mgv 3.1.5: A Motif PostScript Viewer

Eric A. Howe (mu@trends.net) 1998/09/28

Contents

List of Figures

1 Introduction

mgv is a Motif based viewer for **PostScript** files which uses Ghostscript as the underlying **PostScript** rendering engine. Limitted PDF support is also supplied.

1.1 Running mgv

Executing **mgv** is very simple:

```
mgv [switches] [file.ps [...]]
```

If you mention multiple files on the command line, **mgv** will attempt to open each file in its own window so be careful with `"mgv *.ps"`. If no initial file is specified, **mgv** will try and read from the standard input if it looks like there is something there; see the 16 (Reading From The Standard Input) section for details. The available switches are detailed in the 21 (Command Line Switches) section. You can also use the *-help* switch for a compact list of available switches or the *-longhelp* switch for a more verbose list.

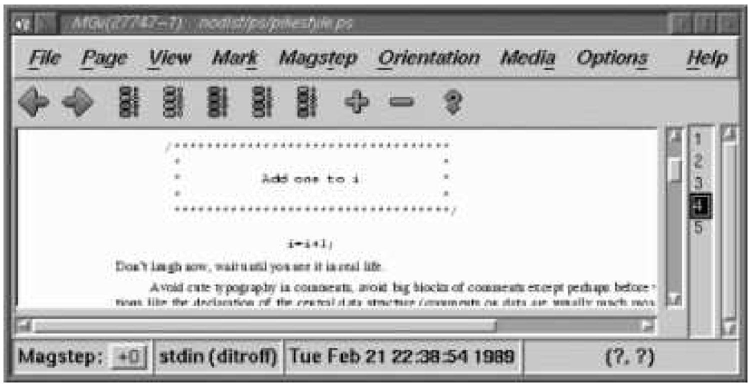

Figure 1: Main Window

2 The Main Window

The main **mgv** window consists of a menu bar, a tool bar, a page selection list, a status line, and the main viewing area. Everything in the main window except the viewing area can be shown or hidden via the 5 (View) menu.

The menu bar is across the top of the **mgv** window; nothing exciting here. Note that if the menu bar is hidden, you can still activate it using any of the standard keyboard short cuts (such as **F10**); the visual effect may be a little strange but this functionality is quite useful.

The scrolled list along the left side contains the page numbers (if any) for the current document, selecting an entry in this list will display the selected page. Marked pages will appear in a different font as specified in the **fontList** resource for the list; the **fontList** for the list should contain two fonts named **MARKED** for marked pages and **UNMARKED** for unmarked pages. Shift-button1 will toggle the marked status of a page in the page list (see 6 (The Mark Menu) for more information on marking pages). If the `%%Page` comments in the current document contain page labels, then the page list can display the labels along with the raw page numbers; you can toggle between page numbers and labels and just page numbers using the 4 (Page) menu.

Along the bottom of the **mgv** window there is a status line which displays the name of the current document, the creation date (if available), and the current cursor position. If the document contains a `%%Title` comment, then that will be used as the name, otherwise, the name of the file is used. The status line also contains a 7 (magstep) display and a button for changing the magstep. When you press this button, the button will turn into a text field; type in your desired magstep and press **Enter** to activate it. This button has the same effect as using the 7 (Set...) entry on the *Magstep* menu.

The rest of the **mgv** window is the actual viewing area. Mouse button one will activate the zooming reticule when you are in this area (see 15 (Zooming)) and mouse button two will activate panning.

Inside the viewing area and page list, the cursor keys will scroll the main window.

3 The File Menu

The File menu contains the following items:

Open (Ctrl+O)

This button will open a new file. A file selector will be popped up for you to chose a file to open. The file selector will have an extra *Browse* toggle button; when this toggle is activated, the file selector will not automatically pop down when a file has been selected. If the *New Window* toggle is on when you

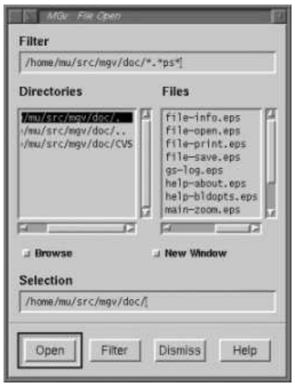

Figure 2: File Open Dialog

Figure 3: File Save Dialog

select a file, a new **mgv** window will be created with your chosen file; otherwise, the new file replaces the current file. When you open a file, all of the zoom windows attached to the old file will be removed from the screen. If the selected file appears to compressed (i.e. has an extension of **Z**, **z**, **gz**, or **bz2** and starts with one of the correct magic numbers), **mgv** will attempt to decompress it using the command specified in the 19.9 (gunzip), 19.9 (bunzip), or 19.9 (decompress) resources.

Reopen (Ctrl+R)

This button re-opens the current file. The current page number will be retained if possible. If you have explicitly requested a page orientation (i.e. you pushed one of the radio buttons in the 8 (Orientation) menu) then that orientation will remain in effect. This is equivalent to choosing the current file through the *Open* menu entry, reselecting the current page, and possibly resetting the orientation.

You cannot re-open files that came from the standard input.

Save (Ctrl+S)

Activating this entry will prompt you for a file name and write the current document, all or only the marked pages, to disk. The file selector will have two extra toggle buttons: if the *Save Marked Pages Only* toggle is set, only the currently marked pages will be written; otherwise, the entire document will be written; if the *Unmark Pages After Saving* toggle is set, all pages will be unmarked after saving.

If you select a file that already exists, you will be asked if you want to overwrite it (the confirmation dialog is modeless so you can type in a different name without responding to the confirmation request and the *right thing* will be done).

If the specified file name ends with *.Z* then it will be compressed, if it ends with *.gz* then it will be gzipped, if it ends with *.bz2* then it will be bzip2ed; the 19.9 (compress), 19.9 (gzip), and 19.9 (bzip)

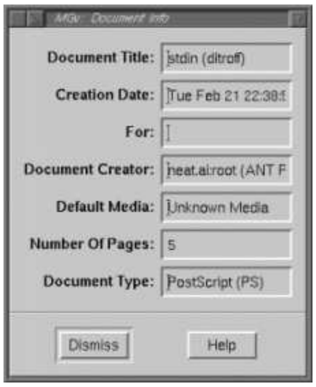

Figure 4: The Document Information Dialog

resources are used to determine what command should be used for compression. The *File Save* dialog can be made 17 (sticky).

Print (Ctrl+P)

This will bring up a dialog box which allows you to print the whole file or just the marked pages (if any); the print dialog is explained in 14 (Printing).

Info (Ctrl+I)

This will bring up the 3.1 (Document Information) dialog.

Close (Ctrl+D)

Close the current window; if there is only one viewing window, then this is equivalent to *Exit*.

Exit (Ctrl+C)

Exit **mgv**. If you have more than one viewing window and the **confirmExit** resource is **True**, you will be asked for confirmation. Note that all of **mgv**'s child processes–including HTML browsers–will be terminated (via **SIGTERM**) when **mgv** exits (if you don't like this, the 19.9 (killChildrenAtExit) resource can be used stop it).

3.1 The Document Information Dialog

The *Document Information* dialog contains the following information about the document:

- **Document Title:** The document title as specified in the `"%%Title"` comment.
- **Creation Date:** The document's creation date as specified in the `"%%CreationDate"` comment.
- **For:** The person who created the document as specified in the `"%%For"` comment. This value is normally used by print spoolers to generate a banner page.
- **Document Creator:** The document's creator as specified in the `"%%Creator"` comment. This value will normally be the name of the program that created the document.
- **Default Media:** The default page media for the document. Individual pages can have a different media than the rest of the document but this appears to be rare.
- **Number Of Pages:** The number of pages in the document.
- **Document Type:** The document type. This value will be "PostScript" or "Encapsulated PostScript".

Some of the information will not be available with some documents. If the document is not DSC compliant, then none of the information will be available.

4 The Page Menu

The Page menu contains various page movement controls.

Next (PageDown), Previous (PageUp)

Display the next or previous page.

Center (Alt+C)

Enable or disable page centering.

Redisplay (Alt+R)

Redisplay the current page.

Show Page Labels (Alt+B), Show Page Numbers (Alt+N)

These toggles control what is displayed in the page list. The *Page Numbers* are just absolute position numbers; the *Page Labels* are arbitrary strings which were assigned by the application which generated the **PostScript** file. The labels will often match up with the table of contents (if there is one) of the document. For example, the page numbers may be *1, 2, 3, 4, 5, 6* but the labels might be *0, i, 1, 2, 3, 4*.

Page labels will appear in parentheses.

Turning off both page labels and page numbers will remove the page list from the screen; if you bring the page list back using the 5 (View) menu and both labels and numbers are deactivated, the page numbers will be turned on to make sure there is something to show.

Automatic Sizing

This sub-menu offers the following radio buttons for controlling automatic window sizing:

Size (Ctrl+E)

Try and keep the main window large enough to display the entire page.

Height (Ctrl+H)

Try and keep the main window tall enough to display an entire page height.

Width (Ctrl+W)

Try and keep the main window wide enough to display an entire page.

None (Ctrl+N)

Leave the window size alone.

If your window manager doesn't limit the size of windows (some won't let you resize a window to exceed the screen size), then you can try and use the 19.6 (smartSizing) resource to limit the resizing.

Whether or not any of this sizing stuff works is really up to your window manager (which is not required to honor out humble requests) but most window managers will grant our wishes (within limits).

5 The View Menu

The *View* menu supplies buttons for hiding/showing various parts of the **mgv** user interface; for convenience, the entries in the window menu are duplicated in the 12 (popup) menu. The following items are available:

Hide Log (Ctrl+L)

This hides or shows the Ghostscript 18 (message log).

Hide Page List (Ctrl+G)

This hides or shows the page list. If you have deactivated both page labels and page numbers from the 4 (Page) menu, un-hiding the page list will turn on page numbers so it has something to display.

Hide Status Line (Ctrl+T)

This hides or shows the status line.

Hide Menu Bar (Ctrl+B)

This hides or shows the menu bar. Note that the menu bar and the accelerator keys are still active even when the menu bar is hidden–hiding the menu bar only places it underneath the main viewing window (this is sneaky but it works just fine).

Hide Tool Bar (Alt+T)

Hide or show the tool bar.

Close All Zooms (Ctrl+Z)

This will close all of the existing zoom windows.

6 The Mark Menu

This Mark menu contains the various page marking commands.

Mark/Unmark(Ctrl+M)

Toggle the marked state of the current page. If the current page is marked, it will become unmarked; if the current page is unmarked, it will be marked. Marked pages will appear in a different font in the page list.

Mark All (Alt+M), Unmark All (Alt+U)

Mark or unmark all of the pages.

Mark Even Pages (Alt+E), Mark Odd Pages (Alt+D)

Mark the even/odd numbered pages.

Invert Marked Pages (Alt+I)

Mark the un-marked pages and un-mark the marked pages (i.e. toggle the marked status of each page).

7 The Magstep Menu

The Magstep menu controls the document magnification. The default magstep, zero, implies no magnification (i.e. the on-screen image should be the same size as the paper version). Positive magsteps increase the magnification by a factor of 1.2 at each step and negative magsteps decrease the magnification by a factor of 1.2 at each step. The factor of 1.2 is the same factor used by Ghostview (upon which **mgv** is based) and Ghostview borrowed the factor from TeX: if 1.2 is good enough for Donald Knuth, then it is certainly good enough for me.

The following entries are provided on the menu:

Decrease (Alt+-), Increase (Alt++)

Decrease or increase the magstep factor.

-5, -4, -3, -2, -1, Normal (Alt+0), +1, +2, +3, +4, +5

Set the magstep to the specified number; *normal* means zero magnification. The radio buttons are provided for convenient access to commonly used magsteps. If none of the radio buttons are toggled on, then you have a magstep outside their range.

Set...

This pops up a simple dialog which allows you to set a specific magstep value. The *Set Magstep* dialog can be made 17 (sticky).

The current magstep is displayed in, and can be changed from, the status line.

If the magstep is above +5 or below -5, then no radio button will be on but the status line will still show the correct value.

Warning: High magsteps can be pretty hard on your machine: *caveat emptor*. If you want to put an upper limit on the magstep, a simple modification to `magstep.c:mgv_ui_magnify()` is all that is needed (just don't make it less than 5 or you'll probably confuse the program).

8 The Orientation Menu

The *Orientation* menu allows you to select the page orientation of your document. You may choose *Portrait*, *Landscape*, *Upside-down*, or *Seascape* as your orientation.

Portrait is the *natural* orientation for a given media; in most cases, the short sides will be at the top and bottom.

Landscape is a clockwise rotation of 90 degrees. Some **PostScript** producers get things backwards and rotate counter-clockwise so you might have to use the *Seascape* orientation instead.

Upside-down is a rotation of 180 degrees. Note that this is not a reflection so *Upside-down* may be misleading.

Seascape is a clockwise rotation of 270 degrees. Some **PostScript** documents that claim to be landscape have actually been rotated by 90 degrees *counter-clockwise* so you might have to use this orientation to get a landscape document to appear right-side-up.

If you explicitly force an orientation, **mgv** will preserve it if you reopen the current document.

9 The Media Menu

The *Media* menu allows you to select different paper sizes; if the paper size can be determined from the **PostScript** file, then that paper size will be selected by default, otherwise, the value of the **defaultPageMedia** resource (see 19 (Application Resources)) will be used.

mgv understands the standard media from Adobe's PPD (sizes are listed in points): 10x14 (720x1008), A3 (842x1190), A4 (595x842), A5 (420x595), B4 (729x1032), B5 (516x729), Executive (540x720), Folio (612x936), Ledger (1224x792), Legal (612x1008), Letter (612x792), Quarto (610x780), Statement (396x612), and Tabloid (792x1224) *Letter* is the standard North American paper size, *A4* is the standard paper size in Europe (and probably the rest of the world). One inch is approximately 72 points, one centimeter is approximately 28.3 points. *Letter* and *Letter Small* are the same size, *A4* and *A4 Small* are the same size.

