AVEVA

AVEVA™ InTouch HMI
formerly Wonderware

Guide for Viewing Application Graphics in a Web Browser

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Chapter 1

Using the Web Client

About the InTouch Web Client

The InTouch Web Client feature allows you to view selected Industrial graphics used within an InTouch HMI application on any HTML5 supported web browser. A built-in Web Server provides web browsers access to application graphics, from any Microsoft Windows client or server operating system without the use of Remote Desktop Protocol (RDP) or Internet Information Services (IIS) for Microsoft Windows® Server. You can view application Industrial graphics in a web browser for both Standalone and Managed applications.
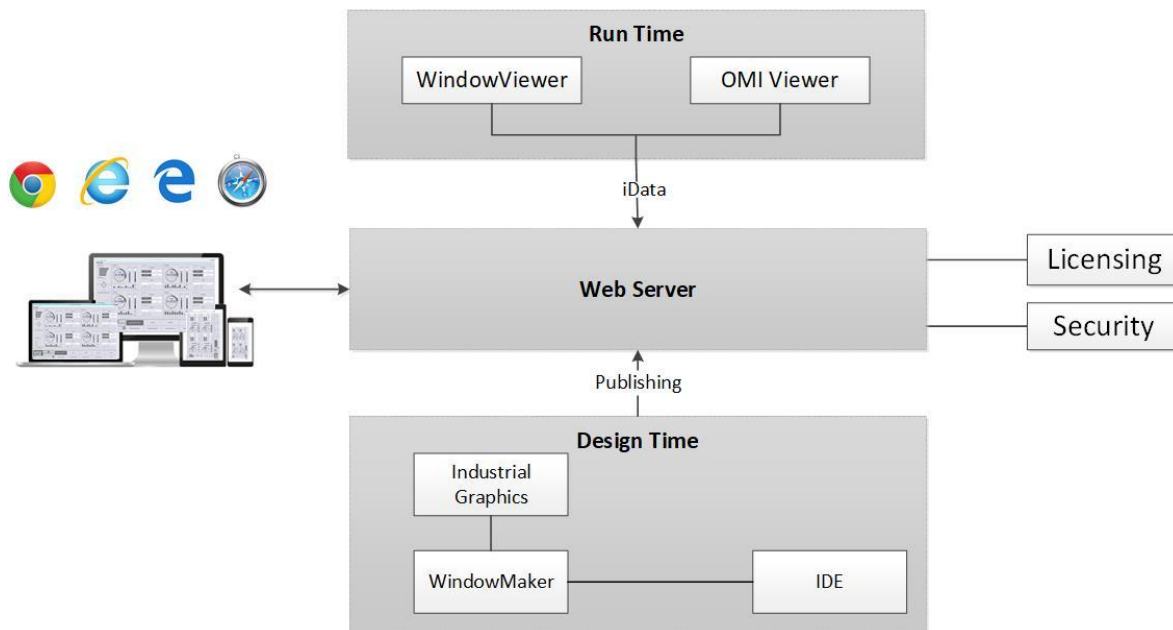
Designing an InTouch Web Client Application

Designing InTouch Web Client applications involves the following stages:

Configure (Optional)

1. Configure the security protocol.

   a. Connect to a System Management Server using the System Platform Configurator - choose between a remote or local server.

2. Configure AVEVA Identity Manager

3. Configure the reverse proxy server.

Design

1. Create and/or edit an application.

2. Identify the root folder that will contain all the graphics you want displayed on the web client.

3. Identify and set the Web Client Root folder.

4. Identify and set the Web Client Home symbol.

5. Fast switch to InTouch WindowViewer.

   o WindowViewer is required to run to access InTouch tags, but not ArchestrA object attribute references.

6. Use the Web Client fast switch button or launch a browser and navigate to http://localhost/InTouchWeb.

Iterative Development

1. The home symbol will be displayed on the web page.

2. Use the Navigation overlay to navigate to a symbol/window.

3. Make any graphic related changes in WindowMaker, the changes are automatically refreshed on the browser.

   Changes in Quality and Status Style, Element Style, and Formatting Styles will be propagated only after making the following graphics changes or re-launching WindowViewer.

   o Content of symbol is updated and saved

   o Symbol is created, imported, or deleted

   o Symbol is moved to different toolset folder

   o Root folder or home symbol assignment is updated

4. You can continue to build the application and test the output in the browser.

Deploy

1. Assign users to one of the Web Client related user groups (local or domain) or opt for anonymous access.

2. Publish or deploy the application.

3. Run the application in InTouch WindowViewer. WindowViewer must be running, to receive live data from InTouch tags.

   After the application is published or deployed, it will be available from any computer on the intranet.

   You can point to http://<IPAddress>/InTouchWeb or http://<NodeName>/InTouchWeb, where <IPAddress> or <NodeName> corresponds to the machine where the application is published or deployed.

Securing Web Client Access

Configuring the System Management Server (SMS) allows Web Client to be used securely with the https protocol. Additionally, after configuring the SMS, Web Client can be used with the AVEVA Identity Manager (AIM), to support non-windows based security and single sign on. As an administrator there are multiple configuration options available for user authentication and security. Security and user management should work together, see *Configuring User Access in Web Client* on page 10 for more information.
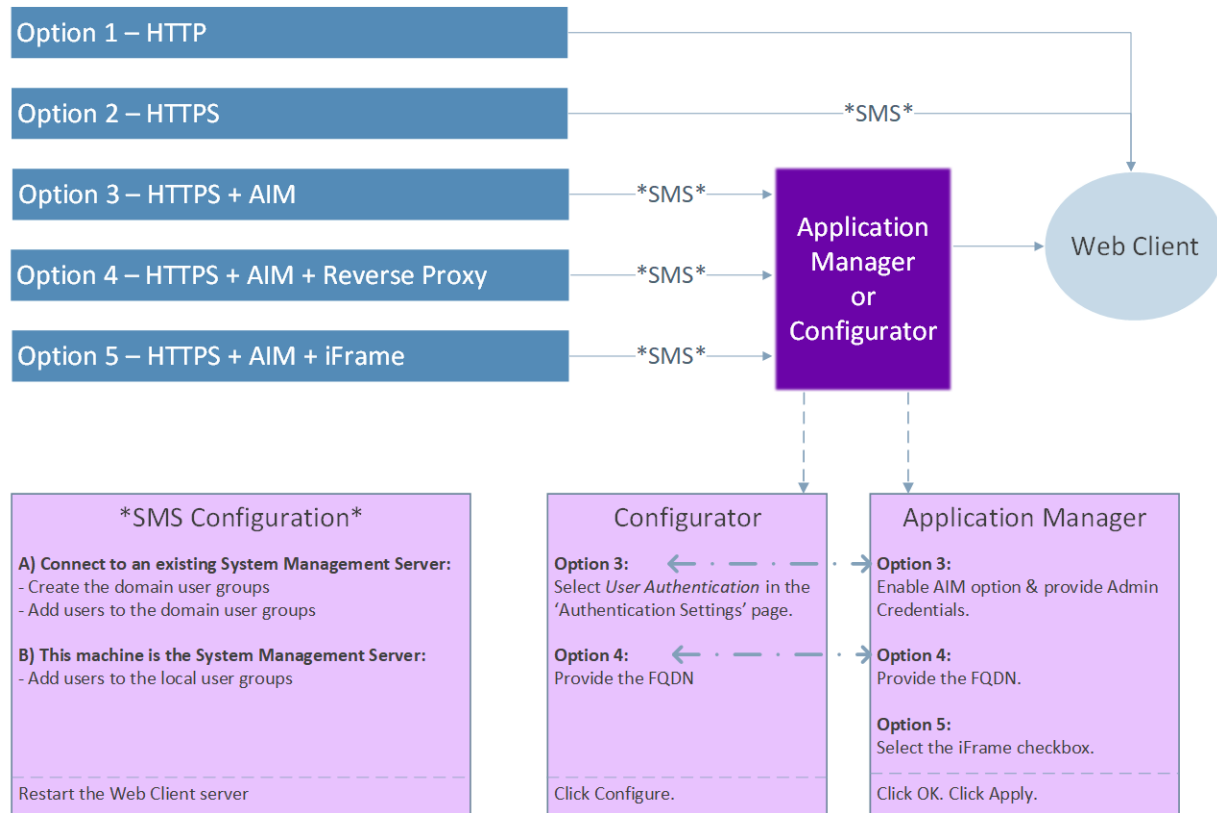
Option 1: By default, Web Client can be accessed using the http protocol and windows-based authentication.

