The Font Management with the OFS

Petr Olšák, Petr Sojka: The Font Management with the OFS
Brest, June 24th, 2003, EuroT$_E$X 2003

The Font Management with the OFS

Petr Olšák

`petr@olsak.net`

Faculty of Electrical Engineering
Czech Technical University, Prague

Petr Sojka

`sojka@fi.muni.cz`

Faculty of Informatics
Masaryk University in Brno

Abstract

The widely used New Font Selection System (NFSS) has its pros and cons. To have uniform platform for large font set management and selection for both plain and LaTeX users, and to extend the possibilities of the NFSS, an Olšák's Font System (OFS) has been designed and implemented.

The user interface of this macro is the same for plain and LaTeX, with two independent implementations. First implementation is based on `plain.tex` macros only; the second one for LaTeX users is implemented as an additional layer over NFSS macros, and is slightly less elaborate (support for math font families is missing).

An Outline

Motivation

☞ Number of fonts available today grows rapidly; one needs tools to handle them. Karl Berry's font names are cryptic (200+ page guide).

Motivation

☞ Number of fonts available today grows rapidly; one needs tools to handle them. Karl Berry's font names are cryptic (200+ page guide).

```
From: Rodolfo Medina <romeomedina@libero.it>
To: <tug-support@tug.org>
Date: Tue, 10 Jun 2003 16:34:52 +0200
Subject: [texhax] Font tables with plain TeX

Hi, everyone.

I'm a quite new plain TeX user. I have difficulties every time
I have to use a new font because you need to know the ''code''
name of the font (sorry for this not proper expression):
for example, pagk7t for avantgarde, cmcsc10 for caps and
small caps, cmmi10 for italics, etcetera. Then you type, for example,

\font\nineavantgarde=pagk7t at 9pt
```
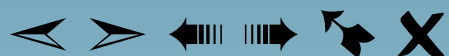
< > ◀▥ ▥▶ ⤳ ✗

in the file.tex and go on. But when you don't know that the
''code'' name for avantgarde is pagk7t or something else,
what on earth can you do?
So: where is it possible to find large collections of font tables
like the ones that are on pages 427--432 of the TeXbook
(or on pages 31--34 of the file amsfndoc.ps)?
I insist upon the fact that the ''code'' name should be shown,
and this way, with both the table and the code
the user would easily be able to choose and use his favourite fonts.
My searching in the web did not have any good result.
(Or maybe there are other ways to load fonts?...)

Thanks,
Rodolfo

```
in the file.tex and go on. But when you don't know that the
''code'' name for avantgarde is pagk7t or something else,
what on earth can you do?
So: where is it possible to find large collections of font tables
like the ones that are on pages 427--432 of the TeXbook
(or on pages 31--34 of the file amsfndoc.ps)?
I insist upon the fact that the ''code'' name should be shown,
and this way, with both the table and the code
the user would easily be able to choose and use his favourite fonts.
My searching in the web did not have any good result.
(Or maybe there are other ways to load fonts?...)


Thanks,
Rodolfo
```
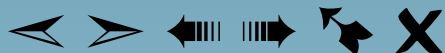
☞ Almost every plainTEX user writes his own font macros, so why Petr Olšák not to join the club :-)?

Font Management Basics

☞ Appropriate font handling support heavily needed during *design phase* of publication preparation.

Font Management Basics

☞ Appropriate font handling support heavily needed during *design phase* of publication preparation.

☞ Macro writer package commands should model *designer's* intentions and changes during document design preparation.

Font Management Basics

☞ Appropriate font handling support heavily needed during *design phase* of publication preparation.

☞ Macro writer package commands should model *designer's* intentions and changes during document design preparation.

☞ *Font selection scheme* maps current font characteristics/attributes (e.g. encoding e, family f, shape sp, series sr and size sz) into particular *font* (table):

$$FontSelectionScheme(e, f, \mathrm{sp}, \mathrm{sr}, \mathrm{sz}, \ldots) \rightarrow \text{font table/metrics}$$

Font Management Basics

☞ Appropriate font handling support heavily needed during *design phase* of publication preparation.

