b.suite - b.note Music User Guide

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# Introduction

b.suite and b.note can handle musical scores from print to braille and back again, and can also play them.

b.suite, the application that runs on a b.book or on a PC, also provides advanced playback functions: play a range of measures, pause, stop, optional announcement of measure numbers, and the ability to make speech synthesis speak or sing. It can announce note names (do re mi...) or the lyrics of a part. We will use the official musical braille notation whenever possible and adapt it when needed, as explained in this guide.

It is possible to open scores prepared by sighted users with notation software such as MuseScore or others. You can also find scores on the internet. Since each program uses its own file format, we use the MusicXML format, which is the most portable format across score editors. If you have a file from MuseScore in its native format, usually `mscz`, you can export it from MuseScore as a MusicXML file. The same applies to other notation editors.

Conversely, you can type a score in braille, listen to it, and export it to the other supported format: a BXML file can be exported to MusicXML, and a MusicXML file can be exported to BXML.

b.note uses two file types: MusicXML files, which allow exchange between blind and sighted users, BXML files, which are a native format created by Eurobraille to preserve information that is not covered by the MusicXML format.

You can customize which information is shown in braille when you open a file for reading, for example whether clef indications should be shown. On the other hand, if you want to create or modify a score, you will need to display much more information so that the software can correctly handle difficulties related to larger or smaller note values. In braille, for example, a whole-note C is written like a sixteenth-note C. To avoid any ambiguity when the software interprets the score, it is currently mandatory to use an eight-dot input mode, which is explained below.

# Opening a file

Like any other file in b.note or b.suite, music files are opened from the explorer: go to the file and press Enter, or perform a strong routine-cursor click on its name. Two file types can be used:

- MusicXML files
- BXML files

## MusicXML files

Any score editor intended for sighted users can save scores in MusicXML format. These files contain multiple pieces of information such as:

- The score title
- Its subtitle
- Its composer
- Its author
- The number of parts and their characteristics
- The time signature
- The key signature
- And of course the different measures and notes that make up the score, etc.

All this information can be shown in braille. However, you may prefer not to show everything in order to make discovering or reading the score easier. Some choices are already enabled by default, but you can adapt them as you wish through the Preferences application, in the main menu, under Music.

For MusicXML files, you can change the following settings:

- Editing mode. There are 4 possible modes:

    - Reading mode, where you can fully customize the braille display of the score, but you cannot listen to it or modify its contents. In this mode, the audio menu is not available.
    - Listening mode, where some braille presentation choices are enforced to allow correct audio playback, but the content cannot be modified. In this mode, saving and exporting are disabled.
    - Editing mode, where presentation choices are enforced so the file can be modified without risking data loss when saving. Playback remains available.
    - Expert mode, which lets you configure the braille presentation freely, listen to the file, and edit its contents, but voluntary or accidental information loss may occur when saving.
- Braille type. You can choose computer braille (8 dots) or literary braille (6 dots) for non-musical information such as titles and lyrics.
- Notes in braille. You can choose to show them in 6 dots with groupings, in 6 dots without groupings, or in 8 dots.
- Intervals. You can display them ascending or descending. For keyboard scores, the standard choice is applied automatically.
- Fingering. You can show or hide it depending on your learning stage.
- Clef. Clefs are of limited use in braille, except to know which ones are used in print.
- Part. Each part can be shown by its full name, its short name, or hidden in reading mode depending on the available settings.
- `b123` bar line. You can choose to show each bar line only as a space, or as a space followed by dots 123 and another space, as musical braille allows. This latter mode is currently required to edit a score so the software can correctly interpret measures.
- Measure number. This helps you locate your place in the piece, for example to resume at measure 9.
- Show measure number every. If measure numbers are enabled, you can show them every 8 measures, for example.
- Display. This lets you present the file by showing the different parts one after another, or by splitting the piece into sections and presenting each part section by section.
- Section. A section is a segment of the part corresponding to an instrument. You can choose to show the whole part in one pass, by system as a sighted reader sees it, or by selecting a number of measures per section.
- Measures per section. If you selected a number of measures per section, you can define that number here.
- Order of instrumental sub-parts. This setting allows sub-parts of an instrument to be displayed in normal or reversed order.
- Annotations. These are indications in the score that describe how a passage should be played.
- Text outside music. These are title, subtitle, composer, and author indications sometimes present in scores; they appear at the beginning of the braille score.
- Lyrics. You can choose not to show them, to show them after each note so there is no doubt about the relation between note and text, at the beginning of the section, or at the end of the section.
- Announce measure numbers. Spoken announcement of measure numbers can also be enabled during playback.

