

IDEC SmartRelay

FL1F Web Editor Online Help

Preface

Security information

IDEC SmartRelay provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

IDEC SmartRelay products and solutions undergo continuous development to make them more secure. IDEC strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customers' exposure to cyber threats.

Data protection

This product does not process / save any personal information, but only technical functional data (e.g. time stamps). If the user links this data to other data (e.g. shift plans) or if the user save personal information on the same medium (e.g. hard disk) and therefore creates a personal reference in the process, the user has to ensure meeting the guidelines regarding data protection in their region of use.

Security note

Note

Notes on protecting administrator accounts

A user with administrator rights has extensive access and manipulation options available to the system.

Therefore, ensure there are adequate safeguards for protecting the administrator accounts to prevent unauthorized changes. To do this, use secure passwords and a standard user account for normal operation. Other measures, such as the use of security policies, should be applied as needed.

Note

To protect WindLGC and FL1F Web Editor from any undesired manipulation when your PC suffers malicious attacks from the Internet, we recommend that you install whitelist-based security software on the PC. Then use the whitelist-based security software to manage the software installed on your PC.

General introduction

FL1F Web Editor is used together with IDEC SmartRelay Base Module (BM) and WindLGC. This tool helps you create user-defined web pages in the Editor pane, and visually view the whole project through Web Server of IDEC SmartRelay Base Module.

With FL1F Web Editor, you can:

- integrate different components including some variables conveniently;
- customize individual web pages.

Comparison between BM version number and hardware type in WindLGC

BM version number	Hardware type in WindLGC
FL1F FS4 or previous version	FL1F
FL1F FS5	FL1F FS5
FL1F FS6	FL1F FS6

Note

You can find the BM version number on the base module. For more detailed information, refer to the user's manual.

Document History

The following edition of FL1F Web Editor has been published:

Release	Version	Edition
02/2019	V1.0	First edition
11/2024	V1.2.0	Second edition

What's new in FWE V1.2.0?

The following described features are only used for FL1F Web Editor V1.2.0.

New functions

FL1F Web Editor V1.2.0 provides the following new functions:

- Cloud Web Application (Page 18): you can deploy a FWE V1.2.0 project to Amazon Web Services (AWS) Elastic Beanstalk and view the deployed project through supported web browsers.
 - FWE V1.2.0 supports AWS Temporary Credential Account when deploying projects to AWS.
 - Through File -> Deploy to AWS -> Create a WebApp Service -> Advanced Settings, you can set Tags and select Instance Type for your Web App to manage cost of AWS services.
- Login page (Page 44): you can create a Login page and add a Login component in the page for your FWE project.
- IoT thing (Page 47): for FWE projects deployed on cloud, FWE supports you bind IoT things registered in AWS with IoT components in your project.
- User Local File System (Page 81): you can select graph from your local folder through Graph Library -> User Local File System to add image to certain component.

Improvements

FL1F Web Editor V1.2.0 improves the following functions:

- User defined color: FWE V1.2.0 provides different color modes for you to define color when you set Text Color or Background Color for your project. HSV, HSL, RGB, CMYK color modes are available in FWE V1.2.0 and later versions.
- FWE source project optimization: Unused temp files and pictures will be automatically deleted from FWE project.
- FWE performance improvement: Download/Upload speed is improved in FWE V1.2.0 with the connection to IDEC SmartRelay FL1F FS6 Base Module.
- Component:
 - Digital Value component is changed to Switch Button component.
 - For Digital and Analog components, VX and VR Block Type are available.
 - Analog Value component performance is enhanced when you check the deployed project on mobile devices.

New commands

- FL1F Web Editor V1.2.0 provides the following new menu commands:
 - File -> Deploy to AWS (Page 18)
 - File -> Export as AWS WebApp (Page 24)
 - File -> Show Project in System Explorer (Page 25)
 - Edit -> Select All IoT Components (Page 27)
 - Edit -> Select Other Same IoT Components (Page 28)
 - Tools -> Update (Page 31)
 - Window -> Reset Windows (Page 38)
- FL1F Web Editor V1.2.0 provides the following commands to align and distribute multiple components in the editing page:
 - Align Left (Page 40)
 - Align Center (Page 40)
 - Align Right (Page 40)
 - Align Top (Page 40)
 - Align Bottom (Page 41)
 - Distribute Horizontally (Page 41)
 - Distribute Vertically (Page 41)

New components

FL1F Web Editor V1.2.0 provides the following new components:

- Rainbow (Page 66)
- Trend View (Page 71)
- Push Button (Page 59)
- Webcam (Page 72)
- Login (Page 74)
- PDF (Page 56)

Basic concept

Having a general idea of FL1F Web Editor is the prerequisite for using it. The basic concept about the whole project is as follows:

Project

In FL1F Web Editor, project contains Pages and a Navigator. Each page contains pre-defined components, such as Text, Image, Digital Value and so on. Global Tag is defined for facilitating end user to bind components and variables.

Pages

Pages contains a Login page, a Home page and some user-defined pages. Home page is a default page, while you can determine whether to create Login page or user-defined pages according to your requirements. You can create your own Login page for logging on FWE project deployed to IDEC SmartRelay BM or cloud. Either Login page, Home Page or other page is a web page, and you can visit it in web browser after deploying a project to IDEC SmartRelay BM or cloud.

Navigator

Navigator is a floating page of the web site and it intended to aid users to switch between different web pages or log off during the runtime operation.

Navigator is a floating page for accessing different pages or log off in the deployed FWE project.

Component

FL1F Web Editor contains a couple of pre-defined components for web page. Each component has different render effect in web page. Each component contains some properties.

Variable

Variable is read/write data element of IDEC SmartRelay BM, such as I, Q, AI, AQ and etc. Variable can be bound with component. You can read/write variable via components.

Global Tag

A global tag that is declared outside any component and is accessible to all components throughout the project.

Tag Table

Tag Table is a place to define Global Tags, and you can add, modify, and delete Global Tags here.

Private Tag

A private tag that is used for the component it bound with only.

IoT Thing Table

IoT Thing Table is used to create, update and delete IoT things registered in Amazon Web Services (AWS). After an IoT thing is created in IoT thing table, this IoT thing can be referenced in tag table or component property.

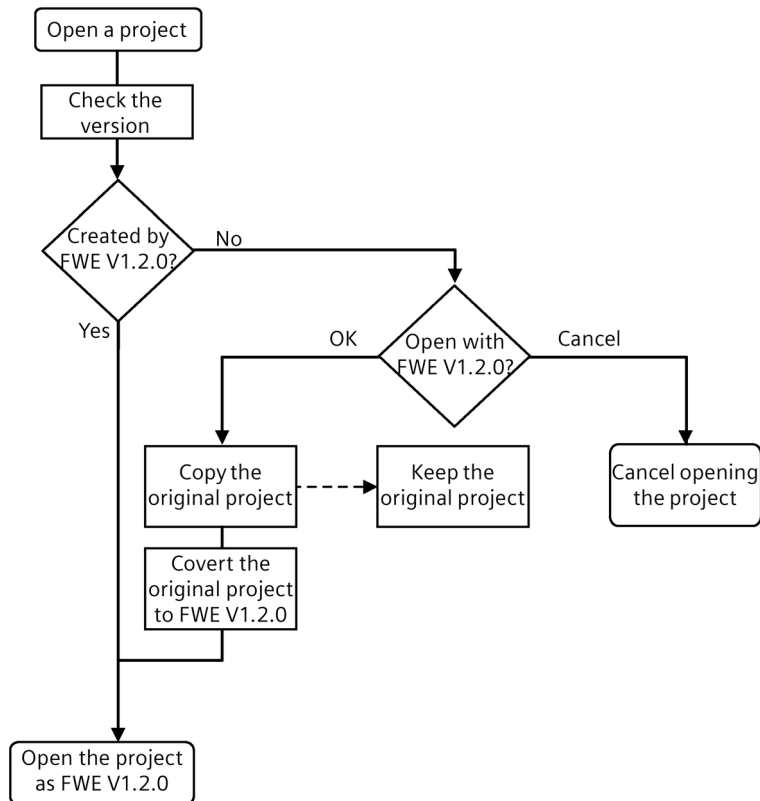
IoT Thing name

IoT thing name is the name you fill in IoT Thing table for IoT thing. It must be the same as the name you registered in AWS.

Compatibility

One FL1F Web Editor should be installed in one PC. Otherwise, all the installed FL1F Web Editors in one PC cannot run appropriately.

If the project is created with a version earlier than FWE V1.2.0, the project cannot be opened with FWE V1.2.0. If you open the project with the FWE V1.2.0, FWE V1.2.0 saves the original project and upgrades the original project to V1.2.0.



FL1F Web Editor V1.2.0 is available for:

- IDEC SmartRelay Base Module:
 - FL1F FS5
 - FL1F FS6

Note

- If you insert a SD card into FL1F FS6, and the SD card contains a FWE V1.0.0 project, then FL1F FS6 cannot run the FWE project normally. You should use FWE V1.2.0 to open and convert the project, and download it to FL1F FS6.
 - If you insert a SD card into FL1F FS5, and the SD card contains a FWE V1.2.0 project, then FL1F FS5 cannot run the FWE project normally. You should use FWE V1.2.0 to download it to FL1F FS5.
-

- Java Runtime Environment: Amazon Corretto 11.0.13.8.1

- Web browser which supports HTML5:
 - **Microsoft Edge** version 90.0 and later versions
 - **Mozilla Firefox** version 91.8 and later versions
 - **Google Chrome** version 91.0 and later versions
 - **Apple Safari** version 12.1.2 and later versions

Note

IDEC recommends you use the latest version of Google Chrome when visiting the deployed FWE projects.

- Windows operating system:
 - Windows 7 (64 bit)
 - Windows 8 (64 bit)
 - Windows 10 (32 bit/64 bit)
 - Windows 11 (21H2)

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User interface

1.1 User interface - overview

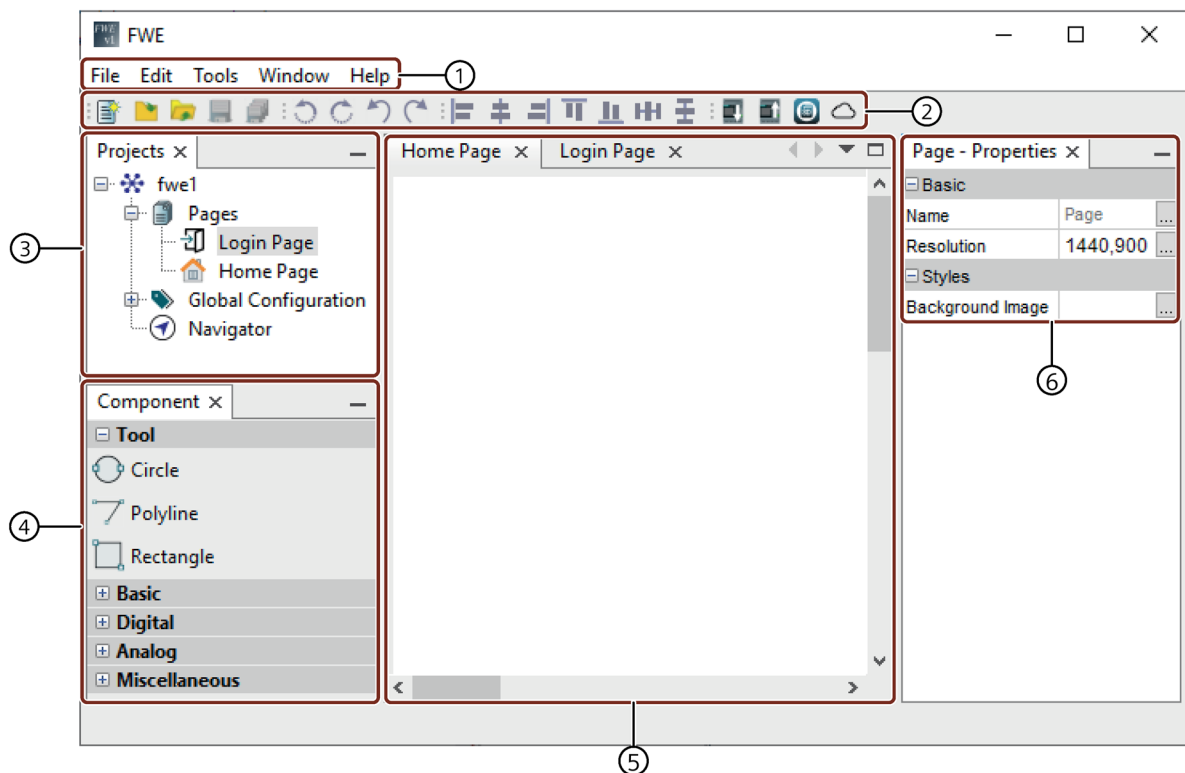
User interface

FL1F Web Editor starts with an empty pane for the project.

When you create a new project, the user interface appears as follow:

- A new project appears in Project tree.
- Component pane contains all the component information.
- An empty window for Home Page in the Editor pane.
- Property pane contains the properties information for the Home Page.

To help you maintain an overview of a complete project, the right side and the bottom of the Editor pane contain scroll bars, which you can use for vertical and horizontal scrolling of the project editing.



- | | |
|---------------------|-------------------|
| ① Menu bar | ④ Components pane |
| ② Standard toolbar | ⑤ Editor pane |
| ③ Project tree pane | ⑥ Properties pane |

Menu bar

The top of the FL1F Web Editor window contains the menu bar (Page 15). Here, you can find various commands for editing and managing your projects, as well as functions for defining your default settings and for transferring of the project to and from IDEC SmartRelay.

Standard toolbar

The standard toolbar (Page 14) appears above the Project tree and Editor pane's interface. Initially, FL1F Web Editor shows you a reduced standard toolbar that provides only the essential functions.

The standard toolbar provides direct access to the essential functions of FL1F Web Editor.

After you open a project for editing, you can see the complete standard toolbar.



You can use these icons to create a new project or download, save an existing project, undo/redo the last action, or initiate data transferred to and from IDEC SmartRelay devices.

1.2 Function keys and shortcuts

FL1F Web Editor provides the following function key and shortcuts for frequently called functions:

Function key in FL1F Web Editor:

Help menu (Page 38)	[F1]	Help -> Help Contents (Page 39)
------------------------	------	---------------------------------

Shortcuts in FL1F Web Editor:

File menu (Page 15)	[Ctrl+Shift+N]	File -> Open Project (Page 17)
	[Ctrl+F4]	File -> Close Project (Page 17)
	[Ctrl+S]	File -> Save (Page 17)
	[Ctrl+Shift+S]	File -> Save All (Page 17)
	[Alt+F4]	File -> Exit (Page 25)
Edit menu (Page 25)	[Ctrl+Y]	Edit -> Redo (Page 26)
	[Ctrl+Z]	Edit -> Undo (Page 26)
	[Alt+L]	Edit -> Left Rotate (Page 26)
	[Alt+R]	Edit -> Right Rotate (Page 26)
	[Alt+D]	Edit -> Bing to Front (Page 26)
	[Alt+B]	Edit -> Bing to Back (Page 26)
	[Ctrl+C]	Edit -> Copy (Page 27)
	[Ctrl+V]	Edit -> Paste (Page 27)
	[Delete]	Edit -> Delete (Page 27)
[Ctrl+A]	Edit -> Select All (Page 27)	

1.3 Standard toolbar overview

	[Alt+A]	Edit -> Select All IoT Components (Page 27)
	[Alt+F]	Edit -> Select Other Same IoT Components (Page 28)
Tools menu (Page 29)	[Ctrl+D]	Tools -> Download (Page 29)
	[Ctrl+U]	Tools -> Upload (Page 31)
Window menu (Page 36)	[Ctrl+1]	Window -> Project (Page 36)
	[Ctrl+2]	Window -> Properties (Page 37)
	[Ctrl+3]	Window -> Component (Page 37)
	[Ctrl+4]	Windows -> Reset Windows (Page 38)





















1.3 Standard toolbar overview

The icons of the standard toolbar provide quick access to commands that are also available on the menu.

In FL1F Web Editor, you can use the mouse-over-button function to display the icon name, which represents the tooltip. This helps you quickly recall the function of the icon, without calling the menu or the help.

The following commands are found in the standard toolbar:



-  **File:** New Project (Page 15)
-  Open Project (Page 17)
-  Close Project (Page 17)
-  Save (Page 17)
-  Save all (Page 17)
-  Deploy To SD Card (Page 18)
-  Deploy To AWS (Page 18)
-  **Edit:** Left Rotate (Page 26)
-  Right Rotate (Page 26)
-  Redo (Page 26)
-  Undo (Page 26)
-  **Tools:** Download (Page 29)
-  Upload (Page 31)
-  **Others:** Align Left (Page 40)
-  Align Center (Page 40)
-  Align Right (Page 40)
-  Align Top (Page 40)
-  Align Bottom (Page 41)
-  Distribute Horizontally (Page 41)
-  Distribute Vertically (Page 41)

1.4 Menu bar

The menu bar contains some editing functions for the project and provides access to the context-sensitive help.

- File menu (Page 15)
- Edit menu (Page 25)
- Tools menu (Page 29)
- Window menu (Page 36)
- Help menu (Page 38)

1.4.1 File menu

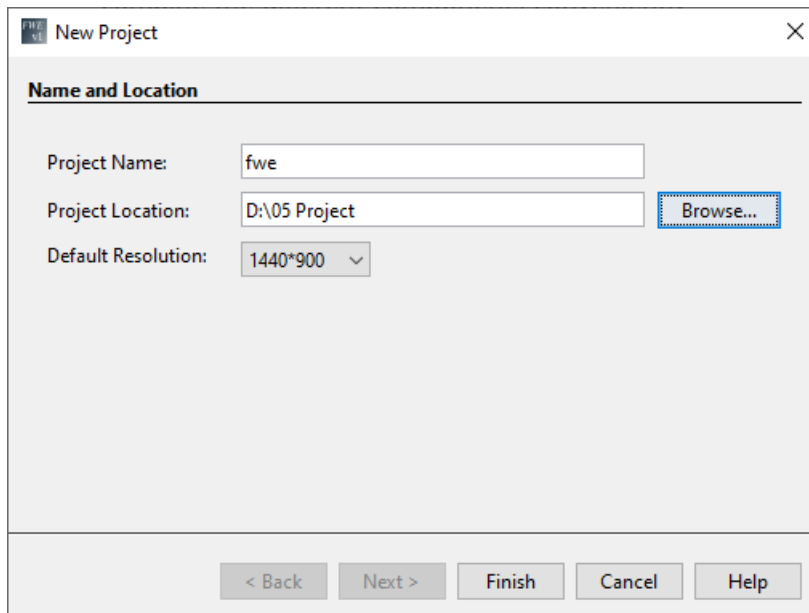
The File menu command contains commands for file management. Included are also commands for creating, saving or exit:

- New Project (Page 15)
- Open Project (Page 17)
- Close Project (Page 17)
- Save (Page 17)
- Save All (Page 17)
- Save As... (Page 18)
- Deploy to SD Card (Page 18)
- Deploy to AWS (Page 18)
- Export as AWS WebApp (Page 24)
- Show Project in System Explorer (Page 25)
- Exit (Page 25)

1.4.1.1 File -> New Project



Click this command to open a **New Project** dialog box which contains name, location and resolution information.



Name and Location dialog box

- Project Name: give a valid name to the project.

Note

Naming Conventions for the Project Name

- The maximum length of a name is 8.
- The maximum length of filename extension is 3.
- Do not use space in the file name.
- Do not assume case sensitivity.
- Do not use the following characters:
 - < (less than)
 - > (greater than)
 - : (colon)
 - " (double quote)
 - / (forward slash)
 - \ (backslash)
 - | (vertical bar or pipe)
 - ? (question mark)
 - * (asterisk)
 - + (plus sign)
 - . (dot)

-
- Project Location: click **Browse** button and select a proper location in your computer to save the project.
 - Default Resolution: click the drop-down menu and select a resolution for the project.

After modifying this dialog box, click **Finish** button to accomplish the new project creation. Then a new project appears in Project tree.

You can also click **Cancel** button to cancel the creation or click **Help** button to get more information from online help.

The standard toolbar (Page 14) also contains an icon for this menu command.

1.4.1.2 File -> Open Project



Click this command to open a dialog box from which you can select and open a previously created project for further editing.

The type of file that you can open is only for Project Folder.

The icon for the Project Folder is .

The standard toolbar (Page 14) also contains an icon for this menu command.

1.4.1.3 File -> Close Project



Click this command to close the active project window. If you have not yet saved the current project, FL1F Web Editor prompts you to save it.

The standard toolbar (Page 14) also contains an icon for this menu command.

1.4.1.4 File -> Save



Click this command to save the current editor pane.

For other opened windows, you can save them with **Save all**. You can find additional information under File -> Save All (Page 17).

If you are saving a modified version of an existing project, FL1F Web Editor performs a quick save. The revised version overwrites the old version at the same path and name as the source file.

The standard toolbar (Page 14) also contains an icon for this menu command.

1.4.1.5 File -> Save All



Click this command to save all the corrections for project in editor pane.

The revised version overwrites the old version at the same path and name as the source file.

The standard toolbar (Page 14) also contains an icon for this menu command. A click on this menu command closes all open windows.

1.4.1.6 File -> Save As...



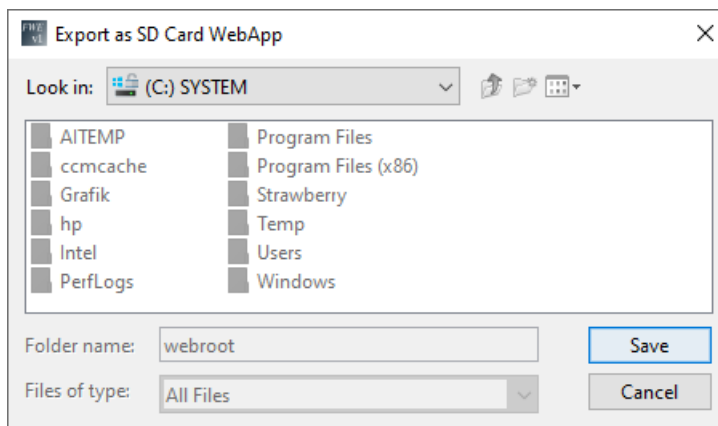
After clicking this command, a dialog box opens for you to specify the path and project name under which the current project is to be saved. This allows you to save modified projects under a different name or folder, and thus keep previous versions for retrieval.


The only type of files that you can save is project folder. Each project is saved in its own project folder.

1.4.1.7 File -> Deploy to SD Card



Click this command to deploy the project to Micro SD card, the following dialog box opens and you can specify the driver under which you want to save your project.



You can also deploy the project to SD card by clicking  on the standard toolbar (Page 14).

When you download project to BM, FWE builds and compiles a new file folder in project to support https mode.