☞ Macro writer package commands should model *designer's* intentions and changes during document design preparation.

☞ *Font selection scheme* maps current font characteristics/attributes (e.g. encoding e, family f, shape sp, series sr and size sz) into particular *font* (table):

$$FontSelectionScheme(e, f, \mathrm{sp}, \mathrm{sr}, \mathrm{sz}, \ldots) \rightarrow \text{font table/metrics}$$

☞ Font selection scheme should support traveling in this space, e.g. making one font attribute change in a time, showing possibilities on the current installation (subspaces), etc.

Font Management Basics

☞ Appropriate font handling support heavily needed during *design phase* of publication preparation.

☞ Macro writer package commands should model *designer's* intentions and changes during document design preparation.

☞ *Font selection scheme* maps current font characteristics/attributes (e.g. encoding e, family f, shape sp, series sr and size sz) into particular *font* (table):

$$FontSelectionScheme(e, f, \mathrm{sp}, \mathrm{sr}, \mathrm{sz}, \ldots) \rightarrow \text{font table/metrics}$$

☞ Font selection scheme should support traveling in this space, e.g. making one font attribute change in a time, showing possibilities on the current installation (subspaces), etc.

☞ Font management support should interface with font installation tools (in T$_E$X distributions cumbersome).

Font Management—Status Quo

"One thing that definitely was a mistake was the use of `\small`, `\large`, etc. instead of `\size{n}` command along with commands to increase or decrease the size. I am afraid I just copied the size-changing commands from Scribe without thinking."   Leslie Lamport, 2001

Petr Olšák, Petr Sojka: The Font Management with the OFS
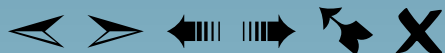Brest, June 24th, 2003, EuroT$_E$X 2003

Font Management—Status Quo

"One thing that definitely was a mistake was the use of
`\small`, `\large`, etc. instead of `\size{n}` command
along with commands to increase or decrease the size.
I am afraid I just copied the size-changing commands
from Scribe without thinking."   Leslie Lamport, 2001

☞ NFSS release 2 *big step forward* over 2.09, but still not perfect: built-in relative font size change support is missing, hard eXtensibility (new font attributes/font scheme axis), loading of font metrics which are never used when sequence of high-level commands is used, 8.3 convention "hardwired" for portability reasons).

Font Management—Status Quo

"One thing that definitely was a mistake was the use of `\small`, `\large`, etc. instead of `\size{n}` command along with commands to increase or decrease the size. I am afraid I just copied the size-changing commands from Scribe without thinking."   Leslie Lamport, 2001

☞ NFSS release 2 *big step forward* over 2.09, but still not perfect: built-in relative font size change support is missing, hard eXtensibility (new font attributes/font scheme axis), loading of font metrics which are never used when sequence of high-level commands is used, 8.3 convention "hardwired" for portability reasons).

☞ availability of FSS for plain?

Font Management—Status Quo

"One thing that definitely was a mistake was the use of `\small`, `\large`, etc. instead of `\size{n}` command along with commands to increase or decrease the size. I am afraid I just copied the size-changing commands from Scribe without thinking."   Leslie Lamport, 2001

☞ NFSS release 2 *big step forward* over 2.09, but still not perfect: built-in relative font size change support is missing, hard eXtensibility (new font attributes/font scheme axis), loading of font metrics which are never used when sequence of high-level commands is used, 8.3 convention "hardwired" for portability reasons).

☞ availability of FSS for plain?

☞ "Every installation should have a local guide telling you what fonts are available." (LaTeX Companion, p. 184).

