



# Pano Manager

## User Manual

*March 2018*

*(c) Steve Clarke*

*[www.trumpton.uk/panomanager](http://www.trumpton.uk/panomanager)*

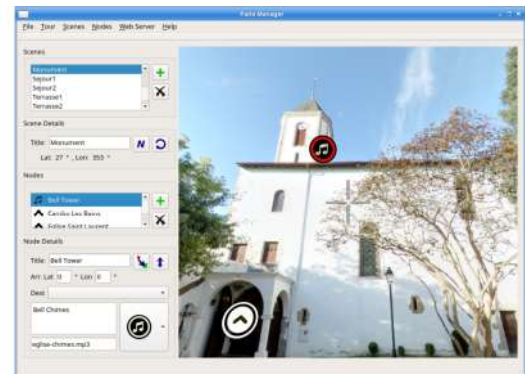


## Introduction

Pano Manager is an application which is used to manage a panoramic tour.

It imports equirectangular images from cameras such as the MiSphere or Theta-S, or from panoramic photo stitching programs such as Hugin.

It converts the images to cube faces (allowing any image refining to be done, such as editing out the camera itself).



And finally, it exports to files suitable for viewing in a web browser, using third-party viewer programs such as Pannellum and Marzipano.

## Launching

Panomanager has some command-line options, that under normal circumstances, should not be required.