Option 2: Use the Configurator to connect to a local or remote System Management Server. Here the Web client will use the https protocol with windows-based security (by default). If you connect to a remote server, you must provide credentials for a domain user when accessing the Web Client.

Option 3: After you configure the System Management Server, you can optionally enable the AVEVA Identity Manager (AIM). AIM is a standalone authentication server that exposes an OpenID Connect endpoint. To use AIM, you must register the client to the identity server. You can configure AIM using the System Management Server Configurator or InTouch HMI Application Manager. For more information, see *Registering with the AVEVA Identity Manager* on page 8.

In runtime when the Web Client page loads, if there is no valid security token, then:

- Web Client will re-direct to AIM's login page

- AIM will check user credential from the Active Directory.

- If the credentials are valid, then Active Directory will provide a security token and return it to Web Client

- Web Client will then grant access to user with the token.

If a security token already exists, then the user will be granted access. AIM will only support users that can be validated from Active Directory.

Option 4: The Reverse Proxy option allows the web client to be accessed by users outside the OT network. Provide the FQDN of the reverse proxy server in the secure gateway field in the Configurator or the Web Client tab in InTouch HMI Application Manager.

Option 5: When AIM is used for user authentication, it will prevent graphics from being displayed in an iFrame. Selecting the *Allow web client to be embedded in any website* checkbox will allow users to display graphics within an iFrame in runtime. In runtime, use the Share icon and select the code snippet to insert in the iFrame.

Accessing Web Client from Outside the OT Network

A reverse proxy is a server that sits in front of one or more web servers, intercepting requests from clients. With a reverse proxy, when clients send requests to the origin server of a website, those requests are intercepted at the network edge by the reverse proxy server. The reverse proxy server will then send requests to and receive responses from the origin server.

A forward proxy sits in front of a client and ensures that no origin server ever communicates directly with that specific client. On the other hand, a reverse proxy sits in front of an origin server and ensures that no client ever communicates directly with that origin server.
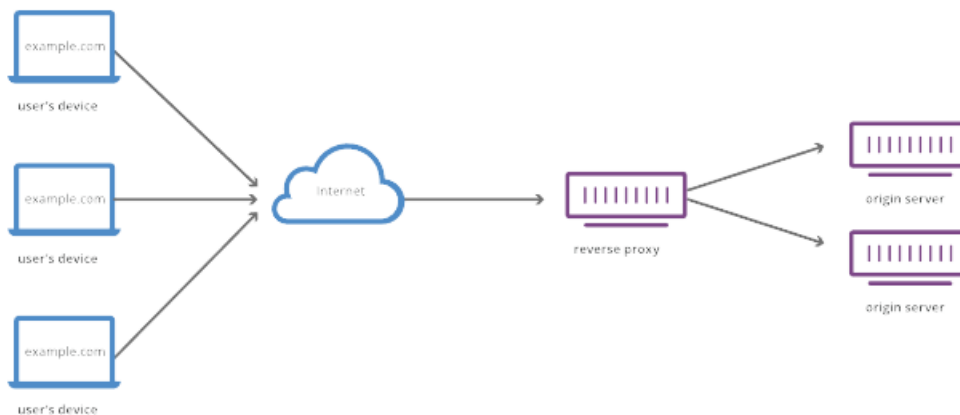
Before devices outside the OT network can access the Web Client, a reverse proxy must be configured on the DMZ server. AVEVA Identity Manager must be enabled for the reverse proxy to function. There are many providers of reverse proxy solutions. Refer to the relevant reverse proxy solution documentation, for instructions on setting up the reverse proxy solution in your infrastructure. For more information, see the InTouch HMI Application Management and Extension Guide.

Registering with the AVEVA Identity Manager

Using the AVEVA Identity Manager you can configure the Web Client to use Single Sign On, instead of the default Windows OS based authentication.

The steps to configure the Identity Server are:

1. In the System Platform Configurator, configure the *Common Platform > System Management Server*.

2. In AVEVA Application Manager, register the AIM server with user credentials.

The AIM Registration dialog box can also be used to configure the reverse proxy server:

1. Setup the reverse proxy server.

2. In the System Platform Configurator, configure the *Common Platform > System Management Server*.

3. Provide the Secure Gateway address in the AIM registration dialog box.

You can select a remote or local System Management Server. For more information on configuring the System Management Server, see the *System Platform Installation Guide*.

To register with the Identity Server:

1. In Application Manager, click the **Web Client** tab.

2. Click **Tools** and then **AIM Registration..**.

   The **AIM Registration** dialog box appears.

3. Click the **Use AIM Server as the authentication server** checkbox to enable the use of the AVEVA Identity Manager.

   The Identity Server field displays the Identity Server, configured in the Configurator.

4. Update the following settings:

   a. *User Name*: Provide the user name to connect to the Identity Server. The user must be part of the Administrators user group.

   b. *Password*: Provide the password for the corresponding user name.

5. To complete the reverse proxy setup, provide the URL of reverse proxy or DMZ server in the **Secure Gateway** field.

   This is an optional setting, and needs to be set only if the We Client is hosted behind a reverse proxy server.

6. Optionally you can also click the **Allow Industrial Graphics to be embedded in any website** checkbox to view the web client within an HTML iframe in runtime.

7. Click **OK**.

8. Click **Apply**.

Accessing the Web Client Using Single Sign On

If the System Management Server option has been enabled in the Configurator, you can use Single Sign On to access the web client. This will be different from the default Windows based authentication. This method will use the HTTPS protocol and only support domain users (when using a remote SMS) that can be validated from Microsoft Active Directory. If the user selects to use the HTTP protocol, then Web Client will fall back to using Windows Based authentication only.

For information to configuring the System Management Server, see the *AVEVA System Platform Installation Guide* and the *InTouch HMI Application Management and Extension Guide*.

1. Launch Web Client.

   The login page appears.

2. Enter your username and password.

3. Click **Login**.

   Optionally, you could click on **Windows Integrated** to use the credentials of the user currently logged in.

   You will be logged with the Identity Manager credentials.

4. Use **Sign Out** to logout of the session.

Using Local Tags with AIM

The behavior of Local tags in Web Client is independent of WindowViewer. The behaviour of local tags will differ if AIM is enabled. If AIM is enabled a unique token is used for every session for every user. For more information on Memory Local Tags, see the InTouch HMI Data Management Guide.

	User 1 – Session 1	**User 1 – Session 2**	**User 2 – Session 1**
AIM Disabled	Same tag value	Same tag value	Different tag value
AIM Enabled	Different tag value	Different tag value	Different tag value

Configuring User Access in Web Client

Accessing the Web Client Anonymously

Web Client provides both anonymous and authenticated user access. By default, anonymous access is disabled. To enable this option, select the **Allow Anonymous Access** checkbox in the Web Client tab in InTouch HMI Application Manager. In runtime, the user does not have to provide any user credentials and will be logged in as a 'Guest' user. The Guest user will have read only access to Web Client.

