

## Overview

This document will guide you through the installation and uninstallation process of the NetBorder Express Gateway on Windows and Linux.

NetBorder Express supports the following Operating Systems:

- Windows XP 32-bits
- Windows 2003 32-bits
- Windows 7 32-bits/64-bits
- Windows 2008 32-bits/64-bits
- Linux CentOS 5.5 distribution 32-bits

**WARNING:** Remove any Sangoma device drivers software and hardware before proceeding with the installation. The Gateway has been validated with a given version of the Sangoma device drivers that is packaged with the software.

## Windows Installation

You will find detailed instructions on how to obtain the NetBorder Express software and license in the *Quick\_Start\_Guide\_for\_Windows.pdf* file provided in the installation package.

1. To begin the installation, run the setup executable file appropriate for your host operating system.

- ***NetborderExpressGateway\_Setup\_X.Y.Z\_winAA /Options***

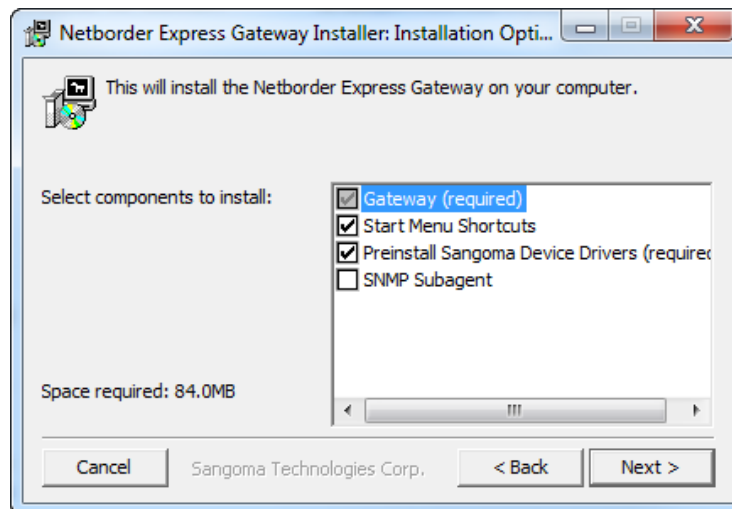
Where **X** is a major revision number, **Y** and **Z** are minor revision numbers, **AA** is either 32 or 64 depending on the operating system of the system. The command line options are:

- **"/h"**: Display usage
- **"/S"**: Perform the installation without any prompting
- **"/U"**: Perform the update without any prompting
- **"/D=Windows\_Style\_Installation\_Folder"**: Specify an installation folder.

Return codes

- 0-99: Installer return codes
- 100-199: Import return codes
- 200-299: Export return codes
- 0: normal
- 1: user aborted installation (should never see this during silent install)
- 2: aborted by script (installation failure)
- 3: gateway is already installed (update option not passed)
- 4: installer version is more then one major version from the installed version
- 5: installed version is newer then the installer version
- 6: could not retrieved installed version (missing registry key)
- 7: failed to uninstalled currently installed version.
- 100: import application failure
- 101: update succeeded, but some things require your attention

- 102: invalid configuration archive file format
  - 103: export information is missing from configuration archive
  - 104: configuration comes from a different platform
  - 105: version of the configuration greater then the currently installed application version
  - 106: application currently installed version is more then one major version from the configuration being imported
  - 107: brand is not matching
  - 108: sub brand is not matching
  - 200: export application failure
2. After accepting the license agreement on the initial screen. You will be presented with the following screen to select the components you wish to install.



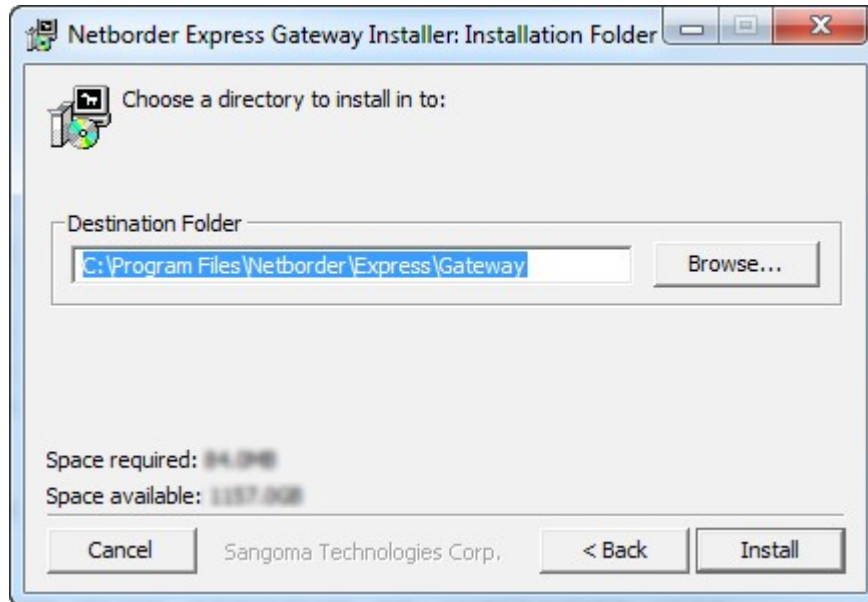
To install Start Menu shortcuts (recommended), leave this option pre-selected. Start Menu shortcuts provide you with quick access to the documentation, the Gateway Manager, logging information and configuration files.

If you would like to enable SNMP on the gateway, you must select the SNMP Subagent option.

Please refer to the *SNMP\_User\_Guide.pdf* located in **\$INSTALLDIR/doc** for more information on SNMP.

**N**ote: **\$INSTALLDIR** refers to the following path in Linux: **"/opt/Netborder/Express/Gateway"** and in Windows: **"C:\Program Files\Netborder\Express\Gateway"**

3. The following screen in the installation process will set the home directory location

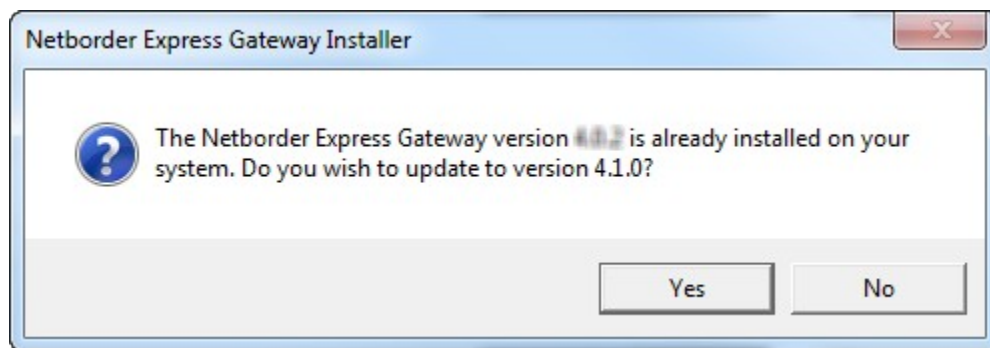


4. Once you have selected the directory location, click **Install** to complete the installation process.
5. Once the installation is completed, restart the server.
6. After Windows starts, your web browser will open automatically to <http://127.0.0.1:7783> to run the Quick Setup Wizard detailed on page 11.