Usage:

```
panomanager [ -h ] [ -f|F ] [ -n|N ]
```

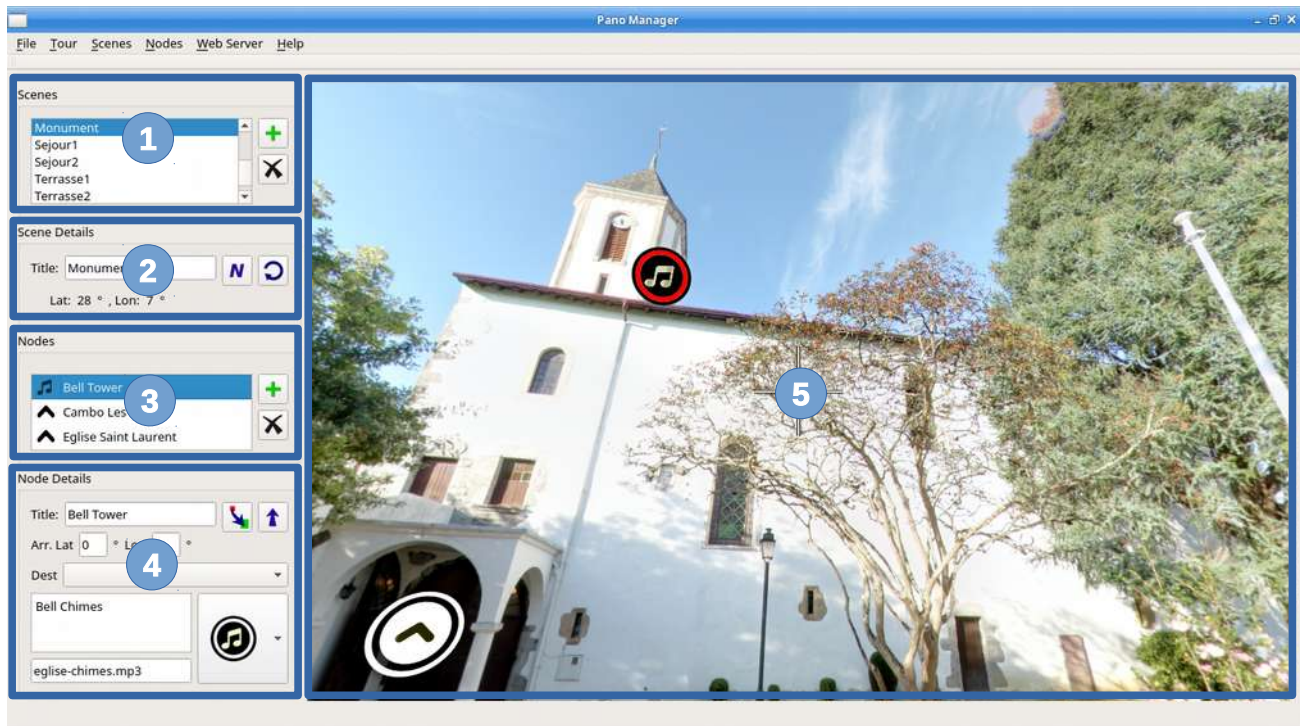
-h      – Display command-line help

-f|F    – Select to use internal fonts (-f), or system fonts (-F, default)

-n|N    – Select to use native file-browsing dialogs (-n, default), or system ones (-N)



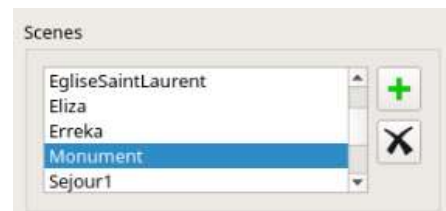
## Navigating Around The Application



### 1. Scenes

A tour is made up from a number of scenes, which are shown in the scenes list.

New scenes are added by pressing the add button **+**, which is used to load an equirectangular image, and scenes can be removed with the delete button **X**.



Selecting a scene causes it to be loaded in the output panel, its details to be loaded into the Scene Details, and its associated nodes to be loaded into the Nodes list.



## 2. Scene Details

The Scene Details is where the scene title can be edited. By default, this title will be the filename, but can be changed if desired.



This title is used to name the output folders when the tour is exported, and is not end-user visible. As the title is used to name folders, special folder path related characters such as ':', '/' and '\' should not be used.

The Scene Details displays the latitude and longitude of the centre of the currently displayed scene in the Output Panel.

There are two buttons in this section, the first being the North Offset button **N**, which is used to adjust the concept of which direction is north. In the Output Panel, looking down, there is a compass north pointer. Pressing the **N** button will align this pointer to the current direction. Having all images aligned in the same direction aids the setting of the arrival longitudes in the Node Details section.



The second button is the rotate button **C**, which simply turns the viewer around by 180 degrees in the Output Panel. This button is useful when used in conjunction with the Go button **U**, when adding return node links.

## 3. Nodes

Each scene contains a number of nodes, which are links to other scenes, information to be displayed, or links to other pages or media files.

Nodes can be added using the add button **+**, and removed using the delete button **X**.



When a node is selected, it is centred in the Output Panel, and its details are displayed in the Node Details.



#### 4. Node Details

Once a node has been selected, the details for the node are populated.

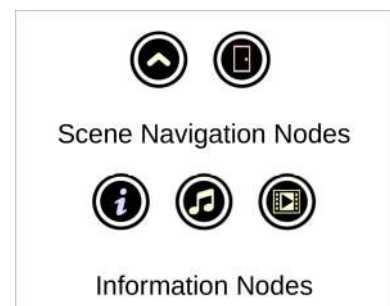
Nodes fall into two classes: scene navigation links and information links. Scene navigation links are used to move between scenes, and Information links are used to show information or provide links to external resources or media.


The title is displayed in any scene links or information, the description is displayed in information or media links, and if provided, the URL is followed for information and media links.


 A screenshot of the 'Node Details' dialog box. It has a title bar 'Node Details'. Inside, there's a 'Title' field with 'Bell Tower'. Below it are 'Arr. Lat' and 'Lon' fields, both set to '0'. To the right of these are two buttons: a move/set button (a blue arrow pointing down and right) and a go button (a blue arrow pointing up). Below the latitude/longitude fields is a 'Dest' dropdown menu. Underneath is a text field containing 'Bell Chimes'. To the right of this is a circular icon with a musical note. At the bottom, there's a text field containing 'eglise-chimes.mp3'.

Scene links use additional information to achieve the navigation: an arrival latitude and longitude which must be manually entered. Note that it is recommended that all scenes are correctly north aligned before setting these values; and, of course, have a destination scene, which is selected from the drop-down list of scenes.