Font Management—Status Quo

> "One thing that definitely was a mistake was the use of `\small`, `\large`, etc. instead of `\size{n}` command along with commands to increase or decrease the size. I am afraid I just copied the size-changing commands from Scribe without thinking."   Leslie Lamport, 2001

☞ NFSS release 2 *big step forward* over 2.09, but still not perfect: built-in relative font size change support is missing, hard eXtensibility (new font attributes/font scheme axis), loading of font metrics which are never used when sequence of high-level commands is used, 8.3 convention "hardwired" for portability reasons).

☞ availability of FSS for plain?

☞ "Every installation should have a local guide telling you what fonts are available." (LaTeX Companion, p. 184). Quiz: let those that have local *font availability guide* on his/her TEX installation raise hands!

Font Management—Status Quo

"One thing that definitely was a mistake was the use of
`\small`, `\large`, etc. instead of `\size{n}` command
along with commands to increase or decrease the size.
I am afraid I just copied the size-changing commands
from Scribe without thinking."   Leslie Lamport, 2001

☞ NFSS release 2 *big step forward* over 2.09, but still not perfect: built-in relative font size change support is missing, hard eXtensibility (new font attributes/font scheme axis), loading of font metrics which are never used when sequence of high-level commands is used, 8.3 convention "hardwired" for portability reasons).

☞ availability of FSS for plain?

☞ "Every installation should have a local guide telling you what fonts are available." (LATEX Companion, p. 184). Quiz: let those that have local *font availability guide* on his/her TEX installation raise hands!
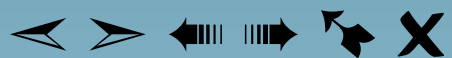
☞ $\implies$ OFS (Olšák's Font System), extensible set of font selection and cataloging macros for both plainTEX and LATEX users.

OFS—Historical Notes

☞ At the beginning

OFS—Historical Notes

☞ At the beginning there was pragmatic need for managing the whole set of fonts ⎢show⎢ from Storm Type Foundry (www.stormtype.com) (made by the Czech font designer František Štorm) in order to make the TEX support for these fonts by Petr Olšák.

Petr Olšák, Petr Sojka: The Font Management with the OFS
Brest, June 24th, 2003, EuroTEX 2003

OFS—Historical Notes

☞ At the beginning there was pragmatic need for managing the whole set of fonts ⎡show⎤ from Storm Type Foundry (www.stormtype.com) (made by the Czech font designer František Štorm) in order to make the TEX support for these fonts by Petr Olšák.

☞ `\usepackage{times}` solution inconvenient, font cataloging macros ("local font guide") a necessity.

OFS—Historical Notes

☞ At the beginning there was pragmatic need for managing the whole set of fonts ⬚show⬚ from Storm Type Foundry (www.stormtype.com) (made by the Czech font designer František Štorm) in order to make the TEX support for these fonts by Petr Olšák.
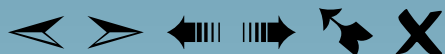
☞ `\usepackage{times}` solution inconvenient, font cataloging macros ("local font guide") a necessity.

☞ OFS macro written for plainTEX: `\input ofs [fonts, collections]`

OFS—Historical Notes

☞ At the beginning there was pragmatic need for managing the whole set of fonts ⟨show⟩ from Storm Type Foundry (www.stormtype.com) (made by the Czech font designer František Štorm) in order to make the T_EX support for these fonts by Petr Olšák.

☞ `\usepackage{times}` solution inconvenient, font cataloging macros ("local font guide") a necessity.

☞ OFS macro written for plainT_EX: `\input ofs [fonts, collections]`

☞ Lately, independent implementation for LAT_EX users, based on NFSS, with the same user interface:

`\usepackage [fonts, collections] {ofs}`

List of Main Features

☞ The OFS defines declarative language to define the mapping from the original full names of fonts to the tfm names (in plain) or to NFSS short names of the font families (in LaTeX). The user does not need to remember the short 8.3 names of tfm files and/or the short names of NFSS font families. This allows for user-defined logical font markup: one can use the real font (foundry) names from font (catalog).

