DORICO

Version history
Known issues & solutions

April 2019

Steinberg Media Technologies GmbH

steinberg

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Credit notice

23 April 2019

Improvements

Key commands

Printing. New commands have been added to which keyboard shortcuts can be assigned to print the current page, layout, or all layouts without switching to Print mode. Look in the **Print** category on the **Key Commands** page of Preferences, where you will find the following new commands:

- **Export All Layouts as PDF**
- **Export Current Layout as PDF**
- **Export Current Page as PDF**
- **Print Current Layout**
- **Print Current Page**

When you print or export using any of these commands, the current print options as specified in Print mode for the relevant layout will be used.

Print preview. It is now possible to go to the first page in the print preview by pressing **Home**, and to go to the final page in the print preview by pressing **End**.

Note input

Auditioning whole chords. A new option **Play all notes in chord when any is selected** has been added to the **Auditioning** section of the **Note Input and Editing** page of the Preferences dialog. When this option is switched on, when you select any note in a chord – for example, by clicking on it or by navigating to it using the arrow keys – all notes in that chord will be auditioned.

Maintaining selection after deletion. When you delete one or more selected items, Dorico will now attempt to select another item nearby to the rhythmic position of the first deleted item, so that you do not have to pick up the mouse and click back in that area or otherwise manually reselect something in order to continue editing the music.

If you delete a note, Dorico will first select another note in the same voice at the same rhythmic position, and failing that select a note in the same voice at an earlier rhythmic position (up to four quarter note beats earlier). If you delete a non-note voice-specific item, Dorico will select a note in that voice at or near that rhythmic position, if possible. If you delete a non-voice-specific item (such as a slur, pedal line, or dynamic), Dorico will select a note in the first voice on the top staff belonging to that instrument at or near that rhythmic position. If you delete a

system-attached item (such as a tempo, chord symbol, or repeat ending), Dorico will select a note in the first voice on the top staff in the system at or near that rhythmic position. All of these selection operations may result in the viewport being moved to bring the newly-selected item into view, with a greater likelihood of movement when deleting a system-attached item.

Tempo track import

A new option **Show border around system text markers** has been added to the **Import Tempo Track** dialog. It is only enabled when the option to import markers as system-attached text is chosen. Deactivate this option to import markers as text with no border around them.

Issues resolved

ID #	Component	Issue
STEAM-9198	*Barlines*	Barlines and bar numbers can now be copied and pasted as part of the same operation as copying and pasting a time signature.
STEAM-9305	*Dynamics*	Under certain circumstances, replacing a dynamic with an SVG graphic in the **Music Symbols** dialog could cause parts of the music not to draw; this has now been resolved.
STEAM-9189	*Flows*	Clicking on a card in the Flows panel in Setup mode now correctly navigates to that flow even if the first bar in that flow is not numbered 1.
STEAM-7952	*Grace notes*	Grace notes on percussion kits now play back correctly once more.
STEAM-7831	*Graphics export*	The size and position of text in exported SVG graphics is now correct (Windows only).
STEAM-9229	*Key signatures*	Custom key signatures with octave position overrides for particular clefs now appear with accidentals in the correct octaves in the preamble at the start of the system.
STEAM-9212	*MIDI export*	Under some circumstances, some of the notes from a trill late in a flow could erroneously appear at the start of the exported MIDI file. This problem has now been resolved.
STEAM-9195	*Multi-bar rests*	An immediate dynamic that coincides with the start of a multi-bar rest will no longer cause the multi-bar rest to be broken.
STEAM-9213	*Multi-bar rests*	Dorico no longer crashes when attempting to exclude single bar multi-bar rests from spacing in the presence of multiple local time signatures.
STEAM-9197	*Note input*	When pasting a selection that extends the flow, Dorico now correctly adds an extra bar if necessary to ensure that any item at the end of the selection is shown.
	Noteheads	The stem attachment positions for the wide diamond notehead have been improved.
STEAM-9239	*Page layout*	System and frame breaks at tacet flows are now considered correctly when determining whether to wait for the next system or frame break.
STEAM-9288	*Playback*	Under certain circumstances, starting playback from midway through a flow could cause notes prior to the start position to be played back; this has now been resolved.

ID #	Component	Issue
STEAM-9290	*Playing techniques*	Changing the global space size at a system break now correctly causes playing techniques following the break to redraw at the correct size right away.
	Project files	Dorico will no longer crash on start-up if it encounters files other than Dorico projects in the **AutoSave** folder.
STEAM-9122	*Project files*	Dorico no longer crashes when saving a backup project if the project filename contains an unmatched opening or closing parenthesis.
STEAM-9270	*Rhythm slashes*	Dorico will no longer sometimes crash when extending a rhythm slash region into a bar with an open meter.
STEAM-9193	*Time signatures*	Selecting a barline belonging to an open time signature and hitting **Return** to open the **Shift+B** popover no longer sometimes causes a crash.
STEAM-9140	*Tremolos*	Resetting the beaming of notes with single-stem tremolos no longer incorrectly prevents them from playing back as tremolos.
STEAM-9178	*Tremolos*	Resetting the beaming of notes with multi-note tremolos now correctly immediately removes their tremolo effect in playback.
STEAM-9245	*Tremolos*	Activating the **Single-stem tremolo** property for a note in a tie chain no longer sometimes causes the rhythmic splits earlier in the tie chain to change.
	User interface	The keys [and] are no longer bound to the buttons to show the information for the next or previous flow in the **Project Info** dialog.
	User interface	It is now possible to specify **Pitch of A4** to three decimal places on the **Tuning** page of Playback Options.
	User interface	The step size when incrementing or decrementing the value via the paddle arrows in the multi-unit spin box used for measurements is now more appropriate for each unit type.
	User interface	The space size and page dimension read-outs in the expanded cards in the Layouts panel in Setup mode now use an appropriate level of precision for each measurement unit.
STEAM-9105	*User interface*	The **Delete Layout** button in the Layouts panel in Setup mode now works correctly and no longer sometimes results in the application crashing when it is clicked.
STEAM-9113	*User interface*	The display of the current layout transposition (i.e. concert or transposed pitch) in the status bar is now always updated correctly when switching layouts.
STEAM-9194	*User interface*	The rhythm dot buttons for the left- and right-hand side durations in the **Tempo Equation** section of the Tempo panel now update correctly.
STEAM-9207	*User interface*	**Home** and **End** always move left and right by a screenful in galley view, rather than sometimes incorrectly using the width of the first flow to determine the increment.
	Video	It is now possible to set a very large video attachment position (9999 beats) in the **Video Properties** dialog.

Dorico 2.2.10

31 January 2019

New features

Flipping items

A new **Edit ‣ Flip** command has been added, with the default key command of **F**. This command will flip the placement of all items that can be positioned above or below the staff (such as text items, lyrics, articulations, etc.) and will flip the direction of items such as stems, slurs, and ties.

Some items – including ties and articulations – can only be selected individually in Engrave mode, and hence can only be flipped in Engrave mode.

You cannot flip the selected item during note input in Write mode, because the key command **F** will instead input a note with the pitch F. If you want to be able to flip the selected item during note input, you can reassign **Edit ‣ Flip** to another key combination in the **Key Commands** page of Preferences.

When you flip an item, the appropriate **Placement** or **Direction** property is set. To undo the effect of having flipped an item, either deactivate the appropriate property in the Properties panel, or choose **Edit ‣ Reset Position**.

Slurs with multiple segments (e.g. S-shaped cross-staff slurs) and tuplet brackets on cross-staff notes whose hooks point in opposite directions are handled specially: if you have multiple slurs or tuplets selected, unless all of them have compatible directions set, they will flip simply to above or below.

Auto-save

While you are working on a project, Dorico will periodically save a copy of the project into a folder called **AutoSave** located inside your **Dorico Projects** folder (inside your user account's **Documents** folder by default). Even if you do not save your project at all, Dorico will update the auto-saved project every few minutes, so that in the unlikely event that Dorico crashes, when it next starts up, you will be given the chance to recover the latest auto-saved version of your project, thus minimizing the amount of work you may lose.

Recovering auto-saved projects. When you restart Dorico after it has crashed, if there are any auto-saved projects to recover, after the splash screen disappears Dorico will display the following dialog:
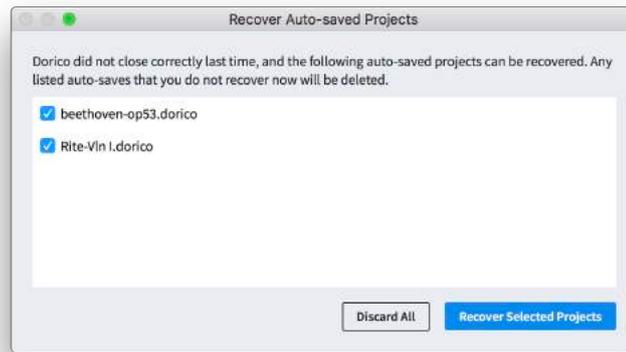
By default, Dorico will offer to recover all auto-saved projects, but if you want to recover only some of those listed, deactivate the checkboxes of those projects you do not want to recover, then click **Recover Selected Projects**. If, on the other hand, you know you do not need to recover any of the listed projects, you can click **Discard All**: be warned that all auto-saved projects will be deleted immediately after you click the button, and recovery after that point is impossible.

After a project is recovered, choose **File ▸ Save** to save it permanently: you will be prompted to provide the appropriate filename and location to save the project at that point.

Changing the auto-save interval. By default, Dorico saves the active project every five minutes. To change the interval, set **Auto-save every** *n* **minutes** in the **Files** section of the **General** page of Preferences to the desired auto-save interval. If you wish to disable auto-save altogether, deactivate the **Auto-save every** *n* **minutes** checkbox instead.

Changing the auto-save location. If you want to specify that Dorico uses a different folder for auto-save than the default, click the **Choose** button beside the **Auto-save folder** read-out in the **Files** section of the **General** page of Preferences, and choose a new location. If the folder specified here does not exist, Dorico will try to create it when it starts up. If Dorico is unable to write to the specified folder, auto-save will not work, and you will not be warned, so if you change the default location, be sure it is a location into which your user account can successfully save files.

Auto-save with multiple open projects. Because Dorico can only keep a single project active for playback at any given time, if you have multiple projects open, only the active project, i.e. the one you are working on at the moment the auto-save interval is reached, will be auto-saved. If you are switching back and forth between multiple projects, you may wish to consider setting a smaller auto-save interval.

When Dorico performs an auto-save, depending on the size of the project, you may notice the program become less responsive for a moment while the project is saved.

Removal of auto-saved projects. When you close a project, its auto-save file is deleted right away. Likewise, when you quit Dorico, all auto-save files are deleted when the application closes.

Remember that if you need to get back to an earlier version of a project, by default Dorico saves a snapshot of the project each time you explicitly save it inside an appropriately-named folder inside the **Backup Projects** folder inside the **Dorico Projects** folder in your user's **Documents** folder.

Improvements

Barlines

Systemic barlines for single-staff systems. A new option **Barline at start of systems following first system** has been added to the **Barlines** page of **Notation Options**, allowing you to show a systemic barline for a single-staff system after the first system. This convention was used in hand-copied lead sheets, normally when the clef is excluded at the start of systems after the first.

Graphics export

Export Filenames. A new **Export Filenames** dialog has been added, allowing you to define a recipe for how the filenames for exported graphics should be determined. The dialog can be accessed via the **Files** page of Preferences, or by clicking **Export Filenames** in the right-hand panel in Print mode when **Destination** is set to **Graphics**.
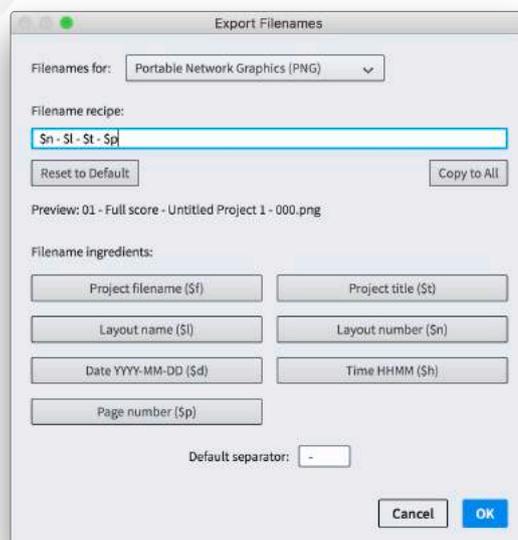
The dialog allows you to set a different recipe for each supported graphics format. Choose the format whose recipe you want to edit from the **Filenames for** drop-down at the top of the dialog. The **Filename recipe** edit box allows you to add or change the ingredients in the recipe directly, or you can click any of the **Filename ingredients** buttons below to add that ingredient to the end of the current recipe. The ingredients will be appended and/or prepended with the text shown in the **Default separator** edit box as appropriate.

If a project is active when the dialog is opened, a **Preview** line will appear showing an example of what the resulting filename will look like using the current recipe.

To reset a recipe back to its factory default, click **Reset to Factory**. To copy the current recipe to all other export formats, click **Copy to All**. Note that PDF is a multi-page format, so the **$p** token for page number can not be resolved intelligently for that format.

The settings chosen in the **Export Filenames** dialog are saved in Dorico's preferences and will apply to all projects.

Export folder. The folder into which graphics files are exported is saved along with each project. If you move a project to another computer, or receive a project from another person (particularly if that person is using Dorico on a different operating system), then the destination saved in the project may not be accessible or possible to recreate on the computer on which the project is later opened. If Dorico determines this to be the case, it automatically now updates the folder to the folder from which the project itself is being opened. This avoids you seeing a confusing error when attempting to export graphics from a project that was last saved on another computer.

Layouts

Renumbering layouts. A new **Setup ‣ Renumber Layouts** command has been added to set the layout number according to the order the layouts of that type are listed in the Layouts panel. The quickest way to renumber layouts is therefore to drag them into the desired numerical order in the Layouts panel, then choose **Setup ‣ Renumber Layouts**.

Propagate Part Formatting. Settings related to flow headings and tacet flows are now propagated when using **Setup ‣ Propagate Part Formatting** when the **Propagate layout options** checkbox is activated.

MIDI recording

Fill gaps. A new **Fill gaps** option has been added to the **Quantization Options** dialog, and to the **Edit ‣ Requantize** dialog, allowing you to determine whether or not Dorico should fill in the gaps between short notes for music input via MIDI

recording or importing a MIDI file. If you are importing music that is already precisely quantized, then you may prefer to switch **Fill gaps** off, to ensure that note and rest durations are notated exactly as quantized.

Piano pedaling. A new **Import CC64 as pedal lines** option has been added to the **Recording** section of the **Play** page of Preferences, allowing you to choose whether or not Dorico should interpret sustain pedal controllers in MIDI recording and when importing a MIDI file as pedal lines. A further dependent option, **Snap pedal lines to previous beat**, snaps the start position of a created pedal line back to the start of the beat as it would normally be notated (even though the point at which the pedal is depressed follows the onset of the note or chord).

Input pitch. The current setting chosen in the **Write ▸ Input Pitch** submenu is now respected during MIDI recording, so you can record in written or sounding pitch. Furthermore, octave-transposing instruments (such as piccolo, guitar and double bass) now sound at the correct octave in MIDI input.

Multi-bar rests

Staff-attached text. Text items that coincide with the start of a bar no longer cause that bar to be completely separated from an ongoing multi-bar rest. An ongoing multi-bar rest will be broken by the text item, but provided the text item coincides with the start of the bar, the bar itself can then be consolidated into the following multi-bar rest.

Tacets. Where a player is assigned to a flow but has no music, a "tacet" multi-bar rest will appear (as distinct from a tacet flow, where no staff appears at all). When a flow is only a few bars in length, for example in a musical theatre show, you may prefer to show the number of bars in the flow instead of simply showing the word "tacet" so that your players can see at a glance that the cue is short. To accommodate this, a new **Minimum number of bars in flow to show 'Tacet'** option has been added to the **Rests** page of Engraving Options. By default, a flow shorter than 16 bars will show the number of bars in the flow, and longer flows will show the word "tacet."

Width of single bar rests. In layouts where multi-bar rests are shown, when **Bar count for single bar rests** on the **Rests** page of Engraving Options is set to **No bar count**, single bar rests are now spaced as normal bars, rather than as multi-bar rests; only if this option is set to **Show bar count** will they be spaced according to the options under **Spacing** below. This improvement may slightly change the appearance of existing projects when opened in Dorico 2.2.10.

Playback

Playing techniques. Playback playing techniques that are defined as Attributes rather than Directions, that is those that apply only to the note or chord on which they are written (e.g. snap pizzicato, written as a symbol above the note or chord) as opposed to those that are ongoing until they are countermanded by a further instruction (e.g. pizzicato, written as the text *pizz.* and later countermanded by the text *arco*), are now handled correctly during playback.

Dorico now correctly takes into account the duration of the note or chord that coincides with the playing technique, and restores the previous playing technique again at the end of that note or chord. This allows playing techniques such as harmonics for guitar, snap pizzicato for strings, and so on, to be played back correctly (provided they are defined in the VST Expression Map).

Mute/open. Changes of mute, common for brass instruments, are now handled correctly in playback. Previously, instructions such as *open* or *mute off* would not correctly remove a previous mute, and changing from one mute to another – for example, moving from *straight mute* to *cup mute* – would also not work correctly. Now these techniques are all handled correctly (provided they are defined in the VST Expression Map).

Gradual dynamics. If a gradual dynamic is followed by an immediate dynamic that is contrary to the direction of the gradual dynamic – for example, a *diminuendo* from *mp* followed by *ff* – the gradual dynamic now plays the expected direction. Previously, the direction of the gradual dynamic would be overridden by the immediate dynamic at its end, so *dim.* followed by *ff* would play back as a *crescendo*.

Printing

Transposition warning. When one or more of the part layouts selected for printing or graphics export is set to display in concert pitch, when you click **Print** or **Export** in Print mode, Dorico will show a warning dialog reminding you that some layouts are currently set to display in concert pitch, and offering to automatically set them to transposed pitch for you:
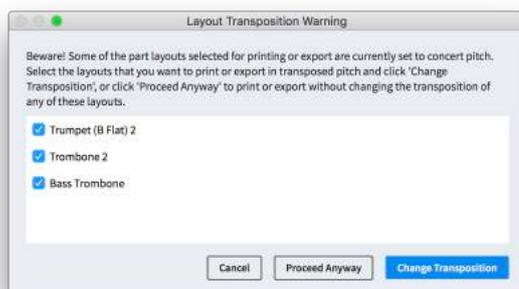
If you simply click **Change Transposition**, all of the listed layouts will be changed to transposed pitch, and then the print or export operation will be carried out; if you click **Proceed Anyway**, Dorico will carry out the print or export operation but leave those layouts in concert pitch; if you click **Cancel**, the operation will be cancelled altogether. To change the transposition of only some of the layouts, simply deactivate the relevant checkboxes before you click **Change Transposition**.

Custom paper sizes. For layouts using unusual page sizes, such as 9"x12" for parts, if this paper size is not supported by default on the selected printer, but the printer supports paper of this or larger dimensions, as long as the chosen page size matches a standard paper size, it will appear in the list of sizes shown in Print mode. Whether or not it will actually print successfully depends on the capabilities of your printer.

Repeat markers

Repeat count. A new **Repeat Count** paragraph style has been added, allowing you to change the appearance of the e.g. **Play 4 times** text that appears at the end of a repeated section independently from the appearance of staff labels.

Automatic double barline. A new **Barline coinciding with repeat jump before coda** option has been added to the **Repeats** section of the **Barlines** page of Engraving Options, allowing you to specify that Dorico should automatically show a double barline at the end of the bar immediately preceding a coda.

Rhythmic notation

Slash and bar repeat regions. It is now possible to create a slash region or a bar repeat region from the position of the caret; previously it required a note or rest to be selected.

Text

Flow numbers. New **{@flowNumberRomanLower@}** and **{@flowNumberRomanUpper@}** tokens have been added to show the flow number as a lower case (e.g. i, iv, x) or upper case (e.g. I, IV, X) Roman numerals.

Time signatures

Pick-up bars. A new **Group first bar as pick-up** property has been added to the Time Signatures group in the Properties panel. This allows you to override the rhythmic grouping in the irregular bar immediately following a time signature. Pick-up bars are rhythmically grouped as if they count backwards from the end of a bar, rather than counting forward from the start of the bar, and Dorico uses heuristics to determine whether a given irregular bar should be considered as a pick-up bar.

In the event that these heuristics do not give the desired result, it is possible to force a bar that Dorico has identified as a pick-up bar to be grouped as a normal

irregular bar, or indeed to force a bar that Dorico has identified as a normal irregular bar to be grouped as a pick-up bar, by activating the **Group first bar as pick-up** property and setting it as appropriate.

Trills

Trill extension lines. A new choice has been added to the **Extension line for trills** option in the **Trills** section of the **Ornaments** page of Engraving Options: choose **Show on tied notes** to automatically show an extension line when a trill spans multiple tied noteheads and show only the *tr* symbol when the trilled note is written as a single notehead.

Auxiliary notes. It is now possible to use any notehead set for the auxiliary note displayed for a trill, allowing you to indicate that the trilled-to note should be played as, say, a harmonic. To change the notehead used for the auxiliary note, select the trill or the auxiliary note and choose the desired notehead set from the **Edit ‣ Noteheads** menu.

Furthermore, auxiliary notes are automatically hidden for trills whose trill interval is set to unison, except in the case that the notehead set is overridden, in which case the auxiliary note will appear.

User interface

System track. The system track now correctly shows ruler subdivisions for long, open metered bars.

Playback templates. You can now confirm your choice in **Play ‣ Playback Template** by simply double-clicking the item in the list.

Percussion maps. The last chosen percussion map, the state of **Show all / Show MIDI notes in use**, and the size of the dialog is now saved and restored when returning to **Play ‣ Percussion Maps** during the same session.

New key commands. Some new commands have been added to the Key Commands page of Preferences, allowing you to set keyboard shortcuts for a number of operations that can otherwise only be performed using the Properties panel:

- **Toggle Accidental Visibility**: for a selected note or grace note, cycles through forcing its accidental to be hidden, shown, or shown in parentheses.
- **Hide Accidental**: for a selected note or grace note, forces its accidental to be hidden.
- **Show Accidental**: for a selected note or grace note, forces its accidental to be shown.

- **Show Accidental in Parentheses**: for a selected note or grace note, forces its accidental to be shown in parentheses.
- **Toggle Laissez Vibrer Tie**: for a selected note or grace note, toggles whether it should show a *laissez vibrer* tie.

Issues resolved

ID #	Component	Issue
STEAM-4241	*Accidentals*	Changing the pitch of a grace note before the barline no longer incorrectly considers the state of the accidentals in the following bar.
STEAM-8900	*Accidentals*	A number of problems related to the appearance and disappearance of accidentals when using the **Modernist** accidental duration rule have been fixed.
STEAM-9075	*Accidentals*	Under some circumstances, accidentals on altered unisons could appear or disappear when editing surrounding music; this problem has now been fixed.
STEAM-8916	*Audio export*	Audio export no longer fails with an error if the project or flow title contains a carriage return.
STEAM-8944	*Bar repeats*	When using fixed casting off, bar repeat regions now correctly respect the desired number of bars per system.
STEAM-8974	*Barlines*	Under some circumstances, adding a special barline could cause a crash; this problem has now been resolved.
STEAM-8889	*Brackets and braces*	Nudging the handle on the top or bottom end of a barline in Engrave mode no longer sometimes ends up reselecting the wrong handle.
STEAM-8917	*Brackets and braces*	Creating a bracketing change at the same position as an existing bracketing change now correctly overwrites the existing change.
STEAM-8991	*Divisi*	Under some circumstances, nudging a long octave line in Engrave mode on an instrument with divisi staves could cause a crash; this problem has now been resolved.
STEAM-9003	*Engrave mode*	It is now possible to set the constraint properties for frames to zero in Engrave mode.
STEAM-8913	*Fingering*	Fingerings for guitar in projects created in Dorico 2.1.10 or earlier no longer unexpectedly disappear when opening them in the current version.
STEAM-8931	*Flows*	When adding a player to multiple flows, the player is now correctly added to any flows that it was not previously attached to, rather than not being added to any of them.
STEAM-8955	*Instruments*	Changing the instrument held by a player to an instrument with fewer staves than the original instrument no longer fails if the top staff of the original instrument had no music.
STEAM-8996	*Key signatures*	Under some circumstances, editing the current tonality system could cause some or all of the music in the flow to appear to be deleted; this has now been resolved.
STEAM-9020	*Licensing*	On some Macs running macOS 10.14 Mojave, Dorico could intermittently hang during start-up. This problem has now been resolved.
STEAM-8928	*MIDI import*	Importing a MIDI file whose track names or other metadata use unexpected text encodings no longer causes Dorico to crash.
STEAM-8894	*MIDI recording*	The first note input via MIDI recording is no longer spelled as if the key signature at the start of the flow were active rather than the prevailing one at the recording position.
STEAM-8920 STEAM-8952	*MIDI recording*	MIDI recording now correctly takes repeats into account.
STEAM-8921	*MIDI recording*	**Edit ▸ Requantize** now works correctly in irregular bars and all kinds of compound time signatures.

ID #	Component	Issue
STEAM-8924	*MIDI recording*	MIDI recording now correctly takes into account the current setting for **Write ▸ Input Pitch**, allowing you to record in either written or sounding pitch.
STEAM-8929	*MIDI recording*	**Edit ▸ Requantize** now always correctly applies the specified minimum note durations when quantizing.
STEAM-8948	*MIDI recording*	The transcription of tuplets in irregular meters has been improved.
STEAM-8972	*MIDI recording*	Recording onto one of the instruments belonging to a player holding multiple instruments in galley view now always records into the correct instrument.
STEAM-8998	*MIDI recording*	The metronome click now plays back correctly in irregular bars that are longer than the prevailing time signature.
STEAM-9062	*MIDI recording*	When recording into a flow other than the first in a project, the correct key and time signatures are now used for notating the recorded music.
STEAM-9068	*MIDI recording*	When recording into a flow other than the first in a project, the first note recorded is no longer sometimes dropped.
STEAM-9076	*MIDI recording*	When recording into an instrument that has extra staves added, pedal lines created by recording sustain pedal changes now correctly appear below the bottom staff.
STEAM-8914	*Mixer*	Changing mode with the Mixer open no longer causes EQ, sends and inserts sections for each fader to be hidden if they were shown.
STEAM-8943	*Mixer*	The mute/solo state of the video fader is now correctly reset when a new playback template is applied via **Play ▸ Playback Template**.
STEAM-9051	*Multi-bar rests*	Single-bar multi-bar rests now use the double whole (breve) rest instead of the whole (semibreve) rest if the option to show bar rests in long bars is set appropriately.
STEAM-9056	*Multi-bar rests*	Multi-bar rests now appear correctly where a grace note appears at the start of the flow.
STEAM-8075	*Music symbols*	When using an imported graphic in place of a music symbol, when printed there is no longer a slightly blurry image for that item.
STEAM-8912	*MusicXML import*	Under some circumstances, gradual dynamics with large offsets could be imported from MusicXML files with incorrect durations; this has now been fixed.
STEAM-8988	*MusicXML import*	Under some circumstances, gradual dynamics can be exported from Cubase with excessively large offsets; these are now truncated to prevent absurdly long hairpins.
STEAM-5290	*Note input*	When using step-time or MIDI recording for octave transposing instruments, the pitch you hear is now always in the correct octave.
STEAM-8905	*Note input*	Under some circumstances, doubling or halving note duration with the caret visible could cause the caret to advance too far; this problem has now been resolved.
STEAM-8982	*Note input*	Pasting material copied from an unpitched percussion kit onto a pitched instrument now correctly overwrites the existing material on the pitched instrument.
STEAM-8956	*Ossias*	A redundant clef no longer appears at the position of an instrument change between two instruments using the same clef if an ossia staff is present on one of the instruments.

ID #	Component	Issue
STEAM-8995	*Ossias*	When using **Split Flow**, music on ossia staves following the point at which the flow is split is no longer lost.
STEAM-9001	*Ossias*	Empty ossia staves no longer appear or disappear incorrectly based on the layout option to show extra staves across the whole width of the system.
STEAM-9027	*Ossias*	Showing a mid-system preamble on an ossia staff belonging to an instrument held by a section player now works correctly.
STEAM-9031	*Ossias*	Under some circumstances, an ossia staff could be made to appear when the main staff associated with it is hidden; this problem has now been fixed.
STEAM-8902	*Page layout*	Dorico no longer crashes if a flow overflows the end of a layout-specific music frame chain.
STEAM-8910	*Page layout*	Using **Any flow starting at top of page** option to use the **First** master page no longer sometimes causes music to disappear when at least one flow is tacet.
STEAM-8911	*Page layout*	Time signatures could sometimes appear incorrectly at the end of a system involving transitions between instruments with differing number of staves; this is now fixed.
STEAM-8922	*Page layout*	Break signposts on tacet flows now correctly respect the **View options** checkbox in the **Annotations** section of the right-hand panel in Print mode.
STEAM-9039	*Page layout*	Adding extra staves before the first existing position at which an extra staff is added no longer creates an additional staff, instead correctly reusing the existing extra staff.
STEAM-9057	*Page layout*	When leaving the master page editor and choosing to discard the changes, the warning about losing those changes now appears only once.
STEAM-9060	*Page layout*	Under some circumstances, flow headings might not be updated correctly when they end up being moved to another page by casting off changes; this has now been resolved.
STEAM-9013	*Pedal lines*	Under rare circumstances, a pedal line of a very particular length could cause Dorico to crash when printing or exporting graphics; this problem has now been fixed.
STEAM-9058	*Percussion*	Note input onto a percussion kit will no longer incorrectly duplicate existing articulations on other voices in the kit to the newly-input notes.
STEAM-8741	*Performance*	Some of the panels in Write mode were unnecessarily recalculated every time the selection changes; this has now been resolved.
STEAM-8976	*Performance*	The system track has been optimized and now has considerably less impact on the speed of editing in both page and galley view when it is shown.
STEAM-8981	*Performance*	Dorico now breaks alignment in large dynamic groups with gaps of 12 quarter notes (crotchets) or longer in galley view to improve redraw performance.
STEAM-8984	*Performance*	The speed of opening large projects with many playing techniques, and of preparing for playback after making changes to the music, has been significantly improved.
STEAM-8990	*Performance*	Double-clicking to edit an item or show the caret now works reliably in larger projects, in both page and galley view, whether or not the system track is shown.
STEAM-9032	*Play mode*	Switching layout in Play mode now correctly ensures that the tracks for all players in the newly-chosen layout appear populated.

ID #	Component	Issue
STEAM-8754	*Playback*	The playback of microtonal dyads has been improved; both notes are now played correctly under a much greater number of circumstances.
STEAM-8896	*Playback*	The score is now always moved to keep the playhead in view; previously it could go wrong if the number of systems in the flow changed since the project was opened.
STEAM-8906	*Playback*	Playing techniques on the first note of the flow now play back correctly when multiple voices are active.
STEAM-8954	*Print mode*	Under some circumstances, print options set in projects last saved in Dorico 2.1.10 or earlier were lost when opening in the current version; this problem has now been fixed.
STEAM-8933	*Repeat markers*	Changes made to the **Repeat Marker Sections** and **Repeat Marker Jumps** paragraph styles are now correctly shown in the layout immediately.
STEAM-8915	*Selection*	**Shift**+clicking in an empty part of the staff no longer extends the selection to the wrong staves if the bar contains a fermata.
STEAM-8965	*Text*	In Dorico Elements, it now possible to edit the text in a frame more than once.
STEAM-9014	*Ties*	Tie endpoints now correctly avoid rhythm dots on unison notes in opposing voices.
STEAM-8966	*Time signatures*	The **Ends interchangeable** property is no longer sometimes incorrectly deactivated or reactivated when undoing the deletion of a time signature in the interchangeable set.
STEAM-8967	*Time signatures*	Flows that begin with an interchangeable time signature where the first bar uses a time signature other than the first in the set no longer change appearance after reloading.
STEAM-8930	*Trills*	Under some circumstances, a trill interval of a diminished fifth played back incorrectly in the lower octave rather than the octave above the written note; this problem is now resolved.
STEAM-8620	*User interface*	The positioning of the score when switching between modes is now more stable.
STEAM-8840	*User interface*	The correct tempo value is now shown immediately when activating fixed tempo mode.
STEAM-8880	*User interface*	Creating or deleting a tempo no longer causes the tempos filtered by the slider in the **Absolute Tempo** section of the Tempo panel to be reset unexpectedly.
STEAM-8918	*User interface*	Changing the selected layout in the right-hand panel in Layout Options now correctly causes all of the other options in the dialog to be updated immediately.
STEAM-8980	*User interface*	MIDI triggers for key commands that require multiple notes to be played are now correctly loaded when Dorico is restarted.
STEAM-9078	*User interface*	Opening a project whose filename includes words like **setup**, **config**, **options**, or **preferences** no longer prevents the **Preferences** dialog from being opened.
STEAM-8415 STEAM-9037	*Video*	Incrementing or decrementing the values in the timecode spin box now always works correctly for drop frame rates.

