

Proficy HMI/SCADA – iFIX New Features VERSION 5.5

January 2012



CAUTION: To alpha users - iFIX pictures or any other files (PDB, FDS, etc.) that were generated with the iFIX 5.5 Alpha release are not supported in the iFIX 5.5 final release. You will need to recreate these files in the final 5.5 release.

The new features of iFIX 5.5 include:

- New Charting Features for Enhanced Charts
- New .NET Component Hosting
- iFIX WebSpace Enhancements
- Networking Improvements
- Enhanced Failover Updates
- New Proficy Workflow Trigger
- Proficy Historian for SCADA 4.5 Support
- SQL Server 2008 R2 Support
- SQL Server 2008 Native Client Driver Support
- DVD Main Menu and iFIX Installer Changes
- New Dynamos and Pictures from Vertical Packs Added
- Updates to the DA, AA, and DO Blocks
- Alarm Summary Performance Updates
- Discover and Auto Configure (DAC) Update
- PCM 6.5 Update
- Microsoft Windows XP Embedded, Service Pack 3, Support
- Picture Properties Now Available from Windows Explorer
- Changes to the User Preferences and Expression Editor Dialog Boxes
- Build Number Identifiers
- FIXUserPreferences.INI Changes
- New Database Dynamos
- New Database Fields Added for Future Use
- Updates to the iFIX Automation Reference



1. New Charting Features for Enhanced Charts

In iFIX 5.5, some of the new charting features include:

- Support for multiple Y axes in the XY Chart and Line Multiline Chart. You can now enter up to 16 Y-Axis data sources. Multiple axes can be shown in the same graph, or in graphs stacked one on top of the other. Different plotting methods are supported for each data source.
- Support for a configurable time cursor style is available in Enhanced Charts. The Show Time Cursor check box on the General tab now has two associated radio buttons, As Table and As Tooltips, to pick the Time Cursor style.
- Support for a way to quickly and easily change various Enhanced Chart properties while in run mode without having to display the configuration dialog or the right-click menu. The General tab contains an Enable Quick Configure check box to support this property.
- Support for an Expandable option on the General tab of all Enhanced Charts.
- Support for a Thumbnail option on the Chart Style tab of all Enhanced Charts. When coupled with the Expandable property, this option allows you to display a chart in a thumbnail mode when contracted. When expanded, the displayed chart will not be in thumbnail optimized mode, but with user configured legend settings.
- Support for EGU Limits for Legend Column widths on the Chart Style tab, and on the Legend area of the Data Sources tab for Enhanced Charts.
- Support for many new automation properties and methods for Enhanced Charts.
- Inclusion of a new XY Chart Dynamo in the HistoricalLineChart.fds Dynamo Set for use in your pictures.

NOTE: Be aware that the Quick Dynamo Updater and Dynamo Updater Wizard do not support Dynamos containing Enhanced Charts at this point in time.

For more information on the options available for Enhanced Charts, refer to the following section in the ebooks: Creating Pictures > Developing Objects in Pictures > Pictures Dialog Boxes> Enhanced Chart Customization Dialog Box. For detailed information on the new properties and methods, refer to the "Updates to the iFIX Automation Reference" below.

2. .NET Component Hosting

The .NET Component feature for iFIX allows you to host .NET components within your iFIX pictures. These .NET Components include pre-selected ones from the .NET Framework, samples from GE Intelligent Platforms, or custom ones that you develop on your own, or when you integrate a 3rd Party component.

You can access the .NET Component on the Insert menu in the iFIX WorkSpace.

Creating custom components requires proficiency in Microsoft® Visual Studio® 2010 and the .NET Framework. In addition, to develop your own .NET components, you must be proficient in programming with the .NET Framework. For iFIX scripting, you must have a working knowledge of the Visual Basic programming language.

For more information on the .NET Component, see the .NET Component Help, by clicking the Help button on the .NET Component Browser dialog box, which appears when inserting a control.

3. iFIX WebSpace Enhancements

The iFIX WebSpace now includes:

- Support for the iFIX WebSpace Server on Microsoft® Windows® 7 (64-bit), Service Pack 1, Professional, Enterprise, or Ultimate Edition.
- Support for the iFIX WebSpace Server on Microsoft® Windows® Server 2008 R2 (64-bit), Service Pack 1, Standard or Enterprise Edition.
- Support for iFIX WebSpace scalability across multiple servers. Includes a new Relay Server and Session Balancing features. Session balancing is a technique used to spread the work for the iFIX WebSpace Server across two or more dependent application servers. The Relay Server maintains and distributes the client connections across each of the dependent application servers.
- Support for the following web servers:
 - For Microsoft Internet Information Server (IIS) 5.1, 6.0, 7.0, or 7.5.
 - For Apache HTTP Server 2.2.10 or greater.
- Support for the following web browsers:
 - For Mozilla Firefox, the following versions were tested: 4.0, 5.0, 6.0, 7.0, and 8.0.
 - For Internet Explorer, the following versions were tested: 7.0, 8.0, and 9.0.

