



Adroit 10

What's New

COPYRIGHT

Copyright © 2020 Advanced Worx 112 (Pty) Ltd. All rights reserved.

Information in this document is subject to change without notice. The software described in this document is furnished under a license agreement or nondisclosure agreement. The software may be used or copied only in accordance with the terms of those agreements. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or any means electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of Advanced Worx 112 (Pty) Ltd.

Advanced Worx 112 (Pty) Ltd
20 Waterford Office Park
189 Witkoppen Road (c/o Waterford Drive)
Fourways
South Africa

www.adroittech.co.za

Version	Date	Author	Comment	Approval
1.0	09.03.2018	Unknown	Original	D. Wibberley
2.0	22.05.2020	J. Duncan	Update Cover and formatting	
3.0	23.07.2020	J. Munitich	Update Content for 10.0.5.0	
4.0	26.07.2020	J. Duncan	Reformat	
5.0	27.08.2020	J. Duncan	Finalise	

Contents

1. What is new in the Adroit 10 Release	3
1.1. Product Licensing Changes	3
1.1.1. Important differences between a HASP and a Soft License:.....	3
1.2. Install.....	4
1.3. Product Theme, Icons and Shortcuts	5
1.4. Adroit Agent Server	7
1.4.1. The ICMP or PING Agent	7
1.4.2. The DumpConfig Agent	7
1.4.3. The DBQuery Agent	7
1.4.4. The Accumulator Agent	7
1.4.5. Primitive Agents – Adroit Lite.....	7
1.4.6. The Analog Agent.....	7
1.4.7. The AlarmManagement Agent.....	8
1.4.8. The Notify Agent	8
1.4.9. The Custom Agents.....	8
1.4.10. The SNMPMgr Agent	8
1.4.11. Agent Classification	8
1.4.12. Scanning	9
1.4.13. The Datalog Agent	10
1.4.14. Adroit 10 Backup Files	11
1.4.15. Agent Browser.....	11
1.4.16. Agent Server Monitor Utility.....	12
1.4.17. The Alarm and Event Routes	12
1.4.18. The IOT Agent	12
1.5. SmartUI Config Editor	13
1.5.1. Theme	13
1.5.2. IOT Agent Configuration.....	13
1.5.3. Backup and Restore Enhancements	14
1.5.4. Product Mode indication	14
1.5.5. Smart Data Services Configuration	15
1.6. Performance Anywhere	16
1.7. SmartUI Designer	17
1.7.1. The Object Model Datasource.....	17
1.7.2. The Context Window.....	18
1.7.3. Find and Replace.....	19
1.7.4. Enhanced Data Element Browser	20
1.7.5. Graphic Form Publishing	21
1.7.6. Wizards.....	21
1.7.7. Controls	21
1.7.8. Vectors	22
1.7.9. Behaviours	24
1.7.10. Scripting.....	24
1.8. SmartUI Operator.....	25
1.9. Other Components:.....	25
1.9.1. SCADA Components and Utilities and Samples:	25
1.9.2. HMI SCADA Demo install	27
1.9.3. Report Suite 1.3.....	27

1. What is new in the Adroit 10 Release

Apart from various performance enhancements of the existing functionality, Adroit provides the following additions:

1.1. Product Licensing Changes

IMPORTANT: *HASPs are NOT backwardly compatible with previous product versions due to a change in the internal licensing structure of the HASPs.*

The **Adtech Licensing Utility** allows you to get, view and/or update your Adroit product license.

- The product license is now a .XML document to make it easier to read and is displayed in the **License** tab.

IMPORTANT: *The former **Remote Nodes** licenses that applied to all types of clients have been **DISCONTINUED**. These have now been replaced by the following client specific node licenses, each of which have different costs:*

- Clients: typically Operators and/or Designers and
- Web Clients: typically Performance Anywhere clients.
- Remote Desktop (RDP) clients can now get a free node connection to obtain engineering access to the Agent Server, by adding and configuring the RDAdminName WG.INI registry string value.

Note: By default, this registry entry does not exist and therefore all Remote Desktop (RDP) clients are subject to node licensing. This registry value must be created and set to the required Windows username to establish free connections for this user.

The OEM (separately-licensed) components are no longer specified by their associated OEM codes but now included as separate textual entries in the product license, so that users can easily see exactly which components they are currently licensed for.

Tip: Only the OEM components that you are licensed for will appear.

- All product licenses have a GLOBAL expiry and can also support product-specific expiries, which can be used for product trials.
- .V2C (Vendor to Customer) and .C2V (Customer to Vendor) files are now used to create and update product licenses instead of using .RUS files.

A new licensing methodology has been added to support new product variants (Ignite and OPC/Edge Gateway) where rather than using traditional scan point licensing the system will count the number of user defined agents.

Note: Full and Lite / HMI products continue to use the traditional scan point methodology

1.1.1. Important differences between a HASP and a Soft License:

- A HASP license is bound to a USB HASP, which has a specific serial number - this is therefore portable and not restricted to a specific computer but has associated security risks and needs to be insured at your own risk.
- A Soft license is bound to a specific computer and therefore cannot be transferred

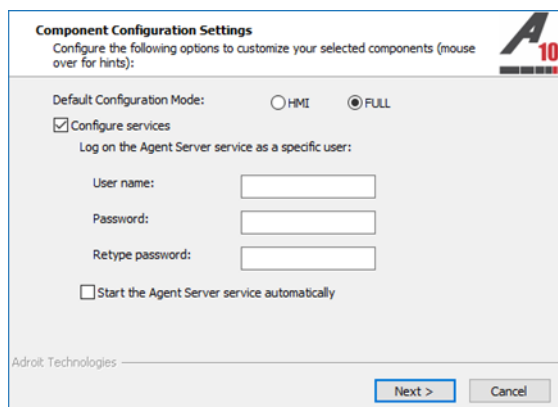
1.2. Install

Adroit 10 is designed to run on Windows 10 and Windows Server 2008 R2 onwards, it no longer supports the Windows Vista nor Windows Server 2008 operating systems.

Adroit 10 requires Microsoft .NET Framework 4.6.2. If this is not installed then the installation uses an offline installation that it provides to install this for you (so no further downloading is required).

IMPORTANT: *The install can no longer be installed if the name of the user running it is called "Administrator", since this COULD be the built-in Windows Administrator account, which is DISALLOWED because UAC is automatically disabled whenever this built-in Administrator account is used, which causes a myriad of problems to occur.*

When installing the Agent Server, the **Component Configuration Settings** dialog does not provide the option of not installing the Agent Server and SmartUI Server as services. From version 10.0.5.0 this is required as certain underlying functionality requires consistency so far as access rights and user context go.



It is mandatory to specify both a username and password for the Agent Server Service, which should be those of a user that has the rights / permissions to access the network resources (printers, SQL Express, network shares) that the Agent Server requires access to. Hence this dialog has been reorganized as follows:

The install installs/updates the latest INSTALLABLE drivers' files, typically in the Drivers sub folder of the Adroit installation folder. When users want to install a new driver via the Config Editor this folder is now selected by default. While the drivers that are automatically installed by the install, such as the OPC Client driver are automatically installed and/or updated. For all other drivers, we do not touch the installed drivers and the onus is upon the user to update the necessary drivers. When the installed version is same as the version of the install, a message box is displayed to allow users to select whether they want to reinstall the existing components or they can opt to install additional components that have not been installed yet or exit the install (the default option).

