LaTeX support for Fedra Serif Pro

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Abstract

This document describes the fedraserif package, which provides LaTeX support for the commercial Fedra Serif Pro fonts in both text and math mode.

Contents

1 Overview

The fedraserif package provides LaTeX support for the commercial Fedra® Serif Pro fonts[1] from Typotheque[2]. You can load this package by adding

```
\usepackage[⟨options⟩]{fedraserif}
```

to the preamble of your document. If no options are specified, this will change both the text font and the math font to Fedra Serif A; use the option `variant=B` to select Fedra Serif B. For the available options, see Section 3.

Acknowledgements

This package is heavily influenced by the MinionPro package, developed by Achim Blumensath, Andreas Bühmann and Michael Zedler, as well as the lucimatx package by Walter Schmidt. Additionally, I am indebted to Eddie Kohler for creating the LCDF typetools.

2 Interferences with other packages

In order to use Fedra Serif as a math font, you need to have the fdsymbol package (version 0.7 or higher) installed. Apart from fdsymbol, the fedraserif package automatically loads the packages textcomp and amsmath. Additionally, the fontaxes

[1] Fedra is a registered trademark of Typotheque VOF.
[2] `http://www.typotheque.com/fonts/`

Table 1: Summary of options

Key	Values	Section
`boldweight`	`Medium`*, `Bold`, `auto`	4.3
`fedrabb`	`true`, `false`*	5.3
`footnotemarks`	`true`, `false`*	4.6
`figures`	`lining`* (`lf`), `text` (`osf`)	4.5
`math-style`	`tex`*, `iso`, `french`	5.1
`nomath`	`true`, `false`*	5
`normalweight`	`Book`*, `Demi`, `auto`	4.3
`stdmathdigits`	`true`, `false`*	5.2
`variant`	`A`*, `B`	4.1

package, which is bundled with the MinionPro package, is loaded if it is present in your LaTeX installation. If you want to pass options to these packages, you can either load these packages beforehand, or you can include the options in the `\documentclass` command. Unless the option `nomath` is used, the fedraserif package is *not* compatible with amssymb and amsfonts (since fdsymbol is not).

3 Options

All package options are set using a ⟨*key*⟩=⟨*value*⟩ syntax. Boolean options accept `true` and `false` as values, and setting a Boolean key without a value is equivalent to setting it to `true`. Table 1 lists all option keys of the fedraserif package with their possible values; values that are marked with an asterisk correspond to the default behaviour of the package.

4 Font selection

4.1 Variants

Fedra Serif Pro comes in two variants: *Fedra Serif A* has a lower contrast and shorter ascenders, which makes it a good choice for small sizes, whereas *Fedra Serif B* has an increased contrast and longer ascenders. To select one variant, use the `variant` key: setting `variant=A` will select Fedra Serif A (the default), while `variant=B` will select Fedra Serif B. Additionally, setting `variant=auto` will select Fedra Serif A for text in normal and small sizes and Fedra Serif B for text in large sizes (larger than 12pt).

4.2 Encodings

The package currently supports the OT1, T1, LY1, QX and T5 encodings for typesetting text with Latin characters, as well as the TS1 encoding for typesetting text symbols. For typesetting text with accented characters, it is strongly recommended to change the default font encoding from OT1 to T1 or one of the other encodings. This can be achieved by putting `\usepackage[T1]{fontenc}` in the preamble of your document.

4.3 Weights

All fonts of the Fedra Serif Pro family come in four weights, which are (in increasing order) Book, Demi, Medium and Bold. Of these, Book and Demi can be used as the standard text font, while Medium and Bold can be used for bold text. The option keys `normalweight` and `boldweight` allow to control which weights are used for the standard LaTeX font series `m` and `b` (or `bx`), selected by `\mdseries` and `\bfseries`, respectively. For example, to use the Demi weight as the standard text font, use the option `normalweight=Demi`. By default, only the Book and the Medium weights are used. Additionally, both keys can be set to the value `auto`, which selects a weight depending on the font size (Book and Medium for normal and large sizes, Demi and Bold for small sizes). Independently of these options, the Demi and the Bold weight can always be accessed using the commands `\fontseries{md}` and `\fontseries{ub}`, respectively.

4.4 Shapes

In addition to the normal small caps shapes `sc` and `scit`, there are letterspaced versions `ssc` and `sscit`. Moreover, italic shapes with *swash capitals* are accessible via the `sw`, `scsw` and `sscsw` shapes (see Table 2).

If the fontaxes package is available, you can use the commands `\sscshape` and `\textssc{`⟨*text*⟩`}` to switch to letterspaced small caps and the commands `\swshape` and `\textsw{`⟨*text*⟩`}` to switch to swash capitals.

4.5 Figures

Fedra Serif Pro offers four main figure versions (see 3). On the one hand, one can choose between *lining figures* and *text figures*, also known as *old-style figures*. On the other hand, one can choose between *proportional figures* and *tabular figures*.

By default, proportional lining figures are used throughout the document. If you want to use text figures instead, use the option `figures=text` or `figures=osf`.

Assuming that the fontaxes package is installed on your system, you can use the command `\figureversion` to switch between different figure versions inside

Table 2: Summary of font shapes

Shape	Example
`n`	A Quick Brown Fox Jumps Over The Lazy Dog.
`it`	*A Quick Brown Fox Jumps Over The Lazy Dog.*
`sc`	A Quick Brown Fox Jumps Over The Lazy Dog.
`ssc`	A Quick Brown Fox Jumps Over The Lazy Dog.
`scit`	*A Quick Brown Fox Jumps Over The Lazy Dog.*
`sscit`	*A Quick Brown Fox Jumps Over The Lazy Dog.*
`sw`	*A Quick Brown Fox Jumps Over The Lazy Dog.*
`scsw`	*A Quick Brown Fox Jumps Over The Lazy Dog.*
`sscsw`	*A Quick Brown Fox Jumps Over The Lazy Dog.*

Table 3: Summary of figure versions

	Lining figures	Text figures
Proportional	0123456789	0123456789
Tabular	0123456789	0123456789

the document. Possible arguments are `text` or `osf` for text figures, `lining` or `lf` for lining figures, `tabular` or `tab` for tabular figures, and `proportional` or `prop` for proportional figures. Note that you can combine several arguments. For example, the command `\figureversion{osf,tabular}` selects tabular text figures.

Small and slanted fractions are fractions with a height matching the font's body size; they can be accessed via:

`\smallfrac{`⟨*numerator*⟩`}{`⟨*denominator*⟩`}` $^{3}/_{17}$
`\slantfrac{`⟨*numerator*⟩`}{`⟨*denominator*⟩`}` $3/17$

Note that only figures can be used for ⟨*numerator*⟩ and ⟨*denominator*⟩.

Finally, Fedra Serif Pro offers so-called bullet figures, which are enclosed by a circle; they can be accessed via:

`\openbullet{`⟨*number*⟩`}` ① ㉞
`\closedbullet{`⟨*number*⟩`}` ❺ ❻❼❽

As for small and slanted fractions, only figures can be used for ⟨*number*⟩.

4.6 Footnotes

By setting the option `footnotemarks`, footnote marks are set using special characters designed for this purpose, i.e. [1,a] instead of [1,a]. However, this only works for footnote marks that consist of figures and the lowercase letters a–z.

4.7 Dingbats

Assuming that the pifont package is loaded, you can access Fedra Serif's ornamental characters via:

`\Pisymbol{FedraSerifPro-Pi}{`⟨*number*⟩`}`

The available glyphs are listed in Table 4.