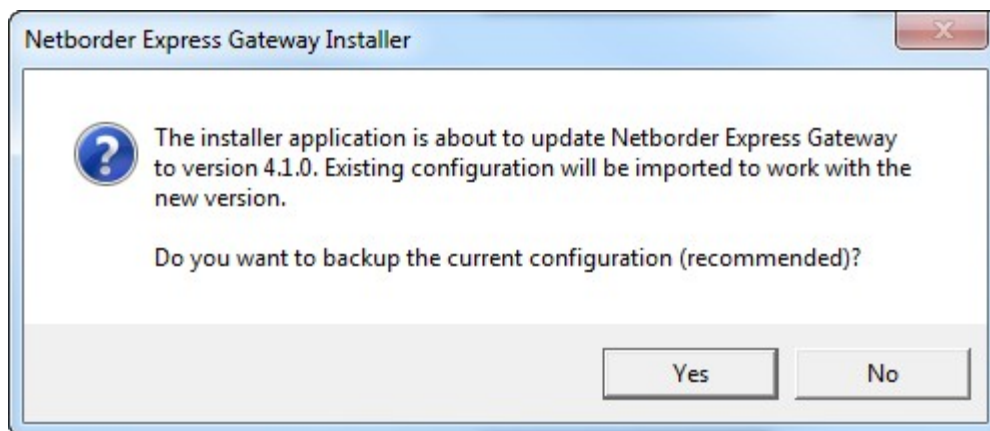
## Upgrade for Windows

Introduced in version 4.1, the smart update feature enables any version of NetBorder Express above 3.0 to be updated without any uninstallation/reinstallation.

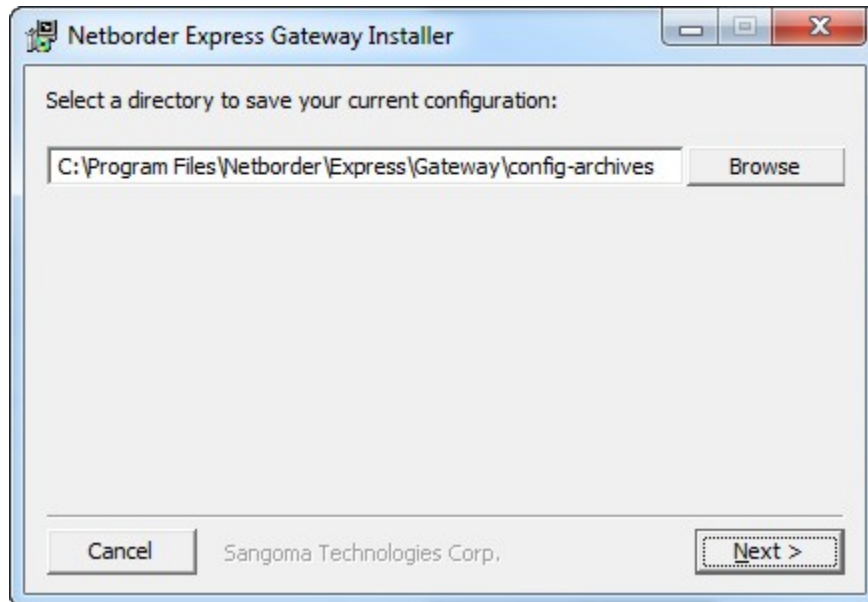
1. The installer will detect a previous version of NetBorder Express is installed on the system and request a confirmation to proceed with the update.



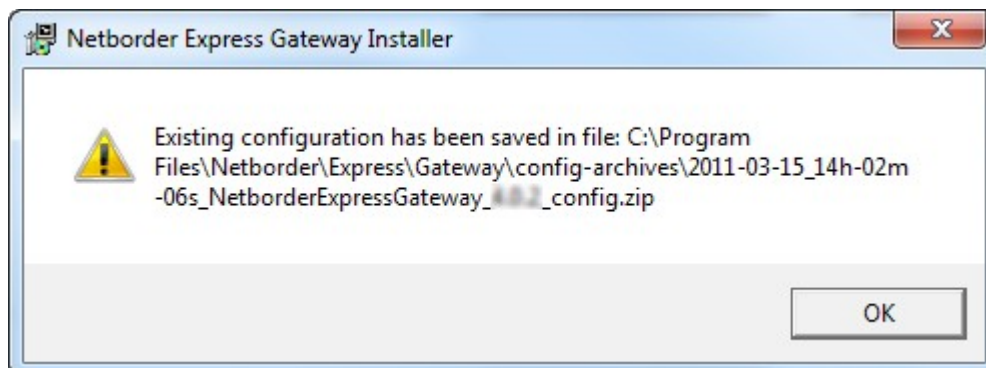
2. The installer will then ask you whether you want to backup the configuration. Select "Yes".



3. Enter the location where the configuration backup will be saved.



4. A message box will display the location of the saved configuration



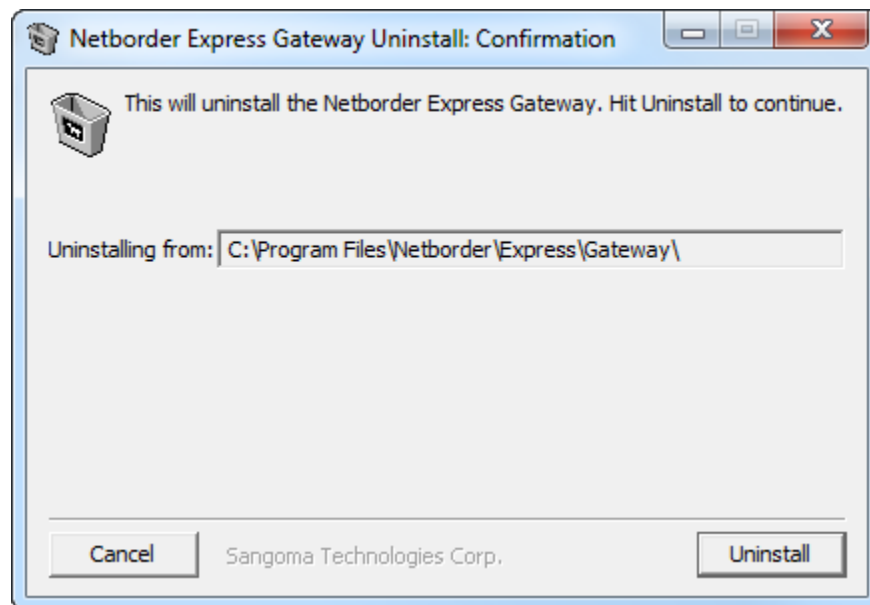
5. The installation will proceed and automatically uninstall the previous version of NetBorder Express and install the new version.

## Uninstall for Windows

1. Uninstall the Gateway software by launching the Gateway uninstaller from the Start Menu:

**Start > Programs > NetBorder Express Gateway > Uninstall.**

The following window appears.



2. Click **Uninstall**

3. Click **Yes** to remove the Sangoma device drivers when the uninstaller will ask if you want to uninstall the device drivers.

4. The Gateway software is removed from your system

### **Uninstaller command line options:**

- **"/S"**: Perform the uninstallation without any prompting.
- **"\_?=Gateway\_installation\_directory"**: Stops the uninstaller from copying itself to a temporary directory.

**Note:** **\_?** must be the last parameter used in the command line and must not contain any quotes.

## Linux Installation

You will find detailed instructions on how to obtain the NetBorder Express software and license in the *Quick\_Start\_Guide\_for\_Linux.pdf* file provided in the installation package.

The Linux gateway installer is packaged in an RPM file. There are two RPM file packages that can be used to install Netborder Express software.

