BLUE Open Studio HMI Runtime Reference Manual

BOS-HMIRT_00
02/2022

www.pro-face.com

Pro-face™
by Schneider Electric

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As part of a group of responsible, inclusive companies, we are updating our communications that contain non-inclusive terminology. Until we complete this process, however, our content may still contain standardized industry terms that may be deemed inappropriate by our customers.

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Safety Information

Important Information

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result** in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

About This Manual

Document Scope

This manual describes the settings and operations on target devices where the HMI Runtime for BLUE Open Studio is installed (or where HMI Runtime will be installed).

Validity Note

This documentation is valid for this product.

The technical characteristics of the device(s) described in the present manual also appear online at www.pro-face.com.

The characteristics that are described in the present document should be the same as those characteristics that appear online. In line with our policy of constant improvement, we may revise content over time to improve clarity and accuracy. If you see a difference between the document and online information, use the online information as your reference.

Registered Trademarks

Microsoft® and Windows® are registered trademarks of Microsoft Corporation in the United States and/or other countries.

Product names used in this manual may be the registered trademarks owned by the respective proprietors.

Related Documents

You can download the manuals related to this product, such as hardware and software manuals, from our website.
https://www.pro-face.com/trans/en/manual/1085.html

Product Related Information

GPL/LGPL License

This product partially uses the open source licensed under public license such as GNU General Public License (GPL), GNU Lesser General Public License (LGPL). As long as these open source, you have the right to get, modify and redistribute them.

WE PROVIDES THESE SOURCE CODE "AS IS" WITHOUT WARRANTY OF ANY KIND AND ALL SUCH WARRANTIES, EXPRESS OR IMPLIED, RE HEREBY DISCLAIMED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS OR USEFULLNESS FOR ANY PARTICULAR PURPOSE, ACCURACY, AVAILABILITY, QUALITY OF THE SOURCE CODE, PERFORMANCE OR NON-INFRINGEMENT.

There is no guarantee by the copyright for these as the open source and we do not provide nor is obligated to provide support for the usage of these source code packages, but we guarantee this product under the condition described in this script.

You can refer the following link about GPL/LGPL.
GPL: https://www.gnu.org/licenses/gpl-3.0.html
LGPL: https://www.gnu.org/licenses/old-licenses/lgpl-2.1.html

Cybersecurity

Cybersecurity Best Practices

To help keep your Pro-face products secure and protected, we recommend that you implement the cybersecurity best practices. Following the recommendations may help significantly reduce your company's cybersecurity risk. For the recommendations, refer to the following URL:
https://www.pro-face.com/trans/en/manual/1087.html

Hardware Configuration

What's in This Chapter

Introduction.....9
Functions in Hardware Configuration 9

Introduction

In **Hardware Configuration**, configure required settings such as IP address and internal clock of the target device where the HMI Runtime for BLUE Open Studio is installed (or where HMI Runtime will be installed).

About the Login Password

To reduce the risk of unauthorized access to the product, a password must be set up the first time you log in to Hardware Configuration. The password must meet the following requirements:

Number of characters	At least 8 single-byte characters, up to 64 characters
Types of characters	Use at least one of each of the following types of characters: • Uppercase letter (A-Z) • Lowercase letter (a-z) • Number (0-9) • Symbol (special character): ! # - = _ .

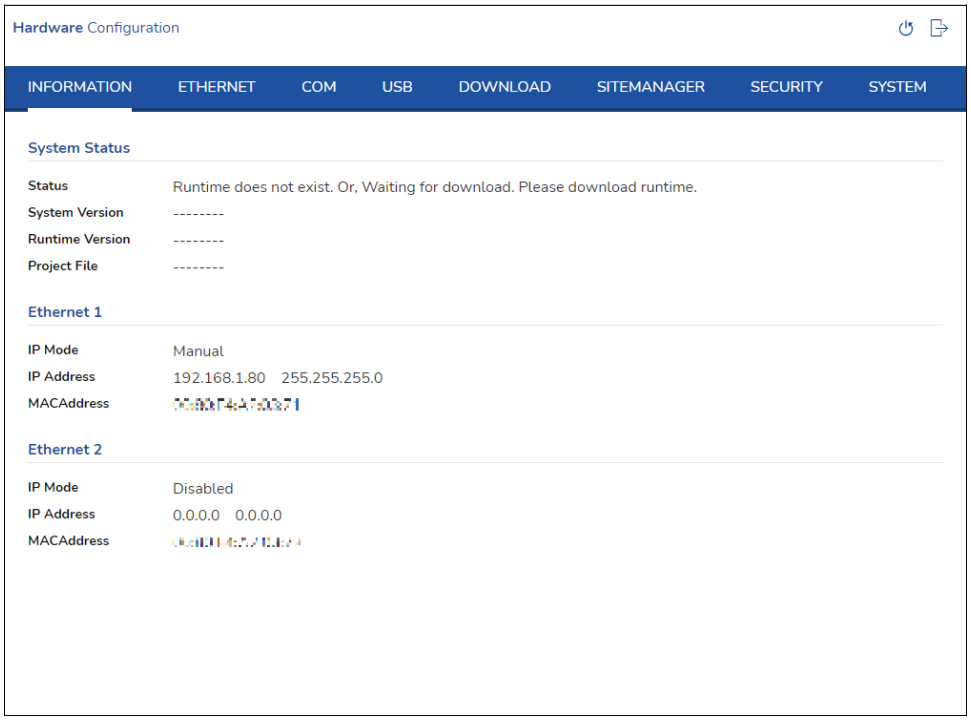
If you forget the password, note that you will not be able to reset it. To restore the product to its original state (at time of purchase), contact customer support. All user data in the product will be lost.

Functions in Hardware Configuration

This section describes the functions available in **Hardware Configuration**.

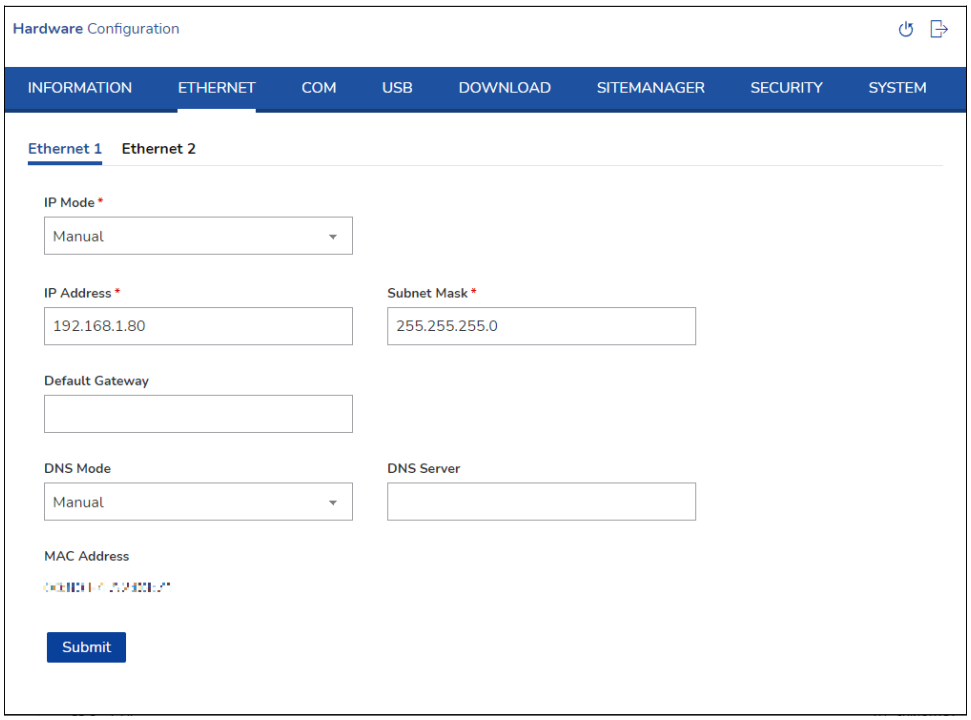
INFORMATION

You can check the product system version, runtime version, IP address, and so on. Also, if a System Error/Runtime Error occurs, you can check the error information in the **Status** area.



