**CIQGUITool**

A tool for building the views for Control IQ

Document revision as of v4.0 beta

See Revision History at the end of the document

How to use the tool:

This document is not intended to indentify all of the features of this tool. It is best to work with the tool (SAVE YOUR WORK OFTEN) and learn how it best works for you.

Every 'control' that you put on a screen takes 'resources'. The more you put on, the longer the page will take to load and to refresh. Also, if you use 32mb jpegs and a lot of images, not only will it that take a lot of memory, it will take a long time to load (especially over a remote connection). Bottom line: be sensible; put static labels and images within the background and when 8 colors can do the job, don't use 16,000 just because you can. The “best-practice” is to put all of the titles, static images (all things that do not change) in the background image, and use this tool to define all elements that get refreshed.

This is not a drawing tool. It is a placement tool. Elements will have to be drawn in other applications like Fire Works, Paint or Photo-Shop.

Defining a new View:

Use the “Add Components” drop down at the top of the screen to add new controls to the view. In general, it is a good idea to define the controls in the order that is displayed in the dropdown (Background first, then the larger controls and finally the smaller controls).

Controls Supported:

 Background Images - For static images, schematics, floor plans

 Web Browsers - Displays any website, or web based data

 Charts - Displays data in Line, Bar, Pie Charts

 Data Grids - Displays tabular data

 Images - Displays bitmaps, jpegs, Animated GIFs etc

 Labels - Add tags, create clickable areas

 Buttons - Standard Widows Button

Identifying Controls:

In previous versions you could define labels and images with transparent backgrounds (and nothing in the foreground). This effectively created a clickable region on the screen that was not visible. This also made it very difficult to “find” the control. On the File dropdown there is now a selection to “Identify all Controls”. This will temporarily draw a red-white box around each control so you can find it on the screen. [Ctrl-A is a keyboard shortcut to accomplish the same thing]

Moving and Sizing:

When the mouse is hovered over a control, you can move and resize the control by left-clicking on the control and dragging the borders (for resizing) or the entire control (for moving it). Some controls (like a 'Label') have an 'Autosize' property. If Autosize=True, the size of the control is relative to the text that is displayed. You will have to set 'Autosize=False' to be able to re-size the control.

Web Browser: The web browser control is a bit unique in that you must “grab” the control around the border to be able to move it. This is easily observed as the cursor will change to a ‘hand’ when the control is moveable.

 Only one control may be ‘dragged’ or moved at a time.

Moving a control(s) can also be done by selecting one (or multiple) and using the arrows to move them 1 pixel at a time (nudge), shift+arrow keys will move the controls 5 pixels at a time. Single or Multiple controls can also be moved by left-clicking inside a selected control, hold and drag (v4.0)

Adding Controls:

Controls may be added by selecting them from the drop down at the top of the form, or by right clicking in an area of the working pallet (anywhere there is not a control present)

Screen Guide:

There is no size limitation for the views any longer. In design mode, you will use all of the real estate of the screen. ~~On the File Dropdown menu, you can select different “Screen Guides” that will draw a rectangle on the screen showing the working area of the view at different screen sizes. This box is for reference only. Controls can be placed anywhere on the palette, but they will obviously not be viewable if they are outside the size of the users workstation.~~

On the workstation (GUI) controls are located based on the center of the screen.

Views DO NOT *scale* based on the workstation screen. It is up to the designer to design a view for the appropriate workstations.

As of v4.0 views DO scale to the screen-size of the workstation. The views also support zoom and pan in GUI. Settings for Maximum Zoom are set in Background & Defaults.

As views are enlarged / shrunk the controls will become ‘visible/invisible’ if their font size gets to small. I.E. If the scaled font size is less than 6pt, the control will disappear. (Think Google Maps). Settings for Minimum Font Size are set in Background & Defaults

With v4.0 final release, the Settings / Screen Guide will be removed

Editing Controls

A control is in edit mode when the red-white box appears on the control. You can edit multiple controls at the same time but each will need to be “selected”. Controls are selected by:

1. Left-Click or Right-Click on top of a control for a single control
2. Shift or Ctrl-Left-Click will add controls from the selected list
3. Ctrl-A will select all controls
4. File / Indentify all Controls
5. Add Components / View All / Select one or multiple controls

Once the control(s) is selected, Right-Click on any one of the selected controls. If multiple controls are selected for editing, only the properties that are common to each of the controls will be editable.

