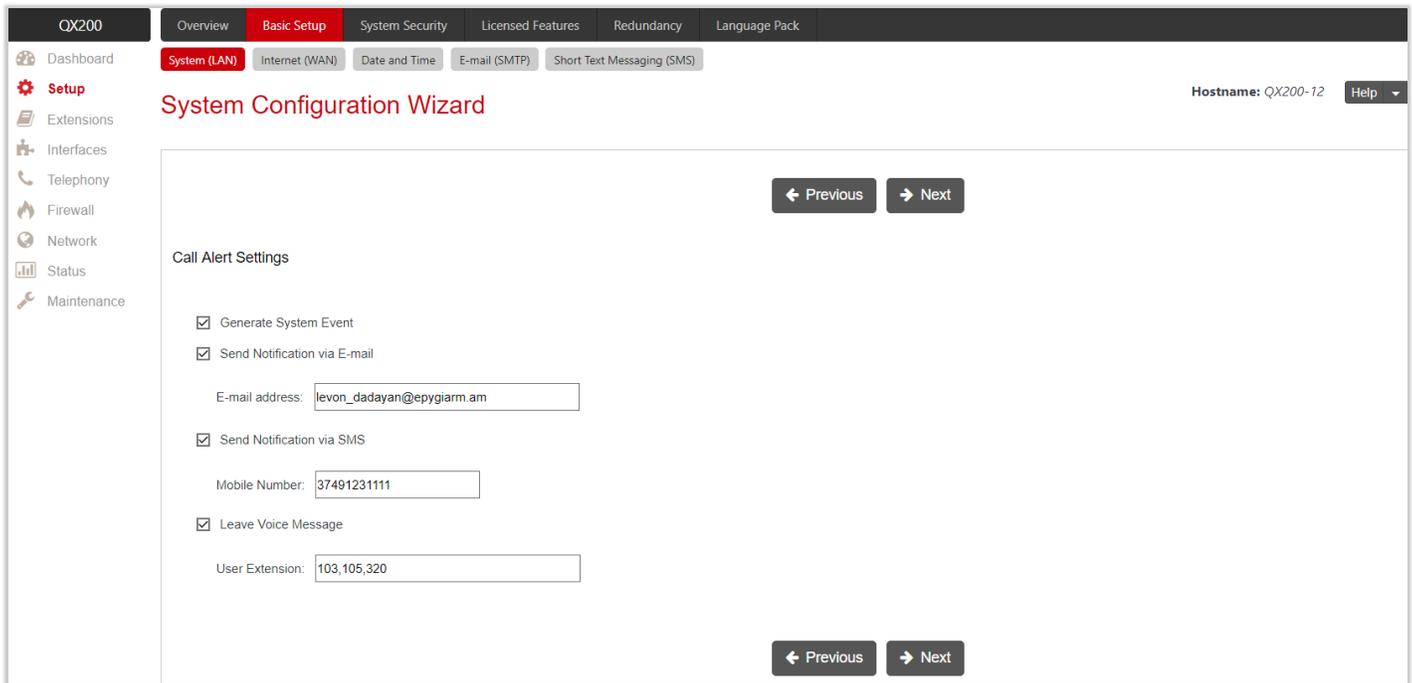
Call Alert Settings

This section is used to activate the call alert service and configure settings. The **Call Alert** service is used to notify the designated personnel about emergency calls, as well as calls through the certain call routing rules. The following information will be included in the notification: the routing pattern, the user extension who placed the call, the dialed number and the call Date/Time.

The following settings (options) are available:

- **Generate System Event** is used to generate and display event notification in the **System Events**.
- **Send Notification via E-mail** is used to send a notification to a specified address via e-mail.
- **Send Notification via SMS** is used to send a notification to a specified number via SMS.
- **Leave Voice Message** is used to leave a voice mail on defined extension(s) with a voice message.

Note: Use commas to separate email addresses, mobile numbers and user extensions in case of multiple entries.



The screenshot shows the QX200 System Configuration Wizard interface. The top navigation bar includes 'Overview', 'Basic Setup' (selected), 'System Security', 'Licensed Features', 'Redundancy', and 'Language Pack'. Below this, there are tabs for 'System (LAN)', 'Internet (WAN)', 'Date and Time', 'E-mail (SMTP)', and 'Short Text Messaging (SMS)'. The main content area is titled 'System Configuration Wizard' and 'Call Alert Settings'. It contains several configuration options:

- Generate System Event
- Send Notification via E-mail
 - E-mail address:
- Send Notification via SMS
 - Mobile Number:
- Leave Voice Message
 - User Extension:

Navigation buttons for 'Previous' and 'Next' are located at the top and bottom of the configuration area.

Figure 19: Call Alert Settings section

Summary

This section displays all configured settings (options) before applying them.

Note:

- Finish the wizard and click "OK" to apply the changes made in all sections 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 connect to QX.

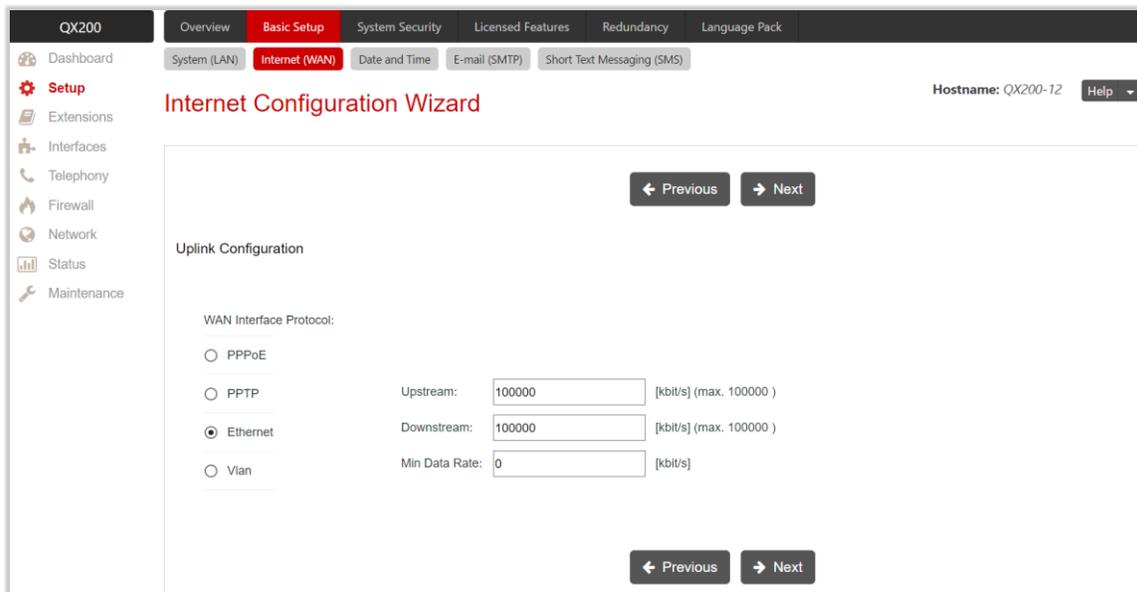
5.2.2 Internet Configuration Wizard

The **Internet Configuration Wizard** is used to configure or adjust the network parameters for QX WAN interface. **Note:** It is strongly recommended to leave the factory default settings unchanged if their meanings are not fully clear to you.

The **Internet Configuration Wizard** consists of the following sections:

- [Uplink Configuration](#)
- [WAN Interface Configuration](#)
- [DNS Settings](#)
- [Summary](#)

Uplink Configuration



The screenshot shows the 'Uplink Configuration' section of the Internet Configuration Wizard. The interface includes a navigation menu on the left with options like Dashboard, Setup, Extensions, Interfaces, Telephony, Firewall, Network, Status, and Maintenance. The main content area is titled 'Uplink Configuration' and features a 'WAN Interface Protocol' section with radio buttons for PPPoE, PPTP, Ethernet (selected), and Vlan. To the right of these options are input fields for 'Upstream' (100000 kbit/s), 'Downstream' (100000 kbit/s), and 'Min Data Rate' (0 kbit/s). Navigation buttons for 'Previous' and 'Next' are located at the top and bottom of the configuration area.

