



New Features in IGSS 12

List of new features

Release Note

Schneider Electric

The most recent version of IGSS is IGSS Version 12 which was released in March 2016.

IGSS V12 contains the following new features:

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General Changes

Increased number of auxiliary objects

Auxiliary objects (objects not used to retrieve PLC data) were introduced in IGSS 11 as an addition to the standard I/O (Input/Output) objects in IGSS.

Auxiliary objects include object templates, area and diagram objects, global and diagram function keys, faceplates and faceplate master objects, in short any objects that were not designed to contain input or output values.

IGSS licenses included 1,000 free auxiliary objects per configuration Auxiliary object exceeding the initial 1,000 were treated as Input/Output objects and were added to the licensed object count.

In IGSS 12, the number of auxiliary objects in a configuration has been increased from 1,000 to 50% of the number of I/O objects in the license, with a minimum number of 1,000 Auxiliary objects. The increase in Auxiliary Objects only affects licensed IGSS installation. Free50 IGSS installations do not have access to the increased number of Auxiliary Objects

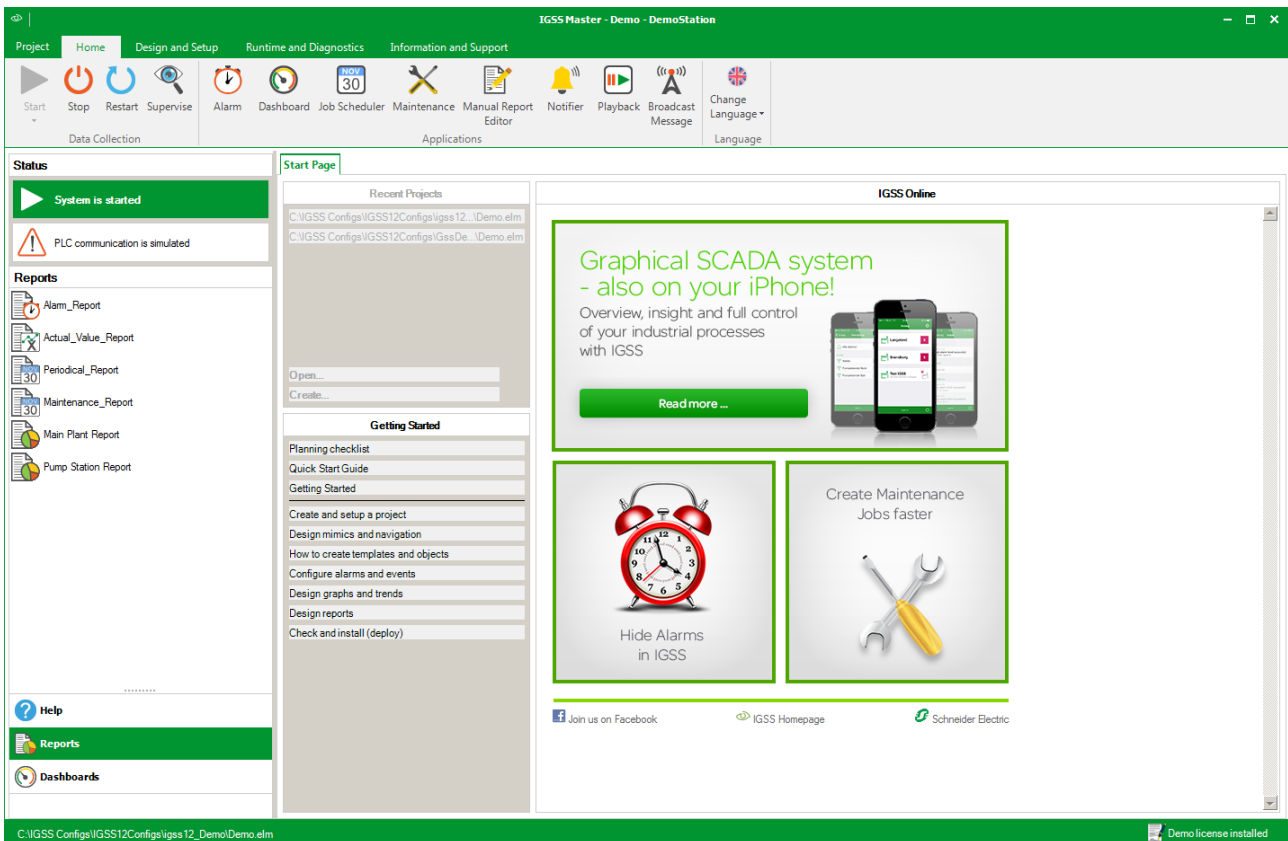
For example Thus a 600-object license will contain 600 I/O objects and 1,000 Auxiliary objects while a 10,000 object license will contain 10,000 I/O objects and 5,000 Auxiliary objects.

Furthermore, I/O objects with only Local atoms enabled are considered Auxiliary objects instead of I/O objects.

If the I/O mode of the atom is changed from “Local” to “In”, “Out” or “I/O”, the object in question will then be considered an I/O object.

User Interface updates

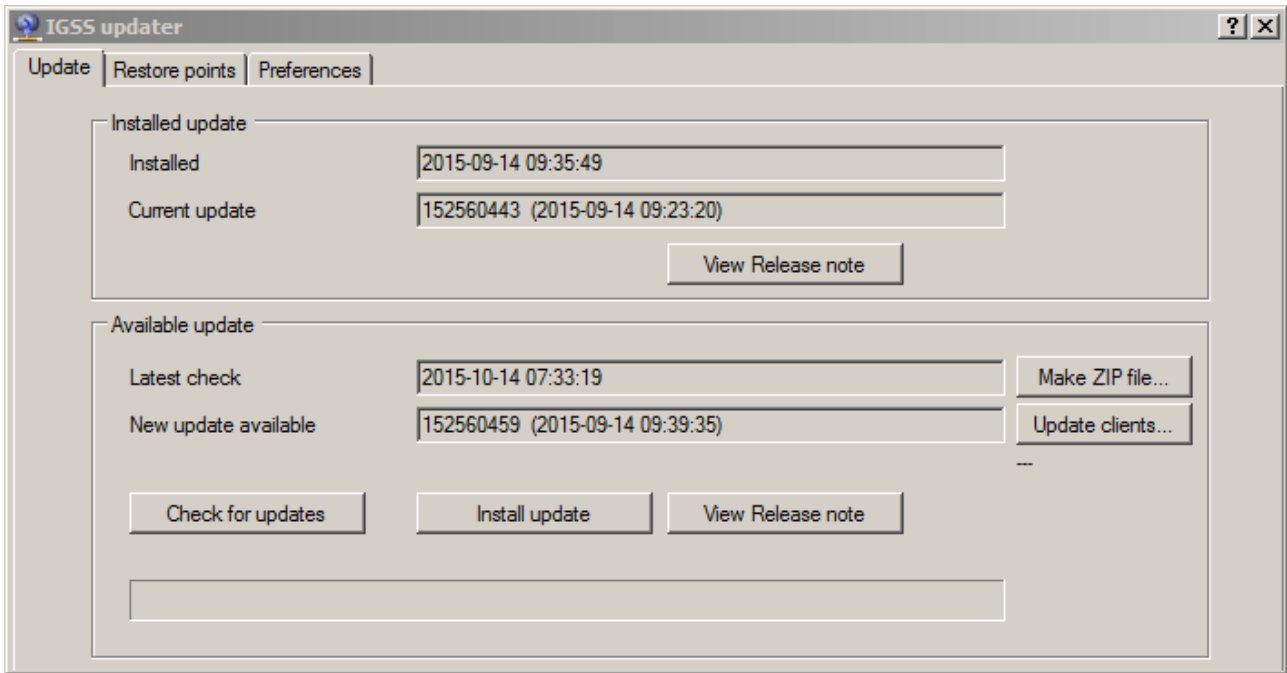
The icons and appearance of selected IGSS modules – the IGSS Master, Notifier, Maintenance and Dashboard modules - have been updated to a more modern GUI, with a Windows 10 based look-and-feel of colors and icons.



More traditional IGSS modules such as the System Configuration, Definition, Alarm and Job Scheduler modules are also planned to be updated to a newer look-and-feel sometime in the future.

Easier update of IGSS 12

The update procedure for IGSS12 has been improved and optimized in order to update the IGSS client machines locally on the net instead of requiring every client machine to access the internet.

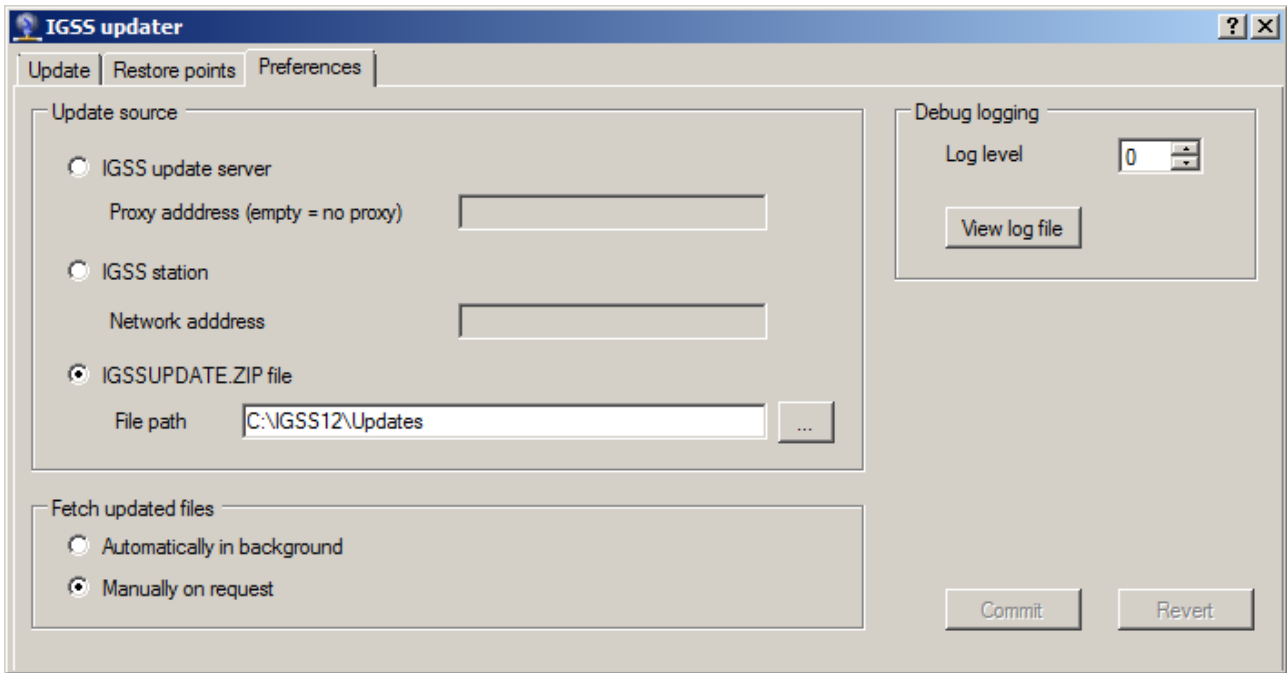


Program updates are collected in update packages which contain all files submitted for update by the IGSS Support and Development teams. Each update package is identified by a date, time and serial number which enables you to roll-back updates and gain an overview of which updates have been installed on the IGSS stations of the plan. Any file to be updated will be backed up and new files immediately installed.

You can roll back updates by selecting the restore point and clicking the Restore button. You can also manually restore selected files by copying the original files back into your local IGSS installation.

You can update to your IGSS installation from multiple sources:

- The IGSS Update server - Requires internet access to the IGSS Update Server
- Another IGSS station - for example an IGSS Server or dedicated operator station with internet access.
- An update .zip file – the .zip file can be manually downloaded from the IGSS Update Server and placed on a network location all stations can access.



The IGSS update procedure can be set up to check for updates automatically and regularly every 24 hours or you can check for updates manually as usual.

The update status of any online operator stations can be seen in the System Monitor tab in the IGSS Master and you can create station objects that indicate the update status of the operator station directly in the process diagrams in the Supervise module.

Note that IGSS installation on the local machine must still be shut down in order to update and all IGSS stations must still be updated at more or less the same time in order to ensure identical IGSS files across the board.

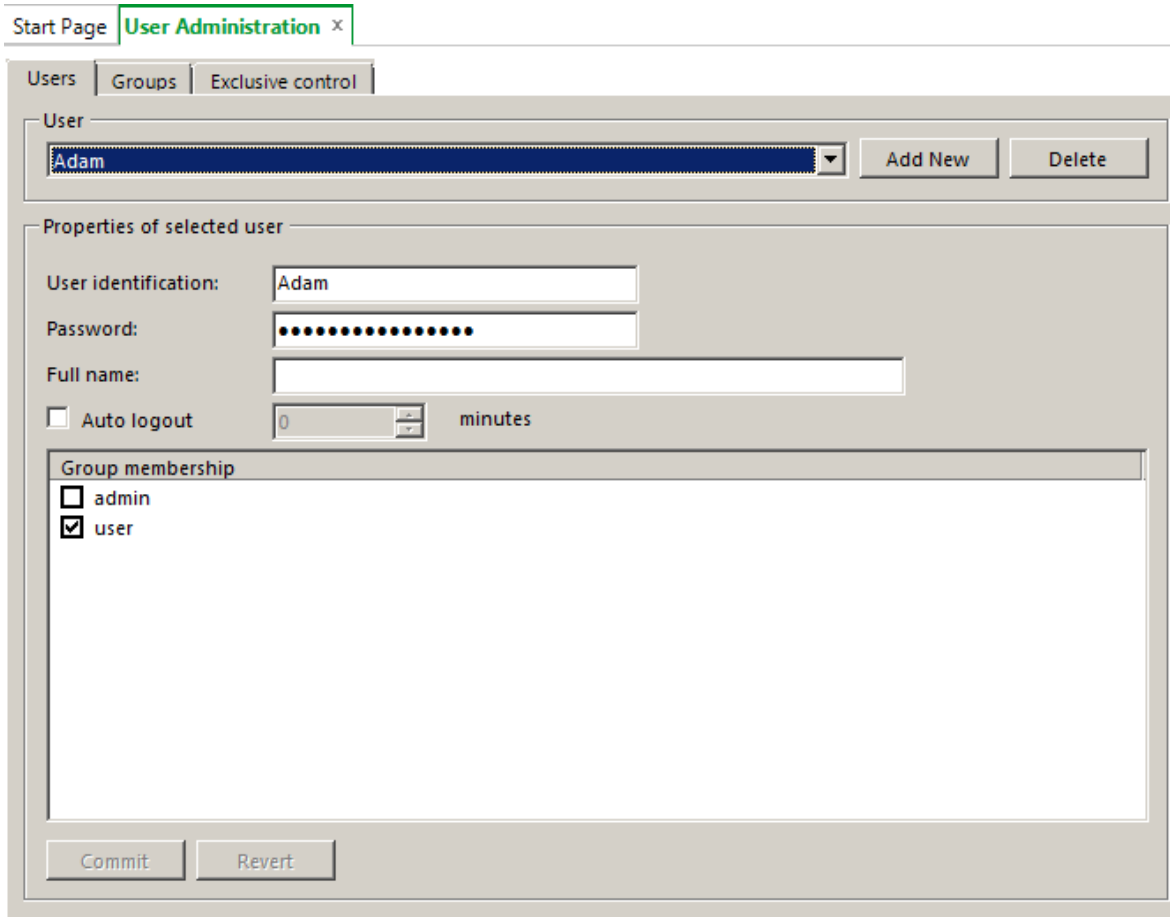
If you roll an update back, you must also roll the update back for all IGSS stations.

You cannot select individual update files to install or exempt from installation. All files released for update must be installed in order to avoid clashes between different versions of inter-dependent IGSS system files and programs.

Supervise and the IGSS Master

Display the current User name in the diagrams

The name of the current user logged into the system can be displayed in the process diagrams of the Supervise module if you are using the IGSS User Administration module.



The current user name is displayed in a local string object, with a string length of 31 characters or more and can be connected to a text descriptor for improved display options in the diagram.

→ Adam

Training

This Training area in the demo project is mostly used internally by our training personnel during IGSS workshops.