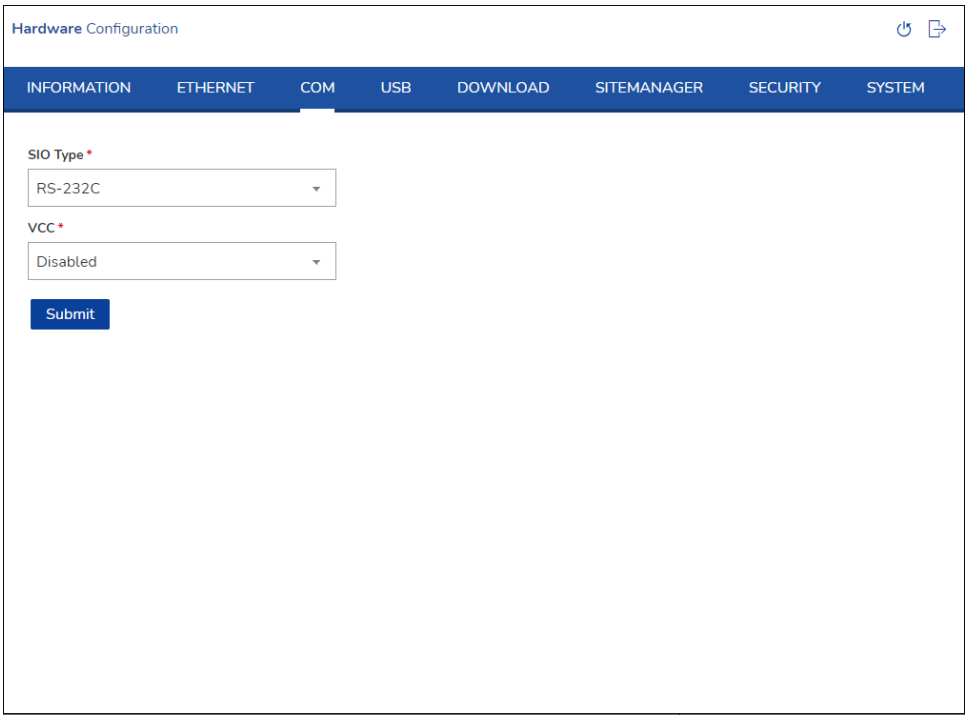
ETHERNET

Configure Ethernet settings, which are required when communicating over Ethernet with connected devices, or when using functions that interact with a network PC, such as downloading project files.



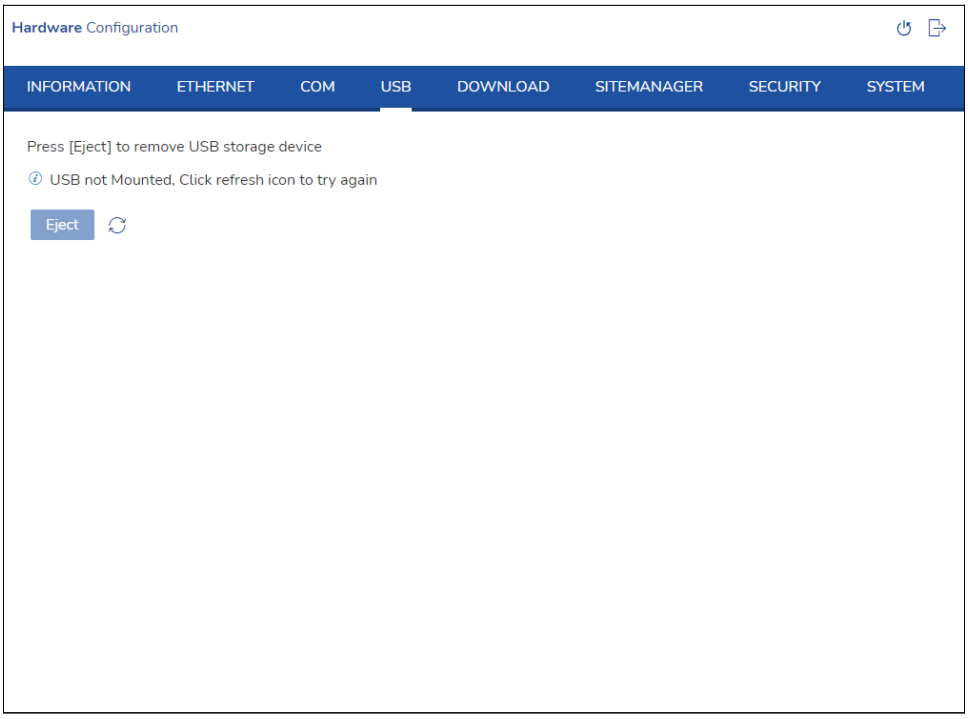
COM

Select the serial interface communication method as either RS-232C or RS-422/485. For RS-232C communication, you can select to enable or disable VCC.



USB

When a USB device is connected to this product, use this function to safely remove the hardware.

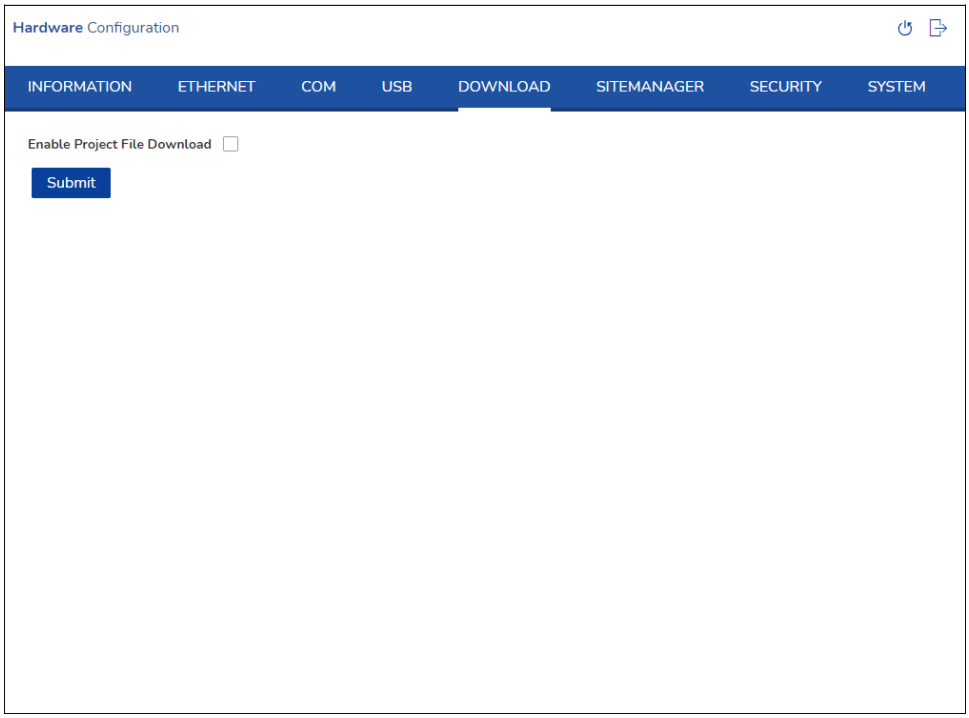


DOWNLOAD

Enable to download project files and HMI Runtime to this product. Disable this setting for active run time operation.

