SchrollTec

Time Module

Ignition 3rd Party Add-on

User Manual

Ver. 1.0

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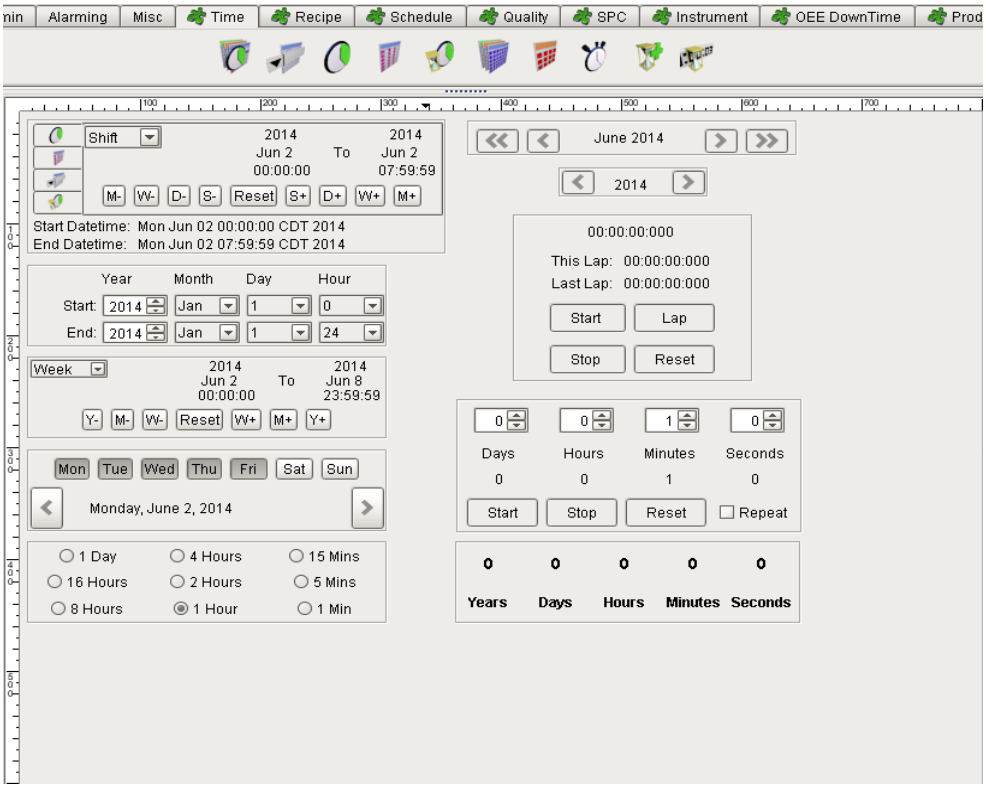
Intro:



Overview

The STC (SchrollTec Time Module) contains 10 time related GUI (graphical user interface) components that you can easily add to your Ignition Vision projects. The crown jewel of the component is the "Time Range Combo" component. I created this module due to the need for users to be able to get the historical/realtime data they need; really fast.

Once you understand the Time Range Combo component, you will wonder how you lived without it. It allows users to get specific and accurate time ranges so that the data they are looking at, be it in chart format or SQL populated tables, is for the exact date range they are interested in.

Upper Management can look at big picture Month by Month or Year by Year time ranges, and drill down to their hearts desire.

Managers will love looking at Shift by Shift time ranges or Realtime Ranges.

Maintenance Staff can use the Time Slicer feature to look at charts minute by minute to trace down what exactly happened last night to the compressors/air pressure at 3:42 in the morning.

Supervisors and Production Workers can look at Shift and Realtime Ranges to see realtime performance data.

The STC also works for selecting date ranges on the mobile module since there is no click and drag needed to use the component.

The STC also contains a GUI controllable Timer component "Timer Plus" and a Stopwatch/Lap Timer.

There is also a fairly customizable "Time Till The Big Game Style" "Countdown Clock" Component. And a Stopwatch/Lap Timer that has a dataset that holds the lap times for easy display in a table or chart.

Thank you for your interest, I hope you enjoy test driving this module and thank you for your business if you happen to choose to make the purchase.

Oh, and **be sure** to read the "Important Notes" section of this manual.

