Overview

GSview is a graphical interface for Ghostscript under MS-Windows or OS/2. Ghostscript is an interpreter for the PostScript page description language used by laser printers. For documents following the Adobe PostScript Document Structuring Conventions, GSview allows selected pages to be viewed or printed. GSview 2.7 requires Ghostscript 4.03 - 5.99. GSview was inspired by Tim Theisen's X11 Ghostview program.

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Installation

It is recommended that you use the installation program for installing GSview. This is called **setup.exe** for MS-Windows and **os2setup.exe** for OS/2. The installation program will install both GSview and Ghostscript.

If you wish to install GSview manually, see the Manual Installation topic.

See also Options | Language.

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Uninstalling GSview and Ghostscript

To uninstall GSview and Ghostscript from Windows 95 or NT 4.0, use **Add/Remove Programs** from the Windows **Control Panel**.

For Windows NT 3.5 or Windows 3.1, use the "Uninstall GSview and Aladdin Ghostscript" program in the **GS Tools** group.

Manual uninstallation

Manual uninstallation

To uninstall GSview, remove the files in the **gsview** directory. To uninstall Ghostscript, remove the files in the **gsN.NN** directory where N.NN is the version number of Ghostscript.

Also remove

```
c:\windows\gsview32.ini
```

from the appropriate system directory. For Windows you may also need to remove gsview32.ini from user profile directories.

Remove the **GS Tools** group from the Program Manager or Start menu

If you know how to edit the registry, remove the following keys:

```
HKEY_CLASSES_ROOT\psfile
HKEY_CLASSES_ROOT\.eps
HKEY_CLASSES_ROOT\.ps
HKEY_CLASSES_ROOT\MIME\Database\Content Type\application/postscript
```

If you associated PDF with GSview you will also need to remove

```
HKEY_CLASSES_ROOT\pdffile
HKEY_CLASSES_ROOT\.pdf
HKEY_CLASSES_ROOT\MIME\Database\Content Type\application/pdf
```

If you installed Ghostscript with GSview, remove the key

```
HKEY_LOCAL_MACHINE\Software\Aladdin Ghostscript\gsN.NN
```

Manual Installation

It is recommended that you use the installation program for installing GSview. The following instructions describe how to install GSview without using the installation program.

Set the environment variable TEMP to point to a directory for temporary files. For example:

```
SET TEMP=c:\temp
```

The directory must exist and must be writeable.

First you need to install Ghostscript, plus its library files and fonts. You need the Ghostscript version listed in Overview. This version of GSview will not work with other versions of Ghostscript. Install Ghostscript in a directory c:\gstools\gsN.NN (Replace N.NN by the Ghostscript version number.)

Make a directory c:\gstools\gsview

Next install GSview for Windows by copying gsview32.exe, gsv16spl.exe, gvwgs32.exe, gsvw32de.dll, gsvw32fr.dll, gsviewen.hlp, gsviewde.hlp, gsviewfr.hlp, and printer.ini to the **c:\gstools\gsview** directory.

Start GSview then follow the instructions given in the configuration wizard. This will automatically configure Options | Configure Ghostscript, copy a list of known printers to the INI file, create file associations in the registry and create a program manager group.

If you want to run the configure wizard later, use Options | **Configure**.

Advanced Manual Installation

Instead of using the configure wizard Options | **Configure**, use Options | Configure Ghostscript.

In the Ghostscript DLL field enter the full path to the Ghostscript DLL.

```
c:\gstools\gsN.NN\gsdll32.dll
```

Enter the correct Ghostscript include path into the Ghostscript Include Path field. This include path must include the directories where the Ghostscript library files (gs_*.ps and Fontmap) and the Ghostscript fonts (*.pfb) are located. For example:

```
c:\gstools\gsN.NN;c:\gstools\gsN.NN\fonts
```

Do NOT put a **-I** before the include path.

Leave the Ghostscript Options field empty.

If you do not get the Ghostscript DLL field correct, GSview will not be able to load Ghostscript. If you do not get the Ghostscript Include Path correct, Ghostscript will not initialise and will then unload.

Exit GSview, then append printer.ini to the GSview INI file (c:\windows\gsview32.ini or c:\os2\gvpm.ini)

Create a Program Manager or Start Menu item for GSview.

Add the .ps and .eps (and optionally the .pdf) file types to the Registry.

If you have some Type 1 fonts on your system, it may be possible to tell Ghostscript to use them. See **Fontmap.os2** and **Fontmap.atm** supplied with Ghostscript for examples. See the Fonts topic.

If you have problems, try reading the help topic Common Problems.

Network Installation

Install GSview to a network directory.

When a user starts GSview for the first time, or starts GSview after the version number has changed, GSview will configure the local computer.

Using a UNC path when installing GSview will not work from Windows 3.1, but does work from Windows 95.

GSview tries to maintain one configuration file for each user. If user profiles are being used under Windows 95 or NT, GSview will store the INI file in the user profile directory, as specified in the registry. If this can't be found, and the environment variable USERPROFILE is defined and is a directory, GSview will store the INI file in this directory. If this fails, GSview will store the INI file in the default location, the Windows directory. If the user profile directory exists, but is write protected, GSview will have trouble.

If you wish to stop GSview from displaying the configuration wizard when GSview is first run, or whenever GSview is upgraded, place an INI file in the GSview directory. **Remember to remove this file before upgrading GSview in the future.** This should contain only those entries that you wish to overwrite in the users configuration. The suggested technique is to install GSview, then configure it. Copy gsview32.ini or gvpm.ini from the system directory or your user profile directory to the GSview directory, then edit it to remove all entries except for:

```
[Options]
Version=2.7
GSversion=550
Configured=1
GhostscriptDLL=E:\GSTOOLS\gs5.50\gsdll32.dll
GhostscriptInclude=E:\GSTOOLS\gs5.50;E:\GSTOOLS\gs5.50\fonts
GhostscriptOther=-dNOPLATFONTS -sFONTPATH="c:\psfonts"
```

When a user starts GSview, their INI file will normally be used. The first time GSview is run, or when the GSview version doesn't match the INI file, the following will occur:

1. The INI file in the GSview directory will be read, overriding the users INI file.

2. The list of printers will be updated from printer.ini in the GSview directory.

3. File associations (.ps, .eps, .pdf) will NOT be made or changed. If you wish to change these you must use Options | **Configure**.

4. Program Manager groups / Start menu items / Program objects will NOT be changed. If you wish to change these you must use Options | **Configure**.

If a user tries to use the GSview uninstall program, it will try to delete the GSview and Ghostscript files on the network. Make sure the GSview and Ghostscript directories are not writeable by users. To be extra safe, you may wish to remove the file **win32.log** from the GSview directory. This is the list of files that the uninstall program will remove.

The uninstall program will also delete all registry keys in **win32new.reg** and then restore the registry keys in **win32old.reg**. These keys are those of the user who installed GSview on the network. To disable this, delete these files.

The file **win32dde.log** contains the Program Manager DDE commands that the uninstall program will use.

If any or all of **win32.log**, **win32new.reg**, **win32old.reg** and **win32dde.log** are missing, the uninstall program will not complain.

Ghostscript Installation

WARNING: SOME OF THE INFORMATION BELOW IS OLD.

The following describes how to install Ghostscript, not GSview. The primary documentation on installing Ghostscript is found in the Ghostscript file Install.htm.

Aladdin Ghostscript for the PC is available on the Internet from
```
ftp://ftp.cs.wisc.edu/ghost/aladdin/gsNNN???.zip
```
Where NNN is the version number.

For Ghostscript N.NN, the files required to run Ghostscript are:

All PC platforms require the library (INI) files in
```
gsNNNini.zip
```

If you do not already have a set of Type 1 fonts, you will need
```
gsNNNfn1.zip
```

To run Ghostscript in conjunction with GSview you need one or more of the Ghostscript DLLs:
```
gsNNNos2.zip   (OS/2 2.0 or later DLL)
gsNNNw32.zip   (MS-Windows 3.1/Win32s, 95 or NT)
```

The following assumes that Ghostscript is to be installed in the directory \gstools of drive d:. Make a directory d:\gstools then change to this directory. Unzip the INI zip file and the required DLL and EXE zip files. This should put the files into the directory d:\gstools\gsN.NN.

If you also need the fonts, change to the d:\gstools\gsN.NN directory and then unzip gsNNNfn1.zip. This will put font files into .\fonts.

To run Ghostscript without GSview, set the GS_LIB environment variable as follows
```
SET GS_LIB=d:\gstools\gsN.NN;d:\gstools\gsN.NN\fonts
```
then start the appropriate EXE. To run Ghostscript without using the environment variable, use the following command
```
d:\gstools\gsN.NN\gs -Id:\gstools\gsN.NN;d:\gstools\gsN.NN\fonts
```
where the EXE name needs to be replaced with the appropriate name (gs, gs386, gswin16, gswin32 or gsos2).

If you already have some Type 1 fonts, there are two ways to tell Ghostscript about these fonts: editing/replacing the Fontmap file, or the GS_FONTPATH environment variable. See the Ghostscript Use.htm and the sample Fontmap files for details.

See the Include Path and Fonts topics for more details.

Include Path

Ghostscript needs to read some initialisation files during startup, and needs to read font files before drawing text. Ghostscript must be told where to find these files by using the Ghostscript **-I** command line switch or the **GS_LIB** environment variable can be used. See below for details for Unix or VMS.

The **-I** switch or **GS_LIB** environment variable contains a list of directories to search for the required initialisation files. On a PC, it is normal to put the initialisation files in the same directory as the Ghostscript program. If Ghostscript is in c:\gs, then **-Ic:\gs** would be used as a command line option to Ghostscript.