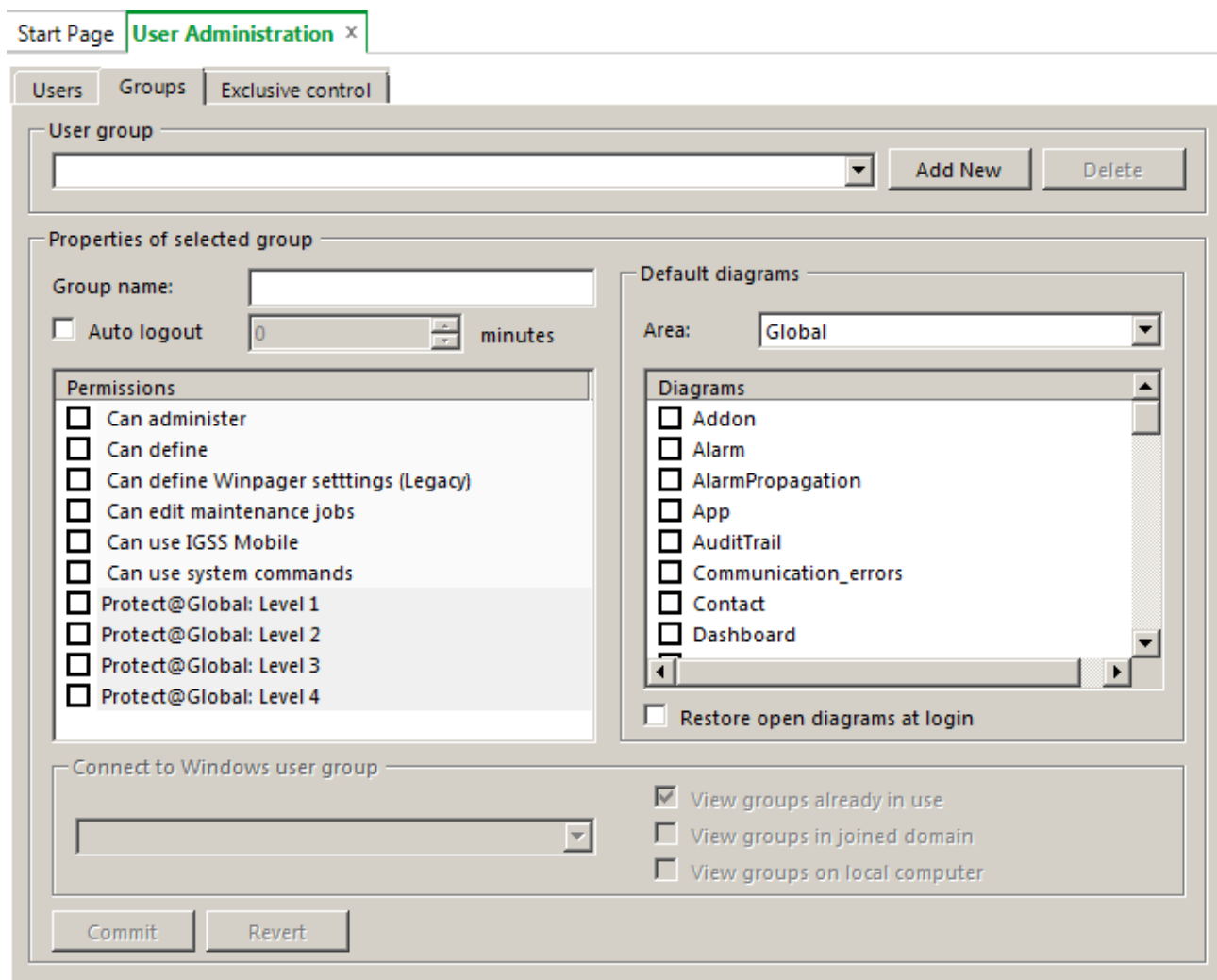
Display current users in IGSS Master

The current users and the number of minutes remaining until they are automatically logged off are displayed in the Connection Information sub tab in the System Monitor tab in the IGSS Master.

The System Monitor tab is opened by clicking the System Monitor button in the Runtime and Diagnostics tab.

Restore open diagrams when a user logs on

If the IGSS User Administration module is enabled, you can set up the system to automatically restore any diagrams and graphs which were open in the Supervise module when the previous user logged off IGSS.



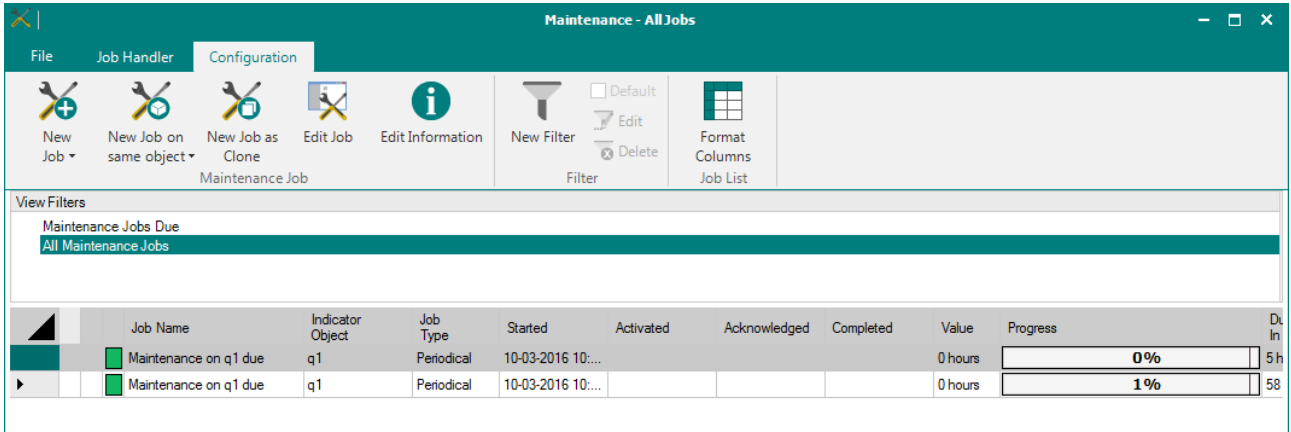
Any areas and diagrams selected as default diagrams will be ignored unless there are no diagrams or graphs to be opened.

If there are no diagrams defined as default diagrams, the diagrams and graphs defined by the Set Initial Display command in the Definition module (if any) will be opened.

Multiple Maintenance jobs

Multiple maintenance jobs of the same job type can be created for the same object using the same alarm number.

In previous versions, it was not possible to create maintenance jobs of the same type on the same object with the same alarm number.

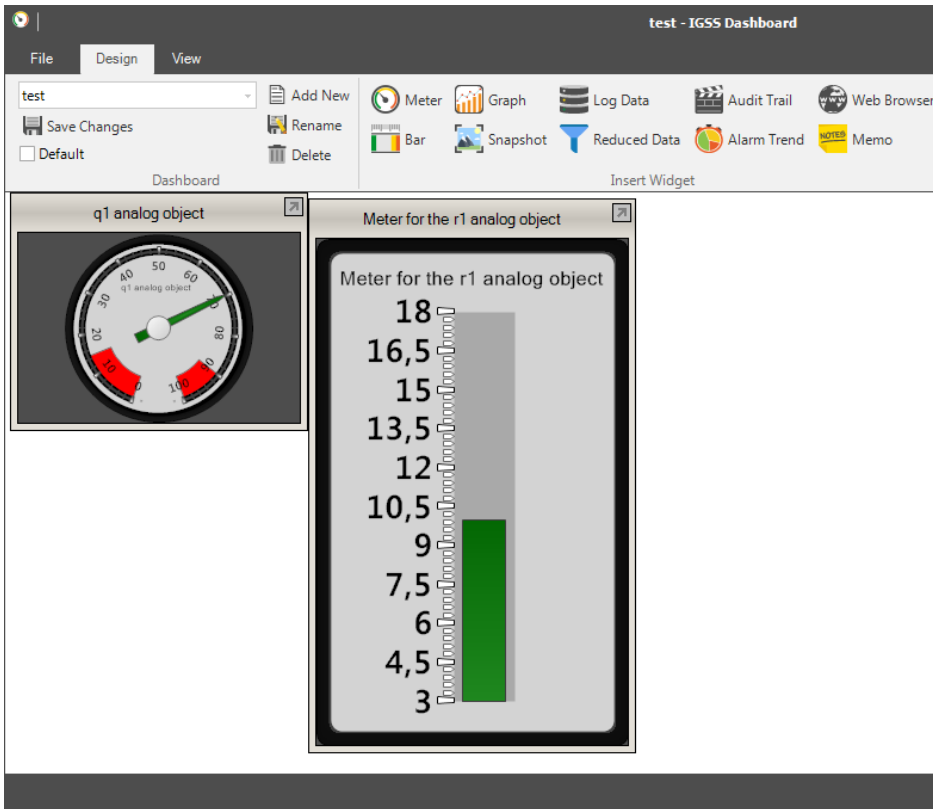


Note that when identical maintenance jobs are triggered, identical alarms are registered in the Active Alarms list.

It is not possible to differentiate between the maintenance alarms in the alarm list and only by opening the Maintenance jobs form can you determine which job is active.

New Bar and Meter widget for IGSS Dashboard

Two new widgets have been introduced for the IGSS Dashboard: the Meter Widget and the Bar widget



Both widgets display the actual values of an analog object and can also display alarm limits and value increments.

Alarm Enhancements

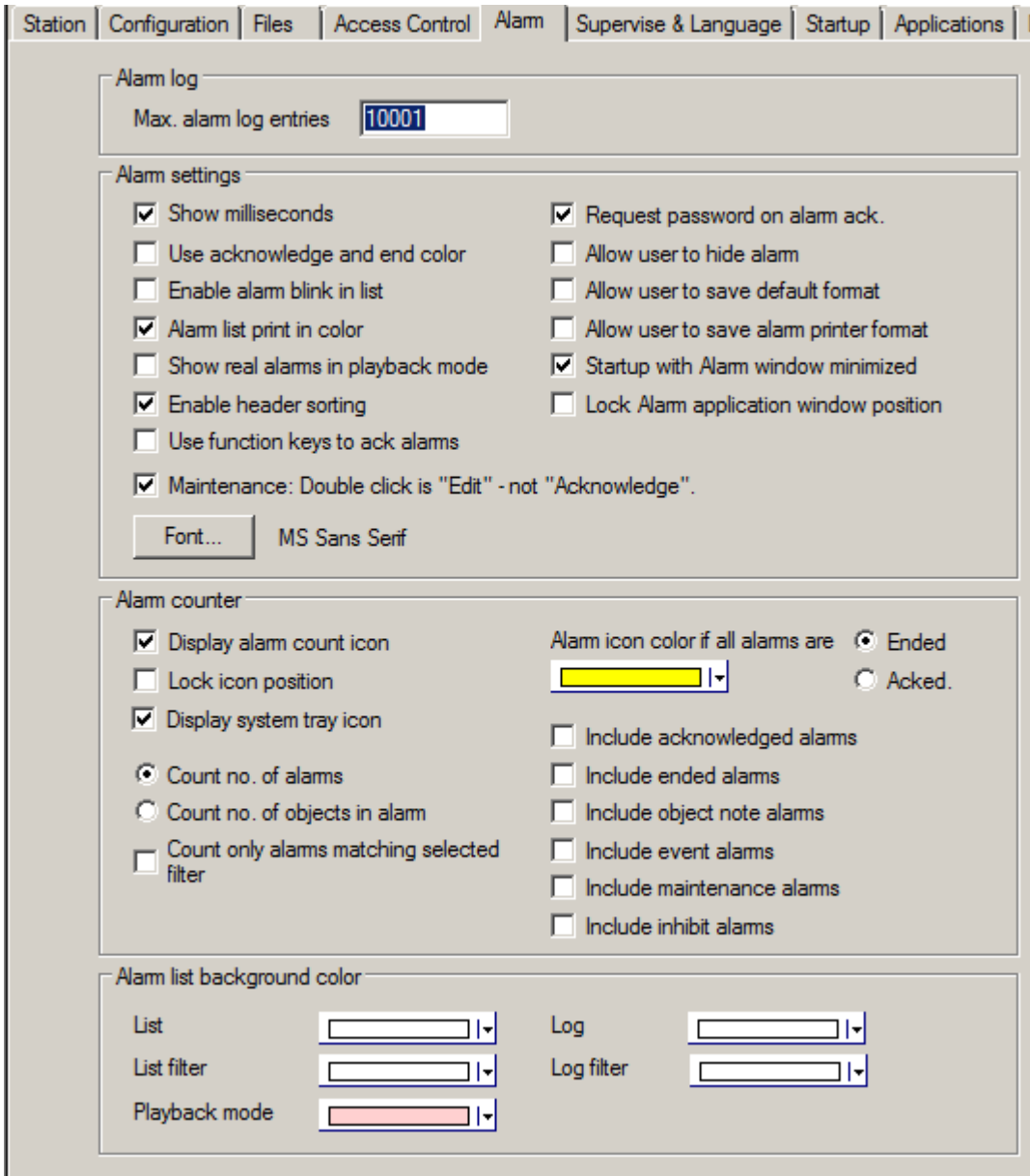
Alarm Ended state

You can define specific colors for when an alarm is ended in the IGSS alarm module, making visual verification of alarm states faster and easier.

The properties for the Alarm Ended stat are defined in the Edit Alarm form, along with the properties for the Alarm and Acknowledged alarm states.

Alarm Counter

The background color of the alarm counter will be displayed with the alarm color of the alarm with the highest priority in the alarm list that also conforms to any specified alarm counter conditions.

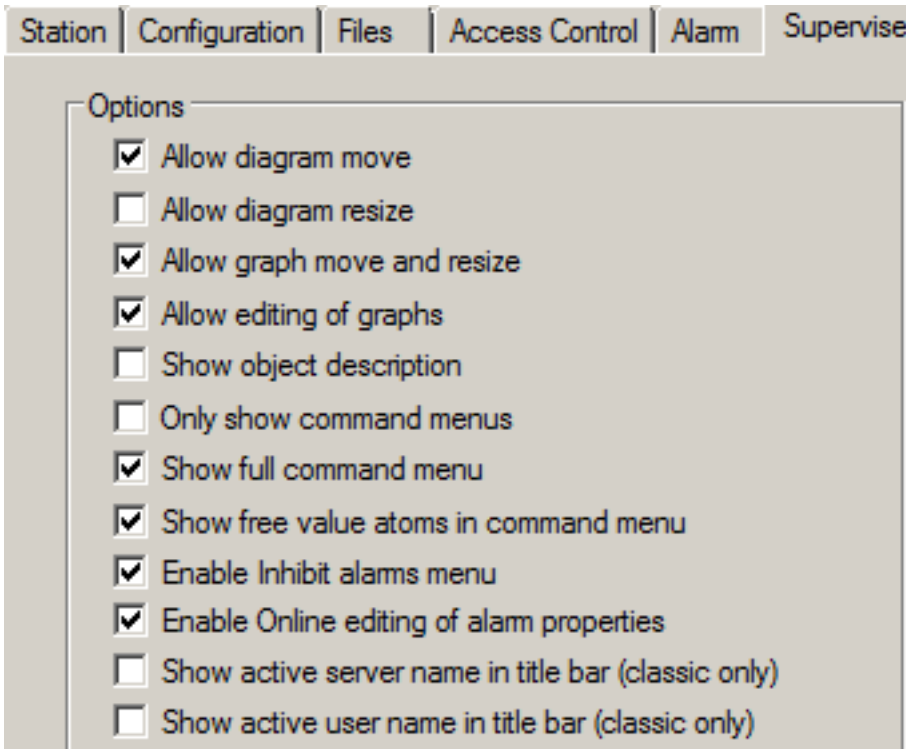


The color of the alarm counter can also be defined for situations when all alarms in the alarm list have been acknowledged or all alarms have been ended.

Operator editing of alarm properties

The IGSS program automatically assigns many rights and access options to operators, for example operators may change the alarm colors and alarm priorities on the fly while monitoring the process.

You can restrict all operator access to the Alarm properties by setting an option in the System Configuration form. (The Enable Online editing of alarm properties check box on the Supervise & Language tab) This does not require the IGSS User Administration module but all operators on the station will be affected.

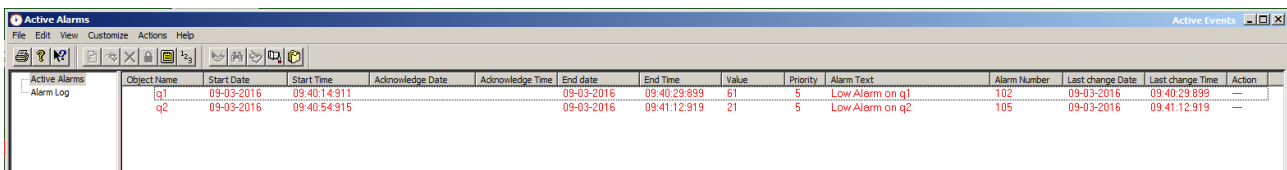


If you are using the IGSS User Administration module, you can set up your user rights to restrict or allow operator access to the alarm properties and thus only target specific IGSS users.

