adfsymbols

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v1.5 (SVN Rev: 11700) 2026/02/25

Abstract

Hirwen Harendal, Arkandis Digital Foundry (ADF) has produced Symbols ADF. This guide outlines the TEX/LATEX support provided with version 1.001 of the fonts in postscript type 1 format.

1 Introduction

This document explains how to use the TEX/LATEX support included with version 1.001 of the Symbols ADF font collection in postscript type 1 format. The fonts were developed by Hirwen Harendal of the Arkandis Digital Foundry (ADF), and information about the fonts themselves, together with copies of the fonts in opentype format, can be found at http://pagesperso-orange.fr/arkandis/ADF/tugfonts.htm. The fonts are released under the GPL. For details, see README, NOTICE and COPYING.

The TEX/LATEX support package consists of all files listed in manifest.txt and these files are released under the LATEX Project Public Licence as explained in the included licensing notices and README. Please let me know of any problems so that I can solve them if I can. If you can correct the problems and send me the fix, that would be even better. Unlike the fonts themselves, the TEX/LATEX support is somewhat experimental.

adfsymbols includes a copy of the fonts in type 1 format, documentation and support files for TEX/LATEX including two LATEX package files, `adfarrows.sty` and `adfbullets.sty`.

2 The support packages

adfsymbols provides access to the symbols in ArrowsADF and BulletsADF in LATEX through two packages, adfarrows and adfbullets.

2.1 adfarrows

`adfarrows` (*pkg.*) adfarrows provides access to ArrowsADF. The package supports a single option to

*Bug tracker: codeberg.org/cfr/nfssext/issues | Code: codeberg.org/cfr/nfssext | Mirror: github.com/cfr42/nfssext

scale the fonts.

`scale` (*opt.*) = ⟨*scaling factor*⟩

Scale the font by ⟨*scaling factor*⟩, which should be a positive integer or simple decimal such as `2` or `1.2`. This option is intended for cases where the fonts should be scaled to match other fonts used in the document e.g. for consistency with the size of regular text or superscript markers.

Initially empty, which is equivalent to `1` but more efficient.

adfarrows provides the command `\adfarrow{}` which takes a single numerical argument. There are 52 arrows in ArrowsADF which can be produced by feeding the relevant number between 1 and 52 to `\adfarrow{}`.

`\adfarrow` `{`⟨*number*⟩`}`

Where ⟨*number*⟩ is a positive integer between 1 and 52 inclusive[1].

1: ▻	14: ↙	27: ⬸	40: ↙
2: ◅	15: ←	28: ⬻	41: ←
3: ➵	16: ↖	29: ➵	42: ↖
4: ➘	17: ↑	30: ➘	43: ↑
5: ⇓	18: ↗	31: ⇓	44: ↗
6: ➶	19: ⬬	32: ➶	45: ➵
7: ⬸	20: ⬊	33: ⬸	46: ⬊
8: ⬁	21: ⇕	34: ⬊	47: ⇕
9: ⇞	22: ⬋	35: ⇞	48: ⬋
10: ⇗	23: ⬷	36: ⇗	49: ⬻
11: →	24: ⬊	37: →	50: ⬊
12: ↘	25: ⇕	38: ↘	51: ⇞
13: ↓	26: ⬋	39: ↓	52: ⇗

For example, `\adfarrow{5}\adfarrow{9}` produces: ⇓⇞.

2.1.1 Alternative commands

To make things a little more convenient, additional commands are provided to access the various arrows. The effect is to typeset one of the arrows show above but it is not necessary to look up or remember the correct numerical argument.

`\adfhalfarrowright` `\adfhalfarrowleft` `\adfhalfarrowleftsolid` `\adfhalfarrowrightsolid`

First, table 1 lists the four commands provided to access the half arrows. In each case, the number of the arrow is given first. This may be used directly with the `\adfarrow{}` command as explained above. The alternative command is given next. This command may be used to typeset the same arrow. For example both `\adfarrow{1}` and `\adfhalfarrowright` produce ▻. Finally, the arrow produced by the two commands is typeset to their right.

The remaining arrows consist of six families each containing eight arrows — one for each of the eight directions of the compass. These may be accessed in two ways, in addition to using `\adfarrow{}`.

[1]The argument 0 will simply typeset a space and should be avoided as using it may interfere with TEX's spacing algorithms. The problem is that TEX will not recognise it as a space and so will treat it instead as a character.

Table 1: Commands for half arrows

No.	Command		No.	Command	
1	`\adfhalfarrowright`		2	`\adfhalfarrowleft`	
27	`\adfhalfarrowrightsolid`		28	`\adfhalfarrowleftsolid`	

Table 2: Directional commands

Direction	Command	Example usage	
north	`\adfarrown`	`\adfarrown1`	
northeast	`\adfarrowne`	`\adfarrowne2`	
east	`\adfarrowe`	`\adfarrowe3`	
southeast	`\adfarrowse`	`\adfarrowse4`	
south	`\adfarrows`	`\adfarrows5`	
southwest	`\adfarrowsw`	`\adfarrowsw6`	
west	`\adfarroww`	`\adfarroww1`	
northwest	`\adfarrownw`	`\adfarrownw3`	

`\adfarrown` `\adfarrowne` `\adfarrowe` `\adfarrowse` `\adfarrows` `\adfarrowsw` `\adfarroww` `\adfarrownw` `{`⟨*number*⟩`}` First, eight commands are provided (table 2). Each command takes a single numerical argument, ⟨*number*⟩, which must be a positive integer in the range 1–6 inclusive. The argument corresponds to one of the six families of arrows. So using the same number with the different commands will typeset arrows from the same family pointing in different directions.

Second, a further command is provided which allows you to specify both the family and direction as separate arguments. This is in fact the base command `\adfarrow` again. Above, we used the command with just one argument: `\adfarrow{}`. In effect, we left the optional argument empty: `\adfarrow[]{}`.

