

Typeface

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Chapter 1

Typeface

1.1 Typeface Guide

Typeface 1.2
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- Introduction
- Installation
- Using Typeface
- Opening a font
- Saving a font
- Changing the font directory
- Editing the font parameters
- Editing a character
- Preferences
- History
- Contacting the author

1.2 Introduction

The Amiga provides support for two types of font; bitmap and outline. In bitmap fonts each character is stored as a series of bits indicating which pixels should be on or off. A bitmap font has a specific size, and bitmap fonts with the same design but in different sizes are usually stored together in the FONTS: directory, e.g. for a bitmap font "foo":

```
foo.font      information about foo
foo/8         bitmap font of height eight pixels
foo/9         bitmap font of height nine pixels
```

Outline fonts (introduced in Release 2.04 of the operating system) store fonts as a series of curves, so that one definition can provide a font in many different sizes. Such fonts usually appear in the FONTS: directory as .font and .otag files (the .otag file contains information specific to the particular font engine to be used). Since Release 3.0 the outline font engine has been separated from diskfont.library (and is now called bullet.library). This allows new font engines to be used, e.g. type1.library, which provides support for Postscript Type 1 fonts.

Typeface is an editor for bitmap fonts. In addition, outline fonts can be loaded with specific dimensions, altered if required, and saved out as bitmap fonts. Having an outline font also saved as a bitmap font means that if an application requests the font in a size stored as a bitmap, then the bitmap version is used, otherwise the outline font is converted to the correct size, which generally takes time and memory.

Typeface may be freely distributed but remains the copyright of the author, David Kinder. Typeface may not be distributed for more than a nominal fee to cover media, etc., and may not be distributed as part of a commercial package without the written permission of the author. Source is provided for the benefit of anyone interested in the structure of an Amiga program, and may not be used by anyone other than the author in this or any other font editing program.

1.3 Installation

Typeface requires that `bgui.library v40` be in either the LIBS: directory or in a "libs" subdirectory of the directory where the Typeface files are kept, and that `textfield.gadget v3` be installed. Other than this, Typeface requires the presence of the following standard libraries in LIBS:

```
asl.library v37
diskfont.library v36
```

Provided that you have booted into a standard Workbench setup, Typeface should start when its icon is double clicked; you can move `bgui.library` and `textfield.gadget` to their proper places later, if you want.

Also, `amigaguide.library v34` must be available if on-line help is to be used in the program.

Typeface searches the catalogs subdirectory and the path `LOCALE:catalogs` for "Typeface.catalog", which allows Typeface to be localized under Workbench 2.1 and higher (`locale.library v38` required). Full information on the creation of such catalogs is available in the "Catalogs" subdirectory.

All version numbers given are the minimum required.

1.4 BGUI Library

`bgui.library` is a shared library written by Jan van den Baard which provides a font sensitive gadget layout engine in an object orientated manner.

1.5 Using Typeface

When first started, Typeface opens a character selection window in the top-left corner of the display. In this window, any of the 256 characters which make up a font can be chosen for editing. The scroll bar on the right of the window can be used to move through the available characters. The size of the window and the font used can be altered in the preferences window.

Clicking on any of the characters causes a character editing window to open, in which the character is displayed on a grid. Any number of these windows may be opened, as all the windows in Typeface multitask (for example, you can open up a new character editing window with the preferences window open). Holding down the shift key while clicking on a character causes Typeface to display the character in one of the already open editing windows, if one is available, rather than opening a new window. All windows also have the following menus:

```
Project Menu      Open Font
  Save Font
  Change Dir
  Preview
  Preferences
  About
  Quit
```

```
Font Menu      Edit Parameters
  Edit Character
  Move Left
  Move Right
  Move Up
  Move Down
  Reset Kerning
  Cascade Windows
```

1.6 Opening a font

Project Menu/Open Font

A standard ASL font requester will open from which the user can select a font to be loaded into Typeface. Outline fonts will be listed as well as bitmap fonts; remember that while bitmap versions of outline fonts can be created, but Typeface does not support direct editing of outline fonts.

The fonts listed will be those found in memory and those in the FONTS: assign. To change the FONTS: directory, use the Change Dir option.

If the "Query Width on Load" gadget is selected in preferences, then a window will open in which the width of the font being loaded can be altered. The font will be scaled by diskfont.library to the chosen width.

1.7 Saving a font

Project Menu/Save Font

This window allows control over how the font is to be saved.

"Font Directory" is the directory into which the .font file and the font directory will be placed. The default is the current FONTS: directory.

