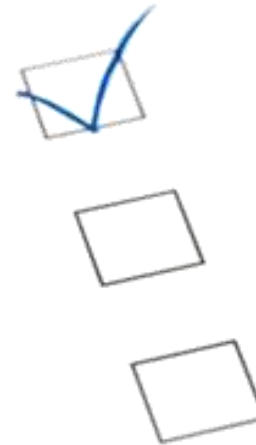


# *Themes, Visual Classes and More*

PxPlus 2017 (v14) and PxPlus 2018 (v15)

# Agenda

- User Interface Overview
- Themes
- Visual Classes
- Custom Title Bars



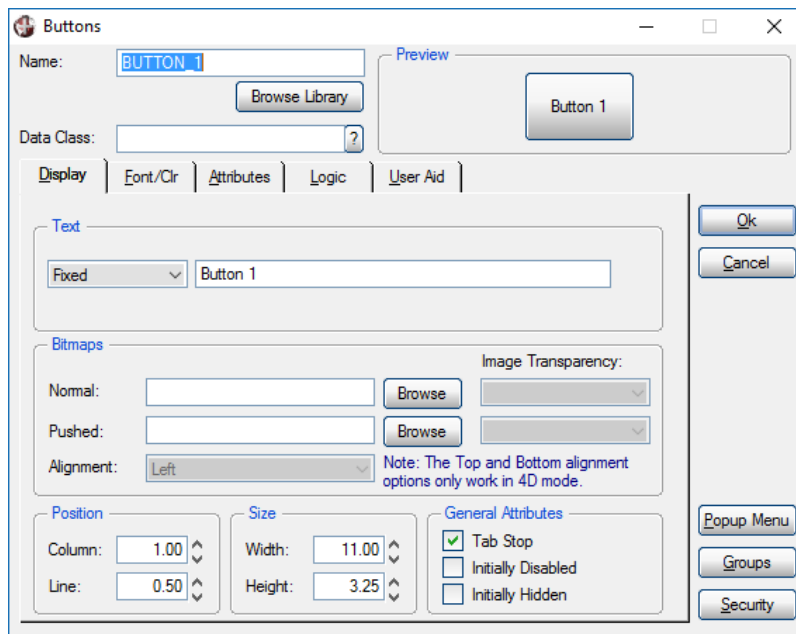
# User Interface Overview

# User Interface Overview

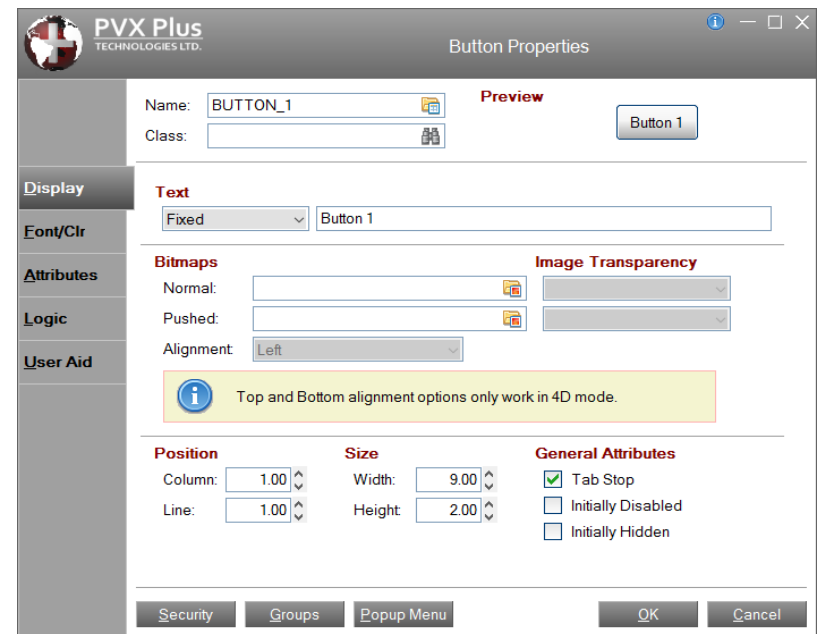
- Toolkit user interface continues to evolve
- PxPlus 2014 - November 2014
- PxPlus 2016 - May 2016
- PxPlus 2017 - May 2017
- PxPlus 2018 – May 2018
- Online Updates in between

# PxPlus UI Before and After

PxPlus v11.50 – Feb 2014



PxPlus 2017 (v14.00) – May 2017



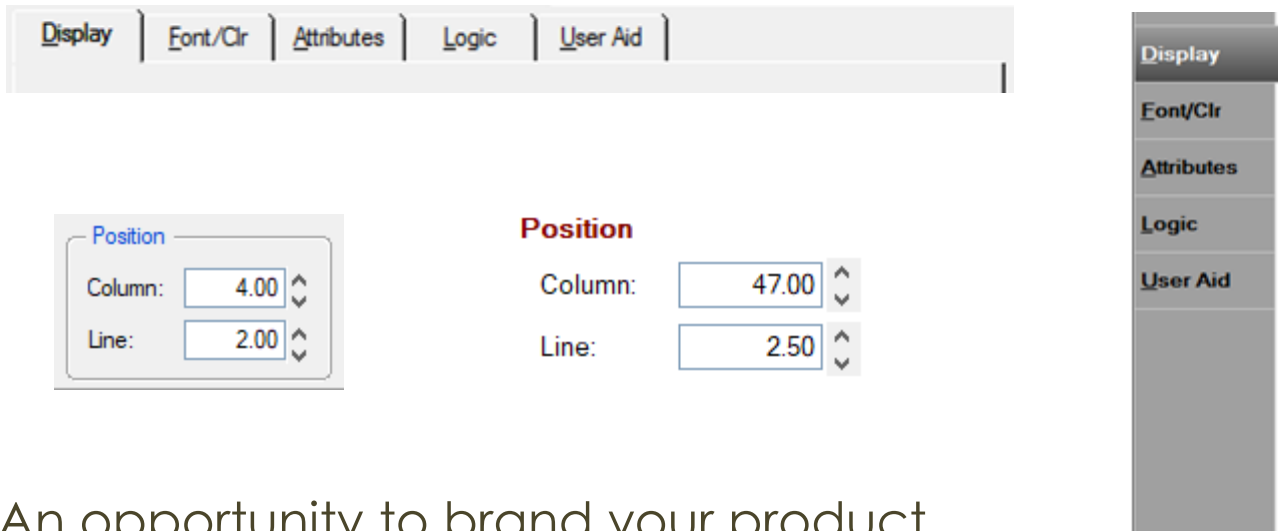
*Which one would you or your users prefer?*

