



Sfware

A Manual for the Shell and Other Utilities

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Version 1.0

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1. Introduction

The Sftware softfont utilities from Small Planet Software are MS-DOS programs distributed under a shareware license agreement. These utilities provide extensive font manipulation capabilities for HP LaserJet softfonts.

The Sftware utilities allow you to download, rotate, compress, expand, view, and perform special effects on softfonts. The effects provided include bold, fill, convert to fixed spacing, halftone, hollow, invert, mirror, outline, convert to proportional spacing, resize, reverse, shade, shadow, slant, stripe, three-d, hollow-three-d, and filled-three-d. The effects can be tailored and customized for any font with various parameters and shading patterns. All of these features are available from an integrated, easy-to-use menu interface. For situations when you would like to run these programs without human intervention (to download a selected group of fonts every morning, for example) every feature is available from a stand-alone utility. The standalone utilities are described in another manual—this manual documents the menu interface.

1.1. Getting Started

Sftware is “shareware,” and the author encourages archive maintainers to post Sftware for downloading; you may have received your copy from almost anywhere and almost anyone. Please make sure that you have a complete distribution before you try to install Sftware.

Hardware Requirements

In order to use Sftware, you will need a PC, PS/2, or close compatible with 150KB or so of free memory. A hard disk is recommended, but not required. A LaserJet+ or compatible printer is not actually *required*, but Sftware is probably a little pointless without one! Note: the original LaserJet printer does not have the ability to use softfonts; the Sftware utilities cannot help you use fonts with the original LaserJet printer.

If you want to use the SfShell program, you will need 300-400KB of *free* memory and either a hard disk, a ram disk, or sufficient expanded memory for swapping. You cannot use a removable (floppy) drive for swapping. The shell is not required for any of the features available in Sftware, but it does provide a user-interface for the Sftware utilities that is less intimidating than the command line.

If you are running a version of DOS prior to 3.30, read the configuration section carefully since you may have to do a little more work to get Sftware installed.

Software Requirements

In addition to Sftware, you must have at least one HP LaserJet softfont file.

1.3. Initial Configuration

Before you can use Sfware, you must run SfConfig to establish an initial configuration. Please follow the 'quick start' instructions in the **READ.ME** file or read the Configuration chapter before trying to run Sfware.

2.2. Sections

Captured Screens

Many of the chapters contain “captured screens” to provide a context for the discussion of the choices available. These captured screens are taken directly from version 1.0 of SfShell.

Technically Speaking

Many chapters end with a “technically speaking” section. This section describes, more technically, what Sftware does. You don’t have to read it unless you want to. If you find the material in the technically speaking sections intimidating, just ignore it. On the other hand, if you find that something is not performing exactly the way that you thought it was supposed to, this section may help you figure out why Sftware is doing something other than what you expected.

Laser Printer

The Laser printer selection helps Sftware decide if font compression should be enabled. Later versions of Sftware may make more use of this option.

Printer Output

The most common selection for printer output is **LPT1**. However, you can select **LPT1-4**, **PRN**, or any valid file or device for printer output.

Font Directory

Most users keep all of their softfonts in one directory. If this is the case, you can tell Sftware always to look for fonts in that directory regardless of what directory you are currently in. This becomes the default font directory. However, even if you do select a default font directory, you can still override it and use any directory you want by selecting a new directory with **F4** in SfShell or by specifying a **fontdir** on the command line.

3.3. Format of the configuration file

The configuration file is a plain ASCII text file, and it should be edited with a program that will not insert extra formatting characters when the file is saved (I recommend Multi-Edit by American Cybernetics).

Each line of the configuration file is divided into three parts as follows:

```
programid parameter=value
```

The **programid** is separated from the **parameter** by one or more spaces and the **parameter** is separated from the **value** by an equal sign (=). The **programid** is optional but the **parameter** and the **value** are required (actually, the **value** can technically be empty or blank but that is exactly the same as not defining it at all).

Individual Sftware programs use the combination of **programid** and **parameter** as a key to lookup the default value of each parameter. Any configuration line that does not contain a **programid** automatically matches all **programid**'s for that parameter. Case is insignificant in the **programid** and **parameter**.

A simple example should make everything clearer. Given the following configuration file:

```
PROG APPLE=1
PROG ORANGE=2
APPLE=3
OTHER ORANGE=4
```

The value of **PROG APPLE** is 1, **PROG ORANGE** is 2, **ANYTHING-ELSE APPLE** is 3, **OTHER ORANGE** is 4, and **ANYTHING-ELSE ORANGE** is undefined (blank, or non-existent).

Each possible configuration parameter is described in the sections that follow. The section header lists only the **parameter** if the **programid** is the name of the utility program that uses it. For configuration parameters that make special use of the **programid**, both parts are listed. The parameters are listed in alphabetical order by **parameter**.

3.8. Esc

Usage: *program* **ESC=**YES or NO
Used by: SfDir

Controls how SfDir displays font information. If **ESC** is **YES**, escape sequences are displayed by default. Otherwise a readable, text description is displayed by default.

3.9. ExecOutput

Usage: *program* **EXECOUTPUT=**WINDOW or FULLSCREEN
Used by: SfShell

The individual Sftware utilities are run as “child tasks” from within SfShell to perform the actions. The **EXECOUTPUT** option controls how output is redirected from each utility. If **WINDOW** is used, the utilities are run within a window on the screen, if **FULLSCREEN** is used, the utilities run on a full DOS screen. The **WINDOW** selection looks better but it is an option so that the feature can be disabled if it causes problems with your version of DOS. If SfShell hangs your machine whenever you try to execute an action list, the first thing you should try is setting **EXECOUTPUT=FULLSCREEN**.

3.10. FontDir

Usage: *program* **FONTDIR=***directory*
Used by: SfShell, SfCmpr, SfFx, SfLoad, SfRotate, SfShow

Names the DOS subdirectory where HP LaserJet softfonts are located. This is the default input and output directory for Sftware utilities that read or write softfont files.

3.11. FontExtn

Usage: *program* **FONTEXTN=***ext*
Used by: SfShell, SfCmpr, SfFx, SfLoad, SfRotate, SfShow

Names the default filename extension for softfont files. If you specify either an input softfont name or an output softfont name that does not include an extension, the Sftware utilities will append this extension to the filename. Note: it is possible to specify that a file should not have *any* extension by ending the filename with a period.

3.12. FontListSize

Usage: *program* **FONTLISTSIZE=***number*
Used by: SfShell

The size of the font list determines how many softfonts SfShell can place in the scrolling font window. Like the action list, this parameter can be very large but performance will be degraded if it is so large that it is written to disk.

The following table lists all of the graphics cards and the modes associated with them. In general, it is not necessary to specify a graphics mode since the highest resolution mode is selected by default:

Card	Mode	Resolution	Palette
CGA	0	320x200	0
CGA	1	320x200	1
CGA	2	320x200	2
CGA	3	640x200	3
CGA	4	640x200 (default)	2 colr
MCGA	0	320x200	0
MCGA	1	320x200	1
MCGA	2	320x200	2
MCGA	3	320x200	3
MCGA	4	320x200	2 colr
MCGA	5	640x480 (default)	2 colr
EGA	0	640x200	16 colr
EGA	1	640x350 (default)	16 colr
EGA64	0	640x200	16 colr
EGA64	1	640x350 (default)	4 colr
EGAMONO	3	640x350 (default)	2 colr
HERC	0	720x348 (default)	2 colr
ATT	0	320x200	0
ATT	1	320x200	1
ATT	2	320x200	2
ATT	3	320x200	3
ATT	4	640x200	2 colr
ATT	5	640x400 (default)	2 colr
VGA	0	640x200	16 colr
VGA	1	640x350	16 colr
VGA	2	640x480 (default)	16 colr
PC3270	0	720x350 (default)	2 colr
IBM8514	0	640x480	256 colr
IBM8514	1	1024x768 (default)	256 colr

`sfshow refset=8u` would make SfShow print the reference characters with the 8U symbol set. You *must* select a symbol set that is available in your laser printer's line-printer font. If you don't want reference characters to be printed, use `sfshow refset=none`.

