

MuseScore

Reference

Version 2.0

Contents

| | | |
|----------|-------------------------------|----------|
| 1 | ScoreElement Reference | 7 |
| 1.1 | Measures | 7 |
| 1.1.1 | Multi Measure Rests | 7 |
| 1.2 | Frames | 8 |
| 1.2.1 | Horizontal Frames | 8 |
| 1.2.2 | Vertical Frames | 8 |
| 1.2.3 | Text Frames | 8 |
| 1.3 | Staves | 8 |
| 1.4 | Systems | 8 |
| 1.5 | Pages | 8 |
| 1.6 | Voices | 9 |
| 1.7 | Beams | 9 |
| 1.7.1 | Beam Properties | 9 |
| 1.7.2 | Groupings | 9 |
| 1.8 | Articulation | 9 |
| 1.9 | Clefs | 9 |
| 1.10 | Key Signatures | 10 |
| 1.11 | Time Signatures | 10 |
| 1.12 | Barlines | 11 |
| 1.13 | Chords | 11 |
| 1.13.1 | Notes | 11 |
| 1.13.2 | Grace Notes | 11 |
| 1.13.3 | Accidentals | 11 |
| 1.13.4 | Stem | 11 |
| 1.13.5 | Hook | 11 |
| 1.13.6 | Rests | 12 |
| 1.13.7 | Articulation | 12 |
| 1.14 | Lines | 12 |
| 1.14.1 | Slur | 12 |
| 1.14.2 | Tie | 13 |
| 1.14.3 | Crescendo/Diminuendo | 15 |
| 1.14.4 | Ottava | 15 |

| | | |
|----------|--------------------------|-----------|
| 1.14.5 | Volta | 17 |
| 1.14.6 | Pedal Lines | 17 |
| 1.14.7 | Trills | 17 |
| 1.14.8 | Text Lines | 17 |
| 1.14.9 | Simple Lines | 17 |
| 1.15 | Text | 17 |
| 1.15.1 | Title | 17 |
| 1.15.2 | Staff Text | 17 |
| 1.15.3 | System Text | 17 |
| 1.15.4 | Instrument Change | 18 |
| 1.15.5 | Lyrics | 18 |
| 1.15.6 | Fingering | 18 |
| 1.15.7 | Tempo Text | 18 |
| 1.15.8 | Rehearsal Mark | 18 |
| 1.15.9 | Chord Names | 18 |
| 1.15.10 | Dynamics | 18 |
| 1.16 | Repeats | 19 |
| 1.17 | Brakes and Spacer | 19 |
| 1.17.1 | Staff Break | 19 |
| 1.17.2 | Page Break | 19 |
| 1.17.3 | Section Break | 19 |
| 1.17.4 | Spacer | 19 |
| 1.18 | Arpeggio and Glissando | 19 |
| 1.19 | Tremolo | 19 |
| 1.20 | Breath and Pauses | 19 |
| 1.21 | System Brackets | 20 |
| 2 | Program Reference | 21 |
| 2.1 | Menus | 21 |
| 2.1.1 | File | 21 |
| 2.1.2 | Edit | 22 |
| 2.1.3 | View | 23 |
| 2.1.4 | Add | 24 |
| 2.1.5 | Notes | 25 |
| 2.1.6 | Layout | 25 |
| 2.1.7 | Style | 26 |
| 2.1.8 | Plugins | 26 |
| 2.1.9 | Help | 26 |
| 2.2 | Toolbars | 27 |