10 The Options Menu

The *Options* menu is effectively a dumping ground for menu items that don't belong in any of the other menus; the following items have been abandoned here:

Enable Anti-aliasing (Ctrl+A)

Enable or disable anti-aliasing within Ghostscript. Your copy of Ghostscript must support the **x11alpha** device if you want to use anti-aliasing. Note that anti-aliasing can make some **PostScript** files look worse (see 22.3 (Caveats and Bugs)).

Enable Magic Scrolling (Alt+G)

Enable or disable *magic* scrolling. When magic scrolling is enabled, attempting to scroll down at the bottom of a page (or scroll up at the top of a page) will move you to the next (or previous) page. The 19.5 (magicResistance) resource controls the number of attempts you have to make before magic scrolling takes effect.

Enable Smooth Scrolling (Alt+L)

Enable or disable *smooth* scrolling. When smooth scrolling is enabled, scrolling with the 20 (mgvScroll) action (i.e. with the arrow keys but not the little buttons on the scrollbars) will scroll the screen a couple pixels at a time with an update after each movement; this will give the scrolling a smoother appearance than the normal scrolling. When smooth scrolling is disabled, normal scrolling is performed. The 19.5 (smoothScrolling) resource controls the initial state of smooth scrolling and the 19.5 (smoothness) resource controls how smooth the scrolling will be. If you're interested in the scrolling, you might want to look at the 19.5 (scrollPercentage) resource as well.

Enable Smart Sizing (Alt+Z)

Enable or disable *smart sizing*. The documentation for the 19.6 (smartSizing) resource covers the smart sizing features and their limitations. Note that smart sizing places upper limits on the main window size whereas 4 (automatic sizing) places lower limits on the main window size.

Color Palette

This sub-menu allows you to choose the color palette used for rendering files. You can choose from *Monochrome*, *Grayscale*, and *Color* palettes. Palette changes are not propagated to existing zoom windows but the new palette will be used by new zoom windows.

11 The Help Menu

The *Help* menu provides access to the on-line help system via the following entries:

Contents

This entry will launch an HTML browser, set via the **helpBrowser** resource (see 19 (Application Resources)), with the contents page.

On Context (F1)

This entry will change the mouse cursor to a question mark; if you click on a widget, an HTML browser will be launched with the help entry for that widget. If the widget doesn't have any help text, the bell will be rung and no browser will get launched.

On Application Resources

This entry will launch an HTML browser, set via the **helpBrowser** resource, with the 19 (Application Resources) section.

Figure 5: The About Box

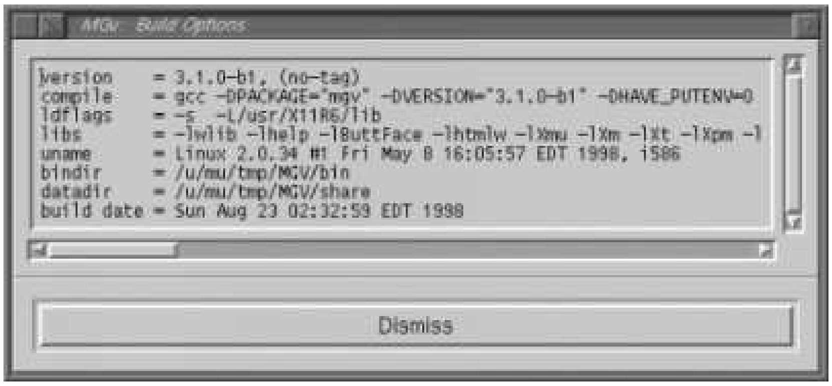

Figure 6: Build Settings Dialog

On Command Line

> This entry will launch an HTML browser, set via the **helpBrowser** resource (see 19 (Application Resources)), with the 21 (Command Line Switches) section.

About

> This will pop-up a dialog box with the **mgv** version, operating system, etc... If you encounter a bug, the information in this dialog may be useful to the author.

If you are using Netscape/remote or libhelp for on-line help, then **mgv** will attempt to maintain a connection with the browser so that only one instance of the browser will be required. If you are using plain HTML, then **mgv** will launch a separate browser for each help request. Note that when **mgv** exits, it will attempt to kill (via **SIGTERM**) any browsers that it has launched (this can be changed by setting the 19.9 (killChildrenAtExit) resource to **False**), browsers that **mgv** has just borrowed will not be affected by this.

11.1 About Dialog

The *About* dialog contains the program name, a copyright statement, author contact information, a *Build Options* button, and a *Dismiss* button. The *Dismiss* button will remove the about box from the screen; if the *Build Options* dialog is also visible, it will be removed as well. Activating the *Build Options* button will pop up the *Build Options* dialog (see 11.2 (Build Options Dialog)).

11.2 Build Options Dialog

The *Build Options* dialog contains various flags and program names used to compile the program;. The entries are as follows:

version

The program version.

compile

The command used to compile source files, this command will include various macro definitions, includes paths, and sundry other compiler flags.

ldflags

Extra flags used to link the program.

libs

The libraries which the program was linked against.

uname

This line will contain the operating system name, release number, version, and machine type as specified by the operating system.

bindir

The binary installation directory.

datadir

The library installation directory. Help files should be in the `help` subdirectory of **datadir**.

build date

The data and time when the program was linked.

If you find a bug, the information in this dialog may be useful to the maintainer. You can also get this information using the *-version* command line switch.

12 The Popup Menu

A popup menu is available anywhere in the main window by pressing mouse button three; this menu contains the entries in the 5 (View) menu with the following additions:

Back (Alt+Left)

Go to the previous page in the page history list; the previous page is the page you were at before the current page.

Forward (Alt+Right)

Go forward in the page history list.

The *Forward* and *Back* commands behave like *Forward* and *Back* in most web browsers; the only difference is that the page history list is initialized to a list of all the pages in the current document. There is currently no way to view the page history list, if you really want such a feature send a request to the **mgv** author.

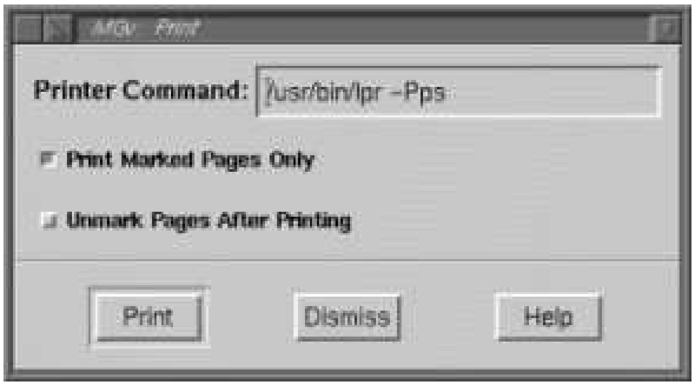

Figure 7: Print Dialog

13 The Tool Bar

The **mgv** tool bar provides convenient access to various functions which are available via the menus. The functions available from the tool bar are currently hard wired, there is no way add or remove buttons without chaning the **mgv** source code. However, various visual aspects of the tool bar can be configured through the 19.8 (resource database).

Users can change the icons used in the tool bar by setting the 19.8 (toolBarIcon) resource on the tool bar buttons. If a tool bar icon cannot be found, the built-in default images (Dobbs heads) will be used and a warning message will be printed to the standard error stream.

14 Printing

mgv has the ability to print an entire document or just selected pages. Printing is accessed through the *Print* button in the *File* menu which pops up a *Print* dialog. You can try and print a PDF file but don't expect it to work unless your print spooler knows what to do with PDF files.

The *Print* dialog contains the following controls:

- A text field for specifying the print spooling command to use. The command should specify the printer to use and arguments to make it read from the standard input.
- A *Print Marked Pages Only* toggle button. If this toggle is set, only the marked pages will be sent to the print spooler. This toggle is only active if there are marked pages.
- An *Unmark Pages After Printing* toggle button. If this toggle is set, the marked pages will be unmarked after the marked pages have been submitted to the print spooler. This toggle is only active if there are marked pages.
- A *Print* button. Pressing this button will submit the requested pages to the print spooler and pop down the *Print* dialog. Any output from the print spooler will be displayed in a message box.
- A *Help* button for requesting help.
- A *Dismiss* button for popping down the *Print* dialog.

The default print command is taken from the 19.9 (printCommand) application resource. If you do not specify the **printCommand** resource, **mgv** will attempt to choose sensible values; the manual entry for the 19.9 (printCommand) resource discusses the guessing procedure, the **printCommand** resource entry also lists the restrictions on the print command. The *Print* dialog can be made 17 (sticky).

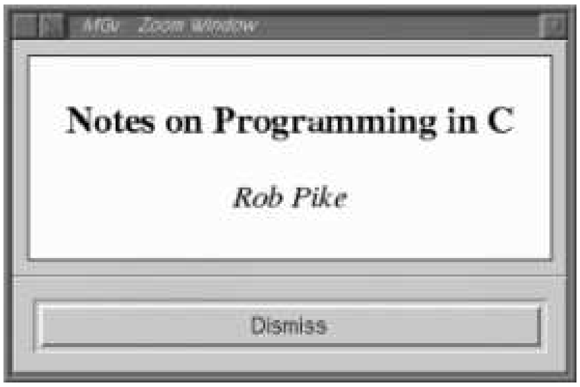

Figure 8: Zoom Window

If the current document does not contain DSC comments, then you will not be able to mark individual pages and hence, you will only be able to print the entire document.

If your print spooler prints any status messages, a message box containing the messages will be popped up.

15 Zooming

If you wish to magnify a section of the displayed image, you can either magnify the entire image using the 7 (Magstep Menu) or zoom in on a specific region using mouse button one. Pressing mouse button one and dragging will mark out the selected area; when the button is released, a menu will popup with several zoom factors to choose from. Of course you can zoom in on a zoom if you wish.

Note that resizing a zoom dialog stretches the area rather than expanding it.

16 Reading From The Standard Input

If you run **mgv** without a file name or with a file name of `"-"` then one of two things will happen:

- If the standard input is a TTY, then **mgv** will just start up without a file.
- If the standard input is not a TTY, then **mgv** will attempt to read **PostScript** from the standard input.

This means that running **mgv** like this:

```
$ mgv
```

will just start an instance of **mgv** without a file; if you run **mgv** like this:

```
$ mgv somefile.ps
```

then **mgv** will open `somefile.ps` as the initial file; if you run **mgv** like this:

```
$ mgv < somefile.ps
$ mgv - < somefile.ps
$ cat somefile.ps | mgv
$ cat somefile.ps | mgv -
```

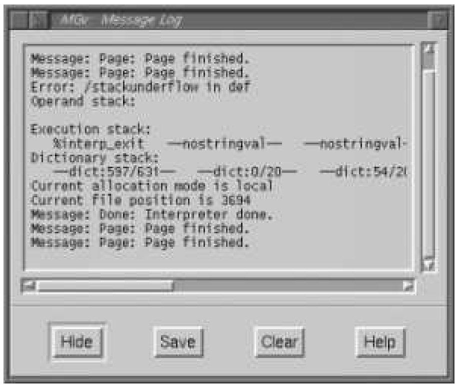

Figure 9: Ghostscript Message Log

then **mgv** will end up reading `somefile.ps` from the standard input. If you have asked **mgv** to copy files from the standard input using the 19.9 (copyStdin) resource, then **mgv** will copy the standard input to a temporary file and work from the temporary file. Note that if a file is read from standard input and not copied, you will only be able to move to the next page: you won't be able to jump to an arbitrary page and you won't be able to move backwards.

17 Sticky Dialogs

Some of the dialogs in **mgv** can be configured to require explicit user action to dismiss them; generally, the dialogs will dismiss themselves after you press the *OK* or *Apply* button but some users dislike this behavior. If you prefer to keep dialogs up until you explicitly dismiss them (via *Cancel* or *Dismiss* buttons), then you can use the **wlAutoDismiss** resource to keep the dialogs up (note that all of the dialogs in **mgv** are modeless so keeping the dialogs up will not interfere with normal application usage).

You can make all of the sticky-enabled dialogs sticky by setting the **wlAutoDismiss** resource to **False** with something like this:

```
mgv*wlAutoDismiss: False
```

in your local resource file (probably `"~/.Xresources"`) or from the command line:

```
mgv -xrm 'mgv*wlAutoDismiss: False'
```

The following dialogs can be made sticky:

- 3 (File Save) (`"mgv*fileSave.wlAutoDismiss:  False"`)
- 7 (Set Magstep) (`"mgv*magstepDialog.wlAutoDismiss:  False"`)
- 14 (Print) (`"mgv*printDialog.wlAutoDismiss:  False"`)

The 3 (File Open) dialog offers similar functionality through its *Browse* toggle.

18 The Ghostscript Message Log

All messages from Ghostscript are stored in a log dialog. By default this dialog is not visible but may be viewed at any time using the *Hide Log* entry in the 5 (View Menu). The 19.3 (hideLog) application resource may be used to alter the default behavior for all instances of **mgv** and the **-log** and **-nolog** command-line switches (see 21 (Command Line Switches)) may be used to alter the default behavior for a single execution. The message log is also used to display errors from the Ghostscript interpreter. If there is an error, the log will automatically pop up.

The log dialog consists of the following widgets:

- A Scrolled text region for displaying the messages. The text widget is editable so you are free to add notes if you find a bug in **mgv**, Ghostscript, or someone's **PostScript** program.
- A *Hide* button for popping down the log until an error occurs or you explicitly request its presence again.
- A *Save* button for saving the current contents of the log to a file. This button will activate a standard file selector to ask for the filename.
- A *Clear* button for emptying the log.
- A *Help* button for requesting help on the log dialog.

