GraphWorX64
Using Grid Panels for Resizable Displays

APPLICATION NOTE

October 2015

Description: Guide to using GraphWorX64 grid panels for resizable displays.
General Requirement: Intermediate knowledge of GraphWorX64.

Introduction

As the resolution of target platforms for viewing HMI displays may vary greatly, there is a need to accommodate these different resolutions in a consistent manner. This is especially true if using web deployed HMI displays as the target platform may not always be the same resolution. Historically, the solution was to resize the whole HMI display to fit the available space. This however, did not always provide an appropriate user interface for the end user to work with. In GraphWorX64 it is still possible to resize the whole display, but now it also provides the ability to define a grid with zones which may be fixed or flexible. Flexible zones will grow or shrink to ensure the window fits the available space. This greatly improves the user interface for users on different target platforms with different resolutions.

Enabling Grid Mode

To define zones in GraphWorX64 display, you will first need to setup the GraphWorX64 display to use Grid instead of Canvas mode.

1. In a new GraphWorX64 display, on the ribbon select View and ensure that the Application Mode is set to Advanced Mode.

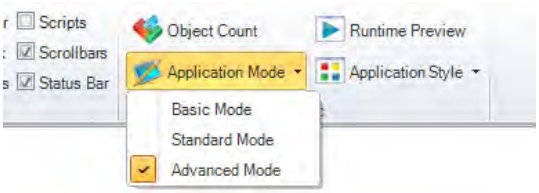

Figure 1 - Enable Advanced Mode

2. In GraphWorX64, select File → Preferences. Select General Settings and set the property 'DefaultNewRootObjectType' from 'Canvas' (default value) to 'Grid'. Once set, select File → New → Display (.gdfx). You will now see in the display properties a new set of properties under the heading 'Measurements - Grid'

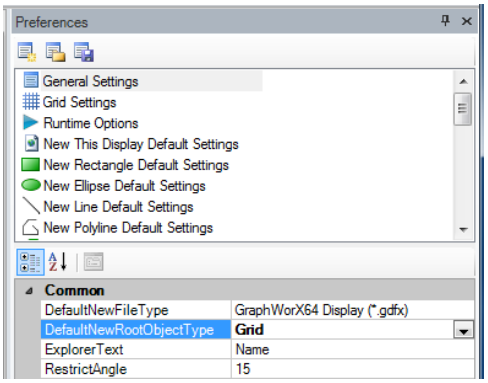

Figure 2 - Enable Grid Mode

Creating a Grid

Once you have enabled Grid mode in GraphWorX64 you will need to define rows and columns definitions for the GraphWorX64 display which will create your grid. These will need to be set under the 'Measurements - Grid' section in the display properties.

The row and column definitions allow you to define a number of rows and columns which each have the following settings:

Rows

- Height - Height of the Row definition
- MinHeight - Minimum height of the Row definition
- MaxHeight - Maximum height of the Row definition

Columns

- Width - Width of the Column definition
- MinWidth - Minimum width of the Column definition
- MaxWidth - Maximum width of the Column definition

Row and Columns

- GridUnitType – What unit to use for the grid length values. Options are Auto – size based on contents, Pixels – absolute size and Star – weighted proportion of available space

The settings you define for rows and columns will depend on what you are planning on showing in each grid e.g. for an Asset Navigator tree control you may want to set the GridUnitType to Auto and also specify a maximum width. This way it can grow as the tree is expanded so the whole tree is visible.

Adding Controls and Objects

Any controls/objects added to the GraphWorX64 display will always default to Row 0 Column 0 in the grid. You will need to define for each object what grid it should be a part of.

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1. For each object or control you are adding to GraphWorX64, enter the required settings for where the control should be located. The settings are under the 'Measurements – Grid' section in the properties of the object or control. The settings are:
    - Row - Zero based index of the Row
    - Column - Zero based index of the Column
    - RowSpan – Number of rows to span within a Grid
    - ColumnSpan – Number of columns to span within a Grid
2. For any GraphWorX64 controls e.g. GraphWorX64 Viewer, AlarmWorX64 Viewer, to get it to fill the size of the grid it is applied in set the Width and Height properties of the control to Automatic.

    NOTE: The quickest way to do this is to delete the values for Width and Height that are currently entered so it is left blank and press Enter. This will set the value to 'Automatic' and will fill the size of the grid it is part of.

3. For any grouped objects or symbols, it is recommended to add a Canvas Panel in the grid first and add the grouped objects and symbols to the Canvas Panel. This is because these objects will center themselves to the grid that they are applied to and cannot be positioned, so using a Canvas Panel will allow you to position these on the Canvas Panel without being affected by the grid settings.