Configuring Authenticated Users for Web Client

Both authentication and licensing workflows use user groups to determine which users get access and the type of license acquired for the web session. The user groups can be configured on the local or remote node depending on the SMS configuration. All users needing access must be included in one of the groups depending on their access level.

If Web Client is configured to use a remote System Management Server, create the following domain user groups;aaInTouchUsers and aaInTouchRWUsers on the remote server. Add all relevant users to these groups before deploying the application.

Enabling the Web Client Feature

By default, on installation the InTouch Web Client feature will be disabled. You must enable the Web Client feature before you can use it. The Web Client feature will be automatically enabled if you configure one of the following options in the Configurator:

- Common Platform > System Management Server

- Application Manager > Web Client

For more information on the Configurator, refer to *System Platform Installation Guide*. To enable or disable the Web Client feature manually, you must have administrative privileges. You can enable the Web Client feature from Application Manager or InTouch WindowMaker.

Enabling the Web Client Feature from Application Manager

To enable the Web Client feature, launch Application Manager and select one of the following options:

- Under the Web Client Tab, click the **Enable Web Client** toolbar icon.

- Under the Web Client Tab, from the **Tools** menu, click **Enable Web Client**.

Enabling the Web Client Feature from WindowMaker

A user with administrative privileges can enable the web client feature from WindowMaker.

1. Launch an application in WindowMaker.

2. Click the **Web Client** fast switch button.

    The following dialog box appears 'InTouch Web Client feature is currently disabled on this system. Do you want to enable it?'.

3. Click **Yes**.

    The InTouch Web client page will appear.

If you try to launch the Web Client when it is disabled, you will receive the following error message: **HTTP Error 404.0 – Not Found**.

If a non-administrative user attempts to enable the Web Client feature from WindowMaker, they will be directed to enable the feature from Application Manager.

Customizing the Web Client

Users can customize the Web Client interface using the AVEVA Application Manager.

1. In **Application Manager,** navigate to the **Web Client** tab.

2. In the **Graphic Refresh Rate (ms)** specify the refresh rate in milliseconds.

3. In the **Alarm Refresh Rate (ms)** provide the refresh rate in milliseconds.

4. In the **Web Client Site Name** field provide the new URL string.

    The string provided here will be appended after http://localhost/.

5. Select the **Show Header** checkbox to display the Title Bar.

6. Select the **Enable NavBar** checkbox to display the Navigation Overlay.

    If the Title bar is hidden, the navigation overlay will not be displayed by default.

7. Select the **Allow Anonymous Access** checkbox to enable anonymous user access to Web Client. By default the option is disabled.

8. Click **Apply**.

Configuring Graphics for Viewing in a Web Browser

Using the Graphic Toolbox, you can configure the folder containing the application graphics that will be displayed on the web browser. Only graphics stored within the folder set as the Web Client Root folder are displayed on the web browser.

Note: The operating system user groups **aaInTouchUsers** and **aaInTouchRWUsers** will be created on the InTouch runtime node during installation. Only users in the aaInTouchUsers or aaInTouchRWUsers user groups will have access to view graphics from an application in the web browser. Add relevant users to the group before configuring the application. By default, the installation user will be added to the groups.

1. Start InTouch WindowMaker.

2. Open an application.

   In the **Industrial Graphic Toolbox**, create or identify the folder that will contain the hierarchy of folders and graphics you want displayed on the web browser.

3. Right-click the folder and select **Set the Web Client Root Folder**.

   The icon thumbnail will change to reflect the setting.

Icon	Description
🏠	When the root folder is set as the Web Client Root folder
📁	When a folder is set as the Web Client Root folder

   By default, the root of the Graphic Toolbox is set as the Web Client Root folder.

Setting the Web Client Home Symbol

You can set the default symbol displayed on the Web Client page when it is launched by setting the Web Client Home Symbol.

1. Set the Web Client Root Folder, see *Configuring Graphics for Viewing in a Web Browser* on page 12.

   The Home Symbol must be a child of the Web Client Root folder.

2. Under the Web Client Root folder, identify the home symbol.

3. Right-click the symbol and click **Set Web Client Home Symbol**.

The icon thumbnail (📷) will change to reflect the setting. If no home symbol is set, the Web Client web page will display a blank page when launched. While viewing the Web Client in a browser, click the Home icon on the Title bar to navigate to the home symbol.

Understanding the behavior of the Web Client Home Icon

Standalone applications can be viewed on the web client. Standalone application windows must be converted to Industrial Graphics before they can be viewed on the Web Client. Only Frame windows and Industrial Graphics can be viewed on the web client.

For InTouch applications, in WindowMaker you can use the Home Windows tab to set up windows that will appear by default in WindowViewer, see *Setting Windows to Appear at RunTime* in the InTouch HMI Visualization guide. Similarly, you can set a graphic to be the default symbol that appears on the web client when it is launched, see *Setting the Web Client Home Symbol* on page 12.

If you have used the InTouch ShowHome script function, when the windows is converted to a graphic, the script is converted to the ShowHome() function and will display the corresponding graphic as a Home symbol in WindowViewer.

These settings will impact, which window or graphic appear on the web client by default when it is launched. For an InTouch HMI application; there are two possibilities:

1. If Home Windows are configured

    Even if the user has configured Home Symbols, on all occasions, only the Home Windows are displayed by default. Clicking the Home icon will display the Home Windows.

2. If Home Windows are not configured

    And the Home Symbol is configured, by default the home symbol will be displayed.

    If no home symbol is configured then, by default, no symbol or home windows are displayed. Clicking on the Home symbol will not display any graphic or window.

Viewing Application Graphics in a Web Browser

After you configure the Web Client application you can view the graphics in the web browser. For a list of tested and supported browsers, refer to the *Browser and Mobile Support* section of this guide.

1. Launch an HTML5 supported browser, enter the URL: `http://<hostname>/InTouchWeb` or `http://<IPAddress>/InTouchWeb`.

    If your credentials are authenticated and a valid InTouch Web Server license is acquired, the InTouch Web page is displayed. The Home Symbol will be displayed by default.

    You can access the web client using the URL: https://<hostname>/InTouchWeb or https://<IPAddress>/InTouchWeb. The InTouch Web Client will automatically use the HTTPS protocol, when the Common Platform System Management Server is configured with a certificate (local or remote server) for encrypted communication between the server and client. If the Web Client page is not displayed, refer to *Troubleshooting Viewing Graphics in a Web Browser* on page 36.

    For information on customizing the Web Client URL, see *Customizing the Web Client* on page 11.

2. Click the [≡] icon.

    The overlay on the left displays the hierarchical structure of the graphics, under the selected Web Client Root folder within the running application.

3. Click a folder name.

    The graphics within the folder are displayed.

4. Click a graphic.

    The selected graphic is displayed on the InTouch Web Client.

Only graphics stored within the folder set as the Web Client Root folder are displayed on the web browser. If anonymous access disabled, then the user account accessing the graphics must be Authenticated and Authorized, for more information see *Acquiring a License* on page 38.

InTouch WindowViewer must be running on the host machine for symbols displayed in the Web Client to receive live data from InTouch tags. You can also run WindowViewer as a service. Application Server must be running to receive live data from application objects.

Web Client Fast Switch

During the development of the application you can use the Web Client Fast Switch feature to toggle between WindowMaker and the InTouch Web Client.

- To use the Web Client Fast Switch feature, click the **Web Client** button in InTouch WindowMaker.

Any changes in WindowMaker will reflect automatically on the Web Client, if the same application is being edited in WindowMaker and viewed in the Web Client. For automatic refresh to work, only one application can be edited and viewed at a time. The InTouch Web page refreshes to the symbol previously displayed. If WindowViewer is run for another application, then the Web Client page will automatically switch to that application.