`\adfarrow` `{`⟨*number*⟩`} [`⟨*family*⟩`]{`⟨*direction*⟩`}`

`\adfarrow`

Where ⟨*number*⟩ may be any positive integer between 1 and 52 (as above), ⟨*family*⟩ may be any integer between 1 and 6 (table 3) and ⟨*direction*⟩ may be any of the eight standard compass directions (table 4). ⟨*family*⟩ may also be the name of the 'family' of arrows. ⟨*direction*⟩ may also be given in an abbreviated form.

When ⟨*family*⟩ is given, the second argument specifies the arrow's direction. *Note that you must specify a family if you specify a direction.* If the optional argument is omitted, the command expects the numerical argument corresponding to the arrow you wish to typeset as listed earlier.

The arrow's direction may be specified in either a long or an abbreviated form.

The different possibilities are illustrated table 5 where each row consists of a selection of equivalent commands which may be used to produce identical output in different ways. In each case, the number of the arrow is given first. This may be used directly with the `\adfarrow{}` command as explained above. One of the eight commands from the previous section follows. Two additional uses of `\adfarrow` are given next using the `\adfarrow[family]{direction}` form described in this section. Finally, the arrow each of these commands typesets is displayed to their right.

Table 3: `\adfarrow`: 'family' names and numbers for first argument

No.	Name
1	opentail
2	plain
3	comic
4	solidtail
5	thick
6	tail

Table 4: `\adfarrow`: direction names for second argument

Direction	Name & abbreviation	
north	north	n
northeast	northeast	ne
east	east	e
southeast	southeast	se
south	south	s
southwest	southwest	sw
west	west	w
northwest	northwest	nw

Table 5: `\adfarrow`: examples

No.	Commands equivalent to `\adfarrow{`⟨*no.*⟩`}`			Result
4	`\adfarrowse1`	`\adfarrow[1]{southeast}`	`\adfarrow[opentail]{se}`	↘
51	`\adfarrown6`	`\adfarrow[tail]{north}`	`\adfarrow[6]{n}`	↘
42	`\adfarrownw5`	`\adfarrow[thick]{nw}`	`\adfarrow[5]{northwest}`	↗
15	`\adfarroww2`	`\adfarrow[2]{w}`	`\adfarrow[plain]{west}`	←
31	`\adfarrows4`	`\adfarrow[solidtail]{south}`	`\adfarrow[4]{s}`	↙
22	`\adfarrowsw3`	`\adfarrow[comic]{sw}`	`\adfarrow[3]{southwest}`	↙

2.2 adfbullets

`adfbullets` (*pkg.*) adfbullets provides access to BulletsADF. The package supports a single option to scale the fonts.

`scale` (*opt.*) = ⟨*scaling factor*⟩

Scale the font by ⟨*scaling factor*⟩, which should be a positive integer or simple decimal such as `2` or `1.2`. This option is intended for cases where the fonts should be scaled to match other fonts used in the document e.g. for consistency with the size of regular text or superscript markers.

Initially empty, which is equivalent to `1` but more efficient.

adfbullets provides the command `\adfbullet{}` which takes a single numerical argument. There are 52 bullets in BulletsADF which can be produced by feeding the relevant number between 1 and 52 to `\adfbullet{}`.

`\adfbullet` `{`⟨*number*⟩`}`

Where ⟨*number*⟩ is a positive integer between 1 and 52 inclusive[2].

1: ❖	14: ❖	27: •	40: ➢
2: ❖	15: ❁	28: •	41: •
3: ❋	16: ❁	29: ■	42: •
4: ✖	17: ❁	30: ◆	43: •
5: ✦	18: ⊗	31: ◂	44: ·
6: ✖	19: ◌	32: ▸	45: ◦
7: ✚	20: ✪	33: ▲	46: ▪
8: ✧	21: ✵	34: ▼	47: ▪
9: ✦	22: ✺	35: ◃	48: ✦
10: ✧	23: ✣	36: ▹	49: ✦
11: ✵	24: ✣	37: ◃	50: ◆
12: ✵	25: ⋆	38: ▹	51: ◇
13: ✵	26: ✪	39: ◃	52: ◦

For example, `\adfbullet{17}\adfbullet{19}\adfbullet{23}` produces: ❁◌✣.

3 Usage Examples

enumitem allows you to easily change the format of lists:

```
\begin{itemize}[label=\adfbullet{25}]
 \item sealing was,
 \item cabbages;
 \item kings.
\end{itemize}
```

⋆ sealing was,

[2] Again, the argument 0 will simply typeset a space and should be avoided as using it may interfere with TEX's spacing algorithms.

- cabbages;
- kings.

Refer to the package documentation for further details.

adfarrows and adfbullets can be used in beamer presentations to produce lists with custom bullet markers; as icons and markers in pgf diagrams; with sectsty, titlesec and/or fancyhdr to typeset custom headings, headers and footers. For example, the equivalent of,

```
\pagestyle{fancy}
 \fancyhf[ch]{}
 \fancyhf[lf]{}
 \fancyhf[rf]{}
 \fancyhf[lh]{}
 \fancyhf[rh]{}
 \fancyhf[ch]{%
  \itshape adfsymbols\hspace*{1.5em}{\Large\adfbullet{14}}\hspace*{1.5em}\filedate}
 \fancyhf[cf]{%
  \itshape {\large\adfbullet{39}} \thepage~\ofname~\lastpage %
  {\large\adfbullet{40}}}
 \renewcommand{\headrulewidth}{0pt}
```

was used to customise this document's headers and footers with fancyhdr.

A Implementation

You do not need to read the remainder of this document in order to install or use the fonts.