# User Interface Overview

- PxPlus 2014
  - '4D' Visual effect
  - Flat buttons
  - Button state color enhancements
  - Side Bar Folders
  - Embedded buttons in multi-lines
  - Ribbon Bars
  - Notation boxes
  - White background on all screens

# Review PxPlus UI Refresh

- New visuals/features
  - Button state colors, Side bar folders, embedded buttons, create visual classes, etc.

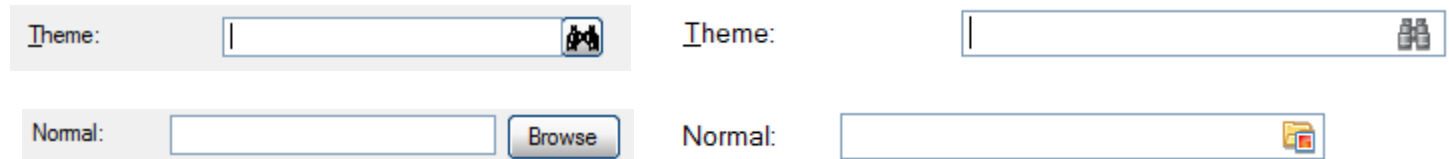


- An opportunity to brand your product




# Review PxPlus UI Refresh

- New visuals/features



Note: The Top and Bottom alignment options only work in 4D mode.

 Top and Bottom alignment options only work in 4D mode.

- New bitmaps introduced



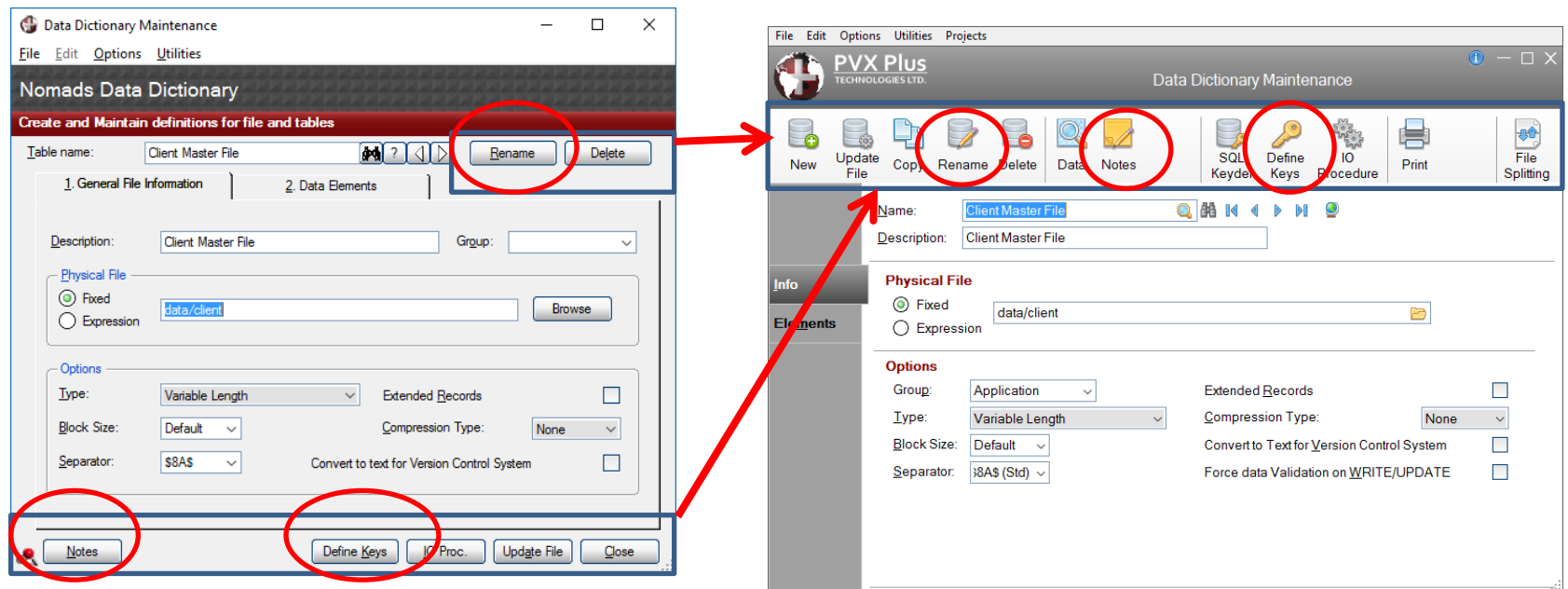


# Review PxPlus UI Refresh

- Consistent screen design
  - Control spacing
  - Button sizes
  - Button images
  - Naming
  - etc.
- De-cluttered and reorganized screens