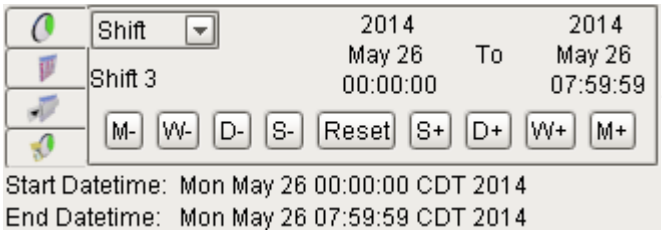
-Dustin Schroll

Component Descriptions:

Time Range Combo

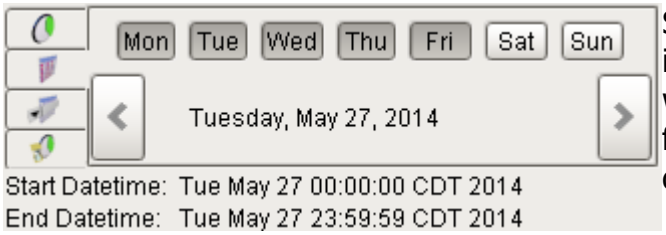
The TRC consists of the next four components all in one tab separated component for easy inclusion. You may also select in the property editor, whether to show the datetimes at the bottom of the component. The four examples below have them showing.

Time Slicer Tab:



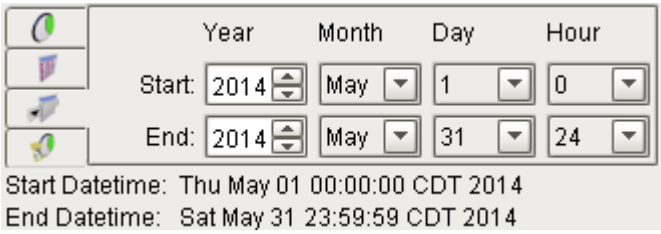
Select the primary slice size from the Dropdown menu and the appropriate time navigation buttons will be presented. Look at the Time Slicer Component Description for more details on this part of the TRC Component.

Day Hopper Tab:



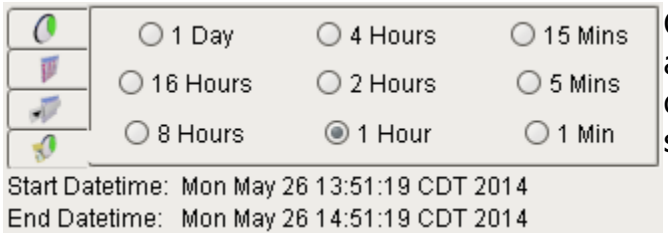
Select what days you are interested in (in the image on the left only weekdays are selected) and press the forward and back buttons to "Hop" day to day.

Time Range Dropdowns Tab:



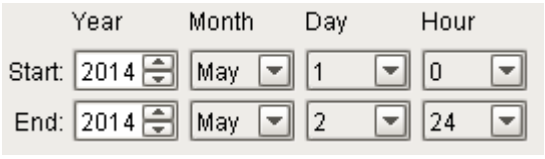
Select the start date you want on the top row of dropdowns and select the end date you want from the bottom row. If the start date comes after the end date, an invalid label that tells you that it is not a valid selection.

Realtime Range Tab:



Constantly refreshes so your charts and queries keep displaying current data. (refresh rate defaulted to 5 seconds)

Time Range Dropdowns

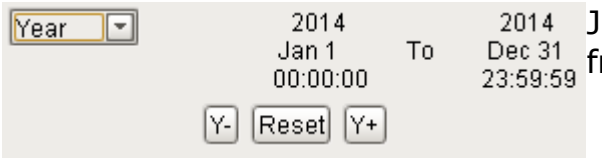


Choose a start datetime and an end datetime.

Time Slicer

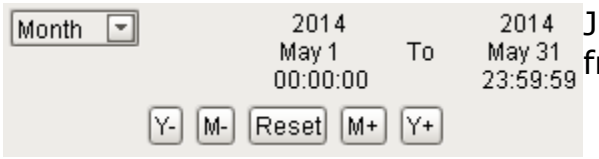
Shift mode is disabled by default, to enable it, set the appropriate shift related properties on the component. Your shift times or number of shifts and shift names can all be customized. And of course check on the Enable Slicing By Shift property to enable it.

Year Mode:



Jump year to year displaying the data from the entire year selected.

Month Mode:

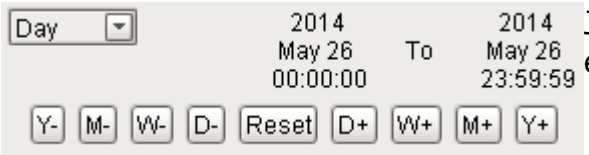


Jump month to month displaying data from the entire year selected.

Week Mode:

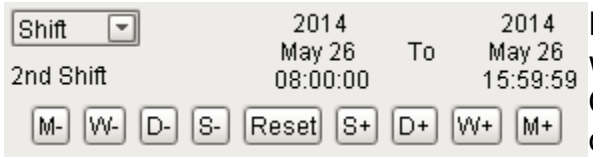
Jump week to week displaying data from the entire week selected.