Left-Click on the screen where there is no control will de-select all controls.

Copy/Paste:

After a control is placed on the palette, right-click on top of it to get into the property editor. Once you have all the properties set the way you want, click on the “Edit” drop-down menu. Clicking on "Copy" will place all of the properties for the control in a reserved location that can be "Pasted" into other controls.

Notes:

* Copy/Paste is not stored with the view
* Copy/Paste is retained between views until you exit CIQGUITool
* If you make changes to the control that the Paste function is copied from those changes will be reflected in the Paste properties.

You may also select a control and press Ctrl-C to copy the parameter in the Paste Clipboard and Ctrl-V to paste the parameters in to selected controls. As of v4.0 copy and paste will work between views.

Assign as Default/Paste the Default:

Works just like Copy/Paste including the notes with the following exceptions:

* If you do not “Assign as Default" for a control, a newly added control will use the previously added control of the same type for all of the default settings
* Once a Default is assigned, you may use it to modify existing controls by clicking on the "Paste the Default” from the edit menu. Essentially this gives you two copy/paste holdings for each control type.

Show Real-Time Data:

GUI - Views is obviously the ultimate use for this tool, but you can see how the labels and images will react by selecting File / Show Real-Time Data. Note that Left and Right-Click events will not be functional in this mode.

Colors:

There are a number of areas where colors are selected, but the most comprehensive area is in Labels. The first selection is “Defined Colors or ControlIQ”.

*ControlIQ*

If you select “ControlIQ” the label will follow the coloring rules as defined by the Point (in Setup), and then by the coloring defined in the ReasonCodes table (in the database). For instance an Alarm is White Text with Red Background. Many of the reason code colors are defined as “Default” which in Tabular Data means Black text with a White background. The Point coloring is defined in Setup as part of the point definition. The hierarchy of coloring rules when a label is set to “Control IQ” is:

1. If the Point has colors defined, use them exclusively
2. If the Point colors are defined as “Default” then use the colors out of the ReasonCodes table
3. If the ReasonCodes table is “Default” then use the colors defined in the Background component “CIQ Default Foreground Color” and “CIQ Default Background Color”

*Defined*

If you select “Defined” the label will follow the coloring rules that are further defined in the properties of the label as “Defined – Text Color” and “Defined – Background Color”. If there is an Alias defined, GUI will get the value and reason of the alias to further color the label.

If the Reason = Alarm or the Value is “true” based on the “Display Energized Colors when the Value is:” property, the label will use the “Defined – Energized Text Color” and “Defined – Energized Background Color”

AutoSave

Autosave has now been implemented in v4.0. Once you make an edit to a view, the view will be automatically saved every 2 minutes.

Parent / Child Relationships

One of the biggest features introduced in version 4.0 is the Parent / Child relationship of each control. Prior to v4.0 the “background” was the parent and all controls (Background Image, Labels, Images, etc) were children to that single parent. Controls that have a transparent attribute (background color), are transparent to their parent. Therefore, all controls pre-version 4 were transparent to the background (usually SAI-Blue) and NOT to the image they are on top of.

Controls can now select the parent they belong to. For example, the default parent is the Background Image (Panel1). All controls placed in the view will default to this parent and will be transparent to image. I.E. their transparency will now show the image instead of the background color.