A.1 Encoding

Both ArrowsADF and BulletsADF use a single encoding. The only reason to reencode the fonts is to ensure consecutive slot numbers, which makes the user interface a bit nicer.

```
/SymbolsADFEncoding [
/space
/A
/B
/C
/D
/E
/F
/G
/H
/I
/J
/K
```

```
/L
/M
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/P
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/R
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/b
/c
/d
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 68 /.notdef
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] def
```

adfsymbols: adfarrows

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v1.5 (SVN Rev: 11700) 2026/02/25

```
\NeedsTeXFormat{LaTeX2e}
\RequirePackage{svn-prov}
\ProvidesPackageSVN[\filebase.sty]{$Id: adfarrows.dtx 11700 2026-02-25 07:11:48Z
  cfrees $}[v1.5 \revinfo  ArrowsADF]
\DefineFileInfoSVN[adfarrows]
\newif\if@adfarrows@digonnew
```

Copied verbatim, excepting format and modulo package/module name from Joseph Wright's `siunitx.sty` under LPPL

```
\@ifundefined{ExplLoaderFileDate}{%
  \IfFileExists{expl3.sty}{%
    \RequirePackage{expl3}%
  }{%
    \@adfarrows@digonnewfalse
  }%
}{\@adfarrows@digonnewtrue}
```

`scale` (*opt.*) scale takes a factor by which to scale the fonts. This is empty by default, which is equivalent to `1`, but more efficient.

```
\if@adfarrows@digonnew
\ExplSyntaxOn
\keys_define:nn { adfarrows }
{
  scale .tl_set:N = \adfarrows@scale,
  scale .initial:V = \@empty,
}
\else
  \let\adfarrows@scale\@empty
\fi
```

Provide `\ProcessKeyOptions`, `\IfFormatAtLeastTF` on older kernels. Joseph Wright: from `siunitx.sty` ; https://chat.stackexchange.com/transcript/message/64327823#64327823

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\providecommand \IfFormatAtLeastTF { \@ifl@t@r \fmtversion }
```

*Bug tracker: codeberg.org/cfr/nfssext/issues | Code: codeberg.org/cfr/nfssext | Mirror: github.com/cfr42/nfssext

```
\IfFormatAtLeastTF { 2022-06-01 }
{
  \ProcessKeyOptions [ adfarrows ]
}{
  \RequirePackage { l3keys2e }
  \ProcessKeysOptions { adfarrows }
}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\ExplSyntaxOff
```

`\adfarrows@style`

```
\DeclareRobustCommand{\adfarrows@style}{%% do NOT break line below!
  \not@math@alphabet\adfarrows@style\relax
  \fontencoding{U}\fontfamily{ArrowsADF}\fontseries{m}\fontshape{n}\selectfont
}

\RequirePackage{fixtounicode}

\ExplSyntaxOn
```

`\l__adfarrows_base_ot_int`

```
\int_new:N \l__adfarrows_base_ot_int
\int_set:Nn \l__adfarrows_base_ot_int {1}
```

`\l__adfarrows_base_p_int`

```
\int_new:N \l__adfarrows_base_p_int
\int_set:Nn \l__adfarrows_base_p_int {2}
```

`\l__adfarrows_base_c_int`

```
\int_new:N \l__adfarrows_base_c_int
\int_set:Nn \l__adfarrows_base_c_int {3}
```

`\l__adfarrows_base_st_int`

```
\int_new:N \l__adfarrows_base_st_int
\int_set:Nn \l__adfarrows_base_st_int {4}
```

`\l__adfarrows_base_th_int`

```
\int_new:N \l__adfarrows_base_th_int
\int_set:Nn \l__adfarrows_base_th_int {5}
```

`\l__adfarrows_base_t_int`

```
\int_new:N \l__adfarrows_base_t_int
\int_set:Nn \l__adfarrows_base_t_int {6}
```

`\l__adfarrows_dir_e_int`

```
\int_new:N \l__adfarrows_dir_e_int
\int_set:Nn \l__adfarrows_dir_e_int {0}
```

```
\l__adfarrows_dir_east_int
                                312 \int_new:N \l__adfarrows_dir_east_int
                                313 \int_set:Nn \l__adfarrows_dir_east_int {0}

 \l__adfarrows_dir_se_int
                                314 \int_new:N \l__adfarrows_dir_se_int
                                315 \int_set:Nn \l__adfarrows_dir_se_int {1}

l__adfarrows_dir_southeast_int
                                316 \int_new:N \l__adfarrows_dir_southeast_int
                                317 \int_set:Nn \l__adfarrows_dir_southeast_int {1}

  \l__adfarrows_dir_s_int
                                318 \int_new:N \l__adfarrows_dir_s_int
                                319 \int_set:Nn \l__adfarrows_dir_s_int {2}

\l__adfarrows_dir_south_int
                                320 \int_new:N \l__adfarrows_dir_south_int
                                321 \int_set:Nn \l__adfarrows_dir_south_int {2}

 \l__adfarrows_dir_sw_int
                                322 \int_new:N \l__adfarrows_dir_sw_int
                                323 \int_set:Nn \l__adfarrows_dir_sw_int {3}

l__adfarrows_dir_southwest_int
                                324 \int_new:N \l__adfarrows_dir_southwest_int
                                325 \int_set:Nn \l__adfarrows_dir_southwest_int {3}

  \l__adfarrows_dir_w_int
                                326 \int_new:N \l__adfarrows_dir_w_int
                                327 \int_set:Nn \l__adfarrows_dir_w_int {4}

\l__adfarrows_dir_west_int
                                328 \def\adfarrows@west{west}%
                                329 \int_new:N \l__adfarrows_dir_west_int
                                330 \int_set:Nn \l__adfarrows_dir_west_int {4}

 \l__adfarrows_dir_nw_int
                                331 \int_new:N \l__adfarrows_dir_nw_int
                                332 \int_set:Nn \l__adfarrows_dir_nw_int {5}

l__adfarrows_dir_northwest_int
                                333 \int_new:N \l__adfarrows_dir_northwest_int
                                334 \int_set:Nn \l__adfarrows_dir_northwest_int {5}
```