1.4.1.8 File -> Deploy to AWS



Click this command to deploy FWE project to AWS (Elastic BeanStalk).

Prerequisites

- The Cloud access must be enabled.

On how to enable Cloud access, refer to the chapter *Tools -> Transfer -> Cloud Settings -> Cloud Connection Settings* of *WindLGC online help*.

- An AWS account is created (https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_accounts_create.html).

Note

If you cannot visit the FWE project you deployed on AWS China EC2, contact AWS customer service to open these ports for your account: 80, 8080, and 443.

- IoT things are created.

On how to create a thing, refer to AWS (<https://docs.aws.amazon.com/iot/latest/developerguide/thing-registry.html>) or chapter *Tools -> Transfer -> Cloud Settings -> Cloud Connection Settings* of *WindLGC Online help*.

- IoT thing names are added in IoT thing table (Page 47) and the FWE project has used the IoT things.

Procedures

1. Select **File -> Deploy to AWS**.
2. Select the **WebApp Region**, **IoT Region**, enter the "**Access Key ID**" and "**Secret Access Key**". If you use AWS Temporary Credential Account (TVM), you need also enter "**Session Token**". Then click the **Next** button.
 - WebApp Region: the region FWE project deployed on AWS.
 - IoT Region: the region IDEC SmartRelay BM registered on AWS.

Deploy to AWS

AWS Account Configuration

* WebApp Region: US East (N. Virginia) <us-east-1>

* IoT Region: US East (N. Virginia) <us-east-1>

* Access Key ID:

* Secret Access Key:

Session Token:

Note:

[AWS IAM Account]: Input "Access Key ID" and "Secret Access Key"

[Temporary Credential Account]: Input "Access Key ID", "Secret Access Key" and "Session Token"

⚠ Access Key ID cannot be empty.

< Back Next > Finish Cancel Help

3. Select the checkbox **"Create a new environment"** or **"Choose an existing environment"**.
If you select "Create a new environment", proceed with step 4. If you select "Choose an existing environment", proceed with step 5.

Note

Using AWS Temporary Credential Account

If you use AWS Temporary Credential Account, you can only choose to create a new environment.

If the IoT thing used in the existing application is re-registered in WindLGC, you can select this application in the existing environment list, then click **Restart** button to update the application.

Deploy to AWS

Select a WebApp Service

Create a new environment

Choose an existing environment

Application Name	Environment Name	Environment Des...
test-AWS-lei	test-AWS-envirom...	test-AWS-envirom...

Terminate

Refresh

Restart WebApp

< Back Next > Finish Cancel Help

4. Enter a name for the new application and environment. Or you can choose an existing application and select it from the drop-down list.

Note

The length of the environment name should be between 4 and 40 characters.

Application name cannot be empty.

Note

If you use AWS Temporary Credential Account for the configuration, the registered application name displayed on AWS website would be prefixed with "_CLOUDAPP_".

The screenshot shows a dialog box titled "Deploy to AWS" with a close button (X) in the top right corner. The main heading is "Create a WebApp Service". Below this, the instruction "Choose a name for your WebApp" is displayed. The "Application" section contains two radio buttons: "Create a new application:" (which is selected) and "Choose an existing application:". Below these is a "Name:" text input field. The "Environment" section has "Environment Name:" and "Description:" text input fields. The "Advanced Settings" section contains a single "+" button. At the bottom left, a red error message reads "Application name cannot be empty." The bottom of the dialog features a row of five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

In **Advanced Settings**, click "+" button to expand to configure **Tags** and **Instance Type** for AWS service.

- Tags: you can set tags to categorize your AWS IoT resources in different ways, for example, by purpose, owner or environment. Each tag consists of a key and optional value, and you can define both of them. You can set at most 3 tags for the Web App.
- Instance Type: when you create a new environment, Elastic Beanstalk provisions Amazon EC2 instances. The instance type determines the host hardware that runs your instances.

Advanced Settings

Tags:

key	value
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

Instance Type: Search

Platform:

Platform Branch:

Platform Version:

5. Set the Web user password for access the Cloud Web App.

Deploy to AWS

Enter Web User Password

Web User Password:

Confirm Password:

Note:

It is recommended to use a combination of characters, numbers and symbols to strengthen your password.

❗ User password cannot be empty.

< Back Next > Finish Cancel Help

Note

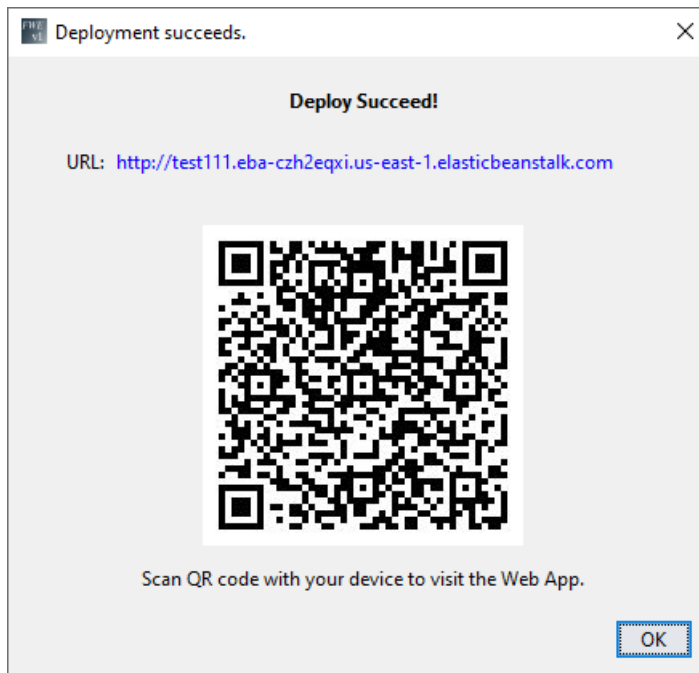
The length of the password should be between 4 and 40 characters.

Note

IDEC highly recommends you set a strong Web user password to protect the Web App.

This password is used to log in the Cloud Web App that you have deployed on AWS. It is independent from the web user password used to log in the BM Web server.

Result: After the deployment succeeds, you will get the URL and QR code of the Web App. You can check the Web App in web browser or AWS Elastic BeanStalk console through the URL. You can also use smart mobile devices to scan the QR code to visit the deployed Web App.



Note

You can access the Cloud Web App which is deployed on AWS Service through the administrator password. If you forget the password, you must re-deploy the Web App again to reset the password.

Note

After the FWE project is deployed to AWS successfully, if the IoT thing used in this project is re-registered from WindLGC to AWS, then you need to re-deploy this FWE project to AWS to activate the IoT connection. Or you can use the Restart button in step 3 above to update the Web application.

Note

"Deploy to AWS" is realized by FWE calling AWS API. The deployed web service is based on AWS Elastic Beanstalk. The default mode is HTTP. If you want to change your Web App cloud environment settings, for example, security enhancement, load balance, you can configure them on AWS console page. Refer to corresponding AWS document for detailed operation. All the consequences resulted from your manual operation through the AWS console are irrelevant to FWE.

1.4.1.9 File -> Export as AWS WebAPP

Click this command to export the editing project as AWS Web App. The exported AWS Web App can be deployed to tomcat web server directly.

1.4.1.10 File -> Show Project in System Explorer

Click this command to show where the current project is saved. After you click this command, the system explorer window appears and displays all files of the current project.

Note

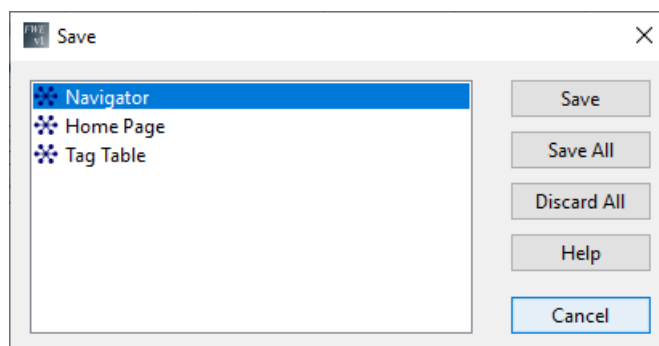
As FWE project is not encrypted, to avoid any undesired manipulation or malicious hacking from the Internet, please store and transfer FWE project in a secure environment.

1.4.1.11 File -> Exit

Click this command to close FL1F Web Editor tool.

If you are editing a project and have not yet saved it, FL1F Web Editor prompts you about your project.

Below is an example for the pop-up window:



In this pop-up window, you can decide which windows are needed to be saved. You can click **Save** to save the current window or click **Save All** to save project.

Alternatively, you can exit FL1F Web Editor without saving windows by clicking **Discard All**.

You can also click **Cancel** button to cancel the creation or click **Help** button to get more information from online help.

1.4.2 Edit menu

The Edit menu provides commands for editing your project. The toolbar contains some of the basic commands for creating and editing projects.

- Undo (Page 26)
- Redo (Page 26)
- Left Rotate (Page 26)
- Right Rotate (Page 26)
- Bring to front (Page 26)
- Send to back (Page 26)

1.4 Menu bar

- Copy (Page 27)
- Paste (Page 27)
- Delete (Page 27)
- Select All (Page 27)
- Select All IoT Components (Page 27)
- Select Other Same IoT Components (Page 28)

1.4.2.1 Edit -> Undo



Click this command to undo the previous actions.

The standard toolbar (Page 14) also contain an icon for this menu command.

1.4.2.2 Edit -> Redo



Click this command to revert the last undo action.

The standard toolbar (Page 14) also contains an icon for this menu command.

1.4.2.3 Edit -> Left Rotate



Click this command to rotate the component anticlockwise. Once you select the component, and then click the **Left Rotate** button, you can rotate the component 90 degrees anticlockwise.

The standard toolbar (Page 14) also contains an icon for this menu command.

1.4.2.4 Edit -> Right Rotate



Click this command to rotate the component clockwise. Once you select the component, and then click the **Right Rotate** button, you can rotate the component 90 degrees clockwise.

The standard toolbar (Page 14) also contains an icon for this menu command.

1.4.2.5 Edit -> Bring to front

Click this command to move a component to the top position in its group or layer.

1.4.2.6 Edit -> Send to back

Click this command to move a component to the bottom position in its group or layer.

1.4.2.7 Edit -> Copy



Click this command to copy one or more selected components to the clipboard, for example, you can copy the selected Polyline, Rectangle, Image and Navigator Item from the Editor pane to the clipboard.

1.4.2.8 Edit -> Paste



Click this command to copy the clipboard content to the Editor pane.

1.4.2.9 Edit -> Delete



Click this command to delete the selected components, without copying them to the clipboard. You can retrieve deleted components with the **Undo** function.

When you delete the selected components, a pop-up window of **Confirm Object Deletion** appears. You can confirm the deletion with **Yes** button or cancel the deletion with **No** button in the pop-up window.

1.4.2.10 Edit -> Select All

Click this command to select all components in current Pages or Navigator under the project, for example, Polyline, Rectangle, Image or Navigator Item can be selected on the Editor pane. You cannot use this command to select the component in Global Tags.

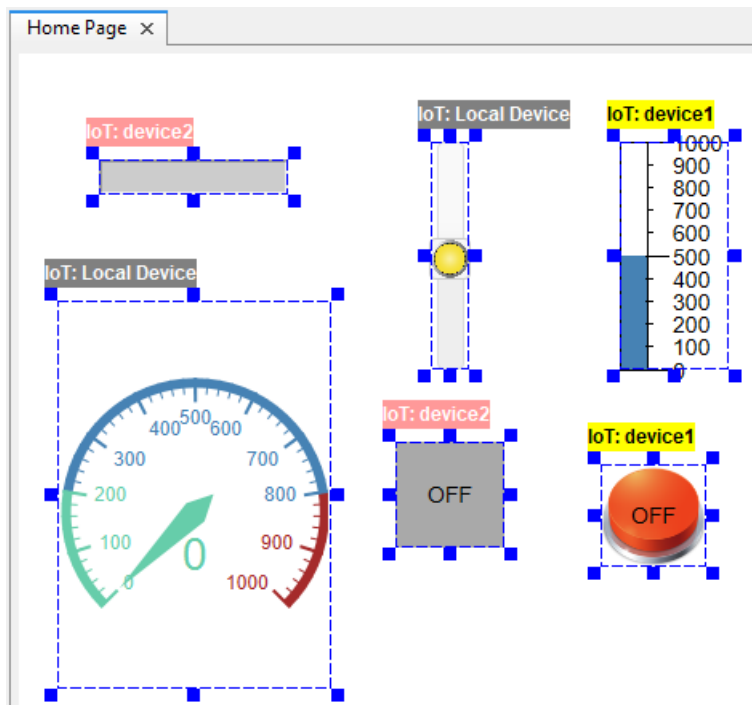
1.4.2.11 Edit -> Select All IoT Components

Click this command to select all components configured for IoT things. Once you click this command, all found IoT components are in the "being selected" mode, and the IoT thing name appears on the top of each IoT component. The color of IoT thing name label on components for local device is gray, and the color of IoT thing name label for other IoT things is other random color.

To cancel components selection, you can press **ESC** key on your keyboard, or click anywhere on the editing page.

You can also find this command in the shortcut menu after right-clicking any component or on the editing page.

The following example screenshot displays IoT components in a page after using this command.



1.4.2.12 Edit -> Select Other Same IoT Components

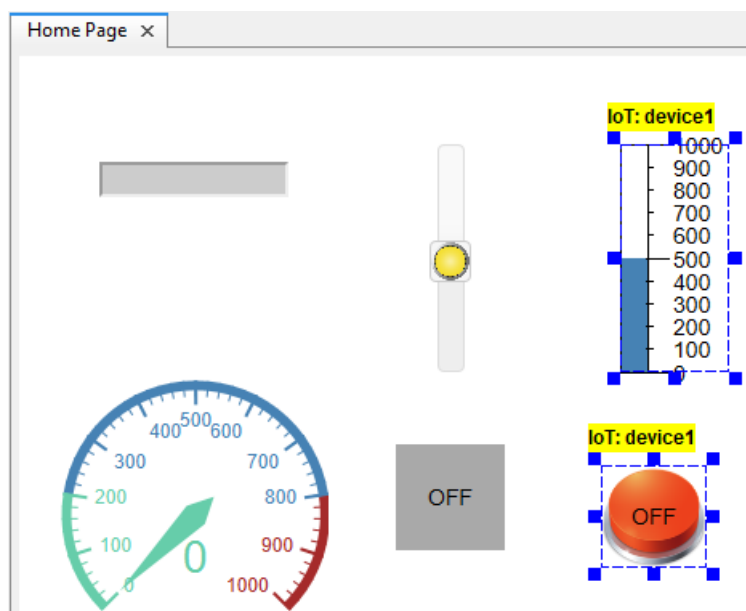
Click this command to select other components configured for the same IoT thing. To use this command, you should first select an IoT component; Otherwise, this command is not available to use.

Once you click this command, all found IoT components configured for the same IoT thing are in the "being selected" mode, and the IoT thing name appears on the top of each IoT component. The color of IoT thing name label on components for local device is gray, and the color of IoT thing name label for other IoT things is other random color.

To cancel components selection, you can press **ESC** key on your keyboard, or click anywhere on the editing page.

You can also find this command in the shortcut menu after right-clicking the IoT component.

The following example screenshot displays IoT components in a page after using this command.



1.4.3 Tools menu

The tools menu provides the following menu commands:

- Download (Page 29)
- Upload (Page 31)
- Update (Page 31)
- Options (Page 35)



1.4.3.1 Tools -> Download



Click this command to download a FL1F Web Editor project from PC to the Micro SD card of IDEC SmartRelay Base Module. You can also use this button in the standard toolbar (Page 14) for such purpose.

Example for Download

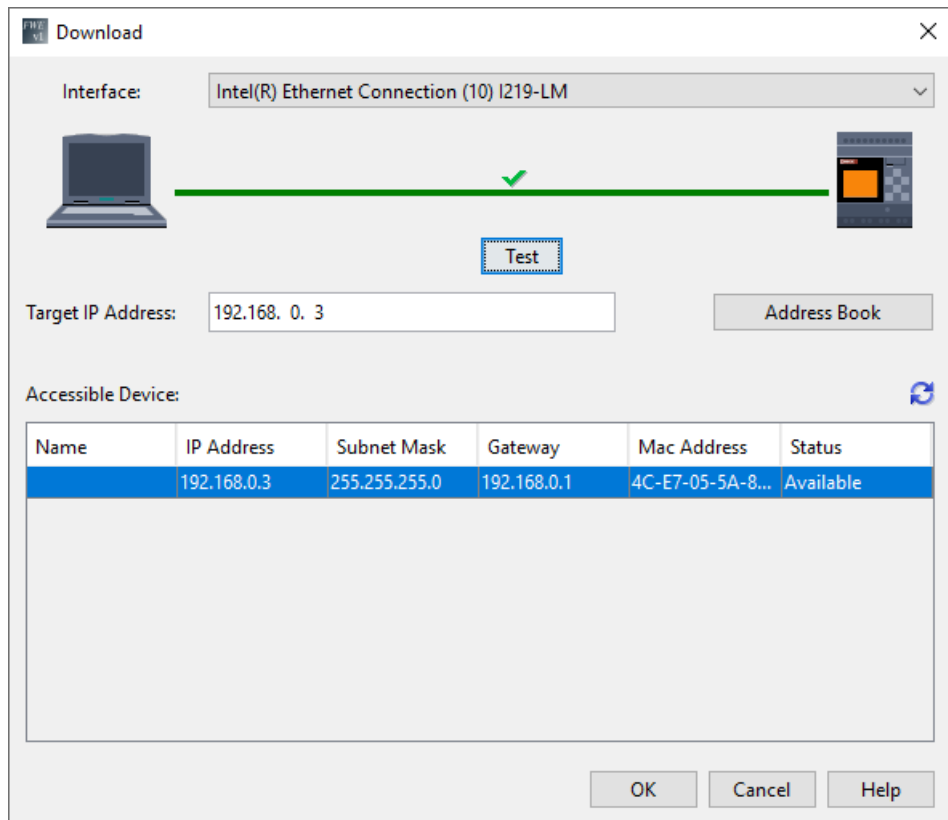
To download a new project to IDEC SmartRelay Base Module, do the following steps:

1. Click the icon  in the standard toolbar or select **Download** from **Tools** bar.
2. In the pop-up **Download** window,
 - select correct **Interface** from the drop-down menu;
 - enter the valid **Target IP Address** or click scan icon  to find the accessible device to connect the BM.

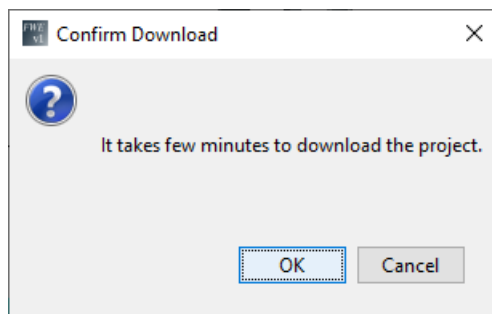
Note

When you download a FWE project to an old version BM, some features might not be supported on Web Server, for example, VX or VR Block Type for Digital and Analog components.

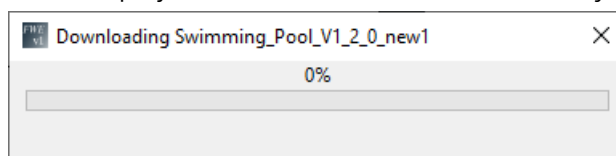
- click **Test** button, and then a **Connecting** pane pops up.
- after the connection line turns green, click **OK** button. You can also click **Cancel** button to cancel the configuration or click **Help** button to get more information from online help.



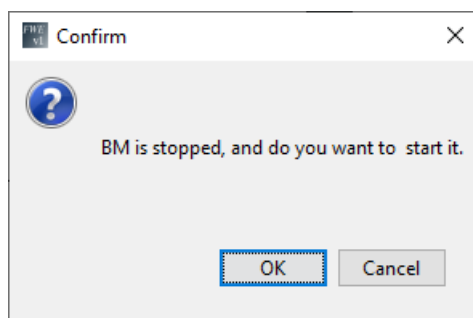
3. In the **Confirm Download** pane, click **OK** button to confirm to download the project.



Then the project is downloaded to IDEC SmartRelay BM.



4. In the **Confirm** pane, click **OK** button to start the BM.



1.4.3.2 Tools -> Upload



Click this command to upload a FL1F Web Editor project from the Micro SD card of IDEC SmartRelay Base Module to PC. You can also use this button in the standard toolbar (Page 14) for such purpose.

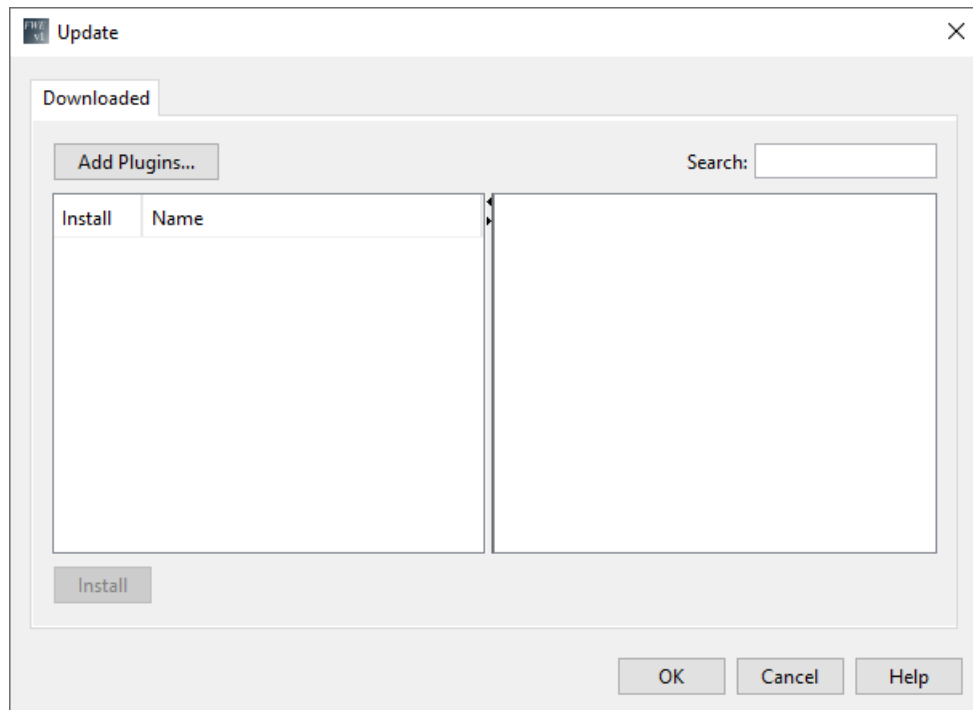
1.4.3.3 Tools -> Update

Here you can install and update required FWE modules that you have downloaded from IDEC official website. After the installation and update, FWE can support certain AWS updated features.