Day Mode:



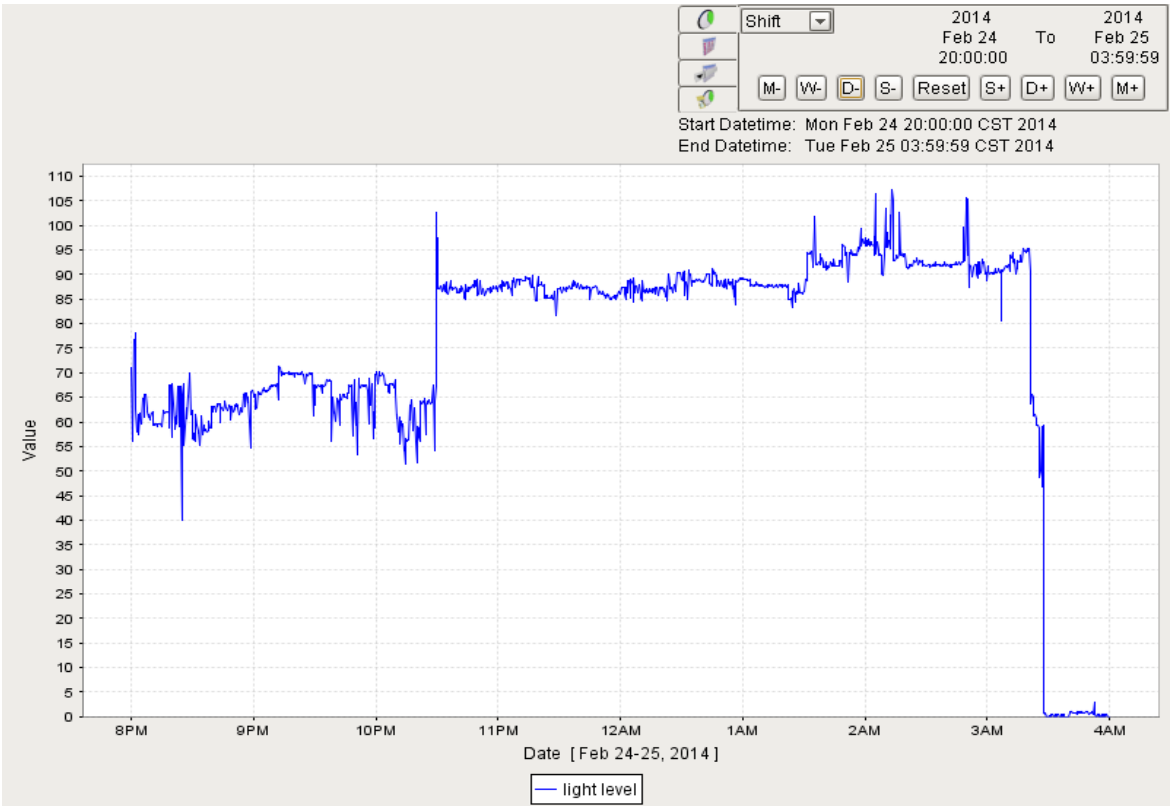
Jump day to day displaying data from the entire day selected.

Shift Mode:

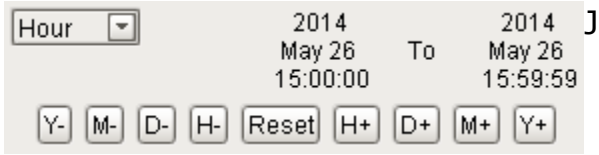


My favorite mode, very useful for seeing what is happening for each shift. Just Click S+ or S- to cycle through each shift, or Click D+ and D- to see how a just a certain shift does each day, one after the next.

Shift Mode can even support shifts that run through midnight as shown below.

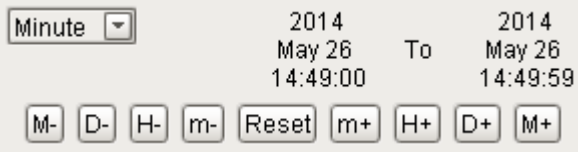


Hour Mode:



Jump hour to hour.

Minute Mode:

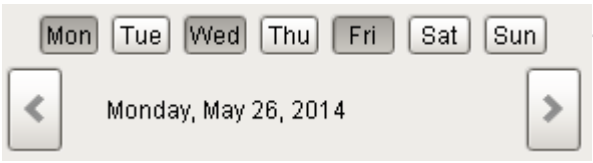


Jump minute to minute.

