

# Where Automation Connects.



PLX35-NB2 Network Bridge

November 8, 2024

**USER MANUAL** 

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PLX35-NB2 User Manual For Public Use.

November 8, 2024

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#### For professional users in the European Union

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Warning - Cancer and Reproductive Harm - www.P65Warnings.ca.gov

#### Important Installation Instructions

Power, Input, and Output (I/O) wiring must be in accordance with Class I, Division 2 wiring methods, Article 501-4 (b) of the National Electrical Code, NFPA 70 for installation in the U.S., or as specified in Section 18-1J2 of the Canadian Electrical Code for installations in Canada, and in accordance with the authority having jurisdiction. The following warnings must be heeded:

**WARNING** - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIV. 2;

**WARNING** - EXPLOSION HAZARD - WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES

**WARNING** - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.

**Class 2 Power** 

#### Agency Approvals and Certifications

Please visit our website: www.prosoft-technology.com

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## 1 Start Here

#### 1.1 About the PLX35-NB2 Network Bridge

The PLX35-NB2 Network Bridge is the ideal solution for system integrators, machine builders, and OEMs requiring remote system access for commissioning, troubleshooting, or network maintenance.

During the commissioning phase, a network bridge is deployed on site with automation equipment. Once the equipment is installed and ready for configuration and programming, the bridge allows the user to remotely access the network to commission, maintain, and troubleshoot the system, thereby reducing travel time costs.

By deploying a network bridge to an existing network, the network bridge allows access from anywhere by authorized personnel. In the event of unscheduled downtime, an authorized user can connect to the network to minimize downtime and loss of profit.

Module configuration and remote connections are accomplished through Belden Horizon™, ProSoft Technology's secure, cloud-native platform for the Industrial Internet of Things (IoT).



The PLX35-NB2 allows users to:

- Securely connect to remote devices from any PC without having to use a 3<sup>rd</sup>-party software application
- Locally control the VPN connection through an EtherNet/IP® message.

The PLX35-NB2 provides 2 Ethernet ports. One port is used for the local network requiring remote access. The second port is used to connect to the internet.

#### 1.1.1 Specifications

| Power                   | Description   |
|-------------------------|---|
| Power                   | 24 VDC nominal, 10 to 36 VDC allowed, Positive, Negative, and |
|                         | GND terminals   |
| Power Connector         | Three pin, screw terminal, screw retention, black             |
| Current Load            | 24 VDC nominal @300 mA  |
|                         |   |
|                         |   |
| Internal Specifications | Description   |
| EtherNet/IP             | Supports local control of VPN access through MSG instruction. |
| Network Ports           | HTTP or HTTPS ports 80  |
|                         |   |
|                         |   |
| Dhusiaal                | Description   |
| Physical                | Description   |
| Enclosure               | Extruded aluminum with DIN clip                               |
| Dimensions              | 5.52 x 2.06 x 4.37 in   |
| (H x W x D)             | 14.01 x 5.24 x 11.09 cm                                       |

| Shock         | IEC 60068-2-27; 20G @ 11ms (Operational)     |
|---------------|--|
|               | IEC 60068-2-27; 30G @ 11ms (Non-Operational) |
| Vibration     | IEC 60068-2-6; 10G, 10 to 150 Hz             |
| Ethernet Port | (2) 10/100 Base-T, RJ45 connector            |

| Environmental          | Description                                   |
|------------------------|---|
| Operating Temperature  | IEC 60068; -22°F to +158°F (-30°C to +70°C)   |
| Humidity               | IEC 60068-30; 5% to 95%, with no condensation |
| External Power         | 10 to 30 VDC                                  |
| Peak Power Consumption | < 6W  |

#### 1.2 PLX35-NB2 Package Contents

The following components are included with the PLX35-NB2 and are required for installation and configuration.

Important: Before beginning the installation, please verify the following items are present.

| Qty. | Part Name                | Part Number | Part Description      |
|------|--------------------------|-------------|-----------------------|
| 1    | PLX35-NB2 Network Bridge | PLX35-NB2   | 2-port Network Bridge |
| 1    | 2-pin Power Connector    | 002-0116    | Power Connector       |

If any of these components are missing, please contact ProSoft Technology Technical Support for replacement parts. See Contacting Technical Support (page 85).

#### **1.3 Jumper Information**

The module has one visible set of jumper pins on the back of the gateway. These pins should only be jumped/shunted when resetting the gateway back to factory defaults.

To perform a factory reset:

- 1 Set the jumper on both pins and power-cycle the module.
- 2 Wait until the FLT, CFG and ERR LED's flash in a reverse-clockwise direction (the gateway should boot twice by then).
- **3** You will notice all the LED's flashing twice (except interface LED's).
- 4 Remove the jumper and wait for the gateway to finish the power-cycle.
- 5 When the factory reset has finished, the CFG LED flashes.

#### **1.4** Failover and Automatic Backup & Factory Reset

#### 1.4.1 Failover

The Failover process provides a recovery mechanism whenever a serious malfunction renders the main filesystem inoperable.

If the system fails to boot up (all LEDs are solid on) 4 times in a row, on the 5th boot up the gateway will enter a failover state (the FLT LED is solid red and the CFG LED blinks amber). While in this state, the PLX35-NB2 can be accessible using its default configuration. A new upgrade can be performed on the gateway which should fix the serious malfunction that led to the failover state.

#### 1.4.2 Automatic Backup & Factory Reset

If the system fails to boot up (all LEDs are solid on) 10 times in a row, on the 11th boot up the gateway tries to restore the backup firmware and configuration. The backup firmware and configuration are in place before the last upgrade was performed. If the backup restore procedure has performed correctly, only the PWR LED will be lit upon boot up.

The automatic factory reset process takes place when the PLX35-NB2 needs to return to the default configuration. This is because the backup restore process has not succeeded. After this process is completed, it will run the factory default image with the default configuration, in an out-of-the-box condition. In this case, there is no need to use a jumper to perform a factory reset.

If the factory reset has performed correctly, the CFG LED will blink amber.

# 2 Quick Start

### 2.1 Local Configuration

| Task                                 | Page |  |
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| Set gateway configuration parameters | 15   |  |
| Configure login credentials          | 20   |  |
| Update firmware                      | 44   |  |

#### 2.2 Belden Horizon Setup and Configuration

Belden Horizon allows you to remotely configure, maintain, and troubleshoot the gateway.

| Task   | Page |
|--|------|
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| Create a VPN client                                  | 52   |
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| Perform configuration functions in Belden Horizon    | 57   |
| Add Team Members                                     | 58   |
| Change Firmware if required                          | 61   |

# 3 Installing the PLX35-NB2

Mount the PLX35-NB2 such that:

- There is easy access for the cables to ensure that they are not bent, constricted, near high amperage, or exposed to extreme temperatures.
- The LEDs on the front panel are visible for troubleshooting and verifying the gateway status.
- There is adequate airflow around the gateway, but also protected from direct exposure to the elements, such as sun, rain, and dust.

**Caution:** The PLX35-NB2 is in a hardened case and is designed for use in industrial and extreme environments; however, unless the cables are expressly designed for such environments, the cables can fail if exposed to the same conditions the PLX35-NB2 can withstand.

### 3.1 LED Indicators

The following table describes the diagnostic LEDs on the PLX35-NB2.

| LED         | State                 | Description  |
|-------------|-----------------------|--|
| MGMT        | Off                   | The module cannot reach the internet and is not managed      |
|             |                       | by Belden Horizon (default).                                 |
|             | Flashing Green        | The module can reach the internet.                           |
|             | Solid Green           | The module is managed by a Belden Horizon account.           |
|             | Solid Red             | N/A  |
|             | Flashing Red          | The module is configured to be managed by Belden             |
|             |                       | Horizon but cannot reach Belden Horizon.                     |
|             | Alternating Red/Green | N/A  |
| VPN         | Off                   | Belden Horizon is not enabled (default).                     |
|             | Flashing Green        | VPN is possible (normal).                                    |
|             | Solid Green           | A VPN tunnel is established.                                 |
|             | Solid Red             | The module is managed by Belden Horizon and EIP has          |
|             |                       | disabled VPN tunneling.                                      |
|             | Flashing Red          | VPN connection failed.                                       |
|             | Alternating Red/Green | N/A  |
| PWR (Power) | Off                   | Power is not connected to the power terminals or source is   |
|             |                       | insufficient to properly power the module.                   |
|             | Solid Green           | Sufficient power is connected to the power terminals.        |
| FLT (Fault) | Off                   | Normal operation   |
|             | Solid Red             | A critical error has occurred. Program executable has        |
|             |                       | failed or has been user-terminated and is no longer          |
|             |                       | running. Press the Reset button or cycle power to clear the  |
|             |                       | error.   |
| CFG         | Off                   | Normal operation   |
|             | Flashing Amber        | The module has no configuration.                             |
|             | Solid Amber           | The module is in configuration mode. Either a                |
|             |                       | configuration error exists, or the configuration file is     |
|             |                       | currently being downloaded or read. After power-up or        |
|             |                       | after the Reset button is pressed, the configuration is read |
|             |                       | and the module implements the configuration values and       |
|             |                       | initializes the hardware.                                    |
| ERR         | Off                   | Normal operation   |
|             | Flashing Amber        | An error condition has been detected and is occurring on     |
|             |                       | one of the application ports. Check configuration and        |
|             |                       | troubleshoot for communication errors.                       |
|             | Solid Amber           | The ERR LED is cleared on receipt of a well-formed           |
|             |                       | allowed packet. On receipt of data packet containing an      |
|             |                       | unsupported protocol, the LED is lit. If the LED is solid, a |
|             |                       | large number of errors are occurring on one or more ports    |
|             |                       | (network communication errors).                              |

| LED      | State          | Description   |
|----------|----------------|---|
| 100 Mbit | Off            | No activity on the port   |
|          | Flashing Amber | The Ethernet port is actively transmitting or receiving data.   |
| LNK/ACT  | Off            | No physical connection is detected. No Ethernet<br>communication is possible. Check wiring and cables.          |
|          | Solid Green    | Physical network connection detected. This LED must be<br>ON (solid) for Ethernet communication to be possible. |

## 3.1.1 Ethernet Port LEDs

# 4 Local Configuration Using the PLX35-NB2 Configuration Webpage

The PLX35-NB2 contains a browser-based configuration webpage used for configuration. The following sections describe the configuration process.

#### 4.1 Connecting to the PLX35-NB2 Webpage

- 1 Ensure that the module is connected to the network through the LAN port.
- **2** Apply power to the module.
- 3 To log into the PLX35-NB2 configuration webpage through the network, your PC must be able to connect to the PLX35-NB2. The default IP address of the PLX35-NB2 is 192.168.0.250. If your PC is on a different subnet, temporarily set the IP address of your PC to 192.168.0.xxx with a subnet of 255.255.255.0 (where xxx is an available address on the network).

| IP address:  | 192.168.0.    |
|--------------|---------------|
| Subnet mask: | 255.255.255.0 |

**Note:** ProSoft Discovery Service can be used to discover the IP address. Download and install ProSoft Discovery Services from the ProSoft website at <u>www.prosoft-technology.com</u>.

- 4 In a web browser, enter the PLX35-NB2 default address of **192.168.0.250**. Minimum browser requirements: Chrome 58, Firefox 54, and Internet Explorer 10.
- 5 In the PLX35-NB2 configuration webpage, enter the **USERNAME** and **PASSWORD** to log in. The default **USERNAME** is *admin* and the default **PASSWORD** is *password*.

| ProSoft   |                          |
|---|--------------------------|
| Login here:   | PLX35-NB2                |
| admin   | ALL ME                   |
|   |                          |
| Enter login credentials for this PLX35-NB2.<br>Belden Horizon login credentials not accepted. |                          |
| Remember me   | 2022                     |
| Minimum browser requirer<br>Chrome 58, Firefox 54, Internet I                                 | l<br>ents:<br>xplorer 10 |

**Note:** For security purposes, it is required to change the default username and password after initial login or factory reset. See *Initial / Factory Reset Login* on page 22.

6 After successful log in, the configuration webpage displays the Overview tab.

| O PLX35       | -NB2    |        |            |         |          |   | 0.  |
|---------------|---------|--------|------------|---------|----------|---|---|
| Lill Overview | Gateway | Access | File Relay | SD Card | Activity |   | Apply changes   |
| PERFORMANCE   | ► LIVE  |        |            |         |          | DEVICE DET                                | AILS  |
| 5 Days        |         | 172 M  | B          | 5       | 7 MB     | Model:<br>LAN IP:<br>WAN IP:              | ProSoft PLX35-NB2                                     |
|               |         | 310 M  | B          | 2       | B MB     | Serial #:<br>Firmware:<br>System<br>Time: | 1.7.1-r0 debug<br>Change<br>2022-07-20 09:19:33 +0000 |
|               |         |        |            |         |          | Belden<br>Horizon:                        | Change<br>Activate                                    |

This page allows you to:

- View Performance Information
- View Device Details
- Update Firmware
- Manually enter a custom date and time
- 7 After 5 consecutive failed login attempts, login is suspended for 10 minutes. The login details and status is logged in *syslog* and */psft/loginRecords.txt* (The last 100 login attempts are logged).

|  | PròSoft  |                     |
|--|--|---------------------|
| Login here:  |  | PLX35-NB2           |
| admin1234  |  | Prosent<br>ProSoft* |
| Enter login credentials for Belden Horizon login cre | or this PLX35-NB2.<br>dentials not accepted.   |                     |
| Remember me  | Login<br>Too many failed logins.<br>Last IP used:<br>You can try again when timer expires:<br>9m 30s |                     |
|  | Minimum browser requirements:  |                     |

#### 4.2 Using the Overview Tab

The *Overview* tab contains performance information as well as device details, access information, and module location information.

In addition, this page allows you to make firmware updates to the gateway. You can view this tab at any time by simply clicking on the *Overview* tab.

**Tip:** This tab provides an *Activation Code* that allows you to take advantage of configuring and maintaining your gateway using Belden Horizon. See *Cloud-based Maintenance using Belden Horizon on page 48* for details on using this code.

#### 4.3 Setting Gateway Configuration Parameters

1 Click on the *Gateway* tab.

| Int Overview      | Gateway | Access            | File Relay             | SD Card | Activity |  |
|-------------------|---------|-------------------|------------------------|---------|----------|--|
| GATEWAY           |         |                   |                        |         |          |  |
|                   |         | Gateway Name      | PLX35-NB2              |         |          |  |
|                   |         | Description       | Prosoft                |         |          |  |
|                   |         | Address           |                        |         |          |  |
|                   |         |                   | Advanced configuration |         | A        |  |
| LOCAL AREA NETWOR | к       |                   |                        |         |          |  |
|                   |         | IP                | 92.168.0.26            |         |          |  |
|                   |         | Subnet            | 255.255.255.0          |         |          |  |
|                   |         | Default Gateway   | 92.168.0.1             |         |          |  |
|                   |         | DHCP Server       | Disabled               | ~       |          |  |
|                   |         | NTP               | Enabled                | ~       |          |  |
|                   |         | NTP Server 1      | ).us.pool.ntp.org      |         |          |  |
|                   |         | NTP Server 2 1    | us.pool.ntp.org        |         |          |  |
|                   |         | NTP Server 3 2    | us.pool.ntp.org        |         |          |  |
| WIDE AREA NETWORK |         |                   | anent                  | Ŷ       |          |  |
|                   |         | DHCP Client       | Disabled               | ~       |          |  |
|                   |         | IP Address 1      | 0.20.254.70            |         |          |  |
|                   |         | Subnet Mask 2     | 55.255.255.0           |         |          |  |
|                   |         | Default Gateway   | 0.20.254.1             |         |          |  |
|                   |         | DNS 1             | 0.11.200.201           |         |          |  |
|                   |         | DNS 2 1           | 0.11.200.202           |         |          |  |
|                   |         | VLAN ID           |                        |         |          |  |
| BELDEN HORIZON    |         |                   |                        |         |          |  |
|                   |         | URL W             | ss://belden.io         |         |          |  |
|                   | Or      | n-Prem IP Address |                        |         |          |  |
|                   |         |                   |                        |         |          |  |

#### **2** Use the following table to enter the appropriate parameters:

| Parameter            | Description   |
|----------------------|---|
| Gateway              |   |
| Gateway Name         | Enter a name for this gateway.  |
| Description          | Enter a description to describe the gateway.                                      |
|                      | For example, Network Bridge - Bakersfield.  |
| Address              | Enter the street address of the gateway (i.e., where the gateway resides)         |
| Advanced             | This link allows you to provide GPS coordinates of the gateway's location.        |
| configuration (link) |   |
| Local Area Network   |   |
| IP                   | Enter the IP address of the gateway. This is a static IP address. The default     |
|                      | IP address is 192.168.0.250. (The netmask is always 255.255.255.0).               |
| Subnet               | Subnet mask of the PLX35-NB2 Ethernet port.                                       |
| Default Gateway      | Default gateway of the PLX35-NB2 Ethernet port.                                   |
| DHCP Server          | Use this parameter to enable or disable DHCP. The default is <b>Disabled</b> . If |
|                      | you want to use a DHCP server to select an IP, select <b>Enabled</b> .            |

Selecting **Enabled** displays a number of additional DHCP-related parameters

| DHCP Server      | Enabled        | ٣ |
|------------------|----------------|---|
| DHCP Lease Time  | 12             |   |
| DHCP Lease Units | Hours          | ٣ |
| DHCP Pool Low    | 192.168.2. 100 |   |
| DHCP Pool High   | 192.168.2. 249 |   |

**DHCP Lease Time** - Allows you to select lease times in hour, minutes, or seconds. This is the amount of time an IP address remains available on a particular device before releasing the IP address for use by another device. **DHCP Lease Units** - Allows you to specify Hours and Minutes and works in conjunction with *DHCP Lease Time*.