19 Application Resources

The following sections detail the **mgv** application resources. Each resource name is followed by its type and the resource class name in parentheses. All resource settings should have the form:

```
mgv*resourceName: value
```

to make sure the resource gets to the proper widget.

19.1 Help Resources

The following resource control various aspects of the on-line help system:

helpBrowser String (HelpBrowser)

This resource specifies the HTML browser to use for on-line help. The HTML files used by **wlib** are quite generic so any HTML browser should work. Note that the browser will be given a *-display display* argument before the actual URL so the browser that you use should understand this standard **X** option.

The **helpType** resource should agree with your chosen browser.

helpPrefix String (HelpPrefix)

The help prefix serves as the root of the HTML documentation tree. If the help files are installed locally, then this will be the full path (including the trailing slash) to the directory containing the help files. If you are accessing the help files through an HTTP server, then this resource should have the form **http://hostname/path/to/help/files/**. If you are using a **helpType** of **libhelp**, then the help files must be accessible from the file system.

helpType String (HelpType)

This resource specifies your preferred on-line help format. The following types are known:

html

Plain old HTML with no communication with the browser. This help method will launch a separate browser for each help request.

html-remote, netscape, remote

HTML with Netscape's **-remote** protocol.

libhelp

The libhelp help system. If you wish to use libhelp for online help then you should make sure that your **LIBHELPPATH** environment variable contains a path to the libhelp images; the application will add its own entries to **LIBHELPPATH** based on the **helpPrefix** resource so you should make sure that **helpPrefix** is correctly set. See *http://www.informatik.uni-stuttgart.de/ipvr/bv/personen/mache/libhelp* `<http://www.informatik.uni-stuttgart.de/ipvr/bv/personen/mache/libhelp>` for more information about libhelp. This is the lightest weight help system currently supported so I recommend that you use it if possible.

All help methods except **html** will attempt to maintain a connection to the help browser used so that only one instance of the help browser will be used. Not all help methods are supported on all platforms but the three HTML methods should always be available (assuming the availability of browsers). If you supply an unknown help type a warning message will be printed on standard error and **html** will be used.

The **helpBrowser** resource should agree with your chosen help type.

19.2 Rendering Resources

The following resources control the actual **PostScript** rendering process and supply various rendering defaults. Most of these resources are converted to switches for the child Ghostscript that does all of the real work.

antialias Boolean (Antialias)

If this resource is **true** then **PostScript** files will be anti-aliased to improve image quality (at the expense of performance). Your Ghostscript must support the **x11alpha** device or anti-aliasing won't work. If anti-aliasing is enable, then the **x11alpha** device is used and Ghostscript will be run with the *-dNOPLATFONTS* switch; if anti-aliasing is disabled, then the **x11** device will be used. The default value is **true**.

antialiasEPS Boolean (AntialiasEPS)

Anti-aliasing graphic images (which seems to be what most EPS files contain) will often produce a poorer quality display and significantly increase the rendering time. If you find yourself disabling anti-aliasing by hand whenever you open an EPS file, then this resource is for you. If you disable anti-aliasing globally, then this resource is irrelevant. If you enable anti-aliasing globally, then this resource is only relevant if its value is **False**; in this case, anti-aliasing will automatically be disabled when you load an EPS file and, of course, reset to the previous state when you load a non-EPS file. The default value is **True** which means that EPS files will be treated like any other **PostScript** file so that anti-aliasing of EPS files will be controlled by the **antialias** resource of the Ghostview widget.

arguments String (Arguments)

This resource is used to supply extra command-line switches to Ghostscript. This resource is useful for passing *-I* switches to Ghostscript when your library files are not where Ghostscript thinks they are. The default value is empty.

defaultPageMedia String (DefaultPageMedia)

This resource sets the media for documents that do not specify one with a `%%BoundingBox` or `%%PageMedia` comment. All of the values in the 9 (Media Menu) are valid values for this resource and the values are case insensitive. The default is **Letter**.

gsLocale String (GsLocale)

This resource supplies the locale used when writing the **GHOSTVIEW** window property. In order to support multiple locales, **mgv** calls **XtSetLanguageProc()** and this might put you into a non POSIX locale; using a non-POSIX locale can alter the decimal separator so that commas are used where Ghostscript expects periods. By default, **mgv** temporarily forces a POSIX locale while building the the property string but your copy of Ghostscript may be expecting something else. If Ghostscript is having problems parsing the **GHOSTVIEW** property, then you should try adjusting this resource.

interpreter String (Interpreter)

Specify where your Ghostscript lives. If you don't specify a particular Ghostscript, **mgv** will use the first one that shows up in your **PATH** environment variable.

magstep Integer (Magstep)

This resource specifies the initial 7 (magstep). The default value is zero.

19.3 Display Resources

The following resources control which parts of the **mgv** user interface will be displayed at start up:

hideLog Boolean (HideLog)

If this resource is **True** then the Ghostscript message log will be hidden by default. Any errors from Ghostscript will force the log to be displayed. Messages from Ghostscript will be logged even if the log is hidden. The default value is **True**. Note that the log does not exist until there is something to put in it.

hideMenuBar Boolean (HideMenuBar)

This resource controls the initial state of the menu bar; if set to **True**, the menu bar will be hidden at start up and the menu bar will be visible at start up if this resource is **False**. The default value is **False**.

hidePageList Boolean (HidePageList)

When this resource is **False**, the page list will be visible at start up and the page list will be hidden if this resource is set to **True**. The default value is **False**.

hideStatusLine Boolean (HideStatusLine)

If this resource is **True**, the status line will be hidden at start up; if this resource is **False**, the status line will be visible at start up. The default value is **False**.

hideToolBar Boolean (HideToolBar)

If this resource is **True**, the tool bar will be hidden at start up; if this resource is **False**, the tool bar will be visible at start up. The default value is **False**.

showLabels Boolean (ShowLabels)

If this resource is **True** then the page labels, if any, will be displayed in the page list; if **showPageNumbers** is also **True** then both will be displayed. The default value is **False**.

showPageNumbers Boolean (ShowPageNumbers)

If this resource is **True** then the page numbers, if any, will be displayed in the pagelist; if **showLabels** is also **True** then both will be displayed. The default value is **True**.

19.4 Colormap Resources

The following resources control such things as private color maps and non-default visuals. If you're running out of colors, there may be some help for you here.

wlDepth Integer (WlDepth)

Specify a non-default color depth.

wlUsePrivateColormap Boolean (WlUsePrivateColormap)

Install a private colormap if **true**, otherwise use the default colormap. If you specify a non-default visual or depth, you will get a private colormap whether you ask for one or not.

wlVisualClass WlVisualClass (WlVisualClass)

Specify a non-default visual by visual class. The value of this resource can be any of the following strings (case insensitive):

StaticGray

This visual yields a hardware defined read-only grayscale palette, the colors cannot be changed to suit the application's needs.

StaticColor

This visual yields a hardware defined read-only color palette, the colors cannot be changed to suit the application's needs.

PseudoColor

This visual yields an indexed read/write palette, the colors may be modified to suit an application's needs. This is the most common visual on eight bit color displays.

GrayScale, GreyScale

This visual yields an indexed read/write palette where the red, green, and blue components of each color are equal.

TrueColor

This visual yields a hardware defined, non-indexed, read-only palette.

DirectColor

This visual is a high-performance visual where the red, green, and blue color components are separately indexed. The palette is read/write.

Not all visual classes are available with all servers, the **xdpyinfo** command will tell you which visuals are available. If you don't know what any of the descriptions mean, you should experiment to find the visual which you like best and bug the author (`mu@trends.net`) to clarify the documentation. If you aren't having any problems with your colormaps, then you should probably just use the defaults and leave these resources alone.

You might want to set the **wlDepth** resource as well.

wlVisualID String (WlVisualID)

Specify a non-default visual by visual id. This resource takes precedence over the **wlDepth** and **wlVisualClass** resources. This resource is available in case the visual chosen by the **wlDepth** and **wlVisualClass** resources is not the one you want–you should only use this resource if **wlDepth** and **wlVisualClass** are not giving the visual you want.

The final visual, depth, and colormap are chosen as follows:

1. If the **wlVisualID** is set and it contains a valid visual, then we use that.

2. If **wlDepth** and **wlVisualClass** are set, then we try and find a visual with the desired depth and class. If this fails, the defaults are used. If only **wlDepth** is set, then we use the first available visual which supports that depth.

3. If **wlVisualClass** is set but **wlDepth** is not, we use the visual of the specified class which has the largest depth.

4. If all else fails (or nothing special is requested), then the defaults supplied by Xt are used.

If **wlUsePrivateColormap** is **true** or the visual requires a private colormap, then a private colormap is used. Normally you can just specify the **wlVisualClass** and **wlDepth** (after looking at the output of **xdpyinfo**(1) first) and you'll get what you want, if that doesn't work, just specify the visual ID in **wlVisualID**.

19.5 Scrolling Resources

The following resource affect various aspects of scrolling in **mgv**:

center String (Center)

When this resource is **True**, pages will be centered when displayed. The default value is **False**. You can also enable or disable page centering at run-time with the 4 (Center) menu entry.

magicResistance Integer (MagicResistance)

This resource specifies the number of consecutive attempts to scroll beyond the page boundaries that are needed before magic scrolling takes effect. This resource has no effect if magic scrolling is not enabled. The absolute value of this resource is used. If you want no resistance at all (i.e. magic happens as soon as you try to exceed the page boundary), use a value of zero. The default value is **2** (i.e. the second attempt succeeds).

The documentation for the 20 (mgvScroll) contains some more notes about scrolling in general.

magicScrolling Boolean (MagicScrolling)

When this resource is **True**, **mgv** will move to the next page if you try and scroll down at the bottom of a page and move to the previous page if you try and scroll up at the top of a page. You can change this behavior at run-time via the 10 (Option) menu. The default value is **True**.

resetScrollBars ResetScrollBars (ResetScrollBars)

This resource controls the resetting of the horizontal and vertical scrollbars in the main window when you change pages; the possible values are

- **both, all**: reset both the horizontal and vertical scrollbars. The value **true** is an alias for **both** in the interests of backwards compatibility.
- **none**: don't reset either scrollbar. The value **false** is an alias for **none** in the interests of backwards compatibility.
- **horizontal**: reset the horizontal scrollbar.
- **vertical**: reset the vertical scrollbar.

All of these values are case-insensitive. When this resource is used, the chosen scrollbars will be moved back to their home positions (the top or left edge) when you change pages. Note that changing the orientation or media type will always reset both scrollbars. The default value is **both**.

scrollPercentage Percentage (ScrollPercentage)

This resource controls how far the page will move when you scroll with the 20 (mgvScroll) action (i.e. the keyboard but not the little buttons on the scrollbars). A value of **100%** will scroll a whole window height/width while a value of **90%** (the default) will leave a little bit of overlap for context. If the value you specify has a trailing percent sign ("%"), then it will be interpreted as a percentage (i.e. the value will be divided by 100), otherwise, the value will be considered a raw floating point value. For example: *75%*, *.75*, and *7.5e-1* all represent the same value.

smoothScrolling Boolean (SmoothScrolling)

This resource controls the smooth scrolling in the main viewing window. When smooth scrolling is enabled, scrolling with the 20 (mgvScroll) action (i.e. with the arrow keys but not the little buttons on the scrollbars) will scroll the screen a couple pixels at a time with an update after each movement; this will give the scrolling a smoother appearance than the normal scrolling. When smooth scrolling is disabled, the normal scrolling is performed. Smooth scrolling makes it much easier to keep track of where you are on the page but it is slower: *caveat emptor*. Smooth scrolling can be turned on and off at run time from the 10 (Options) menu. Smooth scrolling is enabled by default.

smoothness Integer (Smoothness)

This resource controls how smooth smooth scrolling will be; the normal increment (see the **scrollPercentage** resource) is divided by the value of this resource to determine how many pixels to scroll between screen updates. Larger values will yield smoother scrolling but will take more time. Values between 20 and 30 tend give fairly good results (this is dependent on how fast your machine and X server are). The default value is **25**.

19.6 Sizing Resources

The following resources control how **mgv** resizes the main window to accomodate the page size of a **PostScript** file.

autoHeight Boolean (AutoHeight)

If the this resource is **True** then **mgv** will attempt to make the main window tall enough to display an entire page; your window manager may refuse the request but **mgv** will try anyway. This resource is **False** by default.

autoWidth Boolean (AutoWidth)

If the this resource is **True** then **mgv** will attempt to make the main window wide enough to display an entire page; your window manager may refuse the request but **mgv** will try anyway. This resource is **True** by default.

smartSizing Boolean (SmartSizing)

This resource controls how smart the 4 (automatic sizing) will be. If this resource is **True**, then **mgv** will attempt to keep the window smaller than the screen during automatic resizing; if **False**, **mgv** will leave this task to your window manager. The default is **False** since this stuff is really your window manager's problem.

You should only need to use the **smartSizing** resource if your window manager allows windows to exceed the screen size. If you need to use this resource, you should set the 19.6 (wmWidth and wmHeight) resources since there is no sane way to get determine how large the window manager decorations are.

wmHeight Integer (WmHeight)

This resource specifies the height (top and bottom combined) of the window manager decorations. You will only need to care about this resource if you need to use the 19.6 (smartSizing) resource. The default value of **30** is most likely incorrect for your system; the easiest way of finding the correct value is to run `"xwininfo"` and `"xwininfo -frame"` and use the difference between the reported **Height** values.

wmWidth Integer (WmWidth)

This resource specifies the width (both sides combined) of the window manager decorations. You will only need to care about this resource if you need to use the 19.6 (smartSizing) resource. The default value of **12** is most likely incorrect for your system; the easiest way of finding the correct value is to run `"xwininfo"` and `" xwininfo -frame"` and use the difference between the reported **Width** values.