4.8 Additional notes

Fedra Serif Pro implements a large subset of the glyphs made available by the TS1 encoding. However, the following glyphs are missing:

`\textdblhyphen`	`\textdivorced`	`\textdied`
`\textleaf`	`\textmarried`	`\textmusicalnote`
`\textdblhyphenchar`	`\textdollaroldstyle`	`\textcentoldstyle`
`\textguarani`	`\textpertenthousand`	`\textpilcrow`
`\textbaht`	`\textdiscount`	`\textlquill`
`\textrquill`	`\textcopyleft`	`\textreferencemark`

In addition to the monetary symbols defined by the TS1 encoding, the following currency symbols are available:

₢	`\textcruzeiro`	₣	`\textfranc`	₥	`\textmill`
₧	`\textpeseta`	₨	`\textrupee`	₪	`\textsheqel`
₭	`\textkip`	₮	`\texttugrik`	₴	`\texthryvnia`

5 Math support

By default, we change the math font to Fedra Serif Pro with mathematical symbols taken from FdSymbol. To disable this behaviour, use the option `nomath`. Note that all other options described in this section have no effect if this option is active.

5.1 Letters

In TEX and LATEX, uppercase Greek letters are traditionally set upright in math mode, even when they are used as variables. This differs from the ISO standards ISO31-0:1992 to ISO31-13:1992, which mandate italics in this case. While the package employs the TEX tradition by default, you can select the ISO behaviour by setting the option `math-style=iso`. Independently of this option, you can alyways select upright and italic greek letters using the commands `\upalpha`, `\italpha`, `\upGamma`, `\itGamma`, etc. Additionally, the `math-style` key can take the value `french`, in which case all Greek and uppercase roman letters are typeset upright.

Table 4: Dingbats available with the fedraserif package

number	glyph	number	glyph	number	glyph	number	glyph
100	✁	128	Ⓤ	156	✆	184	🙰
101	✂	129	♾	157	🖷	185	🙱
102	✃	130	⊛	158	🖹	186	✲
103	✄	131	✪	159	🖻	187	✳
104	✅	132	✇	160	🖼	188	✴
105	✆	133	✈	161	🖽	189	✵
106	✇	134	✉	162	🖾	190	✶
107	✈	135	✌	163	🖿	191	✷
108	✉	136	✍	164	🗀	192	✸
109	✌	137	✎	165	🗁	193	✹
110	✍	138	✏	166	🗃	194	✺
111	✎	139	✐	167	🗄	195	✻
112	✏	140	✑	168	🗅	196	✼
113	✐	141	✒	169	🗆	197	✽
114	✑	142	✓	170	🗇	198	✾
115	✒	143	✔	171	🗈	199	✿
116	✓	144	✕	172	🗉	200	❀
117	✔	145	✖	173	🗊	201	❁
118	✕	146	✗	174	🗋	202	❂
119	✖	147	✘	175	🗌	203	❃
120	✗	148	✙	176	🗍	204	❄
121	✘	149	✚	177	🗎	205	❅
122	✙	150	✛	178	🗏	206	❆
123	✚	151	✜	179	🗐	207	❇
124	✛	152	✝	180	🗑	208	❈
125	✜	153	✞	181	🗒	209	❉
126	✝	154	✟	182	🗓	210	❊
127	✞	155	✠	183	🗔		

Table 5: The different styles for letters in math mode

`math-style`	example
`tex`	$a, b, \ldots, A, B, \ldots, \alpha, \beta, \ldots, \Gamma, \Delta, \ldots$
`iso`	$a, b, \ldots, A, B, \ldots, \alpha, \beta, \ldots, \Gamma, \Delta, \ldots$
`french`	$a, b, \ldots, \mathrm{A}, \mathrm{B}, \ldots, \alpha, \beta, \ldots, \Gamma, \Delta, \ldots$

For an illustration of the differences between the three values for `math-style`, see Table 5.

The fedraserif package provides all letters available in math mode with the Computer Modern fonts, with the exception of `\varpi` and `\varrho`, which have the same shape as `\pi` and `\rho`, respectively. Additionally, the following letters and letter-like symbols are can be typeset:

β	`\varbeta`[3]	$\varkappa$	`\varkappa`[3]	$\digamma$	`\digamma`[3]
$\ni$	`\backepsilon`[3]	$\varni$	`\varbackepsilon`[3]	$\hbar$	`\hslash`
λ	`\lambdabar`	λ	`\lambdaslash`	$\eth$	`\eth`[3]
$\emptyset$	`\slashedzero`	$\mho$	`\mho`	ℓ	`\upell`
$\hbar$	`\uphbar`	$\beth$	`\beth`	$\gimel$	`\gimel`
$\daleth$	`\daleth`				

5.2 Digits

By default, digits in math mode are typeset in the default figure version for text mode (as selected by the `figures` key). To use lining figures in math mode even if `figures=text` is active, set the option `stdmathdigits`.

Apart from the standard math versions `normal` and `bold`, the package introduces two new math versions `tabular` and `boldtabular`, in which digits are typeset as tabular figures.

5.3 Blackboard characters

Fedra Serif Pro has a limited set of blackboard characters, namely $\mathbb{N}$, $\mathbb{Z}$, $\mathbb{Q}$, $\mathbb{R}$, $\mathbb{C}$, $\Bbbk$ and $\mathbb{l}$. To use these characters for the math blackboard alphabet `\mathbb`, set the option `fedrabb`. If this option is not selected, the AMS blackboard bold font is used instead, which has the advantage that all uppercase roman letters are available.

[3] The shape of the symbol is different if the option `math-style=french` is selected. Upright and italic shapes are also available directly via the commands `\up`⟨*cmd*⟩ and `\it`⟨*cmd*⟩, respectively.

Table 6: NFSS classification

Encoding	Family	Series	Shape
OT1, T1, TS1, LY1, QX	FedraSerifPro-LF, FedraSerifPro-OsF, FedraSerifPro-TLF, FedraSerifPro-TOsF	m, md, b (sb, bx), ub	n, it (sl), sw, sc, scit (scsl), scsw, ssc, sscit (sscsl), sscsw
OML	FedraSerifPro-TOsF (FedraSerifPro-LF, FedraSerifPro-OsF, FedraSerifPro-TLF)	m, md, b (sb, bx), ub	n, it
U	FedraSerifPro-Extra	m, md, b (sb, bx), ub	n, it (sl)
U	FedraSerifPro-Pi	m, md, b (sb, bx), ub	n
U	FedraSerifPro-BB	m	n

6 NFSS classification

Table 6 lists all fonts made available with this package. Parenthesised combinations are provided via substitutions.

