OxPAGE DESIGN GUIDE

Contents

Powered by
sedona
FRAMEWORK™

OxBase component

OxBase is central to R-ION graphics functionality

OxBase must be present under platform service (and nowhere else)

R-ION oxPage Design Guide
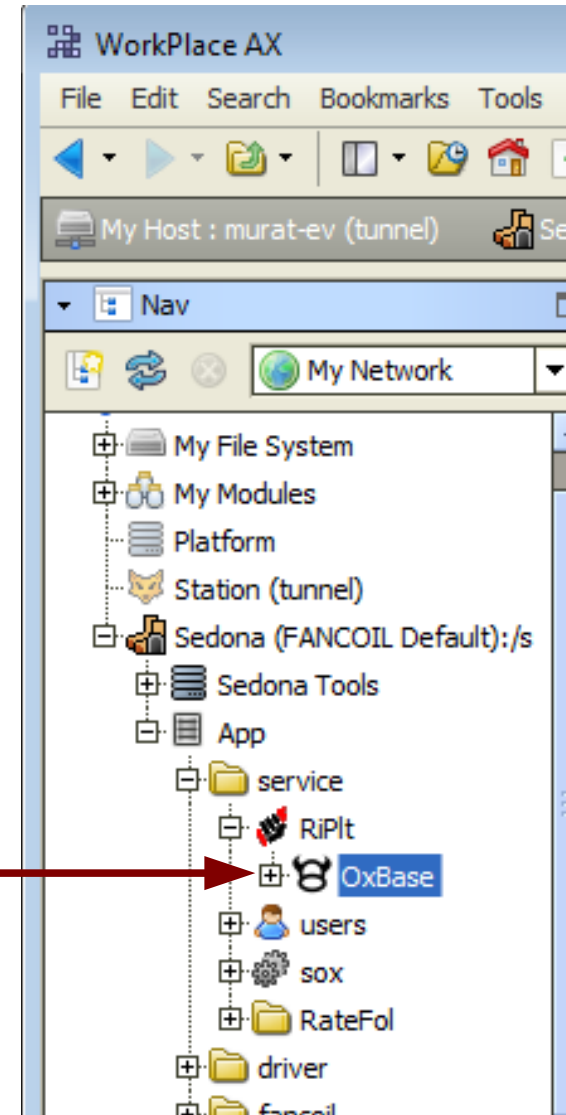
HomePageId property

This determines the oxPage that will be displayed on power-up.

- Do not set this directly. It is not a config property and will not be saved.

- The correct implementation is to establish a link :
  - from an oxPage's pageId slot
  - to oxBase's homePageId slot

- In this way, you will not need to worry about the componentId assigned automatically (outside your control) to an oxPage component. The link will provide the necessary information to the oxBase component.

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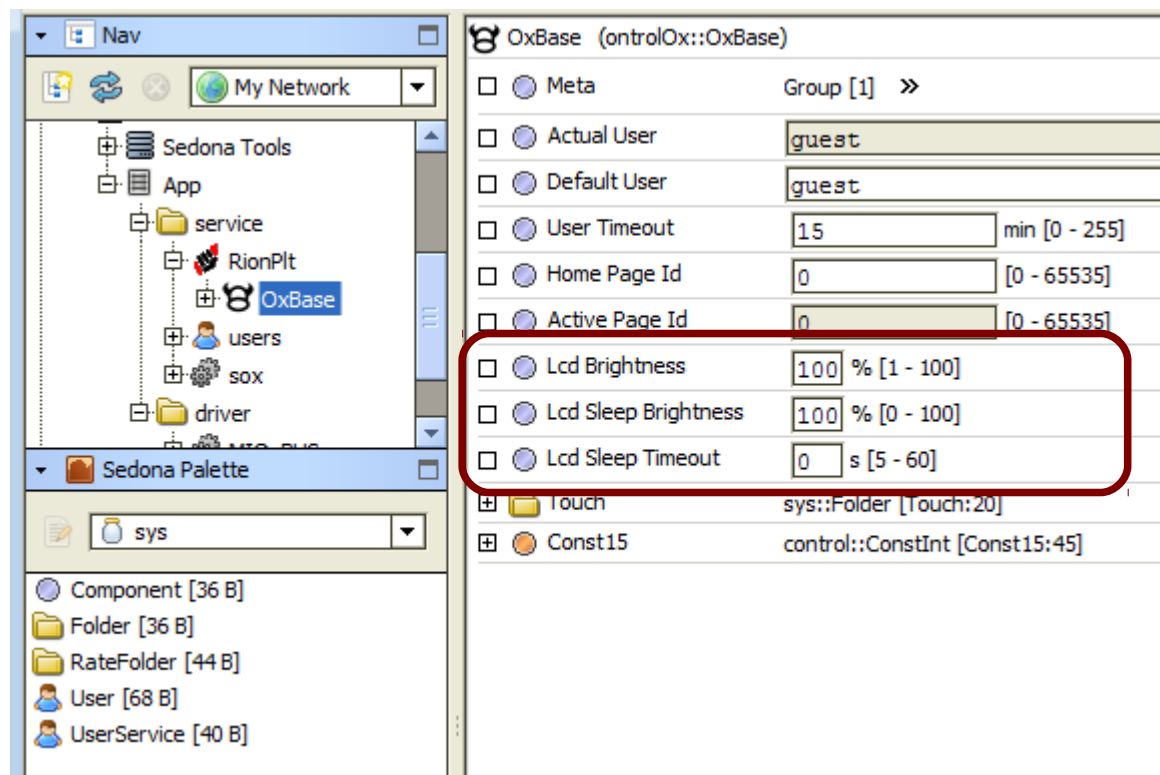
OxBase Component
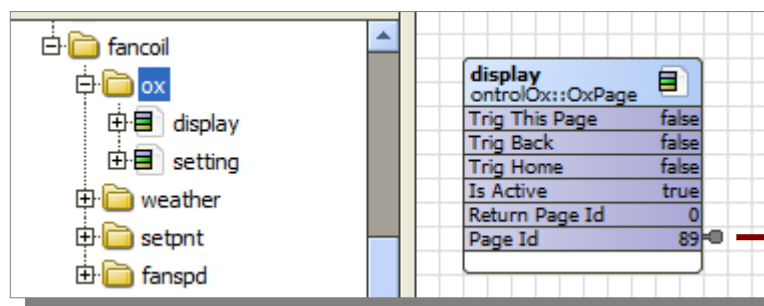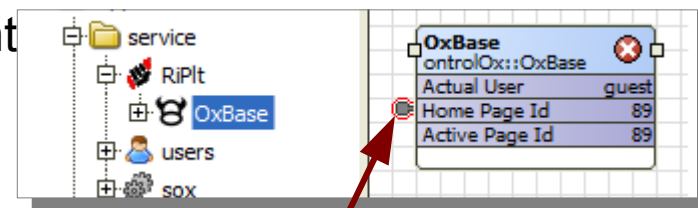
LCD Brightness
Brightness level, in percent, during normal use