NOTE: On 64-bit clients, you can run 32-bit browsers only; 64-bit browsers are not supported.

- Support for a new Windows Desktop Client which allows you to view Workspace pictures from a desktop application using web services. It does not require Internet Explorer or Mozilla Firefox.
- Support for more client install options:
 - Directly from the browser when you browse to the iFIX WebSpace web page: <http://iFIXWebSpaceServerName/iFIXWebSpace>, where iFIXWebSpaceServerName is the computer name or IP address of your iFIX WebSpace Server.
 - Directly from the browser by browsing to this page as well <http://iFIXWebSpaceServerName/iFIXWebSpace/AllClients.html>. The AllClients.html page allows you to choose which clients you want to install, and in the case of Firefox or Internet Explorer, specify Loose or Embedded mode.
- By using the ifix-client.windows.exe installer provided on the iFIX DVD (in the Setup\Proficy\WebSpace\WebSpaceServer subfolder), in the iFIX WebSpace install folder (in the Web\Clients path, which by default is the C:\Program Files\Proficy\iFIX WebSpace\Web\Clients folder), or on the iFIX WebSpace Server computer in the folder where you publish the iFIX WebSpace files to be hosted by your IIS or Apache server.
- Support for two modes in which you can run the Internet Explorer and Mozilla Firefox clients: Loose and Embedded mode. Loose mode displays the Workspace in an application window (providing you with more screen real estate), while the Embedded mode displays the Workspace directly in an Internet Explorer window (in a single window). Embedded mode is the default setting.
- Support for easier printer configuration in the iFIX WebSpace Administration application on the Client Access tab in the Host Options dialog box.

- Support for other user interface (UI) changes in the Host Options dialog box in the iFIX WebSpace Administration application:
- The Minimum Available Virtual Memory field on the Session Startup tab is now a percentage field (it defaults to 10% instead of 64 MB, as it did in previous releases).
- The Grace Period field on the Session Shutdown tab changed from a default value of 5 to 1 minute.
- The Automatic Update Clients on the Client Access tab provides the capability to automatically update an iFIX WebSpace Desktop Client when a user connects to an iFIX WebSpace Server that is running a newer version.
- There are also new fields for Relay Server configuration including Relay Server Name on the General tab, and Resource Limits for Maximum Sessions per Host on the Session Startup tab.
- Upgrade capability from previous versions. Be aware on the iFIX WebSpace Server, if you changed any of the default settings in the Host Options dialog box, you will need to re-enter these changes in the iFIX WebSpace Administration application after upgrading, since we uninstall this administration application and then re-install it.
- Availability of experimental clients for preview, experimentation, and evaluation include: iPad2, Microsoft Windows CE, Pocket PC, Linux, and Mac OS X. These clients are currently not supported by GE Intelligent Platforms, but are available for testing on non-production systems.

For information on using the iFIX WebSpace and these new features, refer to the "Viewing Pictures from a Web Session" e-book.

4. Networking Improvements

iFIX 5.5 includes enhanced scalability improvements for iFIX Networking.

5. Enhanced Failover Updates

Dynamic Connections and Enhanced Failover

In iFIX 5.5, there is no longer the need to enable Dynamic Connections when Enhanced Failover is enabled.

As failovers between redundant SCADA nodes occur, the client nodes that are communicating with the SCADA pair need to follow the new active SCADA. Previous to iFIX 5.5, the new active SCADA sent a data message to each client directing the client to follow. To send the message, the SCADA needed Dynamic Connections enabled. In iFIX 5.5, the client nodes regularly receive failover status from the SCADAs using existing Connection Manager messaging and there is no longer the need for Dynamic Connections.

If iFIX 5.5 will be installed on all the nodes in the network, there is no special configuration required. However, if a node is upgraded from a previous version of iFIX, the SCADA nodes will still have Dynamic Connections enabled. In this case, you will need to modify the SCU network settings on the SCADA nodes to disable Dynamic Connections.

Be aware that during the upgrade, as part of the updated Enhanced Failover functionality in 5.5, the existing SCADASync.ini file will be overwritten. This happens so that the SCADASync.ini will be updated to include the new default value of 0 for the CheckClientConnectionsInterval parameter (for Dynamic Connections).

Special Configuration for Mixed Versions of Enhanced Failover

If iFIX 5.5 will not be installed on all the nodes in your network (and you will have older versions of iFIX on your network), special configuration is required for Enhanced Failover.

If there is an older client on the network from version 5.1 or earlier, that node does not have the changes necessary to follow the new active SCADA. Conversely, if there is an older SCADA pair on the network that has version 5.1 or earlier, those nodes do not have the changes necessary to supply the failover status to the client nodes. In both cases, the client nodes rely on the old method and need to be pulled by the SCADA. The following configuration changes are necessary on the SCADA nodes to achieve this:

1. In the Network Settings in the SCU, ensure that Dynamic Connections are enabled.
2. Edit the SCADASYNC.ini file in the LOCAL folder and find the ClientConnectionsCheckInterval variable and set it to something other than zero (anywhere from 10 to 600 seconds).

