

ICONICS 10.97.2

What's New | **ICONICS Suite™**
December 2022



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Introduction to What's New

This edition of the "What's New" describes many notable new features and enhancements in version 10.97.2 since the previous release (10.97.1). For information on features and enhancements made in earlier versions, see the appropriate "What's New" document for those versions.

For information on fixes made in version 10.97.2, see the appropriate "Resolved Issues" document.

Note that if updates need to be made, the most up to date "What's New" and "Resolved Issues" documents can be found in our online documentation here:

[Release Notes](#)

This document was last updated in December 2022.

Structure of the Document

This document is split into three main sections, one for beta and technical preview features, one for major updates that contain significant explanation, and another for smaller additional enhancements and features that are listed in a table. Sections are broken down further into the different areas of the ICONICS Suite.

Where appropriate, references to additional information, such as instructional application notes or help files, will be indicated.

Security Vulnerabilities

Information about security vulnerabilities will not be found in this document. For this information, refer to iconics.com/cert.

Most Notable Features

Some of the most notable new features in 10.97.2 are listed below. Visit each link to learn more and see the "Major Enhancements" section for additional notable features.

- Hyper Alarm Logger
 - [Data Exporter for Hyper Alarm Logger](#)
 - [Table and Dataset Controls support for Hyper Alarm Logger](#) – Hyper Alarm Logger now supports the query interface
- Hyper Historian

- [Export Data to Kafka via Azure Event Hub](#) – Export to Kafka in the cloud
- [Import Data from MELSEC Q and iQ-R Data Logger Modules](#) – New MergeWorX plugin
- Mitsubishi Electric FA Tools
 - [Asset Builder](#) – automatic configuration of GENESIS64 from a MELSOFT GX Works3 project
 - [GENESIS64 Converter-GOT](#) – convert MELSOFT GT Designer3 projects to GENESIS64
- [Easier Secure Installation](#) – usable out of the box
- [German Language](#)
- [HTML5 and MobileHMI Parity Improvements](#) – continuing to close functionality gaps between HTML5 and WPF platforms
- [Improved Security](#) – better security for various aspects of ICONICS Suite
- [IoTWorX Proxy Support](#)
- [Microsoft Teams Messaging for CFSWorX](#)
- Miscellaneous Enhancements for controls
 - [Data Diagram](#)
 - [Fault Viewer](#)
 - [Table Control](#)
 - [TrendWorX64 Viewer](#)
- [Sample Energy AnalytiX Reports for ReportWorX64](#)
- [Set Value Command](#) – write to localsim and other local values with commanding

Possible Action Needed

This is a list of changes that may require action from the user after upgrading or cause a significant change to the user's workflow. For more information on these work items, search for the reference ID in this document or the [Resolved Issues document](#).

What Changed?	Possible Action Needed	Reference ID
If the SQL Server certificate is self-signed, connection strings now need to specify "trustservercertificate=true" or the connection will fail.	<p>If you plan to install Critical Fixes Rollup 1 or later:</p> <p>You do not need to take any additional action. The connection strings update automatically when the rollup is installed.</p> <p>If you do not plan to install a Critical Fixes Rollup:</p> <p>If you are upgrading a configuration from a previous version, you either need to configure SQL Server with a certificate from a trusted certificate authority or manually update the connection strings.</p> <p>To update the connection strings, do one of the following:</p>	87517, 90969

	<ul style="list-style-type: none"> • Add "trustservercertificate=true" to the end of the connection string. • Open the connection string dialog and enable Trust Server Certificate. <p>Connection strings that are used for configuration databases will update automatically when upgrading, but other connection strings will need to be edited. These include but are not limited to:</p> <ul style="list-style-type: none"> • AlertWorX custom logging database • Assets (AssetWorX) cache data store • AlarmWorX64 Logger custom logging database • Bridging (BridgeWorX64) custom logging database • Connected Field Service (CFSWorX) custom logging database • Hyper Historian data exporter storage of type "SQL/Azure SQL" • Reporting (ReportWorX64) custom logging database • TrendWorX64 Logger custom logging database 	
<p>WCF communication was disabled by default in version 10.97.2.</p> <p>Installing Critical Fixes Rollup 1 or later will automatically enable WCF communication.</p> <p>With WCF disabled you may see connectivity issues, such as:</p> <ul style="list-style-type: none"> • Clients (including Workbench, GraphWorX64, web clients, and the MobileHMI app) will not be able to connect to the server. They may report a license failure or general connectivity failure. • Hyper Historian will not log any data coming from a remote collector. 	<p>Install Critical Fixes Rollup 1.</p> <p>Optionally, because the WCF protocol is being obsoleted by Microsoft, you may want to switch to WebSockets using these steps:</p> <ol style="list-style-type: none"> 1. Open the FrameWorX Server Location dialog. 2. Select Configure for the primary or secondary server. 3. Choose WebSockets and select OK. 4. Repeat for the primary and secondary server on each tab of the FrameWorX Server Location dialog. 	84515, 91261
IoTWorX edge/gateway devices now require Azure IoT Edge Runtime 1.2 instead of 1.1.	To deploy the new version to an IoTWorX edge device, follow the steps in the 10.97.2 Readme file or What's New document.	88006
The base operating system for IoTWorX containers was changed to Alpine Linux 3.14 for enhanced security. As a result of this change, IoTWorX containers on EFLOW will can no longer connect to IoT Edge without extra steps.	<p>IoTWorX EFLOW users who require BACnet Network Discovery or the SNMP Explorer should not upgrade to version 10.97.2 until this issue is resolved.</p> <p>Users who do not need BACnet Network Discovery or the SNMP Explorer can disable them to regain IoT Edge connectivity. Follow these steps:</p> <ol style="list-style-type: none"> 1) Open Workbench where your IoT project is located. 2) Configure the modules for the devices that use EFLOW. <ol style="list-style-type: none"> i. For a single device, right-click the device, select Configure Modules, then Click to Configure Modules. 	90526

	<ol style="list-style-type: none"> ii. For multiple devices, right-click Devices, and then select Bulk Modules Configuration. 3) Find the IoT Edge Agent (or IcoEdgeAgent) module. 4) Ensure Deploy is selected. 5) Select Advanced Settings. 6) In Container Create Options, look for Networking Config. In that section, remove these lines: <pre> "EndpointsConfig": { "host": {} } </pre> 7) Look for HostConfig. In that section, remove the "NetworkMode": "Host", line. 8) Select OK. 9) Repeat for all modules that you plan to deploy on the device. 10) Select Deploy. 	
<p>The Unrestricted Servers tab of the Platform Services Configuration dialog has been removed. It is no longer possible to trust remote server modules based on the machine name or IP address.</p>	<p>If you previously added machines names or IP addresses to the Unrestricted Servers tab to trust the remote server modules on those nodes, you will need to use one of the two methods below.</p> <p>Preferred steps:</p> <ol style="list-style-type: none"> 1. Make sure that FrameWorX Server is running as a domain user. 2. Ensure that the trusted server modules are running as the same identity as FrameWorX Server. 3. On the FrameWorX machine go to Platform Services Configuration > Access Restrictions tab and select Allow unrestricted access for server modules. <p>Alternative steps:</p> <ol style="list-style-type: none"> 1. Open the Platform Services Configuration dialog and go to the Passwords tab. 2. Add the appropriate credentials for your trusted server modules. 	87138
<p>Users now need security permission to write to GenEvents.</p>	<p>Users must now be granted permission to post custom GenEvents. Custom GenEvents are generated by:</p> <ul style="list-style-type: none"> • The Log Event global command. • Scripting, such as the LogSimpleEvent or LogTrackingEvent functions in FwxClientWrapper. <p>To grant this permission to a specific user or group:</p> <ol style="list-style-type: none"> 1. In Workbench, go to Security and expand Users or Groups as needed. 2. Double-click the appropriate user or group. 3. In the tab that appears, in the Application Actions section, expand Common and select Log GenEvent. 	87153, 87783

The source and message fields of some GenEvents have changed.	<p>If filters have been applied to GenEvents (on display or logging), especially if the Source/Tag or Message fields were used, you may need to update the filters to match the new information.</p> <p>ICONICS recommends applying filters only on the display side, not logging. Data that is not logged is gone forever. An incorrect filter on the logger side can create permanent data loss, whereas an incorrect filter on the display side does not.</p>	87153, 87783
The ICONICS OData Connector Point Manager (FwxODataService) service is now disabled by default for security reasons.	Users can enable the ICONICS OData Connector Point Manager (FwxODataService) service via the Services control panel or switch to the more secure Web Platform Services (WebAPI) REST API.	89251
The OPC Direct and OPC Over DCOM channels are now marked as "obsoleted" due to Microsoft's hardening of DCOM. These channels are configured in Workbench under Platform Services > FrameWorX > Server Settings > GenBroker64 Settings .	ICONICS recommends using the OPC Over TCP/IP channel for remote OPC Classic servers. This was the default, so you may not need to make any changes. See this news article for more details about this change and Microsoft's hardening of DCOM.	88836
The OPC Configuration Tool has been removed.	Users who need to add Certificate Authority-signed certificates to FrameWorX - should refer to this help topic .	90190

Beta and Technical Preview Features

Items in this section are either Beta or Technical Preview features.

Beta – Features labeled "Beta" are features that are near completion but still contain several known and unknown bugs. Beta features may also have speed or performance issues and may also cause crashes or data losses. These features are fully intended to be released as completed features in the future and are currently suitable for customers to use in test environments and in certain cases, production runtimes. For a full list of known issues or to report new ones, please contact us.

Technical Preview – Features or releases that are labeled "Technical Preview" are features that are not fully supported, may not be functionally complete, and are not suitable for deployment in production. These features are provided as a courtesy with their primary goal of exposing experimental and innovative technology to gain insights on how these can be applied in projects. Bugs, anomalies, and performance issues are expected as it is not productized code; however, these specific items do not fall under any implied or explicit service level agreements in place. It is the intention of ICONICS to further develop technical preview features in a future release, however, due to what we learn and unforeseen circumstances, some of the technical preview features may get dropped from future releases and production support will not be made available.