Dorico 2.2

23 November 2018

This version contains the following new features, improvements and issue resolutions.

New features

MIDI recording

Dorico 2.2 introduces support for real-time MIDI recording.

Initial setup. Ensure your MIDI keyboard is connected to your computer and is powered on before you run Dorico: at present, Dorico will not detect changes in connected MIDI devices while it is running.

We also recommend that you try inputting a simple rhythm against the click to check the latency of your system before you do any serious input: for example, start a new project, add a player, and add a few bars of 4/4. Select the initial rest and start recording, then try to play quarter notes (crotchets) exactly in time with the click.

You may discover that the quarter notes are notated fractionally ahead of the beat: if so, try setting the new **MIDI input latency compensation** option in the **Recording** section of the **Play** page of Preferences to a value like 50ms, then try again.

If, by contrast, you discover that the quarter notes are notated behind the beat, try reducing the buffer size in **Edit ‣ Device Setup**: you should choose the lowest value that still produces stable playback with no drop-outs. If your computer runs Windows and you are using the computer's built-in audio device, you may find that you cannot achieve sufficiently low latency for reliable real-time input: if this is the case, we recommend that you purchase an external USB audio interface with ASIO support. It is not necessary for you to connect your MIDI keyboard directly to the USB audio interface: connecting your MIDI keyboard to your computer via USB is sufficient, provided the audio subsystem of your computer has sufficiently low latency. The Steinberg UR range of USB audio interfaces is recommended for use with Dorico, but any audio interface with good-quality ASIO drivers will be acceptable.

Disabling specific MIDI input devices. By default, Dorico will accept MIDI input from any MIDI device connected to your computer, including any virtual MIDI cables or inter-application buses you are running. To disable a particular MIDI device so that Dorico does not accept any input from it, click the **MIDI Input**

Devices button on the **Play** page of Preferences, and in the dialog that appears, deactivate any unwanted devices by unchecking the relevant checkbox.

Click settings. Before you record, you may wish to review the metronome click settings on the new **Click** page of Playback Options. There is a choice of two click sounds: a pitched beep, and an unpitched click in the style of a vintage digital metronome. By default, Dorico uses the beep, and will produce a higher pitched tone for the first beat of the bar, then a lower and quieter tone for subsequent beats of the bar; if the beat is further subdivided, a tone lower still is used for each subdivision. You can edit the pitch and velocity of each of these three tones here.

By default, Dorico does not subdivide the beat in simple time signatures, but does for compound time signatures: the options **Subdivide beats in simple time signatures** and **Subdivide beats in compound time signatures** control this behaviour.

Dorico will always play a click during MIDI recording, but you can also hear the click during playback: simply click the appropriate button in the mini transport on the toolbar.

The click is played by a dedicated tone generator called DoricoBeep. If you want to change the device to be used for the click, you can manually route the click to any VST instrument of your choosing using the controls in the track header for the Time track in Play mode. Be aware that if you provide manual routing for the click, this will require you to provide manual routing for any new instruments you subsequently add to your project. If you want to return to Dorico routing instruments automatically, choose one of the default playback templates via **Play ‣ Playback Template**.

Count-in. By default, Dorico provides one bar of count-in before you start recording, which can be adjusted by changing **Number of bars count-in** on the **Click** page of Playback Options. If you start recording after the start of the flow, you will hear any existing music in the bar prior to the recording start position along with the count-in, to help you orientate yourself in the music.

Quantization settings. Depending on the kind of material you are going to play, set the quantization settings appropriately. For example, if you know the note values you are going to play are rarely going to be any shorter than eighth notes (quavers), you should set the quantization unit to eighth notes as well. To change quantization, click **Quantization Options** on the **Play** page of Preferences.

Separate quantization options are provided for regular rhythmic notes and notes within tuplets. If you know that you will not play any tuplets, switch off **Detect tuplets** to prevent Dorico from interpreting anything you play as a tuplet.

Starting recording. Dorico will not create any additional bars or rhythmic time during recording, so ensure that sufficient bars or empty rhythmic space already exists before you start recording. You can quickly add multiple bars, provided your music has a prevailing time signature, by typing **Shift+B** to open the bars and barlines popover, entering the number of bars to add, and hitting Return.

To start recording, select a note or rest in the staff into which you want to record; Dorico will record into the first available voice on that staff. When recording into a grand staff instrument, such as piano, it is not necessary to select a note or rest in both the right- and left-hand staves: Dorico will assume that you want to record into both staves, and will automatically split the music between the staves based on pitch.

To tell Dorico that you want to record into a specific voice, or that you want to record into only one staff of a grand staff instrument, show the caret at the position at which you want recording to begin and ensure that the desired voice is chosen by way of the indicator to the left of the caret; type **V** to cycle through the existing voices on the staff, or type **Shift+V** to prime a new voice of the appropriate direction.

By default, Dorico will overwrite any existing music in the voice you choose to record into. If you would prefer the music to be merged with the existing music in that voice, activate chord mode (by typing **Q**) before you start recording.

Once you have made an appropriate selection, choose **Play ‣ Record**, or type **Ctrl+R** (Windows) or **Command-R** (Mac), to start recording.

To change the number of bars count-in before recording starts, set **Number of bars count-in** on the **Click** page of Playback Options.

During recording, the red playhead moves through the bars, but no music appears in Write mode, but if you are recording in Play mode you will see notes appear in the piano roll for the target instrument. When you stop recording, the music is notated and appears in Write mode.

Retrospective recording. During playback, you can play notes on your MIDI keyboard and hear the notes echoed back to you without inputting them into the score. If you subsequently find that you wished you had recorded the music you played during playback, you can use retrospective recording to insert it into the score.

After playing on your keyboard during playback, stop playback and select a note or rest on the staff in which you want the music you played to be input, at the position at which you want it to appear, and choose **Play ‣ Retrospective Record**, or type **Ctrl+Alt+R** (Windows) or **Opt-Command-R** (Mac).

The retrospective recording buffer is cleared each time you start playback, so you cannot recover music you played earlier than the last time playback was invoked.

Recording unpitched percussion. When recording onto an unpitched percussion kit instrument, Dorico respects the **Input onto kit or grid** option on the **Note Input and Editing** page of Preferences, allowing you to choose between using the staff position of the notes to be input (relative to the treble G or bass F clef) or the pitches specified by the percussion map used by the kit. Dorico will also follow the voicing rules specified in the **Edit Percussion Kit** dialog when determining which voice to use for each instrument.

Fixed tempo mode. By default, Dorico will follow the tempo markings in the flow during MIDI recording. If you would prefer to record at a different tempo, switch on **Play ‣ Fixed Tempo Mode**, which makes Dorico ignore the written tempo markings during recording and playback. You can also enable or disable fixed tempo mode by clicking on the note value representing the beat unit in the mini-transport on the toolbar:

Follow tempo

Fixed tempo

When fixed tempo mode is active, you can adjust the playback and recording tempo by clicking and dragging up or down on the numeric read-out.

You cannot change the tempo used by fixed tempo mode during playback, nor can you switch between fixed tempo and following tempo during playback.

Requantize. To requantize music you have recorded (or imported via MIDI), select the music to be requantized, then choose **Edit ‣ Requantize**. A dialog showing the same options as those accessible from Preferences to determine the quantization settings for MIDI recording will appear: simply choose the new settings and click **OK**. The music will be instantly requantized.

Repeat markers

Building on the improved playback of repeat barlines and repeat endings in version 2.0, Dorico 2.2 introduces comprehensive support for complex repeat structures involving D.C./D.S./Coda jumps. Repeat markers can be added via the **Repeat Structures** panel in Write mode or the **Shift+R** popover, with options for placement and appearance for the various markings provided in both Layout Options and Engraving Options.

Dorico divides repeat markers into two categories: *repeat jumps* specify the place from which playback must jump under certain conditions (for example, **D.C. al**

Coda), while *repeat sections* specify the destinations for the jumps (e.g. a segno or a coda), or where the music should end (e.g. **Fine**).

Creating repeat jumps. Repeat jumps are right-aligned, so to add a repeat jump at the end of a bar, select the barline with which the right-hand end of the jump instruction should be aligned, or select the note or rest at the start of the following bar, and either click the desired repeat jump from the Repeat Structures panel in Write mode, or type **Shift+R** to open the repeats popover.

The popover syntax is intended to be as flexible as possible, so you can type the jump instruction in full or abbreviate it. The following are examples of the kinds of things you can type into the popover:

- *D.C. al Fine:* **dcalf**, **DC al Fine**, **D.C. al Fine**
- *D.C. al Coda:* **dcalc**, **DC al Coda**, **D.C. al Coda**
- *D.C.:* **dc**, **D.C.**, **da capo**
- *D.S.:* **ds**, **D.S.**, **dal segno**
- *D.S. al Fine:* **dsalf**, **DS al Fine**, **D.S. al Fine**
- *D.S. al Coda:* **dsalc**, **DS al Coda**, **D.S. al Coda**
- *To Coda:* **toc**, **tc**, **to coda**, **To Coda**

Creating repeat sections. Repeat sections are left-aligned, so to add a repeat section at the start of a bar, select the barline with which the left-hand end of the section marker should be aligned, or select the note or rest at the start of the bar, and either click the desired repeat jump from the Repeat Structures panel in Write mode, or type **Shift+R** to open the repeats popover.

The popover syntax is designed to be flexible and to accept any reasonable way of describing the section, so the following are examples of the kinds of things you can type:

- *Segno:* **s**, **seg**, **segno**
- *Fine:* **f**, **fin**, **fine**
- *Coda:* **c**, **co**, **coda**

Mid-system gaps. When you create a coda section, Dorico automatically inserts a gap in the system to visually separate the coda from the music that comes before it. The default size of the gap can be adjusted by changing the value of **Default gap before mid-system coda section** on the **Repeat Markers** page of Engraving Options. To adjust the size of an individual mid-system gap, switch to Engrave mode and activate the **Note Spacing** tool: a large square handle appears at the start of the coda section, which can be nudged left and right by typing **Alt**+left/right (add **Ctrl** or **Command** to move in larger steps).

The default position of the coda marker relative to the mid-system gap can also be adjusted – aligning it either with the start of the staff lines following the gap, or instead at the start of rhythmic space after the restated clef and key signature – by changing the **Position of coda marker at start of system** option in the **Horizontal Position** section of the **Repeat Markers** page of Engraving Options.

You may want the bar number to be shown at the start of the coda section, in which case activate **Show bar numbers at start of codas** on the **Bar Numbers** page of Layout Options.

In common with how Dorico currently handles other bars that are played in a different sequence to their printed order, items that are ongoing at the point of transition are not specially treated, so beware of clefs, key signatures, time signatures and so on that may be different between the bar immediately before the coda and the first bar of the coda. Dorico will not display any cautionary key or time signatures immediately preceding the coda. A future version of Dorico will introduce further new functionality to manage items that are ongoing at the point at which a repeat jump occurs.

Appearance of repeat markers. Many options to control the appearance of repeat markers can be found on the new **Repeat Markers** page of Engraving Options. Two presets are provided, which can be chosen via the **Repeat marker appearance preset** menu at the top of the page:

- **Standard** produces an appearance based on the most commonly-used conventions in current rock/pop sheet music publishing.
- **Gould** produces an appearance based on the recommendations made in Elaine Gould's book *Behind Bars*, which is better suited for classical and concert music.

The main difference between the two presets is that **Standard** results in instructions that are more abbreviated or shorthand, while **Gould** results in wordier, more explicit instructions. Gould also recommends that repeat markers should be positioned below the staff, while it is more common in current rock/pop sheet music publishing for these instructions to be placed above the staff.

After choosing one of the two presets, you are free to adjust any of the options on the **Repeat Markers** page, in which case the preset menu will show **Custom** as the current preset.

To change the size of the segno and coda symbols relative to the surrounding text, adjust the **Scale factor for music symbols** option in the **Design** section. You can control the font, style, weight and size for repeat jumps and sections independently

by editing the **Repeat marker jumps** and **Repeat marker sections** paragraph styles in **Engrave** ‣ **Paragraph Styles**.

Default placement. Repeat jumps and sections appear above the staff by default. Gould recommends that repeat jumps and *Fine* sections should appear below the staff, which can be achieved by changing **Default placement for repeat jumps and Fine** on the **Staves and Systems** page of Layout Options to **Below staff**.

In some kinds of music, for example German *posaunenchor* church brass music, both repeat jumps and sections are shown both above the staff and additionally below the bottom staff of the system. This convention can be followed by setting **Default placement for repeat jumps and Fine** to **Above and below staff**.

Word wrap. Some repeat jump instructions can be very verbose, particularly when following the classical conventions recommended by Gould. As such, with very long repeat instructions it can help to reduce ambiguity concerning where such instructions take effect for them to be wrapped onto two lines. To wrap long repeat jumps on two lines, set **Word wrapping for repeat markers** to **Show on two lines** on the **Staves and Systems** page of Layout Options.

Moving repeat markers in Write mode. Repeat jumps and sections can be moved in Write mode in the usual way, either by dragging them left and right with the mouse, or by typing **Alt**+left/right.

Nudging repeat markers in Engrave mode. Repeat jumps and sections can be nudged graphically in Engrave mode, either by dragging them with the mouse or by typing **Alt**+arrow keys. To reset the repeat marker back to its default position, choose **Edit** ‣ **Reset Position**.

Overriding text for repeat markers. You should be able to obtain any commonly-used convention for repeat markers using the options on the **Repeat Markers** page of Engraving Options, but if you have need of specifying an unusual or non-standard instruction, you can activate the **Custom text** property in the **Repeat Markers** group of the Properties panel to override the text of any repeat marker.

Multiple codas and segnos. In pieces with complex repeat structures, it may be necessary to specify multiple codas or segnos (though we urge you to consider writing the music out in a longer, unwound form rather than subjecting your performers to a repeat structure that requires a map and compass to understand).

To achieve this, Dorico allows you to specify the **Marker index** property for a repeat section and the **'Jump to' index** property for a repeat jump, assigning a numeric index to the pair of repeat instructions.

Options are provided on the **Repeat Markers** page of Engraving Options for how multiple segnos and codas should be indicated to the performer.

End repeat barlines. In addition to the playback of repeat jumps and sections, it is now possible to specify that an end repeat barline should be repeated more than once. To increase the number of times a repeated section should be played, select the end repeat barline, then activate the **Play n times** property in the **Time Signatures** group of the Properties panel.

When **Play n times** is set to more than two, Dorico will display text above the repeat barline to inform the players that the music is repeated more than once. Options to control exactly what text should appear, and whether it should be aligned with the start, end or both start and end of the repeated section, are found in the **Repeat Count** section of the **Repeat Markers** page of Engraving Options.

Playback of repeats. Dorico plays back complex repeat structures automatically. You can specify whether repeat endings and barlines should be respected after a backwards jump (either a D.C. or D.S. jump) by setting the **Play repeats after D.S./D.C. jump** option on the **Repeats** page of **Playback Options**.

This option can be overridden on a per-repeat marker basis by activating **Replay repeats** in the **Repeat Markers** group in the Properties panel.

Jazz articulations

Broadening the support for notations used in jazz added in version 2.0, such as bar repeats and rhythm slashes, Dorico 2.2 brings comprehensive support for the notation of idiomatic ornamentations typical of brass writing in jazz (though not limited to brass instruments). Although they are colloquially known as jazz articulations, these techniques are closer to ornamentation than articulation in the strictest sense, so they are found in Dorico in the **Ornaments** panel and can be input using the **Shift+O** popover.

Each note can have a maximum of one jazz articulation to each side: on the left, a plop, scoop or lift; on the right, a doit or fall. The terminology for these techniques is not universally agreed, so for the avoidance of doubt: a plop approaches the written note from above; a scoop or a lift approaches the written note from below; a doit rises from the written note; while a fall falls from the written note.

These articulations are sometimes written with a curved line that looks a little like a slur, which Dorico calls a "bend", and sometimes written with a straight line, which may be drawn using a solid, dashed, or wavy line, which Dorico calls "smooth".

There is currently no playback support for jazz articulations, since they are too complex to approximate using crude techniques like MIDI pitch bend, and in the handful of virtual instruments in which sampled versions are available, triggering

them requires complex addition and removal release of multiple notes at precise times. Playback of jazz articulations may be added in a future release.

Adding jazz articulations. Jazz articulations are added to the selected note or chord by clicking the desired technique in the **Jazz** section of the **Ornaments** panel on the right-hand side in Write mode, or by typing into the **Shift+O** popover:

- *Plop*: **plop** for a bend plop, **plopsmooth** for a smooth plop
- *Scoop*: **scoop** for a bend scoop, **scoopsmooth** for a smooth scoop
- *Lift*: **lift**
- *Doit*: **doit** for a bend doit, **doitsmooth** for a smooth doit
- *Fall*: **fall** for a bend fall, **fallsmooth** for a smooth fall

Removing jazz articulations. Because jazz articulations are part of the note to which they apply, they cannot be removed by hitting **Delete** (as this will delete the note in its entirety): instead, they are removed by selecting the note and clicking the **Remove** button in the **Jazz** section of the **Ornaments** panel.

Positioning jazz articulations. Dorico positions jazz articulations automatically relative to the noteheads to which they apply, considering the presence and position of rhythm dots, accidentals, back notes, and so on. When jazz articulations are present on multiple notes of a chord, Dorico has sophisticated behaviours for determining when they should be aligned horizontally based on how close to each notehead they can be positioned versus how ragged jazz articulations at different horizontal positions will appear. Dorico will also allow a maximum of one jazz articulation per space, so if you have a cluster chord, not every notehead in the chord may be able to show an articulation.

You can adjust the horizontal threshold for alignment and the approach Dorico should take to lining up multiple jazz articulations on the same chord on the new **Jazz Articulations** page of Engraving Options.

Smooth jazz articulations. When you choose to create a smooth lift, plop, doit, or fall, the default length and angle of the line is determined by options on the **Jazz Articulations** page of Engraving Options. You can adjust the position of each end of the line in Engrave mode, allowing you to freely change the length and angle of the line. Select the line and then hit **Tab** to cycle between each end of the line, then nudge it with **Alt**+arrow keys. You can reset the position of the line to its default by choosing **Edit** ‣ **Reset Position**.

The default line style (solid, dashed, or wavy) for a smooth jazz articulation is also specified on the **Jazz Articulations** page of Engraving Options. Jazz articulations created via the **Shift+O** popover will use the default line style, while those created from the panel will be created with the line style set explicitly, according to the

button in the panel you choose. To reset the line style of a jazz articulation back to the default, choose **Edit ▸ Reset Appearance**.

Other jazz ornaments. Four other idiomatic jazz techniques – flip, smear, jazz turn (or shake), and bend – can also be created from the new **Jazz** section of the **Ornaments** panel, or by entering **flip**, **smear**, **shake**, **jazzturn** or **bend** into the **Shift+O** popover.

In earlier versions of Dorico, these symbols could be found in the Brass section of the Playing Techniques panel, and when you open a project created in an earlier version, these playing techniques will automatically be converted into the appropriate ornaments.

There is currently no automatic playback for these additional jazz ornaments.

Tempo track import/export

When scoring for films, TV and games it is common for an updated edit to be sent to the composer or orchestrator, resulting in some changes to the musical structure of the cue or project becoming necessary. Dorico 2.2 introduces features to import the tempo track from a MIDI file, or to export a tempo track from the current project.

The term *tempo track* in fact refers not only to the tempo information from a MIDI file, but also to other global timing-related information, including the SMPTE offset, time signatures, and markers. Dorico allows you to import some or all of these elements from a MIDI file, replacing the existing ones in the flow but retaining all the rest of the music and reflowing it accordingly.

To import a tempo track into the current flow, choose **File ▸ Import ▸ Tempo Track**. After choosing the MIDI file containing the tempo track, the following dialog appears:
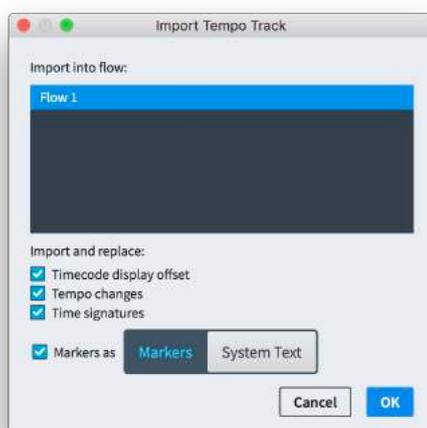
Choose the destination flow from the list at the top of the dialog, and then choose which types of items you want to import:

- **Timecode display offset** sets the initial timecode position at the start of the flow
- **Tempo changes** replaces all immediate and gradual tempo changes in the flow with the tempo changes from the MIDI file
- **Time signatures** replaces all time signatures in the flow with the time signatures from the MIDI file
- Finally, you can choose to import the markers in the MIDI file either as **Markers** or as **System Text**. If you import them as markers, any existing markers in the flow will be replaced; but if you import them as system text, existing system text will not be removed (as Dorico doesn't know which items can be safely replaced without removing other text that you might want to keep).

Click **OK**, and the chosen items will be imported into the selected flow.

To export a tempo track, choose **File ‣ Export ‣ Tempo Track**. You will be prompted for a file name for the MIDI file to be exported, and this file can then be imported into Cubase or another DAW to transfer the flow's timing into a corresponding project.

Flow headings

In projects including multiple flows, it may be necessary for a new flow to start midway through a page; this is particularly likely in instrumental parts for multi-movement works, where it is common for the start of a new movement to be printed immediately following the end of the previous one. Until now, although Dorico has made it easy to show multiple flows in the same music frame, it was left to you to add any necessary heading (such as the title, composer, etc.) manually, which required you to add text frames, producing page overrides in the layout.

Dorico 2.2's new flow headings feature removes the need for any manual intervention beyond determining what material should appear before each flow.
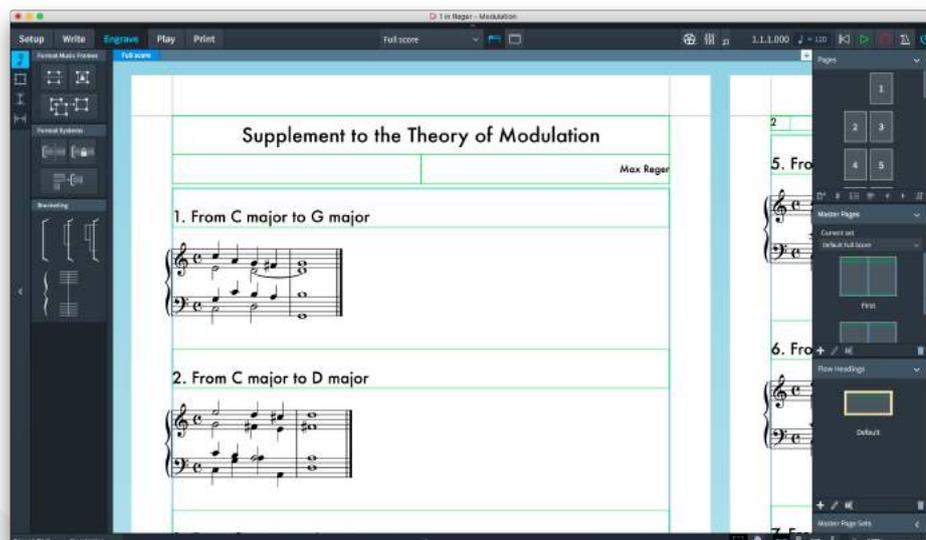
Enabling flow headings. Flow headings are enabled by default in new projects: the **First** master page in both the **Default Full Score** and **Default Part** master page sets now uses tokens from the project info, and a flow heading is inserted before the first flow. If you intend to have only a single flow in your project, you may wish to switch off flow headings.

The new option **Show flow headings** in the **Flows** section of the **Page Setup** page of Layout Options determines when flow headings will appear:

- **Never**: flow headings are disabled, and will not appear automatically.
- **Not for first flow**: flow headings will appear for all flows after the first flow in the layout; this setting is useful if you are using a master page set that includes an automatic **First** page pair, and that **First** page pair shows the flow title rather than the project title; this avoids duplicating the flow title before the first flow.
- **For all flows**: flow headings will appear for all flows.

The default margin to be added above and below a flow heading is also specified here: the top margin will not normally be used, as the flow heading is normally positioned in the gap between systems, but the bottom margin is always used. If the bottom margin is zero, the bottom edge of the bottommost frame in the flow heading will touch the top staff line of the uppermost staff in the first system of the flow directly below.

A new option **Use 'First' master page** has also been added, allowing you to specify whether the First master page should be used at the start of the layout (**First flow only**), for any flow after the first that starts at the top of a page (**Any flow starting at top of page**), or not at all (**Never**).

Editing flow headings. Flow headings are part of a master page set, and each master page set can have its own set of flow headings. The **Default full score** and **Default part** master page sets include a single flow heading, which has the same information as shown at the top of the **First** master page pair, i.e. the flow title (using the **{@flowTitle@}** token), the flow composer (using **{@flowComposer@}**) and flow lyricist (using **{@flowLyricist@}**), resolving these tokens using the information specified for the flow in **File ‣ Project Info**.

A new **Flow Headings** section has been added to the right-hand panel in Engrave mode, showing the flow headings designed for the master page set chosen in the **Master Pages** section above.

To edit a flow heading, simply double-click it in the **Flow Headings** section, and the flow heading editor will open. This editor is essentially the same as the master page editor, though is shows a different colour background to reinforce that there are some differences. The main differences are that flow headings do not differ when shown on left- and right-hand pages, so only a single page is shown; and that you cannot create a music frame as part of a flow heading.

It doesn't matter where in the page you position the frames in your flow heading: Dorico will use the top of the uppermost frame and the bottom of the bottommost frame to determine the dimensions of the flow heading that will be inserted into the frame. You should attempt to keep the overall height of the flow heading to a minimum, to avoid unduly reducing the amount of music that will fit in the frame.

Flow headings are inserted relative to the music frame and will automatically move vertically relative to the first system of the flow to which they apply. As such, frames in flow headings cannot have vertical constraints, i.e. they cannot be locked to the top or bottom of the page: instead, they can be constrained to either or both the left and right edges of the page.

Flow heading changes. You can define multiple flow headings within a master page set. Only one flow heading can be designated the default, which can be changed by creating a new flow heading based on an existing one and setting **Type** to **Default** in the **New Flow Heading** dialog.

To use a flow heading other than the default, you can insert a flow heading change on any page in the layout, specifying that for that page only or for all subsequent pages, Dorico should use a specific flow heading. Right-click a page in the **Pages** panel to show the context menu, and choose **Insert Flow Heading Change** to show this dialog:
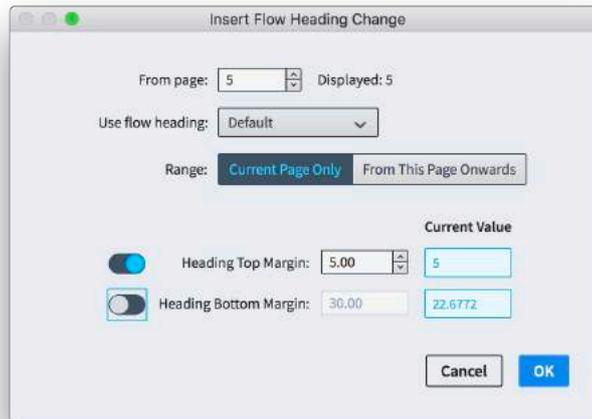
Choose the desired flow heading from the master page set from the **Use flow heading** menu and specify whether or not the change should take effect for the **Current Page Only** or **From This Page Onwards**. You can also override the top and bottom margin to be used by the new flow heading; if you do not specify an override here, the margins defined in Layout Options will be used instead.

Moving flow headings. When a flow heading is added to the layout, its frames are drawn with dashed lines to make it clear that they are a different kind of frame. As the music reflows, flow headings move automatically with the first system of the flow to which they apply. If you move the top system of a flow using the staff spacing tool, the flow heading will also follow the top system: you must use the large square handle for the whole system rather than the small square handle for the top staff only if you want the flow heading to move.

You can also simply move the frames in the flow heading yourself in the usual way in Engrave mode, but doing so will introduce a page override and prevent Dorico from making any further automatic changes to the layout of the frames on that page.

Flow headings at the top of the page. When a flow heading falls at the top of a page, the margin above flow headings, as defined in Layout Options or in the prevailing flow heading change, will not apply: the flow heading will be positioned at the top of the music frame with no margin above.

Furthermore, in a new project, any running header and page number at the top of the page is also automatically suppressed when a flow header falls at the top of a page, following common publishing practice for the start of a new chapter or section in a book. Options to control this behaviour are found on the **Page Setup** page of Layout Options, allowing you to specify whether each of these elements should be hidden.

Flow headings in existing projects. Flow headings are enabled by default in newly-created projects but are disabled in existing projects in order to avoid causing them to change appearance when opened in Dorico 2.2. However, the default master flow heading template is automatically added to all master page sets in an existing project when it is opened in the new version, so you can simply enable flow headings in Layout Options.

Converting an existing project to use automatic flow headings instead of manual text frames added in an earlier version will also require you to remove overrides from pages in your layouts, and may require you to lay out the music again, as Dorico's determination about how much music will fit in each system once automatic flow headings are taken into account will almost certainly differ from your choices made when setting up flow headings manually.

Tacets

Complementing flow headings, Dorico 2.2 also introduces support for handling flows in which all of the players in the layout are tacet. If a player is assigned to a flow (and to a layout), but has no music, then Dorico will display multi-bar rests appropriate for the whole flow, showing tempo changes, rehearsal marks, and so on. As of Dorico 2.2, a layout can have a flow assigned but have no players assigned to that flow, and display a flow heading followed by the text **Tacet** instead.

To ensure that a tacet will appear, ensure that the flow is attached to the layout, but that none of the players in that layout are attached to that flow.

Showing tacets. The options for enabling tacets are found in the new **Tacets** section of the **Players** page of Layout Options. In newly-created projects, tacets are enabled by default, but to enable them in existing projects, activate **Show tacet for flows where no players are assigned**. Although it is possible to activate this option without also choosing to use flow headings, it is recommended to use the two features in conjunction, so that each tacet is properly contextualised by the title of the flow to which it corresponds.

You can specify the text to appear when all players in a flow are tacet: by default, the word **Tacet** appears, in a new dedicated paragraph style **Tacet**, which can be edited in **Engrave ▸ Paragraph Styles**. By default, the **Tacet** text is enclosed in a border to help it stand out from the flow headings surrounding it; options for the amount of padding to the left and right of the text and the thickness of the line, as well as the option not to use a border, can be found on the new **Tacets** page of Engraving Options.

The gap between the tacet text and the flow heading above is determined by the **Margin above tacet** option (and the **Flow heading bottom margin** value is not

used in this situation), while the gap between the tacet and the following flow heading is determined by the **Margin below tacet** option.

Staff spacing. When editing staff spacing in Engrave mode, a tacet is treated as a system in its own right, and shows a large square handle allowing you to move it up or down on the page, bringing its associated flow heading with it.

However, it is worth bearing in mind that some staff spacing operations do not make sense with tacets, such as using **Alt**+drag to proportionally change the distance between all staves above or below the top or bottom selected staff. Because tacets do not have staves, they are not moved by **Alt**+drag.

Frame breaks. To ensure that a tacet appears at the start of a frame, select the **Tacet** text itself in Engrave mode and type **Shift+F** or choose **Engrave ‣ Format Music Frames ‣ Frame Break** to create a frame break before the tacet.

Trills

Trills have been completely overhauled in Dorico 2.2. In previous versions, Dorico could display an accidental above the trill as a means of indicating the trill interval, but this was purely cosmetic: the accidental did not take the current key into account, and it could not be displayed as a different accidental if need be in another layout for a transposing instrument. Trills in Dorico 2.2 have much greater musical intelligence, can reflect and indeed affect the accidental state in the current bar, and can display the trill interval in several ways.

