



Pylon Navigator

formZ palette plugin

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1 Introduction

The Navigator palette provides a number of window-related functions designed to make your formZ modeling workflow more efficient.

Quick Views

Have you ever wanted an easy way to jump between 2 or 3 temporary locations in your project-- while in the middle of a drawing operation? We have. Three buttons are provided for managing temporary views in your project. Control-clicking on a button stores the current view; clicking on the button restores the view stored in the button. Each button/view can be assigned a key shortcut, so you can toggle between views without moving your cursor or taking your eyes off your drawing. Quick, easy, and you won't clog your views palette with temporary views you'll only need for the next 5 minutes.

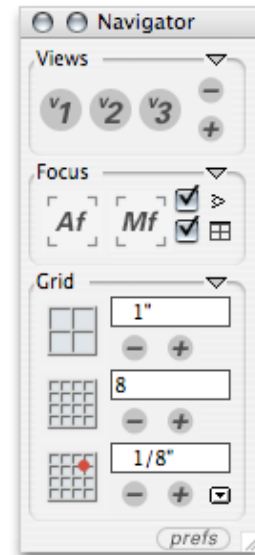
Find that elusive view

Have 40 views, and can't find the one you're looking for to match that render from several days ago? No problem. Click on the + or - buttons to cycle through all the saved views in your project until you find it. With your eyes on the modeling window, rather than the views palette, this is fast and painless.

Stay Focused

Effortlessly keep your work in the center of your window with Navigator's focusing features. When enabled, AutoFocus continuously updates your view so that selected topologies appear at the center of the modeling window. Manual Focus works much the same, but focuses only when pressed. Both focus options work well in combination with formZ's direct view navigation shortcuts: for instance, formZ's "set view interactive (center of interest)" will always revolve around your selection, rather than some previously chosen point.

Options are provided for maintaining the same view heading when focusing, and for synchronizing the focus of some or all of the viewports in multiple-frame windows. AutoFocus can be enabled and disabled on a per-window basis (like grid snapping)



allowing you to enable it where appropriate (some modeling windows), and keep it off where not ('hero' rendering windows). Both Auto- and Manual Focus can be assigned key shortcuts.

Grid Management

Navigator's grid management makes precision drawing easier and more intuitive. Navigator introduces Grid Presets, which allow you to logically group your commonly used grid snaps, name them, and associate each with an appropriate reference grid. For instance, your presets might include a 1/8" grid snap associated to a 1 inch / 8 division display, and a 1/16" grid snap associated to a 1 inch / 16 division display. When you select a Grid Preset from the presets pop-up menu, the grid snap, reference grid, and reference grid divisions are all changed at once. For even greater efficiency, you can skip to the next or previous Grid Preset using key shortcut equivalents. Switching presets works even while in the middle of a drawing operation.

Groups of related Grid Presets are stored in user-editable template files. Navigator comes bundled with several templates. English Small, English Machining, and Metric, which may be all you'll ever need. If not, you can modify them (or create entirely new templates) to suit your workflow. You can change the Grid Preset template used in Navigator at any time by selecting the 'Open' option from the pop-up menu.

Additionally, you can directly change the reference grid size, grid divisions, or grid snap by typing values into the text fields. Pressing the + or - buttons increases or decreases each value.

2 Getting Started

2.1 Showing and hiding Navigator

To toggle Navigator's visibility, select *Palettes > Navigator*.

2.2 Setting up a key shortcut to toggle Navigator visibility

To set up a key shortcut to show and hide Navigator, select *Help > Menus...* In the resulting dialog, double-click on the item *Navigator* under the *Palettes* menu, then create a new key shortcut.

2.3 Setting up key shortcuts to activate Navigator's functions

To get the most out of your new plugin, we recommend that you assign key shortcuts to the following Navigator functions:

- Quickview 1**
- Quickview 2**
- Quickview 3**
- Auto Focus**
- Manual Focus**
- Grid Snap**
- Grid Preset: Previous**
- Grid Preset: Next**

Each of these Navigator functions can be activated by an associated command in the *Extensions* menu. Select *Help > Menus...* In the resulting dialog, double-click on each commands under the *Extensions* menu, then create a new key shortcut for it.

NOTE The Grid Snap toggle is designed to be used in place of formZ's existing grid snap toggle. (This replacement is necessary because the native snap toggle will not update Navigator's grid snap icon.) Simply re-assign your current grid snap shortcut to this command.

