gv 3.5, June 1997

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gv - View PostScript and PDF documents using ghostscript

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1 Synopsis

```
gv [ filename ]
   [-monochrome] [-grayscale] [-color]
   [-[no]safer] [-[no]quiet] [-arguments <arguments>]
   [-page <label>] [-[no]center]
   [-media <media>]
   [-portrait] [-landscape] [-upsidedown] [-seascape]
   [-scale <n>] [-scalebase <n>]
   [-swap] [-noswap]
   [-antialias] [-noantialias]
   [-dsc] [-nodsc]
   [-eof] [-noeof]
```

```
[-pixmap] [-nopixmap]
[-watch] [-nowatch]
[-?] [-h] [-help] [-v]
[-resize] [-noresize]
[-geometry [<width>][x<height>][{+-}<xoffset>{+-}<yoffset>]
[-ad <resource file>]
[-style <resource file>]
[-spartan]
[<other toolkit options>]
```

2 Description

gv allows to view and navigate through PostScript and PDF documents on an X display by providing a user interface for the ghostscript interpreter (See 12.1 for further information on ghostscript).

Please note that gv is derived from Tim Theisen's ghostview 1.5 (See 12.2 for further information on ghostview 1.5).

3 Options

filename

The name of the file to be displayed. The file ending ".ps" may be omitted. "filename" may point to a compressed file (gzipped, zipped or compressed). Viewing PDF files requires at least ghostscript version 4.x.

-ad <*resource file*>

Read and use additional resources from the file <*resource file*>. These resources have higher priority than those provided in the context of the *-style* <*resource file*> option.

-antialias, -noantialias

Whether to use antialiasing.

-arguments <*arguments*>

Start ghostscript with additional options as specified by the string <*arguments*>.

-center, -nocenter

Whether the page should be centered automatically.

-dsc, -nodsc

Determines if *document structuring convention* (DSC) comments should be respected or ignored. If *-nodsc* is used gv will not attempt to examine the structure of the document but will pass the file to the ghostscript interpreter as a whole. In this case no page numbers are shown and freely moving around in the document is not possible. This option may help when viewing files not conforming to the *document structuring conventions*.

-eof, -noeof

Defines the behaviour of the postscript scanner used to examine the structure of the document. If *-noeof* is used the scanner will ignore end of file (EOF) comments. This may help when viewing documents which import other documents without enclosing them within the proper "BeginDocument" and "EndDocument" comments. If *-eof* is used, the scanner treats an EOF comment as marking the end of the file.

-pixmap, -nopixmap

If *-pixmap* is used gv tries to maintain off-screen regions of the displayed page by allocating a sufficiently large pixmap. If *-nopixmap* is used the *X Server* is responsible for maintaining obscured portions of the displayed page (see also the "useBackingPixmap" resource).

-v

Print the version number of gv to standard output and exit.

-h, -?

Display a short help message and exit.

-help

Display a more explicit help message and exit.

-scale <*n*>

Selects the scale entry <*n*> relative to the scale 1.0. <*n*> must be an integer.

-scalebase <*n*>

Selects the scale base <*n*>.

-monochrome, -grayscale, -color

Sets the color palette to be used.

-media <*media*>

Selects the paper size to be used. Valid values are names of paper sizes that appear in the list of page medias as given by the *medias* resource.

-page <*label*>

Display the page with label <*label*> first.

-portrait, -landscape, -seascape, -upsidedown

Sets the orientation.

-quiet, -noquiet

Whether to start ghostscript with the *-dQUIET* option.

-resize, -noresize

Whether gv is allowed to automatically fit the size of its window to the size of the displayed page.

-safer, -nosafer

Whether to start ghostscript with the *-dSAFER* option.

-spartan

This is a shortcut for "-style gv_spartan.dat".

-style <*resource file*>

Read and use additional resources from the file <*resource file*>. These resources have lower priority than those provided in the context of the *-ad* <*resource file*> option.