**DHCP Pool Low** - DHCP uses a pool of assigned addresses that are available to requests. *DHCP Pool Low* allows you to set the last octet to the low end number of the pool. (See example below)

**DHCP Pool High** - DHCP uses a pool of assigned addresses that are available for use. *DHCP Pool High* allows you to specify the high-end last octet of the pool

| For | exam | ole: |
|-----|------|------|
|     | onum |      |

| DHCP Pool Low  | 192.168.72. | 100 |
|----------------|-------------|-----|
| DHCP Pool High | 192.168.72. | 249 |

This example specifies that the range of addresses that may be used is between 192.168.72.100 through 192.168.72.249.

| NTP          | This parameter specifies whether or not the Network Time Protocol (NTP) is  |
|--------------|---|
|              | enabled or disabled. The default is Enabled. If Disabled, the following two |
|              | parameters are not present.   |
| NTP Server 1 | Default set to: 0.us.pool.ntp.org. Enter a different NTP server, if needed. |
| NTP Server 2 | Default set to: 1.us.pool.ntp.org. Enter a different NTP server, if needed. |
| NTP Server 3 | Default set to: 2.us.pool.ntp.org. Enter a different NTP server, if needed. |
| NTP Mode     | Default is Client. This can be edited to Client/Server mode.                |

| Wide Area Network  |  |
|--------------------|--|
| DHCP Client        | This is set to Enabled by default. If your administrator wants to assign a static                        |
|                    | IP, this should be set to <b>Disabled</b> .  |
|                    |  |
|                    | If <b>Disabled</b> , you must supply the following information:  |
|                    | IP: The IP address assigned to the WAN port.   |
|                    | Subnet: Enter the subnet address.  |
|                    | Gateway: Enter the gateway address for this subnet.  |
|                    | <b>DNS 1</b> : Enter the Domain Name Server IP provided to your system.                                  |
|                    | DNS 2: Enter the backup Domain Name Server IP provided to your system.                                   |
| VLAN ID            | If the gateway is part of a VLAN, enter the VLAN ID.   |
| Belden Horizon     |  |
| URL                | By default, URL is set to wss://belden.io.   |
|                    | If the PLX35-NB2 needs to be activated on premises then the URL must be                                  |
|                    | set as wss://onprem.belden.io.   |
|                    | If the PLX35-NB2 is activated to the cloud, this parameter cannot be modified.                           |
|                    |  |
|                    | Note: Only wss://belden.io and wss://onprem.belden.io can be configured as the URL.                      |
| On-Prem IP Address | This section is disabled by default.   |
|                    | If the URL is configured as wss://onprem.belden.io, then the On-Prem                                     |
|                    | server IP address must be entered here.  |
|                    | If the PLX35-NB2 is activated to the cloud, this parameter cannot be modified.                           |
|                    | <b>Note:</b> If the <i>URL</i> is configured as <b>wss://belden.io</b> , this parameter will be disabled |

3 Click the **APPLY CHANGES** button when complete.

## 4.3.1 Open Source Software and License Information

To view a list of the software and licenses contained in the PLX35-NB2, click on the **LICENSES** link at the bottom of the *Gateway* tab.

|                    |           |              |                   | TUNNE   | L CONNECTED                 | DISCONNECT |
|--------------------|-----------|--------------|-------------------|---------|-----------------------------|------------|
| In Overview        | 🗘 Gateway | Access       | File Relay        | SD Card | Activity                    |            |
| LOCAL AREA NETWORK |           |              |                   |         |                             |            |
|                    |           | IP           | 192.168.0.250     |         |                             |            |
|                    |           |              |                   |         |                             |            |
|                    |           | DHCP Server  | Disabled          | *       |                             |            |
|                    |           | NTP          | Enabled           | •       |                             |            |
|                    |           |              |                   |         |                             |            |
|                    |           | NTP Server 1 | 0.us.pool.ntp.org |         |                             |            |
|                    |           | NTP Server 2 | 1.us.pool.ntp.org |         |                             |            |
|                    |           |              | TransfoormelpionB |         |                             |            |
|                    |           | NTP Server 3 | 2.us.pool.ntp.org |         |                             |            |
|                    |           | NTP Mode     | Client            | *       |                             |            |
|                    |           |              |                   |         |                             |            |
| WIDE AREA NETWORK  |           |              |                   |         |                             |            |
|                    |           | DHCP Client  | Enabled           | v       |                             |            |
|                    |           |              |                   |         |                             |            |
|                    |           | VLAN ID      |                   |         |                             | _          |
|                    |           |              |                   |         | Licenses                    | ₿ 🖓        |
|                    |           |              |                   |         | Powered by <b>ProSoft</b> 1 | Technology |

A list of the Open Source software and its license terms are displayed:

| 😹 Overview     | © Gateway                                | Access           | File Relay | SD Card            | Activity     | Apply changes   |
|----------------|--|------------------|------------|--------------------|--------------|---|
| Software co    | ontained in<br>tofused Open Source Softw | n the produ      | ICT        |                    |              |   |
| Package Name   |  | License          |            | Point of Contact   |              | Source Link:  |
| acl-2.2.53     |  | LGPL-2.1 GPL-2.0 |            | https://github.com | m/mstorchak  | https://github.com/openwit/packages/tree/openwirt-18.07/utils/acl   |
| attr-2.4.48    |  | LGPL-2.1 GPL-2.0 |            | https://github.com | m/mstorchak  | https://github.com/openwrt/packages/tree/lede-17.01/utils/attr  |
| bash-4.4.18    |  | GPLv3- on-later  |            | https://github.com | m/ja-pa      | https://github.com/openwrt/packages/tree/openwrt-19.07/utlu/bash  |
| binutils-2.27  | -2.27 GPLv3                              |                  | GPLv3      |                    | Sopenwrt.org | eq:https://github.com/openwrt/lopenwrt/tree/openwrt-13.07/package/devel/binutia   |
| busybox-1.25.1 | 25.1 GPLv2                               |                  |            | Felix Fietkau/nbd  | Bopenwrt.org | eq:https://github.com/openwit/openwit/tree/iede=17.01/package/utilu/busybox   |
| bzip2-1.0.6    |  | bzip2            |            | https://github.com | m/sbyx       | https://gthub.com/apernwrt/apernwrt/tree/opernwrt-19.07/package/utils/be/p2.000000000000000000000000000000000000  |
| curi-7.50.3    |  | MIT              |            | https://github.com | m/kaloz      | $eq:https://gthub.com/openwit/openwit/tree/openwit-19.07/package/network/utils/curl \label{eq:https://gthub.com/openwit/openwit/tree/openwit-19.07/package/network/utils/curl \label{eq:https://gthub.com/openwit/openwit/tree/openwit-19.07/package/network/utils/curl \label{eq:https://gthub.com/openwit/tree/openwit-19.07/package/network/utils/curl \label{eq:https://gthub.com/openwit/tree/openwit-19.07/package/network/utils/curl \label{eq:https://gthub.com/openwit/tree/openwit-19.07/package/network/utils/curl \label{eq:https://gthub.com/openwit/tree/openwit-19.07/package/network/utils/curl \label{eq:https://gthub.com/openwit/tree/openwit-19.07/package/network/utils/curl \label{eq:https://gthub.com/openwit-19.07/package/network/utils/curl \label{eq:https://gthub.com/openwit-19.07/package/net$ |
| dnsmasq-2.78   | masq-2.78                                |                  | GPLv2      |                    |              | https://github.com/openwrt/openwrt/tree/lede=17.01/package/setwork/services/dnsmasq   |
| dosfstools-4.1 |  | GPLv3 or later   |            | https://github.com | m/Noltari    | https://github.com/openwrt/packages/tree/lede-17.01/utils/doufstools  |
| expat-2.2.6    |  | MIT              |            | https://github.com | m/sbyx       | https://github.com/openwit/packages/tree/lede-17.01/lbu/expat   |

#### License Details:

| TUNNEL CONNECTED DISCONNECT                     |  |   |  |  |                              |                                  |   |  |  |  |                               |  |
|---|--|---|--|--|------------------------------|----------------------------------|---|--|--|--|-------------------------------|--|
| Ltd Overview                                    | O Gateway  | Access  | File Relay   | SD Card  | Activity                     |                                  | Apply changes   |  |  |  |                               |  |
| Ipaddr  |  | MIT   |  | https://gthub.com/whitequark https://gthub.com/whitequark/paddcjs                |                              |                                  |   |  |  |  | https://github.com/whitequark |  |
| eonasdan-bootstrap-dat                          | tetimepicker   | MIT   |  | https://github.com/Eonasdan https://github.com/Eonasdan/bootstrap-datetimepicker |                              |                                  |   |  |  |  |                               |  |
| License Details                                 |  |   |  |  |                              |                                  |   |  |  |  |                               |  |
| Packages: busybox-1.2                           | 5.1, dnsmasq-2.78, fstools-                                      | 2016-09-31, libcap-2.25                           | , iproute2-4.4.0, lede-keyring                                 | -2016-04-30, lzo-2.09, r   | nbedtls-1.3.17, mbedtls-2.   | ہم.<br>3.0, mtd-utils-1.5.2, ne. | tfd-2016-11-21, popt-1.16, procd-2016-10-19, u-bool-2016.05, ubus-2016-10-12, ubox, uci-2016-07-04.1, util-linux-2.28 |  |  |  |                               |  |
| Packages: curl-7.50.3,<br>deep-model, file-save | expat-2.2.6, json-c-0.12.1, li<br>r, he, jQuery-slimScroll, ipac | bxml2-2.9.8, ncurses-5.<br>Idr, eonasdan-bootstra | 9, go-syslog, lua-5.1.5, httpro<br>p-datetimepicker, goxml2jso | uter, pty, orcaman, go-<br>n, httpunix   | uuid, atomic,testify, server | r, httpunix, goxml2json          | , jquery, bootstrap, underscore, backbone, backbone-forms, handlebars, swag, js-cookie, bootstrap3-dialog, backbone-  |  |  |  |                               |  |
| Packages: go-avro, sof                          | tethervpn-psft-4.29-9680, g                                      | log   |  |  |                              |                                  |   |  |  |  |                               |  |
| Packages: acl-2.2.53, a                         | ttr-2.4.48, libiconv, libnl-tin                                  | y-0.1, Linux-PAM-1.2.0,                           | userspace-rcu-0.9.4, xz-5.2.4                                  | zlib-1.2.8   |                              |                                  |   |  |  |  |                               |  |
| Packages: bash-4.4.18                           | , binutils-2.27, dosfstools-4.                                   | 1, fwtool, readline-7.0                           |  |  |                              |                                  |   |  |  |  |                               |  |
| Packages: pflag, fsnoti                         | fy, snappy, iperf-1.3.4  |   |  |  |                              |                                  |   |  |  |  |                               |  |
| Packages: gorilla-web:                          | sockets, libarchive-3.3.2  |   |  |  |                              |                                  |   |  |  |  |                               |  |
| Packages: jsonfilter-20                         | 16-07-02, firewall-2016-11-                                      | 07, libubox, usign-2015                           | -07-04, go-sphew   |  |                              |                                  |   |  |  |  |                               |  |
| Package: zlib                                   |  |   |  |  |                              |                                  |   |  |  |  |                               |  |
| Package: bzip                                   |  |   |  |  |                              |                                  |   |  |  |  |                               |  |
|   |  |   |  |  | Powered by ProSoft           | Technology                       |   |  |  |  |                               |  |

#### Each entry can be expanded:

|  |   |   |   | TUNNE                                      | EL CONNECTED                 | DISCONNECT   |  |  |  |
|--|---|---|---|--|------------------------------|--|--|--|--|
| 🕍 Overview   | Gateway   | 🛔 Access  | 🔓 File Relay  | SD Card                                    | Activity                     | Apply changes  |  |  |  |
|  | License Details   |   |   |  |                              |  |  |  |  |
| Packages: busybox-1.2  | 5.1, dnsmasq-2.78, fstools  | -2016-09-31, libcap-2.2                             | 5, iproute2-4.4.0, lede-keyr                                | ing-2016-04-30, lzo-2.09, i                | mbedtls-1.3.17, mbedtls-2    | 1.3.0, mtd-utils-1.5.2, netifd-2016-11-21, popt-1.16, procd-2016-10-19, u-book-2016.05, ubus-2016-10-12, ubox, uci-2016-07-04.1, util-linux-2.28 |  |  |  |
| Packages: curl-7.50.3,<br>deep-model, file-save  | expat-2.2.6, json-c-0.12.1,<br>, he, jQuery-slimScroll, ipa   | libxml2-2.9.8, ncurses-5<br>addr, eonasdan-bootstra | .9, go-syslog, lua-5.1.5, http<br>p-datetimepicker, goxml2j | prouter, pty, orcaman, go<br>son, httpunix | -uuid, atomic,testify, serve | r, httpunik, goxmizijson, jquery, bootstrap, underscore, backbone, backbone forms, handlebars, swag, js-cookie, bootstrap3-dialog, backbone-     |  |  |  |
| Packages: go-avro, sof   | tethervpn-psft-4.29-9680,   | glog  |   |  |                              |  |  |  |  |
| Packages: acl-2.2.53, a  | ttr-2.4.48, libiconv, libnl-ti  | ny-0.1, Linux-PAM-1.2.0                             | userspace-rcu-0.9.4, xz-5.2                                 | .4, zlib-1.2.8                             |                              |  |  |  |  |
| Packages: bash-4.4.18  | binutils-2.27, dosfstools-4   | 4.1, fwtool, readline-7.0                           |   |  |                              |  |  |  |  |
| Packages: pflag, fsnoti  | fy, snappy, iperf-1.3.4   |   |   |  |                              |  |  |  |  |
| Packages: gorilla-web:   | ockets, libarchive-3.3.2  | <b>N</b>  |   |  |                              |  |  |  |  |
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| 2. Redistributions in bin<br>IMPLIED WARRANTIES, I<br>CONSEQUENTIAL DAMA<br>OR OTHERWISE) ARISIN | 2. Redistributions in binury form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. THIS SOFTWARE IS PROVIDED BY THE COPPRIGHT HOLDERS AND CONTRIBUTORS 'NS IS' AND ANY EXPRESS OR<br>INFLED WARRANTES, INCLUDING, BUT NOT LIMITED TO, THE INFLED WARRANTES OF MERCINATES OF TRADARDA ARATICULAR PURPORE ARE DISCLAMED. IN NO EVENT SHALL THE COPPRIGHT HOLDERS AND CONTRIBUTORS 'NS IS' AND ANY EXPRESS OR<br>CONSEQUENTIAL MARKES INCLUDING, BUT NOT LIMITED TO, THE INFLED WARRANTES OF THE CONSTRUCTIVE CONST OR STATUS IS' AND ANY EXPRESS OR<br>CONSEQUENTIAL MARKES INCLUDING, BUT NOT LIMITED TO, THE INFLED WARRANTES OF THE CONSTRUCTIVE CONST OR STATUS IS' AND ANY EXPRESS OR<br>CONSEQUENTIAL MARKES INCLUDING, BUT NOT LIMITED TO, THE INFLED THE CONST OR STATUS IS' AND ANY EXPRESS OR<br>CONSEQUENTIAL MARKES INCLUDING, BUT NOT MILTED TO POSICIENTIFIC LOSS OF SUBJECTIVE CONST OR STATUS IS' AND ANY EXPRESS OR<br>CONSEQUENTIAL MARKES INCLUDING, THE USE OF THE SOSTIMUTE ODD OR STATUS IS CONSTITUED. CONST OR STATUS IS' AND ANY EXPRESS OR<br>CONSEQUENTIAL MARKES INCLUDING, ANY WAY OUT OF THE USE OF THE SOSTIMUTE ODD OR STATUS IS CONSTITUED. ODD OR ANY THEORY OF LUBLITY, WHETHER IN CONTRACT, STRICT LIMITITY OF SOUTH ONE OF THE DISTRIBUTION HOLD THE USE OF THE DISTRIBUTION OF ANY THEORY OF LUBLITY, WHETHER IN CONTRACT, STRICT LIMITITY OF SOUTH AND ANY EXPRESS OR THE DISTRIBUTION OF ANY THEORY OF LUBLITY, WHETHER IN CONTRACT, STRICT LIMITITY OF SOUTH AND ANY EXPRESS OF THE OPENDATION OF ANY THEORY OF LUBLITY, WHETHER IN CONTRACT, STRICT LIMITITY OF SOUTH AND ANY EXPRESS OF THE DISTRIBUTION OF ANY THEORY OF LUBLITY, WHETHER IN CONTRACT, STRICT LIMITITY OF SOUTH AND ANY EXPRESS OF THE DISTRIBUTION OF ANY ANY OUT OF THE USE OF THE DISTRIBUTION OF ANY ANY OUT OF THE USE OF THE DISTRIBUTION OF ANY ANY OUT OF THE USE OF THE DISTRIBUTION OF ANY ANY ANY OUT OF THE USE OF THE DISTRIBUTION OF ANY ANY ANY OUT OF THE USE OF THE DISTRIBUTION OF ANY ANY A |   |   |  |                              |  |  |  |  |
| Packages: jsonfilter-20  | 16-07-02, firewall-2016-11  | -07, libubox, usign-2015                            | i-07-04, go-sphew   |  |                              |  |  |  |  |
| Package: zlib  |   |   |   |  |                              |  |  |  |  |

#### 4.4 Configuring Login Credentials

The gateway is shipped with the following login defaults: User: admin Password: password

The Access tab allows you to change the default user name and password.

1 Click on the Access tab.

| O PLX3        | 35-NB2          |            |               |         |          | <b>*</b> •    |
|---------------|-----------------|------------|---------------|---------|----------|---------------|
| ul Overview   | Gateway         | Access     | File Relay    | SD Card | Activity |               |
|               |                 |            |               |         | I        | Apply changes |
| WEB INTERFACE |                 |            |               |         |          |               |
|               | Use             | er admin   |               |         |          |               |
|               | Passwor         | d ****     |               |         |          |               |
|               | Confirm passwor | d ****     |               |         |          |               |
|               |                 | + Advanced | configuration |         |          |               |

This page allows you to set up the users that can manage and configure this gateway. The *Advanced Configuration* link allows you to restrict access based on user.

- 2 Enter a user name and a password.
- **3** Confirm the password by retyping it.

#### 4.4.1 Advanced Configuration

1 Click on the *Advanced Configuration* link.

| O PLX3        | 85-NB2          |              |               |         |          | •             |
|---------------|-----------------|--------------|---------------|---------|----------|---------------|
| Jul Overview  | Ø Gateway       | Access       | 🔓 File Relay  | SD Card | Activity |               |
|               |                 |              |               |         |          | Apply changes |
| WEB INTERFACE |                 |              |               |         |          |               |
|               | Use             | er admin     |               |         |          |               |
|               | Passwor         | d ****       |               |         |          |               |
|               | Confirm passwor | d ****       |               |         |          |               |
|               |                 | - Advanced o | configuration |         |          |               |
|               | Web Protoco     | HTTP         |               | •       |          |               |
|               | HTTP po         | rt 8080      |               |         |          |               |

- 2 Select the Web Protocol. Select HTTP or HTTPS.
- 3 Choose the port depending on what protocol is selected.
- 4 Click APPLY CHANGES when complete.

### 4.4.2 Initial / Factory Reset Login

This procedure is used for brand new units, or resetting the PLX35-NB2 to the default configuration. The default credentials are as follows:

User: admin

#### Password: password

**Note:** Beginning with PLX35-NB2 firmware v1.5, this process requires you to change the default password on initial/reset login.

1 Connect to the PLX35-NB2 webpage using the default credentials.



2 After logging in, the Access tab will be displayed to change the password.

**Note:** Beginning with PLX35-NB2 firmware v1.5, this process requires you to change the default password on initial/reset login.

| • PLX35       | -NB2      |                  |                          |                       |                   | •                               |
|---------------|-----------|------------------|--------------------------|-----------------------|-------------------|---------------------------------|
| 🔟 Overview    | Ø Gateway | Access           | 🔓 File Relay             | SD Card               | Activity          | Apply changes<br>Cancel changes |
| WEB INTERFACE |           |                  |                          | You must chang        | ge your password. |                                 |
| h             |           | User             | admin                    |                       |                   |                                 |
|               |           | Password         | Password must contain a  | t least one uppercase |                   |                                 |
|               |           | Confirm Password | character                |                       |                   |                                 |
|               |           |                  | + Advanced configuration |                       |                   |                                 |
|               |           |                  | + Advanced configuration |                       |                   |                                 |

- **3** Select a password that is compatible with the following rules:
  - Between 8 and 40 characters
  - At least one upper case letter
  - At least one lowercase letter
  - Contains at least one digit (0 through 9)
  - Contains at least one special character: !@#\$%^&\*()\_+=-~
- 4 Re-enter the new password in the Confirm Password field.
- **5** After confirming the new password in the *Confirm Password* field, click the **APPLY CHANGES** button in the top right corner of the page.

| PLX35       | -NB2      |                  |                          |                   |               | • •           |
|-------------|-----------|------------------|--------------------------|-------------------|---------------|---------------|
| In Overview | ¢ Gateway | Access           | 🖺 File Relay             | SD Card           | Activity      | Apply changes |
| INTERFACE   |           |                  |                          | You must change y | our password. |               |
|             |           | User             | admin                    |                   |               |               |
|             |           | Password         | •••••                    |                   |               |               |
|             |           | Confirm Password | •••••                    |                   |               |               |
|             |           |                  | + Advanced configuration |                   |               |               |

6 After the changes are applied, you will be logged out and redirected to the login page.



7 After logging in using the username and the new password, future password changes can be done from the *Access* tab as in the *Configuring Login Credentials* section on page 20.

| PLX35-      | NB2       |                  |                          |         |          |  |
|-------------|-----------|------------------|--------------------------|---------|----------|--|
| al Overview | 🌣 Gateway | 🛔 Access         | 🖺 File Relay             | SD Card | Activity |  |
| INTERFACE   |           |                  |                          |         |          |  |
|             |           | User             | admin                    |         |          |  |
|             |           | Password         | ****                     |         |          |  |
|             |           | Confirm Password | ****                     |         |          |  |
|             |           |                  | + Advanced configuration |         |          |  |

#### 4.5 File Relay

The LAN and WAN ports on the PLX35-NB2 are physically isolated. The File Relay functionality enables simple and secure transfer of files across segmented networks.