3 Using the Help System

You can launch this manual from formZ by holding down the shift key and selecting *Navigator* from formZ's *Palettes* Menu.

4 Using Navigator

4.1 Navigator Views

Quickviews



Control-clicking (Mac) or Control-Alt-clicking (PC) on a button stores the current view; clicking on the same button later restores that view. Each view may also be restored by selecting one of the Quickview commands from formZ's *Extensions* menu, or by pressing its key shortcut. (See section 2.3 on setting up key shortcuts.)

View Cycle



If a saved view is currently active, clicking on the (+) button selects and restores the next view in the views palette; if not, the first view in the views palette is selected. If a saved view is currently active, clicking on the (-) button selects and restores the previous view in the views palette; if not, the last view in the views palette is selected. Repeatedly clicking on either button cycles through all the views in the project.

4.2 Navigator Focus

In the discussion below, the term 'frame/window' is used to refer to either a frame within a window (if the window has frames enabled) or the entire window (if the window does not have frames enabled).

Auto Focus



Click on this icon to enable or disable Auto Focus for a frame/window. When enabled, and a point, segment, face, or object is selected with the Pick Tool or from the objects palette, the center of interest of the current frame/window will be moved to the center of the selection. If multiple entities are picked, the center of interest will move to the average centerpoint of the selected entities. The frame/window focus updates continuously, as entities are selected and deselected.

Auto Focus is be enabled or disabled on a per-frame basis (if frames are enabled) or per-window basis (if they are not). The state of Auto Focus for a given frame/window is remembered between formZ sessions.

Manual Focus

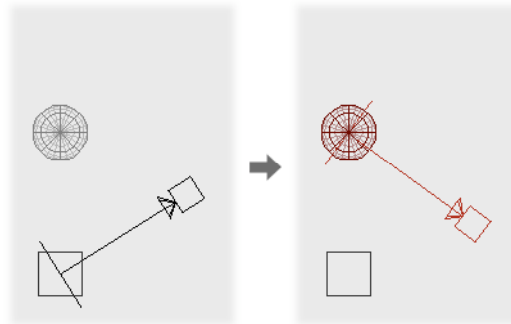


Works like Auto Focus, but only focuses only when explicitly pressed. Can be used when Auto Focus is active to re-focus on already selected objects.

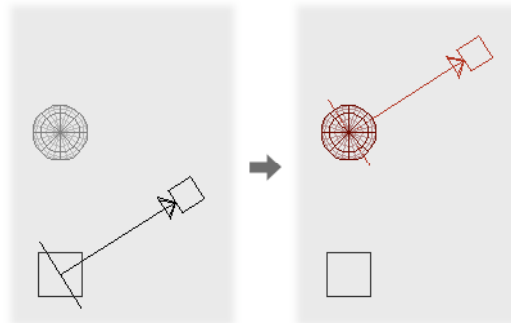
View Heading Lock

➤ When enabled, and a focus occurs in a non-orthographic view, the eye point is moved along with the COI, so that the view heading and distance between the eye point and COI remain the same. When disabled, only the COI is moved.

In orthographic views, the view heading lock is always applied regardless of the status of this checkbox.



*View Heading Lock disabled:
After the sphere is selected, only the COI is moved.*



*View Heading Lock enabled:
After the sphere is selected, both the COI and eye are moved; heading and distance remain constant.*

Frames Synchronization



When this checkbox is enabled, and a manual or auto focus occurs within a window frame, all other frames within the same window that have Auto Focus enabled are focused as well.

For example, imagine a window has been divided into 4 frames. Frames Synchronization is turned **on**, frames 1, 2, and 3 have Auto Focus turned on, and frame 4 has Auto Focus off. If an object is selected in frame 1, it will become the focus in that frame, as well as in frames 2 and 3. Frame 4 will remain unaffected. On the other hand, if an object is selected in frame 4, no focusing will take place in any of the frames, because autofocus has not been enabled for that frame.

Alternately, if Frames Synchronization is turned **off**, and an object in frame 1 is selected, autofocus will occur in only that frame.

4.3 Navigator Grids

Reference Grid Module



Clicking on this icon toggles the reference grid display in the current window. The reference grid module (a dimension given in the current working units) can be changed by typing a new value into the text box. In Navigator, the grid module is always identical in X, Y, and Z.