"Font" is the name of the font. Thus if the font directory is "foo:", the font name is "bar" and the font height is 8, then the font will be saved as the files

```
foo:bar.font
and foo:bar/8
```

"First" and "Last" control which characters will be saved. Not all characters in a font need to be defined; those without a definition appear in applications as the blank character. "Kern Info" determines whether or not the tables of kerning information are saved. This gadget is selected and ghosted if the font is proportional, as such information must be saved in this case. For "First", "Last" and "Kern Info" the default is to save the font with the same parameters as the last loaded font.

1.8 The blank character

Every bitmap font contains a definition for a "blank" character, which is used if a character requested from the font is not defined. This character can be edited in Typeface by clicking on the "Blank" gadget in the Edit Font Parameters window.

1.9 Changing the kerning information of a character

Character Menu/Kerning

In this window the spacing and kerning values for a character can be altered. The kerning value determines how many pixels the cursor position should be advanced before rendering the character, and the spacing value determines how many pixels the cursor should advance after rendering. For example, consider this character, defined on a 5x5 grid:

```
.....
.***. Spacing = 6
**.** Kerning = 1
.***.
.....
```

If the rendering cursor starts at position 1, and the character is printed twice:

```
.....
.***. .***. 1 and 2 (also 2 and 3) are
**.** **.** separated by 7 pixels (i.e.
.***. .***. the spacing plus the kerning).
.....
```

^ ^ ^
1 2 3

2 is the position of the cursor after rendering one character, and 3 the position after rendering both characters.

Note that these values are not usually altered in fixed-width fonts, and are only saved in the font if the "Kern Info" checkbox is set in the Save Font window.

1.10 Changing the width of a character

Character Menu/Change Width

In this window the width of the character currently being edited (the character number is shown in title bar) can be changed. Enter the new width in the string gadget then use the slider gadget below to determine how the character data is placed in the new space.

The slider gadget works as follows. If the new width is greater than the old width, then the slider represents where the old data will appear in the new space (i.e. if the slider is at the right, then the data will be copied to the new space flush with the right edge of the new space). If the new width is less than the old width, then the slider represents which section of the data will be copied into the new space, as not all the data will fit.

1.11 Changing the font directory

Project Menu/Change Dir

When opening a font, the FONTS: directory is scanned. If the font to be edited is not in the FONTS: assign, then this window can be used to change or add to FONTS:.

The name of the new directory should be entered in the string gadget, optionally by using a file requester (obtained by clicking on the folder gadget to the right of the string gadget). To change the FONTS: assign to this directory, click on "Assign". To add this directory to the FONTS: assign, click on "Assign Add".

1.12 Editing the font parameters

Font Menu/Edit Parameters

This window allows editing of the various flags and parameters that define the font. These are:

Font Type

This gadget determines whether the font is fixed-width or proportional. In a fixed-width font, all characters have the same width, whereas in a proportional font, different characters can have different widths.

Note that for Amiga fonts this distinction is not absolute, as "fixed-width" fonts can have characters with widths different from the nominal (e.g. the standard courier font). However, it is not a good idea to have fixed-width fonts with characters whose widths vary by more than a few pixels from the nominal, as this will confuse most software. If this gadget is changed from proportional to fixed-width, a requester will appear to ask if all the character widths should be changed to the default (given in the "Width" gadget).

Height

The height (in pixels) of the font.

Width

The width (in pixels) of the font. For a proportional font this should be an approximate average width for all the characters in the font. For a fixed-width font, all characters should have this width (but see above). If the font is fixed-width, then changing this number will change the width of every character in the font.

Baseline

The font baseline, measured (in pixels) from the top of the font. When the font is rendered into a RastPort, the vertical cursor position (cp_y) will correspond to the font baseline. The baseline must be less than the font height.

Bold Smear

When a bold font is algorithmically generated, the font data is binary or'd with itself, shifted right by this many pixels.

The next set of parameters do not affect how the font is displayed; they only provide information on how the font should be used.

Normal The font does not have any of the following attributes set.

Bold Specifies that the font is designed so that it appears as bold.

Italic Specifies that the font is designed so that it appears as italic.

Underline Specifies that the font is designed so that it appears underlined.

Extended Specifies that the font is designed so that it appears wider than it is high.

Reversed

Specifies that the font is designed to be rendered right-to-left (i.e. the reverse of the usual).