- You can specify the **Graphic Refresh Rate** from the **Configurator**. By default the polling rate will 1000 milliseconds.

- You can also specify the **Alarm Refresh Rate** from the **Configurator**. By default the polling rate will 1000 milliseconds.

Alarm Refresh Rate should be greater than the Graphic Refresh Rate, and the value of the Graphic Refresh Rate should be less than 180 seconds.

Note: To enable the Web Client to run in Fast Switch mode while editing a Managed InTouch application from a remote IDE, first configure the **InTouch Web** Windows service to run as a user account that is a member of the **aaConfigTools** user group, in both the GR and Remote IDE machines. For more information, refer to the Application Server User Guide.

For a given InTouch application, the Web Client fast switch button in WindowMaker is disabled by default. The button is automatically enabled when the application is run in WindowViewer.

Note: The web client fast switch feature is available
- only during development,
- only on the computer with InTouch WindowMaker and InTouch WindowViewer installed,
- only on a web browser accessing the Web Client pointing to *http://localhost/InTouchWeb* in the URL.

Understanding the Web Client Page

The InTouch Web Client page provides various options to inform and organize the user experience using icons on the page. The following table describes these options.
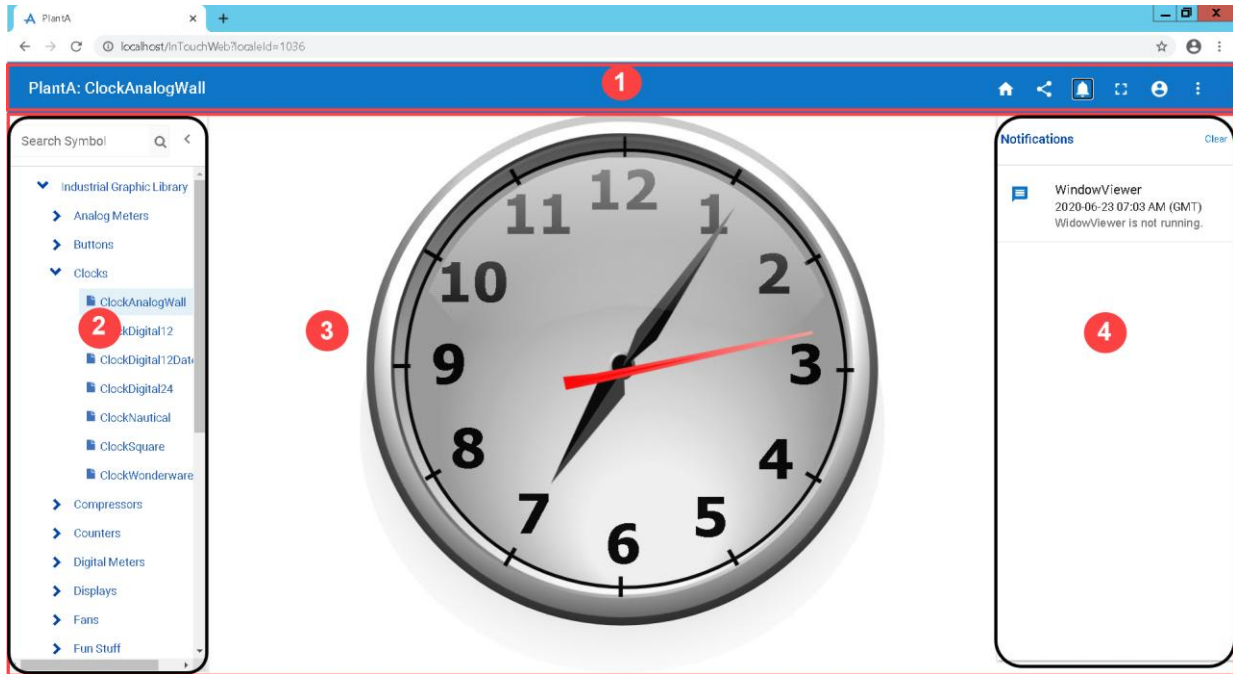
Element	Description
1	The Title bar displays the InTouch Application name, symbol name, home icon, notifications icon, full screen icon and profile icon.
Application Name: Symbol Name	The Title bar will display the application and symbol name. For example – *PlantA: Section16* - where PlantA is the application name and Section16 is the symbol name.
🏠	Click to view the symbol set as the web client home symbol.
⌟	Click to view the iFrame code snippet for the selected graphic.
🔔	Click the Notifications icon messages related to License status change and WindowViewer status change messages. The number of notifications will be overlayed on the icon.

	Click to maximize the canvas area and display the web page in full screen mode. You can also use the F11 key. The title bar and navigation overlay will not be visible. **To view the title bar:** • Move your cursor to the top of the page, the title bar will slide down. • Click to pin the title bar on the page. • Click to hide the title bar.
	Click to minimize the canvas area and exit the full screen mode.
	The profile icon displays the user logged in.
Sign Out	Click the profile icon and then select the **Sign Out** icon. The Sign Out will only be available if System Management Server option is configured. For more information, see *Accessing the Web Client Using Single Sign On* on page 9.
	From the Title Bar click , and then click the **Language** icon. Select the language. The tooltip, translated static text and custom properties will display in the selected language. Only languages configured in WindowMaker will appear. **Note**: When the user changes the language, a new session will be created causing the data in the local tags to be lost.
2	Click the icon to view the folder navigation overlay. All folders and symbols under the selected Web Client root folder are displayed. You can use the search box at the top of the overlay to search for symbols. The search box is enabled with the autocomplete feature, where symbol names matching the input search term will be listed as you are typing. Select the symbol name to view the symbol in the canvas area.
3	The canvas area displays the symbol selected from the navigation overlay. The symbol will be scaled to fit the browser viewport size, while maintaining the aspect ratio. The navigation and notifications overlays do not consume any space on the canvas or affect the size of the graphic.
4	Click the notifications icon to view the notifications related to connection and licensing issues.
⚠	Click the warning icon to view the list of animations or properties not supported by the InTouch Web Client. This icon is available only during application development and when the browser points to the exact URL of http://localhost/InTouchWeb.

Application Graphics and Browser Resizing

The InTouch Web Client page can be viewed in different screen sizes. As the browser is adjusted the graphics resize to fit the new browser viewport dimensions. The graphic will also resize when the mobile device is rotated between portrait and landscape orientation.
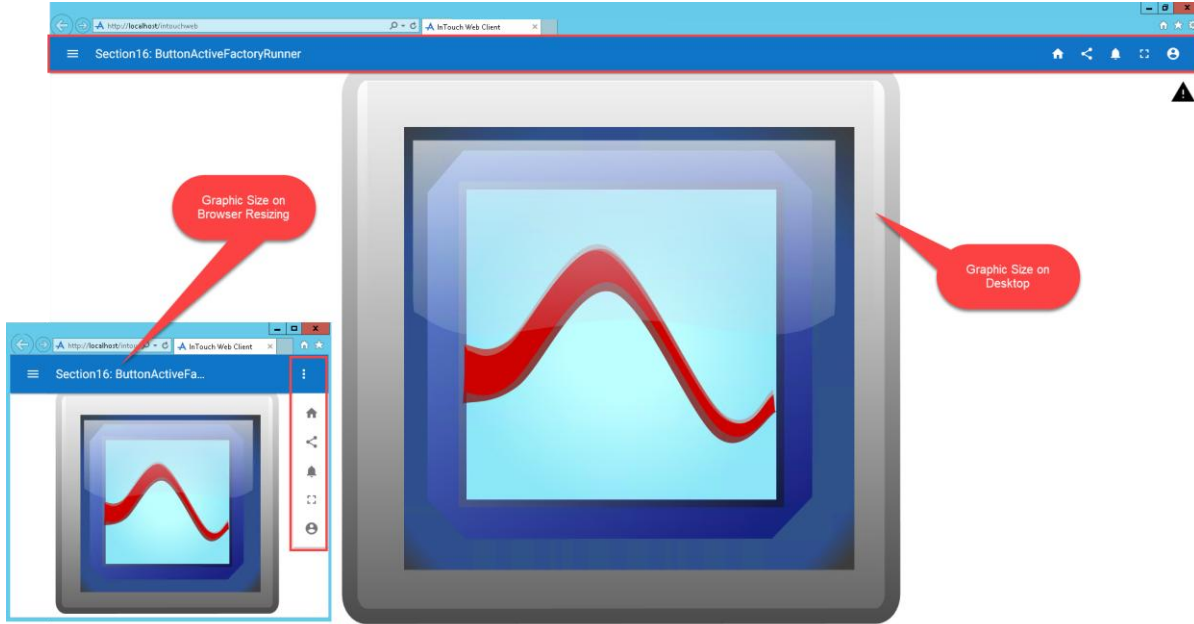
Title Bar and Smaller Screens