Ghostscript also needs to find font files. The list of fonts known to Ghostscript is contained in the Fontmap file. The directories which contain these fonts should be added to the **-I** switch. If the Ghostscript *.pfb fonts are in c:\gs\fonts, and some other *.pfb fonts are in c:\psfonts, then **-Ic:\gs;c:\gs\fonts;c:\psfonts** would be used as a command line option to Ghostscript on a PC.

Under Unix or VMS with Ghostview, the include path should have been configured when Ghostscript was compiled. If not, and Ghostview is being used, use the **GS_LIB** environment variable instead of **-I**. The Ghostscript include files are generally not put in the same directory as the executable under Unix. Instead the executable might be in

```
/usr/local/bin
```

while the include files are in

```
/usr/local/lib/ghostscript/gsN.NN
```

and the fonts in

```
/usr/local/lib/ghostscript/fonts
```

Consequently, the **GS_LIB** environment variable would need to be set to

```
/usr/local/lib/ghostscript/gsN.NN:/usr/local/lib/ghostscript/fonts
```

It is to be hoped that these were set as the default when Ghostscript was compiled, and that it is unnecessary to use **GS_LIB**.

For more information, see the following topic.

File searching

File searching

(from Ghostscript Use.htm)

When looking for initialisation files (gs_*.ps, pdf_*.ps), font files, the Fontmap file, and files named on the command line, Ghostscript first checks whether the file name specifies an explicit directory or drive (i.e., doesn't begin with '/' on Unix systems; doesn't begin with a '/' or '\' or contain ':' as the second character on MS-DOS systems; doesn't contain a ':' or a square bracket on VMS systems). If it does, Ghostscript simply tries to open the file using the given name. Otherwise, Ghostscript will try directories in the following order:

- The current directory (unless disabled by the -P- switch);

- The directory/ies specified by the -I switch(es) in the command line (see below), if any;

- The directory/ies specified by the GS_LIB environment variable, if any;

- The directory/ies specified by the GS_LIB_DEFAULT macro in the Ghostscript makefile, if any.

Each of these (GS_LIB_DEFAULT, GS_LIB, and -I parameter) may be either a single directory, or a list of directories separated by a character appropriate for the operating system (':' on Unix systems, ';' on VMS systems, ';' on MS-DOS systems). We think that trying the current directory first is a very bad idea -- it opens serious security loopholes and can lead to very confusing errors if one has more than one version of Ghostscript in one's environment -- but when we attempted to change it, users insisted that we change it back. You can disable looking in the current directory first using the -P- switch described below.

Note that Ghostscript does not use this file searching algorithm for the 'run' or 'file' operators: for these operators, it simply opens the file with the given name. To run a file using the searching algorithm, use 'runlibfile' instead of 'run'.

Fonts

Ghostscript locates fonts in two ways:

1. Those listed explicitly in Fontmap

2. Font files found in directories listed in the GS_FONTPATH environment variable or -sFONTPATH= switch.

Those listed in the Fontmap file should be locatable on the Ghostscript include path, or should have fully qualified paths. Note that you must use / or \\ and must not use \ within a directory name.

Ghostscript now comes with a good quality set of free fonts. Most have a .pfb extension and can be used with Adobe Type Manager. The Ghostscript fonts can be broken into three main classes:

1. Type 1 outline fonts with hinting (*.pfb and most *.pfa). These produce good quality output. The standard Fontmap file uses these in preference to the other font types. A full set of the common 35 PostScript fonts is available.

2. Type 1 outline fonts that have been created from bitmap fonts (*.gsf). These produce poor quality output. These are ordinary Type 1 fonts (although they cannot be used with Adobe Type Manager). Avoid them if at all possible.

3. Type 1 stroked fonts created from the public domain Hershey fonts (h*.gsf, h*.pfa). These produce moderate quality output, but do not correspond to standard PostScript fonts.

If you have some other Type 1 outline fonts (*.pfa, *.pfb), it is possible to use these with Ghostscript. Whether or not you are allowed to do this depends on the font licence. If you do use these fonts with Ghostscript, it is **your** responsibility to make sure that the font licence permits this use. To use the other Type 1 fonts, you will need to replace or edit the Fontmap file, or use GS_FONTPATH.

Fontmap
GS_FONTPATH
Platform Fonts

Fontmap

The **Fontmap** file tells Ghostscript what fonts are available and where to find them. Each line in **Fontmap** may be one of the following:

1. A comment. These are lines that start with a %

```
% fontmap aka Fontmap - standard font catalog for Ghostscript.
```

2. A font name and file name. For example

```
/Courier                (ncrr.pfa)      ;
/Courier-Italic         (ncrri.pfa)     ;
```

The first of these lines says that the font name **Courier** is to be found in the file **ncrr.pfa**. The file **ncrr.pfa** must contain a font named Courier. If the name is not Courier then a font alias must be used. This is described later. Note that the file name is a PostScript string and so \ has a special meaning. If **ncrr.pfa** was in the c:\gs\fonts directory, you would need to have **c:\gs\fonts** as one of the directories listed in the include path, or you would need to use the file name (c:/gs/fonts/ncrr.pfa) or (c:\\gs\\fonts\\ncrr.pfa). Using / is preferred to \\.

3. A font alias. For example

```
/Courier-Oblique                /Courier-Italic         ;
```

This tells Ghostscript that if Courier-Oblique is requested, Courier-Italic is to be used instead. The standard Fontmap file uses aliases to replace the standard 35 fonts by a set of outline fonts with different names. The NimbusSansL-Regular font looks like Helvetica, so the default Fontmap file actually uses

```
/Helvetica                      /NimbusSansL-Regu    ;
/NimbusSansL-Regular            (n019003l.gsf)  ;
```

A description of the required formatting for each line is near the top of each **Fontmap** file.

Ghostscript comes with a number of alternate **Fontmap** files. These include

```
Fontmap         The standard fontmap file
Fontmap.ATB     For Adobe Type Basics (65 Type 1 fonts)
Fontmap.ATM     For Adobe Type Manager (13 fonts)
Fontmap.OS2     For Type 1 fonts shipped with OS/2 (13 fonts)
Fontmap.OSF     For DEC OSF/1 systems
Fontmap.Sol     For Solaris 2.3 and above
Fontmap.Ult     For DEC Ultrix systems
Fontmap.VMS     For VAX/VMS systems with DECwindows/Motif
```

If you want to use one of the alternate Fontmap files, the procedure is as follows:

1. Copy Fontmap to Fontmap.old

2. Copy Fontmap.??? (your selected Fontmap file) to Fontmap

3. Add the directory that contains the Type 1 fonts to the include path (**-I** or **GS_LIB**)

GS_FONTPATH

(From Ghostscript Use.htm)

Ghostscript has slightly different rules for determining how to find the file containing a font with a given name. It starts by looking for Fontmap files in every directory on the search path: these files provide mappings between font names and file names. (See the Fontmap file in the Ghostscript distribution for details.) If it can't find a font in any Fontmap file in the search path (or in the list provided with the -sFONTMAP= switch, if present), it looks at the GS_FONTPATH environment variable (or the value provided with the -sFONTPATH= switch, if present), which is also a list of directories. It goes to those directories, one by one, and looks for all files that appear to contain PostScript fonts; it then effectively adds all those files and fonts to its internal copy of the Fontmap (the catalog of fonts and the files that contain them). If you are using one of the following types of computer, you may wish to set GS_FONTPATH to the indicated value so that Ghostscript will automatically acquire all the installed Type 1 fonts:

```
System type       GS_FONTPATH
-----------       -----------
DEC OSF/1         /usr/lib/X11/fonts/Type1Adobe
DEC Ultrix        /usr/lib/DPS/outline/decwin
HP-UX 9           /usr/lib/X11/fonts/type1.st/typefaces
IBM AIX           /usr/lpp/DPS/fonts/outlines
  "               /usr/lpp/X11/lib/X11/fonts/Type1
  "               /usr/lpp/X11/lib/X11/fonts/Type1/DPS
NeXT              /NextLibrary/Fonts/outline
SGI IRIX          /usr/lib/DPS/outline/base
  "               /usr/lib/X11/fonts/Type1
Sun SunOS 4.x     /usr/openwin/lib/X11/fonts/Type1/outline
  " (NeWSprint only)
   newsprint_2.5/SUNWsteNP/reloc/$BASEDIR/NeWSprint/small_openwin/lib/fonts
Sun Solaris 2    /usr/openwin/lib/X11/fonts/Type1/outline
VMS              SYS$COMMON:[SYSFONT.XDPS.OUTLINE]
```

These paths may not be exactly right for your installation; if the indicated directory doesn't contain files whose names are familiar font names like Courier and Helvetica, you may wish to ask your system administrator where to find these fonts.

NOTE: On Solaris systems simply setting GS_FONTPATH may not work, because for some reason some versions of Ghostscript can't seem to find any of the Type1 fonts in /usr/openwin/lib/X11/fonts/Type1/outline. It says: "15 files, 15 scanned, 0 new fonts". See Fontmap.Sol instead.

See also Fontmap.

Platform Fonts

Platform fonts are described in Ghostscript Fonts.htm.

WARNING: Text anti-aliasing will not work if platform fonts are used. For this reason, GSview will automatically use -dNOPLATFONTS if text anti-aliasing is selected.

The description below was written when Ghostscript came with bitmap derived fonts of poor quality. Ghostscript now comes with Type 1 fonts of good quality.