Figure 20: Uplink Configuration section

The **Uplink Configuration** section is used to configure the following settings (options):

- **WAN Interface Protocol** is used to select the protocol for the WAN interface. Based on this selection the wizard configuration sections may differ. The following protocols are available:
 - PPPoE
 - PPTP
 - Ethernet
 - VLAN (**TIP:** This option becomes available only when VLAN is configured on QX.)
- **WAN Interface Bandwidth** is used to specify the upstream and downstream speeds in Kbit/s, helping to assure the quality of IP calls. IP call loses the voice quality if there is no available bandwidth. When the limits of a bandwidth capacity are approaching, another IP call will be rejected.
- **Min Data Rate** is used to set the amount of upstream bandwidth that ought to remain for data traffic even if voice applications use the entire available upstream bandwidth. The value selected here needs to be smaller than the upstream bandwidth.

PPPoE

- **Keep Connection Alive** is used to keep the connection alive by sending control packets for the link state verification.
- **Authentication Settings** is used to set the authentication parameters (**Username** and **Password**) to register on the ISP server.
- **Dial Behavior** is used to select the **Dial Behavior** type.
 - **Dial manually** – if selected, a button will be displayed on the **Dashboard** to switch the connection on/off.
 - **Always connected** – if selected, the connection will always stay active and connected.
- **IP Address Assignment** is used to select the IP address assignment type:
 - **Obtain an IP Address automatically** – if selected, QX will get the IP address from local network or ISP automatically.
 - **Use the following IP Address** is used to set the IP address manually.

PPTP

- **Obtain an IP Address automatically** – if selected, QX will get the IP address from local network or ISP automatically.
- **Use the following IP Address** is used to set the IP address manually.

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

- **PPTP Server** is used to set the IP address of PPTP server.
- **Encryption** is used to select the encryption for the traffic over PPTP interface.
- **Keep Connection Alive** is used to keep the connection alive by sending control packets for the link state verification.
- **Authentication Settings** is used to set the authentication parameters (Username and Password) to register on the ISP server.
- **Dial Behavior** is used to select the **Dial Behavior** type:
 - **Dial manually** – if selected, a button will be displayed on the **Dashboard** to switch the connection on/off.
 - **Always connected** – if selected, the connection will always stay active and connected.
- **IP Address Assignment** is used to select the IP address assignment type:
 - **Obtain an IP Address automatically** – if selected, QX will get the IP address from local network or ISP automatically.
 - **Use the following IP Address** is used to set the IP address manually.

Ethernet

- Obtain an IP Address automatically – if selected, QX will get the IP address from local network or ISP automatically.
- Use the following IP Address is used to set the IP address manually.

VLAN

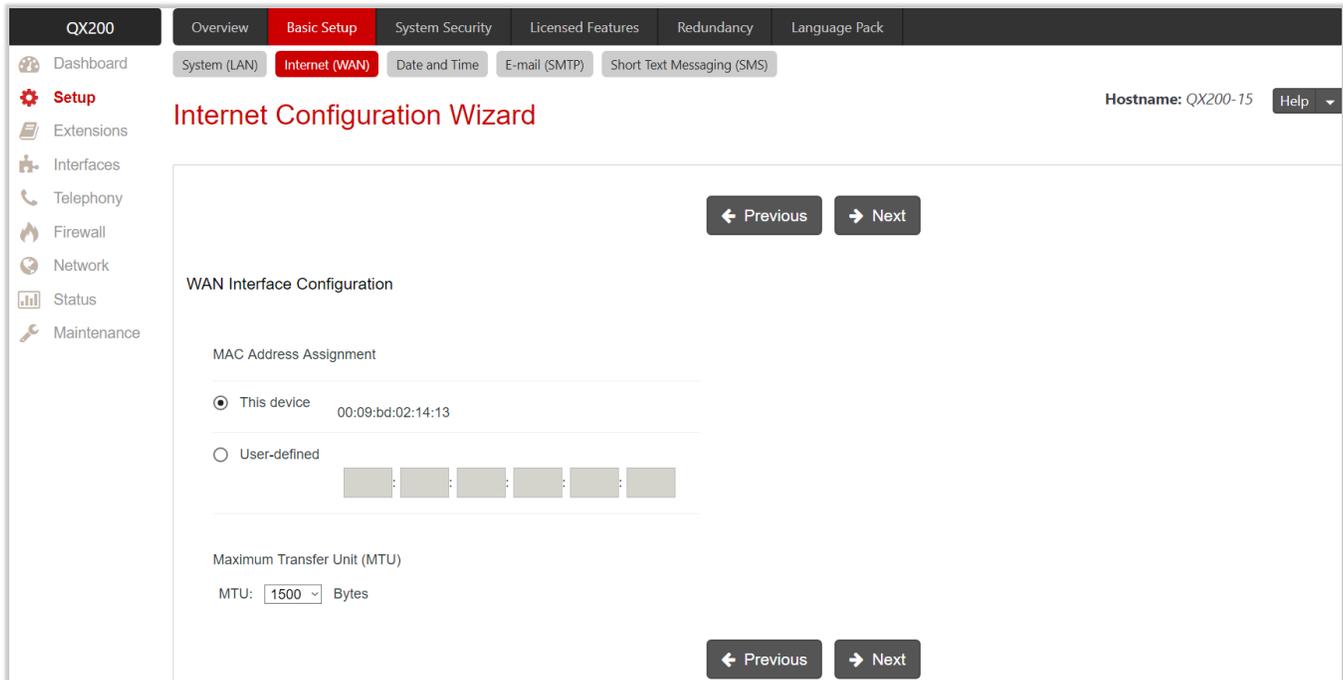
- VLAN ID is used to select VLAN ID from the configured VLAN list.

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

- Obtain an IP Address automatically – if selected, QX will get the IP address from local network or ISP automatically.
- Use the following IP Address is used to set the IP address manually.

WAN Interface Configuration

The **WAN Interface Configuration** section is used to set the MAC address of QX. This might be necessary if the ISP requires a specified MAC address (e.g. for authentication).



The screenshot shows the QX200 web interface. At the top, there are navigation tabs: Overview, Basic Setup (selected), System Security, Licensed Features, Redundancy, and Language Pack. Below these are sub-tabs: System (LAN), Internet (WAN) (selected), Date and Time, E-mail (SMTP), and Short Text Messaging (SMS). The main content area is titled 'Internet Configuration Wizard' and 'WAN Interface Configuration'. It features two 'Previous' and 'Next' buttons at the top and bottom. The 'MAC Address Assignment' section has two radio buttons: 'This device' (selected) with the MAC address '00:09:bd:02:14:13', and 'User-defined' with six input fields for manual entry. The 'Maximum Transfer Unit (MTU)' section has a dropdown menu set to '1500' and the unit 'Bytes'.