For very small screens, the icons on the right collapse into a vertical bar. The icons will be hidden to save screen space. You can view Industrial Graphics on any mobile device, and use the pan and zoom gestures to view larger graphics.

Pan and Zoom Support

InTouch Web Client supports the Pan and Zoom gestures for all supported browsers and devices. When a graphic in the web browser is zoomed in from a non-mobile device, the zoom percentage is displayed in the lower left corner of the horizontal scrollbar. The zoom percentage is limited up to 500%.
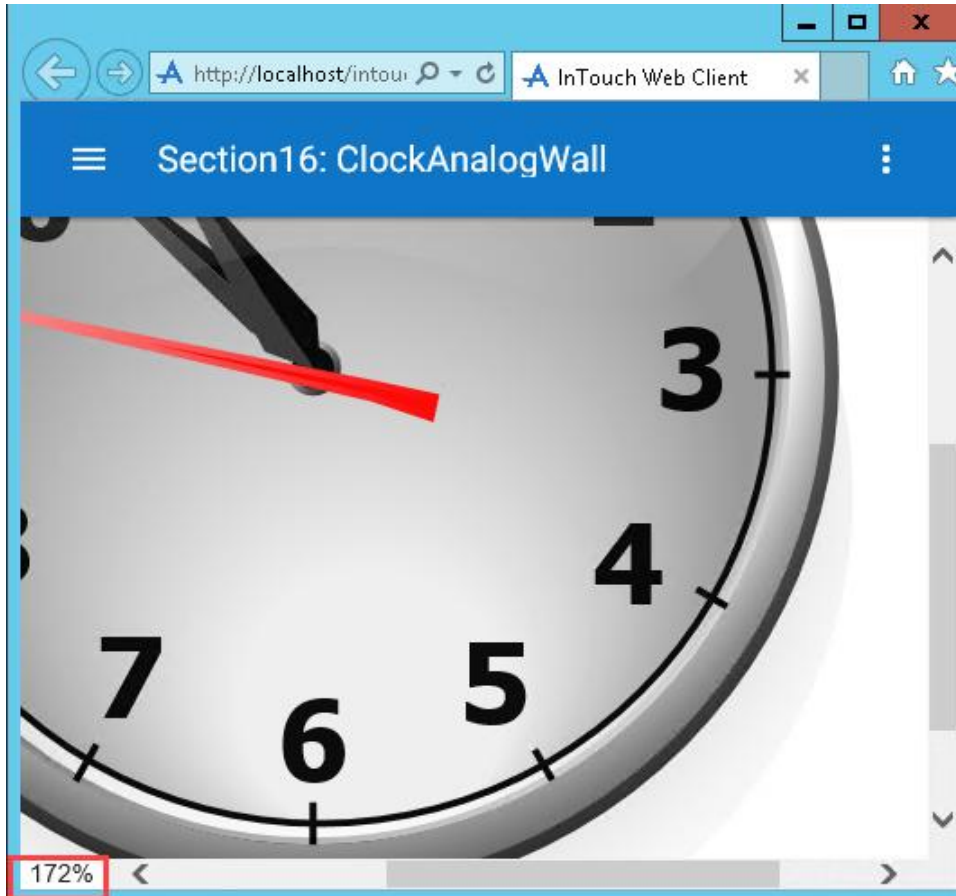
Pan and Zoom using Touch

You can zoom-in and zoom-out on a focused display by using two fingers.

- To zoom-in, place two fingers on the screen and expand. To zoom-out, pinch the display with two fingers.

- Double-tap to restore the display to 100% zoom.

To pan the display, press one finger on the display and move your finger.

Pan and Zoom using Mouse

You can zoom-in and zoom-out on a focused display by using the mouse's scroll wheel.

- Hold the **Ctrl** key and scroll the wheel up or down to zoom-in or zoom-out. If the mouse pointer is outside of a pane, then zooming will not be allowed.

- Double-click the left mouse button to restore the display to 100% zoom.

To pan a display, keep the center wheel pressed, move the mouse to the area and then release the center wheel.

Zoom using Keyboard

You can zoom-in and zoom-out on a focused display by using keyboard.

To zoom-in, use the **Ctrl** and **+** keys together. To zoom-out, use **Ctrl** and **-** keys together.

Zoom by Location

You can also zoom in the graphic from the location you click on.

Pan and Zoom toolbars are not supported. Pan and Zoom gestures are not supported for graphics displayed using the ShowSymbol animation or ShowGraphic script, Button Click and Slider.

Hosting InTouch Application Graphics on External Websites

You can configure graphics in InTouch WindowMaker and host them on external websites using the direct URL to the graphic.

1. Using the Industrial Graphic Toolbox, create a symbol.

2. Test the symbol on the InTouch Web Client.

3. In your external website, create a HTML **<iframe>** tag.

4. In the URL attribute, include the link to
    http://<hostname>/InTouchWeb/?iframe=true&symbol=<graphicname> or
    http://<IPAddress>/InTouchWeb/?iframe=true&symbol=<graphicname>,
    where <hostname> or <IPAddress> corresponds to the machine where the application is published or deployed and <graphicname> is the name of the graphic you want displayed.

5. The URL format will differ if the symbol is displayed in a non-English language. For example, the URL for French will be:
    http://<hostname>/InTouchWeb/?localeid=1036&iframe=true&symbol=<graphicname>

    Later versions of Web Client allowed for language switching in runtime resulting in a change of the URL format. After upgrading to the latest version of Web Client, the earlier URL format will not display symbols configured for non-English languages.

6. Publish or deploy the application.

7. Run the application in InTouch WindowViewer. WindowViewer must be running to receive live data from InTouch tags.

Syntax:
```
<iframe src="http://localhost/InTouchweb/?iframe=true&symbol=YourGraphicName"></iframe>
or
<iframe src="http://NodeName/InTouchweb/?iframe=true&symbol=YourGraphicName"></iframe>
```

Example: Consider a symbol ClockAnalogWall in the web client application in the local machine
```
<iframe src="http://localhost/InTouchweb/?iframe=true&symbol=ClockAnalogWall"></iframe>
<iframe
src="http://localhost/InTouchweb/?localeid=1036&iframe=true&symbol=ClockAnalogWall"></ifram
e>
```

The same InTouch Web Client security and licensing will be enforced for accessing the symbol directly using the URL. Relevant error messages will be returned to the <iframe> section, similar to the InTouch Web Client error messages.