To install an FWE module, take the following steps:

1. Download the required FWE module from the IDEC Website (https://us.idec.com/idec-us/en/USD/Programmable-Logic-Controller/SmartRelay/FL1F-SmartRelay/c/SmartRelay_FL1F?page=1).
2. Click **Update** command from the **Tools** menu.

3. Click **Add Plugins** button in the **Downloaded** section in the **Update** window. The file system window appears.

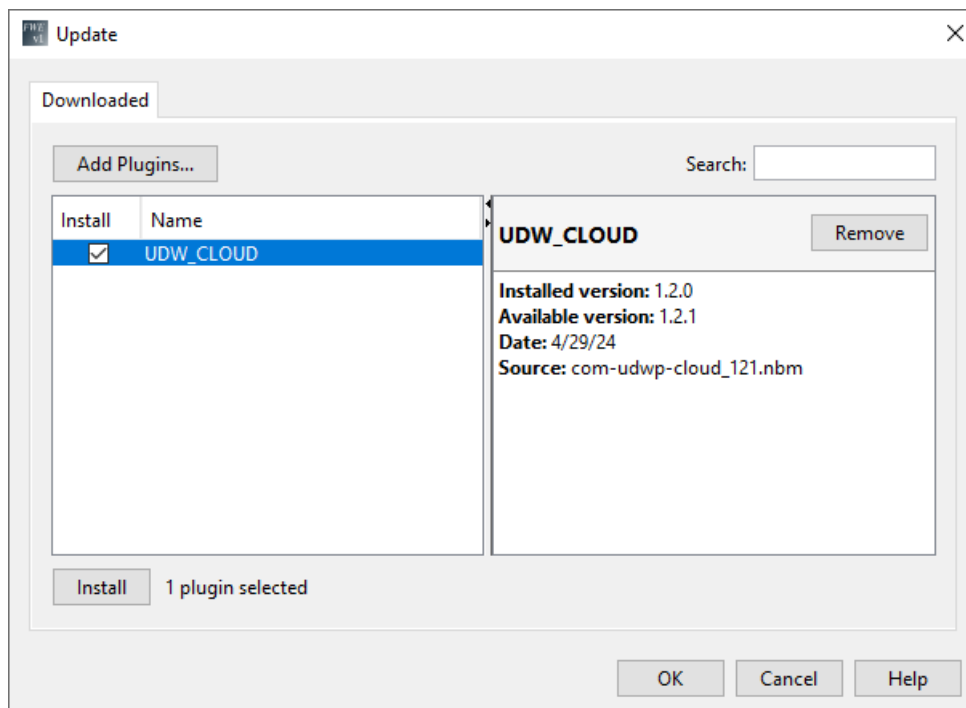


4. Select the FWE module from the file system, and the .nbm format file name displays on the left window, and you can review version information of the .nbm file on the right window.

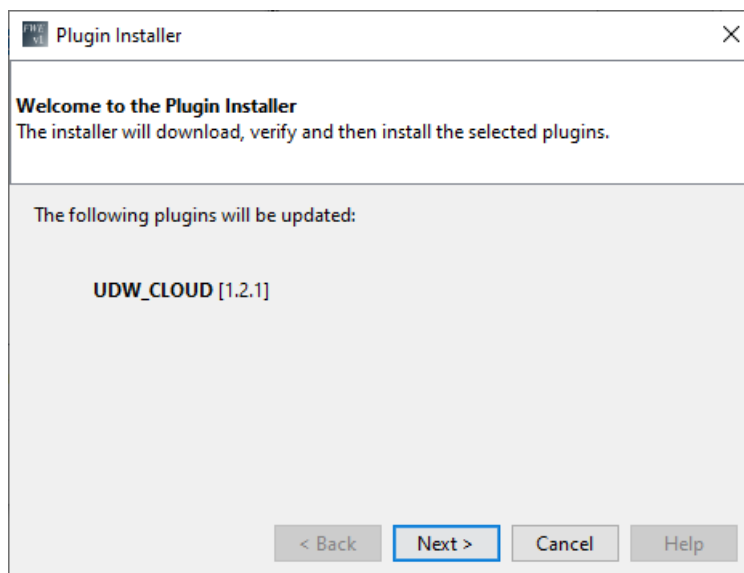
Note

FL1F Web Editor only supports to install FWE module in .nbm format, and the file version must be higher than the already installed module version. Otherwise, the installation fails.

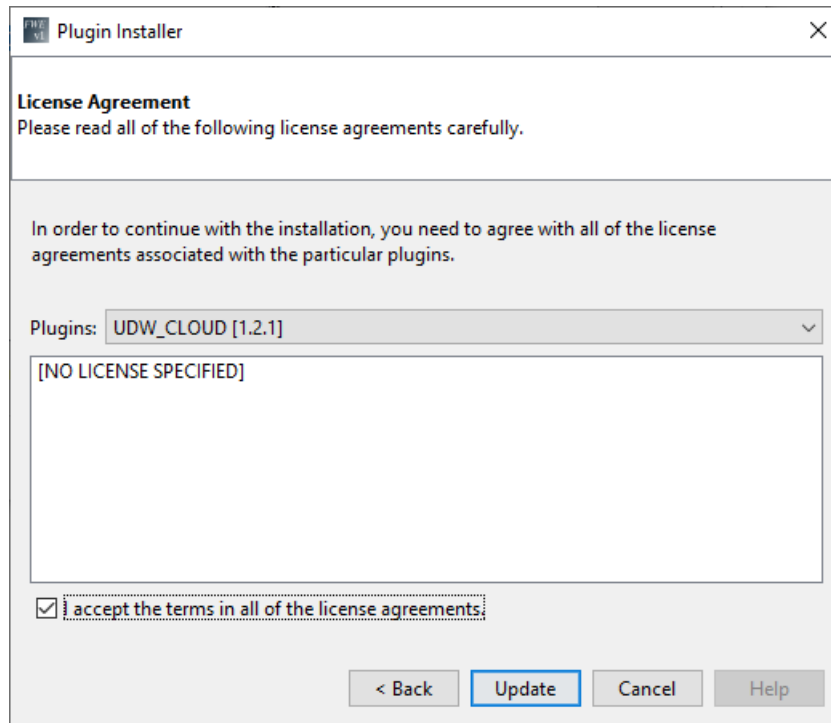
5. Select the .nbm format file in the list, and click **Install** button to start the process.



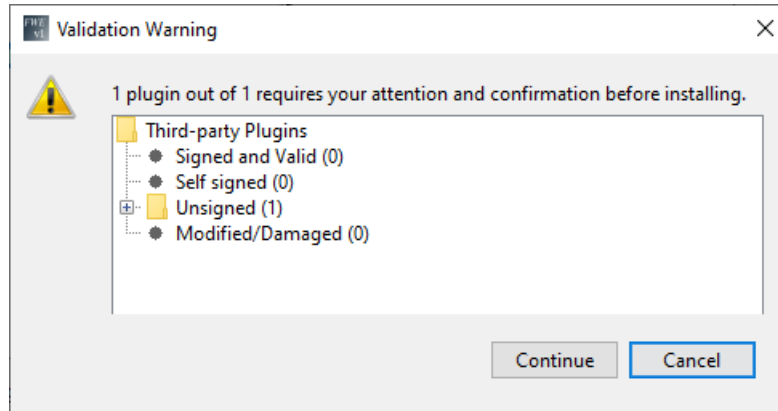
6. Click **Next** button in the Plugin Installer window.



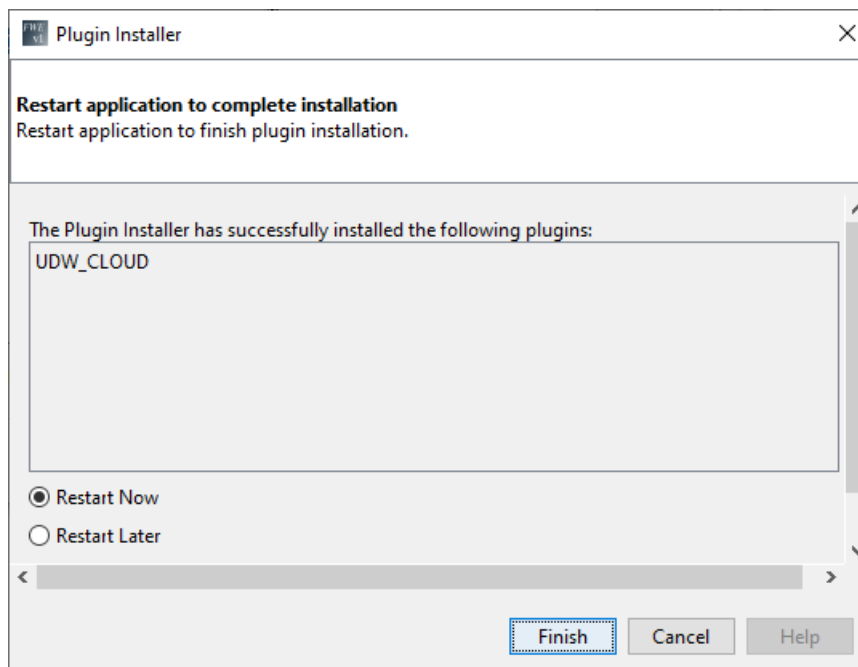
7. Check the box to accept license agreements terms. Then Click **Update**.



8. Click **Continue** button to confirm the installation.



9. Select **Restart Now** or **Restart Later**. Then click **Finish** button. The module update takes effect after FL1F Web Editor is restarted.



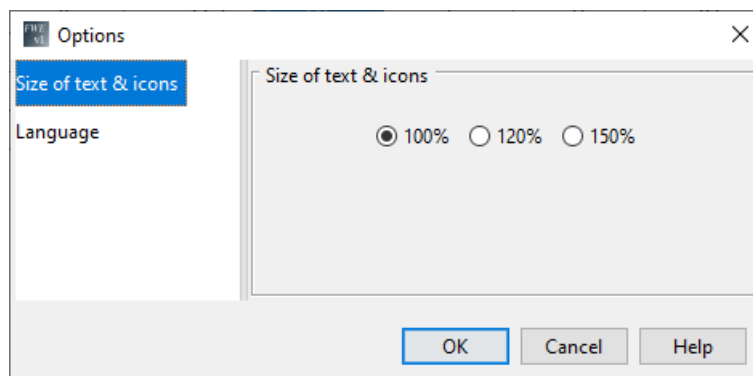
1.4.3.4 Tools -> Options

Here you have **Language** and **Size of the text & icons** options for FL1F Web Editor, click the radio button before each option and press **OK** button to save the selection.

You can also click **Cancel** button to cancel the selection or click **Help** button to get more information from online help.

Note

Changes for **Language** and **Size of the text & icons** options will not take effect until you restart FL1F Web Editor.



Language

Here you can define the user interface language.

- Deutsch
- English
- Japanese

Size of the text & icons

Here you can select the size of the text and icons in the user interface.

- 100%
- 120%
- 150%


1.4.4 Window menu

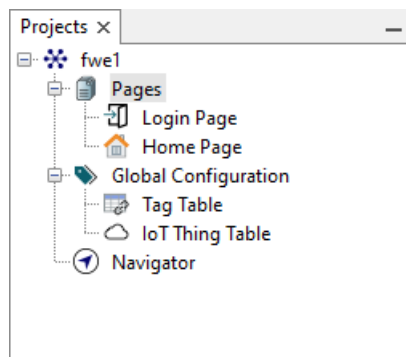
From the Window menu, you can arrange your project windows on the desktop. You can show the Project tree pane, Component pane, Editor pane and Property pane on the desktop.

The following window options are available:


- Project (Page 36)
- Properties (Page 37)
- Component (Page 37)
- Reset Windows (Page 38)

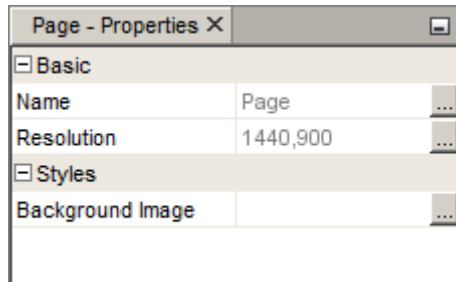
1.4.4.1 Window -> Project

You can use this menu command to show the **Project tree pane** on the desktop. If you want to close the Project tree pane, click the  cross button.



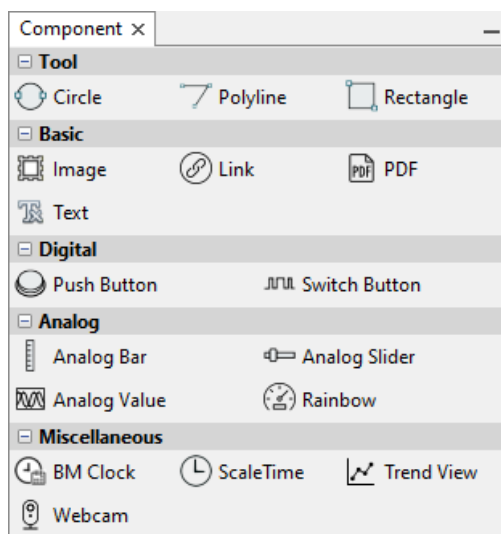
1.4.4.2 Window -> Properties

You can use this menu command to show the **Property pane** on the desktop. If you want to close the Property pane, click the  cross button.



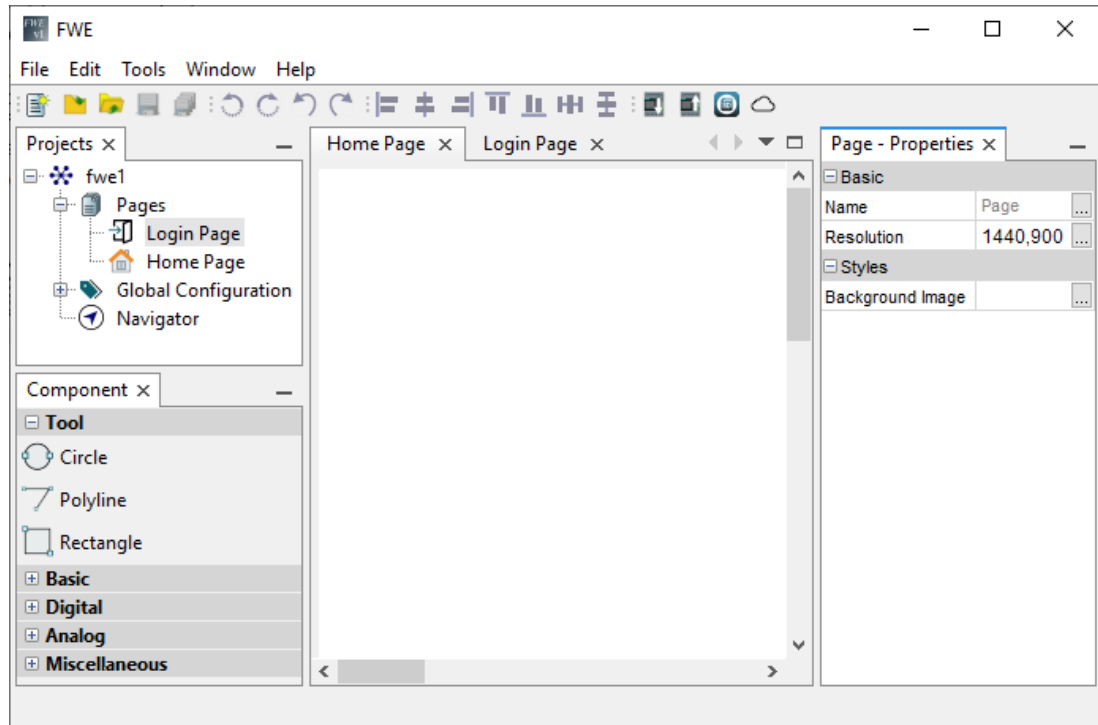
1.4.4.3 Window -> Component

You can use this menu command to show the **Component pane** on the desktop. If you want to close the Component pane, click the  cross button.



1.4.4.4 Window -> Reset Windows

You can use this menu command to reset the windows to the default layout.



1.4.5 Help menu

This menu provides you with help and information on FL1F Web Editor.

- Start Page (Page 38)
- Help Contents (Page 39)
- About (Page 39)

1.4.5.1 Help -> Start Page

Close the whole project or close all the windows in Editor pane, and then exit the FL1F Web Editor, when you restart the FWE again, you can see the **Start Page** shows in the Editor pane.

If you exit the FL1F Web Editor without closing the edited project, when you restart the FWE again, the last edited pages show in the Editor pane.

1.4.5.2 Help -> Help Contents

The Online Help

The online help quickly and reliably provides you with information about projects, tools and the creation of projects with FL1F Web Editor.

Topics of the Online Help

The User interface (Page 12) section describes the user interface with its toolbars and the FL1F Web Editor menus in detail.

Refer to the Tutorial (Page 82) for a quick and easy introduction to the basics of operating FL1F Web Editor.

The section of Getting started with project creation (Page 87) that takes you a general description for creating a new project, and towards the end of this section you will find an extensive Practical example (Page 89) that takes you through all the steps of project creation.

The Tips and Tricks (Page 113) section includes information about operating tips with FL1F Web Editor.

The online help includes an **index** as well as a **full text search** feature for keyword and terminology based searches.

1.4.5.3 Help -> About

The **General** tab displays the version number and the release version of your FL1F Web Editor tool.

The **System** tab provides you with information on the version of the Java Runtime environment used, the program paths, the installed operating system and on the memory used.

The **Notice** tab provides you with information on the Commercial Features in Java SE Product Editions.

1.4.6 Commands to align and distribute components

After selecting more than one component in the editing page, you can use the **Align** commands to quickly align the selected components; After selecting more than two components in the editing page, you can use the **Distribute** commands to arrange the selected components equal distance from each other. You can find the following commands in the standard toolbar.

- Align Left (Page 40)
- Align Center (Page 40)
- Align Right (Page 40)
- Align Top (Page 40)
- Align Bottom (Page 41)

1.4 Menu bar

- Distribute Horizontally (Page 41)
- Distribute Vertically (Page 41)

You can refer to section User example (Page 41) to learn how to use these commands to make components layout editing easier.

1.4.6.1 Align Left



Click this command to align the selected components along their left edges. This command only works after you select more than one component in the page.

You can find this command in the standard toolbar (Page 14), or in the shortcut menu (Page 114) by right-clicking the selected components.

1.4.6.2 Align Center



Click this command to align the selected components vertically along their centers. This command only works after you select more than one component in the page.

You can find this command in the standard toolbar (Page 14), or in the shortcut menu (Page 114) by right-clicking the selected components.

1.4.6.3 Align Right



Click this command to align the selected components along their right edges. This command only works after you select more than one component in the page.

You can find this command in the standard toolbar (Page 14), or in the shortcut menu (Page 114) by right-clicking the selected components.

1.4.6.4 Align Top



Click this command to align the selected components along their top edges. This command only works after you select more than one component in the page.

You can find this command in the standard toolbar (Page 14), or in the shortcut menu (Page 114) by right-clicking the selected components.

1.4.6.5 Align Bottom



Click this command to align the selected components along their bottom edges. This command only works after you select more than one component in the page.

You can find this command in the standard toolbar (Page 14), or in the shortcut menu (Page 114) by right-clicking the selected components.

1.4.6.6 Distribute Horizontally



Click this command to arrange the selected components in the page, making the left and right components stay in their current position while components between them are distributed evenly. This command only works after you select more than two components in the page.

You can find this command in the standard toolbar (Page 14), or in the shortcut menu (Page 114) by right-clicking the selected components.

1.4.6.7 Distribute Vertically



Click this command to arrange the selected components in the page, making the top and bottom components stay in their current position while components between them are distributed evenly. This command only works after you select more than two components in the page.

You can find this command in the standard toolbar (Page 14), or in the shortcut menu (Page 114) by right-clicking the selected components.

1.4.6.8 User example

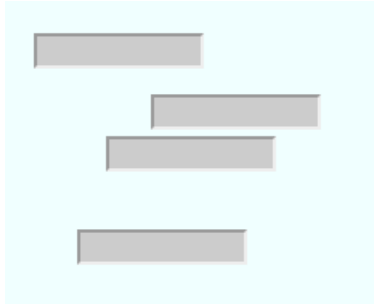
This user example is meant to show how you can use align and distribute commands to make components layout editing easier and more efficient.

User example

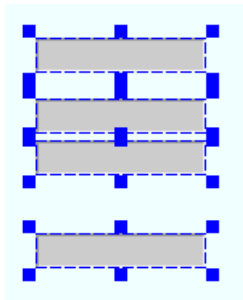
If you need to create a project with eight Analog Value in two rows in a page, you can use align and distribute commands to make the layout neat.

Follow these steps:

1. Add four Analog Value in the editing page. You can drag four components, or copy one into four.

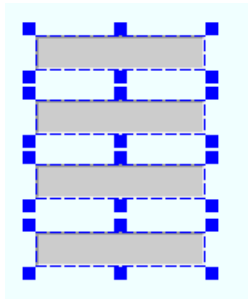


2. Select all components.
3. Use **Align Left** command in the standard toolbar or the shortcut menu. Now all four components are aligned along their left edge.

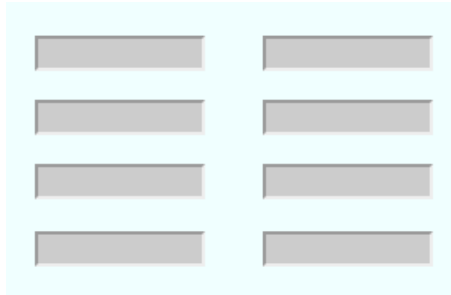


4. Use **Distribute Vertically** command in the standard toolbar or the shortcut menu. Now the distance between each component is the same.

In practical operation, you can also carry out step 3 and step 4 in reverse order. Now these four components are in a row neatly.



5. Copy the row of components into another row on the right.
6. Slightly adjust the row on the right to be the same level with the left row.



1.5 Projects tree pane

In the Project tree pane, you can configure and manage your projects. When you create a new project from the menu bar of File -> New Project (Page 15), FL1F Web Editor creates a new project with a **Pages**, a **Global Configuration** and a **Navigator** automatically.

- Pages (Page 43)
- Global Configuration (Page 45)
- Navigator (Page 48)

1.5.1 Pages



Pages is the container of your pages. Page is the main editing area of FL1F Web Editor. You can edit pages with the provided components (Page 49), and save the pages as html file in project. After deploying the project in IDEC SmartRelay Base Module or Cloud, you can view them in web browser. You can navigate among different pages with Navigator (Page 48).

The **Pages** can contain one default **Home Page**, a Login page and other pages. You can open a page by double-clicking the **page** icon, or right-clicking the **page** icon and select **Open** button.