19.7 Splash Screen and Icon Resources

The following resources control the **mgv** splash screen and window manager icon.

wlInstallIcon Boolean (WlInstallIcon)

This resource tells the application to install or not install its own built-in icon when it runs. If you have your own cool icon that matches your personal desktop better than the built-in icon you can set this resource to **false** and tell your window manager to use your preferred icon. This resource is **true** by default.

wlSplashBitmap String (WlSplashBitmap)

The full path to your desired splash screen as an XBM file.

wlSplashPixmap String (WlSplashPixmap)

The full path to your desired splash screen as an XPM file. If the file doesn't exist or cannot be loaded, then the bitmap will be tried.

wlShowSplashScreen Boolean (WlShowSplashScreen)

If this resource is **True**, the splash screen will be shown; if this resource is **False**, the splash screen will not be shown. The internal default is **False** but the application defaults file will probably specify **True**.

wlUseColorIcon Boolean (WlUseColorIcon)

Use or don't use a color icon. If the color icon is not available (due to a lack of Xpm support), then the monochrome icon will be used. The default value for this resource is **true**.

wlUseMonoSplash Boolean (WlUseMonoSplash)

If this resource is **True**, then the application will show the monochrome splash screen without even trying to show the color one. Normally, the application will try the color splash screen (as specified by the 19.7 (wlSplashPixmap) resource) and then try the monochrome splash screen (as specified by the 19.7 (wlSplashBitmap) resource) if that doesn't work. The default value is **False**.

19.8 Tool Bar Resources

The following resources control various aspects of the **mgv** toolbar.

buttonMarginExtra Dimension (ButtonMarginExtra)

Margin setting for tool bar buttons. The default value is **1**.

buttonShadowThickness Dimension (ButtonShadowThickness)

The shadow thickness for tool bar buttons. The default value is **1**.

flattenButtons Boolean (FlattenButtons)

If this resource is **True**, the toolbar buttons will appear flat until the mouse passes over them, when the mouse enters one of the buttons, it will *pop up* (i.e. its shadow will be drawn). If this resource is **False**, the toolbar buttons will look and act like every other button. The default value is **True**.

groupSpacing Dimension (GroupSpacing)

The amount of space between groups of buttons (see 19.8 (newGroup)). The default value is **10** pixels.

showToolTips Boolean (ShowToolTips)

If this resource is **True**, then tool tips will be shown for the toolbar buttons, otherwise, tooltips will not be shown. The default value is **True**.

tipBackground Color (TipBackground)

The background color for tool tips. The default value is **yellow**.

tipBorderWidth Dimension (TipBorderWidth)

The border width for tool bar buttons. The default value is **1**.

tipDelay Integer (TipDelay)

The delay before showing a tool tip. When the mouse cursor enters a tool bar button, **mgv** will wait **tipDelay** milliseconds before showing the tool tip. The default value is **1000** (one second).

tipDistance Dimension (TipDistance)

The distance, in pixels, between a tool bar button and its tool tip. The default value is **10** pixels.

tipFontList FontList (TipFontList)

The font list to use when drawing tool tips. The default is the standard Motif default font list.

tipForeground Color (TipForeground)

The foreground color for tool tips. The default is **black**.

tipPosition TipPosition (TipPosition)

The position, relative to the button, where tool tips will be drawn. This resource may have one of the following values:

- **bottom-left**
- **bottom-right**
- **top-left**
- **top-right**

The values may be specified with a **tip-**, **wltip-**, **xwltip-**, or **xmtip-** prefix and underscores may be used instead of hyphens. The default value is **bottom-left**.

useColorIcons Boolean (UseColorIcons)

If this resource is **True** then **mgv** will attempt to use color icons in the toolbar, if **False** then monochrome images will be used. If your copy of **mgv** was compiled without XPM support then you will get monochrome toolbar icons even if this resource is **True**. The default value is **True**.

The following resources can be set on the tool bar buttons:

newGroup Boolean (NewGroup)

Mark a button as the start of a new group of buttons. Button groups are separated by 19.8 (groupSpacing) extra space. The default value is **False**.

toolBarIcon String (ToolBarIcon)

The name of the icon to use for this button. This resource specifies a name which is used to construct file names or a value in an internal icon table. If the name begins with **INTERNAL::** then the list of compiled-in icons is used to find the icon, otherwise, the name should specify a full path to your desired icon without the `.xpm` or `.xbm` extension: the extension will be appended by **mgv**. The insensitive icon image file should have a **-i** suffix; for example: if the image name is `someIcon`, then the sensitive pixmap would be `someIcon.xpm` and the insensitive pixmap would be `someIcon-i.xpm`. Color icons should be in XPM format, monochrome icons in XBM format. For color icons, you can use the *None* and *none* color symbols to indicate transparency (the GIMP, at least, uses these symbols in transparent XPM files).

toolTip String (ToolTip)

The tool tip to display for this button. The default value is an empty string.

19.9 Miscellaneous Resources

The following list contains resources which don't fit in any of the other categories:

applicationVersion String (ApplicationVersion)

This resource holds the application version number. **mgv** uses the value of this resource to check the version of the application defaults files that gets used. If the incorrect version is found, **mgv** will warn you to expect strange behavior. If this occurs, then you have the wrong version of the application defaults installed somewhere and you should remove or replace it.

You should never alter the value of this resource.

bunzip String (Bunzip)

This resource contains the command (including arguments) that will be used to decompress bzip2ed files; the command must read from the standard input and write to the standard output. By default this resource is set to **"bunzip2"**.

bzip String (Bzip)

This resource contains the command (including arguments) that will be used to compress files with bzip2; the command must read from the standard input and write to the standard output. This resource defaults to **"bzip -9"**.

compress String (Compress)

This resource contains the command (including arguments) that will be used to compress files with compress; the command must read from the standard input and write to the standard output. This resource defaults to **"compress"**.

confirmExit Boolean (ConfirmExit)

If this resource is **True** and you have multiple top level viewing windows when you issue an exit request (through the *Exit* entry in the *File* menu), you will be prompted to confirm that you really meant it; note that this resource only has an effect when you have more than one viewing window. The default is **True**.

copyStdin Boolean (CopyStdin)

This resource controls whether or not **PostScript** files read from the standard input are copied to temporary files. If you don't copy the standard input then you won't get page navigation; however, if the file you're reading from the standard input is quite large you may wish to give up page navigation to avoid running out of temporary file space. This resource is **True** by default.

decompress String (Decompress)

This resource contains the command (including arguments) that will be used to decompress compressed files; the command must read from the standard input and write to the standard output. By default this resource is set to **"gzip –stdout –decompress"**.

gunzip String (Gunzip)

This resource contains the command (including arguments) that will be used to decompress gzipped files; the command must read from the standard input and write to the standard output. By default this resource is set to **"gzip –stdout –decompress"**.

gzip String (Gzip)

This resource contains the command (including arguments) that will be used to compress files with gzip; the command must read from the standard input and write to the standard output. This resource defaults to **"gzip -9"**.

killChildrenAtExit Boolean (KillChildrenAtExit)

When this resource is **True**, all child processes (which for now are just the HTML browsers) will be killed, using **SIGTERM**, when **mgv** exits; if this resource is **False**, then the children will be left alone. Note that Ghostscript children will always be killed. By default this resource is **True**.

printCommand String (PrintCommand)

The command for your printer spooler. If you don't specify this resource, **mgv** will attempt to determine it automatically by looking for **lp** in your **PATH** environment variable and if **lp** cannot be found, it will search for **lpr**. The **printCommand** does not understand shell quoting, the command will be broken into arguments at white space boundaries; if you really need to supply quoted arguments to your print command, then you'll have to write a shell script wrapper. The 14 (print dialog) allows you to change the print command.

reticuleForeground Color (ReticuleForeground)

This resource specifies the foreground color for the zoom selection reticule; the reticule is drawn in **xor** mode so it should always be visible. The default value is **red**.

reticuleLineWidth Integer (ReticuleLineWidth)

This resource specifies the width of the lines used to draw the zoom selection reticule. The default value is **2**.

tempDir String (TempDir)

This resource specifies where temporary files should be stored. If this resource is not specified, **mgv** will use the directory specified in first available source from the following list:

- the **TMPDIR** environment variable
- the **TEMPDIR** environment variable
- the standard temporary directory for your system (**P_tmpdir** in `stdio.h` or `"/usr/tmp"` if there is no **P_tmpdir**).
- `/tmp/`.

For convenience, **mgv** will create its own directory under the specified directory.

wlUseEditRes Boolean (WlUseEditRes)

This resource controls whether support for the editres protocol will be installed in application shell widgets. If **wlUseEditRes** is **true**, then the editres protocol will be support; otherwise, editres will not be supported. On system that don't support editres at all, this resource will do nothing. The default value is **true**.

19.10 The Application Defaults File

By default the **mgv** application defaults file is installed in the **mgv** library directory for future reference–the application defaults is not needed since the entire application defaults file is compiled into **mgv** as fallback resources. However, you may, if you wish, install the application defaults file in the normal location (probably `/usr/lib/X11/app-defaults` or `/usr/X11/lib/X11/app-defaults`) and everything should work just fine until the next **mgv** upgrade.

I stopped installing the application defaults file in the app-defaults directory to avoid version conflicts: an incorrect application defaults file can seriously break **mgv**. **mgv** will detect an out-of-date application defaults file and warn you about it.

20 Actions

The following actions are defined by **mgv**:

mgvMark()

Toggle the marked status of a page; this action is only valid in the main page list. This action takes no arguments. This action is bound to **Shift-Button1** by default.

mgvPan(*command*)

This action scrolls the main viewing window in two dimensions. The argument should be **begin**, **pan**, or **end**; **begin** starts the panning, **pan** causes the window to scroll, and **end** stops the panning. These commands are bound to **Btn2Down**, **Btn2Motion**, and **Btn2Up** (respectively) by default.

mgvScroll(*direction* [, ***magical*** [, ***force***])]

This action scrolls the main viewing window; the action has one, two, or three arguments. The first argument should be the scrolling direction (**up**, **down**, **left**, or **right**), the second (optional) argument should be **magical** or non-existent–the scrolling will be 10 (magical) if the second argument is **magical**. If you specify the second argument, you can also specify the third argument which indicates how many scrolling attempts this should count for; the absolute value of this parameter is used so the sign of *force* makes no difference; a value of zero is considered to be one (which is also the default value).

You can use the third argument to attach different levels of *magicalness* to different keys. For example, if your **magicResistance** is **3** and you add these bindings:

```
<Key>space:             mgvScroll(down, magical, 3)
<Key>osfBackSpace:      mgvScroll(up,   magical, 3)
```

then the spacebar will always scroll down magically and the backspace key will always scroll up magically.

This action will scroll smoothly if smooth scrolling is enabled.

mgvZoom(*command*)

Begin, extend, or end a zoom reticule. This action takes one argument which must be one of: **begin** (begin a new zoom reticule at the current mouse position), **end** (end the current zoom reticule at the current mouse position), or **extend** (extend the current zoom reticule).

wlHelpContext()

This action activates the context sensitive help system; the cursor will turn into a question mark so you can select the widget you want help with. This action is normally bound to the **osfHelp** virtual key (which is generally **F1**).

All arguments are case insensitive. Arguments in (square) brackets are optional.

21 Command Line Switches

The command line switches for **mgv** generally set application resources; see 19 (Application Resources) for descriptions of the various resources.

21.1 Help Switches

-browser htmlbrowser

Specify the HTML browser to use for the on-line help; this switch sets the 19.1 (helpBrowser) resource.

-help, –help, -H, -?

Display a short summary of the available command line switches.

-helptype type

Specify the help type for on-line help. This switch sets the 19.1 (helpType) resource to **type**.

-longhelp

Display a summary, with explanations, of the available command line switches.

-prefix pfx

Specify the location of the files for the on-line help; this switch sets the 19.1 (helpPrefix) resource.

-version, –version

Display lots of version and build information about **mgv**. The displayed information is the same as that in the 11.2 (Build Options Dialog).

21.2 Rendering Switches

-aliaseps, -noaliaseps

Anti-aliasing graphic images will often make the images look worse and increase the rendering time significantly; hence, these switches are offered to give you finer control over when anti-aliasing is used. These switches set the 19.2 (antialiasEPS) application resource.

-antialias, -noantialias

Enable or disable anti-aliasing within Ghostscript; by default, anti-aliasing is enabled. If anti-aliasing is enable, then the **x11alpha** device is used and Ghostscript will be run with the *-dNOPLATFONTS* switch; if anti-aliasing is disabled, then the **x11** device will be used. This switch sets the 19.2 (antialias) resource for Ghostview widgets.

-arguments args

Specify additional arguments for Ghostscript; this switch sets the 19.2 (arguments) resource.

-color, -grayscale, -greyscale, -monochrome

Force color/grayscale/monochrome display; these switches do not have anything to do with the visual, depth, or colormap that **mgv** uses, you will want to use the *-visual*, *-visualid*, *-depth*, and *-privatecm* switches for that. These switches set the **palette** resource.

-dpi n, -resolution n

Specify the overall resolution; these switches set the **Resolution** resource.

-gslocale locale

Force the **GHOSTVIEW** window property to be written according to *locale*. This switch sets the 19.2 (gsLocale) resource.

-interpreter interp

Use **interp** as the **PostScript** interpreter. This switch is useful if you want to use an interpreter that is not in your PATH or is not the first **gs** is your PATH. This switch sets the 19.2 (interpreter) resource.

-magstep m

Set the initial magstep to m; this switch sets the 19.2 (magstep) resource.