Note: Due to policy changes in Google Chrome 80 and later versions, graphics placed in an <iframe> tag will not be displayed when the http protocol is used. To display graphics using the http protocol, disable the following cookie settings available under **chrome://flags**
   - *SameSite by default cookies*
   - *Enable removing SameSite=None cookies*
   - *Cookies without SameSite must be secure*
For more information, see https://www.chromestatus.com/feature/5633521622188032. It is recommended to use the https protocol for Web Client to prevent any security issues.

Generating the iFrame Code Block

You can generate the <iframe> block for a symbol directly from the web browser. You can then use this code block in an external website to view Industrial Graphics in run time.

1. Navigate to the graphic.

2. Click the **Share** icon ().

3. In the **Owning Object** field, specify the Owning Object for this graphic.

4. The list of supported custom properties will be displayed. Select a custom property and provide a value.

    All values provided will be verified against the data type. For example, if a custom property requires an integer value, you will not be allowed to enter a character value.

5. Click **Support cross origin** to use the script on any InTouch Web Client, either on the local or remote machines.

    The embedded HTML code will change based on the selected options.

6. Click **Copy**.

7. You can now paste the generated code in your website in a .html file.

```
<iFrame src="http://<hostname>/InTouchWeb/?iframe=true&symbol=Sym1?crossOrigin=1"
id="symbol" width="640px" height="480px"
customProperty='[{"n":"CP1","v":"True","t":1},{"n":"CP2","v":"24.5","t":6},{"n":"CP3","v":"
Orange","t":7}]' onload="postMsg()"></iFrame>
<script type="text/javascript">
function postMsg(){
    var iframe=document.getElementById('symbol');
    var obj={};
    for (var i=0;i<iframe.attributes.length;i++) {
        obj[iframe.attributes[i].nodeName]=iframe.attributes[i].nodeValue;
    }
    var win=iframe.contentWindow;
    win.postMessage(obj,obj['src']);
};
</script>
```

    If Language = French (France)

```
<iFrame src="http://<hostname>/InTouchWeb/?localeid=1036&iframe=true&symbol=Sym1"
id="symbol" width="640px" height="480px" onload="postMsg()"></iFrame>
<script type="text/javascript">
```

```
function postMsg(){
    var iframe=document.getElementById('symbol');
    var obj={};
    for (var i=0;i<iframe.attributes.length;i++) {
        obj[iframe.attributes[i].nodeName]=iframe.attributes[i].nodeValue;
    }
    var win=iframe.contentWindow;
    win.postMessage(obj,'*');
};
</script>
```

Chapter 2

Supported Graphical Elements and Known Limitations

Known Limitations

The Web Client will be enhanced with each product release. The following list summarizes the major limitations in the current release.

- The Web Client can be accessed only on the Intranet. Gateways through firewalls onto the Internet are not supported at this time. To minimize the attack surface, we recommend not exposing the Web Client to the internet.

- InTouch WindowViewer running in an RDS session is not supported for data communication with the Web Server.

- Published applications from System Platform 2017 and earlier versions are not supported by the Web Client. You must migrate the original application to the current version and then republish the application to work with Web Client.

- Frame windows with special (unsupported) characters in the window name are not supported.

- Indirect tags are not supported.

- System tags will not return user name, and related details per user.

- Setting graphic properties using a script: Only the following properties are supported for reading or writing to a graphic element property using a script:
  - Position (X,Y)
  - Size(Height,Width)
  - Angle
  - StartAngle
  - SweepAngle

- Several symbols in the symbol library incorporate graphic elements or color settings that are not supported by the Web Client in the current release.

- Windows Common Controls (WCC) refer to RadioButton Group, CheckBox, Editbox, ComboBox, Calendar, DateTime Picker, and ListBox.

The following sections describe these limitations in detail.

Important: When loading a graphic in the Web Client, unsupported features are logged as warnings in the System Management Console (SMC) Logger. A generated report will include the warning path.

Properties Supported by All Graphical Elements

The following properties are supported by all graphic elements in a symbol:

- Angle
- X
- Y
- Width
- Height
- Enable
- Visible
- AbsoluteAnchor
- RelativeAnchor
- Transparency
- ElementStyle
- OwningObject
- Start
- End
- Radius
- Tension
- Custom Property Overrides

Note: The ElementStyle property enables users to select a defined element style and apply it to a graphic element. An element style includes options that define color properties like FillColor, LineColor, TextColor and OutlineColor.

Properties Supported by All Graphic Elements With Some Limitations

The following table lists the properties of graphic elements that can be incorporated with some HTML5 rendering limitations.

Graphic Element Property	Property Limitations
FillColor	Texture is not supported. Some other limitations on FillColor might apply to individual elements.
UnFilledColor	The same limitations of the FillColor property apply to the UnFilledColor property.
LineColor	Texture is not supported.
Font	Only supports the Font Size, Font Type, and Bold or Regular Font Style options of the Font property.
TextColor	Only the Solid Color option of the TextColor property is supported.
FillOrientation	RelativeToScreen is supported only when Color is set as 'Solid' or 'Fill' or 'UnFill'.
FillBehavior	Will always be set to Both.
Runtime Behavior	TabOrder, TabStop, ZoomPercent are not supported on any graphical element.
Relative references	MyPlatform, MyEngine, MyHost, MyArea, MyContainer and Me are supported. MyViewApp is not supported.
AutoScale	Is not supported.
ShowGraphic	Is supported.
Line	If the Line graphic is configured with the LineWeight property value more than 1px on the rim of the symbol, it will be Truncated.
Group/Embed Graphic	Supports Visibility, Blink, Disable, Push Button, User Input/Value Display, ShowSymbol and ActionScript animation. Changing the 'Treat as icon', and 'Enabled' properties by script is not supported. %FillHorizontal and %FillVertical animations: - Only applies on the group. Not supported for sub elements. - for Button and Image are not supported . - 'Related To Screen' for both group and sub elements are not supported. - when the angle of the sub elements is changed is not supported

Supported Graphic Elements and Additional Properties

The following table lists the graphic elements that can be incorporated with some limitations. Any graphic element not listed in this table is not supported.

The table includes a column that lists any limitations of the supported graphic element properties. When using graphics that incorporate color properties, the colors have the same limitations applicable for FillColor, LineColor, and other related graphic properties.

Graphic Elements	Supported Properties	Limitation Notes
Line Polyline Curve 2 Point Arc 3 Point Arc Connector	**Line Style**: LineWeight LinePattern StartCap EndCap	StartCap, EndCap: Supported but there maybe slight differences in rendering.
Button	ButtonStyle Text Word Wrap FillOrientation FillColor Alignment	ButtonStyle: Only Standard button style is supported. Word Wrap: Any caption that exceeds the button width will be truncated. FillOrientation:'RelativeToScreen' is only the Color is set. FillColor: Only Solid color is supported. If you have gradients with multiple colors selected, they will be converted to a single color using the first color. Alignment: Only Centers alignment is supported.
Text	Alignment	Alignment: Only left-top supported.
Image	HasTransparentColor TransparentColor ImageStyle	FillColor, FillPercent and unfilledColor are not supported.

Graphic Elements	Supported Properties	Limitation Notes
Text Box	Text TextFormat WordWrap LineWeight LinePattern Alignment Font	Flip is not supported
Status	Graphics Expression	Status Style: Only Default configuration is supported.
Web Alarm Client (EAC)	Alarm Mode Colors Column Details Queries and Filters Time Settings Run-Time Behavior	**Alarm Mode** • Client Mode: Only supports Current Alarms, Recent Alarms and Events. • Alarm Query: Supports InTouch and ArchestrA alarms • Use Default Ack Comment: Only supports comments showing Alarms and Events. **Alarms and Events:** Colors: Shelve, Flash Unack Alarms is not supported. Column Details: Does not support sorting. Queries and Filters: Only supports the 'Default' query. Customized query or filter are not supported. Data Binding: Not supported. Events: Not supported. Time Settings: Not supported. Run-Time Behavior: Only supports Show Heading, Show Grid and allow column resizing. Only supports user ACK on selected records or ACK on all alarm records. **Note:** WindowViewer must be running to view InTouch or Application Server alarms. **Note:** Does not support embedded alarm client's methods or properties.