Alarm Last Changed fields

Two new fields: Last changed date and Last changed time registers the most recent date or time of the three alarm dates and times:

- Alarm Start Date / Time
- Alarm Acknowledge Date / Time
- Alarm End Date / Time



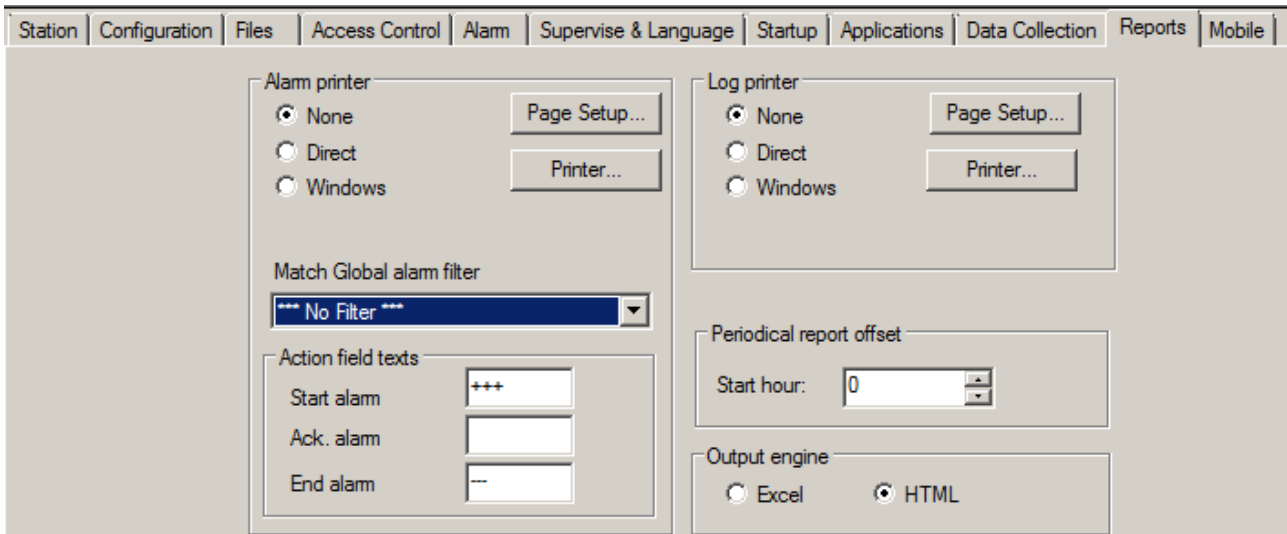
Object Name	Start Date	Start Time	Acknowledge Date	Acknowledge Time	End date	End Time	Value	Priority	Alarm Text	Alarm Number	Last change Date	Last change Time	Action
q1	09-03-2016	09:40:14.911			09-03-2016	09:40:29.899	61	5	Low Alarm on q1	102	09-03-2016	09:40:29.899	---
q2	09-03-2016	09:40:54.915			09-03-2016	09:41:12.919	21	5	Low Alarm on q2	105	09-03-2016	09:41:12.919	---

The Action field indicates which action triggered the date and time in the Last Changed Date and Last Changed Time fields.

To maintain backwards compatibility, the default values are indicated below:

- Alarm Start: +++
- Alarm Acknowledged: <three spaces>
- Alarm End: ---

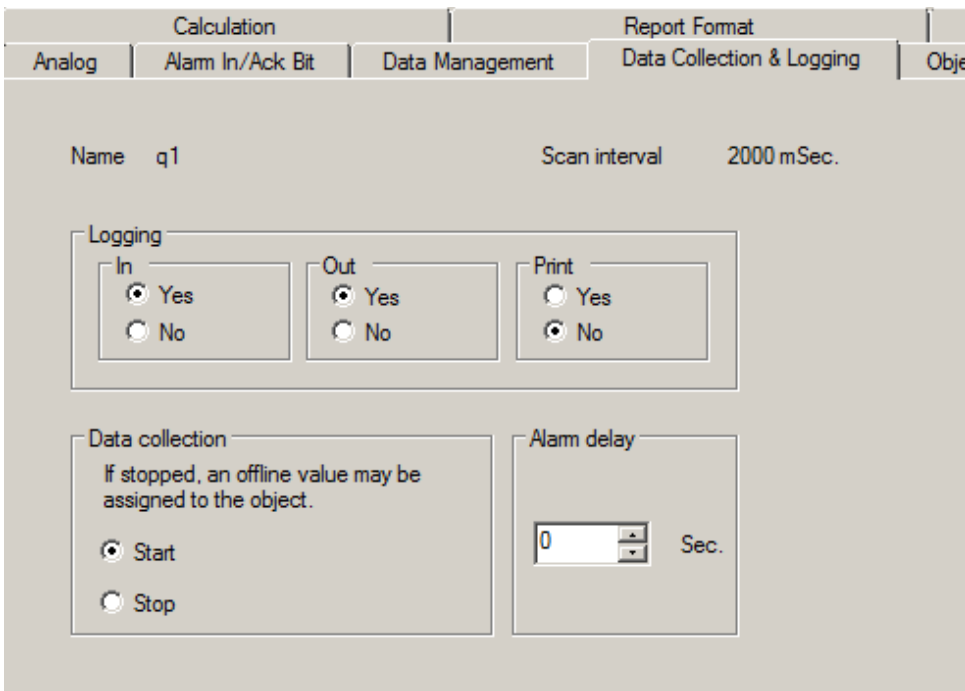
You can define your own texts for the Action field texts group field in the System Configuration form, for example changing the Alarm start field from +++ to “Started”.



Additionally, you can specify the Action property in alarm list filters, enabling you to filter the alarm list by alarm status.

Operator defined Alarm Delay

Sometimes it will be necessary to delay alarms from certain objects during operations and operators can set the alarm delay on the object in the Data Logging tab for the specific object.



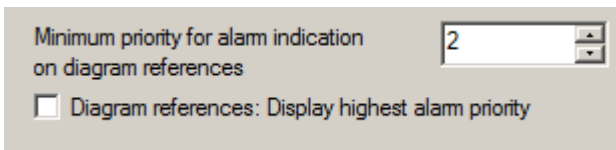
Alarm delay is defined in seconds, with a maximum alarm delay of 2 billion seconds (2,000,000,000 seconds), roughly 63 years.

Operators must remember to cancel or reduce the alarm delay after whatever conditions requiring the setting of the alarm delay has expired.

Alarm See-Thru options

You can define the minimum alarm priority which will enable alarm indication on any diagram references - also known as Alarm See-Thru.

Alarms on objects in the referenced diagrams must have at least the defined priority in order to have the alarm condition indicated on the control which opens the referenced diagram.

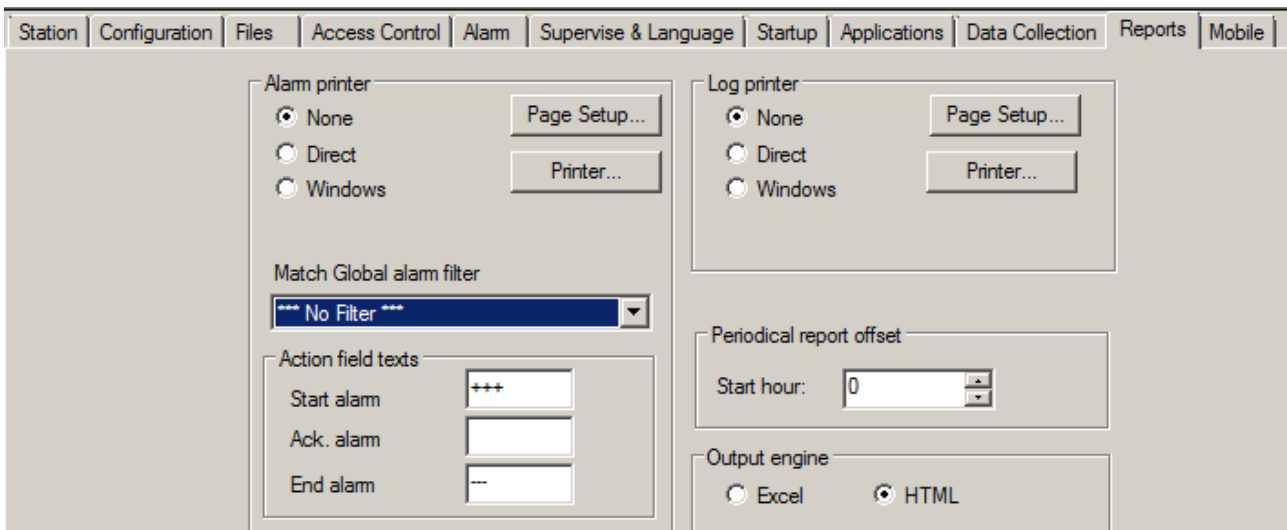


You can also use the alarm color of the alarm with the highest priority of all the objects presently in alarm on the diagram linked to as the alarm color on the descriptor linking to the diagram.

The normal alarm used to indicate alarms on referenced diagram, Alarm number 1, will no longer be used.

Alarm Print base on Global Alarm filter

If your alarms are sent to an alarm printer for documentation, you can reduce the number of alarms printed by using a global alarm filter to only print alarms that match the filter conditions.



Only one global alarm filter can be selected at a time for the station.

You can revert to printing all alarms by removing the filter again.

Notifier Improvements

Cloud-based SMS services

You can set up a cloud service in the Notifier module and use the service to send an alarm SMS from the Notifier module instead of the GSM modem normally associated with the Notifier module.

SMS via Cloud service

Send alarm SMS to operators with a mobile number using: [Go to website](#)

Twilio phone number: (Include country code +xxnnnnnn)

Account Sid:

Auth Token:

Error handling

If modem/cloud does not reply send command "1" to IGSS object:

Several services have been included as options in the Notifier setup options and more can be requested to be added by the IGSS development team.

Broadcast SMS as E-mail message

You can broadcast SMS messages to some or all operators and also elect to broadcast the SMS message as an E-mail message as well.

Broadcast Message
?
×

Message to send

The pumps will be back online in 10 minutes and all alarms must be reset and enabled.

Operators to send to

- <All operators>
- <Operators available for duty>
- <Operators unavailable for duty>
- <Primary operators on duty>
- <Backup operators on duty>
- <Reference operators on duty>
- <Supervisor>

Communication channel

SMS
 E-mail

Send
Close

The E-mail integration must be correctly set up and the recipients (the Notifier operators) must contain a valid E-mail address in order to receive the broadcast E-mail message.

Send test SMS or test E-mails to specific users

When sending a test SMS or E-mail message, you can specify the recipient of the test message and supply phone number or e-mail address if need be.

E-mail message service

Send alarm e-mails to operators with an e-mail address.

Sender e-mail address:

SMTP server name:

SMTP server user: SSL connection

SMTP server password:

Delay takeover from server

When a backup Notifier server has started, you can specify if and how long the server is to delay the start of normal Notifier operations in minutes.

Alarm sending on Dualized system

Only send alarms if no reply from server: IP (required) : Port:

Activate backup Notifier alarming on modem error on server.

Delay take over from server minutes

This creates a time buffer allowing the backup Notifier server time to verify system readiness and potentially stand down if the primary Notifier server returns online.

Improved duty plan navigation

You can double-click on a duty plan to open an information box with the properties of the duty plan. If the duty plan is a recurring duty plan, a Duty recurrence form is opened and you can edit the details of the recurring duty plan.

Duty Recurrence - Day shift ? X

Duty time

Start:

End:

Duration:

Recurrence pattern

Daily

Weekly

Monthly

Yearly

Recur every week(s) on:

Monday Tuesday Wednesday Thursday

Friday Saturday Sunday

Exclude holidays

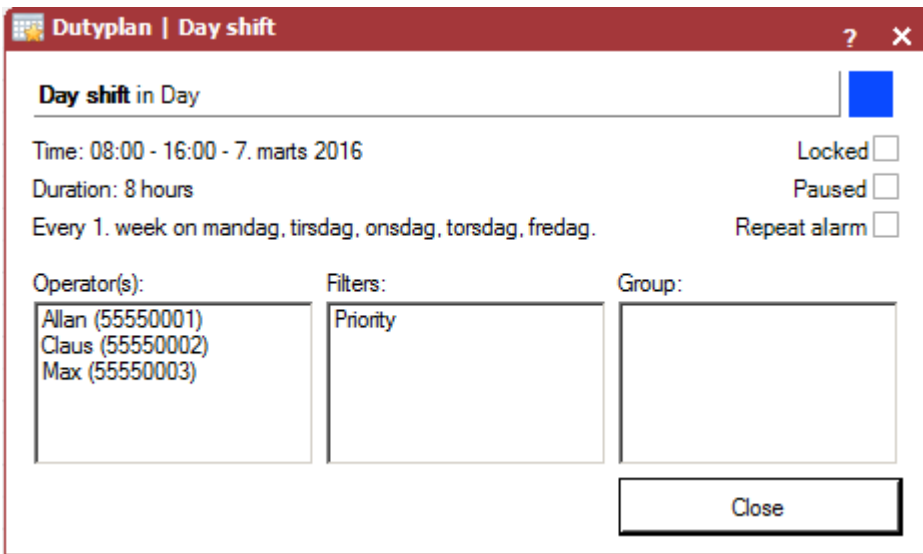
Range of recurrence

Start: No end date

Start time: End after: occurrences

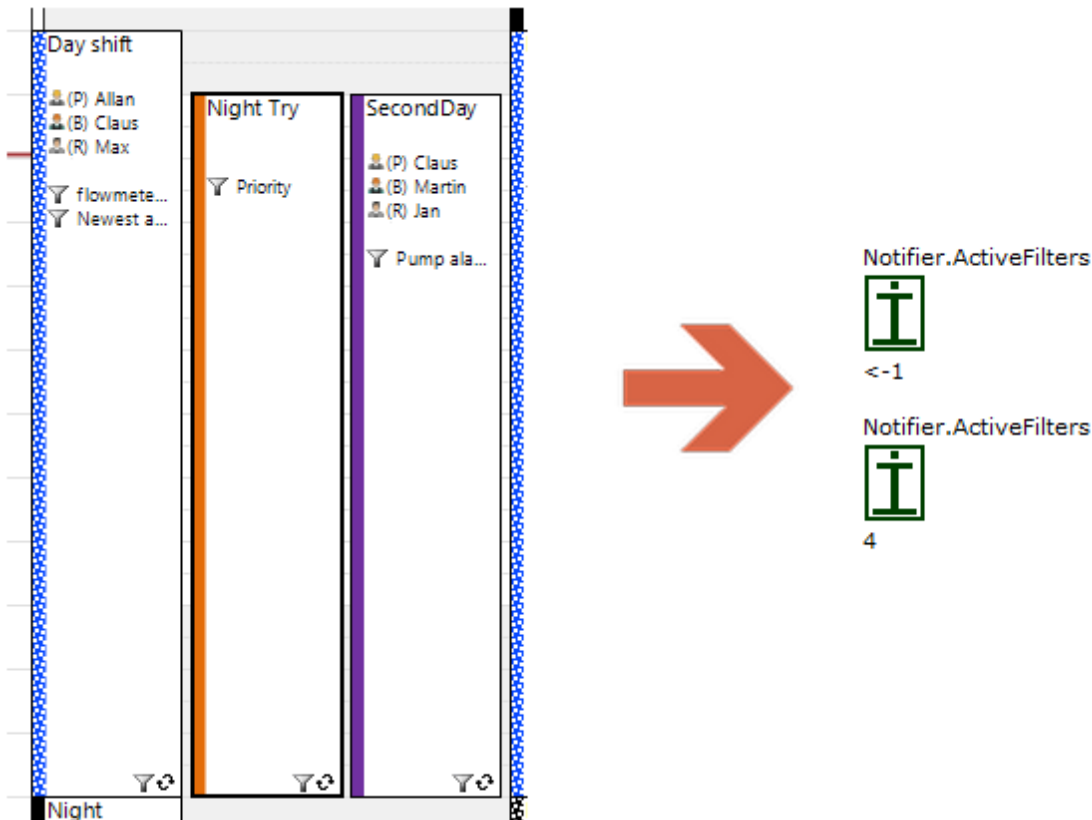
End time: End by:

If you right-click the duty-plan and select Properties, a simplified information dox is opened, detailing only immediate properties of the duty plan.



Indicate active Notifier filters in the Supervise Module

You can indicate the presence of any active Notifier filters in the process diagrams of the Supervise module by using a new status object – the Notifier ActiveFilters digital object.