During audio playback, **b.suite** opens a dialog box allowing you to choose a start measure and an end measure. You can then listen to only a portion of the piece and use the `play`, `pause`, and `stop` commands during playback.

If the score must make the lyrics speak or sing, **b.suite** uses `espeak-ng`. If this component is not installed on the PC, a warning message is displayed.

Notes or lyrics can also be spoken using b.suite's usual voice. The singing voice in `espeak-ng` adjusts its speed to the tempo and note duration.

## BXML files

This file type is specific to the music application in b.note and b.suite. Very close in structure to MusicXML files, it can also store information related to features specific to our application, as well as indications specific to musical braille.

The existence of both file types, MusicXML and BXML, also makes it possible to configure differently what should be shown in braille for each format.

In the Preferences application, under Music, you will find the same settings as for MusicXML files, plus the following one: Karaoke. This function can be edited in b.note, but is only usable in b.suite. It makes speech synthesis read the phrases you will have to sing before you actually have to sing them, in order to remind you of the lyrics.

# Displaying the score in b.suite

When a music document opens in b.suite, the braille text and graphical score are displayed side by side. This lets you follow the same passage in braille and standard musical notation, particularly with a teacher or sighted assistant.

In the `view` menu, `hide the score` ( `Ctrl+Shift+P` ) leaves only the text on screen. The command then becomes `show the score` to restore both views.

When the score is displayed, the `view` menu offers `zoom in` ( `Ctrl++` ), `zoom out` ( `Ctrl+-` ) and `fit page` . The `previous page` and `next page` buttons let you browse the pages.

Clicking a note selects its passage in the braille text. Conversely, moving the cursor through the text highlights the corresponding note in the score. The description below the score shows the part, measure number and note or rest, including pitch, accidental and duration; dotted durations are also indicated. If no reliable braille position is available for a note, a message indicates this.

Musical changes are made in the braille text. When the score has focus, typing and braille commands are passed to this text. Clicking a note selects the passage to read or modify.

## Note navigation

Navigation initially moves by character. The `view > switch to note navigation` command ( `Ctrl+Shift+J` ) lets you use the `left` and `right` arrows to move to the previous or next note. Each move selects the corresponding braille passage and speaks its description, including its duration.

The command then becomes `switch to character navigation` ; the same shortcut returns to normal navigation to edit the braille signs. This choice also applies when the score is hidden. Arrows combined with modifier keys retain their usual behaviour in the editor.

## Updating the score

After the braille text changes, the preview is prepared automatically following a short pause in typing. You can also choose `view > refresh ( F6 )` to rebuild it. The zoom and viewing position are preserved during updates, provided the pages still exist.

If the musical text is incomplete or incorrect, a message indicates that the preview is unavailable and asks you to complete or correct the text. The last available preview may remain visible, but note highlighting is suspended until an update succeeds. Correct the text or undo the change, then use `F6` if necessary.

# Creating or editing a file

## Creating a file

From the explorer, you can create a new file through the File, New, MusicXML or BXML menu. The BXML format is preferable because it can contain additional information compared with MusicXML, especially as the music application evolves. In the **b.suite** music editor, the `Export` command automatically creates the other format: a `musicxml` file exports to `bxml` , and a `bxml` file exports to `musicxml` . You must then follow the recommendations from chapter 2.3.