List of Main Features

☞ The OFS defines declarative language to define the mapping from the original full names of fonts to the tfm names (in plain) or to NFSS short names of the font families (in LaTeX). The user does not need to remember the short 8.3 names of tfm files and/or the short names of NFSS font families. This allows for user-defined logical font markup: one can use the real font (foundry) names from font (catalog).

☞ Font mapping declarations are structured into fonts *collections* (e.g. a35.tex/sty defining family names of standard 35 PostScript fonts). demo

☞ Suggested root collection file with the name `allfonts.tex/sty.` demo

☞ One can choose the T_EX internal encoding of fonts for your language not only at the beginning of your document. This feature is commonly used for Czech and Slovak languages: there are T_EX fonts which encode the alphabets of these languages by Cork (T1 encoding) or by ISO-8859-2 (IL2 encoding), or even others.

☞ One can choose the T_EX internal encoding of fonts for your language not only at the beginning of your document. This feature is commonly used for Czech and Slovak languages: there are T_EX fonts which encode the alphabets of these languages by Cork (T1 encoding) or by ISO-8859-2 (IL2 encoding), or even others.

☞ There are *at least* four independent parameters of fonts (family, size, encoding, variant). Possibility to switch one font parameter independently on the others is important.

Petr Olšák, Petr Sojka: The Font Management with the OFS
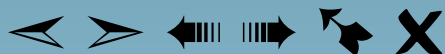Brest, June 24th, 2003, EuroT_EX 2003

☞ One can choose the T$_E$X internal encoding of fonts for your language not only at the beginning of your document. This feature is commonly used for Czech and Slovak languages: there are T$_E$X fonts which encode the alphabets of these languages by Cork (T1 encoding) or by ISO-8859-2 (IL2 encoding), or even others.

☞ There are *at least* four independent parameters of fonts (family, size, encoding, variant). Possibility to switch one font parameter independently on the others is important.

☞ One can use the `\fontusage` command which lists the short usage about OFS macros on the screen and to the log file. ⎹demo⎸

◁ ▷ ⫷ ⫸ ⭢ ✗

☞ One can choose the T_EX internal encoding of fonts for your language not only at the beginning of your document. This feature is commonly used for Czech and Slovak languages: there are T_EX fonts which encode the alphabets of these languages by Cork (T1 encoding) or by ISO-8859-2 (IL2 encoding), or even others.

☞ There are *at least* four independent parameters of fonts (family, size, encoding, variant). Possibility to switch one font parameter independently on the others is important.

☞ One can use the `\fontusage` command which lists the short usage about OFS macros on the screen and to the log file. ⃞ demo ⃞

☞ The `\showfonts` macro lists all available font families on the screen and to the log file. ⃞ demo ⃞

☞ One can choose the T$_E$X internal encoding of fonts for your language not only at the beginning of your document. This feature is commonly used for Czech and Slovak languages: there are T$_E$X fonts which encode the alphabets of these languages by Cork (T1 encoding) or by ISO-8859-2 (IL2 encoding), or even others.

☞ There are *at least* four independent parameters of fonts (family, size, encoding, variant). Possibility to switch one font parameter independently on the others is important.

☞ One can use the `\fontusage` command which lists the short usage about OFS macros on the screen and to the log file. │demo│

☞ The `\showfonts` macro lists all available font families on the screen and to the log file. │demo│

☞ One can print the short catalog of the all installed fonts by using `\input ofscatal.tex.` │demo│ │show│

≺ ≻ ⬛▮ ▮⬛➡ ✦⬆ ✗

Petr Olšák, Petr Sojka: The Font Management with the OFS
Brest, June 24th, 2003, EuroT$_E$X 2003

☞ One can choose the T_EX internal encoding of fonts for your language not only at the beginning of your document. This feature is commonly used for Czech and Slovak languages: there are T_EX fonts which encode the alphabets of these languages by Cork (T1 encoding) or by ISO-8859-2 (IL2 encoding), or even others.