-swap, -noswap

Whether to interchange the meaning of the orientations landscape and seascape.

-watch, -nowatch

The *-watch* option causes gv to check the document periodically. If changes are detected gv will automatically display the newer version of the file. The document is by default checked once every second. This can be changed via the *watchFileFrequency* resource. Note that sending gv the *SIGHUP* signal also causes an update of the displayed document. This method may be used by document creators to trigger gv remotely.

4 Resources

Resource files

In general gv does not depend on any external resource files. However, when starting gv, preferences are read from

- **a system specific resource file**. The name of this file is as described by the "XFILESEARCHPATH" environment variable, or, if this variable is not defined, implementation dependant. In most cases it is "/usr/X11/lib/X11/app-defaults/GV". Administrators may want to modify this file in order to set up gv according to the local needs of their system.
- **a user specific resource file**. The name of this file is either "~/.gv" or as described by the "XUSERFILESEARCHPATH" environment variable.

The files "gv_user.ad" and "gv_system.ad" (located in the library directory of gv, which is most probably either "/usr/local/lib/gv/" or "/usr/lib/gv/" may serve as a basis for constructing the user and system specific resource files.

Note that the user and system specific resource files are not the only sources of preferences taken into account when gv is started. However, in practice these are the most important.

Resources of gv

The following describes some of the resources of gv. The precise syntax of some of the resource values may be inferred from the appended default system specific resource file.

antialias

Whether antialiasing should be used. Valid values are "True" and "False".

autoCenter

Whether the displayed page should automatically be centered (for instance when opening a new file). Valid values are "True" and "False".

autoResize

Whether gv is allowed to resize the main window according to the size of the current page. Valid values are "True" and "False".

confirmPrint

Whether printing requires an extra confirmation. Valid values are "True" and "False".

confirmQuit

Whether leaving gv requires extra confirmation. Valid values are "0" (Never), "1" (When processing) and "2" (Always). The default value is "1", which causes a confirmation request when trying to leave gv in the presence of pending PDF to Postscript conversions.

scrollingEyeGuide

If this resource is “True” scrolling via the keyboard causes a temporary border to be drawn around the previously visible area of the page. Allowed values are “True” and “False”.

ignoreEOF

Defines the behaviour of the postscript scanner as described in the 3 section. Valid values are “True” and “False”.

respectDSC

Determines whether gv should attempt to respect document structuring comments. Valid values are “True” and “False”.

reverseScrolling

Defines the interpretation of directions when scrolling with the mouse. Valid values are “True” and “False”.

swapLandscape

Whether the meaning of “landscape” and “seacape” should be interchanged. Valid values are “True” and “False”.

scratchDir

Specifies a directory used to store temporary data.

defaultSaveDir

Specifies the default destination directory for files to be saved.

useBackingPixmap

If the value of this resource is “False” the *X Server* is advised that saving off-screen pixels of the displayed page would be beneficial (maintaining backing store). In this case gv does not actively maintain the contents of the page but relies on the *X Server*. The server is, however, always free to stop maintaining backing backing store. If the value of this resource is “True” the *X Server* is advised that maintaining backing store is not useful. In this case gv attempts to allocate a sufficiently large pixmap to store the contents of the displayed page.

watchFile

Whether the document should be checked periodically and updated automatically if changes are detected. Valid values are “True” and “False”.

watchFileFrequency

Defines the time in milliseconds elapsing between successive checks of the document when *watchFile* is set to “True”. Allowed values must be larger than 500.

printCommand

The command used for printing a file. The command may contain multiple ’%s’ wildcards which will be replaced by the name of the file to be printed.

gsInterpreter

The command used to start the ghostscript interpreter.

gsCmdScanPDF

The command used to extract document structuring comments from a PDF file.

gsCmdConvPDF

The command used to convert a PDF file to PostScript.

gsX11Device

The ghostscript command line option which activates the “X11” device.