Button Label Meanings:

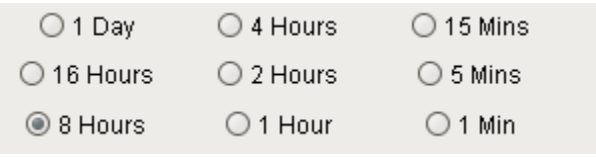
Y+	Go forward one year
Y-	Go back one year
M+	Go forward one month
M-	Go Back one month
D+	Go forward one year
D-	Go backward one year
S+	Go forward one shift
S-	Go back one shift
H+	Go forward one hour
H-	Go back one hour
m+	Go forward one minute
m-	Go back one minute

Day Hopper



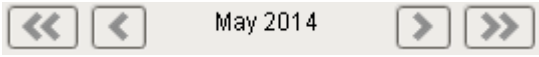
Jump day to day only on the days of the week selected along the top. The example to the left would only jump to Mondays Wednesdays and Fridays.

Realtime Range



Constantly selects the last (selected radio button's label) time range. The refresh rate is set to 5000 milliseconds by default, but it is changeable with the refresh rate parameter. You may want it slower if your database is slow.

Month Selector



Selects a month range. Useful on the tops of pages that display monthly data.

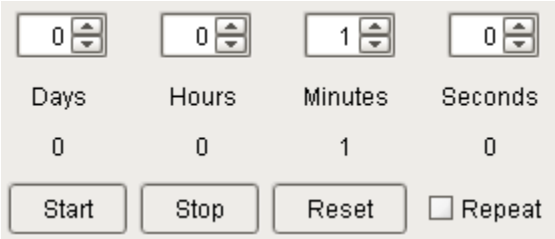
Year Selector

Selects a year range. Useful on the tops of pages that display yearly data.

Stopwatch

Stopwatch/lap timer that holds a dataset of the laps. You can chart realtime as you hit the lap button.

Timer Plus



Set the delay time, then hit start. Once finished repeat if repeat is selected. Has 3 output parameters: Timer finished, timer flip-flop and timer one-shot. The one shot stays true for 1 second after triggered.

Countdown Clock

Set this component's End Date property to the Date that you want the clock to end on. Now the component will display the time till the End Date. You can remove the years and seconds display elements if you choose to.

Component Useage:

I'll get to the point and show how to connect into the meat of the components. The "Start Date" and "End Date" properties. These two properties are available to pull from on the time selection type components.

Using the Start Date and End Date Properties:

(Applicable for: Time Range Combo, Time Slicer, Day Hopper, Realtime Range, Month Selector, and Year Selector. Countdown Clock has these two properties as well but their values are typically just set, not read from.)

On the applicable components, they will have the following two properties under thier property editor.

Start Date (the start datetime of the selected time range)

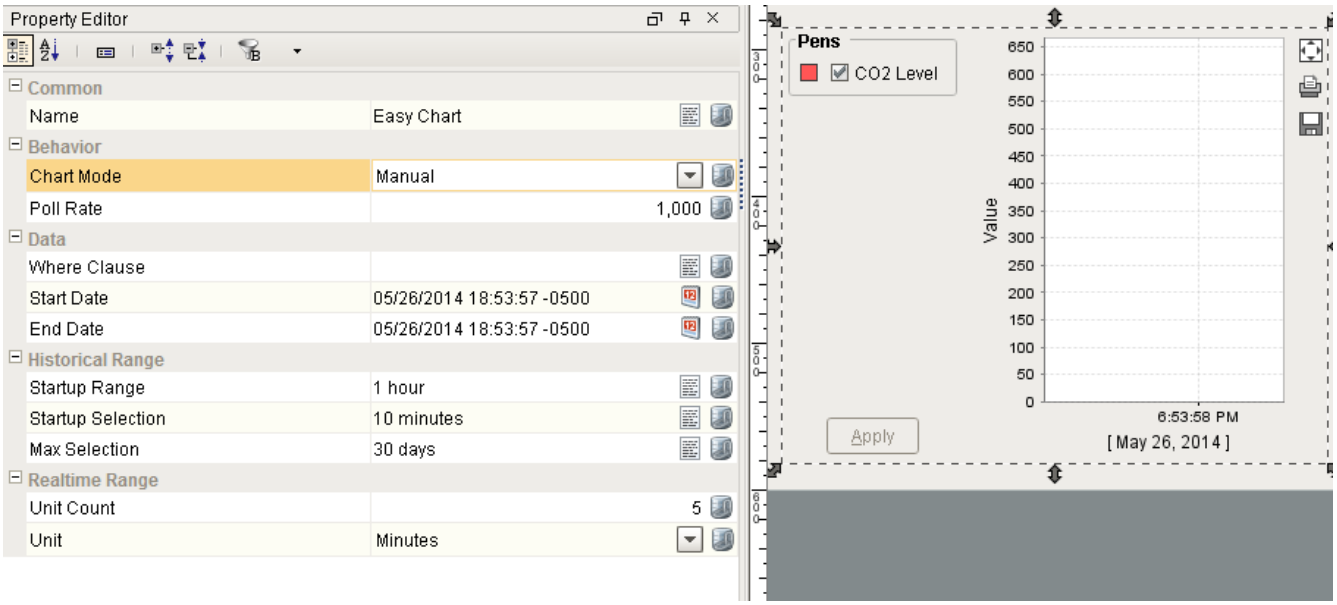
End Date (the end datetime of the selected time range)

These are accessable from other components and from expressions/sql queries.