LCD Sleep Brightness
Brightness level after a period has elapsed with no user interaction.

LCD Sleep Timeout
The period, in seconds, that the display will wait for a user interaction before activating the sleep brightness level

Note: These settings may affect temperature measurement adversely.
Do not set a long timeout period, or a high sleep brightness level.
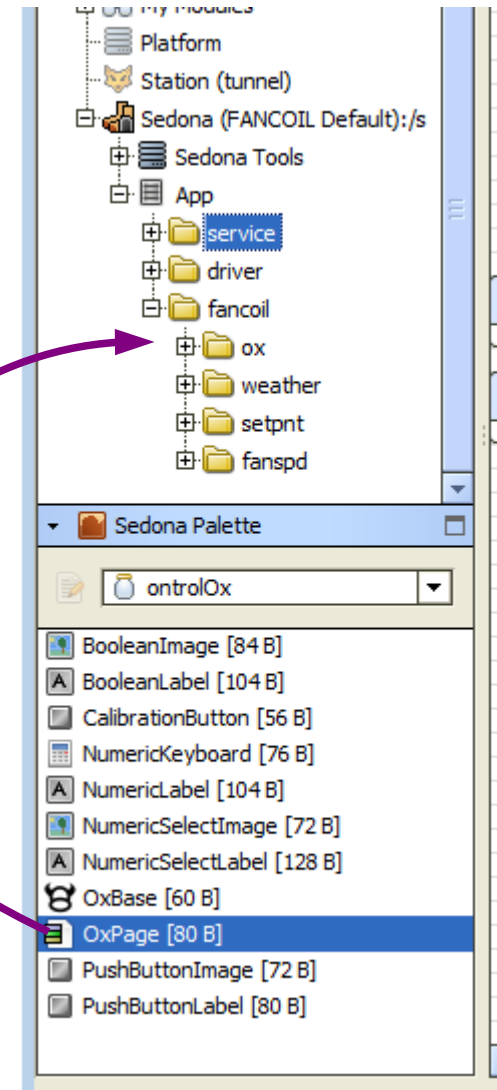Recommended values:
Sleep brightness : 0%
Sleep timeout : 20 seconds

Adding a new page

- In the Sedona Palette side bar, select ontrolOx palette from the dropdown box.

- Drag & Drop an OxPage component from the palette to any location in your App

- Double-click on the new OxPage to open the oxEditor view

OxEditor

drag&drop

My Modules
- Platform
- Station (tunnel)
- Sedona (FANCOIL Default):/s
  - Sedona Tools
  - App
    - service
    - driver
    - fancoil
      - ox
      - weather
      - setpnt
      - fanspd