Aspect

Specifies the pixel aspect ratio that the font is designed for. "Normal" indicates that the pixels should be as wide as they are high; "Thin" that the pixels should be higher than they are wide; and "Wide" that the pixels should be wider than they are high.

The "Blank" gadget allows editing of the font's blank character.

1.13 Editing a character

Each character in a font can be edited in its own window, which can be opened by clicking on the character in the character selection window. The main section of the window is given over to an expanded display of the character. Clicking on any pixel in the window toggles the pixel between on and off. Dragging the mouse with the left mouse button held down either toggles or overwrites any subsequent pixels, depending on the preferences setting.

The window also contains a tool bar along the top and a Character menu. The functions of the gadgets in the tool bar are:

Hollow left arrow Decrease the character width by one pixel.

Hollow right arrow Increase the character width by one pixel.

Filled arrows Move the character data one pixel in the direction specified by the arrow.

Triangles Open the kerning window.

Filled arrow with a black border Open the width window.

Plus/Minus Halves/doubles the size of the rectangle representing each pixel of the character.

Horizontal Arrows Flip character horizontally.

Vertical Arrows Flip character Vertically.

Which of these gadgets are shown in the tool bar is controlled in the preferences window. The Character menu items are:

Undo Reset the character to its initial design when the editing window was opened.

Cut Cut the character into the internal clipboard.

Copy Copy the character into the internal clipboard.

Paste Replace the character with the last character stored in the internal clipboard.

Erase Clear the character without putting it into the internal clipboard.

Move Move the character data one pixel in the Left/Right/Up/Down specified direction.

Flip Horizontally Flip the character data along its vertical /Vertically /horizontal axis.

Zoom In/Out Halves/doubles the size of the rectangle representing each pixel of the character.
The shortcuts are the "+" / "-" keys.

Change Width Open the width window.

Kerning Open the kerning window.

1.14 Preferences

Project Menu/Preferences

The preferences window can be used to control aspects of Typeface's appearance and behaviour. The window contains a number of "pages", which are accessed from the gadget at the top of the window (for which the keyboard shortcut is '\'). The pages available are:

- Screen
- Tool Bar
- Edit Windows
- Selection Window
- Miscellaneous

Selecting "Save" will save the preferences to either ENVARC: or PROGDIR: (the directory containing the Typeface files), depending on the selection made in the Miscellaneous page. "Use" makes Typeface use the current preferences but does not save them. "Cancel" ignores any changes made to the preferences and just closes the preferences window.

1.15 Preferences - Screen Page

This page contains the following gadgets:

Custom Screen

If this is selected, then Typeface uses its own screen, else it uses a public screen (the Workbench screen by default).

Mode

Here the screen mode of Typeface's custom screen is shown. To change, click on the arrow gadget to the right of the mode name. Note that the user can only select the screen mode if asl.library v38 or higher is present (Release 2.1 of the operating system).

Font

Here the screen font of Typeface's custom screen is shown. To change, click on the arrow gadget to the right of the font name.

Public Screen

If "Custom Screen" is selected, this will be the public name of Typeface's screen. If it is not selected, then Typeface will try to open on the public screen given here. If that screen is not available, the default public screen will be used instead.

1.16 Preferences - Tool Bar Page

The tool bar is the line of gadgets along the top of the character editing windows. Which of these gadgets is displayed is controlled by the two listview gadgets on this page; the left hand contains gadgets which will not be displayed; the right those which will be. To add or remove a gadget from the tool bar, select the appropriate entry by clicking on it and drag it to the other listview by holding the mouse button down while moving the mouse. When the chosen entry is over the destination listview release the mouse button to drop the entry. More than one entry can be selected by holding down the shift key when selecting. For a description of what each gadget does, see editing a character.

The "Height" gadget determines the height of the tool bar. The minimum is 11 (which looks good for a non-interlaced screen), but if you use a higher resolution display you may want to increase this value. If the "Auto" gadget is selected, then the "Height" gadget is ghosted and Typeface automatically determines the height of the tool bar, based on the screen resolution.

Note that changing these options does not affect character editing windows currently open, only those opened after "Save" or "Use" has been selected.

1.17 Preferences - Edit Windows Page

This page controls the appearance of the character editing windows. In the "Pixels" box are several gadgets which determine the appearance of each bit of the character's definition. These gadgets are:

Width / Height

These gadgets determine the width / height of each pixel.

Border

This gadget determines how the pixel's border is drawn. The options are "No" (no border); "Yes" (a clear border around each filled pixel) and "Grid" (draws a grid around all pixels).

Baseline

This gadget determines whether or not the font baseline is drawn on the character editing window.