Reference Grid Divisions



Clicking on this icon toggles the reference grid display in the current window. The reference grid divisions (the number of subdivisions between each module) can be changed by typing a new value into the text box.

Grid Snap



Clicking on this icon toggles grid snapping in the current window. The reference grid divisions (the number of subdivisions between each module) can be changed by typing a new value into the text box. In Navigator, the grid snap for X, Y, and Z is always the same.

Increase and Decrease buttons



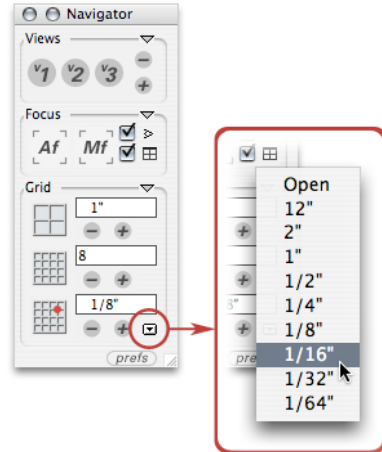
Clicking on these buttons will increase or decrease the value in the adjacent number box. The degree and kind of adjustment is determined by the options in Navigator Preferences (see Preferences, below). By default, when the Increase button is pressed, the number is doubled, and when the Decrease button is pressed, it is halved.

What is a Grid Preset?

A Grid Preset is an association between a particular grid snap, a reference (display) grid module, and a reference grid division. You can create your own Grid Presets, name them, and store them in logically related groups called Grid Presets Templates.

Selecting a Grid Preset

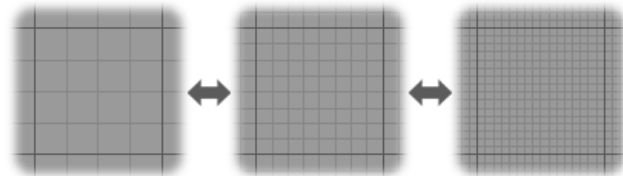
A Grid Preset is invoked by selecting it from the Grid Presets pop-up menu, or by pressing the **Grid Preset: Next** or **Grid Preset: Previous** key shortcuts until the desired shortcut is selected. (Section 2.3 describes how to assign these shortcuts.)



When a Grid Preset selected, the grid snap, reference grid, and reference grid divisions are all changed simultaneously, according to the data stored in the preset. Switching presets works even while in the middle of a modeling operation.

What is a Grid Preset Template File?

Groups of logically related Grid Presets (such as 'Metric' or 'English Machining') are store together in a file called a Grid Presets Template. When formZ is first launched, the Navigator will load the template called 'Default Grid Presets.grd', located within the 'Plugins/Pylon Technical/Views and Navigation/Grid Presets/'. If you wish, you can change the grid presets in this file.



Increase or decrease grid resolution and snap simultaneously, via key shortcuts.

Opening a new Grid Preset Template File

You can load a new Grid Preset Template at any time by selecting 'Open' from the top of the Grid Presets pop-up menu. Grid Template Presets files can be recognized by their extension, ".grd." Several useful templates are included.

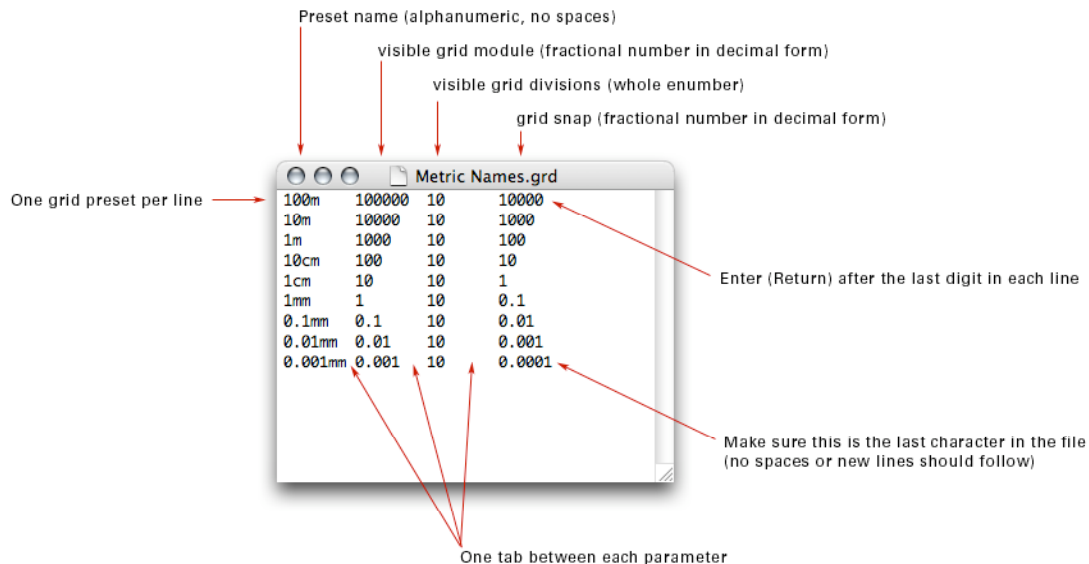
Section 4 describes how to create and edit Grid Preset Template Files.