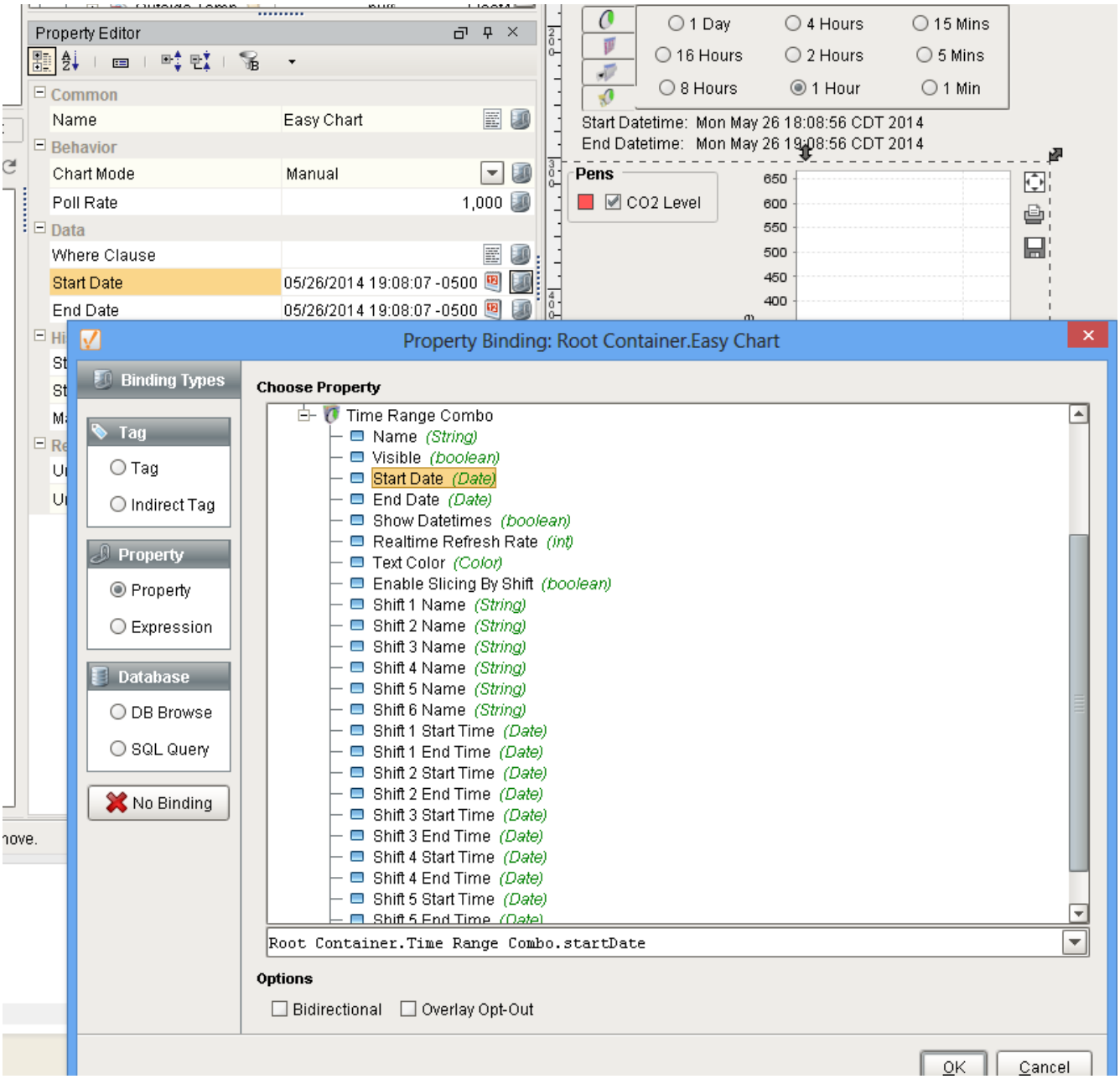
With An Easy Chart:

Add the Time component you want to the window you are designing, such as the Time Range Combo. Also add an Easy Chart.

Drag your historical tags into the Easy Chart like normal, then under the property editor on the chart, change Chart Mode to Manual.



