

Image Conversion for SGML/DocBook-Based Single Sourcing

Our single-source documents require at least three image formats: GIF, PDF, and EPS for HTML, PDF and Postscript outputs respectively. There are two main types of input for these formats: bitmaps and vector images. We'll discuss each output format separately.

HTML

This document type works best with small, bitmapped images, and GIF is the format of choice for the time being. It is recognized by DocBook, and is produced easily in many ways; we use Paint Shop Pro.

PDF

This document type supports a limited number of image formats. We choose PDF images since they seem to be most compatible. We have found a way to convert bitmaps and vector images to PDF (see below) where they can be scaled with no loss of resolution, and where their file size remains relatively small. The former is important for good-looking output, and the latter for making the files accessible for downloading and storage.

One drawback of PDF is that it is not recognized as a valid image format by DocBook 3.1, forcing us to use a tag called `<graphic>`, which doesn't have to specify the extension, instead of the newer `<imagedata>`, which does.

Postscript

For this document type we use EPS. These image files tend to be very big, but can be printed at excellent resolution. We aren't currently distributing EPS documents electronically, so the size is not important.

Image Creation

- GIF images for HTML are created directly in Paint Shop Pro or other bitmap-capable software. Vector images can be converted to GIFs in Corel Draw, as well as several other packages.
- PDF images can be created from bitmapped or vector images. We use Corel Draw to convert GIFs or Corel vector drawings to PDF.

Follow these steps for GIFs:

1. Create the image or make a screen capture in Paint Shop Pro.
2. Save image as a GIF. (Reduce color depth to 256).
3. Import the GIF into Corel Draw 9.

Follow these steps in Corel Draw 9 for both GIFs and vector images:

4. Resize the page to the size of the image (using the sizing tool on the toolbar).
 5. Center the image on the page.
 6. Choose **Publish to PDF** from the **File** menu to export the image.
 - Select the **PDF for Prepress** option at the bottom of the dialog box if your original is a GIF.
 - Select the **PDF for Web** option in this box if your original is a vector image. Make sure your fonts are Arial for best output.
 7. Move or copy the image into the Linux document directory.
 8. For some reason we haven't figured out yet, the image is displayed about 25% larger in the PDF generated from DocBook than in Windows. No problem, you can rescale it to any size with no loss of resolution using the **scale** and **scaleftit** attributes of the <graphic> tag in DocBook.
- EPS images for Postscript can be either bitmaps or vectors. Either can be converted in Corel Draw. GIFs can also be converted in Linux, using ImageMagik (with the **display** command).

File sizes

The size of these files can vary greatly, as the following chart illustrates. The original file in this chart is a single GIF file created in Paint Shop Pro, converted to PDF with various **Publish to PDF** options (as shown), and to EPS in Corel Draw 9. It was also redrawn as a vector image in Corel Draw 9 and converted to GIF, PDF, and to EPS, as shown:

Original	Converted to:	File size
GIF	no conversion	5 K
GIF	PDF for Document Distribution	35 K
GIF	PDF for Prepress	10 K
GIF	PDF for Web	27 K
GIF	EPS	1069 K
vector	GIF (8-bit palette)	4 K
vector	PDF for Document Distribution	17 K
vector	PDF for Prepress	16 K
vector	PDF for Web	6 K
vector	EPS	154 K

Current Guidelines

Based on this, we currently follow these guidelines for single-source images:

- Screen captures: GIF originals, used as is for HTML, and converted to **PDF for Prepress** (PDF documents).
- Diagrams: vector originals, converted to GIF (HTML documents), and **PDF for Web** (PDF documents).
- EPS remains large-sized image files.