Beta: BACnet with SC Point Manager

(Reference IDs: 81438, 82093, 82094, 83903, 84059, 85851, 88060)

This version contains a beta of the new **BACnet with SC Point Manager**. This feature was first introduced in version 10.97.1 as a technical preview.

The new BACnet with SC Point Manager is designed for ASHRAE 135-2016 (BACnet Protocol Revision 19) and includes support for BACnet Secure Connect (BACnet/SC) as defined in Addendum 135-2016bj to the BACnet protocol.

In addition to this enhanced security, BACnet with SC comes with improved support for BACnet alarms, improved network discovery (with better filtering), and multi-channel support (allowing BACnet device ID isolation between different networks).


Along with the improved BACnet with SC Point Manager, the **BACnet with SC Workbench Provider** has been redesigned to work with the latest BACnet standards, including support for many new object types.

The Data Explorer has also been improved to work with the new BACnet with SC Point Manager and take advantage of the new features.

The **BACnet Classic Point Manager** is still included in this version and is the default BACnet Connector. There is currently no upgrade path from a BACnet Classic configuration to a BACnet with SC configuration, but we plan to have one in future versions.

The **Project Document** feature of Workbench, which allows users to generate reports about their configuration, has been enhanced to work with either of the two BACnet point managers.

To try out the BACnet with SC Point Manager beta:

- 1) Open **Workbench**.
- 2) Select your project in **Project Explorer**.
- 3) From the context menu or the **Home** ribbon, select **Configure Application(s) Settings**.
- 4) Uncheck **BACnet Classic**.
- 5) Check **BACnet with SC** and select the desired **SQL Server** and **Catalog**. (This can be the same database where the BACnet Classic configuration is located or a different database.)
- 6) If there is not already a configuration in the desired database:
 - a. Select the  **Create or overwrite the database associated with this application** button for BACnet with SC.
 - b. If you are sure there is no existing BACnet with SC configuration or you're okay with overwriting it, select **OK** to the warning message. (This will not overwrite the BACnet Classic configuration.)
 - c. Wait for the configuration to be created in the database.
- 7) **Apply** the changes.
- 8) Confirm that the **Notes** for **BACnet with SC** say **Configuration Active**.
- 9) In **Project Explorer** under **Data Connectivity**, you should now see the **BACnet with SC** provider.

To switch back to BACnet Classic, follow the steps again except check BACnet Classic and uncheck BACnet with SC. Advanced users can enable both applications at the same time, but note that they share the same port, so only one point manager can run at a time. One set or the other of BACnet services must be disabled from the Windows Services control panel. (The Configure Application(s) Settings dialog takes care of this when only one application is enabled.)

The version 10.97.1 iteration of BACnet with SC contained some limitations. This beta release contains these enhancements beyond version 10.97.1:

- The Schedule Control has been advanced to have full support for BACnet with SC.
- BACnet trends are now supported.
- BBMDs and Foreign Devices are now supported in BACnet with SC.
- The "AddListElement" and "RemoveListElement" services are now supported. BACnet with SC can now add or remove elements in a list.
- Added this new functionality to Device Management:
 - Backup and restore (DM-BR-A)
 - Creating/removing objects (DM-OCD-A)
 - Reinitialization of device (DM-RD-A)
 - Manual/automatic synchronization (DM-ATS-A, DM-MTS-A)
 - Device communication control (DM-DCC-A)
- Elliptic curve encryption is now available.
- Native data types are now available.

There are still some notable differences in the behavior of BACnet with SC and BACnet Classic that users may want to be aware of.

- **Device templates** – BACnet with SC currently only has one default device template. Future versions will support multiple device templates.
- **Device status checking** – In BACnet Classic, Workbench automatically detects a device's status and reflects this in the device's icon in the Workbench tree. This is done by regularly polling each device's systemStatus point. With BACnet with SC, Workbench only polls systemStatus to update a device's status icon when the device is refreshed. This means the Workbench icons do not update automatically, but it is a more efficient use of resources. A refresh action can be manually triggered from each individual device or from the parent level of all devices.
- **Time/date and priority array format** – BACnet with SC can expose time/date data types and priority arrays as JSON objects in addition to the datetime and array native types.

For Further Reference

- Help: [Overview of BACnet with SC](#)

Technical Preview: Enhanced Redundancy Switch

The ICONICS team has included in this release a technical preview feature that provides the ability to define an expression to trigger a failover. With this feature enabled, you can define an expression that will force the system to fail over to its pair. The original intent of this capability was to be able to fail over based off the quality of the data coming into the system versus the status of the ICONICS associated service, but it can be used for many other scenarios depending on your specific needs.

The elements of the expression can be defined on any level of a tag (i.e.: quality, value, etc.) and you can define expressions for an entire OPC UA server, for a single device, or for a single tag. Below is the scenario we considered for this feature.

An expression can monitor two OPC UA servers, ServerA and ServerB, and on each of these servers the expression is monitoring the quality element of a specific PLC/device register to determine if the system is online and collecting or providing good data to the user. In the event that ServerA's quality is bad, the expression will trigger a failover to ServerB. Once the ServerA quality has returned to good, the system will go back to using ServerA.

If you chose to enable this technical preview feature, know that the existing standard redundancy expression remains running. The standard expression is based on monitoring the health and status of the paired ICONICS software components. So, if you enable this feature and define an expression based off the quality of the data, you'll be adding another level of resiliency to your system.

While we're confident in this new feature, we simply haven't tested it with real world implementations and have not provided a GUI within Workbench to configure the expression. Thus, we are releasing this feature as a tech preview and expect it to make its way into the product as a standard feature in an upcoming release.

Please contact your distributor or sales representative for information on how to try out this feature and we'll guide you through it.

Technical Preview: HTML5 3D Viewer Support

The technical preview of 3D viewport support in HTML5 WebHMI and MobileHMI displays continues in version 10.97.2. This feature will close a significant functionality gap compared with WPF WebHMI (which runs only in Internet Explorer) and desktop GraphWorX64.

The 3D viewport is now available when GraphWorX64 is in Web Browser or Mobile App edit mode. Previously the 3D viewport was only available in the Desktop App or UWP App modes.

The preview 3D support must be enabled in **ico.anyglass.parsing.config** (located by default in C:\Program Files\ICONICS\GENESIS64\WebSites\AnyGlass\Bin) by setting `<Experimental3DSupport enabled="true"/>`. Without this enabled, the 3D viewport will not be rendered in HTML5 displays.

There are some limitations and differences to the HTML5 3D support from the WPF (desktop) implementation. Most notably, these are not supported:

- Annotations and embedded GraphWorX64 Viewers in the 3D space
- Primitives: Tiling, custom tile, mapping, and mapping direction properties
- Camera View: Camera Patrol, Camera Follow
- Materials: Back material, 2D material, material mapping and mapping directions (only solid color materials are supported)
- Dynamics: Disable dynamic

Note, in HTML5 displays the 3D viewport will be rendered on top of any other controls or elements in the GraphWorX64 display. Also, there is a limitation of one 3D viewport per screen. If multiple viewports are added, only the first one will be rendered in runtime.

New for version 10.97.2, when GraphWorX64 is in Web Browser configuration mode, the 3D Viewport more accurately reflects limitations of the HTML5 3D capabilities.

For Further Reference

- Help: [Mobile 3D Viewports](#)

Major Enhancements

Common & Platform Services

German Language

In addition to Chinese, French, Japanese, and Russian, ICONICS Suite is now available in German.

Note, Russian is only available in runtime. Chinese was added in 10.97.1 Critical Fixes Rollup 2.

Commanding

Write to Localsim Tags with Set Value Command

(Reference ID: 26286)

A significant limitation of the preexisting Write Value global command is that it can only write to tags that are visible to all clients on a system. This means that local tags, such as the "localsim" tags that are unique to a given GraphWorX64 display, could not be written to using the Write Value command.

The **Set Value** command was introduced to bridge this gap. Set Value works like Write Value except it takes a target parameter, and the target executes the write. This means that the command can target a particular GraphWorX64 display and write to a localsim tag on that display, including local variables and properties.

Here are some places where Set Value allows you to write to local tags where you couldn't before:

- The AssetWorX Navigator and other controls that execute commands
- Batch commands
- "Pressed When" pick actions
- GraphWorX64 [event commands](#)
- Across GraphWorX64 windows, such as from a popup to a parent

The Set Value command is supported in both desktop (WPF) GraphWorX64 and HTML5 displays.

For Further Reference

- Help: [Set Value Command](#)

FrameWorX

GenBroker DCOM Channels Obsoleted

(Reference ID: 88836)

For security reasons, Microsoft has been hardening DCOM communications between remote machines. Due to these changes, the OPC Direct and OPC Over DCOM channels are now marked as "obsoleted". These channels are configured in Workbench under Platform Services > FrameWorX > Server Settings > GenBroker64 Settings.

These channels will still continue to work unrestricted by ICONICS functionality, but eventually will become nonfunctional due to Microsoft's DCOM hardening. ICONICS highly recommends that systems that were using these channels to communicate with remote OPC Classic servers switch to the OPC Over TCP/IP channel or take some other mitigation step as described in this [ICONICS press release](#).

Future releases of ICONICS Suite will remove the option to create these obsoleted channels entirely.

The TCP/IP channel has been and continues to be the default channel for remote OPC Classic servers. Systems configured to use this channel will not be affected. This means that the majority of ICONICS users will need to make no changes and will see no adverse effects from Microsoft's DCOM hardening.

Note, this only affects communication with remote OPC Classic servers. OPC UA servers do not use GenBroker or DCOM. Communication with local OPC Classic servers is not affected by Microsoft's DCOM hardening.

For Further Reference

- Help: [GenBroker64 Settings](#)

Installation

Easier Secure Installation

(Reference IDs: 88374, 88379)

We've heard the feedback and taken steps to make our "secure" installation easier to use out of the box.