For example, if the customer would like to back up their OT equipment configuration files on the server without wanting to create a link between the IT and OT network, the PLX35-NB2 can be used to segment between the two networks.



The *File Relay* tab allows you to use the SD card port on the device as a temporary storage medium for large files that can be automatically transferred to a remote location. Files can be copied to the PLX35-NB2 SD card from an FTP/SFTP Client. The files can then be transferred to a remote FTP/SFTP Server, or via Belden Horizon.

1 In the *Incoming* section of the *File Relay* tab, select the **FTP** or **SFTP** protocol to enable FTP or SFTP Incoming file transfer.

| O PLX35-N   | NB2       |                  |              |         |          |
|-------------|-----------|------------------|--------------|---------|----------|
| dl Overview | 🌣 Gateway | Access           | 📔 File Relay | SD Card | Activity |
| INCOMING    |           |                  |              |         |          |
|             |           | Protocol         | FTP          | •       | •        |
|             |           | User             | f-relay      |         | G        |
|             |           | Password         | ***          |         |          |
|             |           | Confirm Password | <b>**</b> ** |         |          |

#### **2** Use the following table to enter the appropriate parameters:

| Parameter | Description  |
|-----------|--|
| Incoming  |  |
| Protocol  | FTP (File Transfer Protocol)   |
|           | SFTP (Secure File Transfer Protocol)   |
| User      | The username is for uploading files through FTP to the module's SD card.<br>The default value is <b>f-relay</b> .  |
| Password  | Password for FTP access. The password must have at least 8 characters, contain at least one uppercase letter, one lowercase letter, and one special character. |
| Outgoing  |  |
| Protocol  | Protocol of the server used as final destination for the File Relay.   |
|           | Supported protocols for upload are FTP/SFTP/Belden Horizon   |
| URL       | URL of the server used as final destination for the File Relay.  |
|           | Supported protocols for upload are FTP/SFTP/Belden Horizon   |
|           | For FTP the format is specified in the field: <a href="mailto:ftp://user@host:port/path/">http://user@host:port/path/</a>                                      |
|           | For SFTP the format is: <u>sftp://user@host:port/path/</u>   |
| Password  | Password used to upload to the remote server. You can view the   |
|           | configured value by pressing the "eye" button.   |
|           | Password is used only for FTP.   |
|           | This field is greyed out for SFTP.   |
|           | This field is removed for Belden Horizon.  |

| Host Key | Public Key that authenticates SFTP Server and proves its identity to<br>PLX35-NB2 client. This should be copied from SETP Server and pasted |
|----------|---|
|          | here  |
|          | Used only for SFTP  |
|          | This field is areved out for FTP  |
|          | This field is removed for Belden Horizon  |
|          | <ul> <li>Keys supported: RSA 2048, RSA 3072, RSA 4096, Ed25519 255,</li> </ul>  |
|          | ECDSA nistp256, ECDSA nistp384, ECDSA nistp521  |
|          | Keys unsupported: DSA 1024, ECDSA secp256k1   |
|          | Public Key from SFTP Server should be exported as <b>OpenSSH</b> format.  |
|          | Example.  |
|          | AAAAB3NzaC1vc2EAAAADAOABAAACAODaE1+/MsozqFb5JF6q6   |
|          | y1dhlYfeyPTrsforNIKKfQRE1KACOF3c6eRsSkUnOazfUWHLt   |
|          | CT2B49sxgpteiDu4Phg01kECKjCvISeUuRmWX9CDbGUJNQBea   |
|          | wapZ7WRBIoSBh0aua1ywcnvdMZ0dd16J9t+T49KRJtxG8iw17   |
|          | AKE5ylzBegsRm1v21WQV444w/+Z/DcLR5BmSxuXA/Mm6VCvMp   |
|          | fcaMsOHe/OaiblnIjpvGL7VB0adAln2Igtd5nmvKUPHkBn/vB   |
|          | 26/YKsa69P2Z8qfkpMZV3jKp0xHu5CLEYG4fj1BKLSDVY49AU   |
|          | 2oT6CS+ad++vMdD0boALiJfM08ztUbMBKVkQDZ4FJD/n418HZ   |
|          | jJnOU8Ax3Jw7jghkisES3J4sKIPSvse8DR8+iGzg6oYplZJhk   |
|          | bzEGJgHE46hIM80V0YcsU/htyaSRZ0ZtAU+Ulg/tKkraWota8   |
|          | TPhKKLKEoz3llixxH3c+T6CfP/CVzSubik523ZAZviK0Npimc+  |
|          | MSmROE8hrPWSCg9uimIzGHWLWxjxbSmHRz42EdUi1rWA5Uv8q   |
|          | 7vK19xFgwji0wNLjlx8I3ZmcIehQ==  |
|          | • ecdsa-sha2-nistp384   |
|          | AAAAE2VjZHNhLXNoYTItbmlzdHAzODQAAAAIbmlzdHAzODQAA   |
|          | ABhBDbqqXJXwsBDy+kGaAZbeHC02FL8p0xmXEQfy9X1yuXQTT   |
|          | DWSOH/QG1BZTJ2NIEM/NJDPG2YDOa98pOBUWIMMSICDJKVIF3   |
|          | JIIAVEJOBAGEIYOIIMZYOVEJADDIIWVZZYG   |
|          | Standard SSH2 format is NOT supported:  |
|          | BEGIN SSH2 PUBLIC KEY   |
|          | AAAAB3NzaC1yc2EAAAADAQABAAABgQDanO7WbWaWl+Ukd2RJfvNTSlf   |
|          | GuAHirVi3WxvnOF9vvV/an+0XAsfiFUhMRE+DaaLMzvinmXIMFHcihM   |
|          | FsHZk3RUOfF5d5Syd   |
|          | lfuqMDj2+s2dcjidnkBRXF2Nq+Ii7rPCHtjmDgwE7b7dZxgG6erVs61   |
|          | Ybbr9dAuUs7i5ri79   |
|          | ISBCHUXLVF/OOMIR2/JEYIZMRYOBSWa5DJBL6SK180K51agSamvyy61<br>I88cedD01ipwCt+X9  |
|          | 511jeFzXlIa/L+NzshBs4vAjr3obgHWNiwEDdckw0RU/FDFdbjmH55f   |
|          | vWAa7M71E+A8/UFEa   |
|          | cdYUgovb5pzgbmVHh   |
|          | MiMaŔjkVtdc118nPwdeO4CUn1mLIIWROSLf2JGTg2GTZipbT1Fge8e2   |
|          | wEO9bHiDBORRU5PZP   |
|          | RQUIQDnbtFnE4gswFdhvs4+tHaunw4wBVDIIol0=  |
|          | FIND SOUS LODITO VET  |

**Note:** Host Key will be removed from the outgoing server configuration upon downgrade from PLX35-NB2 1.5 release to any older firmware.

|                   | OUTGOING  |  |
|-------------------|---|--|
|                   | Protocol  | SETP V   |
|                   |   |  |
|                   | UNL   | stp://admin@192.168.0.13:22/   |
|                   | Password  | ••••   |
|                   | Host Key  | ssh-rsa<br>AAAAB3NzaC1yc2EAAAADAQABAAACAQD   |
|                   | SSH-Key   | Generate SSH Key   |
|                   | Daily Upload Time   | 07:56  |
| SSH-Key           | <ul> <li>transfer. Once generated, it shoul file and associated with the design The SSH-Key pair generation take Subsequent requests return the subsequent requests return the subsequent for SSH keys will be removed upon g</li> <li>Used only for SFTP</li> <li>This field is greyed out for</li> <li>This field is removed for</li> </ul> | d be copied to the SFTP Server as a .pub<br>nated user.<br>es place the first time it is requested.<br>ame public key.<br>nateway factory reset.<br>or FTP<br>Belden Horizon |
|                   | OUTGOING  |  |
|                   | Prote   | col SFTP v   |
|                   | ,   | sftp://admin@192.168.0.13/   |
|                   | Passw   | ord **** 🕐   |
|                   | Host i  | BUDIIol@=  |
|                   | SSH-1   | Generate SSH Key   |
|                   | Daily Upload Ti   | me 03:00   |
|                   |   |  |
|                   | PLX35 Public Key  | ×  |
|                   | ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQDk++MYn46<br>pm7j2Dv4jwugicCdaLJPa32TXEKUoiv2nTsxLbK73BH,IYk/,<br>Morengw6Kbh1xb3NSpdDUMYOMUR/zjlM+AcaiCZJURINS2<br>OLBinkMOlvGL1kfyQsRhiIRBDPy2ZBdw20j232V23bb0/2F<br>EZ8+17UkG6Ph7QP8J2eVm5e1JAakQrJF7X7fJJ2P4BMTmn   | uZ33pulp/w4kMlhahHyCLIJE24SKWuz<br>WIJ4C/wK+HMoGWeJ3Udlos490/WL<br>ehYtbkd8MOHa3UoEviYxGIRxqHB8TkP<br>MYT2AQwtYLIMGANcsMB7nEtVj91GD<br>G30Zw4RqftkxXfQ7Ln9UVZ root@lede      |
|                   | 2.166   | Copy to Clipboard  |
|                   | ۲   |  |
| <b>D</b> 11 11 1  | The uplead time, shown in the Le  | col III is UTC similar with the time on  |
| Daily Upload Time | the Overview page. Default time v   | value is $03:00$ .   |

3 Click APPLY CHANGES when complete.

# 4.5.1 Example #1: Transferring Files Across Segmented Networks Using FTP

This example shows an incoming FTP to an outgoing FTP.

- On the LAN port, the PLX35-NB2 acts as an FTP Server for the incoming files to a WinSCP Client, The files are temporarily stored in the PLX35-NB2 SD card.
- On the WAN port, the PLX35-NB2 acts as an FTP Client to a Filezilla Server. The files are pushed from the PLX35-NB2 to the Filezilla FTP Server.

| Filezilla Serv<br>(Resides on a PC)<br>User: admin<br>Password: Pros | er<br>oft1234! | WAN               |                   | nB2     | LAN      | WinSCP Client<br>(Resides on a PC)<br>User: f-relay<br>Password: Prosoft1234! |
|--|----------------|-------------------|-------------------|---------|----------|---|
| OPLX35-N   | IB2            |                   |                   |         |          | •   |
| all Overview   | 🔅 Gateway      | 🛔 Access          | 🔓 File Relay      | SD Card | Activity | Apply changes   |
| INCOMING   |                |                   |                   |         |          |   |
|  |                | Protocol          | FTP               | •       |          |   |
|  |                | User              | f-relay           |         |          |   |
|  |                | Password          | <b>火灾</b> 灾灾      |         |          |   |
|  |                | Confirm Password  | ***               |         |          |   |
| OUTGOING   |                |                   |                   |         |          |   |
|  |                | Protocol          | FTP               | •       |          |   |
|  |                | URL               |                   |         |          |   |
|  |                | Password          | ••••••            | ۲       |          |   |
|  |                | nost Key          | nose-key required |         | 4        |   |
|  |                | SSH-Key           | Generate SSH Ke   | Ey      |          |   |
|  |                | Daily Upload Time | 07:00             |         |          |   |

1 From the WinSCP Client, open a FTP session to PLX35-NB2 and transfer a few files to the *Upload* folder on the PLX35-NB2 SD card:



#### 2 Click OK.

| 🌆 f-relay@192.168.0.254 (FTP) -  | WinSCP   |                    |   |                      |            |                               |                |  |                        |                    |
|--|--|--------------------|---|----------------------|------------|-------------------------------|----------------|--|------------------------|--------------------|
| Local Mark Files Commands  | Session Option   | ns Remote H        | Help  |                      |            |                               |                |  |                        |                    |
| 🗰 📰 🕞 Synchronize 🗾  | 2 2 3  | 🗃 Queue 👻          | Transfer Settin                               | ngs Default          |            | • 🔗 •                         |                |  |                        |                    |
| f-relav@192.168.0.254 (FTP)  | × 🗳 New Ses  | sion               | -   | -                    |            |                               |                |  |                        |                    |
| - D: Data • 🖾 • 🕅  | 7 - ↓ - →  | - I 🖬 🗖            | o 2 %   |                      |            |                               |                | - 🖉 - 🔽                                  | 1-14                   |                    |
| E Unload - D'Edit - Y  | / D- Propertie   | - R New            |   |                      |            |                               | Dow            | alaad a 🛛 🖓 Edi                          |                        | / D- Prop          |
| D:\Tert\   |  |                    |   |                      |            |                               | E DOW          |  |                        | и цу нор           |
| Name   |  | Size               | Turne   |                      | Changed    |                               | Name           |  |                        |                    |
| than the   |  | 3126               | Parent directory                              |                      | 4/30/202   | 0 3:19:19 PM                  | Name           |  |                        |                    |
| test file 01.txt   |  | 1 KB               | Text Document                                 |                      | 4/14/202   | 0 2:05:20 PM                  |                |  |                        |                    |
| test file 02.txt   |  | 1 KB               | Text Document                                 |                      | 4/21/202   | 0 10:14:00 AM                 |                |  |                        |                    |
| test file 03.txt   |  | 1 KB               | Text Document                                 |                      | 4/30/ Pa   | ssword - f-relay@192.168      | 0.254 (FT      | P)                                       |                        | ×                  |
|  |  |                    |   |                      | Ba<br>F    | ssward:                       | к <sub>С</sub> | <br>Cancel                               | Help                   |                    |
|  | Remote Help<br>Queue - Transfe<br>ion<br>I I I I I I I I I I I I I I I I I I I | r Settings Default | • 1 <i>8</i> 7 •                              | / <root></root>      | • 🚰 • 🕁 •  | ← · → ·   ≅ ≅ <b>6 2</b> Q    | Find Files     | 6  | -                      |                    |
| 🕼 Upload 👻 📝 Edit 👻 🔏 🕞 Properties   | 🖆 New - 主 🖃  | A                  |   | i 📄 Download         | - 🛛 Edit - | 🗙 🛃 🕞 Properties 📑 New - 🗄    | + - V          |  |                        |                    |
| D:\Test\<br>Name   | Size Type  | c                  | Changed                                       | /<br>Name            |            |                               | Size           | Changed                                  | Rights                 | Owner              |
| e<br>test file 01.txt  | Parent dire  | ctory 4            | 1/30/2020 3:20:43 PM<br>1/14/2020 2:05:20 PM  | t []                 |            |                               |                | 4/30/2020 8:18 AM                        | DWXDWXDWX              | f-relay            |
| test file 02.bd  | 1 KB Text Docur<br>1 KB Text Docur   | nent 4<br>nent 4   | //21/2020 10:14:00 AM<br>//30/2020 3:20:56 PM | sent                 |            |                               |                | 4/30/2020 7:57 AM<br>4/30/2020 7:57 AM   |                        | f-relay<br>f-relay |
| in the original  |  |                    |   | lostnfound           |            |                               |                | 4/22/2020 12:04 PM                       | INXINXINX              | f-relay            |
|  |  |                    |   |                      | B          |                               |                |  |                        |                    |
|  |  |                    |   |                      |            |                               |                |  |                        |                    |
|  |  |                    |   |                      |            |                               |                |  |                        |                    |
| 0 B of 9 B in 0 of 3   |  |                    |   | 0 B of 0 B in 0 of   | 4          |                               |                |  |                        |                    |
|  |  |                    |   |                      |            |                               |                |  | FTP 🖣                  | 0:01:13            |
| _  |  |                    |   |                      |            |                               |                |  |                        |                    |
| upload - f-relay@192.168.0.254 (FTP) - WinSCP     Local Mark Files Commands Session Ontion | Remote Help  |                    |   |                      |            |                               |                |  | -                      |                    |
| 🕀 😂 🎭 Synchronize 📘 🦑 👔 🍥 🕯  | Queue - Transfe  | r Settings Default | - I <i>Ø</i> -                                |                      |            |                               |                |  |                        |                    |
|  | on<br>En En 🏠 🔎 🔍  |                    |   | unload               | 🛤 v 🖂 v    | (de a se) - 10 (de de de la c | Find Files     |  |                        |                    |
| Upload - Z Edit - X 🚮 🕞 Properties   | 1 III III III III III III III III  | 4                  |   | Download             | Edit -     | 🗙 🔬 🕞 Properties 🎽 New - 🔢    | + - V          |  |                        |                    |
| D:\Test\   | Cian T   | 1.                 | toward .                                      | /upload/             |            |                               |                | Channel                                  | Diald                  | Ourse              |
| Name   | Size Type<br>Parent dire   | ctory 4            | nanged<br>/30/2020 3:20:43 PM                 | Name                 |            |                               | Size           | cnanged                                  | Rights                 | Uwner              |
| test file 01.txt   | 1 KB Text Docum<br>1 KB Text Docum   | nent 4             | /14/2020 2:05:20 PM<br>/21/2020 10:14:00 AM   | test file 03.txt     |            |                               | 1 KB<br>1 KB   | 4/30/2020 12:29 PM<br>4/30/2020 12:29 PM | TWXTWXTWX<br>TWXTWXTWX | f-relay<br>f-relay |
| test file 03.txt   | 1 KB Text Docum  | nent 4             | /30/2020 3:20:56 PM                           | 📄 test file 01.bit   |            |                               | 1 KB           | 4/30/2020 12:29 PM                       | INXINXINX              | f-relay            |
|  |  |                    |   |                      |            |                               |                |  |                        |                    |
| 0 Rof 9 Rin 0 of 3   |  |                    |   | 0 B of 9 P in 0 -f   |            |                               |                |  |                        |                    |
| 0 B 01 9 B IN 0 01 3   |  |                    |   | U B OT 9 B in 0 of 3 |            |                               |                |  | FTP (1)                | 0:03:44            |

3 Log into the FTP Filezilla Server.

User: admin Password: Prosoft1234! Folder: C:\FTP\_Root):



| age:   | Shared folders  |   | Users   |                |
|--|---|---|---|----------------|
| General<br>Shared folders<br>Speed Limits<br>IP Filter | Directories     Alia       H     C:\FTP_Root       Image: Comparison of the second s | Files<br>Regad<br>Write<br>Polete<br>Append<br>Directories<br>Create<br>Delete<br>Uist<br>Vist<br>V Subdirs<br>Rename<br>Set as home dir<br>at the specified location. Aliases mur<br>r one directory structures, it will only co | Add<br>Rename<br>st contain the full virtuater (1)<br>who st PTP clients. | Remove<br>Copy |
| OK   |   |   |   |                |