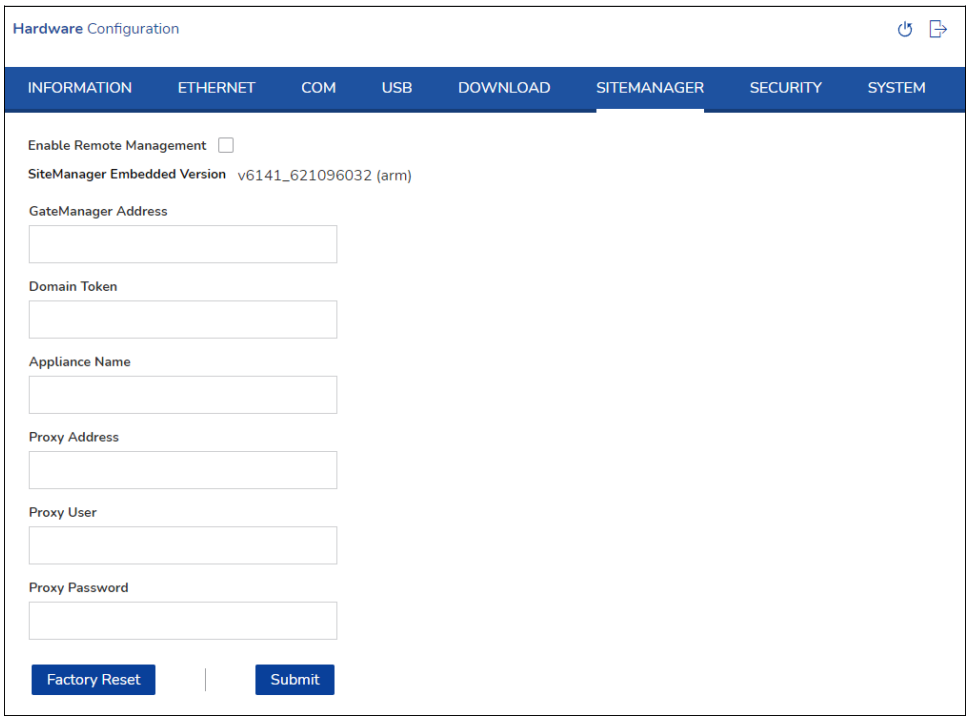
NOTE:

- Enable only when downloading project files or HMI Runtime. For information on how to download the project file, refer to "BLUE Open Studio Technical Reference Manual" (Help Manual) - "Remote Management" - "Download your project to the target device".
- If you are downloading the project file to Edge Box HMI for the first time, refer to the following.
Edge Box HMI Setup Procedure, page 18



SITEMANAGER

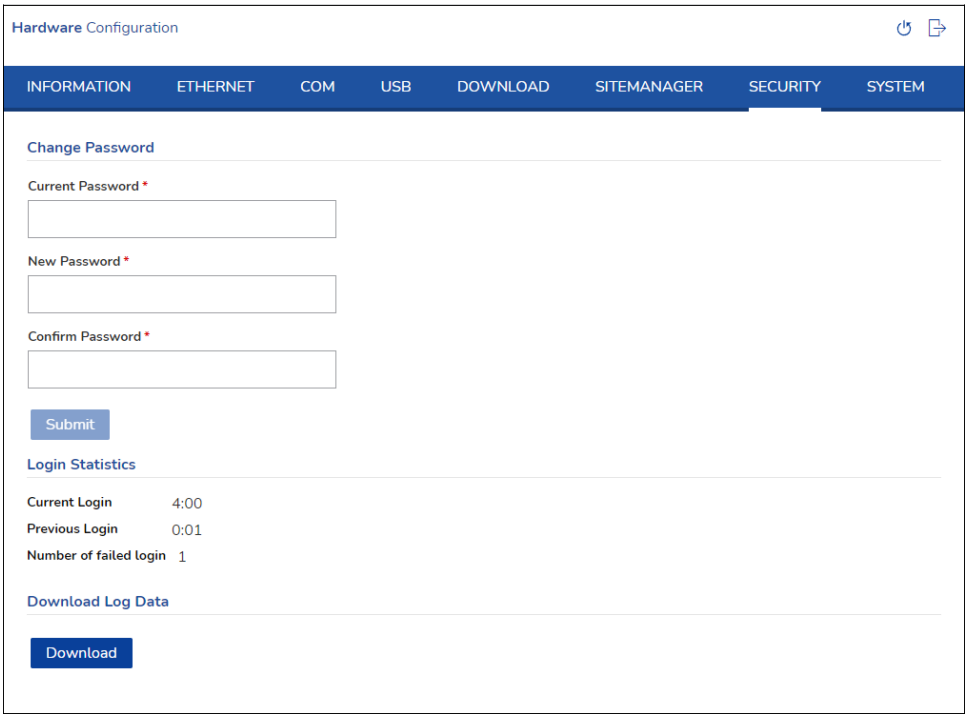
Set up when configuring a system that includes Pro-face Connect (sold separately). Refer to the following for the set-up process.
Settings for Using Pro-face Connect, page 17



SECURITY

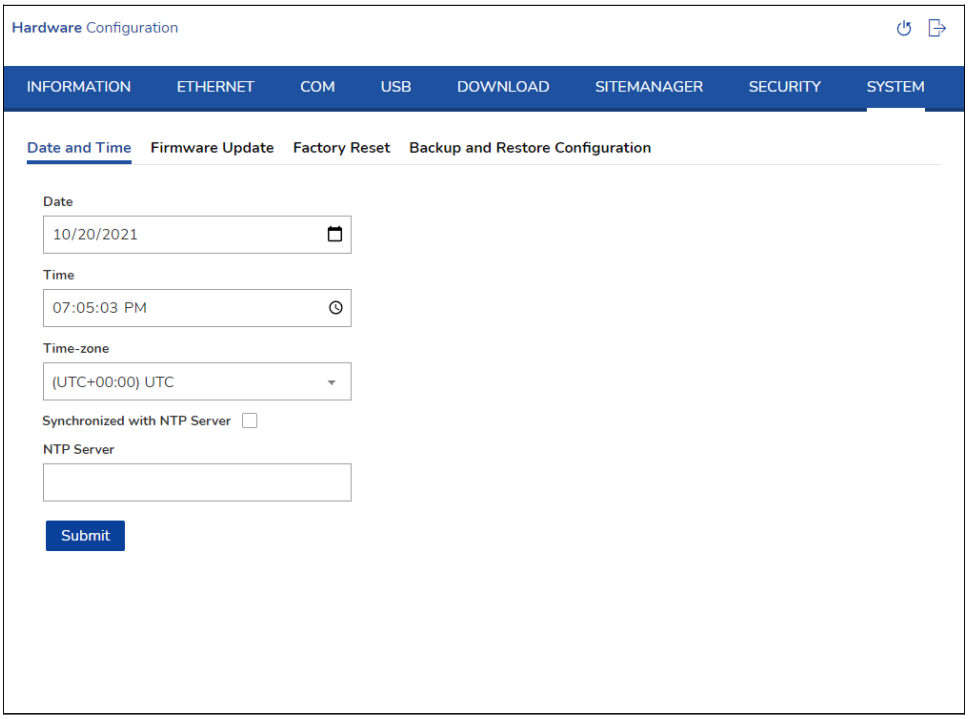
Change the password. You can also perform operations such as check the previous login information and download that information. The downloaded security data file is "log.csv".

NOTE: For password setup requirements, refer to About the Login Password, page 9.