The computer hosting Ghostscript may have the same fonts in better quality versions, either as scaleable fonts (e.g. Type 1 or TrueType) or as bitmaps. To improve the display of documents, Ghostscript can use these **platform fonts** instead of using the low quality fonts.

This can be illustrated with an example. The default /Helvetica-Bold font is phvb.gsf, an outline font derived from a bitmap. When the /Helvetica-Bold font is requested, phvb.gsf is read. When a character is to be rendered to the display, Ghostscript instead asks MS-Windows for the Helvetica-Bold font at the appropriate size. MS-Windows then draws the requested character from the TrueType Arial Bold font, and Ghostscript puts it on the display. The resulting output is of better quality than the /Helvetica-Bold bitmap derived font.

In another example, the same request for /Helvetica-Bold under Unix/X11 might instead display characters using a prebuilt bitmap font if one is available in the requested size.

There are some limitations to using **Platform fonts**.

1. Platform fonts are only used for upright (Portrait) characters. Rotated characters will be displayed using the original PostScript font.

2. A PostScript version of the required font must be available. This is needed to obtain character bounding box information, encoding vector for character sets, and drawing rotated characters.

3. Platform fonts may only used for a limited range of sizes. For example, MS-Windows only uses platform fonts for 6 to 36 point fonts.

4. MS-Windows lies about the available font sizes. Ghostscript asks for a particular font size and MS-Windows returns a font that it claims is the same size. However MS-Windows may instead return a font of a different size that it thinks will look better. Often it looks worse because the intercharacter spacing is out of proportion to the character size. If this happens, platform fonts can be disabled by adding -dNOPLATFONTS to the Ghostscript Command Line.

5. Platform fonts will only be used for the display. Output to printer devices will continue to use the PostScript font.

MS-Windows Ghostscript has a fixed alias table for fonts. In the table below, the name on the left is the name of the PostScript font, and the name on the right is the name that Ghostscript will try if MS-Windows doesn't know the PostScript name.

```
Courier         Courier New
Helvetica       Arial
Helvetica       Helv
Times           Times New Roman
Times           Tms Rmn
```

Platform fonts are not supported under OS/2.

Not yet written: Unix/X11 Ghostscript may have an ability to use Xresources to specify font aliases. If

this is the case, then the method should be described here.

Document Structuring Conventions

Adobe has defined a set of extended comment conventions that provide additional information about the page structure and resource requirements of a PostScript file. If a file contains these Document Structuring Convention (DSC) comments, GSview can display pages in random order using Goto Page and display pages in reverse order using Previous Page. Selected pages can be extracted to another file or printed.

If a file does not contain DSC comments, GSview can only display the pages in the original order.

DSC conforming files start with the comment line:

```
%!PS-Adobe-3.0
```

where the number 3.0 may change and is the DSC version number. Some programs write PostScript files with a control-D as the first character of the file, followed by the comment line mentioned above. GSview will correctly report that these files are not DSC conforming, but will still display them with page selection features available. Complain to the author of the program that produced the PostScript file. To make the file DSC conforming, edit it to remove the control-D character.

DSC conforming files contain lines such as:

```
%%Pages: 24
%%Page: 1 1
```

These lines tell GSview how many pages a document contains and where they start. GSview uses this information to select individual pages.

Encapsulated PostScript Files (EPSF) are single page documents that contain a subset of the **DSC** comments and PostScript commands. EPS files start with the comment line:

```
%!PS-Adobe-3.0 EPSF-3.0
```

EPS files are commonly used for inclusion in other documents and for this reason require the bounding box comment:

```
%%BoundingBox: llx lly urx ury
```

where llx, lly, urx and ury are integers giving the x and y co-ordinates of the lower left and upper right corners of a bounding box which encloses all marks made on the page.

Some EPS files contain a preview of the PostScript document. This preview can be a Windows Metafile, a TIFF file, or an Interchange preview (EPSI format). For the Windows Metafile or TIFF file preview, the EPS file under DOS contains a binary header which specifies the location and lengths of the preview and PostScript language sections of the EPS file. For the Interchange format, the preview is contained in DSC comments starting with

```
%%BeginPreview: width height depth lines
```

An EPS file with a preview can be created from an EPS file without a preview using Add EPS Preview.

Portable Document Format

GSview can display and print PDF files, although there are a number of limitations with the current method.

GSview ignores the page size on the Media menu, and instead uses the /MediaBox from the PDF file. If Options | EPS Clip is enabled, GSview will use the /CropBox from the PDF file.

GSview needs to Open a PDF file to count the pages. If you **Select** the file, GSview will not be able to Text Extract, Find, Goto Page or do any other operation that needs to know how many pages are in the document.

pdfmark link support is crude.

To convert a PostScript file to a PDF file, use File | Print, then select the **pdfwrite** device and **Print to File**.

To convert a PDF file to a PostScript file, use File | Print, then select the **pswrite** device and **Print to File**.

File | Extract does not work for PDF files. Extracting PDF pages extracts PostScript rather than PDF.

To batch convert multiple files, look at ps2pdf.bat and pdf2ps.bat in the Ghostscript directory. You will need to use gswin32c.exe instead of gs.exe. You may also need to set the Ghostscript include path using **-I** or the environment variable **GS_LIB**.

Opening a Document

The **Open** command on the **File** menu opens a file and displays the first page.

If the file contains DSC comments, pages can be selected using Next Page, Previous Page and Goto Page.

If the file does not contain DSC comments, Previous Page and Goto Page will not work. Another file should not be selected until a last page of the file has been displayed.

When a file is open, GSview will display the document filename, the current page (if available) and while the cursor is over the image, the location of the cursor in co-ordinates specified by Options | Units. The co-ordinate can be PostScript points (1/72"), millimetres or inches. The cursor location is useful for calculating bounding boxes.

The **Select File** command is similar to **Open** but it does not display the document. This command is useful for opening a document prior to printing it.

The **Save As** command saves a copy of the current document. This is useful if GSview is being used as a PostScript viewer by another application and you wish to save the currently displayed file.

Extract allows a range of pages to be copied from the current document to a new document. For example, ten pages can be extracted from the middle of the current document and written to another file, which will later be sent to a printer. If you select **Reverse**, the extracted pages will be in descending order.

The **Close** command closes the currently open document. This should be used before the current file is changed by another program. If you do not do this and GSview detects that the file length or date have changed, it will close Ghostscript and rescan the document.

See also Print.

PS to EPS

PS to EPS

In general, it is not possible to convert a PostScript file to EPS. However, many single page PostScript files can be converted to EPS by changing the first line of the file to

```
%!PS-Adobe-3.0 EPSF-3.0
```

and then adding or fixing up the **%%BoundingBox** comment.

EPS files are commonly used for inclusion in other documents and for this reason require the bounding box comment:

```
%%BoundingBox: llx lly urx ury
```

where llx, lly, urx and ury are integers giving the x and y co-ordinates of the lower left and upper right corners of a bounding box which encloses all marks made on the page.

When used incorrectly, the PS to EPS command can produce PostScript files with incorrect DSC comments. Such a document will cause problems when you try to include it inside another document.

To convert a PostScript file to EPS, the original file **must** be a **single page** document. If the document contains DSC comments and is multi page, extract the desired page with File | Extract. If the document does not contain DSC comments, you will need to edit the file by hand to extract the desired page.

EPS documents **must not** use any of the following operators:

```
banddevice   clear         cleardictstack  copypage
erasepage    exitserver    framedevice     grestoreall
initclip     initgraphics  initmatrix      quit
renderbands  setglobal     setpagedevice   setpageparams
setshared    startjob      letter          note
legal        a3            a4              a5
```

The following operators should be used with care:

```
nulldevice   setgstate     sethalftone    setmatrix
setscreen    settransfer   setcolortransfer
```

It is **your** responsibility to make sure that the above requirements are met.

To test if a document contains any of the above operators, select Options | EPS Warn and then Open the desired document. After the page has been displayed, Close the document and then display the Ghostscript messages with File | Show Messages. If any of the above operators have been used you should see lines like:

```
Warning: EPS files must not use ...
```

If you find these warnings then do **not** use **PS to EPS**. Remember to turn off EPS Warn afterwards.

A document must be displayed before **PS to EPS** is used.

For documents without DSC comments, **PS to EPS** allows a bounding box to be specified, then writes out an EPS file consisting of an EPS wrapper around the original document.

For documents with DSC comments, **PS to EPS** will change the first line of the file to

```
%!PS-Adobe-3.0 EPSF-3.0
```

then allows the **%%BoundingBox** comment to be changed or added.

For EPS documents, **PS to EPS** allows the **%%BoundingBox** comment to be changed.

PS to EPS does not clip the document to the **%%BoundingBox**. To do so would require changing the PostScript code itself. **PS to EPS** only changes the DSC comments.

If **Automatically calculate Bounding Box** is checked, GSview will calculate the bounding box from the non white pixels. If unchecked, you get to choose the bounding box by clicking at the left, bottom, right and top.

PS to EPS does not add a preview to a document. If you want a preview you add it with **Edit** | Add EPS Preview after first creating an EPS file with a correct **%%BoundingBox**.

See also Add EPS Preview, Extract, EPS Warn.

Page Selection

View | **Next Page** or the **+** button moves to the next page of a document. This works even if the document does not contain DSC comments.

View | **Previous Page** or the **-** button moves to the previous page.

View | **Redisplay** redisplays the current page.

View | **Goto Page** or the **pointing hand** button shows a dialog box which allows selection of the next page number to display. The **Select Page** dialog box shows page labels since these are likely to be more useful than a sequential page number.

View | **Next Page and Home** or the space bar moves to the top of the next page of a document.