## Editing a file

After opening an existing file, you can modify it. You must then follow the recommendations from chapter 2.3. You must be in editing or expert mode in order to write to the file.

The `Properties` command displays information about the music document: number of paragraphs, words, and characters, modified or unmodified state, and file path. This information is shown in a multi-line box so it remains readable when the message is long, for example with a full file name.

## Recommendations for editing a file

In the current state of the b.note music software, it is essential to follow the recommendations below in order to obtain a correct result.

### Notes

In musical braille, note writing is made more complex by the fact that one braille code can have several meanings:

- Whole notes are written like sixteenth notes.
- Half notes are written like thirty-second notes.
- Quarter notes are written like sixty-fourth notes.
- Eighth notes are written like one-hundred-twenty-eighth notes.
- Note groupings may also mean that if you have four sixteenth notes in the same beat, you can write the first one as a sixteenth note (therefore like a whole note) and the next three as eighth notes.

The b.note music software cannot currently handle all these cases correctly, which is why we ask you to use 8-dot braille notation to enter notes. Whole, half, quarter, and eighth notes are written as usual. Sixteenth, thirty-second, sixty-fourth, and one-hundred-twenty-eighth notes are also written as usual, but with dot 7 added. Once the file has been saved, you can switch back to the traditional notation if you no longer need to modify the score.

### Bar lines

In musical braille, each measure is most often separated from the next by a space. However, the isolated dots-123 symbol can also be used to mark the bar line. For the software to interpret each measure correctly, it is currently mandatory to use the dots-123 symbol as the measure separator. This is because a space does not represent only the bar line; it can also appear as a separator for time signatures, key signatures, etc. Once the file has been saved, you can switch back to the traditional notation if you no longer need to modify the score by switching to reading mode.

### Spaces in a braille score

To be recognized correctly, some elements must be written in isolation, either at the beginning of a line followed by a space, or surrounded by a space before and after. This applies to:

- Time signatures
- Key signatures
- Annotations in a score
- Clefs
- Part indications

### Elements that must appear alone on a line

The elements title, subtitle, work title, work number, composer, author, lyricist, arranger, copyright, and plain score header text are usually written in embossed braille at the beginning of the score, without any particular indication of their nature. In MusicXML, each type of element is specifically described so that it can be displayed correctly in print. These title and header indications must therefore be prefixed with the appropriate code, which was created for this purpose. See the appendix.

# Appendix

## Codes created for compatibility with the MusicXML format

| Meaning | Braille code |
|---|---|
| Work number at the beginning of the score, work number | 56,23,23,2456,1345,25 |
| Work title at the beginning of the score, work title | 56,23,23,2456,2345,25 |
| Text at the beginning of the score, credit words | 56,23,23,14,2456,25 |

| Meaning | Braille code |
|---|---|
| Title at the beginning of the score, credit title | 56,23,23,14,2345,25 |
| Subtitle at the beginning of the score, credit sub-title | 56,23,23,14,234,25 |
| Composer at the beginning of the score, credit composer | 56,23,23,14,14,25 |
| Lyricist at the beginning of the score, credit lyricist | 56,23,23,14,123,25 |
| Arranger at the beginning of the score, credit arranger | 56,23,23,14,1,25 |
| Copyrights at the beginning of the score, credit rights | 56,23,23,14,1235,25 |
| Track name, at the beginning of each track | 56,23,23,1234,25 |
| Chromatic transposition | 56,23,3,2345,14,36,part,25,number of semitones |
| Diatonic transposition | 56,23,3,2345,145,36,part,25,number of notes |
| Octave transposition | 56,23,3,2345,135,36,part,25,number of octaves |
| Doubling transposition | 56,23,3,2345,12,36,part,25,nothing or yes or no |
| MIDI program | 56,23,3,134,1234,36,part,25,number from 1 to 128 |
| MIDI channel | 56,23,3,134,14,36,part,25,channel from 1 to 16 |
| MIDI volume | 56,23,3,134,1236,36,part,25,volume from 0 to 127 |
| Speak or sing notes in the b.suite player | 56,23,3,234,1345,36,part,25,value: 0 none, 1 speak, 2 sing |
| Speak or sing lyrics in the b.suite player | 56,23,3,234,123,36,part,25,value: 0 none, 1 speak, 2 sing |
| Language for the singing voice | 56,23,3,234,15,36,part,25,language code |
| Descending interval | 46,46,345 |
| Ascending interval | 456,456,345 |
| C maxima, value of 8 whole notes, identical for the other notes or rests | 13456,45,14,45,14,45,14,13456 |
| C longa, identical for the other notes or rests | 13456,45,14,45,14,13456 |
| C sixteenth note, identical for the other notes or rests | 134567 |
| C thirty-second note, identical for the other notes or rests | 13457 |
| C sixty-fourth note, identical for the other notes or rests | 14567 |