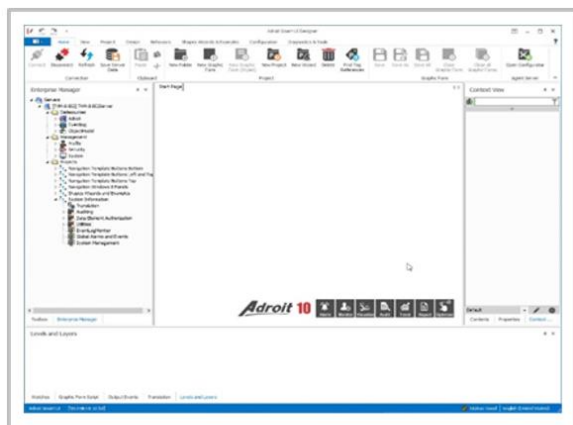
The install now detects when the .NET Framework 4 install seems to install without any issue but does not update Microsoft .NET Runtime Execution Engine (mscorlib.dll) and prevents the install from continuing in this instance and provides assistance to resolve this Microsoft issue that ONLY affects Windows 7 and Windows Server 2008 R2.

Added Performance Anywhere to the list of available installable components and added the **Performance Anywhere Server** option to the list of available installation options, which also installs the required Web Server component:

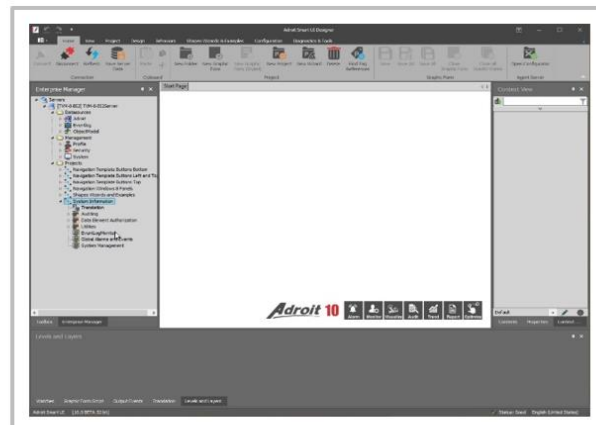
Performance Anywhere needs to be installed on a Web Server - a computer that has IIS (Internet Information Services) installed and ensures that the SmartUI Web Service is also installed.

1.3. Product Theme, Icons and Shortcuts

The SmartUI applications now support the following two themes that affect how these applications are displayed:

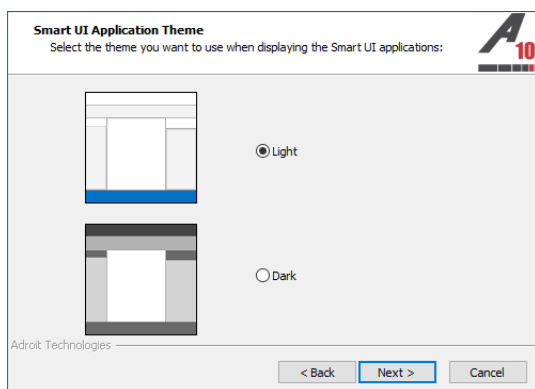


Light



Dark

Users can select which theme they want to use, when installing the SmartUI Operator, Designer or Server for the first time (in other words this is not displayed when any of these components are installed subsequently), from the following installation dialog:



Tip: You change this theme at any time by opening the Adroit Config Editor and specifying the required option from the **Theme** list box at the bottom of this application.

The product icons have been revised and updated and standardized and are now classified using different coloured vertical bars on their left hand side. Each colour representing the following categories of function to make them easier to recognize and use:

Clients	Diagnostics	Servers	Utilities	Services
Operator	Adroit Scanning Monitor	Adroit OPC Server	Adroit Backup	Agent Server Service
Designer	Driver Monitor Launcher	Agent Server Timed License	Adroit Classic Setup	VIPService
WAN Client	Adroit Driver Monitor	AgentServer	Adroit Demo	Wan Server Service (WSS.exe)
OPC Browser	Pdrmon.exe (command line utility)	Batch OPC Server	Adroit Launcher	VIP Distribution

The **Adroit Utilities** has been added to provide a central location from which the installed utilities can be launched, instead of installing a host of separate shortcuts for each individual utility. This shortcut is also installed on the Desktop.



This application also describes their supported command line options and by right clicking the utility you can specify which command line options you want to use when launching the utility

1.4. Adroit Agent Server

1.4.1. The ICMP or PING Agent

Added the ICMP or PING agent uses the Internet Control Message Protocol to troubleshoot network problems.

By continuously polling the specified remote IP address, this agent is therefore able to identify potential network problems as they occur by generating alarms when errors are obtained when attempting to contact the specified remote IP address and/or when the round trip time exceeds specified High and High-high times.

1.4.2. The DumpConfig Agent

Added the DumpConfig agent, which simply stores the configuration of specific agents in an OLE DB database.

One example for its use is when you need to report on agents in the context of their configuration at the time of the report, alternatively this could be used as an extensive method of auditing changes made to specific agents.

1.4.3. The DBQuery Agent

Added the DBQuery agent type supporting a full range of advanced database interactions superseding that provided by the DBOAccess agent

This agent type allows for advanced queries to be executed on an OLDB database connection for reading; inserting and manipulating tabular data

1.4.4. The Accumulator Agent

This agent performs 3 basic functions:

It retrieves an input value that normally accumulates over time and is always increasing in value.

It uses this value to calculate the difference, or its change in value, between successive events or over a specific time or interval.

It calculates the total for a period based on a predefined trigger or time interval.

1.4.5. Primitive Agents – Adroit Lite

The following primitive agent types have also been added to Lite / HMI mode: Real and Integer, however these agents (including Boolean) should ONLY be used where efficient use of memory is required.

PLEASE NOTE: These legacy primitive agents do not support Alarming and other SCADA functionality, use Analog/Digital agents instead!

1.4.6. The Analog Agent

The Analog agent now provides support for up to 51 bit numbers, in that the new maximum range is 2,000,000,000,000,000 for unsigned numbers or -1,000,000,000,000,000 to 1,000,000,000,000,000 for signed numbers.

To reduce the loss of accuracy in scaling caused by IEEE conversion issues, the Analog agent bypasses the scaling calculation, when the scaling is 1:1.

1.4.7. The AlarmManagement Agent

The AlarmManagement agent now provides the Integer **kpiCalcRate** slot that sets the maximum rate at which the KPIs should be calculated, in minutes, to improve the performance of this agent, which by default is set to 1.

If this slot is set to 0 then KPI calculations are NEVER executed on new or changed alarm occurrences and so also added the Boolean **kpiCalcNow** slot that pulses to allow users to perform a KPI calculation at any time, especially when they have set the kpiCalcRate slot to 0.

1.4.8. The Notify Agent

The Notify agent now provides a **valueEx** VARSTRING slot that is now SMS'd or emailed to subsystems that can handle long strings. It is also the slot that is saved to the WGP file.

1.4.9. The Custom Agents

Custom agents created via the Custom Agent Designer that require scripting intelligence now provides support for JavaScript (.jav file) or you can choose to use the existing VBScript (.vbs file).

1.4.10. The SNMPMgr Agent

The enhanced SNMPMgr agent replaces the legacy SNMPManager agent

- This agent supports up to SNMP version 3 and allows an MIB file to be browsed in, in order to select which OID values you need to monitor and/or control and/or trap.
- Any existing SNMPManager agent is converted to SNMPMgr agent when the Agent Server loads.
- This agent does not use .wgx files as now the OID configuration of your SNMPMgr agents are saved to the Agent database (.wgp) file directly.
- Various improvements have been made in the way the SNMPMgr agent handles reporting the quality (the bad or good state) of the OID list linked tags.

1.4.11. Agent Classification

For a new project, the available agent types are now classified into the following default groups to better facilitate the selection of the required agent when designing your system:

Primitive:

These agent types are primitive because they offer limited value and are limited in functionality when compared to the Basic agents, they are essentially single value containers.

Boolean, Integer, Real, Text and Frame

- *IMPORTANT: These agent types CANNOT be alarmed, and their values are not scaled etc, so use the Basic agent types instead to represent your process values.*

Basic:

These agent types form the basic building blocks of a system and are used for gathering, handling and processing data to and from the physical external world.