The installation now offers the user a choice between a "Normal" and "Secure" setup and clearly describes the differences between them.

A secure setup will be usable from the start, no longer requiring users to enable applications. All installed applications will be enabled by default for both the normal and secure setup installations.

ICONICS Suite - InstallShield Wizard

ICONICS Suite

Please specify an administrator user that will be used to log in the GENESIS64 applications.

User Name: MyFirstUser

Password:

Confirm Password:

Choose setup mode. Note, these settings can always be modified after installation.

☒ Normal Setup
Easy but less secure. Login to Workbench not required.

☐ Secure Setup
Login to Workbench required. HTTPS is default for connections and remote HTTP disabled.
WPF WebHMI (requires Internet Explorer) disabled.

InstallShield

< Back Next > Cancel

As described in the installation itself, after installation, the secure setup will require a login to Workbench, will use HTTPS by default, and will disable HTTP for remote connections. (HTTP is still used for local connections.) The GENESIS64 IIS application pool will be disabled, which will prevent WPF WebHMI clients from connecting. (WPF WebHMI requires Internet Explorer. This restriction does not affect HTML5 WebHMI clients.)

All of these settings can be changed after installation. Users can choose to secure a normal setup or loosen the restrictions on a secure setup after the installation has completed.

For Further Reference

- Help: [Secure and insecure installation](#)

Legacy OData Connector

OData Connector Service Disabled by Default

(Reference ID: 89251)

Starting in version 10.97.2, the legacy OData Connector is disabled by default for security reasons. Users who wish to continue using it can change the startup type of the **ICONICS OData Connector Point Manager (FwxODataService)** service from **Disabled** to **Automatic** or **Automatic (Delayed)**.

The OData Connector is a legacy component that provides REST endpoints for ICONICS data. It has been replaced by Web Platform Services (also known as WebAPI).

The OData Connector REST API is less secure than the Web Platform Services REST API. It supports authentication, but only HTTP Basic Authentication which requires sending username and password credentials in plaintext. Furthermore, the OData Connector's REST API is configured with an unencrypted HTTP endpoint by default. These factors make the OData Connector unsecure, so ICONICS does not recommend its use and encourages users to instead use the more secure Web Platform Services API for REST integration, where possible.

For Further Reference

- Help:
 - [Setting Up Web API REST](#)
 - [OData Connector](#)

Security

Security Hardening for Trusting Server Modules

(Reference ID: 87138)

ICONICS has taken steps to harden security in version 10.97.2.

When most client applications, such as GraphWorX64, connect to a FrameWorX Server instance, they supply the credentials of the logged-in ICONICS user and can see data and perform actions according to the configured security in that FrameWorX Server. However, applications without a graphical user interface, such as the AnalytiX-BI server or AssetWorX, did not use the credentials of the logged-in user. These types of applications are referred to as "server modules". The security credentials for server modules had to be supplied another way.

Previously, one way to deal with this situation was to configure the "Unrestricted Servers" tab of Platform Services Configuration. This tab contained a list of machine names and IP addresses. These machines were considered "trusted", and any server modules on those machines would be allowed full access to FrameWorX Server without having to supply security credentials.

Due to the possibility of spoofing machine names and IP addresses, this "Unrestricted Servers" tab has been removed.

To replace this functionality in a more secure manner, server modules can be considered "trusted" if they are running under the same identity as the FrameWorX Server or if they are running as SYSTEM and on the same machine as the FrameWorX Server.

Note that when communicating between two different nodes, a domain is required to ensure the identity is the same. Local users with the same name on two nodes will be considered different users. Also note that on a default system all locally installed server modules are considered trusted because, by default, they are all installed under the same user account.

This method of trust is enabled by default, but can be disabled by opening **Platform Services Configuration**, going to the **Access Restrictions** tab (which was formerly named "Allowed Clients"), and unchecking **Allow unrestricted access for server modules**.

An alternative method to providing security context for server modules is to use the **Passwords** tab in **Platform Services Configuration**. This is unchanged from previous versions.

Users who were previously leveraging the "Unrestricted Servers" tab should either ensure that all ICONICS services are running as the same domain user across all ICONICS nodes that need communication, or they need to leverage the Passwords tab of Platform Services Configuration.

For Further Reference

- Help:
 - [Platform Services Configuration](#)
 - [Passwords](#)

Security Hardening for GenEvents

(Reference ID: 87153, 87783)

Accurate logging is very important to a secure system. To help protect the integrity of the GenEvent log, the generation of many GenEvents has been moved from the client side (applications such as GraphWorX64 or screens running in the browser) to the server side (specifically, in FrameWorX Server).

This move may change the source value for event messages. Users upgrading systems that logged or displayed GenEvents with filters applied should check their filters to be sure they still show or hide the desired messages. (Note, ICONICS recommends no filtering be done on the logging side, only on the viewing side. This way if a mistake is made in the filter, no data will be permanently lost.)

The GenEvent messages that were moved include:

- User login and logout
- Alarm acknowledgement
- Set alarm state (such as latch)
- Updating datasets
- Updating historical data (including SPC annotation)
- Calling a method

Security has also been added to the generation of GenEvents from within client applications. Users who were using the Log Event global command or scripts that generated GenEvents (such as the LogSimpleEvent or LogTrackingEvent functions in FwxClientWrapper) now need to be granted the **Common > Log GenEvent** permission in the **Application Actions** section of a user or group in Security.

Note that, since the Log GenEvent application action is new in version 10.97.2, systems that were upgraded from previous versions will not have this application added to their configuration automatically. Users should be sure to add this permission to their security if their users need to log GenEvents from clients.

Folder Visibility in the Data Browser Can Be Secured

(Reference ID: 86999)

It is now possible to secure which folders users can see in the Data Browser.

The ability to hide individual points from the data browser based on security was added in version 10.97.1, but this could only be used to secure "leaves" in the browsing tree (such as OPC tags). It could not be used to secure folders. The folders were always visible, even if browsing was denied for all points.

Now, folders can also be hidden based on security. Folder names can be added to a user or group's Points tab, and the Browse checkbox can be used to allow or deny visibility of that folder in the Data Browser.

Users can select a folder in the Data Browser and view the breadcrumb bar to see the name of the folder according to security. Wildcards can be used in this name as normal when adding it to the Points tab in security.

Note that some data providers do not have hierarchical names for folders. These providers may be unable to hide and show individual folders with security.

For Further Reference

- Help: [Points Tab](#)

Option to Disable Scripting in GraphWorX64

(Reference ID: 89769)

Users can now disable scripting in their GraphWorX64 installations by making a change to a configuration file. Disabling scripting will help you secure the automation system or developer station as a whole. ICONICS encourages integrators to use a holistic approach to security by looking at all elements of your architecture.

Scripting is enabled by default. To disable scripting, edit the **Gwx.config.xml** file (located by default in **C:\Program Files\ICONICS\GENESIS64\Components**), search for **ScriptingEnabled**, and set the value to **false**.

For Further Reference

- Help: [Scripting Basics](#)

Tools

Asset Builder – New Optional Feature

(Reference ID: 86907)

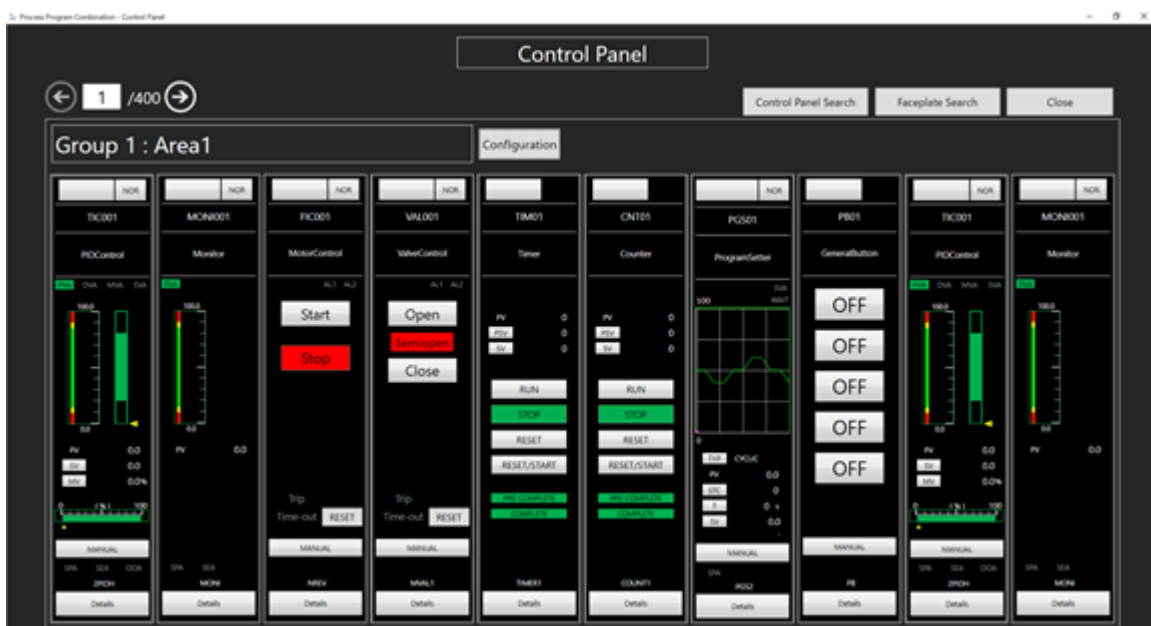
The Asset Builder is a new optional feature for GENESIS64 that can take a template file for Mitsubishi Electric FA PLCs and automatically generate AssetWorX assets and GraphWorX64 screens to match the PLC configuration. This allows users to generate a system in very little time and with very little manual configuration.

The Asset Builder can generate these configurations and files:

- GraphWorX64 screens
- AssetWorX configuration
- Language Aliasing configuration
- Mitsubishi Electric FA configuration

Version 10.97.2 includes the Process Automation Template, allowing users to automatically create standard Process Automation monitoring screens, such as Control Panel, Faceplate, and Turning screens.