☞ There are *at least* four independent parameters of fonts (family, size, encoding, variant). Possibility to switch one font parameter independently on the others is important.

☞ One can use the `\fontusage` command which lists the short usage about OFS macros on the screen and to the log file. ⬚ demo

☞ The `\showfonts` macro lists all available font families on the screen and to the log file. ⬚ demo

☞ One can print the short catalog of the all installed fonts by using `\input ofscatal.tex.` ⬚ demo ⬚ show

Petr Olšák, Petr Sojka: The Font Management with the OFS
Brest, June 24th, 2003, EuroT_EX 2003

☞ The OFS for plain includes the support of the math fonts manipulation: switching between math font collections (CM, MathTimes, . . .), and/or text-font dependent math fonts switching.
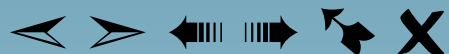
☞ The OFS for plain includes the support of the math fonts manipulation: switching between math font collections (CM, MathTimes, . . .), and/or text-font dependent math fonts switching.

☞ The user of the OFS can use a font separated into two T_EX metrics (basic and extended tfm). The font is from the user perspective seen as one font only. The mapping works even for fonts with more than 256 characters (if one does not want to kern between all characters): typical fonts by Štorm foundry have about 350 characters.

Choosing and Defining Fonts with OFS:
`\setfonts` and `\fontdef` commands

☞ Font family change only: `\setfonts [JannonText/]`

Petr Olšák, Petr Sojka: The Font Management with the OFS
Brest, June 24th, 2003, EuroTEX 2003

Choosing and Defining Fonts with OFS:
`\setfonts` and `\fontdef` commands

☞ Font family change only: `\setfonts [JannonText/]`

☞ Font size change only `\setfonts [/14]`

Choosing and Defining Fonts with OFS:
`\setfonts` and `\fontdef` commands

☞ Font family change only: `\setfonts [JannonText/]`

☞ Font size change only `\setfonts [/14]`

☞ Family, relative size, and variant change:
`\setfonts [CMTypewriter/mag1.1]\it`

Choosing and Defining Fonts with OFS:
\setfonts and \fontdef commands

☞ Font family change only: \setfonts [JannonText/]

☞ Font size change only \setfonts [/14]

☞ Family, relative size, and variant change:
\setfonts [CMTypewriter/mag1.1]\it

☞ Relative size change only:
\def\LaTeX{L\kern-.2em\raise.45\hbox{
                    \setfonts[/mag.7] A}\kern-.05em\TeX};
useful when using fonts from different font families with different ex height.

≺ ≻ ⬅▥ ▥➡ ✒ ✖

Choosing and Defining Fonts with OFS:
`\setfonts` and `\fontdef` commands

☞ Font family change only: `\setfonts [JannonText/]`

☞ Font size change only `\setfonts [/14]`

☞ Family, relative size, and variant change:
`\setfonts [CMTypewriter/mag1.1]\it`

☞ Relative size change only:
`\def\LaTeX{L\kern-.2em\raise.45\hbox{`
`\setfonts[/mag.7] A}\kern-.05em\TeX};`
useful when using fonts from different font families with different ex height.

☞ `\fontdef\name [Family-vr/size]` defines font switching command
without knowing explicit font metric name.

Specifics of OFS for plainTEX

☞ `\setmath [size/size/size]`

Specifics of OFS for plainTEX

☞ \setmath [size/size/size]

☞ font tracing commands ⌸demo⌸

OFS for LaTeX

☞ Different implementation, a layer over NFSS.

OFS for LaTeX

☞ Different implementation, a layer over NFSS.

☞ Declaration file for LaTeX (a35.sty). ⬚ demo

< > ⬅ ➡ ↖ ✖

OFS for LaTeX

☞ Different implementation, a layer over NFSS.