-media media, -paper media

Specify the default page media; this switch sets the 19.2 (defaultPageMedia) resource.

-portrait, -landscape, -seascape, -upsidedown

Specify the initial page orientation.

-quiet, -noquiet

Use or don't use *-dQUIET* with Ghostscript; this switch sets the **quiet** resource. The *-dQUIET* switch tells Ghostscript to suppresses the normal startup messages.

-safer, -nosafer

Use or don't use *-dSAFER* with Ghostscript; this switch sets the **safer** resource. When run with the *-dSAFER* switch, Ghostscript disables the **deletefile** and **renamefile** operators and can only open files with read-only access.

-xdpi n, -ypdi n

Specify the horizontal and vertical resolutions; these switches set the **xdpi** and **ydpi** resources.

21.3 Display Switches

-labels, -nolabels

Show or don't show the page labels in the page list; this switch sets the 19.3 (showLabels) resource.

-log, -nolog

Show or hide the Ghostscript log on start-up; this switch sets the 19.3 (hideLog) resource.

-menubar, -nomenubar

Show or hide the menu bar at start up; this switch sets the 19.3 (hideMenuBar) resource.

-pagelist, -nopagelist

Show or hide the page list at start up; this switch sets the 19.3 (hidePageList) resource.

-pgnums, -nopgnums

Show or don't show the page numbers in the page list; this resource sets the 19.3 (showPageNumbers) resource.

-status, -nostatus

Show or hide the status line at start up; this switch sets the 19.3 (hideStatusLine) resource.

-toolbar, -notoolbar

Show or hide the tool bar at start up; this switch sets the 19.3 (hideToolBar) resource.

21.4 Colormap Switches

-depth n

Specify a non-default color depth. This switch sets the 19.4 (wlDepth) resource.

-install, -noinstall, -privatecm, -noprivatecm

Install or don't install a private colormap. Non-default visual and/or depth settings may cause this switch to be ignored. This switch sets the 19.4 (wlUsePrivateColormap) resource.

-visual visualClass

Specify a non-default visual. This switch sets the 19.4 (wlVisualClass) resource.

-visualid visualID

Specify a non-default visual by visual id (see **xdpyinfo** for a list of visual ids). This switch sets the 19.4 (wlVisualID) resource.

21.5 Scrolling Switches

-center, -nocenter

Enable or disable automatic page centering. This switch sets the 19.5 (center) resource.

-magicresistance n

Specify the number of attempts to scroll beyond the page boundaries before magical scrolling takes effect; this switch sets the 19.5 (magicResistance) resource.

-magicscroll, -nomagicscroll

Allow or disallow *magical* scrolling; this switch sets the 19.5 (magicScrolling) resource.

-resetboth

Reset both the horizontal and vertical scrollbars when you move to a new page. This switch sets the 19.5 (resetScrollBars) resource to **both**.

-resethor

Reset the horizontal scrollbar when you move to a new page. This switch sets the 19.5 (resetScrollBars) resource to **horizontal**.

-resetnone

Don't reset either scrollbar when you move to a new page. This switch sets the 19.5 (resetScrollBars) resource to **none**.

-resetver

Reset the vertical scrollbar when you move to a new page. This switch sets the 19.5 (resetScrollBars) resource to **vertical**.

-scrollpercent percentage

Scroll the screen by *percentage* of the window size when scrolling with the keyboard. This switch sets the 19.5 (scrollPercentage) resource.

-smooth, -nosmooth

Enable or disable smooth scrolling. This switch sets the 19.5 (smoothScrolling) resource.

-smoothness n

Specify how smooth smooth scrolling should be. This switch sets the 19.5 (smoothness) resource to **n**.

21.6 Sizing Switches

-autoheight, -noautoheight

Attempt to make the main window tall enough to accommodate a whole page. This switch sets the 19.6 (autoHeight) resource.

-autowidth, -noautowidth

Attempt to make the main window wide enough to accommodate a whole page. This switch sets the 19.6 (autoWidth) resource.

-smartsizing, -nosmartsizing

Enable or disable smart sizing. This switch sets the 19.6 (smartSizing) resource.

-wmwidth width, -wmheight height

Set the total width or height of the window manager decorations. These switches set the 19.6 (wmWidth) and 19.6 (wmHeight) resources.

21.7 Splash Screen and Icon Switches

-coloricon, -monoicon, -nocoloricon

Use or don't use a color icon (if available). These switches set the 19.7 (wlUseColorIcon) resource.

-installicon, -noicon

Install or don't install an icon when the application starts up. These switches set the 19.7 (wlInstallIcon) resource.

-monosplash, -colorsplash

Use the monochrome or the color splash screen. These switches set the 19.7 (wlUseMonoSplash) resource.

-splash, -nosplash

Show or don't show the splash screen.

-splashxbm filename

Specify the splash screen XBM file. This switch sets the 19.7 (wlSplashBitmap) resource.

-splashxpm filename

Specify the splash screen XPM file. This switch sets the 19.7 (wlSplashPixmap) resource.

21.8 Tool Bar Switches

-colortoolbar, -monotoolbar

Use color or monochrome icons in the tool bar. These switches set the 19.8 (useColorIcons) resource.

-flatten, -noflatten

Flatten or don't flatten the tool bar buttons. These switches set the 19.8 (flattenButtons) resource.

-tooltips, -notooltips

Show or don't show tool tips for the tool bar buttons. These switches set the 19.8 (showToolTips) resource.

21.9 Miscellaneous Switches

-bzip cmd, -bunzip cmd

Specify the command to compress or decompress bzip2ed files; the commands should read from the standard input and write to the standard output. These switches set the 19.9 (bzip) and 19.9 (bunzip) resources.

-compress cmd, -decompress cmd

Specify the command to compress or decompress compressed files; the commands should read from the standard input and write to the standard output. These switches set the 19.9 (compress) and 19.9 (decompress) resources.

-confirmexit, -noconfirmexit

Require or don't require user confirmation when attempting to exit the application with more than one top level viewing window. These switches set the 19.9 (confirmExit) resource.

-copystdin, -nocopystdin

Copy or don't copy files from the standard input to a temporary file. These switches set the 19.9 (copyStdin) resource.

-editres, -noeditres

Install or don't install support for editres. This switch sets the 19.9 (wlUseEditRes) resource.

-gunzip cmd

Specify the command to compress or decompress gzipped files; the commands should read from the standard input and write to the standard output. These switches set the 19.9 (gzip) and 19.9 (gunzip) resources.

-killkids, -nokillkids

Kill or don't kill child processes when **mgv** exits; this switch sets the 19.9 (killChildrenAtExit) resource.

-printcommand cmd

Use *cmd* as the default printer command; this switch sets the 19.9 (printCommand) resource.

-temp dir

Specify the temporary directory; this switch sets the 19.9 (tempDir) resource.

-zoomfg color, -reticulefg color

Specify the zoom reticule color; these switches set the 19.9 (reticuleForeground) resource.

-zoomwidth n, -reticulewidth n

Specify the zoom reticule width; these switches set the 19.9 (reticuleLineWidth) resource.

22 Caveats and Bugs

22.1 Switches Pages Too Fast

I have had bug reports about crashes when you change pages too fast. I have been able to reproduce the problem but I had to hold the *PageDown* key down to trigger the bug. I think I know what's going on but I'm still thinking about the best way to fix the problem. Since the bug only manifests itself under extreme circumstances and since I've only had one bug report about this, I'm not going to try and rush a fix out. In the mean time, you can avoid the problem by not holding the *PageDown* or *PageUp* keys down, use the page list instead. My apologies if this causes anyone grief.

22.2 Modal Dialogs

mgv has no modal dialogs (even the *overwrite confirmation* dialog in *File/Save...* is modeless); modal dialogs are evil. This really means that dialogs don't stop you from doing other things in the application: you don't have to back out of a dialog to change something and bring the dialog back–you just go and change things without leaving your current dialog. For people that have lived too long under the tyranny of modal dialogs this may be confusing.

22.3 Anti-aliasing

The anti-aliasing support in newer versions of Ghostscript (version 3.33 GNU and higher) is a mixed blessing. For text documents, especially those produced by **dvips** from TeX DVI documents, the readability advantages are wonderful and easily overshadow the performance penalties (which aren't that noticeable with text anyway); however, anti-aliasing delivers a noticeable performance penalty on graphics and can actually make the images look worse, anti-aliasing can also seriously degrade any document which uses a lot of colors when viewed on an eight-bit display. If you find this happening to you, try using the **antialiasEPS** resource (or the *-aliaseps* and *-noaliaseps* switches) to change the anti-aliasing of EPS files.

22.4 Non-DSC and PDF Documents

If the document does not begin with `%!PS-Adobe-`, it does not claim conformance to the document structuring convention; the functionality of **mgv** is severely limited when dealing with non-DSC conformant documents–about all you can do is move to the next page. Also, zooming in a non-DSC document will always display the first page. Since I haven't implemented a PDF parser, PDF files are effectively treated as non-DSC documents so that **mgv** is quite limited when viewing PDF files (xpdf or Adobe's Acroread are much better for PDF files).

22.5 Broken Windows PostScript Drivers

Some **PostScript** documents produced by the MS-Windows **PostScript** drivers will cause erroneous warnings about a lack of virtual memory. When trying to view such documents, you will only get a page telling you that you don't have enough memory in your printer and some steps (which will probably be useless if you don't have the original document) to correct the problem. A simple hack to fix this problem is to find a line that looks like

```
30000 VM?
```

and remove it. The following perl filter should fix such documents:

```
perl -pe 's/^(\d+\s+VM\?\r?)$/% \1/'
```

Thanks to Bart Robinson (`lomew@cs.utah.edu`) in comp.lang.postscript for this advice.

Windows printer drivers for **PostScript** also tend to produce incorrect DSC comments. The Windows PostScript driver builds the **NTPSOct94** dictionary which contains various functions; the required `NTPSOct94 begin` command appears between the `%%EndSetup` comment and the first `%%Page` comment so that neither **mgv** or Ghostview will pass `NTPSOct94 begin` to Ghostscript. The simplest solution is to change

```
%%EndSetup
NTPSOct94 begin
%%Page: 1 1
```

to

```
NTPSOct94 begin
%%EndSetup
%%Page: 1 1
```

in the offending document (this is will leave your **PostScript** file *less* broken rather than fixed). A better solution–which the NT **PostScript** driver should probably be doing–is to remove the offending `"NTPSOct94 begin"` command and add `"NTPSOct94 begin"` at the beginning of each page and add an `"end"` at the end of each page. The following perl script should perform this transformation on its standard input and print the fixed file to its standard output:

```
#!/usr/local/bin/perl
$first_page = 1;
$bogus      = "";
while($line = <STDIN>) {
        ##
        ## Skip NT's brain damage (at least a little teeny tiny
        ## part of it)
        ##
        if($line =~ /^NTPSOct9[45] begin/) {
                $bogus = $line;
                next;
        }

        ##
```

```
                ## Insert appropriate begin/end pairs
                ##
                if($first_page && $line =~ /%%Page:/) {
                        print $line, $bogus;
                        $first_page = 0;
                }
                elsif($line =~ /%%Page:/) {
                        print "end\n", $line, $bogus;
                }
                elsif($line =~ /%%Trailer/) {
                        print "end\n$line";
                        # next line is the "end" that we want to kill
                        $line = <STDIN>;
                }
                else {
                        print $line;
                }
        }
        exit(0);
```

The same problem occurs with the **NTPSOct95** version of the **PostScript** driver but the above script should deal with that one too.

22.6 DSC Parsing Problems

The current DSC parser doesn't like Mac files (which use a single carriage return as end-of-line); if you want to view such files, change the carriage returns to line feeds with something like this:

```
perl -pe 's/\r/\n/g' < mac-file > unix-file
```

and try again. I could attempt to fix the DSC parser but I'd rather not touch it until I have time to build a cleaner one.

Files with a PageOrder of **Special** will confuse the DSC parser–pages will be lost or out of order. If you have to deal with such files, you'll have to use another viewer until I can rewrite the DSC parser.

22.7 Application Defaults Version Problems

The application defaults file specifies a significant portion of **mgv**'s behavior; hence, an incorrect application defaults file can cause many problems. If **mgv** warns you about an incorrect version number, you should fix it–setting the 19.9 (applicationVersion) will not fix the problem, it will only make the warning go away.

The correct version of the application defaults file should be installed in the same place as the documentation (look for a file called `MGv`) so you can fix the problem by running **mgv** like this:

```
XENVIRONMENT=/path/to/mgv/library/files/MGv mgv
```

until the local administrator can fix the problem by removing the old application defaults file. This problem should only be encountered by people that started with **mgv** version 1.x.

22.8 Non-Default Visuals on Irix 5.3

I have had reports of problems with non-default visuals under Irix 5.3 when the root window has depth eight. Everything works fine with Irix 6.2/6.4 and other systems. Private colormaps do work with Irix 5.3 so all is not lost. As near as I can tell, this is a bug somewhere in SGI's Motif libraries and I don't know how to work around the problem.

22.9 Reporting Bugs

If you find any bugs in **mgv** please send a bug report to `mu@trends.net` which includes the following information:

- **mgv** version number
- operating system name and release number
- Motif and X versions
- Ghostscript version
- clear and concise instructions to reproduce the bug (include sample **PostScript** files if possible)
- anything else that may be relevant

The information in the build options dialog (see 11.2 (Build Options Dialog)) may be useful as well. If you can fix the bug, a patch would be appreciated but please bear in mind that the author is somewhat fanatical about maintaining a consistent coding/naming style in the code so patches may be reformatted and/or torn apart before they get into the code.

I will try and respond to all bug reports quickly (where *quickly* is a function of how detailed the report is and how easy it is for me to reproduce) but don't be surprised if it takes me a few days to respond.