- The first RPM file, named **netborder-gateway-<version>-<release>.i386.rpm** installs the gateway files and also compiles and installs the Sangoma drivers for the telephony boards on the system. The **<version>** and **<release>** tags are replaced with Netborder Express product version and product release number. Installation of this RPM package requires the following RPM packages to be installed first: ***kernel-devel, ncurses-devel, libtermcap-devel, bison, libtool, flex, gcc-c++, automake, autoconf, imake, rpmlib and netsnmp.***
- The second RPM file named **netborder-gateway-light-<version>-<release>.i386.rpm** installs only the gateway files (without compiling or installing the Sangoma drivers for telephony boards). The **<version>** and **<release>** tags are replaced with Netborder Express product version and product release number. This light version of the Netborder Express gateway linux installer requires the following RPM packages to be installed: ***wanpipe-<kernel\_version>-<wanpipe\_version>.rpm, rpmlib and netsnmp.*** The ***wanpipe-<kernel\_version>-<wanpipe\_version>.rpm*** package is an Rpm package that installs the Sangoma drivers for telephony boards. More information on how to generate and install this package can be found in the document named *Driver\_RPM\_Generation\_Guide.pdf*.

The RPM installation package is supported on Centos 5.x. All listed above required rpm packages (except for wanpipe-<kernel\_version>-<wanpipe\_version>.rpm package) can be obtained by running the command “**yum install <package\_name>**” on a linux Centos 5.x. System connected to the internet. The **<package\_name>** tag has to be replaced with the name of the package to install.

Note that the linux system **MUST** also have **/bin/sh** installed.

### Installation:

```
$ rpm -ihv --prefix=<dir> netborder-gateway-<version>-<release>.i386.rpm
```

or, if you are using the light version of Netborder Express linux installer, use:

```
$ rpm -ihv --prefix=<dir> netborder-gateway-light-<version>-<release>.i386.rpm
```

- The default installation directory is **/opt/Netborder/Express/Gateway** which can be overridden by the **--prefix=<dir>** option.
- Once the installation is completed and the system is restarted, proceed to the Web Manager located on **http://<server IP>:7783** to complete the Quick Setup Wizard detailed on page 11.



**Upgrade (version 4.1+):**

```
$ rpm -U netborder-gateway-<version>-<release>.i386.rpm
```

or, if you've installed Netborder Express using the light version linux installer, use the following to upgrade:

```
$ rpm -U netborder-gateway-light-<version>-<release>.i386.rpm
```

- Version 4.1 introduces the smart update feature that automatically updates the configuration files for version 4.1+ of the software.
- Your configuration files will be backed up in the **/opt/Netborder/Express/Gateway/config-archives** folder.
- The previous version will be uninstalled and the new version will be installed automatically.

**Uninstallation:**

```
$ rpm -e netborder-gateway
```

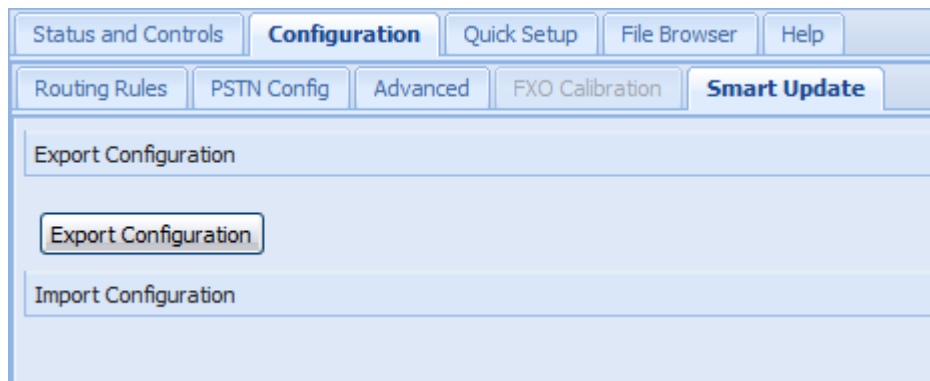
or, if you've installed Netborder Express using the light version linux installer, use the following to uninstall:

```
$ rpm -e netborder-gateway-light
```

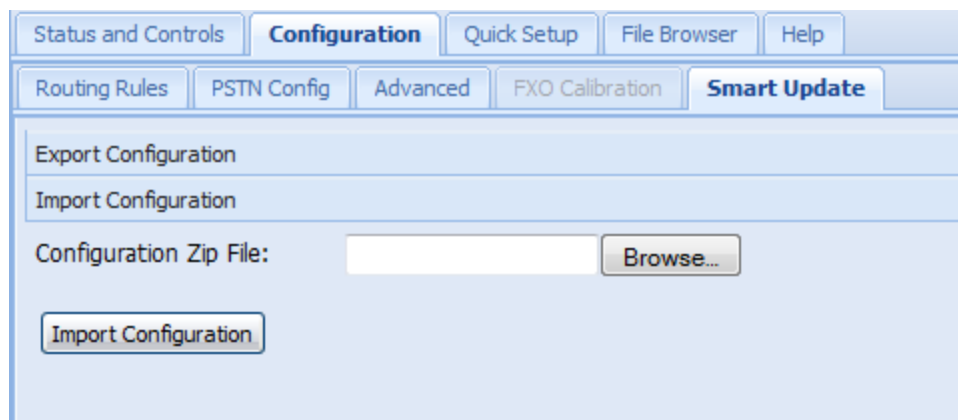
## Configuration Import/Export

It is possible to export your configuration settings to a zip file to import back into the gateway. The export and import functionality can be accessed through the Gateway Manager under the “**Configuration /Smart Update**” tab.

To export, click the export button and select the destination folder for the zip archive.

