

NAME

autosp – preprocessor to generate note-spacing commands for MusiXTeX scores

SYNOPSIS

autosp [-v | --version | -h | --help]

autosp [-d | --dotted] [-l | --log] *infile* [.aspc] [*outfile* [.tex]]

DESCRIPTION

This program makes it easier to create MusiXTeX scores by converting (non-standard) commands of the form `\notes ... \en` (or `\an ... \en`) into one or more conventional note-spacing commands (`\notes \Notes \Notes ...`), determined by the actual note values, with `\sk` spacing commands inserted as necessary. The coding for an entire measure can be entered one part at a time, without concern for note-spacing changes within the part or spacing requirements of other parts.

For example, if applied to

```
\notes\qa J\qa K&\ca l\qa m\ca n\en
```

autosp generates

```
\Notes\qa J\sk\qa K\sk&\ca l\qa m\sk\ca n\en
```

Typically, an `\notes` command generates several conventional note-spacing commands.

If the *infile* argument does not have an .aspc extension, input is taken from *infile*.aspc if that file exists.

If the *outfile* argument does not have a .tex extension, output is sent to *outfile*.tex. If no *outfile* argument is provided, output will go to *infile*.tex (or to *infile*.ltx if a `\documentclass` declaration is encountered).

For `\notes` commands, line breaks and spaces may precede note segments, allowing more flexible source formatting; the line breaks and spaces will be elided from the output.

For example,

```
\an
\ibl0K0\qb0K\bb10\qb0{.K}\tbbb10\tbb10\ql0L&
\ibb11m{-2}\qb1{.m}\tbbb11\tbb11\qb11\ql1k\en
```

is acceptable and generates

```
\notesp\ibl0K0\qb0K&\ibb11m{-2}\qb1{.m}\en
\nnotes\sk&\tbbb11\tbb11\qb11\en
\notesp\nbb10\qb0{.K}&\tql1k\en
```

`\nnotes\tbbb10\tbb10\tq10L&\sk\en`

If the `-l` (`--log`) option is used, a very detailed log *infile.alog* is generated.

If the `-d` (`--dotted`) option is used, *dotted* beam notes of the form `\qb{n}{.p}` are *not* given extra space; it is assumed that the subsequent note will be shifted by a `\roff`-like command or a spacing command such as `\qsk` or `\hqsk`. Commands of the form `\qlp{p}`, `\qlpp{p}`, ..., `\qpb{n}{p}` and `\qppb{n}{p}` are always spaced as indicated.

If there is a single staff, consecutive whole-bar rest bars are merged into a multi-bar rest. Bar-centered rests can be coded using the standard `\defatnextbar` notation but the non-standard command `\Cpause` (or `\Cp`) in a note segment also generates a bar-centered rest.

Spacing commands `\sk` and `\bsk` in the source are discarded, but not "small" skips `\hsk`, `\qsk`, `\tqsk`, `\hqsk` or `\qqsk`, or the small "backward" skips `\hbsk`, `\bqsk`, `\btsk`, or `\bhsk`. Moreover, non-standard commands `\QQsk`, `\HQsk`, `\TQsk` and `\Qsk` in the source generate "global" skips; i.e., the effect of `\qqsk`, `\hqsk`, `\tqsk` or `\qsk`, respectively, in *every* staff. These ensure that staves remain synchronized if additional spacing is needed in any staff(s).

Global skips may also be obtained within collective-coding sequences by using up to four successive commas to get the effects of `\QQsk`, `\HQsk`, `\TQsk` or `\Qsk`, respectively. Global skips `\tqsk` (or, for double-flats, `\qsk`) are automatically inserted before accidentals (`'^`, `'_`, `'=`, `'<`, `'>`) on collective-coding notes (except when the preceding note is "virtual"; i.e., a skip). If this automatic additional spacing is *not* wanted in some context, it may be avoided by replacing the accidental in the collective-coding sequence by any of the *explicit* accidental commands: `\sh`, `\fl`, `\na`, `\smallsh`, `\bigsh`, etc. If the automatic spacing is insufficient, the spacing may be increased by adding sufficient commas or using a conventional notes command instead of `\an`.