3.23. Replace

Usage: `program REPLACE=YES` or `NO`
Used by: SfCmpr, SfFx, SfLoad, SfRotate, SfShow

Each of the Sftware programs that can create new files use this flag to determine if existing files should be destroyed without warning. If you set this flag to `YES`, you can shoot yourself in the foot; if you leave it `NO`, the Sftware utilities will always make sure the safety is on!

3.24. Sentence

Usage: `program SENTENCE=string`
Used by: SfShell, SfView, SfShow

Identifies the sentence to be displayed on graphical font preview screens and printed on the reference page. The default sentence is: The quick red fox jumped over the lazy brown dog. I said (very loudly), "THE QUICK RED FOX JUMPED OVER THE LAZY BROWN DOG!" How many times? 0, 1, 2, or 3456789 times.

3.25. SwitchChar

Usage: `program SWITCHCHAR=char`
Used by: SfShell, SfCmpr, SfFx, SfLoad, SfRotate, SfShow, SfView, SfInfo

Identifies the switch character. It must be set to either "/" or "-". Under MS-DOS, "/" is recommended. The switch character setting can be ignored by SfShell users. SfShell makes sure that the correct switch character is used when the utilities are invoked. For more information about the uses of the switch character, consult the "technically speaking" note at the end of the *Conventions for Describing the Standalone Utilities* chapter.

3.26. Style *name*

Usage: `STYLE name=number`
Used by: SfShell, SfShow, SfFx

The "style" of a softfont is one of the font parameters that is used to distinguish between two otherwise identical softfonts. The values defined by HP are "upright," "italic" and "oblique." Using SfFx to create variations on a font can potentially create two fonts that are indistinguishable from each other. For example, "hollowing" a softfont does not change *any* of its font characteristics. The `STYLE` parameter tells the SfFx what style value to use in the font header for each effect. In this way, it will always be possible to tell the old and new fonts apart. The name of the style must be one of the following: `Bold`, `Fix`, `Fill`, `Fill13d`, `HalfTone`, `Hollow`, `Hollow3d`, `Invert`, `Mirror`, `OutLine`, `Prop`, `Resize`, `Reverse`, `Shade`, `Shadow`, `Stripe`, and `Threed`. The style value can be any number between 0 and

3.30. Sample File

This is a sample configuration file. This sample does not contain all of the possible configuration variables because many require defaults that are system-specific (graphics cards, program filenames, etc.) and many repetitious lines have been deleted.

```
Device      = LPT1
FontDir     = .
FontExtn    = SFP
Replace     = No
Compress    = No
;
SfShow Sentence=The quick red fox jumped over the lazy brown dog.
;
SfShell CommandFile=SFSHELL.COMD
SfShell SwapFile=SFSHELL. $$$
SfShell MsgFile=SFSHELL.MSG
SfShell ExecOutput=Window
;
SfShell FontListSize = 35
SfShell ActionListSize = 35
;
; The Pattern and Style lines are for Sfx
;
Pattern DarkSaw      = 255/127/62/28/8/128/193/227/247
Pattern LightSaw     = 128/65/34/20/8/0/0/0
Pattern NarrowBackslash = 136/68/34/17
Pattern TightSaw     = $6B/$DD/$B6/$6B/$DD/$B6
Pattern DecoSlash    = $D2/$69/$B4/$5A/$2D/$96/$4B/$A5
Pattern Cross        = $11/$BB/$EE/$BB
;
; Styles defined by HP:
;
; 0 = Upright
; 1 = Italic
; 2 = Oblique
;
Style Fill          = 5
Style Halftone     = 15
Style Hollow       = 3
Style Invert       = 14
Style Mirror       = 13
```

3.31. Command Files

The standalone utilities, whether they are run from the command line directly or invoked automatically by SfShell, accept all of their input on the command line. Since this imposes a severe limit on the amount of input that can be provided, the utilities also accept input from a command file.

4. Running SfWare

There are two ways to use the Sftware package. First, the SfShell program provides an easy to use menu interface to all the utilities. This is the easiest way to become familiar with the Sftware utilities. However, if you have limited memory available, or if you want to run the Sftware utilities automatically (from a batch file, for example) you can run each utility separately. If you run the utilities individually, you must supply the parameters as command line options. If you use Sftware from within the shell, you will be prompted for each parameter.

The rest of this document assumes that you are using the shell. If you do not plan to use the shell, you should still skim this manual for a brief overview of Sftware's features. The reference to the individual Sftware utilities is in the files `SFUTILSO.PCL` and `SFUTILSE.PCL`.

To start the shell, go to[†] the Sftware subdirectory (or the Sftware floppy) and enter:

```
SFSHELL [fontdir] [/MONO] [/NOEMS]
```

When the shell is run, it will attempt to detect what kind of video adapter you have and adjust itself accordingly. If you find that SfShell makes the wrong decision, or you are using a computer with an LCD monitor and would prefer a simple black-and-white display, use the `/MONO` switch. If you do not want SfShell to use EMS memory for swapping, use the `/NOEMS` switch. The `/NOEMS` switch forces SfShell to swap to disk. The optional parameter *fontdir* selects what drive/directory and mask SfShell should use to scan for softfonts. The default *fontdir* is set in the configuration file.

4.1. Up and running

When run, SfShell will display a brief startup message. The startup message displays memory usage and indicates where various buffers are allocated.

[†] To “go to” the Sftware subdirectory, move to the drive that contains Sftware and use the `CHDIR` command to make the Sftware subdirectory the current directory (e.g. `D: CHDIR \SF`).

Performance may suffer noticeably if SfShell is forced to place one or more buffers on disk. It is probably better to make the buffers small enough to fit in main memory (or EMS, if it is available). Consult the configuration chapter for more information about buffers and memory usage.

After the startup message, SfShell will display its main title screen.

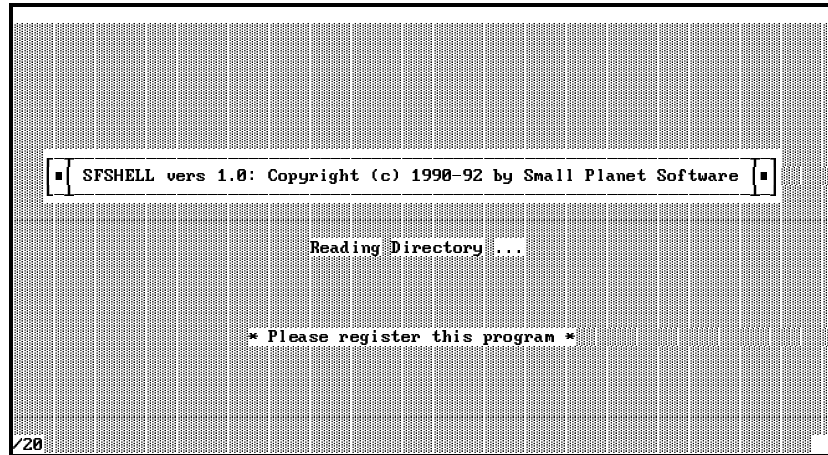


Figure 4.2. Main title screen

The numbers at the bottom left of the title screen will change as SfShell reads the font directory. The first number is the number of fonts that SfShell has found so far, and the second is the number of files that match the *fontdir* mask.

4.2. Main menu

After reading the font directory, SfShell will display the main menu. The main menu is the starting point for all further font actions. If there are no softfonts in the font directory, SfShell will present the “changing directories” prompt discussed below. If the number of fonts in the directory exceeds the size of the font list buffer, SfShell will print a message indicating that the main-menu font-list is incomplete.

