



INTRODUCTION

The image displayed in the Graphics Window can be saved to disk or printed in a variety of formats: Apple PICT, PCL (Printer Control Language), TIFF, JPEG, PostScript (supporting image, “move-draw”, and EPS), RGB (Silicon Graphics default image format), TARGA, and EnVideo.

If you wish to save a sequence of images (e.g. for a smooth animation or a transient data display), use EnSight's [keyframe animation](#) facility.

BASIC OPERATION

1. Select File > Print/Save Image....

2. Select Format... to choose the desired output format and format options.

3. Enter a file name prefix to save the image to disk.

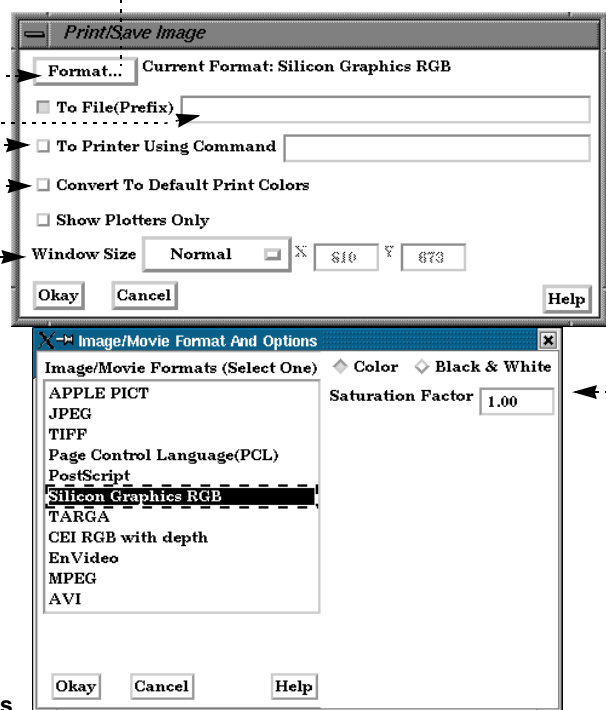
– AND/OR –

4. Toggle the “To Printer ...” button on and enter a print command (see Notes below).

5. If desired, automatically convert colors for printing (see notes below).

6. If desired, select a window size option. *Normal* is the current size of the Graphics Window and *Full* is full screen size. If the setting is *User Defined*, you can enter the desired size in the X and Y text fields.

7. Click Okay.

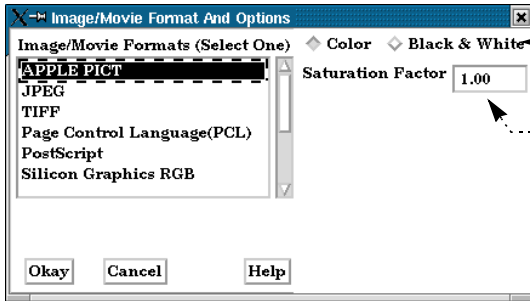


Notes:

1. The file is saved or printed from the EnSight client machine – not the server.
2. The printer command should not include the file name. For example, if you normally print with “lpr -Plaser1 file.ps” then enter “lpr -Plaser1” in the To Printer Using Command field.
3. If you toggle on Convert to default print colors, all viewport background colors are changed to white and any object (part, viewport border, annotation, etc.) currently colored pure white (RGB = 1,1,1) will be changed to black.



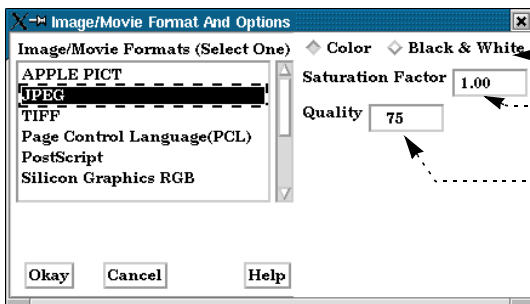
Options for Apple PICT Format



Select either color or black and white output.