The ClientConnectionsCheckInterval variable indicates how often the SCADA node will communicate with the clients and pull them if necessary. When it is set to 0, client-pulling by SCADA is disabled. Since the older nodes require the SCADA to pull, set the ClientConnectionsCheckInterval variable to something other than 0. The default for this variable is 60 seconds. You can set it anywhere from 10 to 600 seconds.

Network Timers and Enhanced Failover

The new behavior for Enhanced Failover uses the Keep-Alive network timer. You should ensure that this timer is enabled in the SCU network settings on all nodes. You may notice that it sometimes takes several seconds longer for clients to follow a new active SCADA. Decreasing the Keep-Alive network timer setting will reduce the time it takes for a client to follow the new active SCADA.

Also, previous to these changes, there was a problem with how the Keep-Alive and Inactivity network timers were calculated internally. These timers ran three times faster than they should have. For example, a 300 second timer would actually run as a 100 second timer. This problem is corrected in iFIX 5.5. As such, if you previously adjusted the timers to work around the calculation issue, you should adjust them again to account for the timers now behaving correctly.

iFIX Notification Changes for Enhanced Failover

The Notification function has been enhanced in iFIX 5.5; the user interface is greatly improved. Instead of just a message box that displays information that a failover occurred, you can now display a table with a status of all the nodes included in your Enhanced Failover configuration. It also runs in the system tray, for easy and fast access.

In iFIX 5.5, iFIXNotification.exe now runs as two programs: iFIXNotificationFG.exe (for the foreground) and iFIXNotificationBG.exe (for the background). The iFIXNotificationBG.exe program runs in the background gathering information about the SCADA nodes. iFIXNotificationBG.exe notifies the foreground client, iFIXNotificationFG.exe, when changes occur in the failover status. The foreground client displays the iFIX Notification window when the change occurs, so that a user can see the issue and take immediate action if required. If any WorkSpace popups display that require immediate action, such as those for acknowledging alarms or for information on communication losses, the iFIX Notification window will be pushed behind them. The foreground client does this by readjusting the Z ordering of the iFIX Notification window, allowing the iFIX Notification window not to block any WorkSpace pop-ups.

For information on iFIX Notification and other Enhanced Failover features, refer to the "Enhanced Failover" e-book.

6. New Proficy Workflow Trigger

Proficy Workflow Trigger is an add-on component which can be integrated into Proficy iFIX for use with Proficy Workflow 1.5 SP2, SIM2 or above. It allows users from iFIX to trigger schedules associated with workflows configured in any Proficy Workflow Server. Using this feature, you can view and trigger schedules (workflows) remotely. Some of the features include the ability to:

- View Proficy Workflow Trigger Configuration: The Proficy Workflow Trigger features a user-friendly configuration utility where you can configure users to connect to a Proficy Workflow Server. For each configured Workflow server, you can set the connection time-out to control network traffic and throttling time to ensure that the triggering start time overlaps the next scheduled instance.
- View Workflow Schedules Configured on Workflow Server: Using Workflow Trigger scripting functionality, you can get the list of all schedules that are configured in a particular workflow server. Use filters to get intended list of schedules. You can retrieve parameters of the schedules along with configuration details such as Datatype and DefaultValue.
- Trigger Schedules: The Proficy Workflow Trigger features scripting functionality that allows you to trigger a valid schedule associate with the workflow configured to a workflow server. You can trigger the schedule either using the default parameter values or by overriding the parameter values. The schedule must be associated with a workflow in order to trigger it from the iFIX WorkSpace and the schedule and workflow must be enabled in Proficy Workflow.
- View the Status of the Current Workflow Instances: Using the Workflow Trigger scripting functionality, you can view the status of each triggered schedule (workflow) instance. It also provides the state of the workflow instance and its start time.
- List of Workflow Instances: All the active instances of a workflow can be viewed using the Proficy Workflow Trigger scripting functionality. It also provides the state of each instance and its start time.

To install the Workflow Trigger, there is a new option on the iFIX install. The InstallFrontEnd.exe (the screen that appears when you insert the iFIX DVD in your DVD drive) includes a new link to Install Proficy Workflow Trigger.

Before installing Proficy Workflow Trigger from the iFIX DVD, you must install the Task List, version 1.5, SP2, SIM2 or higher. This is not included on the iFIX DVD. You must download the SIM from the support web site, or use your Proficy Workflow DVD to install. Refer to the steps below for details.

For more information, refer to the Workflow Trigger online help. You can access the Help from the Start menu in the WorkFlow Trigger program group.

Steps to Install Proficy Workflow Trigger

1. Install iFIX 5.5, and restart your computer as prompted.
2. Install the latest remastered Proficy Workflow Task List, version 1.5 SP2B (at a minimum).

NOTE: If you have a previous version of the task list installed, you need to uninstall Workflow Task List, and then install the LATEST remastered Workflow Task List before you can continue.

3. Download Proficy Workflow SP2 SIM2 or higher from the support site and install it.
4. Install the Workflow Trigger from the iFIX DVD.