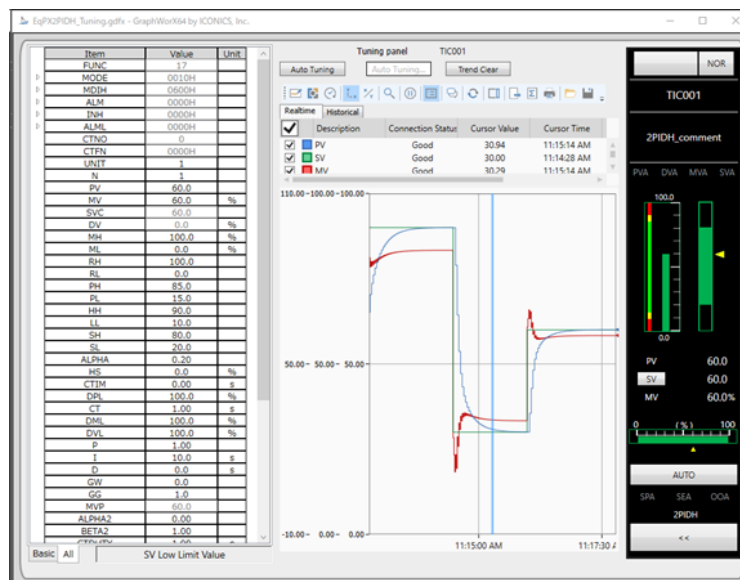
To use Asset Builder, users can launch the Asset Builder from Workbench and follow the wizard to import their GX Works3 project (*.GX3) or Assignment Information Database file (*.FADB) from GX Works3, select a template, and configure a few settings. In just a few minutes, Asset Builder will create a fully functional GENESIS64 system, customized for your Mitsubishi Electric FA PLCs.



These PLCs are currently supported by the Process Automation Template:

- RnPCPU - R08PCPU, R16PCPU, R32PCPU, R120PCPU
- RnPSFCPU - R08PSFCPU, R16PSFCPU, R32PSFCPU, R120PSFCPU

Screens created by Process Automation Template are designed for desktop (WPF) format. They run in desktop GraphWorX64 or in Edge running in IE mode. They are not supported for MobileHMI or HTML5 clients.



Asset Builder is available for both GENESIS64 Advanced and GENESIS64 Basic SCADA systems.

Note, the Asset Builder requires a separate license. To see a demonstration of Asset Builder, please contact your ICONICS representative. The Asset Builder license is not included in demo mode or the one-time 30-day temporary license. It is also not subject to the grace period that occurs after contact with the license server is lost.

For Further Reference

- Help: [About Asset Builder](#)

GENESIS64 Converter-GOT – New Optional Tool

Users with existing Mitsubishi Electric GT Designer3 (GOT2000) projects can now automatically convert them to GraphWorX64 projects using a new tool called **GENESIS64 Converter-GOT**.

Launch **GENESIS64 Converter-GOT** from Windows **Start > ICONICS Tools**, specify your GTX project file and fill in a few other settings. The tool will produce one or more GraphWorX64 display files (GDFX) and, if necessary, a CSV file that can be imported into the Mitsubishi Electric FA Connector.

For Further Reference

- See the help document from within the GENESIS64 Converter-GOT tool.

AnalytiX

AnalytiX-BI

Calculate Aggregate Values with OVER and PARTITION BY Clauses

(Reference ID: 86255)

AnalytiX-BI now supports the OVER and PARTITION BY clauses. These clauses work similarly to the equivalent T-SQL clauses. They allow the user to determine the partitioning and order of a rowset before an associated window function is applied.

The OVER clause can be used with functions to calculate aggregated values, such as moving averages, cumulative averages, running totals, or the top N items per group.

The following example query uses a subquery to compute monthly order totals, and then calculates a monthly running total using the OVER clause:

```
SELECT
  [Year],
  [Month],
  toformat(SUM(Total) OVER (PARTITION BY [Year] ORDER BY [Month])), 'n') AS [Running
Total]
FROM
(
  SELECT
    year(OrderDate) AS [Year],
    month(OrderDate) AS [Month],
    SUM(Quantity * UnitPrice * (1 - Discount)) AS [Total]
  FROM
    Orders AS o INNER JOIN OrderDetails AS od ON od.OrderID = o.OrderID
  INNER JOIN
    Customers AS c ON c.CustomerID = o.CustomerID
  GROUP BY
    year(OrderDate),
    month(OrderDate)
) AS t
ORDER BY [Year], [Month]
```

Enhanced Query Performance via Column Statistics

(Reference ID: 87048)

The performance of large, complicated queries has been enhanced by the implementation of column statistics.

AnalytiX-BI now uses statistics to optimize predicate execution and to create indexes for columns most commonly used in predicates.

These column statistics are not visible to the user, but they will be used to help move towards the fastest possible execution time of each query.

BridgeWorX64 & Workflows

New BridgeWorX64 Activities

(Reference IDs: 65293, 65294, 69786, 86731)

Four new activities have been added to BridgeWorX64.

- **Variable Reader** and **Variable Writer** – These activities can read and write to global and local variables. They convert the variables to and from datasets, making them easily accessible to other activities.
- **Bulk Web Service Manipulator** – Allows users to send multiple values to web services, similar to the GridWorX Bulk Manipulator.
- **Generic Method Call** – Calls a method from a point manager, similar to the Call Method global command.

These blocks are only available in BridgeWorX64, not Workflows or CFSWorX.

For Further Reference

- Help: [Templates](#)

CFSWorX

Workflow and Alerts

Microsoft Teams Messaging

(Reference ID: 85709)

CFSWorX can now send alerts to Microsoft Teams chats. Messages can be sent to individuals or groups.

The integration first needs to be configured in **Workbench** under **Alarms and Notifications > AlertWorX > MSTEams Configuration**.

Once the Teams connection is configured, the **Teams IM** activity can be used in Connected Field Service templates to notify workers of alarms via Teams chat.

Acknowledgement Support for Azure Communication Services SMS

(Reference ID: 83809)

Alarms sent via Microsoft Azure Communication Services SMS can now be acknowledged.

IBM Maximo No Longer Supported

(Reference ID: 86866)

Due to IBM ending support for the necessary services, sending CFSWorX alerts with IBM Maximo is no longer supported.

Please contact your local sales representative or email info@iconics.com with questions or feedback.

Workbench Provider

Configuration Interface Improved for Ease of Use

(Reference ID: 87821)

Numerous improvements were made to the configuration of worker sources, workflows, templates, and activities to make them more intuitive and easier to use. Some of these enhancements include:

- Many dialogs clarified and improved
- Enhanced helpful tooltips
- Workflows can be enabled/disabled on the configuration level

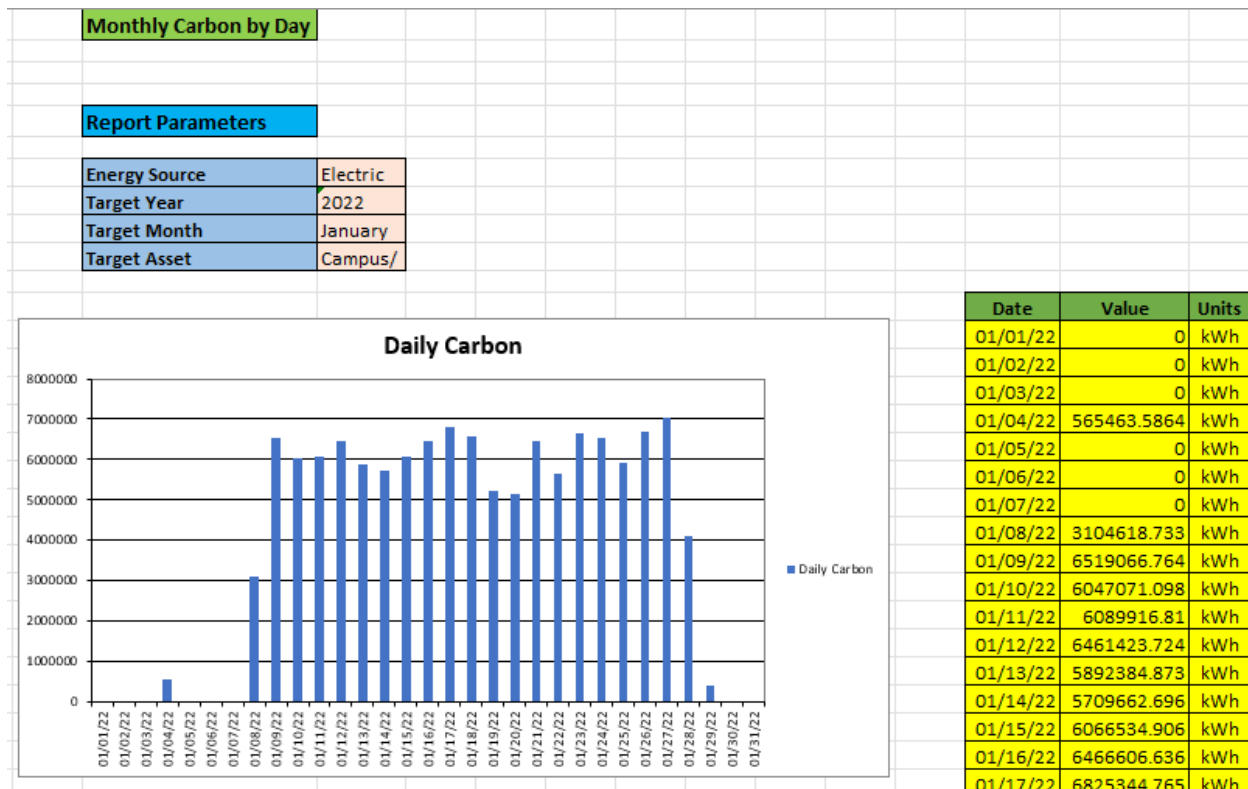
In addition, the various email, SMS, voice, and WhatsApp activities were unified into just four activities: Send Email, Send SMS, Send Voice Message, and Send WhatsApp. This reduces the list of activities in the library and makes it easier for users to reuse workflow diagrams for different services. For instance, switching from Twilio voice to Vonage voice now can be done by changing one field, instead of having to remove and re-add a whole new activity block.