Set the saturation factor for color images. Full saturation is 1.0 and no saturation (i.e. white) is 0.0.

Options for JPEG Format

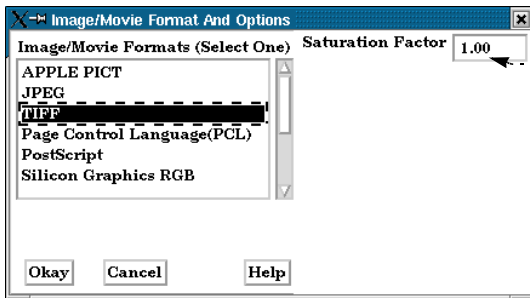


Select either color or black and white output.

Set the saturation factor for color images. Full saturation is 1.0 and no saturation (i.e. white) is 0.0

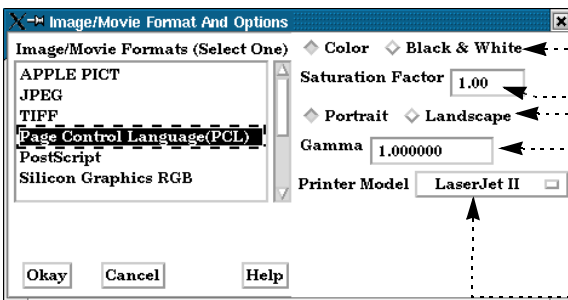
Set the desired output quality. The value represents a trade-off between fidelity and compression: 100 means maximum fidelity and 0 means maximum compression.

Options for TIFF Format



Set the saturation factor for color images. Full saturation is 1.0 and no saturation (i.e. white) is 0.0

Options for PCL Format



Select either color or black and white output.

Set the saturation factor for color images. Full saturation is 1.0 and no saturation (i.e. white) is 0.0.

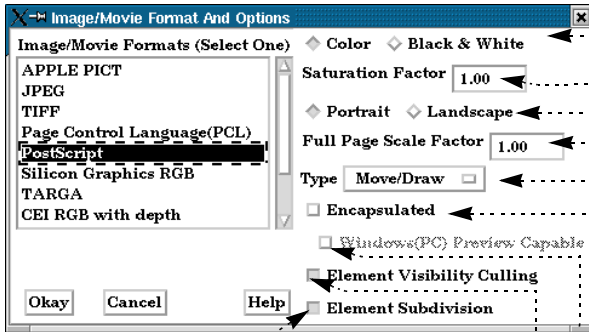
Select Portrait or Landscape output orientation.

Set gamma correction factor. Gamma can correct for nonlinearities in monitor brightness.

Select the destination PCL printer model.



Options for PostScript Format



Select either color or black and white output.

Set the saturation factor for color images. Full saturation is 1.0 and no saturation (*i.e.* white) is 0.0.

Select Portrait or Landscape output orientation.

Set the page scale factor.

Select either "Move/Draw" or "Image" PostScript output (see below).

Toggle on for Encapsulated Postscript output.

Toggle on to remove invisible geometry:

Toggle on to enable a preview image for EPS files (for import into PC Windows applications ONLY – see [Other Notes](#) below).

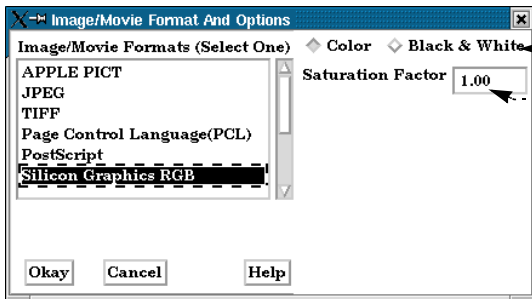
Toggle on to subdivide geometry for smooth color and shading output.

The PostScript format handles primitives either as precise drawing instructions (e.g. move to here, draw a line to here, fill this region) or as sampled images (pixel data). There are advantages and disadvantages to both.