View | **Previous Page and Home** or the BackSpace key moves to the top of the previous page.

The **Previous Page**, **Redisplay** and **Goto Page** commands work only if the document contains DSC comments.

View | **Full Screen** or the **F4** key displays the page full screen (without title bar, scroll bars etc.). To return to normal display, press the Escape key.

Zoom

To enlarge a displayed feature, position the cross-hair mouse pointer over the feature then press the right mouse button. The window will swap from normal display resolution to zoom resolution and the status line will have the word **Zoomed** appended to it. The zoomed feature will be in the centre of the window. To cancel **Zoom**, press the right mouse button again or select any command that redraws the page (e.g. Redisplay, Next Page). By default the zoom resolution is 300 dots per inch but this can be changed with Media | Display Settings dialog box.

Zoom will only work for DSC conforming documents.

To enlarge or shrink the entire page, use the Resolution on the Media | Display Settings dialog box, use the magnifying glass toolbar buttons.

Document Information

A brief information area at the top of the window is used by GSview to display the document filename, the current page number and label (if available) and while the cursor is over the image, the location of the cursor (relative to the lower left corner of the paper) in co-ordinates specified by Options | Units. The cursor location is useful for calculating bounding boxes.

The **Info** command on the **File** menu shows a dialog box with the following information about the DSC comments in the current document.

File is the full pathname to the document.

Type is **DSC**, **EPS**, **No DSC comments** or 'Ignoring DSC Comments'. EPS is an Encapsulated PostScript File - a single page document that contains a subset of the DSC comments and PostScript commands. **EPS** files are commonly used for inclusion in other documents. **Ignoring DSC Comments** is displayed if Options | Ignore DSC is selected. These may be prefixed by **Ctrl-D followed by** or **PJL followed by**. Both of these indicate that the document does not comply with the DSC because there is some garbage at the beginning of the document. To fix the former, see Common Problems. To fix the latter, do not use a HP LaserJet driver when creating PostScript documents for distribution to others.

Title is a text title that can be used when printing banner pages and for routing or recognising documents.

Date is the time the document was created.

BoundingBox specifies a box that encloses all the marks painted on the page. The four integer values are the co-ordinates of the lower left and upper right corners of the bounding box in default user co-ordinates (1/72 inch).

Orientation is the default page orientation and is either **Portrait** or **Landscape**. See the Orientation menu.

Page Order is either **Ascending**, **Descending** or **Special**. If **Page Order** is **Descending**, GSview automatically reverses the pages when displaying or printing so they appear in ascending order. When extracting or printing, GSview can be instructed to print pages in descending (reverse) order.

Default Media gives the media name followed by the width and height of that media in default user co-ordinates (1/72 inch).

Pages is the total number of pages in the document.

Page gives the page label and page number.

Bitmap is the size of the display bitmap in pixels which may be useful if you are copying the displayed image to the clipboard.

Printing

The **Print** command on the **File** menu allows printing of the document using Ghostscript. The **Print** command is also used for creating bitmap files and PDF files. A **Printer Setup** dialog box allows selection of the Ghostscript printer driver and resolution, the page range and the Spooler output.

All pages, individual pages or any combination may be printed. The **All**, **Odd** and **Even** buttons provide quick selection of pages. If a single contiguous block of pages is marked, the **Odd** and **Even** buttons will select odd or even pages within this range. The **Reverse** check box causes the pages to be printed in descending order.

The **mswinpr2** printer driver uses the Windows printer drivers and should work with any printer with raster capabilities. Printer resolution cannot be selected from within GSview; use the Control Panel instead. The Windows printer driver used must be set to Portrait orientation.

With all other printer drivers, Ghostscript sends the output direct to the printer queue. If you have trouble printing you may have to **Print To File** and then **Print File** or use the DOS command **COPY /B FILENAME PRN**.

If PostScript Printer is checked, the selected pages will be sent direct to the printer queue, without using Ghostscript. This is similar to **File | Print File**, except that you can specify which pages to print. The Advanced button allows prolog and epilog files to be placed around the PostScript being sent to a PostScript printer.

Under Win32s, GSview and Ghostscript can't send output directly to a printer queue, so an external 16-bit program is used.

The list of available devices and resolutions is stored in the [Devices] section of gsview32.ini. The default list of devices and resolutions is taken from the standard distribution version of Ghostscript 5.50 and may not be complete.

To print a document without displaying it, open the document using Select File.

If you want to produce a bitmap, some useful drivers are **bmpmono**, **bmp16**, **bmp16m** and **bmp256**.

File | Print File sends a file to a local port, bypassing the Windows printer drivers. This is useful for sending a document to a PostScript printer, or for sending an output file produced by Ghostscript to a printer.

The **Options** field contains a Ghostscript command line option for the selected device.

The **uniprint** button selects the uniprint device and displays a list of available configuration files (*.upp) for the uniprint device. If you select one of these configuration files, the configuration file name will be placed in the **Options** field of the Printer Setup. See the Ghostscript file **Devices.htm** for details of how to configure the uniprint device.

PostScript Printer
Spooler
Properties

PostScript Printer

When a PostScript printer is connected via a serial port, it sometimes requires a Ctrl+D character to be sent after the PostScript file, and depending on how well behaved other programs are, sometimes before. This is part of the serial communications protocol used by these printers - it is not part of PostScript. When using the **PostScript Printer** option, you can choose to send Ctrl+D before and/or after the PostScript file.

Some PostScript printers understand multiple languages, and require a prolog to enable the PostScript mode. For example, HP LaserJet printers (with the PostScript option) require the following prolog

```
^[%-12345X@PJL JOB
@PJL ENTER LANGUAGE = POSTSCRIPT
```

and the following epilog

```
^[%-12345X@PJL EOJ
^[%12345X
```

The prolog and epilog files allow you to send a file to the printer before and after the PostScript file.

Spooler

The **Select Printer Port** or **Select Printer** dialog box prompts you for the name of a printer queue or port to which output should be sent. This queue or port will be saved and will be the default selection next time.

Under Windows 3.1, a port name is used. Output will be spooled for this port.

Under Windows 3.1 / Win32s, a port name is used. An external 16-bit program is used to spool output for the port.

Under Windows 95 or NT, a printer queue name is used. At present this must be a local queue, or a network printer for which a connection has been established.

See also Print

Properties

The **Printer Setup** dialog box has a **Properties** button which allows some printer drivers to configure extra properties and a page offset to be specified.

A page offset can be specified for each printer. The page offset is useful for correcting a mismatch between the page origin of a Ghostscript printer device and a particular printer. Increasing the X value will translate the image towards the right. Increasing the Y value will translate the image downwards.

Properties are typically used to set BitsPerPixel for a colour printer or other types of colour or density correction.

Properties are specific to a particular printer. Changing the value of the **BitsPerPixel** property on one printer does not change it for any other printer.

When you press the **OK** button in the **Properties** dialog box, the current settings are written to the gsview32.ini file.

Some **Properties** are predefined in GSview, but these may not match those available in Ghostscript. The **Edit** and **New** buttons allow you to modify available **Properties** for that printer. See the Edit Properties topic for more details.

Edit Properties

Edit Properties

Not every printer supports the use of optional Properties. To find out which printers support Properties and which Properties are recognised by each printer, read the Ghostscript file Devices.htm or look at the Ghostscript source code.

There are two ways to add or edit Properties.

The first method uses the **Edit** or **New** button on the Properties dialog box.

Each property must be either a number or a string. Number properties are equivalent to the Ghostscript **-d** command line option. String properties are equivalent to the Ghostscript **-s** command line option. Each property consists of a **Name** and **Value**. These are used as **-dNAME=VALUE** or **-sNAME=VALUE**. The **Value** is chosen from the comma separated list of **Values** entered into the **Edit Properties** dialog box. Spaces must not be embedded in the **Name** or **Values**.

To delete a property, select it on the Properties dialog box, then press **Edit**, then press the **Delete** button on the **Edit Properties** dialog box.

The second method is to manually edit the GSview INI file.

For each printer, you must add two sections to the gsview32.ini file. The following example shows how to add property information for the cdjcolor driver. First add a section which gives the current values. This section, after the first character is removed, gives the options that will appear in the **Property** list box. The first character is **s** for string or **d** for number.

```
[cdjcolor]
dBitsPerPixel=24
dDepletion=1
dShingling=2
dBlackCorrect=4
```

Next add a section which gives the values to display in the **Value** list box.

```
[cdjcolor values]
dBitsPerPixel=1,3,8,16,24
dDepletion=1,2,3
dShingling=0,1,2
dBlackCorrect=0,1,2,3,4,5,6,7,8,9
```

GSview will also add the value **[Not defined]** to the listbox.

When GSview prints a file, it will give Ghostscript the contents of the [cdjcolor] section of gsview32.ini as follows:

```
-dBitsPerPixel=24 -dDepletion=1 -dShingling=2 -dBlackCorrect=4
```

If the value of a property is **[Not defined]**, that property will not be sent to Ghostscript.

File conversions and tricks

Some common file conversions that can be performed using GSview and Ghostscript are:

Convert PostScript to PDF. File | Print, select pdfwrite, 300dpi, Print to File. With Ghostscript 5.50, fonts with non-standard encodings will be included as bitmaps. If you choose 72dpi, fonts will look rough.

Convert PDF to PostScript. File | Print, select pswrite, 300dpi, Print to File.

Convert Level 2 PostScript to Level 1 PostScript. File | Print, select psmono, 300dpi, Print to File. Instead of 300dpi, you should use the resolution of your printer.

Convert to a bitmap. File | Print, select bmp16m, 72dpi, Print to File.