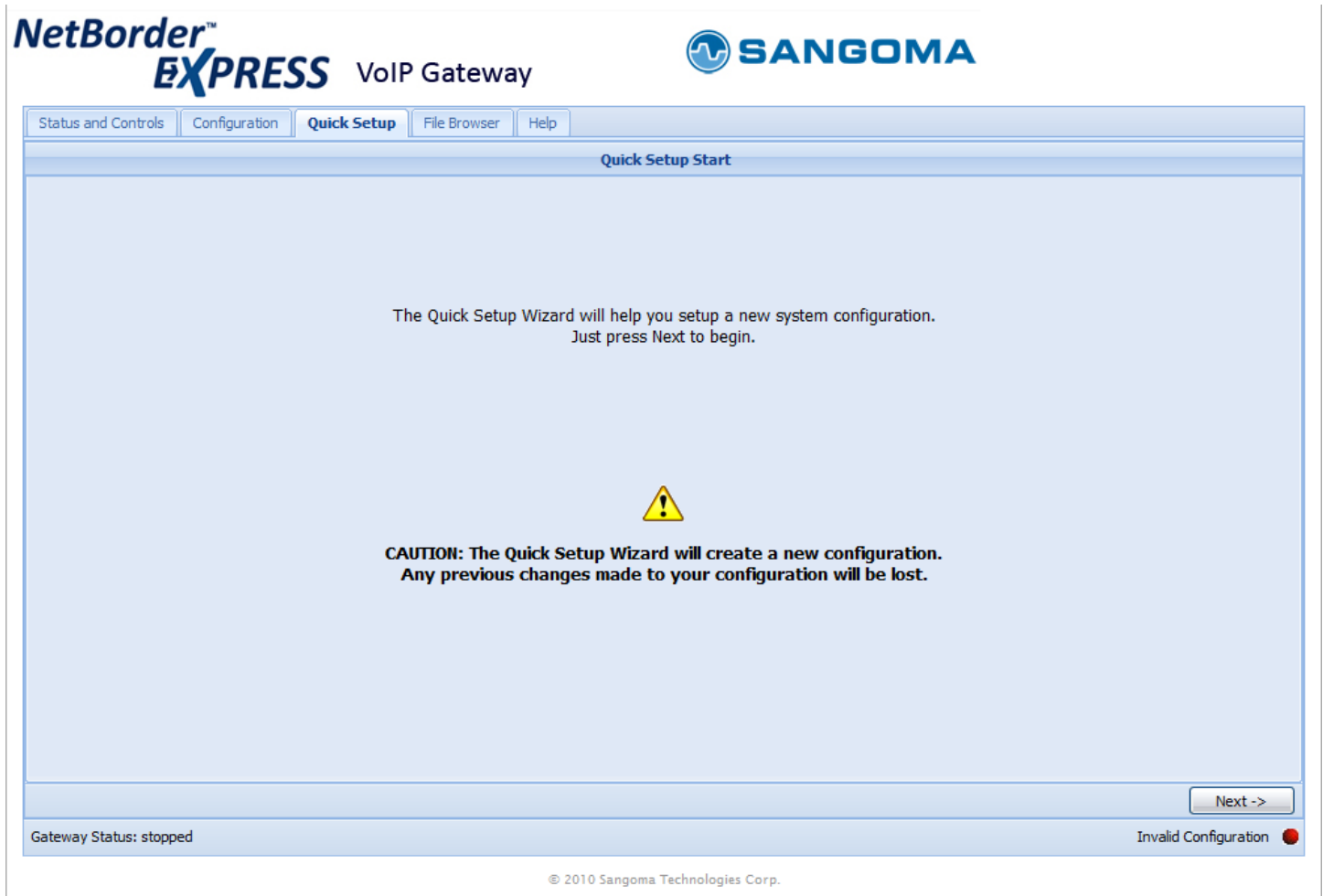


To import, browse to the location of the zip archive containing the exported configuration setting and click the import button.



## Quick Setup Wizard

Once the installation is completed, you need to run the Quick Setup Wizard from the Web Manager User Interface to configure the gateway. Here is a screenshot of the initial screen of the wizard located under the “Quick Setup” Tab.

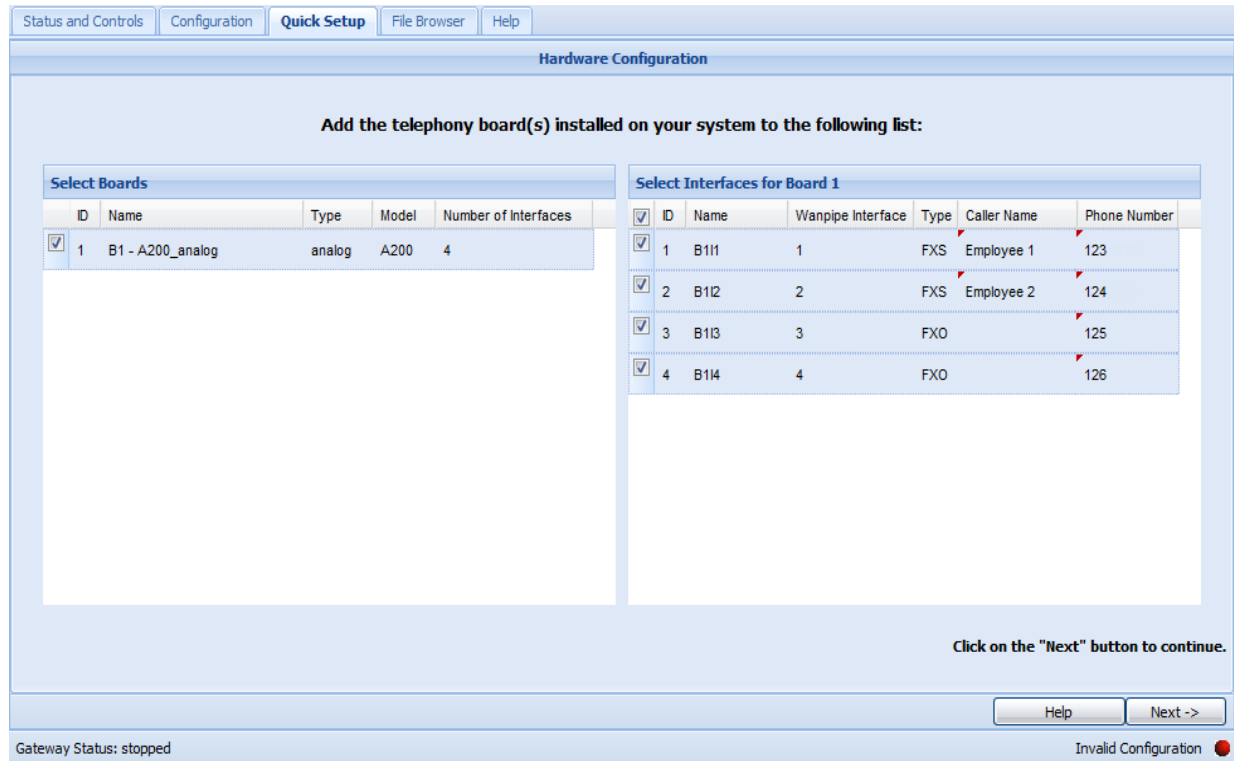


The second screen of the wizard is the hardware configuration page. This document will show you screenshots for the following hardware configurations:

- Analog Card with 2 FXO and 2 FXS channels.
- Digital Card with T1, E1, MFC/R2 and J1 PRI ports.
- Digital Card with BRI ports.

## Analog Card - 4 FXO/FXS ports

The screenshot below shows an example of an A200 telephony board with 2 FXO and 2 FXS modules.



**Hardware Configuration**

Add the telephony board(s) installed on your system to the following list:

Select Boards					
ID	Name	Type	Model	Number of Interfaces	
<input checked="" type="checkbox"/>	1	B1 - A200_analog	analog	A200	4

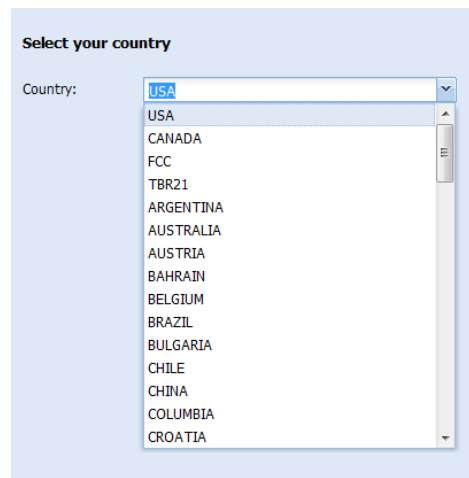
Select Interfaces for Board 1						
<input checked="" type="checkbox"/>	ID	Name	Wanpipe Interface	Type	Caller Name	Phone Number
<input checked="" type="checkbox"/>	1	B1I1	1	FXS	Employee 1	123
<input checked="" type="checkbox"/>	2	B1I2	2	FXS	Employee 2	124
<input checked="" type="checkbox"/>	3	B1I3	3	FXO		125
<input checked="" type="checkbox"/>	4	B1I4	4	FXO		126

Click on the "Next" button to continue.

Gateway Status: stopped

Invalid Configuration

- For FXS ports, it is mandatory to enter the Caller Name and Phone number.
- For FXO ports, it is only mandatory to enter the Phone Number.
- The following screen asks you to select the country where the gateway is installed to load the tone specific information.