Figure 21: WAN Interface Configuration page

The following settings (options) are available:

- **This device** is used to select the default MAC address of the WAN interface.
- **User-defined** is used to set the MAC Address manually.
- **MTU** is used 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

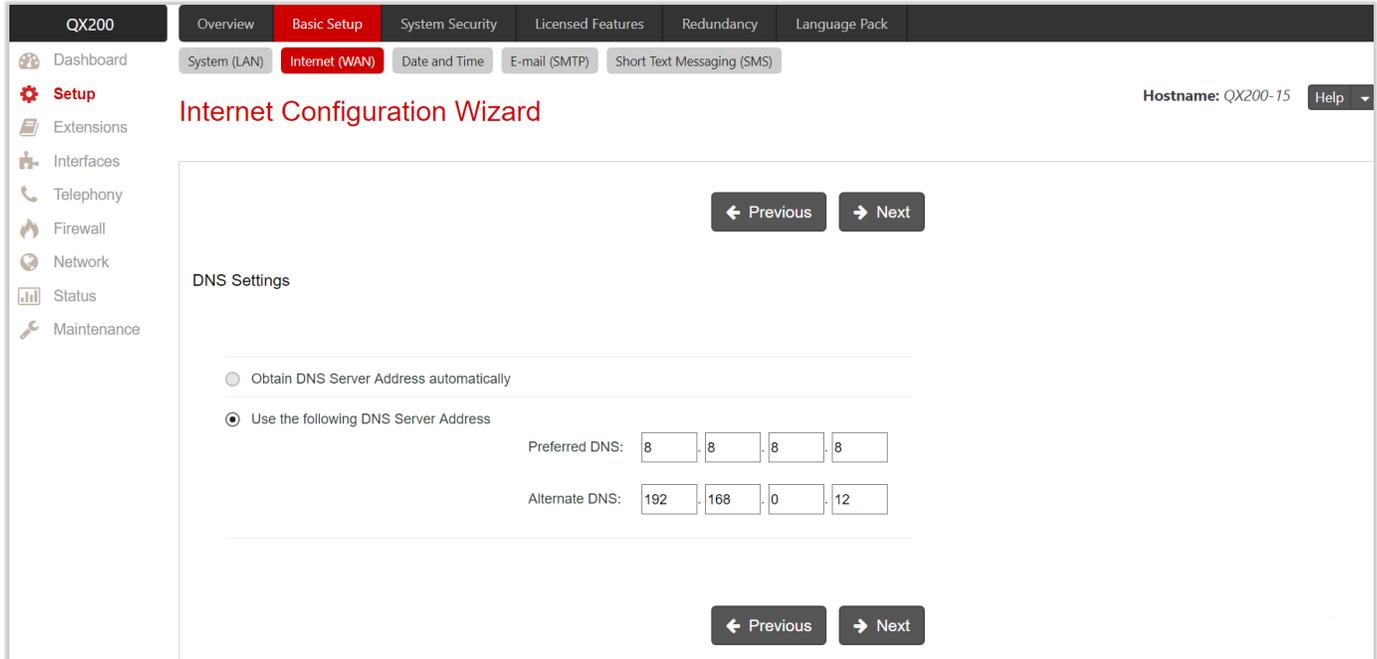


Figure 22: DNS Settings section

The **DNS Settings** section is used to configure the following settings (options):

- **Obtain DNS Server Address automatically** – if selected, QX will get the IP address of DNS server from local network or ISP automatically.
- **Use the following DNS Server Address** is used to manually assign a name server as follows:
 - **Preferred DNS** is used to set the IP address of name server.
 - **Alternate DNS** is used to set the IP address of the secondary name server that will be used if the main name server cannot be accessed.

Summary

This section displays all configured settings (options) before applying them.

Note:

- Finish the wizard and click "OK" to apply the changes made in all sections of the wizard. You must confirm the settings within **20** minutes. Otherwise the device will return back to the previous configuration and reboot.
- Internet Configuration Wizard is renamed to Uplink Configuration Wizard on QX2000 and QX3000.

5.3 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.

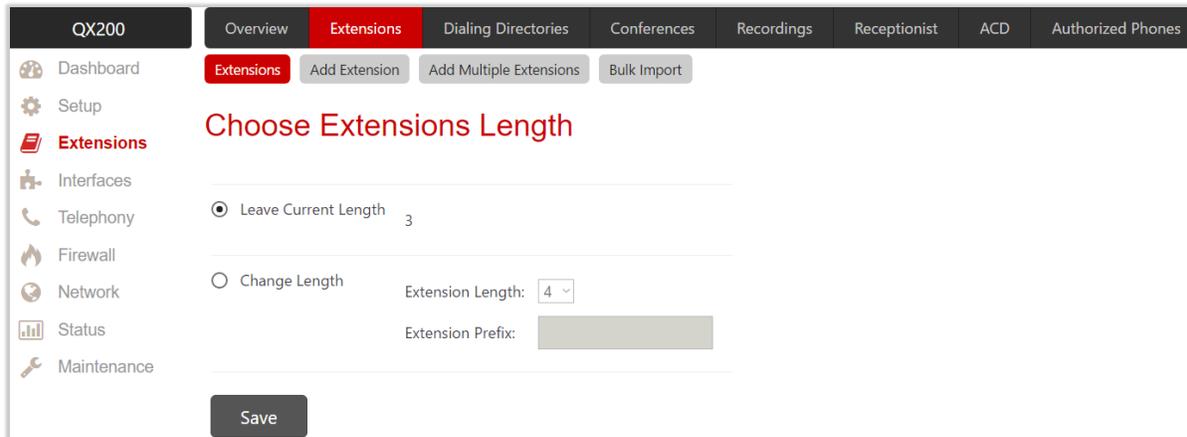


Figure 23: Choose Extensions Length page

The following options are available:

- **Leave Current Length** – by default, the extension length is **3** on QX20, QX50, QX200, QX500, QXISDN4+ and is **4** on the QX2000, QX3000 and QX5000. In front of this selection, the actual length of configured extensions is displayed.
- **Change Length** changes the length of extensions as follows:
 - **Extension Length** is used to select the length of extensions. It will be applied for all existing extensions on QX.
 - **Extension Prefix** is used to set 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:

- In case of saving the settings on the **Choose Extensions Length** page, all existing extensions will lose the custom voice messages and voice mails in the mailbox. The device will be rebooted. The **Choose Extensions Length** page will not appear again unless the default configuration settings are not restored on QX.
- QX20 is limited to **100**, QX50/QXISDN4+ to **200**, QX200 to **400**, QX500 to **800**, QX2000 to **2400**, QX3000 to **3400** and QX5000 to **5400** 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: **Auto Attendant**, **User Extension**, **Pickup Group**, **Call Park**, **Paging Group** and **Recording Box**.
2. Click **Save** to add the new extension to the **Extension Management** table.

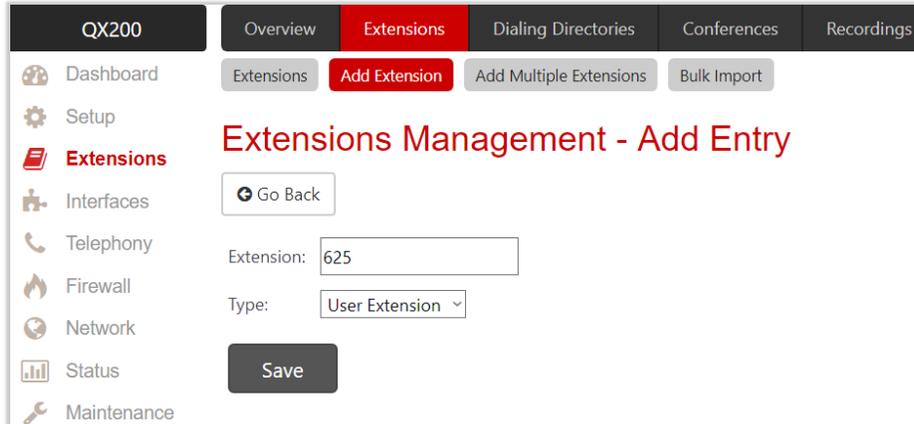


Figure 24: Extensions Management – Add Entry page

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

- **Active extensions** are those that are attached to the line (IP or FXS), can place and receive calls and use available telephony services.
- **Inactive extensions** are those that are not attached to the line (IP or FXS), cannot place and receive calls and use only part of telephony services.

Note:

- Manually 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.
- The **Recording Box** extension type becomes available if the **Call Recording** feature is activated on QX.