Convert to an editable vector format (pstoedit). Edit | Convert to vector format OR convert to PDF using the method above.

Extract text (pstotext). Edit | Text Extract

Add a preview to an EPS file. Edit | Add EPS Preview. See Add EPS Preview for more details.

Remove preview from an EPS file. Edit | Extract EPS | PostScript

Display with smooth edges. Media | Display Settings. Set **Text Alpha** and **Graphics Alpha** to 4. You need a display with at least 8 bits per pixel.

Save the displayed bitmap. Edit | Copy to copy to the clipboard. To save to a BMP file, use Edit | Copy then Paste To...

Create a bitmap with smooth edges (anti-aliasing). 1. Display with smooth edges and save the display bitmap. OR 2. Convert to ppmraw and set the properties

```
-dTextAlphaBits=4 -dGraphicsAlphaBits=4
```

Convert to vector format

(GSview 2.7 did not include the pstoedit DLL. This is GSview 2.71, an update to 2.7 which contains PStoEdit 3.01. See http://www.cs.wisc.edu/~ghost/gsview/pstoedit.html for details).

You can convert a PostScript or PDF file to an editable vector format using **pstoedit** by Wolfgang Glunz. **pstoedit** is included with GSview for Win32. It is licensed with the GNU Public Licence. A command line version **pstoedit.exe** and the manual **pstoedit.htm** are included in the gstools\pstoedit directory. The home page of pstoedit is

```
http://www.geocities.com/SiliconValley/Network/1958/pstoedit/index.html
```

To use **pstoedit** from within GSview, use **Edit | Convert to vector format**. Three dialog boxes will be shown.

The first dialog is for pstoedit settings.

Select an output **Format**.

Draw text as polygons should be selected if the PostScript file contains text and the output format does not support this, e.g. gnuplot. This might produce a large output file.

When **Map to ISO-Latin1** is selected, pstoedit maps all character codes to the ones defined by the ISO-Latin1 encoding, which is used by HTML and MS-Windows. This is the default. If you uncheck this item, the encoding from the input PostScript is passed unchanged to the output.

If the output format does not support curves in the way PostScript does, all curves are approximated by lines. The **Flatness** option is used to control this approximation. This parameter is directly converted to a PostScript setflat command. Small values produce a more accurate approximation, but more line segments.

Sometimes fonts embedded in a PostScript program do not have a fontname. For example, this happens in PostScript files generated by dvips. In such a case pstoedit uses a replacement font. The default for this is Courier. Another font can be specified using the **Default Font** option. Some alternative font names are Courier, Helvetica and Times-Roman.

Some of the output formats support extra options. See the pstoedit manual for more details. For example, the java output format uses **Driver Options** to specify the name of the java class.

The second dialog (omitted if no page numbering is available) specifies the page to be converted, or if supported by the output format, a range of pages to be converted.

The third dialog specifies the output file name.

Not all **pstoedit** formats support bitmap graphics. If you need bitmap output, see File conversions and tricks.

For more details please read the pstoedit manual.

Text Extract and Find

In general, extracting text from a PostScript document is not a trivial operation. Words may be broken. Text may be encoded. Ligatures may be used (e.g. replacing 'fi' with a single character). There may be no relationship between the location of a word in the PostScript file and its location on the page. Success in extracting text from a PostScript document depends greatly on the document itself.

GSview has two methods of extracting text from a PostScript file.

The quick method extracts all text from PostScript strings.

The second method uses pstotext and Ghostscript to more accurately extract text from a PostScript document.

The method used is selected by Options | PStoText. See the appropriate topic below:

Quick Text Extract and Find
PStoText Text Extract and Find

Quick Text Extract and Find

It is common for PostScript documents to contain text in the same order as it appears on the page, and for it to be given in PostScript strings, surrounded by parentheses. Complete lines may be given in one string, or one word per string. For this sort of document, extracting text can be done with reasonable success.

Edit | Text Extract will extract text contained in strings from specified pages and write it to a text file. Line breaks in this text file correspond to lines in the document. Spaces in the text file correspond to spaces within strings, or to separate strings. A more effective method of extracting text is to use ps2ascii.ps supplied with Ghostscript, or to use the PStoText program listed on the Ghostscript WWW page. PStoText can be used from GSview by using Options | PStoText.

Edit | Find will search for text and display the first page that contains the text. Find asks for a search text and a range of pages in which to search. The preceding comments about extracting text from a PostScript document should be noted. Find first extracts text from the document, then searches it ignoring all spaces in both the document and the search text. Case is ignored when searching. Consequently the search text **these** would match both **These** and **The serial**. No information is given about where the word is located on a given page because this information is not available without a complete PostScript interpreter. Find will not work for non DSC documents or DSC documents with special page order.

Edit | Find Next will continue the search from the next page.

PStoText Text Extract and Find

This method uses pstotext and Ghostscript to extract text from a PostScript document. Before doing any text extraction or searching, the entire PostScript document will be processed by Ghostscript and pstotext to produce a text index file. This may take a long time. Once this has finished, text extraction and searching should be quick.

pstotext uses the ISO-Latin1 character set. See the pstotext documentation for more details.
`http://www.research.digital.com/SRC/virtualpaper/pstotext.html`

Orientation must be set to match the text direction of the document.

Edit | Text Extract will extract text from specified pages and write it to a text file.

Words can be copied to the clipboard using **Edit** | Copy.

Edit | Find will search for text and display the first page that contains the text. Find asks for a search text and a range of pages in which to search. The search text is first broken up into words. For each search word, a search is made to find a match anywhere within a document word. Searching for **frog** would find **frog**, **frogs** and **bullfrogs**. The wildcards '*' (zero or more characters) and '?' (any one character) are supported, but it doesn't make sense to use them at the beginning or end of a word. Wildcards do not extend beyond the word being searched. Multiple complete words may be specified, e.g. **GSview is a**. If the search text is found, the page containing the text is displayed and the first word highlighted. Find will not work for non DSC documents or DSC documents with special page order.

Edit | Find Next will continue the search.

For most PostScript files you should use Options | PStoText | **Normal**.

Options | PStoText | **Dvips Cork Encoding** is only relevant for PostScript files produced by dvips from TeX or LaTeX documents; it tells **pstotext** to use the Cork encoding rather than the old TeX text encoding. Unfortunately files produced by dvips don't distinguish which font encodings were used.

Clipboard

The GSview window can be copied to the Clipboard as a bitmap by selecting **Copy** from the **Edit** menu. The bitmap will be a Device Independent Bitmap (DIB/BMP format).

An alternative way to get a bitmap output from Ghostscript is to use one of the BMP drivers. See Print.

Paste To copies a Device Independent Bitmap from the Clipboard (if available) to a BMP file.

Convert Bitmap converts between a Device Independent Bitmap and a Device Dependent Bitmap. If the clipboard contains a Device Independent Bitmap (BMP format), this is converted to a Device Dependent Bitmap and added to the clipboard. If the clipboard does not contain a colour palette, one is created from the Device Independent Bitmap and added to the clipboard. This option is present because some applications (notably Windows Paintbrush) won't recognise a Device Independent Bitmap in the clipboard.

If Text Extract or Find are used on a document with PStoText enabled, GSview creates an index of the words in the document. If any words are marked with the mouse, **Copy** will copy these words to the clipboard instead of copying a bitmap. Text cannot be marked until either Text Extract or Find has been used with Options | PStoText enabled.

EPS Preview

Add EPS Preview takes a bitmap from the display and uses it to add a preview to an EPS file. **Add EPS Preview** can create a DOS EPS file with a Windows Metafile or TIFF preview, or an EPSI file with an Interchange preview. To use the **Add EPS Preview** command the following steps must be followed.

1. Deselect **Options | Ignore DSC**

2. Make sure the document has a correct bounding box. Options | Show Bounding Box is useful for checking the bounding box. A bounding box can be added or changed using File | PS to EPS.

3. Select Orientation | Portrait.

4. Select **Media** | Display Settings and set a suitable resolution for the preview. If the resolution is too high it will make the EPS file excessively large.

5. Open an EPS file that does not contain a preview.

6. Select **Edit** | **Add EPS Preview**, then the preview format, then the new EPS filename. GSview will write a new file containing the original PostScript EPS file and a preview created from the display bitmap. The available preview formats are **Interchange**, **TIFF 4**, **TIFF 6 uncompressed**, **TIFF 6 packbits** and **Windows Metafile**. If adding an Interchange preview, the document must have an **%%EndComments** line, otherwise GSview may put the preview in the wrong place. An interchange preview is always monochrome. A TIFF 4 preview is a Baseline Bilevel Image (1 bit/pixel) with no compression as described in the TIFF 6.0 memorandum, but avoiding tags which are not described in the TIFF 4 specification. WordPerfect 5.1 requires a TIFF 4 preview. A TIFF 6 preview is a Baseline Bilevel Image, or a Baseline Palette-colour Image (4 or 8 bits/pixel) or a Baseline RGB Full Colour Image (24 bits/pixel) according to the TIFF 6.0 specification. TIFF 6 previews are either uncompressed or compressed with packbits. A Windows Metafile preview contains an uncompressed bitmap.

7. Reset Orientation | Portrait, and **Media** | Display Settings to their previous values.

To extract the PostScript or Preview section from a DOS EPS file, use File | Select File followed by **Edit** | **Extract EPS** then **PostScript** or **Preview**.

See also PS to EPS.