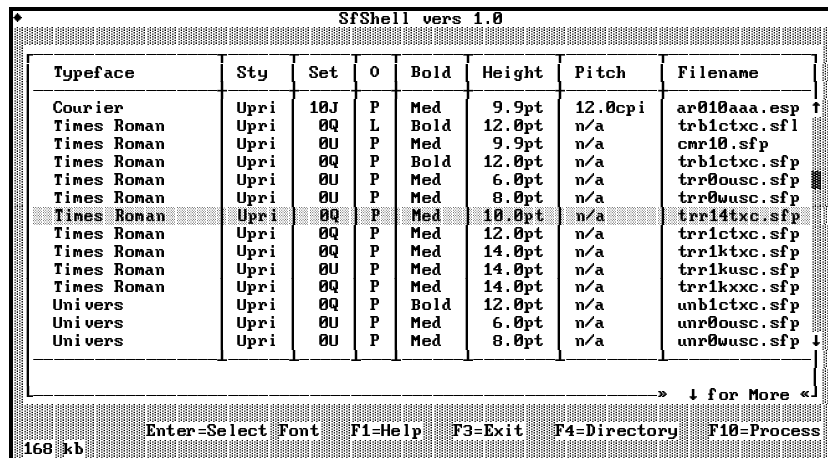


Figure 4.3. Main menu

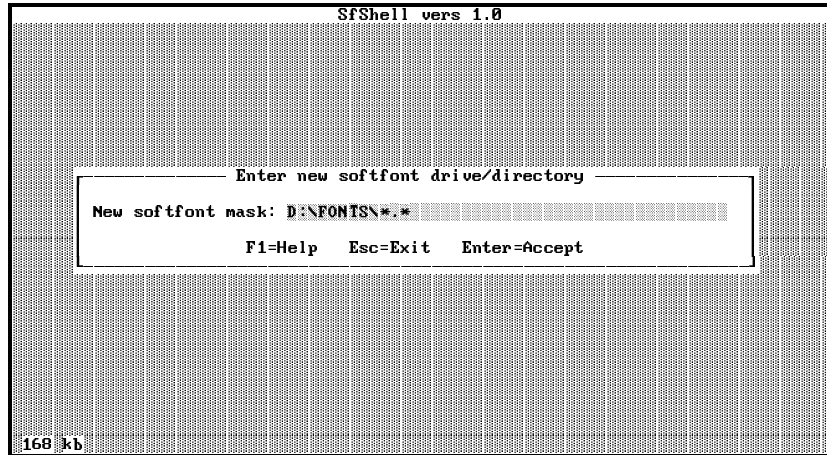


Figure 4.4. Changing font directories

The directory that you select must contain at least one font file. If no fonts match the *fontdir* mask that you enter, you will be returned to the directory prompt.

4.5. Font actions (in brief)

After selecting a font with the highlight bar, press **Enter** (or **Return**, as appropriate). SFSHELL will respond by “popping up” the action menu.

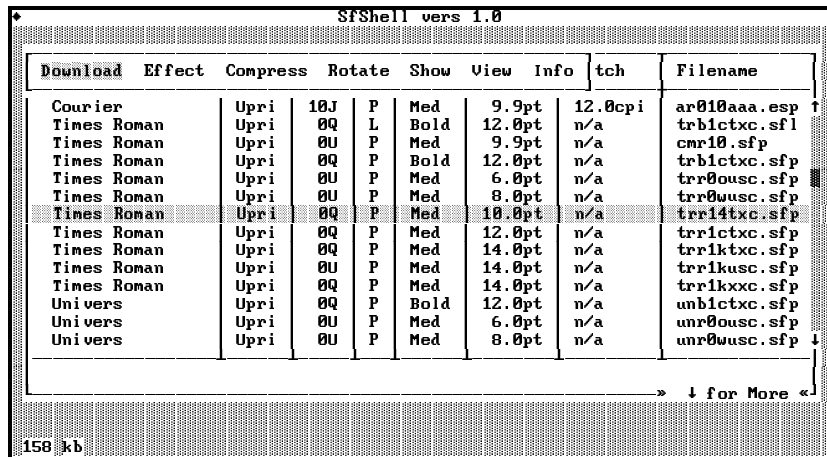


Figure 4.5. Action menu (overlying the main menu screen)

The action menu has seven choices. These seven choices correspond to seven of the utility programs that come with Sftware (actually, the **View** and **Info** choices are builtin, but corresponding utilities are provided). The action choices are described in detail in future chapters. You select an action by moving the highlight bar with the arrow keys and pressing **Enter** when the highlight bar is on the selection you wish to make. You can select more than one action per font.

5. Downloading Fonts

Downloading fonts “teaches” the LaserJet printer how to print a particular font. The actual downloading is performed by the SfLoad utility.

SfShell vers 1.0

Download	ct	Compress	Rotate	Show	View	Info	tch	Filename
<input checked="" type="checkbox"/> Image		Upri	10J	P	Med	9.9pt	12.0cpi	ar010aaa.esp
<input type="checkbox"/> Expand		Upri	0Q	L	Bold	12.0pt	n/a	trb1ctxc.sfl
<input type="checkbox"/> Compress		Upri	0U	P	Med	9.9pt	n/a	cmr10.sfp
<input type="checkbox"/> Portrait		Upri	0Q	P	Bold	12.0pt	n/a	trb1ctxc.sfp
<input type="checkbox"/> Landscape		Upri	0U	P	Med	6.0pt	n/a	trr00usc.sfp
		Upri	0U	P	Med	8.0pt	n/a	trr00usc.sfp
Times Roman		Upri	0Q	P	Med	10.0pt	n/a	trr14txc.sfp
Times Roman		Upri	0Q	P	Med	12.0pt	n/a	trr1ctxc.sfp
Times Roman		Upri	0Q	P	Med	14.0pt	n/a	trr1ktxc.sfp
Times Roman		Upri	0U	P	Med	14.0pt	n/a	trr1kusc.sfp
Times Roman		Upri	0Q	P	Med	14.0pt	n/a	trr1kxxc.sfp
Univers		Upri	0Q	P	Bold	12.0pt	n/a	umb1ctxc.sfp
Univers		Upri	0U	P	Med	6.0pt	n/a	unr00usc.sfp
Univers		Upri	0U	P	Med	8.0pt	n/a	unr00usc.sfp

164 kb

Figure 5.1. Download options

5.1. Options

As you can see, there are five additional options that can be selected for the download action. These options are described below. The option(s) that are selected are marked with a small square. The options that do not have a square are not selected. Use the **[Spacebar]** to toggle an option between selected and unselected.

Some combinations of options are not allowed (for example, you cannot select both **Compress** and **Expand** at the same time). When you select an option, other options that cannot be selected in combination with it will be unselected automatically.

Image

Downloading a softfont as an image has two advantages: first, it is the fastest method and second, it should work for softfont formats that the Sftware utilities are not otherwise equipped to handle. For example, if a new laserjet printer, the Series IV perhaps, is developed with a new kind of softfont, downloading will continue to work with that new printer as long as you select the image option. The image option is the default.