Trill intervals. When you create a trill without specifying a particular interval, Dorico calculates the interval using the top note in the voice to which the trill belongs, considering the current key and any accidentals earlier in the bar: for example, in C major, a trill on an E natural will produce an interval of a half-step (semitone) or a minor second to F natural, unless there has been, say, a sharp introduced on the F in that octave earlier in the bar, in which case the trill interval will be a whole step (tone) or a major second to F sharp. You can specify a trill's interval via the **Shift+O** popover or activating the **Interval** property in the **Trills** group of the Properties panel. To specify an interval in the popover, use similar syntax to that used for specifying an interval in the **Shift+I** popover:

- To specify a minor interval, use lower-case **m**: e.g. **m2** produces a minor second; to specify a major interval, use upper-case **M**, e.g. **M2** produces a major second.

- To specify a perfect interval, use **p**: e.g. **p5** produces a perfect fifth.
- To specify an augmented interval, use **aug**: e.g. **aug4** produces an augmented fourth; to specify a diminished interval, use **dim**: e.g. **dim5** produces a diminished fifth.

A trill's interval can change over time, at any notehead position within a tie chain. To change the interval, start note input with **Shift+N** or by hitting **Return** to show the caret, position the caret at the same position as a notehead under the trill, and type **Shift+O** for the ornaments popover: simply enter the desired interval. The change in interval will be indicated by the appearance of an accidental, Hollywood-style interval or auxiliary note to the right of the notehead at the caret position.

When you first activate the **Interval** property to override a trill's interval, the property is set to the trill's current automatically-determined interval, which makes it easier to be sure you are adjusting it in the appropriate direction.

Trill interval appearance. By default, the trill interval is shown as an accidental positioned above the *tr* symbol, but it can alternatively be shown using the Hollywood convention of using **H.T.** for a half-step (semitone) and **W.T.** for a whole step (tone). If the interval is greater than a minor or major second, then it will instead appear as an auxiliary note: this is a small, parenthesized stemless black notehead shown immediately to the right of the note to which the trill applies.

Options to control the appearance of trill intervals are found in the new **Interval** group (formerly called the **Accidentals** group) of the **Ornaments** page of Engraving Options. You can specify whether the accidental or Hollywood-style interval should be shown above, below or to the right of the *tr* symbol, and choose between a number of specific conventions for the appearance of H.T. and W.T. Options for the appearance of the auxiliary note – including its scale factor, whether or not it should be parenthesized, and various gap values for different accidentals – are also to be found in the same place.

If the first notehead of a trill has a very short duration, e.g. if it is a 16th note (semiquaver) or shorter, then it may be preferable to show the auxiliary note not after the first notehead in the tie chain, but instead after the first note with a longer duration, in order to avoid distorting the rhythmic spacing. You can specify the duration threshold for the auxiliary note to be shifted to a later notehead in the tie chain on the **Ornaments** page of Engraving Options.

Hiding trill accidentals. It is possible to override Dorico's decision about whether or not to show a trill interval by activating the **Accidental** property in the **Trills** group of the Properties panel and setting either **Hide** or **Show** as appropriate.

If a trill is currently showing an appearance other than an accidental for an interval, i.e. an auxiliary note or a Hollywood-style H.T./W.T. marking, you can hide this by first activating the **Appearance** property in the Trills group to set the interval to appear as an accidental, then hide the accidental using the **Accidental** property as described above.

If a trill extends over multiple pitches, the interval will be restated above the trill line at every new pitch; if the interval remains unchanged over multiple notes, you can use the **Identical trill intervals on successive notes** to hide a Hollywood-style trill interval if need be, though accidentals or auxiliary notes will always appear.

Trills and accidentals. Dorico considers the upper note of the trill when determining which accidentals should appear in the bar: by default, the trill itself will show the interval unless the upper note is modified by an accidental in the key signature. If the upper note has been modified by an accidental earlier in the bar, then the trill will always show the interval, and indeed if the trill itself modifies a pitch that has a sharp or flat in the key signature, any subsequent notes of that pitch will show the appropriate accidental. Furthermore, the upper note of a trill behaves the same way as an explicit note with regard to ensuring that cautionary accidentals appear on other pitches in the current and following bars.

Microtonal trill intervals. When writing in a tonality system other than the default 12-EDO system, you can specify the trill interval in terms of the number of diatonic steps and the total number of divisions from the written note; in 24-EDO you can usually still describe the interval in terms of its quality (major, minor, etc.) but in tonality systems with a greater number of divisions, or an unequal number of divisions between each diatonic step, these quality descriptors are inadequate, so the interval must be described in terms of divisions of the octave. (STEAM-8622)

Trill continuation. A new option **Label for start of system** has been added to the **Ornaments** page of Engraving Options, controlling how a trill that spans a system break should appear: the *tr* symbol can appear as normal, in parentheses, or be hidden altogether.

The *tr* mark can also be hidden at the start of a trill by activating the new **Show trill mark** property in the **Trills** group of Properties, and clearing the checkbox.

Trill playback. Dorico automatically interprets trills in playback, and can use a combination of sampled trills, where available, and simulating a trill by triggering multiple notes. Options for trill playback are to be found on the new **Trills** page of Playback Options.

Dorico can now automatically play back sampled half-step (semitone) and whole-step (tone) trills if these playing techniques are defined in the VST expression map.

They are defined by default for a number of instruments in HALion Symphonic Orchestra, and these are now played back appropriately. For sound libraries that do not provide sampled trills, or for intervals beyond a whole step, Dorico will instead simulate a trill. If your music contains a mixture of trill intervals that cannot be handled solely by sampled trills, you may prefer to disable the use of sampled trills and use simulated trills throughout. To do this, set **Playback approach for trills** to **Generated trills only**.

If you are using NotePerformer for playback, you are likewise recommended to set **Playback approach for trills** to **Generated trills only**. This allows Dorico to always send the correct notes and controllers to cause NotePerformer to produce its most realistic trill playback.

Because sampled trills are recorded, looped samples, they typically offer no parameters allowing any kind of variation in the trill interpretation, such as trilling at different speeds, or incorporating grace notes or termination notes into the pattern of trilled notes. By contrast, generated trills can provide greater flexibility, at the expense of verisimilitude, and the remaining options on the **Trills** page allow adjustment of the interpretation of generated trills.

Dorico seamlessly incorporates grace notes immediately before the trill and at the end of the trill when playing generated trills. A single unslashed grace note on the note where the trill begins will result in an appoggiatura, a lengthened initial upper note, while multiple grace notes on the initial note will be included in the trill pattern. Grace notes on the note immediately following the trill, such as a turn or other form of trill termination pattern, will also be included in the trill pattern.

If a trill has variable speed by way of the **Start speed** and **End speed** properties, when generating trills for playback Dorico can respect this, using the values for **Slow trill speed**, **Normal trill speed** and **Fast trill speed** to determine the curve over which the trilled notes will speed up or slow down. These values can also be overridden on a per-trill basis by activating the corresponding properties in the **Trills** group of the Properties panel. If you want to override the played speed of a trill, but not show the change in speed in the way the trill line is drawn, you can also activate the new **Suppress drawing speed changes** property, which will draw the trill line

In contemporary performance practice, trills are usually performed starting on the written note, while in historical performance practice of music of the Baroque and classical eras, trills are usually performed starting on the upper (trilled-to) note. You can control this behavior by setting **Starting pitch for generated trills** to **Upper note** or **Lower note** as desired. This, too, can be overridden on a per-trill basis by

activating the **Start on upper note** property in the **Trills** group of the Properties panel.

Another common performance practice, in particular for Romantic piano music, is to perform all trills with an acceleration, starting more slowly and then faster as the trill proceeds. To achieve this, set **Default playback of generated trills** to **Accelerating from normal to fast speed**. With this setting, all trills that do not have their playback speed overridden via properties will play back starting at the number of notes per second defined for **Normal trill speed**, accelerating to **Fast trill speed** by the end. Dorico ensures that an appropriate number of notes will always be played and will only produce a change in trill speed for a note of sufficient length.

Editable instrument grouping

Dorico provides a number of different approaches for determining how the instruments in your layouts should be bracketed and braced together, together with options for the design and appearance of brackets and braces. These options are found on the **Brackets and Braces** page of Engraving Options, and for most works, one of the default bracketing approaches produces the desired, conventional result. However, if you find that your work has special requirements for bracketing, Dorico 2.2 introduces tools to allow you to fully customize instrument grouping.

Because of the complexities of score layout, where staves can appear and disappear from system to system due to instrument changes, changes in divisi, adding or removing staves from instruments, and hiding empty staves, for best results, it is recommended that you complete all of the score setup tasks so that all players and instruments are present before you start customizing brackets and braces.

It is also recommended that, if possible, you customize the brackets and braces at the very beginning of the flow, and that you ensure that **Hide empty staves** is set to **Never** (on the **Vertical Spacing** page of Layout Options) so that all staves appear in the first system – you can of course hide empty staves once you have set up the instrument groupings to your taste. Similarly, if you need to change the instrument groupings later in the flow, work from the beginning of the flow to the end; each new bracket and barline change is based on the prevailing grouping, so working backwards from the end of the flow to the start is not advisable.

Bracketing section. With the graphic editing tool chosen in Engrave mode, the left-hand panel contains a new **Bracketing** section, in which you will find buttons that allow you to create new instrument groups. The buttons are as follows, from left to right, top row then bottom row:
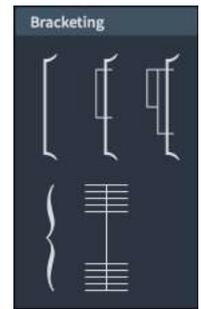
- **Bracket**: the primary (innermost) level of grouping; a thick line, normally used to join instruments of the same family. Brackets cannot overlap, either with themselves, or with braces, which are also positioned directly against the systemic barline.
- **Sub-bracket**: secondary level of grouping; a thin line, normally used to link instruments of the same type within a family (e.g. two flutes). Sub-brackets cannot extend beyond their containing bracket. Sub-brackets can also be drawn using braces, though this is uncommon in contemporary scores.
- **Sub-sub-bracket**: tertiary level of grouping; identical in appearance to sub-bracket, normally used to link instruments within the same section (e.g. two divisi staves of a violin section in a passage where the leader of the section has a solo). Sub-sub-brackets cannot extend beyond their containing sub-bracket. Sub-sub-brackets will not be drawn if sub-brackets are set to draw using braces.
- **Brace**: also used for primary grouping; a curved brace, normally used to join grand staff instruments (e.g. piano or harp). Braces cannot overlap, either with themselves, or with brackets. Staves joined with a brace as their primary group cannot show sub- or sub-sub-brackets.
- **Barline joins**: by default, barline joins follow primary grouping, i.e. barlines extend through the staves that are joined by the innermost bracket or brace, with the exception of staves belonging to singers, in which case the barline is broken regardless of the bracketing to avoid collisions with lyrics.

Creating a new group. To create a new bracket, brace, or sub-bracket, select an item on the staff that should begin the group, then select an item on the staff that should end the group, and click the appropriate button in the **Bracketing** section of the left-hand panel in Engrave mode: the specified bracket, brace or sub-bracket will be created. If necessary, any existing instrument groupings will be adjusted to accommodate the new group.

Editing an existing group. When you select a bracket, brace, or barline in Engrave mode, handles appear at the top and bottom. You can move the selected end of the item up or down by typing **Alt**+up/down arrow. Brackets cannot overlap, so as you move the end of a bracket upwards, any bracket or brace above will be shortened; a bracket having been shortened, moving the intruding bracket back again will not restore the original length of the shortened bracket.

It is also possible to drag the top or bottom of a bracket, brace, sub-bracket or sub-sub-bracket using the mouse to change the staves enclosed; barlines, however, can only be lengthened or shortened using key commands.

Signpost. When the new group is created, a **Bracket and Barline Change** signpost appears at the start of the system. The change in grouping will take effect from the current system if the signpost is positioned at the start of the system, but if the signpost appears midway through a system, the change will take effect from the following system.

Barline joins. Creating a new barline join is identical to creating a new bracket or brace: select an item on the staff that should begin the barline group, then select an item on the staff that should end the group and click the barline join button in the **Bracketing** section of the left-hand panel in Engrave mode.

To quickly separate an existing barline section so that each staff has its own independent barline, simply select the barline and hit **Delete** in Engrave mode. (In Write mode, deleting a barline will merge the bars to either side into a single, longer bar, so it's important to be sure you are in the correct mode.)

Resetting brackets and barlines. To remove any custom instrument groupings altogether, simply delete the bracket and barline change signposts.

To return to the default instrument groupings as specified in Engraving Options after a passage where custom instrument groupings have been used, select the position at which the return to the default groupings should occur and choose **Engrave ‣ Reset Bracketing**; this creates a signpost at the selected rhythmic position, though the reset will only take effect at the start of the following system.

It is also possible to reset either the bracketing or the barlines independently: select the signpost and open the Properties panel. In the new **Bracket and Barline Changes** group, you can set **Change bracketing** to **Auto** to remove any custom brackets and braces and do likewise for **Change barlines** to remove any custom barline joins.

Music symbols editor

The new **Engrave ‣ Music Symbols** dialog allows you to edit the appearance of every symbol used in your project that is not already editable via another dialog (i.e. chord symbols, accidentals, playing techniques, noteheads).
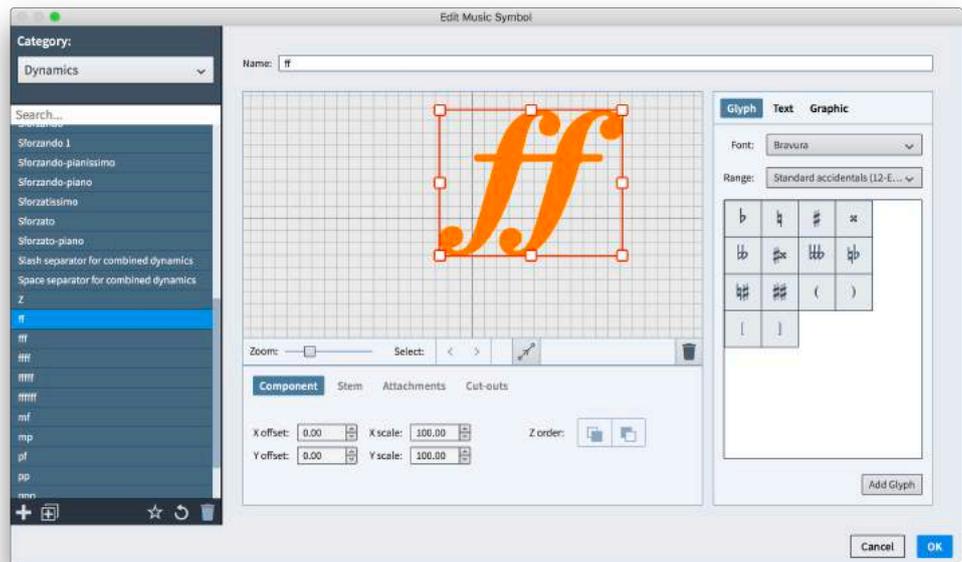
The symbols are organized into categories, which you can choose from the selector at the top left-hand corner of the dialog. To help narrow down the choice of symbols, you can also enter a search string in the field directly below the category selector. (A useful tip is to set the **Category** selector to **All Categories**, then search within the entire set of symbols using the search field.)

If you create a new music symbol in this dialog, it will not be used by Dorico directly: only the default built-in music symbols will be used by the built-in features to draw notes, dynamics, clefs, time signatures, tuplets, and so on.

To make a change to a built-in music symbol such that it will use the edited appearance in every new project you create thereafter, edit the symbol and then click **Save as Default**.

Improvements

Accidentals

Designing accidentals. When designing custom accidentals, it is common to require the positioning of multiple glyphs relative to one another. When adding a new glyph to an accidental, each glyph is now aligned relative to the baseline of each glyph, rather than the bottom corner, which reduces the amount of adjustment required. (STEAM-8658)

Articulations

The positioning of staccatissimo articulations relative to staff lines when allowed inside the staff has been improved. (STEAM-8484)

Bar numbers

Repeats. Bar numbers can now optionally take repeats into account and increment the bar count each time a bar is played. This is controlled by the new option **Bar numbering for repeated sections** option on the **Bar Numbers** page of Engraving Options, which applies to all layouts and all flows in the project: this is set to **Do not count repeats** by default, in which case repeats will have no effect on bar numbering; set **Count repeats** to take repeats into account.

How bar numbers that include repeats are displayed in each layout is determined by new options on the **Bar Numbers** page of Layout Options. Set **Count repeats** to **All repeats** to show the bar number of each pass one after the other: for example, the second bar of an initial eight-bar phrase that is played twice will be numbered *2 (9)* by default. Change **Prefix** and **Suffix** to determine how the bar numbers are separated (for example, changing **Prefix** to **,** and clearing **Suffix** would produce *2,9* instead).

Set **First repeat only** if you want to see only a single bar number each time it appears, but for the count to increment taking repeats into account. For example, the bar immediately following an initial eight-bar phrase that is played twice will be numbered *17* rather than *9* when using this option.

Set **Last repeat only** if you instead want to see the latest rather than earliest bar number for each bar. For example, the first bar of an initial eight-bar phrase that is played twice will be numbered *9* instead of *1* when using this option.

View bar numbers. The **View ▸ Bar Numbers** option has been improved such that bar numbers now appear on all staves, rather than only above the top staff of the system. (STEAM-8229)

Bars split between systems. A new option **Show bar number at start of system for bar split over break** has been added to the **Bar Numbers** page of Layout

Options, switched on by default. Switching this option off tells Dorico not to display the number of the bar split across the system break in square brackets, which may be useful in music in open meter. (STEAM-8499)

Layout Options. The **Bar Numbers** page of Layout Options has been reorganized to make the relationships between groups of options clearer, including consistently using **Show**… for all options, thus inverting three options that were previously using **Hide**… instead. (STEAM-8507)

Beams

Beam corners. A new option **Position for secondary beam groups in beams with opposing outer stems** has been added to the **Vertical Position** section of the **Beams** page of Engraving Options, allowing you to choose whether all secondary beam groups should be shown on the same side of the primary beam to make the rhythmic grouping clearer, at the expense of introducing beam corners for the beam on the opposite side of the primary beam than its outer stem would normally dictate, or whether secondary beam groups should go on opposite sides of the primary beam, eliminating the beam corners but perhaps making the rhythmic grouping less clear.

Partial beam length. A new option **Partial beam length** has been added to the **Appearance** section of the **Beams** page of Engraving Options.

Clefs

Clefs for divisi and extra staves. Clefs on divisi staves, and on extra staves added above or below the default staves for an instrument, are now drawn full size, instead of being drawn at the size more appropriate for a mid-system clef change. (STEAM-8550)

Divisi

Staff labels. The existing option for showing divisi sections in staff labels on the **Staves and Systems** page of Layout Options has been split into two options: **Show section names on first system**, and **Show section names on subsequent systems**. By splitting these options, you can now choose to show divisi section names only on the first system of a divisi passage, provided the divisi change occurs at the start of the system. (STEAM-8405)

Vertical justification. A new option **Gap to use for divisi staves** has been added to the **Vertical Spacing** page of Layout Options, allowing you to choose between using the **Staff to staff** gap (the default for newly-created projects) or the **Braced staff to braced staff** gap (which was the default in Dorico 2.1.10 and earlier). Divisi staves are justified in accordance with the gap used to separate them: just as the gap between braced staves is not justified, so too is the gap between divisi

staves not justified when **Braced staff to braced staff** is chosen; when **Staff to staff** is chosen, the gap between divisi staves is subject to vertical justification. (STEAM-8682)

Dynamics

Aligning dynamics. Dorico automatically aligns dynamics that are in the same group relative to the staff, and abutting dynamics are automatically grouped by default. However, it may also be necessary to align dynamics that are not abutting, and because the music will typically be laid out differently between the full score and the instrumental parts, it is often not desirable to group dynamics in order to achieve alignment, because this can cause unwanted alignment in one or other of the layouts. To solve this, a new command **Edit ‣ Dynamics ‣ Align Dynamics** has been added, making it easy to align dynamics across the width of a system without grouping them.

This command can only be used in Engrave mode, so first switch to Engrave mode, and then select the dynamics you want to align; a convenient way to do this is to use the new **Edit ‣ Select More** command (see **Selections** below). When you choose **Align Dynamics**, all of the selected dynamics will be positioned at the vertical position of the selected dynamic furthest from the staff. All of the dynamics remain selected after alignment, so you can nudge them all up or down afterwards in the usual way with **Alt**+up/down arrow.

To reset aligned dynamics back to their original positions, select the dynamics and choose **Edit ‣ Reset Position**. (STEAM-8661)

Creating dynamics on multiple staves. It is now possible to create dynamics on multiple staves in a single operation. Select the staves on which you want the dynamics to appear before you type **Shift+D** to open the dynamics popover, and when the popover is confirmed, dynamics will be created on all selected staves. (STEAM-7451)

Fingering

Advancing the popover. The **Shift+F** popover for fingering can now be advanced using the arrow keys, **Space**, and **Tab**. Fingering can only be added to selected notes, so when you advance the popover, Dorico will automatically select the appropriate note or chord in the current voice; if you need to add fingerings to a note or chord in another voice, or to notes or chords in multiple voices at once, you will need to manually select the notes or chords yourself before you type **Shift+F**. The left and right arrow keys navigate to the previous or next note or chord in the current voice; **Space** navigates to the next note or chord in the current voice (unless the last character you typed into the popover was a comma, so that you can naturally type a list of fingerings separated by commas and spaces, e.g. **1, 2,**

5); **Tab** navigates to the first note or chord in the current voice in the next bar, while **Shift+Tab** navigates to the first note or chord in the current voice in the previous bar. (STEAM-8659)

Graphics export

1200dpi export. It is now possible to export bitmap graphics in TIFF or PNG format at 1200dpi resolution. (STEAM-8590)

Instruments

New ensembles. A number of new default ensembles are now available in Setup mode, including clarinet choir, pop horns, big band horns, and various rhythm sections. (STEAM-8546)

Instrument changes. When a percussion player is switching back and forth between unpitched and pitched instruments, Dorico now shows the prevailing key signature as well as the prevailing clef when switching from an unpitched instrument to a pitched instrument. (STEAM-8751)

Layouts

Layout numbers. Some publishers use a numbering of scheme for each publication, with a catalogue or work number used to identify a specific work, and then each score or (more typically) part associated with that publication uses the catalogue number in conjunction with a number that uniquely identifies each part. For example, the full score might use catalogue number **23512**, and the parts may then use numbers of the form **23512-01**, **23512-02**, and so on.

To make this easier to manage, each layout can now have a number associated with it, unique to the layout type (i.e. full scores, parts, and custom scores are all numbered independently). To see or change the layout number for a layout, expand its card in the **Layouts** panel in Setup mode, where it can be edited.

To print the layout number on the layout itself, use the token **{@layoutNumber@}** in a text frame; this will be substituted with the number of the layout in which it appears.

The layout number is also prepended to the filename Dorico creates when exporting graphics in Print mode, or when exporting via **File ▸ Export ▸ Flows**. (STEAM-8742)

Page and staff size read-out. When expanding a layout card in the **Layouts** panel in Setup mode, the page and staff size are now displayed in the preferred measurement unit as specified in Preferences, and if the page dimensions correspond to one of the preset page sizes, the name of the page preset is now displayed. (STEAM-8734, STEAM-8733)

Lyrics

Lyric hyphens. A new option **Lyric hyphen character** has been added to the **Hyphens** section of the **Lyrics** page of Engraving Options, allowing you to override the default hyphen character used for hyphens between lyrics. (STEAM-8652)

Markers

Timecode in markers. A new option **Timecode in markers** has been added to the **Markers** page of Engraving Options, allowing you to choose whether or not timecode should be displayed in markers. (STEAM-8486)

MIDI export

Key signatures. Simple Western key signatures (of up to seven sharps and flats) are now exported in MIDI files. (STEAM-8370)

Time signatures. If the flow to be exported contains repeats, time signatures are now exported correctly taking the repeats into account. (STEAM-8535)

MIDI import

Markers. Dorico now imports markers from MIDI files. If the SMPTE Offset value is defined for the MIDI file, Dorico also now imports that, and uses it to set the timecode position for the start of the flow. Markers are also now exported when exporting MIDI. (STEAM-8316)

Tempo changes. To avoid cluttering up the score with many metronome marks, Dorico now imports small changes in tempo as signposts, with only jumps in tempo of at least 10bpm resulting in a visible metronome mark. (STEAM-8471)

Default page setup. Dorico now attempts to set a sensible default page and staff size when importing a MIDI file with many tracks. (STEAM-8442)

Enharmonic spelling. A new algorithm for producing correct enharmonic spelling when importing MIDI files or using MIDI recording has been implemented, greatly reducing the amount of manual respelling required after import or input. (STEAM-6582)

Pedal lines. Sustain pedal lines are now imported by interpreting MIDI controller 64 data in imported MIDI files, or indeed during live MIDI recording.

Player groups. When importing a MIDI file as a source for further arrangement or orchestration, it may be useful to demarcate the players in the final ensemble and the players introduced by the imported MIDI file. Switch on the new option **Create player group for new players** in the **Import MIDI File** dialog to place all of the players created for the tracks in the MIDI file into their own group, which can later be deleted if necessary. (STEAM-8487)

Part layouts. In a similar vein, you may prefer Dorico not to create part layouts for all of the players added when importing a MIDI file. If so, switch off the new option **Create part layouts for new players** in the **Import MIDI File** dialog.

Mixer

Hiding unused outputs. Different VST instruments provide a variety of output configurations, and depending on the way the plug-in is configured, you may find that some of the outputs that appear in the Mixer end up unused, making the Mixer more unwieldy than necessary. A new option **Number of audio outputs to show in Mixer** has been added to the **Endpoint Setup** dialog, allowing you to limit the outputs shown in the Mixer. (STEAM-8679)

Multi-bar rests

Split multi-bar rests. A new command to split a multi-bar rest at a specific barline has been added. This may be useful if you need to split a multi-bar rest into two or more rests that would otherwise be shown as a single one, perhaps to make it easier by revealing the phrase structure of the music and to allow a cue to be written in during a rehearsal or session.

In Engrave mode, select the barline at which you want the multi-bar rest to be split, then choose **Engrave ▸ Split Multi-bar Rest**. A signpost containing the word **SPLIT** will appear, and any ongoing multi-bar rests at that barline will be split in all instrumental parts. To remove the split, simply select the signpost and delete it.

Music fonts

Changing text fonts. A new option **Update text fonts when changing music fonts** has been added to the **Engrave ▸ Music Fonts** dialog, allowing you to determine whether Dorico should additionally reset text fonts when you change music font. By default, this option is switched on, which means that when switching to Petaluma, the default text font will be set to Petaluma Script, and when switching to Bravura, the default text font will be set to Academico. (STEAM-8662)

MusicXML import

Default page setup. If the MusicXML file to be imported specifies the page size and margins of the document, Dorico now respects this value, and also imports the staff size, if specified. If the page and staff size are not specified in the MusicXML file, Dorico now sets sensible defaults for these values, based on the number of instruments in the ensemble.

Note input

Popovers. Typing **Return** or double-clicking a single item in Write mode now opens the appropriate popover, populated with the input that would produce that

item. This was previously the case for lyrics and chord symbols and is now extended to all types of item for which a popover is used. This includes tempo, dynamics, clefs, octave lines, key signatures, time signatures, playing techniques, holds and pauses, pedal lines, rhythmic feel, cues, arpeggio signs, glissandos, ornaments, and trills.

This means that many items that would previously cause the caret to appear at that rhythmic position if you selected them and hit **Return** will now cause the popover to appear instead: to show the caret you should select a note, chord, rest, beam, or barline before you hit **Return** or type **Shift+N**.

Swap the contents of two staves. A new command **Edit ▸ Paste Special ▸ Swap** has been added, making it very quick to try out alternative voicings or instrumental colors. In particular, if you find that **Explode** produces a voicing that you want to change, selecting the music in two staves in the affected passage and choosing **Swap** provides a fast way to try another voicing. (STEAM-7846)

Force Duration. It is now possible to set and unset Force Duration on existing notes and rests, rather than it only being possible to set Force Duration when a note or rest is first input. When you select a note or rest that was input with Force Duration, the corresponding button in the toolbox will now be illuminated; to remove Force Duration, simply click the toolbox button or use the key command **O**. Conversely, you can select a note and force its duration such that if you, say, lengthen or shorten it, the way the note is currently split up will be preserved: to force the duration of an existing note or rest, simply select it and click the toolbox button or type **O**. If you tie two or more existing notes that have had Force Duration set on them, Dorico attempts to retain the forced duration of the final note in the chain of ties. (STEAM-8427)

Linked slurs and dynamics. A new option **Link dynamics and slurs to existing items when pasting** has been added to the **Editing** section of the **General** page of Preferences, switched on by default. If you would prefer Dorico not to create links between dynamics and slurs on different staves when you paste a group of dynamics or a slur at the same rhythmic position as dynamics or slurs with identical durations, switch this option off. (STEAM-8570)

Inserting beats or other non-bar durations. Using the **Shift+B** popover, you can now insert any amount of rhythmic space rather than only inserting one or more bars' worth of space. You can specify the multiple of units to add using a number, and then the unit itself either using the number that corresponds to that rhythmic duration (e.g. **6** for quarter, **5** for eighth, **7** for half, etc.) or a letter (e.g. **q** for quarter, **e** for eighth, **h** for half, **x** for 16th, etc.). Rhythm dots can be represented using the full stop or period character. If using numbers for both the multiple and the unit, the

two values must be separated by either a space or a hyphen, but if using letters for the value there is no need to separate them. By way of example, **4q**, **1w**, **4-6**, **2 7** would all insert four quarters' worth of time.

You can alternatively enter the same kind of string used to represent a time signature in the **Shift+M** popover: for example, entering **4/4** would also insert four quarters' worth of time. (STEAM-8579)

Inserting bars before time signature changes. In previous versions of Dorico, if you selected a time signature and invoked the **Shift+B** popover to add bars, those bars would always be added immediately following the time signature, i.e. the same behavior as if you had selected the note or rest at the start of the bar and inserted bars. In Dorico 2.2, you can now insert bars using the previous or prevailing time signature, thus moving the time signature along with the other musical material to its right: select the time signature itself and type **Shift+B**. (STEAM-8580)

Key commands. It is now possible to assign key commands to various commands from the **Edit** menu, including filtering notes by position in chord, filtering notes by voice, and changing the voice of selected notes. (STEAM-7847)

Rhythmic grid. It is now possible to assign key commands to set the rhythmic grid to a specific note duration, in addition to the existing key commands that increase or decrease the current grid value. (STEAM-8660)

Lengthening and shortening notes. New commands to lengthen and shorten notes by a specific note duration have been added and can have key commands assigned, complementing the existing commands to lengthen and shorten by the current rhythmic grid. These commands can be found in the **Key Commands** page of Preferences by searching for **Shorten duration by** and **Lengthen duration by**. (STEAM-4605)

Using existing voices when pasting. When pasting material consisting of a single voice, Dorico will now re-use an existing voice in the destination instrument that shares the same nominal stem direction as the voice used by the copied material when possible, instead of always creating a new voice. (STEAM-8758)

Notes

Rhythm dots for unisons. The options for how rhythm dots should appear for unisons in opposing voices have been further adjusted: the new **Rhythm dots on unisons in opposing voices** option in the **Rhythm Dots** section of the **Notes** page of Engraving Options allows you to specify whether each note should show its own rhythm dot always, never, or only when the unison notes are on a staff line (in which case one dot can appear symmetrically in the spaces above and below the note). (STEAM-8604)

Playback

Playback pre-roll. If one or more of the flows in your project begins with grace notes before the first primary beat of the first bar, you can specify a small amount of pre-roll on the **Timing** page of Playback Options so that Dorico will start playback just before the first beat of the first bar. Set **Pre-roll before flow** to a suitable value; for a single grace note, even a value as small as 0.25 seconds should be sufficient.