5.4 Configuring IP Phones

[Epygi supported IP phones](#) can be configured with QX using **Plug and Play (PnP)** or **Auto Configuration** services.

PnP Configuration

The PnP service allows the supported IP phones to be automatically configured when having a connection to QX and are in a factory default state.

To configure IP phones with QX using PnP service:

1. Go to the **Interfaces**→**IP Lines**→ **IP Lines Settings** page.
2. Check and configure (if needed) the following options:
 - The **Enable PnP for IP lines** option should be selected, to activate PnP service.
 - Select the interface from the **Configure IP phones from** drop-down list which will be used for PnP service. **TIP:** IP phones can be connected to QX via LAN, WAN or VLAN interface. The QX will provide a configuration file to the phones that are locally connected to the same network.
3. Click **Save** to apply the changes.
4. Connect IP phone from selected side and factory reset it to start PnP configuration.

Note:

- For Mitel (Aastra) phones, during the PnP process the phone will ask to choose the preferred extension. For other IP phones (or if there is no input from the user) the IP phone will acquire the extension that is attached to the first free IP Line.
- The PnP service will work only if there is at least one free IP line attached to extension.
- The PnP service will not work for IP phones that have already been configured on any other IP line.

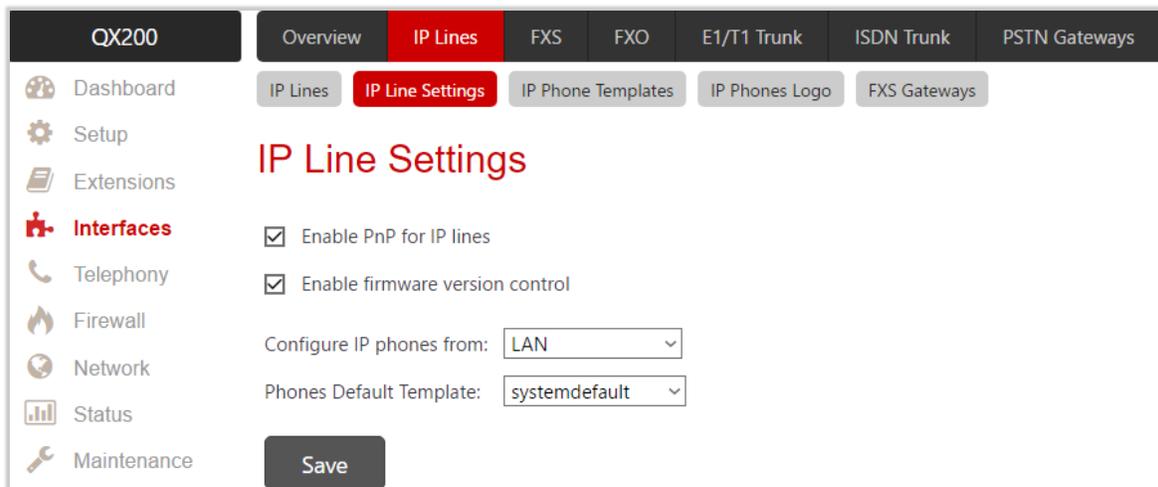


Figure 25: Enabling PnP option for QX IP lines

Auto Configuration

The **Auto Configuration** service simplifies the configuration procedure of the supported IP phones.

To configure IP phones with QX using **Auto Configuration** service:

1. Go to the **Interfaces**→**IP Lines** page.
2. Select a **free** IP line which is attached to extension.
3. Click on the **IP Line** hyperlink, the **IP Line Settings – IP Line#** page will be opened.
4. Select the **IP Phone** option to configure the line and choose the model of the IP phone from the **Phone Model** drop-down list.
 - Enter the **MAC Address** of the phone. **TIP:** MAC addresses of IP phones are usually printed on the back of the phone.
 - Set the number for intended simultaneous calls (the total number of active and held calls), in the **Line Appearance** field.
 - **Username** and **Password** are used to set the authentication parameters to register the IP phone on QX. By default, QX assigns unique username and password to each IP line. You may either keep these values or specify new ones. **TIP:** The **Username** and **Password** should match on both QX and IP phone for the successful registration.
 - **Transport** drop-down list is used to select the SIP transport – **UDP**, **TCP** or **TLS**. For **TLS** you may activate the **TLS certificate** update mechanism from IP Phone to obtain the latest certificate generated by QX.
5. Click **Save** to apply the changes.
6. Once the **IP line** is configured, connect the IP phone to QX and factory reset it to complete auto configuration.

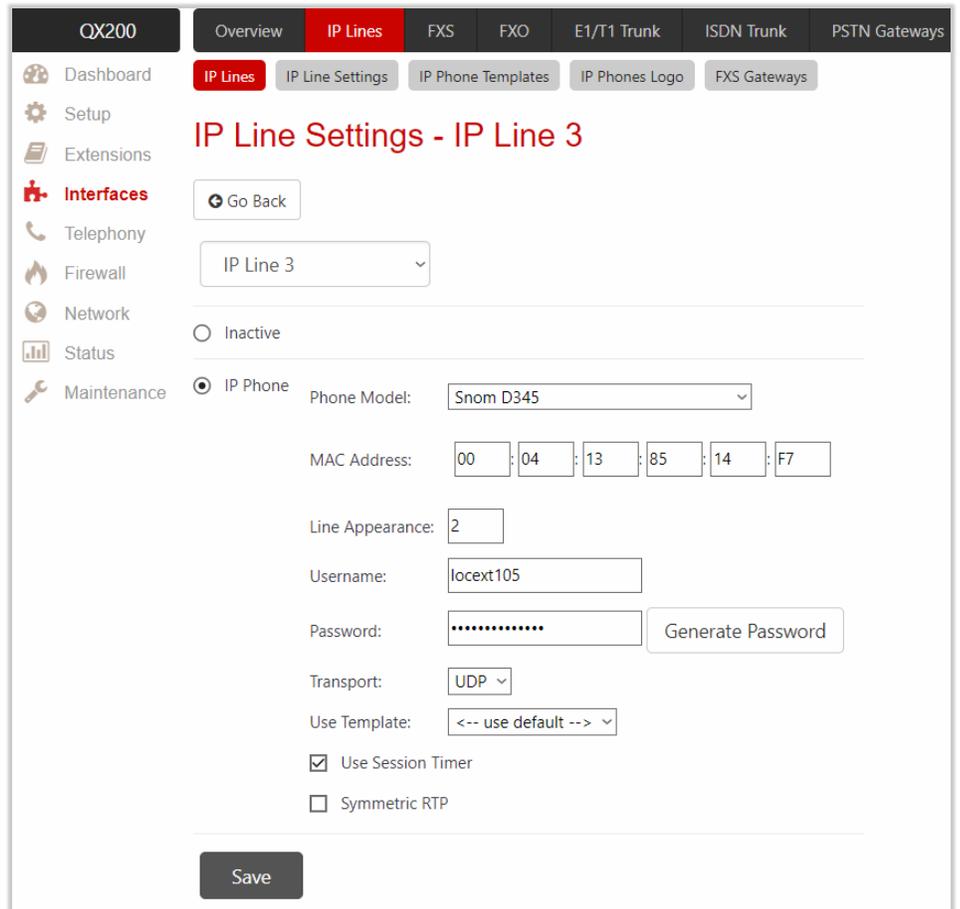


Figure 26: Configuring an IP Line on QX

Supported IP Phones

Below is the list of IP phones that are officially supported by Epygi and can be configured with the QX using Plug and Play (PnP) or Auto Configuration services.

