

# Harmony Edge Box HMI

## Demo Setup Guide – AVEVA Insight



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## Preface

### (1) About this quick start guide

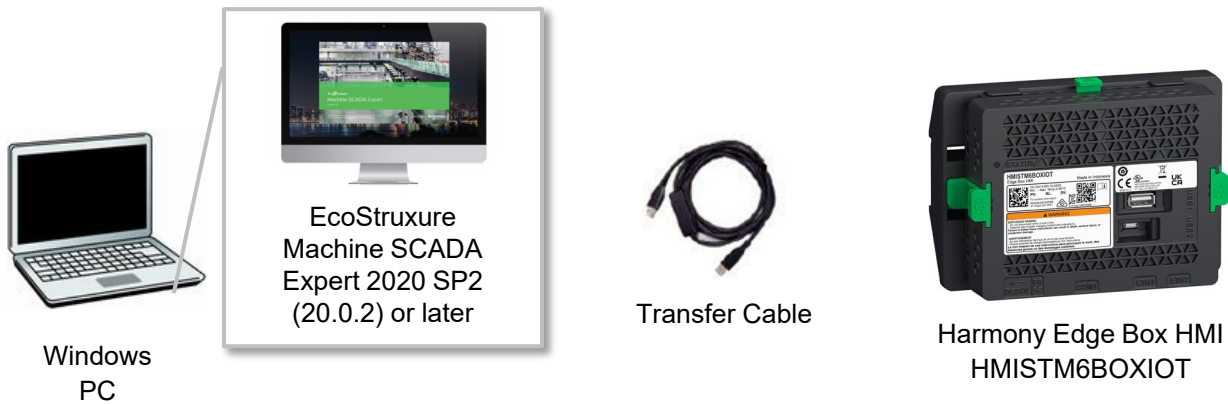
This Edge Box HMI Demo Setup Guide is intended for individuals using the Edge Box HMI and its software for demonstration purposes and not for a production environment. This publication will help you quickly configure hardware, software and cloud services.



## Preface

### (2) Building a development environment

Prepare the following environment.



#### (A) EcoStruxure Machine SCADA Expert

EcoStruxure Machine SCADA Expert is a development and runtime software that incorporates all the tools users need to create SCADA HMI applications, dashboards and OEE interfaces.

#### (B) Transfer Cable

Two ways of transferring project files



USB Cable  
(Type A – Micro-B)

Use an optional USB transfer cable or commercial USB cable (Type A to Micro-B) for transfer.



LAN Cable

Use LAN cable (Ethernet cable) for transfer.

#### (C) Harmony HMISTM6BOXIOT

Please visit <https://www.se.com> for more information on the Harmony Edge Box HMI.



Harmony Edge Box HMI  
HMISTM6BOXIOT

## Preface

### (3) How to get EcoStruxure Machine SCADA Expert

To create HMI Screen for the Edge Box HMI, the version of EcoStruxure Machine SCADA Expert needs to be V2020 SP2 or later.



You can download EcoStruxure Machine SCADA Expert Installer from the following link.

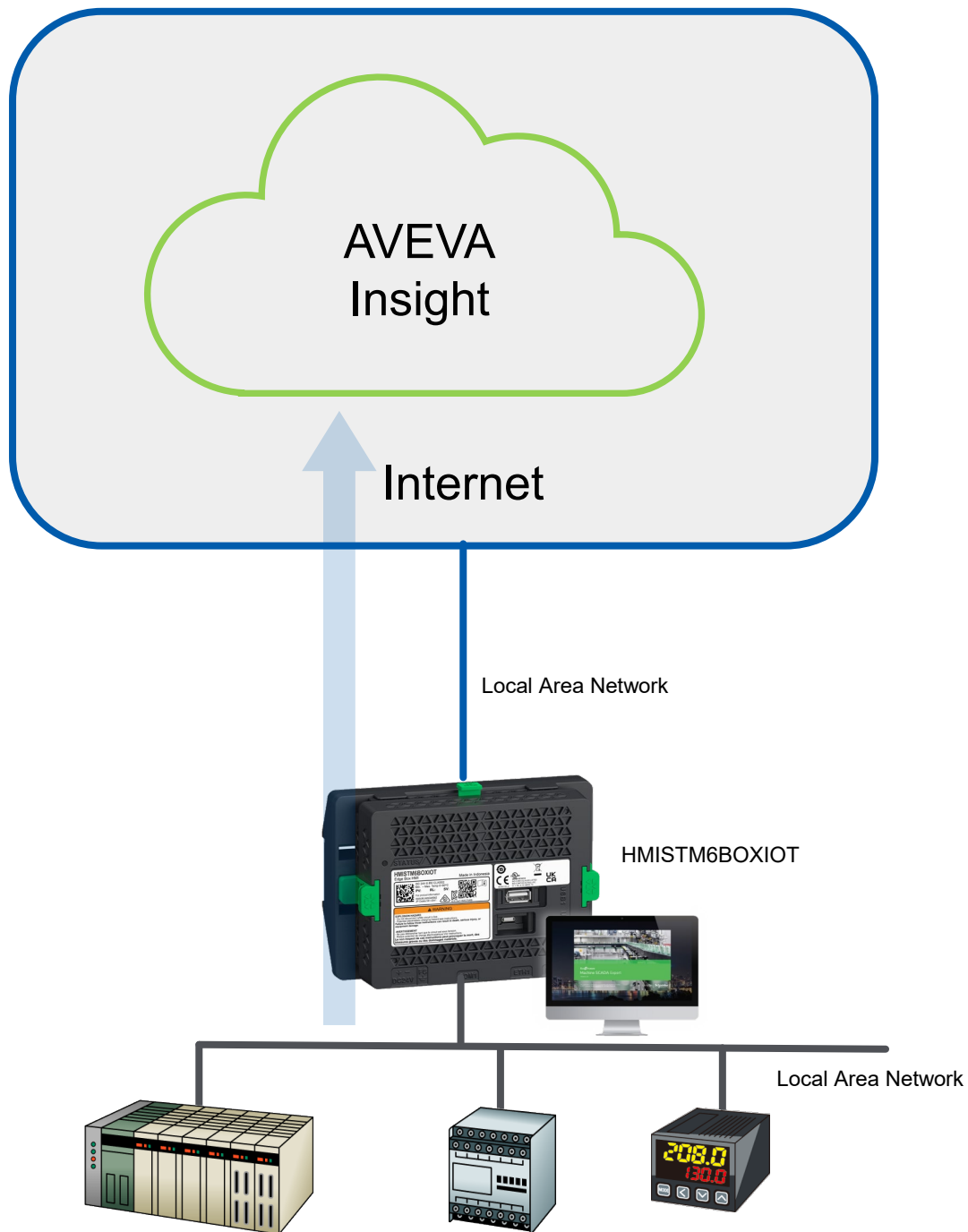
<https://www.se.com/ww/en/product-range/63734-ecostruxure-machine-scada-expert/?preferredCountry=yes#software-and-firmware>

You can use the software without a license in Evaluation Mode for 40 hours. After the evaluation period ends, the program automatically converts into Demo Mode until you apply a valid license. You cannot reactivate the Evaluation Mode even if you reinstall the software on your computer.

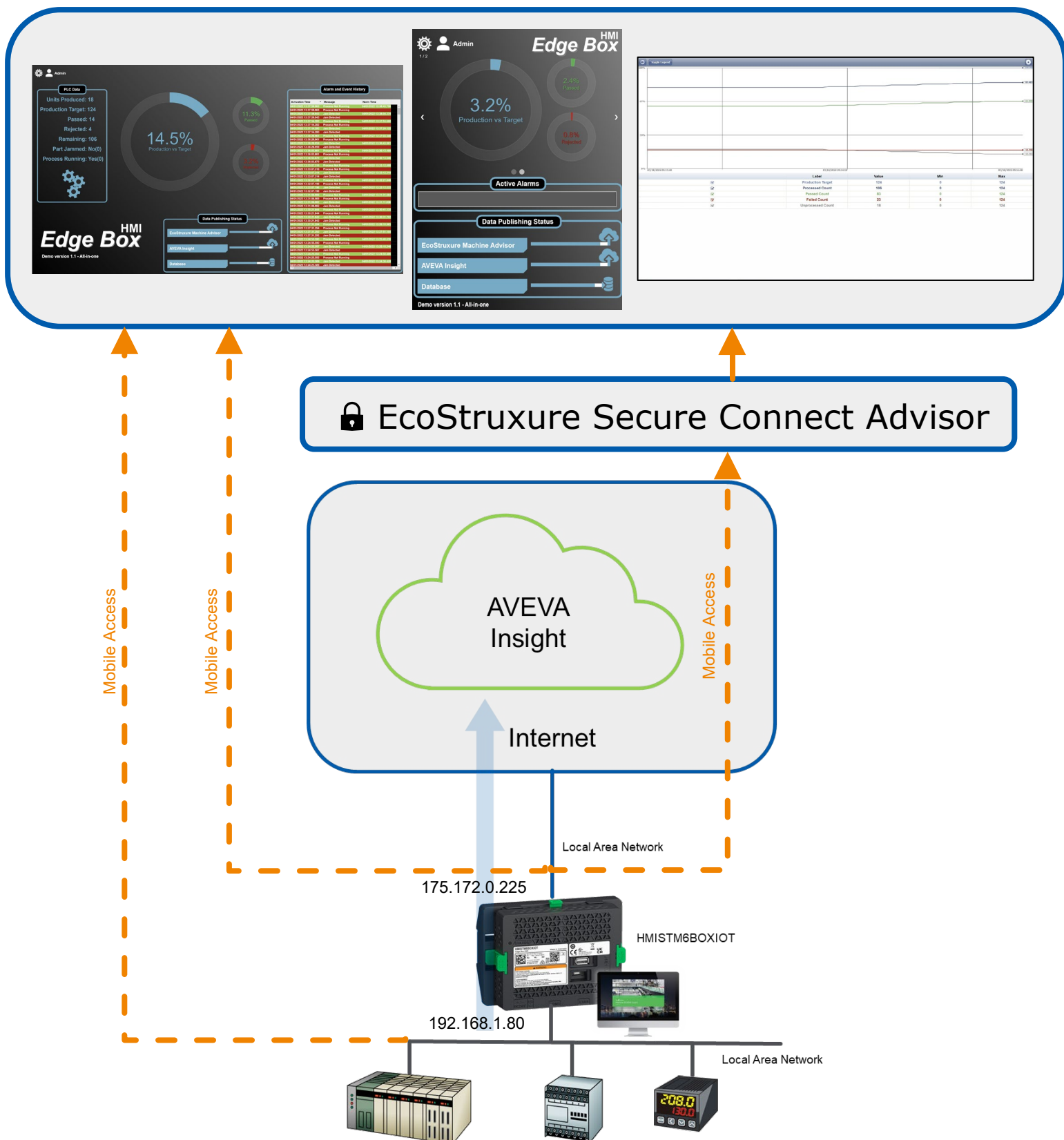
Please access the [FAQ page](#) to check how to activate EcoStruxure Machine SCADA Expert.