# Review PxPlus UI Refresh

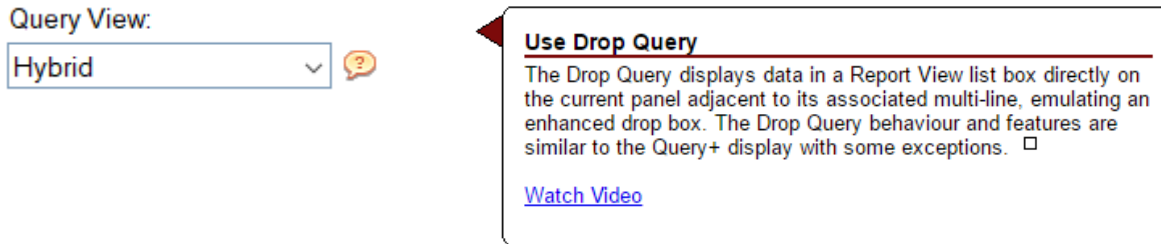
- Looked for other opportunities involving big payback with little coding



*Big* impact, *no* coding

# User Interface Overview

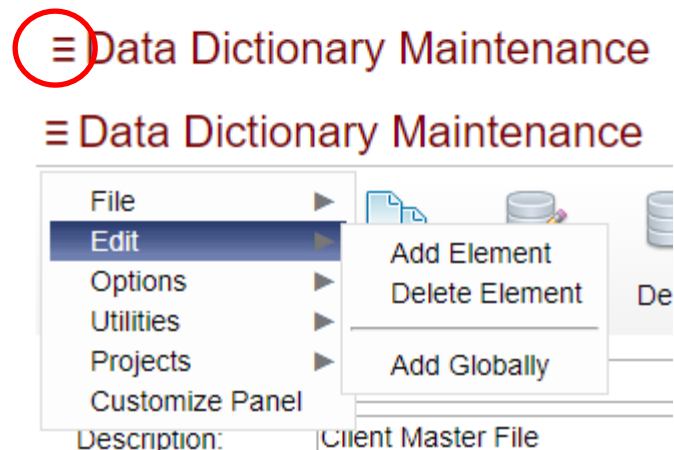
- PxPlus 2016
  - Info Tips
    - HTML style info tips with embedded hyperlinks



- Themes
  - Renamed *Templates* to *Themes*
  - Enhanced – more properties
  - More robust

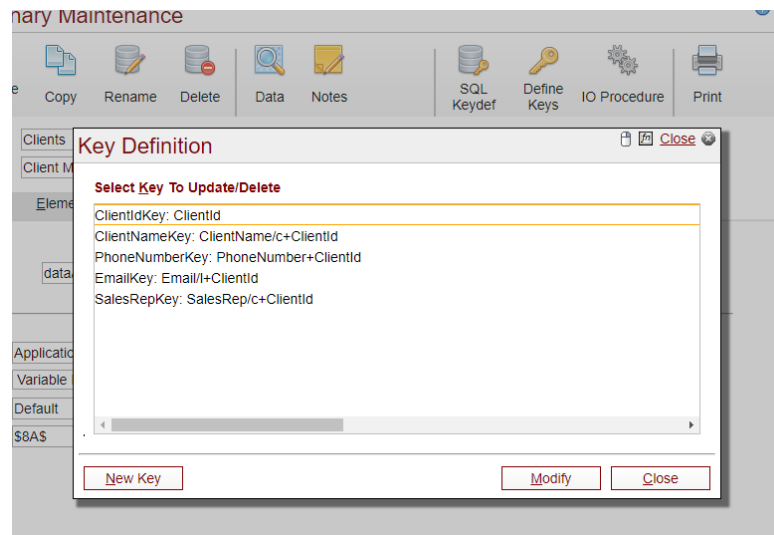
# User Interface Overview

- PxPlus 2016
  - *i*Nomads enhancements
    - *i*Nomads Setup – Enhanced UI usability
    - Template designer wizard
    - Template designer maintenance
    - New templates
    - Hamburger style menus



# User Interface Overview

- PxPlus 2016
  - iNomads enhancements
    - Calendar and Calculator controls
    - iFrame popup style windows for subdialogs

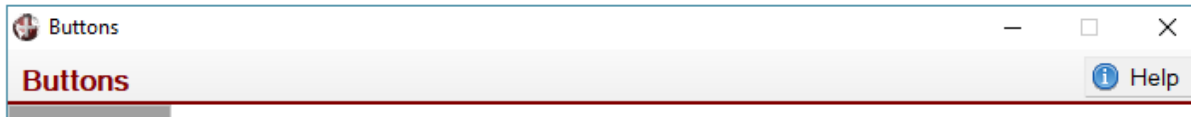


- Web version of the toolkit (Web IDE)

# User Interface Overview

2017

- PxPlus 2017
  - Custom title bars

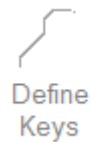


- Custom check boxes and radio buttons
- Fonted text alignment

# User Interface Overview

2017

- PxPlus 2017
  - New Attributes
    - ClrHighlight, ClrHighlightText
      - Sets background color and text for selected item in list box and drop box
    - GrayDisableBmp
      - Controls image display on disabled button



Define  
Keys



IO Procedure



Define  
Keys



IO Procedure

# Themes & Visual Classes



# Themes & Visual Classes

- Define display attributes for a group or individual controls
- Themes
  - Applied to all controls
  - Global level
- Visual Classes
  - Specific type controls
  - For example, tool bar buttons or text buttons
- NOMADS and *i*Nomads are supported

# Themes & Visual Classes

- Each type has its own utility to define

## Theme

Theme: CATS

Control Type: Button

Property	Value
<b>Attributes</b>	
Bitmap Button	<input type="checkbox"/>
Border Style	Solid
Border Width	1
Drop-List Button	<input type="checkbox"/>
Flat Button	<input type="checkbox"/>
Flat-No Border	<input type="checkbox"/>
Hover Color	<input type="checkbox"/>
Hover Cursor	Default
Transparent	<input type="checkbox"/>
Underscore	<input type="checkbox"/>
<b>Colors</b>	
Background Color	White
Background Color 2	RGB:248 248 248
Border Color	RGB:100 47 4
Border Color 2	Default
Foreground	RGB:100 47 4
<b>Colors (States)</b>	
Active Background Color	RGB:253 220 193
Active Background Color 2	Default
Active Border Color	RGB:100 47 4
Active Border Color 2	Default
Active Text Color	RGB:100 47 4