```
\l__adfarrows_dir_n_int
```

```
\int_new:N \l__adfarrows_dir_n_int
\int_set:Nn \l__adfarrows_dir_n_int {6}
```

```
\l__adfarrows_dir_north_int
```

```
\int_new:N \l__adfarrows_dir_north_int
\int_set:Nn \l__adfarrows_dir_north_int {6}
```

```
\l__adfarrows_dir_ne_int
```

```
\int_new:N \l__adfarrows_dir_ne_int
\int_set:Nn \l__adfarrows_dir_ne_int {7}
```

```
l__adfarrows_dir_northeast_int
```

```
\int_new:N \l__adfarrows_dir_northeast_int
\int_set:Nn \l__adfarrows_dir_northeast_int {7}
```

```
\g__adfarrows_base_int
```

```
\int_new:N \g__adfarrows_base_int
```

```
\g__adfarrows_add_int
```

```
\int_new:N \g__adfarrows_add_int
```

```
l__adfarrows_base_opentail_int
```

```
\int_new:N \l__adfarrows_base_opentail_int
\int_set:Nn \l__adfarrows_base_opentail_int {3}
```

```
\l__adfarrows_base_plain_int
```

```
\int_new:N \l__adfarrows_base_plain_int
\int_set:Nn \l__adfarrows_base_plain_int {11}
```

```
\l__adfarrows_base_comic_int
```

```
\int_new:N \l__adfarrows_base_comic_int
\int_set:Nn \l__adfarrows_base_comic_int {19}
```

```
__adfarrows_base_solidtail_int
```

```
\int_new:N \l__adfarrows_base_solidtail_int
\int_set:Nn \l__adfarrows_base_solidtail_int {29}
```

```
\l__adfarrows_base_thick_int
```

```
\int_new:N \l__adfarrows_base_thick_int
\int_set:Nn \l__adfarrows_base_thick_int {37}
```

\l__adfarrows_base_tail_int

```
\int_new:N \l__adfarrows_base_tail_int
\int_set:Nn \l__adfarrows_base_tail_int {45}
```

\l__adfarrows_arrow_int

```
\int_new:N \l__adfarrows_arrow_int
```

I don't know why somebody would use these fonts with a Unicode engine, but, just in case, map for that as well as pdfTEX.

```
\bool_if:nT { \sys_if_engine_luatex_p: || \sys_if_engine_pdftex_p: }
{
```

__adfarrows_glyphtounicode_seq This seems ... insane?

It would be more efficient to just set everything directly, but this is easier to set up and only read once. First, a sequence to hold glyph names.

```
  \seq_new:N \l__adfarrows_glyphtounicode_seq
  \seq_set_from_clist:Nn \l__adfarrows_glyphtounicode_seq
  {
```

outlines

```
    A, %% A  right arrow top half 21C0
    B, %% B  left arrow top half 21BC
```

outline shaft/tail with solid tip

```
    C, %% C  → 2192
    D, %% D  ↘ 2198
    E, %% E  ↓ 2193
    F, %% F  ↙ 2199
    G, %% G  ← 2190
    H, %% H  ↖ 2196
    I, %% I  ↑ 2191
    J, %% J  ↗ 2197
```

solid in various styles

```
    K, %% K  → 2192
    L, %% L  ↘ 2198
    M, %% M  ↓ 2193
    N, %% N  ↙ 2199
    O, %% O  ← 2190
    P, %% P  ↖ 2196
    Q, %% Q  ↑ 2191
    R, %% R  ↗ 2197
    S, %% S  → 2192
    T, %% T  ↘ 2198
    U, %% U  ↓ 2193
    V, %% V  ↙ 2199
    W, %% W  ← 2190
```

```
    X, %% X  ↖ 2196
    Y, %% Y  ↑ 2191
    Z, %% Z  ↗ 2197
    a, %% a  right arrow top half 21C0
    b, %% b  left arrow top half 21BC
    c, %% c  → 2192
    d, %% d  ↘ 2198
    e, %% e  ↓ 2193
    f, %% f  ↙ 2199
    g, %% g  ← 2190
    h, %% h  ↖ 2196
    i, %% i  ↑ 2191
    j, %% j  ↗ 2197
    k, %% k  → 2192
    l, %% l  ↘ 2198
    m, %% m  ↓ 2193
    n, %% n  ↙ 2199
    o, %% o  ← 2190
    p, %% p  ↖ 2196
    q, %% q  ↑ 2191
    r, %% r  ↗ 2197
    s, %% s  → 2192
    t, %% t  ↘ 2198
    u, %% u  ↓ 2193
    v, %% v  ↙ 2199
    w, %% w  ← 2190
    x, %% x  ↖ 2196
    y, %% y  ↑ 2191
    z, %% z  ↗ 2197
  }
```

`\l__adfarrows_tounicode_seq` A sequence to hold Unicode targets. These are not incredibly detailed, but hopefully more useful than PUA.