## 2. Harmony Edge Box HMI Demo Overview

The Harmony Edge Box HMI Demo – AVEVA Insight demonstrates pushing data from internal tags or external devices to the cloud: AVEVA Insight. Although a PLC or other device can supply data, for demonstration purposes data is internally generated.



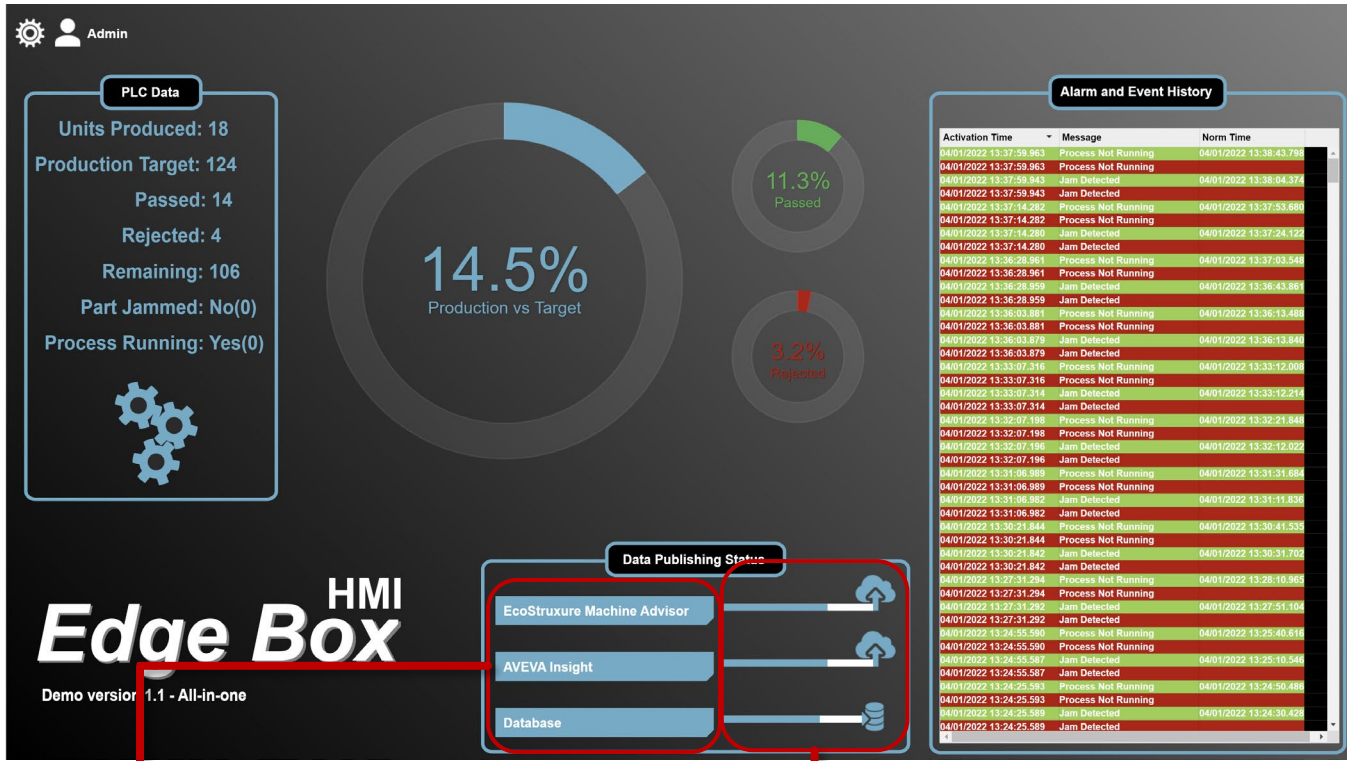
The Harmony Edge Box HMI cannot be used with an integrated display. However, you can view screens and more within a web browser using Mobile Access. Mobile Access can be used via one of the two possible IP addresses of the Edge Box HMI. For secure remote viewing utilise EcoStruxure Secure Connect Advisor + the local IP.



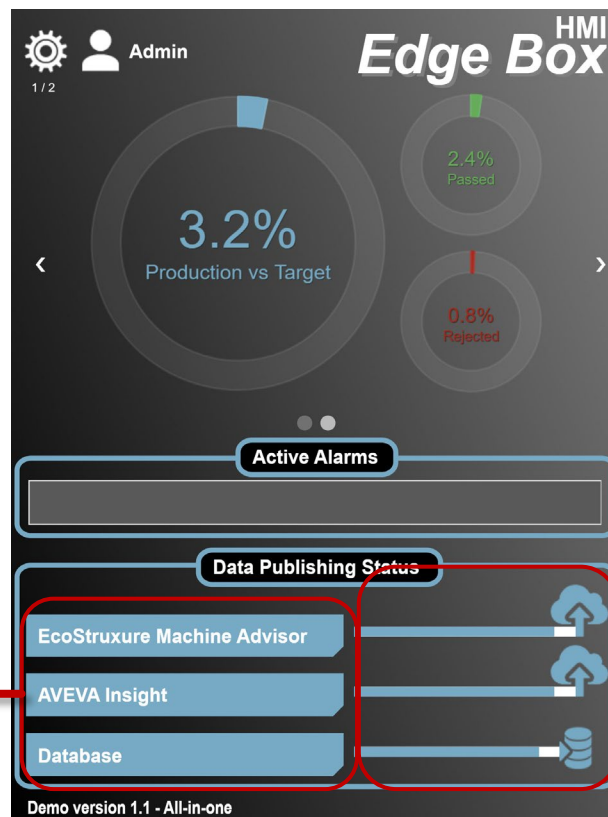
The demonstration project has two user accounts:

- Guest, password = (blank)
- Admin, password = Admin

main\_desktop screen



main\_mobile screen



Enable / Disable  
Communication

Communication Status  
and Links to Cloud Websites



### 3. Hardware Configuration



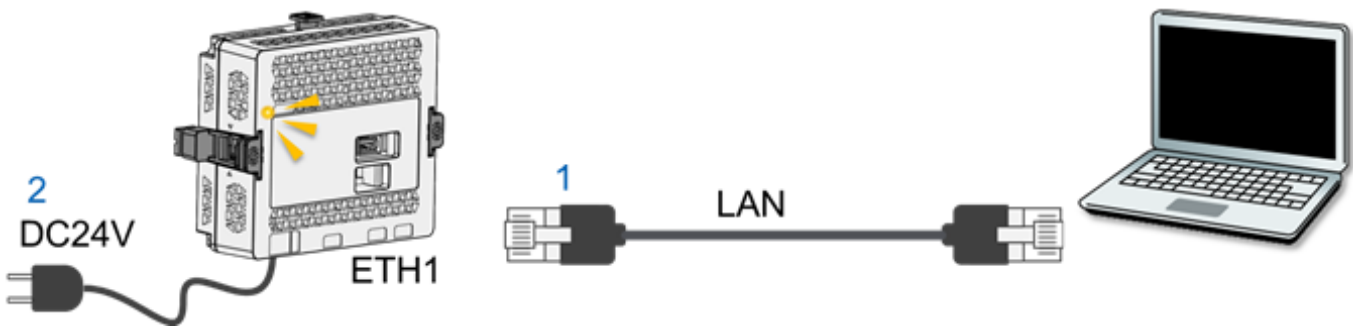
**ETH1 – OT Layer**  
Manual IP  
192.168.1.80

**ETH2 – IT Layer**  
Automatic/DHCP  
(e.g. 175.172.0.225)  
or  
Manual IP, Subnet, Gateway settings that  
allows access to the Internet  
(e.g. IP = 175.172.0.225  
Subnet = 255.255.255.0  
Gateway = 175.172.0.1)

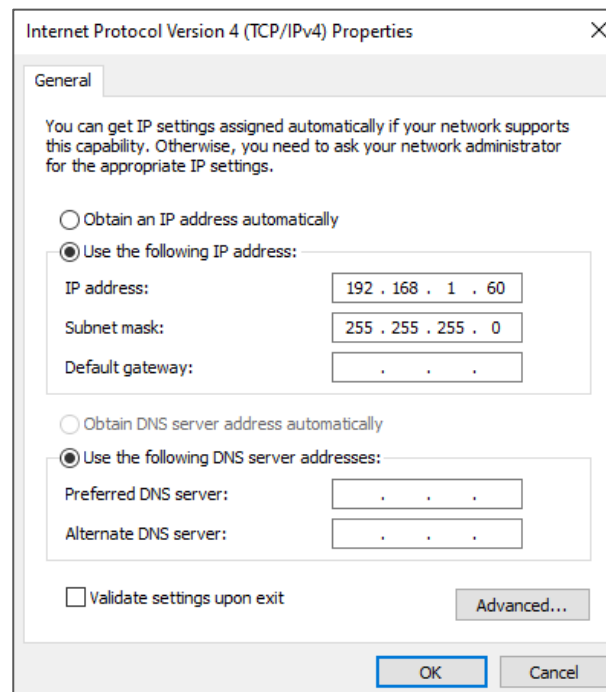
The Harmony Edge Box HMI will have two connections for demonstration purposes:

- ETH1 is primarily for the Operational Technology layer (OT) and is potentially connected to OT devices. For an easy demonstration experience a database service can also be connected to this layer. No internet connectivity on this port.
- ETH2 is primarily for the Internet Technology layer (IT) and is potentially connected to the internet via a router, Local Area Network (LAN) or other edge/IT devices. Connections to cloud services, databases and other services can be done from this port.

1. Connect a USB transfer cable (micro-B) to Edge Box HMI.  
or Connect to the same network as PC (development environment) using ETH1 port of Edge Box HMI.
2. Turn on Harmony Edge Box HMI. The status LED flashes orange.