User Supplied Preview

User Supplied Preview

The **Edit** | Add EPS Preview | **User Supplied Preview** command allows an existing TIFF or WMF file to be added to an EPS file to create a DOS EPS file. This is useful if an application can export to an EPS file and to a WMF file, but cannot create a DOS EPS file with a WMF preview. The EPS file **must** contain a bounding box that corresponds with the TIFF or WMF preview file. It is not necessary to display the EPS file. **User Supplied Preview** can be used after an EPS file has been opened with Select File.

You can add a preview that has no resemblance to the PostScript, which is most undesirable.

Measure

Lengths can be measured using the cursor location displayed on the status bar, or with the **Edit | Measure** dialog box.

This dialog box shows the start location, finish location, difference between these locations and the length and angle between these locations. The start location is set when you click the left mouse button. The default start location is the lower left corner of the page. The units can be pt, mm, inch, or custom.

Custom units allows you to display coordinates as they appear in a PostScript file. Custom units are usually specified by starting with an identity matrix and then performing a series of transformations. If a PostScript file invokes landscape orientation using

```
90 rotate
0 -595 translate
```

then to display the user coordinates you would enter the following in the Calculate Transformation dialog:

```
Custom
initmatrix
90 rotate
0 -595 translate
invertmatrix
Ok
```

The Current Transformation Matrix (CTM) is shown in upper part of the dialog. You can enter a CTM directly if you like maths. It is easier to enter values in the Custom edit fields below this, but these have no effect until one of the transform buttons (translate, rotate, scale) is selected.

See also Units.

Options

The **Options** menu has the following selections:

Configure Ghostscript
Sounds
Units
Language
PStoText
Save Settings
Safer
Save Last Directory
Button Bar
Fit Window To Page
Quick Open
Auto Redisplay
EPS Clip
EPS Warn
Ignore DSC
Show Bounding Box

Configure Ghostscript

Ghostscript DLL tells GSview where to find Ghostscript. The default is **c:\gstools\gsN.NN\gsdll2.dll** for OS/2, and **c:\gstools\gsN.NN\gsdll32.dll** for Win32.

Enter the correct Ghostscript include path into the **Ghostscript Include Path** field. This include path must include the directories where the Ghostscript library files (gs_*.ps and Fontmap) and the Ghostscript fonts (*.pfb) are located.

```
c:\gstools\gsN.NN;c:\gstools\gsN.NN\fonts
```

Do NOT put a **-I** before the include path.

It is usual to leave the **Ghostscript Options** field empty. If you wish to turn off the Platform Fonts feature under MS-Windows, put **-dNOPLATFONTS** in the **Ghostscript Options** field.

See the Installation topic.

Sounds

The **Sounds** option assigns sounds to various events. For each event the sound can be set to **None**, a **Speaker Beep** or a **Wave** file.

You must have a sound driver loaded before using Wave files. Wave file sounds are not available under MS-Windows 3.0.

The events are:

Output Page: the PostScript showpage operator was executed.

No Page: an invalid page was selected. For example, pressing **Prev** while on the first page of a document with DSC comments.

No Number: a command required page numbering and the document did not have page numbering. For example, pressing Goto Page when viewing a document without DSC comments.

Not Open: a command required a document to be open and this was not the case. For example, pressing Goto Page when no document is open.

Error: many types of errors.

Start: GSview opened.

Exit: GSview closed.

Busy: busy at the moment, can't do what you asked.

The defaults are for **No Page**, **Error** and **Busy** to be a **Speaker Beep** and all other events to be **None**.

Units

The **Units** option sets the units used to display the cursor location on the status bar. Available units are PostScript points (**pt** = 1/72"), millimetres (**mm**) and inches (**in**). The default is **pt**.

The resolution of the units can be increased by selecting **Units** | **Fine Resolution**.

See also Measure.

Language

GSview is available in English, French and German. To change the language use Options | **Language**.

PStoText

GSview has two methods of extracting and searching text.

The Quick Text Extract and Find method does a simple extraction of PostScript strings. This method is easily confused. This is selected by the menu item **PStoText** | **Disabled**.

The PStoText Text Extract and Find method uses the external pstotext tool and Ghostscript to extract words and their co-ordinates. This method is more accurate, but there may be a long pause while pstotext and Ghostscript do the initial processing. After this, text extraction and searching should be quick. There are two modes of operation. **Normal** should be used for most PostScript files. **Dvips Cork Encoding** should be used if you have a PostScript file produced by dvips which uses Cork Encoding.

The default is **Normal**.

Save Settings

The **Save Settings Now** option saves the GSview window position, window size, last used printer, last directory, all items on the Options menu and all items on the Media menu to the initialisation file gsview32.ini in the Windows system directory (or for Windows 95 or NT 4 in the user profile directory if user profiles are being used). GSview reads this file during startup.

When the **Save Settings on Exit** option is checked, GSview will automatically save the above settings when you quit GSview.

Safer

When the **Safer** option is **checked**, GSview will give Ghostscript the **-dSAFER** flag, which disables the deletefile and renamefile operators, and the ability to open files in any mode other than read-only. This is the default.

When the **Safer** option is **unchecked** Ghostscript can change files.

Save Last Directory

When the **Save Last Directory** option is **checked**, GSview will save the current directory when you quit GSview. When GSview is started next, this will be made the current directory. This is the default.

When **Save Last Directory** option is **unchecked**, the current directory when GSview is started will be the current directory of the program that started GSview.

Button Bar

When the **Button Bar** option is **checked**, GSview will display a Button Bar down the left side of the window. This is the default. The Button Bar contains the following items in order from top to bottom:

File | Open

File | Print

File | Info

Help | **Contents**

View | Goto Page

View | Next Page

View | Previous Page

Go forward 5 pages

Go back 5 pages

Increase resolution by 1.2

Decrease resolution by 1/1.2

Edit | Find

Edit | Find Next

If using the increase/decrease resolution buttons, Auto Redisplay should be set. Instead of using these buttons the **Media** | Display Settings command can be used. When the **Button Bar** option is **unchecked**, GSview will not display the Button Bar.

Fit Window To Page

When the **Fit Window To Page** option is **checked**, changes to the page size or orientation will cause the window size to be enlarged or reduced to suit the page size. Whenever the window is resized, GSview will force it to be no larger than the page being displayed.

Changes in the window size will only occur when the window is resized or the page size changed; it does not happen immediately after this option is changed. Fit Window To Page is ignored for a maximized window.

If **Fit Window To Page** is **unchecked**, GSview will not resize the window and areas outside the page will be drawn in light grey. This is useful if you do not wish the window to shrink when looking at pages at low resolution. This is the default.

Quick Open

When the **Quick Open** option is **checked**, GSview will not restart Ghostscript whenever the page orientation, resolution or size is changed.

GSview tries to preserve the Ghostscript state, but a document may still leave the Ghostscript interpreter in an unusual state or cause an error. If an error occurs, Ghostscript will abort. Ghostscript error messages are displayed using **File** | Show Messages. Select Redisplay to reopen the document.

If **Quick Open** is **unchecked**, GSview will restart Ghostscript before each new document or whenever the page orientation, resolution or size is changed.

Auto Redisplay

When the **Auto Redisplay** option is **checked**, GSview will redisplay DSC documents when the Orientation, Resolution, Depth or Media are changed. This is the default.

For **non-DSC documents**, if **Auto Redisplay** is **checked**, GSview will **restart at the first page**.

If **Auto Redisplay** is **unchecked**, the View | Redisplay command must be used to redisplay a document after changing the Orientation, Resolution, Depth or Media.

EPS Clip

When the **EPS Clip** option is **checked**, GSview will clip the display bitmap to the bounding box of an EPS file instead of using the page size specified on the Media menu. This is useful when adding a bitmap preview to an EPS file. If a PDF file is being displayed, **EPS Clip** will cause the display to be clipped to the PDF crop box.

If **EPS Clip** is **unchecked**, GSview will use the page size specified on the Media menu for EPS files. This is the default.

EPS Clip does not alter the original document, it only affects how much of the document is displayed by GSview.

See also **Edit** | Add EPS Preview

EPS Warn

When the **EPS Warn** option is **checked**, GSview will write a prolog to Ghostscript when each file is opened. This prolog will produce warning messages in the **File** | Show Messages window if any PostScript operators that should not be used in EPS files are used. An example warning message is:

```
Warning: EPS files must not use /initgraphics
```

EPS Warn is not infallible. It is possible to access restricted operators without **EPS Warn** producing a warning. If you do get a warning, do NOT used PS to EPS.

The default for **EPS Warn** is **unchecked**.

See also PS to EPS.

Ignore DSC

Some documents incorrectly claim to conform to the Adobe Document Structuring Conventions. Attempting to display one of these bogus documents will probably leave GSview horribly confused and unable to display the document. If **Ignore DSC** is **checked**, GSview will treat the document as if it does not contain DSC comments and will only display the pages in the original order.

The default for **Ignore DSC** is **unchecked**.

Show Bounding Box

Selecting this option causes a dashed rectangle to drawn over the image, showing the location of the bounding box. This bounding box is only drawn on the display, and does not affect printer output. The bounding box will only be shown for DSC documents (non conforming documents don't have a bounding box).

The default for **Show Bounding Box** is **unchecked**.

Page Orientation

The **Portrait**, **Landscape**, **Upside-down** and **Seascape** (reverse Landscape) commands on the **Orientation** Menu select the page orientation used by the display. **Landscape** implies a clockwise rotation of the paper by 90 degrees. **Seascape** implies an anti-clockwise rotation of the paper by 90 degrees. These orientation options only affect the display and do not affect the print commands.

If the **Auto** command on the orientation menu is checked and a DSC page orientation comment is found (%%Orientation or %%PageOrientation), the orientation will be selected automatically.