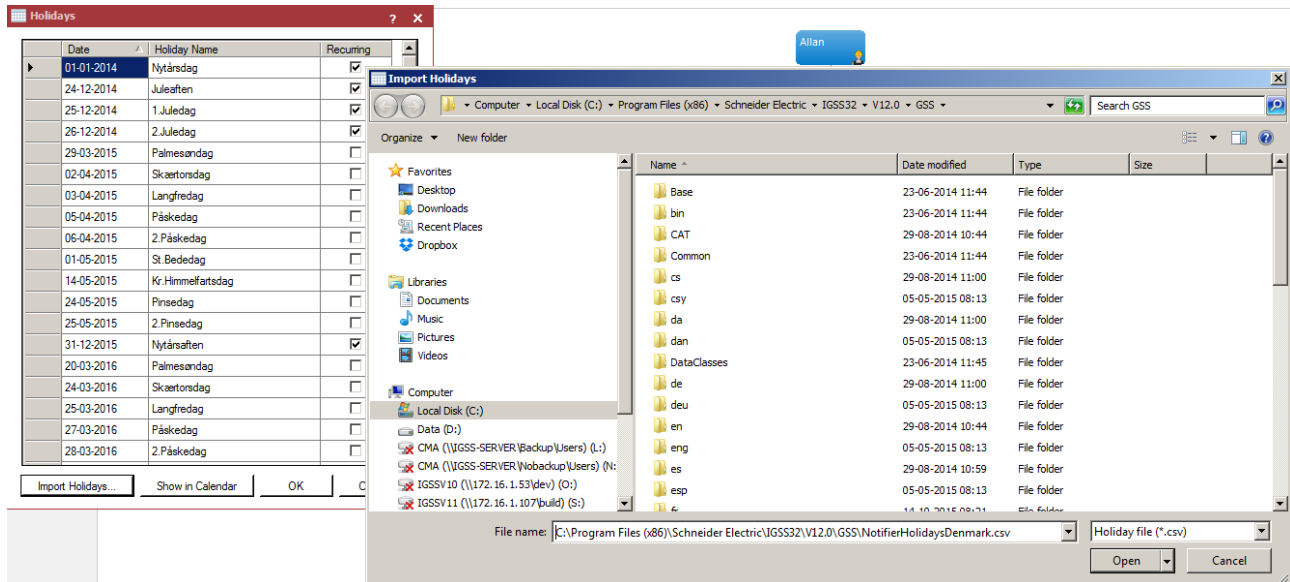


The object will indicate if there are Notifier filters on the active duties in the Notifier calendar and can also be set up to trigger an alarm if there are no active Notifier filters present as well as display the number of active Notifier filters.

Notifier Holidays

You can create a text file with local holidays instead of creating them directly in the Notifier module and then import the contents in the Notifier’s holiday form.

This allows you to quickly create and maintain holidays in Notifier as text editing options are faster in text-based programs than in Notifier’s Holiday form.



Additionally, you can include or exclude holidays when creating recurring duty plans, creating recurring duty plans that reflect workdays only or creating duty plans for holidays only.

New Operator Mode

Operator (sometimes called Calendar) modes were introduced in IGSS 11 and enabled the System Designer to remove complex features and functionality that an operator or end-user might not need, simplifying the Notifier module by removing access to unused or sensitive features..

A new operator mode has been implemented in IGSS 12 to supplement the four original operator modes.

The new operator mode contains the following features and restrictions:

- Operators may select existing filters on existing duty plans
- Operators may add and remove existing operators to existing duty plans.
- Operators may not start or stop the Notifier functionality.

Access to the following tabs is disabled:

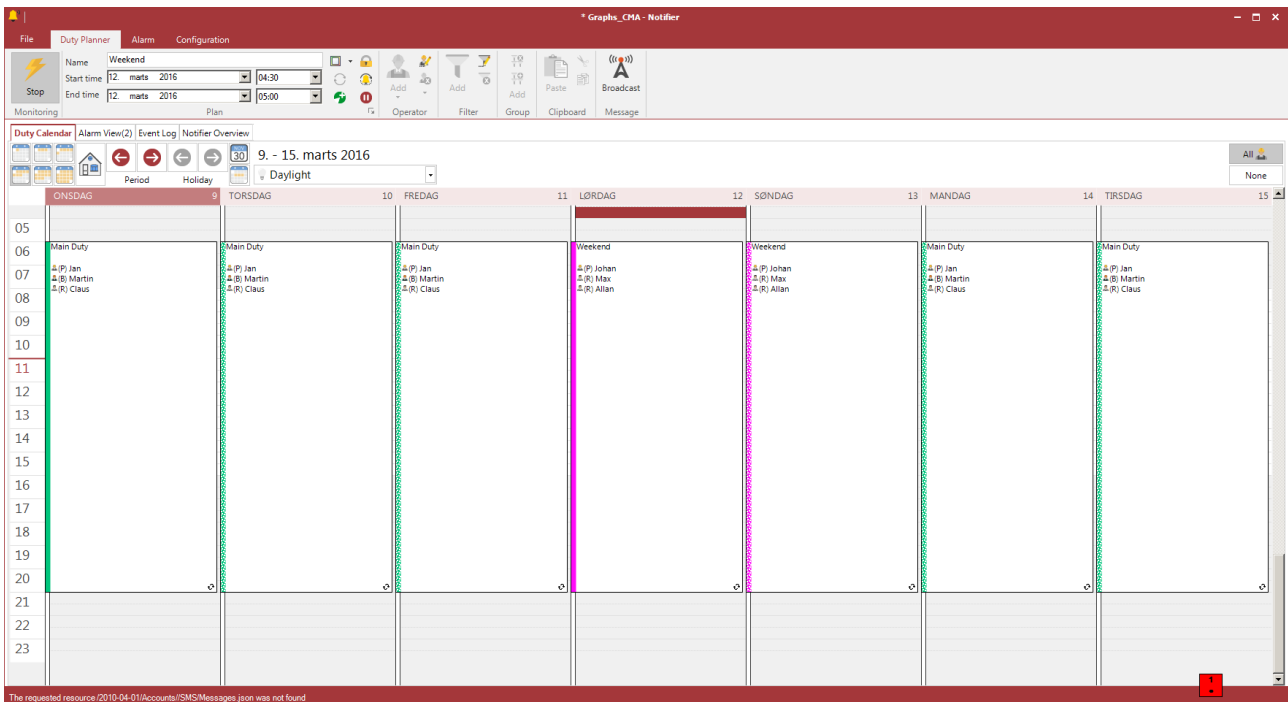
- Notifier options
- Alarm tab
- Configuration tab

- Alarm View on the Duty Planner tab.
- Event Log on the Duty Planner tab.
- Notifier Overview tabs on the Duty Planner tab.

Notifier Security

It is fairly easy to accidentally shut-down the Notifier module and operators can do this by simply closing the Notifier form, clicking the Exit Notifier button or by clicking the Stop button in the upper-right hand corner of the Notifier form

Operators can also inadvertently stop the Notifier module by clicking the Start/Stop button which will not close the module but stop the alarm collecting and forwarding functionality.



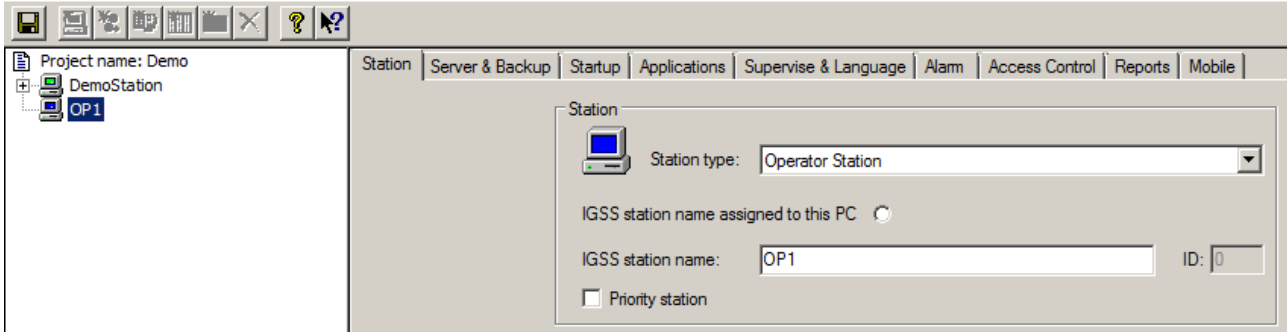
You can prevent an operator from accidentally closing or stopping the Notifier module from running by setting up the local machine to require a local password to close or stop the Notifier module or by using the IGSS User Administration module to only allow users the System Global right to close or stop the Notifier module.

System Configuration

Priority Stations

You IGSS license includes a fixed number of operator stations that can be online simultaneously. IGSS does not differentiate between these operator stations and important stations can be blocked from going online if there are no vacant operator slots.

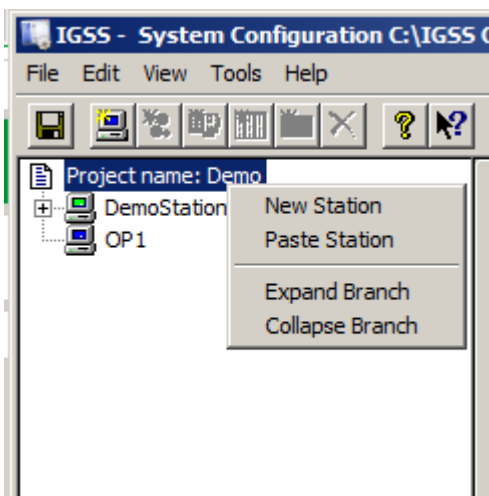
You can define an operator station as a Priority Operator Station, granting the operator station first rights to log on to an IGSS server when in an environment where there are fewer operator licenses than actual online operator machines.



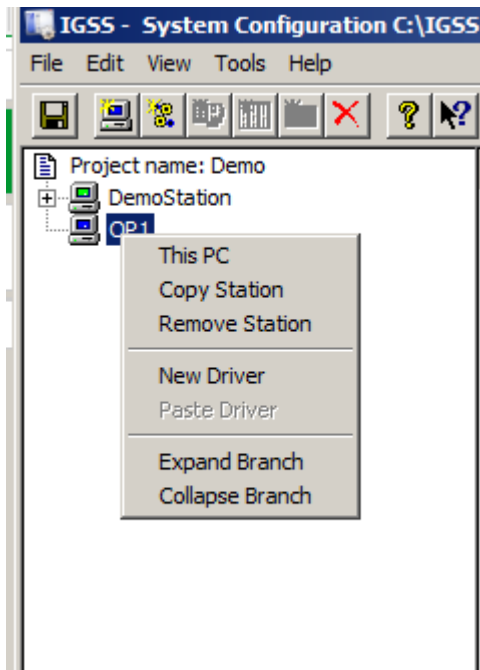
A non-priority operator station will be disconnected in order to re-use the required operator license.

Copy and paste functions in System Configuration

In order to facilitate creating and setting up many, identical stations on the network, for example many identical pump stations or other PLC machines, in the System Configuration form, you can copy a station and all underlying drivers, interfaces, nodes and sub-nodes and paste it as a new station.



You can thereafter edit the properties of the specific drivers, interfaces and /or nodes to set them up individually, for example changing the IP address.

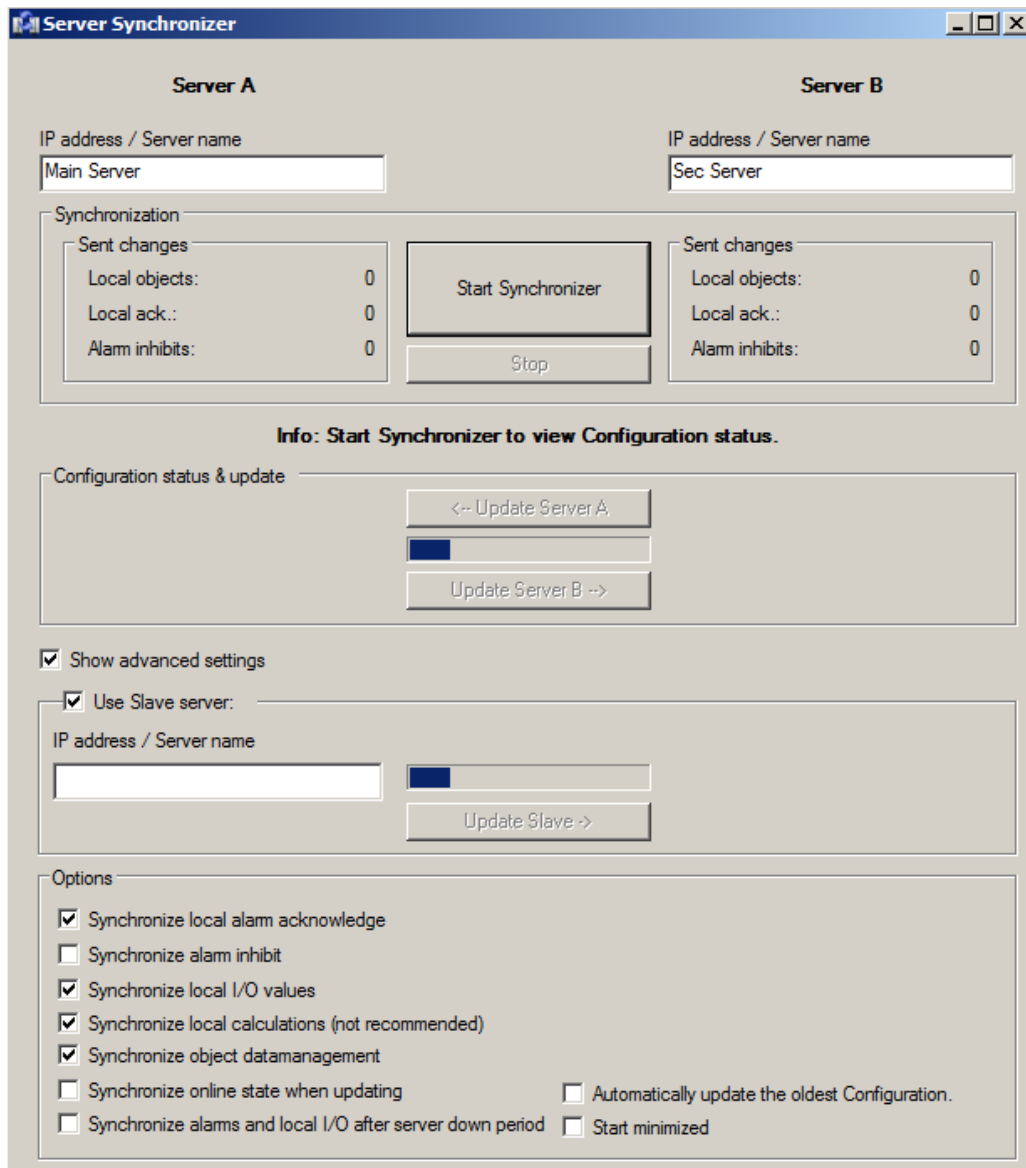


You can also copy drivers, interfaces and nodes, inserting them into other stations, drivers or interfaces in the System Configuration form.

This helps you quickly create many similar or identical IGSS stations, drivers, interfaces and nodes.

New Dual Server Synchronization Options

New synchronization options have been included for Server Synchronization in an IGSS Dualized Server Environment.



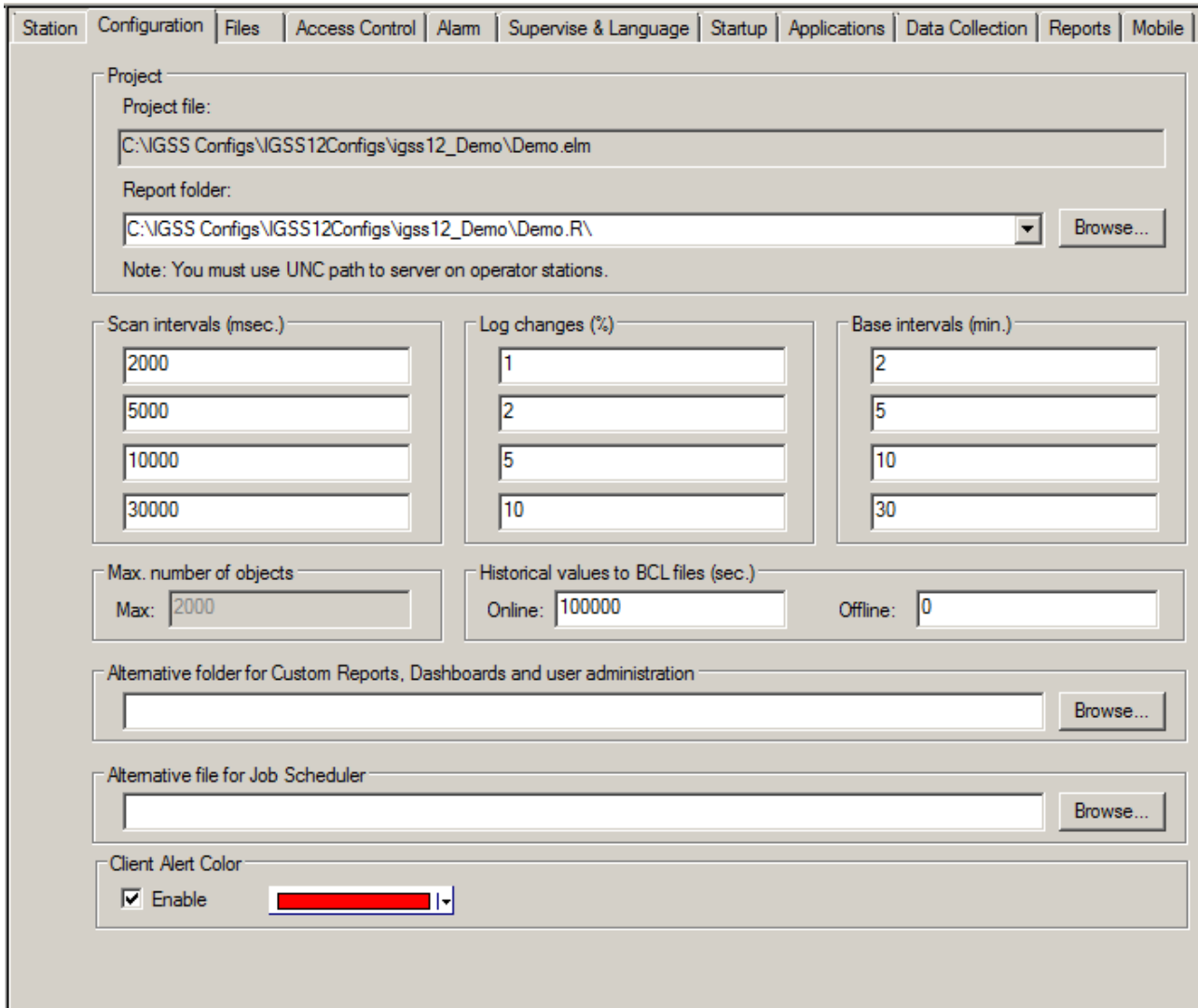
The new server synchronization options allow a System Designer to synchronize:

- Alarm acknowledgments of local (non-PLC based) alarms
- Alarm inhibitions on objects
- Object values of local (non-PLC based) alarms
- Calculations defined and placed in IGSS objects
- Data Management parameters defined by operators in the Supervise module on the object's Data Management tab
- Object values and states when updating an online server
- Alarms and object values and states when updating a server that has been offline

An additional option allows you to create and set up an IGSS server as a slave server. A dualized IGSS slave server is a third IGSS server in an dualized environment. An IGSS slave server can receive process data and configuration updates, but cannot be used for process component control or sending/synchronizing from.

