The fontspec test suite

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Preamble

The examples shown in the remainder of the document are generated directly from the code shown alongside. As well as being good minimal examples, these tests are useful to ensure that changes to fontspec don't affect old behaviour.

When the test suite is run, the new output is compared pixel by pixel with that shown here and warnings produced if the outputs are not identical (within a small tolerance to account for rounding errors).

Tests with a name that begins with 'X' are processed with xelatex only; 'L' with lualatex; and 'F' with both. In the latter case, the output from both engines is compared with each other, ensuring that the package is consistent cross-platform.

To generate tests yourself, write a new file in the testsuite/ folder with filename

$\langle F,L,X\rangle\langle num\rangle\langle letter\rangle$.ltx

according to the naming scheme above and the following numbering scheme. If you are writing a new test entirely, increment the $\langle num\rangle$; if you are writing a variation on an old test, increment the $\langle letter\rangle$. No need to be too fussy, though.

After writing the new test, run

        make initest

This will generate the reference output (*.safe.pdf) from which to check all future tests. After any changes have been made to fontspec, the entire test suite is compiled with

        make check

If you want to run just a single test, use

        make $\langle testname\rangle$

(but this syntax *may* be fragile and need to be changed in the future).

1 Test F-alias-feature-option

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}

\aliasfontfeature{Numbers}{123}
\aliasfontfeatureoption{Numbers}{Lining}{UC}
\aliasfontfeatureoption{Numbers}{OldStyle}{LC}

\fontspec[123=UC]{TeX Gyre Pagella}
Numbers: 12345

\fontspec[123=LC]{TeX Gyre Pagella}
Numbers: 12345

\end{document}
```

Numbers: 12345

Numbers: 12345

2 Test F-alias-feature

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}

\aliasfontfeature{ItalicFeatures}{IF}
\fontspec[IF = {Colour=FF0000}]{Times}
Roman letters \itshape and red italics

\end{document}
```

Roman letters *and red italics*

3 Test F-autofake

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}
\Large
\def\text{ABC \textit{ABC} \textbf{ABC}
        \textbf{\textit{ABC}}\\}
\fontspec{Inconsolata}\text
\fontspec[AutoFakeSlant]{Inconsolata}\text
\fontspec[AutoFakeBold]{Inconsolata}\text
\fontspec[AutoFakeSlant,AutoFakeBold]
        {Inconsolata}\text
\fontspec[AutoFakeSlant=0.4]{Inconsolata}\text
\fontspec[AutoFakeBold=5]{Inconsolata}\text
\fontspec[AutoFakeSlant=0.4,AutoFakeBold=5]
        {Inconsolata}\text
\end{document}
```

ABC ABC ABC ABC
ABC *ABC* ABC ABC
ABC ABC ABC ABC
ABC *ABC* ABC *ABC*
ABC *ABC* ABC ABC
ABC ABC ABC ABC
ABC *ABC* ABC *ABC*

4 Test F-autoscaling

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}
\Large
\setmainfont{TeX Gyre Termes} aA
\fontspec{TeX Gyre Heros}  aA
\fontspec{TeX Gyre Cursor} aA
\fontspec[Scale=MatchUppercase]{TeX Gyre Heros}  aA
\fontspec[Scale=MatchUppercase]{TeX Gyre Cursor} aA
\fontspec[Scale=MatchLowercase]{TeX Gyre Heros}  aA
\fontspec[Scale=MatchLowercase]{TeX Gyre Cursor} aA
\end{document}
```

aA **aA** aA **aA** aA **aA** aA

5 Test F-charactervariant

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}
\Large
\fontspec{EB Garamond Italic} very
\fontspec[CharacterVariant=5]{EB Garamond Italic} very
\fontspec[CharacterVariant=5:0]{EB Garamond Italic} very
\fontspec[CharacterVariant=5:1]{EB Garamond Italic} very
\fontspec[CharacterVariant=5:2]{EB Garamond Italic} very
\fontspec[CharacterVariant=5:3]{EB Garamond Italic} very
\end{document}
```

very very very very very very

6 Test F-colour-basic