Sedona Palette

ontrolOx

- BooleanImage [84 B]
- A BooleanLabel [104 B]
- CalibrationButton [56 B]
- NumericKeyboard [76 B]
- A NumericLabel [104 B]
- NumericSelectImage [72 B]
- A NumericSelectLabel [128 B]
- OxBase [60 B]
- OxPage [80 B]
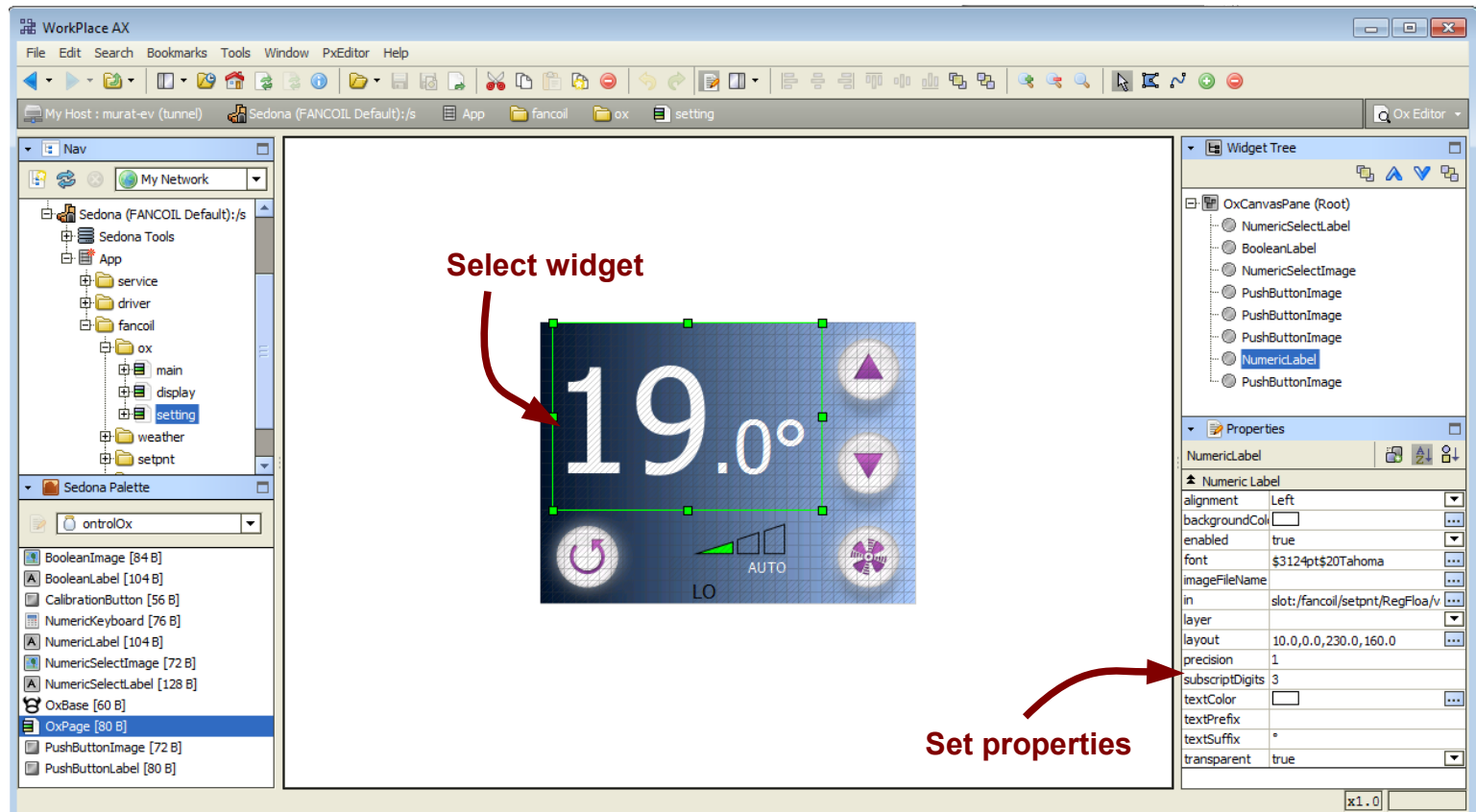- PushButtonImage [72 B]
- PushButtonLabel [80 B]

OxEditor view

Double-clicking on an OxPage component in the app tree opens the oxEditor view.
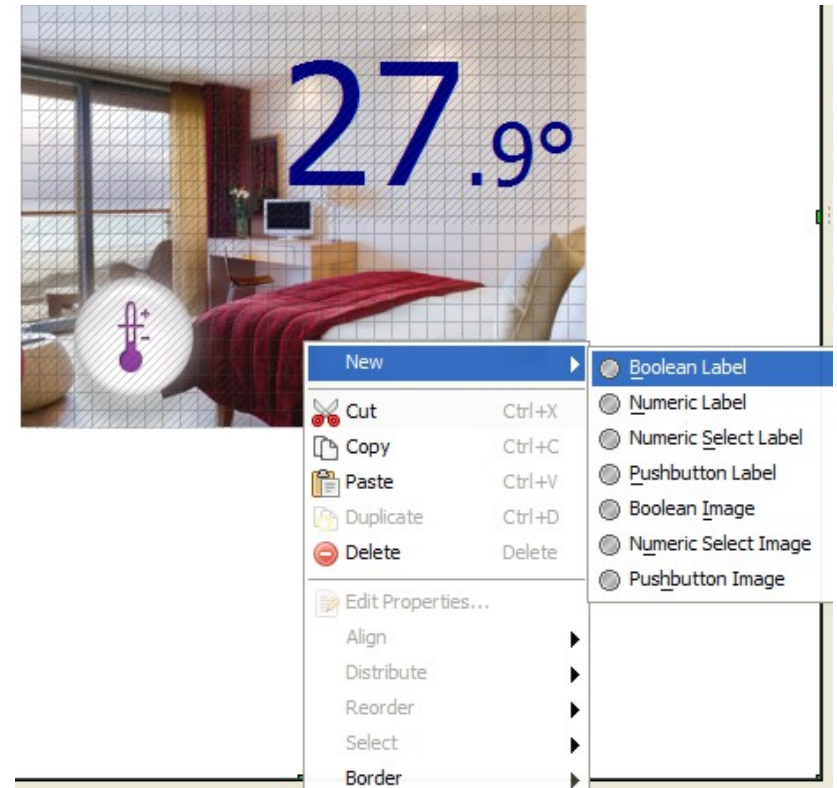
OxEditor view is used to edit RION graphics (oxPages).
Workflow is very similar to Niagara px graphics design, with some limitations.

Adding widgets

OxEditor

ADDING WIDGETS

- right-click on an empty area of the design window,

- click New,

- select from the list of available widgets.

Ox Widgets

NumericLabel	Displays a numeric data value
BooleanLabel	Displays one of two fixed texts, depending on a boolean value
NumericSelectLabel	Displays one of a range of fixed texts, depending on a <u>integer</u> value
BooleanImage	Displays one of two images, depending on a boolean value
NumericSelectImage	Displays one of a range of images, depending on a <u>integer</u> value
PushbuttonLabel[1]	Displays a fixed text that can be touched to perform an action
PushbuttonImage[1]	Displays an image that can be touched to perform an action
NumericLabelSet[2]	Displays a numeric value. Allows editing of the numeric value through a numeric keypad.
TimeLabelSet[2]	Displays a time value in the format hh:mm. Allows editing the value through a numeric keypad.

[1] Starting with OntrolOx kit version 1.06, most widgets have the ability to perform as buttons, mostly eliminating the need to use the two pushbutton widgets.