7. Proficy Historian for SCADA 4.5 Support

iFIX 5.5 provides support for Proficy Historian for SCADA 4.5. Proficy Historian for SCADA supports a local Proficy Historian for SCADA Server, the iFIX Collector, Historian Client Tools, and the Historian OLE DB Driver.

Proficy Historian for SCADA is included on the iFIX DVD. For new installs, you can choose to install Proficy Historian for SCADA during the iFIX install. If an existing Proficy Historian install is found when you install iFIX, the install will exit after the iFIX install and Proficy Historian for SCADA will not be installed. Should you want to move to the newer Proficy Historian for SCADA, you need to:

1. Backup any existing archives.
2. Uninstall the existing version of Proficy Historian from the Windows Add or Remove Programs dialog box.
3. Install Proficy Historian for SCADA from the option on the iFIX DVD install screen.
4. Restart your computer. It is very important not to forget this step, and to restart your computer.
5. Restore your archives, if you backed up any in step 1 (only if you installed Proficy Historian for SCADA to a new path during the Historian install, instead of using the existing one).

NOTE: You can install the Proficy Historian Excel Add-in on a machine which has Proficy Historian for SCADA. However, you must install manually using the Proficy iFIX DVD. The install is located in the following folder on the iFIX DVD: Setup\Proficy\Historian45SCADA\Excel.

For more details on these steps and others, as well as other notable information, refer to the printed Important Upgrade and OS Support Notices guide that came with your iFIX DVD.

For information on using Proficy Historian for SCADA with iFIX, refer to the "Using iFIX with Proficy Historian for SCADA" section in the Getting Started with iFIX e-book.

8. Support for Proficy Historian 4.5

When using iFIX 5.5 with Historian 4.5, it is recommended that you use no more than 100,000 Historian tags per server, as was the limit for previous versions of Proficy Historian. If you have more than 100,000 tags configured, retrieval of tag lists, such as when you browse historical data, may result in unpredictable behavior and iFIX may stop responding. Based on your physical hardware and network infrastructure, be aware that returning 100K tags may take a long time as well.

9. SQL Server 2008 R2 Support

iFIX 5.5 was tested with the SQL Server 2008 R2. This patch can now be installed along with iFIX.

10. SQL Server 2008 Native Client Driver Support

iFIX 5.5 provides support for the SQL Server 2008 Native Client Driver.

If you do not require any of the new functionality provided by the SQL Server 2008 Native Client driver you do not need to modify any existing client ADO applications that reference an OLEDB provider.

If you code your own ODBC calls using VBA (typically using an ADO or RDO call) as part of your iFIX solution (such as custom code inside a picture), and plan to use this new driver, make sure you refer to Microsoft's Help/guidance regarding the new features added to SQL Server 2005 and greater for date and time management.

In order to make use of new Data Types that were added after SQL Server 2005, the property of "DataTypeCompatibility = 80" needs to be used in the connection string. For example, if you want to upgrade an existing VisiconX application, you need to specify "DataTypeCompatibility = 80" to the connection string used with VisiconX.

Be aware that you can continue to use a client ADO application that references an OLEDB provider, as long as you not require any of the features of SQL Server 2005 or later.

11. DVD Main Menu and iFIX Installer Changes

The DVD Main menu, the screen that appears when you insert the iFIX DVD in your DVD drive (InstallFrontEnd.exe), includes new links to:

- Install Proficy Historian for SCADA 4.5
- Install the WorkFlow Trigger 1.0

The iFIX install also includes new custom options for installing the Water Solution Pack and the OEM Solutions Pack.

The "Install an I/O Driver version 6.x" option has been removed from the DVD main menu. If you continue to have a need for 6.x drivers, you can still install them from your Driver DVD, or obtain the install from the Driver Download page on the GlobalCare web site: <http://support.ge-ip.com>.

The iFIX installer no longer provides a custom option to install the FIX Desktop application, as it is not supported on 64-bit operating systems. Be aware that if you are upgrading, you will not need to reinstall FIX Desktop or Classic Historian. However, if you do need to install FIX Desktop on a non 64-bit system, you can access the installer by browsing the folders on the product install DVD. The FIX Desktop installer is included in the `..\Setup\Proficy\Legacy` subfolder.

The Proficy Alarm Viewer is no longer included in the iFIX installer. If you are upgrading from a previous version of iFIX, your pictures with Proficy Alarm Viewer objects will continue to work. At the time of this release, however, the Proficy Alarm Viewer is not supported on a Windows 64-bit enabled operating system.

12. New Dynamos and Pictures from Vertical Packs Added

iFIX now includes many pictures and Dynamo Sets from some of the offerings previously supplied as part of Water Solutions Pack and the OEM Solutions Pack. The components in these packs help programmers and engineers quickly and easily design new iFIX screens or update existing ones with the industry specific items targeted by each of the packs. To install these options from the iFIX installer, select the Custom install option.

For more information on the individual Dynamo Sets, click the Help button on the Dynamo configuration dialog box.