3. Set IP address of your computer as follows:  
IP address: 192.168.1.60,  
Subnet Mask: 255.255.255.0



4. Open a web browser on your PC, and in the address bar enter the IP address of Edge Box HMI.  
 (Ethernet) <https://192.168.1.80>  
 (USB) <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).

5. Hardware Configuration screen is displayed.  
 Set a login password and click [Submit]. e.g. !Se12345, and click [ Submit ]  
 Note: The user name is “Admins” and cannot be changed.

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Hardware Configuration  
Version 1.0

Password is not set

User Name  
Admins

Create Password

Enter Password

Confirm Password

Submit

5

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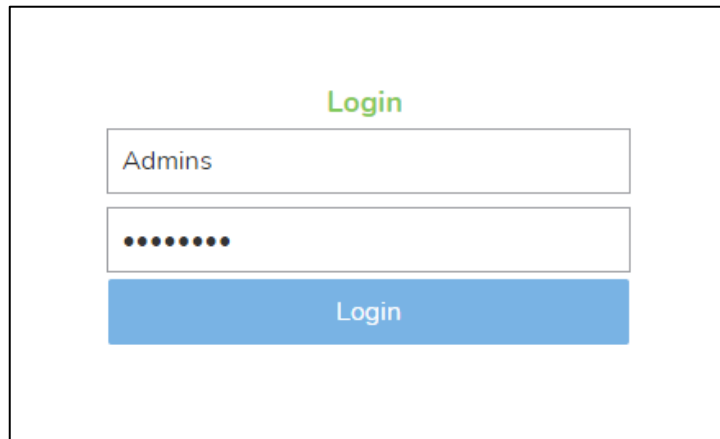
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The password must meet the following requirements:

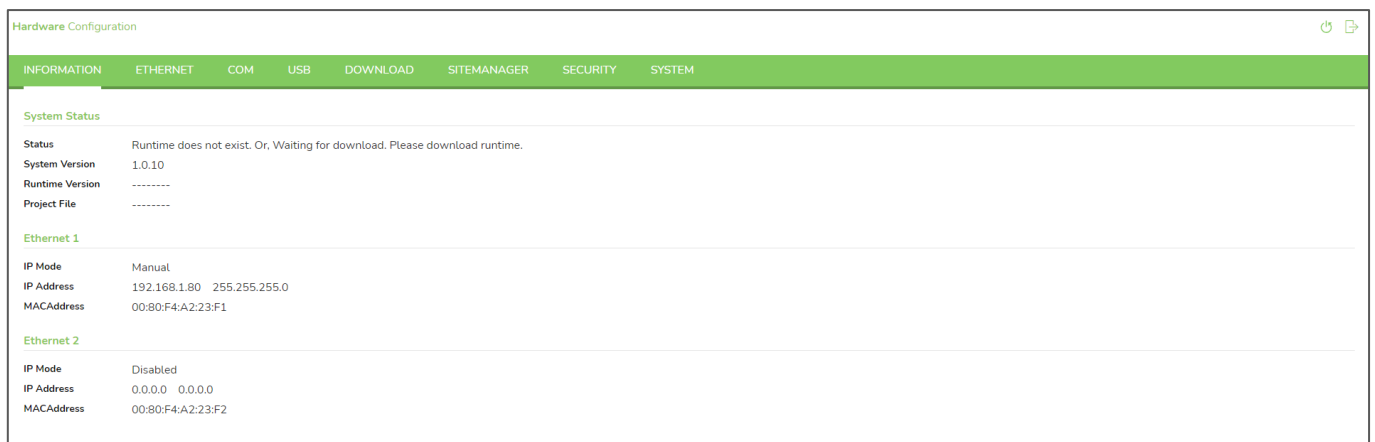
<b>Number of characters</b>	At least 8 single-byte characters, up to 64 characters
<b>Types of characters</b>	Use at least one of each of the following types of characters: <ul style="list-style-type: none"> <li>• Uppercase letter (A-Z)</li> <li>• Lowercase letter (a-z)</li> <li>• Number (0-9)</li> <li>• Symbol (special character): ! # - = _ .</li> </ul>

**Note:** 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.

6. Enter the User Name, Admins and the newly created password, e.g. !Se12345. Click [ Login ]



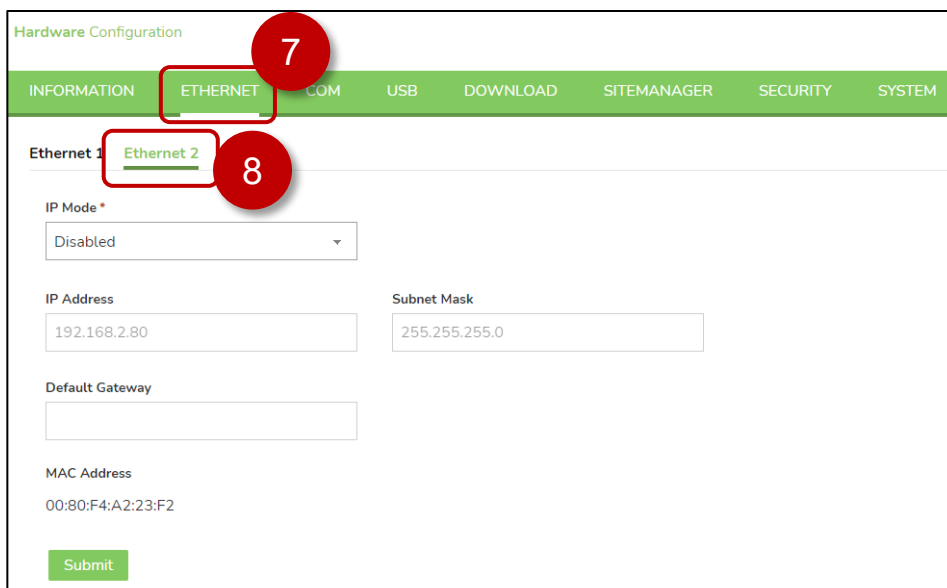
A login form with a green title 'Login'. It contains two input fields: the first is labeled 'Admins' and contains the text 'Admins'; the second is a password field with ten dots. Below the password field is a blue button labeled 'Login'.



The 'Hardware Configuration' page with a green header bar containing tabs: INFORMATION, ETHERNET, COM, USB, DOWNLOAD, SITEMANAGER, SECURITY, and SYSTEM. The 'ETHERNET' tab is active. The page shows 'System Status' and two Ethernet configuration sections. Ethernet 1 is active, showing IP Mode: Manual, IP Address: 192.168.1.80, and MAC Address: 00:80:F4:A2:23:F1. Ethernet 2 is disabled, showing IP Mode: Disabled, IP Address: 0.0.0.0, and MAC Address: 00:80:F4:A2:23:F2.

7. Click [ ETHERNET ] to display the Ethernet Settings.

8. Click [ Ethernet 2 ] to display ethernet port 2 settings.



The 'Ethernet 2' configuration page. The 'ETHERNET' tab in the header is highlighted with a red box and a red circle with the number 7. The 'Ethernet 2' sub-tab is also highlighted with a red box and a red circle with the number 8. The configuration fields are: IP Mode (dropdown menu set to 'Disabled'), IP Address (192.168.2.80), Subnet Mask (255.255.255.0), Default Gateway (empty), and MAC Address (00:80:F4:A2:23:F2). A green 'Submit' button is at the bottom.

9. Set the [ IP Mode] to [ Automatic ] or [ Manual] . [ Automatic ] for DHCP or [ Manual ] to enter in the necessary settings to allow internet access.