The icon for the node can be selected – note that these Icons are used where possible in the output, but some rendering (e.g. Pannellum) have their own icons which are used instead.



There are two buttons in the dialog, the first is the move / set button , which is used to move the currently selected node to the cursor position in the centre of the Output Panel.

The second button is the go button , which is used to change scenes and follow the destination link / arrival latitude / arrival longitude.

#### 5. Output Panel

The Output Panel is an interactive display. It can be navigated using the mouse, but note that all modifications are made using the Scene Details and Node Details described above. The centre of the screen contains the cursor, and if a node is selected, it is highlighted with a red ring.



## Importing Scenes

### *Equirectangular Images*

Equirectangular Images, produced by a panoramic camera, or a camera with a panoramic mount (and subsequent software processing), are stretched / distorted images that provide an almost complete spherical view.

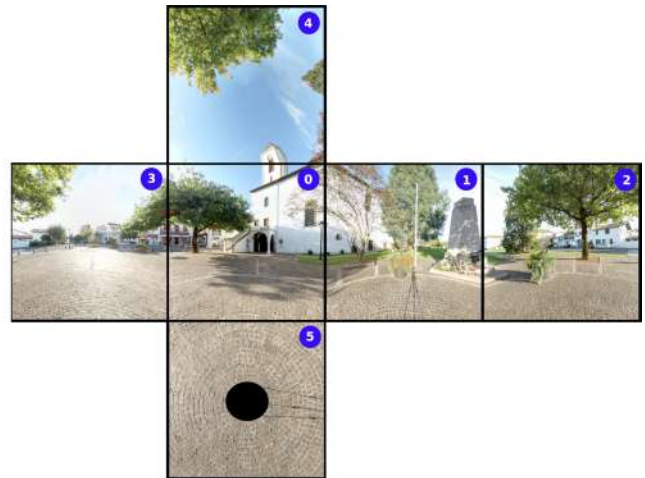


The images are almost complete, because looking down, there will be some part of the tripod showing, and possibly a hole, where image is missing. It is for this reason that when taking pictures, it is important to stand the tripod on some bland surface which can be corrected manually later.

When selecting the add button **+**, in the Scenes list, you are prompted with a search dialog to find an equirectangular image. Once found, it is added to the scenes list, but not loaded.

### *Conversion to Cube Faces*

Tours use 6 images, for 6 cube faces, as cubes contain squares, and squares contain triangles, and triangles are very easy to manipulate in the 3D space required to view the images. So, building involves converting the distorted equirectangular image and projecting it onto 6 cube faces. These images are stored in a subdirectory alongside the original equirectangular image.



This conversion is undertaken in two stages, the first being a calculation of how the equirectangular image pixels are projected onto the cube faces, and the second being the construction of the cube faces themselves. The information from the first stage is stored so that any subsequent conversions (of the same size equirectangular image) can use this cached information.

Two different versions of the image can be built – a low resolution preview version, and a full resolution final version. By default, only preview versions of the scene are built – these are much faster, and allow the tour to be constructed, but do not provide the final output images.

Clicking on the entry in the scenes list will cause it to be built and loaded (preview by default).



## Creating and Editing Cube Images

### ***Batch Generation***

As the generation of the cube faces is time consuming, particularly for very high resolution images, Pano Manager works with previews, and the generation of the high resolution versions can be produced as a batch job.

Simply select “Scenes / Batch Build Hi-Res” Scenes from the menu.

Once generated, the individual cube face images can be edited using your favourite graphics editing package to remove or hide parts of the tripod (usually face005.png), and any unwanted shadows that may exist in the images.

Note that the batch generation will not overwrite any existing images.