Graphic Elements	Supported Properties	Limitation Notes
Web Trend Client	Pens Appearance Options Historical Sources	**Pens** Only supports Show, Pen Name (As description), Expression or Reference Pen Details: Min, Max Pen Options: Color Plot type(all will be treated as Line) **Appearance** PlotArea: Single tag mode,Grid (Show vertical grid, show horizontal grid, Color) X time axis:Show cursor(Cursor1:Color), Number of values Y value axis:Number of values, Value axis label (Multiple Scales,Single Scale) **Options** Only supports Retrieval:Trend Duration **Data Binding**: Not Supported **Event**: Not Supported **Historical Sources**: Connection Timeout in Seconds, Query Timeout in seconds and Use Http are not supported. **Note:** Does not support the Trend Client's methods and properties.

Graphic Elements	Supported Properties	Limitation Notes
Web SQL Data Grid		Data Binding animation Event Animation Custom property • CmdCopy_dg • CmdPaste_dg • CmdWrite_dg • RowsChanged_dg • WriteButtonHide_dg • ColumnAggregateEnable_dg • SupportThemes_dg - When the SQLDataGrid control is used directly, only static values for properties in design time are supported. - The selectedRowNumber property value cannot be retrieved using custom properties. - As databinding is not supported, the default value of a property cannot be retrieved, if the property is referenced in a custom property and the default value is empty. - The RowCount property cannot display the grouping count due to limitations of the kendo grid. It will always display the total number of records. - When 'Windows' authentication is used in a local database, add the virtual user NT Service\AIGWebServer to allow it to access the database. Accessing a remote database with 'Windows' authentication, and 'SQLServer' mode is not supported. - SQLGrid is not supported when used in a carousel widget and viewed in WindowViewer. - When groups are applied to the SQL Grid, with more than 2000 records and 5 columns, some performance issues may be seen with scrolling and refreshing of the rows.

Graphic Elements	Supported Properties	Limitation Notes
Trend Pen	Data Source	Trend time Period: Does not support Fixed Type.
Check Box		Selected Value Changes: Irrespective of user settings, only values submitted immediately are supported. Checked: Does not support Checked property.
Radio Button Group	Static Values and Captions States	Selected Value Changes: Irrespective of user settings, only values submitted immediately are supported.
Edit Box		Selected Value Changes: Irrespective of user settings, only values submitted immediately are supported.
Combo Box		Selected Value Changes: Irrespective of user settings, only values submitted immediately are supported. Type: Does not support MaximumLength
Calendar		Selected Value Changes: Irrespective of user settings, only values submitted immediately are supported. Bold Dates: Is not supported ShowToday: Will always display, even if checked out. Calendar Colors: Is not supported
DateTime Picker		Selected Value Changes: Irrespective of user settings, only values submitted immediately are supported. Configuration : Is not supported. Calendar DropDown Colors: Not supported.
ListBox		Selected Value Changes: Irrespective of user settings, only values submitted immediately are supported.
ConnectorPoint		Moving the ConnectorPoint is not supported.

Supported Animations

The following table lists animations supported by the Web Client. When using animations that incorporate color properties, the selected animation colors have the same limitations applicable for FillColor, LineColor, and other related graphic element properties. Furthermore, the Web Client does not support writing values. Any type of animation that updates attribute value is not supported.

Note: The following table lists only supported animations. Any animations not listed are not supported by the Web Client.

Animation	Limitations
Alarm Border	Alarm Border animation shows an alarm border around a graphic element whose visible appearance represents the graphic element's alarm type and acknowledgement status. The appearance of each alarm border is defined by an associated element style. Not all element style properties are supported. For instance, if Gradient is specified as the value of an element style's Line Color Override option in an alarm border element style, it will not be supported.
Element Style	Refer to the graphic elements limitations regarding color, line, and font. The same limitations applicable to graphic elements also apply to Element Style animation. Expression Or Reference: Time and Elapsed Time are not supported. Changes to an element style definition become effective only after redeploying or publishing the application. Does not support Windows Common Controls.
Fill Style Line Style Text Style	Refer to graphic element limitations regarding color, line, and font. The same limitations applicable to graphic elements also apply to Element Style animation. Expression Or Reference: Time and Elapsed Time states are not supported. Does not support Windows Common Controls. TextColor: Only Solid Color is supported.
% Fill Horizontal % Fill Vertical	Only RelativeToGraphic is supported.

Animation	Limitations
Slider Horizontal Slider Vertical	A slider cannot write data to InTouch tags, but can support data binding with a custom property. Slider only supports On Mouse Release when writing to a custom property. Slider does not support Cursor anchor Slider does not support Show Tooltip.
Width Height	Does not support Windows Common Controls.
Orientation	The Relative Anchor or RelativeOrigin are not supported when setting Orientation animation. (Only supported anchor at center).
Disable	The RadioButton graphic element does not support Disable animation.
Point	Point animation on Curve and ClosedCurve are not supported.
Tooltip	InTouch Web Client supports Tooltip animation except for Image, Radio Button, Button, and Text graphic elements. Tooltip animation is not supported on Group or embedded symbol. Does not support Windows Common Controls.
Action Scripts	Actions scripts are supported except for functions that invoke dialogs. The ShowGraphic animation is only supported for a Frame window.
Show Symbol	Title: Only supports the default option. Type: Supports Modal and Modeless where the Close button option is checked. Position: Only supports the center where the Client Area x,y value is 0,0 Size: Only supports Relative To symbol option. Shortcut: Is not supported.
ShowGraphic	Title: Only supports the default option. Type: Support Modal and Modeless with the Close Button option checked Position: Only supports center, Client Area and x,y value is 0,0 Size: Only supports the Relative To Symbol option Shortcut: Is not supported
Hyperlink	Does not support on windows common controls, button, text, and textbox.

Chapter 3

Web Client Mobile App

Operating System Requirements

Download the Mobile Application from the Apple App Store or Google Play Store. Search for AVEVA Mobile Operations and click **Install**.

Minimum Android version: Android 6.0(API Level 23 – Marshmallow)

Target Android version: Android 9.0(API Level 28 – Pie)

Minimum iOS version: iOS 9.0 or later

For device support, see *Browser Support*.

Logging in to Mobile App

On installing the app, provide user credentials and login to the app to view the graphics.

1. Launch the mobile app.

2. Enter the **server name** or **IP address** of the node where the application is running.

3. Select or enter the **Website** name. The website name provided should match the *Custom URL* specified in InTouch HMI Application Manager.

4. Enter the **user name** and **password**. Provide the domain name for the user name if required.

5. Select the **Full Screen Mode** checkbox to view the app in a full screen mode.

   This setting is useful for displaying full sized graphics for TV or larger displays, where the navigation bar and header bar are hidden by default.

6. Click **Login**.

   On successful login, the Web Client Home page appears.

The user credentials are required for the first time. The application will remember the user credentials on subsequent uses. Use the **Clear** button to clear the details from the login screen. Only users that are part of the Web Client user groups can access the Mobile application. Use the log off button to exit the app.

Using the Web Client Mobile App

If your credentials are authenticated and a valid InTouch Web Server license is acquired, the application is displayed. The Home Symbol, if configured will be displayed by default.

1. Click the icon.

   The overlay on the left displays the hierarchical structure of the graphics within the running application.