```
\documentclass{testsuite}
\usepackage{fontspec}
\usepackage{xcolor}
\begin{document}
{\fontspec[Color=5500FF]{Verdana}Test}

{\fontspec[Color=red]{Verdana}Test} vs
{\color{red}\fontspec{Verdana}Test}

\definecolor{Foo}{rgb}{0.3,0.4,0.5}
{\fontspec[Color=Foo]{Verdana}Test} vs
{\color{Foo}\fontspec{Verdana}Test}
\end{document}
```

Test

Test vs Test

Test vs Test

7 Test F-colour-clash

```
\documentclass{testsuite}
\usepackage{fontspec}
\usepackage{xcolor}
\begin{document}
\fontspec{Verdana}
Black
\color{red}
Red

\fontspec[Color=red]{Verdana}
\color{blue}
Red?
\end{document}
```

Black Red

Red?

8   Test F-colour-opacity

```
\documentclass{testsuite}
\usepackage{fontspec}
\usepackage{xcolor}
\begin{document}
\fontspec[Color=red]{Verdana}
Test

\fontspec[
    Color=red,Opacity=0.5
      ]{Verdana}
Test

\fontspec[
    Color=00FF00,Opacity=0.5
      ]{Verdana}
Test
\end{document}
```

Test

Test

Test

9   Test F-feat-numbers

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}

\fontspec[Numbers={Proportional,OldStyle}]
        {TeX Gyre Adventor}
`In 1842, 999 people sailed 97 miles in
 13 boats. In 1923, 111 people sailed 54
 miles in 56 boats.'            \bigskip

{\addfontfeatures{Numbers={Monospaced,Lining}}
\begin{tabular}{@{} cccc @{}}
        Year & People & Miles & Boats \\
  \hline 1842 & 999   & 75   & 13   \\
        1923 & 111   & 54   & 56
\end{tabular}}

\end{document}
```

`In 1842, 999 people sailed 97 miles in 13 boats. In 1923, 111 people sailed 54 miles in 56 boats.'

Year	People	Miles	Boats
1842	999	75	13
1923	111	54	56

10   Test F-font-selection-bold

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}
\Large
  \fontspec[BoldFont={Kurier Heavy}]
                  {Kurier Bold}
            Kurier Bold          \\
  {\itshape    Kurier Bold Italic} \\
  {\bfseries        Kurier Heavy      } \\
  {\bfseries\itshape Kurier Heavy Italic} \\
\end{document}
```

Kurier Bold
Kurier Bold Italic
Kurier Heavy
Kurier Heavy Italic

11 Test F-hyphenchar

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}
\def\text{\fbox{\parbox{1.55cm}{%
  EXAMPLE HYPHENATION%
}}\hfill}

\fontspec{TeX Gyre Termes}
\addfontfeature{HyphenChar=None}
\text
\addfontfeature{HyphenChar={+}}
\text
\addfontfeature{HyphenChar={"2A}}
\text
\end{document}
```
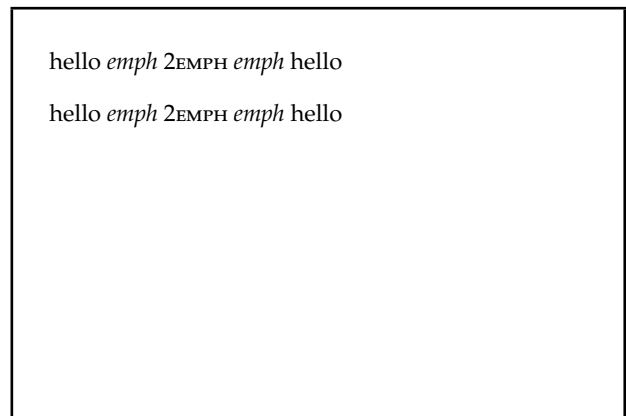
EXAMPLE HYPHENATION | EX+ AMPLE HY+ PHEN+ ATION | EX* AMPLE HY* PHEN* ATION
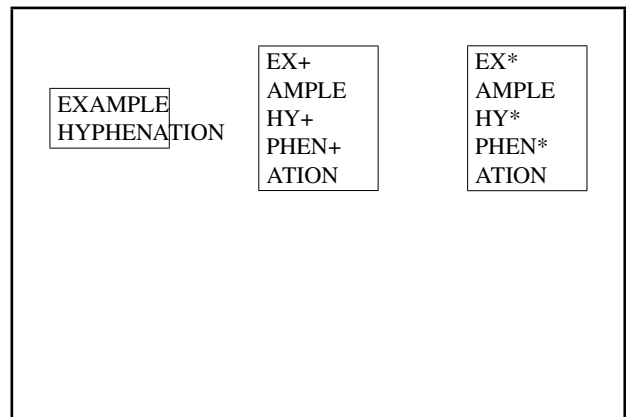
12 Test F-inner-emph

```
\documentclass{testsuite}
\usepackage{fontspec}
\renewcommand\eminnershape{\upshape\scshape}
\begin{document}
\setmainfont[
    ItalicFont=texgyrepagella-italic.otf
  ]{texgyrepagella-regular.otf}
hello \emph{emph \emph{2emph} emph} hello

hello {\em emph {\em 2emph} emph} hello
\end{document}
```