| | | |
|--------|--------------------|----|
| 2.3 | Workspace | 28 |
| 2.4 | Palettes | 29 |
| 2.4.1 | Palette Operations | 29 |
| 2.4.2 | Edit Palettes | 29 |
| 2.4.3 | Master Palette | 32 |
| 2.5 | Inspector | 32 |
| 2.6 | Style | 32 |
| 2.6.1 | General Style | 32 |
| 2.6.2 | Text Style | 32 |
| 2.6.3 | Chordnames | 32 |
| 2.6.4 | Staff Types | 32 |
| 2.7 | Note Input | 33 |
| 2.7.1 | Keyboard | 33 |
| 2.7.2 | Mouse | 33 |
| 2.7.3 | Midi Keyboard | 33 |
| 2.8 | Layout | 33 |
| 2.8.1 | Page Settings | 33 |
| 2.9 | Transpose | 34 |
| 2.10 | Parts | 34 |
| 2.11 | Album | 34 |
| 2.12 | Metadata | 34 |
| 2.13 | Import | 34 |
| 2.13.1 | Midi Import | 34 |
| 2.14 | Export | 34 |
| 2.15 | Print | 35 |
| 2.16 | OMR (Transcribe) | 35 |
| 2.17 | Playback | 35 |
| 2.17.1 | Play Panel | 35 |
| 2.17.2 | Synthesizer | 35 |
| 2.17.3 | Mixer | 35 |
| 2.18 | Selection | 35 |
| 2.19 | Copy & Paste | 35 |
| 2.20 | Search | 36 |
| 2.21 | Foto Mode | 36 |
| 2.22 | Navigator | 36 |
| 2.23 | Plugins | 36 |
| 2.23.1 | Plugin Manager | 36 |
| 2.23.2 | Plugin Creator | 36 |
| 2.24 | MuseScore Connect | 36 |

1 ScoreElement Reference

1.1 Measures

1.1.1 Multi Measure Rests

Silent measures which contain only rests can be concatenated to a so called *multi measure rest*. This is controlled by a style option in **Style** **General...** **Score**. You can also specify the minimum number of empty measures which are replaced by a multi measure rest.

The shortcut **M** toggles creation of multi measure rests.

If you want to break a multi measure rest then locate the measure were you want to break and set the property *Break multi measure rest* to this measure.

Parts are usually shown with multi measure rests.

Style

Minimum measure width:

Spacing:

The minimum value is 1.0 which produces a dense score. The score is more stretched with higher values. As Muse-Score stretches measures to fill a whole line, this value may not have an immediate effect on your score.

Barline to note distance:

Barline to accidental distance:

Note to barline distance:

Minimum note distance:

Clef left margin:

Key signature left margin:

Time signature left margin:

Clef/Key right margin:

Clef to barline distance:

Multi measure rest margin:

Staff line thickness:

1.2 Frames

1.2.1 Horizontal Frames

horizontal frames

1.2.2 Vertical Frames

vertical frames

1.2.3 Text Frames

text frames

1.3 Staves

staves

1.4 Systems

systems

1.5 Pages

pages

1.6 Voices

voices

1.7 Beams

1.7.1 Beam Properties

beam properties

1.7.2 Groupings

groupings

1.8 Articulation

articulation

1.9 Clefs

A clef defines what pitch is assigned to a staff line.

Create

- Drag an clef from the clefs palette on a note or rest. The clef is inserted before the note or rest. The clef must be valid for the staff type. So you cannot drop a percussion clef or a tablature clef into a normal pitched staff.
- Select a note or rest and press **Ctrl** + **Y**, **Ctrl** + **1**. A treble clef will be inserted.
- Select a note or rest and press **Ctrl** + **Y**, **Ctrl** + **2**. This inserts a bass clef.

Delete

Select the clef and press **Del**. If you delete all clefs MuseScore assumes a treble clef as default.

Edit

The clef can be moved in edit mode. It is also possible to move the clef directly by dragging it with the mouse. **Ctrl** + **R** resets all changes.

Properties

Show Courtesy: If the clef is located at the beginning of a new system MuseScore automatically creates a courtesy clef at the end of the previous system. This behaviour can be changed by this switch. Note that there is also a global style value to enable or disable courtesy clefs.

Leading:

Trailing: You can add some horizontal space before and after a clef. The value is in space units. The space is inserted for all elements in the same column. So a clef in another staff at the same column will show the same property value.

Visible: If invisible, the clef will not be printed. It is still part of the layout and will occupy space.