If the image option is so great, why would I use anything else? Good question. There are two possible reasons. First, softfonts, especially large softfonts, take up a lot of disk space. The LaserJet IIP, III, and IIIP printers all support softfont compression (which provides substantial disk space savings for large softfonts). However, the LaserJet Series II printer does not support compression. If you have a LaserJet Series II printer and you always use Sftware to download your softfonts, you can still take advantage of the substantial space savings of softfont compression: compress all of your softfonts on disk and expand them

6. Special Effects

Because they are many and varied, each special effect is described in its own chapter (later in this document). All of the effects are produced by the Sfx program. The effects are available from the following menu (and the appropriate submenus from this menu):

Download	Effect	Compress	Rotate	Show	View	Info	tch	Filename
Courier	Bold		10J	P	Med	9.9pt	12.0cpi	ar010aaa.esp
Times Rom	Fade/Mist ▶		0Q	L	Bold	12.0pt	n/a	trb1ctxc.sfl
Times Rom	Fill		0U	P	Med	9.9pt	n/a	cmr10.sfp
Times Rom	Halftone		0Q	P	Bold	12.0pt	n/a	trb1ctxc.sfp
Times Rom	Hollow		0U	P	Med	6.0pt	n/a	trr00usc.sfp
Times Rom	Invert		0U	P	Med	8.0pt	n/a	trr00usc.sfp
Times Rom	Mirror		0Q	P	Med	10.0pt	n/a	trr14txc.sfp
Times Rom	Outline		0Q	P	Med	12.0pt	n/a	trr1ctxc.sfp
Times Rom	Resize		0Q	P	Med	14.0pt	n/a	trr1ktxc.sfp
Times Rom	Reverse		0U	P	Med	14.0pt	n/a	trr1kusc.sfp
Times Rom	Shade		0Q	P	Med	14.0pt	n/a	trr1kxc.sfp
Univers	Shadow		0Q	P	Bold	12.0pt	n/a	umb1ctxc.sfp
Univers	Slant		0U	P	Med	6.0pt	n/a	unr00usc.sfp
Univers	Spacing ▶		0U	P	Med	8.0pt	n/a	unr00usc.sfp
	Stripe ▶							
	Three-D ▶							

168 kb

Figure 6.1. Effect options

Although you can select more than one effect for a given font, this *does not* apply the effects in sequence. In order to perform two effects in sequence, you must perform the first effect by selecting it and pressing **F10**, then perform the second effect on the font produced as output by the first effect.

In the following chapters, where each effect is discussed, there are no examples of the effects because it was necessary to limit the number of fonts used in this document. This reflects a limitation in some LaserJet printers that prohibits printing more than sixteen different fonts on a given page.

A second document called **EXAMPLES.PCL** is included in the Sftware distribution. This file contains examples of some of the effects that are possible. The corresponding document **EXAMPL16.PCL** is provided for those printers that cannot print more than sixteen fonts per page.

Technically, every character within a softfont is defined within a rectangle. The rectangle is subdivided into squares like a sheet of graph paper. Inside the rectangle, some of the squares are black and some are white. Because the squares are very small, the effect of printing them on a sheet of paper is that they form the lines and curves that make up each character. In the descriptions of effects that follow, it is sometimes necessary to describe the way that “squares” within the rectangle are manipulated. The region of the grid that defines the character (the black dots on the “graph paper”) is referred to as either the *black area* or the *foreground*, and the other “squares” are referred to as the *white area* or the *background*.

7. Compressing Fonts

Compression, available in the LaserJet IIP and subsequent printers, allows you to keep softfonts in a compressed format on disk. For fonts with large point sizes, this can achieve a *very* significant space savings. The actual compression is performed by the SfCmpr utility.

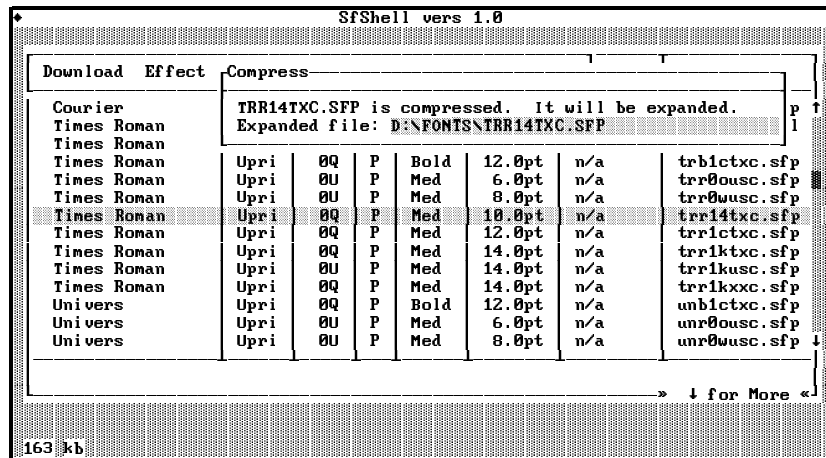


Figure 7.1. The Compress panel

The panel indicates the name of the current font and whether it will be compressed or expanded. You must enter the name of the font file which will be created to hold the new font. The default filename is the same as the original filename. In this case, the original file will be replaced by the compressed or expanded font.

9. Showing Fonts

Showing a font creates a reference page that displays every character in the font. The reference page includes all of the font characteristics, the font selection sequence and a chart of all of the characters in the font. This function is performed by the SfShow utility.

What's to Show?

Every softfont can contain up to 256 different characters numbered from 0 to 255. Most fonts don't define all 256 different characters. The character chart is a grid that has "spaces" for each of the possible characters. If there are some character positions in the font that are not used, the spaces for those characters will be blank in the chart.

For small fonts, the character chart is a 16x16 grid on a single page. If the font is larger than about 36pt (or has some very tall or very wide characters), the characters may be too large to fit into the spaces in a 16x16 grid. In this case, multiple reference pages may be printed for the font. When multiple reference pages are required, SfShell attempts to use the minimum number of pages.

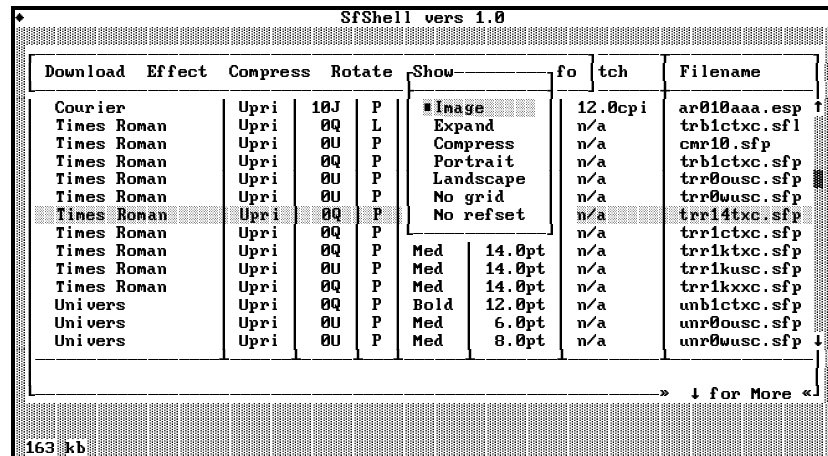


Figure 9.1. Show options

9.1. Options

As you can see, there are five additional options that can be selected for the download action. These options are described below. The option(s) that are selected are marked with a small square. The options that do not have a square are not selected. Use the [Spacebar] to toggle an option between selected and unselected.

Some combinations of options are not allowed (for example, you cannot select both **Compress** and **Expand** at the same time). When you select an option, other options that cannot be selected in combination with it will be unselected automatically.

10. Viewing Fonts

Viewing a font is the on-line equivalent of printing a reference page. Viewing displays every character in the font on a grid similar to the printed output created by showing a font. It can also display a sentence in the font. A graphics adapter is required to view fonts. The following adapters are supported at this time: CGA, MCGA, VGA, EGA, EGA (Mono), PC3270, IBM 8514, AT&T, and Hercules.