## Visual Class

Class Name: BITMAPBUTTON

Class Theme:

Control Type: Button

Description: Bitmap buttons

Property	Value
<b>Attributes</b>	
Bitmap Button	<input type="checkbox"/>
Border Style	Solid
Border Width	1
Drop-List Button	<input type="checkbox"/>
Flat Button	<input checked="" type="checkbox"/>
Flat-No Border	<input type="checkbox"/>
Hover Color	<input type="checkbox"/>
Hover Cursor	Default
Transparent	<input checked="" type="checkbox"/>
Underscore	<input type="checkbox"/>
<b>Colors</b>	
Background Color	Default
Background Color 2	Default
Border Color	Default
Border Color 2	Default
Foreground	Default
<b>Colors (States)</b>	
Active Background Color	Default
Active Background Color 2	Default

# Themes & Visual Classes

- Properties defined by control type that has its own set of unique properties
  - Color (States)
  - Font
  - Other attributes
- A theme can be a collection of control types or a single control type
- Multiple themes and visual classes

# Themes Setup and Hierarchy

## Nomads

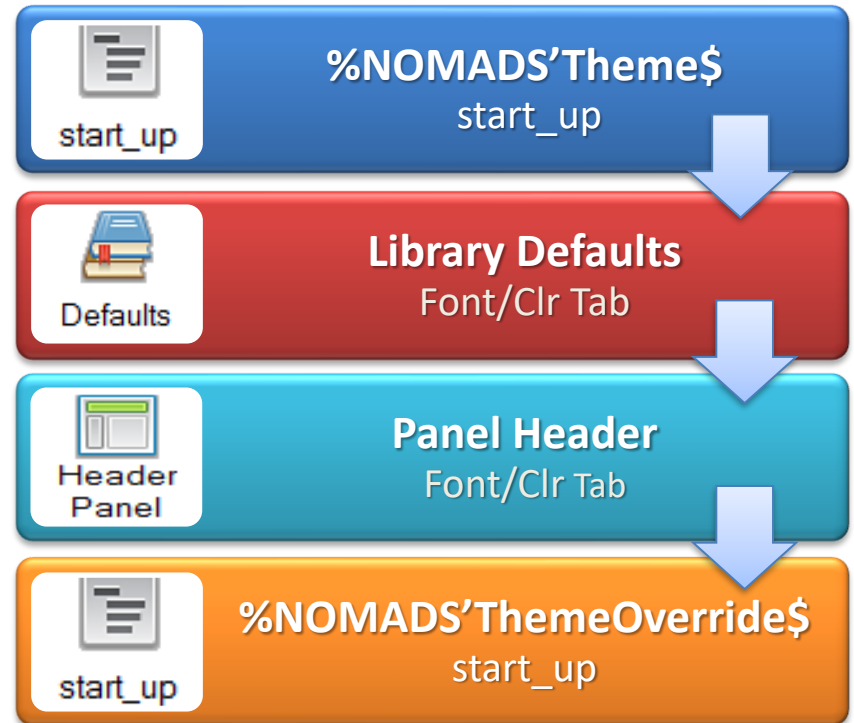
2017

Set NOMADS Property  
%Nomads'Theme\$="ocean"

Defined in Font/Clr tab  
- Fixed value or Expression

Defined in Font/Clr Tab  
- Fixed Value or Expression

Set NOMADS Property



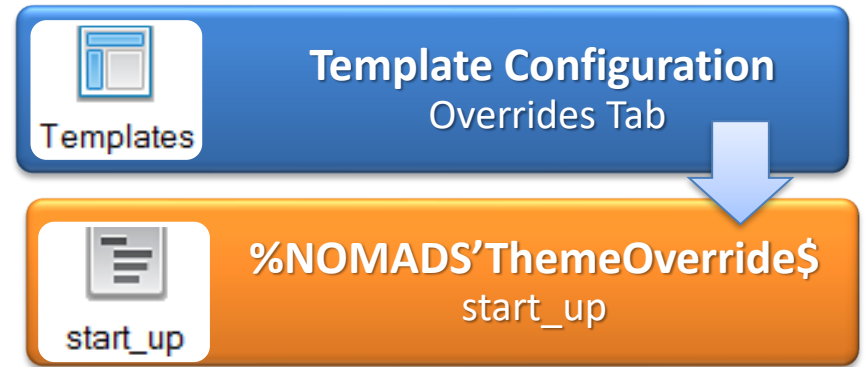
# Themes Setup and Hierarchy

*iNomads*

2017

Set in the Overrides Tab

Set NOMADS Property



# Visual Classes

- Visual classes are applied to individual controls on a panel
- Visual class will override any theme defined
- A theme can be assigned to a visual class
- Why?
  - May want a different look
  - For example: Web IDE buttons

# Applying Visual Classes

- Applying a visual class

Utilities	Where	Description
Panel Designer	Panel	Apply to an individual control
Panel Bulk Edit	Panel Designer	Apply to more than one control in the current panel
Visual Class Assignment by Panel	Panel Designer	Apply to controls for current panel by Visual Class
Visual Class Assignment by Library	Library Object Selection	Apply to controls for a specific library and panel by Visual Class
Library Bulk Edit	IDE/Library Object Selection	Apply to controls in multiple panels either in a single library or in multiple libraries within a specified directory

# Visual Classes

- Started using visual classes in PxPlus 2014
- Created visual classes for different button types

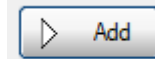
- Buttons with text



- Buttons with images



- Buttons with images and text



- ‘\*Buttontext’ visual class created
- Applied to all buttons with text in toolkit



- All PxPlus pre-defined classes start with “\*”



# Visual Classes

## Buttons

- Attributes section

The screenshot shows the PVX Plus Visual Classes window. The 'Class Name' is set to BUTTONTTEXT, 'Control Type' is Button, and 'Description' is Text Buttons. The 'Attributes' section is expanded, showing a list of properties and their values:

Property	Value
<b>Attributes</b>	
Bitmap Button	<input type="checkbox"/>
Border Style	Solid
Border Width	1
Drop-List Button	<input type="checkbox"/>
Flat Button	<input type="checkbox"/>
Flat-No Border	<input type="checkbox"/>
Hover Color	<input type="checkbox"/>
Hover Cursor	Default
Transparent	<input type="checkbox"/>
Underscore	<input type="checkbox"/>
<b>Colours</b>	

A blue box highlights the 'Attributes' section of the table, and a callout box labeled 'Attributes' points to it.