Analog, Counter, Date, Digital, Expression, Marshal, MultiState, String, StringList, Timer

Advanced:

These agent types provide powerful SCADA and integration functionality that allow the Basic agents to be alarmed and logged to databases and provides various means of reporting and/or controlling their values.

AgentGroup, Alarm, Alarm List, AlarmManagement, ARec, Command, DBAccess, DBLog, EventLogging, EventOutput, Multimedia, Notify, Recipe, Scheduler, Script, Shift, Statistical

MIS/MES:

These are very specific and usually quite complex agent types used to do monitor, control and solve higher level shop-floor and general industrial challenges.

Accumulator, MaxDemand, OEE, PID

IT/IOT:

These agent types facilitate the integration and management of SCADA and IT

Audit, DumpConfig, ICMP, Perfmon, SNMPMgr

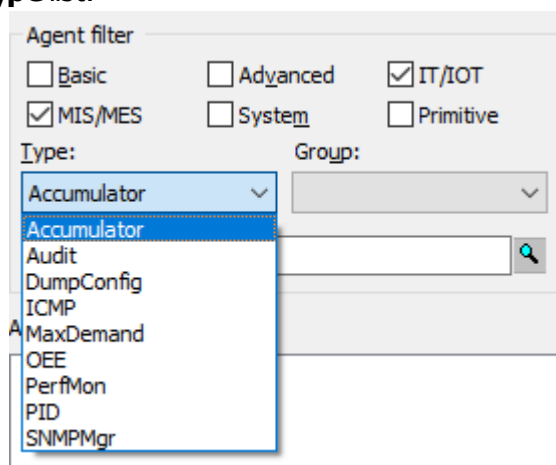
System:

These agent types are used internally to perform certain SCADA and other specific functions.

Alias, Beeper, DataLog, Device, Hasp, Proxy, Scan, SystemDataLog, SystemInformation

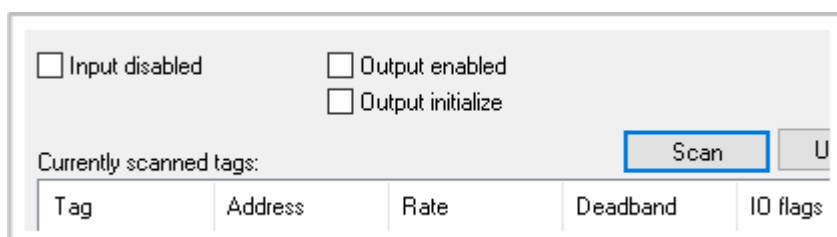
- Note: Instances of these Agents are created automatically and cannot be added manually by the user.

Hence the **Agent filter** section of the **Agent Configuration** dialog provides checkboxes for these default agent groups which if checked, allows you to determine which agent types are displayed in the **Type** list:



1.4.12. Scanning

Simplified the configuration of scanning related settings when scanning tags, hence the following checkboxes appear in the **Tag Scanning Configuration** dialog:



Also these settings are now being stored in the Agent Database (.wgp) file along with the other scanning related settings, such as the scan address, scan rate etc, as an **IO flags** setting, which is displays as an additional column in the Currently scanned tags list.

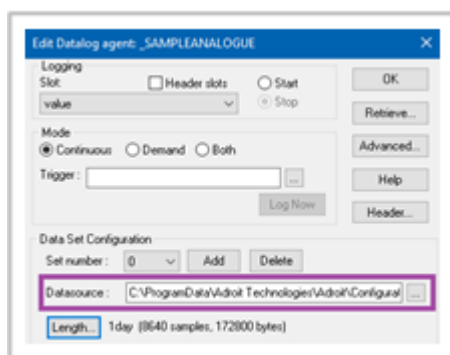
For this reason Adroit WGP files for 10 are NOT backward compatible with previous versions, which saved these settings in the agent header slots.

Added support for the demand scanning of tags, which are only communicated when there are one or more subscriptions against them. For example a graphic form is open with the tag in it. Once the graphic form closes, if this is the only subscription to this tag then communication of that tag will cease.

Note: Demand scanning is only supported by drivers that have been written to support it.

1.4.13. The Datalog Agent

- The logging to ADO (SQL) databases by the Datalog agent is disabled by default (the SQL... button of the **Datasource** field is hidden in the Edit Datalog agent dialog). This is to force users to use the DBLog agent instead, which logs data to SQL more efficiently.



Although if the Agent Server loads a legacy WGP file that ALREADY contains an ADO datalogging configuration, then the SQL... button of the **Datasource** field will be visible in the Edit Datalog agent dialog.

The Datalog agent should therefore only be used for proprietary logging and the datalog period (**Length...**) should not exceed what is required for operational trending purposes.

In other words, should an operator only need to see 24 hours of trend data to properly monitor and control his plant then the datalog period should only be set for 1 day. Historical data (i.e. data outside of the datalog period), if requested, will be retrieved from the backup files, if required.

When the allocated size of the datalog (.LGD) file is filled, it wraps (starts again at the beginning). At which time one or more datalog backup (.LGB) files are created to store this older (historical) data. The datalogging sub-system automatically retrieves this historical data from these files, when this data is required by trends (charts) or other requests for historical data.

1.4.14. Adroit 10 Backup Files

In Adroit 10, the naming convention of these backup files have improved compared to Adroit 8.4 to significantly reduce the number of files that are created.

When creating monthly datalog backup files in **Adroit 8.4**, a separate file was created for each day of the month that had data logged, since the file name also included the day that the data was logged. For instance:

- A data value with a timestamp of 2017-11-21 10:00:00 would go to a backup file called 2017-11-21-m-11
- A data value with a timestamp of 2017-11-22 10:00:00 would go to a backup file called 2017-11-22-m-11

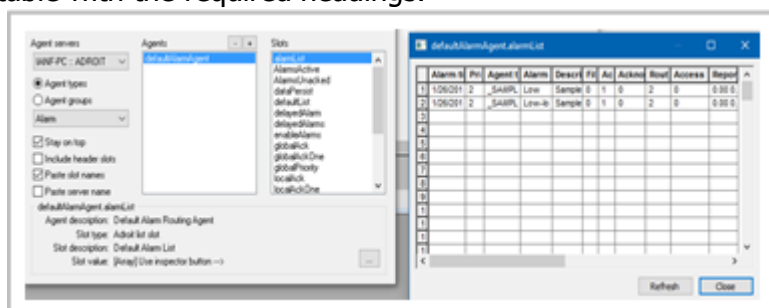
In **Adroit 10**, the name of the backup file only specifies the year and month so that now only one file is created for the month. For instance:

- A data value with a timestamp of 2017-11-21 10:00:00 would go to a backup file called 2017-11
- A data value with a timestamp of 2017-11-22 10:00:00 would also go to a backup file called 2017-11

1.4.15. Agent Browser

Enhanced the Agent Browser utility, as follows:

This dialog is now resizable and when the selected slot is a LIST slot then a browse (...) button is displayed to the right of the slot value, which when clicked displays the contents of this LIST slot in a table with the required headings.

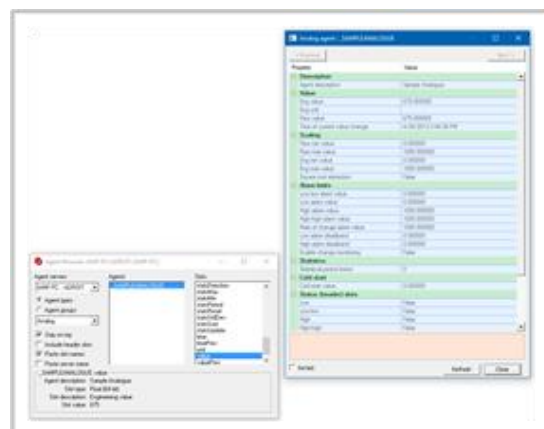


Double clicking an agent displays a dialog that allows you to view the real time status of an agent at a glance.