#### 4 Start the server:

| FileZilla Server (127.0.0.1)  |
|---|
| File Server Edit ?  |
| 🗲 🖺   😹 🕰 📽 💡   /c/ =\ 🎫 🗸  |
| FileZilla Server 0.9.60 beta  |
| Copyright 2001-2016 by Tim Kosse (tim kosse@filezilla-project.org)  |
| https://filezilla-project.org/                                      |
| Connecting to server localhost: 14147                               |
| Connected, waiting for authentication                               |
| Logged on   |
| Warning: FTP over TLS is not enabled, users cannot securely log in. |
| Retrieving account settings, please wait                            |
| Done retrieving account settings                                    |
| Retrieving account settings, please wait                            |
| Done retrieving account settings                                    |
| Retrieving account settings, please wait                            |
| Done retrieving account settings                                    |
| Creating listen socket on port 21                                   |
| Server online   |
|   |
|   |
|   |

5 At the configured *Daily Upload Time*, set (hh:mm, default is 03:00). The files from the PLX35-NB2 SD card *Upload* folder will be time-stamped (yyyy-mm-dd) and transferred to the FTP Filezilla Server on folder C:\FTP\_Root.

| FileZilla Server (127.0.0.1)   |                |
|--|----------------|
| File Server Edit ?   |                |
| Done relieving account settings  |                |
| Hetreving account settings, please wat<br>Done retrieving account settings<br>Retrieving account settings  |                |
| Done retrieving account settings<br>Creating listen socket on pot 21   |                |
| Server online<br>(000136)4/30/2020 15:41:02 PM - (not logged in) (192.168.0.254)> Connected on port 21, sending welcome message  |                |
| (000136)4/30/2020 15:41:02 PM - (not logged in) (192.168.0.254)> 220-FileZilla Server 0.9.60 beta<br>(000136)4/30/2020 15:41:02 PM - (not logged in) (192.168.0.254)> 220-written by Tim Kosse (tim kosse@filezilla-project.org)   |                |
| (000136)4/30/2020 15:41:02 PM - (not logged in) (192:168.0.254)> 220 Please visit https://filezilla-project.org/<br>(000136)4/30/2020 15:41:02 PM - (not logged in) (192:168.0.254)> USER admin  |                |
| (UU0135)4/30/2020 15:41:02 PM - (not logged in) (192.168:0.254)> 331 Password required for admin<br>(000136)4/30/2020 15:41:02 PM - (not logged in) (192.168:0.254)> PASS **********************************   |                |
| (000136)4/30/2020 15:41:02 PM - admin (192:168.0.254) > PWD<br>(000136)4/30/2020 15:41:02 PM - admin (192:168.0.254) > PWD   |                |
| (000136)4/30/2020 15:41:02 PM - admin (192.168.0.254)> EPSV<br>(000136)4/30/2020 15:41:02 PM - admin (192.168.0.254)> 229 Entering Extended Passive Mode (  60833 )  |                |
| (000136)4/30/2020 15:41:02 PM - admin (192.168.0.254)> TYPE I<br>(000136)4/30/2020 15:41:02 PM - admin (192.168.0.254)> 200 Type set to I  |                |
| (000136)4/30/2020 15:41:02 PM - admin (192.168.0.254)> STOR 2020-04-30test file 01.bt<br>(000136)4/30/2020 15:41:02 PM - admin (192.168.0.254)> 150 Opening data channel for file upload to server of "/2020-04-30test file 01.bt"   |                |
| (000136/4/30/2020 15.41:02 PM - admin (192:168.0.254)> 22 Successfully transferred / 2020-04-30lest life 01.54<br>(000136/4/30/2020 15.41:02 PM - admin (192:168.0.254)> QUIT<br>(000136/4/30/2020 15.41:02 PM - admin (192:168.0.254)> 221 Goodbue  |                |
| (000136)4/30/2020 15:41:02 PM - admin (192:168.0.254)> disconnected.<br>(000136)4/30/2020 15:41:02 PM - indi ingaeti ni (192:168.0.254)> disconnected.   |                |
| (000137)4/30/2020 15:41:02 PM - (not logged in) (192.168.0.254)> 220-FileZilla Server 0.9.60 beta<br>(000137)4/30/2020 15:41:02 PM - (not logged in) (192.168.0.254)> 220-written by Tim Kosse (tim kosse@filezilla-project.org)   |                |
| (000137)4/30/2020 15:41:02 PM - (not logged in) (192:168.0.254)> 220 Please visit https://filezilla-project.org/<br>(000137)4/30/2020 15:41:02 PM - (not logged in) (192:168.0.254)> USER admin  |                |
| (UUU13/)4/30/2020 15:41:02 PM - (not logged in) (192, 168.0.254)> 331 Password required for admin<br>(000137)4/30/2020 15:41:02 PM - (not logged in) (192, 168.0.254)> PAS ***********************************   |                |
| (000137)4/30/2020 15:41:02 PM - admin (12:168:0.254) > PWD<br>(000137)4/30/2020 15:41:02 PM - admin (192:168:0.254) > PWD  |                |
| (000137)4/30/2020 15:41:02 PM - admin (192.168.0.254)> EPSV<br>(000137)4/30/2020 15:41:02 PM - admin (192.168.0.254)> 229 Entering Extended Passive Mode (  61831 )  |                |
| (000137)4/30/2020 15:41:02 PM - admin (192.168.0.254)> TYPE I<br>(000137)4/30/2020 15:41:02 PM - admin (192.168.0.254)> 200 Type set to I  |                |
| (000137)4/30/2020 15:41:02 PM - admin (192.168.0.254)> 510R 2020-04-30test file 02.txt<br>(000137)4/30/2020 15:41:02 PM - admin (192.168.0.254)> 150 Opening data channel for file upload to server of "/2020-04-30test file 02.txt"<br>(000137)4/30/2020 15:41:02 PM - admin (192.168.0.254)> 150 Opening data channel for file upload to server of "/2020-04-30test file 02.txt" |                |
| (000137)4/30/2020 15:41:02 PM - admin (192:168:0.254)> 205 Subcessibility dansered 72020-04-soless me 02.0x<br>(000137)4/30/2020 15:41:02 PM - admin (192:168:0.254)> 201<br>(000137)4/30/2020 15:41:02 PM - admin (192:168:0.254)> 221 Goodhye  |                |
| (000137)4/30/2020 15:41:02 PM - admin (192.168.0.254)> disconnected.<br>(000138)4/30/2020 15:41:02 PM - (not logged in) (192.168.0.254)> Connected on port 21, sending welcome message   |                |
| (000138)4/30/2020 15:41:02 PM - (not logged in) (192.168.0.254)> 220-FileZilla Server 0.9.60 beta<br>(000138)4/30/2020 15:41:02 PM - (not logged in) (192.168.0.254)> 220-written by Tim Kosse (tim kosse@filezilla-project.org)   |                |
| (000138)4/30/2020 15:41:02 PM - (not logged in) (192.168.0.254)> 220 Please visit https://filezilla-project.org/<br>(000138)4/30/2020 15:41:02 PM - (not logged in) (192.168.0.254)> USER admin  |                |
| (000138)4/30/2020 15:41:02 PM - (not logged in) (152:168.0.234) > 351 FassWord required for admin<br>(000138)4/30/2020 15:41:02 PM - (not logged in) (152:168.0.254) > ASS<br>(000138)4/30/2020 15:41:02 PM - admin (152:168.0.254) > 351 FassWord required for admin  |                |
| (000138)4/30/2020 15:41:02 PM - admin (192:168.0.254)> PWD<br>(000138)4/30/2020 15:41:02 PM - admin (192:168.0.254)> 257 "/" is current directory.   |                |
| (000138)4/30/2020 15:41:02 PM - admin (192.168.0.254)> EPSV<br>(000138)4/30/2020 15:41:02 PM - admin (192.168.0.254)> 229 Entering Extended Passive Mode (III59867))   |                |
| (000138/4/30/2020 15:41:02 PM - admin (192.168.0.254)> 19PE I<br>(000138/4/30/2020 15:41:02 PM - admin (192.168.0.254)> 200 pp set to 1<br>(000128/4/30/2020 15:41:02 PM - admin (192.168.0.254)> 500 p 200 DA 20 per file 02 tot  |                |
| (000138)//30/2020 15:41:02 PM - admin (192:168:0.254)> 150 Opening data channel for file upload to server of "/2020-04-30test file 03 bt"<br>(000138)//30/2020 15:41:02 PM - admin (192:168:0.254)> 250 Opening data channel for file upload to server of "/2020-04-30test file 03 bt"   |                |
| (000138)4/30/2020 15:41:02 PM - admin (192.168.0.254)> QUIT<br>(000138)4/30/2020 15:41:02 PM - admin (192.168.0.254)> 221 Goodbye  |                |
| (000138)4/30/2020 15:41:02 PM - admin (192.168.0.254)> disconnected.   | Program Speed  |
|  | Progress Speed |
|  |                |
| Ready  |                |
|  |                |
|  |                |
| 🛓 🖾 🗙 🖬 📕 Hin New item 🕶 🗸   |                |
| y path<br>Move Copy Delete Rename New Properti   |                |
| e shortcut to v to v v folder v  |                |
| Organize New   |                |
| Local Disk (C:) > FTP_Root   |                |
| Name   |                |
| 2020-04-30test file 01.txt   |                |
| ★ 2020-04-30test file 01.txt   |                |
| 2020-04-30test file 03.txt   |                |
| *  |                |
| * 43   |                |
|  |                |

# 4.5.2 Example #2: Transferring Files Across Segmented Networks Using SFTP

This example shows an incoming SFTP to Outgoing SFTP.

Public Key: Copied from PLX35-NB2

SSH-Key box to Bitvise

- On the LAN port, the PLX35-NB2 acts as a SFTP Server for the incoming files from the WinSCP Client. The files will be temporarily stored on the SD card.
- On the WAN port, the PLX35-NB2 acts as a SFTP Client to a Bitvise Server. The files are pushed from the PLX35-NB2 to the Bitvise SFTP Server.



1 From the WinSCP Client, open a SFTP session to PLX35-NB2 and transfer few files to the *Upload* folder on PLX35-NB2 SD card:

|  | Gateway  | Access   | File Relay                           | SD Card    | Activity                                 |  |
|--|--|--|--------------------------------------|------------|--|--|
| COMING   |  |  |                                      |            |  |  |
|  |  | Protocol   | SFTP                                 | v          |  |  |
|  |  | User   | f-relay                              |            |  |  |
|  |  | Password   | ·朱安安安                                |            |  |  |
|  |  | Confirm Password   | ***                                  |            |  |  |
| ITGOING  |  |  |                                      |            |  |  |
|  |  | Protocol   | SFTP                                 | Ŧ          |  |  |
|  |  | URL  | sftp://admin@192.16                  | 8.0.13:22/ |  |  |
|  |  | Password   | ***                                  | ۲          |  |  |
|  |  | Host Key   | ssh- <u>rsa</u><br>AAAAB3NzaC1yc2EAA |            |  |  |
|  |  | SSH-Key  | Generate SSH Key                     |            |  |  |
|  |  | Daily Upload Time  | 12:41                                |            |  |  |
|  |  |  |                                      |            |  |  |
| f-relay@192.168.0.254 (SFTI<br>cal Mark Files Command<br>f-relay@192.168.0.254 (SFTI<br>D- Data ~ C to Command<br>Upplaad ~ C to Command<br>est\ | 2) - WinSCP<br>Is Session Options Rerr<br>IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | iote Help<br>eue • ITransfer Setting<br>1 🗟 🏠 🌮 🦕<br>New • I 🕂 🖤 | gs Default                           | •   🔗 •    | -)  - 〒 - ↓<br>vnload - ↓   ☆ Edit - → 🎗 |  |
| State of the second |  |   | upiosa · 🗁 · 🗹 ·  |  | o Files To  |                              |
|--|--|---|---|--|---|------------------------------|
| ad 🔹 🕼 Edit 🔹 🗶 🔂 🖓 Pro  | iperties 🛗 New 🔹 🛨 🖃 🕅   |   | I B Downloak - 2 Edt -                                    | 🛪 🚓 🗠 Properties 📑 New • 🗄                       |   |                              |
| ^  | Size Type  | Changed   | Name  |  | Size Changed  | Rights Or                    |
| e 01.txt   | 1 KB Text Document   | 4/30/2020 3:20:43 PM<br>4/14/2020 2:05:20 PM        | test file 03.txt  |  | 1 KB 4/30/2020 3:20:56 PM                               | rwxrwxrwx ro                 |
| e 03.txt   | 1 KB Text Document<br>1 KB Text Document                         | 4/21/2020 10:14:00 AM<br>4/30/2020 3:20:56 PM       | test file 02.bd   |  | 1 KB 4/21/2020 10:14:00 AM<br>1 KB 4/14/2020 2:05:20 PM | rwxrwxrwx ro<br>rwxrwxrwx ro |
| PLX35-N  | NB2  |   | Ш   |  |   |                              |
| ul Overview  | Gateway  | Access  | 📔 File Relay  | SD Card  | Activity  |                              |
| DMING  |  |   |   |  |   |                              |
|  |  | Protocol  | SFTP  | Ţ  |   |                              |
|  |  | User  | f-relay   |  |   |                              |
|  |  | Password  | ***   |  |   |                              |
|  |  | Confirm Password                                    | <b>光</b> 大 大 大  |  |   |                              |
| GOING  |  |   |   |  |   |                              |
|  |  | Protocol  | SFTP  | Ŧ  |   |                              |
|  |  | URL   | sftp://admin@192.   | 168.0.13:22/                                     |   |                              |
|  |  | Password  | <b>党党党党</b>   | ۲  |   |                              |
|  |  | Host Key  | ssh- <u>rsa</u><br>AAAAB3NzaC1yc2E                        |  |   |                              |
|  |  | SSH-Key   | Generate SSH P  | Key Do   |   |                              |
|  |  | Daily Upload Time                                   | 12:41   |  |   |                              |
|  |  |   |   |  |   |                              |
|  |  |   |   |  |   |                              |
| PLX35 Public Ke  | у  |   |   | ×  |   |                              |
| sh-rsa AAAAB3Nzi<br>Z4yGaxTvx1McKxk<br>vdYFOcTtjTqzaUZ   | aC1yc2EAAAADAQABAA<br>O4egu8cbV5flLF+A3lul<br>UJSXkqKS2J88Fk8y0A | ABAQDWo8Jed6n<br>Hr6O8t/hMepVUHv<br>f0C9IXUPmWJ4Dth | ijAzOFLzmZNzLEA7<br>/H3Dlr1WIW0XE298<br>IkVnQs6AZJV48fEUI | PFsehuMeW3Xnac<br>NuzK8lgpGcFflOSJ<br>bxRL31x40a |   |                              |

- 2 On the Bitvise server, managing public keys:
  - Generate a key on Bitvise Manage host keys, export it as OpenSSH format, then copy the key to Host Key box into the PLX35-NB2
  - Generate SSH Key on PLX35-NB2, copy into a .pub file and add it on admin account on Bitvise server

|   |  | About   |   |                                    |   |
|---|--|---|---|------------------------------------|---|
| is tab to start and stop  | ent<br>Bitvise SSH Server and manage its host  | t keys, certificates, password c  | ache, and settings. Click the que                     | stion mark icons to learn about e  | ach configuration aspect.   |
| e SSH Server service is   | stopped <u>Start Server</u>  |   |   |                                    | Instance type: Standalon  |
| p type: Automatic   |  |   |   |                                    |   |
| log tolder viewer   |  |   |   |                                    |   |
| ost keys  |  |   |   |                                    |   |
| ID5 fingerprint: 61:b   | ;<br>/e:3d:3b:13:10:67:ee:85:23:3f:aa:2e:3   | 3a:07:02 Copy   |   |                                    |   |
| ubble-Babble: xetec<br>HA-256 fingerprint:  | <ul> <li>todk-ripap-seriz-dolyr-deham-finob-kyv<br/>jeHYWZRn10I/Y5veH1JhL0CJGyd8aaBi</li> </ul>  | veh-rutim-gezyg-kexix <u>Copy</u><br>qcPCazBjsGSE <u>Copy</u>   |   |                                    |   |
| CD5A/nistp384 host  | key 384 bits   |   |   |                                    |   |
| ID5 fingerprint: 6a:7<br>ubble-Babble: xuck-  | 9:0d:66:54:6f:bd:62:3d:31:4d:a1:fd:ct<br>fipig-resek-dlut-dopor-pahyh-narec-dyz  | f:c9:f2 <u>Copy</u><br>zel-lefez-turuf-baxox <u>Copy</u>  |   |                                    |   |
| lanage host keys  | Copy all fingerprints  | Hisvouusbao <u>Copy</u>   |   |                                    |   |
| ertificates   |  |   |   |                                    |   |
| ssued to: Bitvise SSH   | Server Issued by: Bitvise SSH Serv   | ver <u>Show</u>   |   |                                    |   |
| alid from 2020-04-08<br>HA-1 fingerprint: eb  | 03:00 +0300 to 2035-04-09 03:00 +0<br>(fa:67:3a:3b:33:c4:b3:a3:84:96:09:7d   | 1300<br>i:be:0b:81:06:11:8d:44 Copy   |   |                                    |   |
| HA-256 fingerprint:   | e1:87:81:81:1a:08:6f:24:74:77:02:9f:   | 2a:80:b8:b1:cc:43:30:8a:5b:b  | 2:f6:96:da:db:b5:22:c4:80:e0:1                        | c <u>Copy</u>                      |   |
| lanage certificates   | Copy all fingerprints  |   |   |                                    |   |
| ttings  |  |   |   |                                    |   |
| pen easy settings   |  |   |   |                                    |   |
| dit advanced settings   | View Import Export Restore   |   |   |                                    |   |
| uery settings with Pov  | <u>rerShell</u>  |   |   |                                    |   |
| assword cache   |  |   |   |                                    |   |
| asswords in cache: 0  | Manage password cache  |   |   |                                    |   |
|   |  |   |   |                                    |   |
|   |  |   |   |                                    |   |
|   |  |   |   |                                    | Close   |
| Ver Sessions  | Activity* Statictics   | About   |   |                                    | Close<br>Send us feed   |
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| ver Sessions<br>ver manageme<br>is tab to start and stop<br>SSM Server service is<br>ap type: <u>Automatic</u><br>log falder viewer<br>ost keys<br>Sitahost key 4096 bits<br>Bittvise SSM Server<br>1. Server settings<br>Simplified virt<br>firbal accounts are ly<br>r port forwarding, bu<br>ontroller, you need t<br>dvanced settings.<br>Virtual account ne<br>admin   | Activity* Statistics  Int Bibles 55H Server and manage its host stopped Start Server  Entry 0 in Simplified vi Entry 0 in Simplified vi Excend / Colacce al hele  Virtual account password Utual account passw   | About  About  t keys, certificates, password c  virtual accounts  irtual accounts  admin not set  Admin Not set  Bushel  Limit to root directory  Limit to root directory | ache, and settings. Clok the que                      | ston mark icons to learn about e   | Close Send us feed ach configuration aspect. Instance type: Standalon                 |
| ver Sessions ver manageme is tab to start and stop software service is p type: Automatic soft keys Sch Server service is Bitviae Sch Server I. Server settings Simplified virt 'thual accounts are ik p port forwarding, bit Bitviae Sch Server I. Server settings Simplified virt 'thual accounts are ik p ort forwarding, bit accounts are ik port forwarding, bit Server settings Virtual accounts are ik admin  | Activity* Statistics ent Biblie SSH Server and manage its host stopped Start Server  | About About t keys, certificates, password c virtual accounts influal accounts admin not set I key I byshel I byshel I IIIII to root drectory C;ISFP_Root Not             | ache, and settings. Click the que                     | ation mark icons to learn about e  | Close<br>Send us feed<br>ach configuration aspect.<br>Instance type: <u>Standalor</u> |
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Close

3 After the Bitvise server is started, set the Daily Upload Time (hh:mm, default is 03:00). The files from the PLX35-NB2 SD card Upload folder will be time-stamped (yyyy-mm-dd) and transferred to PC 2 FTP Bitvise Server on folder C:\SFTP\_Root.



|       | Organize                   | New | Open | Select |                   |               |                      |   |
|-------|----------------------------|-----|------|--------|-------------------|---------------|----------------------|---|
| Local | Disk (C:) > SFTP_Root      |     |      |        |                   |               | ✓ ひ Search SFTP_Root | Q |
|       | Name                       |     |      |        | Date modified     | Туре          | Size                 |   |
|       | 2020-04-30test file 03.txt |     |      |        | 4/30/2020 4:23 PM | Text Document | 1 KB                 |   |
| ×.    | 2020-04-30test file 01.txt |     |      |        | 4/30/2020 4:23 PM | Text Document | 1 KB                 |   |
| A     | 2020-04-30test file 02.txt |     |      |        | 4/30/2020 4:23 PM | Text Document | 1 KB                 |   |
| *     |                            |     |      |        |                   |               |                      |   |
|       |                            |     |      |        |                   |               |                      |   |

ProSoft Technology, Inc.