gsX11AlphaDevice

The ghostscript command line option which activates the “X11” device with antialiasing enabled.

gsSafer

Determines whether ghostscript should be started with the “-dSAFER” command line option.

gsQuiet

Determines whether ghostscript should be started with the “-dQUIET” command line option.

gsArguments

May be used to provide additional command line options for the ghostscript interpreter. Starting gv with the “-arguments <*arguments*>” option will override this resource setting.

magMenu

Describes the menu that pops up when preparing to to zoom an area of the displayed page.

dirs

Defines a list of directories accessible via the *Directories* menu in the file selection window. The special value “Home” corresponds to the users home directory, the value “Tmp” corresponds to the scratch directory as defined by the *scratchDir* resource.

filter

Defines the default filter to be used when displaying a directory contents in the file selection window. A filter is specified according to the syntax

```
<filter>    := [<filespecs>] [no <filespecs>]
<filespecs> := <filespec> [<filespecs>]
<filespec>  := filename possibly including wildcards '*'
               which match any character.
```

Example: The filter

```
GV*filter: *.ps *.pdf no .*
```

screens out all files with names starting with a dot and keeps of the remaining ones only those which end on “.ps” or “.pdf”.

filters

Defines a list of filters offered in the *Filters* menu of the file selection window. The filter “None” has a special meaning causing all files to be displayed when the corresponding menu entry is selected.

miscMenuEntries

Describes the menu that pops up when clicking with the third mouse button on the displayed page. The value of this resource is a list of menu entries. Allowed entries are “update”, “redisplay”, “toggle_current”, “toggle_even”, “toggle_odd”, “unmark”, “stop”, “print_all”, “print_marked”, “save_all”, “save_marked” and “line”.

showTitle

Whether the name of the displayed document should be shown in the title bar of the window. The name of gv’s icon will also change accordingly if this resource is set to “True”.

maximumWidth, maximumHeight

When resizing gv will not attempt to exceed the size specified by these resources. These resources may be specified as a positive integer or as “screen”, optionally combined with a positive or negative offset. The default values listed above provide examples for this syntax. “screen” will automatically be replaced by the size of the screen.

minimumWidth, minimumHeight

Defines a minimum size for the main window. Valid values for both resources are positive integers larger than 200.

scale

Sets the initial scale. The value of this resource is the offset of the scale to be selected relative to the scale 1.0 in the the “Scale” menu.

scaleBase

Selects the initial scale base. The value of this resource should be a positive integer.

scales

Defines the available scales bases and scales in the “Scale” menu.

orientation

Sets the initial orientation. Valid values are “portrait”, “landscape”,“seascape”, “upside-down” and “automatic”. “automatic” causes gv to attempt to derive the correct orientation from document structuring comments.

fallbackOrientation

Defines the paper-size to be used when automatic orientation detetction fails. Valid values are “portrait”, “landscape”,“seascape” and “upside-down”.

medias

A list describing the page medias known to gv. List entries starting with “!” or “#” will not appear in the “Media” menu but will still be used for automatic paper size detection.

pagemedia

Sets the paper size. Allowd values are as given in the above list of paper-sizes. Specifying “automatic” causes gv to attempt to derive the correct paper-size from document structuring comments.

fallbackPageMedia

Defines the paper-size to be used when automatic paper-size detetction fails. Valid values are as given in the above list of paper-sizes.