Server Mask

You can set a background color and pattern which will be applied as a mask over any diagram in Supervise which is run from the IGSS server or accessed from the IGSS server.



The screenshot shows the 'Configuration' tab of the IGSS 12 software. The 'Project' section includes a 'Project file' field with the path 'C:\IGSS Configs\IGSS12Configs\igss12_Demo\Demo.elm' and a 'Report folder' dropdown menu with the path 'C:\IGSS Configs\IGSS12Configs\igss12_Demo\Demo.R\' and a 'Browse...' button. A note states: 'Note: You must use UNC path to server on operator stations.'

Below this are three columns of settings:

- Scan intervals (msec.):** Four input fields with values 2000, 5000, 10000, and 30000.
- Log changes (%):** Four input fields with values 1, 2, 5, and 10.
- Base intervals (min.):** Four input fields with values 2, 5, 10, and 30.

Further down, there are two more sections:

- Max. number of objects:** A 'Max:' label and an input field with the value 2000.
- Historical values to BCL files (sec.):** 'Online:' label with an input field containing 100000, and 'Offline:' label with an input field containing 0.

At the bottom, there are two 'Browse...' buttons for 'Alternative folder for Custom Reports, Dashboards and user administration' and 'Alternative file for Job Scheduler'. The 'Client Alert Color' section has a checked 'Enable' checkbox and a color selection dropdown menu currently showing red.

If an operator station connects to an IGSS server with a supervise mask enabled, all diagrams will be displayed with the supervise mask.

By applying a mask over a configuration, you can provide a visible indication which IGSS server an operator station has connected to, for example if you have a live data environment and an test environment, you can apply a bright red mask on the test environment IGSS server which will indicate to all operator stations that they are connected to a test environment with simulated data and perhaps still under development.

Increased number of Operator Stations with Distributed Drivers

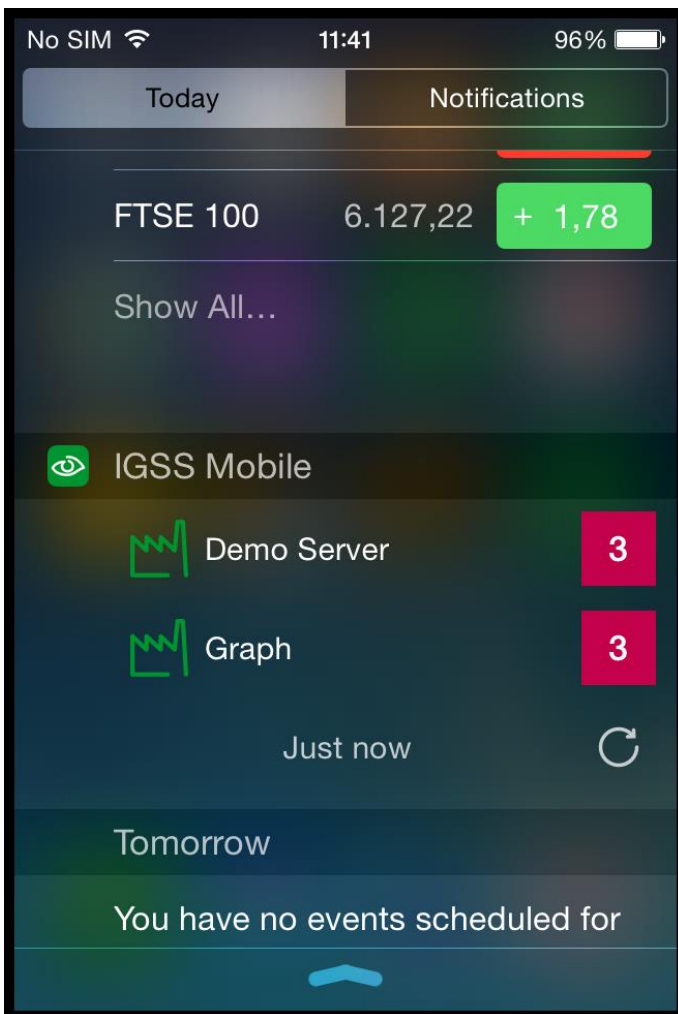
The number of Operator Stations with Distributed Drivers which an IGS sever can administer has been increased from 8 to 16 stations.

IGSS Mobile App Enhancements

Alarm counter widget

A new Alarm counter widget has been added to the IGSS Mobile App.

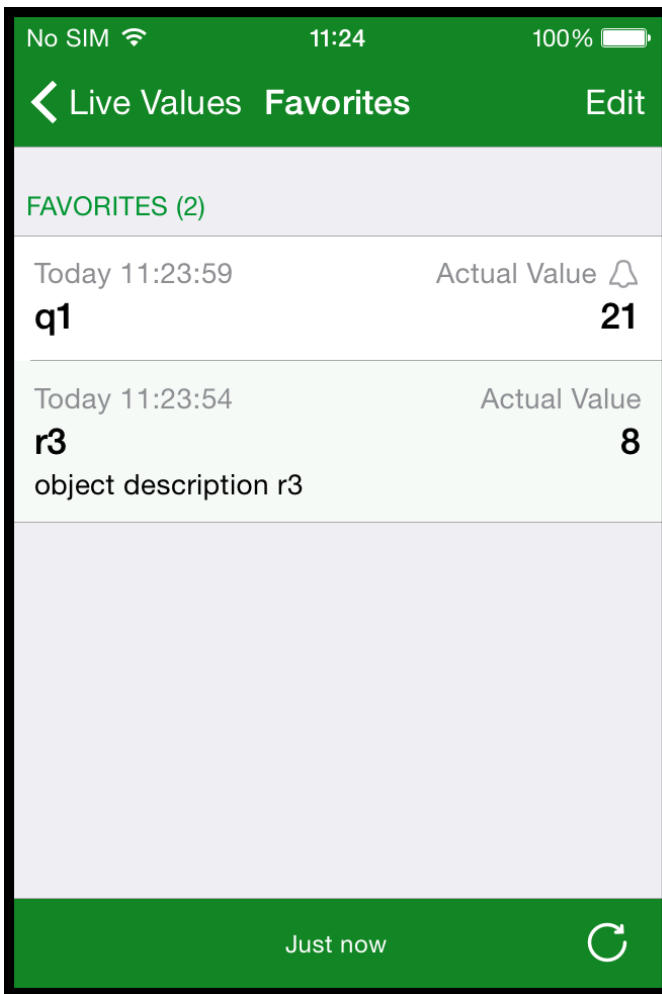
The Alarm counter widget replicates the color and content of the IGSS alarm counter in the widget, which helps you to gain a quick overview of the general alarm status of all your registered plants.



Furthermore, you can open the IGSS Mobile App directly from the widget.

Favorite objects

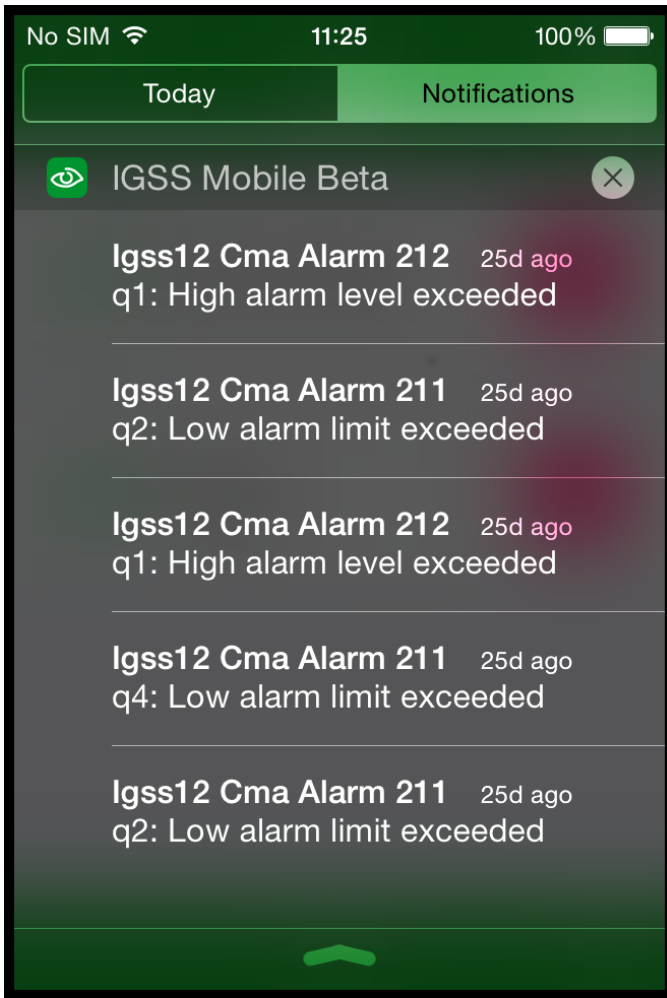
You can mark objects you need to observe more frequently or need to access quickly to your favorites list.



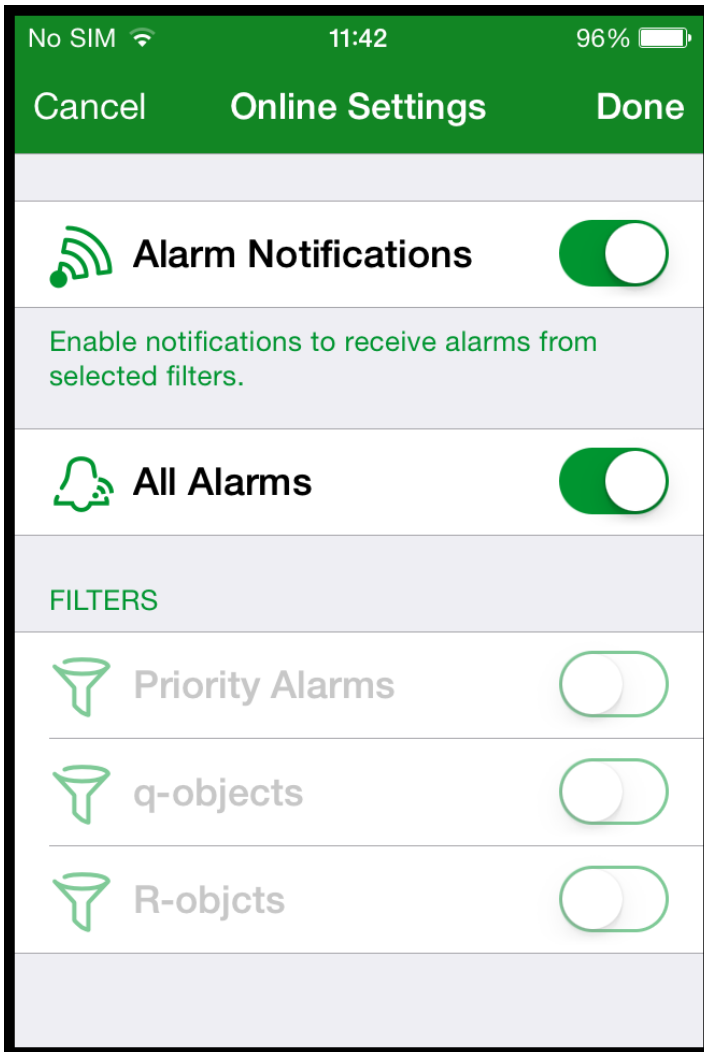
Objects added to the favorites list are quicker to access and can be removed easily, making the favorites list either a list of generally important objects or a temporary list of objects requiring special attention for a limited time.

PUSH notifications

Incoming alarms can be sent as PUSH notifications if enabled on the mobile phone. PUSH notifications can be set up to receive all alarms or just alarms that conform to one or more selected alarm filters.



The alarm filters utilized for PUSH notifications are the same alarm filters used in the IGSS alarm module and elsewhere in the IGSS Mobile app although you can easily create special alarm filters in IGSS that are only for PUSH notifications.

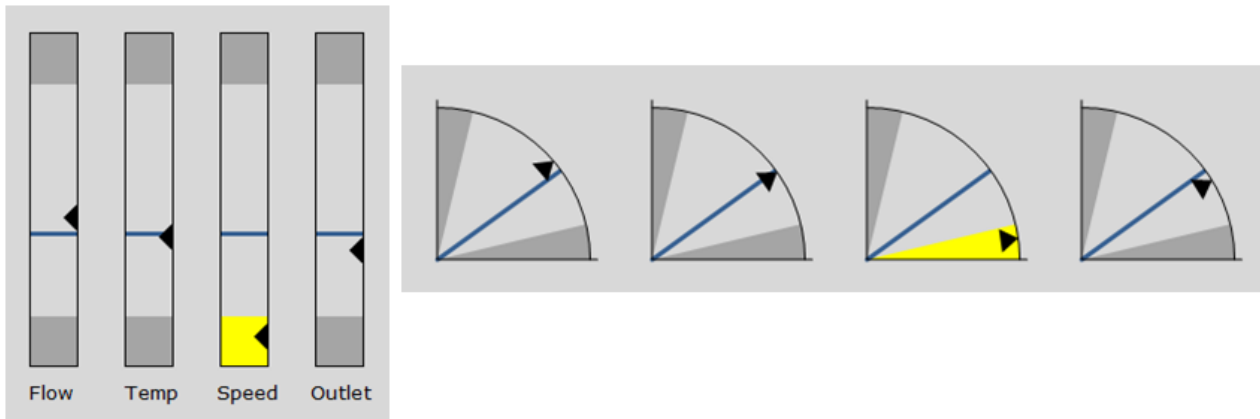


PUSH notifications are internet-based and do not require a GSM modem.

Development and Design (The Definition module)

High Performance HMI Descriptors

The properties of the Bar, Pie and Graph descriptors have been augmented to better conform with the requirements of HMI High Performance elements and support situational awareness techniques, increasing the operator's ability to distinguish between normal and abnormal plant behavior as well as react to inconsistencies.

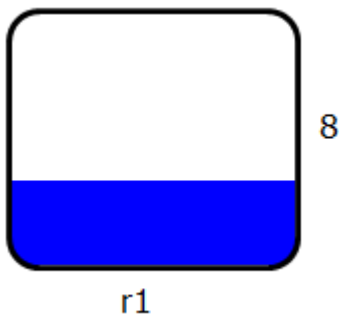


HMI High Performance stresses process diagram design as well as layout and design of process components that help increase process overview and enable quick and meaningful orientation of plant status “at a glance” by providing clear and concise visual indicators and by reducing clutter and distractions in the process diagram.