hello *emph* 2ᴇᴍᴘʜ *emph* hello

hello *emph* 2ᴇᴍᴘʜ *emph* hello

13 Test F-loading-basic

```
\documentclass{testsuite}
\usepackage{fontspec}
\setmainfont[Ligatures=TeX]{TeX Gyre Pagella}
\begin{document}
Hello, moon!\par
\textsc{small caps}\par
`--Punctuation---'

\def\itdefault{sl}
\setmainfont{Verdana}
Testing \textsl{slanted} edge case.
\end{document}
```

Hello, moon!

ꜱᴍᴀʟʟ ᴄᴀᴘꜱ

'–Punctuation—'

Testing *slanted* edge case.
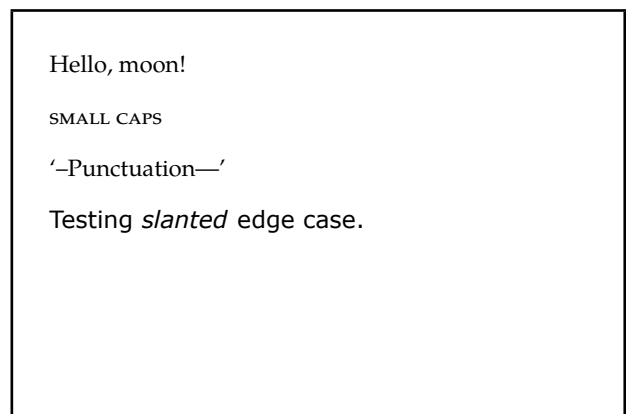
14   Test F-loading-external-underdefined

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}
% behaviour fixed Sept 2011; external
% fonts should not search for variants
% if they're not specified.

\setmainfont
  [ExternalLocation,
   SlantedFont={lmroman10-italic}]
  {lmroman10-regular}

test \textsl{hello}

\setmainfont
  [ExternalLocation,
   BoldFont={lmroman10-bold}]
  {lmroman10-regular}

test \textbf{hello}

\end{document}
```

test *hello*

test **hello**

15   Test F-loading-nested-scfeat

```
\documentclass{testsuite}
\usepackage{fontspec}
\usepackage{xcolor}
\begin{document}
\fontspec[
    UprightFeatures={Color = 220022,
        SmallCapsFeatures = {Color=115511}},
     ItalicFeatures={Color = 2244FF,
        SmallCapsFeatures = {Color=112299}},
       BoldFeatures={Color = FF4422,
        SmallCapsFeatures = {Color=992211}},
 BoldItalicFeatures={Color = 888844,
        SmallCapsFeatures = {Color=444422}},
       ]{TeX Gyre Termes}
Upright {\scshape Small Caps}\\
\itshape Italic {\scshape Italic Small Caps}\\
\upshape\bfseries Bold {\scshape Bold Small Caps}\\
\itshape Bold Italic {\scshape Bold Italic Small Caps}
\end{document}
```

Upright Small Caps
Italic Italic Small Caps
Bold Bold Small Caps
Bold Italic Bold Italic Small Caps

16 Test F-loading-scale