Water Solutions Pack Components

iFIX now includes the following Dynamos Sets from the Water Solutions Pack:

- Water_AdvancedPumps.fds
- Water_AdvancedValves.fds
- Water_Clarifiers.fds
- Water_Clarifiers3D.fds
- Water_Dewatering.fds
- Water_Equipment.fds
- Water_Headworks.fds
- Water_Headworks2.fds
- Water_Miscellaneous.fds
- Water_PID.fds

iFIX also includes the following pictures from the Water Solutions Pack that are used as pop-up pictures from the Water_AdvancedPumps, Water_AdvancedValves, and Water_PID dynamos:

- PIDFaceplate.grf
- AdvPumpFaceplate.grf
- AdvValveFaceplate.grf
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OEM Solutions Pack Components

The OEM Solutions Pack for iFIX 5.x is a compilation of pre-configured out-of-the-box graphic objects and screens specifically tailored to machine-level HMI/SCADA applications. The components, along with a new toolbar and Organization for Machine Automation and Control (OMAC) screen templates, accelerate your iFIX application development and make it easy to duplicate across many devices and/or machines for consistent operations.

iFIX now includes the following Dynamos Sets from the OEM Solutions Pack:

- OEM_Datalink.fds
- OEM_OEE.fds

iFIX also includes the following pictures that were originally part of the OEM Solutions Pack:

- OEM_1024_768_Overview.grf
- OEM_1024_768_MachineSetup.grf
- OEM_1024_768_MachineState.grf
- OEM_1024_768_FaultStatus.grf
- OEM_1024_768_ProductSetup.grf
- OEM_1024_768_ProductStatus.grf
- OEM_800_600_Overview.grf
- OEM_800_600_MachineSetup.grf
- OEM_800_600_MachineState.grf
- OEM_800_600_FaultStatus.grf
- OEM_800_600_ProductSetup.grf
- OEM_800_600_ProductStatus.grf
- OEM_NumericPad.grf
- OEM_StateCommands.grf

Miscellaneous Other Components

Includes two pairs of buttons for data entry and export from Proficy Historian.

13. Updates to the DA, AA, and DO Blocks

Updates were made to the DA, AA, and DO blocks to improve their reliability for staying in sync with a PLC. The DA and AA blocks now contain two new fields on the Alarms tab: the "Continuous Output" and the "Suppress COMM Alarm" fields. The DO blocks contain a new field on the Basic tab, in the Output area: the "Write if Different" field.

The DA and AA blocks also support the following new database fields for these new features: A_CTK_PERSIST and F_CTK_PERSIST (for Continuous Output field), and A_COMM_SUPPRESS and F_COMM_SUPPRESS (for Suppress COMM Alarm field). The DO block supports the following fields: A_WRITEONDIFF and F_WRITEONDIFF (for the Write If Different field).

NOTE: When enabled, be aware that these features produce additional network communications with the PLCs. You should only enable them if you require this specific functionality and have sufficient

network resources to allow for the additional communications required to remain in sync with the PLC.

Continuous Output Field

Selecting this option enables the blocks to attempt to write the contact(s) with every scan, even if the value being written is unchanged. If disabled, the AA or DA block only attempts to write to the defined contact tag when a value has changed and it needs to be written to the PLC. The write is a one-time attempt, so if it fails, the write will not be retried until the block needs to write a new value.

NOTE: There are four modes for the contacts - Acknowledge, Return, All Clear, and Never - that control when the contact is cleared. Since the contact mode of Never does not reset the contact, the Continuous Output option is not supported for this contact mode.

Suppress COMM Alarm

Selecting this option suppresses COMM alarms in the DA or AA block, and return the block to the same state as it was prior to a COMM alarm. COMM alarms identify communication failures that occur between the PLC and iFIX. With this option enabled, if the DA or AA block was an active alarm but acknowledged, and then goes into COMM alarm, it should return to that acknowledged state after communication is restored.

If the Suppress COMM Alarm is disabled, it is possible that acknowledgement of a COMM alarm could cause the ACK bit in the PLC to be written, and the original alarm condition, if already acknowledged, could re-alarm.

Write if Different

Selecting this option allows you to prevent a write by the DO block if the value in the driver is the same as the value that is to be written. The DO block will read the bit from the driver and if different, execute the write. If the values are the same, no value is written on this scan.

Example: DA and AA blocks

In previous releases, the DA and AA blocks only attempted to write to the contact tag when a value had changed and it needed to be written to the PLC. The write was a one-shot attempt. So if it failed, the write would only occur when the contact tag needed to write a new value. In iFIX 5.5, with the "Continuous Output" option enabled, you can enable these contacts to write with every scan, even if the value being written is unchanged.

Additionally, the DA and AA blocks used to only handle only one alarm at a time. As a result, it was possible to encounter conditions where acknowledgement of a COMM alarm caused the ACK bit in the PLC to be written and/or the original alarm condition, if already acknowledged, to re-alarm. To handle this, the DA and AA blocks were modified to separate the original alarm condition from the COMM alarm. With the "Continuous Output" and "Suppress COMM Alarm" options selected, the DA and AA blocks should return to the same state, prior to the COMM alarm. For example, if prior to the COMM alarm, the block was an active alarm but already acknowledged, then that is the state it should return to after communication is restored. With the "Suppress COMM Alarm" field is enabled,

an alarm condition caused by a COMM alarm should not cause the contact to be written with a new value. This implies to the PLC that the original alarm is being processed rather than the COMM alarm.