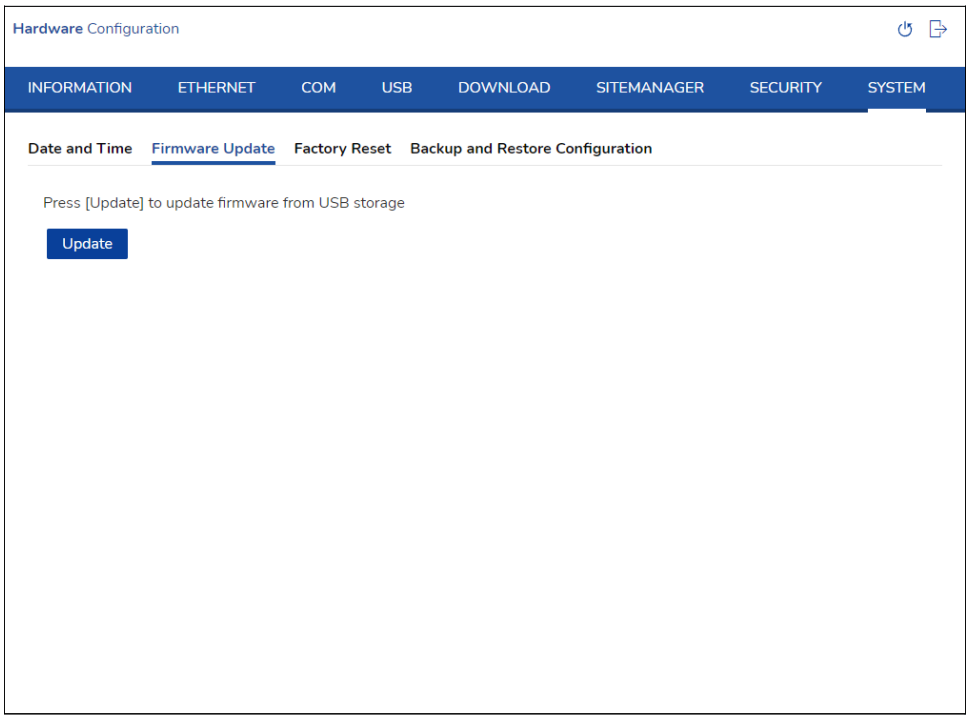


SYSTEM

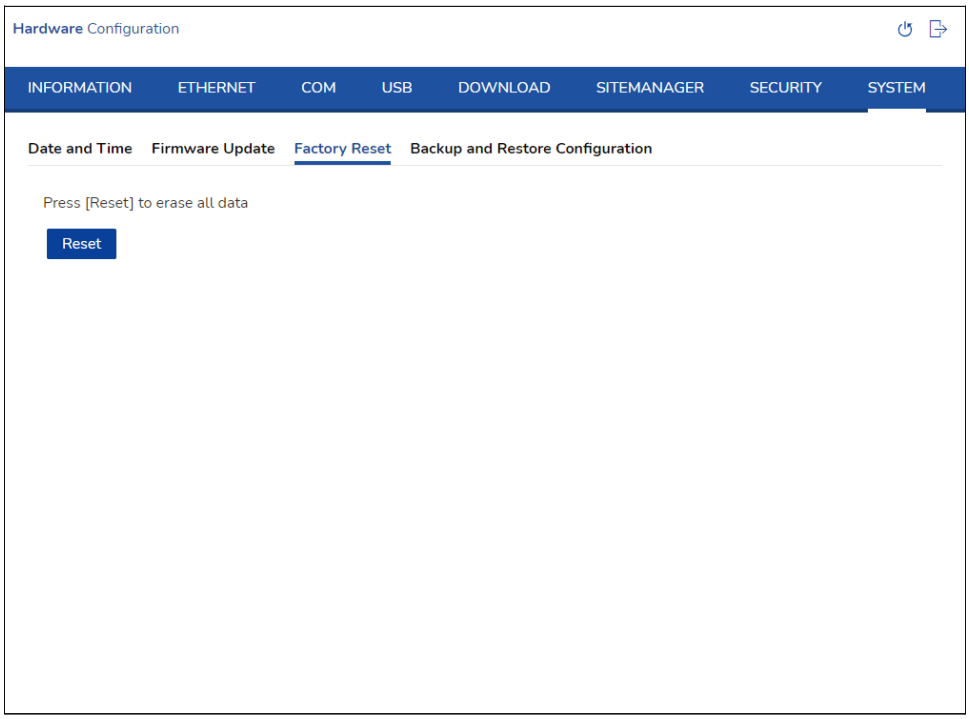
In the **Date and Time** tab, set the internal clock of the product. You can also set up an NTP server to synchronize the clock.



In the **Firmware Update** tab, update the firmware. Refer to the following for the update process.
Updating the Firmware, page 16

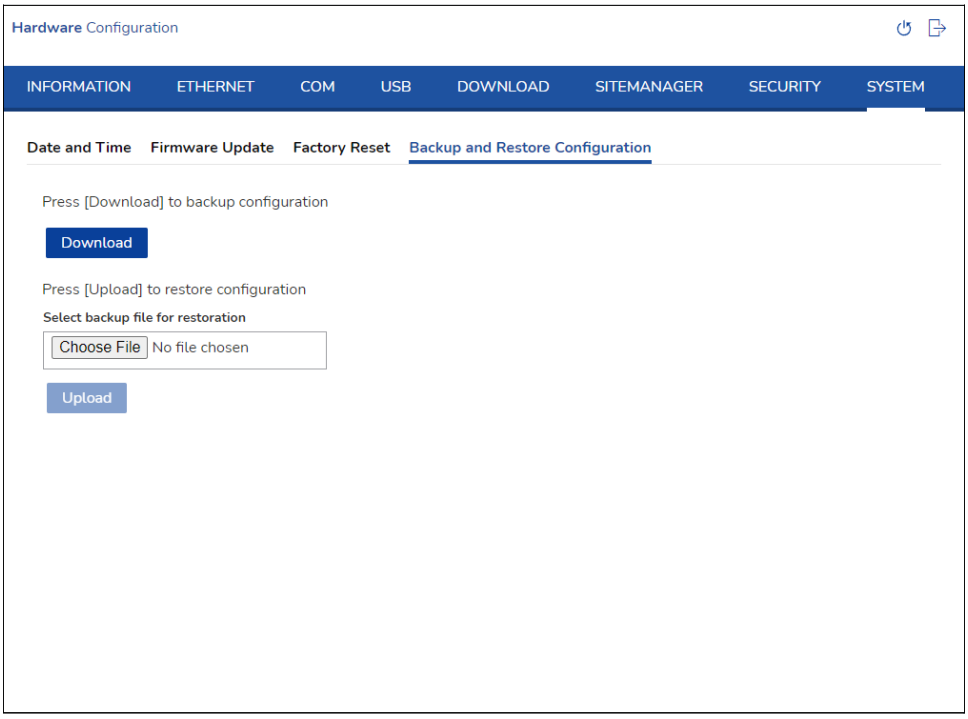


In the **Factory Reset** tab, you can reset the product to the factory default settings.



In the **Backup and Restore Configuration** tab, you can back up the settings in **Hardware Configuration**. The downloaded backup data file is "config.bin". You can also use the backup file to restore the settings of Hardware Configuration. However, please note that the following settings are not backed up or restored.

- **SECURITY** tab
- **Date and Time** tab in the **SYSTEM** tab


Hardware Configuration
INFORMATION
ETHERNET
COM
USB
DOWNLOAD
SITEMANAGER
SECURITY
SYSTEM
Date and Time
Firmware Update
Factory Reset
Backup and Restore Configuration
Press [Download] to backup configuration
Download
Press [Upload] to restore configuration
Select backup file for restoration
Choose File
No file chosen
Upload

Updating the Firmware

We recommend updating the firmware regularly to keep the system up-to-date.

1. Download the firmware from our website and save it to a USB storage device.
   https://www.pro-face.com
2. Confirm that the files BOOTOS13.SYS and BOOTLD13.SYS are in the root folder of the USB storage device and then connect the USB storage device to the product.
3. Login to **Hardware Configuration**.
4. Open the **SYSTEM** tab. In the **Firmware Update** tab, click **Update**.