23 Mathoms

This section is a dumping ground for things that don't belong anywhere else (*mathom* is a Hobbit term: a mathom is something that no one knows what to do with but they don't want to throw it away).

23.1 Enlightening mgv

If you're into the *enlightened* `<http://www.enlightenment.org>` look, then you should make sure you don't try and specify a **backgroundPixmap** for the main scrolled window. Resource settings like this:

```
MGv*view*backgroundPixmap:         XmUNSPECIFIED_PIXMAP
MGv*backgroundPixmap:              /full/path/to/tile.xpm
MGv*foreground:                    fg
MGv*background:                    bg
MGv*XmText.backgroundPixmap:       XmUNSPECIFIED_PIXMAP
MGv*XmTextField.backgroundPixmap: XmUNSPECIFIED_PIXMAP
MGv*XmList.backgroundPixmap:       XmUNSPECIFIED_PIXMAP
```

should give you the enlightened look (text and list widgets look pretty crappy with background pixmaps so there's no point in even trying). If you try and specify a **backgroundPixmap** for **view**, you will probably get an X protocol error at startup. For best results, **fg** should contrast with the whole tiling pixmap (smooth pixmaps work best) and **bg** should be a solid color that is close the pixmap colors. Better results can be had if you're willing to set up different pixmaps for the various types of widgets; if you come up with anything really cool, let me know. If you're wondering what this stuff looks like, my *homepage* `<http://www.trends.net/mu>` has a couple of screen shots.

If you don't have Motif 2.0.1+ then the **backgroundPixmap** resource might not work (it does work with Netscape 4.X/Linux and that uses Motif 1.2.X). I have tried this stuff with Irix and CDE (Motif 1.2.5) without success: **mgv** died on Irix and ignored the pixmap under CDE. I think the problem could be fixed by adding a String to Pixmap type converter that understood XPM files but that will have to wait. Most LessTif libraries supply a String to Pixmap type converter that understands XPM files so LessTif users should be able use fancy tiling as well.

23.2 Using mgv With Netscape

If you want to use **mgv** as the **PostScript** viewer with Netscape you just have to set the **application/postscript** MIME handler to `"mgv %s"`. The MIME handlers can be configured in the big *Preferences* dialog for Netscape 4 or in the *Helpers* tab of the *General Preferences* dialog in Netscape 3.

This is the original reason that I changed the saving behavior of **mgv**: in version one you could only save marked pages, now you can save whatever you want.

23.3 Using mgv With CDE

If you want to use **mgv** in the CDE desktop, the following article from comp.unix.cde may be of interest:

```
Article 1968 of comp.unix.cde:
From: Larry Gardner <lkg@atl.hp.com>
Newsgroups: comp.unix.cde
Subject: Re: Registering new file types
Date: Wed, 25 Jun 1997 10:11:39 -0400
Organization: Hewlett Packard TIS/SEM/IES
Lines: 109
Message-ID: <33B1271B.3BC4@atl.hp.com>
References: <5oojdv$823@bioko.ifi.unizh.ch>
NNTP-Posting-Host: wscoe2.atl.hp.com
Mime-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
X-Mailer: Mozilla 3.01 (X11; I; HP-UX B.10.00 9000/747)
To: Dimitrios Tombros <tombros@ifi.unizh.ch>
Xref: news.lglobal.com comp.unix.cde:1968

Dimitrios Tombros wrote:
>
> Is it possible to register new file types with CDE for a specific
> user so that when clicking on these types from the file manager
> the respective application is started?
>
```

```
> Any help will be appreciated; if this is a FAQ then please point me
> to the FAQ location.
>
> --
>
> ---------------------------------------------------------------------
> Dimitrios Tombros                   Database Technology Research Group
> e-mail: tombros@ifi.unizh.ch               Computer Science Department
> http://www.ifi.unizh.ch/staff/tombros.html        University of Zurich

Here's an example for the postscript file type that will use ghostscript
and ghostview to print/view postscript files.

HTH

Larry

ghostview.dt

################################################################################
#
# File:         ghostview.dt
# RCS:          $ Header: ghostview.dt,v 1.0 97/06/04 16:39:57 lkg Exp $
# Description:  CDE generic action for application execution.
# Author:       TIS/SEM/IES WS-COE Team.
# Created:      Wed Jun  4 16:39:27 EDT 1997
# Modified:
# Language:     CDE 1.0 Actions
#
################################################################################
#
# Initialize Variables
#
################################################################################

set GHOSTVIEW=/opt/gnu/bin/X11/ghostview

################## END OF VARIABLE INITIALIZATION
##############################

ACTION GhostView
{
    ARG_COUNT   0
    ICON        gv
    TYPE        COMMAND
    WINDOW_TYPE NO_STDIO
    EXEC_STRING $GHOSTVIEW
    DESCRIPTION Ghostview postscript viewer.
}
```

```
ACTION GhostView
{
    ARG_COUNT   *
    ARG_TYPE    POSTSCRIPT
    ICON        gv
    TYPE        COMMAND
    WINDOW_TYPE NO_STDIO
    EXEC_STRING $GHOSTVIEW %(File)Arg_1%
    DESCRIPTION Ghostview postscript viewer.
}

ACTION gsPrint
{
    TYPE        COMMAND
    WINDOW_TYPE NO_STDIO
    EXEC_STRING sh -c '/opt/gnu/bin/gs -q -sDEVICE=ljet4 -r300 -dNOPAUSE \
                       -sOutputFile=- \
                       %(File)Arg_1"Postscript File To Print:"% \
                       %(File)Args% | lp -s -oraw'
    DESCRIPTION The gsPrint action formats its arguments \
                using the 'gs' command and prints them to \
                the default printer using 'lp'.
}

DATA_ATTRIBUTES POSTSCRIPT
{
    ICON        Dtps
    ACTIONS     Open,Print
    DESCRIPTION This is a postscript file.
}
DATA_CRITERIA POSTSCRIPT1
{
    DATA_ATTRIBUTES_NAME POSTSCRIPT
    MODE                 !d
    NAME_PATTERN         *.[Pp][Ss]
}

ACTION Open
{
    ARG_TYPE    POSTSCRIPT
    TYPE        MAP
    MAP_ACTION  GhostView
    DESCRIPTION This action opens the postscript file type.
}

ACTION Print
{
    ARG_TYPE    POSTSCRIPT
    TYPE        MAP
    MAP_ACTION  gsPrint
```

```
    DESCRIPTION This action prints the postscript file type.
}
```

This would probably work with **mgv** if you change "ghostview" to "mgv" all over the place. You'll have to make your own icons though (`lib/icon.xpm` would be a good starting place but it is the wrong size). I can't really help you with this so you're on your own (of course, I'd be interested in any results).

23.4 Splash Screen

Here's the **PostScript** program from the splash screen for the curious:

```
%!PS-Adobe-3.0
%%Title: MGv
%%Pages: (atend)
%%Orientation: Portrait
%%DocumentMedia: Letter 612 792 0 () ()
%%PageOrder: Ascend
%%Creator: $\mu$
%%EndComments
%%BeginProlog
/SF {
        findfont exch dup
        type /arraytype eq {makefont} {scalefont} ifelse
        setfont
} def
/MGv {
        72 /Helvetica-Bold-Oblique SF
        50 700 moveto (MGv) show showpage
} def
%%EndProlog
%%Page: 1 1
MGv
%%Trailer
%%EOF
```

23.5 Binaries

I stopped making Linux binaries because LessTif is good enough for **mgv** these days.

Binaries for HP-UX are available from the *HP-UX Porting and Archive Center* `<http://hpux.cae.wisc.edu>` (okay, I admit, I submitted the request for this).

Binaries for FreeBSD are available from the porting section of the *FreeBSD Homepage* `<http://www.freebsd.org>` (I didn't submit the request for this, someone else did).

If anyone knows where people can get binaries for other platforms, RPM packages, or Debian packages, please let me know so that I can add links to the **mgv** web page.

24 References

The following sources may of interest:

- The man page for Ghostscript (`"man gs"`).
- ***PostScript*** *Language Reference Manual, Second Edition* published by Addison-Wesley (ISBN: 0-201-18127-4).
- *The Joy of Coffee* by Corby Kummer, published by Chapters Publishing Ltd. (ISBN: 1-881527-53-0).
- ***PostScript*** *Language Document Structuring Conventions Specification*, available from the Adobe FTP site as `5001.DSC_Spec.ps`.
- ***PostScript*** *Language Program Design* published by Addison-Wesley (ISBN: 0-201-14396-8).

25 Availability

The latest release of **mgv** will be available at my *homepage* `<http://www.trends.net/mu>` (any beta versions will be here as well). New releases will be announced in the comp.windows.x.announce newsgroup.

The latest release of Ghostscript is available from *the GNU home site* `<ftp://prep.ai.mit.edu/pub/gnu>` and *the GhostScript archives* `<ftp://ftp.cs.wisc.edu/ghost/aladdin>`.

26 Acknowledgements

mgv is based on Ghostview by Tim Theisen (`tim@cs.wisc.edu`) with some ideas from Ghostview-VMS by Johannes Plass (`plass@dipmza.physik.uni-mainz.de`). I'd also like to thank L. Peter Deutsch, president of Aladdin Enterprises, (`ghost@aladdin.com`) for Ghostscript (without which, **mgv** would not be possible).

None of this would be possible without Linux and the FSF. I currently develop **mgv** using LessTif.

The conversion to GNU autoconf probably would have been much harder if I couldn't borrow code and ideas from the *DDD* `<http://www.cs.tu-bs.de/softech/ddd>` and *LessTif* `<http://www.lesstif.org>` configure scripts.

The following people have offered helpful advice and patches:

- *Andy Polyakov* `<http://fy.chalmers.se/appro>`
- *Brian Dowling* `<http://www.simplicity.net/brian>`
- *Brian Handy* `<http://lambic.physics.montana.edu/handy>`
- *Christopher Yoder* `<http://www.ionet.net/cyoder>`
- David Green
- *Dmitri Kulginov* `<http://www.fy.chalmers.se/kulginov>`
- *Erik Luijten* `<http://www.cond-mat.physik.uni-mainz.de/luijten>`
- *Hans Vahlenkamp* `<http://www.gfdl.gov/hnv>`
- *Karl Storck* `<http://www.mvs.ikp.liu.se/staff/karl/karl.html>`
- *Lukasz Dutkiewicz* `<http://www.if.uj.edu.pl/ldutkiew>`
- *Thanh Ma* `<mailto:tma@encore.com>`

My apologies if I have left anyone out. I'd also like to thank *Brian Handy* `<http://lambic.physics.montana.edu/handy>` and Feroze Khan for checking the autoconf configuration on various platforms that I don't have access to.

The **WlAppShell** widget (which is used to provide easy support for non-default depths and visuals) is based on the **AppPlus** shell by John L. Cwikla; the **AppPlus** widget comes with the following copyright:

A Installing and Porting

GNU autoconf is used to handle the configuration, compilation, and installation of **mgv** so the standard

```
./configure
make
make install
```

should work.

The `configure` script will disable debug information and enable optimization by default but this can be changed with the following switches:

–enable-debug, –disable-debug

Enable or disable debugging, debugging is disabled by default. The default debug switch it *-g* but you can change it by setting the **DEBUGFLAG** environment variable before running `configure`.

–enable-optimize, –disable-optimize

Enable or disable optimization, optimization is enabled by default. The default optimization switch is *-O2* but you can change it by setting the **OPTFLAG** environment variable before running `configure`.

If optimization is requested but debugging is not requested, the final executable will be stripped by passing the *-s* switch to the linker, if you need to use a different stripping switch, set the **STRIPFLAG** environment variable before running `configure`.

If the `configure` script is having trouble finding X on your system then you may have to specify the header and library paths explicitly with one or more of the following switches:

–x-includes=*DIR*, –x-libraries=*DIR*

Specify the location of the X11 headers and libraries.

–motif-includes=*DIR*, –motif-libraries=*DIR*

Specify the location of the Motif headers and libraries.

–xpm-includes=*DIR*, –xpm-libraries=*DIR*

Specify the location of the XPM headers and libraries. If you don't want to use XPM even though you have it, you can disable XPM with *–without-xpm*.

I assume ANSI and POSIX support, if your system doesn't have an ANSI C compiler and POSIX libraries then you're out of luck. I'm not willing to give up this assumption, trying to support non-POSIX systems is more trouble than I care to think about.

If you have installed any of the 1.x versions of **mgv** you should delete the old application defaults file (probably `/usr/X11/lib/app-defaults/MGv` or something similar) before running **mgv**; if you don't, **mgv** will warn you about it and the user interface will be really screwed up. If you have just compiled a new version of **mgv** and you haven't installed it yet, you can set the **XENVIRONMENT** environment variable to temporarily fix the version problem:

```
XENVIRONMENT=MGv ./mgv
```

However, you really should delete the old application defaults file anyway: none of the **mgv** versions need it, the whole application defaults file has always been compiled in as default resources.

I have had success reports on the following systems:

- RedHat 5.1 Linux with LessTif 0.86
- Linux/libc5 with Mootif
- Sun Solaris 2.6 with gcc
- FreeBSD 2.2.7-STABLE
- HP-UX 9.05 with gcc
- SGI Irix 6.2

B History

B.1 mgv 3.1.5: September 1998

- Fixed the *mark even* and *mark odd* toolbar buttons.

B.2 mgv 3.1.4: September 1998

- Fixed an auto sizing bug. Telling **mgv** to automatically resize both the width and height of the main window could cause X protocol errors and/or bizarre window sizes (okay, I admit it, I'm just trying to get a version number closer to **pi**: I have TeX-envy).

B.3 mgv 3.1.3: September 1998

- Added a simple work-around for a LessTif accelerator problem. Menu accelerators were going away as soon as you brought up a dialog box. This little work-around isn't needed unless you're using LessTif.