7 Implementation

7.1 Options

We use xkeyval's key mechanism to declare all options.

```
⟨*package⟩
\RequirePackage{xkeyval}
\newcommand*\fdrsf@boolkey[2]{%
  \define@boolkey{fedraserif.sty}[fdrsf@]{#1}[true]{#2}%
}
\newcommand*\fdrsf@choicekey[3]{%
  \define@choicekey*{fedraserif.sty}{#1}[\@tempa\@tempb]{#2}{#3}%
}
\newif\iffdrsf@text
\fdrsf@texttrue
\newif\iffdrsf@math
```

```
\fdrsf@mathtrue
```

Font selection

The package fedraserif-fd adapts the font definitions to the requested font set (see Section 9). So we simply pass on the relevant options. Additional care has to be taken to pass the right options to fdsymbol.

```
\fdrsf@choicekey{variant}{a,b,auto}{%
  \PassOptionsToPackage{variant=#1}{fedraserif-fd}%
  \ifcase\@tempb\relax
  \or
    \PassOptionsToPackage{largedelims}{fdsymbol}%
  \or
  \fi
}
\fdrsf@choicekey{normalweight}{book,demi,auto}{%
  \PassOptionsToPackage{normalweight=#1}{fedraserif-fd}%
  \ifcase\@tempb\relax
    \PassOptionsToPackage{normalweight=book}{fdsymbol}%
  \or
    \PassOptionsToPackage{normalweight=regular}{fdsymbol}%
  \or
    \PassOptionsToPackage{normalweight=auto}{fdsymbol}%
  \fi
}
\fdrsf@choicekey{boldweight}{medium,bold,auto}{%
  \PassOptionsToPackage{boldweight=#1}{fedraserif-fd}%
  \PassOptionsToPackage{boldweight=#1}{fdsymbol}%
}
% The next option toggles the math font setup.
%    \begin{macrocode}
\fdrsf@boolkey{nomath}{%
  \iffdrsf@nomath\fdrsf@mathfalse\else\fdrsf@mathtrue\fi%
}
```

Figure style

```
\newcommand\fdrsf@family{FedraSerifPro}
\newcommand\fdrsf@textfig{LF}
\newcommand\fdrsf@mathfig{\fdrsf@textfig}
\newcommand\fdrsf@textfamily{\fdrsf@family-\fdrsf@textfig}
\newcommand\fdrsf@mathfamily{\fdrsf@family-\fdrsf@mathfig}
\newcommand\fdrsf@mathtfamily{\fdrsf@family-T\fdrsf@mathfig}
\newcommand\fdrsf@mathshape{it}
```

```
\fdrsf@choicekey{figures}{text,osf,lining,lf}{%
  \ifcase\@tempb\relax
    \renewcommand\fdrsf@textfig{OsF}%
  \or
    \renewcommand\fdrsf@textfig{OsF}%
  \or
    \renewcommand\fdrsf@textfig{LF}%
  \or
    \renewcommand\fdrsf@textfig{LF}%
  \fi
}
\fdrsf@boolkey{stdmathdigits}{%
  \iffdrsf@stdmathdigits
    \renewcommand\fdrsf@mathfig{LF}%
  \fi
}
```

Math styles

```
\newif\iffdrsf@greek@upper@upright
\newif\iffdrsf@greek@lower@upright
\fdrsf@choicekey{math-style}{tex,iso,french}{%
  \ifcase\@tempb\relax
    \fdrsf@greek@upper@uprighttrue
    \fdrsf@greek@lower@uprightfalse
  \or
    \fdrsf@greek@upper@uprightfalse
    \fdrsf@greek@lower@uprightfalse
  \or
    \fdrsf@greek@upper@uprighttrue
    \fdrsf@greek@lower@uprighttrue
    \renewcommand\fdrsf@mathshape{n}
  \fi
}
```

Other options

This options redefined the blackboard bold alphabet to use Fedra Serif's blackboard letters.

```
%
\fdrsf@boolkey{fedrabb}{%
  \iffdrsf@fedrabb
    \renewcommand\fdrsf@load@bb{%
      \DeclareMathAlphabet\mathbb{U}{\fdrsf@family-BB}{m}{n}%
      \renewcommand\Bbbk{\mathbb{k}}%
    }%
  \fi
```

```
}
\newcommand\fdrsf@load@bb{}
```

This option allows to use superiour figures for footnote marks. If possible, we use the commands `\deffootnotemark` and `\deffootnote` provided by the KOMA-Script classes to change the formatting of footnote marks. Otherwise, we need to redefine `\@makefnmark`.

```
\fdrsf@boolkey{footnotemarks}{%
  \iffdrsf@footnotemarks
    \@ifundefined{deffootnotemark}{%
      \def\@makefnmark{%
        \begingroup
        \usefont{U}{\fdrsf@family-Extra}{m}{n}%
        \@thefnmark\kern0.1em%
        \endgroup
      }%
    }{%
      \deffootnotemark{%
        \begingroup
        \usefont{U}{\fdrsf@family-Extra}{m}{n}%
        \thefootnotemark
        \endgroup
      }%
    }%
    \@ifundefined{deffootnote}{}{%
      \deffootnote[1em]{1.5em}{1em}{%
        \begingroup
        \usefont{U}{\fdrsf@family-Extra}{m}{n}%
        \thefootnotemark\kern0.1em%
        \endgroup
      }%
    }%
  \fi
}
```

Defaults

```
\ExecuteOptionsX{math-style=tex}
\ProcessOptionsX\relax
```

7.2 Font selection

```
\RequirePackage[scale=0.9]{fedraserif-fd}
\@ifpackageloaded{textcomp}{}{\RequirePackage{textcomp}}
\iffdrsf@text
  \renewcommand\rmdefault{\fdrsf@textfamily}
```

```
\DeclareEncodingSubset{TS1}{\fdrsf@family-LF}{1}
\DeclareEncodingSubset{TS1}{\fdrsf@family-TLF}{1}
\DeclareEncodingSubset{TS1}{\fdrsf@family-OsF}{1}
\DeclareEncodingSubset{TS1}{\fdrsf@family-TOsF}{1}
```

In order to accomodate ligatures and glyph variants, we had to remove some glyphs from the standard encodings, but most of them can still be accessed through the TS1 encoding.

```
\AtBeginDocument{
  \UndeclareTextCommand{\textcompwordmark}{T1}
  \UndeclareTextCommand{\textvisiblespace}{T1}
  \UndeclareTextCommand{\textperthousand}{T1}
  \UndeclareTextCommand{\textpertenthousand}{T1}
  \UndeclareTextCommand{\textsterling}{T1}
  \UndeclareTextCommand{\textsection}{T1}
  \UndeclareTextCommand{\textmu}{QX}
  \UndeclareTextCommand{\texteuro}{QX}
  \UndeclareTextCommand{\textEuro}{QX}
  \let\textEuro\texteuro
  \UndeclareTextCommand{\textdagger}{QX}
  \UndeclareTextCommand{\textdaggerdbl}{QX}
  \UndeclareTextCommand{\textdegree}{QX}
  \UndeclareTextCommand{\textsection}{QX}
  \UndeclareTextCommand{\textregistered}{QX}
  \UndeclareTextCommand{\copyright}{QX}
  \let\copyright\textcopyright
  \UndeclareTextCommand{\textdiv}{QX}
  \UndeclareTextCommand{\textminus}{QX}
  \UndeclareTextCommand{\texttimes}{QX}
  \UndeclareTextCommand{\textpm}{QX}
  \UndeclareTextCommand{\textbullet}{QX}
  \UndeclareTextCommand{\textcurrency}{QX}
  \UndeclareTextCommand{\textperthousand}{QX}
  \UndeclareTextCommand{\textanglearc}{QX}
  \UndeclareTextCommand{\textvisiblespace}{T5}
```