Hardware Configuration

INFORMATION ETHERNET COM USB DOWNLOAD SITEMANAGER SECURITY SYSTEM

Ethernet 1 **Ethernet 2**

IP Mode \* 9

Automatic

IP Address Subnet Mask

192.168.2.80 255.255.255.0

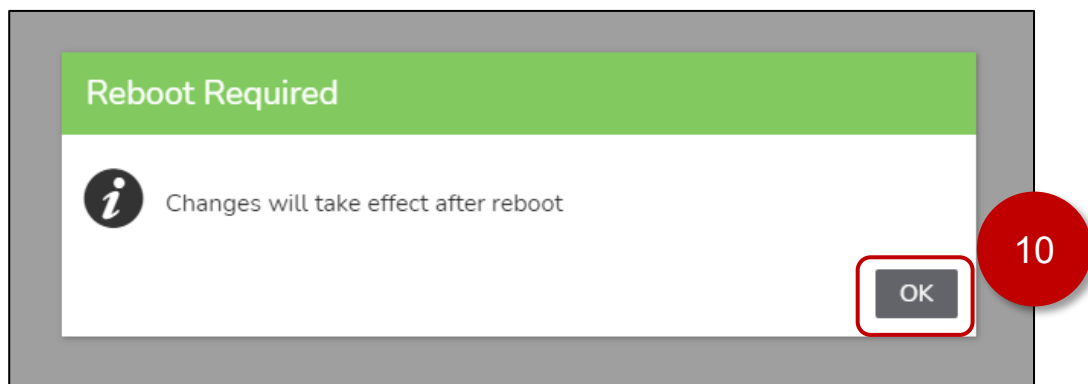
Default Gateway

MAC Address

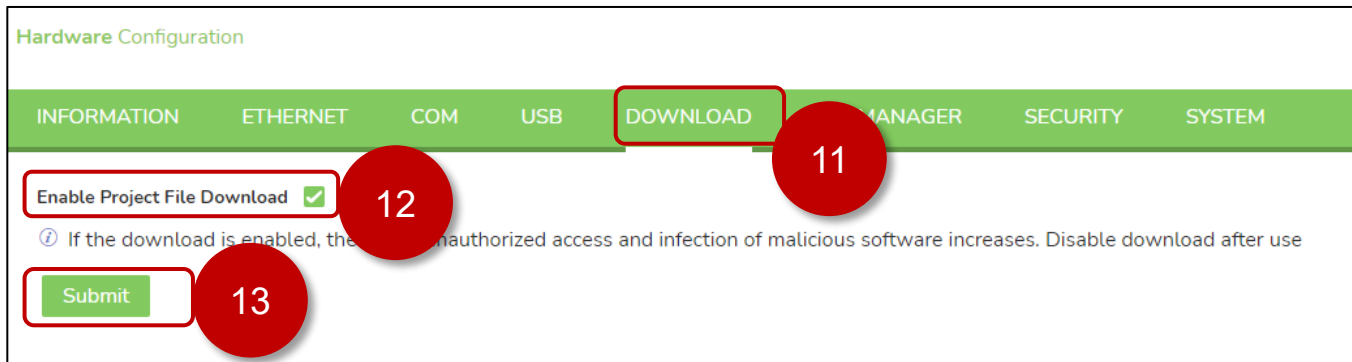
00:80:F4:A2:23:F2

**Submit** 10

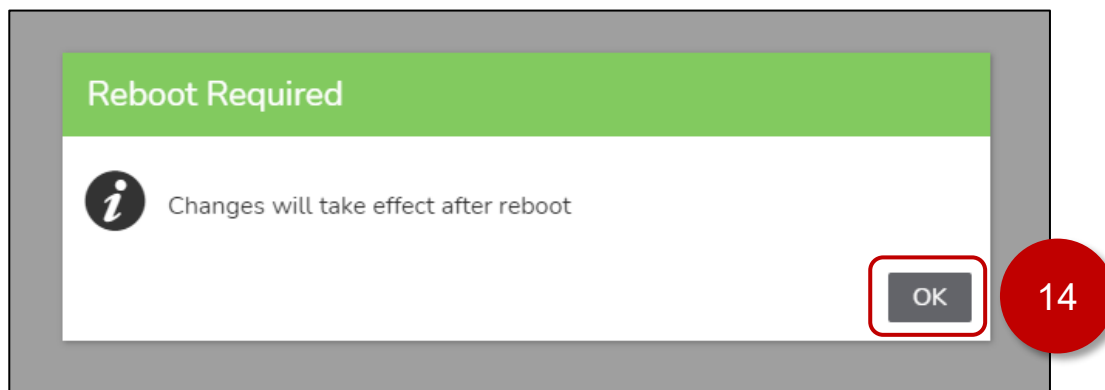
10. Click [ Submit] to apply the ethernet setting. Note that the settings will only take effect after a reboot. [ OK ] to dismiss the Reboot Required dialog.



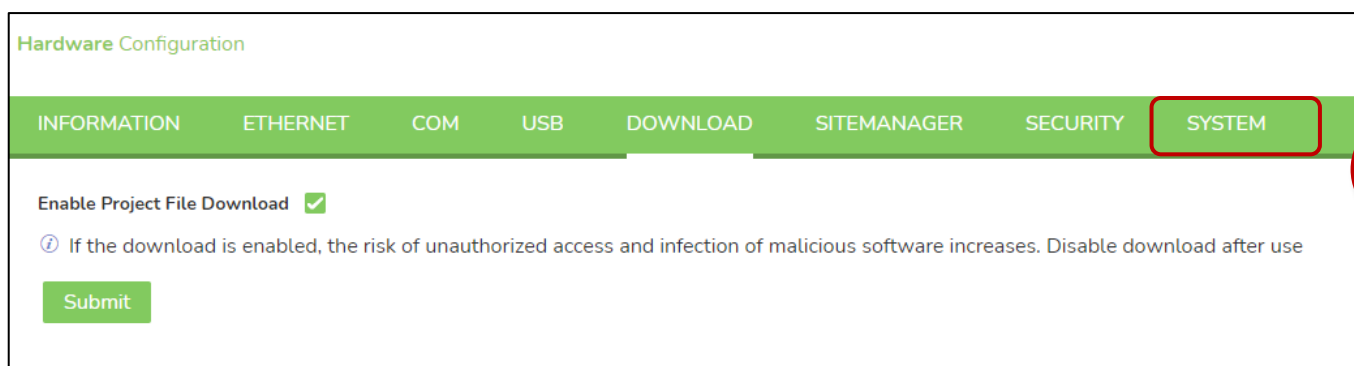
11. Click [ DOWNLOAD ].



12. Check [ Enable Project File Download ]
13. Click [ Submit ]. Changes will take effect after a reboot.
14. Click [ OK ] to accept the Reboot required message.



15. Click [ SYSTEM ]



16. Set the [ Date ], [ Time ], [ Time-zone ] for your region.

Hardware Configuration

INFORMATION ETHERNET COM USB DOWNLOAD SITEMANAGER SECURITY SYSTEM

Date and Time Firmware Update Factory Reset Backup and Restore Configuration

Date  
2022-04-12

Time  
05:56:00 PM

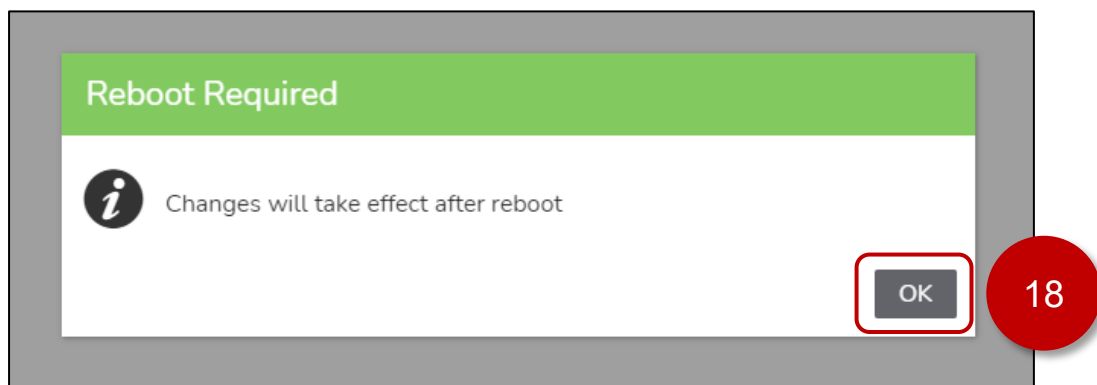
Time-zone  
(UTC-04:00) Canada/Eastern

Synchronized with NTP Server ☐

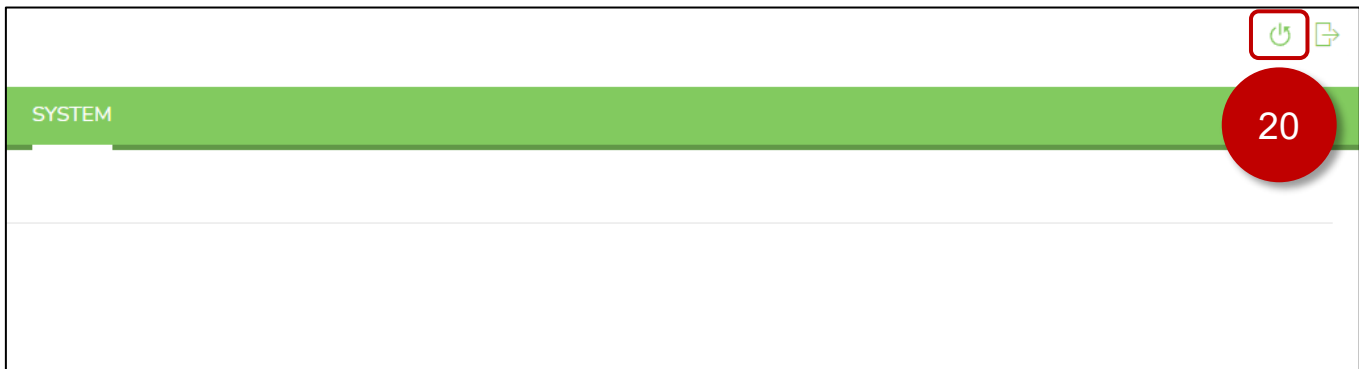
NTP Server

Submit

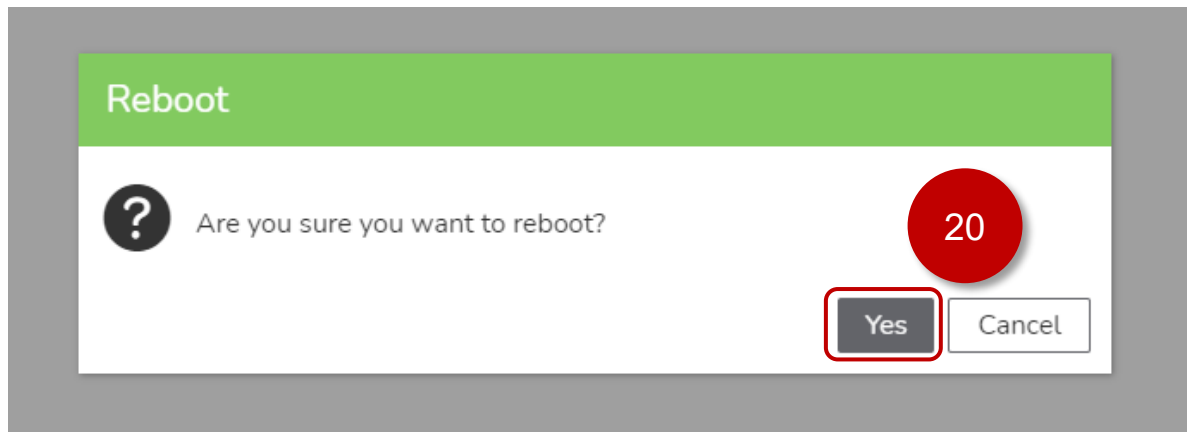
17. Click [ Submit ], changes will take effect after reboot.
18. Click [ OK ] to dismiss the Reboot Required dialog.



19. Click the [ Reboot ] icon  at the top right of the web page.



20. Click [ Yes ] in the Reboot dialog.



21. After the Edge Box HMI has rebooted. Confirm the [ Ethernet 2 ] Settings, [ Enable Project File Download ] check box, [ Date ], [ Time ], [ Time-zone ] are as previously selected.



Hardware Configuration

INFORMATION ETHERNET COM USB DOWNLOAD SITEMANAGER SECURITY SYSTEM

System Status

Status Runtime does not exist. Or, Waiting for download. Please download runtime.