Selecting **view** switches to graphics mode and displays something like the following:

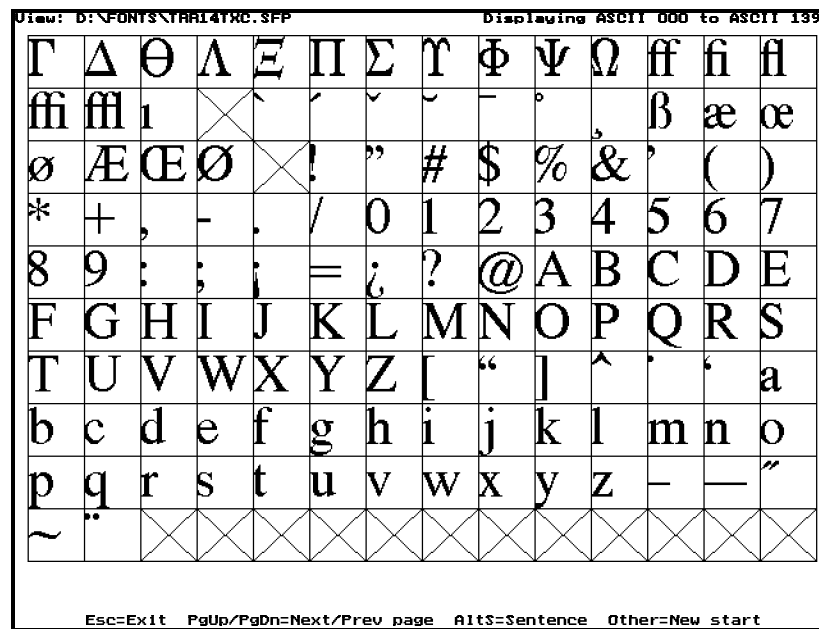


Figure 10.1. The view display

10.1. Running View

The keys described below allow you to change the range of characters displayed, the quality of the display, and the format of the display.

Esc

You can leave at any time by pressing **Esc**.

PgUp/PgDn

Pressing **PgDn** moves the range of characters displayed forward by one "screenfull." If ASCII 255 is currently in the display, pressing **PgDn** has no effect. Pressing **PgUp** moves the range of characters displayed backward by one screenfull. If ASCII 0 is currently in the display, pressing **PgUp** has no effect.

11. Softfont Information

If you have difficulty printing a particular font, SfInfo can help pinpoint the source of the problem. SfInfo displays the contents of the softfont header and the header of each character in the font. In addition, SfInfo examines the font looking for possible printer incompatibilities. New printers have a much more relaxed opinion about what constitutes a valid font. A font that works on a LaserJet III may not work on a Series II; SfInfo will be able to tell you why.

11.1. Running Info

Selecting **Info** displays a panel something like the following:

```
SfShell vers 1.0
« Softfont Information »

Font name: CG Times           Font filename: D:\FONTS\TRR14TXC.SFP
Orientation : Portrait       [ 0]      All distances are in PCL dots
Symbol Set  : 0Q, Name unknown
Spacing     : Proportional   [ 1]
Pitch      : 25.00cpi        [ 48, 0]
Height     : 10.00pt         [166,171]
Style      : Upright         [ 0]
Stroke weight: Medium        [ 0]
Typeface   : Times Roman    [ 5]
PCL5 Typeface: Times Roman  [4101]

          x
          |
          | Baseline=30
          | Xheight=19.00
          | Uline=8
          | Cell height=40
          |
          |
          | Cell width=43

Font selection : <ESC>(0Q<ESC>(s1p25h1v0s0b5T
PCL5 selection : <ESC>(0Q<ESC>(s1p25h1v0s0b4101T

F1=Help F4=Char Info F5=Addnl Desc F6=Warnings Esc=Exit

163 kb
```

Figure 11.1. Info Main Panel

F1

Pressing **F1** provides context-sensitive help for the **Info** panels.

Esc

You can leave at any time by pressing **Esc**.

F4

Pressing **F4** displays character information for the font. The dimensions of the largest character in the font are summarized and a scrolling list of the characters in the font is displayed.

12. The Bold Effect

Emboldening a font makes it appear darker on the page. Adding a large amount of boldness to a font will cause it to blur and become difficult to read. In professional typography, the characters in a bold version of a font have different shapes and proportions. This is beyond the ability of Sftware. A normal font made bolder with Sftware will not look the same (and probably will not look as good) as a real bold version of the original font.

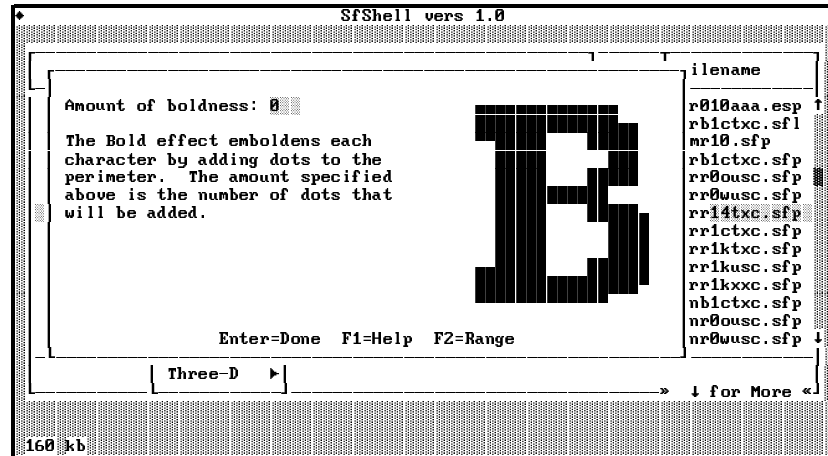


Figure 12.1. The Bold panel

12.1. Options

Amount of boldness

The amount of boldness controls how much darker the characters are made to appear. The larger the number, the darker the characters will be. For best results, the amount of boldness should be small with respect to the size of the font. It's difficult to define "small" in this context; one-tenth of the point size of the font (or less) is probably a good estimate. Experiment and see what looks most pleasing to the eye.

12.2. Technically Speaking

The bold effect locates "edge" pixels (that is, pixels that are on a border of the character) by scanning horizontally across each row of pixels. Every time a pixel position is found that is currently off and adjacent to, but not surrounded by, pixels that are on, the pixel is turned on. This has the effect of adding pixels to the border of the character. The appropriate font and character parameters are updated so that the original character shape (now surrounded by a border) prints in the same position as the original. In other words, the left offset is incremented by one, the baseline is incremented by one, and the character bounding box is expanded. If an amount of boldness greater than one is specified, the above algorithm is iterated to produce the correct amount of boldness.

14. The Fill Effect

Filling a font creates outlined characters filled with a user-specified pattern.

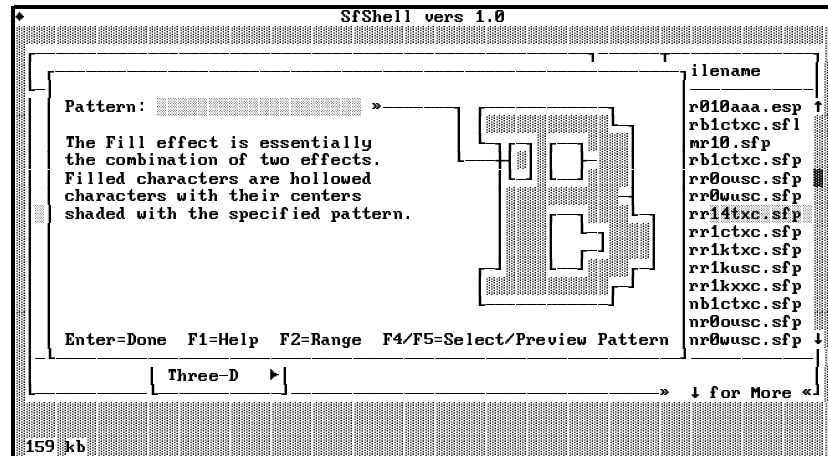


Figure 14.1. The Fill panel

14.1. Options

Pattern

Patterns can be specified directly or by using names defined in the configuration file. The *Patterns* chapter describes how to create patterns; the *Configuration* chapter describes how to save and name patterns.

14.2. Technically Speaking

Patterns are described in more technical detail in the *Patterns* chapter.

Invert start

The invert start specifies where the selected area begins. This value should be expressed as a percentage from the top of the tallest character in the font. For example, specifying 25 begins the selected area 1/4 of the way down from the top of the character, similarly, 50 selects a position halfway down the character and 67 selects a position 67% of the way down from the top of the character.

The panel refers to these areas as “top” and “bottom;” however, there is no reason why you cannot specify a selected region that forms a band across the middle of the character (e.g. from 33% to 66%).