When the **Swap Landscape** option is **checked**, GSview swaps the meaning of Landscape and Seascape. Most of the Landscape documents that I have encountered require a 90 clockwise rotation of the paper to view. However, there is no standard and some documents need to be rotated the other way. The **Swap Landscape** button allows GSview to automatically rotate the document the right way in response to the **%%Orientation** comment in the PostScript file.

See also Page Size and Display Settings.

Display Settings

These settings only affect the display.

The **Resolution** field sets the display resolution in dots per inch. The default for a VGA display is 96 dots per inch. This can also be changed by the resolution changing buttons on the button bar.

For DSC conforming files, pressing the right mouse button will zoom into the page at what is usually printer resolution. Pressing the right mouse button a second time will zoom back out to normal display resolution. The **Zoom Resolution** field sets the zoom resolution in dots per inch.

The **Depth** field sets the page bitmap depth in bits per pixels for the display. Default will select the highest depth supported by your display driver. In general, you shouldn't set this higher than your actual display depth because doing so will use extra memory for the page bitmap but won't improve the display.

The **Text Alpha** field sets anti-aliasing for fonts. The default (no anti-aliasing) is 1 bit. To enable anti-aliasing of fonts, use 2 bits or 4 bits.

IMPORTANT: If you use **Text Alpha**, GSview will disable Platform Fonts by doing the equivalent of adding

```
-dNOPLATFONTS
```

to the **Options** | Configure Ghostscript Ghostscript Options field.

The **Graphics Alpha** field sets anti-aliasing for graphics and also for text that is too large to fit in the font cache.

Using anti-aliasing slows down drawing. Text and Graphics Alpha can only be used if your display depth is set to 8bits/pixel or higher.

Page Size

The **Media** menu also allows selection of page size. Available page sizes are:

```
Letter          8.5 x 11   inch
Tabloid        11   x 17   inch
Ledger         17   x 11   inch
Legal           8.5 x 14   inch
Statement       5.5 x  8.5 inch
Executive       7.5 x 10   inch
A3              297 x 420  mm
A4              210 x 297  mm
A5              148 x 210  mm
B4              257 x 364  mm
B5              182 x 257  mm
Folio           8.5 x 13   inch
Quarto          8.5 x 10.8 inch
10x14          10   x 14   inch
```

A user defined size can be specified in PostScript points (1/72 inch) with the **User Defined** command. A size of 480x360 points at 96 dpi will give an image size of 640x480 pixels.

If a DSC media comment is found, such as

```
%%DocumentPaperSizes: a4
%%DocumentMedia: a4 595 842 80 white ( )
```

the page type will be selected automatically. If the media specification is not one of the above page types, the **User Defined** size will be set.

Keys

Following are the key assignments for GSview.

O, **o** Open and display a file. (File | Open)

C, **c** Close file. (File | Close)

N, **n**, **+** Next Page. (View | Next Page)

Space Next Page and Home. (View | **Next Page and Home**)

V, **v**, **-** Previous Page. (View | Previous Page)

BackSpace Previous Page and Home. (View | **Previous Page and Home**)

G, **g** Goto Page. (View | Goto Page)

I, **i** File information. (File | Info)

R, **r**, **F5** Redisplay page. (View | Redisplay)

S, **s** Select file: open but don't display. (File | Select File)

A, **a** Save As. (File | Save As)

P, **p** Print all or some pages to a printer. (File | Print)

F, **f** Print all or some pages to a File. (File | Print) with **Print to File** checked.

E, **e** Extract some pages to another File. (File | Extract)

M, **m** Show Ghostscript Messages. (File | Show Messages)

< Decrease resolution by 1/1.2

> Increase resolution by 1.2

F1 Help. (**Help** | **Contents**)

Ctrl+C, **Ctrl+Insert** Copy displayed bitmap to clipboard. (Edit | Copy)

Ctrl+F, Find Text. (Edit | Find)

F3, Find Next. (Edit | Find Next)

F4 Full Screen. (View | Full Screen)

Arrow Keys Scroll by 1/16 of a screen.

Ctrl + Arrow Keys Scroll by one screen.

Page Up Scroll up one screen (window height).

Page Down Scroll down one screen.

Home Scroll to top of page.

End Scroll to bottom of page.

Running GSview from the File Manager or Windows Explorer

If you used the GSview setup.exe program and answered **yes** to all the questions, the following configuration has already occurred. If you didn't update the registry during GSview installation, the following information explains how to do it manually.

To run GSview when a PostScript file is double clicked in the File Manager, the following sequence must be followed to teach File Manager about PostScript files.

From the **Program Manager**, run the Registration Info Editor using **File** | **Run...** then type **regedit**. From the **Registration Info Editor** select **Edit** | **Add File Type...** then enter the following fields:

```
Identifier = psfile
Filetype = PostScript
Action = Open
Command = c:\gstools\gsview\gsview32 %1
Uses DDE = unchecked
Action = Print
Command = c:\gstools\gsview\gsview32 /p %1
Uses DDE = unchecked
```

Then press **OK**.

From the **File Manager**, select **File** | **Associate** then enter the following fields:

```
Files with Extension = ps
Associate With = PostScript (gsview)
```

Then press **OK**.

That's it! Now when you double click on a PostScript file, the **File Manager** will run GSview. When you drop a PostScript file on the **Print Manager**, GSview will print the file. If you have a PostScript printer, this won't be useful. In this case you will need to remove the Print action from the registry.

For Windows 95, the configuration is instead made using Windows Explorer.

Start **Windows Explorer**. Select **View** | **Options** . Select the **File Types** tab. Select the **New Type** button. Enter the following fields:

```
Description of type = PostScript
Associated Extension = PS EPS
```

Press the **New** button, then enter

```
Action = open
Application used to perform action = c:\gstools\gsview\gsview32.exe
```

Press the **OK** button

Press the **New** button, then enter

```
Action = print
Application used to perform action = c:\gstools\gsview\gsview32.exe /p
```

Press the **OK** button

Press the **Close** button.

Press the **Close** button.

Command line options

Usage:

```
gsview32 [/D] [/Tn] filename
gsview32 [/D] [/Tn] /F filename
gsview32 [/D] [/Tn] /P filename
gsview32 [/D] [/Tn] /S[port] filename
gsview32 [/D] [/Tn] /S["queue"] filename
```

To start GSview and display filename.ps use:

```
gsview32 filename.ps
```

To start GSview and print filename.ps using Ghostscript (File | Print) use:

```
gsview32 /P filename.ps
```

To start GSview and print filename.ps to a file using Ghostscript (File | Print) with **Print to File** checked use:

```
gsview32 /F filename.ps
```

To start GSview and spool filename.ps for printing directly to a printer (File | Print File) use:

```
gsview32 /S filename.ps
```

To start GSview and spool filename.ps for printing directly to printer port LPT3: use:

```
gsview32 /SLPT3: filename.ps
```

To start GSview and spool filename.ps for printing directly to printer queue "HP DeskJet Portable" use:

```
gsview32 /S"HP DeskJet Portable" filename.ps
```

To start GSview in debug mode use:

```
gsview32 /D
```

In debug mode GSview will **not** remove its temporary files. This is to allow inspection of these files after GSview has finished. Debug mode also produces more verbose output for **File** | Show Messages.

GSview by default runs multi-threaded under Windows 95 and Windows NT, and single-threaded under Windows 3.1 / Win32s. To change this, use **/T** to toggle the threading mode, use **/T0** to select single-thread mode and **/T1** to select multi-thread mode.

Instead of opening up a second copy of GSview, you can tell GSview to open a file in an existing GSview, or if GSview is not already running, in a new window using:

```
gsview32 /E filename
```

To tell an existing GSview to exit:

```
gsview32 /X
```

GSview ignores the case of options: /p is the same as /P.

Dynamic Data Exchange

Dynamic Data Exchange

GSview implements a DDE server, service="GSview and topic="GSview". The XTYP_EXECUTE commands that are recognised are:

```
[FileOpen("filename")]
[FileExit()]
[NextPage()]
[PrevPage()]
[GoBack()]
[GotoPage(5)]
[Command("command line")]
```

The [Command()] command only understands "filename" or "/P filename".

Don't sent multiple commands together. GSview won't complain, but the multithreaded asynchrononous execution within GSview means that the first command won't have been completed before the second command is received. If you need to send multiple commands, send them in separately and with pauses inbetween.

There are two command line options to cause GSview to send a DDE command to another copy of GSview. The /E command line option uses [Command("command line")]. The /X command line option uses [FileExit()]

World Wide Web

The World Wide Web home page for Ghostscript, Ghostview and GSview is at
`http://www.cs.wisc.edu/~ghost/`

GSview can be used as a PostScript file viewer for several OS/2 and MS-Windows Web browsers. See the GSview home page for details.

Thomas Merz has written a Ghostscript manual, which is available in PDF from the above WWW site. This manual is an extract from a book written by Thomas Merz titled **PostScript and Acrobat/PDF**, available in English and German.

Copyright

The **About** menu item shows the GSview copyright message and GSview version number.

```
GSVIEW.EXE - A Ghostscript graphical interface
Copyright (C) 1993-1999, Ghostgum Software Pty Ltd.  All rights reserved.
Portions Copyright (C) 1994, Timothy O. Theisen.  All rights reserved.
```

This file is part of GSview.

This program is distributed with NO WARRANTY OF ANY KIND. No author or distributor accepts any responsibility for the consequences of using it, or for whether it serves any particular purpose or works at all, unless he or she says so in writing. Refer to the GSview Free Public Licence (the "Licence") for full details.