Additional currency symbols are stored in empty slots of the TS1 encoding.

```
  \DeclareTextSymbol{\textcruzeiro}{TS1}{192}
  \DeclareTextSymbol{\textfranc}{TS1}{193}
  \DeclareTextSymbol{\textmill}{TS1}{194}
  \DeclareTextSymbol{\textpeseta}{TS1}{195}
  \DeclareTextSymbol{\textrupee}{TS1}{196}
  \DeclareTextSymbol{\textsheqel}{TS1}{197}
  \DeclareTextSymbol{\textkip}{TS1}{198}
  \DeclareTextSymbol{\texttugrik}{TS1}{199}
  \DeclareTextSymbol{\texthryvnia}{TS1}{200}
```

```
    \DeclareTextSymbolDefault{\textcruzeiro}{TS1}
    \DeclareTextSymbolDefault{\textfranc}{TS1}
    \DeclareTextSymbolDefault{\textmill}{TS1}
    \DeclareTextSymbolDefault{\textpeseta}{TS1}
    \DeclareTextSymbolDefault{\textrupee}{TS1}
    \DeclareTextSymbolDefault{\textsheqel}{TS1}
    \DeclareTextSymbolDefault{\textkip}{TS1}
    \DeclareTextSymbolDefault{\texttugrik}{TS1}
    \DeclareTextSymbolDefault{\texthryvnia}{TS1}
  }
\fi
```

The font selection commands such as `\figureversion`, `\textsw`, and `\textssc` are provided by the fontaxes package (bundled with the MinionPro package).

```
\IfFileExists{fontaxes.sty}{
  \RequirePackage{fontaxes}[2007/03/31]
  \let\oldstylenums\textfigures
}{}
```

7.3 Math font setup

We use FdSymbol for most mathematical symbols.

```
\iffdrsf@math
  \RequirePackage[scale=0.9]{fdsymbol}[2011/08/28]
```

Some math symbols are taken from the text font by fdsymbol. Use the correct math figure version for these.

```
\renewcommand\fdsy@text[1]{%
  \ifx\fdsy@bold\math@version
    \text{\usefont{T1}{\fdrsf@mathfamily}{b}{n}#1}%
  \else
    \text{\usefont{T1}{\fdrsf@mathfamily}{m}{n}#1}%
  \fi
}
```

Redefine the standard math versions `normal` and `bold`.

```
  \DeclareSymbolFont{operators}{T1}{\fdrsf@mathfamily}{m}{n}
  \SetSymbolFont{operators}{bold}{T1}{\fdrsf@mathfamily}{b}{n}
  \DeclareSymbolFont{letters}{OML}{\fdrsf@family-TOsF}{m}{\fdrsf@mathshape}
  \SetSymbolFont{letters}{bold}{OML}{\fdrsf@family-TOsF}{b}{\fdrsf@mathshape}
  \DeclareMathAlphabet{\mathrm}{T1}{\fdrsf@mathfamily}{m}{n}
  \SetMathAlphabet{\mathrm}{bold}{T1}{\fdrsf@mathfamily}{b}{n}
  \DeclareMathAlphabet{\mathit}{T1}{\fdrsf@mathfamily}{m}{it}
  \SetMathAlphabet{\mathit}{bold}{T1}{\fdrsf@mathfamily}{b}{it}
  \DeclareMathAlphabet{\mathbf}{T1}{\fdrsf@mathfamily}{b}{n}
```

Extra math versions `tabular` and `boldtabular`, which use tabular figures instead of proportional ones. These math versions can be useful in tables.

```
\DeclareMathVersion{tabular}
\SetSymbolFont{operators}{tabular}{T1}{\fdrsf@mathtfamily}{m}{n}
\SetMathAlphabet{\mathrm}{tabular}{T1}{\fdrsf@mathtfamily}{m}{n}
\SetMathAlphabet{\mathit}{tabular}{T1}{\fdrsf@mathtfamily}{m}{it}
\SetMathAlphabet{\mathbf}{tabular}{T1}{\fdrsf@mathtfamily}{b}{n}
\DeclareMathVersion{boldtabular}
\SetSymbolFont{operators}{boldtabular}{T1}{\fdrsf@mathtfamily}{b}{n}
\SetSymbolFont{letters}{boldtabular}{OML}{\fdrsf@family-TOsF}{b}{\fdrsf@mathshape}
\SetMathAlphabet{\mathrm}{boldtabular}{T1}{\fdrsf@mathtfamily}{b}{n}
\SetMathAlphabet{\mathit}{boldtabular}{T1}{\fdrsf@mathtfamily}{b}{it}
\SetMathAlphabet{\mathbf}{boldtabular}{T1}{\fdrsf@mathtfamily}{b}{n}
\DeclareMathAccent{\grave}{\mathalpha}{operators}{"00}
\DeclareMathAccent{\acute}{\mathalpha}{operators}{"01}
\DeclareMathAccent{\hat}{\mathalpha}{operators}{"02}
\DeclareMathAccent{\tilde}{\mathalpha}{operators}{"03}
\DeclareMathAccent{\ddot}{\mathalpha}{operators}{"04}
\DeclareMathAccent{\mathring}{\mathalpha}{operators}{"06}
\DeclareMathAccent{\check}{\mathalpha}{operators}{"07}
\DeclareMathAccent{\breve}{\mathalpha}{operators}{"08}
\DeclareMathAccent{\bar}{\mathalpha}{operators}{"09}
\DeclareMathAccent{\dot}{\mathalpha}{operators}{"0A}
\let\hbar\undefined
\DeclareMathSymbol{\hbar}{\mathord}{letters}{"AE}
\DeclareMathSymbol{\uphbar}{\mathord}{letters}{"B6}
\DeclareMathSymbol{\partial}{\mathord}{letters}{"40}
\DeclareMathSymbol{\ell}{\mathord}{letters}{"60}
\DeclareMathSymbol{\upell}{\mathord}{letters}{"B9}
\DeclareMathSymbol{\slashedzero}{\mathord}{letters}{"B8}
\let\mho\undefined
\DeclareMathSymbol{\mho}{\mathord}{letters}{"BA}
\DeclareMathSymbol{\nabla}{\mathord}{letters}{"BB}
\DeclareRobustCommand{\lambdabar}{\middlebar\lambda}
\DeclareRobustCommand{\lambdaslash}{\middleslash\lambda}
```

Execute the hook set up above to redefine the mathbb alphabet.

```
\fdrsf@load@bb
```