Color: This changes the clef color.

Horizontal offset:

Vertical offset: The offset moves the ottava from the normal position.

Style

Default TAB clef: Here you can select the default clef for tabulatur staves.

1.10 Key Signatures

key signatures

1.11 Time Signatures

time signatures

1.12 Barlines

barlines

1.13 Chords

Technically in MuseScore every note is part of a chord. So even a single note is handled like a one note chord. A note has a note head and maybe an accidental and an augmentation dot. The note stem and hook is considered part of the chord.

1.13.1 Notes

Properties

Style parameter

1.13.2 Grace Notes

grace notes

1.13.3 Accidentals

accidentals

1.13.4 Stem

stem

1.13.5 Hook

hook

1.13.6 Rests

rests

1.13.7 Articulation

articulation

1.14 Lines

1.14.1 Slur

Create slur

- Drag an slur from the lines palette on a note or rest.
- Select a note and press **S** to create a slur to the next note.
- Select a note and click **Insert** **»** **Lines** **»** **Slur**.
- If you select several notes, the created slur goes from the first note upto (including) the last note.

Remove slur

Select the slur and press **Del**.

Edit slur

Double click a slur line to enter edit mode:

| Keys | Action |
|----------|--|
| ← | move grip left 0.1 spatium units |
| ctrl + ← | move grip left 1.0 spatium units |
| ⇧ + ← | move grip left 0.01 spatium units |
| ⇧ + ← | move anchorpoint to previous chord |
| ⇧ + → | move anchorpoint to next chord |
| ⇧ + ↓ | move anchorpoint down one voice or staff |
| ⇧ + ↑ | move anchorpoint up one voice or staff |
| X | flip slur direction |
| Home | reset grip position |

If the start handle or the end handle of a slur is moved, the slur anchorpoint is automatically moved to the nearest chord. Drag handle with mouse:

| Keys | Action |
|---------------------|---|
| drag | move grip, change anchor automatically |
| shift + drag | move grip vertical |
| ctrl + drag | move grip horizontal |
| shift + ctrl + drag | move grip in all directions, do not change anchor point |

Properties

Line style, solid dotted dashed

Style

Line thickness at end

Line thickness middle

Dotted line thickness

1.14.2 Tie

A tie looks like a slur but has a different meaning. Tied notes are played like one note with an accumulated duration. For this all tied notes must have the same pitch. If the pitch of a tied note is changed, the pitch of all tied notes also change.

Create tie

In normal mode select a note and press **[+]**. This creates a tie to the next note of same pitch. Nothing happens if there is no note with same pitch.

In note entry mode **[+]** creates a new note of same duration as the current note and a tie to the new note.

Remove tie

Remove a tie by selecting it and press **[Del]**. A Tie is also removed if one of the connected notes is removed.

Edit tie

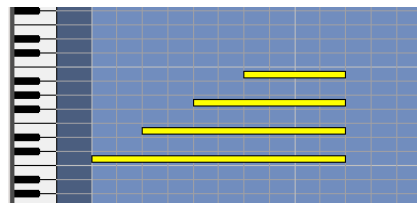
Double clicking a tie enters edit-mode. By dragging the handles with the mouse a tie can be changed.

In a multi voice context there may be more than one next note with same pitch to connect to. In this situation you can select the end note by dragging the end handle onto the desired note head. This way you can create overlapping notes of the same pitch. This notes cannot be played properly. It might be necessary to set the play property of one of the overlapping notes to false.

If you drag the end handle onto the first note head, then you get a tie with no end note. This is useful, if it is a note at the end of a repeated section and the note ties to the first note of the repeat. A tie without end note has no effect on playback.

Arpeggio

Ties can be used to notate arpeggios like:



Properties and style

Ties have the same properties as slurs. They also share the style properties with slurs.

1.14.3 Crescendo/Diminuendo

1.14.4 Ottava

An 8va Ottava sign plays all bracketed notes one octave higher, a 8vb one octave lower. Less often you will see an 15ma or 15mb to play two octaves higher or lower or 22ma or 22mb to play three octaves higher or lower.