# Visual Classes

## Buttons

- Colors & Colors (States) sections

The screenshot shows a 'Colors' dialog box with two sections: 'Colors' and 'Colors (States)'. The 'Colors' section includes:

Background Color	RGB:150 150 150	...
Background Color 2	RGB:90 90 90	...
Border Color	RGB:180 180 180	...
Border Color 2	RGB:90 90 90	...
Foreground	White	...

The 'Colors (States)' section includes:

Active Background Color	RGB:183 14 14	...
Active Background Color 2	Default	...
Active Border Color	RGB:183 14 14	...
Active Border Color 2	Default	...
Active Text Color	RGB:219 219 219	...
Disable Background Color	RGB:219 219 219	...
Disable Background Color 2	Default	...
Disable Border Color	RGB:219 219 219	...
Disable Border Color 2	Default	...
Disable Text Color	Dark Gray	...
Focus Background Color	Dark Red	...
Focus Background Color 2	Default	...
Focus Border Color	Dark Red	...
Focus Border Color 2	Default	...
Focus Text Color	Default	...
Hover Background Color	Dark Red	...
Hover Background Color 2	Default	...
Hover Border Color	Dark Red	...
Hover Border Color 2	Default	...
Hover Text Color	Default	...

A callout box with a blue border highlights the 'Background Color' and 'Foreground' rows, containing the text: **Background Color and Foreground Text**.

Below the dialog box are three buttons: **Write**, **Delete**, and **Clear**.

# Visual Classes

## Buttons

- Colors & Colors (States) sections

Colors		
Background Color	RGB:150 150 150	...
Background Color 2	RGB:90 90 90	...
Border Color	RGB:180 180 180	...
Border Color 2	RGB:90 90 90	...
Foreground	White	...

Colors (States)		
Active Background Color	RGB:183 14 14	...
Active Background Color 2	Default	...
Active Border Color	RGB:183 14 14	...
Active Border Color 2	Default	...
Active Text Color	RGB:219 219 219	...
Disable Background Color	RGB:219 219 219	...
Disable Background Color 2	Default	...
Disable Border Color	RGB:219 219 219	...
Disable Border Color 2	Default	...
Disable Text Color	Dark Gray	...
Focus Background Color	Dark Red	...
Focus Background Color 2	Default	...
Focus Border Color	Dark Red	...
Focus Border Color 2	Default	...
Focus Text Color	Default	...
Hover Background Color	Dark Red	...
Hover Background Color 2	Default	...
Hover Border Color	Dark Red	...
Hover Border Color 2	Default	...
Hover Text Color	Default	...

Font		
------	--	--

**Active  
Button Down**

Write

Delete

Clear

# Visual Classes

## Buttons

- Colors & Colors (States) sections

Colors		
Background Color	RGB:150 150 150	...
Background Color 2	RGB:90 90 90	...
Border Color	RGB:180 180 180	...
Border Color 2	RGB:90 90 90	...
Foreground	White	...
Colors (States)		
Active Background Color	RGB:183 14 14	...
Active Background Color 2	Default	...
Active Border Color	RGB:183 14 14	...
Active Border Color 2	Default	...
Active Text Color	RGB:219 219 219	...
Disable Background Color	RGB:219 219 219	...
Disable Background Color 2	Default	...
Disable Border Color	RGB:219 219 219	...
Disable Border Color 2	Default	...
Disable Text Color	Dark Gray	...
Focus Background Color	Dark Red	...
Focus Background Color 2	Default	...
Focus Border Color	Dark Red	...
Focus Border Color 2	Default	...
Focus Text Color	Default	...
Hover Background Color	Dark Red	...
Hover Background Color 2	Default	...
Hover Border Color	Dark Red	...
Hover Border Color 2	Default	...
Hover Text Color	Default	...
Font		

**Disabled  
Button Disabled**



# Visual Classes

## Buttons

- Colors (States) section

Colors		
Background Color	RGB:150 150 150	...
Background Color 2	RGB:90 90 90	...
Border Color	RGB:180 180 180	...
Border Color 2	RGB:90 90 90	...
Foreground	White	...
Colors (States)		
Active Background Color	RGB:183 14 14	...
Active Background Color 2	Default	...
Active Border Color	RGB:183 14 14	...
Active Border Color 2	Default	...
Active Text Color	RGB:219 219 219	...
Disable Background Color	RGB:219 219 219	...
Disable Background Color 2	Default	...
Disable Border Color	RGB:219 219 219	...
Disable Border Color 2	Default	...
Disable Text Color	Dark Gray	...
Focus Background Color	Dark Red	...
Focus Background Color 2	Default	...
Focus Border Color	Dark Red	...
Focus Border Color 2	Default	...
Focus Text Color	Default	...
Hover Background Color	Dark Red	...
Hover Background Color 2	Default	...
Hover Border Color	Dark Red	...
Hover Border Color 2	Default	...
Hover Text Color	Default	...
Font		



**Focus  
Button Has Focus**

# Visual Classes

## Buttons

- Colors & Colors (States) sections

Colors		
Background Color	RGB:150 150 150	...
Background Color 2	RGB:90 90 90	...
Border Color	RGB:180 180 180	...
Border Color 2	RGB:90 90 90	...
Foreground	White	...