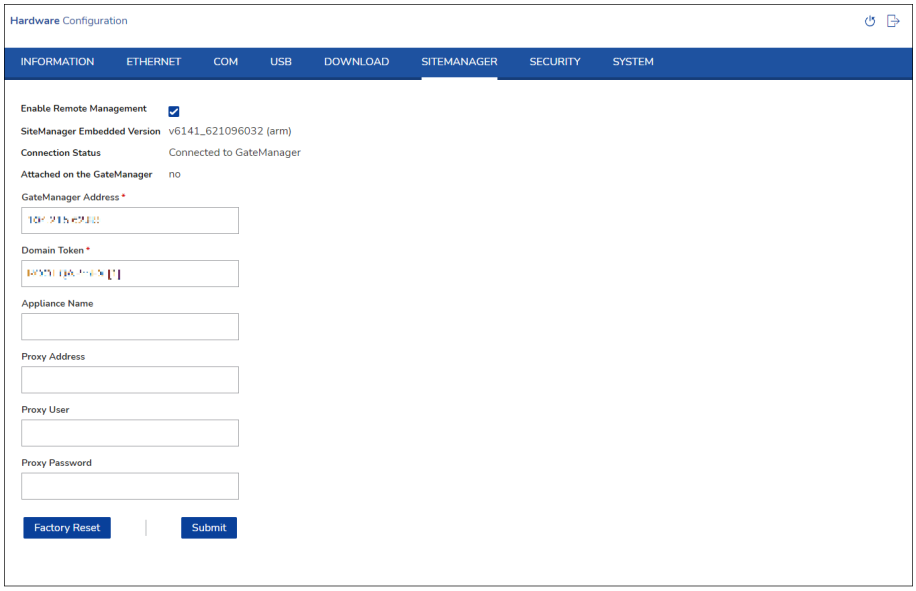
Settings for Using Pro-face Connect

When using a PC or tablet to display and operate HMI products installed in remote locations, it is necessary to build a system that prevents unauthorized access by external entities. By installing Pro-face Connect (sold separately), you can build a secure remote access system.

Pro-face Connect consists of our products on the work site (SiteManager), computers or tablets in the office (LinkManager), and a server to connect them (GateManager).

This section describes how to set up **SiteManager**.

1. Log in to **Hardware Configuration**.
2. Open the **SITEMANAGER** tab and select the **Enable Remote Management** check box.
3. Enter the IP address of the **GateManager** you want to access and the password (token) to connect to the **GateManager**. This information can be found at the bottom of the **GateManager X.509** certificate emailed to you from **GateManager**.



4. In **Appliance Name**, enter the name of the target device (the name of **SiteManager**). The name set here is displayed on the **GateManager**.
5. If required, enter the proxy server IP address, account name, and password. For proxy server information, consult your network administrator.
6. Click **Submit**.
7. Click the **Reboot** icon in the top-right corner of the screen. The product is restarted.

NOTE:

- For more information about Pro-face Connect, refer to our website. https://www.pro-face.com
- When you delete the registered **SiteManager** from **GateManager**, you need to initialize **SiteManager** and reassign the license. Click **Reset to Default** and request the **GateManager** administrator to reassign the license. (You cannot use the same license. Reissuing a license will take 24 hours.)

Edge Box HMI Setup Procedure

What's in This Chapter

Introduction....18
When Transferring via USB Cable....18
When Transferring via Ethernet....22

Introduction

The Edge Box HMI (model number: PFXSTM6B00DIOT) includes an HMI Runtime license (500 tags supported) and a Mobile Access license. There is no need to activate them. Since the Edge Box HMI does not have a display, you can use the Mobile Access feature to access the Edge Box HMI from a web browser on your computer (development environment).

The development environment requires a HTML5 compatible browser (recommended: Google Chrome) to be installed.

NOTE:

- For more information on Mobile Access features, refer to "BLUE Open Studio Technical Reference Manual" (Help Manual) - "Thin Client and Mobile Access" - "Mobile Access".
- If you want to increase the number of tags or access the Edge Box HMI from multiple computers, please check our website for license information.
- There are limitations to the functions available in HMI Runtime. For information, refer to "BLUE Open Studio Technical Reference Manual" (Help Manual) - "HMI Runtime" - "Supported Features".

Prerequisite

The following settings are required in BLUE Open Studio to enable using a project to Edge Box HMI.

1. On the **Project** tab of the ribbon, in **Web** group, click **Mobile Access**. Select the **Enable CGI** check box and save the settings.
2. After creating and editing all the screens, from the **File** menu click **Save All as HTML**. All screens and screen groups in the project are saved in HTML format.

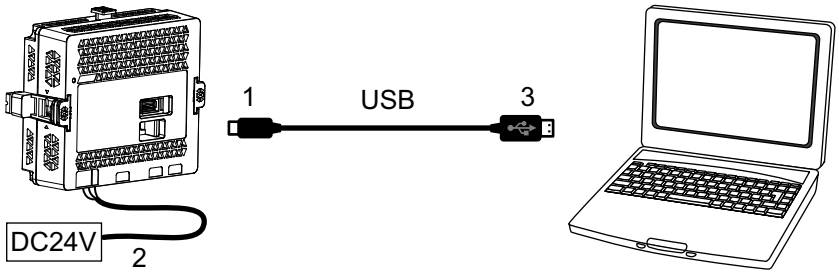
The following section describes the setup procedure when using the Edge Box HMI as the target device.

When Transferring via USB Cable, page 18

When Transferring via Ethernet, page 22

When Transferring via USB Cable

This procedure is intended for users who are transferring a project to the Edge Box HMI for the first time.

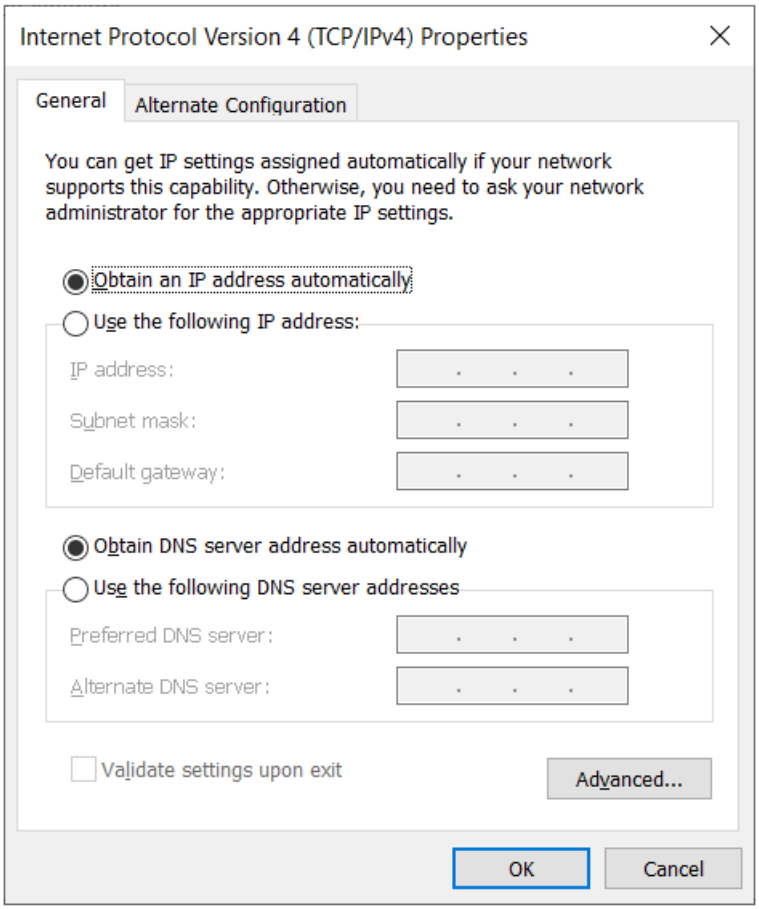


1. Connect a USB transfer cable to the Edge Box HMI.
2. Turn on the Edge Box HMI. The status LED flashes orange.
3. Connect the PC (development environment) to the Edge Box HMI via the USB transfer cable.