Example: DO blocks

For example, you can use the Write if Different field to prevent writes from the DO block from becoming a communication bottleneck between iFIX and the PLC. With the "Write if Different" field enabled, writes only occur if the value in the PLC is different from the value that is being written to. The DO block will read the bit from the driver and if different, execute the write. If the values are the same, then no value gets written on this scan, saving on processing time.

14. Alarm Summary Performance Updates

iFIX 5.5 includes many Alarm Summary performance updates. These include:

- The response time for alarm acknowledgement has been greatly improved.
- During the alarm acknowledgement in iFIX 5.5, other interactions can now occur while the acknowledgment is completing. In previous versions of iFIX, you had to wait until the alarm acknowledgment fully completed before performing any tasks.

15. Discover and Auto Configure (DAC) Update

iFIX 5.5 includes an upgrade of DAC from version 4.1 to 4.3. The DAC 4.3 product includes support for Windows 7 and 64-bit operating systems.

For more information, refer to the "Discover and Auto Configure" e-book in the online help table of contents.

16. PCM 6.5 Update

iFIX 5.5 supports the latest version of Proficy Change Management (PCM), version 6.5. PCM is not included on the iFIX DVD. Integrated PCM support has been available for use with iFIX since iFIX 4.0. For more information on using iFIX with Proficy Change Management, look up "Change Management" in the online Help index.

17. Microsoft Windows XP Embedded, Service Pack 3, Support

The 5.5 release of iFIX supports the Microsoft® Windows® XP Embedded operating system, with Service Pack 3. For SCADA Servers on Microsoft Windows XP Embedded, a maximum of 10 iClient connections are supported. For iClients on Microsoft Windows XP Embedded, up to a maximum of five SCADA node connections are supported.

The following devices were tested with iFIX on Windows XP Embedded:

- AXIOMTEK Touch Panel, GOT-5100T
- ads-tec Thin Client OCT-5012

VBA

Please be aware that while we have fully tested VBA as it relates to our product, Microsoft does not officially support running VBA in an Embedded environment. As such, in the circumstance that a defect is found with respect to VBA, we may not be able to formally address it on the Embedded operating system. That said, GE will provide reasonable efforts to work with our customers to resolve questions or issues encountered. As part of this effort, the troubleshooting phase will include the requirement that the customer stage the problem in a non-Windows XP Embedded environment to facilitate isolation and resolution. In this case, a final solution may require the customer to work around the specific issue by re-implementing or re-working various pieces of their VBA project implementation.

Terminal Server

iFIX does not support running a Terminal Server on the Windows XP Embedded operating system. However, Windows XP Embedded users can connect through RDP 6.0 to another computer running a Terminal Server node on a Microsoft Windows Server 2003 or Windows 2008 computer.

Toolkits

iFIX does not support running programs created with either the Easy Database Access (EDA) toolkit or System Extension Toolkit (STK) on the Windows XP Embedded operating system.

Enhanced Failover

iFIX does not support using the Enhanced Failover feature on the Windows XP Embedded operating system.

18. Picture Properties Now Available from Windows Explorer

iFIX 5.5 provides the ability to view picture properties directly from Windows Explorer. To view these picture properties, right-click the .grf file in Explorer to open the Properties dialog box. Then, click the Picture tab. From the Picture tab, you can view information such as the date modified, the author, the revision number, and the title. Please note that this tab will only appear for .grf and .fds files saved in iFIX5.5 and onwards. Pictures saved in iFIX5.1 and earlier will not display this tab.

19. Changes to User Preferences and Expression Builder Dialog Boxes

The format of the User Preferences dialog box in the iFIX WorkSpace changed from a horizontal tabular view to a vertical option list, from improved readability and navigation. The options are the named the same; the display is what differs.

Similarly, the format of the Expression Builder dialog box in the iFIX WorkSpace changed. There is a drop-down where you can select the tabs that display in the top right-corner of the tab list, and improved historical data filtering drop-down options. The options are the named the same; the display options are what differs.

For more information on the settings in the User Preferences dialog box, refer to the following section in the iFIX e-books: Understanding iFIX > Using the Proficy iFIX WorkSpace > WorkSpace Dialog Boxes > User Preferences Dialog Box.

20. Build Number Identifiers

In iFIX5.5, we use two build numbers to identify the software. The SCADA binaries are identified by the build number 8120, while the HMI binaries are identified by build number 10179. These numbers can be found in the WorkSpace about box. This information is important to know if you later choose to call technical support for any issues.

21. FIXUserPreferences.INI Changes

There is a new option in the FIXUserPreferences.INI file that allows you to control whether a warning prompt appears in run mode when closing a picture with changes.