```
\documentclass{testsuite}
\usepackage{fontspec}
\setmainfont[Color=FF0000]{Georgia}
\def\1{abcABC}\def\2{XYZxyz}
\def\test{\1\textsf{\2}\1\\}
\begin{document}
\setsansfont{Verdana}
\test
\setsansfont[Scale=0.5]{Verdana}
\test
\setsansfont[Scale=MatchLowercase]{Verdana}
\test
\setsansfont[Scale=MatchUppercase]{Verdana}
\test
\end{document}
```

17 Test F-loading-sizefeatures

```
\documentclass{testsuite}
\usepackage{fontspec}
\usepackage{xcolor}
\begin{document}
   \fontspec[ SizeFeatures={
       {Size={-8}, Font=TeX Gyre Bonum Italic, Color=AA0000},
       {Size={8-14}, Color=00AA00},
       {Size={14-}, Color=0000AA}} ]{TeX Gyre Chorus}

   {\scriptsize Small\par} Normal size\par {\Large Large\par}
\end{document}
```

18 Test F-optical-sizes

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}
\fontspec{Latin Modern Roman}
Automatic optical size\par
\scalebox{0.4}{\Huge
Automatic optical size}
\end{document}
```

19 Test F-ot-cvxx-2

```
\documentclass{testsuite}
\usepackage{fontspec}
\usepackage{xcolor}
\begin{document}
\huge
\fontspec{EB Garamond Italic}
\fontspec[CharacterVariant={4}]{EB Garamond Italic}
\fontspec[CharacterVariant={5:2}]{EB Garamond Italic}
\fontspec[CharacterVariant={4,5:2}]{EB Garamond Italic}
\end{document}
```

\& violet
\& violet
\& violet
\& violet \\

20 Test F-ot-cvxx

```
\documentclass{testsuite}
\usepackage{fontspec}
\usepackage{xcolor}
\begin{document}
\huge
\fontspec{EB Garamond Italic}
\fontspec[CharacterVariant=5]{EB Garamond Italic}
\fontspec[CharacterVariant=5:0]{EB Garamond Italic}
\fontspec[CharacterVariant=5:1]{EB Garamond Italic}
\fontspec[CharacterVariant=5:2]{EB Garamond Italic}
\fontspec[CharacterVariant=5:3]{EB Garamond Italic}
\end{document}
```

very
very
very
very \\

21 Test F-ot-ss06

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}
\Huge
\fontspec{Junicode}
Before
\addfontfeature{StylisticSet=6}
After
\end{document}
```

Before After

22   Test F-programmers-interface

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}
\ExplSyntaxOn
LM~is
\fontspec_if_fontspec_font:TF {\ERROR}{~not~a~fontspec~font.\par}

\setmainfont{TeX~ Gyre~ Pagella}
TeX Gyre Pagella
\fontspec_if_fontspec_font:TF {~is~a~fontspec~font}{\ERROR}

\fontspec_if_opentype:TF {,~is~OpenType}{\ERROR}

\fontspec_if_feature:nTF {smcp}{,~has~small~caps}{\ERROR}

\fontspec_if_current_script:nTF {latn}{,~is~using~Latin~script}{\ERROR}

\fontspec_if_script:nTF {cyrl}{,~also~has~Cyrillic}{\ERROR}

\fontspec_if_current_language:nTF {DFLT}{,~is~using~`default'~language}{\ERROR}

\fontspec_if_language:nnTF {latn}{ROM}{,~also~has~Romanian}{\ERROR}

\end{document}
```

LM is not a fontspec font.