```
  \seq_new:N \l__adfarrows_tounicode_seq
  \seq_set_from_clist:Nn \l__adfarrows_tounicode_seq
  {
```

outlines

```
    21C0, %% A  right arrow top half 21C0
    21BC, %% B  left arrow top half 21BC
```

outline shaft/tail with solid tip

```
    2192, %% C  → 2192
    2198, %% D  ↘ 2198
    2193, %% E  ↓ 2193
    2199, %% F  ↙ 2199
    2190, %% G  ← 2190
    2196, %% H  ↖ 2196
    2191, %% I  ↑ 2191
    2197, %% J  ↗ 2197
```

solid in various styles

```
    2192, %% K  → 2192
    2198, %% L  ↘ 2198
    2193, %% M  ↓ 2193
    2199, %% N  ↙ 2199
    2190, %% O  ← 2190
    2196, %% P  ↖ 2196
    2191, %% Q  ↑ 2191
    2197, %% R  ↗ 2197
    2192, %% S  → 2192
    2198, %% T  ↘ 2198
    2193, %% U  ↓ 2193
    2199, %% V  ↙ 2199
    2190, %% W  ← 2190
    2196, %% X  ↖ 2196
    2191, %% Y  ↑ 2191
    2197, %% Z  ↗ 2197
    21C0, %% a  right arrow top half 21C0
    21BC, %% b  left arrow top half 21BC
    2192, %% c  → 2192
    2198, %% d  ↘ 2198
    2193, %% e  ↓ 2193
    2199, %% f  ↙ 2199
    2190, %% g  ← 2190
    2196, %% h  ↖ 2196
    2191, %% i  ↑ 2191
    2197, %% j  ↗ 2197
    2192, %% k  → 2192
    2198, %% l  ↘ 2198
    2193, %% m  ↓ 2193
    2199, %% n  ↙ 2199
    2190, %% o  ← 2190
    2196, %% p  ↖ 2196
    2191, %% q  ↑ 2191
    2197, %% r  ↗ 2197
    2192, %% s  → 2192
    2198, %% t  ↘ 2198
    2193, %% u  ↓ 2193
    2199, %% v  ↙ 2199
    2190, %% w  ← 2190
    2196, %% x  ↖ 2196
    2191, %% y  ↑ 2191
    2197, %% z  ↗ 2197
  }

  \fixtounicode_tounicode:nnNN { ArrowsADF } { ArrowsADF }
    \l__adfarrows_glyphtounicode_seq \l__adfarrows_tounicode_seq
}
```

`\__adfarrows_arrow:nn`

```
\cs_new_nopar:Nn \__adfarrows_arrow:nn
{
  \int_if_exist:cTF { l__adfarrows_base_#1_int }
  {
```

```
    \int_gset_eq:Nc \g__adfarrows_base_int { l__adfarrows_base_#1_int }
  }{ % some kind of error check needed here
    \int_gset:Nn \g__adfarrows_base_int { #1 }
  }
  \int_if_exist:cTF { l__adfarrows_dir_#2_int }
  {
    \int_gset_eq:Nc \g__adfarrows_add_int { l__adfarrows_dir_#2_int }
  }{
    \PackageError{adfarrows}{#2  not a valid direction. Setting east }
    \int_gzero:N \g__adfarrows_add_int
  }
  \int_set:Nn \l__adfarrows_arrow_int { \g__adfarrows_base_int + \g__adfarrows_add_int
  }
  \int_compare:nNnTF { \l__adfarrows_arrow_int } < { 53 }
  { %    \int_compare:nNnTF { \l__adfarrows_arrow_int } > { 0 }
    {
      \expandafter\adfarrows@style\expandafter\char \int_to_arabic:n {
        \l__adfarrows_arrow_int
      }
    }{
      \PackageError{adfarrows}{\textbackslash l__adfarrows_arrow_int must
  be greater than 0 but is \int_to_arabic:n {\l__adfarrows_arrow_int}}%
    }
  }{
    \PackageError{adfarrows}{\textbackslash l__adfarrows_arrow_int   must
  be less than than 53 but is \int_to_arabic:n {\l__adfarrows_arrow_int}}%
  }
}
```

`\__adfarrows_arrow:n`

```
\cs_new_nopar:Nn \__adfarrows_arrow:n
{
  \adfarrows@style\char#1
}
```

`\adfarrow`

```
\NewDocumentCommand \adfarrow { o m }
{
  \group_begin:
  \IfValueTF { #1 }
  {
    \__adfarrows_arrow:nn { #1 } { #2 }
  }{
    \__adfarrows_arrow:n { #2 }
  }
  \group_end:
}

\ExplSyntaxOff
```

`\adfhalfarrowright`

```
520 \newcommand*{\adfhalfarrowright}{\adfarrow{1}}
```

\adfhalfarrowleft

```
521 \newcommand*{\adfhalfarrowleft}{\adfarrow{2}}
```

\adfhalfarrowrightsolid

```
522 \newcommand*{\adfhalfarrowrightsolid}{\adfarrow{27}}
```

\adfhalfarrowleftsolid

```
523 \newcommand*{\adfhalfarrowleftsolid}{\adfarrow{28}}
```

\adfarrowe

```
524 \gdef\adfarrowe#1{%
525  \ifcase #1  \relax
526   \or \adfarrow{3}%
527   \or \adfarrow{11}%
528   \or \adfarrow{19}%
529   \or \adfarrow{29}%
530   \or \adfarrow{37}%
531   \or \adfarrow{45}%
532  \fi}
```

\adfarrowse

```
533 \gdef\adfarrowse#1{%
534  \ifcase #1  \relax
535   \or \adfarrow{4}%
536   \or \adfarrow{12}%
537   \or \adfarrow{20}%
538   \or \adfarrow{30}%
539   \or \adfarrow{38}%
540   \or \adfarrow{46}%
541  \fi}
```

\adfarrows

```
542 \gdef\adfarrows#1{%
543  \ifcase #1  \relax
544   \or \adfarrow{5}%
545   \or \adfarrow{13}%
546   \or \adfarrow{21}%
547   \or \adfarrow{31}%
548   \or \adfarrow{39}%
549   \or \adfarrow{47}%
550  \fi}
```

\adfarrowsw

```
551 \gdef\adfarrowsw#1{%
552  \ifcase #1  \relax
```

```
  \or \adfarrow{6}%
  \or \adfarrow{14}%
  \or \adfarrow{22}%
  \or \adfarrow{32}%
  \or \adfarrow{40}%
  \or \adfarrow{48}%
 \fi}
```

\adfarroww

