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 \anotes ... \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
\anotes\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 \anotes 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 \anotes 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\nbbl0\qb0{.K}\tbbbl0\tbbbl0\tql0L&
\ibbl1m{-2}\qb1{.m}\tbbbl1\tbbbl1\tql1k\en

is acceptable and generates
\nnotesp\ibl0K0\qb0K&\ibbl1m{-2}\qb1{.m}\en
\nnotes\sk\&\tbbbl1\tbbbl1\qb1\en
\nnotes\nbbl0\qb0{.K}\&\tql1k\en
\nnotes\tbbbl0\tbbbl0\tql0L&\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 \rof-like command or a spacing command such as \qsk or \hqsk. Commands of the form \qlp{p}, \qlpp{p}, ..., \qb{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 \def\atnextbar 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, \qqs, \hqqs or \qqqs, or the small "backward" skips \bhs, \bqhs, \btqs or \bhqs. Moreover, non-standard commands \QQsk, \HQsk \TQsk and \Qsk in the source generate "global" skips; i.e., the effect of \qqqs, \hqqs, \ttqs or \qsk, respectively, in every staff. These ensure that staffs 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 \ttqs (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 autop pre-processor. This enables use of musixlyr in autop scores; musixlyr.tex is incompatible with the musixtnt.te xi implementation of \TransformNotes.

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

**OPERATION**

**autop** 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.

**autop** scales notes by the relevant instrument-size value.

**LIMITATIONS**

**autop** assumes that & and | (rather than \nextinstrument and \nextstaff) are used to separate instruments and staffs.

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

\autosp supports x-tuplets introduced using \xtuplet{x} or \xtuplet{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 \notes 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 staffs 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}\hr{cl}\l

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

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

and, similarly, for triplets of sixteenth notes:

\ibbu0J0\qb0{.J}\hs\qq\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 staffs 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 \notes 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 au-tosp. 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>.