#### 4.6 SD Card

The *SD Card* tab allows you to Eject, Mount, Format, and diagnose the PLX35-NB2 SD Card. You can also optimize the SD Card in this tab.

You can only access the SD Card from a FTP/SFTP Client.

| • PLX35-NB2  |                    |                   |              |           |          |               |  |  |  |  |
|--------------|--------------------|-------------------|--------------|-----------|----------|---------------|--|--|--|--|
| Lul Overview | Gateway            | Access            | 🖹 File Relay | SD Card   | Activity |               |  |  |  |  |
|              |                    |                   |              |           |          | Apply changes |  |  |  |  |
| SD CARD      |                    |                   |              |           |          |               |  |  |  |  |
|              | SD Card State      | us null (null% fu | ll)          |           |          |               |  |  |  |  |
|              | Eject              | Mou               | Int File Sys | tem Check | Format   |               |  |  |  |  |
| SPACE MANAGE | MENT               |                   |              |           |          |               |  |  |  |  |
|              | Reclaim Spac       | e Disabled        |              | ¥         |          |               |  |  |  |  |
|              | High water mark (% | ) 75              |              |           |          |               |  |  |  |  |
|              | Low water mark (%  | ) 50              |              |           |          |               |  |  |  |  |

1 Use the following table to enter the appropriate parameters:

| Parameter           | Description  |
|---------------------|--|
| SD Card             | Note: The SD Card options may be greyed out according to the SD card status.     |
|                     | If the SD Card is not present, the SD Card options are greyed out.               |
|                     | If the SD Card is not mounted, the Eject and Format buttons are greyed out.      |
|                     | If the SD Card is mounted, the Mount button is greyed out.                       |
| Eject               | Recommended to be done before manually removing SD Card.                         |
| Mount               | This allows the SD card to be visible to the PLX35-NB2. When the SD Card is not  |
|                     | 'mounted', it will not be visible to the PLX35-NB2.                              |
| File System Check   | Checks the SD Card for errors. This should be used in case the SD Card cannot be |
|                     | mounted. The page will be refreshed after the File System Check process is       |
|                     | finished, then the user can manually mount the SD Card using Mount button.       |
| Format              | Removes the data from the SD Card and creates a new file system (FAT32 type).    |
| Space Management    |  |
| Reclaim Space       | Automatically cleans up the SD Card. Default value is <b>Disabled</b> .          |
| High Water Mark (%) | The system will start deleting files from the SD Card when this threshold is     |
|                     | reached.   |
| Low Water Mark (%)  | The system will delete files from the SD Card until this threshold is reached.   |
|                     |  |

**Note:** The High and Low Water Mark values should be based on the size of the SD Card and the sizes of the uploaded files. Inappropriate values may cause the deletion of files before the upload is performed.

2 Click **APPLY CHANGES** when complete.

## 4.7 Viewing Gateway Log file Activity

## 1 Click on the *Activity* tab.

|   | O Gataway  | Access   | 💼 file fielay   | SD Card  | Activity  |  |   |   |   | Apply chang   |
|---|--|--|---|--|---|--|---|---|---|---|
| wnload log file   | A The timestar   | g is in UTC format.  |   |  | D   | Systog level:  | info  | •   | Search  |   |
| $\begin{split} M_{M_{2}} &= 0.00411132\\ M_{M_{2}} &= 0.00441117\\ M_{M_{2}} &= 0.0044117\\ M_{M_{2}} &= 0.0044127\\ M_{M_{2}} &= 0.0044227\\ M_{M_{2}} &= 0.0044127\\ M_{M_{2}} &= 0.0044127\\ M_{M_{2}} &= 0.0044127\\ M_{M_{2}} &= 0.0044227\\ M_{M_{2}} &= 0.0044227\\ M_{M_{2}} &= 0.0044227\\ M_{M_{2}} &= 0.0042227\\ M_{M_{2}} &= 0.004227\\ M_{M_{2}} &= 0.00427\\ M_{M_{2}} &= 0.00427\\ M_{M_{2}} &=$ | 220 systogenet PLX-Agen<br>220 systogenet PLX-Agen<br>0 timesout<br>0 timesout<br>0 timesout<br>0 timesout<br>0 systogenet PLX-Agen<br>0 timesout<br>0 timesout<br>0 systogenet PLX-Agen<br>0 timesout<br>0 times | gent [133] 2020(30)<br>ref [133] 2020(30)<br>ref [133] 2020(30)<br>ref [133] 2020(30)<br>ref [133] 2020(30)<br>ref [130]; cient got41 C<br>[1303]; cient got41 C<br>[1304]; cient got41 C<br>[1305]; ci | 4 Biold II ang Context go<br>Connector WSSCIert Lob<br>III and Connector WSSCIert<br>IIII and Connector WSSCIert<br>IIIII and Connector WSSCIert<br>224 All States 6 (1) [http://<br>Connector WSSCIert [et<br>IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | 880 DEBUG response &<br>BRODEDUG response &<br>DEBUG response &<br>If addressnik/jap.prod/t.<br>If addressnik/jap.prod/t.<br>At jaddressnik/jap.prod/t.<br>At jaddressnik/jap.prod/t.<br>BODEDUG response &<br>Ski DEBUG response &<br>Ski DEB | ent may by comparison and end of the second and of the second and | reports.<br>Dispatches tables ta | 47.46719484-343<br>90.111.189.60638->44.<br>195.90.111.189.60639<br>90.111.189.60640<br>91.95.90.111.189.60640<br>91.9421.493840.80640<br>91.9421.493840.80640<br>91.9421.493840.80640<br>91.95.90.111.189.60644<br>41.95.71.65.95.0111.189.60644<br>41.911.11.89.90644<br>41.911.11.89.90644<br>919.5.90.111.189.80644 | 228.48.172.443: (jo timeo;<br>44.228.48.172.443: (jo timeo;<br>44.228.48.172.443: (jo timeo;<br>44.228.48.172.443: (jo timeo;<br>44.228.48.172.443: (jo timeo;<br>44.228.48.172.443: (jo timeo; | (I) was closed: read top 11<br>meout) closed: read top 1<br>Al) was closed: read top 1<br>meout) closed: read top 1<br>Al) was closed: read top 1<br>meout) closed: read top 1<br>Al) was closed: read top 1<br>meout) closed: read top 1 | 55.90.111.169950036<br>55.90.111.169950034<br>95.90.111.16995064<br>95.90.111.169950644<br>95.90.111.169950644<br>95.90.111.169950644 |

Options on this page include search, search filter options, and a Download log file option.



2 Click on the **DOWNLOAD LOG FILE** button to download a .txt file to the download folder of your PC or laptop.

**Note:** Some options that appear in the configuration UI may not be available during management or configuration options within Belden Horizon.

## 4.8 Importing a Configuration File

1 Select **IMPORT CONFIGURATION** from the **SETUP** icon located in the upper-right corner of any configuration page.

| PLX35     Prosoft | PLX35-NB2_QA_BH |                     |                    |         |          |                                   |  |   |  |  |  |
|-------------------|-----------------|---------------------|--------------------|---------|----------|-----------------------------------|--|---|--|--|--|
| Lat. Overview     | O Gateway       | Access              | File Relay         | SD Card | Activity |                                   |  |   |  | Change firmware Reboot gateway Factory reset |  |
| PERFORMANCE       | ▶ LIVE          |                     |                    |         |          |                                   |  | DEVICE DETAILS  |  | e Logout                                     |  |
| 1 Day             |                 | 34<br>WAN DAT<br>30 | 5 MB<br>A RECEIVED |         |          | 568 MB<br>111 MB<br>LAN DATA SENT |  | Model:<br>LAN IP:<br>WAN IP:<br>Serial #:<br>Firmware:<br>System Time:<br>Belden Horizon: | Change     2024-02-01     Change     2024-02-01     Change     2024-02-01     07-13-11     -0000     Change     Deactivels |  |  |

2 Locate and select a configuration file to import and then click the **IMPORT** button.

| Import Configuration                     | ×      |
|--|--------|
| CHOOSE AN IMPORT CONFIGURATION TO UPLOAD |        |
| Choose File                              |        |
| Close                                    | Import |

## 4.9 Exporting a Configuration File

1 In the upper-right corner of any configuration page, select **EXPORT CONFIGURATION** from the setup icon.

| PLX35<br>Prosoft | -NB2_QA    | _BH    |            |         |  |        |                              |   | Import configuration  |
|------------------|------------|--------|------------|---------|--|--------|------------------------------|---|---|
| ial Overview     | O Gateway  | Access | File Relay | SD Card | Activity   |        |                              |   | Export configuration     Change firmware     Reboot gateway     Factory reset |
| PERFORMANCE      | ▶ LIVE     |        |            |         |  |        | DEVICE DETAILS               |   | (+ Logout   |
|                  | Day 346 MB |        |            |         |  | 569 MB | Model:<br>LAN IP:<br>WAN IP: | ProSoft PLX35<br>192.168.0.26<br>10.20.254.70 | NB2   |
|                  | 302 MB     |        |            | 111 MB  | энтан #: 000081812.22.20<br>Firmware: 1.8.30-0 debug<br>Change<br>System Time: 2024-02.01 07:18:54 +0000 |        | 20<br>16:54 +0000            |   |   |
|                  |            |        |            |         |  |        | Belden Horizon:              | Deactivate                                    |   |

2 The gateway downloads a **tar.gz** file to your PC or laptop. Do not modify this file.

#### 4.10 Updating the Firmware

**Note:** Downgrading to old firmware versions: If running firmware version is 1.2.13 or higher, performing a downgrade to versions 1.1.57 or 1.0.24 is not supported.

If running firmware version is 1.2.31 or higher, performing a downgrade to versions 1.2.13, 1.1.57 or 1.0.24 is not supported.

If running firmware version 1.7.1 or higher, users cannot downgrade to versions 1.6.90 and lower due to a new signing key method implementation.

Note: Belden Horizon can also schedule updates to the latest firmware for multiple PLX35-NB2 gateways.

1 Click the **SETUP** icon in the top-right corner of the page and then click **CHANGE FIRMWARE**.

| PLX35- Prosoft | PLX35-NB2  |            |         |          |  |   |  |   |  |  |  |
|----------------|--|------------|---------|----------|--|---|--|---|--|--|--|
| Lat. Overview  | O Gateway & Access   | File Relay | SD Card | Activity |  |   |  | Export configuration     Change firmware     Reboot gateway     Factory reset |  |  |  |
| PERFORMANCE •  | LIVE   |            |         |          |  | DEVICE DETAILS  |  | 🕞 Logout  |  |  |  |
| 2 Days         | 441 MB<br>WAR DATA RECEIVED<br>325 MB<br>LAN DATA RECEIVED |            |         |          | 686 MB<br>WAN DATA SENT<br>132 MB<br>LAN DATA SENT | Model:<br>LAN IP:<br>WAN IP:<br>Serial #:<br>Firmware:<br>System Time:<br>Belden Horizon: | ProSoft PLX35<br>192.168.0.25<br>10.20.254.70<br>00.0d.8d.a2.b2<br>1.8.30-r0.debuj<br>Change<br>2024-02-02.07:<br>Change<br>Deactivate | -VB2<br>20<br>9<br>07:17 -0000  |  |  |  |

This opens the Change firmware dialog.

| Change firmware         | ×      |
|-------------------------|--------|
| CHOOSE A FILE TO UPLOAD |        |
| Choose File             |        |
| Close                   | Change |

- 2 Click the **CHOOSE FILE** button and locate the firmware file.
- **3** Select the file and click **OPEN**.
- 4 Click the **CHANGE** button to load the new firmware.
- **5** After the firmware update is complete, refresh PLX35-NB2 webpage.

## 4.11 Rebooting the Gateway

1 Click the **SETUP** icon in the top-right corner of the page and then click **REBOOT GATEWAY**.

| Prosoft     | -NB2                             |          |            |                         |  |   |                                 |  | Import configuration     Expect configuration |
|-------------|----------------------------------|----------|------------|-------------------------|--|---|---------------------------------|--|---|
| M Overview  | O Gateway                        | & Access | File Relay | SD Card                 | Activity   |   |                                 |  | Change firmware Reboot gateway Factory reset  |
| PERFORMANCE | LIVE                             |          |            |                         |  |   | DEVICE DETAILS                  |  | 🗢 Logout                                      |
| 2 Days      | Days 441 MB<br>WAR DATA RECEIVED |          |            | 687 MB<br>WAN DATA SENT | Model:<br>LAN IP:<br>WAN IP:<br>Serial #:<br>Firmware: | ProSoft PLX35-<br>192.168.0.26<br>10.20.254.70<br>00:0d:8d:a2:b2<br>1.8.30+r0 debug | NB2                             |  |   |
|             |                                  |          | A RECEIVED |                         |  | LAN DATA SENT   | System Time:<br>Belden Horizon: | Change<br>2024-02-02 07:<br>Change<br>Deactivate | 09:23 +0000                                   |

This opens the *Reboot gateway* dialog.

| Gateway Name | Keiths_Demo    | A  |        |  |
|--------------|----------------|--|--------|--|
| Description  | Reboot gateway |  | ×      |  |
| Address      |                | Are you sure you want to reboot this gateway?<br>Warning: the gateway will be offline for several minutes. |        |  |
|              | Close          |  | Reboot |  |
|              |                |  |        |  |

2 Click the **REBOOT** button when ready.

#### 4.12 Factory Reset

The *Factory Reset* option will reset the PLX35-NB2 to its default configuration. All custom configuration changes will be lost after this procedure.

1 Click the **SETUP** icon in the top-right corner of the page.

| O PLX35-N    | NB2       |        |              |           |          | <b>•</b> •    |
|--------------|-----------|--------|--------------|-----------|----------|---------------|
| all Overview | 🌣 Gateway | Access | 🖹 File Relay | 🖿 SD Card | Activity | Apply changes |

2 In the drop down, select the **FACTORY RESET** option.

| • PLX35-N     | VB2     |          |              |              |          |   | ۰.   |
|---------------|---------|----------|--------------|--------------|----------|---|--|
| Ltd Overview  | Gateway | 🛔 Access | 📔 File Relay | D SD Card    | Activity |   | Import configuration     Export configuration     Change firmware     Reboot dateway |
| PERFORMANCE ► | LIVE    |          |              |              |          | DEVICE DETAIL                             | s Reboot gateway   |
| 4 Hours       | 5       | 26 KB    |              | <b>1.4</b> ( | )<br>MB  | Model:<br>LAN IP:<br>WAN IP:<br>Serial #: | 🕞 Logout<br>ProSoft PLX35-NB2  |

3 Click the **FACTORY RESET** button in the pop-up message that appears on the screen.

| Factory Reset   | ×             |
|---|---------------|
| Are you sure you want to perform a factory reset?   |               |
| The gateway will be accessible on the default IP: 192.168.0.250:8080<br>The gateway will be offline for several minutes |               |
|   |               |
| Close   | Factory Reset |

A pop-up message will indicate the factory reset procedure has begun.



4 After a few minutes, the PLX35-NB2 UI will be available by using the default IP address 192.168.0.250.

| $\begin{array}{c} \diamondsuit \text{ Login - PLX35-NB2} \\ \leftarrow \end{array} \rightarrow C  \blacktriangle \text{ Not secure } 192.1 \end{array}$ | +<br>68.0.250/#login  |                       |
|---|---|-----------------------|
|   | ProSoft   |                       |
|   | admin Password  | PLX35-NB2             |
|   | Enter login credentials for this PLX35-NB2.<br>Belden Horizon login credentials not accepted. |                       |
|   | Minimum browser requirem<br>Chrome 58, Firefox 54, Internet I                                 | ients:<br>Explorer 10 |

5 After the factory reset is complete, the first login will be done using the default credentials (admin/password).
 It will then require you to change the password as shown in the See *Initial / Factory Reset Login* section on page 22.

# 5 Cloud-based Management Using Belden Horizon

Belden Horizon allows you to manage multiple gateways on the network through a secure VLAN tunnel via a webpage. You can perform multiple tasks, including activating, setting up VPN clients, perform configuration and maintenance, and invite team members.

#### 5.1 Log In and Activate Belden Horizon

Belden Horizon requires that you activate the PLX35-NB2 the first time you use it. You must obtain an activation key from the gateway.

- 1 Connect your gateway WAN port to a network that can reach the internet. The MGMT LED will flash green if the PLX35-NB2 can reach the internet and is not yet activated.
- 2 Log in to the module from the LAN port as described in the section entitled "Connecting to the PLX35-NB2 Webpage" (page 13). This takes you to the Overview tab.
- 3 Under Device Details, click the ACTIVATE link to the right of the Belden Horizon label.

Note: If the gateway is already connected to a Belden Horizon account, the link reads "Deactivate".

4 The gateway securely retrieves an alphanumeric activation key from Belden Horizon that is only valid for three (3) hours. Record this activation key.

**Note:** The module must be connected to the internet through the WAN port in for the module to retrieve an activation key.