Create an Ottava

- Drag an ottava line from the lines palette on a note or rest.
- Select a note and press **Ctrl** + **Y**, **Ctrl** + **O**, **Ctrl** + **A** to create an 8va.
- Select a note and press **Ctrl** + **Y**, **Ctrl** + **O**, **Ctrl** + **B** to create an 8vb.
- **Insert** » **Lines** » **Ottava 8va** or **Insert** » **Lines** » **Ottava 8vb**
- If you select several notes, the created ottava goes from the first note upto (including) the last note.

Delete an Ottava

Select the ottava line and press **Del**.

Edit an Ottava

Double click an ottava line to enter edit mode. You can move the start and endpoint of the ottava like all other lines.

Properties

Type:

Ottava type:

| Type | Pitch change | Placement |
|------|-------------------|-----------|
| 8va | one octave up | above |
| 8vb | one octave down | below |
| 15vb | two octave up | above |
| 15vb | two octave down | below |
| 22vb | three octave up | above |
| 22vb | three octave down | below |

Placement:

The default placement depends on the ottava type but can be over-ridden:

above place ottava above the staff
below place ottava below the staff

numbers only:

Instead of ottava texts like '8va' this options creates ottavas with the text '8' if set.

Allow Diagonal:

If this switch is enabled you the ottava line is allowed to be diagonal.

Line Color:

Changes the line color of the ottava line.

Line Width:

Changes the line width of the ottava line. The value is in space units.

Line Style:

Changes the line style. One of 'Solid', 'Dash', 'Dot', 'DashDot', 'DashDotDot'.

Visible:

If invisible, the ottava will not be printed.

Color:

This changes the text color.

Horizontal offset:

Vertical offset:

The offset moves the ottava from the normal position.

Style

ottavaY

This is the vertical offset of the ottava from top or bottom of the staff in space units.

ottavaHook

Sets the vertical size of the hook at the ottava end in space units.

ottavaLineWidth

The line width of the ottava in space units.

ottavaLineStyle

The line style of the ottava. The default is a dashed line.

ottavaNumbersOnly Instead of ottava texts like '8va' this options creates ottavas with the text '8' if set.

1.14.5 Volta

1.14.6 Pedal Lines

1.14.7 Trills

Add Accidental

A trill line can have an accidental. The accidental can be added by dragging an accidental symbol from the palette onto a trill line.

1.14.8 Text Lines

text lines

1.14.9 Simple Lines

simple lines

1.15 Text

1.15.1 Title

title, subtitle, componist, lyrics, partname

1.15.2 Staff Text

staff text

1.15.3 System Text

system text

1.15.4 Instrument Change

instrument change

1.15.5 Lyrics

lyrics

1.15.6 Fingering

fingering

1.15.7 Tempo Text

tempo text

1.15.8 Rehearsal Mark

rehearsal mark

1.15.9 Chord Names

chord names

1.15.10 Dynamics

dynamics

1.16 Repeats

1.17 Brakes and Spacer

1.17.1 Staff Break

staff break

1.17.2 Page Break

page break

1.17.3 Section Break

section break

1.17.4 Spacer

spacer

1.18 Arpeggio and Glissando

arpeggio, glissando

1.19 Tremolo

tremolo

1.20 Breath and Pauses

breath, pauses

1.21 System Brackets

brackets

2 Program Reference

2.1 Menus

2.1.1 File

File > New

File > Open

File > Recent

File > Save

File > Save As

File > Save a Copy

File > Save Selection

File > Export

File > Export Parts

File > Close

File > Parts

File > Album

File > Layers

File > Info

This opens the meta data dialog. Here you can edit associated metadata for the current score.

File > Print

This opens the print dialog.

File > Quit

Quit MuseScore. If there are unsaved files, MuseScore asks you to save the files before quit.