B.4 mgv 3.1.2: September 1998

- Netscape HTML help got broken in 3.1.0, I converted some fixed sized buffers to dynamically sized buffers and neglected to remove some `memset` calls.

B.5 mgv 3.1.1: September 1998

- Fixed a memory corruption bug, thanks to Stephen R. Veit for reporting the bug and a fix for it.
- Fixed up the XPM include logic.

B.6 mgv 3.1.0: September 1998

- Finally added a tool bar, you can change the images used but there is currently no way to change the entries without hacking the source.
- Switched to autoconf for configuration and compiling and there was much rejoicing. The autoconf/automake files for DDD and LessTif were invaluable. This change means that library files (help files, icons, splash screens, etc...) will usually end up in `/usr/local/share` because autoconf likes it that way; the new library directory will contain a subdirectory for each **mgv** version installed.
- Removed the *LessTif Problems* section of the manual, I don't know of any problems anymore.
- Added some simple hooks for `malloc` debugging via dmalloc (`ftp://ftp.letters.com/src/dmalloc/dmalloc.tar.gz`). If for some reason you want to enable dmalloc, make sure you configure dmalloc to allow freeing `NULL` pointers: ANSI guarantees that `free(0)` will work and I assume ANSI all over the place.
- Removed all instance of **popen**(3) from the source, this function has a history of compile problems so it went away.

B.7 mgv 3.0.2: August 1998

- Fixed an install problem in the lib directory, the makefile had an incorrect source path. Seems that my QA is lacking in some areas.

B.8 mgv 3.0.1: August 1998

- Added the version number to the library directory. Thanks to Marty Leisner for the suggestion.
- Fixed up a couple of compiler warnings.

B.9 mgv 3.0.0: August 1998

- Added panning as yet another scrolling option in the main viewing window. This lets you drag the viewing window around with mouse button two.
- Disabled editres support on everything but Linux and FreeBSD. Editres and the Xmu library were just causing build problems so they went away; I know it works on Linux and FreeBSD (as far as I know, XFree86 always comes with a fully functional Xmu) so I've left it enabled there.
- Fixed a window sizing bug with EPS and non-DSC files; automatic window sizing didn't do anything in these cases but now it works as expected. Thanks to *Erik Luijten* `<http://www.cond-mat.physik.uni-mainz.de/luijten>` for pointing out the problem.
- Renamed the *Window* menu to *View* and moved it over the the third entry from the left in the menu bar.
- Removed the (deprecated in version 2.1) **printer** resource, the printer name is now officially part of the **printCommand** resource.
- Updated my sgml-tools to 1.0.6, some minor document hackery was needed for this.
- Fixed a Lesstif/Motif incompatibility with the file selection widget. I was setting the **dirMask** resource on file selection widgets to get a specific file name filter but Lesstif wants me to use **pattern** instead. Another reading of the Motif documentation has convinced me that **pattern** is the right one anyway.
- Dropped support for the (ancient) Mosaic/CCI help support. If anyone actually uses this I'll consider putting it back but I don't think it is worth the compile trouble.
- Removed a LessTif ifdef in `wlib/create.c`, gadgets seem to be working fine now.
- Changed the *Center* entry in the *Page* menu to a toggle button; page centering now stays around when you change pages. The *-center* and *-nocenter* switches and the *center* resource were also added.
- Fixed a bad memory free when reporting unknown switches. I was freeing an incremented pointer, how embarrassing. Thanks to Guenter Steinbach for reporting this problem.
- Added *-?* and *-H* as aliases for *-help*.
- Added some notes about binary distributions.

I wanted to get a tool bar into this release but some bugs came up and I wanted to get fixes for them out. This means that there will probably be another small release soon with a tool bar.

B.10 mgv 2.4.3: May 1998

- Added **make**, **bindir**, and **libdir** to the version information which appears in the *Build Options* dialog and the *-version* output.
- Fixed an ambiguous *if* statement in `dsc.c`. Thanks to Marty Leisner for the fix.
- Moved the `INSTALL` file to the top directory where it should be. Thanks to Marty Leisner for telling me about this brain damage.
- Two radio buttons in the *Magstep* menu could be turned on if you specified a non-default initial magstep. This problem was just cosmetic but a bug is a bug. Thanks to *Erik Luijten* `<http://www.cond-mat.physik.uni-mainz.de/luijten>` for pointing out this problem.

B.11 mgv 2.4.2: April 1998

- Removed the **SGI**, **CDE**, and **Xnt** stubs in the help system. I never had a chance to implement any of these and I no longer have access to an SGI or CDE system so I've removed the stubs.
- Removed all traces of Xmu from the Ghostview widget. Many people seem to have old versions of libXmu or they don't have Xmu at all so Xmu had to go.
- Turned off editres support on AIX by default.

B.12 mgv 2.4.1: April 1998

- The `wlib/resource.c` file wasn't supposed to exist in 2.4 but I neglected to delete a CVS tag so it was there. This caused some build problems because `wlib/wlib/wlib.h` didn't have the necessary prototypes for `wlib/resource.c`. I have now properly killed `wlib/resource.c`.
- Added some missing **null** checks to some of the resource handling. The problem (a segfault) would only show up if **mgv** couldn't find one of the standard print commands in your **PATH** environment variable.
- *Andrew 0. Smith* <http://www.insync.net/aos> informed me that Solaris's cc prefers *-xO2* instead of the usual *-O2* to get level two optimizations so I fixed the `"make/sys.solaris-cc.mk"` makefile.

B.13 mgv 2.4: March 1998

- Added the **wlInstallIcon** resource to control whether or not **mgv** installs its own icon when it runs. If you want to use a different icon, then you can just set this resource to **false** and tell your window manager to use your icon. Thanks to *Hans Vahlenkamp* <http://www.gfdl.gov/hnv> for this suggestion. SGI users can use one of the `mgv.icon*` files as their icon if they wish (the images are pretty cheesy, if anyone wants to donate a better one, please do).
- Made editres support configurable at run-time (via resources and switches) or compile-time. I have had reports that that HP-UX 10.20 doesn't come with editres support so I added a standard work-around. HP-UX 10.20 users (and others without editres) should set `mk-editres` to **no** in the appropriate `make/sys.*.mk` file before compiling.
- One more little makefile hack for FreeBSD. Thanks to *Brian Handy* <http://lambic.physics.montana.edu/handy> for the patch.
- Added the *Back* and *Forward* entries to the popup menu. These additions were based on a suggestion from *Erik Luijten* <http://www.cond-mat.physik.uni-mainz.de/luijten>.
- Added the ability to read a **PostScript** file from the standard input. You can save the standard input to a temporary file (this gives you full page navigation) or just read it as it comes in. Thanks to David Green for this suggestion.
- Increased the optimization level to `-O2` on all platforms. I don't think this will cause any problems.
- Finally fixed the *current page not visible in the page list* bug. You used to be able to move the selected item in the page list out of the visible range (i.e. if you're page list had room for ten items and you moved to page eleven with PageDown, the eleven in the page list wouldn't be visible).
- Added support for compressing, gzipping, and bzip2ing saved files. This was a quick and simple addition so I added it even though it has dubious utility.

- Merged the *Mark|Mark Current Page* and *Mark|Unmark Current Page* menu items. The new entry (*Mark|Mark/Unmark*) toggles the state of the current page.
- Changed the behavior of the *Mark|Mark Even Pages* and *Mark|Mark Odd Pages* menu items so that they no longer unmark any pages. *Mark Even* used to mark the even pages and unmark the odd pages, now it just marks the even pages and leaves the odd pages alone. Similarly, the *Mark Odd* command no longer unmarks the even pages.
- Some minor hacks for RedHat 5.0 systems. There are still some outstanding linking problems (no surprises here) with commercial Motif libraries; LessTif should work though.
- Added `"-W"` to the compiler warning flags for all gcc setups. This gives even more warnings the `"-Wall -Werror -ansi -pedantic -Wmissing-prototypes"` and this is good.
- Disabled gadgets when compiling with LessTif. I only use gadgets to allow people to use funky background pixmaps with Motif 2.0+ so disabling gadgets really doesn't hurt anything (disabling gadgets was a simple, clean, isolated hack to `wlib/create.c` so it doesn't hurt me either).
- Updated the *LessTif Problems* section again.
- Fixed the error message when you try to open a non-existent file; **mgv** was using `EPERM` instead of `errno` so the message wasn't always accurate.
- Loosened up the DSC checks. As long as the **PostScript** document begins with `"%!"` we'll scan for the structure comments. DSC documents are supposed to start with `"%!PS-Adobe-"` and a version number but there are some naughty **PostScript** files out there.
- Fixed a couple of typos in `wlib/wlib/dirtysocks.h` that were causing problems on Sun machines with Sun's compiler. Thanks go to *Jean-Jacques Moulis* `<http://www.dtr.isy.liu.se/dtr/staff/jj>` for letting me know about the problem.
- Added a warning message about unknown switches. **mgv** used to try to open unknown switches as **PostScript** files but now it ignores such things. As a side effect you'll have to do one of the standard Unix tricks (end the switches with `"--"` or use `"./-blah"`) to open files which begin with a hyphen from the command line. Thanks to David Green for this suggestion.
- I've changed ISPs once again so all references to `echo-on.net` have been converted to the new and improved `trends.net`.
- Added the *Document Info* dialog.
- Added the splash screen. If you don't like my artwork, you're free to use your own by replacing the `splash.xpm` and/or `splash.xbm` files in the final library directory. If you don't like splash screens at all, use the **-nosplash** switch or set the "mgv*wlShowSplashScreen" resource to **False**.
- Added support for *sticky* dialogs. Some people don't like it when dialogs popdown just because you've hit *OK* (or equivalent). See the **autoDismiss** resource and the *Sticky Dialogs* section for more information. This only affects the *File Save*, *Print*, and *Set Magstep* dialogs. This functionality is based on a suggestion from Carl Benker.

B.14 mgv 2.3.1: February 1998

- Modified the makefiles to know about and use `ranlib` if necessary. As far as I know, only FreeBSD (version 2.X at least) needs `ranlib`. This change also has the bonus side effect of allowing `"make -j"` to be used in the `wlib` directory (this may not matter to you but it is a big win on my K6-200); the only disadvantage is a slight increase in disk space when you're compiling.

B.15 mgv 2.3: February 1998

- Added a work-around for a bug in Motif 1.2.3. If you moved one of the main scrollbars out of the default position and left it out of the default position, a File|Close would cause a segmentation fault deep inside Motif. The problem was that **mgv** was trying to move the scrollbars in a widget that was in the process of dying, newer versions of Motif don't mind this but 1.2.3 was missing a check for this state. Some versions of Motif 1.2.5 also appear to have this problem.
- Updated the *LessTif Problems* section; **mgv** and LessTif; almost get along perfectly now.
- Added the **gunzip** and **bunzip** resources. These resources replace the **decompress** resource but **decompress** remains as an alias for **gunzip**. These changes were made so that **mgv** could deal with bzip2ed files, bzip2 is much slower than gzip but offers better compression on many files. You can get bzip2 from the *bzip2 homepage* `<http://www.muraroa.demon.co.uk>` or the *bzip2 US mirror* `<http://www.digistar.com/bzip2/index.html>`; you can also get bzip2 anywhere that you can get *the Gimp* `<http://www.gimp.org>`.
- The **resetScrollBars** resource has been expanded to offer control over the horizontal and vertical scrollbars separately; this just means that you can have only the vertical scrollbar reset on page changes if you want. The old boolean values, **true** and **false**, have been retained as aliases. Thanks to *Dmitri Kulginov* `<http://www.fy.chalmers.se/kulginov>` for this feature.
- Page list updates (during *Mark All* and *Show Page Labels* for example) should be much faster now.
- Added `-D_XOPEN_SOURCE_EXTENDED` to the compiler flags for AIX. I hear that AIX 4.3 needs this rather than `-D_XOPEN_SOURCE` so I'll try it out with both defined and hope for the best (will the madness of `-D_POSIX_SOURCE`, `-D_XOPEN_SOURCE`, `-D_BSD_SOURCE`, etc... ever end?). Thanks to *Lukasz Dutkiewicz* `<http://www.if.uj.edu.pl/ldutkiew>` for telling me about this new piece of vendor/standards brilliance.

B.16 mgv 2.2.1: December 1997

- Fixed a buffer overflow problem in the printing. The bug was a really dumb mistake, sorry for the brain damage.

B.17 mgv 2.2: November 1997

- Added support for non-default color depths, non-default visuals, and private color maps. This didn't have that much impact on the application but it is a cool enough increase in functionality to warrant an increase in the minor version number rather than just the patch level. Thanks to *Hans Vahlenkamp* `<http://www.gfdl.gov/hnv>` for hassling me about this lacking feature (okay, *hassling* is probably a little strong).
- Fixed a bug in zoom window destruction. If you zoomed on a zoom and killed the first zoom before the zoomed zoom, you used to get death but now you don't.
- Fixed the menu accelerators to avoid duplication; the following accelerators were changed:
  - The *Magstep* menu is now activated with **Alt+T** instead of **Alt+G**.
  - The *Options* menu is now activated with **Alt+S** instead of **Alt+O** (this was taken).
  - The *Set* entry in the *Magstep* menu no longer has an accelerator, I couldn't think of anything sensible that wasn't already taken by something that gets more use.

  - The *Enable Smooth Scrolling* entry in the *Options* menu is now activated with **Alt+L** instead of the old **Alt+O**.

  If anyone doesn't like this, you can change them through the resource database to whatever you want.