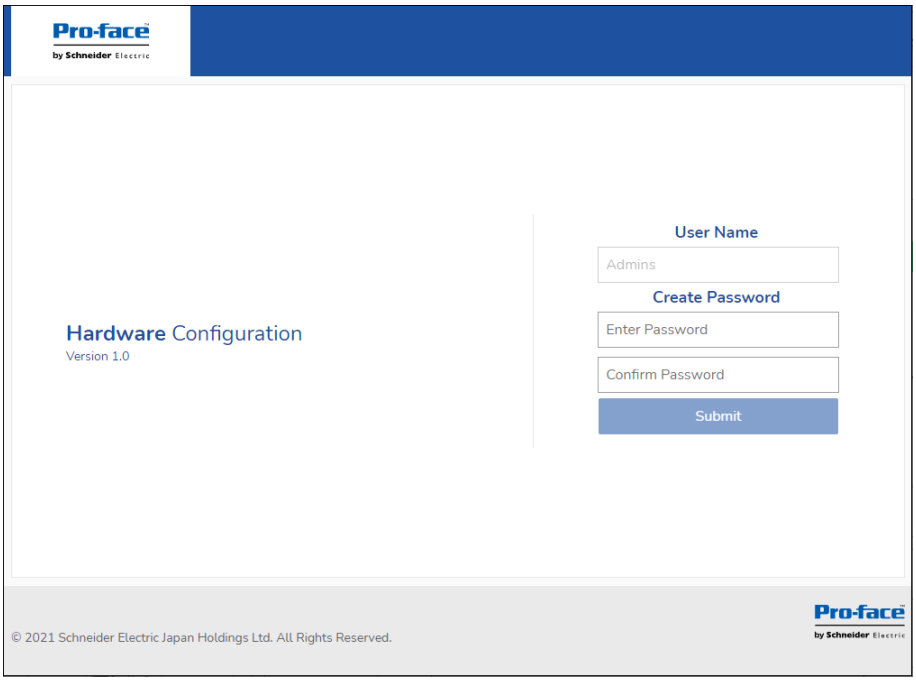
   NOTE: When connected to the PC via the USB device port on the Edge Box HMI, it is recognized as an Ethernet device on the PC. (Device name: Remote NDIS Compatible Device)

4. Check that your computer is set up to obtain an IP address automatically.

   NOTE: If you are using Windows 10, use the following to check your IP address settings.
   From the **Start** menu, select **Settings** > **Network and Internet** > **Change adapter options**.
   Right-click the Ethernet connection and select **Properties**. In the **Internet Protocol version 4 (TCP/IPv4)** properties, check if the **Obtain an IP address automatically** option is selected.



5. Open a browser and in the address bar enter the IP address of the Edge Box HMI (https://169.254.100.100). The message "**Your connection is not private**" is displayed. To continue, click **Advanced** and then click **Proceed to** *** (*** is the IP address).
6. The **Hardware Configuration** screen is displayed. Set a login password and click **Submit**.



NOTE:

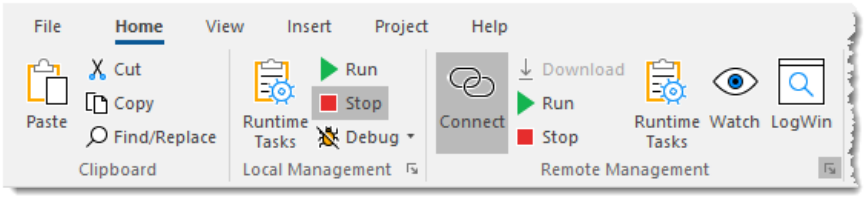
- The user name is "Admins" and cannot be changed.
- The password must meet the following requirements:

Number of characters	At least 8 single-byte characters, up to 64 characters
Types of characters	Use at least one of each of the following types of characters: ◦ Uppercase letter (A-Z) ◦ Lowercase letter (a-z) ◦ Number (0-9) ◦ Symbol (special character): ! # - = _ .

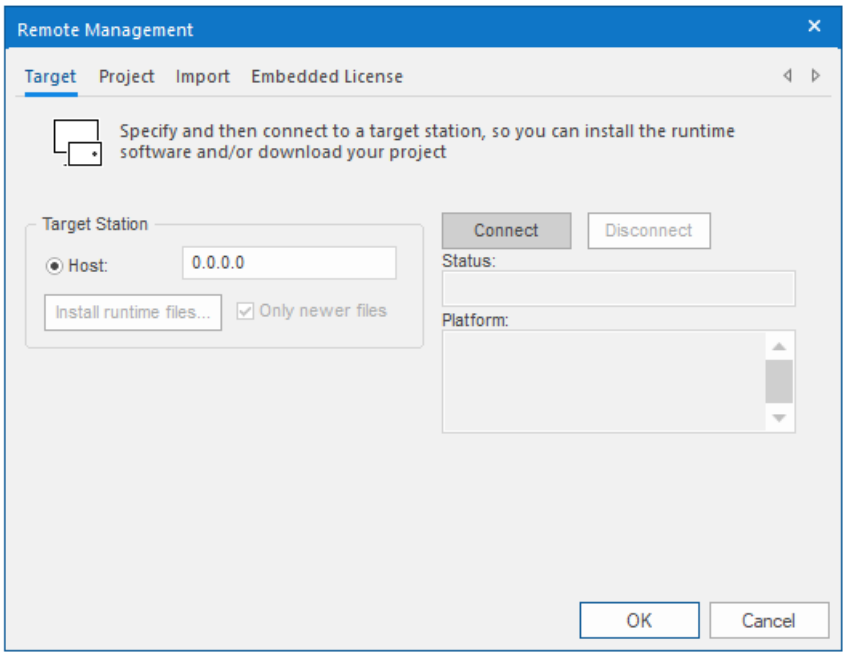
If you forget the password, note that you will not be able to reset it. To restore the Edge Box HMI to its original state (at time of purchase), contact customer support. All user data in the product will be lost.

7. Open the **SYSTEM** tab. Set time of the internal clock on the **Date and Time** tab, and click **Submit**.
8. Open the **DOWNLOAD** tab. Select the **Enable Project File Download** check box, and click **Submit**.
9. Click the **Reboot** icon in the top-right corner of the screen. The Edge Box HMI is restarted.
10. In BLUE Open Studio, open the project file that you want to transfer to the Edge Box HMI.

11. On the **Home** tab of the ribbon, in the **Remote Management** group, click **Connect**. The **Remote Management** dialog box is displayed.



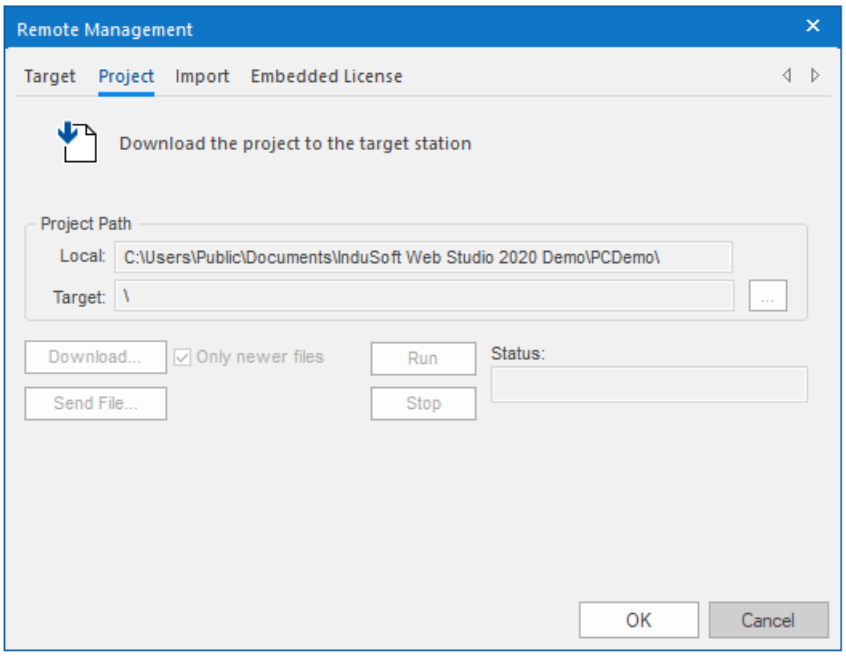
12. From the **Target** tab, in the **Host** field enter the IP address (169.254.100.100) of the Edge Box HMI, and click **Connect**.



13. After confirming that the **Remote Management** tool connected to the Edge Box HMI and its status is displayed, click **Install runtime files**.

    NOTE: It will take awhile to install HMI Runtime.