**Select your country**

Country:

- USA
- CANADA
- FCC
- TBR21
- ARGENTINA
- AUSTRALIA
- AUSTRIA
- BAHRAIN
- BELGIUM
- BRAZIL
- BULGARIA
- CHILE
- CHINA
- COLUMBIA
- CROATIA

## Digital Card - 2 PRI ports

Status and Controls Configuration **Quick Setup** File Browser Help

**Hardware Configuration**

Add the telephony board(s) installed on your system to the following list:

Select Boards					
ID	Name	Type	Model	Number of Interfaces	
<input checked="" type="checkbox"/>	1	B1 - A102_digital	digital	A102	2

Select Interfaces for Board 1			
<input checked="" type="checkbox"/>	ID	Name	Wanpipe
<input checked="" type="checkbox"/>	1	B1I1	1
<input checked="" type="checkbox"/>	2	B1I2	2

Click on the "Next" button to continue.

Help Next ->

Gateway Status: stopped Invalid Configuration

- The following screen asks you to select the country where the gateway is installed to load the tone specific information.
- After you selected the country, you will see the PSTN digital configuration screen.

## T1 Configuration

**Select the PSTN digital configuration**

**Interface Type**

☒ T1 ☐ E1 ☐ J1

**Framing Type**

☒ ESF ☐ D4

**Encoding Type**

☒ B8ZS ☐ AMI

**ISDN Switch Variant**

☐ 4ESS ☒ Lucent 5ESS ☐ Nortel DMS100 ☐ National ISDN 2 (NI2)

## E1 Configuration

**Select the PSTN digital configuration**

**Interface Type**

☐ T1    ☒ E1    ☐ J1

**Signaling Type**

☒ CCS (PRI ISDN)    ☐ CAS (MFC/R2)

**Framing Type**

☒ CRC4    ☐ NON CRC4

**Encoding Type**

☒ HDB3    ☐ AMI

**ISDN Switch Variant**

☒ NET5 (ETSI, EuroISDN)

## MFC/R2 Configuration

**Select the PSTN digital configuration**

**Interface Type**

☐ T1    ☒ E1    ☐ J1

**Signaling Type**

☐ CCS (PRI ISDN)    ☒ CAS (MFC/R2)

**Framing Type**

☐ CRC4    ☒ NON CRC4

**Encoding Type**

☒ HDB3    ☐ AMI

**CAS (MFC/R2) Variant**

Country:

## J1 Configuration

**Select the PSTN digital configuration**

**Interface Type**

☐ T1
 ☒ E1
 ☐ J1

**Signaling Type**

☐ CCS (PRI ISDN)
 ☒ CAS (MFC/R2)

**Framing Type**

☐ CRC4
 ☒ NON CRC4

**Encoding Type**

☒ HDB3
 ☐ AMI

**CAS (MFC/R2) Variant**

Country:

## Digital Card - 4 BRI ports

Status and Controls | Configuration | **Quick Setup** | File Browser | Help

**Hardware Configuration**

Add the telephony board(s) installed on your system to the following list:


**Select Boards**

ID	Name	Type	Model	Number of Interfaces
<input checked="" type="checkbox"/>	1 B1 - A500_digital	digital	A500	4

**Select Interfaces for Board 1**

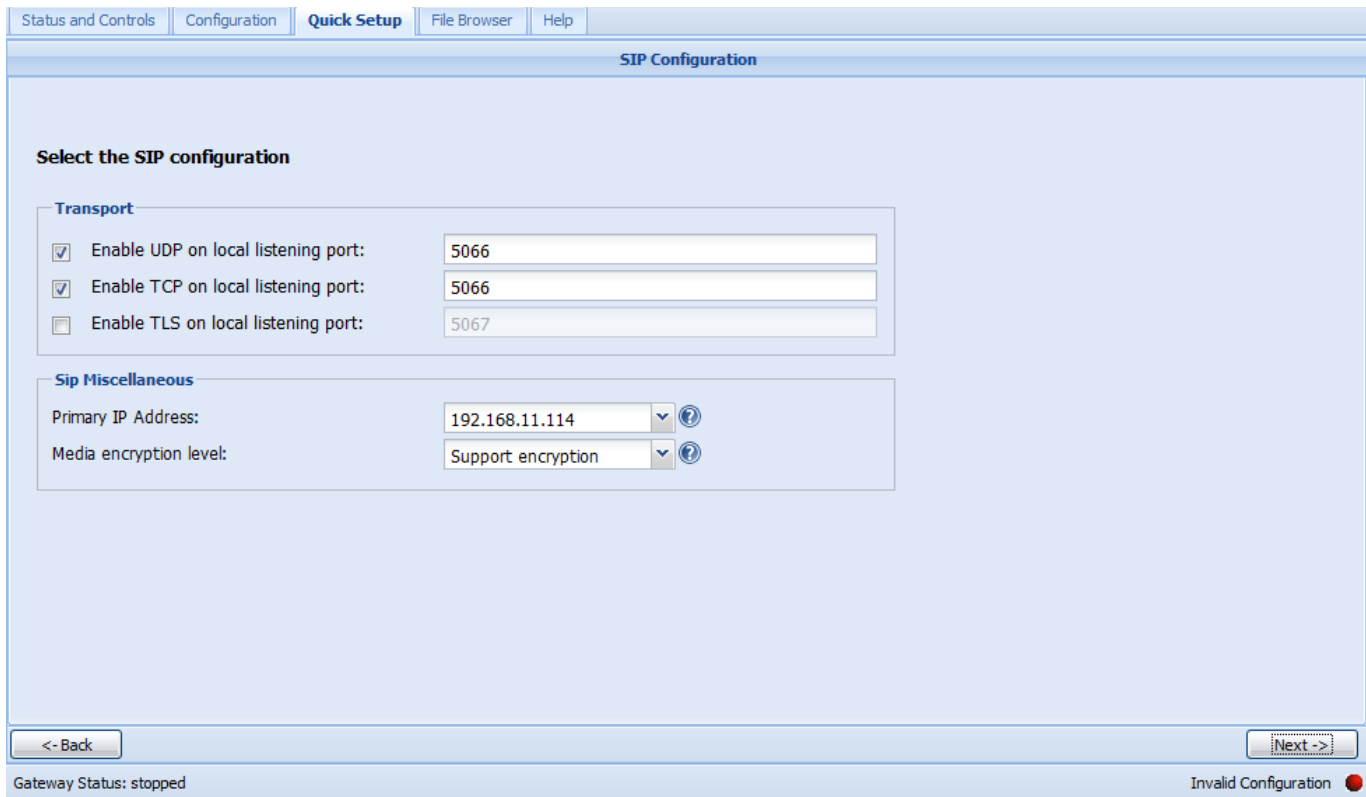
ID	Name	Wanpipe
<input checked="" type="checkbox"/>	1 B1I1	1
<input checked="" type="checkbox"/>	2 B1I2	2
<input checked="" type="checkbox"/>	3 B1I3	3
<input checked="" type="checkbox"/>	4 B1I4	4

Click on the "Next" button to continue.

Gateway Status: stopped Invalid Configuration 

## SIP configuration

Once the hardware configuration is complete, you will proceed to the SIP configuration screen.



The screenshot shows the 'SIP Configuration' window with a navigation bar at the top containing 'Status and Controls', 'Configuration', 'Quick Setup' (highlighted), 'File Browser', and 'Help'. The main title is 'SIP Configuration'. Below it, the section 'Select the SIP configuration' is visible. Under the 'Transport' sub-section, there are three rows: 'Enable UDP on local listening port:' with a checked checkbox and a text field containing '5066'; 'Enable TCP on local listening port:' with a checked checkbox and a text field containing '5066'; and 'Enable TLS on local listening port:' with an unchecked checkbox and a text field containing '5067'. Under the 'Sip Miscellaneous' sub-section, there are two rows: 'Primary IP Address:' with a dropdown menu showing '192.168.11.114' and a blue help icon; and 'Media encryption level:' with a dropdown menu showing 'Support encryption' and a blue help icon. At the bottom left is a '<- Back' button, and at the bottom right is a 'Next ->' button. The status bar at the very bottom shows 'Gateway Status: stopped' on the left and 'Invalid Configuration' with a red circle icon on the right.