The default user and system specific resource file

```
GV.pageMedia:           automatic
GV.orientation:         automatic
GV.fallbackOrientation: portrait
GV.swapLandscape:       False
GV.autoCenter:          True
GV.antialias:           False
GV.respectDSC:          True
GV.ignoreEOF:           True
GV.confirmPrint:        True
GV.reverseScrolling:    False
```

```
GV.scrollingEyeGuide:   True
GV.autoResize:          True
GV.maximumWidth:        screen-20
GV.maximumHeight:       screen-44
GV.minimumWidth:        400
GV.minimumHeight:       430
GV.confirmQuit:         1
GV.watchFile:           False
GV.watchFileFrequency:  1000
GV.showTitle:           True
GV.miscMenuEntries:     redisplay       \n\
                        # update        \n\
                        stop            \n\
                        line            \n\
                        toggle_current  \n\
                        toggle_even     \n\
                        toggle_odd      \n\
                        unmark          \n\
                        line            \n\
                        print_all       \n\
                        print_marked    \n\
                        save_all        \n\
                        save_marked
GV.scale:               0
GV.scaleBase:           1
GV.scales:              Natural size,   1.000,  screen  \n\
                        Pixel based,    1.000,  pixel   \n\
                        0.100,          0.100           \n\
                        0.125,          0.125           \n\
                        0.250,          0.250           \n\
                        0.500,          0.500           \n\
                        0.707,          0.707           \n\
                        1.000,          1.000           \n\
                        1.414,          1.414           \n\
                        2.000,          2.000           \n\
                        4.000,          4.000           \n\
                        8.000,          8.000           \n\
                        10.00,          10.00
GV.medias:              Letter,         612     792     \n\
                        # LetterSmall,  612     792     \n\
                        Legal,          612     1008    \n\
                        Statement,      396     612     \n\
                        Tabloid,                792     1224    \n\
                        Ledger,         1224    792     \n\
                        Folio,          612     936     \n\
                        Quarto,         610     780     \n\
                        # 7x9,          504     648     \n\
                        # 9x11,         648     792     \n\
                        # 9x12,         648     864     \n\
                        # 10x13,                720     936     \n\
                        10x14,          720     1008    \n\
                        Executive,      540     720     \n\
```

```
                                    # A0,           2384     3370     \n\
                                    # A1,           1684     2384     \n\
                                    # A2,           1191     1684     \n\
                                    A3,             842      1191     \n\
                                    A4,             595      842      \n\
                                    # A4Small,      595      842      \n\
                                    A5,             420      595      \n\
                                    # A6,           297      420      \n\
                                    # A7,           210      297      \n\
                                    # A8,           148      210      \n\
                                    # A9,           105      148      \n\
                                    # A10,          73       105      \n\
                                    # B0,           2920     4127     \n\
                                    # B1,           2064     2920     \n\
                                    # B2,           1460     2064     \n\
                                    # B3,           1032     1460     \n\
                                    B4,             729      1032     \n\
                                    B5,             516      729      \n\
                                    # B6,           363      516      \n\
                                    # B7,           258      363      \n\
                                    # B8,           181      258      \n\
                                    # B9,           127      181      \n\
                                    # B10,          91       127      \n\
                                    # ISOB0,                 2835     4008     \n\
                                    # ISOB1,                 2004     2835     \n\
                                    # ISOB2,                 1417     2004     \n\
                                    # ISOB3,                 1001     1417     \n\
                                    # ISOB4,                 709      1001     \n\
                                    # ISOB5,                 499      709      \n\
                                    # ISOB6,                 354      499      \n\
                                    # ISOB7,                 249      354      \n\
                                    # ISOB8,                 176      249      \n\
                                    # ISOB9,                 125      176      \n\
                                    # ISOB10,       88       125      \n\
                                    # C0,           2599     3676     \n\
                                    # C1,           1837     2599     \n\
                                    # C2,           1298     1837     \n\
                                    # C3,           918      1296     \n\
                                    # C4,           649      918      \n\
                                    # C5,           459      649      \n\
                                    # C6,           323      459      \n\
                                    # C7,           230      323      \n\
                                    # DL,           312      624
GV.magMenu:                         2,       2      \n\
                                    4,       4      \n\
                                    8,       8      \n\
                                    16,      16     \n\
                                    32,      32     \n\
                                    64,      64
GV*Ghostview.background:                    white
GV*Ghostview.foreground:                    black
GV.gsInterpreter:                   gs
```

```
GV.gsCmdScanPDF:       gs -dNODISPLAY -dQUIET -sPDFname=%s -sDSCname=%s pdf2dsc.ps -c quit
GV.gsCmdConvPDF:       gs -dNODISPLAY -dQUIET  -dNOPAUSE -sPSFile=%s %s -c quit
GV.gsX11Device:        -sDEVICE=x11
GV.gsX11AlphaDevice:   -dNOPLATFONTS -sDEVICE=x11alpha
GV.gsSafer:            True
GV.gsQuiet:            True
GV.gsArguments:
GV.uncompressCommand:  gzip -d -c %s > %s
GV.printCommand:       lpr
GV.scratchDir:         ~/
GV.defaultSaveDir:     ~/
GV.fallbackPageMedia:  a4
GV.useBackingPixmap:   True
GV*dirs:               Home\n\
                       Tmp\n\
                       /usr/doc\n\
                       /usr/local/doc
GV*filter:             no .*
GV*filters:            None\n\
                       *.*ps* *.pdf*  no  .*\n\
                       *.*ps*   no  .*\n\
                       *.pdf*  no  .*\n\
                       no  .*
```