[2] Prior to OntrolOx kit version 1.06, this functionality was achieved with different widgets.
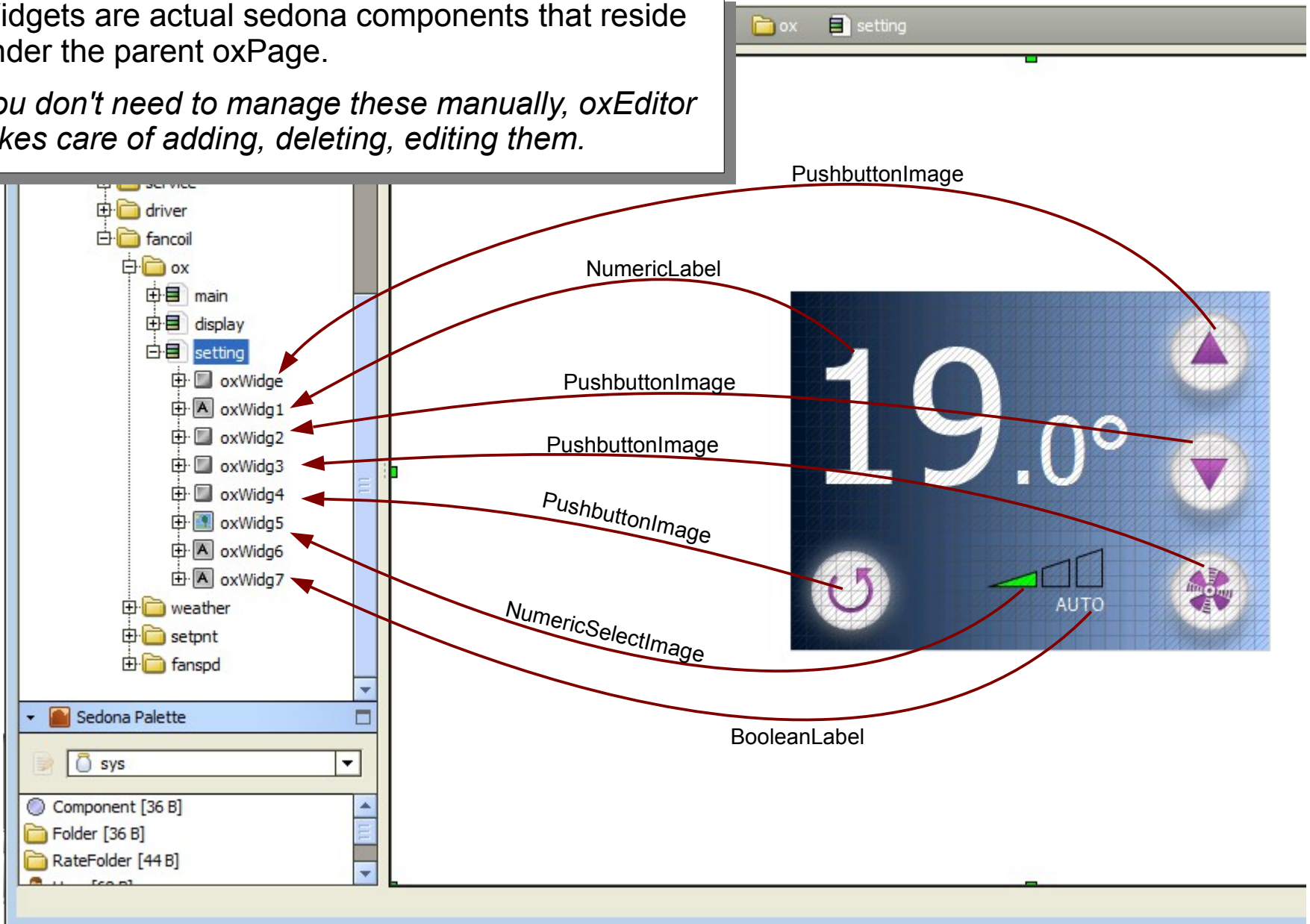
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Ox Widgets

Widgets are actual sedona components that reside under the parent oxPage.

You don't need to manage these manually, oxEditor takes care of adding, deleting, editing them.

PushbuttonImage

NumericLabel

PushbuttonImage

PushbuttonImage

PushbuttonImage

NumericSelectImage

BooleanLabel

Ox Widget Properties

Some specific OxWidget properties

Most oxWidgets and properties are exactly similar to standard Niagara px widgets or are intuitively understandable.

A few, though, may require explanation. These are covered in the following pages, specifically for the following widgets:

- NumericLabel

- NumericSelectLabel

- NumericSelectImage

- NumericLabelSet

- TimeLabelSet

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AN003 RevE

Numeric Label

labelText

Fixed text can be added before and/or after the live numeric value.

In the example below,
- the "Room : " prefix is added before
- the degree sign (°F) suffix is added after
the temperature value.

Precision (number of digits after the decimal point) can also be set.

backgroundColor / transparent

BackgroundColor is painted only if 'transparent' is set to false.

subscriptCharacters

Number of characters from the right to display at half size.

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NumericSelectLabel usage

text

The text property should contain a range of texts, separated by semicolon (';')

The widget selects the display text from this range, based on its input data value.

Example: OFF;LO;MED;HI;

0: OFF
1: LO
2: MED
3: HI

The selection is always zero-based, you can not change this.

Always use a final semicolon to terminate the text range.

Numeric Selact Image

usage

Image : Select the first one of a series of images. This is the image to be used when the linked data value=0. Its name *must* end with a '0'.

Subsequent images must use the same name, with only the last character changing to indicate the index value.