By default the Agent Browser displays a categorized view of the double-clicked agent, although you can check the **Sorted** checkbox to display an alphabetical listing.

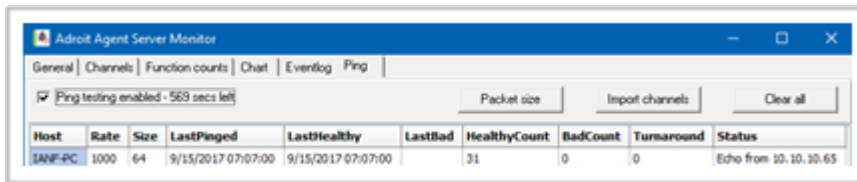
You can also click the **Previous** / **Next** buttons (or use the PAGE UP / PAGE DOWN keys) to view other agents of the selected agent type, in this manner.

When launched in admin mode you can add or remove agents from it using the + or - buttons of the Agents list.



1.4.16. Agent Server Monitor Utility

Added the **Ping** tab to the Agent Server Monitor utility, which can help you determine whether any of the currently connected clients have connection issues to the Agent Server.



1.4.17. The Alarm and Event Routes

The alarm and event routes support lists of up to 256 characters instead of the legacy 80 characters.

1.4.18. The IOT Agent

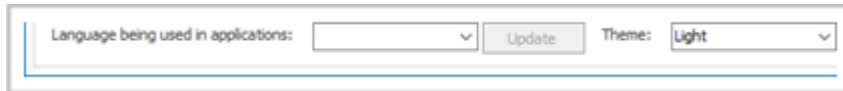
The IOT agent type has been officially incorporated for use with IOT type devices such as Sigfox etc. The mechanism was revised to allow new IOT type agents to be created based on templates from the config editor. A number of templates are shipped with the base product but this will expand over time and can be customised based on each user's needs. Some of the IOT templates included are:

- Kamstrup's MULTICAL® 21 smart water meter
- Lesira smart water meter
- Simple leak detector
- Wi-i Tremoli fence intrusion detection
- VisioPressure meter
- VisioTamp tamper detection
- VisioTrack tracking device
- VisioUtil utility logging device
- Wavetrend water pressure meter

1.5. SmartUI Config Editor

1.5.1. Theme

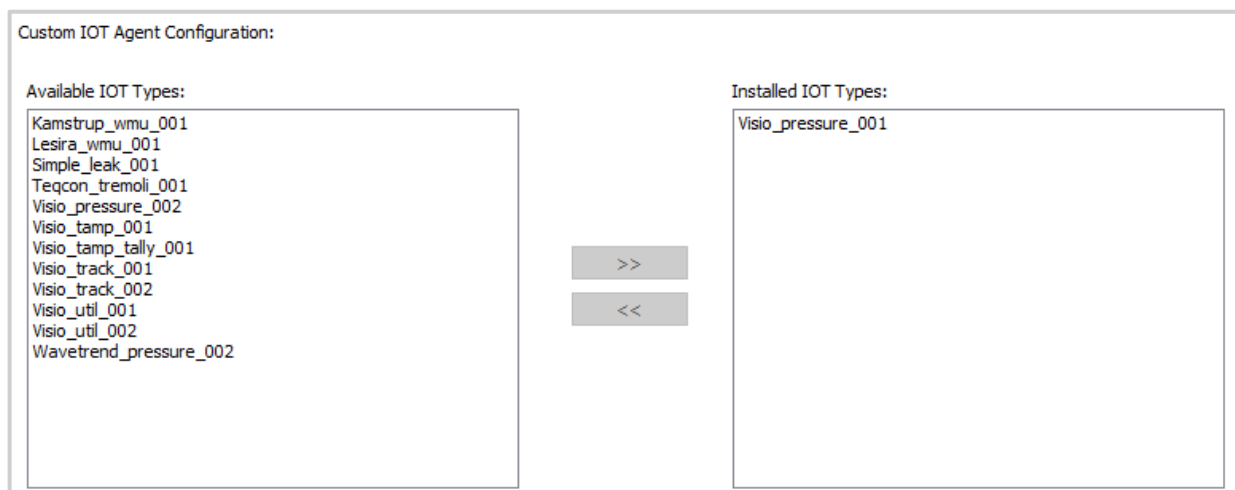
You can change the SmartUI application theme at any time by opening the Adroit Config Editor and specifying the required option from the **Theme** list box at the bottom of this application:



Language being used in applications: Update Theme:

1.5.2. IOT Agent Configuration

IOT Agent Configuration has been added to the config editor so that types (based on installed templates) can be added or removed as required. The idea is to not pollute the list of available agent types unnecessarily in a running Agent Server



Custom IOT Agent Configuration:

Available IOT Types:

- Kamstrup_wmu_001
- Lesira_wmu_001
- Simple_leak_001
- Tegcon_tremoli_001
- Visio_pressure_002
- Visio_tamp_001
- Visio_tamp_tally_001
- Visio_track_001
- Visio_track_002
- Visio_util_001
- Visio_util_002
- Wavetrend_pressure_002

Installed IOT Types:

- Visio_pressure_001

>>

<<

1.5.3. Backup and Restore Enhancements

The backup and restore functionality has been revamped to allow for improved ease of use while still allowing for greater customization if and when required. In most cases the simple backup mechanisms (Basic and Complete) do exactly what users would require from a backup however, the Custom option is available if needed.

This wizard is used to carry out backups of your various settings, projects and files.

Setup
Results

☒ Basic
☐ Complete
☐ Custom

The Basic backup will backup only the most relevant files in your current configuration

Basic backup options

Compulsory	
☐ Graphic Forms	Not found
☒ Server Data	4 file(s), 10 KB
☒ Profiles	4 file(s), 10 KB
☒ Adroit WGP	Default.wgp + Default.BAK, 25 KB
☐ Adroit Scripts	Not found
☒ Other	7 file(s) [MAPS, Adroit, ObjectModel], 24.799 MB
Optional	
☐ Audit Database	Default_Audit.sdf, 65 KB
☐ Config Files	5 file(s), 106 KB
☐ Plugins	23 file(s), 26.076 MB
☐ Adroit Registry	44 registry items
☐ Adroit Datalogs	Not found

Backup destination: C:\ProgramData\Adroit Technologies\MAPS\Backups\Default_Backup_2020-07-24-08-23-17.zip ...

[Open file location...](#)

Backup

The backup process now clearly indicated what files and / or settings are being taken care of while intelligent defaults with regards to deliberate exclusions minimise unnecessary files from being included thus bloating the backup files.

1.5.4. Product Mode indication

The current product mode is clearly indicated in the config editor and a newly added feature is that the active mode of a configuration can be altered rather than having to create a new configuration.

Note: This can only be done if the Full product is installed and the system is licensed for Full mode.

Installed Product Mode:

Full Mode

Active Configuration:

Default

Configuration Mode:

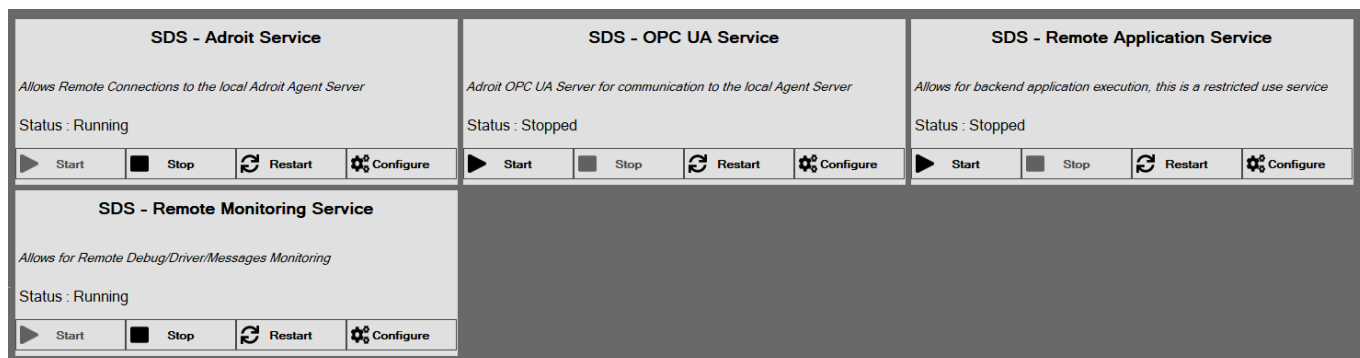
Change active configuration mode:

☒ Full
☐ Lite/HMI

Apply
Cancel

1.5.5. Smart Data Services Configuration

Smart Data Services configuration has been added to the config to allow the user to configure the availability and function of certain modules.