System Version 1.0.10

Runtime Version -----

Project File -----

Ethernet 1

IP Mode Manual

IP Address 192.168.1.80 255.255.255.0

MACAddress 00:80:F4:A2:23:F1

Ethernet 2

IP Mode Automatic

IP Address 175.172.0.205 255.255.255.0

MACAddress 00:80:F4:A2:23:F2

21

Hardware Configuration

INFORMATION ETHERNET COM USB DOWNLOAD SITEMANAGER SECURITY SYSTEM

Enable Project File Download ☒

ⓘ If the download is enabled, the risk of unauthorized access and infection of malicious software increases. Disable download after use

Submit

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Hardware Configuration

INFORMATION ETHERNET COM USB DOWNLOAD SITEMANAGER SECURITY SYSTEM

Date and Time Firmware Update Factory Reset Backup and Restore Configuration

Date

2022-04-12

Time

05:56:00 PM

Time-zone

(UTC-04:00) Canada/Eastern

Synchronized with NTP Server ☐

NTP Server

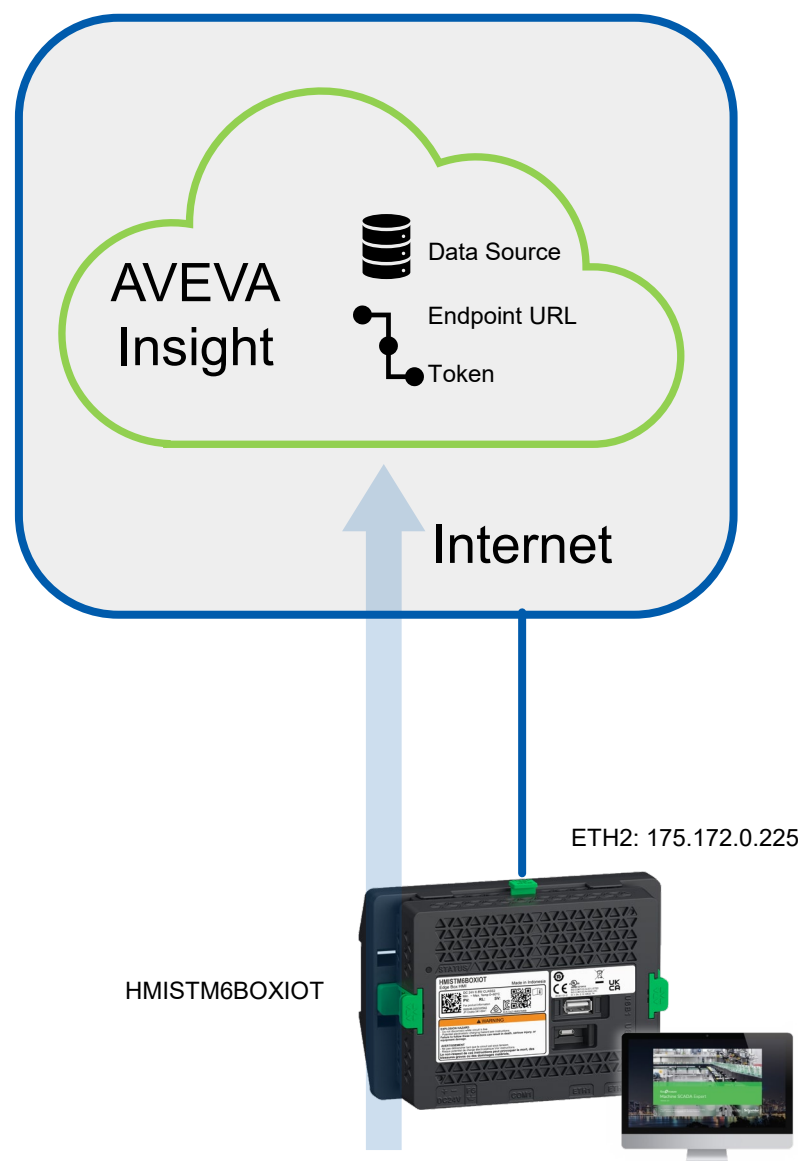
Submit

21

## 4. AVEVA Insight Configuration

### Overview

The Harmony Edge Box HMI Demo – AVEVA Insight uses a Trend Logger worksheet to communicate to an AVEVA Insight account. A Data source definition is required in AVEVA Insight. Trend Logger data is logged every 5 seconds. Accumulated data is forwarded to AVEVA Insight every 15 seconds. All data in the demo is internally generated using one or more math worksheets.



**AVEVA Insight Data Source**

Operation	Type	File Name	Data Start	Data End	Status
Updated Processed	Data	edge-box-hmi-data.csv	Mar 10, 2022, 8:30:40	Mar 11, 2022, 7:41:38	Success
Updated Processed	Data	edge-box-hmi-data.csv	Mar 10, 2022, 8:30:40	Mar 11, 2022, 7:41:38	Success
Updated Processed	Data	edge-box-hmi-data.csv	Mar 10, 2022, 8:30:40	Mar 11, 2022, 7:41:38	Success
Updated Processed	Data	edge-box-hmi-data.csv	Mar 10, 2022, 8:30:40	Mar 11, 2022, 7:41:38	Success
Updated Processed	Data	edge-box-hmi-data.csv	Mar 10, 2022, 8:30:40	Mar 11, 2022, 7:41:38	Success
Updated Processed	Data	edge-box-hmi-data.csv	Mar 10, 2022, 8:30:40	Mar 11, 2022, 7:41:38	Success
Updated Processed	Data	edge-box-hmi-data.csv	Mar 10, 2022, 8:30:40	Mar 11, 2022, 7:41:38	Success
Updated Processed	Data	edge-box-hmi-data.csv	Mar 10, 2022, 8:30:40	Mar 11, 2022, 7:41:38	Success
Updated Processed	Data	edge-box-hmi-data.csv	Mar 10, 2022, 8:30:40	Mar 11, 2022, 7:41:38	Success
Updated Processed	Data	edge-box-hmi-data.csv	Mar 10, 2022, 8:30:40	Mar 11, 2022, 7:41:38	Success

**Forwarder – 15 seconds**

**Trend Logger Worksheet**

Tag Name	Dead Band	Historian Tag
AVEVA_Insight_Control_Verification		
AVEVA_Insight_Data_Production_Target		Production_Target

**Math Worksheets**

Tag Name	Expression
PLC_Data_Process_Running	PLC_Data_Part_Jam
ForceTagChange('EcoStructure_Machine_Advisor_Data_Part_Jam')	PLC_Data_Part_Jam
ForceTagChange('EcoStructure_Machine_Advisor_Data_Passed_Count')	PLC_Data_Passed_Count
ForceTagChange('EcoStructure_Machine_Advisor_Data_Process_Running')	PLC_Data_Process_Running
ForceTagChange('EcoStructure_Machine_Advisor_Data_Processed_Count')	PLC_Data_Processed_Count
ForceTagChange('EcoStructure_Machine_Advisor_Data_Rejected_Count')	PLC_Data_Rejected_Count
ForceTagChange('EcoStructure_Machine_Advisor_Data_Unprocessed_Count')	PLC_Data_Unprocessed_Count
ForceTagChange('EcoStructure_Machine_Advisor_Data_Production_Target')	PLC_Data_Production_Target
Trigger_Sec	0

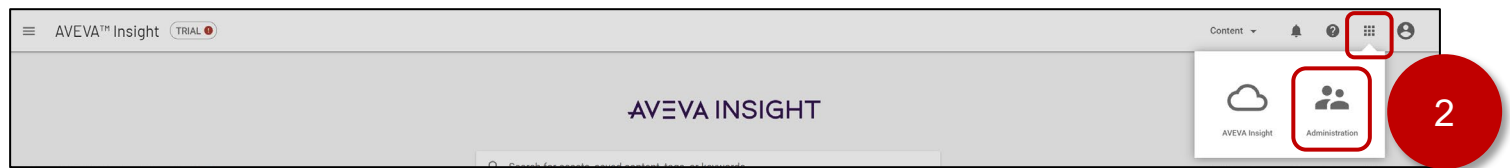
**Scheduler – 5 seconds**

## AVEVA Insight Connection

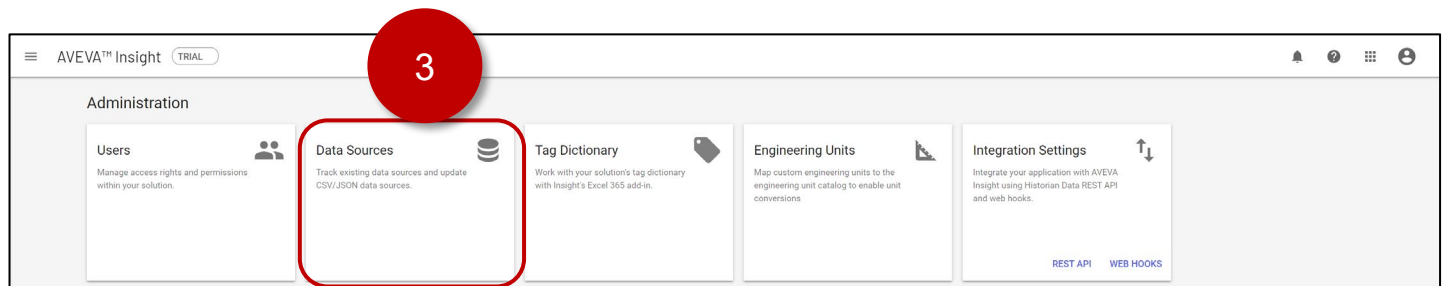
To establish a connection to EcoStruxure Machine Advisor you will need the following:

- AVEVA Insight Account and Solution
- AVEVA Insight Data Source
- Upload Endpoint
- Authentication Token

1. SIGN-IN to AVEVA Insight ( <https://insight.connect.aveva.com> ) and create a solution.
2. Navigate to AVEVA Insight Suite -> [ Administration ]