```
\gdef\adfarroww#1{%
 \ifcase #1  \relax
  \or \adfarrow{7}%
  \or \adfarrow{15}%
  \or \adfarrow{23}%
  \or \adfarrow{33}%
  \or \adfarrow{41}%
  \or \adfarrow{49}%
 \fi}
```

\adfarrownw

```
\gdef\adfarrownw#1{%
 \ifcase #1  \relax
  \or \adfarrow{8}%
  \or \adfarrow{16}%
  \or \adfarrow{24}%
  \or \adfarrow{34}%
  \or \adfarrow{42}%
  \or \adfarrow{50}%
 \fi}
```

\adfarrown

```
\gdef\adfarrown#1{%
 \ifcase #1  \relax
  \or \adfarrow{9}%
  \or \adfarrow{17}%
  \or \adfarrow{25}%
  \or \adfarrow{35}%
  \or \adfarrow{43}%
  \or \adfarrow{51}%
 \fi}
```

\adfarrowne

```
\gdef\adfarrowne#1{%
 \ifcase #1  \relax
  \or \adfarrow{10}%
  \or \adfarrow{18}%
  \or \adfarrow{26}%
  \or \adfarrow{36}%
  \or \adfarrow{44}%
  \or \adfarrow{52}%
 \fi}
```

```
%% end adfarrows.sty
```

A.2 Font Definitions

`uarrowsadf.fd` (*fd.*) Font declarations for ArrowsADF font

```
\ProvidesFile{uarrowsadf.fd}[v1.3 2024/10/01 font definitions for U/ArrowsADF.]
```

addaswyd o t1phv.fd (dyddiad y ffeil fd: 2020-03-25)

```
  \expandafter\ifx\csname adfarrows@scale\endcsname\relax
    \let\adfarrows@@scale\@empty
  \else
    \edef\adfarrows@@scale{s*[\csname adfarrows@scale\endcsname]}%
  \fi
\DeclareFontFamily{U}{ArrowsADF}{}
\DeclareFontShape{U}{ArrowsADF}{m}{n}{
  <-> \adfarrows@@scale ArrowsADF
}{}
\DeclareFontShape{U}{ArrowsADF}{m}{sc}{<->ssub * ArrowsADF/m/n}{}
\DeclareFontShape{U}{ArrowsADF}{m}{it}{<->ssub * ArrowsADF/m/sc}{}
\DeclareFontShape{U}{ArrowsADF}{m}{sl}{<->ssub * ArrowsADF/m/it}{}
\DeclareFontShape{U}{ArrowsADF}{m}{si}{<->ssub * ArrowsADF/m/sl}{}
\DeclareFontShape{U}{ArrowsADF}{m}{scit}{<->ssub * ArrowsADF/m/si}{}
\DeclareFontShape{U}{ArrowsADF}{m}{scsl}{<->ssub * ArrowsADF/m/scit}{}
\DeclareFontShape{U}{ArrowsADF}{b}{n}{<->ssub * ArrowsADF/m/scsl}{}
\DeclareFontShape{U}{ArrowsADF}{b}{sc}{<->ssub * ArrowsADF/b/n}{}
\DeclareFontShape{U}{ArrowsADF}{b}{it}{<->ssub * ArrowsADF/b/sc}{}
\DeclareFontShape{U}{ArrowsADF}{b}{sl}{<->ssub * ArrowsADF/b/it}{}
\DeclareFontShape{U}{ArrowsADF}{b}{si}{<->ssub * ArrowsADF/b/sl}{}
\DeclareFontShape{U}{ArrowsADF}{b}{scit}{<->ssub * ArrowsADF/b/si}{}
\DeclareFontShape{U}{ArrowsADF}{b}{scsl}{<->ssub * ArrowsADF/b/scit}{}
\DeclareFontShape{U}{ArrowsADF}{bx}{n}{<->ssub * ArrowsADF/b/scsl}{}
\DeclareFontShape{U}{ArrowsADF}{bx}{sc}{<->ssub * ArrowsADF/bx/n}{}
\DeclareFontShape{U}{ArrowsADF}{bx}{it}{<->ssub * ArrowsADF/bx/sc}{}
\DeclareFontShape{U}{ArrowsADF}{bx}{sl}{<->ssub * ArrowsADF/bx/it}{}
\DeclareFontShape{U}{ArrowsADF}{bx}{si}{<->ssub * ArrowsADF/bx/sl}{}
\DeclareFontShape{U}{ArrowsADF}{bx}{scit}{<->ssub * ArrowsADF/bx/si}{}
\DeclareFontShape{U}{ArrowsADF}{bx}{scsl}{<->ssub * ArrowsADF/bx/scit}{}

\DeclareUnicodeCharacter{21C0}{right arrow top half}
\DeclareUnicodeCharacter{21BC}{left arrow top half}
\DeclareUnicodeCharacter{2192}{\textrightarrow}
\DeclareUnicodeCharacter{2198}{$\searrow$}
\DeclareUnicodeCharacter{2193}{\textdownarrow}
\DeclareUnicodeCharacter{2199}{$\swarrow$}
\DeclareUnicodeCharacter{2190}{\textleftarrow}
\DeclareUnicodeCharacter{2196}{$\nwarrow$}
\DeclareUnicodeCharacter{2191}{\textuparrow}
\DeclareUnicodeCharacter{2197}{$\nearrow$}
```

adfsymbols: adfbullets

Clea F. Rees*

v1.5 (SVN Rev: 11700) 2026/02/25

```
\NeedsTeXFormat{LaTeX2e}
\RequirePackage{svn-prov}
\ProvidesPackageSVN[\filebase.sty]{$Id: adfbullets.dtx 11700 2026-02-25 07:11:48Z
  cfrees $}[v1.5 \revinfo]
\DefineFileInfoSVN[adfbullets]
\newif\if@adfbullets@digonnew
```

Copied verbatim, excepting format and modulo package/module name from Joseph Wright's `siunitx.sty` under LPPL

```
\@ifundefined{ExplLoaderFileDate}{%
  \IfFileExists{expl3.sty}{%
    \RequirePackage{expl3}%
  }{%
    \@adfbullets@digonnewfalse
  }%
}{\@adfbullets@digonnewtrue}
```

`scale` (*opt.*) scale takes a factor by which to scale the fonts. This is empty by default, which is equivalent to `1`, but more efficient.