Colors (States)		
Active Background Color	RGB:183 14 14	...
Active Background Color 2	Default	...
Active Border Color	RGB:183 14 14	...
Active Border Color 2	Default	...
Active Text Color	RGB:219 219 219	...
Disable Background Color	RGB:219 219 219	...
Disable Background Color 2	Default	...
Disable Border Color	RGB:219 219 219	...
Disable Border Color 2	Default	...
Disable Text Color	Dark Gray	...
Focus Background Color	Dark Red	...
Focus Background Color 2	Default	...
Focus Border Color	Dark Red	...
Focus Border Color 2	Default	...
Focus Text Color	Default	...
Hover Background Color	Dark Red	...
Hover Background Color 2	Default	...
Hover Border Color	Dark Red	...
Hover Border Color 2	Default	...
Hover Text Color	Default	...

Font		
------	--	--

**Write** **Delete** **Clear**

**Hover  
Mouse Over Button**

# Visual Classes

## With Themes

- Change button look for Web IDE

Desktop



Browser



- Created new “\*Buttontext” visual class with a theme

## Desktop

Class Name:  


Class Theme:  


Control Type:  


Description:

Property	Value
<i>Attributes</i>	
<i>Colors</i>	
Background Color	RGB:150 150 150
Background Color 2	RGB:90 90 90
Border Color	RGB:180 180 180
Border Color 2	RGB:90 90 90
Foreground	White
<i>Colors (States)</i>	
Active Background Color	RGB:183 14 14

## Browser

Class Name:  

Class Theme:  

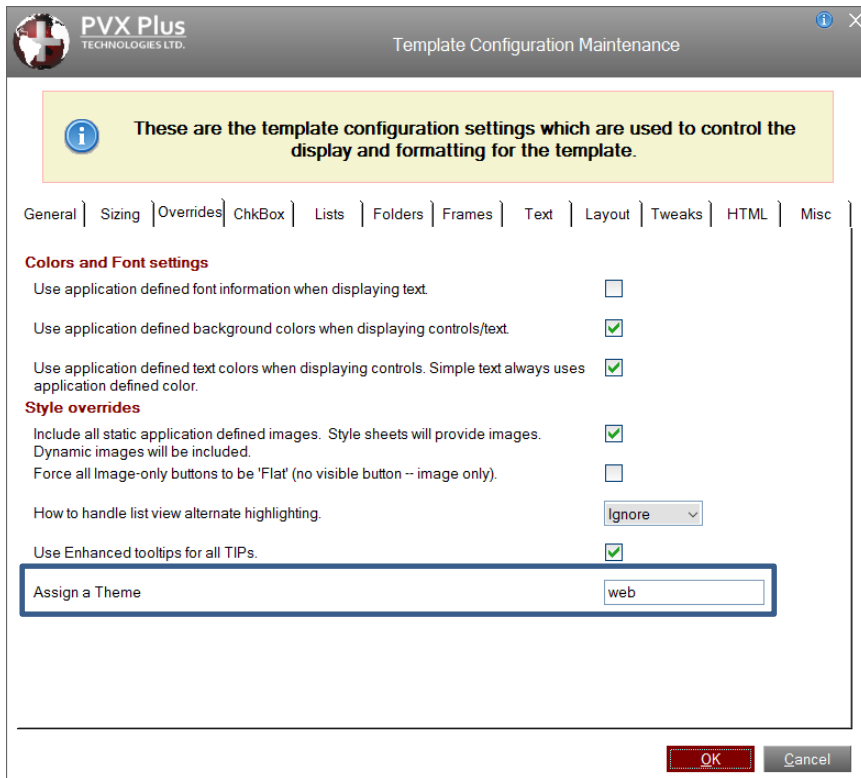
Control Type:  

Description:

Property	Value
<i>Attributes</i>	
<i>Colors</i>	
Background Color	White
Background Color 2	RGB:245 245 245
Border Color	Dark Red
Border Color 2	Default
Foreground	Dark Red
<i>Colors (States)</i>	
Active Background Color	RGB:183 14 14

# Visual Classes

## Web IDE



- Template Configuration Maintenance
- Assign a theme



# Themes/Visual Classes Recap

## Themes

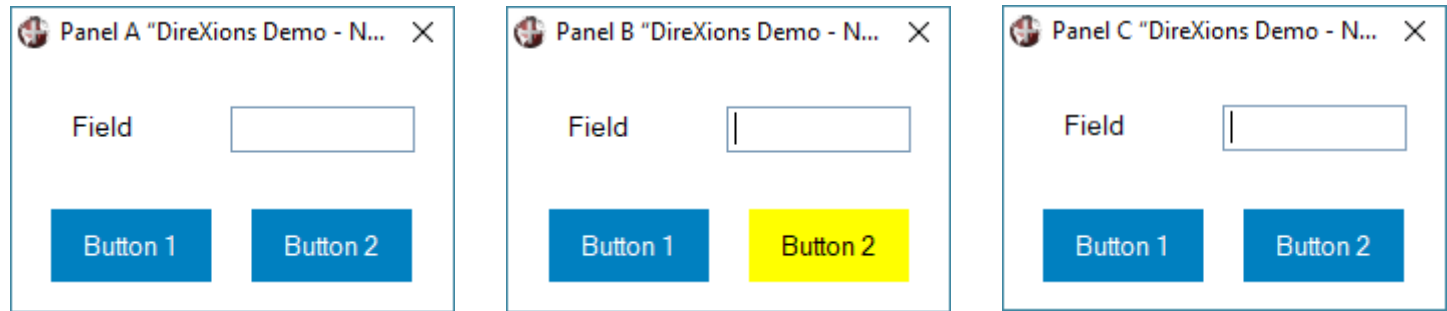
- Applied to all controls
- Defined at a higher level
- Applied system wide, by library, by panel, *iNomads* template

## Visual Classes

- Specific control
- Applied in panel designer or via utilities
- Override Themes