The following services are provided:

- Remote Agent Server connectivity**
 This facilitates remote communication to the local Agent Server from a SmartUI Server located on another machine.
- OPC UA Server**
 Provides OPC UA Server functionality, exposing specific tags within the Agent Server via OPC UA
- Remote Monitoring service**
 This allows remote diagnostic monitoring of servers through the Server Activity Monitor. I.e. A Server Activity Monitor on another machine can connect to this machine remotely and gather status information regarding the running Agent Server and / or SmartUI Server
- Remote Application service.**
 This allows licensing to be controlled / applied remotely from another machine via the ALU utility. Rather than having to engage the ALU on each Server, one can apply licensing updates from a central location.

1.6. Performance Anywhere

Added **Performance Anywhere** to the list of installable components of the Adroit 10 install.

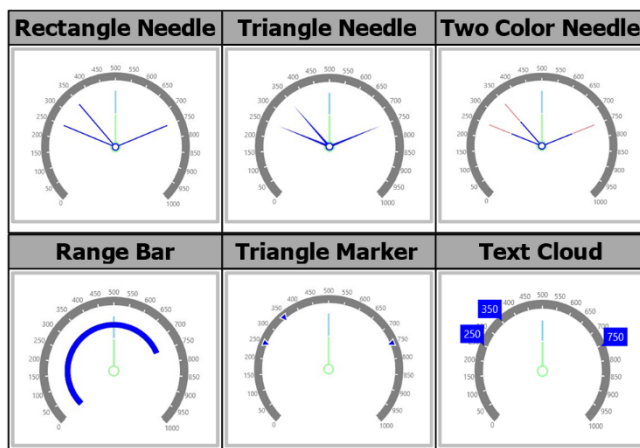
Performance Anywhere needs to be installed on a Web Server - a computer that has IIS (Internet Information Services) installed and ensures that the SmartUI Web Service is also installed.

Once installed, by specifying the required URL provided by the install, the Performance Anywhere dashboard can be opened on a mobile device and/or Internet browser and allows you to create numerous pages in which you place and configure widgets (controls) in **Design** mode so that you can display and, in some cases, configure your Adroit data in **Run** mode.



The Performance Anywhere shortcut that is installed to the Desktop, also contains the virtual directory name of the Web Service, to prevent login issues.

When configuring a Gauge the **Sub Values** tab allows you to add additional values to the gauge, which you can identify using the selected **Sub Value Indicator**, of which the following are provided:



To save configuration time, you can now clone (duplicate) existing pages (and all of their configured widgets and/or clone individual widgets to duplicate their current configuration settings.

Another way to save configuration time, is to create a single page that can display different sets of data, such as to represent different items of the same equipment, without having to create a separate page for each item of equipment.

Furthermore all the non-specific configuration or configuration that would normally be duplicated for each item of equipment now only needs to be performed once, to ensure absolute consistency.

Performance Anywhere licensing change:

You can use a single instance (ONE Performance Anywhere client) free of charge without any changes to your product license.

If you require more than 1 concurrent Performance Anywhere client then you need to add the necessary number of **Web Clients** to your product license.

1.7. SmartUI Designer

1.7.1. The Object Model Datasource

Added the Object Model datasource, which enables you to enhance your existing wizards, by adding SCADA configuration to them.

What can the object model do for you?

It saves you SCADA engineering time by allowing you to reliably duplicate objects that can have all or most of their SCADA configuration pre-configured.

The objects that you can create will typically be items of equipment, like pumps or motors and can be anything that you have already created a wizard to represent.

When creating an object template or an object instance, you are able to add one or more attributes or searchable strings or identifiers to them that you can use to filter or group the objects that you deploy in the **Context View** window.

What does the object model NOT do for you?

It does not help you create the graphical representation of the object; it requires a working instance of a wizard to begin.

It does not help you create the SCADA configuration required by this object, it requires that all the necessary agents already exist for the wizard instance that you have selected and that these agents have already been configured.

Practical example:

Consider an industrial plant has a large number of similar pumps made by the same manufacturer, each of which had some characteristics that differed such as their power calibration.

The engineer would initially create a wizard that provides the graphical representation of this pump.

Then the engineer would implement the wizard and create the necessary SCADA configuration for this pump, such as its required scanning, logging and alarming.

The engineer would then test that this SCADA configuration was working correctly.

Then the engineer would create a template from this working wizard, ensuring that the characteristics that differed between these pumps would be substitutable.

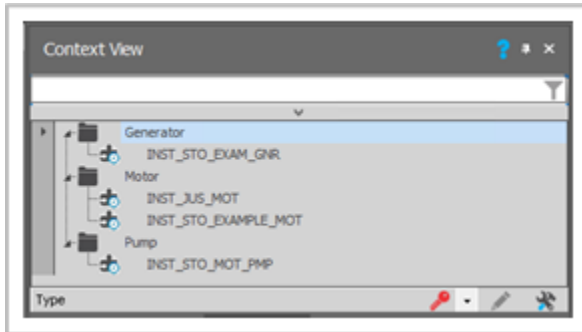
Using this template the engineer would then create multiple instances of the pump, changing each of their differing characteristics as needed.

So each instance of this pump would then have their scanning, logging and alarming pre-configured.

The Object Model also now supports configuring of data element security during the instance creation process

1.7.2. The Context Window

The **Context View** window, logically groups or organises the deployed objects according to their defined attributes, so that they can be easily located and/or searched. In other words all the objects that have the SAME attribute are added a separate group or 'context'.



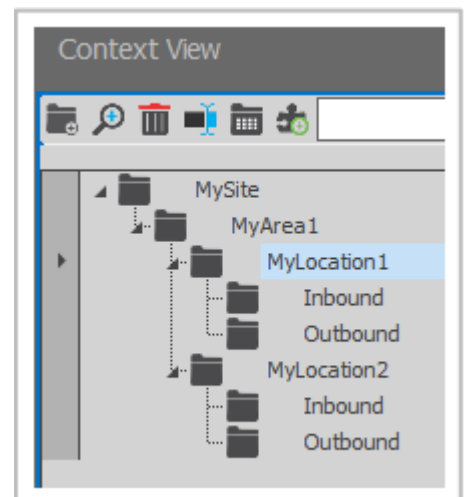
Furthermore this grouping is hierarchical so that the objects are further classified or grouped according to their specified values of this attribute. This allows you to see which objects have the same values and/or view all the values

For instance, if an attribute defined the power rating for equipment, then you could see all your equipment that had the same power rating OR if an attribute defined the manufacturer, you could see how much of your equipment was made by each manufacturer.

Therefore by defining common attributes for your deployed objects, the Context View window can become a very useful tool in managing not just your deployed objects but your entire process.

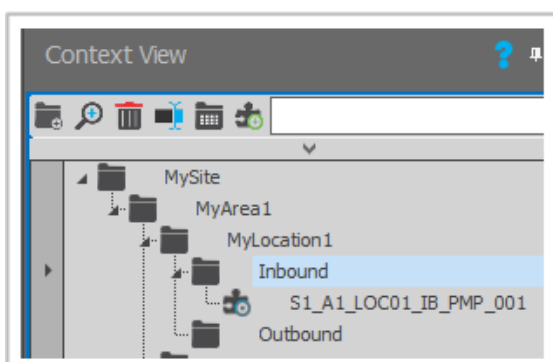
While these automatically generated contexts cannot be edited, you can edit the **Default** context to create your own logical organisation of your objects and/or other data, by either:

- manually adding the necessary hierarchy of nodes
- or if you have implemented Alarm Management, you can import your existing hierarchy of categories as nodes , with or without the agents that are associated with their configured incidents.