☞ Declaration file for LaTeX (a35.sty). | demo |

Summary

☞ A T_EX macropackage that helps designer to handle and manipulate big font collections with the same user interface for plainT_EX and L^AT_EX has been developed and is in use by $\mathcal{C}_S$TUG users since 2001. $\boxed{\text{demo}}$ $\boxed{\text{show}}$

Summary

☞ A T_EX macropackage that helps designer to handle and manipulate big font collections with the same user interface for plainT_EX and L^AT_EX has been developed and is in use by $\mathcal{C}_\mathcal{S}$TUG users since 2001. ⌐demo⌐ ⌐show⌐

☞ The declaration and support OFS files for all of the fonts offered by the Storm Type Foundry. and e.g. MathTimes fonts have been created.

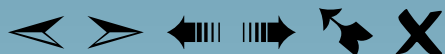# Summary

☞ A TEX macropackage that helps designer to handle and manipulate big font collections with the same user interface for plainTEX and LATEX has been developed and is in use by $\mathcal{C_S}$TUG users since 2001. $\boxed{\text{demo}}$ $\boxed{\text{show}}$

☞ The declaration and support OFS files for all of the fonts offered by the Storm Type Foundry. and e.g. MathTimes fonts have been created.

☞ The detailed documentation in English (in addition to the current Czech one) has been released in January 2003. $\boxed{\text{show}}$

Petr Olšák, Petr Sojka: The Font Management with the OFS
Brest, June 24th, 2003, EuroTEX 2003

Summary

☞ A T_EX macropackage that helps designer to handle and manipulate big font collections with the same user interface for plainT_EX and L^AT_EX has been developed and is in use by $\mathcal{C}_S$TUG users since 2001. ⟦demo⟧ ⟦show⟧

☞ The declaration and support OFS files for all of the fonts offered by the Storm Type Foundry. and e.g. MathTimes fonts have been created.

☞ The detailed documentation in English (in addition to the current Czech one) has been released in January 2003. ⟦show⟧

☞ License: T_EX-like: use at your own risk, when do you change it give it a new name (say, XFS).

Summary

☞ A T$_E$X macropackage that helps designer to handle and manipulate big font collections with the same user interface for plainT$_E$X and L^{A}T$_E$X has been developed and is in use by $\mathcal{C_S}$TUG users since 2001. ☐ demo ☐ show

☞ The declaration and support OFS files for all of the fonts offered by the Storm Type Foundry. and e.g. MathTimes fonts have been created.

☞ The detailed documentation in English (in addition to the current Czech one) has been released in January 2003. ☐ show

☞ License: T$_E$X-like: use at your own risk, when do you change it give it a new name (say, XFS).

☞ Primary download site: `http://www.olsak.net/ofs.html`,

⊲ ⊳ ⬅||| |||➡ ↖ ✗

Petr Olšák, Petr Sojka: The Font Management with the OFS
Brest, June 24th, 2003, EuroT$_E$X 2003

Possible Future Work

"The road to wisdom? Well it's plain and simple to express:
Err and err and err again, but less and less and less."
Piet Hein

☞ pdfT$_E$X's font shrinking and stretching support.

Possible Future Work

"The road to wisdom? Well it's plain and simple to express:
Err and err and err again, but less and less and less."
Piet Hein

☞ pdfT$_E$X's font shrinking and stretching support.

☞ More declaration and support files in the main OFS distribution.

Possible Future Work

"The road to wisdom? Well it's plain and simple to express:
Err and err and err again, but less and less and less."
Piet Hein

☞ pdfT_EX's font shrinking and stretching support.

☞ More declaration and support files in the main OFS distribution.

◅ ➤ ⬅▥ ▥➡ ⤴ ✗

"We are all apprentices in a craft
where no-one ever becomes a master."
Ernest Hemingway

Thank you for your attention.
Questions?

⊰ ⊱ ⫷∥ ∥⫸ ⤡⤢ ✗