Multi-port VST plug-ins. Some VST instruments, such as HALion 6 and Vienna Ensemble Pro, provide multiple banks of 16 MIDI channels, and these additional banks can now be addressed by Dorico. An additional drop-down menu has been added to the track header, allowing you to choose between the ports provided by the plug-in; the first bank of channels uses port **A**, the second port **B**, the third port **C**, and so on. The **Endpoint Setup** dialog has also been expanded to allow the specification of VST expression maps and percussion maps for each channel in banks beyond the first. (STEAM-5152)

Printing

SVG graphics. Instead of rasterizing SVG graphics when drawing them on screen, exporting graphics or printing, Dorico now renders them directly using primitive drawing instructions, which results in both smaller file sizes and superior appearance in exported PDF files and printed pages. (STEAM-8404)

Booklet printing. Depending on the paper path of your printer, when printing booklets using manual duplexing (i.e. where you have to flip the paper after the first side has been printed and feed it back into the printer for the second side to be printed), you may find that the order of pages is incorrect when printing the inward pages. A new **Reverse order of outward pages** option has been provided in the right-hand panel in Print mode, which will cause Dorico to output the first set of pages in the opposite order, necessary for some printers so that you do not have to reverse sort the pages manually before returning them to the printer to print the other sides. (STEAM-8440)

Manual duplexing. It is now possible to specify manual duplexing for all job types, in addition to booklet printing. (STEAM-5544)

Enhanced page ranges. It is now possible to specify arbitrary ranges of pages for printing. The previous **From** and **To** spin controls have been replaced by an edit control allowing free input of multiple page ranges. Each page range is separated by a comma, and uses a hyphen to specify a continuous range of pages. For example, you can type **1,3,5-7** to print pages 1, 3, 5, 6, and 7. Reverse ranges are supported, and will print pages in reverse order if requested. (STEAM-8746)

Rhythmic feel

Swing for unequally divided beats. If a quarter (crotchet) beat is divided as eighth-16th-16th, Dorico will now play this beat swung, with the initial eighth lengthened and the two 16th notes shortened to fit into the shortened second half of the beat. (STEAM-8318)

Selections (STEAM-8476)

Select More. A new **Edit ‣ Select More** command has been added, with the default key command **Ctrl+Shift+A** (Windows) or **Shift-Command-A** (Mac). When invoked, it examines the current selection to determine which event type or types should be selected, and which streams it should examine. It can operate on any number of event types and voices at once, so the selection can span multiple staves and include system-attached as well as staff-attached objects.

Select More can be repeatedly invoked to continue expanding the selection. First, it expands to the boundaries of the current bar, both left and right; next, if you are in page view, it expands to the boundaries of the current system, both left and right (except in galley view, which has only a single system); finally, it expands to the entire flow.

The expansion of the selection is always in the horizontal dimension: it will not select items in streams that are not part of the initial selection. So, for example, if you select notes in an up-stem voice on a single staff and invoke Select More, it will not select notes in a down-stem voice on the same staff, or indeed in an up-stem voice in another staff.

If attempting to select more items at the current extent does not succeed in growing the selection (e.g. you select a semibreve in 4/4 and invoke **Select More**, and this will not manage to select any more notes in the bar because the selected note already fills the bar), then Dorico automatically advances the extent (to the bar, system, then flow) until the selection is grown (unless, of course, it cannot be grown because there are no further similar items to select).

When items start in one bar or system and end in the next, they will become selected when Dorico expands the range to the bar or system boundary (e.g. a hairpin that crosses a system break will become selected when you select dynamics on the first system).

Select More can be used in both Write mode and Engrave mode. This is helpful because it allows you to e.g. quickly select the dynamics in a group and then nudge them up and down without switching to Write mode and back to Engrave mode.

There are several special cases that will be triggered if there is only a single item selected when **Select More** is invoked:

- *Lyrics:* if you select a lyric, Dorico will record the line number, placement, and line type of that lyric, and invoking **Select More** will select only lyrics whose line number, placement and line type match the originally selected lyric.
- *Dynamics:* if you select a dynamic and invoke **Select More**, Dorico will select all of the other dynamics in that group on that staff in one step (in page view, provided they are on the same system). As you continue invoking **Select More**, it will then continue to select other dynamics in other groups in the range of interest.
- *Playing techniques:* if you select a single playing technique, when invoking **Select More** only playing techniques of the same category will be selected. As a further special case, if you select either an up bow or down bow playing technique, invoking **Select More** will select all up bow and down bow playing techniques in the range of interest, but no other kinds of playing techniques.

Hiding or showing selected items. A new **Hide/Show Item** command has been added; though it does not appear in the menus it can be assigned a key command on the **Key Commands** page of Preferences. This command operates on the three types of item that have dedicated properties to hide them: chord symbols, playing techniques, and time signatures. When the command is invoked, Dorico examines the selection to determine whether any of the items can be hidden. If the selected items are a mixture of hidden and shown, the first invocation will hide all items; the next invocation will show them all again.

When hiding time signatures, be aware that they will be hidden in all layouts in which they appear; chord symbols and playing techniques, by contrast, will be hidden only in the layout in which the command is invoked. (STEAM-8544)

Slurs

Editorial slurs. The stroke for editorial slurs now draws perpendicular to the angle of the slur, rather than always being drawn vertical regardless of the slur's angle. (STEAM-8402)

Bisecting naturals. A new option **When slur curvature passes close to the stem of a natural** has been added to the **Avoiding Collisions** section of the **Slurs** page of Engraving Options, allowing you to choose whether slurs should be allowed to skim the vertical stems of natural accidentals, or whether they should never be allowed to touch them. (STEAM-8618)

System items

Placement relative to ossias. Since ossia staves were introduced in Dorico 2.0, system items – such as tempos, rehearsal marks, and so on – were always positioned above the main staff, and below any ossia staff above the main staff. A new option **Position of system objects relative to ossia above staff** has been added to the **Staves and Systems** page of Layout Options that makes it possible to specify that system items should be positioned above the ossia staff if desired. (STEAM-8509)

Tempo

Tempo equations. Simple tempo equations of the form ♩ = ♪ can now be created via the **Shift+T** popover, or using the new **Tempo Equation** section of the Tempo panel in Write mode. To specify the note values to be used on either side of the equation, use the following letters:

- Whole note (semibreve): **w**
- Half note (minim): **h**
- Quarter note (crotchet): **q**
- Eighth note (quaver): **e**
- 16th note (semiquaver): **x**

You can also add up to two rhythm dots to the note values on either side of the equation using **.** (full stop or period).

Tempo equations normally take effect at a barline, so if you create a tempo equation at the start of a bar, Dorico will automatically center it over the barline at which it takes effect. In the unusual circumstance where the relationship of the tempo changes without a change of a time signature, and where the barline at which the change occurs ends a system, you may need to adjust the horizontal position of the equation in Engrave mode.

Tempo equations are taken into account in playback.

Find tempo by tapping. A new **Tap Tempo** section has been added to the Tempo panel in Write mode, allowing you to create an immediate tempo change by clicking the large **Tap** button a few times. As you click, the tempo implied by the time between each click is calculated and displayed in the spin box below. Choose the note value you want to use for the tempo, and click **Create** to either create the tempo mark at the position of the selection, or load the mouse pointer so that you can click to place the tempo in the flow.

Text

Creating text using a specific paragraph style. It is now possible to assign a key command to start inputting staff- or system-attached text in a particular paragraph

style. On the **Key Commands** page of Preferences, find the desired paragraph style within the **Create Text** or **Create System Text** categories, and assign the desired shortcut.

Furthermore, all of the paragraph styles in the current project are now listed in the new **Write ‣ Create Text** and **Create System Text** submenus, making it possible to choose to create a text item using a specific style with the mouse as well. (STEAM-8545)

Paragraph styles dialog. If a staff- or system-attached text item is selected when **Engrave ‣ Paragraph Styles** is invoked, the paragraph style of the first paragraph in the text item will be selected for editing in the dialog when it opens. If no text item is selected, however, the dialog will instead select the last paragraph style chosen for editing, making it more convenient to try out a series of adjustments to a particular paragraph style. (STEAM-8765)

Font styles. The previous selection in the **Engrave ‣ Font Styles** dialog is now remembered within the current editing session, making it more convenient to make several edits to the same font style if needed. (STEAM-8561)

Time signatures

Deleting time signatures. When deleting a time signature, subsequent time signatures are not moved rhythmically, which can mean that if the rhythmic space between the deleted time signature and the following meter change is not an exact multiple of the bar length of the prior prevailing time signature, an irregular bar will exist before the next meter change. To avoid this, engage Insert mode (key command **I**) before you delete the time signature: in common with inserting a time signature, Dorico will if necessary shift the following meter change in order to avoid an irregular bar. (STEAM-8508)

Gap between numerator and denominator. In some house styles, there may be found a small gap between the numerator and the denominator of a time signature. Dorico now provides separate options for the gap between numerator and denominator for normal-sized, large, and outside staff time signatures, in the **Gaps** section of the **Time Signatures** page of Engraving Options. (STEAM-8438)

Tokens

New tokens. The following new tokens have been added:

- **{@flowNumber@}** corresponds to the number of the flow as shown in the bottom right-hand corner of the flow's card in the Flows panel in Setup mode.
- **{@flowDuration@}** and **{@flow*n*Duration@}** show the duration of the current flow or a specific flow respectively, formatted as *m***'s"**, e.g. **4'33"**.

- **{@layoutNumber@}** corresponds to the number of the layout, as specified in the Layouts panel in Setup mode.

Resolving non-indexed tokens. In earlier versions of Dorico, a non-indexed token (e.g. **{@flowTitle@}** rather than **{@flow3Title@}**) would always use the flow located nearest the top left-hand corner of the page to determine which flow should be used to resolve the token and fetch the relevant data. In Dorico 2.2, this behavior has changed: non-indexed tokens now use the flow of the system immediately beneath them (or, if a token is present in a text frame at the very bottom of a page, the flow of the system immediately above). This means that it is now possible to use the same non-indexed token in multiple positions on a single page and the resolved text may come from a different flow.

User interface

View notes out of range. A new command **View ▸ Note and Rest Colors ▸ Notes Out of Range** has been added, switched on by default in new projects. When this option is switched on, any note that is outside the playable range of the instrument will be colored red when it is not selected. Many instruments have two ranges defined: a standard range, and an advanced range, which includes notes that can be played either by more skilled players or using instruments with special extensions. Notes outside the standard range but within the advanced range appear in a darker shade of red, while notes outside both playable ranges are colored a bright red.

Engrave mode toolbox. A new toolbox has been added on the left-hand side of Engrave mode, replacing the single panel that has been used in previous versions. The switches in the headers in the previous panel that activate and deactivate the three special editing tools in Engrave mode – for editing frames, vertical spacing, and note spacing – have been removed, and the buttons in the toolbox now perform those functions. From top to bottom, the buttons are:

- Graphic editing
- Frames
- Vertical spacing
- Note spacing

No panel appears when the vertical spacing or note spacing editing tools are active. The **Copy Staff Spacing** dialog, which used to be accessed from a button in the **Staff Spacing** section of the left-hand Engrave mode panel, is now accessed via the **Engrave** menu: choose **Engrave ▸ Staff Spacing ▸ Copy Staff Spacing**. (STEAM-8783)

Status bar summary. A summary of useful information has been added to the bottom left-hand corner of the document window. This shows three kinds of information: firstly, the transposition of the current layout (i.e. either **Concert Pitch** or **Transposed Pitch**); secondly, the range of bars of the current selection, if there is one; and thirdly, a summary of the current selection. When a note is selected, the sounding pitch of the note is shown; if multiple notes at the same rhythmic position are selected, then a text description of the implied chord symbol is shown.

Options dialogs. The Layout Options and Notation Options dialogs have been redesigned such that the list of layouts and flows respectively now appears on the right-hand side of each dialog, allowing the drop-down menu listing the pages of each dialog to be presented as a list on the left-hand side, which is both consistent with the other options dialogs and also makes it easier to see which categories of options are available at a glance.

Furthermore, if the current page has multiple sections, the names of these sections now appear as subheadings below the name of the selected page: click a subheading to instantly scroll the page to the top of that section.

In addition to remembering which page you were last looking at when recalling one of the options dialogs, Dorico now also scrolls the page to the section of the page you were last looking at.

Tempo read-out. The current tempo at the playhead position is now shown in the mini transport on the toolbar and in the Transport window.

Zoom. When there is no selection, Dorico now zooms in and out relative to whatever is currently in the center of the viewport, instead of trying to focus on a particular page of interest, with the result that the position of the score is more stable when zooming in and out. (STEAM-8552)

Score positioning. When extending the selection, Dorico now records the direction in which the selection is being extended, and ensures that the end of the selection that is changing is brought into view if necessary, preventing unexpected shifts to the start of the selection instead. (STEAM-8553)

Library functions in dialogs. Those dialogs that preset a consistent set of options for managing user-created or edited items – **Playing Techniques**, **Notehead Sets**, **Paragraph Styles**, **Character Styles**, **Music Symbols**, etc. – now all present a consistent set of icons for operations like creating a new item, saving it as a default for future projects, or reverting an edited item back to its factory default. (STEAM-8521)

Tool tips in Key Commands editor. In some languages, the descriptions for commands in the **Key Commands** page of Preferences are wider than the width of the tree control in which they appear; hovering over a truncated entry in the list will now show the complete item name in a tool tip. (STEAM-8588)

Minimum window width. The minimum width of the Dorico project window has been reduced by automatically replacing the five mode buttons with a single menu button when the window is made sufficiently narrow. This makes it somewhat more practical to use Dorico on displays with smaller resolutions, though we recommend that your display has a minimum horizontal resolution of 1280 logical units if possible. (STEAM-8657)

Write mode panels. The panels on the right-hand side of Write mode can now be closed, as well as opened, by clicking their respective icons in the toolbox. (STEAM-8656)

Issues resolved

ID #	Component	Issue
STEAM-8802	*Accidentals*	A problem whereby setting a microtonal accidental with a very large pitch delta can cause the note to jump up an octave has been fixed.
STEAM-8722	*Arpeggio signs*	Arpeggio signs are spaced correctly relative to notes on cross-staff chords where extra staves have been added below the top staff of a piano.
STEAM-8445	*Bar numbers*	Changing the size of the chosen paragraph style for bar numbers now correctly updates all bar numbers throughout the current layout immediately.
STEAM-8505	*Bar numbers*	If bar numbers are shown every bar, when a player changes instruments with different numbers of staves, bar numbers no longer collide with the staff at the change point.
STEAM-8651	*Bar numbers*	Bar numbers no longer sometimes disappear when making an edit to another staff.
STEAM-8603	*Bar repeats*	Using **Alt**+up/down to nudge the bar count for bar repeat regions in Engrave mode now works correctly.
STEAM-8642	*Bar repeats*	Nudging or dragging bar counts for bar repeat regions in Engrave mode now works correctly.
STEAM-8456	*Barlines*	Key signatures at ends of systems no longer collide with the double barline shown for a start repeat at the start of the new system if single barlines normally shown for key changes.
STEAM-8510	*Barlines*	Start repeat barlines no longer collide with large time signatures shown in the staff.
STEAM-8527	*Barlines*	When a system begins with a grace note, Dorico would sometimes incorrectly use the barline sections from the previous system; this has now been resolved.
STEAM-8520	*Beams*	Under some circumstances, crossing beamed notes between staves could cause items to incorrectly avoid the beam once it was no longer between staves; this is now fixed.
STEAM-8595	*Beams*	Beams crossing barlines no longer incorrectly attempt to avoid time signatures if they are drawn above the staff rather than within the staff.
STEAM-8403	*Brackets and braces*	The position of wings on brackets now correctly takes the value of **Additional vertical protrusion beyond top or bottom of staff** into account.
STEAM-8399	*Chord symbols*	Hidden chord symbols no longer cause multi-bar rests to be split if they are shown above the top staff of the system rather than above specific players.
STEAM-8644	*Chord symbols*	Setting or unsetting a property on a chord symbol with the chord symbol popover open could cause Dorico to crash; this is now resolved.
STEAM-8406	*Clefs*	Moving a clef before a dashed barline in an aggregate time signature now works correctly.
STEAM-8426	*Cues*	When showing the divisi section name or number in a cue label, the player number is now shown before the divisi section name or number, rather than after.
STEAM-8431	*Cues*	Rests in rhythmic cues are no longer forced an unnecessarily long distance away from the staff.
STEAM-8607	*Cues*	Under rare circumstances, changing the clef of an instrument that is cued in another instrument did not update the clef in the cue; this problem is now resolved.

ID #	Component	Issue
STEAM-8264	*Divisi*	Restorative clefs no longer incorrectly appear on the wrong divisi staff.
STEAM-8444	*Divisi*	If verse numbers are shown for lyrics in a passage of divisi music, the lyric verse numbers now appear only on the correct divisi staves.
STEAM-8743	*Divisi*	Cue labels and clefs no longer incorrectly appear in divisi staves.
STEAM-8714	*Dynamics*	Creating multiple dynamics with a run of grace notes selected now handles groups of up to three dynamics correctly.
STEAM-8696	*Engrave mode*	When editing the text in a frame on a master page or flow heading, the text editor no longer sometimes appears in the wrong place.
STEAM-7603	*Fingering*	Under some circumstances, setting and unsetting fingering on one note could cause fingering on another note to move up or down unexpectedly; this is now resolved.
STEAM-8420	*Flows*	When exporting flows, Dorico now ensures that each exported flow is attached to at least one layout in the resulting project file.
STEAM-8408	*Graphics files*	It is now possible to set the anchor position for a graphic in a frame to a negative value, so it is possible (in a roundabout way) to show any part of the image in the frame.
STEAM-8792	*Graphics import*	Importing a graphic file from a path including accented or other special characters now works correctly (Windows only).
STEAM-8479	*Key signatures*	Creating a key signature that references a custom tonality system now always works correctly.
STEAM-8529	*Key signatures*	When selecting items in a flow using multiple tonality systems, the panel now immediately updates to show the correct tonality system and custom key signatures and accidentals.
STEAM-8585	*Key signatures*	In some projects, creating a key signature in the 24-EDO tonality system would cause a crash; this is now resolved.
STEAM-8634	*Localization*	The key command for starting tuplet input was incorrectly disabled outside note input in non-English-language versions of Dorico; this is now resolved.
STEAM-8609	*Lyrics*	When typing lyrics very quickly, it was possible for the last character of one lyric or the first character of the next to be dropped; this problem is now resolved.
STEAM-7408	*MIDI import*	If a note cannot be quantized into a tuplet correctly, it no longer causes subsequent notes in that voice not to be imported.
STEAM-8186	*MIDI import*	Step-wise MIDI controller data (e.g. controller 64 for sustain pedal) now imports correctly from MIDI files.
STEAM-8428	*MIDI import*	Quantization for notes in tuplets now removes overlaps in the same manner as notes outside tuplets.
STEAM-8518	*MIDI import*	Under some circumstances, the option for where the split point between the staves of a grand staff instrument should occur was being ignored; this has now been resolved.
STEAM-8665	*MIDI import*	MIDI controller data is now correctly imported when importing a MIDI file into an existing project.

ID #	Component	Issue
STEAM-8551	*Multi-bar rests*	Mid-bar changes of key signature now correctly cause multi-bar rests to be split.
	Music fonts	The size of chord symbol accidentals and the vertical position of notes for metronome marks and tempo equations in Petaluma have been improved,
STEAM-8576	*MusicXML import*	Lyric extender lines on the first line of lyrics in MusicXML files exported from Finale no longer end one note too early.
STEAM-8681	*MusicXML import*	When importing transposing instruments from MusicXML files, Dorico is now much more likely to choose the correct transposition.
STEAM-7949	*Note input*	Pasting lyrics from notes within a tuplet into another similar tuplet now pastes the lyrics to the correct positions in similar tuplets without requiring chord mode to be enabled.
STEAM-8336	*Note input*	Changing the duration of a tied note split by Force Duration no longer causes the duration to be changed in irregular, non-notatable ways.
STEAM-8421	*Note input*	When copying and pasting notes spanning tuplet boundaries, Force Duration splits are no longer lost.
STEAM-8434	*Note input*	Typing **R** when note input is active now correctly repeats the note or chord immediately to the left of the caret, instead of the note at the caret position.
STEAM-8461	*Note input*	It is now possible to use **R** to repeat an implicit rest to the left of the caret.
STEAM-8468	*Note input*	It is now possible to delete tuplets with a 1:1 ratio that have lyrics on the notes within the tuplet.
STEAM-8477	*Note input*	Rests, like notes, are now selected after they have been created during note input.
STEAM-8582	*Note input*	Selecting multiple notes of the same pitch on instruments held by different players and adding ties with **T** now works correctly, even for notes of the same pitch.
STEAM-8621	*Note input*	Pasting music from a multi-staff instrument where some notes have been crossed to another staff to a single-staff instrument now resets back to the original staff.
STEAM-8750	*Note input*	When the caret is positioned between grid positions, moving it left no longer incorrectly moves the caret to the start of the bar.
STEAM-8808	*Note input*	Moving the caret up or down between staves belonging to different instruments held by the same player could sometimes fail; this has now been resolved.
STEAM-8860	*Note input*	Copying and pasting a local time or key signature to another staff at the same rhythmic position no longer incorrectly links them together.
STEAM-8861	*Note input*	Using Force Duration to set the duration of implicit rests on multiple staves now works correctly.
STEAM-8425	*Noteheads*	Clicking **Revert to Factory** in the notehead set editor for a notehead set no longer incorrectly also reverts changes made to the notehead types referenced by the set.
STEAM-6650	*Notes*	Under some circumstances, dotted chords in opposing voices would be positioned further apart than necessary when accidentals are present; this has now been resolved.

ID #	Component	Issue
STEAM-8469	*Octave lines*	The illustrations and labels for octave line continuation options on the **Octave Lines** page of Engraving Options have been clarified.
STEAM-8454	*Page layout*	Closely-positioned text events in galley view no longer sometimes cause items like dynamics to move further away from the staff.
STEAM-8462	*Page layout*	Adding a key signature in a flow containing explicit system breaks now correctly causes all systems to be cast off again.
STEAM-8504	*Page layout*	Under some circumstances, moving unrelated items (e.g. arpeggio signs) could cause dynamics to move further away from the staff; this has now been resolved.
STEAM-8528	*Page layout*	Under some circumstances involving instrument changes, allowing empty staves to be hidden could cause all staves in a system to be hidden; this has now been resolved.
STEAM-8539	*Page layout*	Changing the staff size at a system break at the start of the flow now correctly causes all systems to be cast off again.
STEAM-8683	*Page layout*	Staves containing bar repeat or slash regions, or completely empty staves with bar rests hidden, are now adjusted correctly during vertical justification.
STEAM-8686	*Page layout*	It is no longer incorrectly possible to remove all of the staves belonging to an instrument.
STEAM-8749	*Page layout*	When two projects are open with multiple windows open for each, opening the master page editor in Engrave mode no longer sometimes opens it in the wrong project window.
STEAM-8571	*Percussion*	Slash instruments in percussion kits now correctly use slash noteheads after importing them from a library file.
STEAM-8777	*Percussion*	The playback playing technique for the chosen percussion playing technique is no longer incorrectly removed from the list in the **Edit Playing Technique** dialog.
STEAM-8560	*Performance*	The speed of editing in galley view for large projects with many cues has been improved.
STEAM-8851	*Performance*	The performance of **Duplicate Flow** has been improved.
STEAM-8872	*Performance*	The performance of inputting music in a part that is used as a cue earlier in the flow has been improved.
STEAM-8873	*Performance*	The performance of inputting music in scores with divisi where a fermata is used following a divisi change has been improved.
STEAM-8457	*Piano pedaling*	Pedal lines no longer become misaligned after an ossia or extra staff is added to the piano instrument to which they are attached.
STEAM-8435	*Play mode*	The **e** button that shows whether a VST plug-in window is open is now correctly updated when changing playback template.
STEAM-8629	*Play mode*	*A tempo* markings now correctly ignore any tempo changes added in the **Timing** automation lane in Play mode.
STEAM-8633	*Play mode*	Tempo changes that reset to an earlier tempo now appear correctly in the **Timing** automation lane in Play mode.

ID #	Component	Issue
STEAM-8701	*Play mode*	A problem whereby changing the audio device in **Edit ‣ Device Setup** could intermittently cause no audio device to be mapped has been resolved (Mac only).
STEAM-8724	*Play mode*	Changing the VST instrument, MIDI device or MIDI channel of an instrument in Play mode no longer causes the view to jump back to the top of the track list.
STEAM-8850	*Playback*	A hairpin on a grace note will no longer result in the following note becoming silent.
STEAM-8494	*Playing techniques*	Creating a new glyph-based playing technique with differing above/below appearances based on an existing one now correctly makes the below appearances independent.
STEAM-8599	*Print mode*	Instead of printing in solid black, when printing or exporting graphics in monochrome, watermarks are now excluded.
STEAM-8458	*Project files*	Opening project files that contain a lot of MIDI controller and other automation data is now considerably faster.
STEAM-8396	*Properties*	**Edit ‣ Propagate Properties** now propagates the placement properties for dynamics.
STEAM-8611	*Rhythm slashes*	Under some circumstances, shortening a rhythm slash region might leave it in a state in which its length will become incorrect after further edits; this is now resolved.
STEAM-8648	*Rhythm slashes*	Moving or changing the duration of a slash region with an overridden staff position could cause the slashes to change position unexpectedly; this is now resolved.
STEAM-5759	*Selections*	Extending a selection with **Shift**+click no longer sometimes moves the view to the start of the selection.
STEAM-8430	*Selections*	Selecting the contents of a bar including a system-attached item such as a tempo or chord symbol and then using **Shift**+click to extend the selection now works as expected.
STEAM-8464	*Selections*	Using **Shift**+click to extend the selection now works as expected if the selection begins with an implicit rest.
STEAM-8531	*Setup mode*	Dorico no longer crashes when you detach and then attempt to re-attach a player to a layout whose music contains a slash region.
STEAM-8532	*Slurs*	In the unlikely event that a project contains slurs with negative durations, these are now cleaned up when the project is loaded, and Dorico will not hang trying to open it.
STEAM-5548	*Tempo*	When a gradual tempo item crosses a system break and the top visible staff in the system is different following the break, the tempo now appears correctly as it should.
STEAM-6547	*Tempo*	Under some circumstances, a gradual tempo item would not appear if it ended at the same rhythmic position as another system item, like a chord symbol; this is now resolved.
STEAM-8498	*Tempo*	Under some circumstances, changing the line style of a gradual tempo marking could cause it to move further away from the staff; this has now been resolved.
STEAM-8653	*Tempo*	Under some circumstances, a tempo marking immediately preceding a rehearsal mark could cause vertical spacing to change unexpectedly; this is now resolved.
STEAM-8387	*Text*	Italic fonts are no longer clipped at the left-hand edge of a text frame, and optical overshoots are no longer clipped at the top edge of a text frame.

ID #	Component	Issue
STEAM-8395	*Text*	Baseline shift now scales correctly as the font size of a paragraph style is changed.
STEAM-8480	*Text*	Changing the weight or italic/Roman style of a font used by a paragraph style now correctly immediately updates the score.
STEAM-8565	*Time signatures*	The positioning of time signatures shown outside the staff at system object positions relative to different types of barline has been improved.
STEAM-8698	*Time signatures*	Adjusting staff spacing now correctly adjusts the vertical position of large time signatures centered on instrument brackets.
STEAM-8414	*User interface*	Creating a new window from a project window that has the tab bar hidden now works correctly.
STEAM-8493	*User interface*	**Window ‣ Counterpart Layout** has been improved so that it can be used from Engrave mode, though the selection cannot necessarily be retained.
STEAM-8534	*User interface*	Opening a new project could under some circumstances switch the layout shown in an already-open project's window; this has now been resolved.
STEAM-8567	*User interface*	Opening the same file repeatedly from a network location will no longer cause other projects to be removed from the list of recent projects (Windows only).
STEAM-8593	*User interface*	Switching between Write and Engrave modes with multiple tabs open now correctly sets all tabs to the appropriate view type for the current mode.
STEAM-8601	*User interface*	The appearance and position of the **Cancel** button in progress dialogs has been improved.
STEAM-8615	*User interface*	The list of open project windows at the bottom of the **Window** menu now always lists the correct number of items.
STEAM-8755	*User interface*	When switching between page and galley view, Dorico now uses the bar in the middle of the view to set the position in the new view, rather than returning to the start of the layout.
STEAM-8868	*User interface*	New project windows created by right-clicking a tab and choosing **Move Tab to New Window** are now created at the correct default size.

Dorico 2.1.10

14 September 2018

This version contains the following issue resolutions.

Issues resolved

ID #	Component	Issue
AD-355	*Audio engine*	A problem whereby the length of the first note in the flow could be truncated in exported audio files has been resolved.
AD-356	*Audio engine*	Under some circumstances, Dorico could crash when waking the computer from sleep. This problem has now been resolved (Mac only).
STEAM-8538	*Audio export*	Exporting audio would hang or export an empty file if the name of the flow to be exported ended in a trailing space or multiple full stops; this has now been fixed (Windows only).
STEAM-8454	*Dynamics*	Editing unrelated items no longer sometimes causes dynamics to move incorrectly vertically in galley view.
STEAM-8223	*Key signatures*	Key signatures for transposing instruments in divisi staves now appear correctly.
STEAM-8479	*Key signatures*	Key signatures created using a custom tonality system no longer sometimes reference the wrong system of accidentals and set of octave divisions.
STEAM-8502	*Localization*	When running Dorico in a language where comma is used as the decimal separator, spin boxes that use decimal values now work correctly.
STEAM-8455	*Mixer*	Outputs for plug-ins added in the VST Instruments panel in Play mode now appear correctly in Dorico's Mixer once more.
STEAM-8516	*Percussion*	Percussion playing techniques now play back correctly in the event that one or more instruments in the kit cannot be mapped to entries in the chosen percussion map.
STEAM-8398	*Performance*	Deleting notes at the end of a flow that has explicit bar rests near the start is now much faster.
STEAM-8417	*Performance*	Inputting notes in scores with large numbers of players is now much faster, at the expense of reducing the automatic balancing of bars per system at the end of the flow.
STEAM-8447	*Performance*	Showing the system track in galley view no longer causes editing and redraw to be significantly slower.
STEAM-8458	*Performance*	Opening project files with many MIDI controller automation events is now significantly faster.
STEAM-8418	*Play mode*	Dorico no longer crashes if you do **Play ▸ Reset Playback Overrides** with items other than notes selected.
STEAM-8435	*Play mode*	The **e** button that shows whether a VST plug-in window is open now always correctly reflects the current state.
STEAM-8432	*Print mode*	Exporting a PDF of a 2-up document using a non-European page size now produces a PDF of the correct dimensions.

ID #	Component	Issue
STEAM-8429	*Project files*	Under rare circumstances in projects with divisi and local time signatures, Dorico could hang when attempting to re-open an existing project; this has now been resolved.
STEAM-8475	*Project files*	Under rare circumstances, Dorico could crash when attempting to save a project. This problem has now been resolved.
STEAM-8419	*Rhythmic feel*	Dorico no longer crashes if you type a character not included in any of the rhythmic feel names into the filter control in the **Edit Rhythmic Feel** dialog.
STEAM-8423	*Text*	Under some circumstances, moving a text item on one staff could cause a text item on another staff to move unexpectedly. This problem has now been resolved.

Dorico 2.1

10 August 2018

This version contains the following new features, improvements and issue resolutions.

New features

Swing playback

Dorico 2 now includes support for swing playback. It is possible to set up a project-wide default swing pattern, or to change the amount of swing (or indeed to switch between straight and swing) at any point in the music, and it is also possible for different players to play different swing patterns at the same time.

Based on academic research into how swing is actually rendered by real musicians by authors Anders Friberg and Andreas Sundström, Dorico's swing patterns are tempo-dependent, with the swing feel more pronounced at lower tempos, and trending towards a straight feel at higher tempos. Swing feels that produce the same ratio at all tempos are also included, and it's possible to define your own swing patterns.

Project-wide swing. To enable swing for your whole project, open **Play ▸ Playback Options** and choose the **Timing** page. Choose the desired swing pattern from the **Default rhythmic feel** menu:

- **2:1 swing (fixed)** – sometimes called *triplet swing*, this elongates the first eighth (quaver) in a pair of eighths to be twice as long as the second, creating a strict triplet 2:1 ratio; this ratio is maintained regardless of the tempo.
- **3:1 swing (fixed)** – this elongates the first eighth in a pair of eighths to be three times as long as the second, creating a dotted eighth-16th (dotted quaver-semiquaver) ratio; this ratio is maintained regardless of the tempo.
- **Heavy swing** – this produces a tempo-dependent swing ratio of between 3:1 at low tempo and 1.5:1 at high tempo.
- **Light swing** – this produces a tempo-dependent swing ratio of between 1.5:1 at low tempo and 1:1 (i.e. straight) at high tempo.
- **Medium swing** – this produces a tempo-dependent swing ratio of between 2:1 at low tempo and 1.5:1 at high tempo.
- **Straight (no swing)** – this produces even eighth notes in the ratio 1:1 at all tempos.