Every copy of GSview must include a copy of the Licence, normally in a plain ASCII text file named LICENCE. The Licence grants you the right to copy, modify and redistribute GSview, but only under certain conditions described in the Licence. Among other things, the Licence requires that the copyright notice and this notice be preserved on all copies.


```
    Author: Russell Lang, Ghostgum Software Pty Ltd
  Internet: gsview@ghostgum.com.au
```

Please read the Common Problems topic, the GSview README.TXT and browse the WWW page before sending mail to the author.

GSview uses pstotext in an external DLL. pstotext was written by Andrew Birrell and Paul McJones. It is
```
  Copyright (C) 1995-1996, Digital Equipment Corporation.
```
See the licence in pstotext.txt or pstotext.zip for more details. If you do not agree to the pstotext licence, delete pstotext.zip, pstotxt2.dll and pstotxt3.dll.

Common Problems

Problem: Can't load Ghostscript DLL ...

GSview requires the Ghostscript DLL (gsdll2.dll for OS/2, gsdll32.dll for Win32). This error message usually occurs if you don't have Ghostscript, or if GSview can't find Ghostscript.

From the GSview menu select Options | Configure Ghostscript and enter the correct Ghostscript DLL path. For example

```
c:\gstools\gsN.NN\gsdll32.dll
```

This message also occurs if Ghostscript cannot find its initialisation files (e.g. gs_init.ps). Set the Ghostscript Include Path correctly.

If using Win32s, make sure you don't already have a copy of the Ghostscript DLL loaded by another copy of GSview. Only one copy of Ghostscript DLL can be loaded by Win32s at a time.

If you can't get GSview to run Ghostscript DLL correctly, make sure you can configure and run Ghostscript on its own.

Problem: Ghostscript Messages window says **Can't find initialization file gs_init.ps**.

Set the Ghostscript Include Path to point to the directory containing the correct gs_init.ps.

Problem: Ghostscript Messages window says **gs: Interpreter revision (XXX) does not match gs_init.ps revision (YYY)**.

Set the Ghostscript Include Path to point to the directory containing the correct gs_init.ps. Don't try to display a PostScript file in the directory of an old version of Ghostscript (which will cause the old gs_init.ps to be loaded irrespective of the Ghostscript Include Path).

Problem: Ghostscript Messages window says **Wrong version of DLL found. Found version XXX Need version YYY**.

GSview found the wrong Ghostscript DLL. Install the required version of the Ghostscript DLL. Make sure you have only one copy of the Ghostscript DLL on your system.

Problem: GSview says that a multipage PostScript file produced by MS-Windows contains 0 pages and will only show the first page.

This is because the document does not have correct DSC comments. From the Control Panel, select **Printers**, **Options...**, then in the **Print to** group box click on the **Printer** radio button. You cannot use the **Print To Encapsulated PostScript File** for printing multipage files. The correct method is to connect the printer to **FILE:**. In addition, from the Control Panel select **Printers**, **Options...**, Advanced and then check **Conform to Adobe Document Structuring Convention**.

The DSC comment **%%Pages: 0** means that the document does not produce any pages. That is, the PostScript **showpage** operator is not used. If you find a PostScript document that has multiple pages and contains the **%%Pages: 0** comment, change the first line from **%!PS-Adobe-** to **%!**. GSview will then ignore the DSC comments and allow you to view all pages, but only in the original order. Complain to the author of the program that produced that PostScript file.

Some PostScript printer drivers include code that is specific to a particular printer. The PostScript output from these drivers may be unportable and may not display in GSview. If you are having this problem, try using a reasonably generic PostScript driver such as **Apple LaserWriter II NT** for PostScript level 2

printers, or **Apple LaserWriter Plus** for PostScript level 1 printers.

For Windows 95, open the printer properties then select the PostScript tab, then select PostScript Output Format = **PostScript (optimize for portability - ADSC)**.

Problem: GSview says "Page ordering is Special..."

Your document used the DSC comment **%%PageOrder: Special** which means that pages can not be reliably reordered. This may prevent GSview from displaying pages in any order other than the original order. If you continue and reorder the pages, PostScript errors may occur. The only way to fix this is to regenerate the PostScript without special page ordering.

By default, Windows 95 creates PostScript files which use special page ordering. To disable this, open the printer properties then select the PostScript tab, then select PostScript Output Format = **PostScript (optimize for portability - ADSC)**.

Problem: PostScript files produced by MS-Windows start with a Control-D.

For Windows 3.1:

Since this occurs even when the PostScript printer **Conform to Document Structuring Convention** checkbox is checked, this must be considered a bug in the MS-Windows PostScript printer driver. The bug fix is documented in the MS-Windows PRINTERS.WRI file. Edit the win.ini file and search for the PostScript printer section. There may be more than one. In each of these sections add **CTRLD=0** as shown below.

```
[Apple LaserWriter II NT,FILE]
CTRLD=0
```

For Windows 95:

The PostScript printer driver setup has an option (Properties, PostScript, Advanced) for suppressing a ^D at the start of a document. Fortunately the default is do not send ^D before job.

Problem: PostScript files produced by Word for Windows 6.0 cause a "Missing %%Pages comment" message box.

Congratulations. You have just found a mistake in the DSC comments when Word included an EPS file. Word should have surrounded the included EPS file with the lines

```
%%BeginDocument: filename.eps
%%EndDocument
```

Because Word didn't do this, GSview can't tell how many pages are in the document and where they are located.

Please complain to Microsoft. There is a problem in the EPSIMP.FLT filter version 2.01 which Microsoft needs to fix.

In the interim, you have two solutions:

1. Select Options | Ignore DSC

2. Edit the PostScript file to correct the DSC comments. Search the PostScript file for all lines containing

```
%MSEPS Preamble
```

From each of these lines, search forward for the start of the included EPS file which should start with a line like

```
%!PS-Adobe-3.0 EPSF-3.0
```

Above these lines add the line
```
%%BeginDocument: AddedByHand
```

Then search for all lines containing
```
%MSEPS Trailer
```
Above these lines add the line
```
%%EndDocument
```

GSview should then be able to display the file correctly.

Problem: GSview doesn't recognise the DSC comments in files produced using the Adobe PostScript driver 4.10 for Windows 32-bit.

Do not use Tagged binary communications protocol. Change this to "Printers | PostScript tab | Advanced... | Data format group box | ASCII data"

Problem: Trying to open any file gives
```
`Unrecoverable error: configurationerror in setpagedevice`
Failed to open device or install ViewerPreProcess hook: returns -26
Page size may have been too large or resolution too high.
Resetting page size and resolution
```

Either the problem described in the error message has occurred, in which case you should reduce the page size, resolution, depth or a combination of all three. Alternatively, you may have used **-dFIXEDMEDIA** in the Ghostscript environment variable GS_OPTIONS. When using GSview, it is safest not to use GS_OPTIONS at all and to use Options | Configure Ghostscript | Ghostscript Options instead.

Other Useful Programs

RedMon is a Windows 95 and NT port monitor, which allows you to redirect a printer port to a program. RedMon can be used with Ghostscript and a non-PostScript printer to emulate a PostScript printer. This emulated PostScript printer can be shared on a computer network and appears as a PostScript printer to network clients. More details at:
`http://www.cs.wisc.edu/~ghost/redmon/`
RedMon also includes a command line utility for writing a file to a Windows printer queue.

PrintFile by Peter Lerup is a Windows GUI application for sending files to a printer. It provides smart processing for text, PostScript and other files. It is available from:
`http://hem1.passagen.se/ptlerup/`

See the Ghostscript WWW page for more useful programs.

Other Help Topics

These topics are usually accessed by pressing the **Help** button on a dialog box.

Show Messages
zlib

Show Messages

GSview uses Ghostscript to display or print PostScript files. **Show Messages** displays the console output from Ghostscript, and is most useful when a PostScript error occurs. You may need to scroll back to see the start of the error message.

The text in the **Show Messages** window can be copied to the clipboard. If no text is selected, the entire text will be copied to the clipboard. If some text is highlighted, only that text will be copied to the clipboard.

Explanations of some of the error message that may appear in the **Show Messages** are given in the Common Problems topic.

zlib

If you attempt to load a file that has been compressed by gzip, GSview will attempt to load the zlib DLL, then uncompress it to a temporary file.

If you get an error message **Failed to load zlib DLL...** then you probably don't have the zlib DLL available. Obtain it from the same place you obtained GSview or from
`ftp://ftp.cs.wisc.edu/ghost/rjl/`
Place the zlib DLL in the same directory as the GSview EXE. zlib16.dll is for Win16. zlib32.dll is for Win32. zlib2.dll is for OS/2.

zlib is Copyright 1995-1996 by Jean-loup Gailly and Mark Adler. The source code can be obtained from
`http://www.cdrom.com/pub/infozip/zlib/`

Internals

GSview uses the Aladdin Ghostscript DLL to render PostScript files.

Under Win32s, the GS DLL can be used by only one application at a time. Under Windows 95, Windows NT and OS/2, the GS DLL can be used by many applications at a time (provided you have enough memory). When using Win32s, GSview must unload the GS DLL while it is being used by gvwgs.exe for printing.

gsv16spl.exe is a 16 bit Windows application used by GSview to spool files from GSview Win32s. gsv16spl can not be used on its own - it must be started by GSview. It is not used by Windows 95 or NT.

gvwgs32.exe (Windows) and gvpgs.exe (OS/2) are GS DLL loaders for printing. It would be possible to use them from the command line, but since they delete the files listed on the command line it would be safer to use gswin32.exe (Win32), gswin32c.exe (Win32 console) or gsos2.exe (OS/2).