| Meaning | Braille code |
|---|---|
| C one-hundred-twenty-eighth note, identical for the other notes or rests | 1457 |
| C two-hundred-fifty-sixth note, identical for the other notes or rests | 1345678 |
| C 512th note, identical for the other notes or rests | 134578 |
| C 1024th note, identical for the other notes or rests | 145678 |

# Recognized symbols

## Notes rests and octaves

| Meaning | Braille code |
|---|---|
| C eighth note | 145 |
| D eighth note | 15 |
| E eighth note | 124 |
| F eighth note | 1245 |
| G eighth note | 125 |
| A eighth note | 24 |
| B eighth note | 245 |
| Eighth rest | 1346 |
| C quarter note | 1456 |
| D quarter note | 156 |
| E quarter note | 1246 |
| F quarter note | 12456 |
| G quarter note | 1256 |
| A quarter note | 246 |
| B quarter note | 2456 |
| Quarter rest | 1236 |
| C half note | 1345 |

| Meaning | Braille code |
|---|---|
| D half note | 135 |
| E half note | 1234 |
| F half note | 12345 |
| G half note | 1235 |
| A half note | 234 |
| B half note | 2345 |
| Half rest | 136 |
| C whole note | 13456 |
| D whole note | 1356 |
| E whole note | 12346 |
| F whole note | 123456 |
| G whole note | 12356 |
| A whole note | 2346 |
| B whole note | 23456 |
| Whole rest | 134 |
| C one-hundred-twenty-eighth note | 1457 |
| D one-hundred-twenty-eighth note | 157 |
| E one-hundred-twenty-eighth note | 1247 |
| F one-hundred-twenty-eighth note | 12457 |
| G one-hundred-twenty-eighth note | 1257 |
| A one-hundred-twenty-eighth note | 247 |
| B one-hundred-twenty-eighth note | 2457 |
| Thirty-second rest | 13467 |
| C sixty-fourth note | 14567 |
| D sixty-fourth note | 1567 |
| E sixty-fourth note | 12467 |
| F sixty-fourth note | 124567 |
| G sixty-fourth note | 12567 |

| Meaning | Braille code |
|---|---|
| A sixty-fourth note | 2467 |
| B sixty-fourth note | 24567 |
| Sixteenth rest | 12367 |
| C thirty-second note | 13457 |
| D thirty-second note | 1357 |
| E thirty-second note | 12347 |
| F thirty-second note | 123457 |
| G thirty-second note | 12357 |
| A thirty-second note | 2347 |
| B thirty-second note | 23457 |
| Eighth rest | 1367 |
| C sixteenth note | 134567 |
| D sixteenth note | 13567 |
| E sixteenth note | 123467 |
| F sixteenth note | 1234567 |
| G sixteenth note | 123567 |
| A sixteenth note | 23467 |
| B sixteenth note | 234567 |
| Quarter rest | 1347 |
| C two-hundred-fifty-sixth note | 14578 |
| D two-hundred-fifty-sixth note | 1578 |
| E two-hundred-fifty-sixth note | 12478 |
| F two-hundred-fifty-sixth note | 124578 |
| G two-hundred-fifty-sixth note | 12578 |
| A two-hundred-fifty-sixth note | 2478 |
| B two-hundred-fifty-sixth note | 24578 |
| One-hundred-twenty-eighth rest | 134678 |
| C breve | 13456,45,14,13456 |