```
\if@adfbullets@digonnew
\ExplSyntaxOn
\keys_define:nn { adfbullets }
{
  scale .tl_set:N = \adfbullets@scale,
  scale .initial:V = \@empty,
}
\else
  \let\adfbullets@scale\@empty
\fi
```

Provide `\ProcessKeyOptions`, `\IfFormatAtLeastTF` on older kernels. Joseph Wright: from `siunitx.sty` ; https://chat.stackexchange.com/transcript/message/64327823#64327823

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\providecommand \IfFormatAtLeastTF { \@ifl@t@r \fmtversion }
```

*Bug tracker: codeberg.org/cfr/nfssext/issues | Code: codeberg.org/cfr/nfssext | Mirror: github.com/cfr42/nfssext

```
\IfFormatAtLeastTF { 2022-06-01 }
{
  \ProcessKeyOptions [ adfbullets ]
}{
  \RequirePackage { l3keys2e }
  \ProcessKeysOptions { adfbullets }
}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\ExplSyntaxOff

\RequirePackage{fixtounicode}
```

`\adfbullets@style`

```
\DeclareRobustCommand{\adfbullets@style}{%% do NOT break line below!
  \not@math@alphabet\adfbullets@style\relax
  \fontencoding{U}\fontfamily{BulletsADF}\fontseries{m}\fontshape{n}\selectfont
}
```

I don't know why somebody would use these fonts with a Unicode engine, but, just in case, map for that as well as pdfTEX.

```
\ExplSyntaxOn
\bool_if:nT { \sys_if_engine_luatex_p: || \sys_if_engine_pdftex_p: }
{
```

`_adfbullets_glyphtounicode_seq` This seems ... insane?

It would be more efficient to just set everything directly, but this is easier to set up and only read once. First, a sequence to hold glyph names.

```
  \seq_new:N \l__adfbullets_glyphtounicode_seq
  \seq_set_from_clist:Nn \l__adfbullets_glyphtounicode_seq
  {
    A, %% A
    B, %% B
    C, %% C
    D, %% D
    E, %% E
    F, %% F
    G, %% G  balloon 4-pointed asterisk 2724
    H, %% H
    I, %% I  ✠ 2720   filled
    J, %% J  ✠ 2720   open
    K, %% K
    L, %% L
    M, %% M
    N, %% N
    O, %% O
    P, %% P
    Q, %% Q
    R, %% R
    S, %% S
    T, %% T
```

```
    U, %% U
    V, %% V
    W, %% W
    X, %% X
    Y, %% Y  8-pointed rectilinear star 2737
    Z, %% Z
    a, %% a  . filled 25CC
    b, %% b  . filled 25CC
    c, %% c  ■ 2B1B
    d, %% d  ◇ 2BC1
    e, %% e  ◁ 2BC7
    f, %% f  ▷ 2BC8
    g, %% g  triangle up 2BC5
    h, %% h  triangle down 2BC6
    i, %% i  arrowhead left top highlighted 2B98
    j, %% j  arrowhead right top highlighted 2B9A
    k, %% k
    l, %% l
    m, %% m  arrowhead left top highlighted 2B98 larger/darker
    n, %% n  arrowhead right top highlighted 2B9A larger/darker
    o, %% o
    p, %% p  ellipse 2B2C
    q, %% q  dot large 25CE
    r, %% r  dot 00B7
    s, %% s  circled bullet 29BF circled bullet
    t, %% t
    u, %% u  ■ 2BC0
    v, %% v  cusp 2BCC small
    w, %% w  cusp 2BCC med
    x, %% x  cusp 2BCC large
    y, %% y  cusp open 2BCE
    z, %% z  . open 25CB
  }
```

`\l__adfbullets_tounicode_seq` A sequence to hold Unicode targets. These are not incredibly detailed, but hopefully more useful than none.

```
  \seq_new:N \l__adfbullets_tounicode_seq
  \seq_set_from_clist:Nn \l__adfbullets_tounicode_seq
  {
    2022 , %% A <fallback: text bullet>
    2022 , %% B <fallback: text bullet>
    2022 , %% C <fallback: text bullet>
    2022 , %% D <fallback: text bullet>
    2022 , %% E <fallback: text bullet>
    2022 , %% F <fallback: text bullet>
    2724 , %% G
    2022 , %% H <fallback: text bullet>
    2720 , %% I
    2720 , %% J
    2022 , %% K <fallback: text bullet>
    2022 , %% L <fallback: text bullet>
    2022 , %% M <fallback: text bullet>
    2022 , %% N <fallback: text bullet>
```

```
    2022 , %% O <fallback: text bullet>
    2022 , %% P <fallback: text bullet>
    2022 , %% Q <fallback: text bullet>
    2022 , %% R <fallback: text bullet>
    2022 , %% S <fallback: text bullet>
    2022 , %% T <fallback: text bullet>
    2022 , %% U <fallback: text bullet>
    2022 , %% V <fallback: text bullet>
    2022 , %% W <fallback: text bullet>
    2022 , %% X <fallback: text bullet>
    2737 , %% Y
    2022 , %% Z <fallback: text bullet>
    25CC , %% a
    25CC , %% b
    2B1B , %% c
    2BC1 , %% d
    2BC7 , %% e or 25C0 etc.?
    2BC8 , %% f
    2BC5 , %% g
    2BC6 , %% h
    2B98 , %% i
    2B9A , %% j
    2022 , %% k <fallback: text bullet>
    2022 , %% l <fallback: text bullet>
    2B98 , %% m
    2B9A , %% n
    2022 , %% o <fallback: text bullet>
    2B2C , %% p
    25CE , %% q
    00B7 , %% r
    29BF , %% s
    25B0 , %% t
    2BC0 , %% u
    2BCC , %% v
    2BCC , %% w
    2BCC , %% x
    2BCE , %% y
    25CB , %% z
  }
```