Soft corners on Rectangles

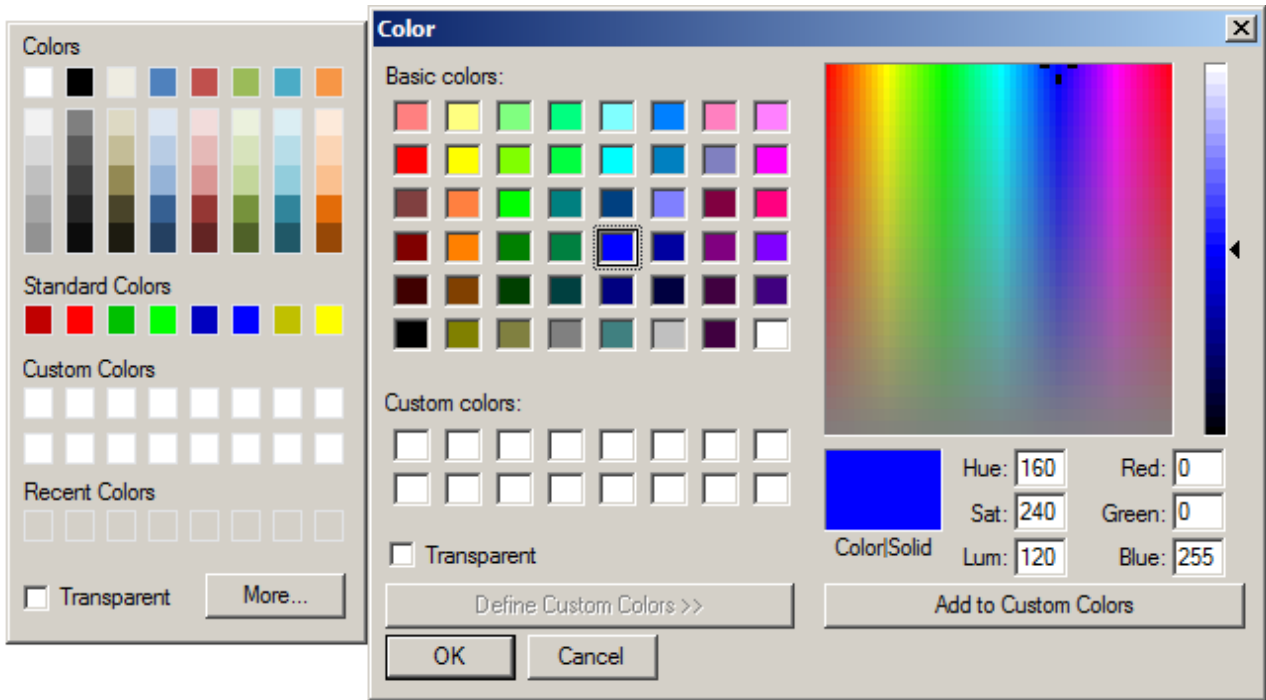
Rectangles are used in IGSS to illustrate the value of an analog reading compared to the maximum value as defined on the object.

Rectangles were supplied with sharp corners, but you can now define soft corners for all rectangles by defining the radius for the corners.



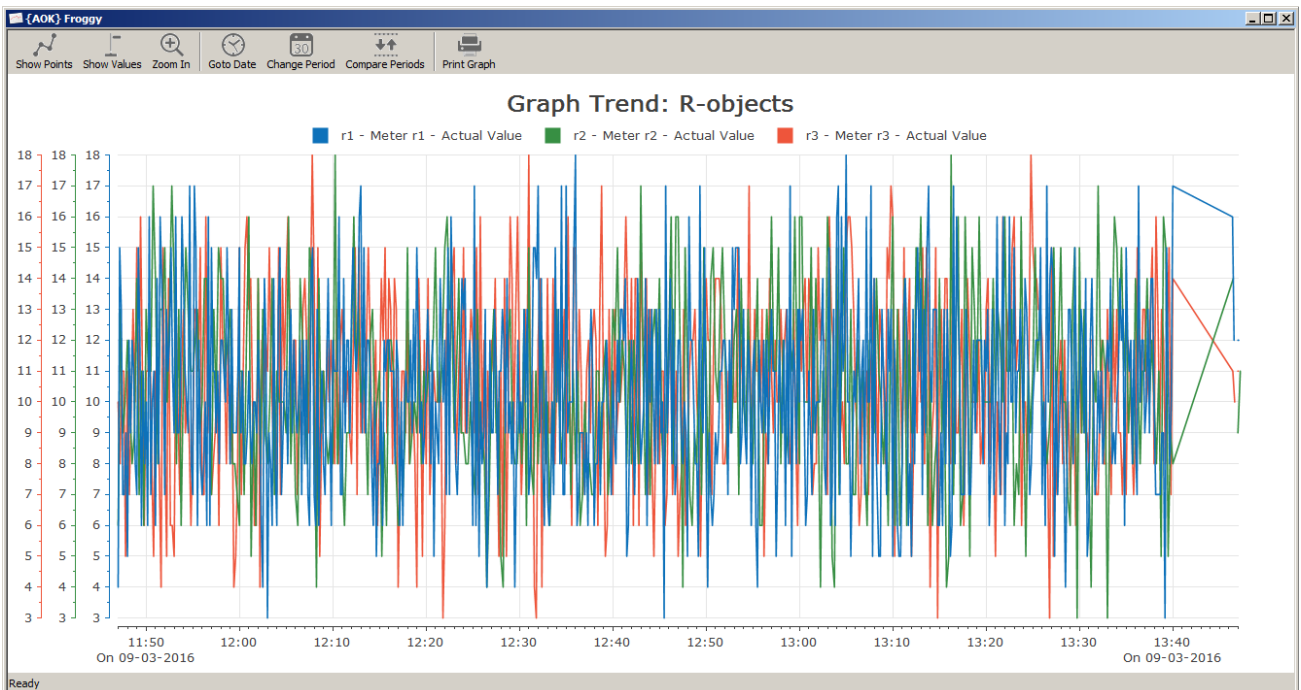
Improved color picker

The Color palette in IGSS has been enhanced with the ability to select recently used colors and the Color picker has been expanded with the options to define custom colors and select recently used colors as well as selecting a transparent background for many descriptors.



Updated graphs and trending functionality

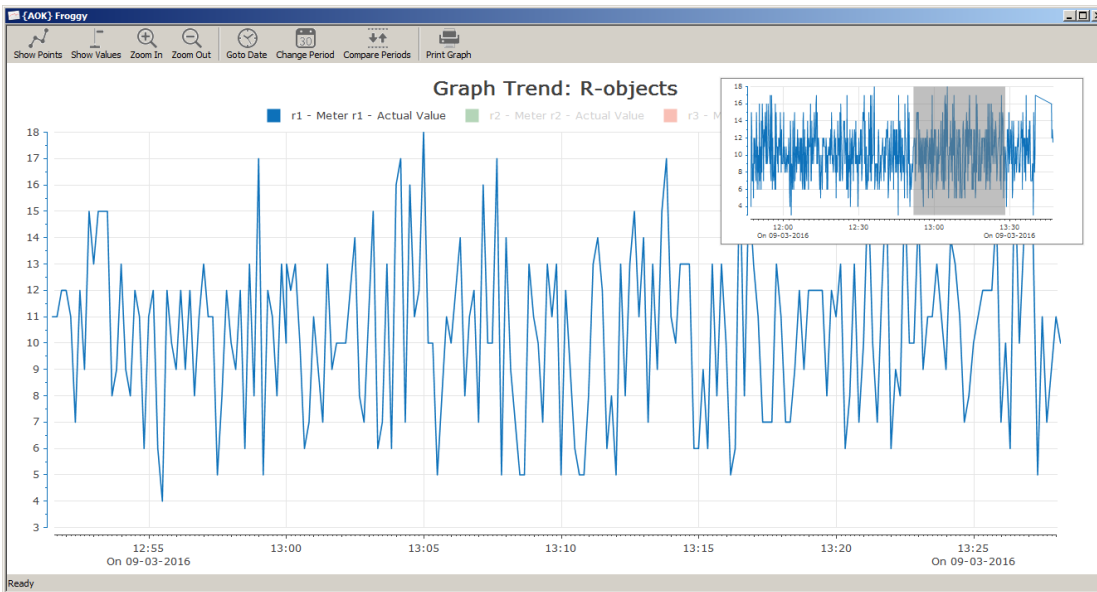
The graphs in IGSS have been completely re-written and re-designed, bringing them up to more modern standards, improving visual design and impact, increasing retrieval speed of the object data to be displayed as well as streamlining operator interaction and input options.



Performance of the graphs has been significantly increased, in some cases up to 10 times faster when analyzing and displaying object data from large LOG data files. The graph

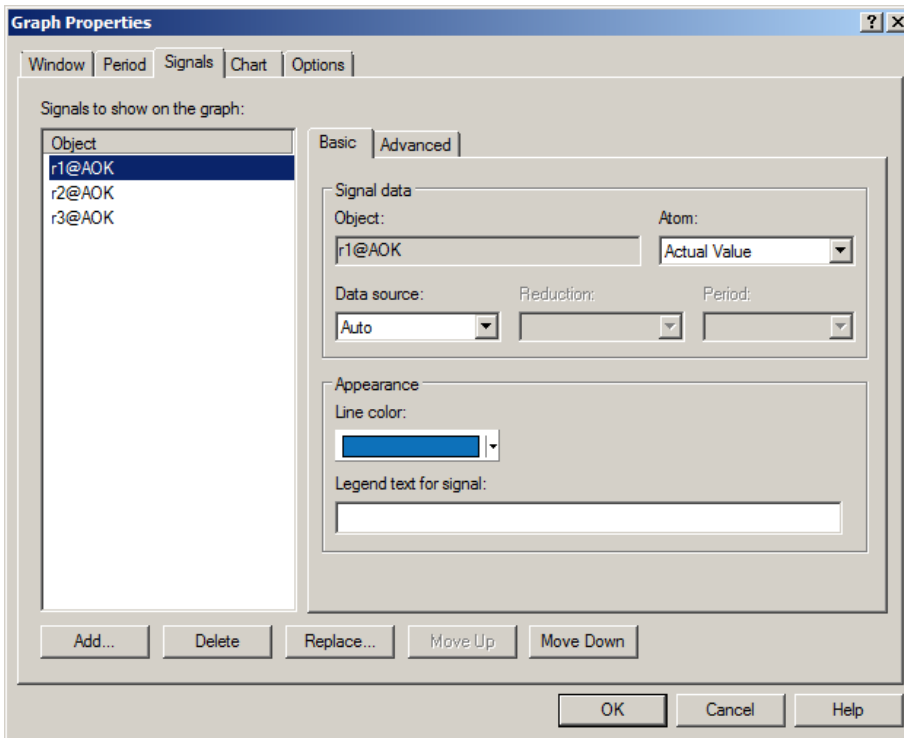
contents are built gradually during the reading and analysis operation as object data from both data file types (LOG & BCL) are displayed in broad chunks first, which delineate the general trend of the graph and then, as more data is processed and displayed, in greater detail. As a consequence, data precision is increased in the graph when zooming.

The estimated remainder time is displayed, allowing the operator to cancel long reading operations for the graph, often the result of a defined graph time period that is too broad.



The graphs contain the option of multiple value axes and digital signals are stacked automatically which improves the overview gained when analyzing digital object history and trends. The multiple axes also allow for multiple time axes, which enables an operator to compare one set of values or signals from an object with the same set from another time period, such as today vs. last month or last year.

Operator input options have been improved, allowing operators and system designers to define non-date intervals such as “Today” or “Yesterday” as start and end date input for the graphs.



Property Table Viewer expansions and augmentation

The Property Table Viewer enables you to mass-update object properties, saving time and resources for other development and design tasks.

In IGSS11, the Property Table Viewer form was extended to also enable a system designer to mass-update alarm properties.

In IGSS12, the functionality of the Property Table Viewer form has been further expanded to allow a system designer to mass-update descriptor properties and object template properties.

Filter	Minor	Scalable	Rapid blink	Icon	Angle	Symbol color	Blink color	Background color	Symbol blink	Diagram	X position	Y position	Width	Height	Referencing	Date	Selectable	Locked	Alarm on symbol	Break hidden alarms	Font	Text color
Icon: t1 @ Training	No	No	No	211	0	055,0,0	??	Transparent	No blink	Refuse @ Training	1034	141	16	32	t1 @ Training	0	Yes	No	Yes	No	16 Verdana	0,0,0
Icon: p1 @ Training (0)	No	No	No	311	0	192,192,192	??	Transparent	No blink	Refuse @ Training	95	541	32	24	p1 @ Training	0	Yes	No	Yes	No	16 Verdana	0,0,0
Icon: p1 @ Training (1)	No	No	No	311	0	0,255,0	??	Transparent	No blink	Refuse @ Training	95	542	32	24	p1 @ Training	1	Yes	No	Yes	No	-	-
Icon: v11 @ Training (0)	No	No	No	504	0	192,192,192	??	Transparent	No blink	Refuse @ Training	880	261	32	24	v11 @ Training	0	Yes	No	Yes	No	16 Verdana	0,0,0
Icon: v11 @ Training (1)	No	No	No	504	0	0,255,0	??	Transparent	No blink	Refuse @ Training	880	262	32	24	v11 @ Training	1	Yes	No	Yes	No	-	-
Icon: p2 @ Training (0)	No	No	No	311	0	192,192,192	??	Transparent	No blink	Refuse @ Training	312	538	32	24	p2 @ Training	0	Yes	No	Yes	No	16 Verdana	0,0,0
Icon: p2 @ Training (1)	No	No	No	311	0	0,255,0	??	Transparent	No blink	Refuse @ Training	312	537	32	24	p2 @ Training	1	Yes	No	Yes	No	-	-
Icon: p3 @ Training (0)	No	No	No	311	0	192,192,192	??	Transparent	No blink	Refuse @ Training	516	540	32	24	p3 @ Training	0	Yes	No	Yes	No	16 Verdana	0,0,0
Icon: p3 @ Training (1)	No	No	No	311	0	0,255,0	??	Transparent	No blink	Refuse @ Training	517	539	32	24	p3 @ Training	1	Yes	No	Yes	No	-	-
Icon: v14 @ Training (0)	No	No	No	504	0	192,192,192	??	Transparent	No blink	Refuse @ Training	880	219	32	24	v14 @ Training	0	Yes	No	Yes	No	16 Verdana	0,0,0
Icon: v14 @ Training (1)	No	No	No	504	0	0,255,0	??	Transparent	No blink	Refuse @ Training	880	518	32	24	v14 @ Training	1	Yes	No	Yes	No	-	-
Icon: v12 @ Training (0)	No	No	No	504	0	192,192,192	??	Transparent	No blink	Refuse @ Training	880	393	32	24	v12 @ Training	0	Yes	No	Yes	No	16 Verdana	0,0,0
Icon: v12 @ Training (1)	No	No	No	504	0	0,255,0	??	Transparent	No blink	Refuse @ Training	880	393	32	24	v12 @ Training	1	Yes	No	Yes	No	-	-

Like IGSS11, the Property Table Viewer form is accessed from different locations, depending on what you want to modify. The Alarm Property Table Viewer form is accessed from the Alarm Text form. In IGSS12, Descriptors are mass-updated from the

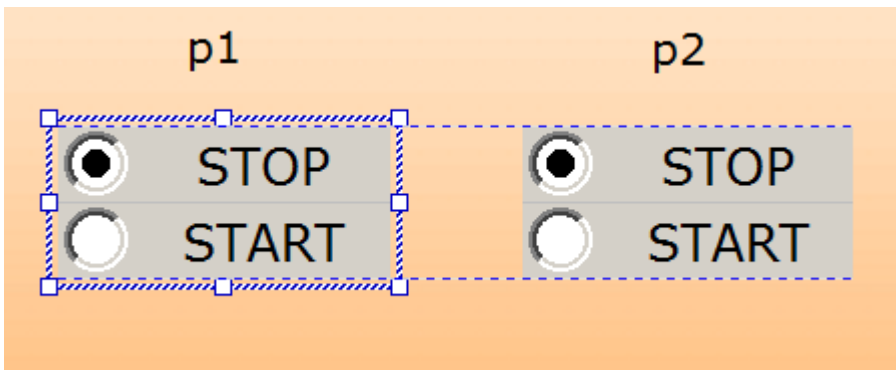
Area Property Table Viewer form and Object Templates are updated from the Template Property Table Viewer form.

The functionality of the Property Table Viewer form has also been augmented with a Search and Replace feature which enables a system designer to search for a text and replace it in the selected cells or globally for all found instances.

Finally, color-indications have been added to all color cells in the Property Table Viewer, enabling a better visualization of the selected colors.

Smart Snapping of descriptors

Smart Snapping is a new way of aligning descriptors and descriptor elements in the process diagram while designing without having to interrupt the creative process to fine-tune descriptor placement.