Outside the "Pixels" box, the "Maximize Window" gadget affects the initial size of an edit window. If this is not selected, the window will always open to the right of the character selection window. If it is selected, then the window may overlap the character selection window if there is not enough room to the right. The "Toggle" gadget determines the drawing mode used. If selected, all pixels over which the pointer is moved are inverted; if not, all pixels are set to the state of the first changed pixel.

Note that changing these options does not affect character editing windows currently open, only those opened after "Save" or "Use" has been selected.

1.18 Preferences - Selection Window Page

This page controls the appearance of the character selection window. The available options are:

Window Sizing

If this gadget is selected, the selection window will have a sizing gadget and can be sized vertically.

Shift

If this gadget is selected, then shift clicking on a character in the selection window loads the character into a currently open editing window, while shift-clicking opens a new editing window, i.e. the effect of click and shift-click is inverted.

Width

This cycle gadget controls the number of characters shown in each row of the selection window.

Height

In this gadget the default height of the selection window can be entered. Since there are 256 characters in a font, this cannot be more than 256 divided by the width defined above.

Font

Here the selection window font is shown. To change, click on the

arrow gadget to the right of the font name.

1.19 Preferences - Miscellaneous Page

In this page the location of the preferences file is determined. The possibilities are:

Environment Variable

"Typeface.prefs" is written to ENV: and to ENVARC:. This is the standard place to put preferences files.

Typeface Directory

This is the directory containing all the Typeface files. Saving "Typeface.prefs" here saves memory, as there will not be a copy in ENV: (usually assigned to RAM:env).

The "Confirm Quit" check box can be used to determine whether or not Typeface asks the user for confirmation before quitting.

The "Query Width on Load" check box determines whether or not the "Query Font Width" requester opens when loading a font.

1.20 Contacting the author

If you have any comments, queries or suggestions about Typeface, I can be contacted via Internet email at either

kinder@teaching.physics.ox.ac.uk
or david.kinder@physics.ox.ac.uk

Future versions of Typeface supporting colour fonts and with more features may materialise, depending on the level of feedback that I receive. If you like Typeface, let me know.

1.21 About

Project Menu/About

Gives the version number, copyright date and author of Typeface, plus the amount of free chip and fast memory in the system.

1.22 Quit

Project Menu/Quit

Quits Typeface. If the font loaded into Typeface has not been saved, it will be lost.

1.23 History

Release 1.2 (2/7/96)

- o The "Reset Kerning" option in the "Font" menu has been improved. Now a window opens to allow a value to be added to both the default spacing and kerning values of each character.
- o When loading a font of a given height, the width can be changed in the "Query Font Width" window. This window will open after the font selection requester, provided that the "Query Width on Load" gadget is selected in the "Miscellaneous" section of "Preferences".
- o Better copying and pasting support in the "Character" menu. The new menu items are "Undo" (which restores the character's initial data), "Cut" and "Erase".
- o Characters can be mirrored either horizontally or vertically using the new "Flip Horizontally" and "Flip Vertically" items in the "Character" menu.
- o It is now possible to numerically specify a character to edit using the "Edit Character" item in the "Font" menu.
- o Character editing windows can now be tidied up in one go with the "Cascade Windows" item on the "Font" menu.
- o New keyboard shortcuts for changing the pixel size when editing a character: "+" for zoom in and "-" for zoom out.
- o Changes to Preferences:
 - o Redesigned the "Tool Bar" section of preferences to use drag and drop.
 - o New option "Toggle" to control drawing mode added to the "Edit Windows" section.

Release 1.1 (5/10/95)

- o Better error reporting. If Typeface fails to allocate something it requires, then instead of exiting silently, an explanatory requester will appear.
 - o If Typeface opens its own screen, the screen is now public. If not, then Typeface can open on any other public screen.
 - o Many new options in Preferences, including:
 - o Selectable screen font and public screen name.
 - o The tool bar in the character editing windows is now configurable.
 - o Edit windows can have a grid overlaid on the editing area, and
-

the font baseline can also be displayed visually.