14. In the dialog box, click the **Project** tab. In the **Local** box, you should see the location of the project that is currently open in your development environment. This is the project that is downloaded to the Edge Box HMI.



15. Click **Download**. The project is downloaded to the Edge Box HMI.

    NOTE: After downloading the project, the status LED of the Edge Box HMI continues flashing orange.

16. Click **OK** to close the dialog box.

17. From **Hardware Configuration**, open the **DOWNLOAD** tab. Clear the **Enable Project File Download** check box and click **Submit**.

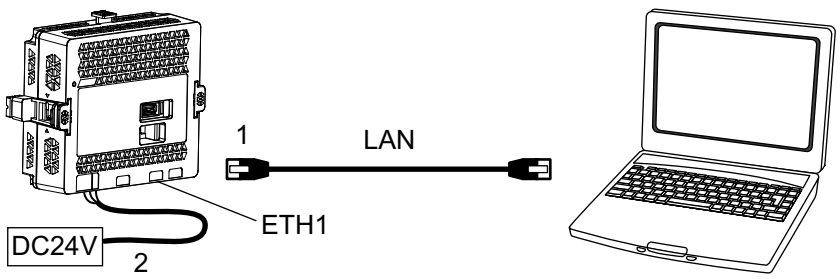
18. Click the **Reboot** icon. Edge Box HMI restarts and operation begins.

    NOTE: After restart, the status LED of the Edge Box HMI turns green.

The next time you download a project, you do not need to install HMI Runtime unless you are purposely updating HMI Runtime. For information about the download procedure, refer to "BLUE Open Studio Technical Reference Manual" (Help Manual) - "Remote Management" - "Download your project to the target device".

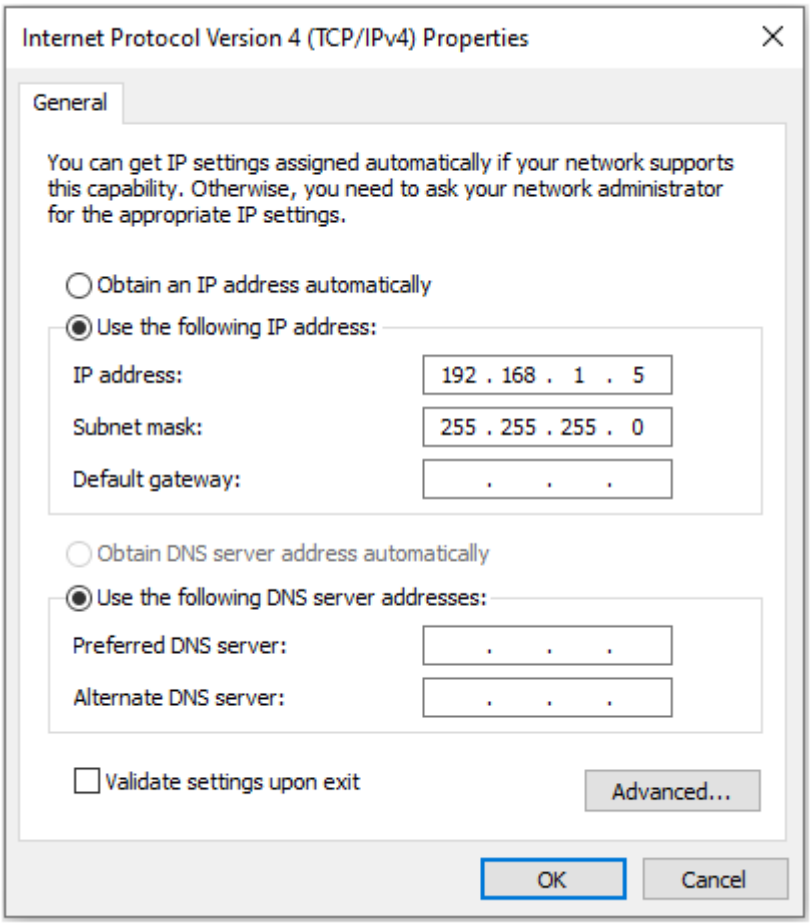
When Transferring via Ethernet

This procedure is intended for users who are transferring a project to the Edge Box HMI for the first time.



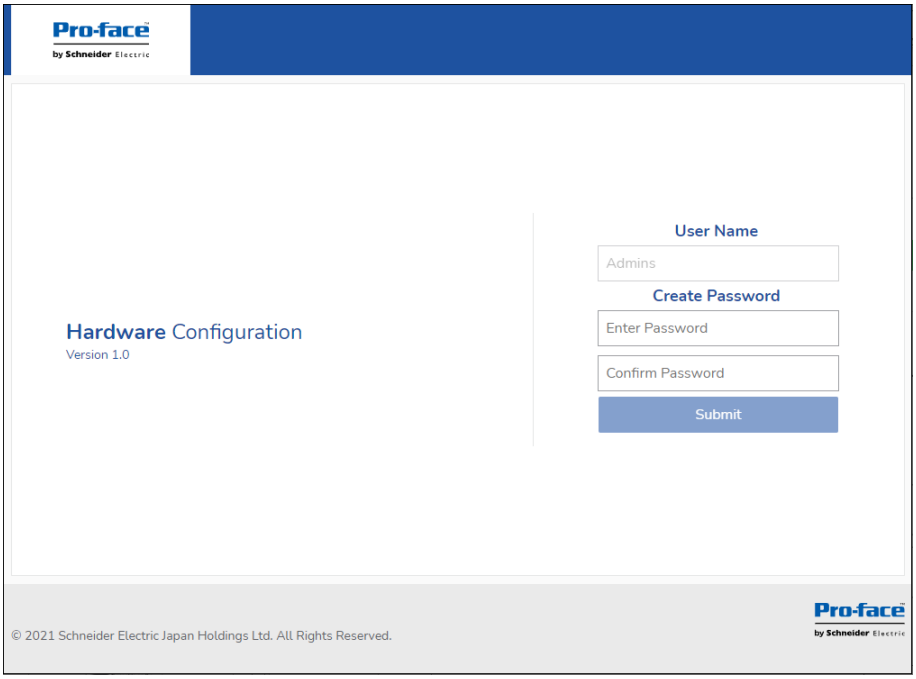
1. Connect to the same network as the PC (development environment) using the ETH1 port of the Edge Box HMI.
2. Turn on the Edge Box HMI. The status LED flashes orange.
3. Set the IP address of your computer as follows.
   IP address: 192.168.1.* (any address other than 192.168.1.80)
   Subnet Mask: 255.255.255.0

   NOTE: If you are using Windows 10, use the following to set your IP address.
   From the **Start** menu, select **Settings** > **Network & Internet** > **Change adapter options**.
   Right-click the Ethernet connection and select Properties. In the **Internet Protocol Version 4 (TCP/IPv4)** properties, select the **Use the following address** option.



4. Open a browser and in the address bar enter the IP address of the Edge Box HMI (https://192.168.1.80). The message "**Your connection is not private**" is displayed. To continue, click **Advanced** and then click **Proceed to** *** (*** is the IP address).