Now you need to set the property bindings for Start Date and End Date. Use the "Property" Binding Type and expand the time selection component you added to in the Choose Property window.



Set Start Date to the Start Date Property and End Date to the End Date Property. It now should be properly linked.

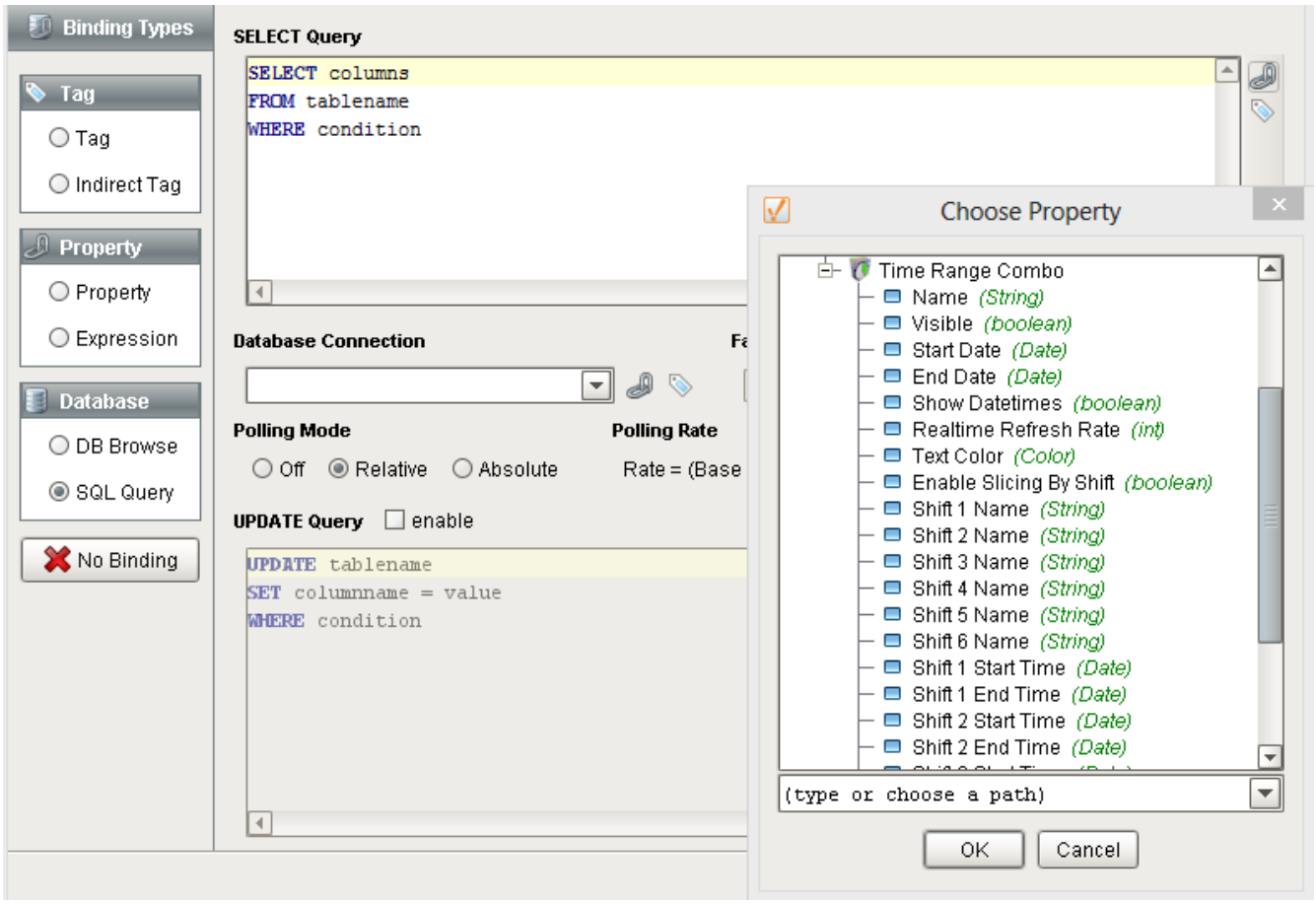
With A Chart/Bar Chart/Status Chart etc.

Add an applicable time component and add a chart to the window you are designing.

The Chart has a property called "Data". In a typical scenerio you can click on the property binding for "Data" and then Choose Tag History. Drag in the available historical tags you are interested in. Click on the "Insert Property Value" Button to the right of the "Start Date" field. Find your time range selection component, such as the Time Range Combo in the "Choose Property" dialog box. Click the little [+] box to the left of it and now you should see and be able to select the Start Date property. Do the same for the "End Date" field. Now most of the components have the ability to select large time ranges that are a year or longer in length. This more than likely will pull a huge number of data points if you do not **select a fixed sample size and set it to something like 3000**. That will limit the result set size and keep the chart from taking too long to load or running out of java heap space. Now you can click "OK" and your chart should be all linked up and ready to go.