# Themes/Visual Class Hierarchy

- Library with three panels



- Create a theme for buttons and apply theme to the library
- Create visual class for buttons and apply visual class to Button 2 on panel B

# Themes / Visual Classes

## List Boxes

- New For PxPlus 2018



Control Type: List\_Box

Property	Value
<b>Attributes</b>	
Borderless	<input type="checkbox"/>
Disable Sorting	<input type="checkbox"/>
<b>Attributes (ReportView)</b>	
Auto Column Size	<input type="checkbox"/>
Column Size Lock	<input type="checkbox"/>
Grid lines	No lines
Header Lock	<input type="checkbox"/>
Lines Per Row	1.0
Sort Options	Default
<b>Colors</b>	
Background	Default
Foreground	Default
Header Background Color	Default
Header Text Color	Default
Highlight Color 1	Default
Highlight Color 2	Default
Hotlink Color	Default
<b>Colors (States)</b>	
Hover Background Color	Default
<b>Font</b>	
Font	<Default Graphic Font>

**Report View**

**Additional Color Attributes**

# Themes / Visual Classes

## Grids

- New For PxPlus 2018

2018

Control Type:

Property	Value
<b>Attributes</b>	
Auto Track	Default
Borderless	<input type="checkbox"/>
Enter Mode	Default
Grid Auto Column Size	As is
Grid lines	Default
Tab Mode	Default
<b>Colors</b>	
Background	Default
Current Cell Color	Default
Fill Color	
Foreground	Default
Grid Hilight Color 1	Default
Grid Hilight Color 2	Default
Header Background Color	Default
Header Text Color	Default
Track Color	Default
<b>Font</b>	
Font	<Default Graphic Font>

**New Attributes**

**Additional Color Attributes**

# Custom Title Bars

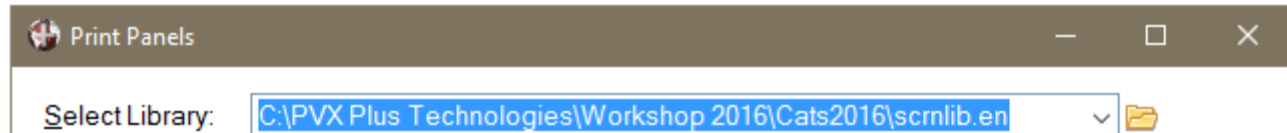
# Custom Title Bars

2017

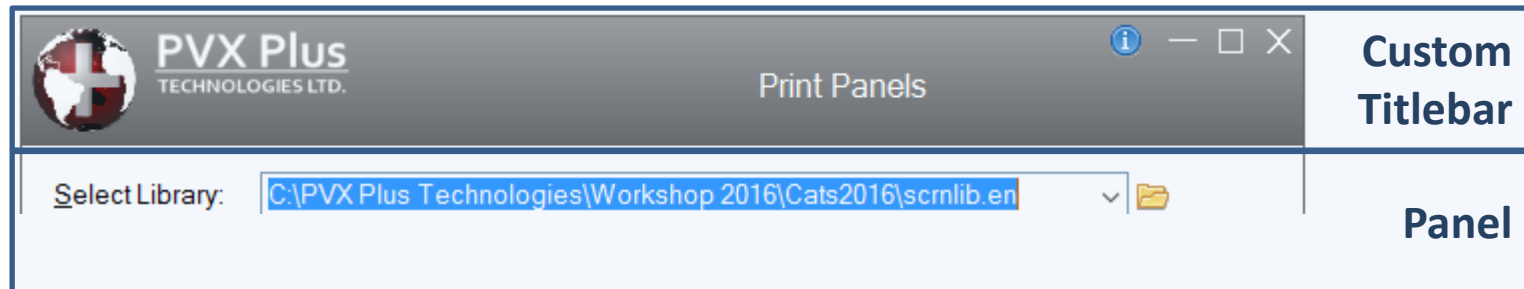
- Introduced in PxPlus 2017 – *NOMADS* only
- Design and create your own title bar
- Brand your application
- Can replace standard Windows title bar
- Custom Title bar is like an embedded panel
- Add virtually any type of control
- Automatically added to all dialog panels at run time
  - *No additional programming required*
  - *No panel changes required*
  - *Does not change the functionality of the panel*
- Turns on Full Screen Dragging

# Creating a Custom Title Bar

- Before (with Windows title bar)



- After (without Windows title bar)



# Creating a Custom Title Bar

- Create a dialog panel
- Set resizing to resizable/custom
- Set the Frame Style
  - Default/Caption – displays Windows title bar
  - No Caption – no Windows title bar
    - Menu bar will be on top
- Add the min, max, close buttons, if needed
- Add a fonted text control for caption
  - Panel title will be used
- Add other controls as needed
  - Be sure to use unique names
- Apply system wide, by library, by panel



# Custom Title Bars Setup and Hierarchy

2017

Set NOMADS Property

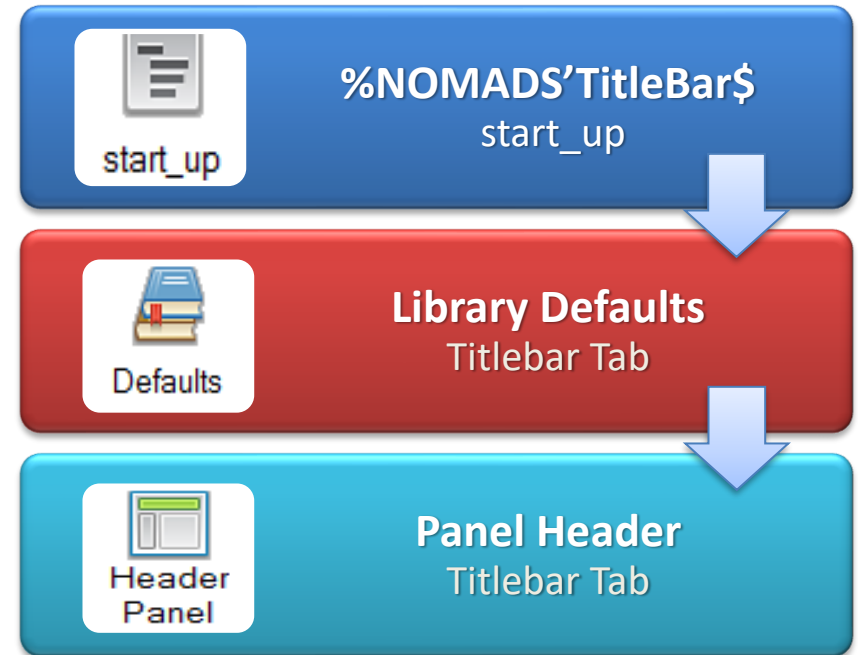
```
%NOMADS'TitleBar$="mypanel,mylib"
```