2.1.2 Edit

- Edit > Undo
- Edit > Redo
- Edit > Cut
- Edit > Copy
- Edit > Paste
- Edit > Select All
- Edit > Select Section
- Edit > Find
- Edit > Measure
- Edit > Measure > Delete Selected Measures
- Edit > Measure > Split Measure
- Edit > Measure > Join Measure
- Edit > Voices
- Edit > Voices > Exchange Voice 1-2
- Edit > Voices > Exchange Voice 1-3
- Edit > Voices > Exchange Voice 1-4
- Edit > Voices > Exchange Voice 2-3
- Edit > Voices > Exchange Voice 2-4
- Edit > Voices > Exchange Voice 3-4
- Edit > Workspaces
- Edit > Workspaces > advanced
- Edit > Workspaces > basic

Edit > Workspaces > custom

Edit > Workspaces > New

Edit > Workspaces > Delete

Edit > Workspaces > Undo Changes

Edit > Preferences...

2.1.3 View

View > Palette

View > Master Palette

View > Inspector

View > Omr Panel

View > Play Panel

View > Navigator

View > Mixer

View > Synthesizer

View > Piano Keyboard

View > MuseScore Connect

View > Zoom In

View > Zoom Out

View > Transport

View > NotelInput

View > Status Bar

View > Document Side by Side

View > Document Stacked

View > Show Invisible

View > Show Unprintable

View » Show Frames

View » Show Page Margins

View » Full Screen

2.1.4 Add

Add » Instruments

Add » Measures

Add » Measures » Insert One Measure

Add » Measures » Insert Measures...

Add » Measures » Append One Measure

Add » Measures » Append Measures...

Add » Frames

Add » Frames » Insert Horizontal Frame

Add » Frames » Insert Vertical Frame

Add » Frames » Insert Text Frame

Add » Frames » Append Horizontal Frame

Add » Frames » Append Vertical Frame

Add » Frames » Append Text Frame

Add » Text

Add » Text » Title

Add » Text » Subtitle

Add » Text » Composer

Add » Text » Lyricist

Add » Text » System Text

Add » Text » Staff Text

Add » Text » Chord Name

Add » Text » Rehearsal Mark

Add » Text » Lyrics

Add » Text » Figured Bass

Add » Text » Tempo Marking

Add » Lines

Add » Lines » Slur

Add » Lines » Crescendo

Add » Lines » Decrescendo

Add » Lines » Ottava 8va

Add » Lines » Ottava 8vb

Add » Lines » Note anchored Textline

2.1.5 Notes

Notes » Note Input

Notes » Respell pitches

Notes » Add Note

Notes » Add Interval

Notes » Triplets

Notes » Transpose

Notes » Concert Pitch

2.1.6 Layout

Layout » Page Settings

Layout » Reset

Layout » Add More Stretch

Layout » Add Less Stretch

Layout » Reset Stretch

Layout » Reset Beam Mode

2.1.7 Style

Style » General...

Style » Text...

Style » Chordnames...

Style » Staff Types...

Style » Load Style...

Style » Save Style...

Style » Save Style as Default...

2.1.8 Plugins

Plugins » Plugin Manager...

Plugins » Plugin Creator...

Plugins » plugins

2.1.9 Help

Help » Local Handbook

Help » Online Handbook








Help » About

Help » About Qt

Help » About MusicXML

Help » Report a bug

2.2 Toolbars









-  Starts the new score wizard. Same as **File > New**
-  Opens a score file. Same as **File > Open**
-  Write current score back to disk. Same as **File > Save**
-  Print current score. Opens the print dialog. Same as **File > Print**
-  Show MuseScore connect panel. Same as **View > MuseScore Connect**
-  Undo last command. Same as **Edit > Undo**
-  Redo last undo. Same as **Edit > Redo**

Scale Combobox




- 25%** — **1600%** Some fixed scalings to select from.
- Page Width** Scale score so that a page fits in width.
- Whole Page** Scale score so that a whole page fits.
- Two Pages** Scale score so that two complete pages fit.

View Combobox

- Page View** Show score in page mode.
- Continous View** Show score in continous mode.