Vendor	Model	SW/FW Version	PnP		Auto Configuration
			PnP (Multicast)	Assisted PnP (DHCP options 66/67)	
Akuvox	R15(P)	15.0.5.235	Yes	Yes	Yes
Akuvox	SP-R53(P)	53.0.6.115	Yes	Yes	Yes
Alcatel	IP2015 (IP15)	1.0.7A-0	No	No	Yes
Alcatel	Temporis IP100	1.0.6A-0	No	No	Yes
Alcatel	Temporis IP150	1.0.6A-0	No	No	Yes
Alcatel	Temporis IP200	13.60.0.89	Yes	Yes	Yes
Alcatel	Temporis IP300	1.0.7B-0	No	No	Yes
Alcatel	Temporis IP600	14.60.0.89	Yes	Yes	Yes
Alcatel	Temporis IP700G	1.0.7A-0	No	No	Yes
Alcatel	Temporis IP800	15.60.0.89	Yes	Yes	Yes
Alcatel	Lucent - 8058S	1.51.07	Yes	No	Yes
AudioCodes	310HD	1.6.0_build_37	No	No	Yes
AudioCodes	320HD	1.6.0_build_37	No	No	Yes
Cisco	CP-6851	11-1-1	No	No	Yes
Cisco	CP-7861	11-1-1	No	No	Yes
Cisco	CP-8851	11-1-1	No	No	Yes
Cisco	SPA303	7.4.9c	No	Yes	Yes
Cisco	SPA501G	7.4.9c	No	Yes	Yes
Cisco	SPA508G	7.5.2	No	Yes	Yes
Cisco	SPA509G	7.4.9c	No	Yes	Yes
Cisco	SPA525G2	7.4.9c	No	Yes	Yes
Fanvil	C58/C58P	2.3.233.129	No	No	Yes
Fanvil	C62/C62P	2.5.787.97	No	No	Yes
Fanvil	C400	14.0.0.3.r1	No	No	Yes
Fanvil	C600	14.0.0.3.r1	No	No	Yes
Fanvil	F52/F52P	2.3.123.78	Yes	Yes	Yes
Fanvil	H2/H2S	2.8.0.6251	Yes	Yes	Yes
Fanvil	H3	2.8.0.6251	Yes	Yes	Yes
Fanvil	H5	2.8.0.6251	Yes	Yes	Yes
Fanvil	X3/X3P	1.4.0.2016	Yes	Yes	Yes
Fanvil	X3S/X3G	2.8.0.6251	Yes	Yes	Yes
Fanvil	X4/X4G/X4S	2.8.0.6251	Yes	Yes	Yes
Fanvil	X5/X5G	1.4.0.2016	Yes	Yes	Yes
Fanvil	X5S	1.8.0	Yes	Yes	Yes
Fanvil	X6	1.8.0	Yes	Yes	Yes
Gigaset	Maxwell 3 PRO	82.2.22.7	Yes	Yes	Yes
Gigaset	N720 DM PRO	70.113.00.000.000	No	No	Yes
Grandstream	GXP1100	1.0.8.6	No	Yes	Yes
Grandstream	GXP1105	1.0.8.6	No	Yes	Yes

Vendor	Model	SW/FW Version	PnP		Auto Configuration
			PnP (Multicast)	Assisted PnP (DHCP options 66/67)	
Grandstream	GXP1160	1.0.8.6	No	Yes	Yes
Grandstream	GXP1165	1.0.8.6	No	Yes	Yes
Grandstream	GXP1400	1.0.8.6	No	Yes	Yes
Grandstream	GXP1405	1.0.8.6	No	Yes	Yes
Grandstream	GXP1450	1.0.8.6	No	Yes	Yes
Grandstream	GXP1615/1610	1.0.4.55	No	Yes	Yes
Grandstream	GXP1625/1620	1.0.4.55	No	Yes	Yes
Grandstream	GXP1628	1.0.4.55	No	Yes	Yes
Grandstream	GXP1630	1.0.4.55	No	Yes	Yes
Grandstream	GXP1760	1.0.0.48	No	No	Yes
Grandstream	GXP1782/1780	1.0.0.48	No	No	Yes
Grandstream	GXP2100	1.0.8.6	No	Yes	Yes
Grandstream	GXP2110	1.0.8.6	No	Yes	Yes
Grandstream	GXP2120	1.0.8.6	No	Yes	Yes
Grandstream	GXP2124	1.0.8.6	No	Yes	Yes
Grandstream	GXP2130	1.0.7.99	No	Yes	Yes
Grandstream	GXP2135	1.0.7.99	No	Yes	Yes
Grandstream	GXP2140	1.0.7.99	No	Yes	Yes
Grandstream	GXP2160	1.0.7.99	No	Yes	Yes
Grandstream	GXP2170	1.0.7.99	No	Yes	Yes
Grandstream	GXP2200	1.0.3.27	No	Yes	Yes
Grandstream	GXV3140	1.0.7.80	No	Yes	Yes
Grandstream	GXV3175	1.0.3.76	No	Yes	Yes
Grandstream	GXV3240	1.0.3.62	No	Yes	Yes
Grandstream	GXV3275	1.0.3.62	No	Yes	Yes
Htek	UC902	2.0.4.4.41	Yes	Yes	Yes
Htek	UC903	2.0.4.4.41	Yes	Yes	Yes
Htek	UC912E	2.0.4.4.41	Yes	Yes	Yes
Htek	UC912G	2.0.4.4.41	Yes	Yes	Yes
Htek	UC912P	2.0.4.4.41	Yes	Yes	Yes
Htek	UC923	2.0.4.4.41	Yes	Yes	Yes
Htek	UC924	2.0.4.4.41	Yes	Yes	Yes
Htek	UC924E	2.0.4.4.41	Yes	Yes	Yes
Htek	UC926	2.0.4.4.41	Yes	Yes	Yes
Htek	UC926E	2.0.4.4.41	Yes	Yes	Yes
iServ	8660 (8430/8630/8830)	03.55.0025	No	No	Yes
iServ	Escene ES282-PC	V1.1.0.10143324	No	No	Yes
iServ	U3S	V1.1.0.10143813	No	No	Yes
iServ	U6S	V1.1.0.10143813	No	No	Yes
Mitel (Aastra)	6730	3.3.1.4305-SIP	Yes	Yes	Yes
Mitel (Aastra)	6731	3.3.1.4305-SIP	Yes	Yes	Yes
Mitel (Aastra)	6735	3.3.1.8140-SIP	Yes	Yes	Yes
Mitel (Aastra)	6737	3.3.1.8140-SIP	Yes	Yes	Yes