7.4 Greek and Hebrew letters

We provide three math-mode commands for each Greek letter: for italic, upright and the default.

```
\newcommand*{\fdrsf@greek@capital}[3]{
  \expandafter\DeclareMathSymbol%
    \expandafter{\csname it#1\endcsname}{\mathord}{letters}{#2}
  \expandafter\DeclareMathSymbol%
```

```
    \expandafter{\csname up#1\endcsname}{\mathord}{letters}{#3}
  \iffdrsf@greek@upper@upright
    \expandafter\let\csname #1\expandafter\endcsname\csname up#1\endcsname
  \else
    \expandafter\let\csname #1\expandafter\endcsname\csname it#1\endcsname
  \fi
}
\newcommand*{\fdrsf@greek@letter}[3]{
  \expandafter\DeclareMathSymbol%
    \expandafter{\csname it#1\endcsname}{\mathord}{letters}{#2}
  \expandafter\DeclareMathSymbol%
    \expandafter{\csname up#1\endcsname}{\mathord}{letters}{#3}
  \iffdrsf@greek@lower@upright
    \expandafter\let\csname #1\expandafter\endcsname\csname up#1\endcsname
  \else
    \expandafter\let\csname #1\expandafter\endcsname\csname it#1\endcsname
  \fi
}
\fdrsf@greek@capital{Gamma}{"00}{"80}
\fdrsf@greek@capital{Delta}{"01}{"81}
\fdrsf@greek@capital{Theta}{"02}{"82}
\fdrsf@greek@capital{Lambda}{"03}{"83}
\fdrsf@greek@capital{Xi}{"04}{"84}
\fdrsf@greek@capital{Pi}{"05}{"85}
\fdrsf@greek@capital{Sigma}{"06}{"86}
\fdrsf@greek@capital{Upsilon}{"07}{"87}
\fdrsf@greek@capital{Phi}{"08}{"88}
\fdrsf@greek@capital{Psi}{"09}{"89}
\fdrsf@greek@capital{Omega}{"0A}{"8A}
\fdrsf@greek@letter{alpha}{"0B}{"8B}
\fdrsf@greek@letter{beta}{"0C}{"8C}
\fdrsf@greek@letter{gamma}{"0D}{"8D}
\fdrsf@greek@letter{delta}{"0E}{"8E}
\fdrsf@greek@letter{epsilon}{"0F}{"8F}
\fdrsf@greek@letter{zeta}{"10}{"90}
\fdrsf@greek@letter{eta}{"11}{"91}
\fdrsf@greek@letter{theta}{"12}{"92}
\fdrsf@greek@letter{iota}{"13}{"93}
\fdrsf@greek@letter{kappa}{"14}{"94}
\fdrsf@greek@letter{lambda}{"15}{"95}
\fdrsf@greek@letter{mu}{"16}{"96}
\fdrsf@greek@letter{nu}{"17}{"97}
\fdrsf@greek@letter{xi}{"18}{"98}
\fdrsf@greek@letter{pi}{"19}{"99}
\fdrsf@greek@letter{rho}{"1A}{"9A}
```

```
  \fdrsf@greek@letter{sigma}{"1B}{"9B}
  \fdrsf@greek@letter{tau}{"1C}{"9C}
  \fdrsf@greek@letter{upsilon}{"1D}{"9D}
  \fdrsf@greek@letter{phi}{"1E}{"9E}
  \fdrsf@greek@letter{chi}{"1F}{"9F}
  \fdrsf@greek@letter{psi}{"20}{"A0}
  \fdrsf@greek@letter{omega}{"21}{"A1}
  \fdrsf@greek@letter{varepsilon}{"22}{"A2}
  \fdrsf@greek@letter{vartheta}{"23}{"A3}
  \fdrsf@greek@letter{varpi}{"19}{"99}
  \fdrsf@greek@letter{varrho}{"1A}{"9A}
  \fdrsf@greek@letter{varsigma}{"26}{"A6}
  \fdrsf@greek@letter{varphi}{"27}{"A7}
```

Some of the following symbols are not really Greek letters, but they are treated in the same way.

```
  \fdrsf@greek@letter{varbeta}{"A8}{"B0}
  \fdrsf@greek@letter{varkappa}{"A9}{"B1}
  \fdrsf@greek@letter{digamma}{"AA}{"B2}
  \fdrsf@greek@letter{backepsilon}{"AB}{"B3}
  \fdrsf@greek@letter{varbackepsilon}{"AC}{"B4}
  \fdrsf@greek@letter{eth}{"AD}{"B5}
```

Hebrew letters are provided by FdSymbol, but we replace them with their Fedra counterparts.

```
  \DeclareMathSymbol{\aleph}{\mathord}{letters}{"BC}
  \DeclareMathSymbol{\beth}{\mathord}{letters}{"BD}
  \DeclareMathSymbol{\gimel}{\mathord}{letters}{"BE}
  \DeclareMathSymbol{\daleth}{\mathord}{letters}{"BF}
\fi
```

7.5 Bullet figures

We provide two commands to access Fedra's bullet figures.

```
\iffdrsf@text
  \newcommand*{\fdrsf@@openbullet}[2]{%
    \ifx#2\end
      \char3#1%
      \let\next\@gobble
    \else
      \char2#1\kern-0.02em%
      \let\next\fdrsf@@openbullet
    \fi
    \next#2%
  }
```

```
\newcommand*{\fdrsf@openbullet}[2]{%
  \ifx#2\end
    \char0#1%
    \let\next\@gobble
  \else%
    \char1#1\kern-0.02em%
    \let\next\fdrsf@@openbullet
  \fi
  \next#2%
}
\DeclareRobustCommand*{\openbullet}[1]{%
  \begingroup
  \usefont{U}{\fdrsf@family-Pi}{m}{n}%
  \edef\@tempa{#1}\expandafter\fdrsf@openbullet\@tempa\end
  \endgroup
}
\newcommand*{\fdrsf@@closedbullet}[2]{%
  \ifx#2\end
    \char7#1%
    \let\next\@gobble
  \else
    \char6#1\kern-0.02em%
    \let\next\fdrsf@@closedbullet
  \fi
  \next#2%
}
\newcommand*{\fdrsf@closedbullet}[2]{%
  \ifx#2\end
    \char4#1%
    \let\next\@gobble
  \else
    \char5#1\kern-0.02em%
    \let\next\fdrsf@@closedbullet
  \fi
  \next#2%
}
\DeclareRobustCommand*{\closedbullet}[1]{%
  \begingroup
  \usefont{U}{\fdrsf@family-Pi}{m}{n}%
  \edef\@tempa{#1}\expandafter\fdrsf@closedbullet\@tempa\end
  \endgroup
}
\fi
```

7.6 Superior and inferior figures

The following command converts numbers to inferior figures.

```
\newcommand*{\fdrsf@@inferior}[1]{%
  \ifx#1\end
    \let\next\relax
  \else
    \char"1#1%
    \let\next\fdrsf@@inferior
  \fi
  \next
}
\newcommand*{\fdrsf@inferior}[1]{%
  \begingroup
  \edef\@tempa{#1}\expandafter\fdrsf@@inferior\@tempa\end
  \endgroup
}
```

`\fdrsf@ensuretext` switches to text mode, if necessary.

```
\newcommand*{\fdrsf@ensuretext}[1]{%
  \ifmmode
    \fdsy@text{#1}%
  \else
    #1%
  \fi
}
```

We provide two commands for generating numerical fractions.

```
\newcommand*{\fdrsf@smallfrac}[2]{%
  \begingroup
  \fontencoding{U}\fontfamily{\fdrsf@family-Extra}\fontshape{n}\selectfont
  \leavevmode
  \setbox\@tempboxa\vbox{%
    \baselineskip\z@skip%
    \lineskip.25ex%
    \lineskiplimit-\maxdimen
    \ialign{\hfil##\hfil\crcr
      \vbox to 1.25ex{\vss\hbox{#1}\vskip.25ex}\crcr
      \leavevmode\leaders\hrule height 0.91ex depth -0.87ex\hfill\crcr
      \vtop to 1ex{\vbox{}\hbox{\fdrsf@inferior{#2}}\vss}\crcr
      \noalign{\vskip-1.2ex}}}%
  \box\@tempboxa
  \endgroup
 }
\DeclareRobustCommand*{\smallfrac}[2]{%
  \fdrsf@ensuretext{\kern0.08em\fdrsf@smallfrac{#1}{#2}\kern0.1em}%
```

```
}
\newcommand*{\fdrsf@slantfrac}[2]{%
  \begingroup
  \fontencoding{U}\fontfamily{\fdrsf@family-Extra}\fontshape{n}\selectfont
  #1\kern-0.05em/\kern0em\fdrsf@inferior{#2}%
  \endgroup
}
\DeclareRobustCommand*{\slantfrac}[2]{%
  \fdrsf@ensuretext{\kern0.08em\fdrsf@slantfrac{#1}{#2}\kern0.1em}%
}
```