MaxIndex : This is used to determine how many image files need to be transferred to/from the device.
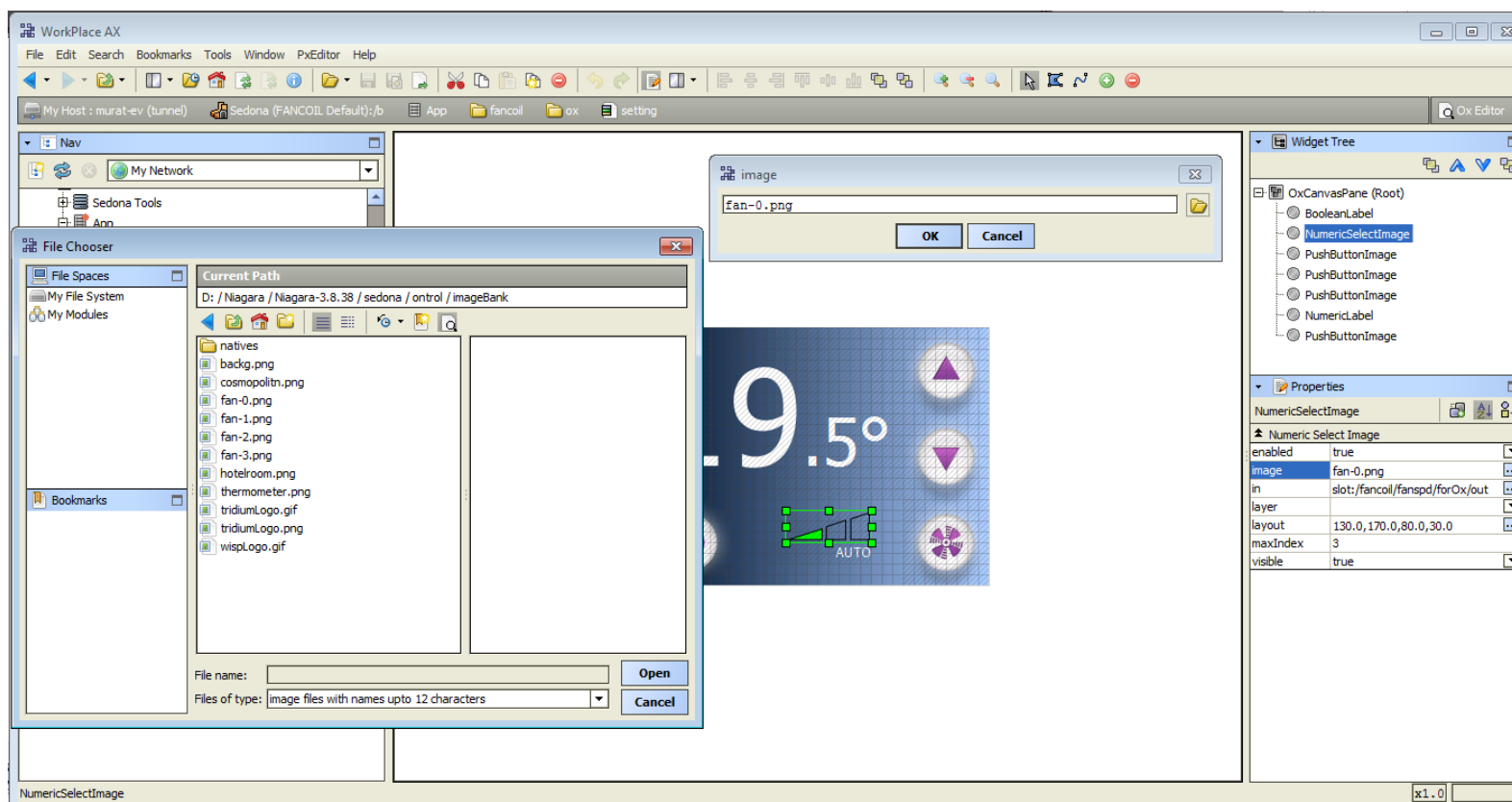
This widget is typically used with a RegFloat component (in ontrolControl kit) to display and modify non-volatile register values.

OPERATION

- This widget will display the value of the RegFloat.

- When touched, a full screen numeric keypad will cover the oxPage and a new value can be entered by the user.

- If the user enters a new value and touches ENT, the new value is saved and the display reverts back to the original oxPage.

- If the user touches ESC, the old value is not changed.

BINDINGS

The bindings between this widget and a RegFloat component should be made as follows:

- in property of the widget <<< value slot of the RegFloat

- out property of the widget >>> the in slot of the RegFloat

Default numeric value editing view

OBSOLETE

NumericLabelSet

This widget is typically used with a RegFloat component (in ontrolControl kit) to display and modify non-volatile register values.

OPERATION

This widget will display the numeric value of associated slot.

When touched, a full-screen numeric keypad will cover the oxPage and a new value can be entered by the user.

If the user enters a new value and touches ENT, the new value is saved back to the associated slot.

If the user touches ESC, the old value is not changed.

min and max properties can be set to limit user input range.

BINDINGS

There is only one binding to the 'in' slot of this widget.

The changed value is written back to the same linked slot.

Default
numeric value
editing view

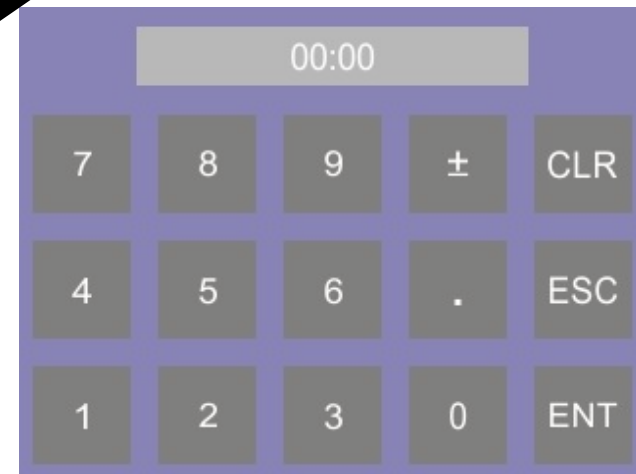[1] Available starting with OntrolOx kit version1.06

This widget is typically used to display time values in the format "hh:mm"

OPERATION

- This widget will display the value bound to its <u>in</u> property, interpreting it as "minutes after midnight"

- When touched, a full screen numeric keypad will cover the oxPage and a new time value can be entered by the user

- If the user enters a new time and touches ENT, the new value is saved back to the bound component/slot

- If the user touches ESC, the old value is not changed.