Vendor	Model	SW/FW Version	PnP		Auto Configuration
			PnP (Multicast)	Assisted PnP (DHCP options 66/67)	
Mitel (Aastra)	6739	3.3.1.4305-SIP	Yes	Yes	Yes
Mitel (Aastra)	6753	3.3.1.4305-SIP	Yes	Yes	Yes
Mitel (Aastra)	6755	3.3.1.4305-SIP	Yes	Yes	Yes
Mitel (Aastra)	6757	3.3.1.4305-SIP	Yes	Yes	Yes
Mitel (Aastra)	9143	3.3.1.4305-SIP	Yes	Yes	Yes
Mitel (Aastra)	9480	3.3.1.4305-SIP	Yes	Yes	Yes
Mitel	6863	4.2.0.2023-SIP	Yes	Yes	Yes
Mitel	6865	4.2.0.2023-SIP	Yes	Yes	Yes
Mitel	6867	4.2.0.2023-SIP	Yes	Yes	Yes
Mitel	6869	4.2.0.2023-SIP	Yes	Yes	Yes
Panasonic	KX-HDV130	03.004	Yes	Yes	Yes
Panasonic	KX-HDV130NE, KX-HDV130X	06.101	Yes	Yes	Yes
Panasonic	KX-HDV230	03.004	Yes	Yes	Yes
Panasonic	KX-HDV230NE, KX-HDV230X	06.101	Yes	Yes	Yes
Panasonic	KX-TGP550T04	12.17	No	No	Yes
Panasonic	KX-UT123 (NE/RU/X)	01.302	No	No	Yes
Panasonic	KX-UT136 (NE/RU/X)	01.302	No	No	Yes
Polycom	SoundPoint IP 330	3.3.5.0247	No	Yes	Yes
Polycom	SoundPoint IP 331	4.0.13.1445	No	Yes	Yes
Polycom	SoundPoint IP 335	4.0.13.1445	No	Yes	Yes
Polycom	SoundPoint IP 450	4.0.13.1445	No	Yes	Yes
Polycom	SoundPoint IP 550	4.0.13.1445	No	Yes	Yes
Polycom	SoundPoint IP 650	4.0.13.1445	No	Yes	Yes
Polycom	SoundPoint IP 670	4.0.13.1445	No	Yes	Yes
Polycom	SoundStation IP 5000	4.0.13.1445	No	Yes	Yes
Polycom	SoundStation IP 6000	4.0.13.1445	No	Yes	Yes
Polycom	VX 150	6.1.1.2670	No	No	Yes
Polycom	VX 250	6.1.1.2670	No	No	Yes
Polycom	VX 300/310	5.7.0.14430	No	Yes	Yes
Polycom	VX 301/311	5.7.0.14430	No	No	Yes
Polycom	VX 350	6.1.1.2670	No	No	Yes
Polycom	VX 400/410	5.7.0.14430	No	No	Yes
Polycom	VX 401/411	5.7.0.14430	No	No	Yes
Polycom	VX 450	6.1.1.2670	No	No	Yes
Polycom	VX 500/501	5.7.0.14430	No	No	Yes
Polycom	VX 600/601	5.7.0.14430	No	Yes	Yes
Polycom	VX 1500	5.7.0.14430	No	Yes	Yes
QOSIP	Q7104/Q7204	1.0.3.98	No	No	Yes
snom	300	8.4.35	Yes	Yes	Yes
snom	320	8.4.35	Yes	Yes	Yes
snom	360	8.4.35	Yes	Yes	Yes

Vendor	Model	SW/FW Version	PnP		Auto Configuration
			PnP (Multicast)	Assisted PnP (DHCP options 66/67)	
snom	370	8.7.5.35	Yes	Yes	Yes
snom	720	8.9.3.60	Yes	Yes	Yes
snom	760	8.9.3.60	Yes	Yes	Yes
snom	821	8.7.5.35	Yes	Yes	Yes
snom	870	8.7.5.35	Yes	Yes	Yes
snom	D120	10.1.10.1	Yes	Yes	Yes
snom	D345	8.9.3.60	Yes	Yes	Yes
snom	D375	8.9.3.60	Yes	Yes	Yes
snom	D710/710	8.9.3.60	Yes	Yes	Yes
snom	D712	8.9.3.60	Yes	Yes	Yes
snom	D715/715	8.9.3.60	Yes	Yes	Yes
snom	D717	10.1.33.1	Yes	Yes	Yes
snom	D725	8.9.3.60	Yes	Yes	Yes
snom	D735	10.1.39.11	Yes	Yes	Yes
snom	D745	8.9.3.60	Yes	Yes	Yes
snom	D765	8.9.3.60	Yes	Yes	Yes
snom	D785	10.1.20.0	Yes	Yes	Yes
snom	M700 (M85/M65/M25)	03.24.0007	Yes	Yes	Yes
snom	m9	9.4.7	Yes	Yes	Yes
snom	MeetingPoint	8.7.5.35	Yes	Yes	Yes
Spectralink	KIRK Wireless Server 300	PCS14C_	No	No	Yes
Spectralink	KIRK Wireless Server 6000	PCS14C_	No	No	Yes
VTech	ErisStation VCS754	1.1.4.0-0	No	No	Yes
VTech	ErisTerminal VSP600 (VSP601)	1.1.4.1-0	No	No	Yes
VTech	ErisTerminal VSP715	1.1.4.0-0	No	No	Yes
VTech	ErisTerminal VSP725	1.1.4.0-0	No	No	Yes
VTech	ErisTerminal VSP726	2.0.3.2-0	Yes	Yes	Yes
VTech	ErisTerminal VSP735	1.1.4.0-0	No	No	Yes
VTech	ErisTerminal VSP736	2.0.3.2-0	Yes	Yes	Yes
Yealink	CP860	37.81.0.10	Yes	Yes	Yes
Yealink	CP920	78.84.0.15	Yes	Yes	Yes
Yealink	CP960	73.83.0.30	Yes	Yes	Yes
Yealink	SIP-T19P	31.72.0.1	Yes	Yes	Yes
Yealink	SIP-T19P E2	53.83.0.50	Yes	Yes	Yes
Yealink	SIP-T20P	9.72.0.1	Yes	Yes	Yes
Yealink	SIP-T21P	34.72.0.1	Yes	Yes	Yes
Yealink	SIP-T21P E2	52.83.0.50	Yes	Yes	Yes
Yealink	SIP-T22P	7.72.0.1	Yes	Yes	Yes
Yealink	SIP-T23G(P)	44.83.0.50	Yes	Yes	Yes
Yealink	SIP-T26P	6.72.0.1	Yes	Yes	Yes
Yealink	SIP-T27G	69.83.0.50	Yes	Yes	Yes

Vendor	Model	SW/FW Version	PnP		Auto Configuration
			PnP (Multicast)	Assisted PnP (DHCP options 66/67)	
Yealink	SIP-T27P	45.83.0.50	Yes	Yes	Yes
Yealink	SIP-T28P	2.72.0.1	Yes	Yes	Yes
Yealink	SIP-T29G	46.83.0.50	Yes	Yes	Yes
Yealink	SIP-T32G	32.70.0.130	Yes	Yes	Yes
Yealink	SIP-T38G	38.70.0.125	Yes	Yes	Yes
Yealink	SIP-T40G	76.83.0.50	Yes	Yes	Yes
Yealink	SIP-T40P	54.83.0.50	Yes	Yes	Yes
Yealink	SIP-T41P	36.83.0.50	Yes	Yes	Yes
Yealink	SIP-T41S	66.83.0.50	Yes	Yes	Yes
Yealink	SIP-T42G	29.83.0.50	Yes	Yes	Yes
Yealink	SIP-T42S	66.83.0.50	Yes	Yes	Yes
Yealink	SIP-T46G	28.83.0.50	Yes	Yes	Yes
Yealink	SIP-T46S	66.83.0.50	Yes	Yes	Yes
Yealink	SIP-T48G	35.83.0.50	Yes	Yes	Yes
Yealink	SIP-T48S	66.83.0.50	Yes	Yes	Yes
Yealink	SIP VP-T49G	51.80.0.100	Yes	Yes	Yes
Yealink	SIP-T52S	70.83.0.50	Yes	Yes	Yes
Yealink	SIP-T53/53W	95.84.0.30	Yes	Yes	Yes
Yealink	SIP-T54S	70.83.0.50	Yes	Yes	Yes
Yealink	SIP-T54W	96.84.0.30	Yes	Yes	Yes
Yealink	SIP-T56A	58.83.0.15	Yes	Yes	Yes
Yealink	SIP-T57W	97.84.0.30	Yes	Yes	Yes
Yealink	SIP-T58A/V	58.83.0.15	Yes	Yes	Yes
Yealink	VP-530	23.70.0.40	Yes	Yes	Yes
Yealink	W52P	25.30.0.20	Yes	Yes	Yes
Yealink	W60B	77.83.0.25	Yes	Yes	Yes

Table 4: Supported IP Phones

For more information how to configure and use IP phones with QX, refer to the [Configuring Epygi Supported IP Phones with QX IP PBXs](#) guide.

5.5 Changing Admin Passwords

For security reasons, it is recommended to change the default passwords for **admin**.