- Home page (Page 44)
- Login page (Page 44)
- Other pages (Page 45)

Page Properties

- **Basic**
 - Name: Page
 - Resolution: you can modify the width and height of the page in the **Size** window.
- **Styles**
 - Background Image: you can select the appropriate picture for the current page from **Graph Library**.

Note

Graph Library is the FL1F Web Editor build-in graphics library. It contains four parts: Build-In Graph, Color, My Graph and User Local File System. You can choose any of the graphic for the image by selecting the picture, and confirm the selection by clicking **OK** button. For detailed information, refer to the chapter Graph Library (Page 76).

1.5.1.1 Home page



This is the home page for your project, and the **Home page** cannot be deleted.

When you create a new project (Page 15), the **Home Page** is created under the **Pages** in the Project tree.

1.5.1.2 Login page



You can add a Login page for your project. When the Login page is enabled, you need to input a password to login.

- When the project is deployed on IDEC SmartRelay BM, you need to enter the password of Web User or Web Guest.
- When the project is deployed on the Cloud, you need to enter the password you set when you deploy (Page 18) the project.

Create a Login page

- Right-click the Pages icon  and select **Create Login Page**.

Then the Login page is created above the **Home Page** and the **Login Page** is opened in Editor pane.

Open or delete the Login page

- Right-click the Login page icon and select the **Open or Delete** from the shortcut menu.

Create the Login panel

1. Drag and drop the Login component (Page 74) to the login page and set the properties as you need.
2. Save (Page 17) the change.

Enable or disable the Login page

- Right-click the Login page icon and select the **Enable or Disable** from the shortcut menu.

1.5.1.3 Other pages

You can add more pages according to your need. The pages you add can be deleted.

Create a new page

- Right-click the Pages icon  and select **New Page**.

Then a page (page_number) is created below the **Home Page** and the new page is opened in Editor pane.

Note

You can create at most 20 pages.

Open, delete or rename a page

- Right-click the **page_x** icon and select the corresponding options (**Open**, **Delete** or **Rename**) from the shortcut menu depending on your need.

1.5.2 Global Configuration



Global Configuration is the set of IDEC SmartRelay BM variable. The **Global Configuration** contains **Tag Table** and **IoT Thing table**, and they cannot be deleted. **Tag Table** is the place to define Global Variables. **IoT Thing Table** is the place to create, update and delete Cloud devices. The IoT thing can be added in **Tag Table** after they are created in IoT thing table.

When you create a new project (Page 87), **Global Configuration** is created in the project tree.

1.5.2.1 Tag Table



Tag table is used to define the global variables for your project. These variables can be from the local device or Cloud. After you saved the Tag table, you can use the variable and its binding data in the component property. The component filters the variables in Tag table,



and only variables which match the component property are showed in the **Variable Name** drop down list.

Block number varies according to the corresponding block type. For the detailed information, refer to the following table.

Block Type	Block Number
I	I1-I24
Q	Q1-Q20
M	M1-M64
AI	AI1-AI8
AQ	AQ1-AQ8
AM	AM1-AM64
V	V: 0-850 Bits: 0-7
VB	VB0-VB850
VD	VD0-VD847
VW	VW0-VW849
Cursor Key	C1-C4
Function Key	F1-F4
Shift Register	S1.1-S1.8, S2.1-S2.8, S3.1-S3.8, S4.1-S4.8
VX	VX: 0-2047 Bits: 0-7
VXB	VXB0-VXB2047
VXD	VXD0-VXD2044
VXW	VXW0-VXW2046
VR	VR: 0-511 Bits: 0-7
VRB	VRB0-VRB511
VRD	VRD0-VRD508
VRW	VRW0-VRW510

Open the Tag Table

Open the Tag Table with either of the following ways:

- Right-click the Tag Table icon  and select **Open** button;
- Or double-click the Tag Table icon .

Add a variable in Tag Table

1. Click **Add** to add a new row.
2. Define the alias name for the variable by double-clicking the **Name** column;
3. Select Block type from the drop-down menu, and select corresponding value for each Block type in Block Number.
4. Save the table by click **Apply** or Save (Page 17).

Delete a variable in Tag Table

1. Select the row which contains the variable you want to delete.
2. Click **Delete**.
3. Save the table by click **Apply** or Save (Page 17).

1.5.2.2 IoT Thing Table



IoT Thing Table is used to create, update and delete IoT things registered in Amazon Web Services (AWS). After an IoT thing is created in IoT thing table, this IoT thing can be referenced in tag table or component property.

Open the IoT thing Table

Open the Tag Table with either of the following ways:

- Right-click the IoT Thing Table icon and select **Open** button;
- Double-click the IoT Thing Table icon.

Add an IoT Thing

1. Click **Add** to add a new row.
2. Enter the IoT Thing name and description.

Note

The IoT Thing name must be the same as you resisted in AWS.

3. Save the table by clicking **Apply** or Save (Page 17).

Note

When you set the IoT thing name in the property pane of a component,

- if you set the IoT thing name as a real IoT thing name but you deploy the FWE project to local BM, the IoT thing is identified as local device.
 - if you set the IoT thing name as local device and deploy the FWE project to Cloud, the data for IoT thing will not be transferred to Cloud.
-

Delete an IoT Thing

1. Select the row which the IoT Thing you want to delete is in.
2. Click **Delete**.
3. Save the table by clicking **Apply** or Save (Page 17).

1.5.3 Navigator





Navigator is a floating page of the web site and it is intended to aid users to switch among different web pages or log off during the runtime operation.

When you create a new project (Page 87), a **Navigator** is created in the Project tree.

Open a Navigator

Follow either of the way to open a Navigator in Editor pane:

- Right-click the Navigator icon  and select **Open** button.
- Or double-click the Navigator icon .

Add a link in the Navigator

1. Drag **Navigator Item** component under the Navigation bar.
2. Set the Link values in Navigator Item Property pane:
 - Set the name by modifying the **Text**.
 - Set the link by selecting the page from the drop-down menu of **Link**.

Note

The added navigator item can be a link to a FWE page or SmartRelay System page (Web server).

3. Save (Page 17) the navigator.

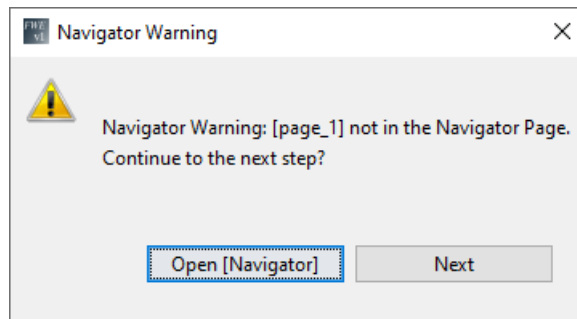
Note

You can add at most 20 navigator item components in the Navigator.

If more than one page is created in the project and no link is configured in the Navigator, when you deploy the project to SD card or AWS, or download the project to BM, a warning message appears to remind you to configure links in the Navigator.

You can click "**Next**" on the dialog to ignore it and continue deploying or downloading the project; Or you can click "**Open [Navigator]**" to configure links in the Navigator page.

Here is an example screenshot of the warning message:



Note

Switch pages through Navigator

Home page is the default displaying page after the project is deployed on BM or Cloud.

If no link is configured in the Navigator, you cannot switch from the Home Page to other pages when visiting the project on web browser.



Properties for Navigator Item


















- **Basic**
 - Name: Navigator Item
 - Location: you can only check the location coordinate from the Location pane.
 - Size: you can only check the width and height information from the Size pane.
- **Styles**
 - Font: select **Font**, **Font Style** and **Size** depending on your need. Click the **OK** button for save the correction or click the **Reset to Default** button to reset to the default setting.
- **Values**
 - Text: Type the Navigator Item name for each page.
 - Link: select Home Page or another page name which you have created in the drop-down menu.

1.6 Components pane

The components can be classified to five segments: Tool, Basic, Digital, Analog and Miscellaneous in the component pane.

You can configure the component based on your requirements.

Tool		Circle (Page 51)
		Polyline (Page 52)

		Rectangle (Page 53)
Basic		Image (Page 54)
		Link (Page 55)
		PDF (Page 56)
		Text (Page 57)
		Navigator Item (Page 48)
Digital		Push Button (Page 59)
		Switch Button (Page 60)
Analog		Analog Bar (Page 62)
		Analog Slider (Page 63)
		Analog Value (Page 64)
		Rainbow (Page 66)
Miscellaneous		BM Clock (Page 68)
		Scale Time (Page 69)
		Trend View (Page 71)
		Webcam (Page 72)
		Login (Page 74)

1.6.1 Tool

Tool is generally used for editing basic graphics.

Tool contains the following selections:

- Circle (Page 51)
- Polyline (Page 52)
- Rectangle (Page 53)

1.6.1.1 Circle




Use the Circle component when you want to draw a circle or an ellipse.

In the Circle Properties, you customize the position and size of the component. You can do the following operations in particular:

- Changing size and position of an object (Page 82)
- Setting the background color (Page 85)
- Setting the border and transparency (Page 86)

Draw circles and ellipses

1. Select the **Circle** component .
2. Draw a circle by dragging the **Circle** component directly where you want it to be in the Editor pane.
3. Do one of the following:
 - To draw an ellipse, drag the circle component into the editor pane, and then drag the blue square on the borderline until the ellipse is the desired size, or specify the value for **Location** and **Size** in the Property pane.
 - To select the circle or ellipse, specify the **Border Width** and **Border Style** in the Property pane. If you want to fill border and background with the color, select color swatches separately.

Properties for Circle


- **Basic**
 - Name: Circle
 - Location: you can modify the location coordinate for the circle.
 - Size: you can modify the width and height information for the circle.
- **Styles**
 - Border Width: adjust the value depending on your need.
 - Border Style: select `dotted`, `dashed`, `solid` or `double` depending on your need.
 - Border Color: click **Border Color** swatches, select a swatch, and click **OK** button.
 - Background Color: click **Background Color** swatches, select a swatch, and click **OK** button.
 - Transparency: value ranges from 1 to 100, adjust the value depending on your need.
 - Fill: click the check box depending on whether to fill the circle with background color.

1.6.1.2 Polyline



Use the **Polyline** component when you want to draw one polyline.

Draw a polyline

1. Select the **Polyline** component .
2. Position the pointer where you want the line to begin in the Editor pane, and click to define the first anchor point.
3. Click again where you want the segment to end.
4. Continue clicking to set anchor points for additional straight segments.
The anchor point you add always appears as a blue solid square.
5. Complete the polyline by doing one of the following:
 - Select a different tool.
 - Press the **ESC button** on your keyboard.
6. Set the properties for the polyline as you need.

Modify the polyline

1. Select the polyline you want to change.
The anchor points of the path appear.
2. Select and drag the anchor point you want to change where you want.

Move the polyline

- Select a line segment (but not the anchor points) and drag it where you want.

Properties for Polyline

- **Basic**
 - Name: Polyline
- **Styles**
 - Weight: enter the width of the polyline.
 - Color: click color swatches, select a color swatch, and click **OK** button.
 - Dashed: select different polyline types *Solid*, *Round Dot*, *Square Dot*, *Dash*, *Dash Dot*, *Long Dash*, *Long Dash Dot* or *Long Dash Dot Dot* depending on your need.
 - Transparency: value ranges from 1 to 100, adjust the value depending on your need.

1.6.1.3 Rectangle




Use the **Rectangle** component when you want to draw a rectangle or a square.

In the Rectangle Properties, you customize the position and size of the component. You can do the following operations in particular:

- Changing size and position of an object (Page 82)
- Setting the background color (Page 85)
- Setting the border and transparency (Page 86)

Draw rectangles and squares

1. Select the **Rectangle** component .
2. Draw a rectangle or a square by dragging the **Rectangle** component directly where you want it to be in the Editor pane.
3. To select the rectangle or square, specify the **Border Width** and **Border Style** in the Property pane.

Properties for Rectangle

- **Basic**
 - Name: Rectangle
 - Location: you can modify the location coordinate for the rectangle.
 - Size: you can modify the width and height information for the rectangle.
- **Styles**
 - Border Width: adjust the value depending on your need.
 - Border Style: select *dotted*, *dashed*, *solid* or *double* depending on your need.
 - Border Color: click **Border Color** swatches, select a swatch, and click **OK** button.
 - Background Color: click **Background Color** swatches, select a swatch, and click **OK** button.
 - Transparency: value ranges from 1 to 100, adjust the value depending on your need.
 - Fill: click the check box depending on whether to fill the rectangle with background color.

1.6.2 Basic

Basic is generally used for adding texts, images and links in your project.

Basic contains the following selections:

- Image (Page 54)
- Link (Page 55)
- PDF (Page 56)
- Text (Page 57)

1.6.2.1 Image




Use the Image component when you want to add an image.

In the Image Properties, you customize the position and size of the component. You can do the following operations in particular:

- Changing size and position of an object (Page 82)
- Setting the background image (Page 85)

Add an Image component

1. Select the **Image** component  .
2. Drag the **Image** component directly where you want the image to be in the Editor pane.

Note

To guarantee better performance when visiting the project through web pages, IDEC recommends you upload images within the size limit:

- GIF < 2 MB
- PNG/JPG/JPEG < 256 KB

If the image size exceeds the limit, then the uploaded image will be compressed.

3. Edit the image in the Property pane by selecting the appropriate pictures for image in **Graph Library**.

Properties for Image

- **Basic**
 - Name: Image
 - Location: you can modify the location coordinate for the image.
 - Size: you can modify the width and height information for the image.
- **Values**
 - Image: select the appropriate pictures from **Graph Library**.

1.6.2.2 Link




Use the Link component when you want to add a Uniform Resource Locator (URL) link.

In the **Link** Properties, you customize the position and size of the component. You can do the following operations in particular:

- Changing size and position of an object (Page 82)
- Setting the background color (Page 85)
- Setting the style of text (Page 85)

Add a Link component

1. Select the **Link** component .
2. Drag the **Link** component directly where you want the line of link to be in the Editor pane.
3. To set the text value of link, click "..." at the end of the row "Text Value" and enter the value as you need.
4. To set the link target, enter the URL in the row "Link Target".

Note

If you enter more text than can fit within link area, the apostrophe (...) appears in the end of the link area. You should adjust the link area by dragging the blue square on the border or modifying the value for **Size** in the Property pane.

Each link is independent.

5. Click the down arrow at the end of the row "Link Response Mode" and select the mode you need.

Properties for Link

- **Basic**
 - Name: Link
 - Location: you can modify the location coordinate for the link.
 - Size: you can modify the width and height information for the link.
- **Styles**
 - Font: select **Font**, **Font Style** and **Size** information separately in the Font pane. Click the **OK** button for save the correction or click the **Reset to Default** button to reset to the default setting.
 - Text Color: click **Text Color** Swatches, select a swatch, and click **OK** button.
 - Background Color: click **Background Color** swatches, select a swatch, and click **OK** button.
 - Fill: click the check box depending on whether to fill the link area with background color.
 - Text Align: align the text on left, center or right.
- **Values**
 - Text Value: Type the content for the link.
 - Link Target: URL of the link target.
- **Animation**
 - Link Response Mode: select the link response mode.

1.6.2.3 PDF



Use the **PDF** component to upload a pdf file in the FWE project. The PDF file should be no more than 15 MB.

In the **PDF** Properties, you can customize the position, size, and style of the object. You can do the following operations in particular:

- Change the size or position (Page 82)
- Setting the style of text (Page 85)
- Setting the background image (Page 85)

Add a PDF component

1. Select the **PDF** component in the component pane.
2. Drag it to the Editor pane and release the mouse button.

3. Set the name for PDF component.
 - Click "..." at the right end of the row **Value** in the PDF properties pane.
 - Change the Text value as you want.
 - Save the change by clicking **OK** or quit the change by clicking **Cancel**.
The text value will change to the default value when you select **Reset to Default**.
4. Upload the PDF file to FWE project.
 - Click "..." at the right of the row **PDF File** in the PDF properties pane.
 - Select a pdf file and click **Open**.

Properties for PDF component

- **Basic**
 - Name: PDF
 - Location: you can modify the location coordinate for the PDF component.
 - Size: you can modify the width and height information for the PDF component.
- **Values**
 - Text Value: Type the content for the PDF component.
 - PDF file: select the pdf file you want to add.
- **Styles**
 - Font: select **Font**, **Font Style** and **Size** information separately in the Font pane. Click the **OK** button for save the correction or click the **Reset to Default** button to reset to the default setting.
 - Text Color: click **Text Color Swatches**, select a swatch, and click **OK** button.
 - Text Align: align the text on left, center or right.
 - Background Image: select the appropriate pictures from Graph Library.

1.6.2.4 Text




Use the Text component when you want to add word description.

In the **Text** Properties, you customize the position and size of the component. You can do the following operations in particular:

- Changing size and position of an object (Page 82)
- Setting the background color (Page 85)
- Setting the style of text (Page 85)

Add a Text component

1. Select the **Text** component  .
2. Drag the **Text** component directly where you want the line of text to be in the Editor pane.
3. Enter the text by double-clicking the text component to edit inline or changing the **Text Value** in the Property pane.
When the text reaches a boundary, it automatically wraps to fit inside the defined area
4. Press **esc** key or click other area to exit edit mode.

Properties for Text

- **Basic**
 - Name: Text
 - Location: you can modify the location coordinate for the text.
 - Size: you can modify the width and height information for the text.
- **Styles**
 - Font: select **Font**, **Font Style** and **Size** information separately in the Font pane. Click the **OK** button for save the correction or click the **Reset to Default** button to reset to the default setting.
 - Text Color: click **Text Color** Swatches, select a swatch, and click **OK** button.
 - Background Color: click **Background Color** swatches, select a swatch, and click **OK** button.
 - Fill: click the check box depending on whether to fill the text area with background color.
 - Text Align: align the text on left, center or right.
- **Values**
 - Text Value: type the content.

1.6.3 Digital

Digital Value is used for presenting the digital value "0" and "1" visually.

Digital Value contains:

- Push Button (Page 59)
- Switch Button (Page 60)

1.6.3.1 Push Button



The **Push Button** component is a special digital value component.

In the **Push Button** Properties, you customize the position, size, and style of the object. You can do the following operations in particular:

- Changing size and position of an object (Page 82)
- Setting the style of text (Page 85)

Add a Push Button component

1. Select the **Push Button** component in the component pane.
2. Drag it to the Editor pane and release the mouse button.
3. To define the **Push Button** runtime behavior, click "..." at the right end of the row **Mouse Mode** in the push button properties pane.
 - **Click**: in web page, the status of push button changes by mouse click. Click mode supports the following block types: Q, M, V.
 - **Hold**: in web page, the status of push button changes by holding mouse press. Hold mode supports the following block types: Q, M, V, Cursor Key and Function Key.

Note

Push Button in Hold mode can only be used in project deployed to local BM

If you defined the **Push Button** runtime behavior as **Hold**, the IoT thing name can only be set as "local device".

If you defined the **Push Button** runtime behavior as **Click**, the IoT thing name can be set as either "local device" or supported IoT thing name bound in IoT thing table.

4. Set the **On Image** or **Off image** for the push button component.
 - Click "..." at the right end of the row **On Image** or **Off Image** in the push button properties pane.
 - Select an image from the Graph Library and click **OK**.
5. Set the name for **Push Button** component.
 - Click "..." at the right end of the row **Off Text** or **On Text** in the push button properties pane.
 - Change the text as you want.
 - Save the change by clicking **OK** or quit the change by clicking **Cancel**.
The text value will change to the default value when you select **Reset to Default**.
6. Set the variable. (Page 83)

Properties for Push Button

- **Basic**
 - Name: Push Button
 - Location: you can modify the location coordinate for the push button.
 - Size: you can modify the width and height information for the push button.
- **Animation**
 - Mouse Mode: select the mouse mode.
 - On Image: select the appropriate pictures for on-state in **Graph Library**.
 - Off Image: select the appropriate pictures for off-state in **Graph Library**.
 - On Text: enter the display content for on-state.
 - Off Text: enter the display content for off-state.
- **Variable**
 - Variable Name: select the **Private Tag** or variables from tag table depending on your need.
 - IoT Thing Name: select **Local Device** or IoT thing names you bounded in tag table
 - Block Type: select the type of variable.
 - Block Number: select the block number.
- **Styles**
 - Font: select **Font**, **Font Style** and **Size** information separately in the Font pane. Click the **OK** button for save the correction or click the **Reset to Default** button to reset to the default setting.
 - Text Color: click **Text Color** Swatches, select a swatch, and click **OK** button.
 - Text Align: align the text on left, center, or right.

1.6.3.2 Switch Button




Use **Switch Button** when you want to present the digital value "0" and "1" visually. "0" is for "off-state", and "1" is for "on-state".

In the **Switch Button** Properties, you customize the position and size of the component. You can do the following operations in particular:

- Changing size and position of an object (Page 82)
- Setting the style of text (Page 85)

Add a Switch Button component

1. Select the **Switch Button** component .
2. Drag the **Switch Button** component directly where you want it to be in the Editor pane.

3. Set the variable (Page 83).
4. Set the On Image or Off image for the switch button component.
 - Click "..." at the right end of the row On Image or Off Image in the push button properties pane.
 - Select an image from the Graph Library and click OK.
5. Select an image from the Graph Library and click OK.
 - Click "..." at the right end of the row **Off Text** or **On Text** in the switch button properties pane.
 - Change the text as you want.
 - Save the change by clicking **OK** or quit the change by clicking **Cancel**.
The text value will change to the default value when you select **Reset to Default**.

Properties for Switch Button

- **Basic**
 - Name: Switch Button
 - Location: you can modify the location coordinate for the Switch Button.
 - Size: you can modify the width and height information for the Switch Button.
- **Variable**
 - Variable Name: select the **Private Tag** or **Global Tag** depending on your need.
 - IoT Thing Name: select **Local Device** or IoT thing names you bounded in tag table
 - Block Type: select the type of variable.
 - Block Number: follow the below table to select each value.
 - Writable: for the writable block types, you can enable the write function by clicking the check box next to **Writable**.
- **Animation**
 - On Image: select the appropriate pictures for on-state in **Graph Library**.
 - Off Image: select the appropriate pictures for off-state in **Graph Library**.
 - On Text: enter the display content for on-state.
 - Off Text: enter the display content for off-state.
- **Styles**
 - Font: select **Font**, **Font Style** and **Size** information separately in the Font pane. Click the **OK** button for save the correction or click the **Reset to Default** button to reset to the default setting.
 - Text Color: click **Text Color** Swatches, select a swatch, and click **OK** button.
 - Text Align: align the text on left, center, or right.

1.6.4 Analog

Analog Value is used for editing analog variable visually.

Analog Value contains the following selections:

- Analog Bar (Page 62)
- Analog Slider (Page 63)
- Analog Value (Page 64)
- Rainbow (Page 66)

1.6.4.1 Analog Bar




Use the **Analog Bar** component when you want to create an analog bar to show the dynamic variable.