5 Mouse and key bindings

Mouse bindings in the Main and the Zoom window

The following mouse events are defined when the mouse pointer is either on the displayed page or on a zoomed area:

- press button 1, move mouse, release button 1
Scrolls the displayed page 'proportionally'.

- press button 3, move mouse, release button 3
Scrolls the displayed page 'absolutely'.

- double-click with button 1
In the main window this displays the previous/next page if the double-click occured in the left/right half of the window. In a zoom window it does nothing.

- press button 2, release button 2
Pops up a small menu which allows to choose a magnification for a certain area around the current mouse position. After selecting a magnification a zoom window pops up displaying the area at the chosen scale.

- press button 2, move mouse, release button 2
This draws and thereby defines a rectangular region which can be displayed in a zoom window. The magnification for the area can be selected by means of a popup menu which appears after releasing button 2.

- press button 1, press button 2
Redisplays the current page. This event sequence works only in the main window.

- press button 3, release button 3
Pops up a small menu which offers a few standard actions like 'Redisplay', 'Mark Page', etc.

Mouse bindings in the File Selection popup

The following mouse events are defined when the mouse pointer is in the window of either a file or a directory list:

- press button 1, move mouse, release button 1

Scrolls a file or directory list 'proportionally'.

- press button 2, move mouse, release button 2

Scrolls a file or directory list 'absolutely'.

- press button 2, release button 2

Scrolls a file or directory list one page up/down if the button was pressed in the upper/lower half of the list.

- double-click with button 1 on a filename

Selects the file and closes the File Selection popup.

- click with button 1 on a directory name

Causes the contents of this directory to be displayed.

Mouse bindings in the Table of Contents

The following mouse events are defined when the mouse pointer is in the window showing a list of page numbers of the current file (table of contents):

- press button 1, move mouse, release button 1

Scrolls the table of contents.

- press button 1 on a page number

Go to this page.

- press button 2 on a page number

Mark this page if it is unmarked, but unmark it if it is marked.

- press button 2, move mouse, release button 2

Marks/unmarks all unmarked/marked pages in the region crossed by the mouse pointer during the movement.

Mouse bindings in the Panner widget

The Panner widget is the rectangular region located close to the left edge of the main window. It indicates the size and the position of the visible area of the current page relative to the total page.

The following mouse events are defined when the mouse pointer is in this region:

- press button 1, move mouse

Scrolls the displayed page.

- press button 2

Display the previous page.

- press button 3

Display the next page.

Mouse bindings in the ">>" and "<<" button windows

The ">>" and "<<" buttons are used to move to another page. The following mouse events are defined:

- press button 1

Move 1 page forward/backwards.

- press button 2

Move 5 pages forward/backwards.

- press button 3

Move 10 pages forward/backwards.