Defined in Titlebar tab

- Default, None, Titlebar,
- Library and Panel

Defined in Titlebar Tab

- Default, None, Titlebar
- Library and Panel

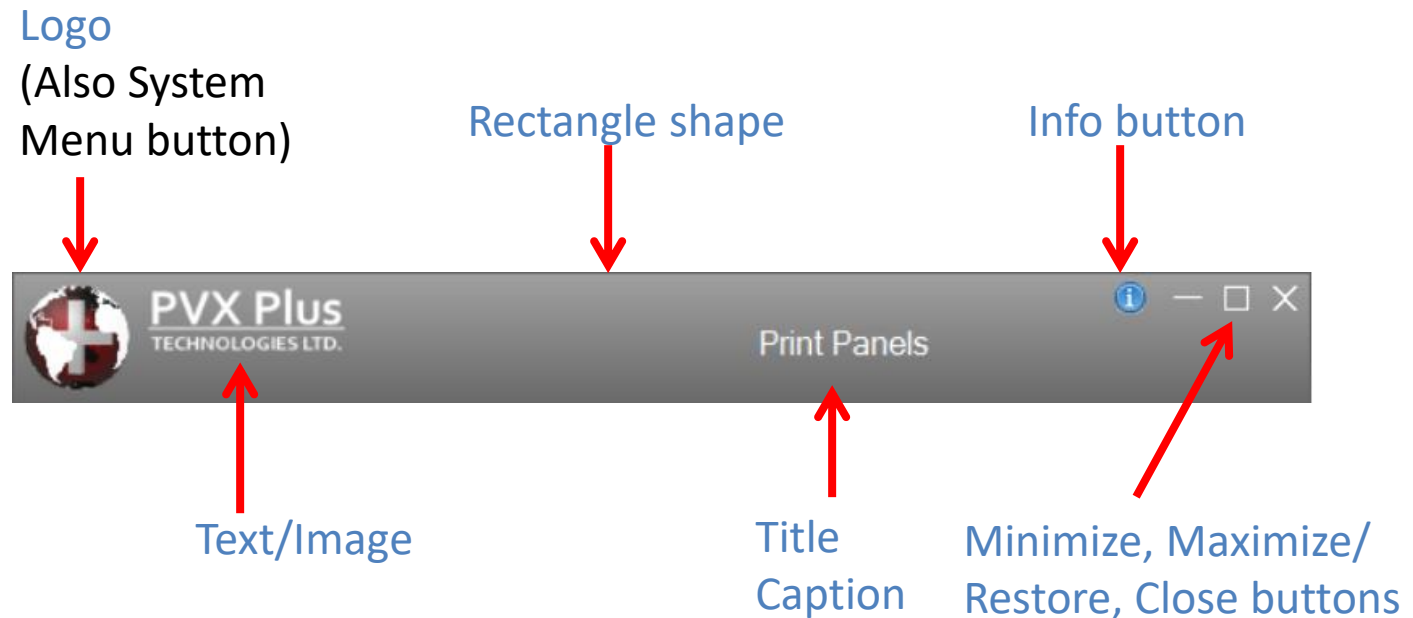


# Custom Title Bars Setup

- Custom title bars will **not** be displayed when:
  - Defined as widget
  - *Auto-scroll resizing* set
  - Concurrent windows
  - Not wide enough to display the custom title bar
  - Windows OS dialogs (Get file, Printer select, ...)
  - Non-NOMADS windows
- Windows title bar will be displayed instead

# Creating a Custom Title Bar

- Create the title bar as you would a dialog or embedded panel



- Stretches to match panel width

# Creating a Custom Title Bar

## Required Control Names

Control Name	Control Type	On Change Logic Perform <i>*plus/winutl/control.lgc</i>	Description
Px_TitleBar_Caption	Fonted Text	N/A	Automatically sets and updates the panel caption using the panel title
Px_TitleBar_Close	Button	Close_Panel	Panel Close button
Px_TitleBar_Max	Button	Maximize_Restore_Panel	Maximize/Restore button. Unlike the standard Windows button that changes images based on the window state, this button supports only one image
Px_TitleBar_Min	Button	Minimize_Panel	Panel Minimize button
Px_TitleBar_SysMenu	Button	System_Menu	System Menu button. The system menu consists of the <i>Restore/Move/Size/Minimize/Maximize/Close</i> options that are usually associated with the Application icon in the upper left corner of the standard Windows title bar

# Recap

- Numerous options to improve application's User Interface
- Simple changes can make a huge impact
- Start off small, no need to go all in
- Goal:  
*Keep end-users happy*
- Shared how we used PxPlus to update its UI
  - Examples & how to tips



...some ideas for your application

# Additional Resources

The help link(s) below refer to the current on-line help pages. The functionality may have been further updated since the PxPlus 2018 (version 15) release.

- [Creating a theme](#)
- [Applying a theme](#)
- [Adding a theme to iNomads](#)
- [Creating a visual class](#)
- [Applying a visual class](#)
- [Creating a custom title bar](#)
- [Using library defaults](#)
- [Using panel headers](#)
- [Using library bulk edit](#)