Generate the actual mappings.

```
  \fixtounicode_tounicode:nnNN { BulletsADF } { BulletsADF }
    \l__adfbullets_glyphtounicode_seq \l__adfbullets_tounicode_seq
}
\ExplSyntaxOff
```

`\adfbullet`

```
\newcommand*\adfbullet[1]{{\adfbullets@style\char#1}}

%% end adfbullets.sty
```

A.3 Font Definitions

`ubulletsadf.fd` (*fd.*) Font declarations for BulletsADF font

```
\ProvidesFile{ubulletsadf.fd}[v1.3 2024/10/01 font definitions for U/BulletsADF.]
```

addaswyd o t1phv.fd (dyddiad y ffeil fd: 2020-03-25)

```
  \expandafter\ifx\csname adfbullets@scale\endcsname\relax
    \let\adfbullets@@scale\@empty
  \else
    \edef\adfbullets@@scale{s*[\csname adfbullets@scale\endcsname]}%
  \fi
\DeclareFontFamily{U}{BulletsADF}{}
\DeclareFontShape{U}{BulletsADF}{m}{n}{
  <-> \adfbullets@@scale BulletsADF
}{}
\DeclareFontShape{U}{BulletsADF}{m}{sc}{<->ssub * BulletsADF/m/n}{}
\DeclareFontShape{U}{BulletsADF}{m}{it}{<->ssub * BulletsADF/m/sc}{}
\DeclareFontShape{U}{BulletsADF}{m}{sl}{<->ssub * BulletsADF/m/it}{}
\DeclareFontShape{U}{BulletsADF}{m}{si}{<->ssub * BulletsADF/m/sl}{}
\DeclareFontShape{U}{BulletsADF}{m}{scit}{<->ssub * BulletsADF/m/si}{}
\DeclareFontShape{U}{BulletsADF}{m}{scsl}{<->ssub * BulletsADF/m/scit}{}
\DeclareFontShape{U}{BulletsADF}{b}{n}{<->ssub * BulletsADF/m/scsl}{}
\DeclareFontShape{U}{BulletsADF}{b}{sc}{<->ssub * BulletsADF/b/n}{}
\DeclareFontShape{U}{BulletsADF}{b}{it}{<->ssub * BulletsADF/b/sc}{}
\DeclareFontShape{U}{BulletsADF}{b}{sl}{<->ssub * BulletsADF/b/it}{}
\DeclareFontShape{U}{BulletsADF}{b}{si}{<->ssub * BulletsADF/b/sl}{}
\DeclareFontShape{U}{BulletsADF}{b}{scit}{<->ssub * BulletsADF/b/si}{}
\DeclareFontShape{U}{BulletsADF}{b}{scsl}{<->ssub * BulletsADF/b/scit}{}
\DeclareFontShape{U}{BulletsADF}{bx}{n}{<->ssub * BulletsADF/b/scsl}{}
\DeclareFontShape{U}{BulletsADF}{bx}{sc}{<->ssub * BulletsADF/bx/n}{}
\DeclareFontShape{U}{BulletsADF}{bx}{it}{<->ssub * BulletsADF/bx/sc}{}
\DeclareFontShape{U}{BulletsADF}{bx}{sl}{<->ssub * BulletsADF/bx/it}{}
\DeclareFontShape{U}{BulletsADF}{bx}{si}{<->ssub * BulletsADF/bx/sl}{}
\DeclareFontShape{U}{BulletsADF}{bx}{scit}{<->ssub * BulletsADF/bx/si}{}
\DeclareFontShape{U}{BulletsADF}{bx}{scsl}{<->ssub * BulletsADF/bx/scit}{}

  \DeclareUnicodeCharacter{2022}{\textbullet}
%%%%%  \DeclareUnicodeCharacter{2724}{balloon 4-pointed asterisk}
%  \DeclareUnicodeCharacter{2720}{$\maltese$}
%%%%%%%%%%%%  \DeclareUnicodeCharacter{2737}{8-pointed rectilinear star}
%  \DeclareUnicodeCharacter{25CC}{\circle{} filled}
  \DeclareUnicodeCharacter{2B1B}{$\blacksquare$}
  \DeclareUnicodeCharacter{2BC1}{$\diamond$}
  \DeclareUnicodeCharacter{2BC7}{$\triangleleft$}
  \DeclareUnicodeCharacter{2BC8}{$\triangleright$}
  \DeclareUnicodeCharacter{2BC5}{triangle up}
  \DeclareUnicodeCharacter{2BC6}{triangle down}
  \DeclareUnicodeCharacter{2B98}{arrowhead left top highlighted}
  \DeclareUnicodeCharacter{2B9A}{arrowhead right top highlighted}
%%%  \DeclareUnicodeCharacter{2B2C}{ellipse}
  \DeclareUnicodeCharacter{25CE}{dot large}
  \DeclareUnicodeCharacter{00B7}{dot}
  \DeclareUnicodeCharacter{29BF}{circled bullet}
```

```
% \DeclareUnicodeCharacter{2BC0}{$\blacksquare$}
  \DeclareUnicodeCharacter{2BCC}{cusp}
  \DeclareUnicodeCharacter{2BCE}{cusp open}
  \DeclareUnicodeCharacter{25CB}{\circle{} open}
```

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Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

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