3. Navigate to [ Data Sources ]



4. Click [ + ] icon and select [ CSV/JSON ]



5. Enter Name, Location Name, etc. and click [OK]

### Add CSV/JSON Data Source

Name\*

EdgeBoxHMI1

**5**

**!** The following fields will apply to all new tags, but do not apply to existing tags.

**Location**

Select a location or type a new one

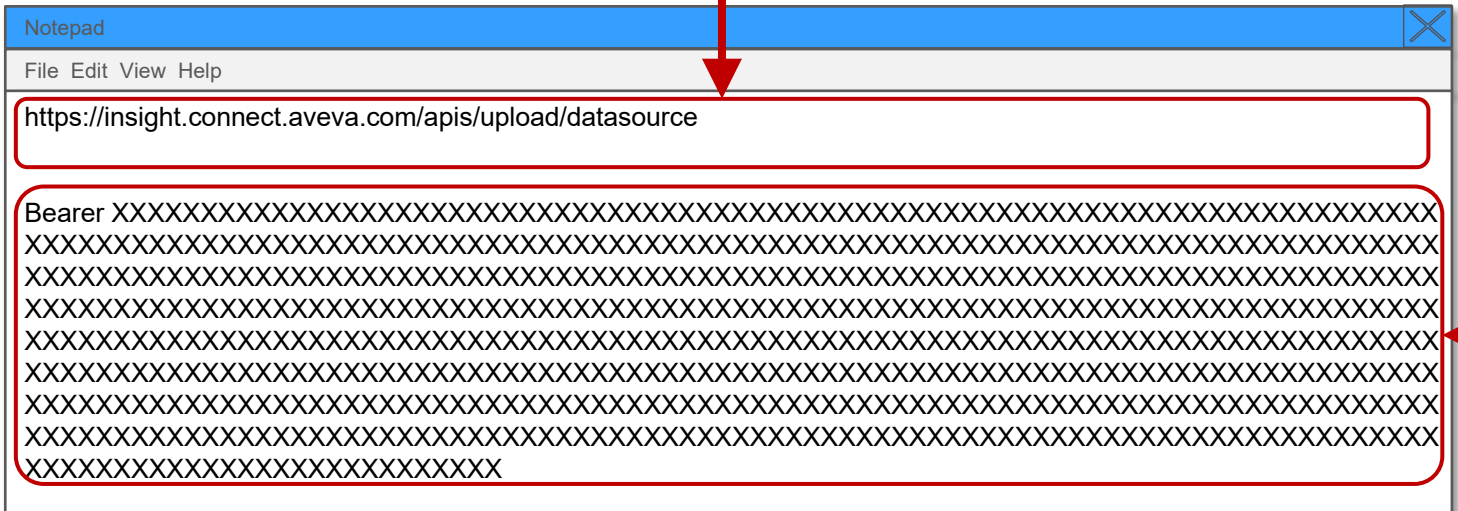
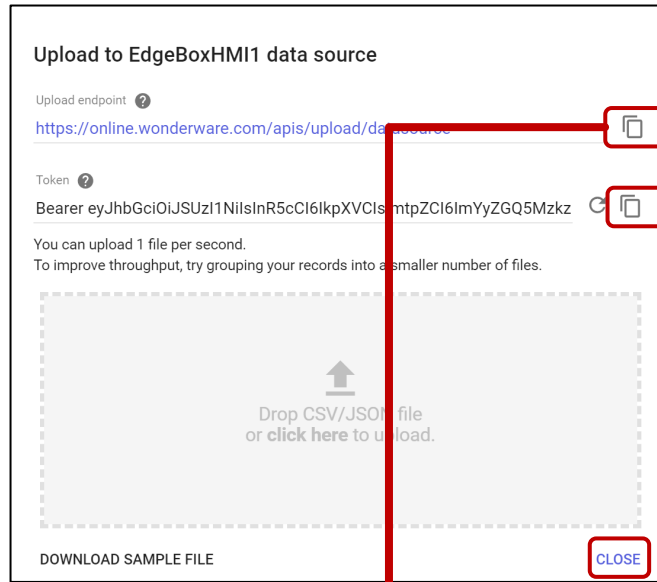
Japan

If you define a new default location, it will be created when the first new tag using this default is created.

**Geolocation Coordinates**

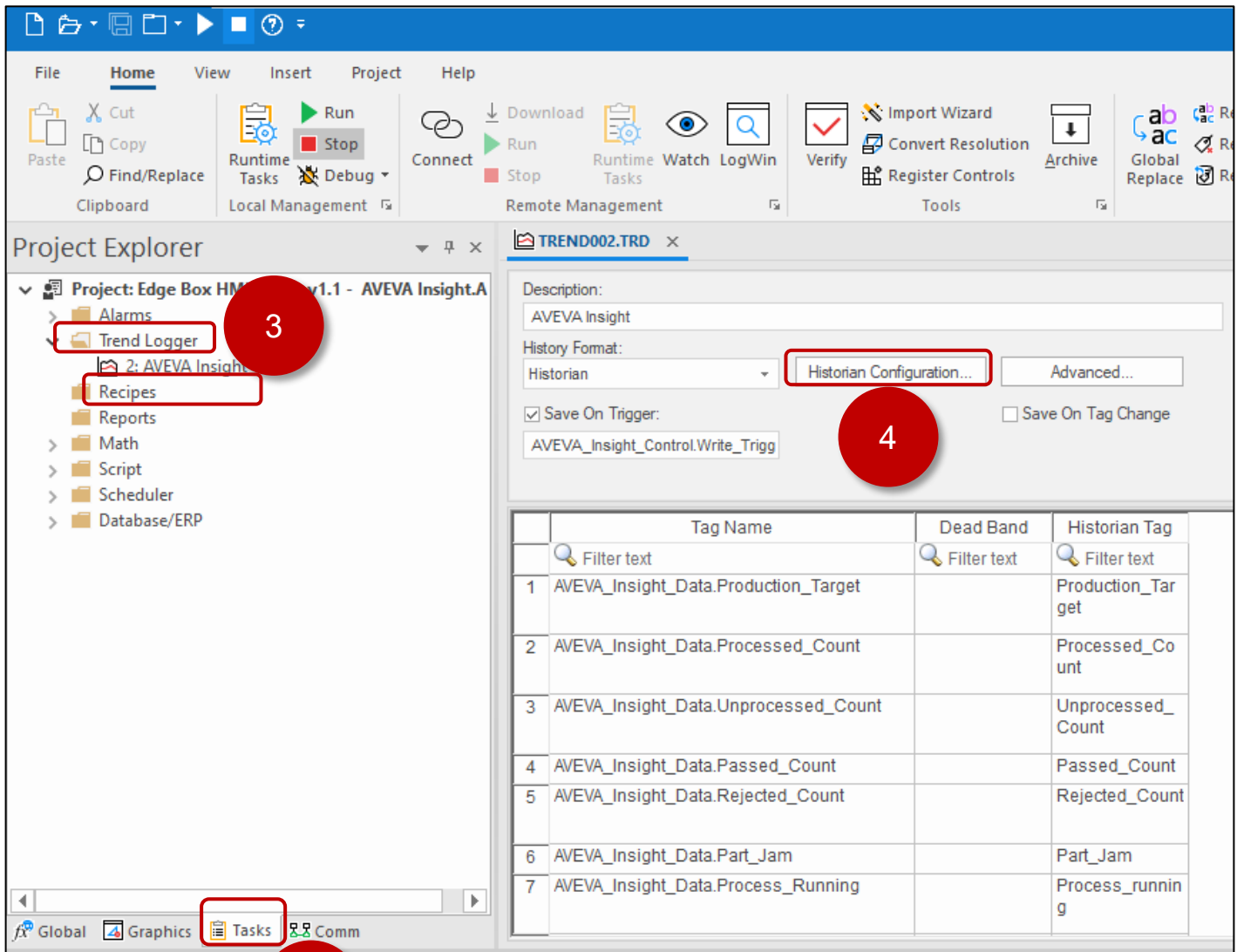
CANCEL OK

6. Copy the text in “Upload endpoint” field and “Token” field and paste them into Notepad, then click [ CLOSE ]



## EcoStruxure Machine SCADA Expert Settings

1. Open the Edge Box HMI Demo v1.1 – AVEVA Insight.app project in EcoStruxure Machine SCADA Expert
2. [ Project Explorer ] -> [ Tasks ] tab
3. [ Trend Logger ] -> [ 2: AVEVA Insight ]
4. Click [ Historian Configuration ]



5. Copy the Endpoint URL from notepad and paste overwriting the [ Upload Endpoint ]
6. Copy the Token from notepad and paste overwriting the [ Authentication Token ]
7. Click [ OK ] to accept the historian settings.

Historian

Connection Settings

Connection Type: AVEVA Insight (CSV/JSON)

Upload Endpoint: <https://insight.connect.aveva.com/apis/upload/datasource>

Authentication Token: Bearer eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6I...

Max Forward Period: 15 seconds

Database Settings

Prefix:

Run-time

Status: AVEVA\_Insight\_Control.S Reload:

Local Storage Limits

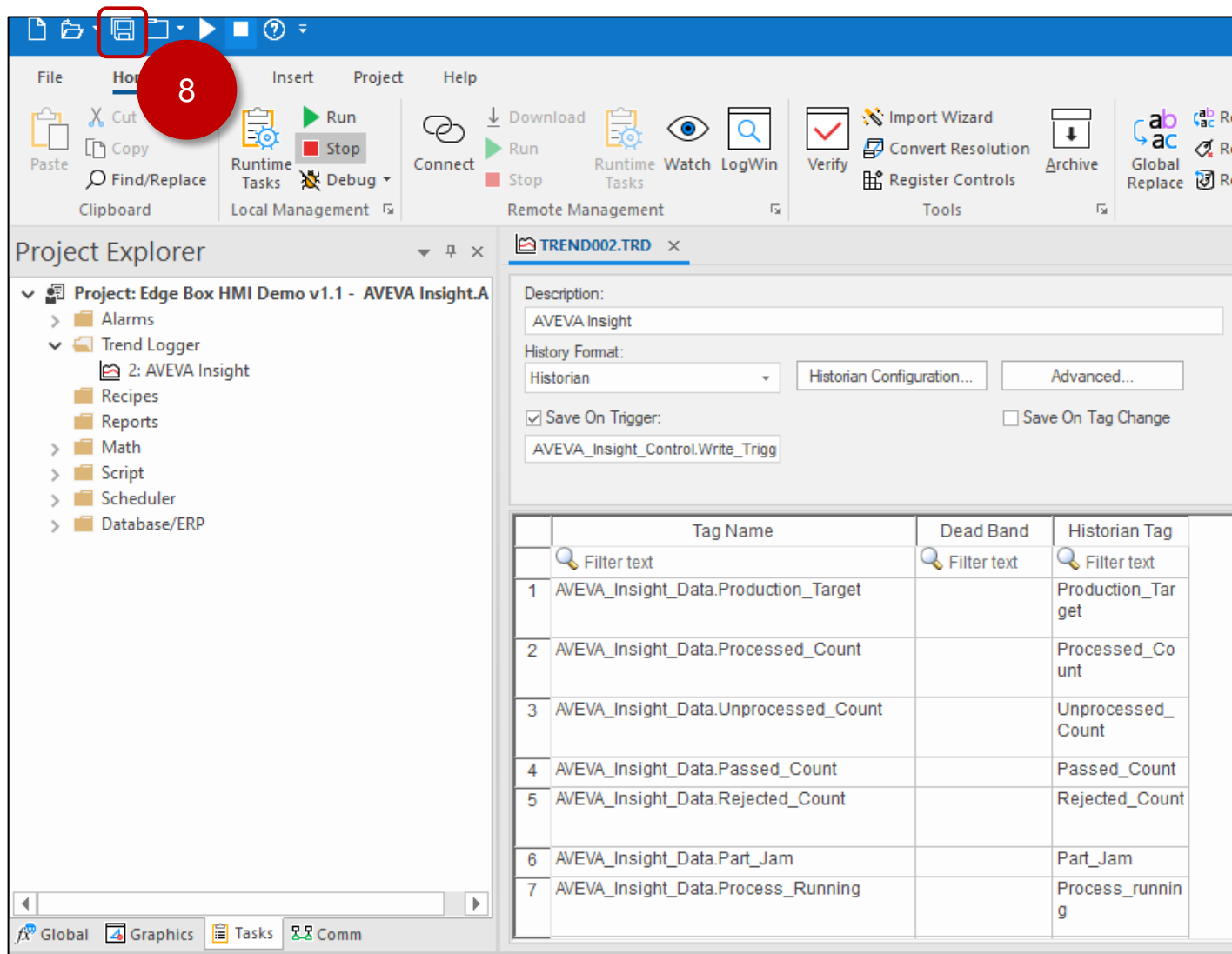
Max File Size: 1024 KB Max Files: 5

7

OK Cancel

[illegible]