Default time value editing view

This widget is typically used to display time values in the format "hh:mm"

OPERATION

• This widget will display the value bound to its <u>in</u> property, interpreting it as "minutes after midnight"

• When touched, a full screen numeric keypad will cover the oxPage and a new time value can be entered by the user.

• If the user enters a new time and touches ENT, the new value is saved back to the bound component/slot

• If the user touches ESC, the old value is not changed.

Default time value editing view

[1] Available starting with OntrolOx kit version1.06

OxPage design and editing workflow is very similar to standard Niagara px pages. There are, however, some crucial differences that you need to understand.

- Data binding

- Font handling

- Image handling

- Layering

- File transfers

- Buttons

These are explained in the following pages, except buttons, which are subject to a separate document.

Data Binding

Binding widgets to live data values

The 'in' slot of an oxWidget enables it to receive live data values from another sedona component.

The oxEditor provides a user-friendly way to link this 'in' slot to another sedona component.

Just click on the 'in' property of a widget, and you can select the source slot freely from the component tree of your App.

The linking will be automatically done for you.

2 Click 'open' button

1 Click 'in' property

3 Select slot from component tree

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RION uses special native font files, which are typically transferred to the device during page design.

When you click on a oxWidget's <u>font</u> property, you will be presented with a list of fonts available on your system.

fontBank folder
Available RION font files are stored in a special folder:
{Niagara Installation}/sedona/ontrol/fontBank
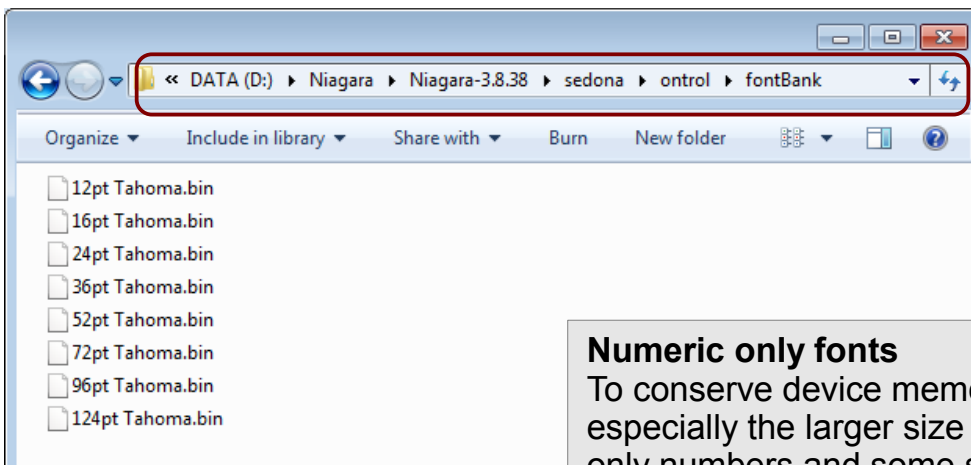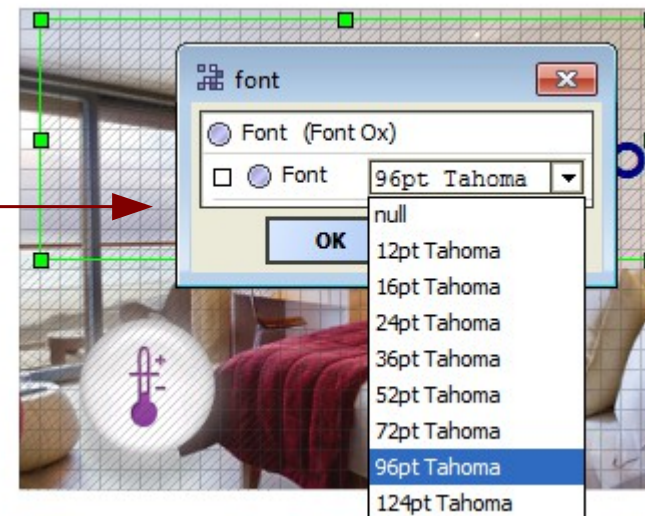
- You can use GIF, JPG or PNG images

- Your image must be in the imageBank folder
{Niagara Installation}/sedona/ontrol/imageBank