Energy AnalytiX

Sample Energy Reports for ReportWorX64

(Reference ID: 87259)

Energy AnalytiX users can now import prebuilt sample energy reports for use in ReportWorX64 Server.



Users can unpack **EnergyReports_Pack_10.97.20.pkgx** in **Program Files\ICONICS\GENESIS64\AnalytiX Reports**. This will add two new folders under **Reports**, an **Energy Reports** folder under **Configurations > Sample Configuration** and an **Energy Templates** folder under **Templates**.

These reports give energy users another way to get insight on their energy data. They can be used out of the box or fully edited and customized using standard ReportWorX64 features.

Note, the reports in the Long Term folder require the Daily aggregates to be enabled in the energy application.

For Further Reference

- Help: [Sample Energy Reports](#)

Global Energy Variables

(Reference ID: 85677)

Users can now optionally define global energy variables. These are energy variables whose values are likely to be the same across all assets, such as electrical cost, CO2 factor, and BTU factor.

These values will not be logged by Hyper Historian. Energy calculations that utilize a global variable will use the most recent value available for that variable. If the value has changed, recalculating the energy data will use the current value, not the original historical value.

To create a global energy variable, edit the **Energy Variables** defined in Energy AnalytiX. Check the **Global Variable** box for the variables you would like to make global and fill in the **Global Variable Value** column with its current value.

For Further Reference

- Help: [Energy Variables](#)

Facility AnalytiX & FDDWorX

Fault Viewer

Table Control Improvements

The Fault Viewer shares these enhancements with the Table Control:

- [Column Visibility](#)
- [Custom Expression Filter](#)
- [Image Button Column Content Type](#)
- [Linked Aggregation](#)

Data Connectivity

Mitsubishi Electric FA Connector

GX Works3 Global Labels and Structures Import

(Reference ID: 87165, 87166)

Workbench can now import the global labels and structures from a GX Works3 project file, making it easier than ever to use your Mitsubishi Electric Factory Automation device data in ICONICS Suite.

After creating your device in Workbench, use the context menu or **Home** ribbon to select **Import global labels**, then select your GX3 file and import mode. Your GX Works3 project structure and global labels will be imported automatically into Workbench.

For Further Reference

- Help: [GX Works3 Global Labels and Structures Import](#)

Additional Data Types: Structured Labels, Arrays, and Strings

(Reference IDs: 87222, 87165)

The Mitsubishi Electric FA Connector now supports arrays, strings, and structured data type tags.

For Further Reference

- Help: [Add MELSEC](#)

Simulator for MLESEC Devices

(Reference ID: 87221)

MELSEC devices can now be simulated. Select the **Use Simulator** box and fill in the Simulator Settings section.

Note that QCPU, LCP, FXCPU, and QSCPU series do not support simulator, so the simulator options will be disabled when one of these CPU Series is selected.

For Further Reference

- Help: [Add MELSEC](#)

GENESIS64

Alarms and Notifications

Hyper Alarm Logger

Data Exporter

(Reference ID: 87024)

The new Data Exporter for the Hyper Alarm Logger allows users to access their alarm data in third-party storage components, including SQL Server and CSV.

Users familiar with Hyper Historian will find the Hyper Alarm Logger Data Exporter very similar to the Hyper Historian Data Exporter. Both work by scheduling tasks to sort logged data into a dataset and then transfer that dataset into a storage space, such as a SQL database.

Hyper Alarm Logger data exporters are configured in Workbench under **Alarms and Notifications > Hyper Alarm Logger > Data Exporters**.

The Hyper Alarm Logger currently supports two storage formats, SQL Server (on-premise or Azure) and CSV.

Note that when Hyper Alarm Logger is running redundantly, the data exporter only runs on the currently active node.

For Further Reference

- Help: [Hyper Alarm Logger Data Exporter](#)



Support for Query Interface (Table and Dataset Controls)

(Reference ID: 85223)

The Hyper Alarm Logger now supports the Query Interface, used by many controls that display datasets, such as the Table Control, Fault Viewer, Data Diagram, Heatmap, and Sankey Diagram.

The query interface is an ICONICS protocol for retrieving datasets. It has been designed to be more efficient at retrieving data, especially when the original dataset needs to be modified, such as by sorting, calculating aggregates, or displaying only a subset of the columns. The query interface allows the server to process those modifications more efficiently before sending the data to the client, whereas with the original dataset protocol the client had to retrieve the entire dataset and modify it on the fly in runtime.

To see data from the Hyper Alarm Logger in the table control:

- 1) Configure the **table** control.
- 2) For **Query**, select **type**.
- 3) For **Data Source**, browse under **Alarms and Notifications** > **Hyper Alarm Logger Query Interface** and select **.Query**.
- 4) For **Table**, select the desired Hyper Alarm Logger collection.
- 5) Go to the **Fields** page.
- 6) Select the refresh  button.
- 7) Go to the **Columns** page.
- 8) Select the refresh  button.
- 9) Make further updates to **Fields** or **Columns** as desired.
- 10) Select **OK**.
- 11) Go into runtime to see your data.

Other ICONICS products that use the query interface will be able to access Hyper Alarm Logger data in a similar fashion.

For Further Reference

- Help: [Table Control](#)

Controls

Data Diagram

Data Diagram Improvements

The Data Diagram shares these enhancements with the Table Control:

- [Custom Expression Filter](#)
- [Linked Aggregation](#)

Table Control

Column Visibility

(Reference IDs: 86708, 59791)

The Table Control and Fault Viewer can now set the visibility of their columns.

Columns that are present but not visible can still be exported, allowing users to configure displays that have a simpler on-screen display but export more verbose data (or vice versa). A column's visibility and exportability can be configured independently.

The visibility of a column can now also be changed in runtime using the Set Visibility command with the Column object type.

For Further Reference

- Help:
 - [Table Control](#)
 - [Fault Viewer](#)
 - [Set Visibility Command](#)

Custom Expression Filter

(Reference IDs: 86060, 85085)

Filters for the Table Control, Data Diagram, and Fault Viewer can now use a custom expression.

Previously, to create a filter, users had to choose a field, an operator, and a value. Multiple clauses could be combined with "and" or "or" operators, but there was a limit to the complexity of the filter. Now, users can add a **Custom Expression** to the conditions of a filter and leverage the expression editor to create filters as simple or complex as they need. Custom expressions can use context variables from the dataset being displayed in the table or fault viewer.

Users who prefer the simplicity of the old conditions can still use them. When adding a condition, choose **Field Comparison**.

If desired, multiple custom expressions and field comparisons can be added to a single filter, using the same "and/or" logic to combine them.

Commands such as Set Filter can use the new custom expressions as well when using a Table Control, Data Diagram, or Fault Viewer as a target.

Note that the expression for these custom filters do not currently support the entire range of ICONICS expression editor functions. The helper buttons inside the filter's expression editor list all of the functions that are supported.

For Further Reference

- Help:
 - [Table Control](#)
 - [Fault Viewer](#)
 - [Data Diagram](#)

Image Button Column Content Type

(Reference ID: 86055)

Columns in the Table Control or Fault Viewer can now be configured with the **Image Button** content type.

Image button works like a combination of the button and icon content types. It requires a command, like a button, but the displayed content is an image instead of text.

Like the icon content type, the image for an image button is loaded from the Asset Catalog icon repository. The expected value is a path, such as "ac:Icon Definitions/Enterprise". Value Expressions can be used to ensure the value is in the right format to retrieve the image.

For Further Reference

- Help:
 - [Table Control](#)
 - [Fault Viewer](#)

Linked Aggregation

(Reference ID: 88779)

The Table Control, Data Diagram, and Fault Viewer can now perform linked aggregation, or aggregation based on the value of an additional field.

With traditional aggregation, the user defines a field to aggregate on, like "product name", then defines the aggregate to use for the other columns, like maximum, minimum, average, or sum. This allows you to display things like the total sales and the last (maximum) date of a sale for each product.

What traditional aggregation does not do is allow you to get additional values based on that aggregation. You can get the last date of sale for each product, but not the customer's name who made that last sale. The new linked aggregation feature allows you to get that information.

To display the customer of the last sale of each product in the Table Control, the fields would be configured as follows:

- **ProductName:** Check **Group By**.
- **CustomerName:**
 - Check **Linked Aggregate**.
 - For **Linked Field**, choose **OrderDate**.
 - For **Aggregate**, choose **Max** (to get the latest date).

Note that the Linked Aggregate option does not appear unless there is at least one field configured with Group By. Also, at this time, only DateTime fields can be chosen for the Linked Field.

The linked aggregate feature can only be used for datasource types of "query". It is not supported for AnalytiX-BI Server data sources.

The Fault Viewer can perform this sort of linked aggregation with several newly added fields to display data about the last comment that goes with a given incident or fault. These fields have been added:

- Last Comment
- Last Comment ID
- Last Comment User
- Last Comment Timestamp
- Last Comment Origin

Choose one of those fields, enabled Linked Aggregate, and select a Linked Field such as FaultActiveTime, then choose the Max aggregate.

For Further Reference

- Help:
 - [Table Control](#)
 - [Fault Viewer](#)
 - [Data Diagram](#)

TrendWorX64 Viewer

New Options for Runtime Pens

(Reference ID: 31131, 86014)

A few new features have been added relating to the addition of new pens in runtime. These features are configured on the **Pens** tab of the **chart** object.

- **Color Style** – Configure a color palette that's used for newly added pens. The color palette can use both static and global colors.
- **Unique Pens** – Limit new pens added in runtime to only unique data sources. This option is disabled by default. When it is enabled, users will be prevented from adding duplicate pens. This setting affects both commanding and drag and drop.