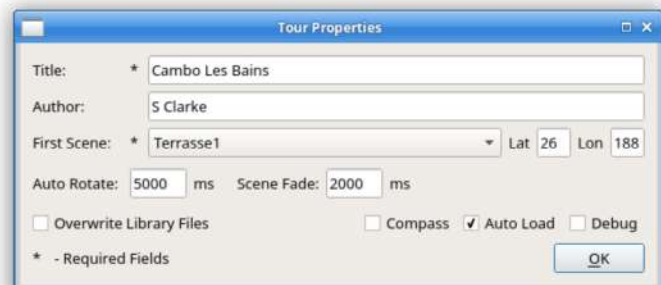
You can view these high-resolution output scenes in Pano Manager – select “Scenes / Use Hi-Res if Available” from the menu. But note that this can mean that switching between scenes is very slow.

## Configuring and Exporting Tours

### ***Tour Properties***

Tours have several properties, such as the title, and where to start. These can be edited by selecting the “Tour / Properties” menu.

Note that not all of the options are used by all of the output renderers.



The ‘Overwrite Library Files’ when selected will cause the appropriate third party (e.g. Pannellum) files to be overwritten if they already exist, when the tour is actually created. Note that this option is not saved, and to force an overwrite, the files must either be manually removed, or this option used. This option is reset either manually (through this dialog), or by creating or loading a new tour.



## Exporting

Exporting a tour is done through the 'Tour / Export' menu. A dialog prompt for an output folder, and the tour is written there. Note that the output folder is not cleared beforehand, so any scenes that have been removed from the project (since a previous export) will not have their files removed from the output folder.

What exporting does is to break each of the 6 cube faces for each image into a number of tiles at different resolutions, and store them in a folder for that scene. It also creates a configuration file for the tour, and a sample tour.html file to use on a website.

Note also that files are automatically overwritten (with the special exception of the library files, described above). This includes the tour.html example output file.

The tour.html is a full-screen view of the tour, which can be viewed in a web browser.

## Viewing a Tour

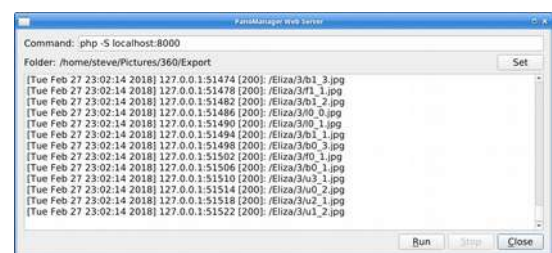
Note that some web browsers are unable to load the configuration files from a local folder, and for these browsers, viewing the files on a web server is necessary. There are several options here, the first being to upload the files to the web server, but this can be a time-consuming task, particularly for large tours, if trial reviews are all that are required.



## Pano Manager Web Server

Pano Manager has the ability to launch and manage an external web server. The File / Web Server menu is used to open the web server management / configuration dialog.

The command is the command used to launch the web server in the selected folder (by default, it launches the php web server on port 8000). This command is a free-text field. Note that in addition to launching the web server in the selected folder, if included, the variable %FOLDER% will also be substituted with the selected output folder.



The Run and Stop buttons are used to launch and stop the web server, and the output of the server itself is displayed in the main window. Closing this dialog does not shut down the web server, which is stopped by either selecting 'Stop', or closing down the main Pano Manager application.





Examples of some other alternative web servers are:

<code>miniweb -v -p 8000 -r %FOLDER%</code>	( <a href="https://sourceforge.net/projects/miniweb">https://sourceforge.net/projects/miniweb</a> )
<code>php -S localhost:8000</code>	
<code>python -m SimpleHTTPServer</code>	(Python 2)
<code>python -m http.server</code>	(Python 3)

## Thankyou

If you find this program useful, please would you consider making a donation to Guide Dogs for the Blind, a charity for which we are very grateful, as my wife is visually impaired, and would be housebound without her dog. There is a link here:

<http://www.trumpton.uk/panomanager/guidedogs>

## Licenses and Permissions

Pano Manager is distributed under the GPL License v3.

It makes use of Qt, which is distributed under the (L)GPL license.

Also, it includes a snapshot distribution of Pannellum, release under the MIT License.

And a snapshot of Marzipano, which is distributed under the Apache License.



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