-  Enable note playback during editing.
-  Enable note playback during editing.
-  Rewind to start of score.
-  Start/Stop playback.
-  Enable loop.
-  Play repeats.
-  Score view follows playback.
-  Enable metronome.

Concert Pitch

-  Start photo mode.
-  Start note entry.
-  Enable repitch in note entry mode.



Select note duration.



Add dot to duration.



Add double dot to duration.



Add tie.



Switch to rest.



Add double sharp.



Add sharp.



Add natural.



Add flat.



Add double flat.





Flip stem.

Voices




2.3 Workspace

A workspace represents a specific collection of palettes. There are two build-in workspaces, "basic" and "advanced" which cannot be changed or deleted.

Select a workspace

The current workspace can be changed by selecting a different one from the list in  .

Create a new workspace

By clicking the menu button    a new workspace is created. A dialog asks you for the name of the new workspace. The name must be unique. The created workspace is a clone of the actual one.

Delete a new workspace

A click on    removes the current workspace.

Undo Changes

what does it do?

2.4 Palettes

2.4.1 Palette Operations

Palettes contain symbols which can be added to the score. There are two methods to do this:

- Drag the symbol from the palette and drop it onto an score element. The target element is colored if it accepts the drop.
- Select one or more target elements. Then double click on the palette symbol. This has the same effect as dragging the palette symbol to the target score element.

2.4.2 Edit Palettes

Palettes can only be modified if the **Enable Editing** switch in the palette context menu is toggled to 'on'. This is to protect you from accidentally changing a palette. Also note that palettes in the builtin workspaces 'basic' and 'advanced' cannot be modified.

Move Element

Palette elements can be moved to another cell in the same palette or to another palette. Of course this other palette also needs the **Enable Editing** to be switched on to allow any modification.

Add Element

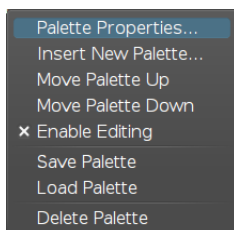
You can add a new symbol to a palette by dragging it from the master palette to you custom palette. Another method is to drag an symbol from the actual score to the palette by pressing **Shift** + **Ctrl** click on the element, drag it to an empty palette cell and drop it there. If you modified some score element properties with the inspector, this is a way to make this special element available for later use.

Delete Element

Right click on an palette element to get the palette cell context menu and then select **Clear**. This removes the symbol from the palette cell.

Palette Context Menu

Right click on the palette header to get the palette context menu.



Palette Properties... Open the palette properties dialog.

Insert New Palette... Create a new palette which can be filled with symbols from other palettes or a score. Opens the property dialog for the new created palette.

Move Palette Up Move the palette up in the list of palettes.

Move Palette Down Moves the palette down in

the list of palettes;

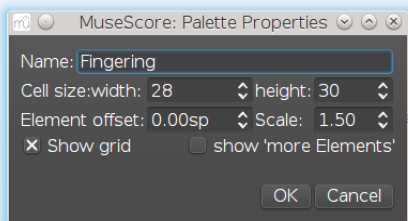
Enable Editing To protect against unwanted changes the palette is locked on default. Toggle the switch to unlock the palette. Note: the built-in palettes 'basic' and 'advanced' cannot be changed.

Save Palette This opens a file dialog and allows to save the palette in a file.

Load Palette This opens a file dialog to fill the palette from a file.

Delete Palette This deletes the palette.

Palette Properties



Name This defines the palette name. The name is used as heading in the palette panel.

Cell size The cell height and width can be defined in screen pixel.

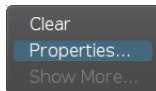
Element offset Cell elements can be moved to fit best. The value entered is in space units.

Scale You can scale palette elements with this property.

Show grid If enabled, a grid is drawn to make the cells visible.

show 'more Elements' Show 'more Elements' in the context menu of the first free cell in the palette. Clicking 'more Elements' for this cell opens the master palette panel. If there is a master palette with the same name as this palette it is shown in the master palette panel. Show 'more Elements' is a hint to the user that there may be more symbols available in the master palette.