For Further Reference

- Help: [TrendWorX64 Viewer](#)

New Events: Pen Selection Changed, Pen Deleted

(Reference ID: 79674, 87963)

New events have been added to the TrendWorX64 Viewer for triggering commands.

The **Pen Selection Changed** event will be triggered when a pen is selected. The **Pen Deleted** event will be triggered when a pen is deleted in runtime.

To associate commands with these events, configure your TrendWorX64 Viewer, select the **chart**, go to the **Chart** tab, enable **Commands on Events**, and select **Configure**.

For Further Reference

- Help: [TrendWorX64 Viewer](#)

New Properties for Shared Axes

(Reference IDs: 86033, 86098, 87026)

Several new properties have been added for Shared Axes (configured on the chart object under the Y Axis tab).

- **Visible** – Explicitly controls whether an axis is visible or not. Previously, axis visibility was handled automatically based on whether any visible pens used the axis.
- **Zoom** – Controls whether zooming affects that axis.
- **Pen Markers on Axis** – When selected, squares representing the colors of the pens linked to that axis will be displayed next to the axis title, giving a quick visual representation of which pens go with that axis. Note, "Pen Markers on Axis" is only available if "Show Title" is selected.

GraphWorX64

Write to Localsim Tags with Set Value Command

See [Write to Localsim Tags with Set Value Command](#).

Hyper Historian

Data Exporter

Kafka via Azure Event Hub

(Reference ID: 73170)

Support for exporting data to an on-premise Apache Kafka existed prior to version 10.97.2, but what's new in this version is the ability to export Hyper Historian data to Kafka via an Azure Event Hub, making it possible to export data into Kafka running in the cloud.

Choose the **Azure Event Hub with Kafka Endpoint** connection type when creating a storage object for the Hyper Historian data exporter.

For Further Reference

- Help: [Data Exporter Storage](#)

MergeWorX

Plugin for MELSEC Q and iQ-R Data Logger Module Format

(Reference ID: 87745)

Users of the Mitsubishi Electric MELSEC Q series and iQ-R series High Speed Data Logger Module can now import that data into Hyper Historian using MergeWorX.

In **Workbench**, under **Historical Data > MergeWorX > Plugins**, create a new plugin and select **Mitsubishi Electric – Log Files from MELSEC Data Logger Module** as the **plugin type**. Configure other settings, such as the trigger which will start the merge and the input directory where the MELSEC data logger files can be found. The plugin can import CSV, TXT, or BIN files from the data logger.

For Further Reference

- Help: [MELSEC Data Logger Plugin](#)

IoTWorX & Internet of Things

Internet of Things

General

Proxy Support

(Reference ID: 84301)

All Internet of Things communication can now work through a proxy on Windows operating systems.

The proxy must be properly configured in the operating system. If credentials are needed, then additional configuration must be made in **Platform Services Configuration**. The **Proxy Server Address** must be entered on the **Basic** tab and the proxy's credentials must be specified on the **Passwords** tab using the **Web Proxy** service type.

Note that the proxy is only supported when the publisher or subscriber connection is configured to use the Web Sockets protocol.

Subscription and Publishing

Publish and Subscribe to Historical Data

(Reference IDs: 83456, 87899)

Users can now use Internet of Things publish and subscribe functionality for historical data. This can allow aggregating historical data from multiple distributed systems to a centralized historian without having to establish FrameWorX communication between all servers.

Publish lists now have a new tab for **Published Historical Points** and new settings for defining collection groups and loggers for these points. Hyper Historian users will recognize the configurations for collection groups and loggers, and they function in very similar ways.

Historical points can be dragged directly from the data browser panel into the Published Historical Points tab to add them to the publish list.

Optionally, points can be aggregated in the publisher. Configure the **Aggregate** and **Aggregate Group** on the **Published Historical Points** tab.

On the subscriber end, users must create a logger and enable **The logger is used by all subscriber connections to retrieve the collected data** on that logger. This logger will be used by all subscribers to store the data. The logger defines the storage limits and archiving condition for the subscribed historical data.

Then the subscriber must have the new **Collect the logged data retrieved with this subscription** setting enabled. The subscriber will then store the historical data to the logger mentioned earlier, and this data will be available in the data browser as historical data tags under **Internet of Things > IoT Subscriber > subscriber name > publisher name > History Data**.

IoTWorX

Deployment

Support for Azure IoT Edge 1.2

(Reference ID: 88006)

This version of IoTWorX newly supports Azure IoT Edge version 1.2.

New gateway or edge devices configured with the IoTWorX deployment scripts of version 10.97.2 or later will be automatically configured with Azure IoT Edge 1.2.

Users upgrading from previous versions will need to upgrade their devices to IoT Edge 1.2. Version 1.1 will no longer be supported by Microsoft after December of 2022.

To upgrade an existing edge device to Azure IoT Edge 1.2, follow these steps:

1. On the edge device, follow the **Setting Up the IoTWorX Edge Device** steps from the **IoTWorX – Quick Start** document.

2. If you haven't already, install 10.97.2 on the ICONICS Suite server where your IoT project is stored.
3. In **Workbench**, go to your IoT project.
4. Right-click on your device and choose **Configure Modules**.
5. Select the **Click to configure modules** link.
6. For **Version**, select **10.97.2**.
7. Uncheck all existing modules except for **IoT Publisher** and **IoT Edge Agent**. Optionally, **Mosquitto** and **Takebishi DeviceGateway** may also be checked, if desired.
8. Select **Deploy**.
9. Refresh the project tree and check the device status in either the **Project Details** panel or the device's tooltip. Wait for the status of the device to show as **Upgraded**. If it does not show as **Upgraded**, continue to periodically refresh the project tree and check again.
10. Right-click the device and select **Restart all modules**. Once completed, the devices will return to **Online** status, and the upgrade process will be complete. (You may need to refresh to see status updates.)

For Further Reference

- Help:
 - [IoTWorX Quick Start](#)
 - [Azure IoT Edge](#)

Edge Device Data Connectivity

BACnet SC Settings Temporarily Removed

BACnet's Secure Connect functionality has been temporarily removed from IoTWorX edge devices for this version while we make improvements.

BACnet functionality is still available; only the Secure Connect features have been removed. When configuring a channel in an IoT project, it is no longer possible to choose a channel type of BACnet/SC under the port settings. Other channel types, such as BACnet IP, are still available.

BACnet Secure Connection functionality can still be used in desktop projects using the [beta of BACnet with SC](#).

MobileHMI & HTML5 WebHMI

HTML5 WebHMI and MobileHMI Apps for iOS and Android

Feature Parity Improvements

HTML5 browsers and the MobileHMI apps for iOS and Android can now use the following features and functionality that were previously only available in the desktop GraphWorX64 app (WPF).

AlarmWorX64 Viewer

Ref ID	Description
85976	The HTML5 AlarmWorX64 Viewer now supports dragging columns to change the order.
87121	The HTML5 AlarmWorX64 Viewer now supports the "BeepFileLocation" property, configurable on the Advanced tab of the control (the parent item in the tree).
87479	Tooltips are now supported for the AlarmWorX64 Viewer grid.
87501	The HTML5 AlarmWorX64 Viewer now supports subscribing only to certain categories (configured in the subscription point properties).

GraphWorX64

Ref ID	Description
51889	The MouseOver localsim:property (example: localsim:property:@@parent.MouseOver) is now supported.
69511	Empty strings no longer cause numeric-formatted process points to display using point fail color and text. They will simply display as empty, with no error. This is now consistent with desktop (WPF) behavior.
84808	The IsTabStop property is now supported for buttons.
86256	HTML5 tooltips (especially the State Selector, but for other dynamics as well) have been modified to be more consistent with desktop (WPF) tooltips.
87750	Smart binding is now supported on custom confirmation message parameters of data entry process points.
88573	The WindowProperties > Text property of a Load Display command now supports smart property binding in HTML5 displays.
88936	The properties of the Toggle Value pick action now support smart binding.
89392	Automatic size is now supported for popups.
89964	HTML5 now supports smart symbols with smart binding on the outside of the symbol.

TrendWorX64 Viewer

Ref ID	Description
87436	Previously, the TrendWorX64 Viewer only drew limit lines if the pen's data source was valid. Now the lines are drawn regardless of the data source. This is now consistent with the desktop (WPF) TrendWorX64 Viewer.
88354	The HTML5 TrendWorX64 Viewer now respects the "Grid" checkbox setting of the chart object. Previously the grid was always shown, even if this option was disabled.

Universal Windows Platform (UWP)

As of version 10.97.1, the MobileHMI app for Universal Windows Platform (UWP), which runs on WinRT, Windows 10, and Windows Phone, will not be receiving any new features due to Microsoft officially deprecating UWP and lack of interest from customers. ICONICS plans to focus development efforts on HTML5 clients.

Major Enhancements - MobileHMI & HTML5 WebHMI

This app may be updated occasionally for bug fixes, but it will not be compatible with features added in version 10.97.1 or later. We expect the app to become unusable over time so if you are using this app, please plan accordingly.

If you have questions, please contact your ICONICS distributor or representative.