7.7 Logos

```
\iffdrsf@text
  \DeclareRobustCommand{\LaTeX}{L\kern-.26em%
    {\sbox\z@ T%
      \vbox to\ht\z@{\hbox{\check@mathfonts
        \fontsize\sf@size\z@
        \math@fontsfalse\selectfont
        A}%
      \vss}%
    }%
    \kern-.05em%
    \TeX
  }
\fi
```

Make the changes take effect. This concludes the main style file.

```
\iffdrsf@text
  \normalfont
\fi
⟨/package⟩
```

8 Microtype configuration file

The microtype configuration. All four families use the same file (cf. section 9).

```
⟨*mtcfg⟩
\SetProtrusion
  [ name = FedraSerifPro-n ]
  {  }
  {
     . = { ,700},
    {,}= { ,500},
     : = { ,500},
     ; = { ,300},
```

```
    ! = { ,100},
    ? = { ,100},
    @ = {50,50},
    ~ = {200,250},
   \% = {50,50},
    * = {200,200},
    + = {250,250},
    ( = {100,   },    ) = {   ,200},
    / = {100,200},
    - = {600,600},
    \textendash       = {450,450},   \textemdash        = {260,260},
    \textquoteleft    = {300,400},   \textquoteright    = {300,400},
    \textquotedblleft = {300,300},   \textquotedblright = {300,300}
  }
\SetProtrusion
  [ name     = FedraSerifPro-OT1,
    load     = FedraSerifPro-n    ]
  { encoding = {OT1},
    family   = {FedraSerifPro-OsF,FedraSerifPro-LF,FedraSerifPro-TOsF,FedraSerifPro-TLF},
    shape    = {n,sc,ssc} }
  {  }
\SetProtrusion
  [ name     = FedraSerifPro-T1,
    load     = FedraSerifPro-n   ]
  { encoding = {T1,LY1},
    family   = {FedraSerifPro-OsF,FedraSerifPro-LF,FedraSerifPro-TOsF,FedraSerifPro-TLF},
    shape    = {n,sc,ssc} }
  {
    _ = {100,100},
    \textbackslash    = {100,200},
    \quotesinglbase   = {400,400},   \quotedblbase      = {400,400},
    \guilsinglleft    = {400,300},   \guilsinglright    = {300,400},
    \guillemotleft    = {200,200},   \guillemotright    = {200,200},
    \textexclamdown   = {100,   },   \textquestiondown  = {100,   },
    \textbraceleft    = {400,200},   \textbraceright    = {200,400},
    \textless         = {200,100},   \textgreater       = {100,200}
  }
\SetProtrusion
  [ name     = FedraSerifPro-QX,
    load     = FedraSerifPro-n   ]
  { encoding = {QX},
    family   = {FedraSerifPro-OsF,FedraSerifPro-LF,FedraSerifPro-TOsF,FedraSerifPro-TLF},
    shape    = {n,sc,ssc} }
  {
```

```
    _ = {100,100},
    \textbackslash    = {100,200},   \textellipsis      = {100,200},
    \textperiodcentered = {500,700}, \quotedblbase      = {400,400},
    \textquotedbl     = {400,400},   \textquotesingle   = {400,400},
    \guillemotleft    = {200,200},   \guillemotright    = {200,200},
    \textexclamdown   = {100,   },   \textquestiondown  = {100,   },
    \textbraceleft    = {400,200},   \textbraceright    = {200,400},
    \textless         = {200,100},   \textgreater       = {100,200}
  }
\SetProtrusion
  [ name     = FedraSerifPro-T5,
    load     = FedraSerifPro-n   ]
  { encoding = {T5},
    family   = {FedraSerifPro-OsF,FedraSerifPro-LF,FedraSerifPro-TOsF,FedraSerifPro-TLF},
    shape    = {n,sc,ssc} }
  {
    _ = {100,100},
    \textbackslash    = {100,200},
    \quotesinglbase   = {400,400},   \quotedblbase      = {400,400},
    \guilsinglleft    = {400,300},   \guilsinglright    = {300,400},
    \guillemotleft    = {200,200},   \guillemotright    = {200,200},
    \textbraceleft    = {400,200},   \textbraceright    = {200,400},
    \textless         = {200,100},   \textgreater       = {100,200}
  }
\SetProtrusion
 [ name     = FedraSerifPro-it ]
 {  }
 {
    . = { ,500},
   {,}= { ,500},
    : = { ,300},
    ; = { ,300},
    & = {50,50},
   \% = {100, },
    * = {200,200},
    + = {150,200},
    @ = {50,50},
    ~ = {150,150},
    ( = {200, },    ) = {  ,200},
    / = {100,200},
    - = {630,630},
    \textendash       = {200,200},   \textemdash        = {150,150},
    \textquoteleft    = {400,200},   \textquoteright    = {400,200},
    \textquotedblleft = {400,200},   \textquotedblright = {400,200}
  }
```

```
\SetProtrusion
  [ name     = FedraSerifPro-OT1-it,
    load     = FedraSerifPro-it      ]
  { encoding = OT1,
    family   = {FedraSerifPro-OsF,FedraSerifPro-LF,FedraSerifPro-TOsF,FedraSerifPro-TLF},
    shape    = {it,scit,sscit,sw,scsw,sscsw} }
  {  }
\SetProtrusion
   [ name     = FedraSerifPro-T1-it,
     load     = FedraSerifPro-it     ]
   { encoding = {T1,LY1},
     family   = {FedraSerifPro-OsF,FedraSerifPro-LF,FedraSerifPro-TOsF,FedraSerifPro-TLF},
     shape    = {it,sl,sw,scit,scsl,scsw} }
   {
     _ = {  ,100},
     \textbackslash    = {100,200},
     \quotesinglbase   = {300,700},   \quotedblbase      = {400,500},
     \guilsinglleft    = {400,400},   \guilsinglright    = {300,500},
     \guillemotleft    = {300,300},   \guillemotright    = {300,300},
     \textexclamdown   = {100,   },   \textquestiondown  = {200,   },
     \textbraceleft    = {200,100},   \textbraceright    = {200,200},
   }
\SetProtrusion
   [ name     = FedraSerifPro-QX-it,
     load     = FedraSerifPro-it     ]
   { encoding = {QX},
     family   = {FedraSerifPro-OsF,FedraSerifPro-LF,FedraSerifPro-TOsF,FedraSerifPro-TLF},
     shape    = {it,sl,sw,scit,scsl,scsw} }
   {
     _ = {  ,100},
     \textbackslash    = {100,200},   \textellipsis      = {100,200},
     \textperiodcentered = {500,700}, \quotedblbase      = {400,500},
     \textquotedbl     = {400,400},   \textquotesingle   = {400,400},
     \guillemotleft    = {300,300},   \guillemotright    = {300,300},
     \textexclamdown   = {100,   },   \textquestiondown  = {200,   },
     \textbraceleft    = {200,100},   \textbraceright    = {200,200},
   }
\SetProtrusion
   [ name     = FedraSerifPro-T5-it,
     load     = FedraSerifPro-it     ]
   { encoding = {T5},
     family   = {FedraSerifPro-OsF,FedraSerifPro-LF,FedraSerifPro-TOsF,FedraSerifPro-TLF},
     shape    = {it,sl,sw,scit,scsl,scsw} }
   {
```

```
    _ = {  ,100},
    \textbackslash    = {100,200},
    \quotesinglbase   = {300,700},   \quotedblbase      = {400,500},
    \guilsinglleft    = {400,400},   \guilsinglright    = {300,500},
    \guillemotleft    = {300,300},   \guillemotright    = {300,300},
    \textbraceleft    = {200,100},   \textbraceright    = {200,200},
  }
⟨/mtcfg⟩
```

9 Font definition support package

As all font definitions look the same, we introduce macros to ease the configuration. These macros are stored in the file `fedraserif-fd.sty`, which is included by every FD file. Since `fedraserif-fd.sty` will be included several times and we do not know in which context the code is executed, we have to define all non-private commands as globals and avoid all `\preambleonly` commands.

