

The xepersian-hm package

Fixing kashida in xepersian

User Documentation

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Kashida feature in `xepersian` has problems with some fonts such as HM Series available at <https://dma8hm1334.bitbucket.io> and X Series 2 available at http://wiki.irmug.com/index.php/X_Series_2. The `xepersian-hm` package fixes these problems.

The files `kashida-glyph-example.tex` and `kashida-hrule-example.tex` in the directory `texmf-dist/doc/xelatex/xepersian-hm/` can be used as simple examples of the usage of the package.

Please use the Bitbucket issue tracker: <https://bitbucket.org/dma8hm1334/xepersian-hm/issues> to report a bug, request a feature or if you have a comment.

I will do my best to fix all the bugs you report, but, unfortunately, time is a big hurdle to overcome; so, my apologies in advance for those which I cannot make time to fix.

1 Brief outline of the issues

Kashida is one of the most important features that must be included in any Persian typesetter. In `xepersian` this feature is implemented but with some problems. These problems along with the fixes in `xepersian-hm` are briefly:

P-I In `xepersian` overlapping of glyphs occurs in letter combinations such as "ی + ُ", "ی + ّ", and "ی + ِ" because the character U+FEF0 (ARABIC LETTER FARSI YEH FINAL FORM) is replaced with another character. This is fixed by modifying the fixed part of the glue inserted between the consecutive characters. Furthermore, both, the fixed and the stretchable parts of the glue can be changed by the user.

P-II In letter combinations such as "ی + ه", in `xepersian`, the character U+FEED (ARABIC LETTER HEH INITIAL FORM) is replaced with U+06BE (ARABIC LETTER HEH DOACHASHEMEE). This is fixed by

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With KashidaOn:	الله، جل جلاله، اكبر
With KashidaOff:	الله، جل جلاله، اكبر

Figure 1: Package: xepersian, Font: Noto Sans Arabic, Scale=1.1, Kashida=On

With KashidaOn:	الله، ﷻ و اكبر به ترتيب خروجی \جلجلاله، \الله و \اكبر
With KashidaOff:	الله، ﷻ و اكبر به ترتيب خروجی \جلجلاله، \الله و \اكبر

Figure 2: Package: xepersian-hm, Font: Noto Sans Arabic, Scale=1.1, Kashida=glyph

inserting the character U+200E before the combination "U+200D + hrule + U+200D" which is used as stretching item.

P-III In `xepersian` when outline or shadow fonts are used, the gaps filled by horizontal rule appears as a solid box. This is fixed by using the `kashida` glyph instead of the horizontal rule in `xepersian-hm`.

P-IV Activating `kashida` in `xepersian` disturbs ligatures. This is fixed in `xepersian-hm` by escaping the components of the ligature which form the glyph, i.e. by inserting an escape character before Persian letters joined to form the ligature without any empty characters, blank characters, invisible characters and whitespace characters which form the glyph. See Figures 1 and 2. Currently only 3 ligature glyphs are available in `xepersian-hm`, but you can add as many as you want or let me know the ligature glyphs that you need, so that I can add them in the next release of the package. Of course, this is not the best solution, but it works.

P-V If italic or oblique style of some fonts such as X Series 2 is used in `xepersian`, an extra gap is left between the stretched characters. This is fixed in HM Series fonts.

For comparing the outputs of `xepersian` and `xepersian-hm` with a variety of options available to these packages, please see the Figures 3, 4, and 5.