Invert stop

By analogy with invert start, this option specifies where the select region ends. The invert stop value should be larger than the starting value. The area between the start position and the stop position is the “selected region” of the character.

Black bottom

The black bottom pattern replaces the foreground (black) area of the selected region.

White bottom

The white bottom pattern replaces the background (white) area of the selected region.

15.2. Technically Speaking

This effect forms the heart of several effects in SFX. For example, the “shade” effect is nothing more than the halftone effect applied to a selected region from 0% to 100% of the character! If you understand the concept of a pattern (discussed in the *Patterns* chapter), it shouldn’t be too difficult to understand the halftone effect.

Note: in any effect that changes the background pattern, it may be necessary to turn off “kerning” within the word processor or other program that you use to print the font. Normally, causing two characters to overlap by a small amount (for example a capital “T” followed by a lowercase “o”) is not noticeable because they only overlap in the “white” background. However, after you have changed the background to a pattern other than plain white, the effect of overlapping two characters by even a small amount may be undesirable.

17. The Hollow Effect

Hollowing a font produces an unfilled outline of each character.

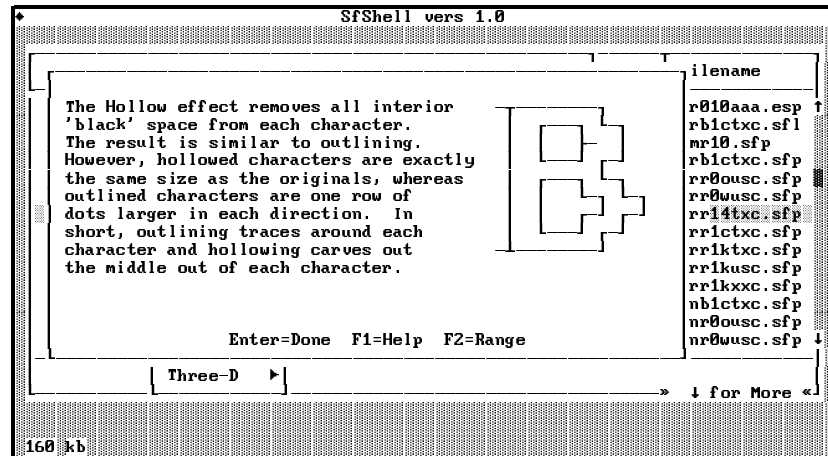


Figure 17.1. The Hollow panel

17.1. Options

The hollow effect has no options.

17.2. Technically Speaking

The hollow effect and the outline effect are very closely related. The only difference is the placement of the outline. In the hollow effect, the existing perimeter of each character is left in place and the interior is “scooped out”. For the outline effect, the entire character is erased and a new perimeter is added just around the character. In effect, an outlined character is a hollowed bold character (see the technically speaking section of the bold effect for more details).

It should also be noted that the hollow and fill effects are closely related. A hollowed character is a filled character with a pattern of 0.

19. The Mirror Effect

Mirroring a font creates characters that are upside down.

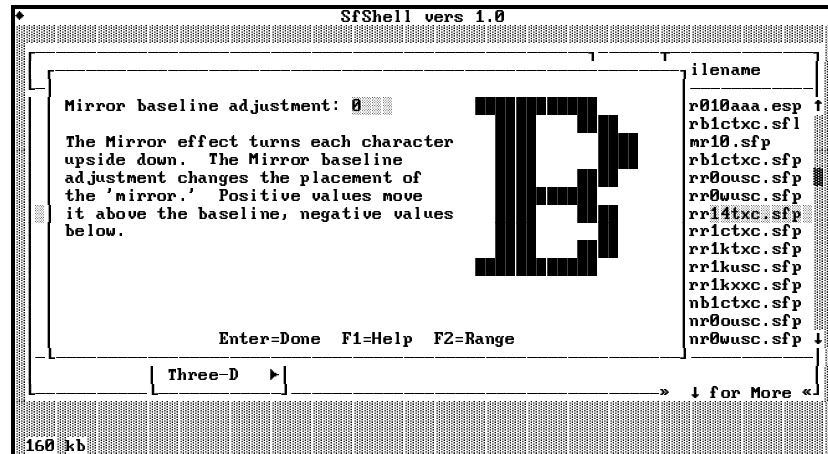


Figure 19.1. The Mirror panel

19.1. Options

Mirror baseline adjustment

The mirror baseline adjustment changes the relative position of the (virtual) mirror across which each character is rotated. A value of zero specifies that the mirror is on the baseline, values larger than zero move the mirror above the baseline, smaller values move it below.

19.2. Technically Speaking

If you plan to use a font and its mirror to create a special display effect (by placing one above the other), you may find that the descenders on the original font overlap the “descenders” (now ascenders!) on the mirrored font. This is where it is helpful to change the mirror baseline adjustment. By making the adjustment roughly equal to the number of pixels in the descenders of the original font, you can move the mirrored font “down” a little so that the mirrored descenders don’t overlap the descenders on the original font.

21. The Outline Effect

Outlining a font produces an unfilled outline of each character.

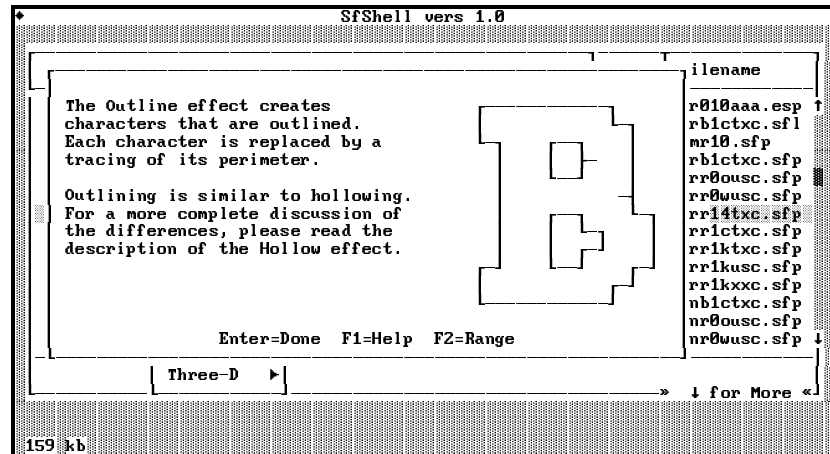


Figure 21.1. The Outline panel

21.1. Options

The outline effect has no options.

21.2. Technically Speaking

See the technical discussion of the hollow effect for more information.

23. The Resize Effect

Resizing a font creates characters that are larger or smaller than the same characters in the original font. The characters can be scaled uniformly (creating more or less accurate renditions of the original characters with the same proportions) or non-uniformly (creating elongated or widened characters).

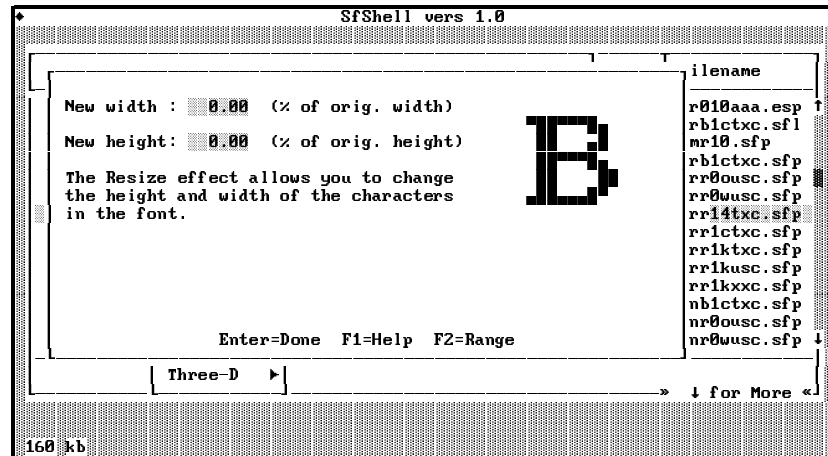


Figure 23.1. The Resize panel

23.1. Options

New Width

The new width specifies the width of each resized character as a percentage of its original size. Values less than 100 make the characters narrower, while values larger than 100 make them wider.