    NOTE: The quickest way to do this is to highlight all the grouped objects and symbols you want to add to a using the Explorer Tree. They should appear under the Canvas Object in the tree if moved correctly.

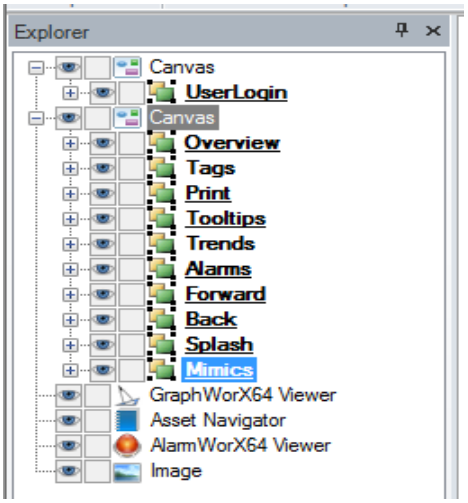

Figure 3 - Canvas Panel Containing Symbols

5. The latest 10.90 release enables user to organize objects in grid panel with drag and drop support. While defining index of the row and column is still an option, user can simply click on the target object and drop it to the desired cell in the grid before releasing the mouse.

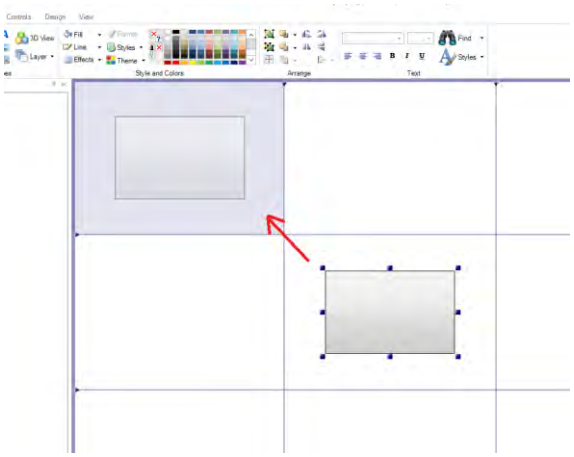

Figure 4 - Drag and drop

Example Display

Below is an example of a display setup using Grid mode.

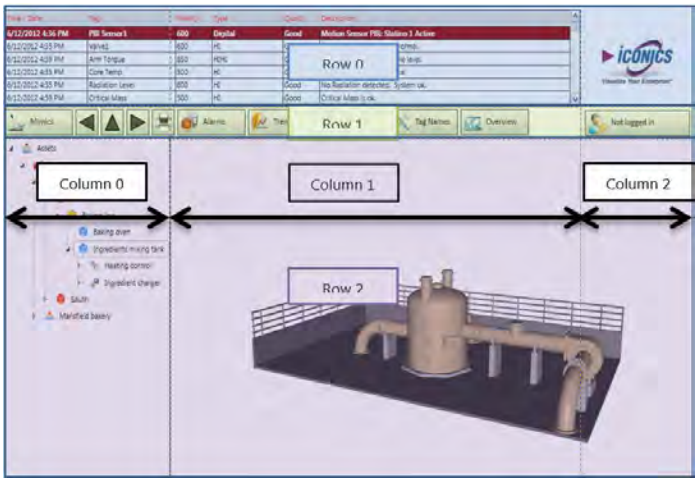

Figure 5 - Example Display

At the top, two rows (Row 0 and Row 1) have been defined to contain an alarm banner, a logo, and navigation buttons. Both of these have been specified to use fixed pixel size. This was achieved by setting the rows to use GridUnitType of Pixel and defining the required the Height and MaxHeight. Below these rows is a third row (Row 2) which has been given a flexible height to allow it to grow and shrink as this row contains a Tree

Navigator and GraphWorX64 Viewer control. This was achieved by setting the GridUnitType to Star.

Three columns have also been defined. The first column (Column 0) has been configured with GridUnitType of Auto with a MaxWidth value defined. This is so the Tree Navigator control in the column can grow as the tree is expanded. Setting a MaxWidth value ensures that the tree does not grow too large to impact on the rest of the columns. The next column (Column 1) is set to be flexible to allow it to grow and shrink to fit the available space and the last column (Column 2) has been set with fixed pixel size. Column 1 contains a GraphWorX64 Viewer control and has been set to span to Column 2. This allows the GraphWorX64 Viewer control to use as much of the available space as possible.

Summary

Using the Grid mode option for GraphWorX64 is a useful way to ensure that displays are capable of loading on different target platforms in a uniform manner, as well as providing a consistent user interface experience.