| Meaning | Braille code |
|---|---|
| D breve | 1356,45,14,1356 |
| E breve | 12346,45,14,12346 |
| F breve | 123456,45,14,123456 |
| G breve | 12356,45,14,12356 |
| A breve | 2346,45,14,2346 |
| B breve | 23456,45,14,23456 |
| Two whole rests | 134,45,14,134 |
| C longa | 13456,45,14,45,14,13456 |
| D longa | 1356,45,14,45,14,1356 |
| E longa | 12346,45,14,45,14,12346 |
| F longa | 123456,45,14,45,14,123456 |
| G longa | 12356,45,14,45,14,12356 |
| A longa | 2346,45,14,45,14,2346 |
| B longa | 23456,45,14,45,14,23456 |
| Four whole rests | 134,45,14,45,14,134 |
| C maxima | 13456,45,14,45,14,45,14,13456 |
| D maxima | 1356,45,14,45,14,45,14,1356 |
| E maxima | 12346,45,14,45,14,45,14,12346 |
| F maxima | 123456,45,14,45,14,45,14,123456 |
| G maxima | 12356,45,14,45,14,45,14,12356 |
| A maxima | 2346,45,14,45,14,45,14,2346 |
| B maxima | 23456,45,14,45,14,45,14,23456 |
| Eight whole rests | 134,45,14,45,14,45,14,134 |
| Octave 1 | 4 |
| Octave 2 | 45 |
| Octave 3 | 456 |
| Octave 4 | 5 |
| Octave 5 | 46 |

| Meaning | Braille code |
|---|---|
| Octave 6 | 56 |
| Octave 7 | 6 |
| Octave 0 | 4,4 |
| Octave 8 | 6,6 |

## Clefs

| Meaning | Braille code |
|---|---|
| Treble clef, soprano | 345,34,123 |
| Treble clef in the left-hand part | 345,34,13 |
| Bass clef, bass | 345,3456,123 |
| Bass clef in the right-hand part | 345,3456,13 |
| C clef, alto clef for viola or tenor clef for bass | 345,346,123 |
| Treble clef 1st line | 345,34,4,123 |
| Treble clef 2nd line | 345,34,45,123 |
| Treble clef 3rd line | 345,34,456,123 |
| Treble clef 4th line | 345,34,5,123 |
| Treble clef 5th line | 345,34,46,123 |
| Bass clef 1st line | 345,3456,4,123 |
| Bass clef 2nd line | 345,3456,45,123 |
| Bass clef 3rd line | 345,3456,456,123 |
| Bass clef 4th line | 345,3456,5,123 |
| Bass clef 5th line | 345,3456,46,123 |
| Treble clef left hand 1st line | 345,34,4,13 |
| Treble clef left hand 2nd line | 345,34,45,13 |
| Treble clef left hand 3rd line | 345,34456,13 |
| Treble clef left hand 4th line | 345,34,5,13 |
| Treble clef left hand 5th line | 345,34,46,13 |

| Meaning | Braille code |
|---|---|
| Bass clef right hand 1st line | 345,3456,4,13 |
| Bass clef right hand 2nd line | 345,3456,45,13 |
| Bass clef right hand 3rd line | 345,3456,456,13 |
| Bass clef right hand 4th line | 345,3456,5,13 |
| Bass clef right hand 5th line | 345,3456,46,13 |
| C clef 1st line | 345,346,4,123 |
| C clef 2nd line | 345,346,45,123 |
| C clef 3rd line | 345,346,456,123 |
| C clef 4th line | 345,346,5,123 |
| C clef 5th line | 345,346,46,123 |