Nodes are like folders, each of which typically represent a specific contextual area and can contain additional nodes or a graphic form associated to them or have data elements and/or object model objects added to them.

You can also use the **TemplateGOContextNav** control to display the graphic forms associated with the nodes and/or added to the nodes of this **Default** context.



The **Default** context lends itself to the creation of object instances, especially those whose name and substitution(s) use a predefined naming convention that specifies the context in which the instance is created.

However, make best use of this feature you need to:

- define the necessary hierarchy of Nodes, each of which typically represent specific contextual areas and especially specify each **Node descriptor**, which is typically a 3 character reference code for each contextual area.
- if your object employs multiple substitutions to define its process variable names, then ensure that these substitutions are specified in the template in the logical order of the defined contextual areas.

1.7.3. Find and Replace

The primary purpose of a graphic form is to display data elements (tags). Over the years a number of separate mechanisms have been created to make this process as easy as possible and/or to facilitate their duplication to save on their engineering time. This means that:

- locating all the references of a tag on a graphic form is a non-trivial task and so this tool is essential and
- not all of these mechanisms allow the tag to be externally replaced by this tool, without breaking the mechanisms themselves.

To work around this limitation, the following two utilities have been created which have different capabilities or uses:

- The GLOBAL **Find** utility in the **Project** group of the **Home** tab of the SmartUI Designer ribbon, enables you to select one or more graphic forms of one or more projects to find where text, typically a tag (agent name), has been referenced and used, you can then export the list of located references to Excel.

Note: This utility only appears when the **Spider Configuration Mode** section of **View** tab of the Designer ribbon is set to **Advanced**, since it is intended for advanced users only.

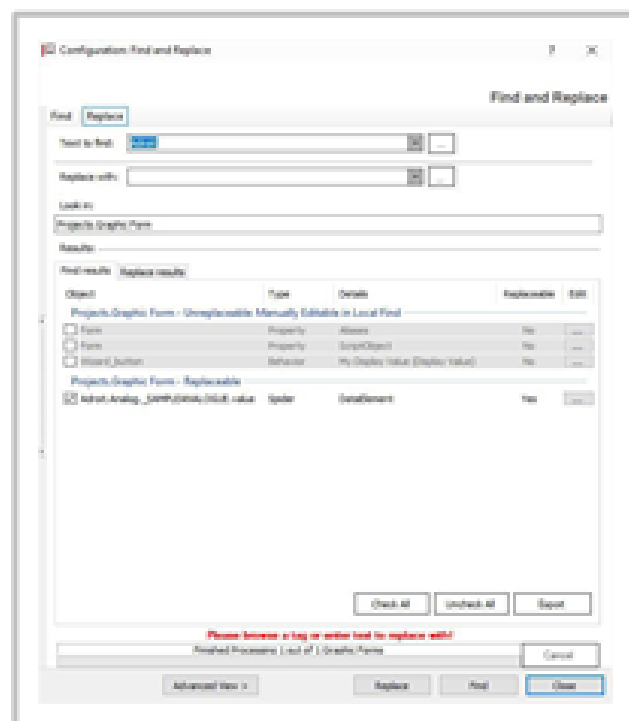


This utility can save much time when redesigning large projects and when creating and maintaining multiple SCADA systems in keeping track of your agents or other graphic form components.

Note: You need to close all open graphic forms before you can use this tool and you cannot perform any other action in the Designer while this utility is open.

The LOCAL **Find and Replace** utility in the graphic form toolbar, searches for the specified text, typically a tag (agent name), in the currently selected graphic form and unlike the other utility provides:

- an **Edit** column in the **Find Results** tab that allows you to edit the indirect mechanisms so that you can change these references to the required replacement one at a time;
- the **Replace** tab to replace the direct references to the searched for text with the specified replacement and
- a moveable dialog, so that you can carry on working on other things or can find and replace text in more than one currently open graphic form.
- This utility also allows you to export the list of references to the searched for text to Excel, if needed.



1.7.4. Enhanced Data Element Browser



Enhanced the **Data Element Browser** dialog by providing the ability to display the current value of the data elements you are currently or have previously selected, by clicking the button in the top right hand corner, which adds the **Watches** column to the **Recently selected elements** list (when this is displayed) and the icon and current value to the right of the currently selected data element at the bottom of this dialog.

1.7.5. Graphic Form Publishing

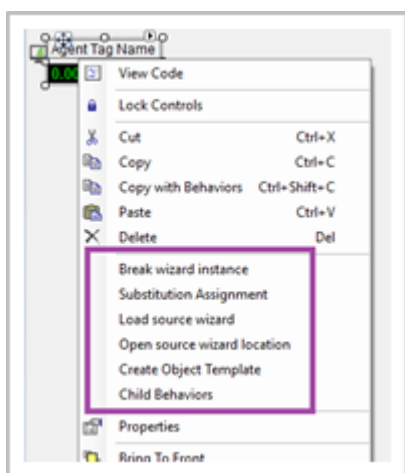
Added the facility to publish run-time versions of graphic forms, typically once a graphic form has been designed and is working as required.

This process creates an optimized run-time version of the graphic form for the Operator as it strips out the design time information from the graphic form to reduce the size and complexity of the graphic form that is sent to the Operator, which also improves its loading time.

Simply click the **Save and Publish** graphic form toolbar button.

1.7.6. Wizards

Made it easier to locate the wizards associated with wizard instances and/or edit the wizard instance, by providing a number of new right click menu options for wizard instances:



1.7.7. Controls

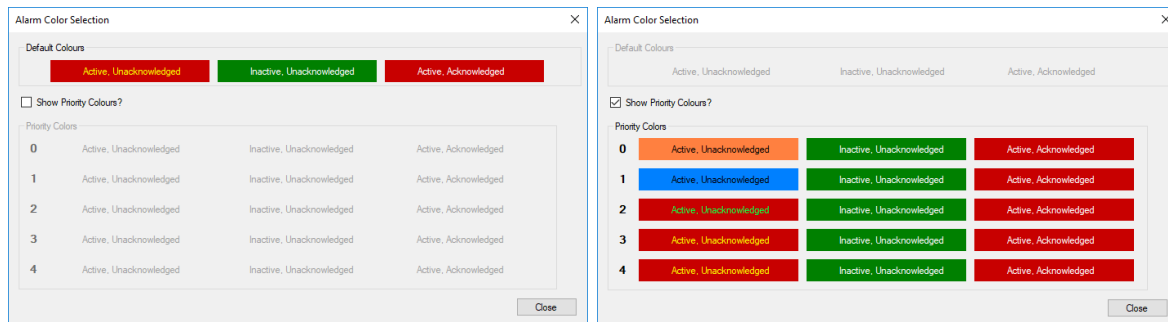
- Enhanced the **WebBrowser control** to support the latest Web clients, which allows you to display content that was previously not possible, such as hosting the Adroit Report Suite in the Operator.

- In addition to viewing the defined contexts in the Context View window in the Operator you can also use the **TemplateGOContextNav** control to display all the graphic forms and/or object instances that have been added to your defined contexts.