- o The size and font used for the character selection window is now configurable.
- o Spacing between objects in windows depends on the screen resolution.
- o All windows (except the character selection window) can be closed by pressing the "Esc" key.
- o New "Font" menu, with options to edit the font parameters (previously on the "Project" menu), move all the characters in the font left/right/up/down and to reset the kerning information.
- o A requester asking for confirmation when quitting Typeface can be enabled, which will report if there are unsaved changes to the currently loaded font.
- o More than one pixel can be changed in the character editing windows by holding the left mouse button down and dragging the mouse.
- o Holding down the shift key while clicking on a character in the selection window causes that character to be loaded into one of the already open editing windows, rather than opening a new window. The operation of click/shift-click can be inverted in the preferences window.
- o New font preview window in which the user can type text in the font currently being defined.
- o The display of the character in an editing window can be zoomed in or out.
- o Typeface can be localized into any language, simply by writing the appropriate catalog file.

Release 1.0 (29/5/95)

- o First release.

1.24 Move Left

Font Menu/Move Left

Moves all characters in the font one pixel to the left.

1.25 Move Right

Font Menu/Move Right

Moves all characters in the font one pixel to the right.

1.26 Move Up

Font Menu/Move Up

Moves all characters in the font one pixel upwards.

1.27 Move Down

Font Menu/Move Down

Moves all characters in the font one pixel downwards.

1.28 Reset Kerning

Font Menu/Reset Kerning

This option allows the kerning information for all characters to be set. In the window are two integer gadgets, for spacing and kerning respectively. If "Reset" is selected, then the kerning information for each character is set as:

Spacing = Character Width + Value in Spacing Gadget

Kerning = Value in Kerning Gadget

The default is zero for both gadgets.

1.29 Cascade Windows

Font Menu/Cascade Windows

This option can be used to rearrange all the character editing windows currently open. The windows are moved so that they form a sequence running from just right of the character selection window to the bottom right of the screen.

1.30 Edit Character

Font Menu/Edit Character

This opens a window containing a single numerical string gadget. Enter the number (from 0 to 255) of the character which you wish to edit, then either press return or click on the "Accept" gadget.

1.31 Previewing the font

Project Menu/Preview

The font preview window allows the user to see what the font being defined actually looks like. Any text required can be entered into the multi-line string gadget (see `textfield.gadget`). Below this, there are four gadgets:

Update Updates the font in the preview window, so that any changes made to the font after opening the preview window are reflected in the preview window font.

Show All Displays all the characters in the font, except 0x00, 0x0A and 0x0D, which are replaced by spaces.

Clear Clears all text from the preview window.

Cancel Closes the preview window.

1.32 TextField Gadget

"`textfield.gadget`" is a BOOPSI gadget which allows programs to use multi-line string gadgets. "`textfield.gadget`" is © 1995 Mark Thomas.

For Workbench 3.0 and higher, copy the file to `SYS:classes/gadgets`. Although Workbench 2.0 and 2.1 support the gadget, there is no standard place in the system to install it. It is suggested that you create a subdirectory "`gadgets`" in your `LIBS:` directory and copy it there. Alternatively, you can leave it with Typeface in the "`gadgets`" subdirectory.

While using the gadget, the following keys are available (reproduced from the "`textfield.gadget`" documentation):

Shift Cursor Up Move to the top line in the current page, or scroll up one page if cursor is on the top line.

Shift Cursor Down Move to the bottom line in the current page, or scroll down one page if cursor is on the top line.

Ctrl or

Shift Cursor Right Move to the far-right end of the current line.

Ctrl or

Shift Cursor Left Move to the far-left end of the current line.

Shift Backspace Delete all the text to the left of cursor on the current line.

Shift Delete Delete all the text to the right of the cursor on the current line, including the highlighted character.

Ctrl Cursor Up Move to the top line of the text.

Ctrl Cursor Down Move to the bottom line of the text.

Alt Cursor Right Move to the next word.

Alt Cursor Left Move to the previous word.

Alt Cursor Up Move to the first character in the gadget.

Alt Cursor Down Move to the last character in the gadget.

Alt Backspace Deletes the word to the left of the cursor,
starting at the current cursor position.

Alt Delete Deletes the word to the right of the cursor,
starting at the current cursor position.

Ctrl x Deletes the whole line that the cursor is on.

Right Amiga e Erase all text in the gadget, and store in the
undelete buffer.

Right Amiga v Paste text from the clipboard to the current
cursor position.

Right Amiga a Mark all text.

Right Amiga u Undelete the last block of text marked, or
recover from Right Amiga e.

When text is highlighted the following keys are available:

Delete or Erase marked text (saved in the undelete buffer).
Backspace

Right Amiga x Cut marked text to the clipboard.

Right Amiga c Copy marked text to the clipboard.

Right Amiga v Replace marked text with text from the clipboard
(saving marked text in the undelete buffer).

Any text key Replace marked text with that character.