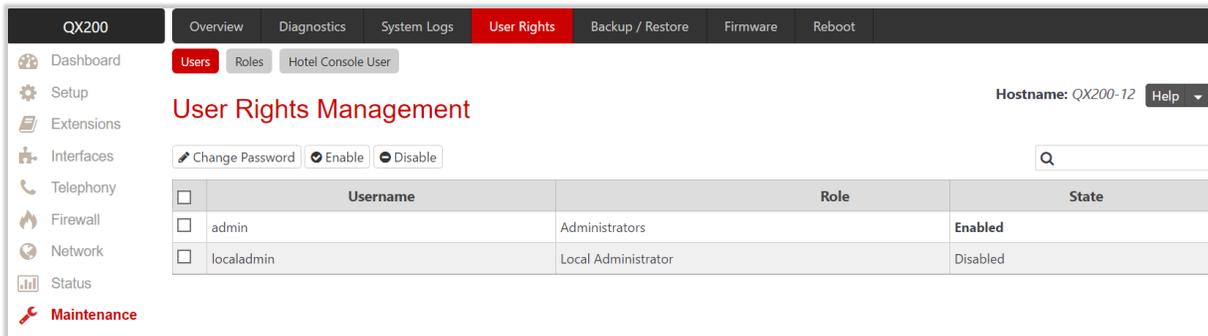


Figure 27: User Rights Management – Users page

To change the **GUI Access Password**:

1. Go to the **Maintenance**→**User Rights**→**Users** page.
2. Tick the checkbox next to the **admin** entry and click **Change Password**.
3. The **Change Password** page will be opened. Select **GUI Access Password** tab.
 - Enter the old password (by default – **19**)
 - Enter a new password and then re-enter it to confirm.
4. Click **Save** to change the password.

The **Phone Access Password** is used for authentication purposes (when connecting to 3PCC application using **admin** account) as well as for **Administrator Login** (***75**).

To change the **Phone Access Password**:

1. Tick the checkbox next to the **admin** entry and click **Change Password**.
2. The **Change Password** page will be opened. Select **Phone Access Password** tab.
 - Enter a new password and then re-enter it to confirm.
3. Click **Save** to change the password.

Note:

- 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 passwords safe, make sure you write it down in a safe place and don't share it with others.

5.6 Configuring NAT Traversal

Network Address Translation (NAT) is a technology most commonly used by firewalls and routers to allow multiple devices on a LAN with **private** IP addresses to share a single **public** IP address. One of the technical challenges to implementing a SIP based VoIP solution is making everything work when a firewall and/or NAT is deployed between devices exchanging data.

If QX is kept within a private network behind a NAT router or firewall, we recommend either using **STUN** or **Manual NAT Traversal**.

Note: STUN and Manual NAT Traversal services are working on QX WAN interface only.

To configure and use STUN on QX

1. Go to the **Telephony**→**NAT Traversal**→**General** page, select the **Automatic** option and click **Save** to apply changes.
2. Go to the **Telephony**→**NAT Traversal**→**SIP Parameters** page, select the **Use STUN** option and click **Save** to apply changes. **TIP:** Only SIP UDP transport is supported for STUN.
3. Go to the **Telephony**→**NAT Traversal**→**RTP Parameters** page, select the **Use STUN** option and click **Save** to apply changes.
4. Go to the **Telephony**→**NAT Traversal**→**STUN Parameters** page, configure **STUN Server** parameters, by default **Epygi STUN Server** (stun.epygi.com) is used.

Note: STUN is not a self-contained NAT traversal solution applicable in all NAT deployment scenarios and does not work correctly with all of them. STUN does work with three types of NAT: **Full Cone NAT**, **Restricted Cone NAT**, and **Port Restricted Cone NAT**. STUN doesn't work with **Symmetric NAT**.

To configure and use Manual NAT Traversal on QX

1. Go to the **Telephony**→**NAT Traversal**→**General** page, select the **Force** option and click **Save** to apply changes.
2. Go to the **Telephony**→**NAT Traversal**→**SIP Parameters** page, select the **Use Manual NAT Traversal** option. Set the IP address of NAT router into the **Mapped Host** field. For **Mapped Port**, set the corresponding port number of router. Configure the manual mappings for TCP and TLS, if needed. Click **Save** to apply changes.
3. Go to the **Telephony**→**NAT Traversal**→**RTP Parameters** page, select the **Use Manual NAT Traversal** option. Set the IP address of NAT router into the **Mapped Host** field. For **Mapped RTP/RTCP Port Range**, set the corresponding port range of router. Click **Save** to apply changes.
4. Set up port forwarding on the NAT router to forward SIP and RTP traffic to the QX.

Note: Manual NAT Traversal only works with Internet connections that have static IP addresses.

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

6 Troubleshooting

IP Phone Configuration

To make sure the IP phone is configured properly, do the following:

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

PSTN Calls

If the QX is connected to PSTN network via the E1/T1, FXO or ISDN interface, verify the functionality of PSTN calls:

1. Make an outbound PSTN call by dialing 9 + PSTN number or 0 + PSTN number.
2. Arrange to receive an incoming call. The incoming PSTN calls will be routed to the auto attendant by default, and the caller has to enter a valid extension number, e.g., 101, followed by the # sign to reach the connected IP/analog phone of the QX.

SIP Calls

Dial **88888#** and you will hear a voice message that confirms you have successfully established an IP call. If this call is not successful, check that the network cables are connected properly.

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

To start diagnostics, go to the **Maintenance→Diagnostics** page and click **Start Network Diagnostics**. If diagnostics is successful, but you are still unable to place a call to **88888#**, then check the SIP registration status by going to **Status→System Status→SIP Registration Status** page. The **Detected Connection Type** is shown, along with SIP registration information for the auto attendant and each connected extension.

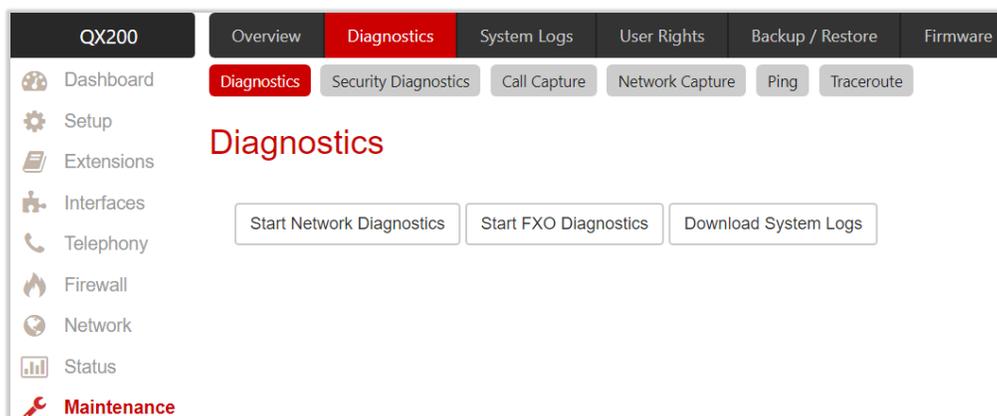


Figure 28: Diagnostics – Start Network Diagnostics page

If QX is placed behind a NAT router and STUN is enabled, the detected connection type and the IP address of this router's WAN port are displayed.

QX cannot work behind a NAT 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 place QX ahead of the router, or configure [Manual NAT Traversal](#). If you are still having issues, contact [Epygi Technical Support](#).

7 Registering on Epygi Support Portal

It is recommended to register your QX on **Epygi Technical Support Center**. Registration with a QX valid serial number will give you access to [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.