Key Bindings

The following key events are defined in the main window. Those bindings scrolling the page are also defined in zoom popups.

```
=== Notation:

s-X          means press "Shift"           and key "X"
c-X          means press "Ctrl"            and key "X"
sc-X         means press "Shift" or "Ctrl" and key "X"

=== Miscellaneous keys:

A            Toggle antialiasing on and off
O            Open a new file
Q            Quit gv
R            Toggle gv's resizing behaviour
I            Respect/Ignore document structuring
W            Watch file / Don't watch file
S            Save the marked pages
sc-S         Save the current file
P            Print the marked pages
sc-P         Print the current file
c-L          Redisplay the current page
.            Redisplay the current page
sc-.         Reopen the current file
M            Mark the current page
N            Unmark the current page

=== Orientation:

7            Orientation portrait
8            Orientation landscape
9            Orientation upside-down
0            Orientation seascape

=== Magnification:

sc-6         Select the scale entry -6 relative to the scale 1.0
sc-5         Select the scale entry -5 relative to the scale 1.0
sc-4         Select the scale entry -4 relative to the scale 1.0
sc-3         Select the scale entry -3 relative to the scale 1.0
sc-2         Select the scale entry -2 relative to the scale 1.0
sc-1         Select the scale entry -1 relative to the scale 1.0
^            Select the scale 1.0 (for german keyboard layout)
`            Select the scale 1.0
1            Select the scale entry 1 relative to the scale 1.0
2            Select the scale entry 2 relative to the scale 1.0
```

```
3           Select the scale entry 3 relative to the scale 1.0
4           Select the scale entry 4 relative to the scale 1.0
5           Select the scale entry 5 relative to the scale 1.0
6           Select the scale entry 6 relative to the scale 1.0
+           Select the next scale entry
=           Select the next scale entry
-           Select the previous scale entry

=== Navigating:

Arrow        Scroll in the direction of the arrow
s-Up         Scroll columns up   or jump -1 pages
s-Down       Scroll columns down or jump  1 pages
s-Left       Scroll rows left    or jump -1 pages
s-Right      Scroll rows right   or jump  1 pages
c-Up         Jump -1 pages (to top/left corner)
c-Down       Jump  1 pages (to top/left corner)
c-Left       Jump -5 pages (to top/left corner)
c-Right      Jump  5 pages (to top/left corner)

D,X,Z,Y,C    Identical to arrow up,down,left,left,right
V            Center the page
sc-Space     Scroll columns up   or jump -1 pages
Space        Scroll columns down or jump  1 pages

BackSpace    Scroll columns up   or jump -1 pages
Insert       Jump  -5 pages
Delete       Jump   5 pages
Home         Go to the first page
End          Go to the last page
Prior        Jump  -1 pages
Next         Jump   1 pages

Keypad 0-9   Highlight a page number
Keypad -     Highlight previous page number
Keypad +     Highlight next page number
Keypad Enter Jump to the highlighted page

c-Enter      Jump  -1 pages
s-Enter      Jump  -1 pages
Enter        Jump   1 pages
B            Jump  -1 pages
F            Jump   1 pages
```

6 Comments about the user interface

Scales

The "Scale" menu which allows to view the document at different sizes is divided into two parts. The first part shows a list of available scale bases, the second part, separated by a line, lists the relative scales which are applied with respect to the selected scale base.

By default two scales bases are available, the "Natural size" and the "Pixel based" base. When choosing the "Pixel based" scale base a relative scale of 1.0 causes one postscript point to correspond to one pixel on the screen.