We add a guard so that this file is executed only once even if it is included multiple times.

```
⟨*fontdef⟩
\ifx\fdrsf@variant@normal\@undefined\else\endinput\fi
```

We distinguish between being loaded directly or via `\usepackage` in the preamble by checking `\@nodocument`.

```
\ifx\@nodocument\relax\else
  \NeedsTeXFormat{LaTeX2e}
  \RequirePackage{xkeyval}
\fi
```

Reset `\escapechar` (which is set to −1 in FD files) to make `\newcommand` work. The additional group does not harm; we have to make the important commands global anyway.

```
\ifx\@nodocument\relax
  \begingroup
  \escapechar`\\
\fi
```

The macro to make commands global is taken from the otfontdef package.

```
\newcommand*\fdrsf@makeglobal[1]{%
  \global\expandafter\let\csname #1\expandafter\endcsname
  \csname #1\endcsname
}
```

9.1 Options

These are the default values if it is impossible to process options.

```
\newcommand\fdrsf@variant@normal{A}
\newcommand\fdrsf@variant@large{A}
\newcommand\fdrsf@mweight@normal{Book}
\newcommand\fdrsf@mweight@small{Book}
\newcommand\fdrsf@bweight@normal{Medium}
\newcommand\fdrsf@bweight@small{Medium}
\newcommand\fdrsf@scale{1.0}
\ifx\@nodocument\relax\else
  \newcommand*\fdrsf@fd@choicekey[3]{%
    \define@choicekey*{fedraserif-fd.sty}{#1}[\@tempa\@tempb]{#2}{#3}%
  }
  \fdrsf@fd@choicekey{variant}{a,b,auto}{%
    \ifcase\@tempb\relax
      \renewcommand\fdrsf@variant@normal{A}
      \renewcommand\fdrsf@variant@large{A}
    \or
      \renewcommand\fdrsf@variant@normal{B}
      \renewcommand\fdrsf@variant@large{B}
    \or
      \renewcommand\fdrsf@variant@normal{A}
      \renewcommand\fdrsf@variant@large{B}
    \fi
  }
  \fdrsf@fd@choicekey{normalweight}{book,demi,auto}{%
    \ifcase\@tempb\relax
      \renewcommand\fdrsf@mweight@normal{Book}
      \renewcommand\fdrsf@mweight@small{Book}
    \or
      \renewcommand\fdrsf@mweight@normal{Demi}
      \renewcommand\fdrsf@mweight@small{Demi}
    \or
      \renewcommand\fdrsf@mweight@normal{Book}
      \renewcommand\fdrsf@mweight@small{Demi}
    \fi
  }
  \fdrsf@fd@choicekey{boldweight}{medium,bold,auto}{%
    \ifcase\@tempb\relax
      \renewcommand\fdrsf@bweight@normal{Medium}
      \renewcommand\fdrsf@bweight@small{Medium}
    \or
      \renewcommand\fdrsf@bweight@normal{Bold}
      \renewcommand\fdrsf@bweight@small{Bold}
```

```
    \or
      \renewcommand\fdrsf@bweight@normal{Medium}
      \renewcommand\fdrsf@bweight@small{Bold}
    \fi
  }
  \define@key{fedraserif-fd.sty}{scale}[0.9]{\renewcommand*\fdrsf@scale{#1}}
  \ProcessOptionsX\relax
\fi
\fdrsf@makeglobal{fdrsf@variant@normal}
\fdrsf@makeglobal{fdrsf@variant@large}
\fdrsf@makeglobal{fdrsf@mweight@normal}
\fdrsf@makeglobal{fdrsf@mweight@small}
\fdrsf@makeglobal{fdrsf@bweight@normal}
\fdrsf@makeglobal{fdrsf@bweight@small}
\fdrsf@makeglobal{fdrsf@scale}
```

9.2 Font configuration

We define commands to write to and read from the configuration database.

```
\newcommand*{\fdrsf@addconfig}[4][]{%
  \@for\@tempa:=#3\do{%
    \expandafter
    \gdef\csname fdrsf@config@#2@#1@\@tempa\endcsname{#4}%
  }%
}
\newcommand*{\fdrsf@useconfig}[3]{%
 \@ifundefined{fdrsf@config@#2@#1@#3}{%
   \@ifundefined{fdrsf@config@#2@@#3}{}%
     {\csname fdrsf@config@#2@@#3\endcsname}%
  }{\csname fdrsf@config@#2@#1@#3\endcsname}%
}
\fdrsf@makeglobal{fdrsf@useconfig}
```

Now we can build up the configuration database.

```
\fdrsf@addconfig{weight/normal}{m}{\fdrsf@mweight@normal}
\fdrsf@addconfig{weight/small}{m}{\fdrsf@mweight@small}
\fdrsf@addconfig{weight/normal}{md}{Demi}
\fdrsf@addconfig{weight/small}{md}{Demi}
\fdrsf@addconfig{weight/normal}{b}{\fdrsf@bweight@normal}
\fdrsf@addconfig{weight/small}{b}{\fdrsf@bweight@small}
\fdrsf@addconfig{weight/small}{ub}{Bold}
\fdrsf@addconfig{weight/normal}{ub}{Bold}
\fdrsf@addconfig{subs/series}{sb,bx}{b}
\fdrsf@addconfig{italic}{it,scit,sscit,sw,scsw,sscsw}{Italic}
\fdrsf@addconfig[OML]{italic}{n}{French}
```

```
\fdrsf@addconfig[OML]{italic}{it}{Mixed}
\fdrsf@addconfig{shape}{sc,scit}{-sc}
\fdrsf@addconfig{shape}{ssc,sscit}{-ssc}
\fdrsf@addconfig{shape}{sw}{-sw}
\fdrsf@addconfig{shape}{scsw}{-scsw}
\fdrsf@addconfig{shape}{sscsw}{-sscsw}
\fdrsf@addconfig{subs/shape}{sl}{it}
\fdrsf@addconfig{subs/shape}{scsl}{scit}
\fdrsf@addconfig{subs/shape}{sscsl}{sscit}
```

This is the main macro to declare a single font shape.

```
\newcommand*\DeclareFedraSerifShape[4]{%
  \edef\@@tempa{\fdrsf@useconfig{#1}{subs/series}{#3}}%
  \edef\@@tempb{\fdrsf@useconfig{#1}{subs/shape}{#4}}%
  \ifx\@@tempa\empty\ifx\@@tempb\empty
    \DeclareFontShape{#1}{FedraSerifPro-#2}{#3}{#4}{%
      <-7.1>s*[\fdrsf@scale]%
        FSerPro\fdrsf@variant@normal-%
        \fdrsf@useconfig{#1}{weight/small}{#3}%
        \fdrsf@useconfig{#1}{italic}{#4}-#2%
        \fdrsf@useconfig{#1}{shape}{#4}-#1%
      <7.1-12.1>s*[\fdrsf@scale]%
        FSerPro\fdrsf@variant@normal-%
        \fdrsf@useconfig{#1}{weight/normal}{#3}%
        \fdrsf@useconfig{#1}{italic}{#4}-#2%
        \fdrsf@useconfig{#1}{shape}{#4}-#1%
      <12.1->s*[\fdrsf@scale]%
        FSerPro\fdrsf@variant@large-%
        \fdrsf@useconfig{#1}{weight/normal}{#3}%
        \fdrsf@useconfig{#1}{italic}{#4}-#2%
        \fdrsf@useconfig{#1}{shape}{#4}-#1%
    }{}%
  \else
    \DeclareFontShape{#1}{FedraSerifPro-#2}{#3}{#4}{%
      <->ssub* FedraSerifPro-#2/#3/\@@tempb
    }{}%
  \fi\else
    \DeclareFontShape{#1}{FedraSerifPro-#2}{#3}{#4}{%
      <->ssub* FedraSerifPro-#2/\@@tempa/#4%
    }{}%
  \fi
}
\fdrsf@makeglobal{DeclareFedraSerifShape}
```