You can disable this warning prompt with the new RuntimePictureChangeSaveWarning setting in the [AppRunPreferences] section of the FIXUserPreferences.ini file. Change the RuntimePictureChangeSaveWarning=1 setting (the default) to RuntimePictureChangeSaveWarning=0 in the FixUserPreferences.ini file to disable this warning message. By default, this message is enabled (set to 1).

The RuntimePictureChangeSaveWarning=0 setting is not available from the User Preferences dialog box in the iFIX WorkSpace. You can only access it from the FIXUserPreferences.INI file. This file is located in your in the LOCAL folder of your iFIX install folder.

For more information on this and other settings in the FIXUserPreferences.INI, refer to the following section in the iFIX e-books: Creating Pictures > Implementing Pictures in Your Process > Changing Picture Settings in the FixUserPreferences.ini File.

22. New Database Dynamos

Three new optional Database Dynamos were added to iFIX: the AR2, DR2, and ODO Database Dynamos. These Database Dynamos (also known as loadable blocks) can be added to iFIX using the Database Dynamo Configuration Utility (BTKCFG.exe). The BTKCFG.exe is located in the iFIX install folder. The default installation location is: C:\Program Files\Proficy\Proficy iFIX. After you add and save the new Database Dynamos, restart iFIX. You will now be able to add blocks of these types in the iFIX Database Manager.

AR2 and DR2 Database Dynamos

The AR2 and DR2 Database Dynamos are similar to the AR and DR blocks, however there is added functionality on the Alarms and Security tab for Alarm Extension Fields, Security Areas, and Event Messaging:

- The Alarm Extension Fields define two user-defined strings that you can display in the Alarm Summary object or an operator display.

- The Security Areas section allows you to restrict the currently logged on operator to be a member of at least one of the three listed security areas to write to the fields in the block (security must be enabled).
- The Enable Event Messaging option lets you enable or disable event messaging for the block. Event messaging is similar to alarming except that it does not require acknowledgment. Event messages are sent to the same alarm destinations as alarms for a given block but do not appear in the Alarm Summary object.
- NOTE: Be careful when using event messaging in a chain with a time-based scan time. If the scan time is short, your alarm files (either disk or printed) can grow very large. We recommend enabling event messaging for exception-based chains, one shot chains, and stand-alone output blocks.

ODO Database Dynamo

The ODO Database Dynamos are used to send a brief pulse to a Digital Output block. A typical use would be for a motor starter. Key highlights of this block include that it:

- Is a secondary block.
- Generates a momentary digital output.
- Supports a configurable pulse length (in seconds).
- Supports the Invert Output feature.
- Does not support cold start initialization.
- Cannot be exception-based or part of a chain.
- Does not generate alarms.
- Does not reset the timer even if a user clicks several times before the pulse completes.

NOTE: In a networked iFIX system, all Database Dynamos must be installed and configured on all nodes. Be sure that after you add your new Database Dynamos, that you save the configuration. Otherwise, your new blocks will not get added to iFIX.

For more information about Database Dynamos and the iFIX Database Manager, refer to the Database Manager online help.

23. New Database Fields Added for Future Use

iFIX 5.5 includes the following new fields with each database block. Although you may see these fields when browsing the iFIX database in the Expression Builder, they are unavailable for use in iFIX 5.5 and solely provided for future use. No development should be done which makes use of any of these fields:

- A/F_WRITABLE
- A/F_PUBLISH
- A/F_ALMGEN
- A/F_ALMUPDATE
- A/F_ALMACK
- A/F_ALMDELETE
- A/F_ALMRESET

- A/F_ALMCHANGE

24. Updates to the iFIX Automation Reference

New Properties

The following new properties were added to the iFIX Automation Interface:

- **DSLegendEngUnitsColWidth Property** - Specifies the column width of the engineering units column in the legend for an Enhanced Chart (HistogramChart, LineChart, SPCBarChart, and XYChart objects).
- **EngUnits Property** - Specifies the Engineering Units for a given data source in run mode. This property only applies to data sources in Enhanced Charts (applies to GeneralDataSet and RealTimeSPCDataSet objects).
- **Expandable Property** - When Expandable is set to true in an Enhanced Chart, an Expand or Contract button displays in the upper right-hand corner of the chart when the cursor hovers over that area. Pressing the Expand button causes the chart to display in full screen, while pressing the Contract button causes the chart to reset to its original size and position. Applies to HistogramChart, LineChart, SPCBarChart, and XYChart objects.
- **MaxXAxisLabels Property** - Applies only to the Line/Multiline Enhanced Chart. This property allows you to specify the maximum number of labels (for the time and date) to be displayed on the X axis for this type of chart (LineChart object).
- **QuickConfigure Property** - When QuickConfigure is set to true for a Line/MultiLine or XY Enhanced Chart, this property allows you to change chart properties while in run mode without having to display the configuration dialog box or the right-click menu. Applies to LineChart and XYChart objects.
- **ShowXAxis Property** - Specifies the combination of Grid, Labels, and Title to display on the X axis. Applies to all Enhanced Charts (HistogramChart, LineChart, SPCBarChart, and XYChart objects).
- **ShowYAxis Property** - Specifies the combination of Grid, Labels, and Title to display on the Y axis. Applies to all Enhanced Charts (HistogramChart, LineChart, SPCBarChart, and XYChart objects).
- **StretchMode Property** - Describes how color is rendered in a Bitmap object.
- **Thumbnail Property** - When the Thumbnail property is set to True in an Enhanced Chart, the chart can be reduced in size and still show useful information. Applies to HistogramChart, LineChart, SPCBarChart, and XYChart objects.
- **TimeCursorStyle Property** - Specifies the type of time cursor to display in an Enhanced Chart in run mode, when the ShowTimeCursor property is set to true. Applies to HistogramChart, LineChart, SPCBarChart, and XYChart objects.
- **TruncateTitles Property** - When TruncateTitles is set to true in an Enhanced Chart, the chart title, chart sub-title and axes titles are all truncated to fit the allowable space, before any scaling is applied. Applies to HistogramChart, LineChart, SPCBarChart, and XYChart objects.
- **UseDefaultYAxisSettings Property** - When UseDefaultYAxisSettings is set to True for a data source (GeneralDataSource object) in an XY or LineChart, the following data source