Changing swing mid-flow. To change the swing pattern for a particular section of the project, select a note, rest or other item at the location where you want to change the swing pattern, then type **Shift+T** for the tempo popover. Type the beginning of the name of the swing pattern you want to use, e.g. typing **med** will show **Medium swing** in the list of suggestions: use down arrow to select it, then hit **Return** to confirm your choice. A signpost will appear on the top staff in the system, showing the name of the rhythmic feel.

To change the swing pattern used by just one of the players in the ensemble, first select a note, rest or other item on the staff in question, or position the caret there, then use the **Shift+T** popover to select the swing pattern using the down arrow key. Finally, type **Alt+Return** to confirm the popover: now a signpost appears on the chosen staff, showing the name of the rhythmic feel.

Changes in rhythmic feel only take effect from the start of a bar, so if you create a change of rhythmic feel in the middle of a bar, it will take effect from the start of the following bar.

To delete a change of swing pattern, simply select the corresponding signpost and hit **Delete**. You can choose whether or not rhythmic feel signposts should be shown via **View ▸ Signposts ▸ Rhythmic Feel**.

Editing swing patterns. To edit one of the default swing patterns or define your own, first open the **Timing** page of **Play ▸ Playback Options**, then click the **Edit** button in the **Rhythmic Feel** section to open the **Edit Rhythmic Feel** dialog:
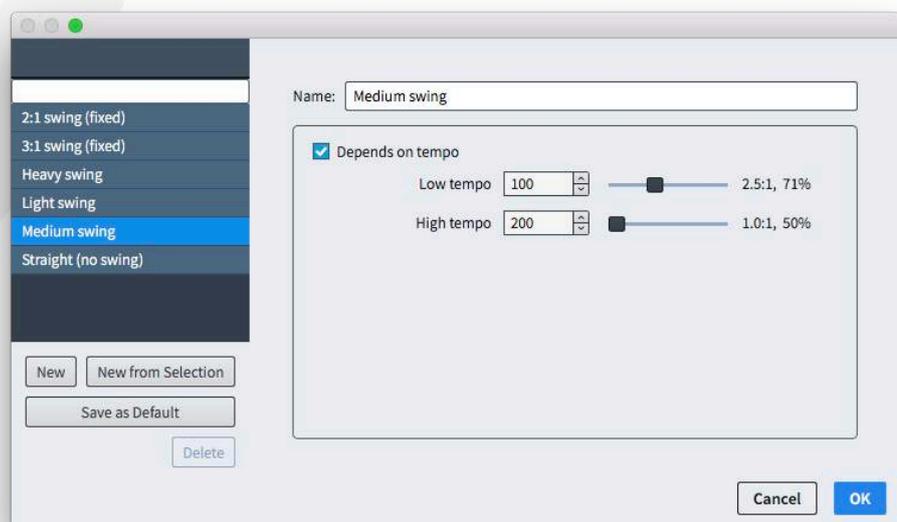
The rhythmic feel definitions in the project are listed on the left. Click **New** to create a new default rhythmic feel; click **New from Selection** to create a copy of the currently-selected rhythmic feel; click **Save as Default** to save the currently-

selected rhythmic feel into your user library so that it will be available in every new project you subsequently create.

On the right-hand side of the dialog are some simple controls to define the swing pattern:

- **Depends on tempo** determines whether or not the swing pattern should use the same ratio at all tempos; when switched off, the **Low tempo** and **High tempo** controls are disabled, and a single swing ratio slider is shown.
- **Low tempo** specifies the tempo (in quarters per minute) at and below which the swing ratio for the slider to the right should be used.
- **High tempo** specifies the tempo at and above which the swing ratio for the slider to the right should be used.
- The swing ratio sliders cover a range from 1:1 (straight) to 5:1 (sextuplet, with the first eighth occupying five divisions, and the second eighth occupying the final division), and display both the ratio and a swing percentage to its right.

When **Depends on tempo** is activated, the swing ratio defined for **Low tempo** is used at and below that tempo; as the tempo increases, Dorico interpolates the swing value towards the swing ratio defined for **High tempo**, until that tempo is reached. If **Depends on tempo** is not activated, then the swing ratio defined by the single slider is used at all tempos.

Notehead set editor

A new **Engrave ▸ Notehead Sets** dialog has been added, which allows you to modify the built-in notehead sets and design your own.

A *notehead set* is a collection of related noteheads: it is important to know that the same notehead can appear in more than one notehead set, which means that if you edit a notehead within one notehead set, it will be edited in all notehead sets that contain that notehead.

A normal notehead set typically contains at least four noteheads: the black notehead for notes up to a quarter (crotchet) in duration; the white notehead for half notes (minims); the wider white notehead for whole notes (semibreves); and the wider white notehead with one or two vertical strokes at either side, or a square white notehead, for double whole notes (breves). Dorico also supports two other types of notehead sets: *pitched*, where the notehead chosen will be different depending on the pitch of the note; and *scale degree*, where the notehead chosen will be different depending on the scale degree of the note, relative to the current key signature. The most common kind of pitched notehead set is the **Note names** notehead set, which shows the letter name (and accidental, if applicable) of the

current note within the shape of the notehead; an example of a scale degree notehead set is the **Aikin 7-shape** set for sacred harp or shape note singing.

A notehead set of a particular type – normal, pitched, or scale degree – can only contain noteheads of the same type. It is not possible to use, say, a normal notehead within a pitched notehead set, so you cannot change the type of an existing notehead set or an existing notehead.

The **Engrave ▸ Notehead Sets** dialog is split into three areas:
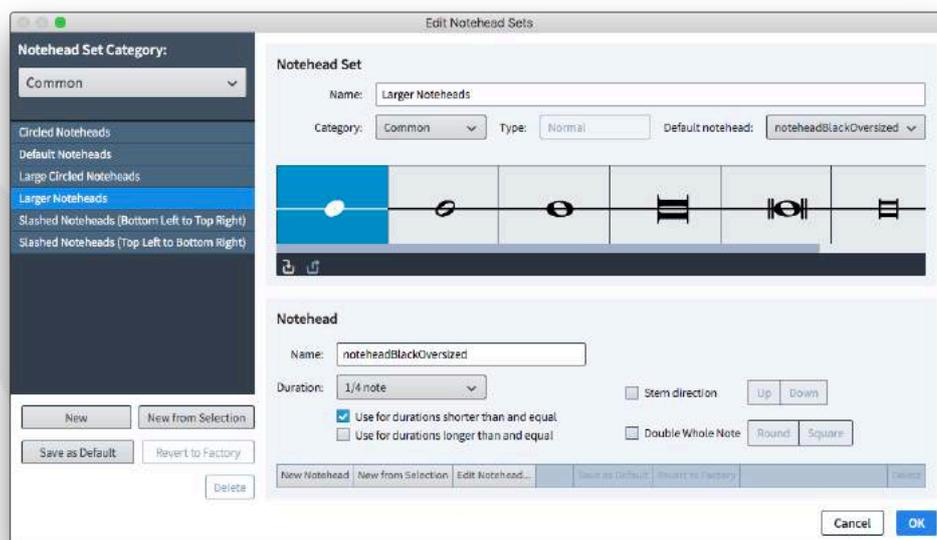
On the left, you can choose which category to work with: the categories here correspond to the submenus in the **Edit ▸ Notehead** menu. You can change which noteheads appear in which submenu by selecting the notehead set in the list on the left, then changing the **Category** drop-down in the Notehead Set section at the top-right.

Below the list on the left are the buttons to create and delete notehead sets:

- **New** creates an empty notehead of the **Normal** type, in the **Common** category.
- **New from Selection** creates a copy of the currently-selected notehead set, of the same type and in the current category. Be aware that the noteheads contained in the new set are the same as the ones in the set the new set is based on: if you want to make changes to the noteheads only in the new set, be sure to also create new noteheads based on the ones currently in the set.
- **Save as Default** saves the selected notehead set into your user library, so that it will be available in all new projects that you subsequently create.

- **Revert to Factory** is only enabled for built-in notehead sets; if you have made any changes to a built-in set, this reverts it to its default state.
- **Delete** allows you to delete custom notehead sets, provided they are not currently being used by any notes in the project; built-in notehead sets cannot be deleted.

The **Notehead Set** section at the top-right shows the noteheads in the current set. Click ⬐ to add an existing notehead to the current set: a menu listing all of the noteheads of the same type as the current set appears. To remove a notehead from the current set, click ⬏, which is only enabled when the notehead is not in use in the project. To specify the category in which this notehead set should appear, choose the desired entry from the **Category** list. The **Default notehead** specifies which notehead within the set Dorico should use if it is unable to find a notehead that exactly matches the requirements of a note (for example, if you have a note longer than a whole note, but no notehead of a suitable duration defined in the set, the default notehead will be used instead).

You cannot change the **Type** of a notehead set: if you want to create a pitched or scale degree notehead set, select an existing notehead set of the desired type and use **New from Selection** to create a new notehead set based on it.

The **Notehead** section at the bottom-right shows the properties for the notehead currently selected in the grid control in the **Notehead Set** section above. You can edit the following properties of each notehead:

- **Name**: the name of the notehead as it will appear in the menu in the action bar for the grid control above.
- **Duration**: the primary rhythmic duration for which the notehead is intended to be used. For most notehead appearances, the same notehead is used for notes of a quarter (crotchet) and shorter in duration: it is sufficient to choose **1/4 note** for that notehead, then set **Use for durations shorter than and equal** directly below.
- **Use for durations shorter than and equal** specifies that this notehead should be used not only for the **Duration** specified above, but also for shorter notes.
- **Use for durations longer than and equal** specifies that this notehead should be used not only for the **Duration** specified above, but also for longer notes.
- **Stem direction** allows you to specify that this notehead should be used specifically for up-stem or down-stem notes. (For example, in shape note systems, the triangular notehead points in opposite directions for up-stem and down-stem noteheads.)

- **Double whole note** allows you to specify that this note is nominally a **Round** or **Square** notehead, which determines which will appear depending on whether **Round** or **Square** is set for **Appearance of double whole note (breve) notehead** on the **Notes** page of Engraving Options.
- **Pitch** (only for noteheads of **Pitched** type) specifies the note name and accidental for which this notehead should be used.
- **Degree** (only for noteheads of **Scale Degree** type) specifies the scale degree (an integer from 1 to 7) for which this notehead should be used.

In the action bar at the bottom of the **Notehead** section are found the following buttons:

- **New Notehead** creates a new notehead of the **Normal** type, based on the default black notehead.
- **New from Selection** creates a new notehead of the same type and appearance as the notehead selected in the grid control in the **Notehead Set** section above.
- **Edit Notehead** opens the notehead editor, allowing you to change the appearance of the notehead itself; see below.
- **Save as Default** saves the selected notehead into your user library, so that it will be available in all new projects that you subsequently create.
- **Revert to Factory** is only enabled for built-in noteheads; if you have made any changes to a built-in notehead, this reverts it to its default state.

Clicking **Edit Notehead** opens the notehead editor:
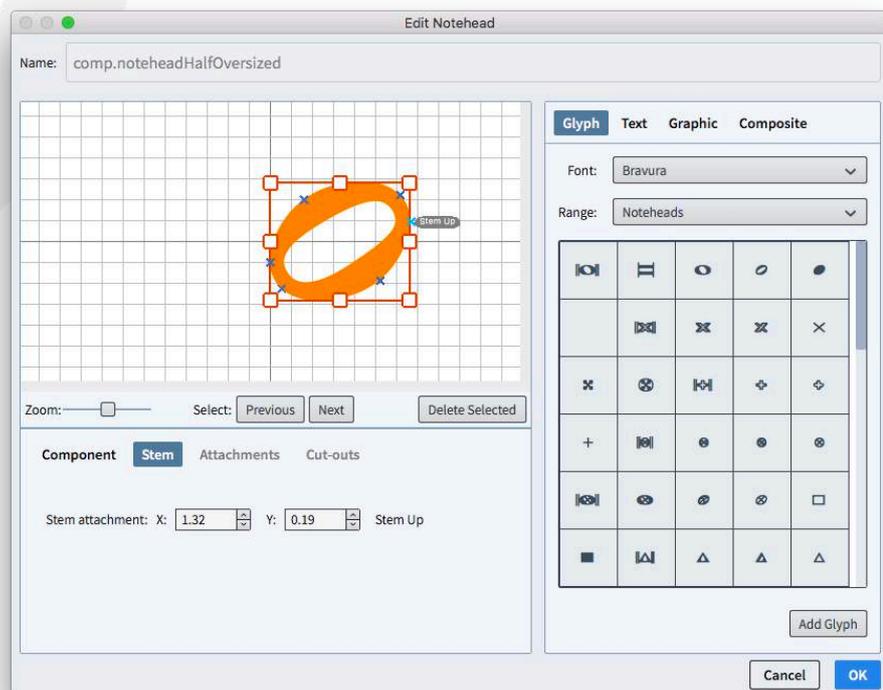
On the right-hand side, choose between the different types of components that can be added to the notehead design:

- **Glyph** allows you to add a character from any font installed on your computer; if you choose a SMuFL-compliant font such as Bravura, the **Range** list will show all of the SMuFL character ranges, making it easier to find the character you're looking for.
- **Text** allows you to add one or more characters using any of the font styles defined in **Engrave ‣ Font Styles**. This would be an unusual choice for a notehead, but the option is provided nevertheless.
- **Graphic** allows you to add a graphic in PNG, JPG or SVG format. It is recommended that you use a vector format like SVG so that it will appear high-resolution at any size.
- **Composite** allows you to add any other symbol that is already defined in the project, though at present you will need to know its name, as no graphical preview is currently available.

When you have chosen the component you wish to add, click the **Add** button at the bottom of the current panel to add the component to the display.

You should position the notehead design such that the left-hand edge is aligned with the slightly thicker vertical grid line that represents the horizontal origin (you can think of this as a nominal stem on a stem-down note), and such that the middle is aligned with the slightly thicker horizontal gridline that represents the vertical origin (you can think of this as a nominal staff line, with the notehead sitting on the staff line).

You can specify exactly where the stem should join the notehead on the right-hand side for a stem-up note and on the left-hand side for a stem-down note; you can also specify additional attachment points for stems that join the note diagonally when the notehead is used for a split stem altered unison. Click the **Stem** button below the main notehead display to add or delete stem attachment points. For more information about stem attachment, please consult the SMuFL specification:

https://w3c.github.io/smufl/gitbook/specification/glyphswithanchors.html

Improvements

Audio export

It is now possible to export individual flows to separate audio files, and to export individual players to separate audio files as well, with audio files for each flow being exported to separate folders. This makes it very quick and easy to export "stems" suitable for dragging and dropping into Cubase or another DAW for further mixing and mastering. (STEAM-8128)

Accidentals

Cut-outs for accidental tucking. The **Edit Accidental** dialog now allows the editing of cut-outs in each of the four corners of the symbol, to instruct Dorico how it can tuck or kern the accidentals in adjacent columns. (STEAM-8113)
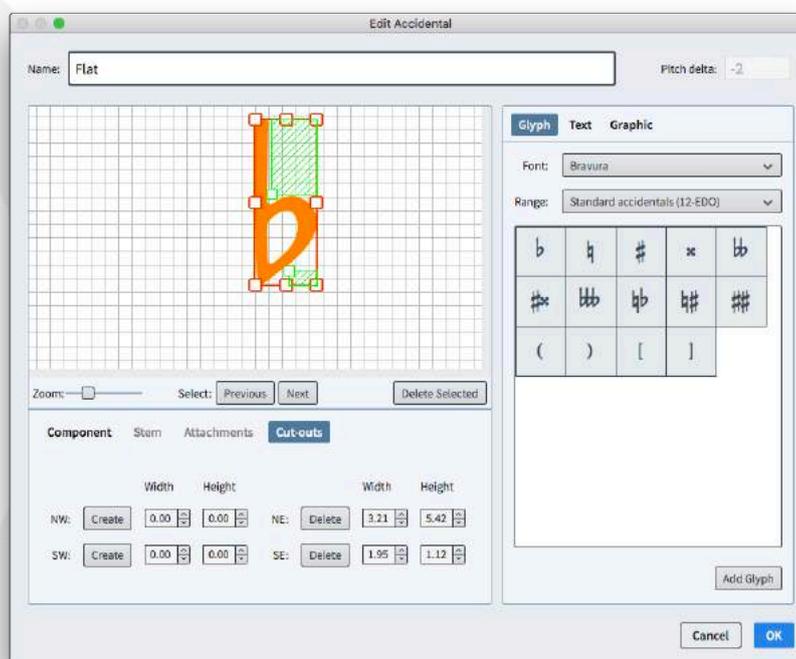
To edit the cut-outs for an accidental, click the **Cut-outs** tab in the lower area of the dialog, and click the **Create** button for the corner of interest (**NW** = north-west, **SW** = south-west, **NE** = north-east, **SE** = south-east), then click the handle on the inner corner of the shaded green area to change the size of the cut-out. To remove a cut-out, click the **Delete** button for the corner of interest.

For more information about cut-outs, consult the SMuFL specification at: https://w3c.github.io/smufl/gitbook/specification/bbox-cut-outs.html

Accidentals and ledger lines. It is now possible to specify that Dorico should not shorten the left-hand side of ledger lines when an accidental is present: set **Ledger lines on notes with accidentals** to **Do not adjust ledger lines** on the

Notes page of Engraving Options to enable this behavior. Ledger lines will then use their default length as defined by **Ledger lines protrude beyond noteheads by *n* spaces** instead of the value defined by **Ledger lines protrude left of notehead with accidental by *n* spaces**. Furthermore, the default gap between the rightmost accidental and a default ledger line is determined by the new **Gap to right of rightmost accidental, if to left of unshortened ledger line** option on the **Accidentals** page of Engraving Options. (STEAM-8179)

Tucking accidentals on back notes. A new option **Gap to right of rightmost accidental, if to left of back note *n* spaces** has been added to the **Gaps** section of the **Accidentals** page of Engraving Options. Normally accidentals are allowed to encroach on the usual margin when a back note is present, and this value specifies the minimum gap that must be present. (STEAM-6902)

Arpeggio signs

A new option **Arpeggio signs on slash voices** has been added to the **Arpeggio Signs** page of Engraving Options, controlling whether or not arpeggio signs should be shown in slash voices. By default, an arpeggio sign shown on a slash voice will be very short, but its length can be adjusted in Engrave mode. (STEAM-8180)

Barlines

Collision avoidance. Dorico now consistently takes barlines than protrude above and below the staff (e.g. for single-line percussion instruments) and wings on repeat barlines, if shown, into account when determining the placement of items above the staff. (STEAM-5752, STEAM-7413)

Thin-thin repeat barlines. Building on the support for hymnal-style barlines introduced in Dorico 2.0, a new option **Start repeat at start of system** has been added to the **Repeats** section of the **Barlines** page of Engraving Options: this option allows you to choose whether or not both the chosen barline type and the repeat dots or only the repeat dots should appear for a start repeat at the start of the system. (STEAM-7668)

Triple barline. Sometimes used in musicological analysis to demarcate structural units larger than a single bar, it is now possible to create a triple single barline by typing **triple** into the **Shift+B** popover. (STEAM-8139)

Chord symbols

A new option **Position of accidental relative to alteration** has been added to the **Alterations** section of the **Chord Symbols** page of Engraving Options. This allows you to follow the recommendations in Russell Garcia's book series *The Professional Arranger Composer*: Garcia advocates the use of minus and plus

instead of accidentals in intervals and alterations in chord symbols, because they occupy less horizontal space. However, when using these symbols, it is important to reverse their usual order relative to the scale degree, i.e. to show **9-** instead of **-9**, as having the minus or plus precede the degree can cause ambiguity in case the player expects **-** to be used to denote a minor quality, or indeed **+** for an augmented triad. Therefore, the new option allows you to specify that the accidental should follow the scale degree if required. (STEAM-8326)

Cues

Rhythmic cues. When creating a rhythmic cue, no octave transposition is now shown in the cue label by default, even when cueing onto an octave transposing instrument. (STEAM-8339)

Divisi

Mid-system divisi labels. A new **Show divisi change labels above staves** option has been added to the **Staves and Systems** page of Layout Options. When switched on, the staff label defined for each divisi soloist or section will appear above each divisi staff at the point at which the divisi begins, and a corresponding *tutti* label will appear above each divisi staff at the point at which the divisi ends.

New options on the **Divisi** page of Engraving Options allow you to determine the default distance above the staff for these mid-system divisi change labels. The labels can also be nudged or dragged freely in Engrave mode. It is also possible to override the content of an individual divisi change label in Engrave mode by way of the new **Custom text** property in the **Divisi** group of the Properties panel. (STEAM-8007)

Creating divisi at the caret. You can now create a divisi change when note input is active: instead of being created at the start of the selection, the divisi change will be created at the caret's location. (STEAM-8002)

Tutti signposts. When using **Restore Tutti** to end a divisi region, the resulting signpost is now labeled **Tutti** to differentiate from the start of a divisi range. (STEAM-8091)

Filters

Filtering slash voices. You can now filter for slash voices by choosing **Edit ‣ Filter ‣ Voices ‣ All Slash Voices**, or by choosing the specific up-stem, down-stem or stemless slash voice from the list in the submenu. (STEAM-8078)

Flows

Trim flow. Type **trim** into the **Shift+B** popover to execute **Write ‣ Trim Flow**. (STEAM-7453)

Layouts

Default part layouts. In the event that you have inadvertently deleted the part layouts for your project, the new **Setup ‣ Create Default Part Layouts** command provides a quick way of recreating a default set of part layouts: one part layout for each player, with each flow attached. (STEAM-8226)

Multi-bar rests

Fixed width H-bar. A new **H-bar width** option has been added to the **Multi-bar Rests** section of the **Rests** page of Engraving Options. When set to **Fixed width**, the H-bar will be drawn using the value of **Fixed H-bar width** instead of being inset from the barline at either side of the multi-bar rest. (STEAM-8240)

Bar count on grand staff instruments. In published music it is usual for the bar count for a multi-bar rest to appear only between the two staves of a grand staff instrument such as piano, but in parts for recording sessions in Hollywood it is usual to show the bar count above both staves. It is now possible to choose between these two conventions by way of the new **Bar count on grand staff instruments** option in the **Multi-bar Rests** section of the **Rests** page of Engraving Options. (STEAM-8342)

Threshold for "tacet al fine". A new option **Minimum number of bars' rest at end of flow to show tacet al fine** has been added to the **Rests** page of Engraving Options, defaulting to 4 bars in new projects, and defaulting to 1 bar in projects created in versions of Dorico earlier than 2.1 to preserve their appearance. This allows you to specify that Dorico should now show "tacet al fine" for very short multi-bar rests at the end of a flow. (STEAM-8238)

Hidden tempo items. Tempo items that do not appear in Write mode, for example those that are created in the tempo track in Play mode, are no longer considered for the purposes of splitting multi-bar rests. (STEAM-8151)

MusicXML import

Text items. A new **Text items** option has been added to the **MusicXML Import** page of Preferences, switched off by default. When switched on, all text items in the MusicXML file will be imported as **Shift+X** text items; you will very likely find that these text items duplicate other items that have been imported using as tempos, dynamics, etc. (STEAM-8221)

Rhythm slashes. Dorico now imports rhythm slash regions and slash voices as appropriate from MusicXML files, for both pitched and unpitched instruments. (STEAM-8212, STEAM-8166)

Bar repeat regions. Dorico now imports one-, two- and four-bar repeat regions from MusicXML files. (STEAM-7780)

Notes

Rhythm dot consolidation. The **Rhythm dot consolidation** option in the **Rhythm Dots** section of the **Notes** page of Engraving Options has been revamped, both to make the behavior clearer and to provide a separate option to specify how rhythm dots should be handled for unisons in opposing voices.

Rhythm dot consolidation describes how Dorico handles situations whereby dotted notes of similar pitches in adjacent voice columns can be positioned together, with their rhythm dots appearing in a single column to the right of both voice columns. This makes efficient use of horizontal space, but can introduce ambiguity when reading the music at sight. Dorico provides three settings for rhythm dot consolidation:

- **Do not consolidate** means that rhythm dots should always be shown immediately to the right of the note or chord to which they apply.
- **Notes of the same duration** allows Dorico to consolidate rhythm dots for notes in adjacent columns, provided they have the same duration (e.g. provided both are dotted quarters, but not if one is a dotted eighth and the other is a dotted quarter).
- **Notes of any duration** allows consolidation for any combination of note values (e.g. an up-stem quarter note and a down-stem half note), which provides the most compact arrangement, but could be considered ambiguous.

In addition to this, a separate **Rhythm dots on unisons in opposing voices** option has been added, which allows you to determine whether two notes of the same duration and pitch in opposing voices should show a single rhythm dot, or one rhythm dot per voice. (STEAM-8228)

Horizontal position of rhythm dots. A new **Rhythm dot X** property has been added to the **Notes and Rests** group of the Properties panel, allowing you to adjust the horizontal position of rhythm dots in Engrave mode. When there are multiple notes at the same rhythmic position, be aware that the property applies to the whole group of rhythm dots; the group may have contributing notes from more than one voice. (STEAM-8214)

Hiding ledger lines. A new **Hide ledger line** property has been added to the **Notes and Rests** group of the Properties panel. This property appears only in Engrave mode, and when activated all ledger lines associated with a note are hidden. (STEAM-8137)

Page layout

A new command **Propagate Part Formatting** dialog has been added, which copies page formatting and layout options from a source layout to one or more

destination layouts. The dialog can be invoked either by right-clicking a layout in the Layouts panel in Setup mode (which initializes the selected layout as the source layout in the dialog) or from the **Setup** menu. This dialog appears:
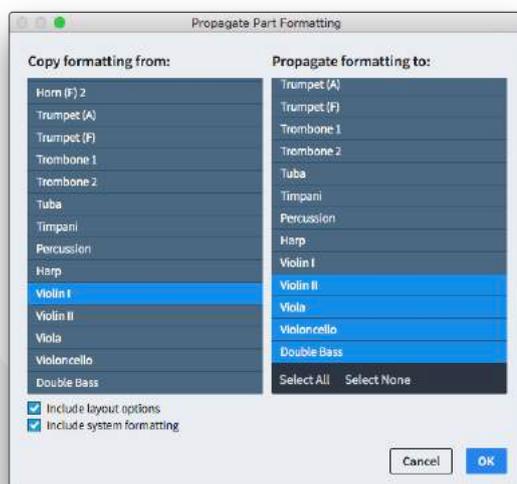
Simply choose the source layout in the left-hand list, then select one or more layouts in the right-hand list. The two checkboxes below the lists determine the behavior when you confirm the dialog:

- **Include layout options** specifies whether key layout options, including page size and margins, default master page set, space size, vertical spacing, note spacing, casting off, multi-bar rest behavior, staff label options, should be copied from the source layout to the destination layouts.
- **Include system formatting** specifies whether Dorico should ensure that the same number of bars should appear on each system, and the same number of systems should appear in each frame, in the destination layouts as in the source layout; this is done by creating system and frame breaks at the start of each system in each destination layout as appropriate. Any existing system and frame breaks in the destination layouts are removed. Likewise, note spacing changes are copied from the source layout to all destination layouts (and any existing note spacing changes in the destination layouts are removed).

If the source layout's system formatting is largely un-edited or relies on the **Casting Off** settings from Layout Options, you may not need to use the **Include system formatting** option, as it is quite likely that using **Include layout options** will produce an identical or very similar layout without the use of breaks on every system.

Complex part layouts that use multiple music frame chains are not suitable as either source or destination layouts for the **Propagate Part Formatting** dialog; Dorico will make the best possible automatic determination of the primary chain of music frame in both the source and destination layouts, but if the setup of the source and destination layouts differs greatly, you may get unexpected results. In particular, page overrides made in Engrave mode are not propagated.

However, you should find that for many cases, checking the layout of the first instrument in a family or section and then using **Propagate Part Formatting** to quickly apply those changes to the remainder of the layouts saves a lot of time in the process of formatting instrumental parts. (STEAM-8315)

Playback

Background sound loading. Dorico now loads sounds into HALion Sonic SE in the background without locking up the user interface, which makes many operations feel much faster. For example, starting a new project and adding players is now much faster because the sounds required for each new player are loaded in the background, rather than making you wait for them to be loaded before you can add another player; when opening an existing project, you can start input and editing right away, without waiting for all of the sounds to be loaded; and when switching between projects, you can input or edit in the new project right away as the sounds are loaded in the background. (STEAM-6471)

Playback of bar repeats. Bar repeats now play back automatically. The bar (for a single bar repeat) or bars (for a two- or four-bar repeat) immediately preceding the bar repeat region will be played back for the duration of the bar repeat region. Dorico will follow the dynamics written in the bar repeat region, rather than repeating any dynamics in the source bars. (STEAM-7916)

Playback of non-standard tonality systems. Building on the playback of microtonal accidentals introduced in Dorico 2.0, Dorico 2.1 now supports full microtonal playback of tonality systems beyond 12-EDO or 24-EDO. Using VST3 Note Expression for HALion family virtual instruments (including the bundled HALion Sonic SE 3), and the VST2.x detune parameter for other instruments (including NotePerformer), Dorico now calculates the appropriate pitch delta for every note, regardless of whether the note is written with an accidental. In addition, it is now possible to specify the reference pitch for playback, defaulted to 440Hz, on the new **Tuning** page of Playback Options. (STEAM-7952)

Phrasing gradual dynamics. Dorico now interprets a series of gradual dynamics of the same direction in close proximity as phrasing dynamics, resetting to the prevailing dynamic level at the start of each gradual dynamic, rather than getting continuously louder or quieter. (STEAM-8220)

Choice of stereo output. A new **Stereo Output** control has been added to the **Edit**
▸ **Device Setup** dialog, allowing you to choose which pair of outputs on your
audio interface should be used for Dorico's playback. (STEAM-5176)

App Nap. App Nap is a power-saving feature on macOS that automatically reduces
the amount of processor time available to an application once it goes into the
background in order to reduce its energy usage. For Dorico, this could have the
result of causing playback to stutter or even stop altogether after putting Dorico
into the background during playback. Dorico now signals to macOS that it should
not use App Nap if it is playing back, which means that playback can continue
unimpeded when Dorico is put into the background. (STEAM-8034)

Play mode

Restoration of state. The state of which tracks are expanded, the vertical sizes of
lanes, and which MIDI controllers are currently set for each automation lane are
now all saved and restored, so switching away from Play mode and then back
again will retain all of those settings. (STEAM-8100, STEAM-8153)

Special tracks. A new **Play** ▸ **Tracks** submenu allows you to choose which of the
four special tracks that can appear above the first player track in Play mode should
appear: **Time**, **Chords**, **Video**, and **Markers** can now be individually hidden or
shown. When a video is attached to a flow in the project, the Video and Markers
tracks are automatically shown. (STEAM-8149)

Fine control of automation. It is now possible to hold the **Alt** key while dragging a
point in the tempo or MIDI automation lanes in Play mode to move the point by a
smaller amount, allowing finer adjustment. (STEAM-8124)

Increase/decrease track size. New commands to change the height of the selected
track in Play mode have been added, with the default key commands **Shift**+**G** and
Shift+**H**. (STEAM-8197)

Silence playback template. If you want to prevent Dorico from loading any sounds
in your current project, you can choose the new **Silence** playback template from
Play ▸ **Playback Template**. To make a project play back again, simply reopen this
dialog and apply one of the other playback templates. (STEAM-8194)

Choosing which sound to use for MIDI thru. Clicking on a track header in Play
mode now sets the end point that will be used to echo notes played from your MIDI
keyboard when note input is not active. It is also possible to change the sound by
making a selection on a staff in Write mode. (STEAM-8201)

Playing techniques

Playing techniques that use imported graphics now show an orange outline when selected, to make their selection state easier to see. (STEAM-8075)

Project files

When opening a project that was last saved in an earlier version of Dorico, an informational message box appears, informing you of the version of Dorico in which it was saved (if that can be determined), and alerting you to the fact that opening it in a later version will automatically update it. The project is opened "clean", i.e. it will not prompt you to save if you try to close it immediately after opening it in the current version, because all of the updates that have been carried out can be carried out in the same way if you subsequently reopen the project in this later version. If you don't want to see this message, it can be disabled by switching off **Warn when opening projects last saved in an earlier or later version** in the **Files** section of the **General** page of Preferences.