In the **Analog Bar** Properties, you customize the position, size, and style of the object. You can adapt the following properties in particular:

- Changing size and position of an object (Page 82)
- Setting the style of text (Page 85)

Add an Analog Bar component

1. Select the **Analog Bar** component  .
2. Drag the **Analog Bar** component directly where you want it to be in the Editor pane.
3. Set the variable (Page 83).
4. Set the range for **Analog Bar** component in the properties pane.
 - Click "..." at the right end of the row **Max. value** and **Min. value**.
 - Change the value as you want.
 - Save the change by clicking **OK** or quit the change by clicking **Cancel**.
The value will change to the default value when you select **Reset to Default**.

Properties for Analog Bar

- **Basic**
 - Name: Analog Bar
 - Location: you can modify the location coordinate for the analog bar.
 - Size: you can modify the width and height information for the analog bar.
- **Variable**
 - Variable Name: select the **Private Tag** or variables from tag table depending on your need.
 - IoT Thing Name: select **Local Device** or IoT thing names you bounded in tag table
 - Block Type: select the type of variable.
 - Block Number: select the block number.
 - Block Format: select Signed or Unsigned for the Block value.
 - Decimal Places: select the number of decimal places for the variable value.
- **Animation**
 - Max. Value: set the maximum value for the analog bar depending on your need.
 - Min. Value: set the minimum value for the analog bar depending on your need.
 - Color: click **Color Setting** swatches, according to different ranges, select a corresponding color swatch, and click **OK** button.
- **Styles**
 - Font: select **Font**, **Font Style** and **Size** information separately in the Font pane. Click the **OK** button for save the correction or click the **Reset to Default** button to reset to the default setting.
 - Text Color: click **Text Color** Swatches, select a swatch, and click **OK** button.
 - Border Color: click **Border Color** swatches, select a swatch, and click **OK** button.

1.6.4.2 Analog Slider




Use the **Analog Slider** component when you want to create an analog slider to show the slider variable.

In the **Analog Slider** Properties, you customize the position, size, and style of the object. You can adapt the following properties in particular:

- Changing size and position of an object (Page 82)

Add an analog slider component

1. Select the **Analog Slider** component .
2. Drag the **Analog Slider** component directly where you want it to be in the Editor pane.

3. Set the variable (Page 83).
4. Set the range for **Analog Slider** component in the properties pane.
 - Click "..." at the right end of the row **Max. value** and **Min. value**.
 - Change the value as you want.
 - Save the change by clicking **OK** or quit the change by clicking **Cancel**.
The value will change to the default value when you select **Reset to Default**.

Properties for Analog Slider

- **Basic**
 - Name: Analog Slider
 - Location: you can modify the location coordinate for the analog slider.
 - Size: you can modify the width and height information for the analog slider.
- **Variable**
 - Variable Name: select the **Private Tag** or variables from tag table depending on your need.
 - IoT Thing Name: select **Local Device** or IoT thing names you bounded in tag table
 - Block Type: select the type of variable.
 - Block Number: select the block number.
 - Block Format: select Signed or Unsigned for the Block value.
 - Decimal Places: select the number of decimal places for the variable value.
 - Writable: for the writable block types, you can enable the write function by clicking the check box next to **Writable**.
- **Animation**
 - Max. Value: set the maximum value for the Analog Slider depending on your need.
 - Min. Value: set the minimum value for the Analog Slider depending on your need.
 - Background Image: select the appropriate picture from **Graph Library**.
 - Thumb Image: select the appropriate picture from **Graph Library**.

1.6.4.3 Analog Value




Use the **Analog Value** component when you want to show the analog value.

In the **Analog Value** Properties, you customize the position, size, and style of the object. You can adapt the following properties in particular:

- Changing size and position of an object (Page 82)
- Setting the style of text (Page 85)

Add an analog value component

1. Select the **Analog Value** component .
2. Drag the **Analog Value** component directly where you want it to be in the Editor pane.
3. Set the variable (Page 83).

Properties for Analog Value

- **Basic**
 - Name: Analog Value
 - Location: you can modify the location coordinate for the analog value.
 - Size: you can modify the width and height information for the analog value.
- **Variable**
 - Variable Name: select the **Private Tag** or variables from tag table depending on your need.
 - IoT Thing Name: select **Local Device** or IoT thing names you bounded in tag table
 - Block Type: select the type of variable.
 - Block Number: select the block number.
 - Block Format: select Signed or Unsigned for the Block value.
 - Decimal Places: select the number of decimal places for the variable value.
 - Writable: for the writable block types, you can enable the write function by clicking the check box next to **Writable**.
 - Unit: set the unit for the variable.
- **Styles**
 - Font: select **Font**, **Font Style** and **Size** information separately in the Font pane. Click **OK** button to save the correction or click **Reset to Default** button to reset to the default setting.
 - Text Color: click **Text Color Swatches**, select a swatch, and click **OK** button.
 - Text Align: align the text on left, center, or right.
 - Background Color: click **Background Color** swatches, select a swatch, and click **OK** button.

1.6.4.4 Rainbow



The **Rainbow** component shows numeric values in the form of an analog gauge. The **Rainbow** is for display only and cannot be controlled by the operator.

In the Rainbow Properties, you customize the position, size, and style of the object. You can adapt the following properties in particular:

- Changing size and position of an object (Page 82)
- Setting the background color (Page 85)
- Setting the style of text (Page 85)

Add a Rainbow component

1. Select the **Rainbow** component in the component pane.
2. Drag it to the Editor pane and release the mouse button.
3. Set the variable (Page 83).
4. Set the range for **Rainbow** component in the properties pane.
 - Click "..." at the right end of the row **Max. value** and **Min. value**.
 - Change the value as you want.
 - Save the change by clicking **OK** or quit the change by clicking **Cancel**.
The range value will change to the default value when you select **Reset to Default**.
5. Set the color for each range.
 - Click "..." at the right end of the row **Color**.
 - In the Color Setting window, customize the range and its color. You can add a range by clicking "+" button.

Note

You can add five ranges for a Rainbow component at most.

- Save the color setting.

Properties for Rainbow

- **Basic**
 - Name: Rainbow
 - Location: you can modify the location coordinate for the Rainbow.
 - Size: you can modify the width and height information for the Rainbow.
- **Variable**
 - Variable Name: select the **Private Tag** or variables from tag table depending on your need.
 - IoT Thing Name: select **Local Device** or IoT thing names you bounded in tag table
 - Block Type: select the type of variable.
 - Block Number: select the block number.
 - Block Format: select Signed or Unsigned for the Block value.
 - Decimal Places: select the number of decimal places for the variable value.
- **Animation**
 - Max. Value: set the maximum value for the analog bar depending on your need.
 - Min. Value: set the minimum value for the analog bar depending on your need.
 - Color: click **Color Setting** swatches, according to different ranges, select a corresponding color swatch, and click **OK** button.
- **Styles**
 - Background color: select the background color.
 - Fill: select the check box if you want to fill the Rainbow area with background color.
 - Font: select **Font**, **Font Style** and **Size** information separately in the Font pane. Click the **OK** button for save the correction or click the **Reset to Default** button to reset to the default setting.

1.6.5 Miscellaneous

Miscellaneous contains:

- BM Clock (Page 68)
- Scale Time (Page 69)
- Trend View (Page 71)
- Webcam (Page 72)
- Login (Page 74)

1.6.5.1 BM Clock




Use the **BM Clock** component to show the date and time information from IDEC SmartRelay Base module.

In the **BM Clock** Properties, you customize the position, size, and style of the object. You can adapt the following properties in particular:

- Changing size and position of an object (Page 82)
- Setting the background color (Page 85)
- Setting the style of text (Page 85)

Add a BM Clock component

You can only read the date and time information from IDEC SmartRelay Base module.

1. Select the **BM Clock** component .
2. Drag the BM Clock component directly where you want it to be in the Editor pane.
3. Set the variable (Page 83).

Properties for BM Clock

- **Basic**
 - Name: BM Clock
 - Location: you can modify the location coordinate for the text.
 - Size: you can modify the width and height information for the text.
- **Styles**
 - Font: select **Font**, **Font Style** and **Size** information separately in the Font pane. Click the **OK** button for save the correction or click the **Reset to Default** button to reset to the default setting.
 - Text Color: click **Text Color** Swatches, select a swatch, and click **OK** button.
 - Background Color: click **Background Color** swatches, select a color, and click **OK** button.
 - Fill: select the check box if you want to fill the text area with background color.
 - Text Align: align the text on left, center, or right.
 - Time format: select the time format.
- **Variable**
 - IoT Thing Name: select **Local Device** or IoT thing names you bounded in tag table

1.6.5.2 Scale Time



Use the **Scale Time** component when you want to display a time value.


In the **Scale time** Properties, you can customize the position and size of the component. You can do the following operations in particular:

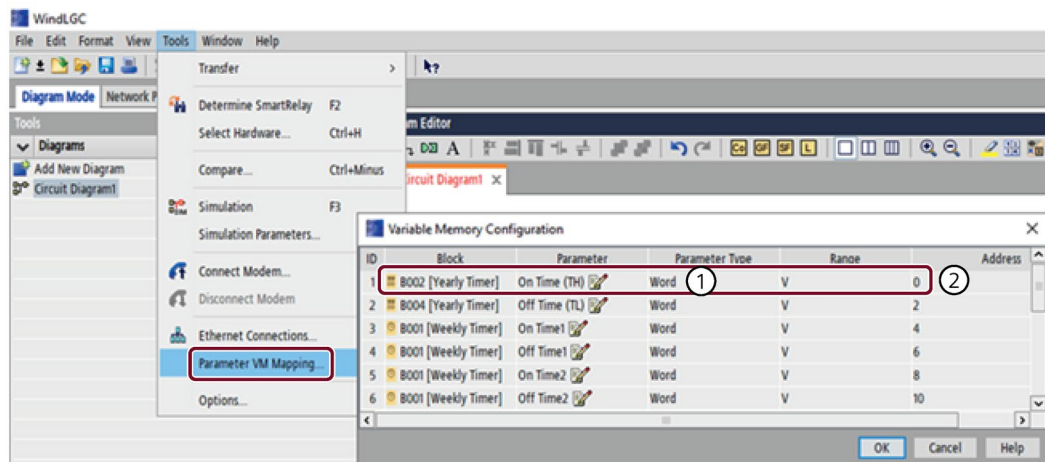
- Changing size and position of an object (Page 82)
- Setting the style of text (Page 85)

Scale time is the process value of a referenced function block which displayed as a time value. Possible time display formats are shown as below:

- hours(h), minutes (HH:mm), seconds (HH:mm:ss), 10 milliseconds (HH:mm:ss:ms), yearly on/off time (MM-dd), weekly on/off time (HH:mm), yearly on/off time (dd/MM)

Add a Scale Time component

1. Select the **Scale Time** component .
2. Drag the **Scale Time** component directly where you want it to be in the Editor pane.
3. Set the variable for Scale time under Properties > Variable:
 - Set the time as hours/minutes/seconds/10 Milliseconds (Page 83)
 - When you set on-time and off-time as yearly/weekly, you must set the block type and block number as you use in the WindLGC circuit diagram.



- a. Check the type ① and address ② of the function block in WindLGC.

b. Set the variables for in FL1F Web Editor as below:

ScaleTime - Properties x	
Basic	
Name	ScaleTime
Location	149,470
Size	100,38
Variable	
Variable Name	Private Tag
IoT Thing Name	Local Device
Block Type	VW
Block Number	0
Time	Hours(h)
Writable	<input type="checkbox"/>
Styles	
Font	Arial 14 Plain
Text Color	■ [0,0,0]
Text Align	Left
Background Color	■ [204,204,204]

Set block type as the value of type ①

Set Block number as the value of address ②

Properties for Scale Time

- **Basic**
 - Name: Scale Time
 - Location: you can modify the location coordinate for the scale time.
 - Size: you can modify the width and height information for the scale time.
- **Variable**
 - Variable Name: select the **Private Tag** or variables from tag table depending on your need.
 - IoT Thing Name: select **Local Device** or IoT thing names you bounded in tag table
 - Block Type: select the type of variable.
 - Block Number: select the block number.
 - Times: Set the unit for the Scale time.
 - Writable: for the writable block types, you can enable the write function by clicking the check box next to **Writable**.
- **Styles**
 - Font: select **Font**, **Font Style** and **Size** information separately in the Font pane. Click the **OK** button for save the correction or click the **Reset to Default** button to reset to the default setting.
 - Text Color: click **Text Color** Swatches, select a swatch, and click **OK** button.
 - Text Align: align the text on left, center, or right.

1.6.5.3 Trend View



Use the **Trend View** component to display tag values from the current process in the form of trends as a function of the time. The scope of the chart is determined by the maximum tag value. One Trend view component can display 10 tags at most.

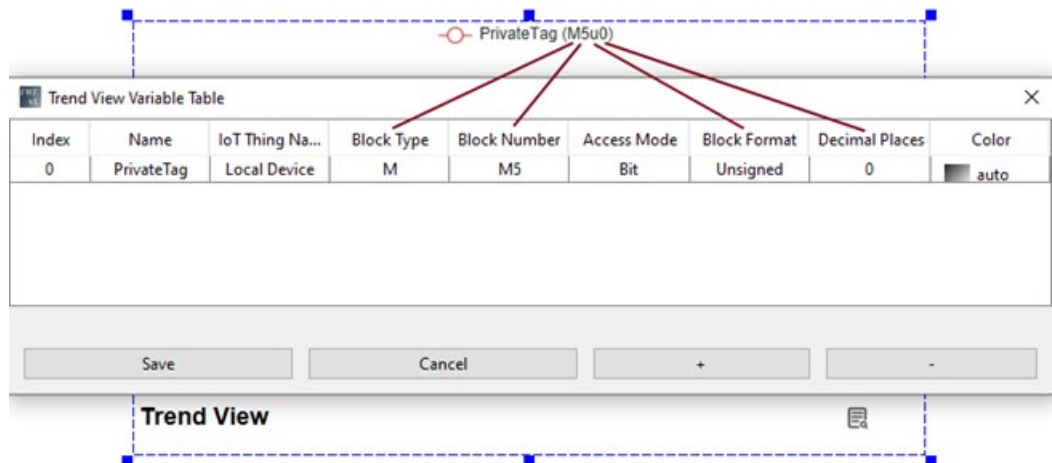
In the **Trend View** Properties, you customize the position, size, title, and title style of the component. You can do the following operations in particular:

- Changing size and position of an object (Page 82)
- Setting the style of text (Page 85)

Add a Trend View component

Set the animation properties of trends under **Properties > Animation**:

1. Select the **Trend View** component in the component pane.
2. Drag it to the Editor pane and release the mouse button.
3. Set the animation properties of trends under **Properties > Variable**:
 - Click "..." at the right end of the row **Trend View** Variables.
 - In the Trend View Variable table, click "+" to add a new variable.
You can delete a variable by clicking "-" while it is selected.
 - Specify the properties of the variable and the color it shows in the trend view.
 - Save the table by clicking **Save**.



4. Set the interval time in the **Interval Time** drop-down list.
5. Set the count of interval time in time axes in the **Time Scale Count** drop-down list.

Properties for Trend View

- **Basic**
 - Name: Trend View
 - Location: you can modify the location coordinate for the Trend View.
 - Size: you can modify the width and height information for the Trend View.
- **Values**
 - Trend View Title: Set the title for the Trend View.
- **Styles**
 - Title Font: select **Font**, **Font Style** and **Size** information separately in the Font pane. Click the **OK** button for save the correction or click the **Reset to Default** button to reset to the default setting.
 - Title Text Color: click **Text Color** Swatches, select a swatch, and click **OK** button.
 - Title Text Alignment: align the text on left, center, or right.
- **Animation**
 - Time Interval (seconds): set the interval time of the Trend View.
 - Time Scale Count: set the time scale count of the Trend View.
- **Variable**
 - Trend View Variable: Add or delete the Trend View variables.

1.6.5.4 Webcam



Use **Webcam** component to add a real-time monitoring screen in web pages. Before adding the Webcam component to FWE project, you need to install your IP web camera and transcode the RTSP address of your camera into HLS. See Example for adding image for IP camera (Page 99) or Example for adding image from USB camera (Page 96) for an example.

FWE web page supports five stream video types through the HTTP protocol. The supported video types vary from browsers. Refer to HTML5 Video (https://en.wikipedia.org/wiki/HTML5_video) for more information on the supported video formats by a given browser.

In the Webcam properties, you customize the position, size, title, and title style of the component. You can set the following properties in particular:

- Change the size and position (Page 82)
- Set the title and tooltip
- Set the animation properties

Note

IDEC recommends you use the latest version of Google Chrome when visiting the deployed FWE projects.

Set the animation properties

You need to provide a stream source for Webcam component under **Properties > Http Live Stream Address**.

1. Click "..." at the right end of the row **Http live stream address**.
2. In the Webcam-Http Live Stream Address window, enter the address.

Note

According to the security policy of browsers, if the IDEC SmartRelay web server is in HTTPS mode, then address you fill in the Webcam-Http Live Stream Address field must be HTTPS address. Otherwise, the browser will reject the connection.

3. Save the change by clicking **OK** or quit the change by clicking **Cancel**.
The text value will change to the default value when you select **Reset to Default**.
4. Click the down arrow at the right of the row **Live Stream Video Type** and select the video type.

Set the title and tooltip

Set the title and tooltip under **Properties > Value**:

1. Click "..." at the right end of the row Title/Tooltip.
2. In the Webcam-Title/Webcam-Tooltip window, set the value as you need.
3. Save the change by clicking **OK** or quit the change by clicking **Cancel**.

The text value will change to the default value when you select **Reset to Default**.

Properties for Webcam

- **Basic**
 - Name: Webcam
 - Location: you can modify the location coordinate for the Webcam.
 - Size: you can modify the width and height information for the Webcam.
- **Styles**
 - Font: select **Font**, **Font Style** and **Size** information separately in the Font pane. Click the **OK** button for save the correction or click the **Reset to Default** button to reset to the default setting.
 - Text Color: click **Text Color** Swatches, select a swatch, and click **OK** button.
 - Text Align: align the text on left, center, or right.
- **Values**
 - Title: Set the title for the Webcam
 - Tooltip: Set the tooltip for the Webcam
- **Animation**
 - Http Live Stream Address: enter the address of http live stream.
 - Live Stream Video Type: select the video types of the live stream.

1.6.5.5 Login



Login component is only available when you are editing the Login page (Page 44). You can add only one Login component in one project.

In the Login Properties, you customize the position, size, title, and title style of the object. You can adapt the following properties in particular:

- Changing size and position of an object (Page 82)
- Setting the style of text (Page 85)
- Setting the background color (Page 85)
- Setting the login animation

Set the Login animation

There are two options for the login panel:

- **To customized site:** when it is selected, you navigate the Home page of your FWE project after logon.
- **Keep me logged on:** when it is selected, you only need to enter the corresponding password for you first logon.

Note

For the projects deployed to AWS,

- **To customized site** is selected by default and cannot be deselected.
 - **Keep me logged on** is invisible.
-

Set the animation properties of Login under **Properties > Animation**:

- Hide or show the option in the **To customized site** and **Keep me logged on** drop-down list by selecting **Invisible** or **Visible**.

1.7 Editor pane

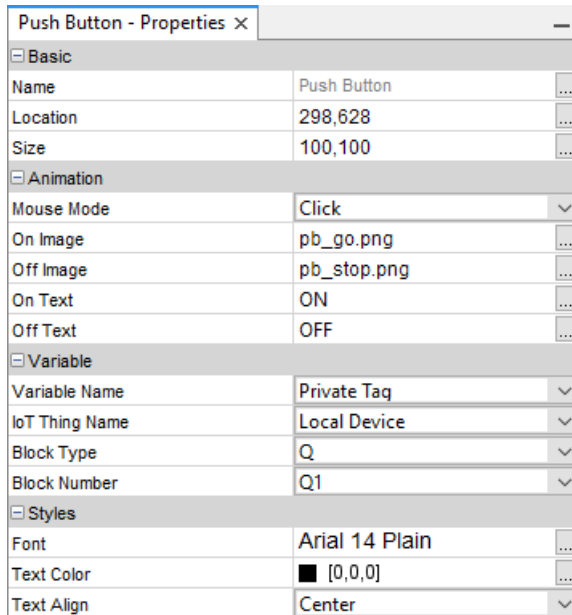
The Editor pane is the working space for the project, and it is shown in the middle of the window. It displays the opened pages, global configuration and navigator for the editing project. You can switch the editor pane for different panes, configuration tables and navigator by clicking the tabs above the editor pane.

With the scroll bars on the right side and the bottom of the editor pane, you can view the complete project.

When you edit components in the Editor pane, you can refer to How to edit component through the shortcut menu (Page 114).

1.8 Properties pane

The "Properties" pane provides information about the properties of a component or navigator as a table. Using the example of a push button, you can see the basic and further properties in the "Properties" pane.



FL1F Web Editor displays properties that you can change in black and those that you cannot change in gray.

There are various input mechanisms for changing properties:

- Direct input in the table cell
- Selection list: if a down arrow shows at the right end of the row.
- Special editors: if '.' shows at the right end of the row.

1.9 Graph Library

Graph Library is the FL1F Web Editor built-in graphics library. You can select graphics for the following four components in Property pane.

- Page: the selection for **Background Image**;
- Image: the selection for **Image**;
- Switch Button: the selections for **On Image** and **Off Image**;
- Analog Slider: the selections for **Background Image** and **Thumb Image**.

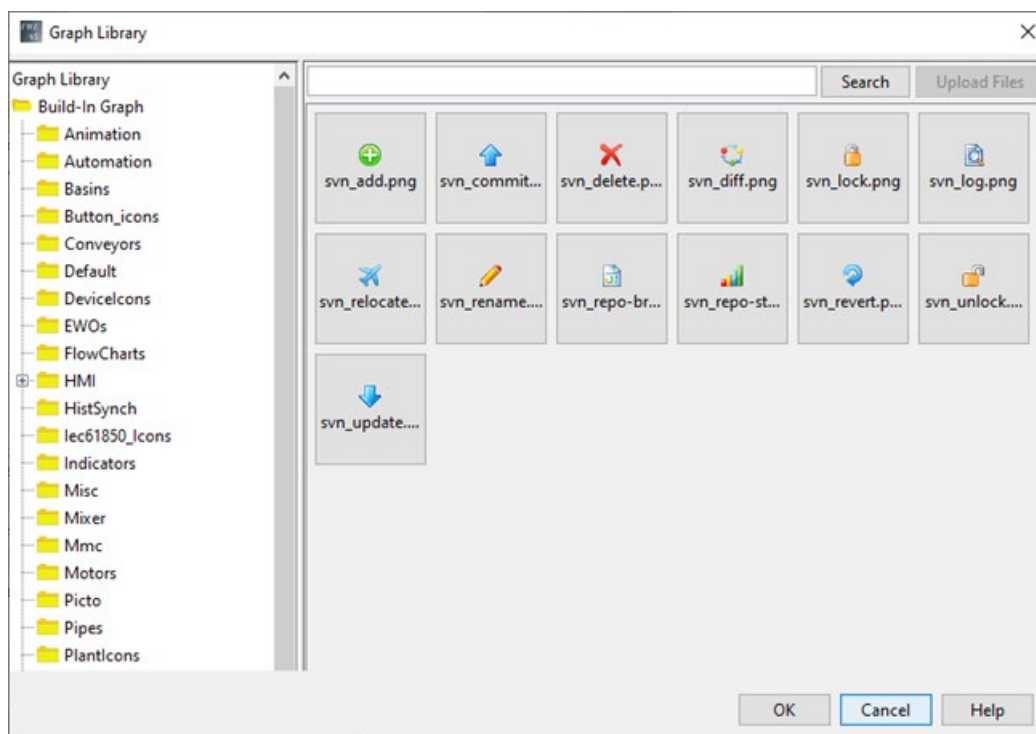
Graph Library contains the following parts:

- Build-In Graph (Page 77)
- Colors (Page 78)

- My Graph (Page 79)
- User Local File System (Page 81)

1.9.1 Build-In Graph

In the Build-In Graph folder, each subfolder contains different kinds of graphics, such as Animation, Automation and Basins. Once you click the subfolder, graphics in this subfolder show on the right side of the dialog box.