5 Open a new tab in your web browser, enter **www.belden.io** in the address bar, and then press **ENTER**.

6 In the *Belden Horizon Login* screen, enter your Belden Horizon login email and password and click **Login**, or click **Sign up** to create a new account. Login credentials are not interchangeable between Belden Horizon and the local interface.

| BELDEN<br>HORIZON <sup>™</sup>   |         |
|--|---------|
| ProSoft.io is now rebranded as Belden.io.<br>To log onto Belden.io, use the same credentials you used to access ProS | oft.io. |
| Have an account? Log in here:<br>Email address   |         |
| ✓ Remember me Log In   |         |
| New Customer ? Sign Up   |         |

7 After you are logged in, you can take a tour of the features of Belden Horizon by clicking **TAKE THE TOUR**. Or you can skip the tour to configure the gateway.

| Welcome to Belden Horizon  |
|--|
| BELDEN<br>HORIZON <sup>TH</sup>  |
| Hello,   |
| Welcome to Belden Horizon!   |
| Belden Horizon helps you get the most out of your ProSoft Gateways. Belden Horizon makes configuring, managing and using your Gateway a snap. Here is a tour for you to show you around. |
| Skip the tour Take The Tour!   |

8 When ready, activate the PLX35-NB2 within the tour, or you can click on the ADD GATEWAY button from the *Gateways* tab.

| HORIZON"         |                                    | VPN 0 Open Tunnels Ale      | rts Activity Projects 🌒 • |
|------------------|------------------------------------|-----------------------------|---------------------------|
| PROSOFT, YEAH!!  | Gateways 🔿                         |                             | + Add Gateway             |
|                  | III Tiles 9 Map III Table O Export | SORT BY: Name • FILTER: Sho | w All • Search Q          |
| GATEWAYS         |                                    |                             |                           |
| MA TEAM          |                                    | GATEWAYS ()                 |                           |
|                  |                                    |                             |                           |
|                  |                                    |                             |                           |
|                  |                                    |                             |                           |
|                  |                                    |                             |                           |
|                  |                                    |                             |                           |
|                  |                                    |                             |                           |
|                  |                                    |                             |                           |
|                  |                                    |                             |                           |
| ALERTS           |                                    |                             |                           |
| PROJECT SETTINGS |                                    |                             |                           |
| O SUPPORT        |                                    | Powered by Belden           |                           |

**9** Belden Horizon prompts you for the activation key that you recorded earlier. Click **ACTIVATE**.

| Enter act          | ivation key         |  |  |
|--------------------|---------------------|--|--|
| fs0jab             |                     |  |  |
| Show me how to a   | activate my gateway |  |  |
| ≓ Transfer Gateway | + Add Data Logger   |  |  |

**10** Upon successful activation, the PLX35-NB2 appears on the *Gateways* page.

|                    |   | VPN 0 Open Tunnels Alerts       | Activity Projects 👔 • |
|--------------------|---|---------------------------------|-----------------------|
| PROSOFT, YEAH!!    | Gateways ©                              |                                 | + Add Gateway         |
| La OVERVIEW        | # Tiles 9 Map # Table O Export          | SORT BY: Name * FILTER: Show Al | Search Q              |
| GATEWAYS           |   |                                 |                       |
| 🗑 TEAM             | l                                       | GATEWAYS (1)                    |                       |
|                    | PLX35-NB2<br>Protod PLX3-NB2<br>Connect |                                 |                       |
| ALERTS             |   |                                 |                       |
| • PROJECT SETTINGS |   |                                 |                       |
| SUPPORT            |   | Powered by Belden               |                       |

### 5.1.1 Belden Horizon On-Prem

Belden Horizon On-Prem requires that you activate the PLX35-NB2 the first time you use it. To do this, you must obtain an activation key from the gateway.

- 1 Connect your gateway WAN port to On-Prem server.
- 2 Log in to the PLX35-NB2 from the LAN port as described in the section entitled "Connecting to the PLX35-NB2 Webpage" (page 13). The *Overview* tab displays.
- 3 In the Overview tab > Device Details, click the **ACTIVATE** link to the right of the Belden Horizon label.

**Note:** If the PLX35-NB2 is already connected to a Belden Horizon account, the link reads "**Deactivate**".

4 The PLX35-NB2 securely retrieves an alphanumeric activation key from Belden Horizon On-Prem. It is valid for three (3) hours. Record this activation key.

**Note:** Access to Internet is not necessary for generating a key or adding it to Belden Horizon On-Prem server.

- 5 Open a new tab in a web browser, enter **www.onprem.belden.io** and press **ENTER**.
- 6 In the Belden Horizon On-Prem Login screen, enter the user credentials or click **SIGN UP** to create a new account. The login credentials are not interchangeable between Belden Horizon On-Prem and the local interface.
- 7 After logging in, you can take a tour of the features of Belden Horizon On-Prem by clicking **TAKE THE TOUR**. Or you can skip the tour to configure the gateway.
- 8 When ready, activate the PLX35-NB2 within the tour, or click on the ADD GATEWAY button from the *Gateways* tab.
- **9** Belden Horizon On-Prem prompts you for the activation key that you recorded earlier. Click **ACTIVATE**.
- **10** Upon successful activation, the PLX35-NB2 appears on the *Gateways* page.

#### 5.2 Creating and Connecting a New VPN Client

Belden Horizon uses your native Windows VPN client for secure remote access.

The first time you intend to establish a VPN connection, you must set up the client and then connect to it. Initial VPN client configuration is only done once and is described in the following steps. If you already have a Belden Horizon VPN Client established in your Network Connections folder, you do not need to perform these steps.

Once the PLX35-NB2 is activated, the gateway is displayed on the Gateways page.



1 In the Gateways tab, click on the **CONNECT** button of the gateway profile.



2 Assign the PC's IP address and subnet mask.

| Assign local IP addres | s |               |  | ×   |
|------------------------|---|---------------|--|---|
|                        |   | Assign IP add | lress to computer when tunneling   |   |
|                        |   |               | Enter an IP address below. Your computer will be given this IP address when connectir<br>through the gateway to devices at the remote site. This IP address must not be in use b<br>the end devices at your remote site. | ıg<br>)y  |
|                        |   |               | This configuration only has to be set one time per gateway   | his IP address when connecting<br>P address must not be in use by<br>eway |
| /                      |   |               | Client IP  |   |
|                        |   |               | IP address   |   |
|                        |   | Ear           | Client Subnet Mask   |   |
| (- 0 -                 | 0 |               | IP address   |   |
|                        |   |               |  |   |
|                        |   |               |  |   |
| Cancel                 |   |               | Save & Connect   | t   |

3 The system generates a unique secure one-time use username.

| Open Tunnel for PLX35-NB2  | ×  |
|--|----|
| ✓ Username generated   |    |
| This username is only valid for a single session. Copy and paste the username below into you<br>VPN client to connect. (Don't worry, you won't need a password or domain.) | ır |
| Region: NA California  |    |
| 51Z082OPKT@Tun-X30RXR93RYMR8LY7Z   |    |
| Copy To Clipboard  |    |
| Show me how to setup my VPN client   |    |
| The tunnel has been initiated. We are waiting for you to connect to your PC  |    |

4 Click the **COPY TO CLIPBOARD** button to save this username.

5 Click "SHOW ME HOW TO SETUP MY VPN CLIENT." This opens the Set Up VPN Client in Belden Horizon dialog.

|            | Set up VPN client for Windows 10 (Region: US<br>West)                           |
|------------|---|
|            | Download the quick setup by clicking the link below:<br>Window 10 64-Bit System |
|            | Other available versions:<br>Window 10 32-Bit System                            |
| windows 10 | Or, you can set up your new VPN client by following instructions:               |
|            | 2. Connecting to the Tunnel   |
|            |   |

6 Click on the **INITIAL CONFIGURATION (ONE-TIME SETUP)** option. Follow the tutorial to complete the setup. The tutorial also shows you how to connect to the VPN tunnel.

| Initial configuration 1/11 |   |  |  |  |  |
|----------------------------|---|--|--|--|--|
| After tunneling to         | we gateway by pressing Connect, you will see a window showing you the generated username for tunnel access. Copy the username to be used later in setup.                    |  |  |  |  |
|                            | Open tunnel for PLX35 ×   |  |  |  |  |
|                            | ✓ Username generated  |  |  |  |  |
|                            | This username is only valid for a single session. Copy and paste the username below into<br>your VPN client to connect. (Don't worry, you won't need a password or domain.) |  |  |  |  |
|                            | 54060fe3b1@Tunnel-P9EKD39WI00FLDUB8   |  |  |  |  |
|                            | Copy to Clipboard<br>Show me how to setup my VPN client   |  |  |  |  |
|                            | The tunnel has been initiated. We are waiting for you to connect to your PC   |  |  |  |  |
| I have completed V         | /PN client setup  |  |  |  |  |

## 5.2.1 Verifying the VPN Connection

The module on the *Gateways* page of Belden Horizon provides a VPN indicator as shown:



You can view the connection status by hovering over the VPN icon or by hovering over the status at the top of the page. See the next section for more details.

This indicator is grayed out if there is no connection established. However, you can hover over this indicator to obtain more information about the connection.



The example above shows both the gateway and the user are connected to the VPN server.

If only one part of the tunnel connection is established, the indication may appear as shown below:



This example shows a connection between the gateway and the VPN server. However, it shows the user as "Disconnected". In this case, Belden Horizon may be waiting for the user to provide a user name in order to connect to the VPN.

### 5.3 Using Belden Horizon to Configure the PLX35-NB2

All configuration tasks may be performed using Belden Horizon. You do not need to use the module's internal web server to configure the module or edit existing configurations.

To access configuration parameters, click on the module name.

| VPN               | ٥       |
|-------------------|---------|
| PLX35-NB2-TEST    |         |
| ProSoft PLX35-NB2 | Priskot |
| Disconnect        |         |

This opens the gateway's configuration pages.

In addition to the normal features of Belden Horizon, these configuration pages are exclusive to the PLX35-NB2. The configuration tabs are the same as those described under "Local Configuration using the Gateway's Configuration Webpage" on page 13.

| HORIZON"                                     |                             |                           | VPN 0 Open Tunnels Alert | ts Activity                  | Projects  |
|--|-----------------------------|---------------------------|--------------------------|------------------------------|---|
| PROSOFT, YEAH!!                              | PLX35-NB2                   |                           |                          | Co                           | onnect Ø •  |
| Le OVERVIEW                                  |                             |                           |                          |                              |   |
| GATEWAYS                                     | 📶 Overview 🎙 Gateway 🛔      | Access 🖹 Files 🧿 Activity |                          |                              | 0 Apply   |
| <ul> <li>TEAM</li> <li>Ø ACTIVITY</li> </ul> | Performance                 |                           | ► LIVE                   | Device Details               |   |
|  | 5 Days                      | 20 GB remaining           |                          | Model:<br>LAN IP:<br>WAN IP: | ProSoft PLX35-NB2   |
|  | 175 MB<br>WAN DATA RECEIVED | 58 MB<br>WAN DATA SENT    |                          | Serial #:<br>Firmware:       | 1.7.1-r0<br>Change Firmware                               |
|  | 314 MB<br>LAN DATA RECEIVED | 29 MB<br>LAN DATA SENT    |                          | Gateway Time:<br>SD Card:    | 12:04:53 UTC, 20-Jul<br>Synchronize Gatewa<br>Not present |

### 5.4 Adding Team Members

Within Belden Horizon, you can invite team members to your account. This allows others to securely access the remote site and perform maintenance and configuration functions on the gateway once invites are accepted.

1 Click on the **TEAM** icon.



2 Click on the **INVITE TEAM MEMBERS** button located in the upper-right hand corner of the page.

| HORIZON         | (UTW)                    | 0 Open Tunnels | Alerts | Activity | Projects       |       |
|-----------------|--------------------------|----------------|--------|----------|----------------|-------|
| PROSOFT, YEAH!! | Team ®                   |                |        | •        | Invite Team Me | mbers |
| LAL OVERVIEW    | # Tiles # Table O Export |                |        | Q. Sean  | h              |       |
| GATEWAYS        |                          |                |        |          |                |       |
| 🗑 ТЕАМ          | •                        |                |        |          |                |       |
| ο αςτινιτή      | Project Admin<br>course  |                |        |          |                |       |

3 The Invite New Team Member dialog opens.

| nvite New Team Mem  | ber  |   | ×                                    |
|---|--|---|--------------------------------------|
|   |  |   |                                      |
| An email with an ac<br>expire in <b>5 days (Ju</b><br>then, they will have        | tivation link will be sent to t<br>I <b>25 2022 @ 17:46)</b> . If the us<br>to manually reset their pass | he provided email addre<br>ser does not activate thei<br>sword. | ss. The link will<br>r account until |
| Message   |  |   |                                      |
| Please join me on Be<br>You can use this acco<br>You can also use this<br>tunnel. | lden Horizon.<br>ount to manage <u>ProSoft</u> gate<br>account to access any devic                       | ways.<br>e connected to a <u>ProSof</u>                         | t gateway using a                    |
| Email   |  |   |                                      |
| E-mail address  |  |   |                                      |
| First Name  |  |   |                                      |
| First Name  |  |   |                                      |
| ast Name  |  |   |                                      |
| Last Name (optional   | )  |   |                                      |
| Choose project role   |  |   |                                      |
| Project Admin   | Configure & Connect  | Connect Only  | Custom                               |
|   |  |   |                                      |
|   |  |   |                                      |

4 Enter the information and the project role of the person you want to invite.

Note: An email address can only be associated with one Belden Horizon account at a time.

- 5 Modify the *Message* dialog to send a unique message to the invitees.
- 6 When you are done, click the **SEND INVITATION** button. You should receive an "invitation sent successfully" message if the email address was valid. You can edit a member's access rights once the invite is sent.

## 5.4.1 Editing Team Member Access

As an administrator, you can control the type of access rights assigned to your team members. When a team member accepts an invitation, a card appears on the *Team* page of Belden Horizon.

|                                       | o |
|---------------------------------------|---|
| B Smith<br>bsmith@psft.com<br>Connect |   |

1 Click on the EDIT ACCESS option.

|                                   | ٢                     |
|-----------------------------------|-----------------------|
| <b>B Smith</b><br>bsmith@psft.com | C Edit Access         |
| Connect                           | × Remove from Project |
|                                   |                       |

2 This opens the access dialog for the new team member. Initially, access defaults to "Connect only" which means that that user is allowed to create a tunnel, but is not allowed to configure a gateway.

| ss for B Smith  |  |  |
|---|--|--|
| Project Admin   | Configure & Connect  | Connect Only                                       |
| B Smith can manage team members,<br>connect to and configure all gateways in<br>the project | B Smith can connect to and configure all gateways in the project | B Smith can connect to all gateways in the project |
|   |  |  |
| Dismiss   |  | Save Access  |

3 Change this user's access rights by clicking on any of the first 3 access selections and then click the **SAVE ACCESS** button.

### 5.5 Changing Firmware

You can schedule a firmware change for multiple gateways or a single gateway through Belden Horizon. There are two ways to start the firmware change process:

• Click the firmware **CHANGE** option in the *Device Details* block.

| HORIZON"        |                                |  |   |            | VPN 0 Open T    | unnels Alerts      | Activity | Projects |        |
|-----------------|--------------------------------|--|---|------------|-----------------|--------------------|----------|----------|--------|
| PROSOFT, YEAH!! | Gateways 🗅                     |  |   |            |                 |                    |          | 🕂 Add Ga | ateway |
| Land OVERVIEW   | II Tiles 9 Ma                  | n III Table O Export   |   |            | SOPT RV: Name * | EIITED: Show All Y | Search   |          | 0      |
| GATEWAYS        |                                |  |   |            | JORT DT. Hame   | FILLER, SHOWAR     | Search   |          |        |
| 🔮 TEAM          |                                |  |   | GATEWAYS 1 |                 |                    |          |          |        |
| Θ ΑCTIVITY      | VPN A                          |  | • |            |                 |                    |          |          |        |
|                 | PLX35-NB2<br>ProSoft PLX35-NB2 | Import Configuration     Export Configuration     Transfer Across Projects     Remote                              |   |            |                 |                    |          |          |        |
|                 | Connect                        | <ul> <li>Retrieve Logs</li> <li>Change Firmware</li> <li>Reboot Gateway</li> <li>Remove from My Account</li> </ul> |   |            |                 |                    |          |          |        |

• Select **CHANGE FIRMWARE** from the setup icon in the top-right corner of every configuration page.

| HORIZON"        |                        |                           | 0 Open Tunnels Ale | erts Activity | Projects   |
|-----------------|------------------------|---------------------------|--------------------|---------------|--|
| PROSOFT, YEAH!! | PLX35-NB2              |                           |                    |               | Connect 🔹 🔹                                      |
| M OVERVIEW      |                        |                           |                    | 0             | Import Configuration                             |
| GATEWAYS        | 📶 Overview 🎙 Gateway 🛔 | Access 🖹 Files O Activity |                    | 0             | Export Configuration<br>Transfer Across Projects |
| 🗑 TEAM          |                        |                           |                    |               | Remote •   |
| Ο ΑCTIVITY      | Performance            |                           | ► LIVE             | Device De     | Retrieve Logs                                    |
|                 | 5 Davs                 | 20 GB remaining           |                    | Model: 2      | Reboot Gateway                                   |
|                 | UPTIME                 |                           |                    | LAN IP: 🗎     | Remove from My Account                           |
|                 |                        | VPN DATA LIMIT            |                    | WAN IP:       | 1.0.00   |
|                 | 175                    | 58                        |                    | Serial #:     | 0.000  |
|                 | IT J MB                | JO MB                     |                    | Firmware:     | 1.7.1-r0   |
|                 | WAN DATA RECEIVED      | WAN DATA SENT             |                    | Gateway Time: | 12:20:02 UTC, 20-Jul                             |
|                 | 314                    | 30                        |                    |               | Synchronize Gatewa                               |
|                 | LAN DATA RECEIVED      | LAN DATA SENT             |                    | SD Card:      | Not present                                      |

1 Click on the **CHANGE FIRMWARE** option to open the *Firmware Upgrade* dialog.

| Firmware Upgrade  | ×                             |  |  |  |  |
|---|-------------------------------|--|--|--|--|
| Please cho  | oose firmware version         |  |  |  |  |
| Version   | Release Date 🔻                |  |  |  |  |
| PLX35-NB2 Firmware v1.3.22  | 2019-03-15 08:10:33 Details   |  |  |  |  |
| Need to specify URL instead of one of the supported upgrades above?<br>Click here |                               |  |  |  |  |
| Cancel  | Schedule For Later Change Now |  |  |  |  |

This dialog lists the most recent firmware versions and details about this version.

2 Select the version to install by clicking the radio button.



There are options to upgrade now or schedule for later.

- i. **Change Now** Allows you select additional gateways for upgrade and then immediately performs the upgrade.
  - 1 With the correct firmware version selected, click the **CHANGE Now** button. You are prompted as to whether or not you want to upgrade other gateways.

| Firmware Upgrade |                 |                       |           |                   |  |  |  |
|------------------|-----------------|-----------------------|-----------|-------------------|--|--|--|
|                  |                 | Upgrade other gateway | ys?       |                   |  |  |  |
|                  | Name 🔺          | Serial Number         | Version   |                   |  |  |  |
|                  | PLX35-NB2-TEST1 | 0.0000000             | 1.4.50-r0 |                   |  |  |  |
|                  | PLX35-NB2-TEST2 | 0.000                 | 1.4.50-r0 |                   |  |  |  |
|                  |                 |                       |           |                   |  |  |  |
| (                | Cancel          | This Gateway and Se   | elected   | Only This Gateway |  |  |  |

- 2 Choose any available gateways that you want to upgrade, if applicable.
- 3 Click the **APPLY ONLY TO THIS GATEWAY** button if you have do not need to upgrade additional gateways or click the **APPLY TO THIS GATEWAY AND SELECTED** button to upgrade firmware on the current gateway and any selected gateways.
- 4 The firmware upgrade starts immediately.