If you want to guard against inadvertently overwriting a project last saved in an earlier version of Dorico after opening it in the current version, you can switch on **Prompt to save projects from an earlier or later version to a new location**, found in the same location in Preferences. When this option is switched on, Dorico will not automatically overwrite the project if you choose **File ▸ Save** or type **Ctrl+S** (Windows) or **Command-S** (Mac): instead, you will see the standard file picker dialog and be prompted to choose a new name and save location for the project. You can of course choose to overwrite the existing project file at this point if you wish. (STEAM-8193)

Properties

A new command **Edit ▸ Propagate Properties** has been added, which copies the properties of the selected item or items from the current layout to all other layouts in which they appear. When invoked from Write mode, only the properties that appear in the Properties panel in Write mode will be propagated to other layouts; when invoked from Engrave mode, the properties that appear in the Properties panel in both Write and Engrave mode will be propagated.

In general, properties that appear in Write mode (which may apply to all layouts, or which can vary by layout, but not by chain of music frames) tend to be more semantic in nature, while properties that appear only in Engrave mode (which can typically vary not only by layout, but also by chain of music frames) tend to be more concerned with fine graphical appearance and positioning.

By way of example, slur placement and design (solid, dashed, etc.) are properties that appear in Write mode and will be applied if **Propagate Properties** is invoked from Write mode, while the precise position of slur end and control points are

properties that appear only in Engrave mode and will only be applied if **Propagate Properties** is invoked from Engrave mode. In this way, you can choose whether all properties should be propagated, or only those that typically can apply regardless of the specifics of the way each layout is formatted. (STEAM-8314)

Rhythm slashes

Hiding music behind slash regions. By default, slash regions now cause any existing music in other voices under their span to be hidden: this allows you to write, say, a possible solo realization for the purposes of playback, and still show only the slashes in the score and part. If, however, you require other voices to appear during a slash region, you can activate the **Show other voices** property in the **Slash Region** group of the Properties panel. (STEAM-8138)

Bar count for slash regions. New options to display bar count numbers on rhythm slash regions have been added via a new **Count** section on the **Notes** page of Engraving Options:

- **Show slash region bar count every** *n* **bars** specifies the interval at which the bar count should appear; setting this to 1 will cause the bar count to be displayed on every bar.
- **Appearance of slash region bar count** specifies whether the count should be shown **With parentheses**, **Without parentheses**, or not at all (**Do not show**).
- **Placement of slash region bar count** determines whether the count should be shown above or below the staff.
- **Bar count distance outside staff** *n* **spaces** specifies the distance between the top or bottom staff line and the bar count number.

If necessary, bar count numbers can be nudged and dragged in Engrave mode. (STEAM-8114)

Staff labels

Rich text for staff labels. The **Edit Instrument Names** dialog now provides additional controls to allow more complex formatting of staff labels. To edit the staff label that appears in the margin for a given instrument, expand the card of the player holding the instrument in the Players panel in Setup mode, hover over the name of the instrument so that the chevron **>** appears, then click and choose **Edit Names** from the context menu. This dialog appears:
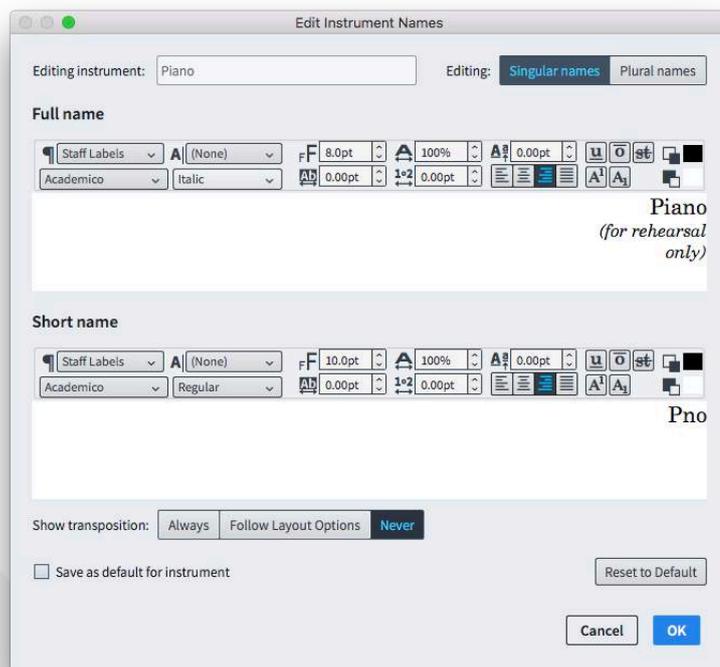
The text entered in this dialog is used not only for the staff label that appears to the left of the staff in the margin, but also for labelling changes of instrument above the staff, in which case any line or paragraph breaks will be removed, and the label reduced to a single line. Furthermore, the alignment specified in the dialog is ignored: instead, the alignment of the paragraph style will always be used. This is to ensure that you can achieve a consistent alignment of staff labels from the top of the system to the bottom.

To restore an instrument's labels back to the defaults, click **Reset to Default**. (STEAM-8273)

Staff group labels. A new option **Staff labels for identical adjacent solo instruments** has been added to the **Staff Labels** page of Engraving Options. Setting this to **Group between staves** will center the name of the instrument between all of the adjacent staves belonging to identical instruments: for example, two flutes will show a label "Flute" centered between the two staves, with the upper staff being labeled "1" and the lower one "2".

The group label is centered on the staves belonging to the identical instruments: for an odd number of staves, the group label is centered on the middle staff line of the middle staff; for an even number of staves, the group label is centered on the gap between the two central staves.

A new paragraph style **Staff labels (inner)** is used for the instrument numbers and for divisi sections, while the existing **Staff labels** style is used for instruments with

no grouping, for the group labels, and for divisi group or player labels. This illustration shows which kinds of labels use which paragraph style:
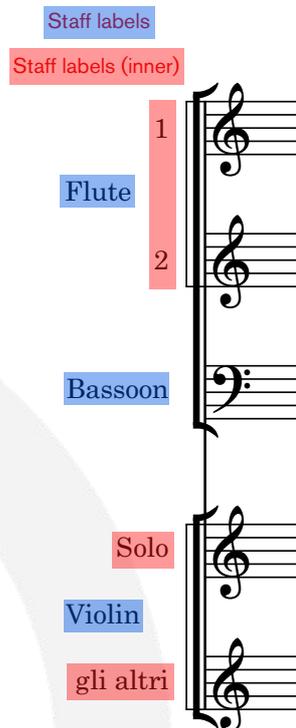
The distances for inner and outer staff labels from the systemic barline are determined using the options under **Start of System** on the **Staff Labels** page of Engraving Options. (STEAM-8324)

Labels at the start of the flow. When a player holds multiple instruments, it is important that the player knows which instrument he or she should be playing at the start of each movement. In a full score layout, there will normally be a staff label to the left of the first system, but in a part layout, this is not normally shown. A new **Show instrument change label at start of flow** option has been added to the **Instrument Changes** section of the **Players** page of Layout Options, switched on by default in part layouts in new projects, but switched off in projects created in Dorico 2.0 or earlier in order to preserve their appearance. When switched on, an instrument change label will appear at the start of the first bar, reinforcing for the player which instrument should be played. (STEAM-8242)

Divisi group labels. The **Show player or group name** option in the **Change Divisi** dialog now takes precedence over the options on the **Staves and Systems** page of Layout Options: the default instrument name shown as an outer staff label for a divided system is the group name for the divisi if no groups are defined; otherwise, the divisi group name is shown. (STEAM-8070)

System dividers

It is now possible to specify that system dividers should appear only between systems of differing numbers of staves (rather than when a flow contains at least a certain number of staves), a convention that is followed in parts prepared for recording sessions in Hollywood. To enable this behavior, set **Show system dividers** to **When number of staves differs** in the **System Dividers** section of the **Staves and Systems** page of Layout Options. The previous default behavior is obtained by instead choosing **When minimum number of players present**. (STEAM-8349)

Time signatures

Large time signatures. The option to show a single time signature for unpitched percussion and keyboard instruments has been refined: now, any and all instruments in any family between brass and strings will be grouped together and a single large time signature will be shown. To reflect this change, the option is now described as **Instruments between brass and strings**: **Treat separately** or **Treat as single bracket**. (STEAM-7726)

Open meter. Type **open** into the **Shift+M** popover to create an open meter that shows no symbol. (STEAM-8150)

Tuplets

Choice of font for tuplet digits. A new **Plain font** choice has been added to the **Tuplet digit style** option on the **Tuplets** page of Engraving Options. When this option is chosen, instead of using the traditional bold or light digits from the current music font (Bravura, by default), the text font specified for **Tuplet plain font** in **Engrave ‣ Font Styles** will be used instead. (STEAM-8218)

Positioning of tuplet bracket hooks. Two new Engraving Options have been added under the heading **Offsets for Start and End of Bracket** in the **Horizontal Position** section of the **Tuplets** page to provide default values for the left and right delta for tuplet brackets. The **Additional offset for start of bracket on stem-down tuplets** value is only used when the tuplet bracket is shown and the stems are down, while the **Additional offset for end of brackets on stem-up tuplets** value is only used when the tuplet bracket is shown and the stems are up. The values are set to zero in existing projects to avoid changing their appearance, and to 1/4 spaces for new projects. (STEAM-8087)

User interface

Key commands. Three new commands in the Edit category in the Key Commands page of Preferences have been added, to allow some reasonably common layout-related operations to be performed directly via keyboard shortcut without opening a menu or dialog:

- **Change Bar Consolidation** allows you to set a specific key command for each of the three states for displaying multi-bar repeats (no consolidation; multi-bar rests only; multi-bar rests plus bar repeats).
- **Toggle Bar Consolidation** can have a single key command assigned, and which cycles through the three states when repeatedly invoked.
- **Toggle Layout Transposition** can have a single key command assigned, and toggles between **Edit ‣ Transposing Pitch** and **Edit ‣ Concert Pitch** when repeatedly invoked. (STEAM-8239)

Transport display. Clicking on the time display in the mini transport in the toolbar now cycles between bar.beat.tick, elapsed time, and timecode read-outs. In the main Transport window, clicking on the right-hand time display toggles between elapsed time and timecode. (STEAM-8115)

Restoring window sizes and positions. Dorico now more reliably restores the saved sizes and positions of windows when reopening previously-saved projects. (STEAM-3213)

Video

Locating missing video files. When opening a project with an attached video, if the video cannot be found at the original location specified in the project, Dorico will now look for the video file in the folder alongside the Dorico project itself and automatically re-attach it if it is located there. (STEAM-7897)

Apple ProRes videos. Videos that use Apple's ProRes codec will now play back correctly as the ProRes codec is now distributed with Dorico (required on Windows only; ProRes files play on Mac without requiring a separate codec). (STEAM-8177)

Issues resolved

ID #	Component	Issue
STEAM-5341	*Accidentals*	Changing the enharmonic spelling of a note with a microtonal accidental now works reliably.
STEAM-7506	*Accidentals*	A number of problems relating to the choice of specific accidental in note input when multiple accidentals in the tonality system have the same pitch delta have been resolved.
STEAM-8133	*Accidentals*	It is once again possible to select the symbols in the **Edit Accidental** dialog with the mouse.
STEAM-7673	*Articulations*	Staccato articulations are now positioned correctly under slurs on beamed grace notes.
STEAM-8174	*Audio engine*	Switching away from Dorico while it is starting up with the **Suspend audio engine in background** preference enabled no longer sometimes causes it to hang (Mac only).
STEAM-8162	*Audio export*	Attempting to switch to another open project while exporting audio from the first no longer causes a crash.
STEAM-8227	*Barlines*	Start repeat barlines now appear correctly at the start of the system if they coincide with a time signature that is set to appear above the staff.
STEAM-8143	*Bars*	When deleting bars at the end of the project, Dorico now ensures that tempos, rehearsal marks, note spacing changes and breaks in the deleted range are correctly removed.
STEAM-5767	*Beaming*	Further improvements have been made to Dorico's algorithms for avoiding "beam corners" when beaming between notes on different staves.
STEAM-8148	*Beaming*	Under some circumstances, stems on notes crossed between staves could appear on the wrong side of the notehead when reopening an existing project; this is now fixed.
STEAM-5767	*Beams*	A problem that caused beam corners (where a partial beam is positioned on the wrong side of a between-staves beam) to appear for some rhythmic patterns has been fixed.
STEAM-8204	*Beams*	A problem whereby noteheads could draw on the wrong side of notes when crossed to other staves when first opening an existing project has been fixed.
STEAM-8156	*Breaks*	Moving a system or frame break signpost with **Alt**+left/right no longer causes the signpost to be removed altogether.
STEAM-8098	*Chord symbols*	Chord symbols no longer incorrectly appear on extra staves added to instruments.
STEAM-8213	*Chord symbols*	Chord symbols now correctly cause multi-bar rests to split on grand staff instruments where one staff is hidden because it is empty.
STEAM-8022	*Clefs*	A problem whereby redundant clefs appear in extra staves belonging to an instrument has been fixed.
STEAM-8069	*Clefs*	Dorico no longer shows restorative clefs and key signatures at the end of a *tutti* passage at the end of a system belonging to the divisi staves that were present earlier in the system.
STEAM-8023	*Divisi*	Staves in galley view will no longer be spaced sufficiently far apart to make room for all divisi staves, when the last divisi change has been deleted from a section player.
STEAM-8071	*Divisi*	Time signatures at the end of a system that coincides with the end of a tutti range (following the end of a divisi section on that system) now appear reliably in all staves.

ID #	Component	Issue
STEAM-8085	*Divisi*	Changes of key signature in unison ranges before or after a divisi change on a system no longer collide with the double barline after reopening the project.
STEAM-8223	*Divisi*	Key signatures on divided transposing instruments in the preamble at the start of the system now always show the correct transposition.
STEAM-8284	*Divisi*	Disabling instrument changes for a given layout no longer causes the staff labels for divisi staves to stop appearing correctly.
STEAM-8288	*Divisi*	Pasting a divisi event that references a custom paragraph style into another project no longer causes a crash.
STEAM-8322	*Divisi*	Under some circumstances, pasting a divisi signpost could cause Dorico to crash; this is now fixed.
STEAM-7942	*Dynamics*	Dynamics will no longer sometimes be positioned incorrectly in galley view after editing them, e.g. changing their placement.
STEAM-8254	*Dynamics*	The *cresc./dim.* gradual dynamics in the **Dynamics** panel are no longer incorrectly shown as hairpins in additional windows opened for a project.
STEAM-8325	*Dynamics*	Under some circumstances, edits to notes on one system could cause dynamics on the previous system to change position incorrectly; this has now been fixed.
STEAM-8068	*Flows*	Playback is now always initialised correctly when importing flows into an empty project.
STEAM-8095	*Flows*	Splitting an existing flow no longer causes notes on the left-hand staff of a piano instrument to be moved incorrectly to the right-hand staff in the new flow.
STEAM-8103	*Flows*	Layouts that contain only a subset of flows now play back correctly, and can be exported as audio correctly.
STEAM-8282	*Flows*	Improvements to the handling of players with multiple identical instruments when importing flows.
STEAM-7482	*Graphics import*	Graphics files imported from OneDrive using the "on-demand files" feature now appear correctly (Windows only).
STEAM-8183	*Holds and pauses*	Caesuras that are not positioned immediately before a note, rest or barline no longer cause an unexpected spacing distortion at the following barline.
STEAM-8183	*Holds and pauses*	A caesura positioned at an arbitrary rhythmic position within a bar no longer causes the spacing of a time signature at the start of the following bar to be incorrect.
STEAM-8085	*Key signatures*	Key signatures no longer incorrectly collide with double barlines to their left when they appear within a *tutti* range preceding or following a divisi change.
STEAM-8208	*Key signatures*	Under rare circumstances, defining a tonality system with specific combinations of divisions could cause a crash; this has now been resolved.
STEAM-8223	*Key signatures*	Key signatures in divisi staves are now always correctly transposed if required in a transposing layout.
STEAM-8279	*Layouts*	**Reset to Factory** in **Layout Options** now restores staff label options to the correct values for parts in part layouts; previously it was incorrectly using the defaults for full scores.

ID #	Component	Issue
STEAM-8267	*MIDI import*	A problem whereby shorter notes contained entirely within the duration of longer notes on the same instrument would be omitted when importing MIDI files has been fixed.
STEAM-8296	*MIDI import*	The last note in a MIDI file is no longer sometimes incorrectly omitted if its duration is shorter than a quarter note (crotchet).
STEAM-8178	*Mixer*	For some projects, the initial displayed position of the Video fader in the Mixer did not match its actual output level when first opened; this problem has now been resolved.
STEAM-8083	*Multi-bar rests*	Edits to grace notes close to divisi change events no longer sometimes result in multi-bar rests being split incorrectly.
STEAM-8121	*Multi-bar rests*	Multi-bar rests no longer disappear at transitions between instruments when the player has local time signature changes.
STEAM-8144	*Multi-bar rests*	Creating a system break following a divisi change no longer incorrectly causes multi-bar rests to be split.
STEAM-8164	*Multi-bar rests*	Divisi changes belonging to players who are cued into the current layout no longer incorrectly cause multi-bar rests to be split.
STEAM-5809	*MusicXML import*	Transposing instruments created via MusicXML import are now correctly numbered, taking their transposition into account.
STEAM-7884	*MusicXML import*	Switching off the **Beam groups** option on the **MusicXML Import** page of Preferences now correctly takes effect for all noteheads within a tie chain.
STEAM-8122	*MusicXML import*	Some specific combinations of coincident tuplets in MusicXML files exported from Finale could cause Dorico to crash; this has now been fixed.
STEAM-8203	*MusicXML import*	Importing a MusicXML file into an existing empty project no longer results in some of the required default notehead types being missing from the project.
STEAM-8256	*MusicXML import*	Under some circumstances, the import of nested tuplets in MusicXML files could fail. This problem has now been fixed.
STEAM-5625	*Note input*	The default enharmonic spelling chosen for grace notes now matches the spelling chosen for normal notes.
STEAM-7113	*Note input*	It is no longer possible to input notes on a staff not currently visible (e.g. an extra staff, ossia, or divisi staff, or a staff belonging to another instrument held by the same player.)
STEAM-7493	*Note input*	It is now possible to lengthen or shorten the duration of an implicit rest repeatedly without needing to reselect the rest after each edit.
STEAM-7506	*Note input*	The input of accidentals with equivalent pitch deltas in tonality systems that define multiple such accidentals has been substantially improved.
STEAM-7585	*Note input*	Multi-paste now works reliably when copying material crossed from one staff to another.
STEAM-7585 STEAM-8167	*Note input*	Under some circumstances, cross-staff notes could be pasted onto the wrong staff; this problem has now been resolved.
STEAM-7852	*Note input*	After using **Edit ▸ Paste Special ▸ Move to Staff Above/Below**, rests that were moved as part of the selection now correctly remain selected.

ID #	Component	Issue
STEAM-8021	*Note input*	Slurs that end at tuplet positions are no longer incorrectly unscaled when using **Edit ▸ Paste Special ▸ Reduce**.
STEAM-8066	*Note input*	Copying and pasting material between instruments with differing numbers of staves now works correctly.
STEAM-8082	*Note input*	Attempting to change existing notes into a slash voice no longer sometimes causes Dorico to crash.
STEAM-8086	*Note input*	Copying and pasting between instruments with different numbers of staves, or between divisi staves and regular staves, now works as expected.
STEAM-8105	*Note input*	Copying and pasting an ossia or extra staff signpost from one instrument to another now correctly creates additional staves if necessary.
STEAM-8134	*Note input*	Grace notes are now handled correctly by **Edit ▸ Paste Special ▸ Explode**.
STEAM-8147	*Note input*	**Edit ▸ Paste Special ▸ Explode** now works correctly if invoked on a staff that contains both notes and dynamics.
STEAM-8249	*Note input*	The enharmonic spellings chosen for octave-transposing instruments no longer unexpectedly differ for non-octave-transposing instruments.
STEAM-8262	*Note input*	It is no longer possible to use **N/M** to cause notes to disappear because they have been crossed to an ossia or extra staff that is not visible at the selected rhythmic position.
STEAM-8263	*Note input*	Inputting notes via MIDI keyboard into a new voice now always produces the expected enharmonic spelling.
STEAM-8270	*Note input*	The notes input on one instrument no longer incorrectly affect the enharmonic spellings chosen for notes input on another instrument during the same input session.
STEAM-8289	*Note input*	Divisi, ossia and extra staff signposts are now excluded from block selection.
STEAM-8297	*Note input*	Using **Alt+N/M** to move items to the staff above or below no longer incorrectly attempts to move pedal lines or divisi/ossia/extra staff signposts.
STEAM-8298	*Note input*	Setting articulations and accidentals before specifying the pitch of the grace note to be input now works correctly.
STEAM-8319	*Note input*	**Edit ▸ Paste Special ▸ Move to Staff Below** (**Alt+M**) now correctly always moves to the next staff when the selection being moved is not on the first staff of an instrument.
STEAM-8329	*Note input*	Starting note input via the mouse by clicking the Lock Duration button in the note input toolbox now works correctly.
STEAM-6975	*Notes*	Under some circumstances, it was possible for a note's rhythm dot to be shown twice when the note is consolidated with a voice column to its left; this is now fixed.
STEAM-7665	*Ornaments*	Under some circumstances, single-stem tremolo slashes could collide with noteheads because the stem was insufficiently lengthened; this has now been fixed (Windows only).
STEAM-8206	*Ossias*	When an ossia is active on a grand staff instrument, only one of the main staves can be hidden if empty, rather than allowing all regular staves of the instrument to be hidden.

ID #	Component	Issue
STEAM-8063	*Page layout*	A problem whereby editing the position of a tempo mark could cause the vertical spacing to change unexpectedly has been resolved.
STEAM-8092	*Page layout*	Hiding empty staves now once again works correctly for players holding multiple instruments in layouts in which instrument changes are disabled.
STEAM-8165	*Page layout*	Spurious additional clefs and key signatures no longer sometimes appear in the middle of the system when extra staves are set via layout options to start at system breaks.
STEAM-8200	*Page layout*	Changes made to staff spacing for extra staves belonging to an instrument are now persisted correctly when saving and reopening a project.
STEAM-8243	*Page layout*	Under some circumstances, moving a rehearsal mark in Engrave mode could cause a tempo mark on another system to move; this is now fixed.
STEAM-8277	*Page layout*	Under some circumstances, repitching music could incorrectly cause lyrics above the staff to move further away from the staff; this is now fixed.
STEAM-8278	*Page layout*	Under some circumstances, editing or inputting notes directly before a multi-bar rest could cause the bar count number to move incorrectly away from the staff; this is now fixed.
STEAM-8287	*Page layout*	It is now possible to select the staff spacing handles for multiple instruments held by the same player independently when instrument changes are not shown for a layout.
STEAM-8312	*Page layout*	A series of fermatas positioned on adjacent barlines no longer sometimes move incorrectly when one of the fermatas is nudged in Engrave mode.
STEAM-8251	*Percussion*	Under rare circumstances it was possible for Dorico to crash when editing the names of instruments in a percussion kit from the **Edit Percussion Kit** dialog. This is now fixed.
STEAM-8157	*Performance*	The speed of inputting notes in projects that include changes in the number of staves for an instrument has been improved.
STEAM-8246	*Performance*	The speed of inputting and editing music in larger projects with percussion kits shown using the grid presentation type has been improved.
STEAM-8268	*Performance*	The speed of note input in larger projects with instrument changes has been improved.
STEAM-8103	*Play mode*	A problem whereby layouts that do not have all flows attached could play back with long periods of silence has been resolved.
STEAM-8174	*Play mode*	A problem that could cause Dorico to hang during start-up if the **Suspend audio device in background** preference was set has been fixed (Mac only).
STEAM-8285	*Play mode*	The correct VST Expression Map is now chosen by default when creating a solo double bass player when using the HALion Symphonic Orchestra playback template.
STEAM-7989	*Playing techniques*	Adding an ossia staff above the right-hand staff of a piano no longer incorrectly causes pedal lines to stop drawing.
STEAM-8224	*Playing techniques*	Under some circumstances, pedal lines would draw on the top staff in the system in galley view; this is now fixed.
STEAM-8327	*Playing techniques*	Editing the default placement of a playing technique in **Engrave ▸ Playing Techniques** now correctly updates any existing playing techniques in the score right away.

ID #	Component	Issue
STEAM-8136	*Print mode*	Lyrics colored by **View ‣ Notes and Rests ‣ Voice Colors** are no longer incorrectly displayed in color in Print mode.
STEAM-8198	*Print mode*	Commands from the **Edit** menu that can edit the score are now correctly disabled in Print mode.
STEAM-7482	*Project files*	Importing a graphic located in OneDrive when using the files on-demand setting now works correctly (Windows only).
STEAM-8195	*Project files*	Improvements have been made to the way that Dorico determines the filename to be used when exporting multiple flows to a new project.
STEAM-2812	*Setup mode*	Under certain circumstances, dragging an instrument from one player to another in the Players panel could cause a crash; this is now fixed.
STEAM-8269	*Setup mode*	Changing the instrument held by a player from one kind to another no longer incorrectly changes any slash voices in that instrument's music into regular voices.
STEAM-7501	*Slurs*	Creating a slur with a single note selected now always correctly advances the slur to the next note of a different pitch, instead of ending at the end of the current note if it is tied.
STEAM-7674	*Slurs*	The positioning of slurs on grace notes in multiple voice contexts has been improved.
STEAM-8241	*Slurs*	Attempting to create and extend a slur with the mouse when more than one window is open on the project no longer causes an error message to appear.
STEAM-8155	*System track*	The appearance of the system track in music in open meter has been improved.
STEAM-8190	*System track*	The system track now draws correctly for bars that span more than one system break.
STEAM-8271	*Text*	The values for the default distance of text items from the staff were incorrect by half a space; this has now been corrected.
STEAM-8320	*Text*	Clicking **Revert to Factory** for one of default paragraph styles in **Engrave ‣ Paragraph Styles**, no longer causes problems displaying items in the score or even a crash.
STEAM-8033	*Time signatures*	Time signatures local to a single staff now draw correctly when global time signatures are set to draw outside the staff.
STEAM-8227	*Time signatures*	Start repeat barlines now appear correctly at the start of the system when they coincide with a time signature change, and the time signature is shown outside the staff.
STEAM-8110	*User interface*	It is once again possible to define shortcuts for commands nested two levels deep in the **Key Commands** editor, e.g. for articulations, note durations, and so on.
STEAM-8129	*User interface*	The state of the various buttons in the user interface concerning the Video window now always correctly stay in sync.
STEAM-8185	*User interface*	Navigating through the entries in the drum map with the arrow keys now correctly updates the selection in the panel at the bottom of the **Percussion Maps** dialog.
STEAM-8219	*User interface*	Some list controls in Dorico incorrectly caused the Input Method Editor for CJK text input to become activated; this has now been fixed (Windows only).

| ID #	Component	Issue
STEAM-8260	*User interface*	Under some circumstances, the instrument labels in expanded player cards in the Players panel in Setup mode would stop drawing; this is now fixed.
STEAM-8332	*User interface*	The **Stereo output** and **Sample rate** controls in **Edit** ‣ **Device Setup** no longer flicker when changing values.
STEAM-8090	*Video*	There is no longer a limit on the length of the path of an attached video file.
STEAM-8093	*Video*	Changing the project frame rate via the **Video Properties** dialog now always correctly sets timecode offsets for the current flow.
STEAM-8132	*Video*	Advancing the playhead position frame by frame now always displays the correct timecode in a newly-created project.
STEAM-8178	*Video*	The position of the video fader in the Mixer is now always correct when opening an existing project.
STEAM-8235	*Video*	Dorico now always correctly detects the framerate of a video at 23.976fps.
STEAM-8101	*Views*	The presence of a timecode staff no longer causes staves to become misaligned in galley view in projects in which instruments have a variable number of staves.
STEAM-8171	*Views*	Staff labels shown in the margin in galley view no longer disappear for a moment at certain points when scrolling music left and right.
STEAM-8176	*Views*	When multiple windows are open on the same project, only the window in focus will follow changes of selection.

Dorico 2.0

30 May 2018

This version contains the following new features, improvements and issue resolutions.

New features

Video, markers and timecode

Dorico 2 now includes the same high-performance video engine as Cubase and Nuendo, providing many new possibilities for composing to picture, together with a suite of features for managing timecode, markers and tempo.
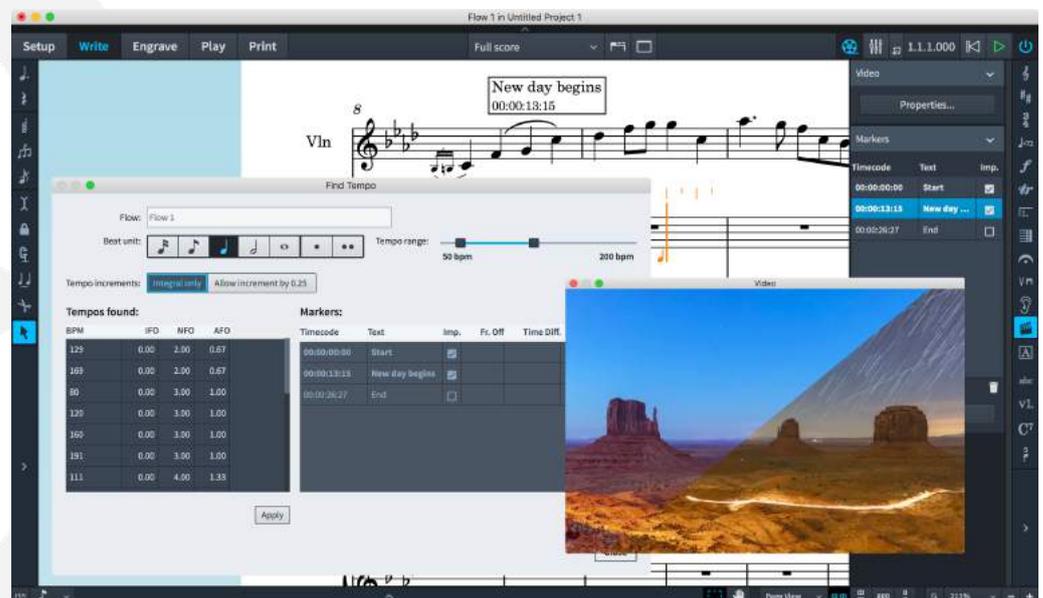
Supported video formats. The Cubase/Nuendo video engine was introduced last year to replace the old 32-bit QuickTime-based engine, and currently supports the most commonly-used video formats, with support for more formats planned for the future.

H263 and H264 video is supported in both MOV and MP4 containers, while Apple ProRes, DV/DVCPro and Avid DNxHR codecs are supported in MOV containers. DV/DVCPro and MJPEG/PhotoJPEG are supported in AVI containers. Videos with variable frame rates are not supported, but all the common frame rates (including 23.976, 24, 24.975, 25, 29.97, and 30 frames per second) are fully supported.

For more information about precisely which formats are supported, and for information about how to determine the format of a video and transcode it to a supported format, please consult the Steinberg support site:

https://helpcenter.steinberg.de/hc/en-us/articles/115000808250-Video-support-in-Cubase-and-Nuendo

Attaching a video. You can attach a video to each flow in your project; if you a working with a longer video (for example, a complete reel of a film), you can attach the same video to multiple flows, and work with different sections of the video with each flow. There are two ways to attach a video:

- In Setup mode, right-click the flow in the Flows panel to which you want to attach a video, and choose **Video ▸ Attach Video** from the context menu. A file chooser dialog appears, allowing you to choose the video to be attached: click **Open** and the video will be attached to the project.
- In Play mode, drag the video file from the folder where it is located and drop it on the timeline at the position where you want the video to be attached.