2 Package loading and options

Please note that `xepersian-hm` loads `xepersian` automatically, so you may only pass options to the package using the command `\PassOptionsToPackage` before

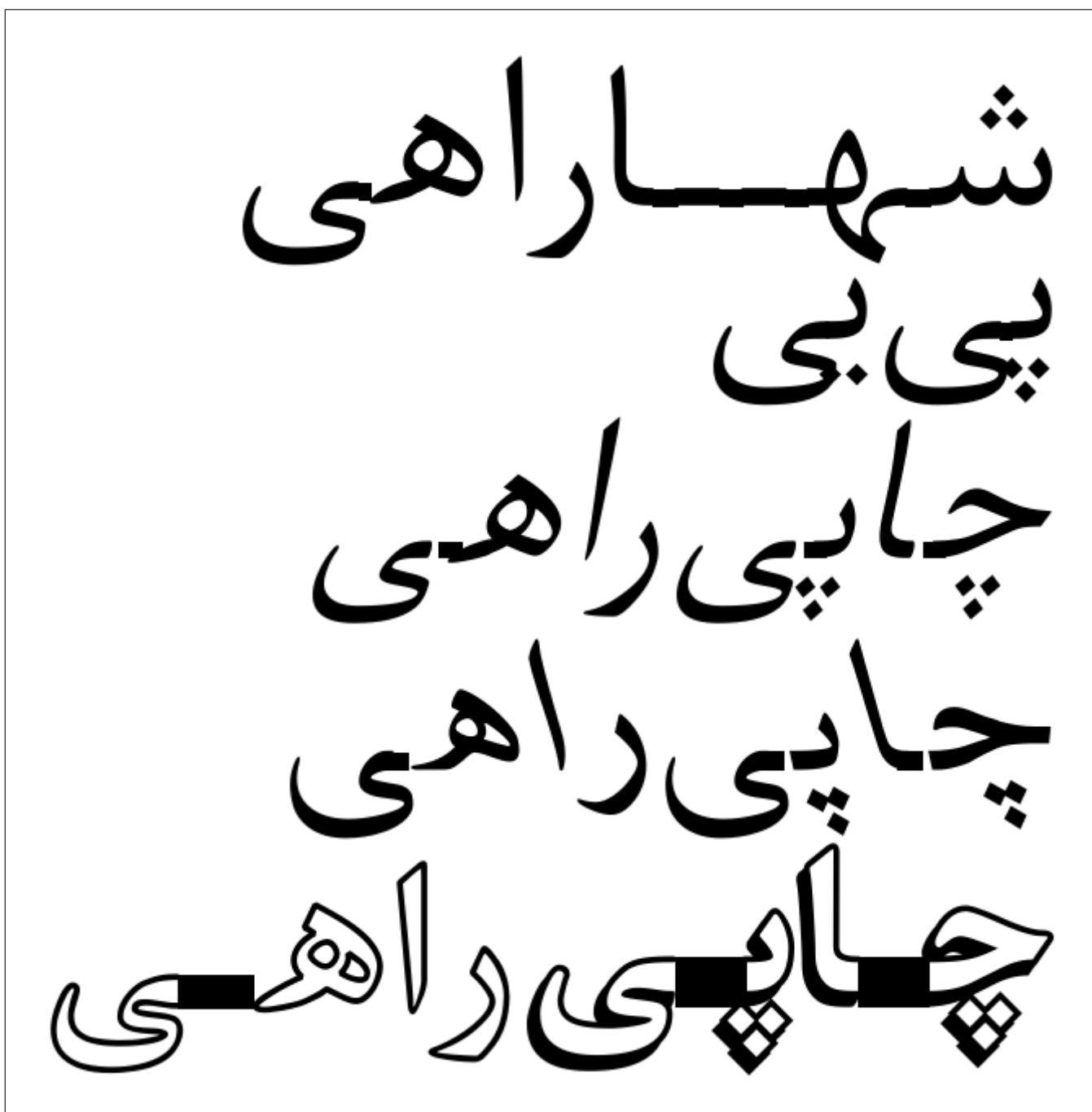


Figure 3: Package: xepersian, Font: XB Kayhan, Scale=4.5, Kashida=0n

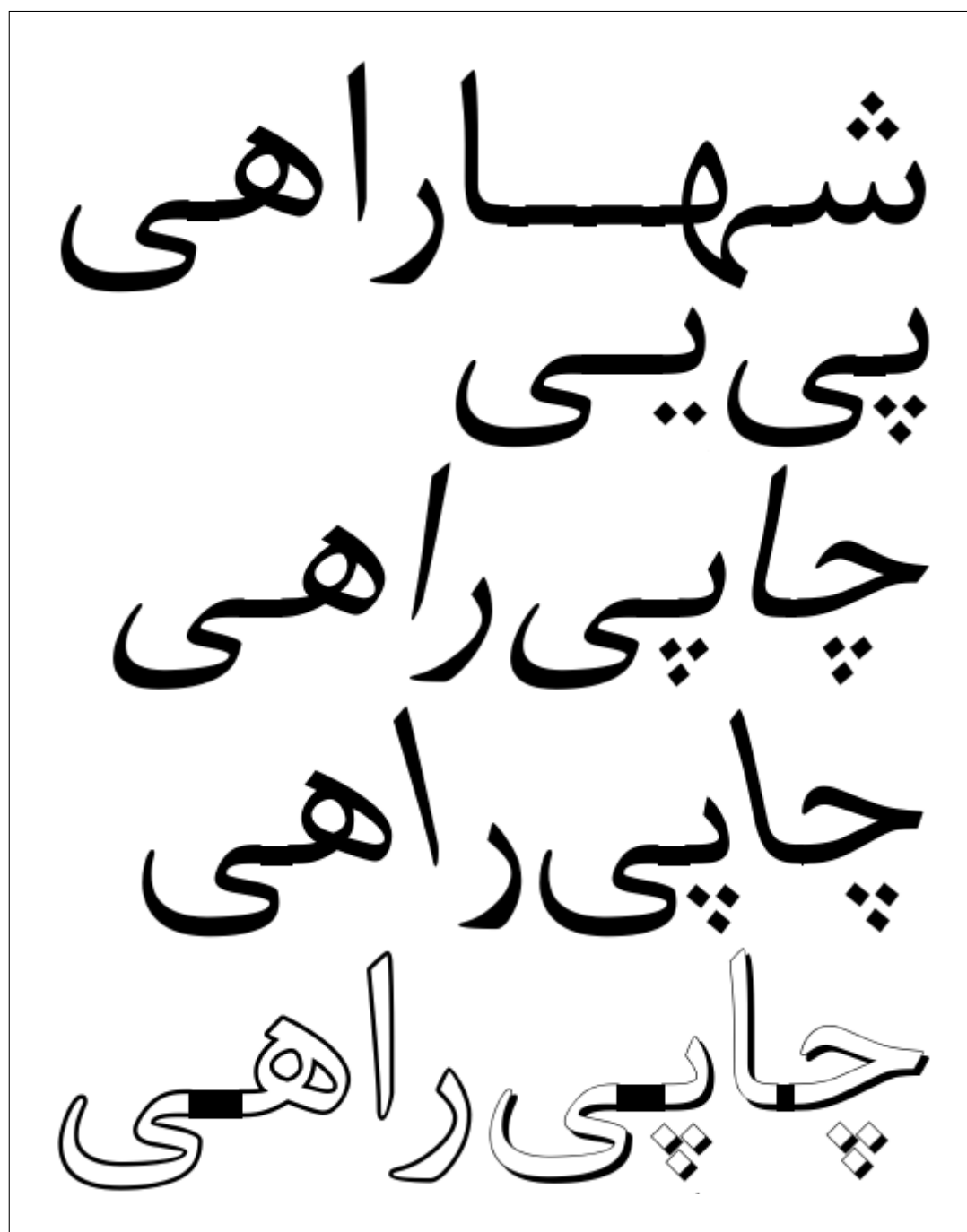


Figure 4: Package: xepersian-hm, Font: HM XKayhan, Scale=4.5, Kashida=hrule

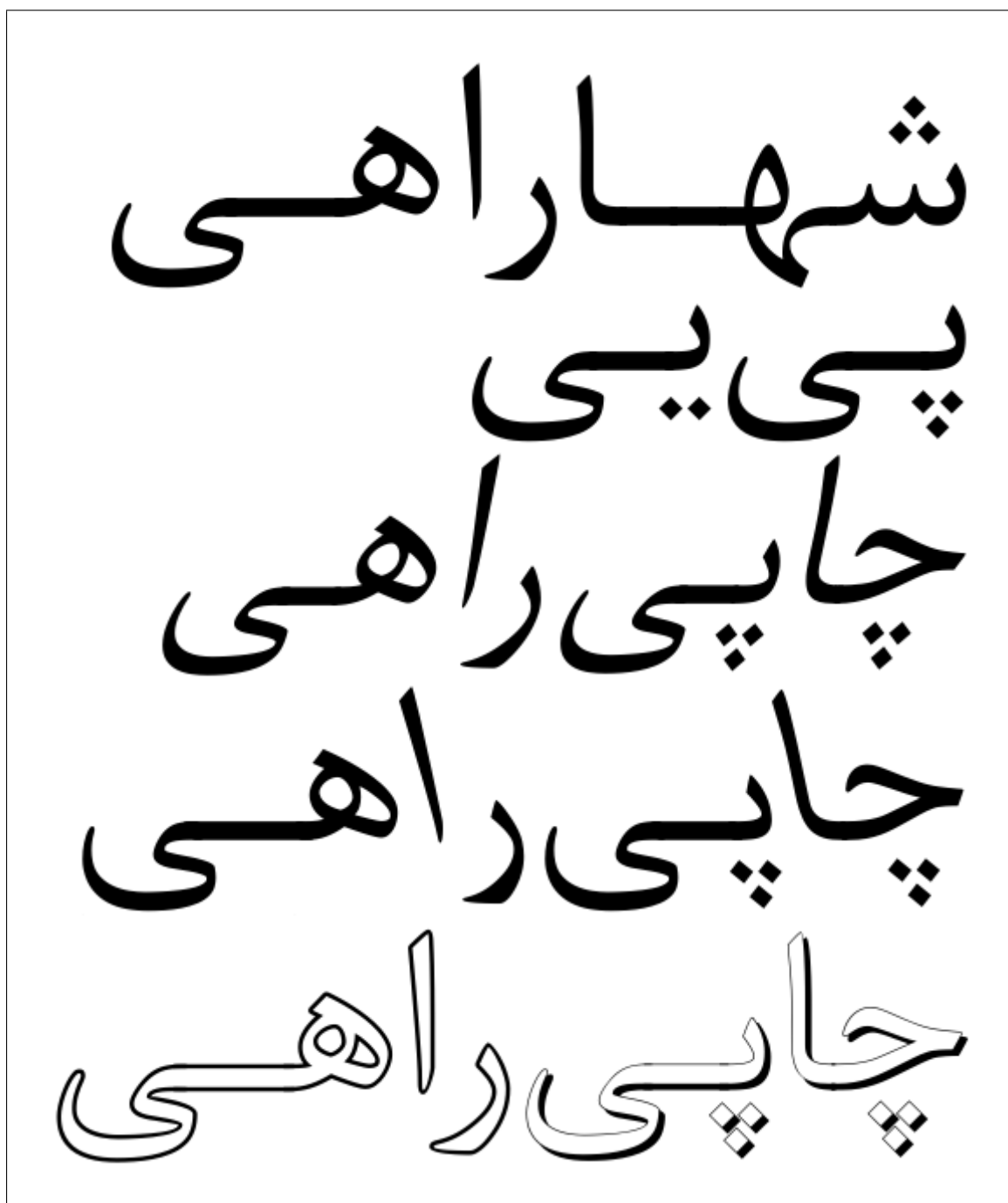


Figure 5: Package: xepersian-hm, Font: HM XKayhan, Scale=4.5, Kashida=glyph

`\documentclass`. For example:

```
\PassOptionsToPackage{debugfootnotedirection=off,localise=off}{xepersian}  
\documentclass{report}  
\usepackage{xcolor}  
\usepackage[Kashida,kashidastretch=0.14 em plus 0.5 em]{xepersian-hm}
```

The options available in `xepersian-hm` are:

- **Kashida:**
which implements `kashida` feature with two possible values:
 - **glyph:**
which uses the `Kashida` character to stretch the text. With this option you should run `xelatex` thrice. For example:

```
rm -f kashida-example.aux  
xelatex kashida-example.tex  
xelatex kashida-example.tex  
xelatex kashida-example.tex
```

Please note that this feature is still experimental and is not regarded as stable. If you are going to use this option be ready for unpredictable results. Also, note that the value of `Kashida` is mandatory.