You will need to define :

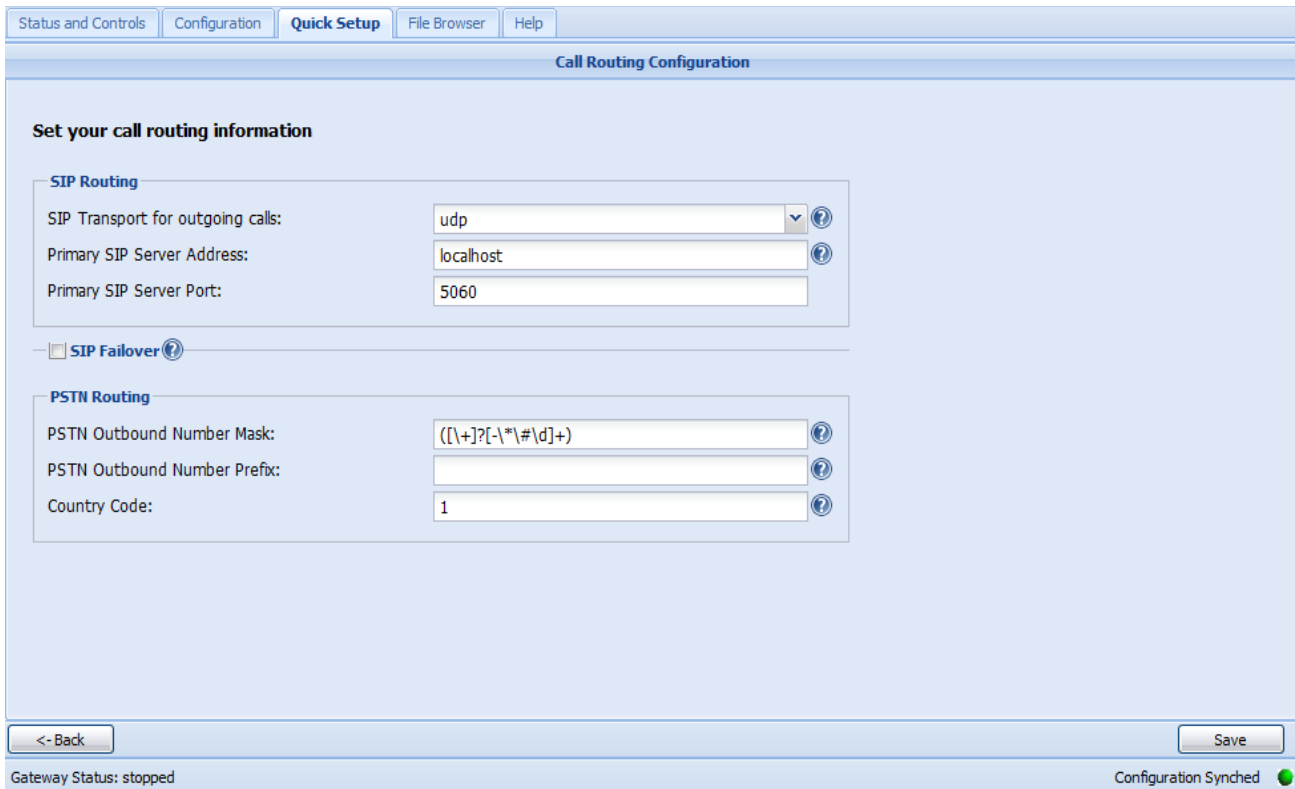
- The UDP, TCP and TLS listening ports
- The primary IP address for the media gateway
- The level of media encryption support.

The input fields labelled with the blue interrogation mark icons contain helpful information. Please click on the icon to display the documentation.



## Routing-rule configuration

This screen will enable you to configure the primary default routing-rule for incoming PSTN calls to SIP and the incoming SIP calls to PSTN .



For the SIP Routing configuration:

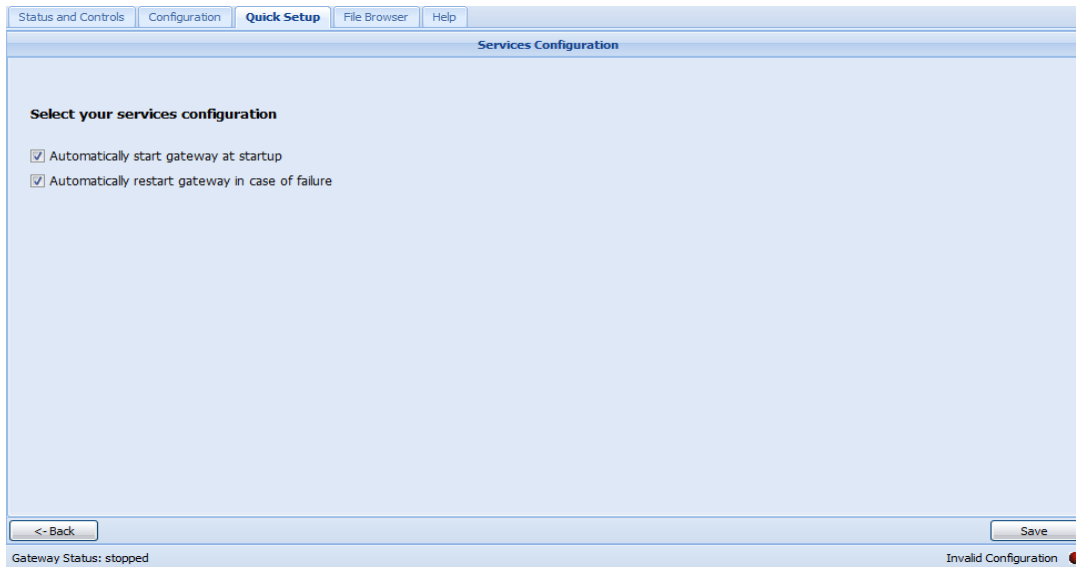
- You can choose between the **udp**, **tcp** or **tls** transport protocols for your outgoing calls.
- You will be able to define the primary SIP destination address and port for all incoming PSTN calls to be routed to.
- You can optionally define a SIP failover destination if the the primary is out of service.

For the PSTN routing configuration:

- You can define a regular expression to extract the phone number from the user part of the incoming SIP call to be sent on the PSTN.
- You can define a prefix to place in front of the outgoing phone number.
- You can also define the country code for international calling.