Additional Enhancements

Common & Platform Services

Ref ID	Description
84914	<p>ICONICS Suite now includes "template" files for most configuration files. For example, a file named MyFile.config will now also have a MyFile.config.template file. The template file is a copy of the configuration file in its default state. If ICONICS Suite cannot find the configuration file, it will create it from the template.</p> <p>This means that advanced users who want to reset a particular element of their system to the default state can simply delete their configuration file and a new copy will be created automatically. Advanced users can also compare their configuration file to the template file if they would like to see ways in which their system differs from a default "clean" system.</p>
86664	Added a new Control and Diagnostics point, :ClientIPAddress. This point shows the IP address of the client. It works with both WPF and HTML5 clients.
88601	Note, ICONICS highly recommends against using this point to secure any sensitive information or functionality, as it may be possible for the system to spoof the IP address. As a best practice, security should be implemented on the server side using the ICONICS security server.
87517	<p>If the SQL Server certificate is self-signed, connection strings now need to specify "trustservercertificate=true" or the connection will fail. This change is automatically made for new connection strings. It is also automatically added to configuration database and Database (GridWorX) SQL Server connections that are upgraded from a previous version; however other connection strings will need to be updated by the user. To update the connection strings, either manually add "trustservercertificate=true" to the end of the connection string or bring up the connection string dialog and enable "Trust Server Certificate".</p> <p>These connection strings may need to be updated:</p> <ul style="list-style-type: none"> * AlertWorX custom logging database * Assets cache data store * AlarmWorX64 Logger custom logging database * Bridging (BridgeWorX64) custom logging database * Connected Field Service (CFSWorX) custom logging database * Hyper Historian Data Exporter storage of type "SQL/Azure SQL" * Reporting (ReportWorX64) custom logging database

Commanding

Ref ID	Description
86049	<p>GraphWorX64 local aliases cannot be used directly inside batch commands, so to address this need, batch commands now have a new property called Parameters. This property can be found in the CommandParameters section of a pick action when the Command is set to "Batch".</p> <p>The Parameters property can be used to initialize static variables inside the batch command. These variables can be used to pass in local alias values or other bits of information that might normally not be accessible inside the command.</p> <p>The Parameters property itself must be a string that defines the static variable and its value. The syntax used is similar to that used to set global aliases. An expression can be used to build this string using dynamic values. Below are two examples of the Parameters property:</p> <pre>myStatVar=1;anotherVar=5;</pre> <pre>{{x="myStatVar="+ "<localAlias>"+";"}}</pre> <p>Once a static variable is defined using the Parameters property, it can be used within the batch command using syntax similar to local aliases: <myStatVar></p>

Ref ID	Description
	<p>These variables cannot be changed inside the batch command. They are set once when the batch command is triggered and will retain that value for the entire run of the command.</p> <p>Note, there is a known issue that the Parameters field appears inside the configuration dialog for the batch steps. It should not appear here, and values entered into this field will not be saved. This will be addressed in future versions. For now, users should make sure to use the Parameters field in the GraphWorX64 Dynamics panel under CommandParameters and ignore the Parameters field in the steps configuration dialog.</p>

FrameWorX

Ref ID	Description
84515	<p>WCF communication is now disabled by default, as it is an obsoleted communication protocol. ICONICS highly recommends using WebSockets, which is the new default, but users who need to use the obsolete NET.TCP communication channel can re-enable WCF by editing FwxServer.Network.config (located by default in C:\ProgramData\ICONICS), looking for the "WcfTransport" value, and setting it to true. Restart FrameWorX Server after making this change.</p>
	<p>The FrameWorX Server Location dialog has had some settings moved around for clarity and ease of use.</p>
84517	<p>Endpoint/transport settings can now be configured separately for the primary and secondary servers.</p> <p>ICONICS highly recommends the WebSockets protocol. The HTTP, WS HTTP, and NET.TCP protocols are now labeled as "Obsolete" in the FrameWorX Server Location dialog. These protocols still function but may not be included in future versions of ICONICS Suite.</p>
	<p>Added a new parameter for the Reverse Networking point manager called "MaxForwardedRequestsPerCall". This parameter limits the number of subscribe requests that can be sent in one message after a reporting server disconnects and reconnects. Setting this parameter to large values may speed up the reconnect process, however having too large of a value risks a situation where the message is too large to be handled and fails. This is especially an issue when "Use WebSockets" is not enabled (this is configured in FrameWorX Server Location's Transport section). Users should decrease this value if they are not using WebSockets, they are using reverse networking, and they find that they are having issues reconnecting to a disconnected reporting server.</p> <p>By default, this parameter is 40,000. Setting this value to 0 means the forwarded subscribe requests per call will be unlimited, which was the default behavior in previous versions.</p> <p>(Note, reverse networking is the communication method used to talk to servers configured in Platform Services Configuration > Basic tab > Reporting section.)</p>
86774	<p>Added a new parameter for the Networking point manager called "ExcludedComputers". By default, this parameter is empty. It may contain a list of computer names, separated by a semicolon.</p> <p>Computer names can be listed here to prevent the Networking point manager from attempting to communicate with them via the standard "direct" communication means. The expected use case is that this setting will be used in conjunction with the "Reporting" feature, configured on the Platform Services Configuration's Basic tab. "Reporting" servers use reverse networking, and adding these reporting servers to the ExcludedComputers list will prevent FrameWorX from attempting to communicate with them via direct communication, instead waiting for the reporting servers to initiate the connection (reverse networking).</p> <p>"ExcludedComputers" is an advanced setting, and is not necessary in most circumstances, even when reverse networking is in use. In most cases, the communication attempt via direct networking is not harmful and does not need to be prevented with this setting.</p>

Redundancy

Ref ID	Description
87244	When a redundant alarm server switches from active to standby, the alarm server now clears all of its cached alarms. This clear does not affect what a client sees. Clearing the cache in this way helps the alarm servers stay in sync. This way, the alarm server that is now standby will not be working with a set of data that may have become inconsistent with the now-active alarm server. This change should help prevent situations where alarms are lost or duplicated after an incident where both alarm servers had become active (which could occur if the network connection between them was offline) but were getting live data that may not have been consistent between the two servers, causing them to become out of sync.
89538	The ability to force a redundant server to become active by using the context menu in the Redundancy viewer has been added for FrameWorX Servers. This functionality was available for other types of redundant server pairs previously, but not FrameWorX pairs.

Tools

Ref ID	Description
90190	The OPC Configuration Tool has been removed. Previously, this tool could be used to configure FrameWorX to use or trust Certificate Authority-signed certificates. Now, users who need to add Certificate Authority-signed certificates to FrameWorX should refer to this help topic: https://docs.iconics.com/V10.97.2/GENESIS64/Help/ICONICS_Product_Help.htm#Com/Tools/Data/Configuring_certificates_for_FrameWorX_OPC_UA.htm

Triggers

Ref ID	Description
83295	<p>If a file trigger for a network folder lost connection to that folder, the trigger would stop executing, even once the connection was restored. A restart of the trigger point manager was necessary to restore file trigger functionality. A new parameter called "FileWatcherReconnectRateSec" has been added to the Trigger Point Manager to address this problem.</p> <p>Users of systems that are prone to this issue should open Platform Services Configuration, go to the Point Managers tab, and select the Triggers Point Manager. Find the FileWatcherReconnectRateSec parameter and set it to 10. This is the interval (in seconds) that the system drops the connection to the network folder and reconnects. In testing, 10 seconds seems to be a good value, but users may want to set a higher or lower value depending on their system. Note that slower intervals may result in longer recovery from a disconnection while extremely fast intervals may increase the risk that a file system event will occur while the point manager is reconnecting, causing the trigger to be missed.</p> <p>A FileWatcherReconnectRateSec rate of 0, which is the default, means that no reconnection attempts will be made.</p>

AnalytiX

BridgeWorX64 & Workflow

Workflows Workbench Provider

Ref ID	Description
87832	The "Enable/Disable all transactions" context menu option has been added to BridgeWorX64 transactions and Connected Field Service workflows. Previously, these workflows could only be disabled via the folder or individual transaction/workflow.
88270	Minor enhancements to the forms for various activities.

CFSWorX

CFSWorX Workbench Provider

Ref ID	Description
87832	The "Enable/Disable all transactions" context menu option has been added to BridgeWorX64 transactions and Connected Field Service workflows. Previously, these workflows could only be disabled via the folder or individual transaction/workflow.

Energy AnalytiX

Ref ID	Description
82730	The sample Energy AnalytiX data model has been improved to take advantage of the parameterized views feature of AnalytiX-BI that was new in version 10.97.1. These new parameterized views were added to all data models and make it easier to get information on energy data in clients like the GridWorX Viewer. The new views start with the name "SP_" and contain descriptions and comments that should help users understand their use.
86982	If an AssetWorX equipment property added by Energy AnalytiX is mapped to a Hyper Historian calculated tag, that property can now be viewed as a real time tag in clients such as GraphWorX64 and Data Explorer. Previously the user needed to browse to the ".HistoryPoint" attribute of the equipment property (such as, "ac:Campus/Property.HistoryPoint") to get the real-time value, but now the property can be used directly (such as, "ac:Campus/Property").
87258	There is a new Default Units Options tab under Energy AnalytiX General Options. This tab allows the user to configure default units for cost and temperature.
87754	Delta counter meters with rollover will now ignore abnormally high meter values (20% above the meter-configured rollover value).
87812	Added protection to meter counters so they ignore negative consumption values coming from the meter.
87887	Improved the behavior of normalized energy consumption when historical data (especially imported historical data) is sparse or there are long periods between updates. Previously, the calculation may have treated these sparsely updated values as zero when there was no sample in range for the calculation. Now, the calculation is better able to find the last logged value even when it falls outside the calculation range. Users may want to ensure their data is recalculated for these sparse periods after applying this update in order to fully benefit from this enhancement.

Facility AnalytiX & FDDWorX

Ref ID	Description
70265	When providing data for the Fault Viewer (and other controls that can use FDDWorX's query interface, such as the Table Control and Data Diagram), the FDDWorX Server now enforces the root asset configured for users in the security server. Logged-in users with a configured root asset will only see data for that asset and its children. This feature works with both local (such as "ac:ThisAsset/") and remote paths (such as "\\RemoteMachine\ac:ThisAsset/").

ReportWorX64 & ReportWorX64 Express

Common

Ref ID	Description
89316	The number of columns allowed in a single data source has been increased. It should now be possible to create data sources with the maximum number of columns supported by Excel in a single worksheet.

Data Connectivity

BACnet Connector

BACnet with SC

Ref ID	Description
78528	Alarms from BACnet with SC now support time zones. The time zone is configured on a per-device basis.