## 8. Save the TREND002 Sheet.



The screenshot shows the AVEVA Insight software interface. A red circle with the number '8' highlights the 'Save' icon in the top toolbar. The Project Explorer on the left shows the project structure: Project: Edge Box HMI Demo v1.1 - AVEVA Insight.A, containing Alarms, Trend Logger, 2: AVEVA Insight, Recipes, Reports, Math, Script, Scheduler, and Database/ERP. The main window displays the configuration for 'TREND002.TRD', including a description, history format, and a table of tags.

**Project Explorer:**

- Project: Edge Box HMI Demo v1.1 - AVEVA Insight.A
  - Alarms
  - Trend Logger
    - 2: AVEVA Insight
      - Recipes
      - Reports
      - Math
      - Script
      - Scheduler
      - Database/ERP

**TREND002.TRD Configuration:**

Description: AVEVA Insight

History Format: Historian

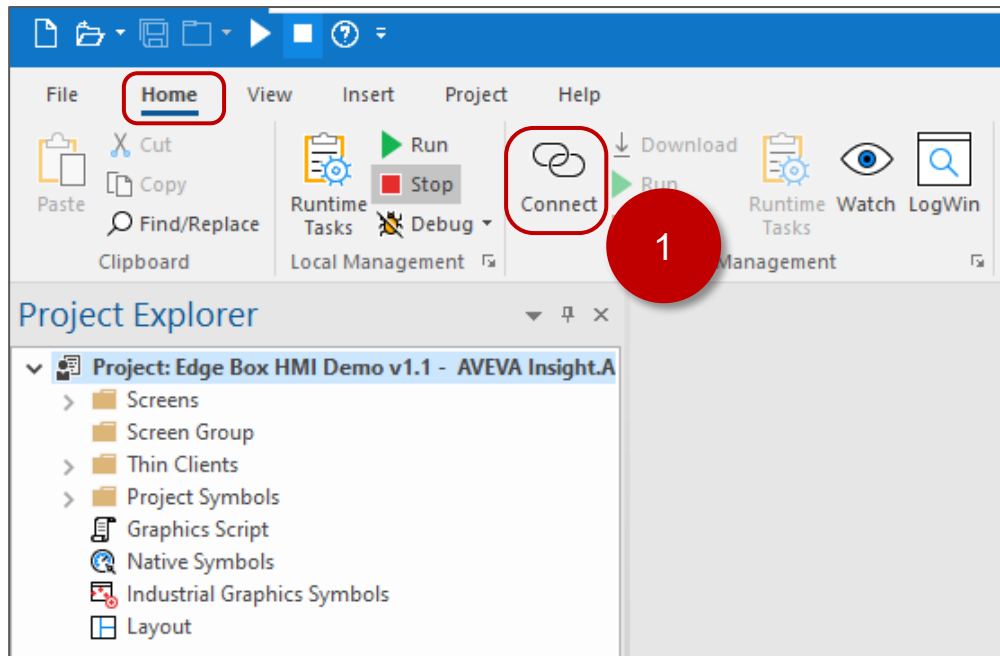
Save On Trigger: ☒ Save On Trigger: AVEVA\_Insight\_Control.Write\_Trigg

Save On Tag Change: ☐ Save On Tag Change

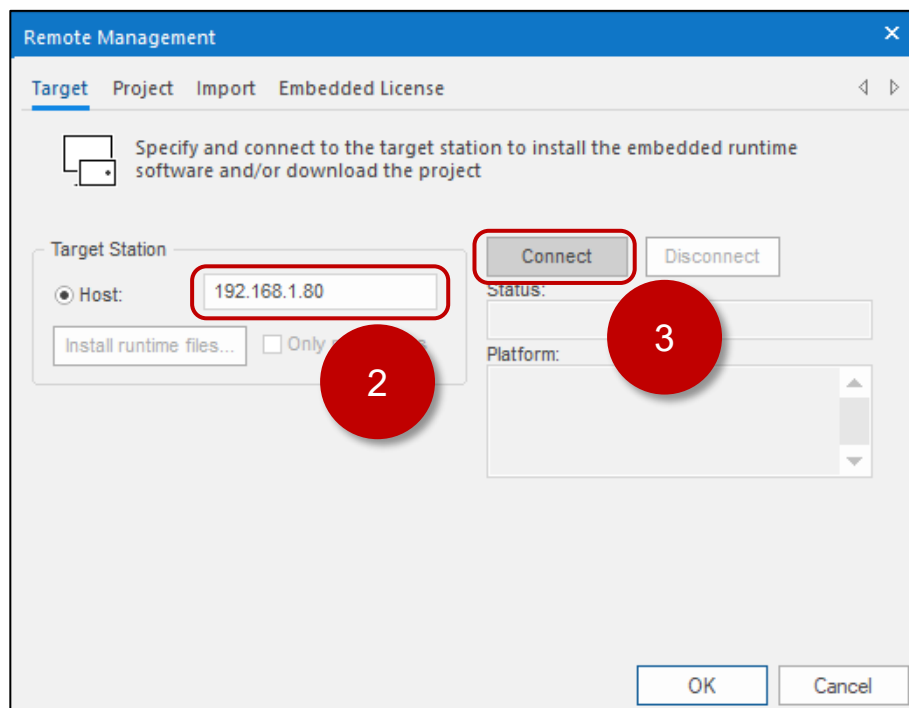
	Tag Name	Dead Band	Historian Tag
	Filter text	Filter text	Filter text
1	AVEVA_Insight_Data.Production_Target		Production_Tar get
2	AVEVA_Insight_Data.Processed_Count		Processed_Co unt
3	AVEVA_Insight_Data.Unprocessed_Count		Unprocessed_ Count
4	AVEVA_Insight_Data.Passed_Count		Passed_Count
5	AVEVA_Insight_Data.Rejected_Count		Rejected_Count
6	AVEVA_Insight_Data.Part_Jam		Part_Jam
7	AVEVA_Insight_Data.Process_Running		Process_runnin g

## 5. Transfer Runtime and Project Files

1. [ Home ] tab and Click [Connect] in Remote Management.