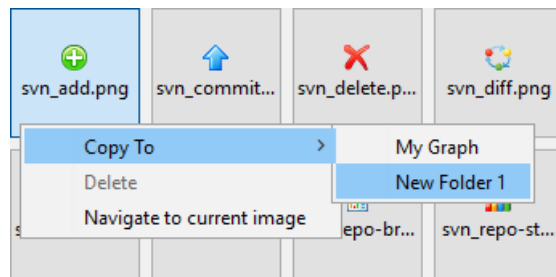
In the Build-In Graph folder, you can do the following:

- To select the appropriate image, click the image and confirm the selection by clicking **OK** button.
- To search for any kinds of image, enter keywords in the entry field and click **Search** button or press the **enter** key, and then the result shows on the right side of the dialog box.

Note

For using the search function,

- the search scope is only available for current selected folder.
 - only list the images whose name contains the keywords.
-
- To copy the selected image to My Graph folder or customized folder, right-click the image and select **Copy To**, then the color image appears in My Graph folder or customized folder.



1.9.2 Colors

There are different kinds of colors in the Color folder.

In the Color folder, you can do the following:

- To select the appropriate color image, click the image and confirm the selection by clicking **OK** button.
- To search for any kinds of the colors, enter keywords in the entry field and click **Search** button or press the **enter** key, and then the result shows on the right side of the dialog box.
- To copy the selected image to My Graph folder or customized folder, right-click the image and select **Copy To**, and then the color image appears in My Graph folder or customized folder.

1.9.3 My Graph

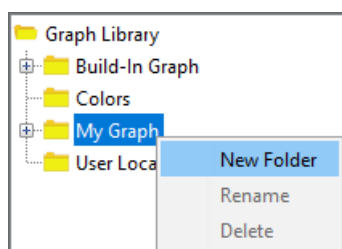
My Graph folder is used for creating customized folder. You can import images from local disk to both My Graph folder and customized folder.

Note

Administrator access is required for all the operations in My Graph.

In My Graph folder, you can do the following:

- To create customized folder, right-click My Graph folder and select **New Folder**, and then a New Folder appears under the My Graph folder.



Note

The maximum number of supported customized folder is 20.

- To rename the customized folder,
 - right-click the customized folder and select **Rename**;
 - then the name of the customized folder change to editable state, enter the new name;
 - save the change by pressing the **enter** key.
- To delete the customized folder, right-click the customized folder and select **Delete**, and then the customized folder is removed from the My Graph folder.

In My Graph folder or customized folder, you can do the following:

- To Import image from local disk,
 - point to My Graph folder or the customized folder;
 - click **Upload Files** button to find the directory of the image in your local disk;
 - click **Open** button to upload the image;
 - then the image appears on the right side of the dialog box.

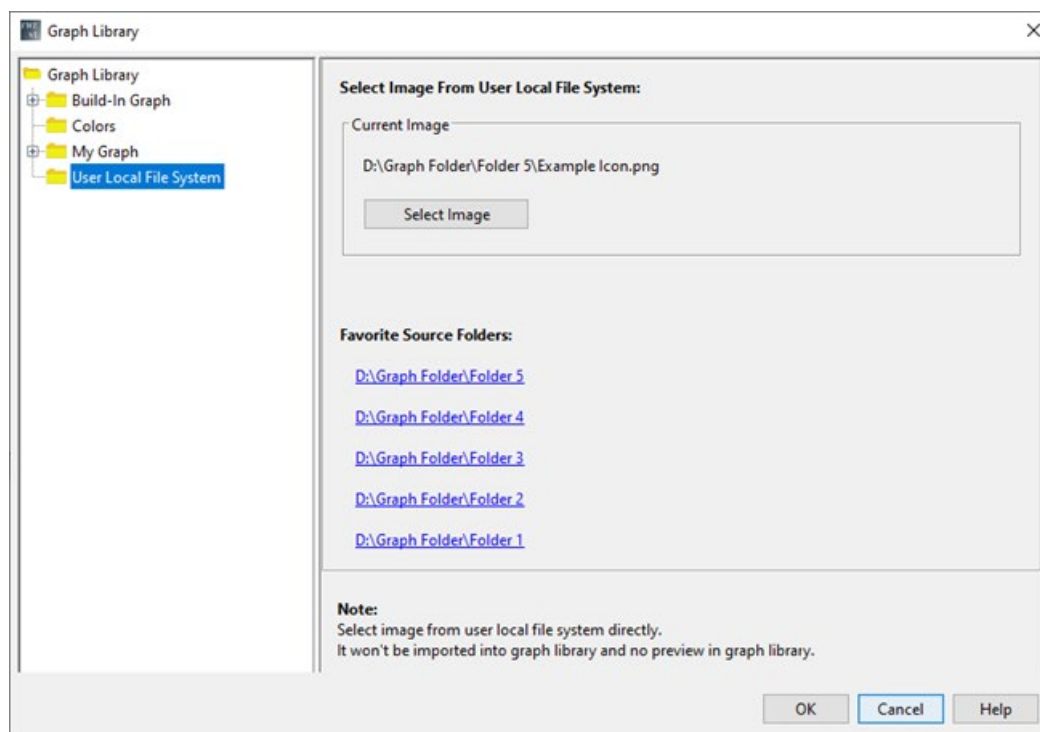
Note

Pay attention to the following issues when you import an image:

- Supported image formats: PNG, JPG/JPEG, GIF.
 - To guarantee better performance when visiting the project through web pages, IDEC recommends that you upload images within the size limit:
 - GIF \leq 256 KB
 - PNG/JPG/JPEG \leq 2 MB
 - If the image size exceeds the limit, the uploaded image will be compressed. FWE ensures the accuracy of the image when compressing it.
 - It takes few minutes to upload high resolution images.
-
- To delete the selected image, right-click the image and select **Delete** in shortcut menu, and then the image is removed from My Graph folder or customized folder.

1.9.4 User Local File System

In User Local File System, you can select and use an image from your local file system. The selected image is not imported into graph library, and there's no preview of the selected image in graph library.



To select an image from your local file system, click **Select Image** and the Graph Library dialog appears for you to choose the image.

If you have already configured image for a component by using the User Local File System, you can see the image's stored path in the User Local File System window when you open the image property. The last five history folder path are shown in the **Favorite Source Folders** pane. Clicking the history folder path directs you to the local folder where the selected image is stored.

Navigate to current image

If you are browsing in the Graph Library and cannot find the image which is currently used for the component, you can right-click any image in the Graph Library and select **Navigate to current image** in the shortcut menu. If the current used image is selected from the User Local File System, clicking "Navigate to current image" directs you to the User Local File System page, where you can see the image's stored path; In other cases, you will be directed to where the image is in the Graph Library, and the image is highlighted for easy recognition.

Tutorial

2.1 Prerequisites for working with the tutorial

To use this tutorial, you must be familiar with PC operation and you must know how to create a project. To download your project, you also need a PC cable, SD card or Ethernet cable for connecting the PC interface to your IDEC SmartRelay device.

2.2 Basics

2.2.1 Changing size and position of an object

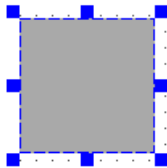
Introduction

When you select a component, it is enclosed by a rectangle with handles. You have the following options for changing the size and position of an object:

- Drag the handles using the mouse.
- Configure properties in the Inspector window.


Change object size

1. Select the object you want to resize. The selection rectangle appears. The following figure shows a selected object:



2. Drag a resizing contact of the rectangle to a new position. The size of the object changes.

Alternatively, click the **size** row in the property pane and enter the "Height" and the "Width" of the object.



3. Click the **Save** button.

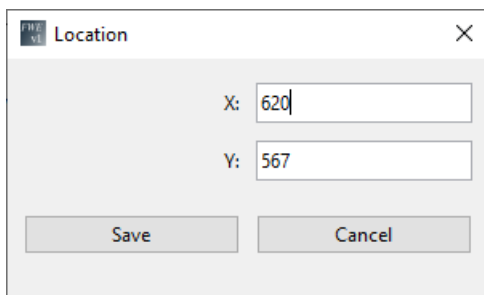
Change object position

1. Select the object whose position you want to change.

The selection rectangle appears.

2. Click on the object and drag it to the desired position.

Alternatively, click the location row in the property pane and enter the coordinates "Position X" and "Position Y" for the position. The zero position is located at the top left-hand corner of the screen.



3. Click the **Save** button.

2.2.2 Setting the variable

For the digital, analog and some miscellaneous component, you need to set the variable. The component filters the variables in Tag table, and only the variables which match the component property are displayed in the Variable Name drop down list.

Set the variables under **Properties > Animation**:

1. Click the down arrow at the right of the Variable Name row.
 - If you select **Private Tag**, the variable you select is local and is only used for the component you selected.
 - If you select variables from tag table, the variable you select is global.
2. Click the down arrow at the right of the IoT Thing Name row.

You can select **Local Device** or IoT thing names you bounded in tag table.

 - If you only added local variables in your project, the project can only be downloaded to local BM.
 - If you also added variables of IoT things, the project can be deployed to AWS Cloud.
3. Select block type, block number, block format, decimal places in the corresponding drop-down list.

Block Type	Block Number	Writable
I	I1-I24	Read Only
Q	Q1-Q20	Read and Write
M	M1-M64	Read and Write
AI	AI1-AI8	Read Only
AQ	AQ1-AQ8	Read and Write
AM	AM1-AM64	Read and Write
V	VB: 0-850	Read and Write
	Bits: 0-7	Read and Write
VB	0-850	Read and Write
VW	0-849	Read and Write
VD	0-847	Read and Write
Cursor Key	C1-C4	Read Only
Function Key	F1-F4	Read Only
Shift Register	S1.1-S1.8, S2.1-S2.8, S3.1-S3.8, S4.1-S4.8,	Read Only
VX	VX: 0-2047	Read and Write
	Bits: 0-7	Read and Write
VXB	0-2047	Read and Write
VXD	0-2044	Read and Write
VXW	0-2046	Read and Write
VR	VR: 0-511	Read and Write
	Bits: 0-7	Read and Write
VRB	0-511	Read and Write
VRD	0-508	Read and Write
VRW	0-510	Read and Write

4. For the writable block types, you can enable the write function by clicking the check box next to **Writable**.

2.2.3 Setting the background color

FL1F Web Editor lets you set the background color for some component.

Requirement

The object is created and selected.

Set the background color of an object

1. Click "." at the right end of the row background color of the properties pane.
The color will change to the default value when you select Reset to Default.
2. Select a color for the background of the object.
3. Select the check box in the **Fill** row.

2.2.4 Setting the background image

FL1F Web Editor lets you set the background image for some component.

Requirement

The object is created and selected.

Set the background image

- Click "." at the right end of the row background image in the properties pane.
- Select an image from the Graph Library and click **OK**.

2.2.5 Setting the style of text

Introduction

FL1F Web Editor lets you design the text of some component.

- Font
- Text color
- Text Alignment

Requirement

The object is created and selected.

Set the Text style

1. Click "..." at the right end of the row "Font" in the properties pane.
2. Select a font for the selected text.
The font will change to the default value when you select Reset to Default.
3. Click "..." at the right end of the "Text Color" of the properties pane.
4. Select a color for the text.
The color will change to the default value when you select Reset to Default.
5. Click the down arrow at the right end of the text align of the properties pane.
6. Select the text alignment as you need.

2.2.6 Setting the border and transparency

FL1F Web Editor lets you design the border and transparency of some component.

Requirement

The object is created and selected.

Set the border width and style

1. To set the border width, enter the width value in the row "Border Width" in the properties pane. The unit is pixel.
2. Click the down arrow at the right end of the row "Border style" in the properties pane.
3. Select the border style as you need.
4. Click "..." at the right end of the "Border Color" of the properties pane.
5. Select a color for the border.
The color will change to the default value when you select Reset to Default.

Set the transparency

To set the transparency, enter the value between 0 (non-transparent) to 100 (completely transparent) in the row "transparency" in the properties pane.

2.3 Getting started with project creation

2.3.1 Creating a new Project

After you have installed FL1F Web Editor tool, you can start to create a new project.

To create a new project, click the **File** → **New Project** or click the **New Project** button in the standard toolbar.

 → File -> New Project (Page 15)

Then a new project contains **Pages**, **Global Tags** and **Navigator** appears in the Project tree (Page 43) automatically.

You can work with IDEC SmartRelay BM to upload (Page 31) or download (Page 29) the project, customize the web pages in the Editor pane (Page 75), combine the different components from the Component pane (Page 49), modify the component properties from Properties pane (Page 76), and visit the whole project through Web Server of the IDEC SmartRelay Base Module.

Note

When you create another new project, after you click the **Finish** button to save the setting for **Name and Location**, the current project will be closed. If you haven't saved the current project, FL1F Web Editor prompts you to save it.

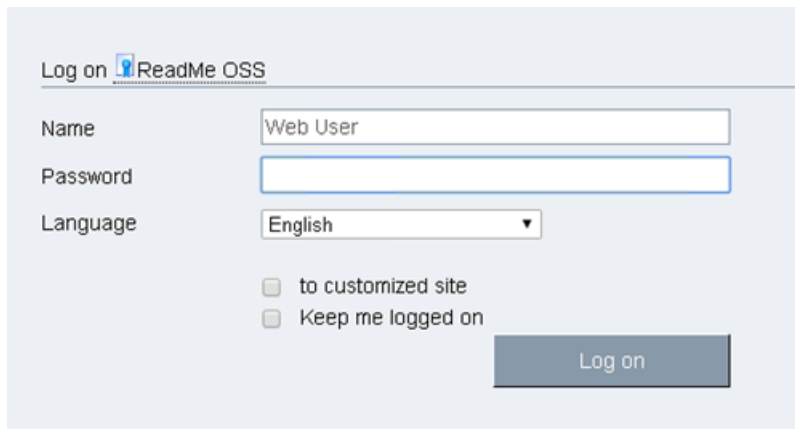
2.3.2 Visiting the project through web page

After you deploy the whole project, you can visit it through the web page.

1. Open the web browser and enter the valid IP address of IDEC SmartRelay Base Module. Then the Log on page appears.

Note

If you selected "Allow HTTPS access only" for Web server access in WindLGC, you need to install the SmartRelay Root Certificate in your operation system or browsers for visiting the FWE project on IDEC SmartRelay BM. On how to install the certificate, refer to IDEC SmartRelay manual.



2. Enter the **Password** for IDEC SmartRelay Base Module.

Note

The password for logging in BM Web server: Web user or Web guest user password.

The password for logging in Web app on AWS: the password you set when you deploy the project on AWS (Page 18).

3. Make sure that to select the check box before "**to customized site**" and click **Log on** button. Then you can view the project in your web browser.

Note

If you download the modified project to IDEC SmartRelay BM, you'd better log in to the corresponding web page again to ensure the correction works.

2.4 Practical example

2.4.1 Introduction for practical example

This practical sample is applicable to swimming pool level control and light control systems, and offer new users a step-by-step introduction. You learn here how to create a whole project and the project contains creation procedures for Pages (Page 89), Global Tags (Page 91) and Navigator (Page 92).

For the detailed configuration information of special components, refer to Example for configuring special components (Page 93) chapter.

2.4.2 Example for Pages

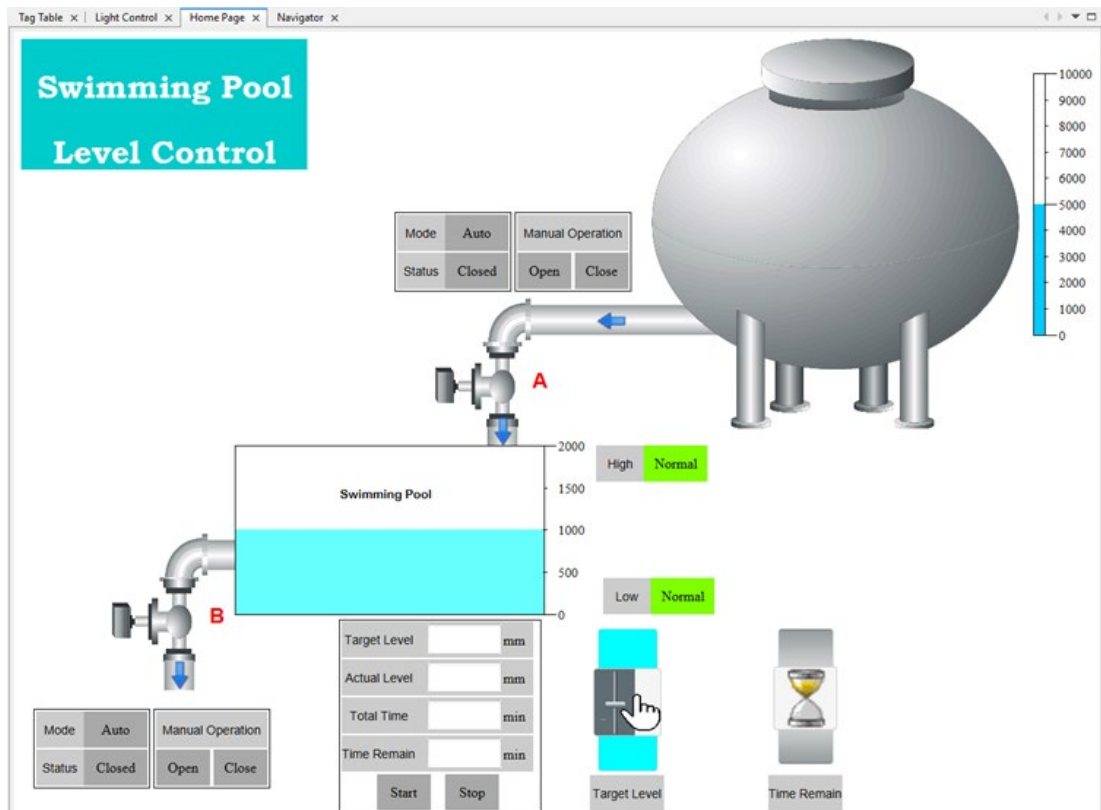
In this swimming pool project, there are two pages:

- Home page is the swimming pool level control system and the page name cannot be changed;
- Light control page is the swimming pool light control system and the page name can be renamed.

Home Page for Swimming Pool Level Control

The swimming pool level control system contains four parts:

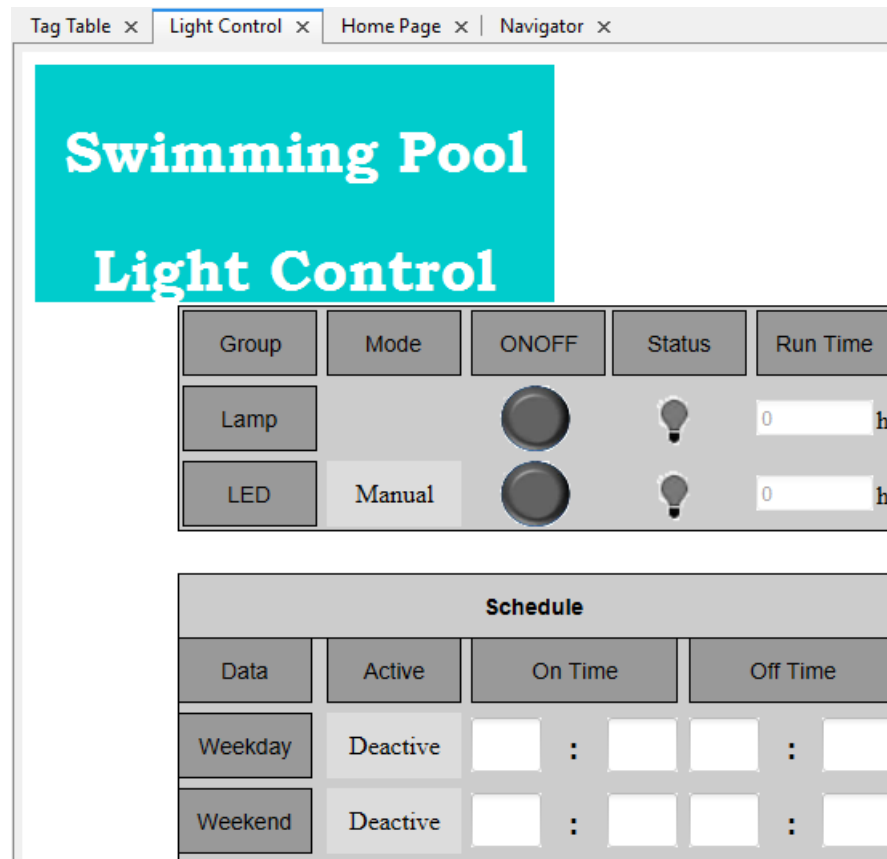
- Tank
 - It is used for water storage.
 - The block contains Image and Analog Bar components.
- Water valve A
 - It is used for connecting tank and swimming pool to control the swimming pool level.
 - It has two modes: Auto and Manual operation. And both of the two modes have two corresponding status: Open or Close.
 - The block contains Text, Rectangle and Switch Button components.
- Swimming pool
 - It is used for swimming and it use the water-level sensor to monitor the actual water level.
 - The block contains Rectangle and Analog Bar components.
- Water valve B
 - It is used for connecting swimming pool and other pipelines.
 - It has two modes: Auto and Manual operation. And both of the two modes have two corresponding status: Open or Close.
 - The block contains Text, Rectangle and Switch Button components.



Page for Swimming Pool Light Control

The swimming pool light control system contains two parts:

- The lamp and LED control
 - It is used for controlling the lights and recording the running time.
 - The block contains Text, Rectangle, Scale Time and Switch Button components.
- Schedule for weekday and weekend
 - It is used for controlling the lighting time.
 - The block contains Text, Rectangle, Scale Time and Analog Value components.