- ii. **Schedule for Later** Allows you to select additional gateways for upgrade and then allows you to schedule a data and time for the upgrade to occur.
  - 1 With the correct firmware version selected, click the **SCHEDULE FOR LATER** button. You are prompted as to whether or not you want to schedule upgrades for other gateways.

| Fi | mware U | Jpgrade         |                     |                          | × |
|----|---------|-----------------|---------------------|--------------------------|---|
|    |         | Schedule upg    | rade for other g    | ateways?                 |   |
|    |         | Name 🔺          | Serial Number       | Version                  |   |
|    |         | PLX35-NB2-TEST1 |                     | 1.4.50-r0                |   |
|    |         | PLX35-NB2-TEST2 |                     | 1.4.50-r0                |   |
|    |         |                 |                     |                          |   |
|    | Can     | cel             | This Gateway and Se | lected Only This Gateway |   |

2 If you don't want to schedule upgrades for other gateways, click the **APPLY ONLY TO THIS GATEWAY** button to schedule the upgrade.

| Schedule Firmware Upgrade   | ×                                 |  |  |  |  |  |
|---|-----------------------------------|--|--|--|--|--|
| Schedule Firmw<br>Version: PLX35-NB2 Firm<br>Gateway: PLX35-NB2-TES | are Upgrade<br>1ware v1.3.22<br>T |  |  |  |  |  |
| Please select a date  | and time                          |  |  |  |  |  |
| 01/08/2020 9:05 AM  |                                   |  |  |  |  |  |
| ✓ January 2020 >  | ^ ^ _                             |  |  |  |  |  |
| Su Mo Tu We Th Fr Sa  | 09 : 05 AM                        |  |  |  |  |  |
| 29 30 31 1 2 3 4  | <b>v v</b>                        |  |  |  |  |  |
| 5 6 7 8 9 10 11   |                                   |  |  |  |  |  |
| 12 13 14 15 16 17 18  |                                   |  |  |  |  |  |
| 19 20 21 22 23 24 25  |                                   |  |  |  |  |  |
| 26 27 28 29 30 31 1   |                                   |  |  |  |  |  |
| 2 3 4 5 6 7 8   |                                   |  |  |  |  |  |
| Cancel Schedule   |                                   |  |  |  |  |  |

- **3** Schedule the date and time for the firmware change to occur.
- Click the SCHEDULE button.
   If you want to schedule changes for other gateways, use the APPLY TO THIS
   GATEWAY AND SELECTED button and follow the same procedure.

#### 5.6 Remote Packet Capture

The following procedure describes a remote packet capture. This feature is available in firmware version v1.6.60 and newer.

1 Right-click on the **SETUP** icon of the PLX35-NB2, and select **PACK CAPTURE**.



2 Select the duration and interface to be used in the capture. Click **CAPTURE** to begin.

| HORIZON"        |  |   | 0 Open Tunnels Alerts Activity Projects 🕘 • |
|-----------------|--|---|---|
| PROSOFT, YEAH!! | Gateways ©   |   | + Add Gateway                               |
| La OVERVIEW     | II Tiles 9 Map   | III Table O Export  | SORT BY: Name * FILTER: ShowAll * Search Q  |
| III GATEWAYS    |  |   |   |
| 曾 ТЕАМ          |  | Remote Packet Capture (PLX35-NB2)   | ×   |
| ο αςτινιτγ      | PLX35-MB2<br>PLX35-MB2<br>PrvSoft PLX35-MB2<br>Connect | You can remotely capture packets on a Gateway. Please select the interface and packet capture.       Duration       1Minute       Maximum 5 minutes | d duration for the<br>Is completed.         |

3 Once the capture is complete, the captured file can be viewed.



4 The captured files are saved in Belden Horizon for few days. It can also be downloaded from the *Activity* tab as shown below:

| HORIZON             | 0 Open Tunnels Alerts  | Activity Projects                                       |
|---------------------|--|---|
| PROSOFT, YEAH!! Act | vity   |   |
| E OVERVIEW          | Filter Activity  | Q. Search activity                                      |
| 🗑 TEAM              | Packet Capture (5KB) upload complete, PLX35-HB2_3022-07-20_12-27-07, pcap.atjp will be saved for 30 days                       | System<br>3 minutes ago @ 5:57:08 PM                    |
| O ACTIVITY          |  |   |
| Gate                | Packet Capture executed successfully on LAN interface for duration 1 Minute any SPLX35-NB2 S2 0 comments                       | System<br>3 minutes ago @ 5:57:05 PM                    |
| Gatev               | Packet Capture started on LAN interface for duration 1 Minute ay  PLX35-NB2  Qr 0 comments                                     | 4 minutes ago @ 5:56:04 PM                              |
| Turn                | Tunnel has been closed after client VPN connection for atripathi@prosoft-technology.com was lost for more than 5 minutes<br>et | 🔗 System<br>27 minutes ago @ 5:32:22 PM                 |
| Turn                | Tunnel has been opened for region US West<br>et  PLX35-NB2 Q2 o comments   | 33 minutes ago @ 5:27:09 PM                             |
| ALERTS              | Project PROSOFT, VEAH!! updated Region has been changed from APAC Mumbai to US West CD_Recomment                               | 33 minutes ago @ 5:27:02 PM                             |
| • PROJECT SETTINGS  | Turnel has been closed   | Activate Windows<br>Ge to Settings to activate Windows. |

# 6 Easy Bridge

The PLX35-NB2 supports bridge capability to allow access to Logix Controllers using RSLinx. This chapter covers the "Easy Bridging" configuration between a Local System and Remote Devices, using the VPN Tunneling functionality. This feature is only available for PDN (Persistent Data Network) Projects in **Belden.io**.

| $\leftrightarrow$ $\rightarrow$ $\mathbf{C}$ <b>belden.io</b> /webclient/#p | projects |
|---|----------|
| BELDEN<br>HORIZON   |          |
| Projects  |          |
|   |          |
| Belden PDN  |          |
| 0 gateways  |          |
| NH  | PDN.     |
|   |          |

#### 6.1 VPN Tunnel Connection

Once a local connection to the PLX35-NB2 gateway has been established (see *Connecting to the PLX35-NB2 Webpage* on page 13 for more information), ensure the following:

- WAN port has internet access (see *Setting Gateway Configuration Parameters* page 15 for more information).
- Activation is successful through the Belden Horizon UI (see *Cloud-based Management Using Belden Horizon* page 48 for more information).

Once the PLX35-NB2 is activated, it will be listed in the *Gateways* section of the **Belden.io** page.

| ← → C 🗎 belden.io/webclient/     | #prj-a69d11db-7743-4c04-a243-eb88d5497ebc/devices               | <ul> <li>Q 않 ☆     <li>Ø ★ ➡ ➡ ■ ■ ▲     </li> </li></ul> |
|----------------------------------|---|---|
| HORIZON"                         |   | 0 Open Tunnels Alerts Activity Projects 👔 -               |
| Belden PDN                       | Gateways o  | + Add Gateway   |
| ₩ OVERVIEW                       | II Thies V Map III Table O Expert                               | SORT BY: Name * FILTER: Show All * Search Q               |
| ➡ APPLICATIONS                   | DATEWAYS ①  |   |
| W TEAM<br>O ACTIVITY<br>& ALERTS | PX35-H02<br>PV358-H023 H02<br>00:00 H02-2:52HC<br>Remote Access |   |

1 Click on the PLX35-NB2 name within the tile.



2 In the Overview tab, ensure the Device Details are correct.

| HORIZON  |  |  | 0 Open Tunnels Alerts Activity Projects 🧕   | ) • |
|--|--|--|---|-----|
| Belden PDN   | OPLX35-NB2  Description  |  | Remote Access   | •   |
| GATEWAYS   | 🕍 Overview P Gateway 👗 Acce  | ss 🗟 Files O Activity  | 0 400   | sty |
| <ul> <li>Applications</li> <li>Team</li> <li>Activity</li> <li>Alerts</li> </ul> | Performance<br>20 Mins<br>uptime<br>1.95 MB<br>Wan data received<br>1.20 MB<br>Lan data received | 20 GB remaining<br>VPR DATA LINIT<br>3.59 MB<br>WAN DATA SENT<br>334 KB<br>LAN DATA SENT | ► LIVE<br>Device Details<br>Medic Product RA35 NB2<br>LAM PY 232.88.173<br>MAR PY 232.873<br>MAR PY 232.88.173<br>MAR PY 232.88.173<br>MAR PY 232.88.173<br>MAR PY 232.88.173<br>MAR PY 232.88.173<br>MAR PY 232.873<br>MAR PY 232.873 |     |
|  |  |  | Access Manage Acces   | 55  |

3 The *Device Details* should match the *Device Details* on the module's webpage (see below). This confirms the Activation and PDN are operating prior to starting the VPN Tunnel.

| ← → C 🔺 Not                       | secure   192.168.0.171 |        |            |         |                |            | 년 <del>ఫ</del>                         |   |     |
|-----------------------------------|------------------------|--------|------------|---------|----------------|------------|--|---|-----|
|                                   |                        |        |            |         | TUNNEL CONNECT | DISCONNECT |  |   | i   |
| O PLX35                           | -NB2                   |        |            |         |                |            |  |   | ۰.  |
| al Overview                       | O Gateway              | Access | File Relay | SD Card | Activity       |            |  | Apply chang   | pes |
| PERFORMANCE > LIVE DEVICE DETAILS |                        |        |            |         |                |            |  |   |     |
| 20 Min                            | S                      | 1.9    | 95 MB      |         |                | 3.59 MB    | Model:<br>LAN IP:<br>WAN IP:           | ProSoft PLX35-NB2<br>192.168.0.171<br>192.168.3.213                         |     |
|                                   |                        | 1.2    | 20 MB      |         |                | 334 KB     | Serial #:<br>Firmware:<br>System Time: | 00:0d:8d:a2:b2:bc<br>1.6:90-r0 debug<br>Change<br>2023-09-01 16:35:02 +0000 |     |
|                                   |                        |        |            |         |                |            | ProSoft Connect:                       | Change<br>Deactivate  |     |

4 Ensure the PLX35-NB2 LAN IP address is on the same network as the PLC Controller IP address.

This exercise uses the following IP address examples: PLX35-NB2 LAN IP: **192.168.0.171** PLC Controller: **192.168.0.215** 

|        |                |                           | 0 Apply |
|--------|----------------|---------------------------|---------|
| ► LIVE | Device Details |                           |         |
|        | Model:         | ProSoft PLX35-NB2         |         |
|        | LAN IP:        | 192.168.0.171             |         |
|        | WAN IP:        | 192.168.3.213             |         |
|        | Serial #:      | 00:0D:8D:A2:B2:BC         |         |
|        | Firmware:      | 1.6.90-r0 (debug)         |         |
|        |                | Change Firmware           |         |
|        | Gateway Time:  | 16:45:22 UTC, 01-Sep-2023 |         |
|        |                | Synchronize Gateway Time  |         |
|        | SD Card:       | Not present               |         |

5 On the left tab of **Belden.io** page, click on the **PROJECT SETTINGS** button. Under the *Persistent Data Network Options* section, verify the PLX35-NB2 IP address range is correct.

|                | 1 Open Luniel   |
|----------------|---|
| Belden PDN     | Projekt U Rosawk Inter<br>Diarriteru<br>Catage  |
| M OVERVIEW     |   |
| CATEWAYS       | Project Type  |
| H APPLICATIONS |   |
| 🗑 TEAM         |   |
|                |   |
| ALERTS         |   |
|                |   |
|                |   |
|                | IPERF:       IPERF:       IPERF:       IPERF:       IPERF:       IPERF:       Sobret Mark   |
|                | IF 2000         IF 2000         IF ADDR         IF ADDR         Subtret Mask         25225230         The IP address range is used to assign IP addresses to clients that connect for socure remote access.         The IP address range is used to assign IP addresses to clients that connect for socure remote access.   |
|                | IF STATE         IF ADDRES         IF ADDRES         IF ADDRES         Sobort Mask         Sobort Mask         The IP address range is used to assign IP addresses to clients that connect for secure remote access.         Reveal IP Connections  |
|                | Particle         Particle         Particle         Particle         Sobort Mak         Sobort Mak         Address range is used to assign IP addresses to: clients that connect for soccer remote access.         The P address range is used to assign IP addresses to: clients that connect for soccer remote access.         Baseding three in address range is used to reach specific IP addresses through the tunnet. Other IP addresses will not be accessible.   |
|                | Packet         Packet         Packet         Submet Mask         Southers Mask         Packet         Noved IP Connections         Bushed         Bushed         Carge         Description  |
|                | Data         Subset Make         Subset Make         Data States comption and to assign IP addresses to clients that convect for soccer remote access.         Table addresses may in used to assign IP addresses to clients that convect for soccer remote access.         Subset Make         Data States         Comption         Data States         Comption         Comption         Comption         Reduce Data Usage         Exact         Exact |

6 From the *Gateways* tab, click on the **REMOTE ACCESS** button to enable a secure, remote access to the PLX35-NB2.

| BEL        | DEN<br>DRIZON |   |
|------------|---------------|---|
| Belden PDN |               | Gateways 🗅  |
|            | OVERVIEW      | III Tilles Q Man III Table O Evnort   |
|            | GATEWAYS      |   |
| ₩          | APPLICATIONS  |   |
| *          | TEAM          |   |
| 0          | ACTIVITY      | PLX35-NB2   |
| •          | ALERTS        | Click here to enable Secure<br>Remote Access to This galeway<br>Remote Access |

#### Then click on the **CONNECT** button.

| HORIZON        |                                 |
|----------------|---------------------------------|
| Belden PDN     | Gateways ©                      |
| 네 OVERVIEW     | # Tiles Q Man HE Table @ Evport |
| GATEWAYS       |                                 |
| ➡ APPLICATIONS |                                 |
| 📽 TEAM         |                                 |
| Ο ΑCTIVITY     | PLX35-NB2                       |
| ALERTS         | ProSoft PLX35-NB2               |
|                | Connect                         |

7 In the Open Tunnel for PLX35-NB2 dialog, a username is automatically generated. Click the **COPY TO CLIPBOARD** button. This is a one-time use username key. This key is needed to connect the VPN Client to the Belden Horizon Tunneling Server.



8 Open the **WINDOWS SETTINGS** > **NETWORK & INTERNET** > **VPN** selection. Under the *PDN Belden Horizon* – *US West* VPN option, click the **CONNECT** button.

| Settings                        |  | × |
|---------------------------------|--|---|
| ഹ VPN                           |  |   |
| + Add a VPN connection          |  |   |
| PDN Belden Horizon - US West    |  |   |
| Connect Advanced options Remove |  |   |
| Belden Horizon - US West        |  |   |
| Advanced Options                |  |   |
| Allow VPN over metered networks |  |   |
| On Con                          |  |   |
| Allow VPN while roaming         |  |   |
| On                              |  |   |

**9** In the VPN Client dialog, paste the one-time username key and click the **CONNECT** button.



**10** Upon successful VPN Tunnel connection, the status is shown in the **OPEN TUNNEL** option in the **Belden.io** menu.

|                                     |              | VPN 1 0   | pen Tunnel Alerts | Activity | Projects      |
|-------------------------------------|--------------|-----------|-------------------|----------|---------------|
| ateways @                           | < Tunnels    | s         | PLX35-NB2         |          | + Add Gateway |
| Satemayo e                          | ×            | Gateway   | Connected to PDN  |          |               |
| 🗄 Tiles 💡 Map 🔠 Table 🔿 Export      | ×            | You       | Connected to PDN  | Search   | Q             |
|                                     |              | Client IP | 192.168.0.XX      |          |               |
|                                     | GATEWAYS (1) |           |                   |          |               |
|                                     |              |           |                   |          |               |
| PDN A                               |              |           |                   |          |               |
| PLX35-NB2                           |              |           |                   |          |               |
| ProSoft PLX35-NB2 00:0D:8D:A2:B2:BC |              |           |                   |          |               |
| Disconnect ()                       |              |           |                   |          |               |
|                                     |              |           |                   |          |               |
## 6.1.1 Verifying VPN Tunnel Connection

**1** To verify the VPN Tunnel connection is active, double-click the PDN Belden Horizon icon in Windows *Network Connections*.



2 In the *Belden Horizon Status* dialog, click on the **DETAILS...** button to open the *Network Connection Details* dialog. The *IPv4 Address* (Alias IP address) is the link through the established VPN Tunnel.



**3** The active network connection can also be viewed through a Command Prompt 'ipconfig -all' command.

| C:\Users\Sysadmin≻ipconfig -all  |
|--|
| Windows IP Configuration   |
| Host Name : Win10_VM_ENV<br>Primary Dns Suffix :<br>Node Type : Hybrid<br>IP Routing Enabled : No<br>WINS Proxy Enabled : No   |
| Ethernet adapter Ethernet0:  |
| Connection-specific DNS Suffix .:         Description  |
| PPP adapter PDN Belden Horizon - US West:  |
| Connection-specific DNS Suffix . :         Description : PDN Belden Horizon - US West         Physical Address :         DHCP Enabled : No         Autoconfiguration Enabled : Yes         IPv4 Address : 192.168.0.150(Preferred)         Subnet Mask : : 255.255.255.255         Default Gateway : Enabled |

4 The PLC Controller's IP Address (ex. 192.168.0.215) can now be pinged.



#### 6.2 Configuring a New Driver in RSLinx

- 1 Open RSLinx to view the available Rockwell Controllers.
- 2 Click on the **COMMUNICATIONS** > **CONFIGURE DRIVERS** option to configure a new driver.