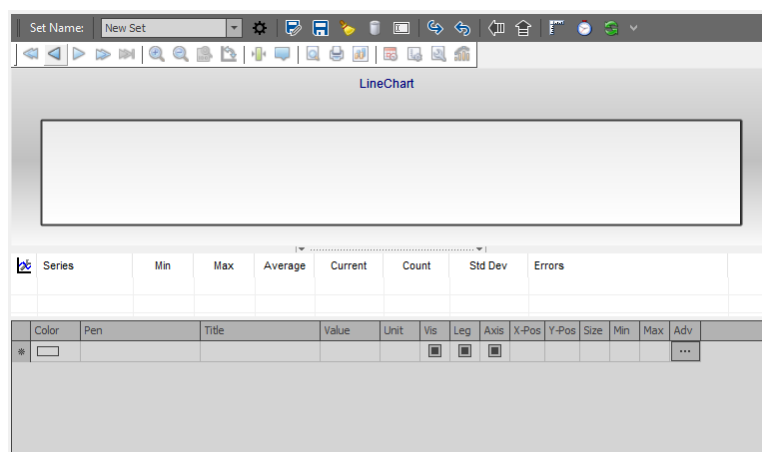
Typically this control is used to view the **Default** context in the Operator, to display the graphic forms associated to the nodes of this context and/or any additional graphic forms added to the nodes too.

This provides the Context View window pane on the left and a TemplateGO pane on the right to display graphic forms.

- The **Alarm Viewer** control's item colour configuration has been redesigned to make the configuration of alarm entry colour as well as colouring based on priority simpler and more effective



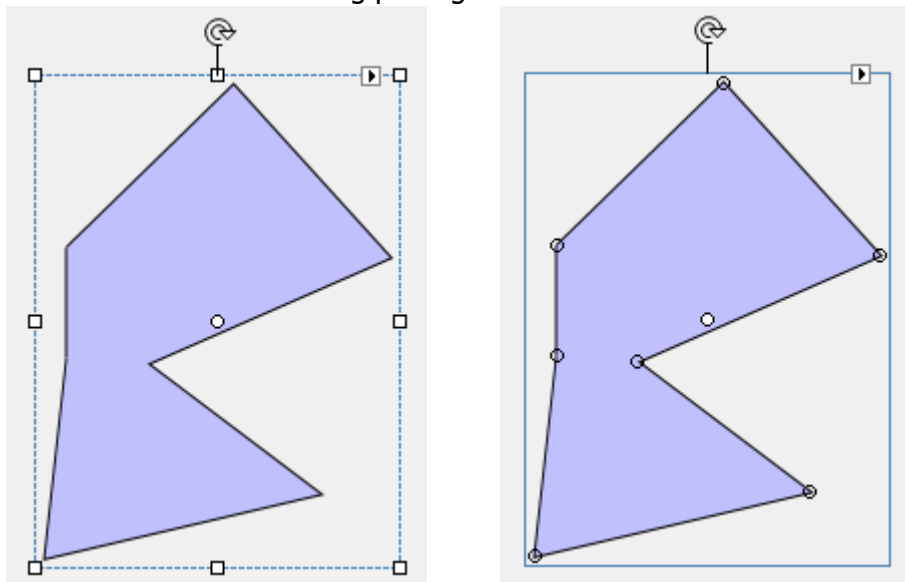
- The **Trend Configurator** control has been enhanced to allow greater configurability in its layout



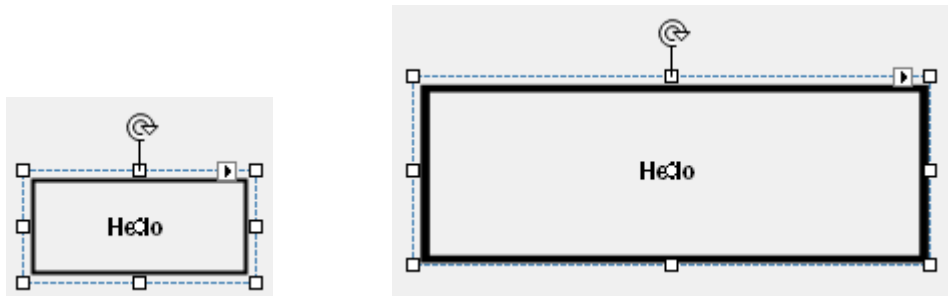
1.7.8. Vectors

Multiple Vector design enhancements:

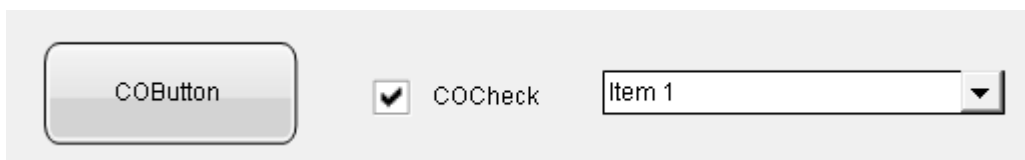
- Vector editing through "grab" handles / nodes now toggles between normal resizing and enhanced, allowing node manipulation etc. Toggle is carried out by clicking on the vector again after selecting it. The different modes are visually indicated through square or circular grab handles as in other drawing packages



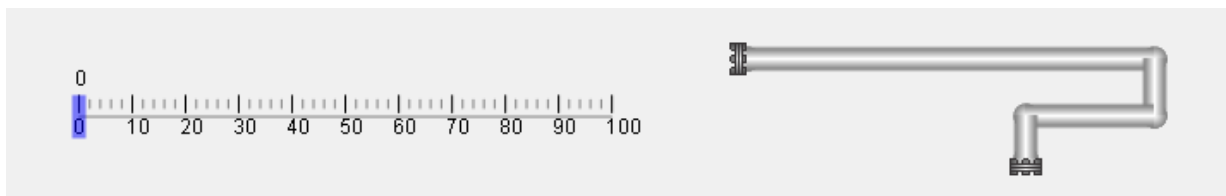
- More intuitive sizing of vectors with text such as buttons so that the text size is preserved by default as it is in controls



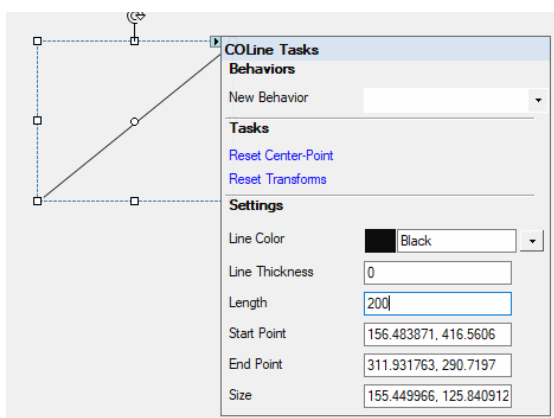
- Added new vectors equivalent to certain controls: CheckBox; ComboBox and TextBox



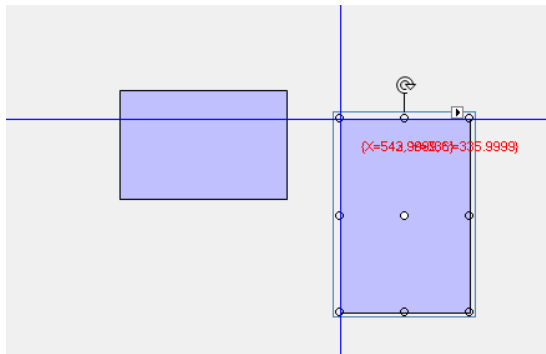
- Added new Slider and Pipe vectors. The latter allowing the drawing of pipework on a graphic form