- The name must be at most 12 characters long

Using images

Images

2 Click 'open' button

1 Click 'image' property

3 Select file from imageBank folder

Notes on images

Images

Color Depth

When you save an OxPage, the images are converted to a native format before being transferred to the device. This may cause a reduction in color depth.
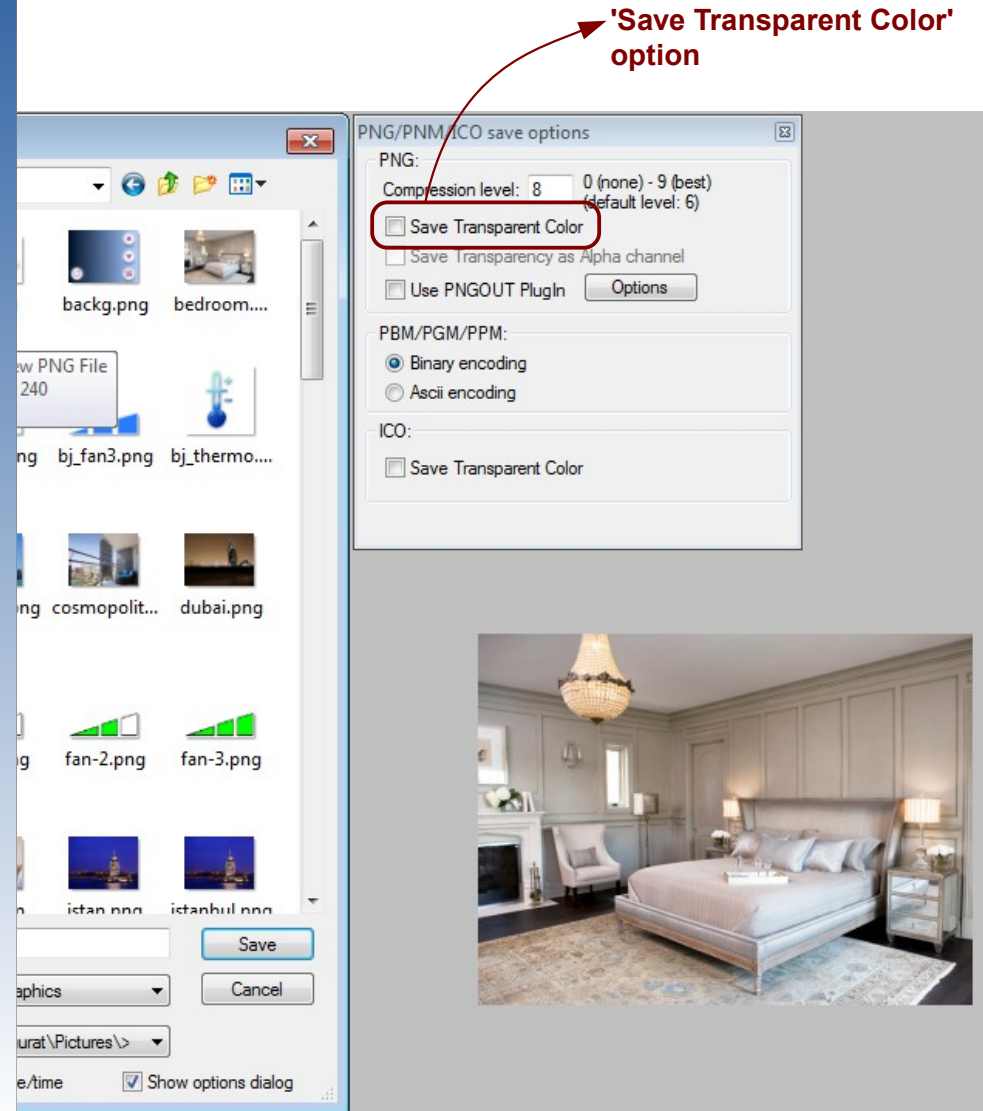
(The native format supports 65535 colors)

Transparency

When images containing transparency information is converted to native format for saving to device, they will result in considerably larger files.

Many image editing programs will let you choose whether you want to include transparency when saving an image. If you know you don't need transparency, make sure you save your image without transparency info.

Example on right from "IrfanView" software

'Save Transparent Color' option

PNG/PNM/ICO save options

PNG:
Compression level: 8   0 (none) - 9 (best)
(default level: 6)

☐ Save Transparent Color
☐ Save Transparency as Alpha channel
☐ Use PNGOUT PlugIn   [Options]

PBM/PGM/PPM:
◉ Binary encoding
○ Ascii encoding

ICO:
☐ Save Transparent Color

backg.png   bedroom....

w PNG File
240

ng   bj_fan3.png   bj_thermo....

ng cosmopolit...   dubai.png

ng   fan-2.png   fan-3.png

istan.png   istanbul.png

[Save]
[Cancel]
...aphics
...urat\Pictures\>
...e/time   ☑ Show options dialog

Layering

There is no layering !