4 Creating and Editing Grid Preset Template Files

Editing a grid presets template file

Launch a plain text editor (such as TextEdit on the Mac, or Notepad on the PC), then open a grid preset template file. Edit the file to suit your needs, then save under a new filename. To have formZ load a particular set of presets by default, name the file 'Default Grid Presets.grd', and save it to the folder 'Plugins/Pylon Technical/Views and Navigation/Grid Presets/'.

Each line in the file represents a grid preset. The format is as follows:



preset_name <i>[alphanumeric, no spaces]</i>	<i>tab</i>	ref_grid_module <i>[fractional number]</i>	<i>tab</i>	ref_grid_divisions <i>[whole number]</i>	<i>tab</i>	grid_snap <i>[fractional number]</i>	<i>end of line</i>
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Note that fractional numbers must be expressed in decimal form (0.25, not $\frac{1}{4}$).

Navigator will load the first 15 grid presets contained in a grid preset file.

5 Preferences

Preferences



Pressing this button invokes Navigator preferences.

Palette Layout

Selecting 'Compact' will save a bit of screen real estate by presenting the Navigator Palette without the text headings at the beginning of each section (and their respective borders). Normal' offers a more clear presentation, but occupies a bit more space.

+/- Button Action

Multiply/Divide: If this option is selected, and the (-) button below each of the grid text boxes is clicked, the value in that text box will be divided by the number indicated in the 'Value' preference. If the (+) button is clicked, the value is instead multiplied by this number.

Add/Subtract: Same as above, by clicking on the (-) sign subtracts the indicated number from the grid text box value, and (+) adds to it.

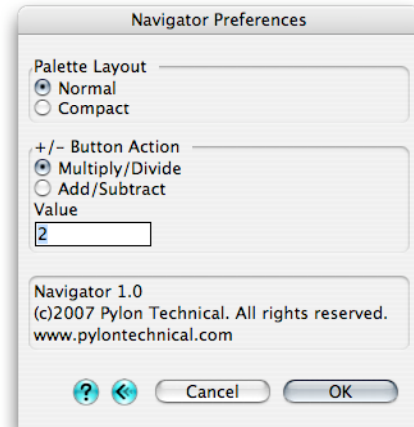
Eye

Frames

These settings are also stored when formZ general preferences are stored.

Saving Preferences

Changes made to Navigator Preferences are by default only retained for the duration of your modeling session. As with all other tools, if you want to save your preferences for subsequent modeling sessions, go to formZ's general preference dialog (*formZ > Preferences... System > General*) and save a new preference set (or save over your old one). All Navigator preferences, as well as the state of the view heading (eye icon) and focus frames (frames icon), will be saved.



formZ tech support strongly recommends that users edit and save their preferences only at the beginning of the modeling session.

7 Known Issues

The following minor issues are due to bugs in the formZ Application Programming Interface (API). They will be corrected if/when ADS attends to the underlying problems.

Autofocus

- If points of a faceted object are moved when Auto Focus is enabled, the focus will follow the points. This is not dangerous, but can be impractical. Workaround: Turn off autofocus when moving points. The underlying problem has been reported to ADS as a bug.
- When a topology is deselected, Auto Focus will focus on the object that was just deselected. The underlying problem has been reported to ADS as a bug.
- Currently, when an object is deselected, then selected again, it will not be re-focused upon. Workaround 1: Click on the 'Manual Focus' icon. Workaround 2: Select another object, then select the first object again. The underlying problem has been reported to ADS as a bug.

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