With An SQL Query

In select query Property Bindings, you can choose properties to add to the where condition in your sql query.



The syntax of the query of course depends on the table you are querying and the type of database you are using. SQL syntax is currently outside of the scope of this document.

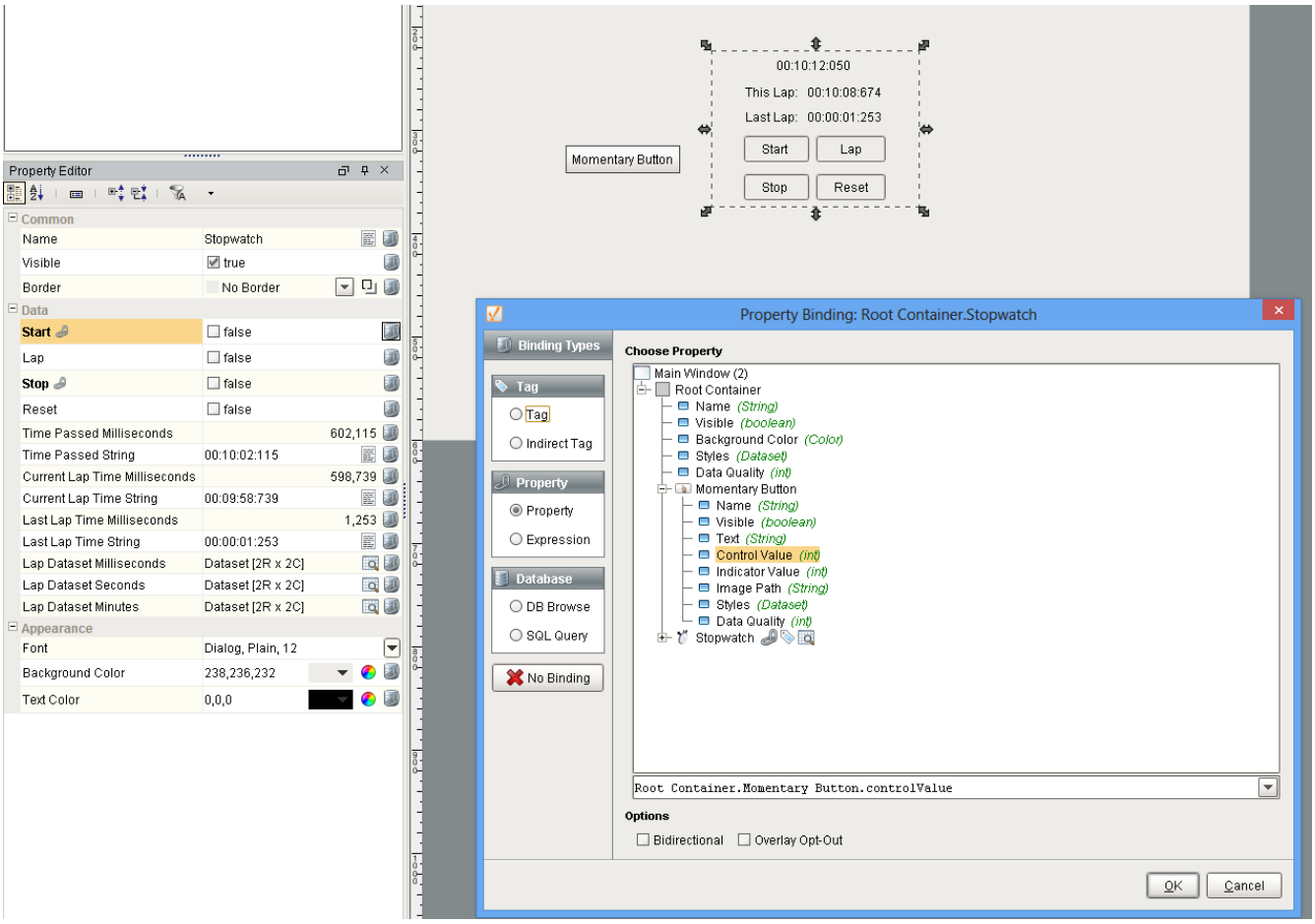
Linking to Client Tags

You may also link values from components to client tags that get updated when different time ranges are selected.