2.4.3 Example for Tag Table

In this swimming pool level control and light control system, you can define both digital value and analog value in the Tag Table. Here is an example for eight kinds of variables:

- The Inlet for Water valve A under the manual mode
- The Outlet for Water valve A under the manual mode
- Level Control for Swimming pool
- Level control for Tank
- Light control for Lamp
- Light control for LED
- Schedule control for Weekday
- Schedule control for Weekend

The variable in Tag table can customize the alias name and it can be bound with some components. Below is just an example screenshot.

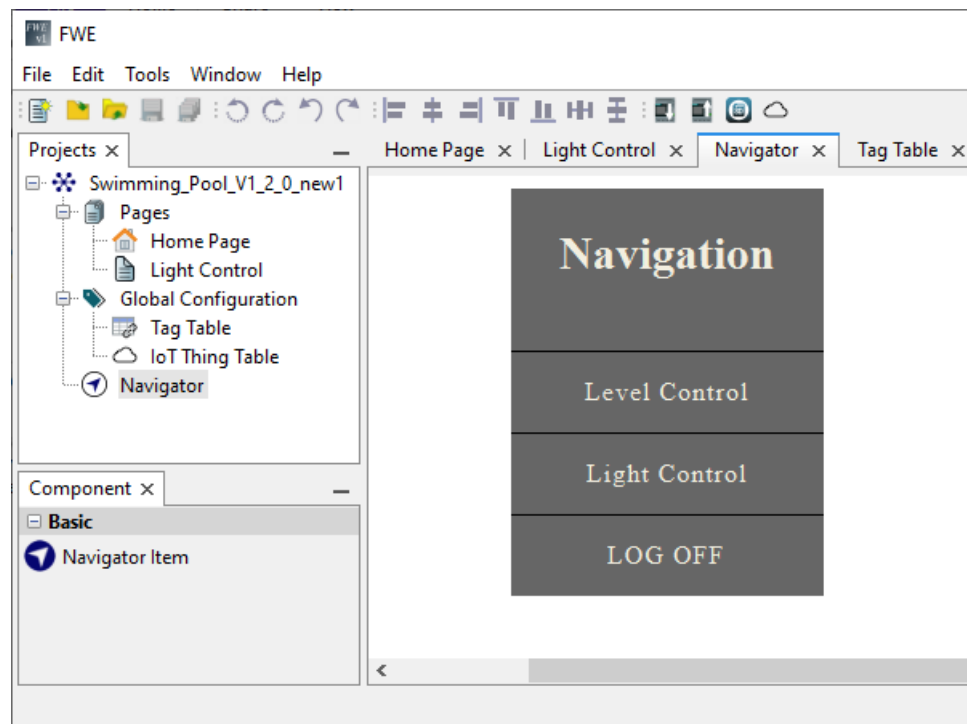
Index	Name	IoT Thing Name	Block Type	Block Number	Access Mode
0	InletVlv_Manual		M	M1	Bit
1	InletVlv_Manual_Opn		M	M16	Bit
2	InletVlv_Manual_Cls		M	M17	Bit
3	InletVlv_Status		Q	Q1	Bit
4	OutletVlv_Manual		M	M2	Bit
5	OutletVlv_Manual_Opn		M	M3	Bit
6	OutletVlv_Manual_Cls		M	M4	Bit
7	OutletVlv_Status		Q	Q2	Bit
8	Pool_Level_Target		VW	0	Word
9	Pool_Level_Current		AM	AM1	Word
10	Pool_Level_High		Q	Q3	Bit
11	Pool_Level_Low		Q	Q4	Bit
12	Pool_Level_Time_Plan		VW	2	Word

2.4.4 Example for Navigator

In this swimming pool level control and light control system, the Navigation bar contains three options: link to Home Page (renamed to Level Control), link to Light Control page and link for **LOG OFF** button.

After editing the Navigator (Page 48), the navigation bar allows you to switch between different web pages or log off the project.

Below is just an example screenshot.



2.4.5 Example for configuring special components

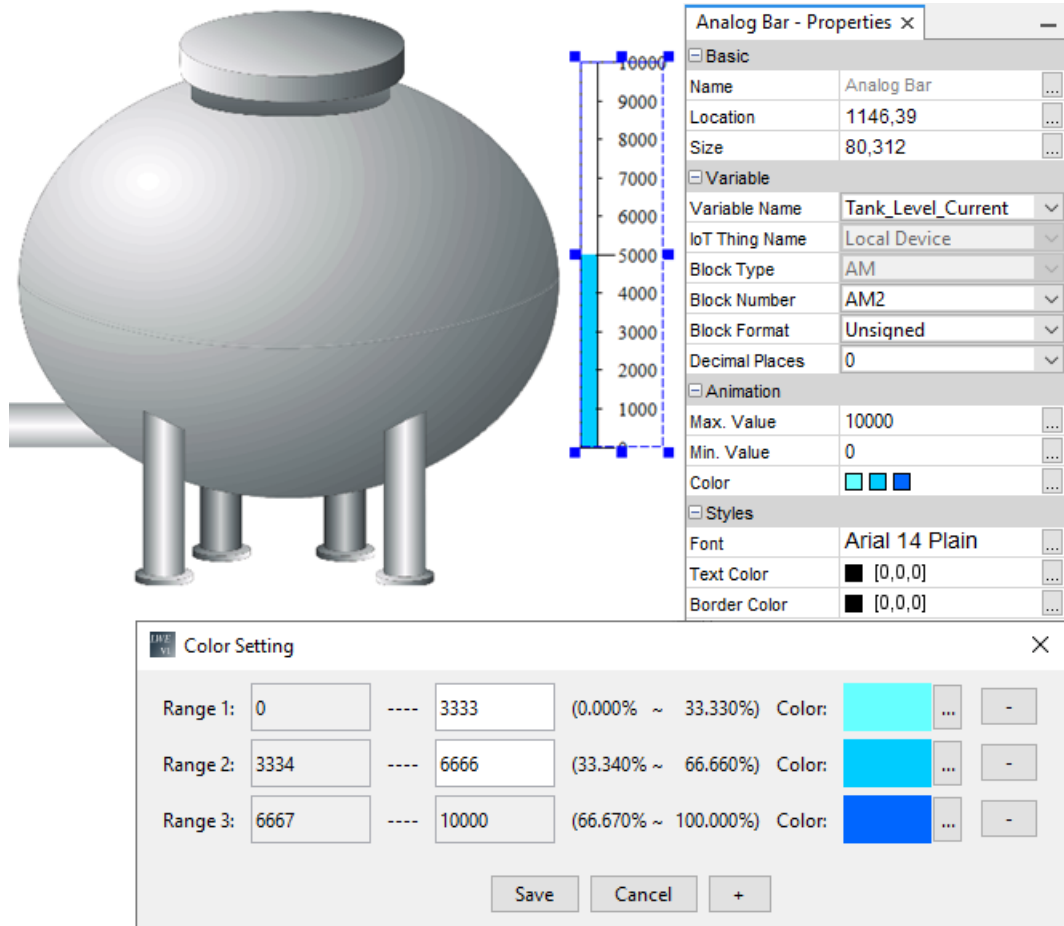
There are more than eleven components in the Component pane. In this swimming pool level control and light control system, each block combines with several components.

For detailed configuration for each component, refer to the section Components pane (Page 49).

Configuration for Analog Bar

In this example, the tank is used for water storage. When the swimming pool water level under the target waterline, the system will give an alarm to the user. The user needs to open the Water valve A manually to inject water from the tank. For the tank block, it contains **Image** and **Analog Bar** components.

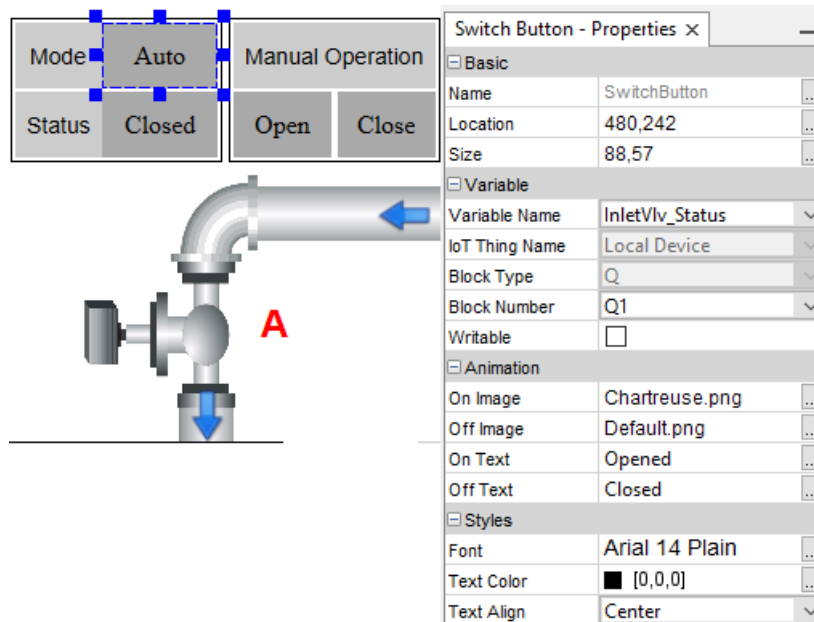
Below is just an example screenshot for configuring **Analog Bar**.



Configuration for Switch Button

In this example, Water valve A is used for connecting tank and swimming pool to control the swimming pool level. When the swimming pool water level under the target waterline, the system will give an alarm to the user. The user needs to open the Water valve A to inject water from the tank manually. For the Water valve A block, it contains **Text**, **Rectangle** and **Switch Button** components.

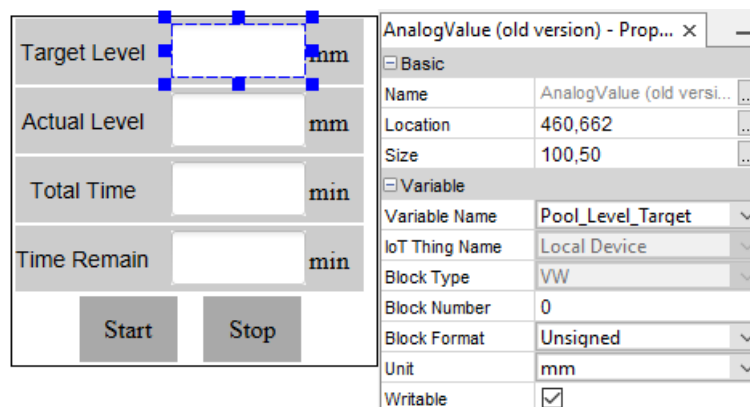
Below is just an example screenshot for configuring **Switch Button**.



Configuration for Analog Value

In this example, swimming pool use the water-level sensor to monitor the actual water level. When the swimming pool water level under the target waterline, the system will give an alarm to the user. This water lever monitor panel also can show the total time and time remain for injecting water. For this panel, it contains **Text**, **Rectangle** and **Analog Value** components.

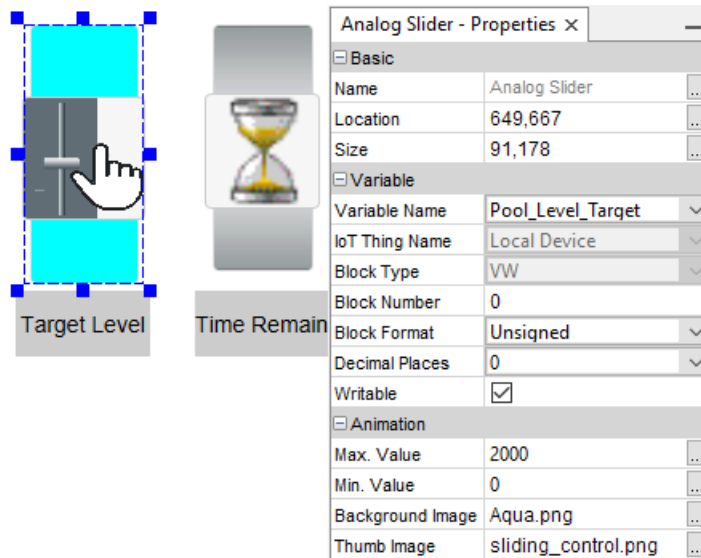
Below is just an example screenshot for configuring **Analog Value**.



Configuration for Analog Slider

In this example, these two sliders are representing target waterline and time remain for injecting water. For these sliders, they contain **Text**, **Rectangle** and **Analog Slider** components.

Below is just an example screenshot for configuring **Analog Slider**.



2.4.6 Example for adding image from USB camera

This chapter takes Cam2web as an example to show how Webcam component works.

Prerequisite

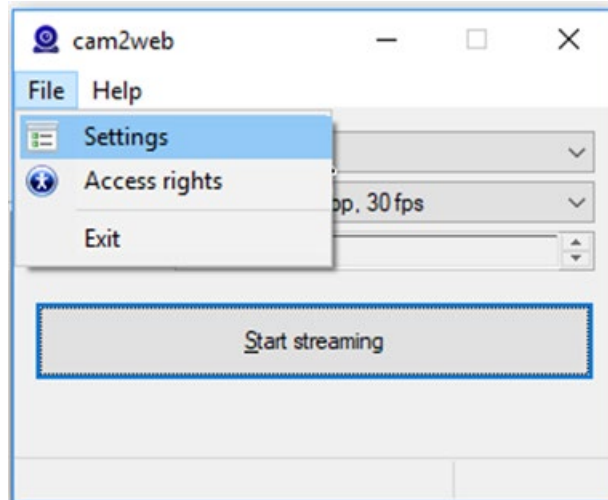
- Connect and start your IP web camera.
- Download Cam2web (<http://www.cvsandbox.com/projects/cam2web/>) and install it on your PC.

Note

Follow the license terms when using Cam2web.

Get the image address

1. Open **cam2web.exe**.
2. Set the port under **File -> Setting**.

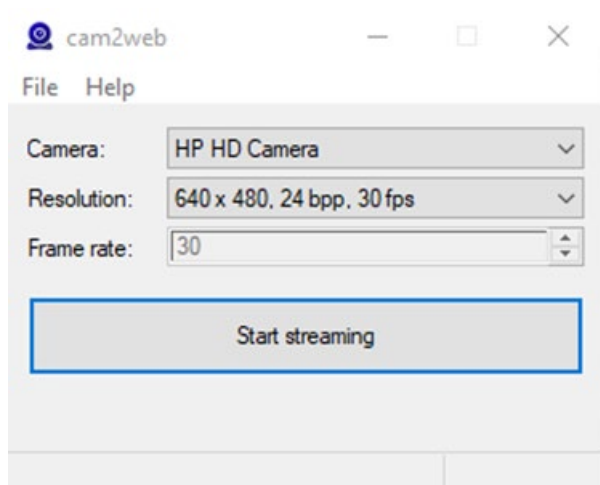


Note

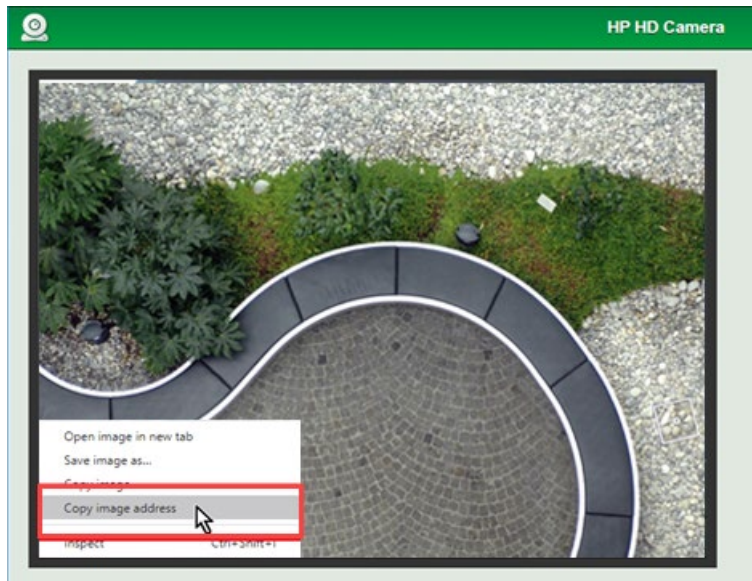
The port you entered must not be occupied by other application.

3. Select the USB camera from the Camera drop-down list and click the **Start streaming** button.

In this example, "HP HD Camera" is the camera USB camera connected to the laptop.

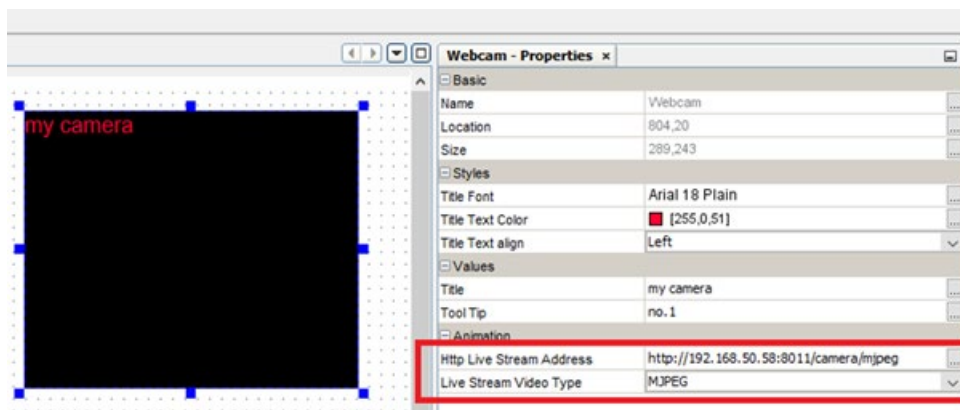


4. Click **Streaming on port ...** to view the live page.
5. Right-click the image and select **Copy image address**.



Set the Webcam Animation and view the video in FWE project

1. Create a **Webcam** component in your FWE project.
2. Click "... " at the right end of the row **Http live stream address**.
3. In the Webcam-Http Live Stream Address window, paste the image address.
4. Click the down arrow at the right end of the row **Live Stream Video Type** and select **MJPEG**.



2.4.7 Example for adding image for IP camera

This chapter takes IP webcam and VLC media player as an example to show how Webcam component works.

Prerequisite

- Install your IP web camera.
- Log in to the page of the IP camera and make sure it can work.
- Get the RTSP address of the camera from the camera information page or instruction manual.

Example: `rtsp://admin:camera.1234@192.168.0.103/MPEG-4/ch1/main/av_stream`

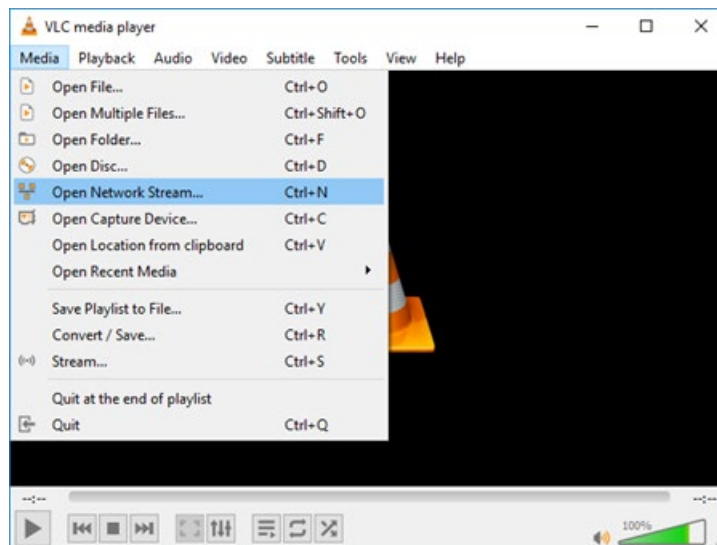
- Download VLC media player (<https://www.videolan.org/>) and install it.

Note

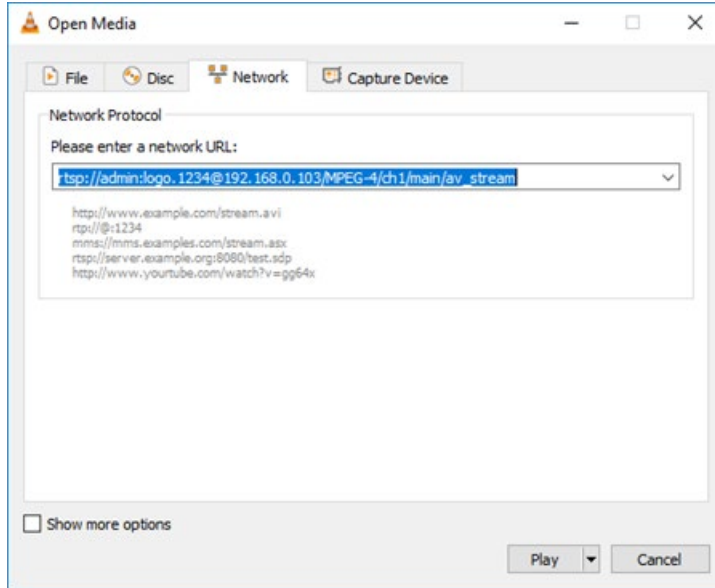
Follow the license terms when using VLC media player.

Transcode RTSP into HLS by VLC media player

1. Go to the Open Media window from **Media** -> **Open Network Stream....**



2. Enter the RTSP address in the marked input field and Click Play.

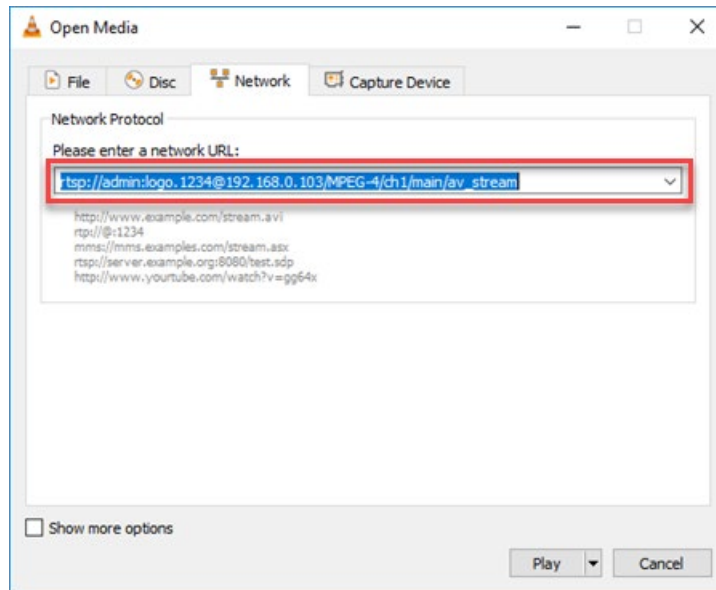


You should see the monitoring video shows in VLC.