A note segment can be completely empty, but if a note segment should start with or contain a "space," the note-value of that space must be made explicit with a command of the form `\ha{*}`, `\qa{*}`, `\qa{*}`, `\ca{*}`, etc.

From version 2017-06-14, the effects of `\TransformNotes` calls are implemented by the **autosp** pre-processor. This enables use of `musixlyr` in **autosp** scores; `musixlyr.tex` is incompatible with the `musixtnt.tex` implementation of `\TransformNotes`.

All other conventional MusiXTeX commands are output exactly as given in the input.

OPERATION

autosp determines the spacing for ordinary notes from the note commands themselves; for example,

+ `\qa`, `\qu`, `\ql`, `\qp` result in `\Notes`;

+ \ca, \cu, \cl, \ds result in \Notes;
and so on.

The spacing for *beamed* notes is determined by the beam multiplicity, so that \ib... results in \Notes, \ibb... results in \notes, etc.

Collective coding of note sequences (including accidentals and dots) is handled by expanding the sequence into a sequence of individual note commands.

autosp scales notes by the relevant instrument-size value.

LIMITATIONS

autosp assumes that & and | (rather than \nextinstrument and \nextstaff) are used to separate instruments and staves.

Appoggiaturas and grace notes are recognized by the use of \tinynotesize; note-spacing of 1.45\elemskip is used. If this isn't suitable and can't be corrected with a small skip, a \vnotes command with any desired spacing can be used.

autosp supports *x-tuplets* introduced using \xtuplet{x} or \xxtuplet{x:y} and *triplets* introduced using any of the following commands (regardless of any re-definition of \txt or \tuplettxt):

\triolet
\uptrio
\downtrio
\uptuplet
\downtuplet

autosp assumes that an x-tuplet is to be played in $(x-1)/x$ of the apparent x-tuplet duration. So, for example, a triplet in eighths is assumed to be played in the time of one quarter note. If this assumption isn't valid, the x-tuplet must be coded explicitly using a suitable \vnotes command; see the first measure of barsant2.aspc for an example of a non-standard x-tuplet: a 5-tuple of 64th notes with an intended duration of *six* 64ths.

In some polyrhythmic scores, the \txt numeral may be displaced, even if the notes themselves are correctly spaced. In these cases, it is possible to suppress the normal output of \txt by using the non-standard commands \Triolet (no arguments) or \XTuplet{k}\ and placing a numeral at the correct location using \zcn (i.e., \zcharnote).

autosp can deal with simultaneous x-tuplets in multiple staves provided the x values and total note durations are identical.

In some baroque scores, particularly by J.S. Bach, a beamed sixteenth note is vertically aligned with the third note of a triplet of eighth notes in another staff (implying that they should be sounded simultaneously); e.g.,

```
\ibl0L0\qb0{.L}\tqql0L
```

would be played as if notated

```
\uptrio{b}10\ql L\hroff{\cl L}
```

The following coding will align the beamed sixteenth note with the third note of a triplet in another staff:

```
\ibl0L0\qb0{.L}\hbsk\tqql0L
```

and, similarly, for triplets of sixteenth notes:

```
\bbu0J0\qb0{.J}\hbsk\inqqu0J\qb0{.J}\hbsk\tqqqu0J
```

Generally, user-defined macros are not processed or expanded; however, definitions of the form

```
\def\atnextbar{\znotes ... \en}
```

generate definitions that do take account of `\TransformNotes`.

All staves are assumed to have the same meter; see `kinder2.aspc` for an example of how to work around this.

autosp may not be effective for music with more than one voice in a single staff. It might be advisable to use a separate staff for each voice, to avoid `\anotes` when necessary, or to omit certain voices initially and add them into the resulting TeX file.

EXAMPLES

See files `quod2.aspc`, `kinder2.aspc`, `geminiani.aspc` and `barsant2.aspc` for scores suitable for input to **autosp**. The program **tex2aspc** can be used to convert "legacy" MusiXTeX scores to `.aspc` format.

SEE ALSO

msxlint(1) **tex2aspc**(1)

`musixdoc.pdf`

AUTHOR

This program and manual page were written by Bob Tennent <rdt@cs.queensu.ca>.