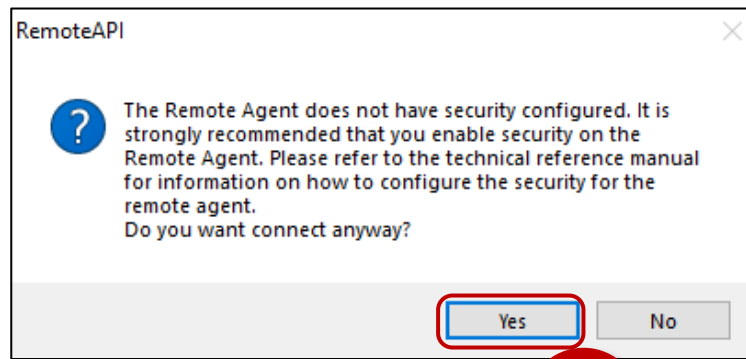


2. Set the IP Address of your Edge Box HMI e.g. 192.168.1.80
3. Click [Connect]



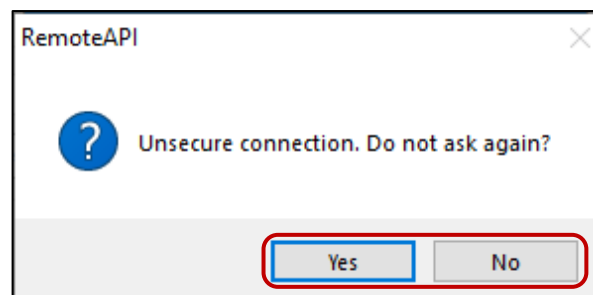


4. If prompted about Remote Agent, click [ Yes ]



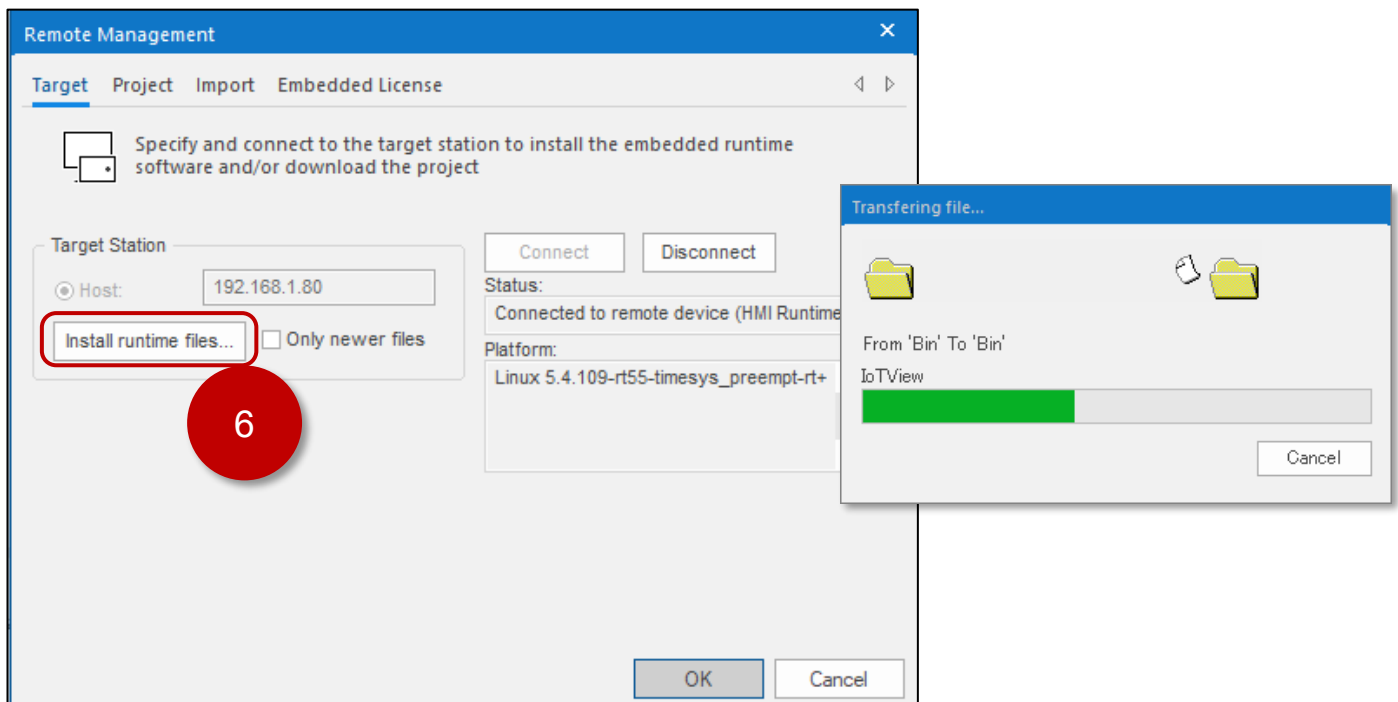
4

5. Answer the question by clicking [ Yes ] or [ No ] as appropriate.



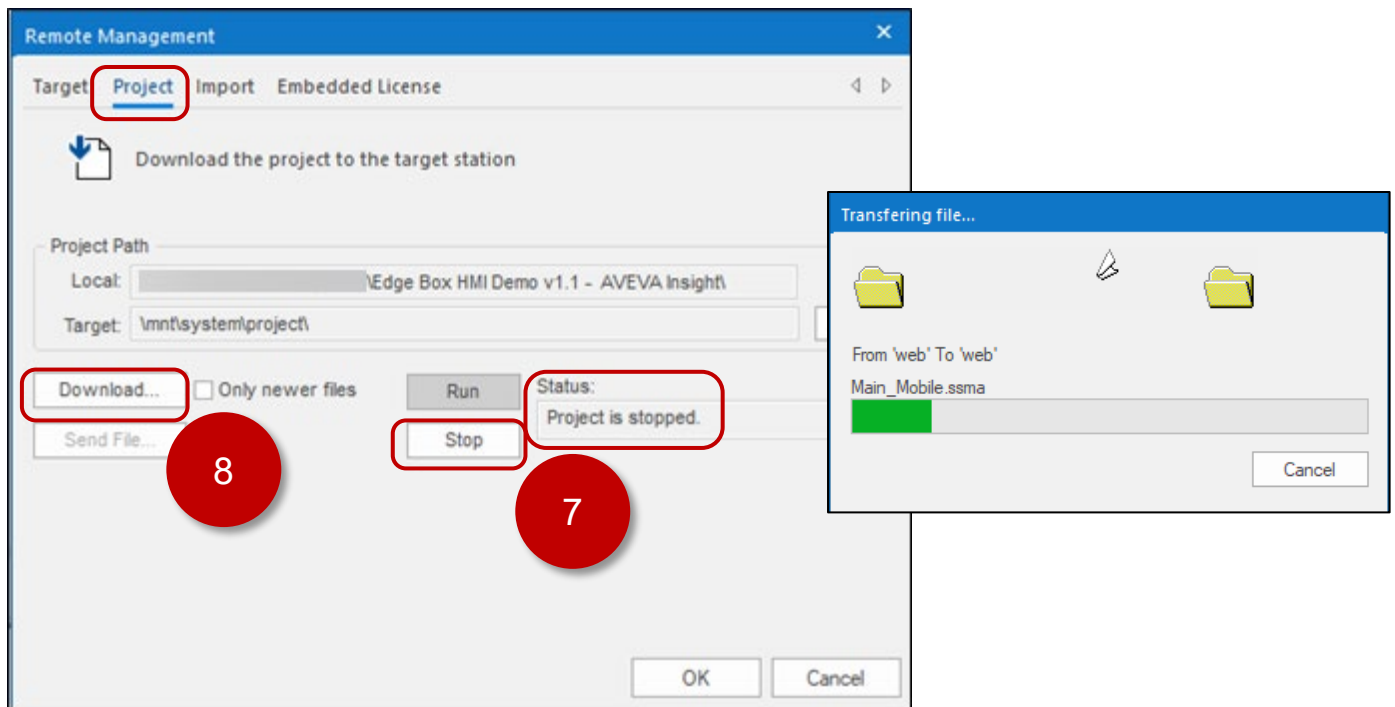
5

6. Click [Install Runtime Files]

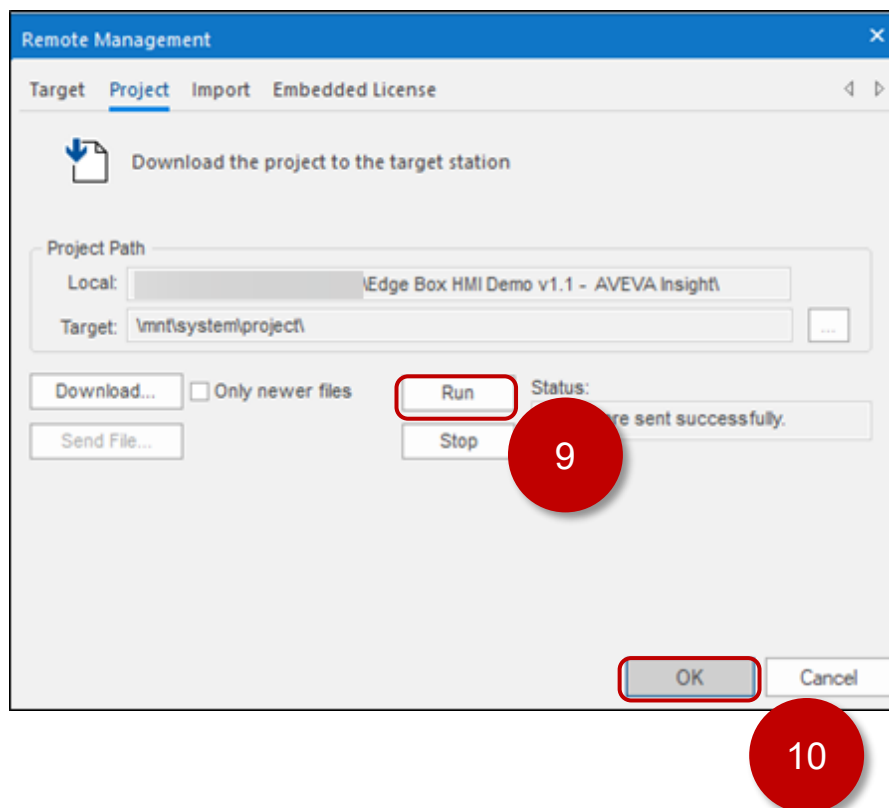


6

7. [ Project ] tab, confirm that the Status is stopped. If running, click [ Stop ]
8. Click [ Download ]



9. Click [ Run ]
10. Click [ OK ]



## 6. Mobile Access

Mobile access is used for both local and remote viewing of Edge Box HMI. You can use either ETHERNET 1 or ETHERNET 2 as the IP address for mobile access.

There are a several mobile access URL options to view the Edge Box HMI.

- Mobile Access Generic Interface
- Mobile Access Direct to screen access
- Mobile Access Watch screen Access

Web Browser URL Examples for the Edge Box HMI Demo:

Link	Description
<a href="https://192.168.1.80/MA">https://192.168.1.80/MA</a>	Generic Interface login prompt
<a href="https://192.168.1.80/MA/#guestuser=1">https://192.168.1.80/MA/#guestuser=1</a>	Generic Interface auto login as Guest
<a href="https://192.168.1.80/MA/#user=Admin&amp;password=Admin">https://192.168.1.80/MA/#user=Admin&amp;password=Admin</a>	Generic Interface auto login as Admin
<a href="https://192.168.1.80/MA/#screen=main_desktop">https://192.168.1.80/MA/#screen=main_desktop</a>	Direct to main_desktop screen login prompt
<a href="https://192.168.1.80/MA/#screen=main_desktop&amp;guestuser=1">https://192.168.1.80/MA/#screen=main_desktop&amp;guestuser=1</a>	Direct to main_desktop screen auto login as Guest
<a href="https://192.168.1.80/MA/#screen=main_desktop&amp;user=Admin&amp;password=Admin">https://192.168.1.80/MA/#screen=main_desktop&amp;user=Admin&amp;password=Admin</a>	Direct to main_desktop screen auto login as Admin
<a href="https://192.168.1.80/MA/#screen=main_mobile">https://192.168.1.80/MA/#screen=main_mobile</a>	Direct to main_mobile screen login prompt
<a href="https://192.168.1.80/MA/#screen=main_mobile&amp;guestuser=1">https://192.168.1.80/MA/#screen=main_mobile&amp;guestuser=1</a>	Direct to main_mobile screen auto login as Guest
<a href="https://192.168.1.80/MA/#screen=main_mobile&amp;user=Admin&amp;password=Admin">https://192.168.1.80/MA/#screen=main_mobile&amp;user=Admin&amp;password=Admin</a>	Direct to main_mobile screen auto login as Admin
<a href="https://192.168.1.80/MA/#watch=1">https://192.168.1.80/MA/#watch=1</a>	Watch screen login prompt Guest access denied
<a href="https://192.168.1.80/MA/#watch=1&amp;guestuser=1">https://192.168.1.80/MA/#watch=1&amp;guestuser=1</a>	Watch screen auto login as Guest Guest access denied
<a href="https://192.168.1.80/MA/#watch=1&amp;user=Admin&amp;password=Admin">https://192.168.1.80/MA/#watch=1&amp;user=Admin&amp;password=Admin</a>	Watch screen auto login as Admin