To obtain any of the preceding clefs with an octave above, meaning that it must be played one octave higher, add 3456,125 after the clef code; for example: treble clef with a small 8 above: 345,34,123,3456,125 To obtain any of the preceding clefs with an octave below, meaning that it must be played one octave lower, add 3456,236 after the clef code; for example: treble clef with a small 8 below: 345,34,123,3456,236

## Accidentals and key signatures

| Meaning | Braille code |
|---|---|
| Sharp | 146 |
| Double sharp | 146,146 |
| Flat | 126 |
| Double flat | 126,126 |
| Natural | 16 |
| Quarter tone up | 4,146 |
| Quarter tone down | 4,126 |
| Three-quarter tone up | 456,146 |
| Three-quarter tone down | 456,126 |
| Time signature C or common time | 46,14 |
| Cut time signature | 456,14 |
| 4/4 or other time signature | 3456,145,256 |

| Meaning | Braille code |
|---|---|
| Key signature, 1 sharp | 146 |
| Key signature, 2 sharps | 146,146 |
| Key signature, 3 sharps | 146,146,146 |
| Key signature, 4 sharps | 3456,145,146 |
| Key signature, 5 sharps | 3456,15,146 |
| Key signature, 6 sharps | 3456,124,146 |
| Key signature, 7 sharps | 3456,1245,146 |
| Key signature, 1 flat | 126 |
| Key signature, 2 flats | 126,126 |
| Key signature, 3 flats | 126,126,126 |
| Key signature, 4 flats | 3456,145,126 |
| Key signature, 5 flats | 3456,15,126 |
| Key signature, 6 flats | 3456,124,126 |
| Key signature, 7 flats | 3456,1245,126 |

## Rhythmic groupings

| Meaning | Braille code |
|---|---|
| Triplet | 23 |

## Chords

| Meaning | Braille code |
|---|---|
| Second | 34 |
| Third | 346 |
| Fourth | 3456 |
| Fifth | 35 |
| Sixth | 356 |
| Seventh | 25 |
| Octave | 36 |

| Meaning | Braille code |
|---|---|
| Full-measure coupler | 126,345 |

## Ties and syncopations

| Meaning | Braille code |
|---|---|
| Tie between 2 notes or chords | 14 |
| Beginning of a phrase slur over more than 4 notes or chords | 14,14 |
| End of a phrase slur over more than 4 notes or chords | 14 |
| Beginning of a phrase slur over more than 4 notes or chords | 56,12 |
| End of a phrase slur over more than 4 notes or chords | 45,23 |
| Syncopation on a single note | 4,14 |

## Fingering

| Meaning | Braille code |
|---|---|
| Keyboard 1st finger | 1 |
| Keyboard 2nd finger | 12 |
| Keyboard 3rd finger | 123 |
| Keyboard 4th finger | 2 |
| Keyboard 5th finger | 13 |

## Bar lines and repeats

| Meaning | Braille code |
|---|---|
| Braille bar line for special uses | 123 |
| Double bar line at the end of the piece | 126,13 |
| Double bar line at the end of a measure or section | 126,13,3 |
| Print repeat, double bar followed by dots, beginning of repeat | 126,2356 |
| Print repeat, double bar preceded by dots, end of repeat | 126,23 |
| Print repeat, first ending (volta) | 3456,2 |
| Print repeat, second ending (volta) | 3456,23 |

| Meaning | Braille code |
|---|---|
| Print repeat, third ending (volta) | 3456,25 |
| Print repeat, fourth ending (volta) | 3456,256 |

## Dynamics

| Meaning | Braille code |
|---|---|
| Staccato (dot) | 236 |
| Staccatissimo (wedge-shaped dot) | 6,236 |
| Accent (horizontal v pointing right) | 46,236 |
| Agogic accent (short l) | 456,236 |
| Marcato (thick v ) | 56,236 |
| Full breath mark | 6,34 |
| Fermata | 126,123 |
| Diverging lines (crescendo) | 345,14 |
| End of diverging lines | 345,25 |
| Converging lines, decrescendo | 345,145 |
| End of converging lines | 345,256 |