When you attach a video in Setup mode, the **Video Properties** dialog opens, with the following options:
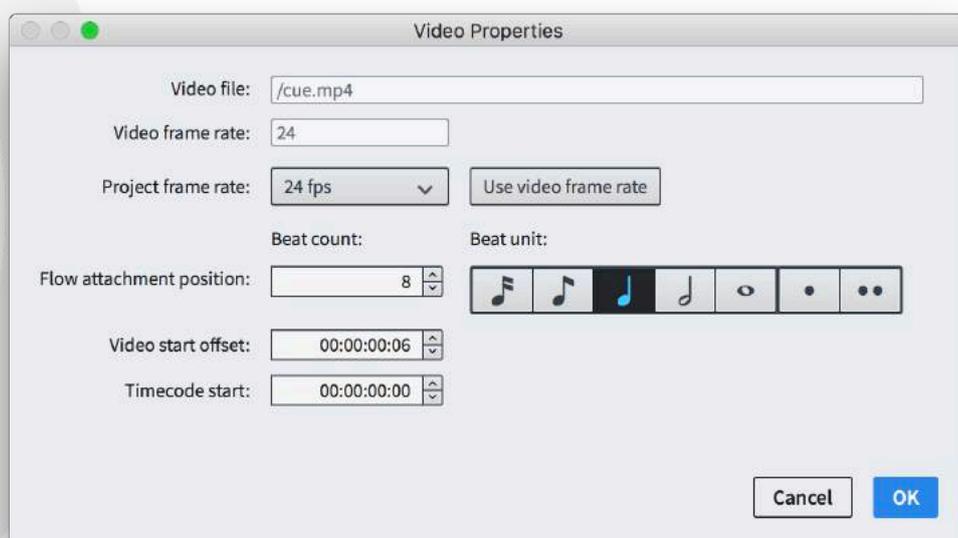
- The read-only fields for **Video file** and **Video frame rate** report the complete path to the attached video file, and the frame rate detected by the video engine.
- **Project frame rate** specifies the frame rate that Dorico will use to determine the timecode displayed in markers and in the Transport window; click **Use video frame rate** to set this to the frame rate detected by the video engine. See below for more information about the available frame rates.
- **Flow attachment position** specifies the point in the flow at which the video will start playing: you specify this as a multiple of beats of the specified unit. For example, if you want two bars free at the start of a 4/4 flow, you would specify **8**

in the **Beat count** field and choose the quarter note (crotchet) from the **Beat unit** control.

▪ **Video start offset** specifies the frame of the video that will appear at the **Flow attachment position**. For example, it may be a requirement that no sound is played until the sixth frame of the video, so entering **00:00:00:06** in this field specifies that when the video starts, it will start from the sixth frame.

▪ **Timecode start** specifies what timecode should appear at the start of the video. For example, each reel of a film is by convention given a timecode position starting at a new hour, with the first reel often starting at **01:00:00:00** or sometimes even at **10:00:00:00**, with the second starting at **02:00:00:00** or **11:00:00:00**, and so on.

When you have set the properties as needed, click **OK**.

If you attach the video in Play mode, the **Video Properties** dialog does not open automatically, but it can be opened either via right-clicking the flow's card in Setup mode and choosing **Video ‣ Properties** from the context menu, or by clicking the **Video Properties** button at the top of the Markers panel in Write mode.

Once a video is attached, a film reel icon appears in the bottom left-hand corner of the flow's card in the Flows panel in Setup mode, together with the timecode of the first frame of the video, as specified in the **Video Properties** dialog.

The Video window will also appear as soon as a video has been attached: the window may appear black at first, but as soon as playback starts, the video will appear.

Locating attached video files. Attached video files are not embedded in your Dorico project: if you need to send your project to somebody else and they also need access to the video, you will need to send the video file or files separately.

When you open a project that has an attached video and the video cannot be located, the flow's card in the Flows panel shows a warning triangle icon in place of the film reel icon. To restore the video to the project, simply re-attach the same video file by right-clicking and choosing **Video ‣ Attach**: the video's existing properties will be preserved.

Working without an attached video. All of Dorico's features for composing to picture – including markers, timecode and finding tempo – can be used even if you don't have a video attached. You can specify a frame rate and initial timecode value using the Video Properties dialog without attaching a video simply by right-clicking the flow's card and choosing **Video ‣ Properties**.

Video window. The Video window can be hidden or shown by choosing **Window ▸ Video**, or using the default key command F4. The window's size and position are saved in the application's preferences, rather than on a per-project basis.

Frame rates and timecode. Dorico supports a wide range of frame rates used in professional film and TV production, from 23.976fps to 60fps, and includes supports for drop frame timecode. NTSC video, used in US and Canadian broadcast, has a frame rate of 29.97fps, and this requires the use of a drop frame timecode. In non-drop frame timecode, each frame is simply numbered sequentially from the preceding one; but in drop frame timecode, timecode numbers are periodically skipped to compensate for the 0.03fps difference between 29.97fps and 30fps. In every minute except every tenth minute, two timecode numbers are dropped from the frame count. The same principle applies to the distinction between 59.94fps and 60fps, a difference of 0.06fps.

In Dorico, non-drop frame timecodes are labeled with the suffix **fps**, while drop frame timecodes are labeled with the suffix **dfps**.

Timecode is displayed in the format *hh:mm:ss:ff*, i.e. two-digit hours, minutes, seconds, and frames. Drop frame timecode uses a semicolon separator between the seconds and frames parts of the timecode rather than a colon, so **00:00:01:05** would be for a non-drop frame timecode, while **00:00:01;05** would be for a drop frame timecode.

Timecode can be displayed in the Transport window (key command **F2**) instead of regular elapsed time: to enable this, set **Time display** to **Timecode** on the **Timecode** page of Playback Options.

Video soundtrack. The soundtrack of the attached video is played back in sync with score playback. To control the relative volume of the video's soundtrack, open the Mixer (key command **F3**) and click the **Video** filter button in the Mixer's toolbar to show the video fader, which appears at the right-hand side of the list of faders, immediately before the **Reverb** and **Output** faders. You can of course mute the video's soundtrack by muting the video fader.

Advancing through the video. The frame of video displayed in the Video window always matches the playhead's current position. If you find that you cannot see the green playhead line when Dorico is not playing back, activate the **Show playhead when stopped** checkbox in the **Play** section of the **General** page of Preferences.

The playhead can be moved by clicking the fast-forward and rewind buttons in the Transport window, or using the **+** and **-** keys on your keyboard's numeric keypad, if it has one. If your keyboard does not have a numeric keypad, you can use **F7** to rewind and **F9** to fast-forward; add **Ctrl** (Windows) or **Command** (Mac) to move

by a single frame, rather than by a whole second. On Mac, you may also need to add the **Fn** key, as by default the row of function keys is reserved by the system to provide features like volume control, screen brightness, and media playback.

Markers. Markers are labels locked to a particular timecode in the video, typically indicating an important moment that should be given some musical prominence. Markers can be added at the playhead's current position by choosing **Write ‣ Create Marker** or using the default key command **Shift+Alt+M**. The marker appears in the score at the appropriate position, and the label in the marker (which says **Marker** by default) can be edited either via the **Marker text** property in the **Markers** group of the Properties panel, or via the Markers panel in Write mode.

Markers panel. Markers can also be added directly in the Markers panel in Write mode by clicking the **+** button at the bottom of the table that lists the markers in the current flow. This can be useful if you have already, for example, completed a spotting session and so already know the timecode for each marker in the cue. You can edit both the timecode and text for each marker directly in-line in the table in the Markers panel simply by double-clicking the field you need to edit.
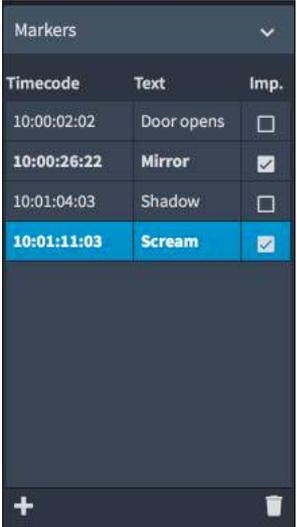
The third column in the table in the Markers panel is labeled **Imp.**, which is an abbreviation for **Important**: important markers are the ones it is most crucial to call attention to musical terms, and play a vital role in Dorico's Find Tempo feature. To designate a marker as important, simply activate its checkbox in the **Imp.** column.

Marker design. Options for the design of markers can be found on the new **Markers** page in Engraving Options, allowing you to determine whether the timecode or the label should be positioned first, adjust the border thickness and padding. To adjust the font family, weight or point size, edit the **Marker text font** or **Marker timecode font** in **Engrave ‣ Font Styles**.

Choosing where markers appear. By default, markers appear above the top staff of the full score layout, and do not appear in part layouts. To change this, set **Vertical position** to **Above system** or **Below system** as appropriate, or alternatively you can choose to display markers on a dedicated timecode staff.

*Displaying timecode in the score.* Dorico can display timecode in the score on a special timecode staff. To show the timecode staff, choose the **Markers** page of Layout Options and set **Vertical position** to **Timecode staff**, then set **Position timecode staff above bracket** to the instrument family above which you want the timecode staff to appear. Finally, you can choose whether you want timecode to

appear on every bar, every system, or never (in which case only markers will appear on the timecode staff), by setting **Timecode frequency on timecode staff** as desired.

Dragging markers in Write mode. Markers have a fixed timecode position, and are effectively locked to a specific frame in the attached video. In order to adjust the position in the music where a marker appears, you can drag it left or right in Write mode: to accommodate the desired position for the marker, this adjusts the immediate tempo preceding the marker (or at the start of the flow, whichever is the later) and clears any gradual tempo changes between that immediate tempo and the marker. Dragging a marker to the right increases the tempo, while dragging it to the left decreases the tempo. This is a simple tool: it is not currently possible, for example, to drag one marker but lock the position of all previous markers, so that a tempo change takes effect only after a specific marker. For these kinds of more sophisticated edits, you can edit the time track in Play mode.

Editing the time track in Play mode. The new time track in Play mode allows fine graphical control over the tempo changes in the flow. When a video is attached, tracks for markers and the attached video also appear at the top of the event display in Play mode. When editing the tempo in the time track, the position of the markers is updated in real-time, making it easy to adjust the position of each marker relative to the music by inserting tempo changes at key points.

Find Tempo. Dorico can also help you identify an appropriate tempo for the whole flow using the new **Find Tempo** window, which can be opened by clicking the **Find Tempo** button in the Markers panel in Write mode:
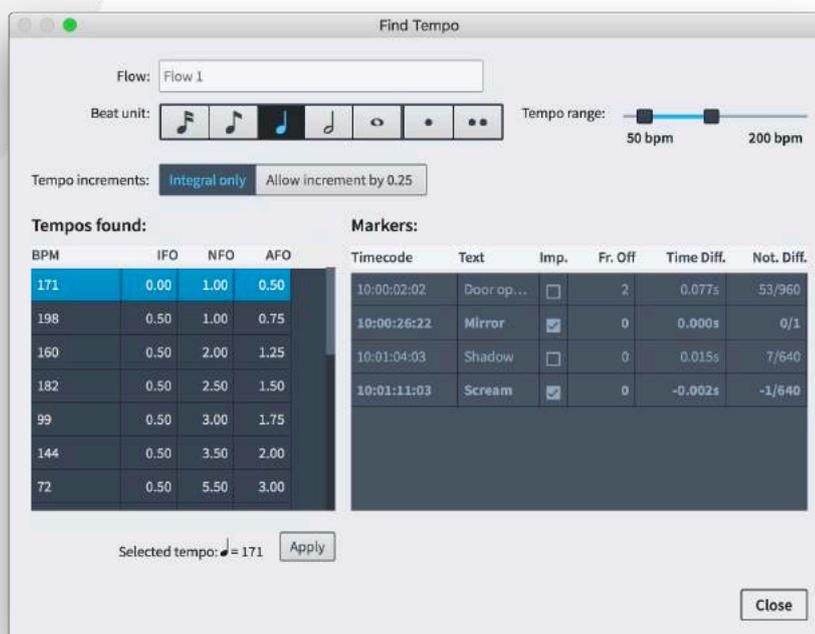
The **Find Tempo** window can only be used if at least one of the markers is designated as important (**Imp.**) in the Markers panel. The window allows you to find the tempo that is the best fit for the important markers in the flow, such that the important markers fall as close as possible to beats.

Choose the desired **Beat unit** from the control on the left, then choose the lower and upper bounds of the tempos that can be found using the **Tempo range** slider on the right. As you adjust the beat unit and tempo range, the **Tempos found** list on the left is updated. The found tempos are listed in descending order of average "frames off" for important markers, i.e. the average number of frames by which the markers miss being aligned to beats.

The abbreviations **IFO**, **NFO** and **AFO** are for the average number of frames off for important markers (**IFO**), non-important markers (**NFO**), and all markers (**AFO**).
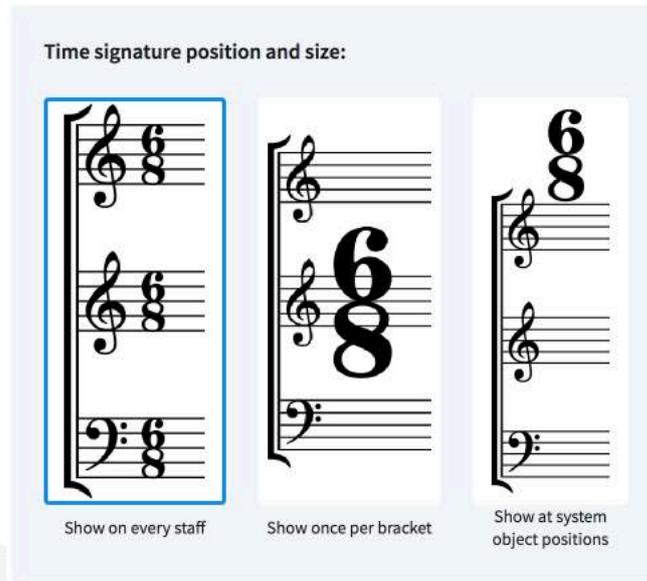
The **Markers** list on the right provides a more detailed view of the tempo selected from the **Tempos found** list: the list shows each marker, and then, assuming the selected tempo is used, the number of frames off the beat (**Fr. Off**), the time difference between the marker's position and the beat expressed in fractions of a second (**Time Diff.**), and the notated difference between the marker's position and the beat expressed in fractions of a whole note (**Not. Diff.**).

When you have chosen the most appropriate tempo, select it in the **Tempos found** list and click the **Apply** button below the list, which adds the chosen tempo at the start of the flow, clearing all other tempo markings from the flow.

Time signatures

Dorico 2 introduces new features for the display of time signatures, with two new placement options, and three new design options. As alternatives to their usual placement within each staff, time signatures can now be displayed above the same staves as system items like tempo and rehearsal marks, or a single large time signature can be centered on each bracket. Both of these options can help to draw attention to time signatures in music with frequent changes of meter.

Choosing time signature placement. To choose one of the new placement options for time signatures, open the new **Time Signatures** page in Layout Options:

Time signature position and size:

Show on every staff — Show once per bracket — Show at system object positions

Choose the appropriate type of placement for the type of layout whose options you are editing: typically **Show once per bracket** and **Show at system object positions** would be used only in score layouts, with the exception that in some part layouts destined for the recording studio, you may choose to use **Show once per bracket** in order to use larger time signatures than normal.

Time signatures shown once per bracket. Large time signatures shown on brackets occupy horizontal space, and as they are often significantly larger than normal time signatures, they can occupy significantly more horizontal space. For this reason, it is usually advisable to choose one of the other design options for time signatures, which are also found on the new **Time Signatures** page of Layout Options:

Time signature design:

Normal — Narrow, serif — Narrow, sans serif — Plain font
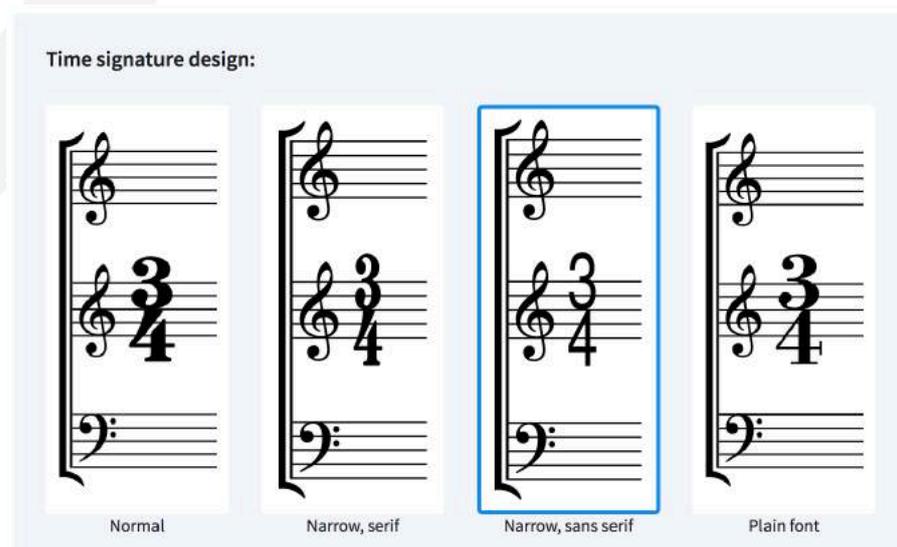
The **Narrow, serif** option uses narrow versions of the traditional time signature numerals, and is similar in look to those used in editions of works by Britten,

Birtwistle, and other composers around the middle of the 20th century. The **Narrow, sans serif** option uses sans serif numerals comparable in appearance to Helvetica or other grotesque fonts, and is similar in look to those used in music prepared for film, TV and game recording sessions. You can alternatively choose the **Plain font** option, which will use the font defined by the **Time signature plain font** style (editable in **Engrave ▸ Font Styles**), but it is advisable to choose a narrow or condensed style.

A single time signature will appear on every bracket in the ensemble, by default centered vertically on the bracket: single, unbracketed staves will show a time signature, though by default it is larger than a normal time signature; pairs of braced staves will likewise show a time signature on each staff, larger than a normal time signature. If instead of showing a single time signature for each bracket you would prefer Dorico to consider the brackets for unpitched percussion, pitched percussion and keyboard instruments as a single group that should together receive only one time signature, open Engraving Options, go to the **Time Signatures** page, and set **Brackets for percussion and keyboards** to **Treat as single bracket**.

In score preparation for film, TV and game recording sessions, time signatures are sometimes aligned with the top of the bracket rather than the middle: to achieve this, open Engraving Options, go to the **Time Signatures** page, and set **Vertical alignment relative to bracket** to **Top**.

On the **Time Signatures** page of Engraving Options, you can also specify the scale factor for brackets with varying numbers of staves, relative to a normal time signature on a single staff when using the default **Show on every staff** option. Separate scale factors are provided for time signatures on single staves (1 1/4, or 125%), on brackets of two or three staves (4 or 400%), and on brackets of four or more staves (10 or 1000%).

Time signatures at system object positions. Time signatures shown above the top staff and, optionally, other staves above which system items such as tempo and rehearsal marks appear have the advantage of occupying no horizontal or rhythmic space, at the expense of occupying more vertical space. This type of placement for time signatures has become increasingly popular in art music through the course of the 20th century, with editions of works by composers including Carter and Henze making use of it.

The staves above which the time signatures will appear are the same as those above which rehearsal marks, tempos, repeat endings, etc. will appear, which can be controlled using the options in the **System Objects** section of the **Staves and Systems** page of Layout Options.

By default, time signatures above the staff are shown at twice the size of normal time signatures, and this can be changed via the **Scale factor for time signatures shown at system object positions** option on the **Time Signatures** page of Engraving Options.

Because time signatures above the staff do not occupy any rhythmic space, it is not crucial to use one of the narrower time signature designs, but it is worth considering that when a time signature coincides with a rehearsal mark or a tempo instruction, by default the time signature will force any such items to the right, so using one of the narrower designs will reduce the distance by which these items are displaced. If you would prefer tempo and rehearsal marks to be positioned above time signatures instead, change **Position of time signatures relative to coincident tempo and rehearsal marks** to **Position below** on the **Time Signatures** page of Engraving Options.

If a time signature above the staff coincides with a bar number, the bar number can optionally be hidden by activating **Hide bar numbers at time signatures at system object positions** on the **Bar Numbers** page of Layout Options.

Time signatures above the staff can optionally be centered over the barline or left-aligned; time signatures announcing a change of meter at the end of a system will be right-aligned with the end of the system unless there is also a change of key of sufficient width that the time signature's chosen alignment can be used. Alignment is determined by the **Alignment relative to barlines** option on the **Time Signatures** page of Engraving Options.

When the time signature's denominator is shown as a note value, it is displayed to the right of the numerator rather than below, and using an up-stem note. You can adjust the scale factor of the denominator note independently from the scale factor of the numerator by changing **Scale factor for denominator when shown as note duration** on the **Time Signatures** page of Engraving Options.

Each time signature can be nudged independently in Engrave mode using **Alt**+arrow keys or by dragging it with the mouse. Use **Edit ▸ Reset Position** to remove the offset.

System track

The system track is a new user interface element that makes it easier to add and delete bars and to select music on all staves in the system.
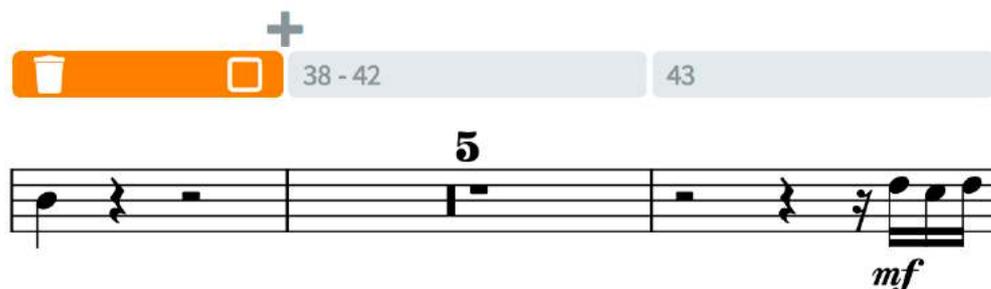
The system track is shown by default in new projects, and can be hidden or shown by choosing **View ▸ System Track**. When shown, the system track appears above the top staff of the system, and is translucent until you move the mouse pointer over the track, at which point it becomes opaque. The system track only appears in Write mode.

If you would prefer the system track not to be shown by default, switch off **Show system track in new projects** in the **View** section of the **General** page of Preferences.

Clicking in the system track makes a selection in the system track: hold **Shift** and click in the system track above another bar and the selection is extended. Once there is a selection in the system track, additional buttons appear in and above the system track: at the left-hand extent of the selection is a delete button; at the right-hand extent is a button to select the music on all instruments in the range specified by the selection on the system track; and a button to insert a bar between the last bar selected in the system track and the following bar.

If you hold down **Alt** while the system track is visible, grid lines conforming to the current rhythmic grid value are drawn on the system track, allowing you to make partial bar selections by clicking and dragging across the system track. As with selections of complete bars, when the selection is complete, buttons appear at the left- and right-hand extents of the selection to delete or select the music respectively.

Selections on the system track are transitory: they are intended to persist only as long as needed to perform another action, such as inserting a bar or selecting all of the music in the system track selection range on all instruments. As such, the system track selection is cleared whenever you make any other kind of selection, or when you switch layout, but it is retained when switching between page and galley view.

Automation

Dorico 2 includes new tools for fine control over tempo and continuous MIDI controllers, expanding the capabilities of Play mode and showing the path for future developments in this area.

Time track. The time track at the top of the event display in Play mode allows you to edit the tempo of your project. Immediate tempo changes appear as step changes in the tempo profile, while gradual tempo changes appear as a slope between two points. You can click and drag any handle to adjust the tempo at that point, and a small read-out next to the mouse pointer provides visual feedback as to the tempo at that point.

It is also possible to create new tempo changes in the time track: use the draw tool to click new tempo changes onto the track; you can keep the mouse button held down and sweep it across to draw in multiple tempo changes at once. The frequency of the tempo changes created is determined by the rhythmic grid setting: the smaller the rhythmic grid value, the greater the number of tempo changes that will be created as you sweep the mouse across the track.

To create a smoother, linear gradual change, use the line tool: click the point at which the change should begin, then drag to the position where the gradual change should end.

Tempo changes inserted with the draw or line tools in Play mode appear as signposts in Write mode by default, so as to avoid changing the appearance of the printed score. If you want these tempos to be printed, you can select them in Write mode and then set the **Text** property in the **Tempo** group in the Properties panel to make them appear.

To delete tempo changes in Play mode, use the erase tool: simply click on each point in the time track to delete that tempo change.

MIDI controller tracks. Each instrument can now display a lane for editing MIDI controller data. Although only a single lane can currently be displayed, it is possible to create data for multiple MIDI controllers.

To show the MIDI controller lane, click the new button in the track header for the instrument for which you want to create automation data: ⌁ The lane appears directly below the instrument to which it belongs. Choose the MIDI controller for which you want to create data from the menu in the controller lane's track header: all 127 MIDI continuous controllers are listed. Any controller for which data already exists is annotated in the menu with an asterisk (*).

Creating automation data for MIDI controllers uses the same tools as creating tempo change data in the time track: the draw tool creates individual points and can be used to click and drag across the range, drawing discrete points at each division of the rhythmic grid; the line tool creates smooth, linear transitions between two values; and the erase tool can be used to clear any existing points by clicking on them.

MIDI export. All automation events drawn in the time and MIDI controller tracks are included when exporting MIDI files.

Divisi

Divisi – from the Italian "to divide" – is a common technique in orchestral string writing, especially though not exclusively for violins, and occasionally used in other instruments outside the string section, for example in choirs. By splitting a single section into multiple smaller sections, each written on its own staff, greater sonority, color or counterpoint is possible.


Working with divisi passages has historically been quite awkward in music notation software, but Dorico 2's unique new features for divisi change that for the better.

In simple terms, you create a divisi in the instrument that will divide, specifying how many staves should be used, and how each of those staves should be labeled. Dorico then takes care of managing those staves for you automatically: there is no need for you to arrange for a change in divisi sections to occur at a system or frame break, as Dorico will automatically show unison music in each divisi staff as

required if a divisi either starts or ends in the middle of a system. When the divisi section ends, you simply create an instruction to restore tutti, and again Dorico manages the removal of the additional staves completely automatically.

Creating divisi. Divisi can only be created for instruments held by section players: because a solo player represents only a single person, it's not possible for that instrument to be divided, but a section player represents multiple people all holding the same instrument, so that can be divided. To create a new divisi, select the point at which the divisi should begin, and choose **Edit ▸ Staff ▸ Change Divisi**. The following dialog appears:
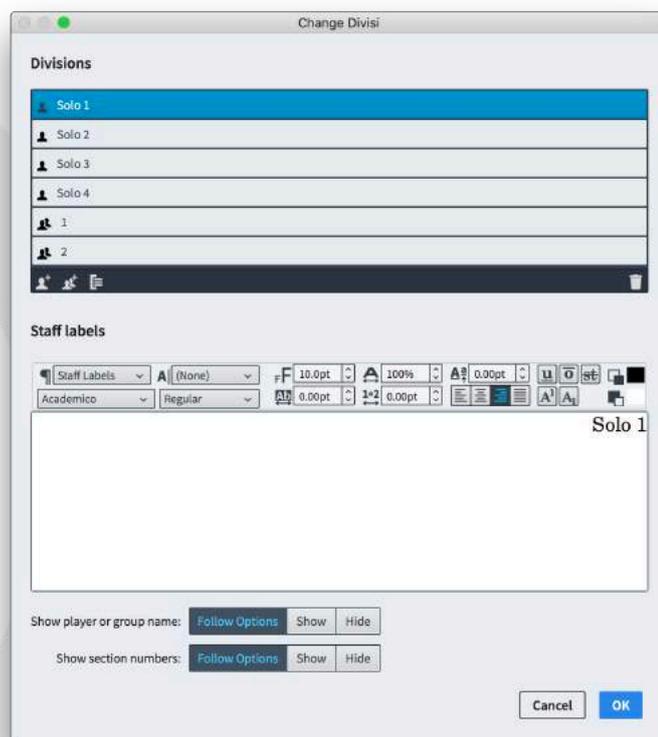
The list at the top of the dialog shows the current divisions: when creating a new divisi, only a single division labeled **Tutti** is present. The action bar below the list of divisions allows you to create new divisions of two types: soloists, and sections. To add a soloist, click the **Add Solo Division** button (⬚), and to add a section, click the **Add Section Division** button (⬚). Each soloist or section you add corresponds to an additional staff in the score. There is no limit on the number of soloists and sections you can create: to make things as simple and flexible as possible, Dorico doesn't keep count of the total number of players involved, and simply trusts that you know what you're doing.

To change the label shown for a division, select the division from the list at the top of the dialog, and then edit the text in the **Staff labels** section below. The section label, which is normally simply number or possibly a letter to denote which desks or

players should play this music, appears directly to the left of that section's staff at the beginning of every system.

You can additionally group sections together, by selecting multiple adjacent divisions in the list of divisions at the top of the dialog and clicking the **Add Group** button ( ). The group label appears centered on all of the staves belonging to the divisions in the group, and will appear in place of the instrument name. When editing the group label, you can edit the **Full Name** and **Short Name** independently, using the buttons that appear directly above the editor.

Finally, the **Show player or group name** and **Show section numbers** options at the bottom of the **Change Divisi** dialog allow you to specify whether or not the labels defined for this particular divisi should follow the default options for whether or not staff and divisi labels should appear as specified on the **Staves and Systems** page of Layout Options (**Follow Options**), or whether they should be explicitly overridden such that they always appear (**Show**), or are always hidden (**Hide**).

When all the settings have been made to your satisfaction, click **OK** and the divisi change will be created. A signpost appears, and this can be dragged with the mouse or moved with **Alt**+left/right in Write mode to move the rhythmic position at which the divisi change occurs. The additional staves specified by the soloists and sections defined in the divisi change appear from the start of the system, with the appropriate labels to the left of the system, and if there are any whole or partial bars of unison music prior to the divisi change, that music is automatically shown in all of the new divisi staves until the divisi change. You can then simply input music into the new divisi staves as if they were any other kind of staff.

Editing an existing divisi change. To edit an existing divisi change, simply double-click the **Divisi** signpost, and the **Change Divisi** dialog will open, allowing you to make changes. If you remove a divisi section, be aware that the music that was previously on that staff is not removed, so it will continue to play back: you may want to delete any music from a divisi staff that you plan to remove before you remove the section. Conversely, if you subsequently recreate a divisi section that previously existed, all of its music will be restored.

Changing divisions. If a divisi passage becomes further divided, or indeed if some but not all divisions come to an end, you can create a further divisi change in the same way as described above at the appropriate point. Note that the staves that appear on a system are those defined by only the first divisi change; any further divisi change on the same system will take effect at the start of the following system.

Ending a divisi passage. When the divisi passage has come to an end, select a note or rest in the main staff at that position, and choose **Edit ▸ Staff ▸ Restore Tutti**. This creates a default divisi change with a single tutti section, without showing the dialog. If this change occurs before the end of the system, unison music will automatically be shown on the divisi staves for any whole or partial bars between the divisi change and the end of the system.

Unison passages. When you select unison music on a divisi staff, you will notice that the same items are selected on the main staff and indeed on all other divisi staves: the music cannot be edited independently, so any changes made on a divisi staff will be reflected on all other staves with that music.

To make it clear where unison passages occur, you can switch on **View ▸ Note and Rest Colors ▸ Divisi Unison Ranges**. This will show the notes and rests in unison passages in mid-gray, to help differentiate them from the actual divisi material.

Due to the complexity of showing the same source music on multiple staves, there are some modest limitations in what kinds of material Dorico can handle when it automatically shows unison music on divisi staves, either at the start of the system before a divisi passage begins or at the end of the system after a divisi passage ends. The primary limitation is with slurs: any slur that is ongoing at the point that the divisi passage begins will not be shown on the divisi staves. To work around this, move the start of the divisi passage to the beginning of the slur, and then manually copy and paste that music onto the divisi staves. Similar issues exist with lyrics, and octave lines will only apply on the main staff, though gradual dynamics (such as hairpins) are handled correctly.

If a divisi staff uses a different clef to the main staff at the point at which it returns to playing unison material, Dorico automatically creates the appropriate clef on that staff, but it may sometimes be spaced too close to the note immediately before it. If possible, try inserting an appropriate clef change somewhere before the end of the divisi passage to restore the same clef as the main staff.

Divisi and staff labels. Two new options have been added to the **Staff Labels** section of the **Staves and Systems** page of Layout Options:

▪ **Show group names** is only enabled when either or both full and abbreviated staff labels are set to appear in the current layout; when switched on, the divisi group label will appear instead of the instrument name.