New Height

Like the width, the new height specifies the height of each resized character as a percentage of its original height.

23.2. Technically Speaking

In practice, this effect has few uses. Unlike more modern font scaling technology (which relies on mathematical descriptions of each character) SFX has only the bitmap description of each character to work with. As a result, gross changes in the size of a character create “jagged” edges and *very* poor quality letters. Making fonts larger generally works better than making them smaller. As a rule of thumb, you probably won’t like the results if you try to resize a font by more than a factor of two. If you hold one dimension constant (100%), it may be possible to stretch or compress the other dimension by a larger factor without significant loss of detail.

25. The Shadow Effect

Shadowing attempts to produce the effect that you would get if all you could see on the page were the shadows from an embossed image of the original character. It's a bit difficult to describe, but it is one of my favorite effects.

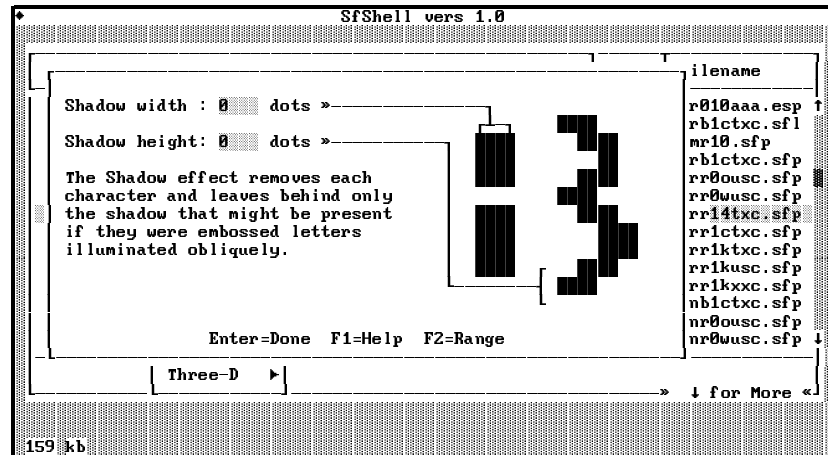


Figure 25.1. The Shadow panel

25.1. Options

Shadow Width

The shadow width controls the width (in dots) of the shadow to the right or left of the original character. Positive values create a shadow on the right hand side of the character, while negative values create a shadow on the left. This value should be small relative to the total width of the character.

Shadow Height

By analogy with the shadow width, the shadow height controls the height of the shadow above or below the character. Positive values create shadows below the character, negative values above. This value should be small relative to the total height of the character.

25.2. Technically Speaking

The effect is produced by moving a copy of the character over and down by the specified amounts and then removing all dots that fall within the original character (including all of the original character). For small widths, this works fine; however when the widths become larger than the widths of the strokes that make up the character, the effect falls apart.

27. The Slant Effect

Slanting is a poor-man's version of italics. In practice, italic fonts are not *just* slanted versions of the upright characters. But slanting will suffice in a pinch and it does allow you to produce oblique characters (slanted backwards), which are occasionally useful.

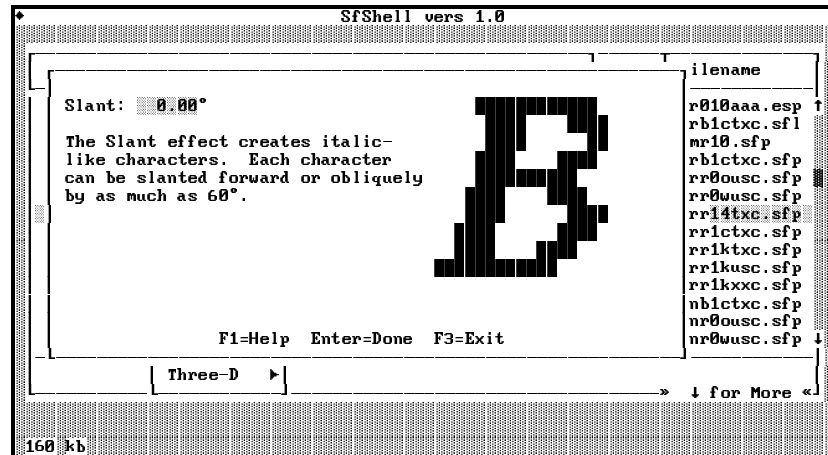


Figure 27.1. The Slant panel

27.1. Options

Slant

The slant specifies the amount of slant in degrees. A positive value causes the characters to slant toward the right. A negative value causes the characters to slant toward the left.

27.2. Technically Speaking

This effect is produced by calculating how far over each row of pixels must be moved in order to produce a slant of the requested angle. Using a little bit of trigonometry, it is easy to calculate how far over the top row must be moved. Each row below the top must be moved over some fraction of the total height of the character. Rows below the baseline must be moved in the opposite direction.

Considering that this algorithm does nothing more than slide rows of dots back and forth, it should be easy to see that large slant values may produce jagged, non-contiguous characters.

29. The Three-D Drop Shadow Effect

Three-D drop shadows create a patterned shadow-image of each character that appears to be below the original. It is possible to change the apparent “distance” of the shadow by changing the offsets used to create it.

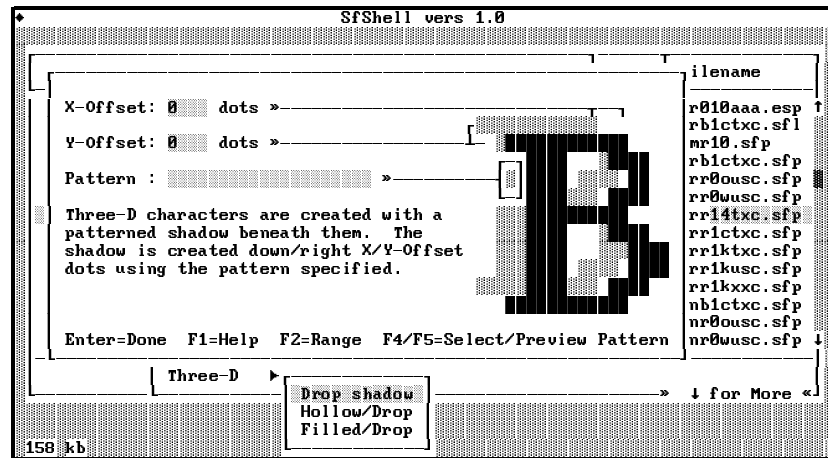


Figure 29.1. The Three-D Drop Shadow panel

29.1. Options

X-Offset

The x-offset controls the distance (in dots) of the shadow to the right or left of the original character. Positive values create a shadow on the right hand side of the character, negative values create a shadow on the left.

Y-Offset

By analogy with the x-offset, the y-offset controls the distance of the shadow above or below the character. Positive values create shadows below the character, negative values above.

Pattern

The pattern specified is applied to the areas used in the shadow.

29.2. Technically Speaking

The original character is moved left or right and up or down by the distances specified. If necessary the character cell is enlarged to accommodate the new character. The character is then shaded with the specified pattern and the original character is painted back into the character cell at its original position.

31. The Filled Three-D Drop Shadow Effect

Filled Three-D drop shadows are simply a combination of the three-d drop shadow effect and the fill effect. It is a limitation of the algorithms used to create the three-d drop shadow effect that it is not possible to create a filled three-d character. This effect is provided to circumvent that limitation.