Figure 29: Register Your Device in Technical Support Center page

To register your device:

1. Go to **Register Your Device in Technical Support Center** page, which will appear when administrating the QX first time.
2. Fill out and complete the registration form (Figure 30):
 - Provide the serial number of your QX (located on a label on the bottom of QX), as well as the purchase date.
 - Fill out 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, send an e-mail to 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/QX. 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:*	
Email:*	
Phone Number:*	
Password:*	
Password (repeat):*	

Registration

Username:*	
Required for Forum and SIP	

Location

Country:*	- Select - ▼
City:*	
ZIP:	
Address:	

User Type

User Status:*	Customer ▼
Please select the type of Epygi user that best describes your relationship	
Company:	
Serial Number:	
If your serial number will be valid, your user status will be higher	

Usage Terms

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

Check this box to release the "Register" button: 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

reCAPTCHA
Privacy - Terms

[Register](#)

Figure 30: Account Registration form

8 Registering on Epygi SIP Server

Epygi maintains a SIP Server that can be used to call between QX devices. From SIP enabled QX devices you can make phone calls to other people owning such devices over the Internet (or local network)

Calls to subscribed SIP addresses on Epygi 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 Epygi Server.



Figure 31: E pygi's SIP Server

How it works: To subscribe SIP addresses at Epygi Server you need to be the owner of one (or more) of our devices. After registering them in **Epygi Technical Support Center** 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.

Log in to the Epygi SIP Server at sip.epygi.com. Use the same **username** and **password** you used to access Epygi Support Portal.

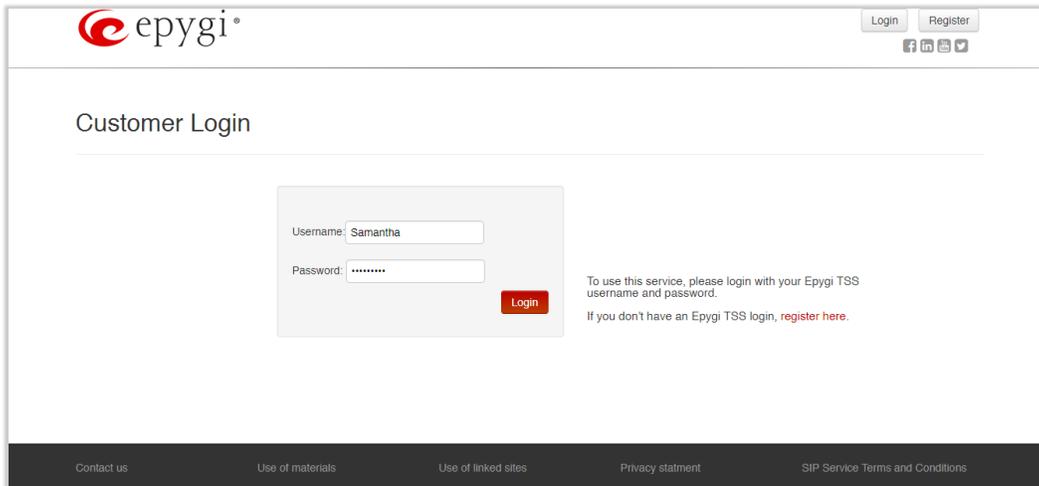


Figure 32: Customer Login page

The **Extension Number** is the eight-digit SIP number assigned to your extension. The first five digits are fixed by the SIP Server and cannot be changed, while the last three digits are configurable.

To add a new **extension**:

1. Click the + (Add new extension).
2. The **Add Record** window will be opened.
 - Enter the user information for registering a new extension on SIP Server.
 - Click **Submit** to create a new extension.

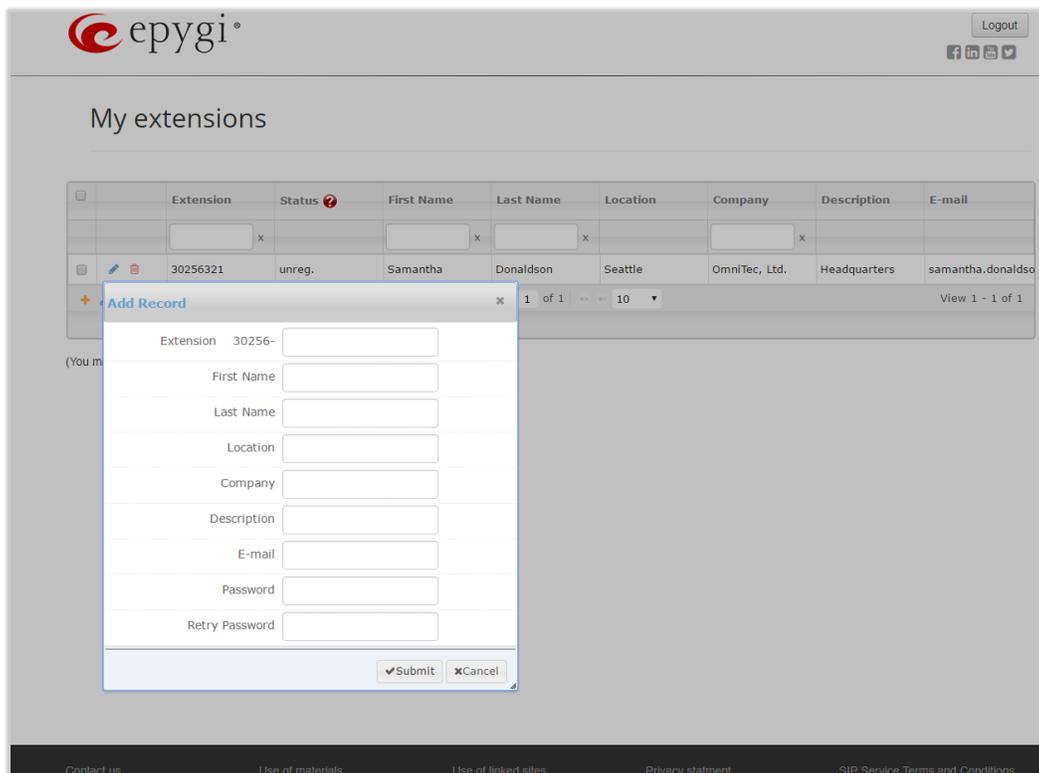


Figure 33: Add New Extension page

The **My extensions** 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.

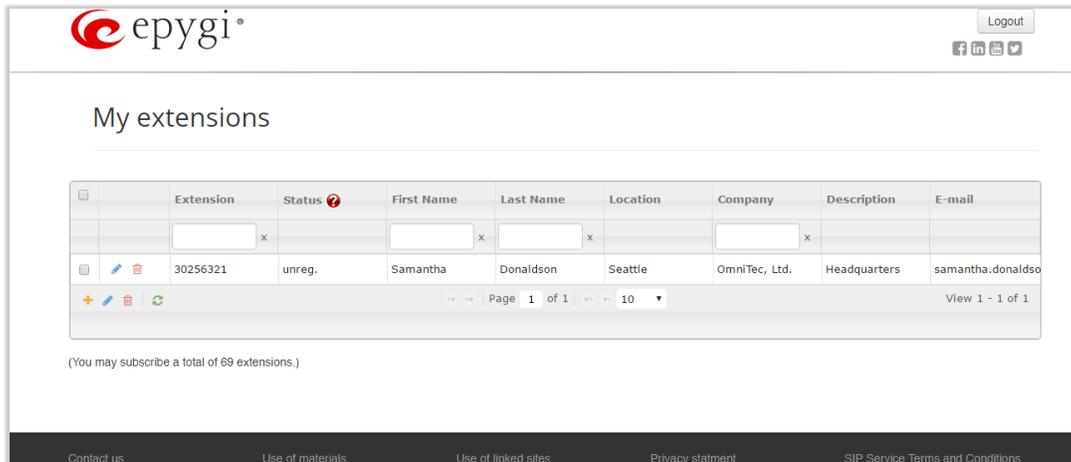


Figure 34: My extension page

9 References

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

- Manual-II: Administration Guide for QX IP PBXs
- Manual-III: User Guide for QX IP PBXs
- System Capacity of QX IP PBXs
- Configuring Epygi Supported IP Phones

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

10 Software License Agreement

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