Move/draw output is *resolution-independent* and will reproduce fine lines and text. Since even low resolution printers have 3-4 times the resolution of a typical graphics workstation (in dots/inch), move/draw PostScript typically produces higher quality output. However, for very large models, the output files can become quite large (even with visibility culling on) and subsequent printing can be slow.

In contrast, image or pixel PostScript saves the pixels of the image in the Graphics Window. Such an image is, by definition, fixed resolution. When printed, the pixels will be scaled to fit the page. Since the printer resolution is higher than the screen resolution, each pixel must be printed larger than it appeared on the screen resulting in visible pixels and jagged edges. To improve the quality of image PostScript output, EnSight will print only 3D geometry as pixels – the remaining objects (annotation text, color legends, and plots) will be output as move-draw instructions and will overlay the image.

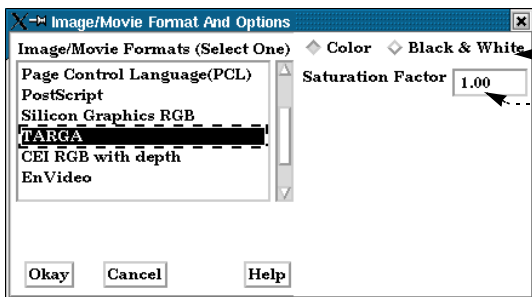
Options for SGI RGB Format



Select either color or black and white output.

Set the saturation factor for color images. Full saturation is 1.0 and no saturation (*i.e.* white) is 0.0.

Options for TARGA Format

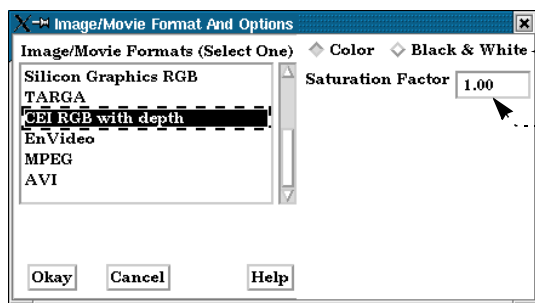


Select either color or black and white output.

Set the saturation factor for color images. Full saturation is 1.0 and no saturation (*i.e.* white) is 0.0.



Options for CEI RGB with depth Format

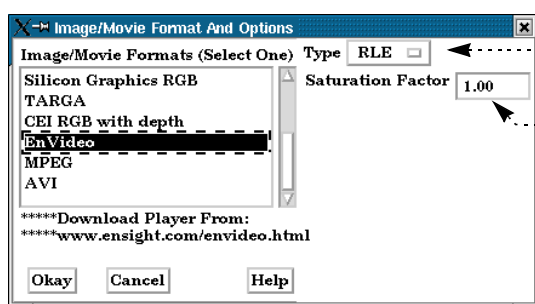


Select either color or black and white output.

Set the saturation factor for color images. Full saturation is 1.0 and no saturation (i.e. white) is 0.0.

Note: This format cannot be viewed or printed. It is used for compositing two or more images according to depth values.

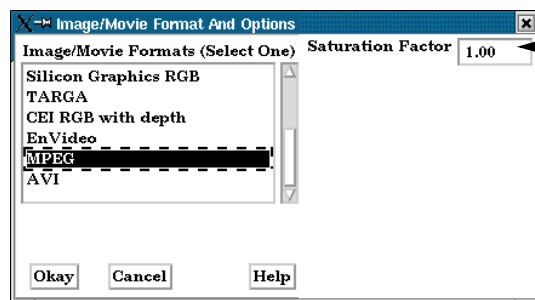
Options for EnVideo Format



Select Run Length Encoding or JPEG type.