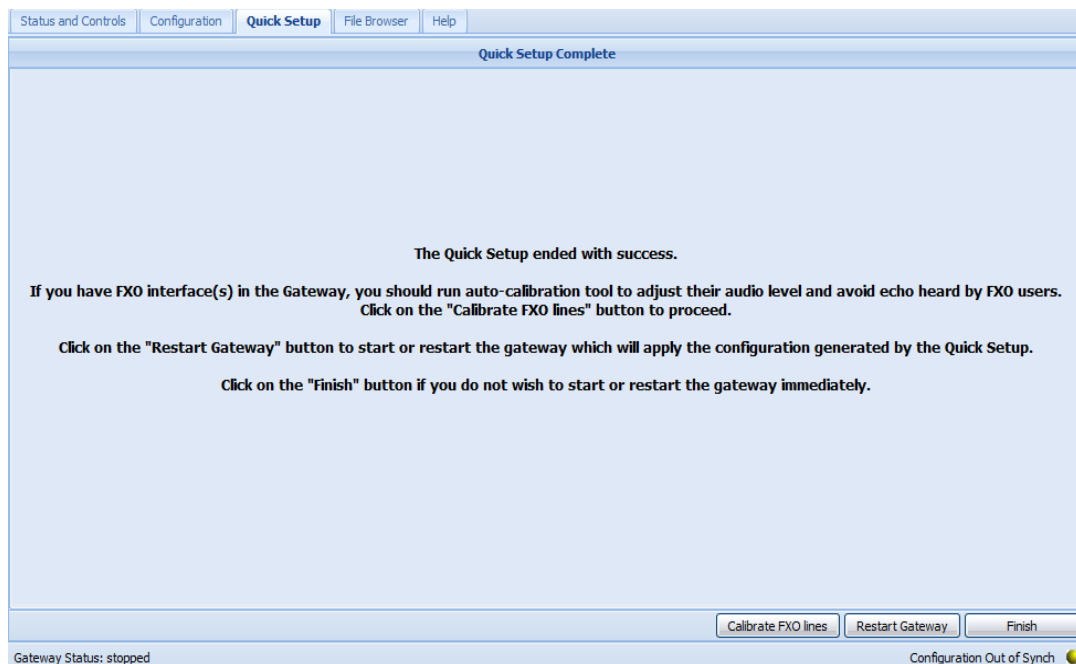
## Services Configuration

This screen of the wizard sets the gateway services behavior and completes the Quick Setup configuration wizard.



The screenshot shows the 'Services Configuration' window of the NetBorder Express Gateway Installation Wizard. The window has a title bar with tabs: 'Status and Controls', 'Configuration', 'Quick Setup' (selected), 'File Browser', and 'Help'. The main content area is titled 'Services Configuration' and contains the instruction 'Select your services configuration'. Below this, there are two checked checkboxes: 'Automatically start gateway at startup' and 'Automatically restart gateway in case of failure'. At the bottom left, there is a '<- Back' button. At the bottom right, there is a 'Save' button. The status bar at the very bottom shows 'Gateway Status: stopped' on the left and 'Invalid Configuration' with a red circle icon on the right.

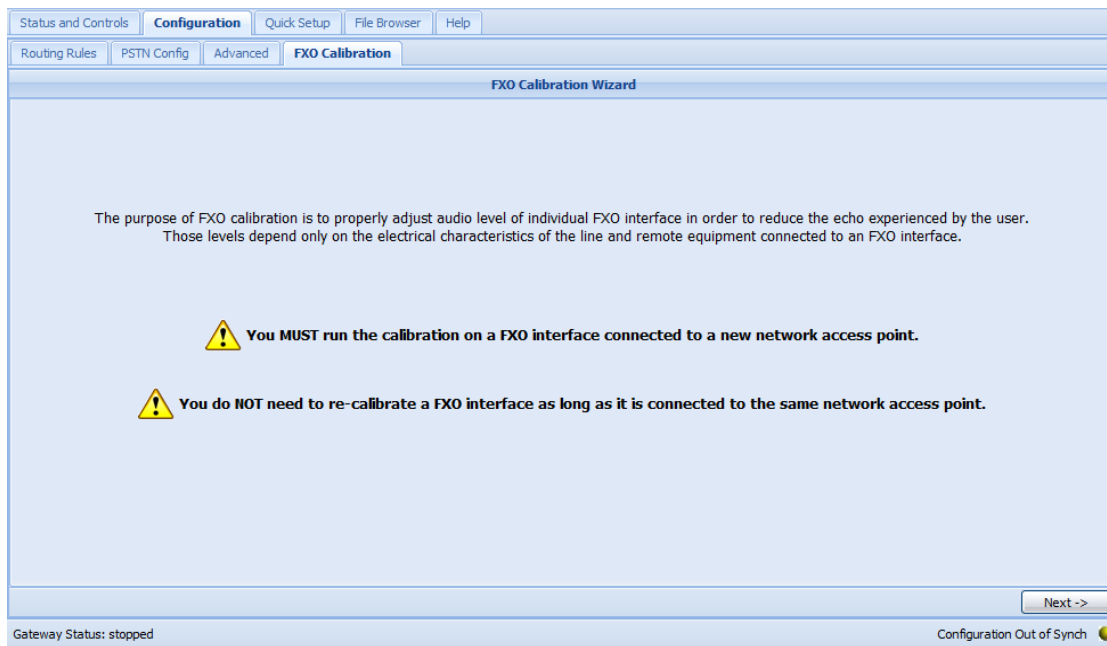
Once you have clicked on the Save button, you will be asked to restart the gateway to apply the configuration changes or exit the wizard without restarting the gateway.



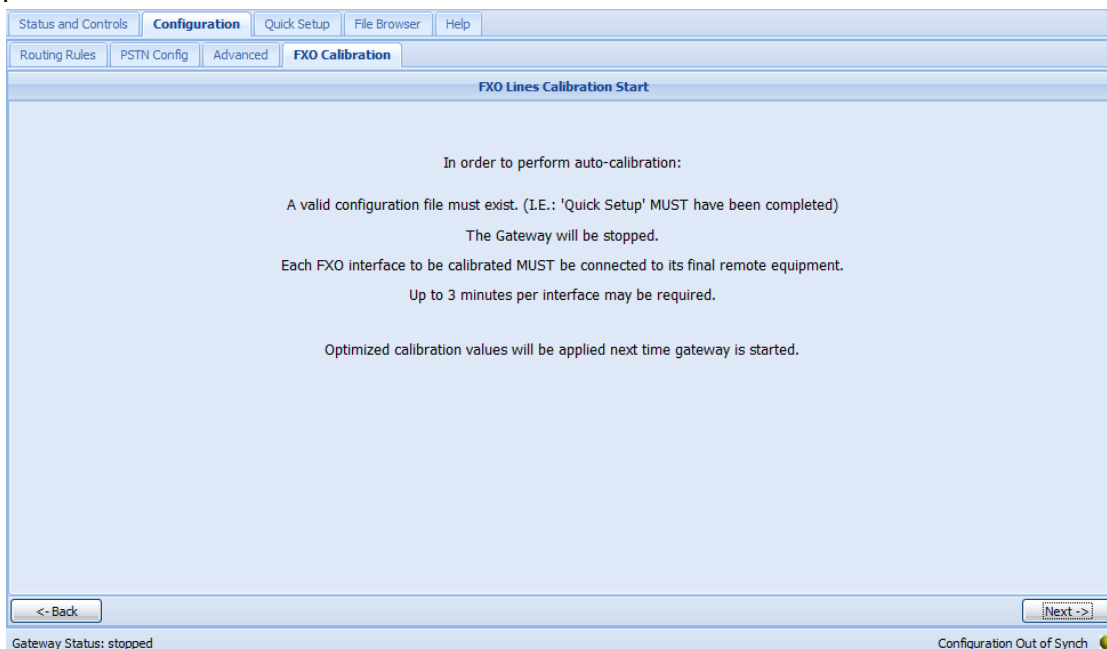
The screenshot shows the 'Quick Setup Complete' window of the NetBorder Express Gateway Installation Wizard. The window has a title bar with tabs: 'Status and Controls', 'Configuration', 'Quick Setup' (selected), 'File Browser', and 'Help'. The main content area is titled 'Quick Setup Complete' and contains the following text: 'The Quick Setup ended with success.', 'If you have FXO interface(s) in the Gateway, you should run auto-calibration tool to adjust their audio level and avoid echo heard by FXO users. Click on the "Calibrate FXO lines" button to proceed.', 'Click on the "Restart Gateway" button to start or restart the gateway which will apply the configuration generated by the Quick Setup.', and 'Click on the "Finish" button if you do not wish to start or restart the gateway immediately.' At the bottom right, there are three buttons: 'Calibrate FXO lines', 'Restart Gateway', and 'Finish'. The status bar at the very bottom shows 'Gateway Status: stopped' on the left and 'Configuration Out of Synchron' with a yellow circle icon on the right.