## Ornaments

| Meaning | Braille code |
|---|---|
| Trill | 235 |
| Appoggiatura | 5,26 |
| Short appoggiatura (formerly grace note) | 26 |
| Upper mordent | 5,235 |
| Extended upper mordent | 56,235 |
| Lower mordent | 5,235,123 |
| Extended lower mordent | 56,235,123 |
| Ascending arpeggio | 345,13 |
| Ascending arpeggio spanning 2 or more staves | 5,345,13 |

| Meaning | Braille code |
|---|---|
| Descending arpeggio | 345,13,13 |
| Descending arpeggio spanning 2 or more staves | 5,345,13,13 |

## Keyboard music

| Meaning | Braille code |
|---|---|
| Piano, partie de right hand | 46,345 |
| Piano, partie de left hand | 456,345 |
| Piano, solo part to accompany | 5,345 |
| Piano, partie de right hand quand les intervalles se lisent enmontant | 46,345,345 |
| Piano, partie de left hand quand les intervalles se lisent en descendant | 456,345,345 |
| Piano, pedal or other pedal-down indication | 126,14 |
| Piano, star or other pedal-release indication | 16,14 |
| Organ, organ pedal part | 45,345 |

## Vocal music

| Meaning | Braille code |
|---|---|
| Soprano | 345,234,3 |
| Alto | 345,1,3 |
| Tenor | 345,2345,3 |
| Bass | 345,12,3 |
| Soprano1 | 345,234,2,3 |
| Alto1 | 345,1,2,3 |
| Tenor1 | 345,2345,2,3 |
| Bass1 | 345,12,2,3 |
| Soprano2 | 345,234,23,3 |
| Alto2 | 345,1,23,3 |
| Tenor2 | 345,2345,23,3 |
| Bass2 | 345,12,23,3 |

# MIDI programs

The sound of the instruments you hear when listening to a file depends on their MIDI program. These programs are numbered from 1 to 128 on synthesizers, or from 0 to 127 in software that manages them. We use numbering from 1 to 128 to remain consistent with synthesizers. Here is the list of instruments in the General MIDI standard.

Pianos 1 Acoustic grand piano 2 Bright acoustic piano 3 Electric grand piano 4 Honky-tonk piano 5 Rhodes piano 6 Chorused piano 7 Harpsichord 8 Clavinet Percussive chromatic instruments 9 Celesta 10 Glockenspiel 11 Music box 12 Vibraphone 13 Marimba 14 Xylophone 15 Tubular bells 16 Dulcimer Organs 17 Hammond organ 18 Percussive organ 19 Rock organ 20 Church organ 21 Reed organ 22 Accordion 23 Harmonica 24 Bandoneon Guitars 25 Classical guitar 26 Acoustic guitar 27 Electric guitar - Jazz 28 Electric guitar - clean 29 Electric guitar - muted 30 Overdriven guitar 31 Distortion guitar 32 Guitar harmonics Basses 33 Acoustic bass 34 Electric bass, fingered 35 Electric bass, picked 36 Fretless bass 37 Slap bass 1 38 Slap bass 2 39 Synth bass 1 40 Synth bass 2 Strings and classical instruments 41 Violin 42 Viola 43 Cello 44 Contrabass 45 Tremolo strings 46 Pizzicato strings 47 Harp 48 Timpani Ensembles 49 String ensemble 1 50 String ensemble 2 51 Synth strings 1 52 Synth strings 2 53 Choir - Aah 54 Choir - Ooh 55 Synth voice 56 Orchestra hit Brass 57 Trumpet 58 Trombone 59 Tuba 60 Muted trumpet 61 French horn 62 Brass section 63 Synth brass 1 64 Synth brass 2 Woodwinds (reed instruments) 65 Soprano saxophone 66 Alto saxophone 67 Tenor saxophone 68 Baritone saxophone 69 Oboe 70 English horn 71 Bassoon 72 Clarinet Flutes 73 Piccolo 74 Flute 75 Recorder 76 Pan flute 77 Blown bottle 78 Shakuhachi 79 Whistle 80 Ocarina Synth - Solo 81 Square wave (Lead 1 (square)) 82 Sawtooth wave (Lead 2 (sawtooth)) 83 Calliope (Lead 3 (calliope lead)) 84 Chiff (Lead 4 (chiff lead)) 85 Charang (Lead 5 (charang)) 86 Solo voice (Lead 6 (voice)) 87 Sawtooth in fifths (Lead 7 (fifths)) 88 Bass & lead (Lead 8 (bass + lead)) Synth - Ensembles 89 Fantasy (Pad 1 (new age)) 90 Warm sound (Pad 2 (warm)) 91 Polysynth (Pad 3 (polysynth)) 92 Choir (Pad 4 (choir)) 93 Bowed (Pad 5 (bowed)) 94 Metallic sound (Pad 6 (metallic)) 95 Halo (Pad 7 (halo)) 96 Sweep (Pad 8 (sweep)) Synth - Effects 97 Ice rain 98 Soundtrack 99 Crystal 100 Atmosphere 101 Brightness 102 Goblins 103 Echoes 104 Space (Sci-Fi) Ethnic instruments 105 Sitar 106 Banjo 107 Shamisen 108 Koto 109 Kalimba 110 Bagpipe 111 Fiddle 112 Shehnai Percussion 113 Tinkle bell 114 Agogo 115 Steel drum 116 Woodblock 117 Taiko drum 118 Melodic tom 119 Synth drum 120 Reverse cymbal Sound effects 121 Guitar fret noise 122 Breath noise 123 Seashore 124 Bird tweet 125 Telephone ring 126 Helicopter 127 Applause 128 Gunshot