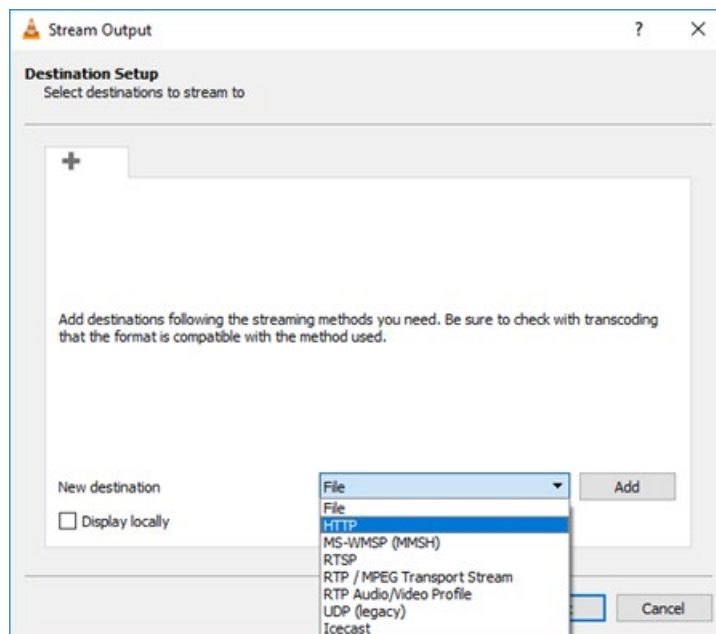


3. Restart the VLC.

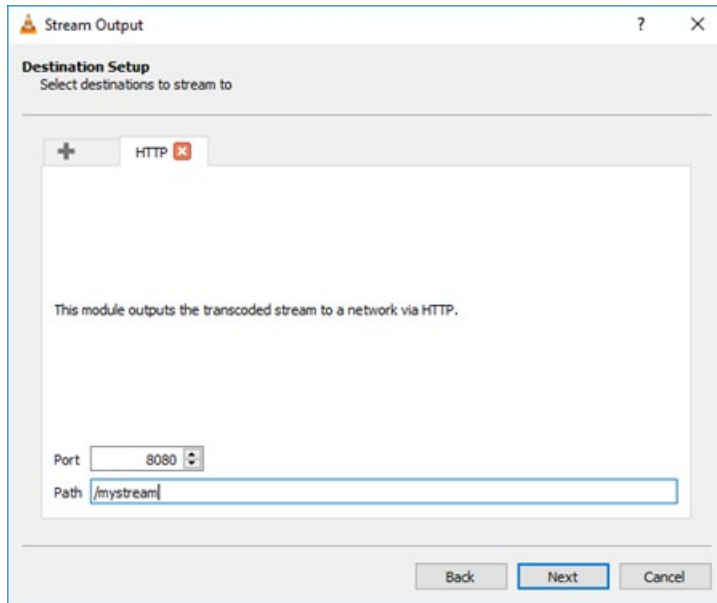
4. Go to the Open Media window and enter the RTSP address in the marked input field.



5. Click the down arrow next to **Play**, select **Stream**, and click **Stream**.
6. Click **Next**.
7. Click the down arrow next to **File**, select **HTTP**, and click **Add**.



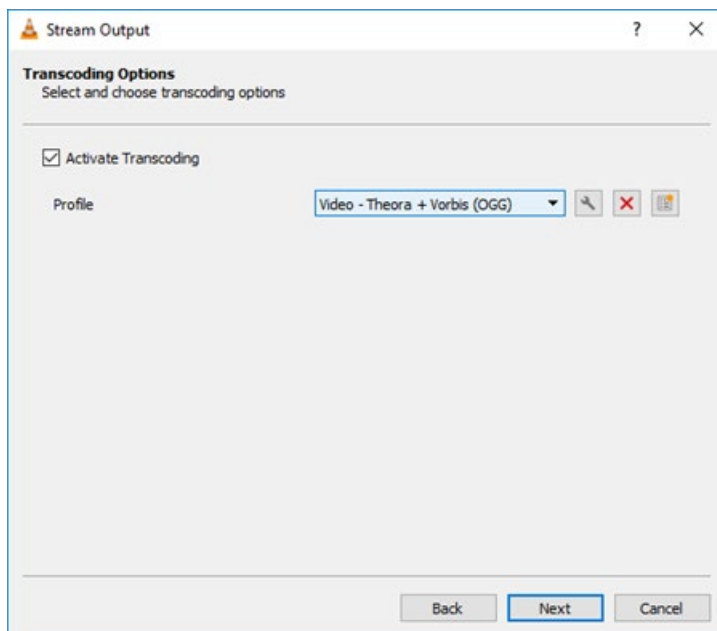
8. Enter the port and path. Click **Next**.



Note

The port you entered must not be occupied by other application.

9. Check the check box next to Activate Transcoding. Select the Output video type as "Video-Theora + Vorbis (OGG)" and Click **Next**.



10. Click Stream.

Your HTTP Live Stream service works after the transcoding.

Note

Don't close the VLC until the transcoding is finished.

The address is: `http://192.168.0.102:8080/mystream`
192.168.0.102 is the IP address of your computer.

Note

When the Ethernet connection is break off, you may need to configure the VLC player again after reestablishing the Ethernet connection.

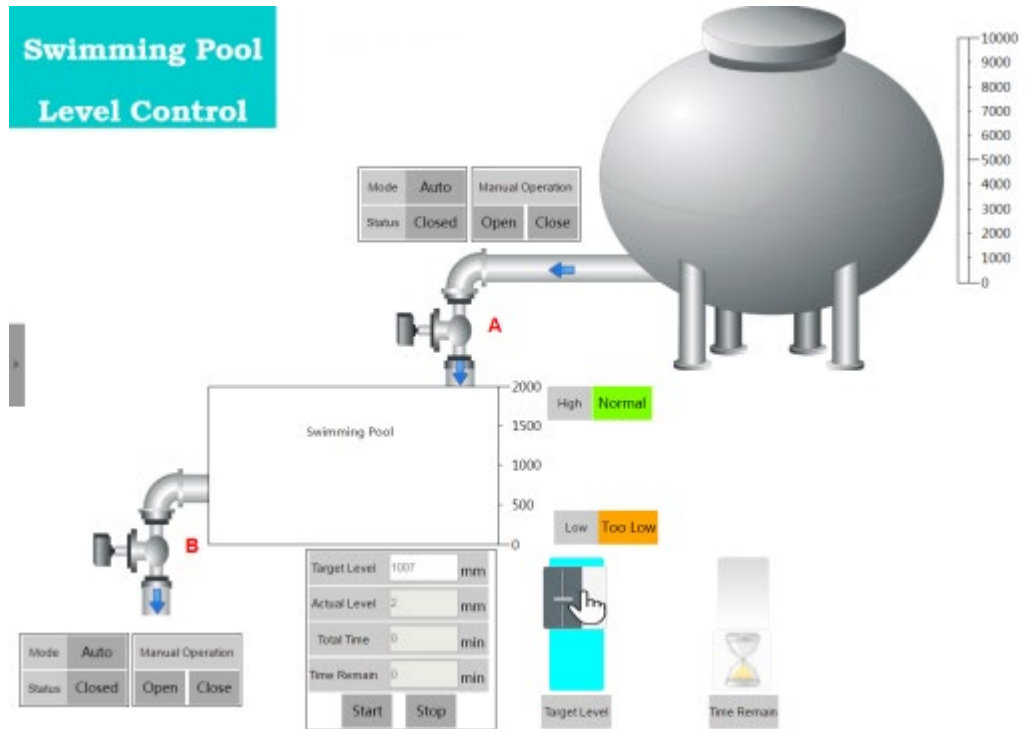
Set the Webcam Animation and view the video in FWE project

1. Create a **Webcam** component in your FWE project.
2. Click "..." at the right of the row **Http live stream address**.
3. In the Webcam-Http Live Stream Address window, enter `http://192.168.0.102:8080/mystream`.
4. Click the down arrow at the right of the row **Live Stream Video Type** and select **OGG**.

2.4.8 Visiting the example project through web page

After you finish creating the whole project, you can visit this example project through the web page.

Follow the chapter Visiting the project through web page (Page 88) to open the project. The following is just an example screenshot for visiting the example project through web page.



For more information, refer to ...Tools\FL1F Web Editor \Sample folder in the DVD ROM.

HTML development interface

Professional clients can modify the project created by FWE to meet their specific requirements on webpage.

After you bind the HTML element to a BM data, you can monitor the BM data through webpage.

Working principle

In **DBinit()**, IDEC SmartRelay JavaScript scans all HTML elements and transfer data with those having **server_binding** class.

In the **server_binding** element, we use **range, address, type, length** to define and bind a data from BM.

Through **show_function** and **show_param**, you can implement a callback method to meet their requirements based on the data refresh.

Follow the below rules when you update the project by the interface. Otherwise, it cannot work with BM correctly.

- Except for htm files, do not delete, move or modify other files.
- You can add, modify or delete the htm files in FL1F Web Editor project folder:
 - Do not delete main. htm.
 - You can only modify the part of a htm file between `<div id="main">` and `</div>`.
 - Keep the name of a htm file within 11 characters (a maximum of 8 characters for base file name and 3 characters for the extension)
- Save the modified projects to webroot of SD card.

3.1 IDEC SmartRelay data access protocol

For the use of this interface, your pages should include all the following JavaScript:

```
<script type="text/javascript" src="/js/utility.js">
</script>
<script type="text/javascript" src="/js/storage.js">
</script>
<script type="text/javascript" src="/js/bigint.js">
</script>
<script type="text/javascript" src="/js/encrypt.js">
</script> <script type="text/javascript" src="/js/ajax.js">
```

3.1 IDEC SmartRelay data access protocol

```
</script>
<script type="text/javascript" src="/js/binding.js">
</script>
```

Note

You should call the function **DBInit()** in the page initializing routine, which initializes the data binding environments. Otherwise, the refresh framework cannot work.

3.1.1 Operation

Define a server_binding element

Define a **server_binding** class as below.

```
<div comp_type="myDigitalComponent" class="server_binding"
id="mydiv" show_param="mydiv" show_function="myCallback"
range="132" address="0" type="1" length="1"
text
</div>
```

- **id**: the unique identifier of an element
- **class=server_binding**: scan identifier for JavaScript framework
- **range**: the first part of the address
- **address**: as the third part of the actual address, **address** means the data offset from the **range** start.
- **type**: data type
- **length**: data counts with its type.
- **show_function**: define the function that is used to show the data. This function is a "callback" function. Framework call the callback function when the binding data is refreshed.
- **show_param**: parameter for the callback function.

For more information on the parameters, see Data format (Page 109).

Note

Ensure all the parameters are included when you define the **server_binding** element. Otherwise, the data cannot be bound.

3.1.1.1 Command

This chapter introduces some commands related to IDEC SmartRelay data access protocol.

Get

To get the data in your webpage, you need to do the following two steps. IDEC SmartRelay's JavaScript framework call the callback function When BM data updates.

1. Create a **server_binding** element according to the instruction in Operation (Page 106) .
2. Implement the declared callback function.

See an example as below:

```
var myCallback = function myCallback() {
    //get new value
    var newValue = parseInt(this.m_sValue, 16);
    //do your actions...
    $("#xxx").html(newValue);
};
```

When the callback_function is called, the JavaScript framework receives a parameter DBRequest. By this parameter, you can get the **server_binding** emelent related information and the updated data as follow.

Property	Parameter
DBRequest.m_nAddress	address
DBRequest.m_nLength	length
DBRequest.m_nRange	range
DBRequest.m_nType	type
DBRequest.m_oSrcElement	server_binding element
DBRequest.m_sShowParam	show_param
DBRequest.m_sValue	value

Set

You need to write your own JavaScript code to implement a set query for a **server_binding** element,

1. Create a DBRequest object for the **server_binding** element.
2. Assign a value to **DBRequest** by SetValue method.
3. Release a set query by **SetQuery** method.
4. Check the **m_iSetPendingFlag** member to make sure the **SetQuery** is complete. The ture value means **SetQuery** is pending while the false value means **SetQuery** is completed.

You can refer to the example below.

```
function DBRequestTest () {
    var oRequest = new
DBRequest(document.getElementById("test1"));
    oRequest.SetValue("00012345");
    if(oRequest.SetQuery())
    {
        while(oRequest.m_iSetPendingFlag)
```

```
    {
        //wait for a while or give customer some hint.
    }
    //done:
    return true;
}
//fail:
return false;
}
```

You can also set value for a set of **sever_binding** elements group. **DBGGroup** object is used for collecting the **DBRequest** objects in this scenario:

1. Prepare a set of DBRequest objects by the upper description.
2. Create a DBGGroup object. Collect the DBRequest objects by Add method.
3. Release the set query by the SetQuery method of DBGGroup.
4. Check the **m_iSetPendingFlag** member to make sure the **SetQuery** is complete. The true value means **SetQuery** is pending while the false value means SetQuery is completed.

You can refer to the example below.

```
function DBGGroupTest () {
    var oRequest1 = new
DBRequest (document.getElementById("test1"));
    oRequest1.SetValue("00012345");
    var oRequest2 = new
DBRequest (document.getElementById("test2"));
    oRequest2.SetValue("0x01");
    var oGroup = new DBGGroup();
    oGroup.Add(oRequest1);
    oGroup.Add(oRequest2);
    if (oGroup.SetQuery())
    {
        while (oGroup.m_iSetPendingFlag)
        {
            //wait for a while or give customer some hint.
        }
        //done:
        return true;
    }
}
```

```
//fail:
return false;
}
```

Note

You should call the function **DBInit()** in the page initializing routine, which initializes the data binding environments. Otherwise, the refresh framework cannot work.

3.1.1.2 Data format

We use **range**, **sub_range**, **address**, **type**, **length** to describe a data.

The **range**, **sub_range**, **address** indicate the address of the data. The **length** of a data indicates its type. For detailed information, refer to the following table.

Address Space Name	range	sub_range	address	length	Recommended Access Mode	Readable/Writable
Digital Input	129	0	0-63	64	Bits	R
Digital output	130	0	0-63	64	Bits	R/W
Digital Marker	131	0	0-111	112	Bits	R/W
Variable	132	0	0-6799	6800	Bits, Bytes, Words, Dwords	R/W
VX	9	0	0-16383	16384	Bits, Bytes, Words, Dwords	R/W
VR	10	0	0-4095	4096	Bits, Bytes, Words, Dwords	R/W
Cursor Key	12	0	0-31	32	Bits	R/W
TDE Function Key	13	0	0-31	32	Bits	R/W
Shift Register	14	0	0-127	128	Bits	R
NetI	16	0	0-127	128	Bits	R
NetQ	17	0	0-127	128	Bits	R/W
Analog Input	18	0	0-239	240	Words	R
Analog Output	19	0	0-239	240	Words	R/W
Analog Marker	20	0	0-1023	1024	Words	R/W
NetAI	21	0	0-1023	1024	Words	R
NetAQ	22	0	0-511	512	Words	R/W

range

It is the first part of the address.

sub-range

It is the second part of the address and reserved for future function extension. The default value is 0.

address

As the third part of the address, it means the data offset from the range start.

Note

Ensure that you provide the offset-address by bits no matter what data type you are accessing.

All the address will be validated before access. IDEC SmartRelay reports an error for an invalid address and truncate the address which is out of range.

type

It means data type. IDEC SmartRelay has four kinds of data.

Id	type	length
1	BOOL	1 bit
2	BYTE	8 bits
4	WORD	16 bits
6	DWORD	32 bits

length

It means the data count with its type.

value

All data value is presented by a HEX string. You can convert it into other type for your customer, but you must convert it back to HEX array mode before you set it to server.

For example, as for data with type DWORD, its value is 0x12345, you will get the string "00012345" from server, and if you want to change it to 0x12346, you also should use string "00012346".

3.2 Example

Below is an example of digital component.

```
<BODY onload="loadPage()">
    <DIV id="wrap">
        <div id="main" onclick="hideMenu()" style="width: 1420px;
height: 880px;">
            <div comp_type="myDigitalComponent" class="server_binding"
id="mydiv" show_param="mydiv" show_function="myCallback"
                range="132" address="0" type="1" length="1"
                onclick="sendDigitalRequest(this)" value="0"
                style="position:absolute; left:389px; top:242px;
width:84px; height:84px; border:1px solid red;line-height: 84px;">
                    OFF
                </div>
            <script type="text/javascript">
                var myCallback = function myCallback() {
                var id = this.m_sShowParam; //get id
                var newValue = parseInt(this.m_sValue, 16); // get
newValue
                document.getElementById(id).value = newValue;//
recode the newValue
                //response
                if (newValue == 0) {
                $("#"+id).html("ON"); //do your
actions
                } else {
                $("#"+id).html("OFF"); //do your
actions
                }
                };
                function sendDigitalRequest(obj) {
                var id = obj.id;
                var oRequest = new DBRequest(obj);
                //set value
                if (obj.value) {
                oRequest.SetValue("00");
                } else {
                oRequest.SetValue("01");
```

```
        }
        //send request
    if (oRequest.SetQuery()) {
        setInterval(checkResult, 1000, oRequest);
    }
}
</script>
</div>

</DIV>
</BODY>
```

Specification

1. All your custom codes have to be added between `<div id="main">` and `</div>`.
2. The following four parameters define the IDEC SmartRelay data access and callback JavaScript function:
 - `class="server_binding"`: IDEC SmartRelay JavaScript will scan all the DIVs and transfer data with those DIV having **server_binding** class.
 - `id="mydiv"`: You should assign **id** and **show_param** with the same DIV.
 - `show_param="mydiv"`: You should assign **id** and **show_param** with the same DIV.
 - `show_function="myCallback"`: You need to implement a callback JavaScript function and assign its name to "show_function".
3. The following four parameters describe the data:
 - `range="132"`: V
 - `address="0"`: 0.0
 - `type="1"`: BOOL
 - `length="1"`: 1For detailed information, see Data format (Page 109).
4. The following two parameters are used to submit requests to server.
 - `"setDigitalData(obj)"`: it's a customized method, used to submit requests to server.
 - `"value"`: used to recode the current data value and could be submitted by `"setDigitalData(obj)"`.

Tips and tricks

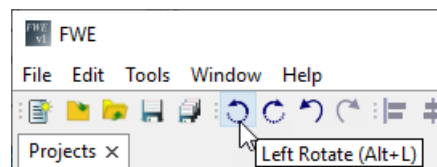
4.1 How to display a corresponding tooltip for a function key

In FL1F Web Editor, you can display a corresponding tooltips both in Standard toolbar and Graphic Library.

Tooltips for Standard toolbar

In the Standard toolbar, you can use the mouse-over-button function to display the icon name, which represents the tooltip. This helps you quickly recall the function of the icon, without having to call the menu or the help.

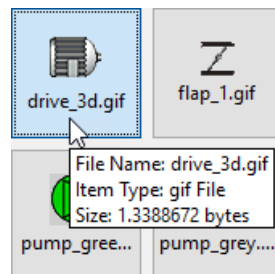
Below is an example screenshot.



Tooltips for Images in Graphic Library

In Graphic Library, you can also use the mouse-over-button function on each image to display the File Name, Item Type, Dimensions and Size information which represents the tooltip.

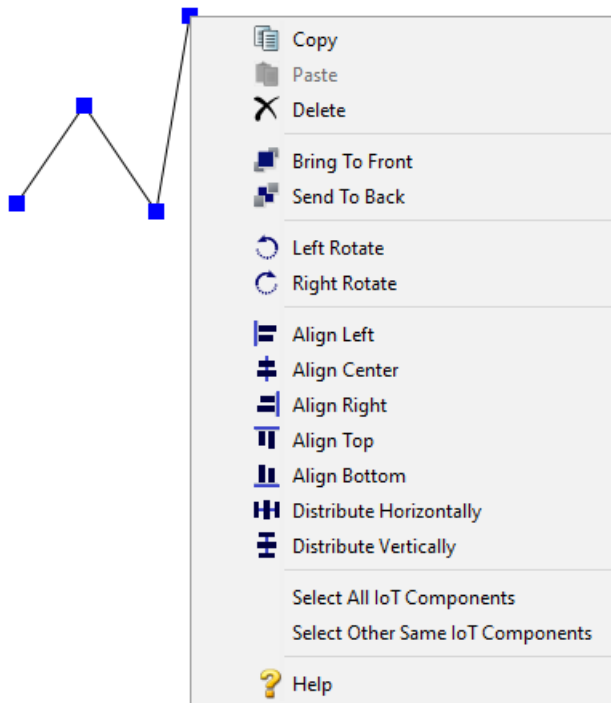
Below is an example screenshot.



4.2 How to draw a polyline well

When you activate the Polyline component, you can draw the polyline start from left-clicking mouse button and end with right-clicking mouse button.

Every point you click appears a blue square, and a blue arrow goes with your mouse. When you finish drawing for the polyline, you'd better move your mouse away from the blue square and do the right-click, or else the shortcut menu for right-click function will be popped up.



4.3 How to edit component through the shortcut menu

Right-click the component to open a shortcut menu that offers you the following functions for editing the component:

- Copy (Page 27)
- Paste (Page 27)
- Delete (Page 27)
- Bring To Front (Page 26)
- Send To Back (Page 26)
- Left Rotate (Page 26)
- Right Rotate (Page 26)
- Align Left (Page 40)
- Align Center (Page 40)
- Align Right (Page 40)
- Align Top (Page 40)
- Align Bottom (Page 41)
- Distribute Horizontally (Page 41)
- Distribute Vertically (Page 41)

- Select All IoT Components (Page 27)
- Select Other Same IoT Components (Page 28)

4.4 How to import multiple images

Import multiple images in Graphic Library

1. Point to My Graph folder or the customized folder where you want to attach the images.
2. Click **Upload Files** button to find the directory of the image in your local disk;
3. Choose the images you want to upload. You can upload multiple images in two ways:
 - To choose a list of sequential images, click the first file you want to upload, hold the **Shift** key on the keyboard and click the last file you want.
 - To choose non-sequential images, click the first file you want to upload, hold the **Ctrl** key on the keyboard and click any further files you want to upload.
 - To choose all the images, hold the **[Ctrl+A]** key on the keyboard.
4. Click **Open** button to upload the images;
5. Once uploaded you will see the uploaded images appear on the right side of the dialog box.

4.5 How to add a link connecting to another page

To add a link connecting to another page in your project, you need to add these parameters after your URL:

```
?!App-Language=" +
```

```
LocalStorage.Instance().Get("pdt_current_language") + "&Security-Hint=" +
```

```
LocalStorage.Instance().Get("pdt_current_login_ref");
```

Example:

```
window.location.replace(link + "?!App-Language=" +
```

```
LocalStorage.Instance().Get("pdt_current_language") + "&Security-Hint=" +
```

```
LocalStorage.Instance().Get("pdt_current_login_ref"));
```

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