- Fixed up the code that deals with (depth one) bitmaps for icons. The old code was causing a BadMatch error on some systems because a copy was attempted from a depth one Pixmap to a Window with a different depth.
- Added the **wlUseColorIcon** resource so you can tell **mgv** to use or not use a color icon at run-time.
- Fixed the spelling of Matthew's name in various places (I thought there was only one `"t"`).
- Added a couple of minor (and harmless) changes to the resources for LessTif. These changes don't affect Motif versions of **mgv**.
- Added some notes on the Ghostview widget resources to the *Application Resources* section of the manual. I was sure the resources were already listed but I was wrong.
- Added the *-portrait*, *-landscape*, *-seascape*, and *-upsidedown* switches to control the initial page orientation.
- Extended the FreeBSD 2.2.2 support to deal with FreeBSD 3 with Motif 1.2.

B.18 mgv 2.1: October 1997

- Reversed the order of History list.
- Removed the *Printer Name* text field from the print dialog. The print command now holds both the command to use and the printer name. The resources (**printer** and **printCommand** are still separate, you can forget about **printer** and put it all in **printCommand** if you want).
- Fixed the *GhostviewSendPS* prototype. The old prototype had a `long` where it should have had an `off_t`. Apparently HP-UX 10.20's `off_t` isn't a `long` like it is on all the other machines (otherwise the compilers would have complained long ago). This was reported and fixed by *Karl Storck* `<http://www.mvs.ikp.liu.se/staff/karl/karl.html>`.
- Small fixes to the makefiles and dirtysocks.h for Solaris 2.6/Intel. Thanks to *Thanh Ma* `<mailto:tma@encore.com>` for the patch.
- I've changed ISPs once again (I'm on my third one this year), lglobal.com just got swallowed by echo-on.net so I've updated everything for this. I think it is time I forked out the cash for a virtual host somewhere.
- Some minor hacks were added to allow **mgv** and LessTif to get along a little better. There are still a number of problems with using LessTif but most things work. I've only tested things with the lesstif-current from 1997-10-02 so the current release might still be broken. You might also want to check my *homepage* `<http://www.trends.net/mu>` for any updates on **mgv** and LessTif.
- A preliminary port to FreeBSD 2.2.2 was supplied by *Christopher Yoder* `<http://www.ionet.net/cyoder>`. The initial attempt was done with LessTif so I don't know how well this works yet (I don't expect any problems).

B.19 mgv 2.0.2: August 1997

- Always scroll the scrolled window back to the top when closing a file. Sometimes the scrolled window would get confused about where its child was when opening a new file; this only appears to happen if you are scrolled down near the bottom and then you open a new file in the same window. The confusion only happens with some files (the exact conditions are unknown but this scrolling-back-to-the-top trick makes the problem go away).

B.20 mgv 2.0.1: August 1997

- Fixed an auto-sizing bug. Any auto-sizing will now take effect if you hide the page list, menubar, or status line.
- Trying to open a non-existent file from the command line will now produce a warning message. Doing `"mgv not-there.ps"` used to just give an empty window.

B.21 mgv 2.0: August 1997

- Help system extended to deal with Netscape's remote protocol and Mosaic's CCI protocol. CDE help, and SGI help are still coming. The **helpSuffix** resource has been replaced with **helpType**.
- Added palette changing menu items.
- Changed the float resources in the Ghostview widget to integers to avoid alignment problems on the DEC Alpha (unaligned access).
- Freeing unallocated memory bugs in Ghostview.c fixed (some resources were getting copied by SetValues() and freed by Destroy() but not copied by Initialize()). These bugs were caused by some modifications that I made to the Ghostview widget. All of the String resources for the Ghostview widget are now copied as God intended them to be.
- You can now save a document without marking pages.
- Fixed two orientation bugs so that you no longer get forced back to the first page when changing orientation and changing the orientation from the menus will always work (in some cases, mgv would switch to the orientation in the document when you tried to change orientations).
- Added a ghost to the icon (hey, this is reason enough to upgrade isn't it?).
- Added the **mgvMark** action to the page list to make marking pages easier (maybe).
- Cleaned up the keyboard handling in the main viewing window so that the cursor keys do the *right thing*; the new **mgvScroll** action was added to facilitate this.
- Support for multiple top level windows added.
- On-the-fly decompression of compressed files added.
- All dialogs now make use of the **defaultButton** and **cancelButton** resources for better compliance with the Motif Style Guide. The zooming is now attached to mouse button one (used to be button two but Motif wants button two for drag-and-drop operations). If you want the old bindings back you just have to change the **baseTranslations** for the Ghostview widget to:

```
MGv*Ghostview.baseTranslations: #replace        \n\
        <Key>osfHelp:   wlHelpContext()         \n\
        <Message>:      gvMessage()             \n\
        !<Btn2Down>:    mgvZoom(begin)          \n\
        !<Btn2Motion>:  mgvZoom(extend)         \n\
        !<Btn2Up>:      mgvZoom(end)            \n\
        !<Btn1Down>:    mgvZoom(begin)          \n\
        !<Btn1Motion>:  mgvZoom(extend)         \n\
        !<Btn1Up>:      mgvZoom(end)            \n\
        <EnterWindow>:  gvNotify(0)             \n\
        <LeaveWindow>:  gvNotify(0)             \n\
        <MotionNotify>: gvNotify(0)             \n\
        <Key>osfUp:     mgvScroll(up,   magical) \n\
        <Key>osfDown:   mgvScroll(down, magical) \n\
        <Key>osfLeft:   mgvScroll(left)         \n\
        <Key>osfRight:  mgvScroll(right)
```

These bindings will give you zooming with either button one or button two.

- Added the *magic* scrolling based on a suggestion and patch from *Brian Dowling* `<http://www.simplicity.net/brian>`. This introduced the **magicScrolling** and **magicResistance** resources.
- Modified the magstep menu based on a suggestion and patch from *Brian Dowling* `<http://www.simplicity.net/brian>`. The old magstep menu let you choose from -5 through +5, the new one lets you increase and decrease it as desired.
- Added the *Auto Size*, *Auto Height*, and *Auto Width* buttons to the *Page* menu; the **autoHeight** and **autoWidth** application resources were also added. Thanks go to *Brian Dowling* `<http://www.simplicity.net/brian>` for suggesting this.
- Added MP-RAS support to the makefiles.
- Added some screen shots to the documentation.
- The *Reopen* command will now try and reset the page number.
- Added support for libhelp online help (see *http://www.informatik.uni-stuttgart.de/ipvr/bv/personen/mache/libhelp* `<http://www.informatik.uni-stuttgart.de/ipvr/bv/personen/mache/libhelp>` for the libhelp sources).
- Added smooth scrolling options.
- Added the **magstep** resource and the **-magstep** switch to make setting the initial magstep easier. *Andy Polyakov* `<http://fy.chalmers.se/appro>` pointed out this feature that got lost between Ghostview and **mgv**.
- Put the quick access -5 through +5 magstep entries back on the *Magstep* menu (a user thought all the clicking and typing and screen re-drawing was inconvenient and since I agreed, I put the radio buttons back). *Erik Luijten* `<http://www.cond-mat.physik.uni-mainz.de/luijten>` liked the old -5 through +5 options so they came back.
- Made explicit page orientations persist through reopens. Credit for this behavior belongs to *Erik Luijten* `<http://www.cond-mat.physik.uni-mainz.de/luijten>`.

- Hacked the new auto sizing stuff to, optionally, stay within the screen dimensions. I think mwm does this for us but mwm is an evil window manager (if you like mwm, go ahead and disagree with me, or kill me, or not). Since there is no sane way to determine how large the window manager decorations are, the **wmWidth** and **wmHeight** resources were added so you can tell **mgv** how big they are (you may notice that Ghostview uses pretty much the same hack). Added the *-smartsizing*, *-wmwidth*, and *-wmheight* switches to control these settings from the command line. I also added the *Enable Smart Sizing* button to the *Options* menu. This stuff was based on a suggestion from *Andy Polyakov* `<http://fy.chalmers.se/appro>`.

- Added the **applicationVersion** resource to help detect app-defaults files with the wrong version. I also expanded the installation documentation to cover this situation. This stuff was added based on problems experienced by *Erik Luijten* `<http://www.cond-mat.physik.uni-mainz.de/luijten>`. After adding this, I moved it to wlib since it was too useful to duplicate in my other (as yet unpublished) projects.

- The *Close All Zooms* entry in the *Window* menu is now only sensitive if there are zoom windows.

- Change the default dirMask of the file-open dialog to `*.*ps*` (it was `*.ps` and then `*.ps*` to get gzipped/compressed files) to try and pick up `.eps` files too.

- Converted the menu bar widget tree to the standard (and highly idiotic, nonsensical, brain damaged, ...) Motif way. This allows **mgv** to work better with Motif 2.0.0 and perhaps some other old versions of Motif (Motif 1.2.2 on AIX 3.2.5 is one of them).

- Keyboard scrolling (the mgvScroll() action) cleaned up. I added the **scrollPercentage** resource to let users decide how much of the screen should be scrolled (the default of **90%** yields a little bit of overlap for context). This little change should make scrolling (including the smooth kind) nicer.

- Fixed Mosaic-cci help. This got broken sometime (I don't know when since I almost never use this). The CCI stuff was trying to get a hostname out of `"file:///path/to/x/blah.html"` without realizing that `file://` means localhost.

- Lots of internal changes that shouldn't be visible to the user.

B.22 mgv 1.0: September 1996

- First release.

C Wish List

This is an unordered list of things that I'm thinking about doing with **mgv**.

- Resizing a zoom window should expand the zoomed area rather than stretching it; effectively, this would allow you to alter the zoom reticule after the zoom has popped up. The **GHOSTVIEW** window property (see D.2 (The GHOSTVIEW Property)) has four optional values that may be of assistance here.

- The wlib library needs a simple resource persistence interface. This should be pretty easy once I have *whatever* to String type converters for the various resources. Any hacking towards this end might also yield a reasonable way to build *Options* dialogs for modifying the application resources.

- The **mgvScroll** action should have a percentage argument (with the **scrollPercentage** resource as a default).

D The Interface to Ghostscript

D.1 The GHOSTVIEW Environment Variable

When the **GHOSTVIEW** environment variable is set, ghostscript draws on an existing drawable rather than creating its own window; ghostscript will draw in either a window or a pixmap depending on the contents of this variable.

The general form of the **GHOSTVIEW** variable is

```
window-id [pixmap-id]
```

where **window-id** is the identifier of the destination window (`XtWindow(ghostview_widget)` for example) and the optional **pixmap-id** value is the identifier for a pixmap to draw into; both values are of type **XID** (32-bit unsigned integer). If only a window is specified, ghostscript will draw into that window but if the pixmap is also specified, all drawing will be done on the pixmap. In both cases the window is used to determine the colormap, screen, and visual to use; if the destination is a window, then the height and width will be retrieved from the window, otherwise, the dimensions will be those of the pixmap. All remaining information is retrieved from the **GHOSTVIEW** property on the window (when drawing is done to a pixmap, this property is deleted when read). Any events that ghostscript wishes to send will be directed at the window specified in the **GHOSTVIEW** environment variable.

D.2 The GHOSTVIEW Property

The **GHOSTVIEW** property is of type **STRING** and should have the form

```
bpixmap orient llx lly urx ury xdpi ydpi [left bottom top right]
```

and a **scanf(3)** format of

```
%d %d %d %d %d %d %f %f %d %d %d %d
```

The parameters are:

bpixmap

Pixmap id of the backing pixmap for the window. If no pixmap is to be used, this parameter should be zero and this parameter must be zero when the destination is a pixmap rather than a window.

orient

This should be a number representing the page orientation. The value is the clockwise rotation of the paper in degrees; only 0, 90, 180, and 270 are permitted

llx, lly, urx, ury

The bounding box of the drawable in **PostScript** points in the default user coordinate system.

xdpi, ydpi

These values specify the horizontal and vertical resolution of the destination. Even though these values may be computed from other parameters, they are specified to avoid round-off errors.

left, bottom, top, right

These optional parameters specify the margins around the window in **PostScript** points; the margins extend the imageable area beyond the boundaries of the window. This is primarily used for popup zoom windows. Some **PostScript** programs position themselves based on the imageable area so these values are useful at times. Any unspecified margins are assumed to be zero.

D.3 Events from Ghostscript

If the final destination is a pixmap, the client will get a property notify event when ghostscript reads the **GHOSTVIEW** property causing it to be deleted.

Ghostscript sends events to the window where it read the **GHOSTVIEW** property; these events are of type **ClientMessage** and the **message_type** is set to either **PAGE** or **DONE**. The first long data value specifies the window which is to be used when sending replies to ghostscript; the second long data value specifies the primary drawable which is:

- the pixmap if ghostscript is drawing into a pixmap which was specified in the **GHOSTVIEW** environment variable
- the destination window if the window does not have a backing pixmap
- the backing pixmap of the destination window if it has one.

This field is necessary to distinguish multiple ghostscripts rendering to separate pixmaps when the **GHOSTVIEW** property was placed on the same window. The **PAGE** message indicates that a page has been completed; ghostscript will wait until it receives a `ClientMessage` whose `message_type` is **NEXT** before continuing. The **DONE** message indicates that ghostscript has finished processing.

E GNU General Public License

```
		    GNU GENERAL PUBLIC LICENSE
		       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
                          675 Mass Ave, Cambridge, MA 02139, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

			    Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.
```

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

```
  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License.  (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.
```

```
In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License.  Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
```

parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

```
  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded.  In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time.  Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number.  If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation.  If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission.  For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this.  Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW.  EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.  THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU.  SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
```

```
POSSIBILITY OF SUCH DAMAGES.

                    END OF TERMS AND CONDITIONS

        Appendix: How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) 19yy  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) 19yy name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:
```

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice
```

```
This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
```

E.1 Philosophy

Give me slack, or give me food, or kill me, or not.