3 Click the ADD New button and select the ETHERNET DEVICES Driver Type.

| RSLinx Classic Lite - [RSWho - 1]        |  |          |           | - 🗆 X |
|--|--|----------|-----------|-------|
| File View Communications Station DDE/OPC | Security Window Help   |          |           | - 8 × |
| * 20                                     |  |          |           |       |
| Autobrowse Refresh 🔯 🔩 🏢 Not Browsing    | 1  |          |           |       |
| . Workstation, WIN10_VM_ENV              | <u> </u>   | 2 9 9    | <b>P</b>  |       |
| 🗄 📲 Linx Gateways, Ethernet              |  | 6 66 66  | <u>66</u> |       |
| 🖮 🚠 AB_ETHIP-1, Ethernet                 | Configure Drivers  |          | ? ×       |       |
| B AB_ETHIP-2, Ethernet                   | Augitable Driver Turgers   |          |           |       |
| 🕀 🚠 Compact_38, Ethernet                 | Available Driver Types.  |          | Close     |       |
| ⊞යයි ControlLgxEN2T, Ethernet            | Ethernet devices   | Add New  | Help      |       |
|  |  |          |           |       |
|  | Configured Drivers:  |          |           |       |
|  | Name and Description   | Statue   |           |       |
|  | AB ETHIP-1 A-B Ethernet RUNNING  | Bunning  | Configure |       |
|  | AB_ETHIP-2 A-B Ethernet RUNNING  | Running  |           |       |
|  | Compact_38 A-B Ethernet RUNNING<br>Control ovEN2T A-B Ethernet RUNNING | Bunning  | Startup   |       |
|  | Controlegizer 21 20 Edianist Horitand                                  | Training | <u></u>   |       |
|  |  |          | Start     |       |
|  |  |          | Stop      |       |
|  |  |          |           |       |
|  |  |          | Delete    |       |
|  |  |          |           |       |
|  |  |          |           |       |
|  | ,  |          |           |       |
|  | 1  |          |           |       |
|  |  |          |           |       |

4 In the Add New RSLinx Driver dialog, assign a unique name.

| Configured Drivers:<br>Name and Descriptin<br>AB_ETHIP-1 A-B Et<br>AB_ETHIP-2 A-B Et<br>Compact_38 A-B Et<br>ControlLgxEN2T A-B | Add New RSLinx Classic Driver<br>Choose a name for the new driver.<br>(15 characters maximum) | OK<br>Cancel | Configure<br>Startup |
|---|---|--------------|----------------------|
|   | PLX35_Net_0_215   |              | Start<br>Stop        |
|   |   |              | Delete               |

5 Add the Controller's IP Address and click the **APPLY** button. Then click the **OK** button.

| I Autobrowse Refresh   | Canfigure driven DLV25 Nat 0 215          | 2 2     |                    |
|------------------------|---|---------|--------------------|
| □                      | Configure driver: PLX35_Net_0_215         | r X     |                    |
| Linx Gateways, Ethe    | Station Mapping                           |         |                    |
| B & AB_ETH Configure D |   |         | 2 × 4 192.168.1.25 |
| and a B_ETH            | Station Host Name                         | Add New | . WIN10_VM         |
|                        | 0 192 168 0 215                           |         | Close              |
| 🗄 🖁 Contro             |   | Delete  | 0.000              |
|                        | 63 Driver                                 |         | Help 1             |
|                        |   |         |                    |
| tonnigured             |   |         |                    |
| Name a                 | ur la |         |                    |
| AB_ET                  | 4   |         | Configure          |
| AB_ET                  | 4   |         |                    |
| Compation              | d   |         | Startup            |
| PLX35_                 | N   |         | Start              |
| PLX35N                 |   |         | otat               |
| 5000                   | 19  |         | Stop               |
|                        |   |         |                    |
|                        |   |         | Delete             |
|                        |   |         |                    |
|                        |   |         |                    |
|                        |   |         |                    |
|                        |   |         |                    |
|                        |   | 1       |                    |
|                        | OK Cancel Apply                           | Help    |                    |
|                        |   |         |                    |

6 To locate the newly created Driver in the RSLinx panel, expand its branches to display the Controller. The Controller is ready to be accessed.

| 💊 RSLinx Classic Lite - [RSWho - 1] 🦳 🗕                                   | ×     |
|---|-------|
| 📓 File View Communications Station DDE/OPC Security Window Help           | - 8 × |
| <u></u>   |       |
| Autobrowse         Refersh         12         Beg ##         Not Browsing |       |
| E   |       |
| 효 옮 Linx Gateways, Ethernet   |       |
| B-& AB_ETHIP-1, Ethernet Backplane  |       |
| □ 器 AB_ETHIP-2, Ethernet 1756-A7/C  |       |
| 효-옮 Compact 38, Ethernet  |       |
| 효-옯 ControlLgxEN2T, Ethernet  |       |
| 由-器 PLX35_Net_0_215, Ethernet   |       |
| 😑 🖞 192.168.0.215, 1756-L81E LOGIX5581E, L81_Template                     |       |
| B Backplane, 1756-A7/C  |       |
| ⊕-      00, 1756-L71 LOGIX5571, AOIs_v2_8                                 |       |
| 🖞 01, 1756-L81E LOGIX5581E, L81_Template                                  |       |
| 02, 1756-OX8I/A, 1756-OX8I/A RELAY n.o. & n.c.                            |       |
| 03, MVI56E-AFC, MVI56E-AFC  |       |
| 205, Unrecognized Device, MVI56 ProSoft Technology, Inc.                  |       |
| ie 🖞 06, 1756-EN2T, 1756-EN2T/D   |       |
|   |       |

## 6.3 Uploading .ACD Project File

1 Open Studio/RSLogix 5000 and select the option to open **FROM UPLOAD**.



2 In the *Upload From Controller or Terminal* dialog, select the Controller to upload its .ACD project file from. Click the **UPLOAD** button.

|        | O Upload From Controller or Terminal                    | ?   | ×   |      |
|--------|---|-----|-----|------|
|        | Communication software: 🍓 RSLinx Classic                |     | Ŷ   |      |
|        | Autobrowse Refresh                                      |     |     |      |
| Roc    | ⊡   |     |     |      |
| 1100   | 直···器 Linx Gateways, Ethernet                           |     |     |      |
|        | 효···• • AB_ETHIP-1, Ethernet                            |     |     |      |
|        | 由 AB_ETHIP-2, Ethernet                                  |     |     |      |
|        | 由   |     |     |      |
| -      | E→ 品 ControlLgxEN21, Ethernet                           |     |     |      |
|        | ⊡ H 102 169 0 215, Ethernet                             |     |     |      |
|        |   |     |     | ore  |
|        | □ Backplane, 1750-A77C                                  |     |     |      |
|        | 01. 1756-L81E LOGIX5581E L81. Template                  |     |     |      |
|        | 02, 1756-OX8I/A, 1756-OX8I/A, RELAY n.o. & n.c.         |     |     |      |
|        | 03, MVI56E-AFC, MVI56E-AFC                              |     |     |      |
| Poco   | 05, Unrecognized Device, MVI56 ProSoft Technology, Inc. |     |     |      |
| Recei  | 🕀 🖞 06, 1756-EN2T, 1756-EN2T/D                          |     |     |      |
| Contr  | -   |     |     | ~    |
|        |   |     |     |      |
| 🍏 Comp |   |     |     | Io V |
|        | ,<br>Version: 32.00                                     |     |     |      |
|        |   |     |     |      |
|        | Upload  | Can | cel |      |
|        |   |     |     |      |

3 In the Connected to Upload dialog, click the SELECT FILE... button.

| DO LOGIX Designer - Los semplates 1756-Los E 3                      | 2.111   |  |
|---|---|--|
| FILE EDIT VIEW SEARCH LOGIC CO                                      | MMUNICATIONS TOOLS WINDOW HELP  |  |
| ै 🖴 🛀 🖴 🗶 🗇 ते 🤊 ୯ 🗍  |   | 3 13                                     |
| Run Mode<br>Controller OK<br>Energy Storage OK<br>I/O OK<br>Rem Run | .Net_0_215\192.168.0.215\Backplane\1*   | inites Add-On Safety Alarms Bit Timer/Cc |
|   |   |  |
|   | Connected To Upload   | ×  |
|   | Options General Date/Time Major Faults Minor Faults Nonvolatile Memory  |  |
|   | Condition: The project file "L81_Template.ACD" was not found in your project directory.<br>Select new or existing project file.   |  |
|   | Select new or existing project file. Connected Controller: Controller Type: 1756-181E ControlLogix® 5580 Controller Comm Path: PLX35_Net_0_215\192.168.0.215\Backplane\1 Setal Number: 011D1E1E Security: No Protection Offline Project: Controller Name: Controller Type: File Setal Number: Security: |  |
|   |   |  |
|   | Select File   | E Cancel Help                            |

4 This opens the *Enter New or Select Existing File* dialog. Enter a new file name or select an existing .ACD file, then click the **SELECT** button.

| Look in:     | Other Uplo | ads       |                  | V 🙆 🏚 🖡            | 🤊 🛄 <del>v</del> |        |
|--------------|------------|-----------|------------------|--------------------|------------------|--------|
| Quick access | Name       | ^         | This folder is e | Date mod<br>empty. | lified           | Тур    |
| Desktop      |            |           |                  |                    |                  |        |
| Libraries    |            |           |                  |                    |                  |        |
|              |            |           |                  |                    |                  |        |
|              | <          |           |                  |                    |                  |        |
|              |            | -         |                  |                    |                  | Coloct |
|              | File name: | L81_Contr | roller_0_215     |                    | ×                | Select |

5 Click the **YES** button to create and upload the project file.

| Co<br>Look in: Other Uploads<br>Co<br>Quick access<br>Desktop<br>Libraries<br>This PC<br>Network<br>File name: L81_Controller_0_215<br>Files of type: Logix Designer Project Files (*ACD) $\checkmark$ Select<br>Cancel   | ptions C    | nter New o | r Select Existing Fi | e Miner Fruite Monuclatile Momen<br>e |                      | ×      |
|---|-------------|------------|----------------------|---------------------------------------|----------------------|--------|
| Co<br>Quick access<br>Desktop<br>Libraries<br>This PC<br>Network<br>File name: L81_Controller_0_215<br>Files of type: Logix Designer Project Files (*ACD) $\checkmark$ Cancel   |             | Look in:   | Other Upload         | s ~                                   | G 🌶 📂 🖽 <del>-</del> |        |
| Image: Desktop       Logix Designer         Libraries       Image: Create project file 'L81_Controller_0_215.ACD' and upload?         This PC       Image: Create project file 'L81_Controller_0_215.ACD' and upload?         Image: Network       Yes         File name:       L81_Controller_0_215         File name:       L81_Controller_0_215         File of type:       Logix Designer Project Files ('.ACD) | Coi<br>Quie | ck access  | Name                 | ^<br>This folder is empt              | Date modified<br>y.  | Туре   |
| Libraries Libraries This PC Network Create project file 'L81_Controller_0_215.ACD' and upload? Yes No File name: L81_Controller_0_215 File name: L81_Controller_0_215 File sof type: Logix Designer Project Files ('.ACD) $\checkmark$ Cancel   | Off D       | esktop     |                      |                                       |                      |        |
| Yes     No       Network        File name:     L31_Controller_0_215       Files of type:     Logix Designer Project Files (*.ACD)   | Li          | braries    | Logix Designer       | project file 'L81_Controller_0_215.AC | X                    |        |
| Network       Image: Controller_0_215       File name: L81_Controller_0_215       Files of type: Logix Designer Project Files (".ACD)   | Т           | his PC     |                      | Yes No                                |                      |        |
| Kile name:     L81_Controller_0_215     Select       Files of type:     Logix Designer Project Files (*.ACD)     Cancel   | N           | etwork     |                      |                                       |                      |        |
| File name:     L81_Controller_0_215     Select       Files of type:     Logix Designer Project Files (*.ACD)     Cancel   |             |            | <                    |                                       |                      | >      |
| Files of type: Logix Designer Project Files (*.ACD) <   |             |            | File name:           | L81_Controller_0_215                  | $\sim$               | Select |
|   |             |            | Files of type:       | Logix Designer Project Files (*.ACD)  | $\sim$               | Cancel |

6 The upload process will initiate and complete.

| Connected To Upload  | $\times$ |
|--|----------|
| Options General Date/Time Major Faults Minor Faults Nonvolatile Memory   |          |
| Condition: The project file 'L81_Template. ACD' was not found in your project directory.<br>Select new or existing project file.   |          |
| Connected Controller:<br>Controller Name: ControlLgxL81_Upload_PLX35_Net_0_215<br>Controller Type: 1756-L81E ControlLogix® 5580 Controller<br>Comm Path: PLX35_Net_0_215\192.168.0.215\Backplane\1<br>Offline Project:<br>Controller Name:<br>Controller Type:<br>File:<br>Security:<br>Cancel |          |
| Select File Cancel   | Help     |

## 6.4 Ending the Tunnel Connection

1 In Logix, connect to the Controller and set it to **Remote Run** mode to confirm the VPN Tunnel connectivity.



2 While the Controller is in **Remote Run** mode, the Tunnel Connection can be ended by clicking the **DISCONNECT** button in the **Belden.io** page.



**3** When the VPN tunnel connection terminates, the Controller displays a 'lost communications' message.

| Scope: 📴 L81_Template 🗸 Show: All Tags                 |  |                   | ~ <b>T</b> , Ent | er Name Filter |
|--|--|-------------------|------------------|----------------|
| Name   |  | Value 🔶           | Force Mask 🗧 🗧   | Style          |
| ▶ AFC  |  | {}                | {}               |                |
| <ul> <li>AFCMeter01DifferentialGas</li> </ul>          |  | {}                | {}               |                |
| <ul> <li>AFCMeter02DifferentialLiquid</li> </ul>       |  | {}                | {}               |                |
| <ul> <li>AFCMeter03LinearGas</li> </ul>                |  | {}                | {}               |                |
| <ul> <li>AFCMeter04LinearLiquid</li> </ul>             |  | {}                | {}               |                |
| AOI56EAFC  | Logix Designer   |                   | × {}             |                |
| <ul> <li>AOI56EAFCMeter01DifferentialGas</li> </ul>    |  |                   | {}               |                |
| <ul> <li>AOI56EAFCMeter02DifferentialLiquid</li> </ul> | Can't communicate with RSLinx.   |                   | {}               |                |
| <ul> <li>AOI56EAFCMeter03LinearGas</li> </ul>          | Logix Designer has been taken offline.   |                   | {}               |                |
| <ul> <li>AOI56EAFCMeter04LinearLiquid</li> </ul>       | If online operations are in progress, they will not  | t be completed.   | {}               |                |
| <ul> <li>AOINetworkConfig</li> </ul>                   | Offline operations after communication loss will<br>correlation. To avoid loss of correlation, close w | result in loss of | {}               |                |
| Local:3:C  | applying changes before attempting to go onlin   | e.                | {}               |                |
| Local:3:1  |  |                   | {}               |                |
| Local:3:0  | OK Help  |                   | {}               |                |
| Network  | Error 806-80042535   |                   | {}               |                |
| ▶ Test   |  |                   |                  | Decimal        |

# 7 Ethernet Cable Specifications

ProSoft recommends using a category 5 (or better) Ethernet cable with the PLX35-NB2. A category 5 cable has four twisted pairs of wire that are color-coded and cannot be swapped. The gateway only uses two of the four pairs when running at 10 MBit or 100 MBit speeds.

The Ethernet port on the gateway automatically detects the network speed and cable type and use the appropriate pins to send and receive Ethernet signals. Use either a standard Ethernet straight-through cable or a crossover cable when connecting the gateway to an Ethernet hub, a 10/100/1000 Base-T Ethernet switch, or directly to a PC.

# 7.1 Ethernet Cable Configuration

Note: The standard connector view shown is color-coded for a straight-through cable.

| Crossover ca | able      |                      | Straight- thro | ough cable |
|--------------|-----------|----------------------|----------------|------------|
| RJ-45 PIN    | RJ-45 PIN | Pin #1               | RJ-45 PIN      | RJ-45 PIN  |
| 1 Rx+        | 3 Tx+     | \<br>\               | 1 Rx+          | 1 Tx+      |
| 2 Rx-        | 6 Tx-     |                      | 2 Rx-          | 2 Tx-      |
| 3 Tx+        | 1 Rx+     |                      | 3 Tx+          | 3 Rx+      |
| 6 Tx-        | 2 Rx-     |                      | 6 Tx-          | 6 Rx-      |
|              |           |                      |                |            |
|              |           | 12345678<br>12345678 |                |            |

# 8 Appendix

#### 8.1 PLX35-NB2 Network Requirements

The following port and transport protocol specifications are utilized by the PLX35-NB2 LAN and WAN ports.

## 8.1.1 PLX35-NB2 LAN Port

| Port | Transport Protocol | Purpose |
|------|--------------------|---------|
| 80   | TCP                | HTTP    |
| 123  | UDP                | NTP     |
| 53   | UDP                | DNS     |
| 443  | TCP                | HTTPS   |

IP Addresses

0.0.0.0/0 (all)

## 8.1.2 PLX35-NB2 WAN Port

| Port | Transport Protocol | Purpose           |
|------|--------------------|-------------------|
| 68   | UDP                | DHCP Renewal      |
| 53   | TCP                | DNS               |
| 53   | UDP                | DNS               |
| 443  | TCP                | Tunnel Connection |
| 500  | UDP                | Tunnel Connection |
| 4500 | UDP                | Tunnel Connection |

IP Addresses

0.0.0.0/0 (all)

DNS Addresses

\*.belden.io

\*.prosoft.io

### 8.2 PDN & SRA Tunnel Server IP/DNS Addresses

The following are the IP and DNS addresses of the Persistent Data Network (PDN) and Secure Remote Access (SRA) tunnel end points. Ensure that the required endpoints are accessible to the PLX35-NB2 WAN port to successfully establish a VPN connection to the PLX35-NB2.

| IP Address     | SRA Tunnel Server                      | Region                  |
|----------------|--|-------------------------|
| 54.148.164.142 | us-west-tunnel-agent.prosoft.io        | NA California / US West |
| 18.192.94.16   | eu-frankfurt-tunnel-agent.prosoft.io   | EMEA/EU Frankfurt       |
| 54.169.94.228  | apac-singapore-tunnel-agent.prosoft.io | APAC Singapore          |
| 52.65.129.24   | apac-sydney-tunnel-agent.prosoft.io    | APAC Sydney             |
| 13.127.196.149 | apac-mumbai-tunnel-agent.prosoft.io    | APAC Mumbai             |
| 18.178.158.9   | apac-tokyo-tunnel-agent.prosoft.io     | APAC Tokyo              |
| 177.71.185.249 | sa-sao-paulo-tunnel-agent.prosoft.io   | SA Sao Paolo            |
| 54.227.141.76  | us-east-tunnel-agent.prosoft.io        | US East                 |
| 15.185.119.47  | middle-east-tunnel-agent.prosoft.io    | Middle East             |

| IP Address     | PDN Tunnel Server                          | Region                  |
|----------------|--|-------------------------|
| 44.233.217.124 | pdn-us-west-tunnel-agent.prosoft.io        | NA California / US West |
| 18.198.29.67   | pdn-eu-frankfurt-tunnel-agent.prosoft.io   | EU Frankfurt            |
| 18.139.132.236 | pdn-apac-singapore-tunnel-agent.prosoft.io | APAC Singapore          |
| 54.153.176.80  | pdn-apac-sydney-tunnel-agent.prosoft.io    | APAC Sydney             |
| 15.206.59.157  | pdn-apac-mumbai-tunnel-agent.prosoft.io    | APAC Mumbai             |
| 3.115.215.189  | pdn-apac-tokyo-tunnel-agent.prosoft.io     | APAC Tokyo              |
| 34.196.232.179 | pdn-us-east-tunnel-agent.prosoft.io        | US East                 |
| 157.175.22.109 | pdn-middle-east-tunnel-agent.prosoft.io    | Middle East             |

# 9 Support, Service & Warranty

## 9.1 Contacting Technical Support

With Belden Horizon, you can click on the **SUPPORT** link to initiate a chat with Support about issues in Belden Horizon, or gateways managed by Belden Horizon.



ProSoft Technology, Inc. is committed to providing the most efficient and effective support possible. Before calling, please gather the following information to assist in expediting this process:

- **1** Product Version Number
- 2 System architecture
- 3 Network details

If the issue is hardware related, we will also need information regarding:

- 1 Module configuration and associated ladder files, if any
- 2 Module operation and any unusual behavior
- 3 Configuration/Debug status information
- 4 LED patterns
- 5 Details about the interfaced serial, Ethernet or Fieldbus devices

**Note:** For technical support calls within the United States, ProSoft Technology's 24/7 after-hours phone support is available for urgent plant-down issues.

| North America (Corporate Location) | Europe / Middle East / Africa Regional Office |
|------------------------------------|---|
| Phone: +1.661.716.5100             | Phone: +33.(0)5.34.36.87.20                   |
| info@prosoft-technology.com        | france@prosoft-technology.com                 |
| Languages spoken: English, Spanish | Languages spoken: French, English             |
| REGIONAL TECH SUPPORT              | REGIONAL TECH SUPPORT                         |
| support@prosoft-technology.com     | support.emea@prosoft-technology.com           |
| Latin America Regional Office      | Asia Pacific Regional Office                  |
| Phone: +52.222.264.1814            | Phone: +60.3.2247.1898                        |
| latinam@prosoft-technology.com     | asiapc@prosoft-technology.com                 |
| Languages spoken: Spanish, English | Languages spoken: Bahasa, Chinese, English,   |
| REGIONAL TECH SUPPORT              | Japanese, Korean                              |
| support.la@prosoft-technology.com  | REGIONAL TECH SUPPORT                         |
|                                    | support.ap@prosoft-technology.com             |

For additional ProSoft Technology contacts in your area, please visit: <u>www.prosoft-technology.com/About-Us/Contact-Us</u>.

# 9.2 Warranty Information

For complete details regarding ProSoft Technology's TERMS & CONDITIONS OF SALE, WARRANTY, SUPPORT, SERVICE AND RETURN MATERIAL AUTHORIZATION INSTRUCTIONS, please see the documents at: <a href="http://www.prosoft-technology.com/legal">www.prosoft-technology.com/legal</a>