# Languages for the singing voice

B.suite, our software running on a PC, can speak or sing the notes or lyrics of a score. The singing voice uses the espeak-ng speech synthesizer. Here is the list of codes to use to select the language: af Afrikaans am Amharic an Aragonese ar arabic as Assamese az Azerbaijani ba Bashkir be Belarusian bg Bulgarian bn Bengali bpy Bishnupriya_Manipuri bs Bosnian ca Catalan cmn Chinese_(Mandarin,_latin_as_English) cs Czech cv Chuvash cy Welsh da Danish de German el greek en english eo Esperanto es Spanish_(Spain) et Estonian eu Basque fa Persian fi Finnish fo Faroese fr french ga Gaelic_(Irish) gd Gaelic_(Scottish) gn Guarani grc Greek_(Ancient) gu Gujarati hak Hakka_Chinese haw Hawaiian he Hebrew hi hindi hr Croatian ht Haitian_Creole hu Hungarian hy Armenian_(East_Armenia) hyw Armenian_(West_Armenia) ia Interlingua id Indonesian io Ido is Icelandic it Italian ja japanese jbo Lojban ka Georgian kk Kazakh kl Greenlandic kn Kannada ko Korean kok Konkani ku Kurdish ky Kyrgyz la Latin lb Luxembourgish lfn Lingua_Franca_Nova lt Lithuanian ltg Latgalian lv Latvian mi Maori mk Macedonian ml Malayalam mr Marathi ms Malay mt Maltese my Myanmar_(Burmese) nb Norwegian_Bokmål nci Nahuatl_(Classical) ne Nepali nl Dutch nog Nogai om Oromo or Oriya pa Punjabi pap Papiamento piqd Klingon pl Polish pt Portuguese_(Portugal) py Pyash qdb Lang_Belta qu Quechua quc K'iche' qya Quenya ro Romanian ru Russian sd Sindhi shn Shan_(Tai_Yai) si Sinhala sjn Sindarin sk Slovak sl Slovenian smj Lule_Saami sq Albanian sr Serbian sv

Swedish sw Swahili ta Tamil te Telugu th Thai tk Turkmen tn Setswana tr Turkish tt Tatar ug Uyghur uk Ukrainian ur Urdu uz Uzbek vi Vietnamese yue Chinese_(Cantonese)