2. Click a folder name.

   The graphics within the folder are displayed.

3. Click a graphic.

   The selected graphic is displayed.

   You can also Pan and Zoom to view the graphics at a different scale.

Chapter 4

Managing the InTouch Web Client

InTouch Web Client Error Handling

InTouch Web Client provides a uniform error page for displaying expected errors. The error page will be displayed for the following scenarios:

- **No Application** - The InTouch Web Client could not detect the necessary supporting files for the last application run on WindowViewer. Open the required application in WindowMaker.

- **Permission Denied** - The user currently logged in does not have adequate permission to view the web page. Add the user to the aaInTouchUsers or aaInTouchRWUsers user group.

- **No License Available** - A valid license status is not obtained for the current web session. Confirm that a valid web client license is available.

- **Fast Switch Mode** - The web client application is in fast switch mode, but the user tries to access the web client using an URL other than **http:\\localhost\intouchweb**.

Browser and Mobile Support

Browser Support

InTouch Web Client has been tested with the following web browsers:

- Google Chrome
  - Chrome on desktop version 64.0.3282.186 or later
  - Chrome on Android Phone & Pad version 64.0.3282.137 or later
- Microsoft Internet Explorer 11.0.9600.18861 or later
- Microsoft Edge
  - Microsoft Edge on Windows 10 version 41.16299.15.0 or later
  - Microsoft Edge on Surface version 41.16299.248.0 or later
- Apple Safari for IOS version 11.2.6

You will receive an error message if the web browser is not supported.

Mobile Device Support

InTouch Web Client supports the following mobile devices and their default browsers:

- Apple iPhone

- Apple iPad

- Android Phone & Tablet

- Microsoft Surface

Troubleshooting Viewing Graphics in a Web Browser

If the Web Client is not displayed, verify the following settings:

- Ensure that the *InTouch Web Service* is running on the node.

- Ensure the user account accessing the InTouch Web page is part of one of the user groups.

- If IIS is running on the same machine, it may conflict with the InTouch Web Server.

  o If IIS is running and it is not being used, stop and disable the service. If IIS must run, configure to use a port other than Port 80 to avoid conflict.

If you get a *HTTP Error 404.0 - Not Found* error when you attempt to launch the InTouch Web Client:

- Ensure that Web Client is enabled on the selected node. Contact your administrator.

If any graphic primitives or animations are not visible or working as expected:

- Check the list of unsupported features to see if it is not yet supported by the Web Client.

- Run the Web Client locally via http://localhost/InTouchWeb, browse to the symbol, and look for the compatibility icon to view a list of the unsupported items in the graphic.

- If you use a primitive or animation in a graphic that is not supported, it will be removed and a message recorded in the System Management Console (SMC) Logger. The logged message contains the path to a generated CSV report file. You can view the Logger message, and navigate to the report for more information.

If the selected graphic is displayed but no data is shown or animations are not updated:

- Ensure InTouch WindowViewer is running, if the graphics point to InTouch tags.

- Ensure Application Server is running, if the graphics point to Application Object references.

- Ensure the InTouch iData service is running.

Invalid Certificate Error

Error: Certificate Error: Your connection to this site is not secure

When accessing the Web Client the browser presents this error when a valid certificate is not available on the client.

Solution:

1. Connect to the Server machine and launch the System Platform **Configurator**.

2. From the System Management Server page, click **Details**. The Certificate Dialog Box appears.

3. On the Details tab, click **Copy to File**.

4. Follow the instructions of the Certificate Export Wizard and save the file.

5. Copy the certificate file to the client machine.

6. In the client machine, launch Microsoft Management Console (mmc).

7. Import the certificate.

8. After importing the certificate, launch the browser.

Chapter 5

Licensing the Web Client

Licensing for InTouch Application Graphics in a Web Browser

You need a valid InTouch Web Server license to login and view application graphics from a web browser. Licensing also extends to hosting application graphics on external websites. For detailed information on licensing, see the *AVEVA Enterprise Licensing* help. The Web Server provides two types of licenses:

- The InTouch Web Server *Unlimited Read-Only license* will allow you to connect to unlimited sessions for viewing application graphics in a web browser.

- The InTouch Web Server *Unlimited ReadWrite license* will allow you to connect to unlimited sessions for viewing and interacting with application graphics in a web browser.

License Status Change

If the Web Server has acquired a valid license but then failed to renew the license, the Web Client will be in Grace Period mode. A notification message will be displayed in the notification page. The message will be logged every time Web Client attempts and fails to renew the license.

Acquiring a License

Acquiring the license is a two-stage process. After the Web Server starts up, it will first Authenticate the user and then determine the user's Authorization. If anonymous access has been enabled then the authentication step is bypassed and Web Client is launched in a Read-Only mode with the 'Guest' user.

Authentication:

1. Web Client supports Windows authentication. The web server will validate if the user is part of either the "aaInTouchUsers" or the "aaInTouchRWUsers" to be authenticated to use the Web Client. Both the user groups will be created during installation. For a remote authentication server, the domain user groups must be created on the server.

2. The login user at the time of Web Client installation will be automatically added to both user groups. Additional users can be added later. After adding the new user to the group, the new user must log off and then re-login for the change to take effective.

Authorization:

1. After the user is authenticated, the web server will attempt to acquire the ReadWrite license.

2. If a ReadWrite license is not available, then it will attempt to acquire the Read-Only license.

3. If a ReadOnly license is not available, then the web client will operate in a Single Session Mode.

Read-Only and ReadWrite Modes

The Web Client supports two types of modes: ReadWrite and Read-Only.

In the *ReadWrite* mode, the user can:

- Write to external references such as Application Server attributes or InTouch tags.

- Acknowledge alarms with details of the operator.

You can access the Write and Alarm Ack capability if both the following conditions are met:

- The Web Server has acquired the Unlimited ReadWrite license.

- The user logged in to Web Client session is part of the aaInTouchRWUsers user group.

If ReadWrite mode is not available, then the Web Server attempts the Read-Only mode.

The user can access the Read-Only mode only if:

- The Web Server has acquired the Unlimited ReadWrite license, but the user logged in does not belong to the Web Client aaInTouchRWUsers user group, or

- The Web Server has acquired the Unlimited ReadOnly license, or

- The Web Server does not acquire any license and this web client session is the first client session.

In the Read-Only mode, the client session cannot write to external references or acknowledge alarms.

Single Session Mode

If the Web Server does not acquire any license at startup, it will operate in the Single Web Session mode, which is assigned on a first come first serve basis.

- If a valid license is unavailable and the first session license has been acquired, the Web Client will notify the user that no licenses are available.

- The Web Server allows sessions a grace period if the Web Server has acquired an unlimited license, but subsequently loses the license.

Grace Period

The Web Server will enter the grace period under the below conditions:

- If a valid license is acquired and later expires.

- If a valid license is acquired, but cannot be acquired later.

During the grace period, all Web Client features will be available for connected and new sessions. The InTouch Web page will display a visual notification that the Web Server is in grace period mode. The grace period is 14 days. After the grace period has ended, the Web Server will continue to function and immediately switch to a single license for one session, on a first come first serve basis. If the same license is acquired, then the Web Server will exit the Grace Period mode.

Periodic Renewal

After a valid license is acquired, a periodic license renewal will occur. The periodic license renewal operation will only check and ensure if the same license can be renewed. If the same license cannot be renewed, then Web Server will enter into a Grace Period mode. License status will not be upgraded or downgraded. To acquire a different license, restart the Web Server and initiate the startup sequence of license acquisition.

License Release

The Web Server will release all the licenses it has acquired, if the Web Server is shutdown, regardless of the number of client sessions and the current state of the Web Server license. The Web Server will also terminate all web client sessions immediately.