Using outside buttons to trigger the Stopwatch or TimerPlus Component

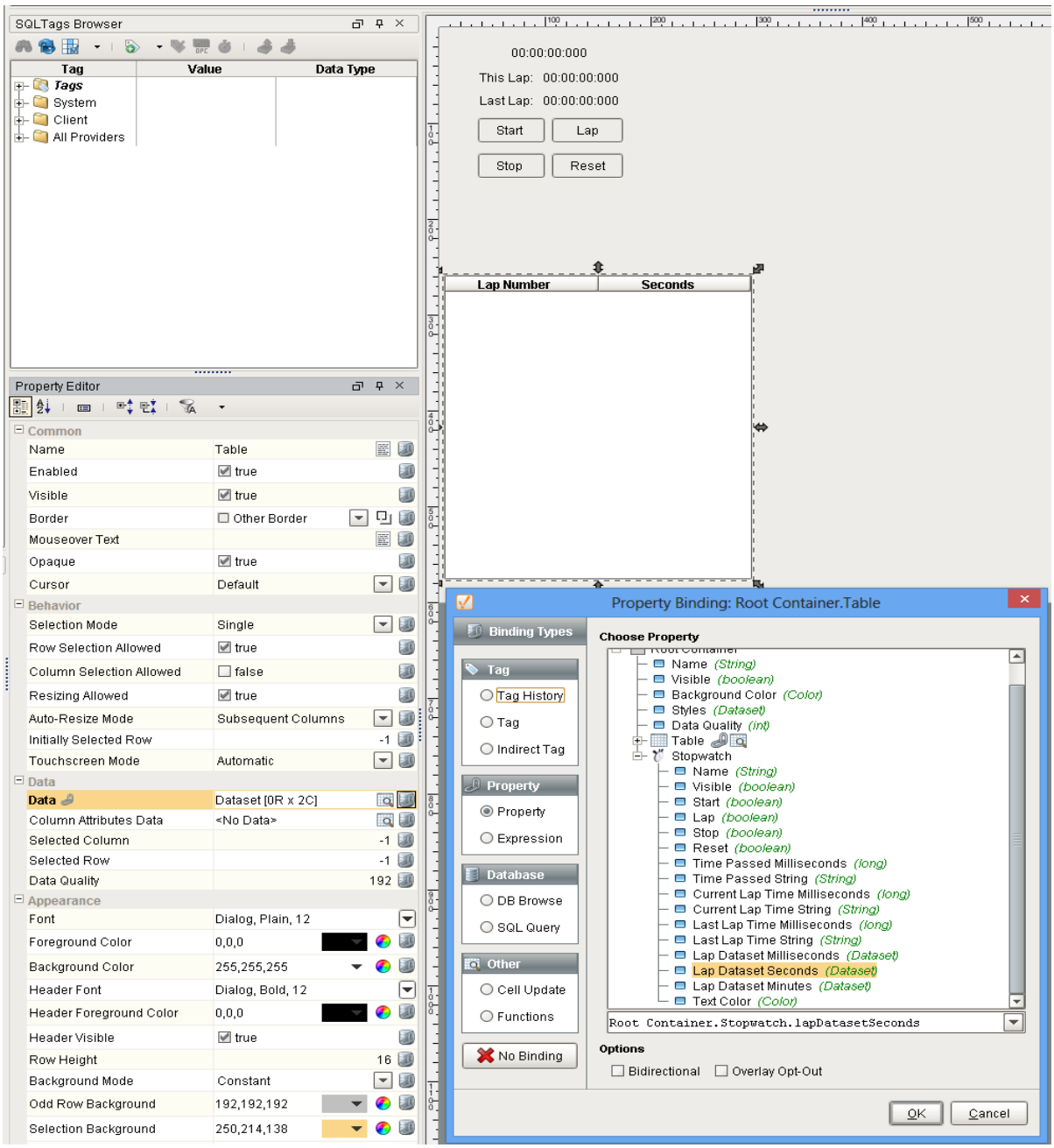
Perhaps you want to provide your own user interface for the timer and make the default one invisible. To trigger the buttons, create a Momentary Button for whatever button you want to trigger. If you want to then link it to perhaps your start button on the Stopwatch component, click on the Start property binding in the Stopwatch Component's Property Editor, then link it to the control value on

the appropriate Momentary Button. Now when you press the new Momentary Button, it will set the Start property on the Stopwatch Component to true, and start the Stopwatch. You can also link the fields of labels for getting values from the Components such as Current Lap Time.



Stopwatch Useage

The Stopwatch component has three datasets that can be used to display the lap data. There is one that keeps track of milliseconds, one for seconds (float values), and one for minutes (float values). You can pull these into charts and tables and they will be updated realtime. Below is a screenshot showing how to pull the Seconds dataset into a table.



Important Notes:

When using the supplied time selection components with a chart, make sure to use a ***fixed or interval sample size*** that makes sense for your application. An "on change" or "natural" sample size can cause the chart to cause java to run out of heap space, which can cause things to not work properly. This is since most of the components allow the users to select large time ranges. Be sure to test your project for these cases.