OPC UA

Ref ID	Description
89627	<p>Added a new parameter to the OPC UA point manager called ConvertEUInformationToStruct. This parameter defaults to false. When it is set to true, EngineeringUnits tags will be interpreted as structures, allowing access to members (such as DisplayName, Description, or UnitId). When it is left as false, EngineeringUnits is interpreted as a string and returns only the DisplayName (which is consistent with the behavior from previous versions).</p> <p>This parameter can be changed in Platform Services Configuration on the Point Managers tab.</p>

Web Services Connector

Ref ID	Description
81746	The Web Service connector now supports certificate-based authentication for REST. The certificate can be configured on the REST service object in the Client Certificate section.

Web Services Workbench Provider

Ref ID	Description
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GENESIS64

Alarms and Notifications

AlarmWorX64 Multimedia

Ref ID	Description
87931	Added support for OAuth 2.0 when connecting to email servers over SMTP.

AlarmWorX64 Server

Ref ID	Description
87244	When a redundant alarm server switches from active to standby, the alarm server now clears all of its cached alarms. This clear does not affect what a client sees. Clearing the cache in this way helps the alarm servers stay in sync. This way, the alarm server that is now standby will not be working with a set of data that may have become inconsistent with the now-active alarm server. This change should help prevent situations where alarms are lost or duplicated after an incident where both alarm servers had become active (which could occur if the network connection between them was offline) but were getting live data that may not have been consistent between the two servers, causing them to become out of sync.
88032	Configuration changes that disable alarms often cause a notification update. When this update occurs the default subcondition, Rate of Change, was used. Now, instead of Rate of Change, a subcondition associated with the alarm type is used instead. (For example, limit alarms will use "lolo".)

AlertWorX

Ref ID	Description
85209	AlertWorX emails now support HTML.
87931	Added support for OAuth 2.0 when connecting to email servers over SMTP.

AssetWorX

AssetWorX Workbench Provider

Ref ID	Description
87962	Previously, when configuring the GlobalAliases field of any command in AssetWorX, equipment class parameters (like <code>"/?param?/"</code>) or references (such as <code>"@@self.Property"</code>) would only be resolved if they occurred within expected places of the global alias string, such as in the position of an alias or theme value (like <code>"#alias1=foo;#alias2=&/?param?&/;"</code>). Now, equipment class parameters are resolved in any position in the string. This allows the use of more complex expressions to define the global alias string.

Controls

Ref ID	Description
58581	Microcharts (used in various controls) can now have a maximum period of 12 hours. Previously it was limited to 1000 seconds. This affects microcharts in WPF, HTML5, and KPIWorX.
86058	When a validation error happens on a page of the configuration dialog, the page name at the top of the window will turn red. This allows users to find and resolve these errors more easily. This affects all controls that use the same sort of configuration dialog as used in the Table control. This includes, but is not limited to, the Asset Navigator, Data Diagram, Fault Viewer, Heatmap, and Sankey.

Smart Tile

Ref ID	Description
44490	The GraphWorX64 Paste Style feature can now be used on smart tiles.

TrendWorX64 Viewer

Ref ID	Description
16102	Added a new Tooltip Format field to pens. This field allows the user to specify the information displayed in the tooltip for that pen. The field can be edited using the expression editor. Context variables can be used to display information about the selected sample or pen, such as <code>@@sample.value</code> or <code>@@pen.description</code> . These context variables are available in the expression editor by selecting "Variables" then going to the "Context Variables" tab of the data browser. The tooltip format can also be set using the Create Pen and Edit Pen commands for desktop (WPF) TrendWorX64 Viewers. Commanding support for tooltip format in HTML5 viewers is planned in a future version.
53759 87301	Added a new property, "FitMarginLabels", to the chart object. It can be edited on the Advanced tab when the chart is selected. When set to true, the labels at the very beginning and end of the X axis will be adjusted to fit within the margins. When set to false (which is the default value and consistent with previous versions), these labels might be cut off by the viewer. This property is respected by both the desktop (WPF) and HTML5 TrendWorX64 Viewers.
69952	Added new available items for context menus. The chart-level context items now include: Edit Period Edit Trend Export Data Export Data for Selected Pens Export Statistic Export Statistic for Selected Pens

Ref ID	Description
	<p>Freeze</p> <p>Page Back</p> <p>Page Forward</p> <p>Refresh</p> <p>Set Right Time</p> <p>Show Annotation</p> <p>Show Axes</p> <p>Swap Axes</p> <p>Zoom</p> <p>The context menu for pens now include:</p> <p>Export Data</p> <p>Export Statistic</p> <p>Some of these items were already available in HTML5 displays as part of the default context menu. Now they can be better integrated into the rest of the configured context menu and are available in desktop (WPF) displays.</p>
87380	Added two new properties to pens that can be set on the Advanced tab of a pen. These properties are "ShowInCursors" and "ShowInLegend". They are true by default. When set to false, this pen will not be shown in the cursor tooltip or legend, respectively. These properties are respected by both the desktop (WPF) and HTML5 TrendWorX64 Viewers. They can also be set in Create Pen and Edit Pen commands.
87371	
87302	
87367	
88103	Added a new field for the X Axis of the chart: Custom Format. When enabled, this field allows the user to customize the format of the values shown on the X axis by specifying an expression.
89889	Added a new property to the Advanced tab of the chart, ReadTimeRangeWhenZoomed. When set to true, updates to the time range data source (configured on the chart's Range tab) will be applied even when the viewer is zoomed in. When set to false, updates to the time range data source will be paused while zoomed. The viewer will remember the last update from the time range data source and apply it when the viewer's zoom level is reset to the default. This property defaults to false.

GraphWorX64

Ref ID	Description
44490	<p>The GraphWorX64 Paste Style feature can now be used on smart tiles.</p> <p>The Access Denied page (GwxFileAccessDenied.gdxf) has been updated to use language aliasing. In addition, these standard displays have been updated to use language aliasing in their title bar text:</p> <p>GwxDataExplorer.gdxf</p> <p>GwxKPIDashboard.gdxf</p> <p>GwxDetails.gdxf</p>
47030	These pages have also been updated to use language aliasing. Note that for full localization of these pages, the appropriate language pack also needs to be applied.
86251	
	<p>GwxReporting.gdxf</p> <p>GwxBridging.gdxf</p> <p>The required language aliases for these displays can be viewed and modified in Workbench under Platform Services > Language Aliasing > System Text.</p>
47524	The Simulation tab in the data browser has been renamed to "Local Simulation/Variables" for enhanced clarity.
48232	Added two new align actions, "Collapse Horizontally" and "Collapse Vertically". These options will take the selected objects and remove any space between them either horizontally or vertically.
49285	When a display's scan rate changes (such as by writing a new value to localsim:property:Document.ScanRate), GraphWorX64 will now automatically subscribe to points at the new scan rate. In previous versions, other steps were necessary for the new scan rate to take effect.
85701	
58666	In a pick action, the DataSource property is no longer automatically cleared when switching between the Write Value, Toggle Value, and Update Database local pick commands.

Ref ID	Description
72390	If there are any right- or middle-click pick actions configured on an object that also has a process point dynamic configured as data entry, the pick action will now be activated. Previously, any click into a data entry field would activate the data entry, blocking any pick action also configured on the object. (Note, left-click will still activate the data entry field, preventing any left-click pick actions from being triggered.)
72863	Hitting Shift-Esc or holding shift and double-clicking on the display's background (i.e., not any object) can now be used to deselect all objects, returning to the root edit level. This allows the user to get to the display or canvas properties more easily.
86425	GraphWorX64 will now remember the print page settings when closing and reopening the application.

Hyper Historian

Hyper Historian Express

Ref ID	Description
89836	Hyper Historian Express now allows the use of up to seven loggers.

Tools

Ref ID	Description
87709	The HistoryEraser.exe tool can now take a file name as a parameter. This file should be a text file with the names of historian points, one point per line. When this parameter is used, Historian Eraser will load with this list of tags pre-filled, providing an easier way to erase large numbers of tags at once.

IoTWorX & Internet of Things

Ref ID	Description
86544	Various updates have been made to the base IoTWorX container image for enhanced security. The base operating system has been changed to Alpine Linux version 3.14, ASP.NET Core has been updated to 3.1.24, and the Node.js and Node modules have been updated.
86623	The "Use Epoch" setting has been removed from Azure IoT Hub and Azure Event Hub Subscriber connections.

KPIWorX

Widgets

Ref ID	Description
58581	Microcharts (used in various controls) can now have a maximum period of 12 hours. Previously it was limited to 1000 seconds. This affects microcharts in WPF, HTML5, and KPIWorX.

MobileHMI & HTML5 WebHMI

HTML5, iOS, Android

AlarmWorX64 Viewer

Ref ID	Description
85962	When selecting multiple columns for sorting, the HTML5 AlarmWorX64 Viewer will now sort only on the last selected column. This behavior is consistent with the desktop (WPF) AlarmWorX64 Viewer.

Ref ID	Description
	To change back to the previous behavior, where selecting multiple columns for sorting will sort on all selected columns, edit the \GENESIS64\WebSites\AnyGlass\Bin\ico.anyglass.parsing.config file and set AwxForceSortBySingle equal to "false".

GraphWorX64

Ref ID	Description
49285	When a display's scan rate changes (such as by writing a new value to localsim:property:Document.ScanRate), GraphWorX64 will now automatically subscribe to points at the new scan rate. In previous versions, other steps were necessary for the new scan rate to take effect.

TrendWorX64 Viewer

Ref ID	Description
87430	Enhanced the performance of the HTML5 TrendWorX64 Viewer.

Workbench

Ref ID	Description
88180	When Workbench could not communicate with the ICONICS Workbench Configuration Service or ICONICS FrameWorX Service it would show two error messages. The first message which appeared indicated a problem communicating specifically with security and the second error indicated a communication issue. The second error message more accurately described the situation and included helpful troubleshooting steps. The first error was misleading and could lead the user to think there was a problem with their security database when there was a greater issue. Now, in the case of a communication issue, only the error message indicating a communication issue is shown. The first error is no longer shown in this situation.

Project Reporting

Ref ID	Description
87284	Value and Status columns have been added to these Assets reports: Dynamic Tags, Expressions, Polled Dynamic Tags, and Static Values.



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