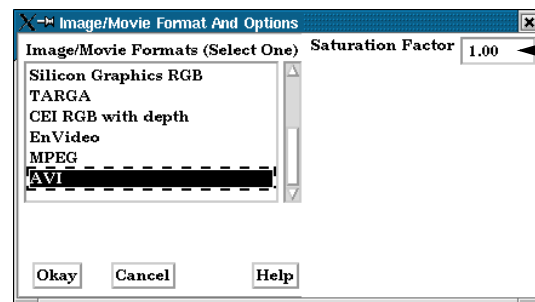
Set the saturation factor for color images. Full saturation is 1.0 and no saturation (i.e. white) is 0.0

Options for MPEG Format



Set the saturation factor for color images. Full saturation is 1.0 and no saturation (i.e. white) is 0.0

Options for AVI Format



Set the saturation factor for color images. Full saturation is 1.0 and no saturation (i.e. white) is 0.0

Note: AVI files are a Microsoft standard format for movies, audio, icons, and other data types.

The AVI files created by EnSight contain uncompressed image data. These files can be quite large for even small animations. You should compress these files on your Windows PC using the utility avi_compress.exe found in the "unsupported" directory of the EnSight distribution. This is a Windows command line based program.



To use the utility, copy it and the AVI movie file to a folder on your PC. Then open a 'Command Prompt' window (DOS shell) and change to the folder containing the files. Next, run the command using the following syntax:

```
avi_compress in.avi out.avi
```

where 'in.avi' is the name of the uncompressed movie file and 'out.avi' is the name to use for the compressed movie file.

The utility will open a simple dialog box presenting a choice of compression methods available on your PC. For portability reasons, you should probably choose 'Cinepak'. You may choose others but they may not generate portable movies that others can view on their PC.

Question: Why doesn't EnSight generate compressed AVI files directly?

Answer: Because the various compression schemes require technology that must be licensed from other vendors. This technology is typically not available for all of the platforms that EnSight supports. Additionally, there are numerous compression choices available, not all of which are available on every Windows PC. This utility uses the compression libraries available on the PC; thus the user can use whatever compression choices the PC has.

ADVANCED USAGE

Most workstations provide tools to display and manipulate images. Silicon Graphics provides a rich image manipulation environment. See, for example, the manual pages for `imgworks` and `dmconvert`.

There are also some excellent public domain (*i.e.* free) tools for manipulating images. A suite of tools for manipulating and converting images is available from the San Diego Supercomputing Center. You can download pre-compiled binaries for most UNIX workstations from the SDSC FTP server: `ftp.sdsc.edu` in `pub/sdsc/graphics/imtools`. ImageMagick is a public domain, X-windows based program for displaying both images and animations (loaded as sequences of images) on a wide variety of platforms. Visit the Web site

<http://www.wizards.dupont.com/cristy/ImageMagick.html> for more information.

OTHER NOTES

Almost all desktop publishing, page-layout, or word-processing packages permit importation of Encapsulated PostScript files or PICT files. Macintosh packages recognize files by explicit file typing based on a four letter code (unlike UNIX, which has no intrinsic file-typing). This code is not stored in the file itself, but in an "information file" used by the Finder (the Mac OS) to handle files. EPS files are recognized by the code "EPSF" and PICT images by the code "PICT". There are various methods of setting this code. File transfer utilities such as "fetch" can set the code during the transfer process. The "FileType" utility can be used to directly edit the Finder Information File. Unless this file type is set properly, it is likely that applications will refuse to recognize your EPS or PICT files. Send email to fetch@dartmouth.edu for information on fetch.

EPS files typically contain a "preview image" that lets the importing application display a facsimile of the actual graphic for ease in interactive positioning, scaling, or clipping. There are different methods of specifying this image (*e.g.* PICT resources for Macintosh or TIFF files for Windows). Unfortunately, the different methods of specifying the preview image preclude EnSight from providing this capability for import into Macintosh applications. When you import an EPS file, most Macintosh applications will display it as a gray box. You can, however, still resize and position the image and it should print fine. EnSight can, however, attach a preview image that can be used by Windows applications. Enable the "Windows (PC) Preview Capable" toggle in the Image Format Options dialog. The suffix ".EPS" should be used for the resulting files.

Do not attempt to send a PostScript file containing a preview image to a printer!

SEE ALSO

User Manual: [Saving and Printing Graphic Images](#)