5. The **Hardware Configuration** screen is displayed. Set a login password and click **Submit**.



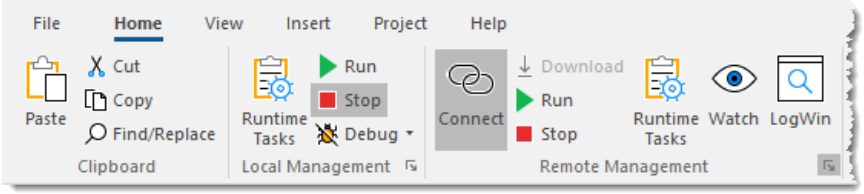
NOTE:

- The user name is "Admins" and cannot be changed.
- The password must meet the following requirements:

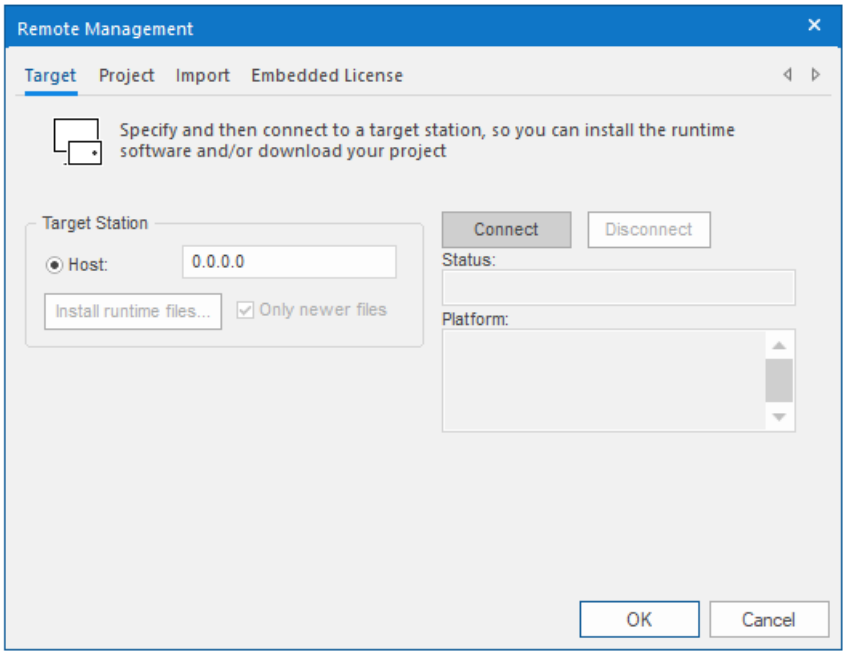
Number of characters	At least 8 single-byte characters, up to 64 characters
Types of characters	Use at least one of each of the following types of characters: ◦ Uppercase letter (A-Z) ◦ Lowercase letter (a-z) ◦ Number (0-9) ◦ Symbol (special character): ! # - = _ .

If you forget the password, note that you will not be able to reset it. To restore the Edge Box HMI to its original state (at time of purchase), contact customer support. All user data in the Edge Box HMI will be lost.

6. Open the **SYSTEM** tab. Set time of the internal clock on the **Date and Time** tab, and click **Submit**.
7. Open the **DOWNLOAD** tab. Select the **Enable Project File Download** check box, and click **Submit**.
8. Click the **Reboot** icon in the top-right corner of the screen. The Edge Box HMI is restarted.
9. In BLUE Open Studio, open the project file that you want to transfer to the Edge Box HMI.
10. On the **Home** tab of the ribbon, in the **Remote Management** group, click **Connect**. The **Remote Management** dialog box is displayed.



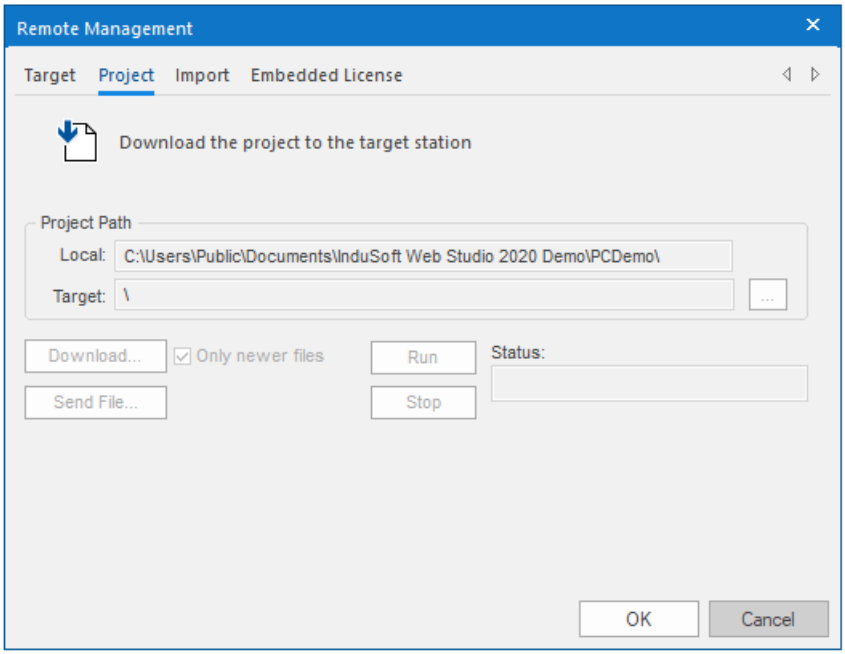
11. From the **Target** tab, in the **Host** field enter the IP address (192.168.1.80) of the Edge Box HMI, and click **Connect**.



12. After confirming that the **Remote Management** tool connected to the Edge Box HMI and its status is displayed, click **Install runtime files**.

    NOTE: It will take awhile to install HMI Runtime.

13. In the dialog box, click the **Project** tab. In the **Local** box, you should see the location of the project that is currently open in your development environment. This is the project that is downloaded to the Edge Box HMI.



14. Click **Download**. The project is downloaded to the Edge Box HMI.

    NOTE: After downloading the project, the status LED of the Edge Box HMI continues flashing orange.

15. Click **OK** to close the dialog box.

16. From **Hardware Configuration**, open the **DOWNLOAD** tab. Clear the **Enable Project File Download** check box and click **Submit**.
17. Click the **Reboot** icon. Edge Box HMI restarts and operation begins.

    NOTE: After restart, the status LED of the Edge Box HMI turns green.

The next time you download a project, you do not need to install HMI Runtime unless you are purposely updating HMI Runtime. For information about the download procedure, refer to "BLUE Open Studio Technical Reference Manual" (Help Manual) - "Remote Management" - "Download your project to the target device".

Appendix

What's in This Chapter

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Status LED Indication

Color	Indicator	HMI Operation
Green	ON	In operation
Orange	Flashing	Software starting up
Red	ON	Power is ON.
	Flashing	System Error/Runtime Error*1
–	OFF	Power is OFF.

*1 You can find the information in **Status** on the **INFORMATION** tab of the Hardware Configuration.

Accessories

The optional items that can be used for each interface of the model on which HMI Runtime is installed are as follows.

Product name	Product number	Description
Serial interface		
RS-422 Terminal Block Conversion Adapter	PFXZCBADTM1	Connects output from a serial interface (D-sub 9 pin plug) directly to an RS-422 terminal block.
COM Port Conversion Adapter	CA3-ADPCOM-01	Connects optional RS-422 communication items to serial interface.
RS-232C Isolation Unit	CA3-ISO232-01	Connects a host controller to this product and provides isolation (RS-232C and RS-422 are switchable).
USB (Type A) interface		
USB Front Cable (1 m)	CA5-USBEXT-01	Extension cable that attaches USB interface to front panel.
USB (micro-B) interface		
USB Transfer Cable	PFXZUSCBMB2	Cable for transferring screen data from a PC (USB Type A) to this product (USB micro-B).
USB (micro-B) Front Cable	PFXZCIEXMB2	Extension cable that attaches USB interface to front panel.

Precautions When Setting the Project

This section describes things to note when you set a project in BLUE Open Studio.

Supported Features

There are limitations to the functions available on the models where HMI Runtime is installed. For information, refer to "BLUE Open Studio Technical Reference Manual" (Help Manual) - "HMI Runtime" - "Supported Features".

Serial Port Setting

When using a serial communication driver, the COM setting differs depending on the SIO type.

Model	Port / SIO type	Communication setting
Edge Box HMI (PFXSTM6B00DIOT)	COM1 / RS-232C	/dev/ttyS1
	COM1 / RS-422/485	/dev/ttyS2

Saving Data to Storage Device

When you connect an external storage device to a physical port for saving data, the data save location (path) is as follows:

Model	External storage	Save location (path)
Edge Box HMI (PFXSTM6B00DIOT)	USB storage	/misc/usb/

You need to format (initialize) the external storage device in FAT32 or FAT. Format using your computer.

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As standards, specifications, and design change from time to time,
please ask for confirmation of the information given in this publication.

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