Cell Context Menu

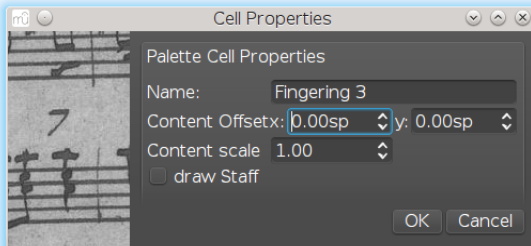


Clear Delete the cell contents.

Properties... Open the cell property dialog.

Show More... If enabled, this opens the master palette of the same name which may contain more symbols of the same category.

Palette Cell Properties



Name The cell name is used for context help.

Content Offset This property allows to move the cell content in space units.

Content Scale The scale determines in combination with the palette scale the size of the cell content.

draw Staff Draw a five line staff. This is useful for elements which are positioned on

the staff like clefs.

2.4.3 Master Palette

Key Signatures

describe creation of new key signatures

Time Signatures

describe creation of new time signatures; describe grouping

2.5 Inspector

describe the common operations for inspector

2.6 Style

2.6.1 General Style

overview of general style

2.6.2 Text Style

overview of text style

2.6.3 Chordnames

overview of chord name style

2.6.4 Staff Types

overview of staff types

2.7 Note Input

2.7.1 Keyboard

keyboard input commands

2.7.2 Mouse

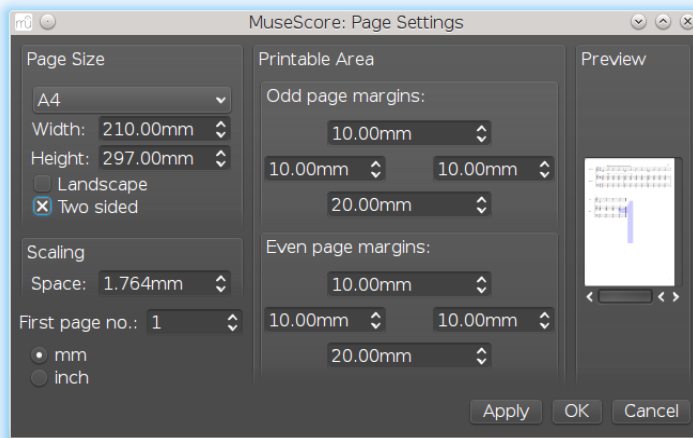
mouse operation

2.7.3 Midi Keyboard

midi keyboard operation

2.8 Layout

2.8.1 Page Settings



Page Size:

Scaling: The 'Space' value determines the overall scaling of the score. A space is the distance between two staff lines of a normal staff.

Printable Area: If you checked 'Two sided' then the margins of even and odd pages can be different. As the score width of odd and even pages must always be the same, the left and right margins of even and odd pages are not free changable.

2.9 Transpose

the transpose dialog

2.10 Parts

parts dialog

2.11 Album

album dialog

2.12 Metadata

metadata dialog

2.13 Import

2.13.1 Midi Import

2.14 Export

export formats

2.15 Print

print dialog

2.16 OMR (Transcribe)

omr operation

2.17 Playback

2.17.1 Play Panel

play panel

2.17.2 Synthesizer

synthesizer

2.17.3 Mixer

mixer

2.18 Selection

selection

2.19 Copy & Paste

copy paste

2.20 Search

search

2.21 Foto Mode

foto mode

2.22 Navigator

navigator

2.23 Plugins

2.23.1 Plugin Manager

plugin manager

2.23.2 Plugin Creator

plugin creator

2.24 MuseScore Connect

muse score connect

Glossary

Chord one or more notes of same voice at the same tick position. 36

PDF portable document format. 36

Index

Arpeggio

Tie, [14](#)

Note

Reference, [11](#)

Slur

Reference, [12](#)

Tie

Reference, [13](#)

Trills

Reference, [17](#)