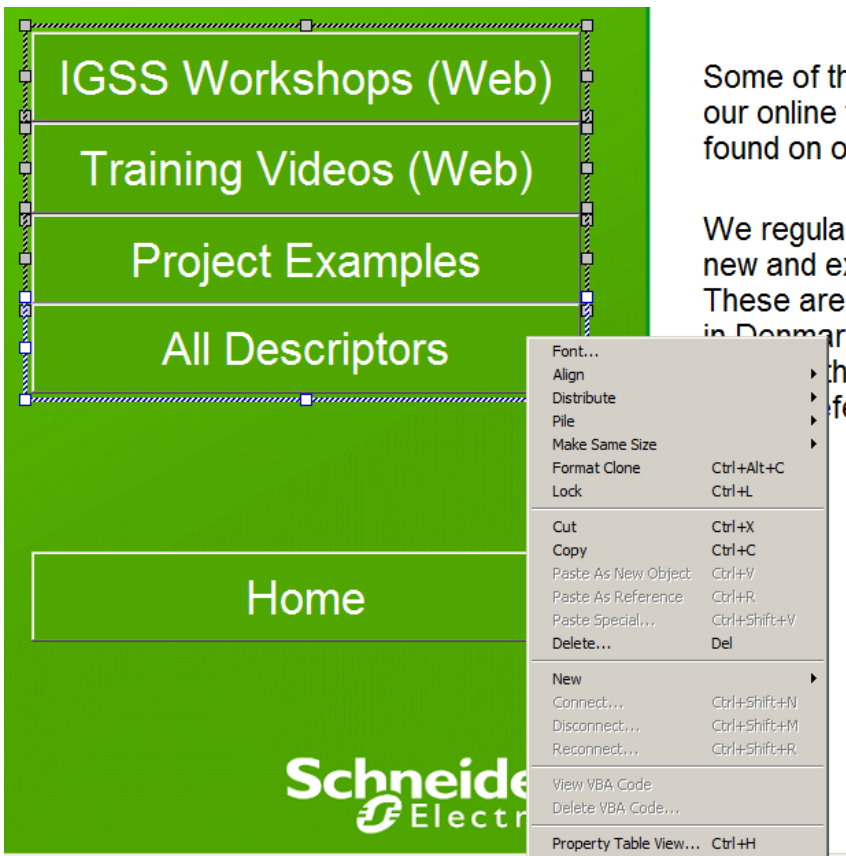
When placing descriptors in the diagram, the Smart Snapping feature displays dotted alignment lines to assist the system designer align the descriptor vertically and/or horizontally with other descriptors of the same general type within about 175 pixels: descriptor text elements with other descriptor text elements, descriptor symbols with other descriptor symbols.

When the descriptor is aligned perfectly with the closest descriptor of the same type, the active descriptor will be noticeably “snapped” in place. The system designer can of course freely move the descriptor to another location if he so chooses. The “snapping “ is only an attention grabber, making it easier to notice a perfect vertical and/horizontal alignment.

Smart snapping is enabled by default, but can be disabled by the system designer.

Descriptor Format Cloning

A process diagram may easily contain many descriptors with different properties - perhaps the pipes have been created with different colors or properties or the buttons have different backgrounds.

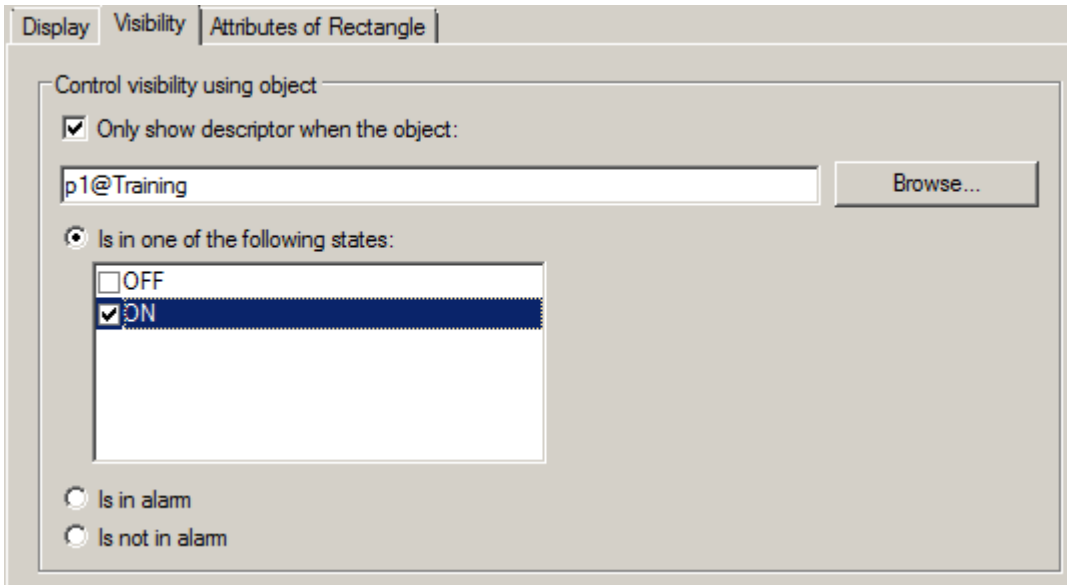


IGSS 12 contains the Format Clone feature which enables you to apply the formatting of one descriptor to all selected descriptors of the same type.

By using the Format Clone feature, you can update selected descriptors with the same formatting and appearance quicker and directly without having to use the Property Table View form.

Display descriptors based on object alarm state or digital state

You can setup the accessibility of a descriptor in the diagram to depend on the alarm state of another object, only displaying the descriptor in the diagram when the object is in alarm or (conversely) hiding the descriptor when the object is in alarm.



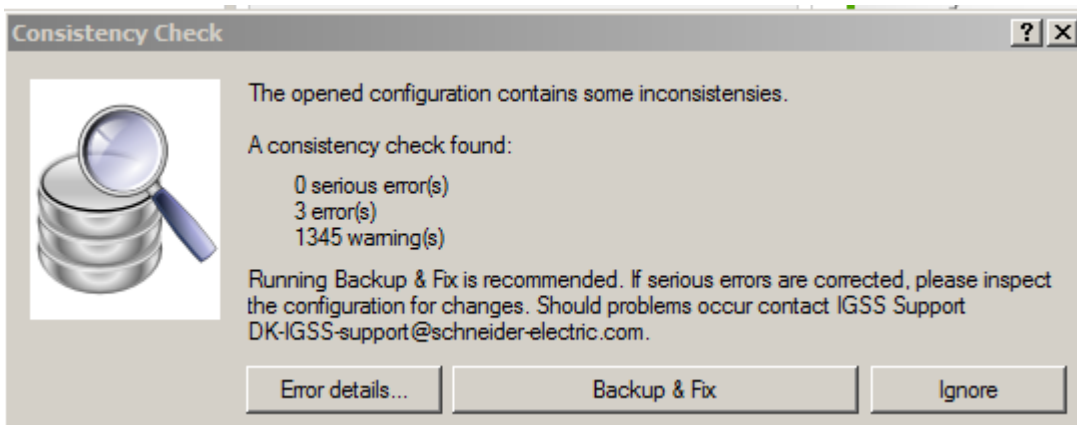
You can also connect the descriptor to a digital object, displaying and hiding the descriptor based on the states of the digital object.

One object could conceivably cause whole sections of the diagram to appear or disappear, displaying a different set of descriptors and objects depending in whether or not the object is in alarm or (in the case of a digital object) whether or not the object is in a predefined state or not.

Configuration Consistency check in Definition

The long history and broad customer base of IGSS has resulted in some configurations accumulating undiscovered errors and internal inconsistencies over time. These are often undetected by the internal check procedures of IGSS, being minor and inconsequential.

In order to detect and remove these errors, a configuration consistency check has been included to the procedures run when a configuration is opened in the Definition module or when it is saved from the Definition module. The Consistency check is based on and derived from the popular DE procedure which can detect, register and fix a many inconsistencies and minor errors in the configuration.



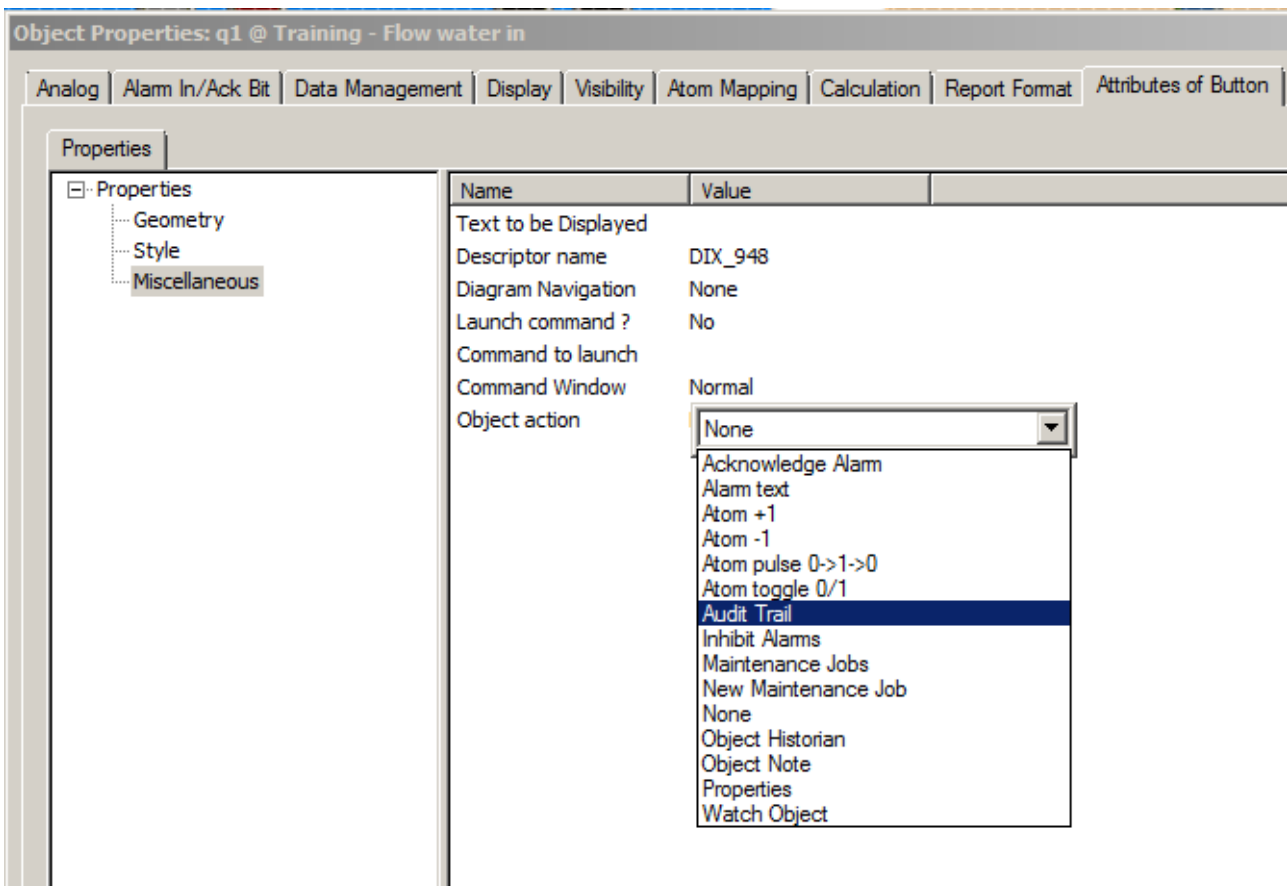
When the consistency check routine uncovers errors, the system designer can select to investigate the list of discovered errors, set the consistency check to fix the discovered errors or ignore the errors and continue working on the configuration without fixing, effectively keeping whatever errors that have been found.

If a configuration does not contain errors and inconsistencies detectable by the consistency check, the system designer will not notice the consistency check has been run.

When fixing a configuration, a back-up copy of the configuration will always be created in order to ensure a fallback plan in case the consistency check does not perform as expected.

Action Properties on Button descriptors

Buttons can be connected to Digital, Analog, String, Table and Counter objects and you can define what action a button click is to execute. The actions are predefined and depend on the type of object the button is connected to.



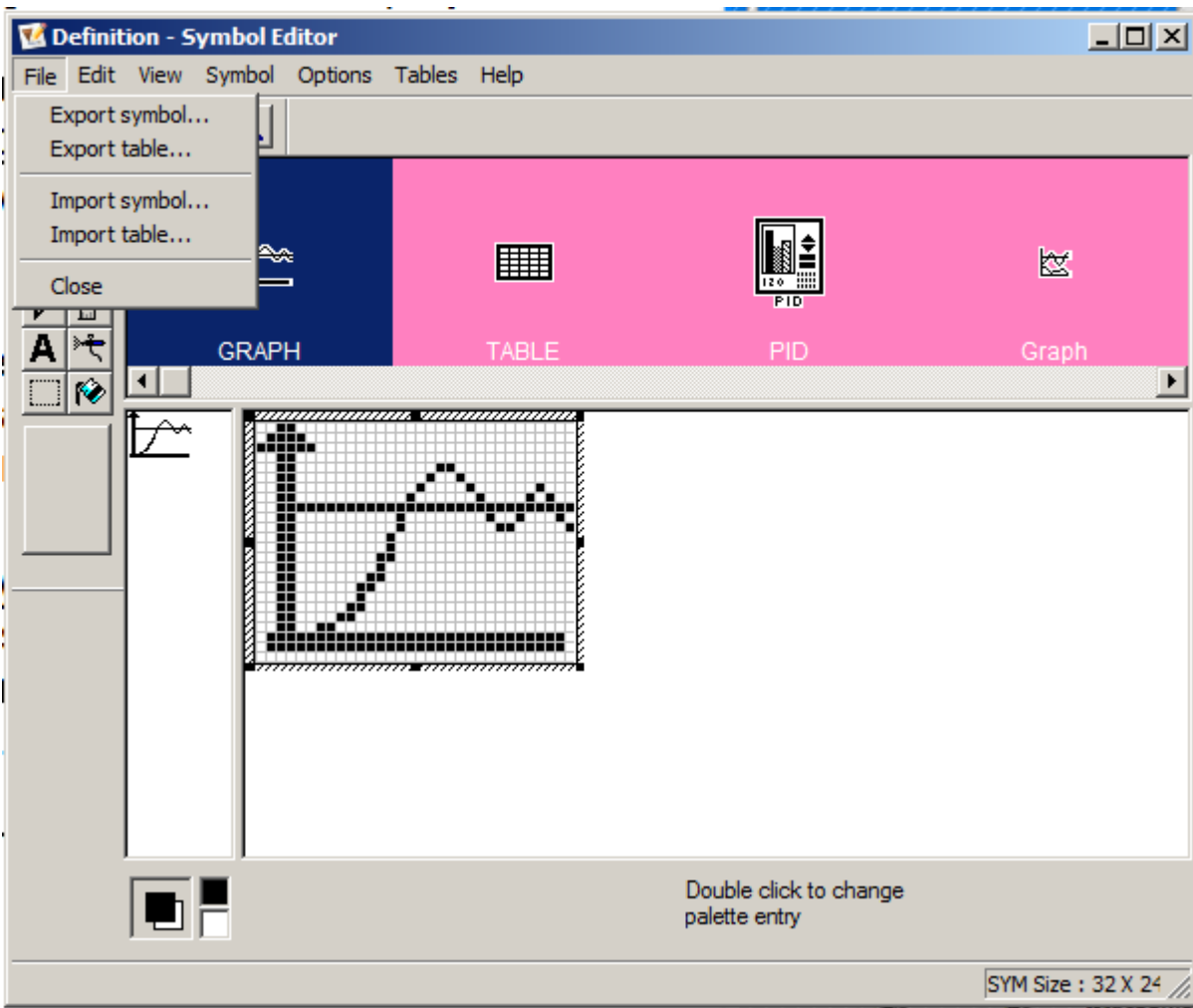
Button actions can be combined with normal button operations such as opening a diagram.

Button actions can:

- Acknowledge all existing alarms on the object.
- Open the connected object's Alarm Text.
- Increase the displayed atom value by one.
- Decrease the displayed atom value by one.
- Change the displayed atom value to 1 the button is depressed then back to 0 again when the button is released.
- Toggle between 0 and 1 for displayed atom value
- Open the Audit Trail form for the connected object.
- Open the Inhibit Alarms form for the connected object.
- Open the Maintenance Jobs form for the connected object.
- Open the Select Job and Indicator object form for the connected object.
- Open the Object Historian form for the connected object.
- Open the Object Note tab for the connected object.
- Open a graph for the connected object.
- Opens the Object Properties form for the connected object.
- Send the connected object to the Object Watch window after selecting which atoms are to be watched.

Import and export Symbol Tables

New symbol tables can be created to contain symbol descriptors for your objects. The symbol tables can be exported and imported in other IGSS installations, enabling you to create your own set of uniquely identifiable symbols for deployment at end-user sites.



Symbols and Symbol tables can be deleted in the Symbol Editor without affecting symbols assigned to objects. If you attempt to delete a symbol assigned to an object, a warning will be triggered and you must assign another symbol to the object(s) in order to complete the symbol removal.

Digital (PLC-based) analog alarms

When creating multiple digital (PLC-based) alarms for analog object templates, you can elect to create individual alarm numbers or consecutive alarm numbers, which is the same procedure as when creating multiple digital alarms.