- **hrule:**
which uses a horizontal rule (`\hrule`) to stretch the text.

For example `Kashida=glyph` inserts a stretched `Kashida` glyph where ever it is needed.

- **linebreakpenalty:**
which specifies the amount of penalty for preventing bad line-breaking. You may strictly specify the value of this option. For example '`linebreakpenalty=8`' or you may use the default values. The available default values of penalties which are put into the horizontal list output are the negative of the followings:

min:	0
low:	8
medium:	15
high:	25
max:	10000

- **kashidastretch:**
which specifies the amount of extra stretching for some combinations of characters. You may strictly specify the value of this option. For example '`kashidastretch=0.14 em plus 0.5 em`' or you may use the default values. The available default values are:

kayhan	0.14 em plus 0.5 em
khorranshahr	0.131 em plus 0.5 em
kayhannavaar	0.129 em plus 0.5 em
kayhanpook	0.133 em plus 0.5 em
kayhansayeh	0.135 em plus 0.5 em
khorranshahr	0.128 em plus 0.5 em
khorranshahr	0.13 em plus 0.5 em
niloofar	0.132 em plus 0.5 em
paatch	0.127 em plus 0.5 em
riyaz	0.125 em plus 0.5 em
roya	0.142 em plus 0.5 em
shafigh	0.143 em plus 0.5 em
shafighKurd	0.126 em plus 0.5 em
shafighUzbek	0.123 em plus 0.5 em
shiraz	0.122 em plus 0.5 em
sols	0.124 em plus 0.5 em
tabriz	0.119 em plus 0.5 em
titr	0.12 em plus 0.5 em
titre	0.121 em plus 0.5 em
traffic	0.124 em plus 0.5 em
vahid	0.134 em plus 0.5 em
vosta	0.136 em plus 0.5 em
yaghut	0.138 em plus 0.5 em
yagut	0.137 em plus 0.5 em
yas	0.126 em plus 0.5 em
yeke	0.141 em plus 0.5 em
yeremook	0.139 em plus 0.5 em
zar	0.116 em plus 0.5 em
ziba	0.119 em plus 0.5 em
default	0.14 em plus 0.5 em
noskip	0 em plus 0.5 em

For example: 'kashidastretch=titr' is equivalent to 'kashidastretch=0.12 em plus 0.5 em'

- **ligature:**
which fixes the disturbance of ligatures caused by activation of kashida in xepersian. You may strictly specify the value of this option. For example 'ligature=dlig' or you may use the default value. The available values are:

aalt:	Access All Alternatives
ccmp:	Glyph Composition/Decomposition
dlig:	Discretionary Ligatures
fin:	Final (Terminal) Forms
init:	Initial Forms

<code>locl:</code>	Localized Forms
<code>medi:</code>	Medial Forms
<code>rliḡ:</code>	Required Ligatures
<code>default:</code>	All the above features

Please note that this feature is still experimental and is not regarded as stable.

3 Commands

`\discouragebadlinebreaks[linebreakpenalty][kashidastretch]{text}`:

text may not contain paragraph breaks. This command puts a penalty after each Persian word. The optional arguments `linebreakpenalty` and `kashidastretch` locally specify the value of the penalty and the amount of extra stretching for some combinations of characters respectively as discussed previously. For example:

```
\discouragebadlinebreaks[9][0.12 em plus 0.5 em]{...}
```

4 Important notes

Kashida and ligatures:

The method used to implement kashida feature breaks a ligature if it is applied to the letters which are joined to form the ligature. This is fixed in `xepersian-hm`, but it is still immature.