- properties are configured according to the corresponding values set on the Axis tab in the Enhanced Chart Customization dialog box in the iFIX WorkSpace: ManualScaleControlY, AutoMinMaxPaddingY, ManualMinY, ManualMaxY, YAxisScaleControl, and UseDSLimits.
- UseDSLimits Property - If the UseDSLimits is set to True, then for a given data source in an Enhanced Chart, the high and low values for the Y axis are obtained from the High and Low Limit fields in the Data sub tab on the Data Sources tab in the Enhanced Chart Customization dialog box. If the UseDSLimits is set to False, then the high and low values for the Y axis are configured using the settings configured in the Y Axis panel of the Axis tab in the Enhanced Chart Customization dialog box. Applies to HistogramChart, LineChart, SPCBarChart, XYChart, and GeneralDataSet objects.
 - YAxesStyle Property - The YAxesStyle property allows you to specify a style for the Y axis in a LineChart or XYChart object (LineChart or XYChart Enhanced Chart).
 - YAxisAlwaysVisible Property - Specifies whether the Y axis for this data source is always visible in the Enhanced Chart (applies to GeneralDataSet objects in a LineChart or XYChart).
 - YAxisTitle Property - Allows you to specify a Y axis title for the specified data source in an Enhanced Chart (applies to GeneralDataSet object in a LineChart or XYChart).

New Properties

The only new object in the iFIX Automation Interface in iFIX 5.5 is the following object:

- GeneralDataSet Object - The GeneralDataSet object can be a real-time or historical data set type.

More on the GeneralDataSet

In iFIX 5.5, the GeneralDataSet object replaces both the HistoricalDataSet (used by Historical Datalinks and animations, the Enhanced Line and XY Charts, and the HistoricalLineChart Dynamo) and the RealTimeDataSet (used by Enhanced Line and XY Charts) objects. The GeneralDataSet supports both real-time and historical data. Having a single data set for all data types allows for a more efficient way of rendering the data in the iFIX WorkSpace. It also provides the flexibility to configure a tag group without having to specify how the tag group has to be treated, as real-time or historical.

NOTE: The RealTimeSPCDataset still exists and has not been upgraded in iFIX 5.5.

When opening pictures from a previous version of iFIX (prior to iFIX 5.5), pictures that contain any older dataset objects are upgraded to use the new GeneralDataSet object. An informational message appears telling you that the file you are opening has been updated to the most recent format and that the original can be found in the backup directory.

Any scripts with the logic to check against the dataset's class name in order to determine the data type will now be replaced with the method IsHistoricalData. Each upgraded line in the script includes a comment that starts with the words: **** Upgraded ****. This comment is provided so that you can

easily search and find any upgraded areas in your VBA scripts. For example, an updated line would display like this:

```
*** Upgraded ** If ds.ClassName = "HistoricalDataSet" Then  
    If ds.IsHistoricalData = True Then
```

An upgraded dataset still retains its object name in order to keep the scripts compatible in the latest version of iFIX. For instance, a RealTimeDataSet named XYZ will still show up as XYZ in the system tree in the iFIX WorkSpace, but the object itself will become a GeneralDataSet with the additional properties. This name is still retained even if the data type is changed to a different type (for instance, from real-time to historical).

Also, for any custom scripts, if you previously used the classname property of a HistoricalDataSet or RealTimeDataSet, be sure to review these scripts as well.

About GE Intelligent Platforms

GE Intelligent Platforms is an experienced high-performance technology company and a global provider of software, hardware, services, and expertise in automation and embedded computing. We offer a unique foundation of agile and reliable technology providing customers a sustainable competitive advantage in the industries they serve, including energy, water, consumer packaged goods, government & defense, and telecommunications. GE Intelligent Platforms is headquartered in Charlottesville, VA. For more information, visit www.ge-ip.com.

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