TeXGyrePagella is a fontspec font, is OpenType, has small caps, is using Latin script, also has Cyrillic, is using `default' language, also has Romanian

23   Test F-verb-fancyvrb

```
\documentclass[twocolumn]{testsuite}
\usepackage{fontspec,fancyvrb}
\begin{document}
\begin{Verbatim}
testing spaces
\end{Verbatim}
\begin{Verbatim*}
testing spaces
\end{Verbatim*}
\end{document}
```

```
testing spaces

testing␣spaces
```

24   Test F-verb-listings

```
\documentclass[twocolumn]{testsuite}
\usepackage{fontspec,listings}
\begin{document}
\begin{lstlisting}
testing spaces
\end{lstlisting}
\begin{lstlisting}[showspaces]
testing spaces
\end{lstlisting}
\end{document}
```

```
testing  spaces

testing␣spaces
```

25   Test F-verb-moreverb

```
\documentclass[twocolumn]{testsuite}
\usepackage{fontspec,moreverb}
\begin{document}
\setmainfont{texgyretermes-regular.otf}
\setmonofont{Inconsolata.otf}
\begin{listing}{7}
testing spaces
\end{listing}
\begin{listing*}{7}
testing spaces
\end{listing*}
\end{document}
```

```
7    testing spaces


7    testing␣spaces
```

26   Test F-verb-plain

```
\documentclass[twocolumn]{testsuite}
\usepackage{fontspec}
\begin{document}
\setmainfont{texgyretermes-regular.otf}
\setmonofont{Inconsolata.otf}
\verb|testing spaces|\\
\verb*|testing spaces|
\begin{verbatim}
testing spaces
\end{verbatim}
\begin{verbatim*}
testing spaces
\end{verbatim*}
\newpage
\setmonofont{Courier New}
\verb|testing spaces|\\
\verb*|testing spaces|
\begin{verbatim}
testing spaces
\end{verbatim}
\begin{verbatim*}
testing spaces
\end{verbatim*}
\end{document}
```

```
testing spaces           testing spaces
testing␣spaces           testing␣spaces

testing spaces           testing spaces


testing␣spaces           testing␣spaces
```

27 Test F-verb-verbatim

```
\documentclass[twocolumn]{testsuite}
\usepackage{fontspec,verbatim}
\begin{document}
\setmainfont{texgyretermes-regular.otf}
\setmonofont{Inconsolata.otf}
\verb|testing spaces|\\
\verb*|testing spaces|
\begin{verbatim}
testing spaces
\end{verbatim}
\begin{verbatim*}
testing spaces
\end{verbatim*}
\newpage
\setmonofont{Courier New}
\verb|testing spaces|\\
\verb*|testing spaces|
\begin{verbatim}
testing spaces
\end{verbatim}
\begin{verbatim*}
testing spaces
\end{verbatim*}
\end{document}
```

```
testing spaces          testing spaces
testing␣spaces          testing␣spaces

testing spaces          testing spaces

testing␣spaces          testing␣spaces
```

28 Test F-wordspace

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}
\fontspec{TeX Gyre Termes}
Some text for our example to take
up some space, and to demonstrate
the default interword space.
\bigskip

\addfontfeature{ WordSpace = 0.3 }
Some text for our example to take
up some space, and to demonstrate
the default interword space.
\bigskip

\large
Some text for our example to take
up some space, and to demonstrate
the default interword space.
\end{document}
```
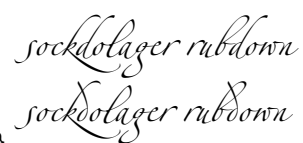
Some text for our example to take up some space, and to demonstrate the default interword space.

Some text for our example to take up some space, and to demonstrate the default interword space.

Some text for our example to take up some space, and to demonstrate the default interword space.

29 Test X-new-font-feature

```
\documentclass{testsuite}
\usepackage{fontspec}
\begin{document}
\newfontfeature{AvoidD}{Special=Avoid d-collisions}
\newfontfeature{NoAvoidD}{Special=!Avoid d-collisions}
\fontspec[AvoidD,Variant=1]{Zapfino}
 sockdolager rubdown                    \\
\fontspec[NoAvoidD,Variant=1]{Zapfino}
 sockdolager rubdown
\end{document}
```