However, any control can be the child of any other control. By default, you can only select a parent that is larger in size of the control to be its parent but, (if there were reasons to do so), the parent could be re-sized after the fact. Consider a view that has a background image. Then add a large, transparent label on top of it (Label1). (Its parent is the background image (Panel1). Now place a number of labels on top of Label1, and make the parent to each “Label1”. As you move “Label1”, all of the labels that are it’s children move with it. If you delete Label1, all of the children are deleted (thank goodness for Ctrl-Z)

Queries

In charts and data grids, the data presented on the screen is based on the result of a query to the database. There are volumes of books written about query design and syntax that we will not cover here, but a few examples can go along ways into showing the designer the capabilities of these controls. Keep the queries simple. This is not a replacement for tabular data.

A simple query to show an alias and value

SELECT alias, txtValue FROM points\_values

Would result in a DataGrid that looks something line this:

|  |  |
| --- | --- |
| alias | txtValue |
| AH1RAT | 57.3 deg |
| AH1Sched | On |
| AH1Status | Running |
| OAT | 67.3 deg |

You could also write a query to show points not communicating

 SELECT alias,txtValue,txtReason FROM points\_values where reason =31 or reason=33

Obviously knowledge of the database would be good to know. Queries can become more complex as in:

SELECT name as Point Name, txtValue as Value from points\_values INNER JOIN points WHERE points\_values.alias = points.alias.

Would result in a DataGrid that looks something line this:

|  |  |
| --- | --- |
| Point Name | Value |
| Air Handler 1 Return Air Temp | 57.3 deg |
| Air Handler 1 Schedule | On |
| Air Handler 1 Fan Status | Running |
| Outside Air Temperature | 67.3 deg |

For charts the Queries are even more complex

SELECT Hour(trnWhen)+(Minute(trnWhen)/60) as H, Round(Value) as V from History where Alias='edisonmeter' and Date(trnwhen) = Date(AddDate(Now(),Interval -2 day))

This would display a line on a chart for the meter recorded two days ago. Note that queries for charts MUST define the X coordinate first and then the Y, and it can only return the two values.

It is always a good idea to develop the query in Navicat and then copy/paste it into CIQGUITool.

Notes:

Right Click – (In GUI) on controls, the right-click has pre-defined functions. Right-Click will present a menu to the CIQ GUI user (when the view is displayed). The menu contains:

 Show Point Data (in Tab Data)

 View Scheduled (if this is a “Sched” point type, otherwise this is not shown)

 Override Point Value

 Print (this applies to the entire view)

Left Click – (In GUI) Some controls have a natural left click function.

* Browsers natural left-click is to allow linking to other pages. If you define left-click in GUITool that will take precedence over the controls natural left-click functions.
* DataGrids allow row and column selection (sorting) with the left click. If you define left-click in GUITool that will take precedence over the controls natural left-click functions.

ALL images must already be in the database. This tool allows you to load images from disk and save them in the database, and to pull images out of the database and save them to disk for editing and copying. See the "File" dropdown menu once the tool is up and running.

You MUST have an ODBC DSN setup as “ControlIQ” pointing to the database to use the tool. The development machine does not have to have IIS running (or installed), but it must be able to access the mySQL database whether local or remote.

**Mouse actions**

 Left-Click on top of a control selects it for edit

 Left-Click NOT on top of a control de-selects all controls

 Left-Click held down on the control allows you to re-size it (if on the border)

 Left-Click held down on the control allows you to move it (if in the center)

 Left-Click held down Drag Down/Right Selects all controls within the box (not on top)

Left-Click held down Drag Up/Left Selects all controls that intersect the box (not on top)

Right-Click on the control brings up the control property editor (multiple controls)

Right-Click NOT on top of a control will bring up a selection to add new controls

 Double-Click on the control brings up the control property editor (single control)

**Keyboard Actions**

 Shift with left-click selects / deselects multiple controls (one at a time)

 Ctrl with left-click selects / deselects multiple controls (one at a time)

 Ctrl-A selects all controls

 Ctrl-C copies the selected controls parameter to its paste holder

 Ctrl-D de-selects all controls

 Ctrl-I brings up the property editor

 Ctrl-M centers control in the middle of the screen (left to right only)

 Ctrl-N resets the screen for a new – erases all the controls on the screen

 Ctrl-O brings up the View Open selection box

 Ctrl-S brings up the View Save selection box

 Ctrl-V paste into selected controls, the parameter of the paste holder

 Ctrl-R toggles Show Real-Time Data

 Ctrl-P brings up the property editor

 Ctrl-Z Undo – the last 40 steps are saved

 Before Ctrl-V

 On entering the property editor

 On leaving the property editor

 Before control resize

 Before control move

 Before New View (Ctrl-N and File / New View)

 Before the add of any control

 Before the delete of an existing control

 Arrows – Move the selected control(s) 1 pixel in the selected direction.