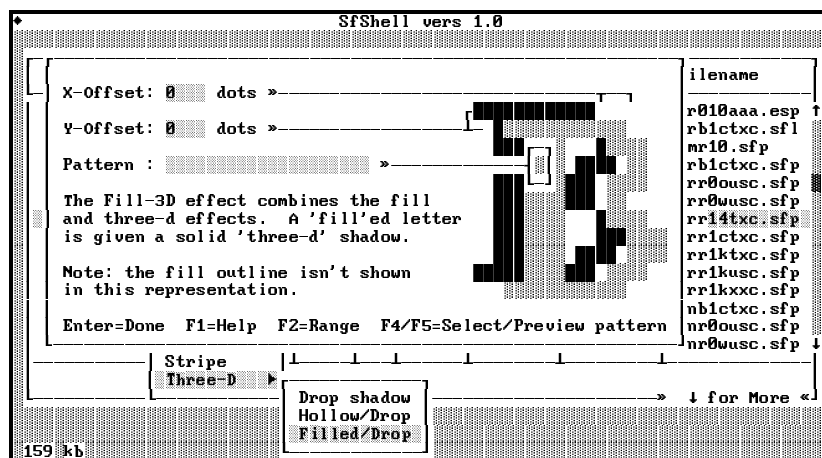


Figure 31.1. The Filled Three-D Drop Shadow panel

31.1. Options

X-Offset

The x-offset controls the distance (in dots) of the shadow to the right or left of the original character. Positive values create a shadow on the right hand side of the character, negative values create a shadow on the left.

Y-Offset

By analogy with the x-offset, the y-offset controls the distance of the shadow above or below the character. Positive values create shadows below the character, negative values above.

Pattern

The pattern specified is applied to the original character.

31.2. Technically Speaking

This option is exactly the same as the three-d drop shadow effect except that the shadow is always solid black and instead of painting the original character back into the cell, a pattern-filled version of the original character is painted back in.

33. Patterns

33.1. What are patterns?

Patterns change the appearance of many effects. A pattern is a rectangular region of on-and-off dots that is repeated across and down to cover the region being filled. The pattern is specified as a series of numbers separated by commas and semicolons. The binary representation of the numbers separated by commas indicates the dots that are on and off in each row and semicolons separate rows.

33.2. How do I create one?

Creating a new pattern is not difficult. The best way to begin is with a piece of graph paper and a pencil. Experiment until you have something that you like and then follow the directions below.

For example, suppose that you wish to create a zig-zag pattern. Here is one possibility:

		*			*			*		*
*	*	*	*	*	*	*	*	*	*	*
	*			*			*			
		*			*			*		*
*	*	*	*	*	*	*	*	*	*	*
	*			*			*			

Isolate a "generating region"

Isolate the smallest region that can be used to generate the pattern. This region, when repeated to the right and down, should create the entire pattern. In this case, the smallest acceptable region is this:

		*	
	*		*
*			

Note: there is frequently more than one smallest region that will produce the pattern. I have intentionally chosen this region because it is *not* the upper-left hand corner. Usually the upper-left hand corner contains a generating region, but not always.

33.3. Saving the pattern

Alternatively, the patterns may be saved in the configuration file and selected by name. Read the *Configuration* chapter for more information.

33.4. Previewing Patterns

It is possible to preview any pattern by pressing **F5** when you are on a pattern field or when the list of patterns is displayed. The list of patterns will be displayed if you press **F4** when you are on a pattern field.

33.5. Technically Speaking

The fact that patterns are used for so many effects makes it apparent that Sftware really needs a pattern editor and a better mechanism for storing patterns. These are planned additions but Sftware is already beginning to suffer from “creeping featurism” (in the author’s opinion, at least) and it has been decided that these changes will just have to wait until the next release.

However, in view of the fact that creating patterns by the above method is very tedious, a simple program (**PATTERN.EXE**) has been added to Sftware that eliminates most of the “hard parts.” Please consult the file **PATTERN.DOC** for more information.

`/verbose`

All of the Sftware utilities print regular progress messages. The `/verbose` option causes many utilities to print more detailed progress messages.

`/quiet`

The `/quiet` option suppresses some informative messages. For example, the `/quiet` option will suppress the %-complete messages in SfLoad.

`/$`

The `/$` option displays registration information for the Sftware utilities. If you are using an unregistered program, this information will be displayed automatically. Please register your shareware!

36. Contacting the Author

36.1. By Mail

You can reach the author by mail at the following address:

Norman Walsh
#42I Southwood Apts
Brittany Manor Dr
Amherst, MA 01002

36.2. Electronically

If you have access to electronic mail, the fastest way to reach the author is to send electronic mail to **walsh@cs.umass.edu**. In this case, electronic mail implies access to Internet domains (through BITNET or UUCP, for example). This is possible from CompuServe and from several of the large national BBS's as well.

filemask	A filemask is a DOS filename which may include the “wildcard” characters * and ?. The wildcard characters in a filemask allow you to select a group of files. Please consult your DOS reference for more information about wildcard characters.
font	A font is a collection of symbols that have similar characteristics. The symbols in a font have a fixed typeface, size, weight, style and symbol set. For example, upright, bold Times Roman at 10pt is a font. Contrast with typeface.
fontdir	In the context of this manual, a fontdir is the filemask (optionally including a path) that identifies LaserJet softfont files. For example, if you keep all of your softfonts in the directory d:\fonts then d:\fonts\A*.SFP is one example of a valid fontdir. The canonical font directory would be d:\fonts*.* .
hexadecimal	Hexadecimal refers to the number base composed of sixteen symbols (0-9,A-F). Hexadecimal is frequently used in computing because 256 different values can be represented in only two digits. Hexadecimal is sometimes called base 16.
kerning	Kerning refers to slight changes in the spacing between characters. Some letter combinations (“AV” and “To”, for example) appear farther apart than others because of the shapes of the individual letters. Many sophisticated word processors move these letter combinations closer together automatically (compare “AV” with “AV”, for example).
laserjet	Laserjet is a trademarked name for laser printers used by Hewlett Packard. In this document, it simply means an HP LaserJet printer or a compatible laser printer from some other manufacturer.
mask	See <i>filemask</i> .
memory, expanded	See <i>EMS</i> .
memory, extended	Extended memory is memory above the 1 megabyte boundary in your computer. Software cannot directly use extended memory. Many programs exist which map extended memory as expanded memory. For more information about expanded memory, see <i>EMS</i> .
memory, main	Main memory is the DOS memory below 640K in your computer. This is the area where normal DOS programs run. The DOS chkdsk program, for example, reports the amount of main memory that is free.
octal	Octal refers to the number base composed of eight symbols (0-7). Octal is sometimes called base 8.
pathname	A pathname is a filename (please consult your DOS reference for more information about what constitutes a valid DOS filename) with its associated drive and path. For example, if tr100.sfp is the name of a file in the directory \fonts on drive d: , then <p style="text-align: center;">d:\fonts\tr100.sfp</p> is the pathname of tr100.sfp .

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Sfware Order Form

Name: _____ Phone: (_____) _____-

Company: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Please pay by check or money order, do not send cash through the mail. Make all checks payable to Norman Walsh.

Individual utilities:	Quantity	Price Each	Total
_____ SFFx (softfont special effects)	_____	\$25	_____
_____ SFCmpr (softfont compression)	_____	\$10	_____
_____ SFLoad (download fonts)	_____	\$10	_____
_____ SFRotate (landscape/portrait conversion)	_____	\$10	_____
_____ SFShow (print summary page)	_____	\$10	_____
_____ SFView (preview font on screen)	_____	\$10	_____
_____ SFDir (directory enhancement for fonts)	_____	\$ 5	_____
_____ SFInfo (complete font information)	_____	\$ 5	_____
Utility bundles:			
_____ SFShell (menu interface shell) and <i>all</i> utilities	_____	\$60	_____
_____ All of the utilities (without SFShell)	_____	\$40	_____
_____ Any three utilities (excluding SFFx, select above)	_____	\$20	_____

Subtotal: _____

Massachusetts residents, please add appropriate sales tax: _____

Total: _____

Complete this form and return it with your payment to:

Norman Walsh
#42I Southwood Apts
Amherst, MA 01002