Finally, we provide commands to declare a complete family.

```
\newcommand*\DeclareFedraSerifFamily[4]{%
```

```
  \DeclareFontFamily{#1}{FedraSerifPro-#2}{}%
  \@for\fdrsf@series:=#3\do{%
    \@for\fdrsf@shape:=#4\do{%
      \DeclareFedraSerifShape{#1}{#2}{\fdrsf@series}{\fdrsf@shape}%
    }%
  }%
}
\fdrsf@makeglobal{DeclareFedraSerifFamily}
\newcommand*\DeclareFedraSerifLargeFamily[2]{%
  \DeclareFedraSerifFamily{#1}{#2}{m,md,sb,b,bx,ub}%
    {n,it,sc,ssc,scit,sscit,sw,scsw,sscsw,sl,scsl,sscsl}%
}
\fdrsf@makeglobal{DeclareFedraSerifLargeFamily}
\newcommand*\DeclareFedraSerifSmallFamily[2]{%
  \DeclareFedraSerifFamily{#1}{#2}{m,md,sb,b,bx,ub}{n,it,sl}%
}
\fdrsf@makeglobal{DeclareFedraSerifSmallFamily}
\newcommand*\DeclareFedraSerifTinyFamily[2]{%
  \DeclareFedraSerifFamily{#1}{#2}{m,md,sb,b,bx,ub}{n}%
}
\fdrsf@makeglobal{DeclareFedraSerifTinyFamily}
\newcommand*\DeclareFedraSerifMathFamily[1]{%
  \def\@tempa{#1}%
  \def\@tempb{TOsF}%
  \DeclareFontFamily{OML}{FedraSerifPro-#1}{\skewchar\font=127}%
  \@for\fdrsf@series:=m,md,sb,b,bx,ub\do{%
    \@for\fdrsf@shape:=n,it\do{%
      \ifx\@tempa\@tempb
        \DeclareFedraSerifShape{OML}{TOsF}{\fdrsf@series}{\fdrsf@shape}%
      \else
        \DeclareFontShape{OML}{FedraSerifPro-#1}{\fdrsf@series}{\fdrsf@shape}{%
          <->ssub* FedraSerifPro-TOsF/\fdrsf@series/\fdrsf@shape
        }{}%
      \fi
    }%
  }%
}
\fdrsf@makeglobal{DeclareFedraSerifMathFamily}
```

We define font family aliases so that we can place all configurations for the FedraSerifPro family variants into one microtype file: `mt-FedraSerifPro.cfg`. We use microtype's hook if microtype has not been loaded yet (which should be the case); otherwise we can execute the alias definitions directly.

```
\gdef\fdrsf@MicroType@Aliases{%
  \DeclareMicrotypeAlias{FedraSerifPro-LF}{FedraSerifPro}%
```

```
  \DeclareMicrotypeAlias{FedraSerifPro-OsF}{FedraSerifPro}%
  \DeclareMicrotypeAlias{FedraSerifPro-TLF}{FedraSerifPro}%
  \DeclareMicrotypeAlias{FedraSerifPro-TOsF}{FedraSerifPro}%
}
\@ifundefined{Microtype@Hook}{%
  \global\let\Microtype@Hook\fdrsf@MicroType@Aliases
}{%
  \g@addto@macro\Microtype@Hook{\fdrsf@Microtype@Aliases}%
}%
\@ifundefined{DeclareMicroTypeAlias}{}{\fdrsf@MicroType@Aliases}%
\ifx\@nodocument\relax
  \endgroup
\fi
⟨/fontdef⟩
```

10 Font definition files

Using the above macros, the various FD files become simple two-liners.

```
⟨*fd⟩
\input{fedraserif-fd.sty}
⟨ot1 & lf⟩\DeclareFedraSerifLargeFamily{OT1}{LF}
⟨ot1 & osf⟩\DeclareFedraSerifLargeFamily{OT1}{OsF}
⟨ot1 & tlf⟩\DeclareFedraSerifLargeFamily{OT1}{TLF}
⟨ot1 & tosf⟩\DeclareFedraSerifLargeFamily{OT1}{TOsF}
⟨t1 & lf⟩\DeclareFedraSerifLargeFamily{T1}{LF}
⟨t1 & osf⟩\DeclareFedraSerifLargeFamily{T1}{OsF}
⟨t1 & tlf⟩\DeclareFedraSerifLargeFamily{T1}{TLF}
⟨t1 & tosf⟩\DeclareFedraSerifLargeFamily{T1}{TOsF}
⟨ts1 & lf⟩\DeclareFedraSerifLargeFamily{TS1}{LF}
⟨ts1 & osf⟩\DeclareFedraSerifLargeFamily{TS1}{OsF}
⟨ts1 & tlf⟩\DeclareFedraSerifLargeFamily{TS1}{TLF}
⟨ts1 & tosf⟩\DeclareFedraSerifLargeFamily{TS1}{TOsF}
⟨ly1 & lf⟩\DeclareFedraSerifLargeFamily{LY1}{LF}
⟨ly1 & osf⟩\DeclareFedraSerifLargeFamily{LY1}{OsF}
⟨ly1 & tlf⟩\DeclareFedraSerifLargeFamily{LY1}{TLF}
⟨ly1 & tosf⟩\DeclareFedraSerifLargeFamily{LY1}{TOsF}
⟨qx & lf⟩\DeclareFedraSerifLargeFamily{QX}{LF}
⟨qx & osf⟩\DeclareFedraSerifLargeFamily{QX}{OsF}
⟨qx & tlf⟩\DeclareFedraSerifLargeFamily{QX}{TLF}
⟨qx & tosf⟩\DeclareFedraSerifLargeFamily{QX}{TOsF}
⟨t5 & lf⟩\DeclareFedraSerifLargeFamily{T5}{LF}
⟨t5 & osf⟩\DeclareFedraSerifLargeFamily{T5}{OsF}
⟨t5 & tlf⟩\DeclareFedraSerifLargeFamily{T5}{TLF}
⟨t5 & tosf⟩\DeclareFedraSerifLargeFamily{T5}{TOsF}
```

```
⟨oml & lf⟩\DeclareFedraSerifMathFamily{LF}
⟨oml & osf⟩\DeclareFedraSerifMathFamily{OsF}
⟨oml & tlf⟩\DeclareFedraSerifMathFamily{TLF}
⟨oml & tosf⟩\DeclareFedraSerifMathFamily{TOsF}
⟨u & extra⟩\DeclareFedraSerifSmallFamily{U}{Extra}
⟨u & orn⟩\DeclareFedraSerifTinyFamily{U}{Pi}
⟨u & bb⟩\DeclareFedraSerifFamily{U}{BB}{m}{n}
⟨/fd⟩
```