You should never place overlapping widgets on an oxPage. There is no logical way to guarantee in which order the widgets are painted. Even if your page view looks right, it might well change after the next save or after an update. So,
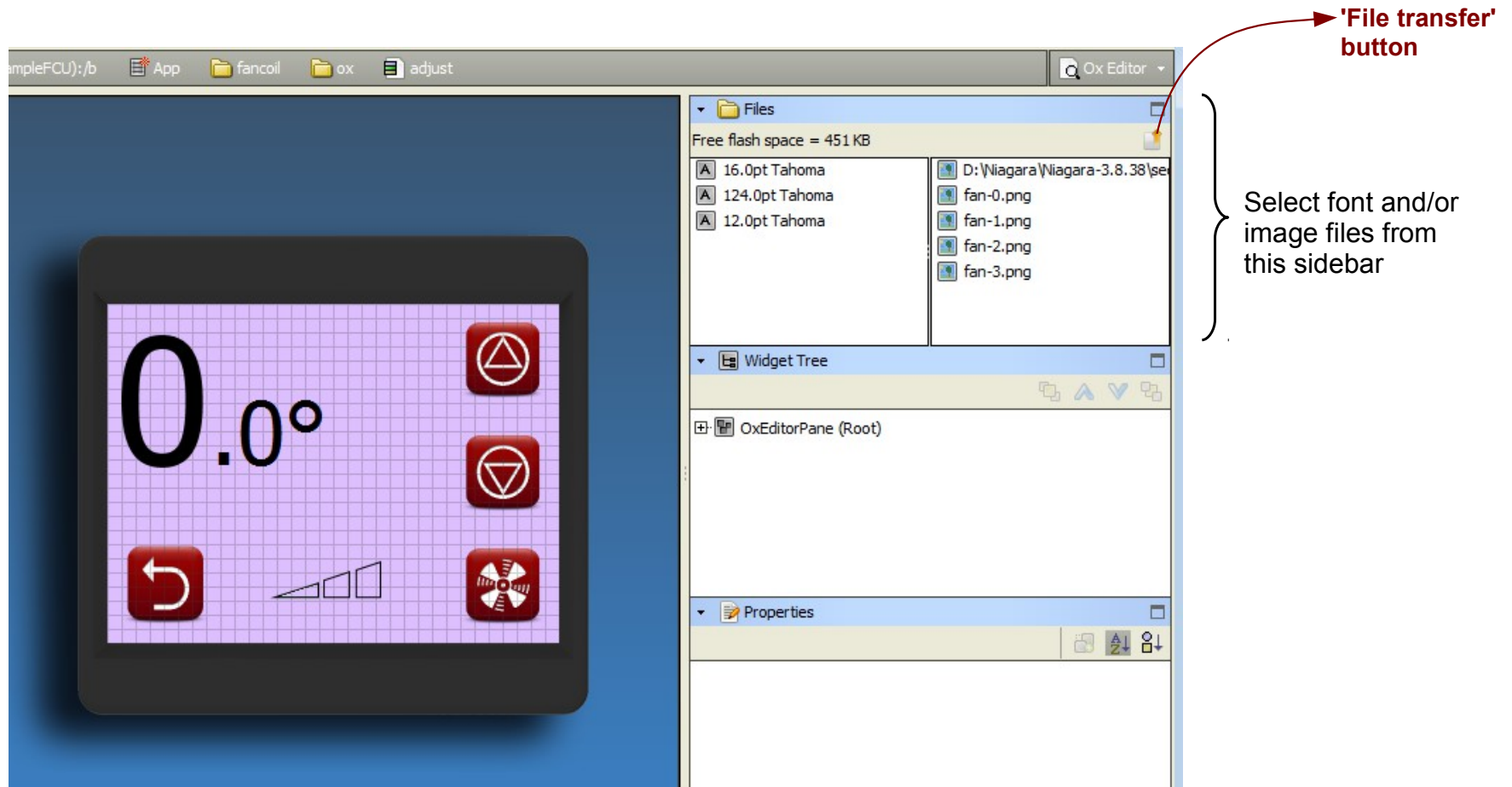
*** AVOID OVERLAPPING WIDGETS ***

File transfers

File Transfers

Your oxPages will be using a number of font and image files. These need to be transferred to the device to be displayed on the touch-screen.

Use the Files sidebar to select and transfer files to the device.

'File transfer' button

Select font and/or image files from this sidebar

File transfers

IMPORTANT MEMORY WARNING

As you work on your oxPage designs, you will have transferred many images and fonts to the device, some of which are probably not being used. (You tried something, changed your mind, tried another image...)

Since the oxEditor transfer doesn't delete any existing files from the device, you might run into a memory issue at some point.

To reclaim memory :

- Double-click on the RionPlt service to open OxFileTransfer view

- Click the button labeled 'Cleanup device memory'

This will first clear all files from device memory, then transfer only the required ones, thus reclaiming space.

Ox pages and widgets can be categorized and password protected.

The security scheme makes use of the standard Sedona UserService permissions.

To setup password-protected pages:

1) Double-click on the 'users' service and:
   - add additional user(s) with unique[1] numeric[2] passwords.
   - set read/write group privileges for these new users[3]

2) In OxEditor, set the 'meta' property of widgets (typically buttons) to limit access to certain groups.

When a user clicks (touches) a security-limited button, he/she will be presented with a numeric keypad to enter the password. The hyperlink will work only if the entered password matches a user with access permissions for the set category.

___

Password protection

Protected pages
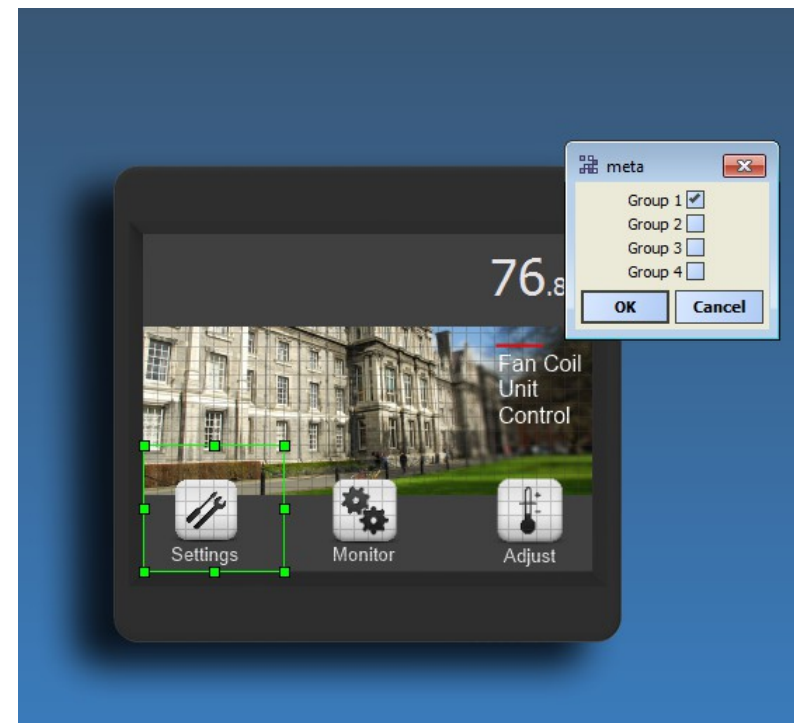
[1] The password for each user needs to be unique. Do not use the same password for more than one user.
[2] The passwords need to be numeric. Do not use letters. Only digits are allowed.
[3] All widgets, components and pages are member of Group1 by default, unless specifically modified.