- Allowed for the length of a line vector to be specified explicitly

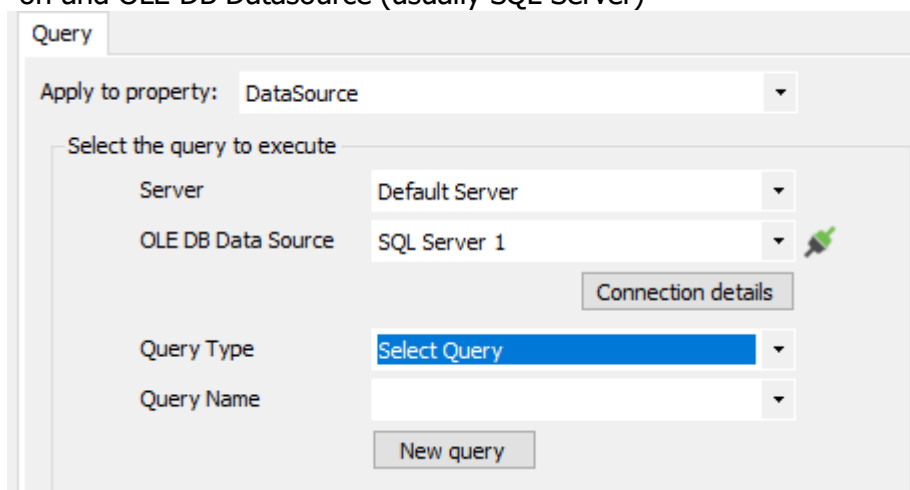


- Enhanced "crosshair" mechanism for alignment of vectors (Enabled by setting the ShowCursorGuidelines property of the graphic form)



1.7.9. Behaviours

- Added the option to close the Operator from the Execute Command behaviour
- Added a new Database behaviour which allows for the configuration and execution of queries on and OLE DB Datasource (usually SQL Server)



This is particularly useful for linking relevant controls / vectors to data returned from queries, for example displaying the result in a datagridview control.

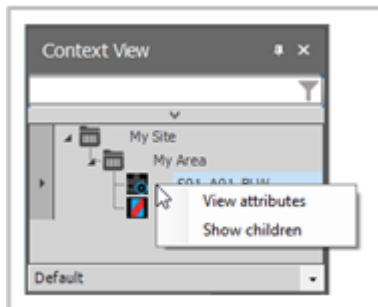
- Enhanced the Execute Command behaviour when opening pop up graphic forms so as to allow the pop up to be displayed without a border and title bar. This allows for more modern UI design in navigation.

1.7.10. Scripting

Added script engine support for Visual Studio 2017 and 2019

1.8. SmartUI Operator

Provides the **Context View** window to display all the graphic forms and/or object instances that have been added to your defined contexts, such as the graphic forms associated to the nodes of your **Default** context.



In addition to searching for your objects, you can also right click them to view the defined attributes of each object instance and/or show the children (sub-components) of any item in your contexts.

1.9. Other Components:

1.9.1. SCADA Components and Utilities and Samples:

This was previously known as the Additional SCADA Components install.

Note: Performance Anywhere is now installed as part of the main product install.

Added the following components:

- Recipe Management - this installs a SmartUI project on a SmartUI Server, which allows users to create recipes and then run them at scheduled times.
- Wanlink - links Agent Servers over a slow or Wide Area Network.
- Agent Server ActiveX Control - an alternative to the Agent Server OLE interface (MISSRV).
- Adroit Classic Backup Utility - backs up the Classic Adroit system and data files and registry settings.

Removed the following unnecessary and unused components:

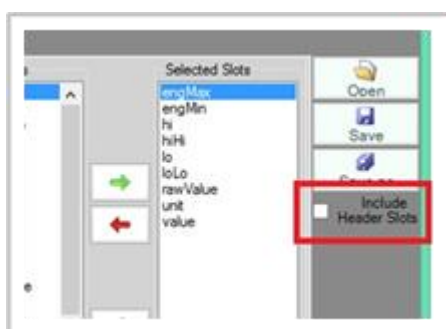
- SCADA DB Generator - to create WGP files from 3rd party sources - since the object model does this.
- Dependency Walker - to troubleshoot applications or DLLs - since this is a developer tool not a user tool.

Enhanced the SCADA Excel AddIn

- The **Scanning** sheet now displays the new **IO flags** column.
- The Excel Configuration Template now automatically jumps to first agent listed in the **Selected Types**.
- When the Excel Addin Configurator is closed an automatic save is now performed to ensure that the selected agent types and slots are saved.
- You can now view the historical data of a logged tag (agent.slot), which is configured via the **Historical Data** tool from the **Project** group:

Agent's History	Agent Name	Slot	Start Date	End Date
	AN01	value	2017-02-02 12:00:00 AM	2017-02-04 12:
	Datalogged DateTime	Slot Value	Quality	
	2017-02-03 14:44:23	0.000000	POST STARTUP VALUE	
	2017-02-03 15:59:19	4.000000	NORMAL VALUE	
	2017-02-03 15:59:20	8.000000	NORMAL VALUE	
	2017-02-03 15:59:21	12.000000	NORMAL VALUE	
	2017-02-03 15:59:22	16.000000	NORMAL VALUE	
	2017-02-03 15:59:23	20.000000	NORMAL VALUE	
	2017-02-03 15:59:24	24.000000	NORMAL VALUE	
	2017-02-03 15:59:25	28.000000	NORMAL VALUE	
	2017-02-03 15:59:26	32.000000	NORMAL VALUE	
	2017-02-03 15:59:27	36.000000	NORMAL VALUE	
	2017-02-03 15:59:28	40.000000	NORMAL VALUE	

- The **Historical Page** now informs the user of invalid inputs and fixed the issues around its Date Time Picker dialog.
- The **Configuration Templates** dialog now provides an **Include Header Slot** checkbox so that these can also be displayed and selected when needed.



New Tools

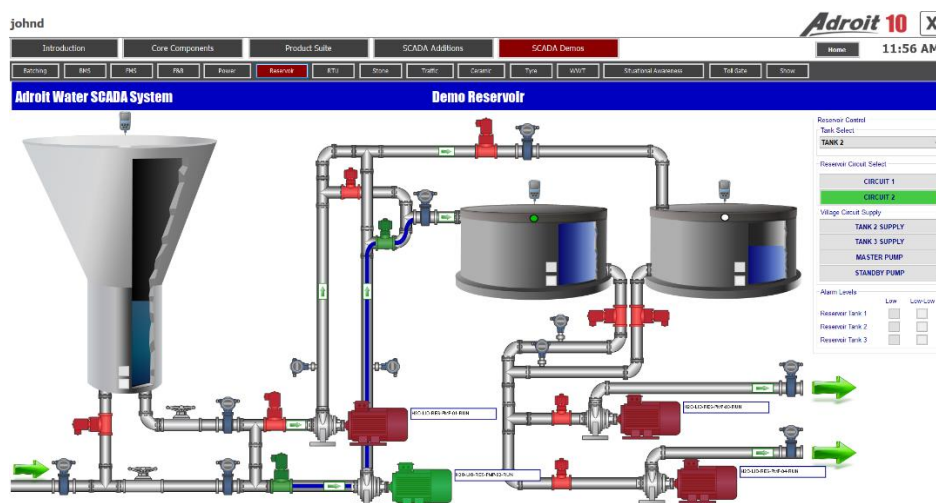
Added the following two new tools that to the **Import Variables** group: **Create Agents** and **Add to SCAN Sheet** to simplify the process of adding variables from a GX Works2 project into the Agent Server, as follows:

- Click the **Create Agents** to create the applicable agents using the selected variable names.
- Click the **Add to SCAN Sheet** to scan these new agents.
- Specify the MAPS Driver Device to which these agents need to be scanned.
- Click the **Scan** button.

However, you can still use the previous method that uses the **Add to Agents Sheet** tool to first add variables to the various agents' sheets, for instance when you need to modify the various fields and agent settings before creating the agents and scanning, logging and alarming them.

1.9.2. HMI SCADA Demo install

Updated the look and feel of the demo and included the new Adroit 10 features.



1.9.3. Report Suite 1.3

Provides a new look and feel for easier navigation:



Enhanced the free SCADA Report Pack, by adding an Agent Configuration Export report for your DumpConfig and DBLog agents and added 21 CFR Part 11-specific Audit Activity and Authorization Detail reports.

Added the OEE Report Pack, which provides four reports that analyse and provide management information about your configured OEE agents and their KPIs.

Improved the Alarm Management Report Pack, by adding the Interrupt Reasons and Interrupt Details reports.