New Calculation functions

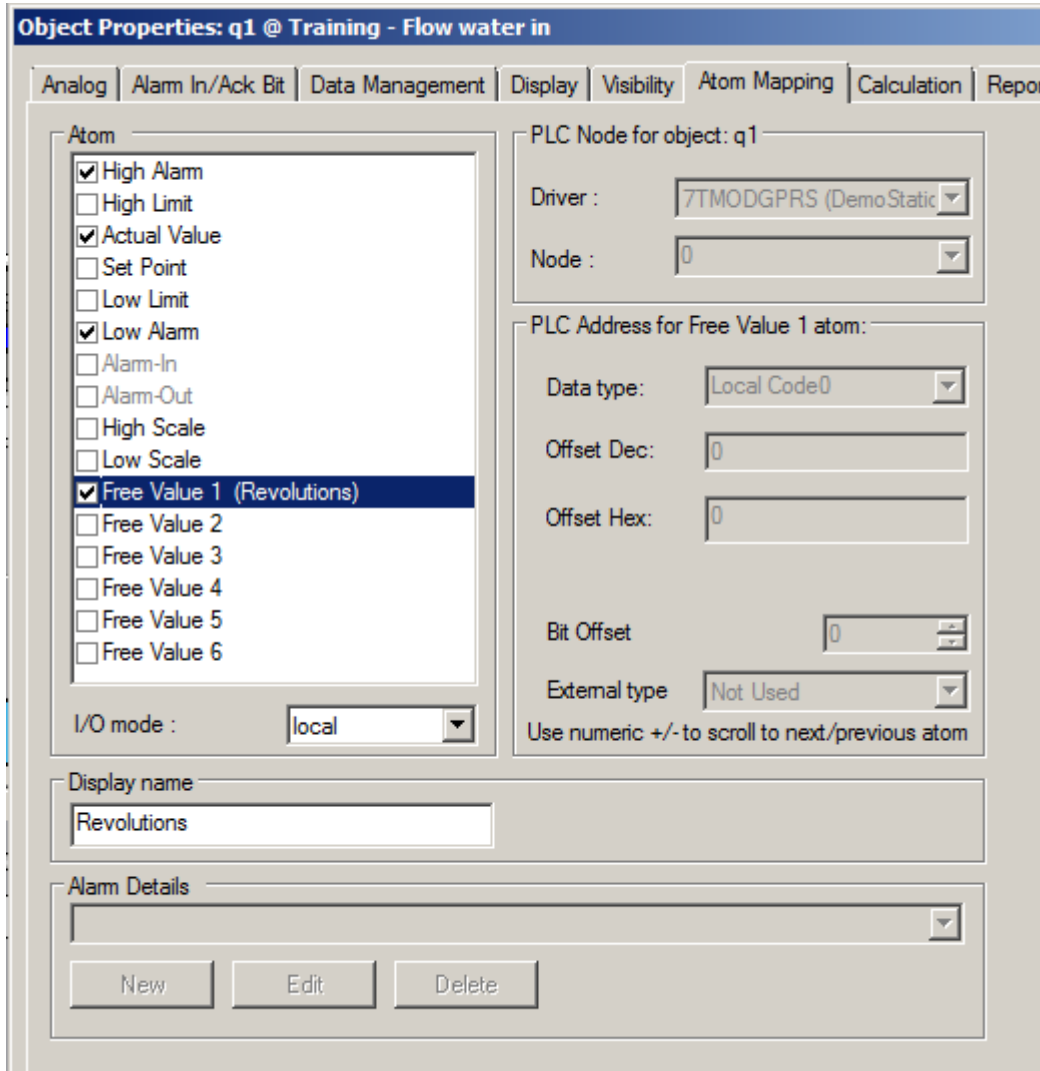
New calculation functions have been added that enable System Designer to detect

- if an object is passive
- if an object has been reset by the system
- if the atom value originate from a spool file
- detects the data duality of an object's atom value (for objects using OPC or OPC UA connections)

Named Atoms / Free Value Atoms

Each Analog and Digital object contains 6 free value atoms in addition to the standard atoms, such as minimum/maximum, alarm and state or value atoms.

Free value atoms can be used to store additional analog values from PLCs or other sources and can be addressed using IGSS calculations or VBA scripts.



Object Properties: q1 @ Training - Flow water in

Atom Mapping

Atom

- High Alarm
- High Limit
- Actual Value
- Set Point
- Low Limit
- Low Alarm
- Alarm-In
- Alarm-Out
- High Scale
- Low Scale
- Free Value 1 (Revolutions)
- Free Value 2
- Free Value 3
- Free Value 4
- Free Value 5
- Free Value 6

I/O mode : local

PLC Node for object: q1

Driver : 7TMODGPRS (DemoStatic)

Node : 0

PLC Address for Free Value 1 atom:

Data type: Local Code0

Offset Dec: 0

Offset Hex: 0

Bit Offset: 0

External type: Not Used

Use numeric +/- to scroll to next/previous atom

Display name: Revolutions

Alarm Details

New Edit Delete

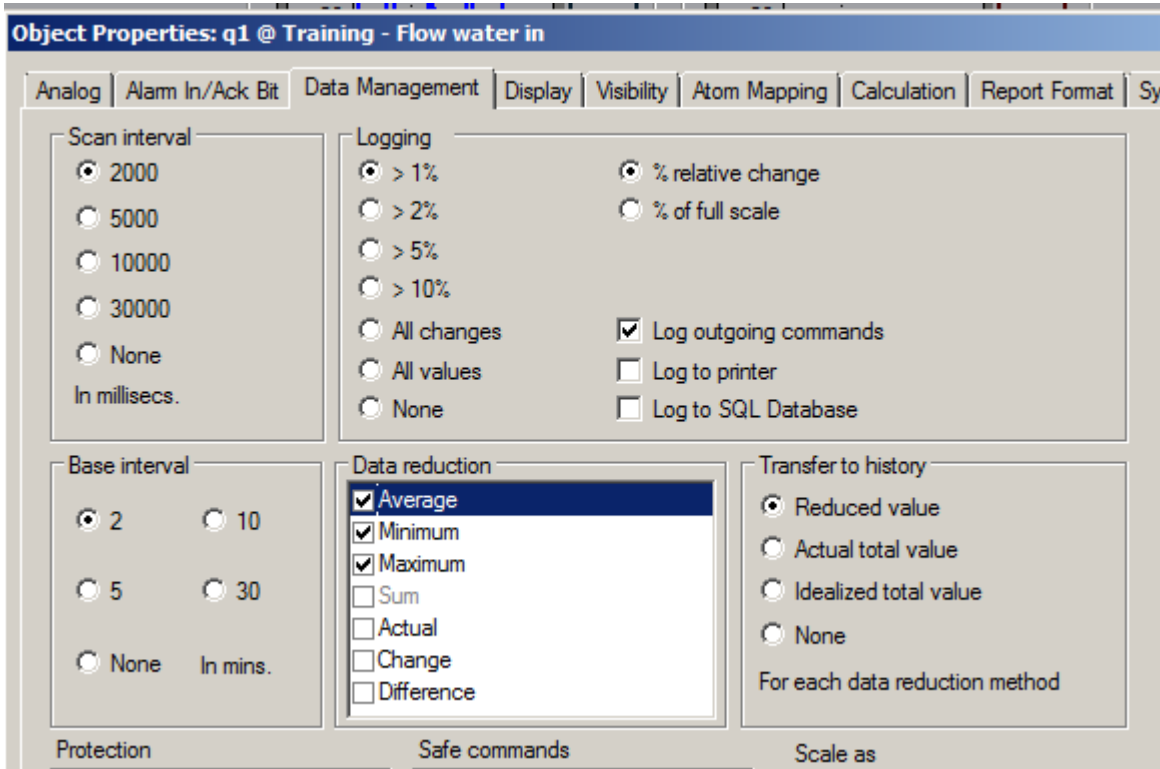
The values stored in the free value atoms can be retrieved from the data log files and rendered in graphs and custom reports as well as displayed in the diagrams.

You cannot attach alarms to the free value atoms and data from the free value atoms is only stored in the LOG data files and cannot be reduced into the BCL data files.

You can freely name all atoms in IGSS 12, adjusting the way the atom label is displayed in the diagrams, graphs and reports as well in the object menus for the descriptors. This enables you to customize the atom names of your plant to better conform to the industry terminology in general or locally used terms.

Log deadband base values and minute LOG data changes

You can set up which object value the log deadband is to be based on: The object value last logged or the maximum value the object can attain.



This will impact when an object value will be logged in the LOG data files.

You can also define minute log change limits (in percentage) in the System Configuration form, allowing very small changes in the object value to be registered and logged, for example 0.001%

Embedded diagrams in Faceplates

Faceplate were introduced in IGSS11 as a means of rapidly creating many identical diagrams, for example creating 20 identical pump stations or a standardized HMI interface for identical pumps, motors or machines – all represented as Digital objects in IGSS.

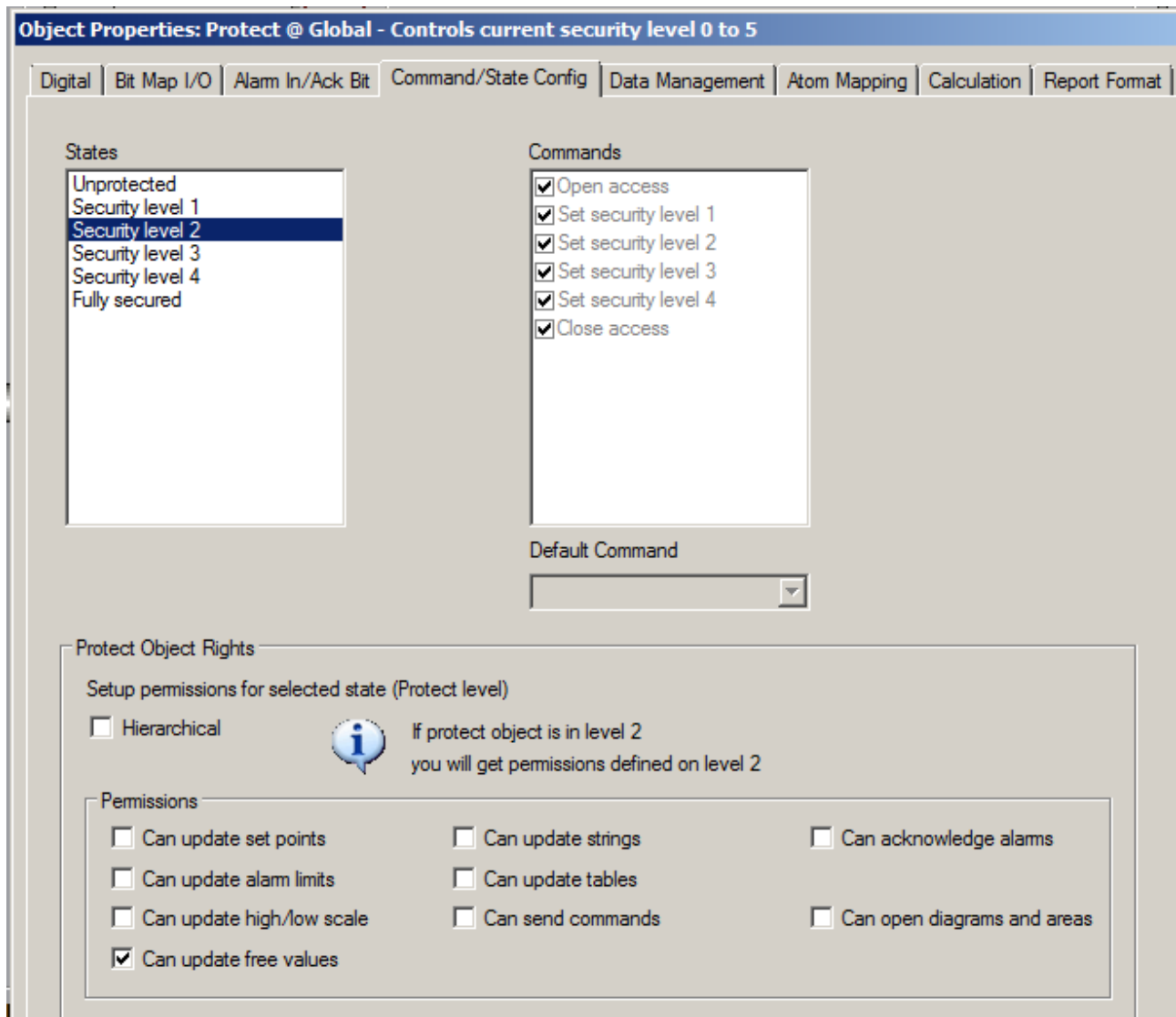
Embedded Alarmlists and Embedded Graphs were added to the faceplate options as software updates for IGSS11 and now Embedded Diagrams can be added to faceplates, allowing a system designer to create more complex faceplate diagrams.

The limit of 80 Input/output faceplate objects must still be respected though.

IGSS User Administration

Object level protection

When using Object Level Protection (Protect Object) in conjunction with the IGSS User Administration, a system designer can differentiate between a user updating a free value, high scale or alarm atom.



The Can Update Alarm Limits security level permission now limits the user from editing alarm atoms (High alarm High Limit, Low Limit and Low Alarm atoms).

Two new security level permissions have been introduced:

- Can update high/low scale
- Can update free values

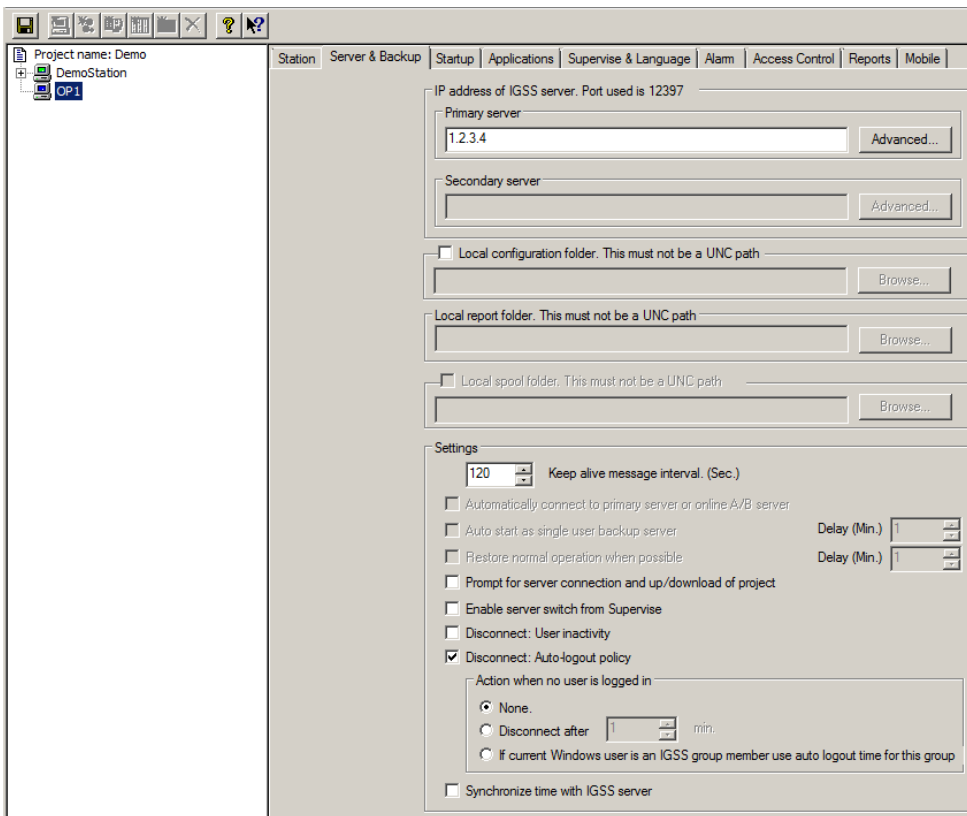
The Can update high/low scale security level permission limits the user from editing the High Scale and low Scale atoms (the Maximum and Minimum fields). The security level permission is only relevant for analog objects.

The Can update free values limits the user from editing the free value atoms. The security level permission is relevant for analog and digital objects.

Disconnect policies

You can set up disconnect or log-out policies for IGSS User groups and IGSS Users, with the most restrictive log out policy being used.

You can also define how IGSS is to react if no users has logged into the system – either using any logout policies for the User Group, defining your own disconnect times or not doing anything.



Command line Arguments

Close the IGSS Master

Use the -Exit command line argument in conjunction with the IGSSMaster.exe to close the IGSS Master without launching confirmation prompts.

For example: IGSSMaster -Exit

This will allow you to completely close the IGSS Master through a batch-file without the shut-down procedure stalling because of confirmation user-prompts.

Specify Server, station and language upon start

You can determine the server the IGSS Master is to connect to and station the IGSS Master is to start as with the `-Server` and `-Station` command line parameters. You must supply the server- or station name after the argument, for example

```
IGSSMaster -Server 192.168.1.10 -Station OP2
```

Where the server's IP address is 198.168.1.10 and the operator station is OP2

The server and station name must be entered exactly as it is spelled in the System Configuration form. The `-server` and `-station` must be used in combination with each other. You cannot use one parameter without specifying the other.

Furthermore, if running in a multiple language setting, you can specify which language the IGSS Master is to start by using the `-Ing` and then the three-letter language code. IGSS uses the language codes for C++ from the Microsoft MSDN network. The utilized language codes are also visible in the GSS folder of the IGSS installation folder

Run reports in silent mode

Use the `-Silent` command line argument in conjunction with running IGSS reports (Standard and Custom reports) to avoid encountering user-prompts which can stop an automated report procedure, for example when running reports as batches through the IGSS Job Scheduler or through batch-files.

The `-Silent` argument will not suppress user-prompts as the user-prompts appear because the report requires critical information but will instead skip reports that require user-prompts.

When using the `-Silent` argument, check the GSST.LOG files for any skipped reports