 Arrows – With Shift - Move the selected control(s) 5 pixels in the selected direction

Definitions:

 Palette: Set when adding and editing the background. The palette is the

 'canvas' that you have to work on. ALL controls, including the

 background image are placed on the palette, and the location of

 ALL controls are referenced to the Upper / Left corner of the palette

REGARDLESS of the size of the screen you are using for CIQGUITool. The palette will show you its working size in the upper left corner of the working area and a border around. Neither of these will show up on the final view as displayed in CIQ GUI Views.

Background Image: Set when adding and editing the background. The

 background image is a 'template' that you lay on the palette to give

 an overall layout of the view. Typically this is a floor-plan,

 or a schematic of a piece of equipment. There is no requirement

 to have a background image. IF a background image is defined,

 it will be centered on the palette EVEN IF IT IS BIGGER THAN the

 palette. It is most efficient to put as much on the background as

 possible. All static labels, titles, lines, images, etc; anything that

 is not going to change as ControlIQ changes values. This will speed

 up the loading and decrease the amount of time it takes to refresh

 the screen.

 Controls: These are the components that you put on the palette like

 buttons, images, data-grids, browsers etc. These will always be

 on top of the background image (if defined)

 Class.Objects.Properties (COPs) – Referencing an Alias (ciqAlias)

A 'COP' is a reference to a piece of information from Control IQ. Some would refer to this as a handle. The 'Class' component is the 'type' of data you are looking for. In most cases this will be the point type

 Example: AI.OATemp.Value

 In general you do not have to specify a class.

 OATemp.Value is the same as AI.OATemp.Value

 If just the aliasname is given, .txtValue is assumed.

 OATemp is the same as AI.OATEMP.txtValue (or OATemp.txtValue)

 Image Files

 CIQGUITool supports the following file formats for images

 .bmp

 .gif

 .jpg / .jpeg

 .png

 .tif / .tiff

 .wmf

 .ico / .icon

Versioning: v2.4beta issued on 07/20/06

 v2.9beta updated on 11/14/07

 v2.9.2 beta update on 2/7/08

 v3.0 distribution on 11/1/2010

 v3.4 distribution on 1/21/2012

 Added support for Ctrl-C / Ctrl-V

 Added support for Arrow movement of controls

 Added support for Right Click context menu

 V4.0 beta on 10/1/2013

 AutoSave every 5 minutes

 Scaleable Views

 Background & Defaults – Maximum Zoom Factor

 Background & Defaults – Minimum Fontsize

 Background & Defaults – Default Label Forecolor

 Background & Defaults – Default Label Backcolor

 Added support to lasso controls

 Fixed AutoScale on Chart Control

 Fixed Show Realtime data bugs

 Fixed Label Autosize

 Added parent / child relationships (transparency and Zorder)

 Export / Import Views

 Makes .Bak of a view as you open it

 Allows deletion/removal of views from database

 Allows deletion/removal of images from database

 Added Settings / Color Picker to find color or any pixel

 Ctrl-C / Ctrl-V survives between views

 Labels

 Added support for rotated text (any angle)

 Added support for multiple aliases (CSV)

 Added support for ticker type display

 Charts / Titles

 ?Now 10/01/2013 14:00:00

 ?Today October 1, 2013

 ?Yesterday September 30, 2013

 ?LastWeek September 22, 2013

 ?LastMonth September, 2013

 ?ThisMonth October, 2013