When viewing a document at a relative scale of 1.0 using the "Natural size" base the page should appear in its real size, as if printed on paper. For the "Natural size" base to work properly gv has to know the correct size of the root window. Automatic detection of this size unfortunately only provides approximate results, therefore it is best if it is provided by the user. To do so the resource

```
GV.screenSize:  <width> x <height>
```

should be added to the "SCREEN_RESOURCES" property of the screen the document is viewed on, with *<width>* and *<height>* describing the width and height of the root window in units of millimeters. For instance by using the command

```
echo "GV.screenSize: 396 x 291" | xrdb -override -screen
```

a width of 346 mm and a height of 291 mm will be used for the "Natural size" scale base. Alternatively the resource

```
GV.screenSize_<machine>_<disp>_<scr>:  <width> x <height>
```

may be added to a resource file read by gv. Here *<machine>* ,*<disp>* and *ANGLED*) describe the display on which gv displays the document. For instance, if the display is set to "tic.tac.toe.wo:0.1" the resource should be specified as

```
GV.screenSize_tic_0_1: 396 x 291
```

Note that this method doesn't work on VMS. As a last alternative the resource

```
GV.screenSize:  <width> x <height>
```

may be added to one of the resource files. However, for obvious reasons this method should be used only on single user machines.

Scrolling

It is probably a *de facto* standard for user interfaces that windows are supposed to be scrolled by means of scrollbars attached to their sides. However, for various reasons the use of scrollbars has been minimized in gv.

Instead, in all windows with obscured data, scrolling may be performed by

> pressing button1, moving the mouse, then releasing button1

directly in the window. This includes the displayed page, zoom popups, the table of contents and the file and directory lists displayed in the file selection popup.

Displaying new versions of a document

During document creation it is usually desirable to always display the newest version of the document in work.

Instead of explicitly loading it via the file selection popup the most recent version can be displayed by pressing the "Redisplay" button in the main window (VMS users should use the "Update File" entry in the "File" menu). Choosing the "Redisplay" entry in the menu that pops up when clicking with the third mouse button anywhere on the displayed page certainly has the same effect.

More comfortable is the "Watch File" feature which may be switched on by selecting the corresponding entry in the "State" menu. If activated gv will check every now and then if a new version of the displayed file exists. If so it will be displayed automatically. By default the file is checked about once every second.

Finally it may also be left to the document creating program to trigger gv to update its display. To do so the program should send the SIGHUP signal to gv. For instance at the end of a shell script generating a postscript file from latex sources the line

```
kill -SIGHUP <gv_pid>
```

may be added (here `<gv_pid>` is the process id of gv). Executing the script and thereby creating a new version of the document will then also cause the result to be displayed instantaneously. Please note that this feature is available only on X11 R6 based systems.

7 Availability

The source code of the most recent version of gv may be obtained from the following sources:

World Wide Web:

http://wwwthep.physik.uni-mainz.de/~plass/gv/

Anonymous ftp:

ftp://thep.physik.uni-mainz.de/pub/gv/

8 Authors


```
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gv is derived from GhostView 1.5, created by
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```


9 Copyright

10 Suggestions and bug reports

Please send suggestions or bug reports to plass@thep.physik.uni-mainz.de.

11 Acknowledgements

Tim Theisen created ghostview 1.5, which was the starting point of gv.

Peter Deutsch is the author of the ghostscript interpreter, without which gv would be not more than an empty hull.

Kaleb S.Keithley turned *Xaw* into the extremely nice Xaw3d widget set.

Keith Packard invented the *Layout* widget, the heart of gv's widget tree.

Finally I'd like to thank Jim Jennis (James_H_Jennis@mail.mmmg.com) for carefully testing all versions of gv. If there is something like the notion of a 'chief-beta-tester' he deserves this attribute for his careful and devoted work.

12 References

12.1 ghostscript

The ghostscript interpreter may be obtained via anonymous ftp from ftp://ftp.cs.wisc.edu/pub/ghost.

12.2 ghostview

gv is based on Tim Theisen's ghostview 1.5. ghostview 1.5 may be obtained via anonymous ftp from ftp://ftp.cs.wisc.edu/pub/ghost.

12.3 Xaw3d

The sources of Kaleb S. Keithley's modification of the Xaw widget set may be obtained via anonymous ftp from ftp://ftp.x.org/contrib/widgets/Xaw3d.