## FXO Calibration

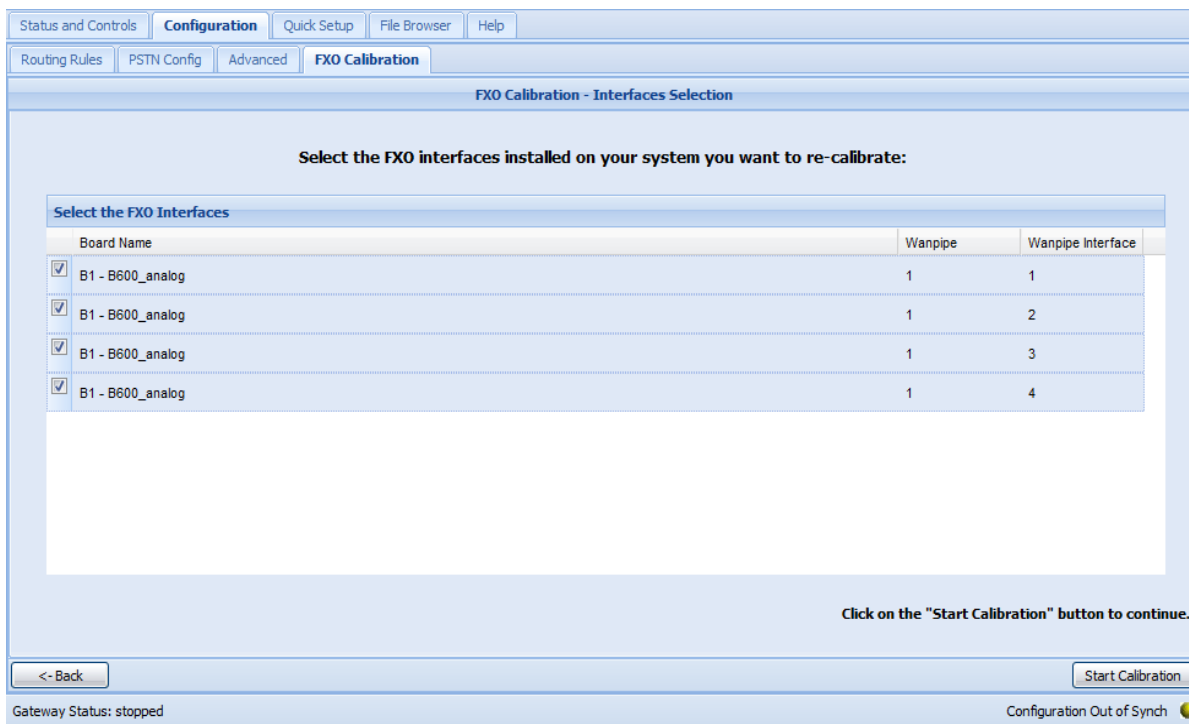
If you have a Sangoma Telephony Card with FXO modules (A200, B600 or B700). You will be asked to run the FXO Calibration wizard to calibrate your FXO lines to optimize the audio quality of the line.



You will need to have a valid configuration for the gateway and the FXO ports must be connected to the remote equipment for the calibration to work.



Select the FXO interfaces you wish to calibrate and start the calibration.



FXO Calibration - Interfaces Selection

Select the FXO interfaces installed on your system you want to re-calibrate:

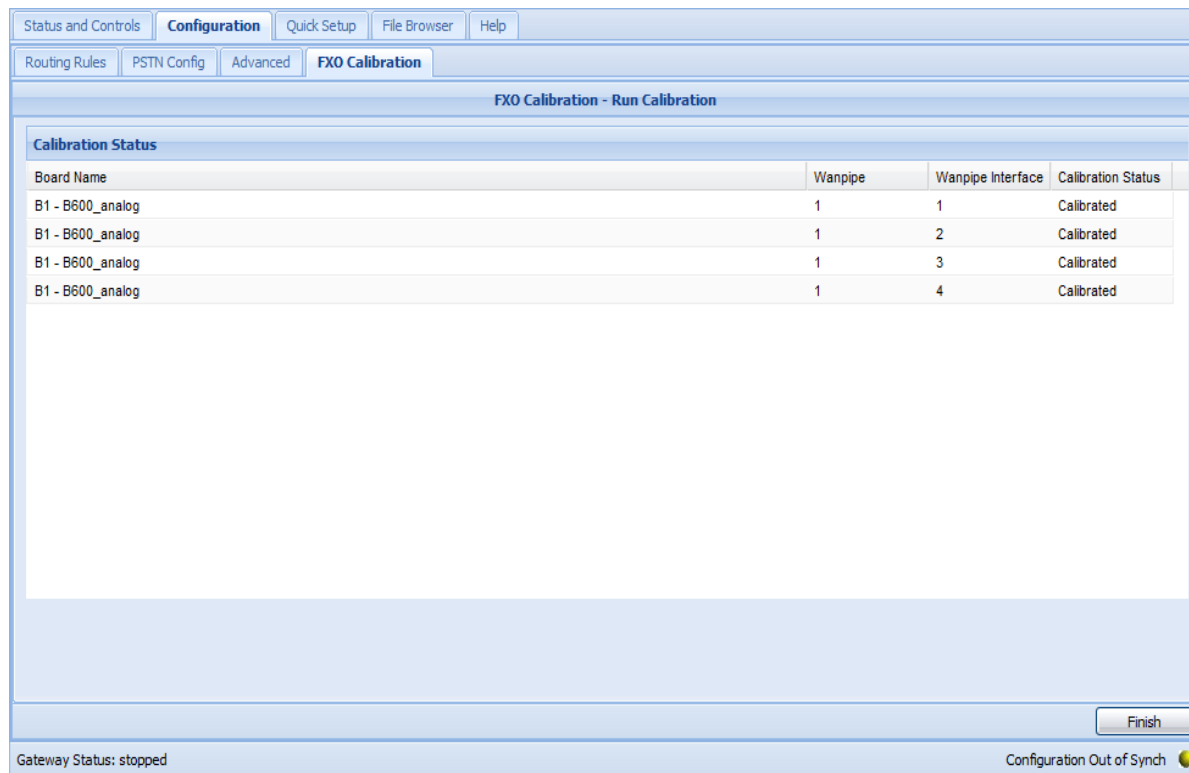
Board Name	Wanpipe	Wanpipe Interface
<input checked="" type="checkbox"/> B1 - B600_analog	1	1
<input checked="" type="checkbox"/> B1 - B600_analog	1	2
<input checked="" type="checkbox"/> B1 - B600_analog	1	3
<input checked="" type="checkbox"/> B1 - B600_analog	1	4

Click on the "Start Calibration" button to continue.

<- Back Start Calibration

Gateway Status: stopped Configuration Out of Sync

Once the calibration is completed, you will see the following screen with the status of each port.



FXO Calibration - Run Calibration

Calibration Status

Board Name	Wanpipe	Wanpipe Interface	Calibration Status
B1 - B600_analog	1	1	Calibrated
B1 - B600_analog	1	2	Calibrated
B1 - B600_analog	1	3	Calibrated
B1 - B600_analog	1	4	Calibrated

Finish

Gateway Status: stopped Configuration Out of Sync