▪ **Show section names** can be set independently of whether either divisi group names or the instrument's name is shown; a typical scenario where divisi section names should be shown but regular staff labels should not is in part

layouts, where it is already known that all of the staves should be played by (say) Violin I, and so showing the staff label adds no further useful information.

These options can be overridden on a per-divisi change basis by the **Show player or group name** and **Show section numbers** options in the **Change Divisi** dialog.

Playback of divisi. In this release, all divisi material – including material for soloists – is played on a single channel, so only limited differentiation between the different sections is possible. In a future release, Dorico will make it possible to assign each soloist and section within a divisi passage to a separate channel, in order to provide fully flexible playback of divisi passages.

Divisi on vocal staves. When using divisi on a vocal section player, Dorico will automatically show choral divide arrows at the end of the system prior to the start of the divisi passage:
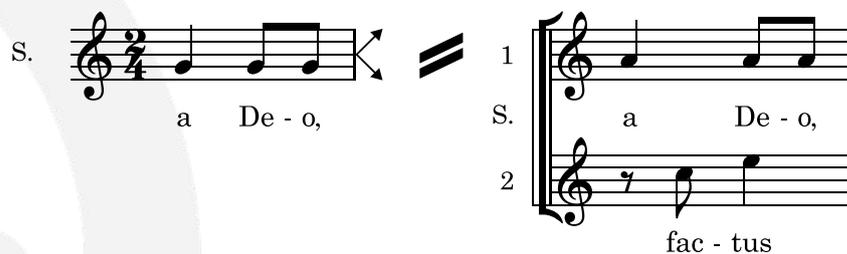
It will show corresponding arrows on each of the divisi staves directing the singers back to a single staff at the end of the system where the divisi passage ends.

To control this behavior, change the **Indicate divisi at end of system on vocal staves** option on the **Divisi** page of Engraving Options.

Ossias

Ossias show alternative passages that can be played instead of the original passage; sometimes they are used to show editorial recommendations for realizing ornaments, or deviations between different sources, or to show an easier version. Dorico 2 introduces comprehensive features for handling ossia passages.

Adding an ossia. To add an ossia, select the range over which you want the ossia staff to appear, then choose **Edit ▸ Staff ▸ Create Ossia Above** or **Create Ossia Below**. If you are writing for piano or another grand staff instrument, and require an

ossia that shows both staves, select material on both the right- and left-hand staves before you choose **Create Ossia Above** or **Create Ossia Below**.

You can create an ossia for an instrument held by a solo or section player, with the exception that you cannot create an ossia for a percussion kit instrument. An instrument can show an ossia both above and below if necessary, but only one ossia on the same side of the staff at once.

A signpost appears at the start of the ossia passage, and another at the end where the ossia staff disappears again. You can select these signposts and move them by dragging them in Write mode or nudging them with **Alt**+left/right, which will also move the start and end rhythmic position of the ossia.

Removing an ossia. To remove an ossia passage, you can simply delete the signpost at each end of the ossia passage, or select any note or rest in the ossia passage and choose **Edit ▸ Staff ▸ Remove Staff**.

Be aware that when you delete an ossia, unless you first deleted the music within the ossia, that music still exists but is simply not shown: if you recreate an ossia at the same position later on, that music will reappear.

Scale factor. By default, ossia staves are scaled to two thirds the size of a regular staff, and this can be adjusted via the **Ossia scale factor** option on the **Staves** page of Engraving Options.

Deciding where ossias appear. By default, ossia staves will appear in all layouts, but it may be more appropriate for ossias to appear only in the part layout for an individual performer, or possibly only in the score. To choose whether ossias appear in a layout, activate or deactivate **Show ossias** in the **Ossias and Extra Staves** section of the **Staves and Systems** page of Layout Options as appropriate.

Barline joins. There are several conventions in use in published music for how barlines in ossias should be joined to the main staff to which they correspond: assuming an ossia both starts and ends at whole bar positions, some publishers join the ossia to the main staff both at the start and the end; others join the ossia only at the end; and still others do not join the ossia to the main staff at all.

When an ossia is joined to the main staff, some publishers use the same kind of barline as used for the other staves (typically a single barline), but others instead join the ossia with a dashed barline.

Dorico provides options to accommodate all of these conventions in the **Ossias** section of the **Barlines** page of Engraving Options.

When an ossia appears between the main staves of an instrument – for example, an ossia below the right-hand staff of a piano – then it will always be joined by the same barline as the main staves, regardless of the options chosen on the **Barlines** page of Engraving Options.

Ossia labels. To label the beginning of an ossia staff with the word "ossia", activate **Show label before ossia** in the **Ossias and Extra Staves** section of the **Staves and Systems** page of Layout Options. If you would prefer to use a custom label, set **Ossia label** to **Custom** and then provide the desired text in the **Custom ossia label** field.

The ossia label is drawn in the staff labels paragraph style, and is positioned according to the distances defined in the **Ossias** section of the **Staves** page of Engraving Options, with separate options for labels before single and braced pairs of ossia staves.

Ossias beginning or ending mid-bar. If an ossia begins or ends in the middle of the bar, Dorico pads the staff lines to the left and to the right of the musical material to ensure that notes, accidentals, rhythm dots and other items do not directly abut the ends of the ossia staff. To adjust the amount of padding to the left and to the right, change **Extend staff lines at start of ossia** and **Extend staff lines at end of ossia** in the **Ossias** section of the **Staves** page of Engraving Options.

Ossias crossing breaks. When an ossia starts on one system and then ends on the next, you may want to see the ossia's clef and key signature restated at the start of the system, as it is for a regular staff; alternatively, to make it clear that the ossia is not an additional instrument, you may prefer that the ossia should restart following the fixed preamble of clef and key signature at the start of the system.

Dorico can accommodate either approach: set **Ossias crossing a system break** to **Include in preamble** or **Exclude from preamble** in the **Ossias and Extra Staves** section of the **Staves and Systems** page of Layout Options.

Vertical spacing. The default distance of an ossia from the main staff to which it corresponds is determined via the new **Ossia staff to staff** value on the **Vertical Spacing** page of Layout Options. This distance is not subject to vertical justification.

You can adjust the distance between an individual ossia staff and its main staff using the staff spacing tools in Engrave mode in the usual way: instead of the handle appearing at the left-hand side of the system, the handle for the ossia will appear at the start of the ossia staff on that system.

Ossias and playback. Music on ossia staves is never played back.

Changing the number of staves for an instrument

Dorico 2 now makes it easy to add or remove staves from an instrument at different points in the flow, allowing for example the notation of complex works for piano where three or sometimes more staves are required.

Adding an extra staff. To add an extra staff to an instrument, select a note or rest on the staff above or below which you want the extra staff to appear, at the rhythmic position at which you want the extra staff to begin, and choose **Edit ▸ Staff ▸ Add Staff Above** or **Add Staff Below**. The extra staff is added from that position, and a signpost appears, labeled with the number of staves that have been added (or removed).

The instrument must belong to a solo player: you cannot change the number of staves of instruments held by section players. It is also not possible to add additional staves to a percussion kit instrument.

Removing an extra staff. To remove an extra staff, either select the signpost that corresponds to the point at which the extra staff appears, or select the note or rest on the staff you want to remove at the point at which you want it to be removed, and choose **Edit ▸ Staff ▸ Remove Staff**. This can also be used to remove one of the primary staves of an instrument, for example either the right- or left-hand staff of the piano (though of course you cannot remove all of the staves belonging to an instrument: at least one will always appear).

Choosing when an extra staff should begin. When a staff starts or stops in the middle of a system, you may want that staff to appear or disappear exactly at that point, or you may prefer for that system to appear for the whole of that system. This is controlled by way of the new **Show extra staves across full system when starting or stopping** checkbox in the **Ossias and Extra Staves** section of the **Staves and Systems** page of Layout Options.

Hiding empty staves. When extra staves are added to an instrument, it will no longer be affected by the **Allow individual staves of multi-staff instruments to be hidden** option on the **Vertical Spacing** page of Layout Options.

Rhythmic slashes

Rhythmic slashes are used to indicate that a performer should play something, but without being especially specific about exactly what they should play: slashes without stems are generally interpreted as giving the performer complete freedom to play whatever he or she likes; slashes with stems are generally interpreted as dictating the rhythm to be played, but without being specific about the pitches. The former is sometimes called *slash notation*, while the latter is sometimes called *rhythmic notation*. Dorico 2 introduces sophisticated support for both kinds of rhythmic slashes.

Slash regions. The quickest way to add rhythmic slashes is to use a slash region, which allows you to fill a range of bars with slashes, where the rhythm of the slashes is automatically determined by the prevailing time signature: for example, in bars of 4/4, four quarter note slashes will be shown, while in 6/8, two dotted quarter note slashes will be shown. Changing the time signature causes the durations of the slashes in the region to be updated automatically.

Slash regions are created by selecting one or more bars and choosing **Write ▸ Create Slash Region**, or by opening the new **Shift+R** popover, typing **slash** and hitting **Return** to confirm the popover. The slash region is created to the duration of the selection, and by default shows a green highlight behind the slashes to show that the slashes are part of a region (to disable this, switch off **View ▸ Highlight Slash Regions**). Handles at the start and end of the slash region allow you to extend the region at either end; you can also use **Alt**+left/right to move the start of the slash range, and **Shift+Alt**+left/right to increase or decrease the duration of the slash region.

Cutting a slash region. You may find that you need to cut a slash region in two, for example because you want to write some more specific notation in the middle of the region. To achieve this, select the slash at the position at which you want to split the slash region, then click the scissors tool in the notes toolbox, or type **U**. The slash region is split in two at that location, and you can then, for example, drag the start handle of the second half of the region right to make room for whatever you need to write.

Rhythm dots for slash regions. In compound time signatures, there are different conventions for whether or not rhythm dots should be shown on slashes; by default, Dorico will show rhythm dots on slashes of the duration of a compound beat, but this can be changed via the **Slash regions in compound time signatures** option in the **Rhythmic Slashes** section of the **Notes** page of Engraving Options.

Appearance of slashes. Dorico provides several different appearances for rhythmic slashes, and you can choose between any of the provided designs by setting **Slashes with stems** and **Slashes without stems** to the desired appearance in the **Rhythmic Slashes** section of the **Notes** page of Engraving Options.

Slash voices. When you want to write more specific rhythmic notation than is provided by a slash region, you can write rhythmic notation using a slash voice. Input using a slash voice is exactly the same as when using a regular voice, except that whatever pitch you specify will be overridden, and instead of the note or chord you input, a single slash will appear on the middle line of the staff by default. You can convert an existing voice to and from a slash voice, so the underlying pitches of

the notes and chords are retained and will be restored if you change the voice back to a regular voice.

To start a new slash voice in note input, choose **Write ▸ Create Slash Voice**, or type the default command **Shift+Alt+V**; this is analogous to the default **Shift+V** command to add a new regular voice.

Typing **Shift+Alt+V** repeatedly cycles through the types of slash voice that can be added: slashes with stems, stem up; slashes with stems, stem down; and slashes without stems. As with a regular voice, the indicator to the left of the caret shows what kind of voice you are about to add.

Once you have input some slashes, the slash voice is available for reuse anywhere else on that instrument, and when cycling through the voices with **V**, the slash voice will be included.

Changing slash voice type. If after inputting rhythmic notation in a slash voice you want to, say, switch to slashes without stems, you can do so by selecting one of the slashes and choosing the desired voice type from **Edit ▸ Voices ▸ Rhythmic Slashes**: if you choose **Normal Notes** from this submenu, the voice will be converted to a regular voice, and the original pitches of the notes and chords as they were first input will be restored.

For slash regions, you can toggle between slashes with and without stems by selecting any slash in the region or either the start or end handle, then activating the **Stemless** property in the **Slash Region** group of Properties.

Changing stem direction. For slashes with stems, you can specify whether the default stem direction for the slash voice should be up or down in the same way as for a regular voice: choose **Edit ▸ Voices ▸ Default Stems Up** or **Default Stems Down** as desired.

For slash regions, you can specify stem direction by selecting any slash in the region or either the start or end handle, then activating the **Voice direction** property in the **Slash Region** group of Properties.

Changing staff position. By default, slash regions and slash voices both show slashes on the middle line of the staff. The staff position can be changed in the

same way: activate the **Slash pos.** property in the **Slash Region** or **Notes and Rests** groups respectively, and then set the desired value. A value of **0** corresponds to the middle staff line, with positive numbers moving slashes upwards, and negative numbers moving them downwards.

Rests before and after slash regions. If a slash region starts or ends in the middle of the bar, you may or may not want the remainder of that bar to be padded with rests, depending on whether any other music is going on at the same time in that staff. By default, slash regions will pad incomplete bars with rests at either end, but you can suppress these rests by activating the **Hide rests before start** and **Hide rests after end** properties in the **Slash Region** group in Properties.

Opposing slash voices. In the event that you have a slash voice opposing either another slash voice or a regular voice, Dorico will override the default staff position for the slash voice in order to reduce the likelihood of collisions between the voices. The amount by which the slash voice is offset is determined by the options in the **Rhythmic Slash Voices** group of the **Voices** page of Notation Options.

Slashes and unpitched percussion. To use slashes on a percussion kit, open the **Edit Percussion Kit** dialog (expand the card for the percussion player in the Players panel in Setup mode, and open the dialog from the instrument's context menu). You can add slashes with or without stems to the percussion kit using either of the **Slashes** buttons in the action bar below the **5-line Staff** editor. More than one set of slashes can be added to a percussion kit and positioned at different staff positions.

In note input, moving between the different instruments in the kit using the arrow keys will include any slashes you have added to the kit, and you can input slashes just as you would input any other music on a percussion kit.

Slashes in percussion kits only appear when using the five-line staff presentation type: if you switch to the grid or individual instrument presentation types, the slashes will not appear.

Bar repeats

Bar repeats indicate to the performer that the material in the preceding one, two or four bars should be repeated exactly: this notational shorthand can be very helpful to the performer as it is easier to read a bar repeat and understand that the music is to be repeated exactly than to read multiple bars of written-out music, trying to spot whether or not it is actually repeated exactly.

(4)
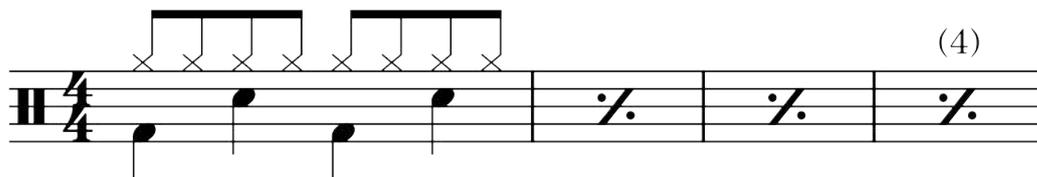
Bar repeat regions. After you have input the music that is to be repeated, make a selection beginning in the following bar and extending as far as you would like bar repeats to be shown (though you can of course change this later), and choose **Write ▸ Create Bar Repeat Region**. This creates a bar repeat region that shows the 1-bar repeat sign for the extent of the selection. You can alternatively type **Shift+R** to open the new repeats popover, then enter **%** to repeat the last bar, **%2** to repeat the last two bars, or **%4** to repeat the last four bars.

To change the number of bars to be repeated after you have created a bar repeat region, select any of the repeat bar symbols or the circular handle at the start or end of the region, and change the value of the **No. bars** property in the **Bar Repeat Region** group in the Properties panel.

By default, a light blue highlight appears behind bar repeat regions to help them stand out: to toggle the visibility of this highlight, choose **View ▸ Highlight Bar Repeat Regions**.

Counting bar repeats. Dorico automatically shows a count of the number of repetitions at intervals above the bar repeat region. By default, it shows the count every four bars, with the bar or bars of music being counted as "one"; so, for example, if you have a single bar of music followed by a bar repeat region covering three bars, the third bar repeat will be counted as "four." To change the default count interval, set **Show bar repeat count every** *n* **bars** on the **Bar Repeats** page of Engraving Options. To prevent the count from appearing altogether, set **Appearance of bar repeat count** to **Do not show**.

These defaults can be overridden for an individual bar repeat region: activate the **Count frequency** or **Count appearance** in the **Bar Repeat Region** group of Properties. You can also specify the number that Dorico should count from by activating the **Count from** property.

To change the font, size or style of the bar repeat count, edit the **Bar repeat count** font style in **Engrave ▸ Font Styles**.

The precise position of the numbers above bar repeats can be adjusted in Engrave mode with the mouse or by nudging with **Alt** and the arrow keys.

Grouping bar repeats. In music with a very regular phrase structure it may be desirable to show that structure by grouping bar repeats. For example, in music
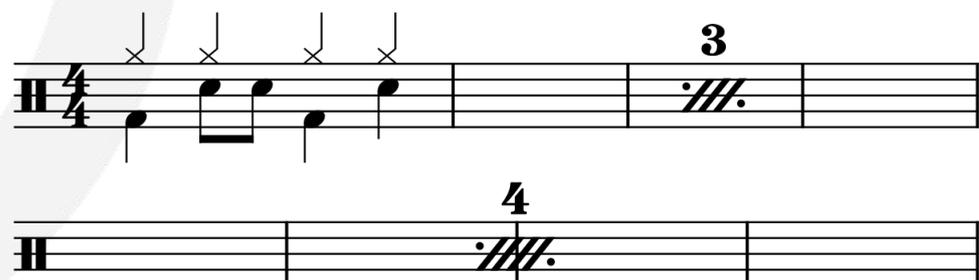
with a regular four-bar structure, you could choose to show two identical phrases of four bars like this:
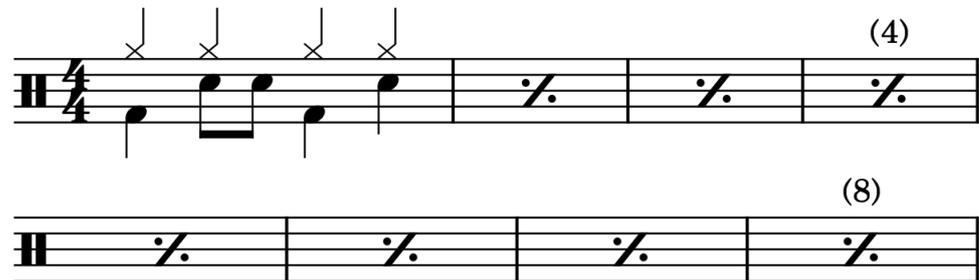
Or you could choose to group at four-bar intervals, like this:
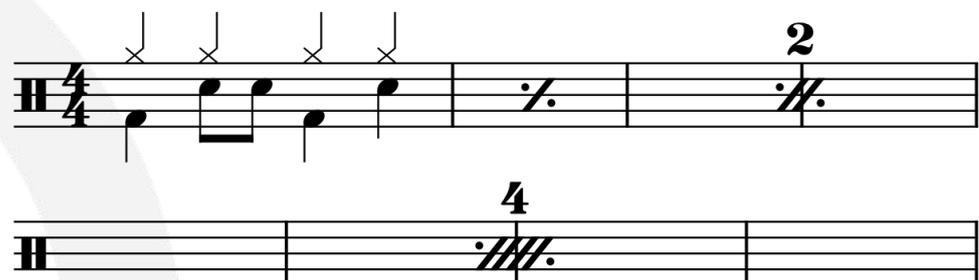
Although it is even less conventional, it is also possible to show the first four-bar phrase using a three-bar repeat, like this:

To enable grouping, select any bar repeat symbol or the handle at either end of the bar repeat range, then set the **Group every** property to the desired number of bars. To show a three-bar repeat when completing a four-bar phrase, set **Appearance for three-bar remainder of group** to **Use 3-bar repeat** on the **Bar Repeats** page of Engraving Options.

It is also possible to specify grouping when creating a bar repeat region using the **Shift+R** popover: **%1,4** will produce a one-bar repeat grouped every four bars, while **%2,4** will produce a two-bar repeat grouped every four bars, and so on. It is only possible to specify grouping at one, two or four bars, but if Dorico determines that the requested combination of settings is invalid, it will default to no grouping.

It must be noted that grouping bar repeats should be exercised with caution, as it can introduce ambiguity.

The range of bar numbers encompassed by a consolidated bar repeat region can be shown beneath the consolidated bar repeat by activating the **Show ranges of bar numbers under multi-bar rests and consolidated bar repeats** option on the **Bar Numbers** page of Layout Options.

New arranging tools

Dorico 2 introduces a number of new note editing tools to assist with common tasks during arranging, including multi-paste, explode and reduce, and moving and copying material to the staff above or below.

Multi-paste. When pasting copied material, Dorico can now paste multiple copies both horizontally and vertically to fill the range described by the extent of the selection: if only a single item is selected, then pasting works exactly as before, but if multiple items are selected, Dorico considers the nominal rectangle described by the contiguous range of instruments on which items are selected, the rhythmic position of the first selected item on the top instrument and the rhythmic position of the last selected item on any of the selected instruments, and then fills that rectangle with as many complete copies of the material as fit within it.

If there is a discontiguous selection of instruments, then Dorico will consider each contiguous range of instruments as separate regions for pasting: this allows you to (for example) copy dynamics from one instrument and then multi-paste them to several instruments, but omitting one or two instruments in the middle of the range.

Even if the rhythmic extent of the selection is shorter than the length of the copied material, Dorico will paste one complete copy of the material onto each instrument in the region, but if the selection is longer than the copied material, Dorico will paste as many complete copies of the material after each other as fit without overflowing the selected region. (STEAM-7450)

Moving music to the staff above or below. Two new commands have been added to the new **Edit ▸ Paste Special** submenu: **Move to Staff Above** and **Move to Staff Below**, which have the default key commands **Alt+N** and **Alt+M** (by analogy with **Edit ▸ Cross Staff ▸ Cross to Staff Above** and **Cross to Staff Below**, which have the default key commands **N** and **M**).

These commands cut the selected notes and other items from their current staff, and then paste them on the staff above or below in a single operation. This is very useful in a variety of situations: for example, after importing a keyboard part from a MIDI file, you may want to move individual notes from the right-hand staff to the

left-hand staff, or vice versa; after using the new explode or reduce features, you may want to make adjustments to individual voicings; and so on.

When moving notes within tuplets to the staff above or below, beware that unless the tuplet number/bracket (or signpost) itself is selected, the tuplet will not be moved to the staff above or below, so the notes will be unscaled and no longer part of a tuplet.

Duplicating music to the staff above or below. The new **Duplicate to Staff Above** and **Duplicate to Staff Below** commands in the **Edit ▸ Paste Special** submenu work similarly to **Move to Staff Above** and **Move to Staff Below**, except that instead of cutting and pasting, these commands copy and paste, so the selected material remains on the original staff and is duplicated on the staff above or below.

Reduce. Reduction is the process of taking music for more than one instrument and assigning it to fewer instruments (or even a single instrument, in the case of a keyboard reduction). The new **Edit ▸ Paste Special ▸ Reduce** command aims to partially automate this demanding task.

First, copy the material to be reduced to the clipboard using **Edit ▸ Copy**. Then select the instrument or instruments into which the copied material should be reduced, and choose **Edit ▸ Paste Special ▸ Reduce**.

Dorico pastes the copied material, and performs some transformations as it does so: if the rhythms match, it merges the material into a single voice; it removes unison notes, so that only a single note of the same pitch is pasted at a given rhythmic position; and it strips out clef changes, octave lines, and cues.

The disposition of the copied material onto the selected instruments for pasting is determined automatically, and will ensure that every destination instrument receives at least one instrument's music, duplicating that instrument's music if necessary: for example, if you copy material from four instruments and reduce into two instruments, the material will be split equally between the two instruments, from the top downwards in instrument order; if you copy material from five instruments and reduce into three, the first instrument will be assigned music from the first two instruments, the second will be assigned music from the third and fourth instruments, the third will be assigned music from the fifth instrument.

Explode. Exploding is the charming colloquial term for taking music written on a certain number of instruments (typically one or two) and pasting it onto a larger number of instruments, and this can now be performed by choosing **Edit ▸ Paste Special ▸ Explode**.

First, copy the material to explode to the clipboard using **Edit ▸ Copy**. Then select the instrument or instruments into which the copied material should be exploded, and choose **Edit ▸ Paste Special ▸ Explode**.

Dorico ensures that each destination instrument receives one of the notes in the source chords, allocated from top to bottom: if the number of notes in the chord matches the number of destination instruments, then each instrument will receive one note; if the number of notes in the chord is less than the number of destination instruments, then the same note will be allocated to more than one instrument. Non-note items such as slurs and dynamics will also be duplicated to each destination instrument.

Playing techniques editor

It is now possible to edit existing playing techniques and create your own, with the new **Engrave ▸ Playing Techniques** dialog.
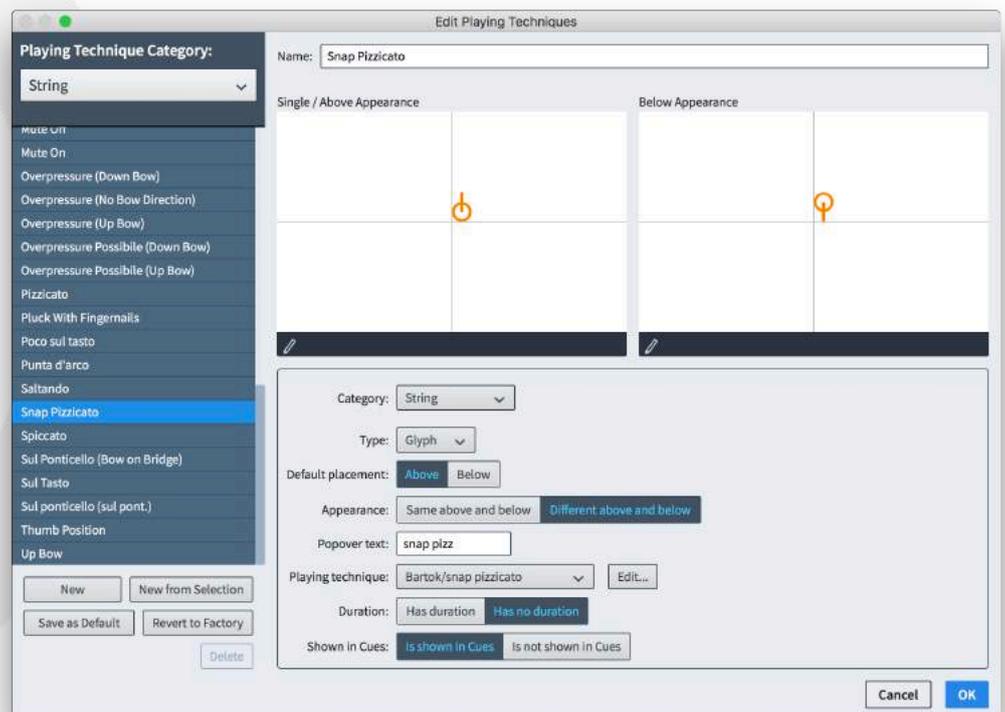
Editing an existing playing technique. To edit an existing playing technique, choose the appropriate category from the **Playing Technique Category** menu at the top left-hand corner of the dialog; this corresponds to the categories shown in the Playing Techniques panel in Write mode. The playing techniques in the chosen category are displayed in the list directly below the menu: the selected playing technique is then shown in the main editor that occupies the right-hand side of the dialog.

The editor will look different depending on the **Type** of playing technique chosen: **Text** playing techniques show the text to be displayed in the score; **Glyph** playing techniques show the graphical symbol (usually one or more characters from the music font, but this can in fact be any combination of glyphs from music fonts, characters from text fonts, and even graphics files).

Editing a **Text** playing technique is done directly in this dialog: simply change the displayed text by editing the **Text** field, and specify which font style should be used by choosing it from the menu immediately to the right of the **Text** field; by default, the font style used is **Playing technique font**.

Editing a **Glyph** playing technique involves opening a secondary dialog: depending on whether the playing technique uses the same or a different appearance when shown above or below the staff, there will either be a single pencil icon in the action bar in the large preview in the top half of the dialog, or one pencil icon for each appearance. Click the pencil icon, and the secondary editor opens:
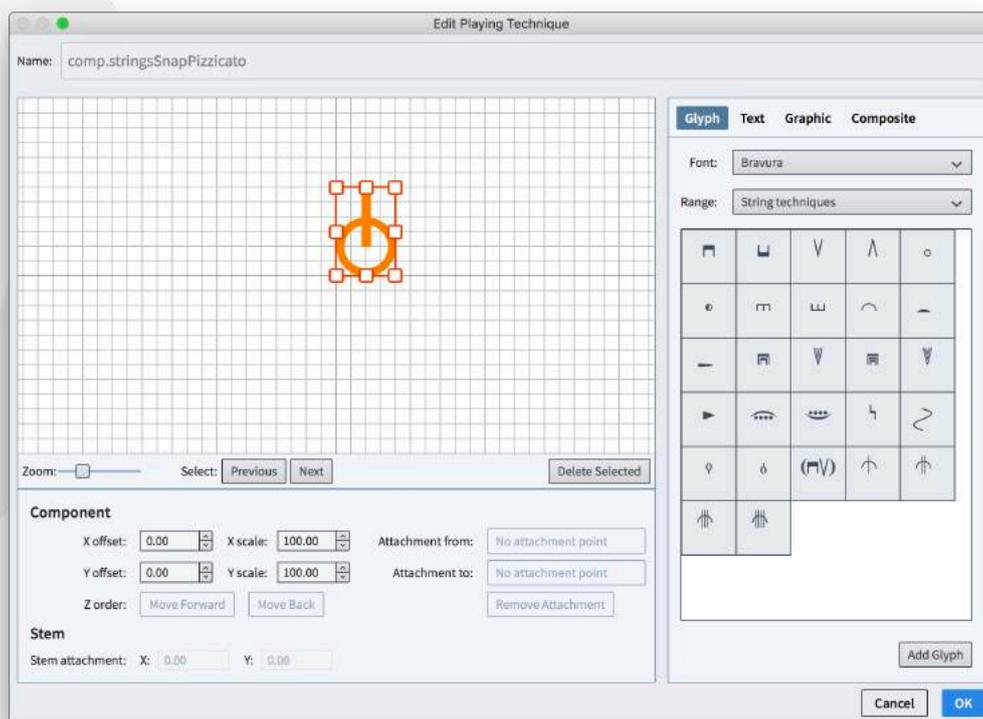
To add a new component to the playing technique, select it from the panel on the right-hand side of the dialog: you can choose any character from any font in the **Glyph** tab, write one or more words in any font style in the **Text** tab, import a graphic in SVG, PNG, or JPG format via the **Graphic** tab, or add any of the existing other musical symbols that are used throughout the project from the **Composite** tab.

Once you have added a component, you can move it either by dragging it with the mouse or by using **Alt** with the arrow keys. Each component can be scaled, either by clicking and dragging on one of the handles, or using the **X scale** and **Y scale** spin controls; graphics components can be scaled independently in the horizontal and vertical dimensions, while glyphs, text and composite components must be scaled a uniform amount in both dimensions.

If you have multiple overlapping components, you can determine which should draw in front and behind each other using the **Z order** buttons to move the selected component towards the front or the back.

Once you have designed the playing technique to your satisfaction, click **OK** to close the secondary editor and return to the main dialog.

The other options below the main preview panel are as follows:

▪ **Category**: the choice of category determines which section of the Playing Techniques panel the playing technique appears in.
▪ **Default placement**: specifies whether the playing technique should appear **Above** or **Below** the staff by default.
▪ **Appearance** only applies to glyph-type playing techniques; **Same above and below** means that the same symbol will be used when the playing technique is shown above or below the staff, and **Different above and below** allows you to specify a different symbol for each side of the staff.
▪ **Popover text**: the text that can be typed into the **Shift+P** popover to create this playing technique; the editor will warn you if the text you specify is already assigned to another playing technique.
▪ **Playing technique**: the playing technique that will actually be produced in playback; see below.
▪ **Duration**: this currently has little effect, since Dorico does not yet provide all of the planned options for showing the continuation of a playing technique (which will eventually include solid and dashed lines and arrows of various kinds in addition to the current repeated glyph appearance), but for future development this allows you to specify whether this playing technique should show a continuation by default (**Has duration**) or should instead apply only to a single rhythmic position (**Has no duration**).
▪ **Shown in cues**: determines whether or not this playing technique will appear in a cue, assuming the cue is set to include playing techniques from the source instrument.

Playback playing techniques. The playing techniques whose appearance you edit in the **Engrave ‣ Playing Techniques** dialog are all bound to a playback playing technique, which can be chosen from the **Playing technique** menu when editing a

playing technique appearance. You can also edit existing playback playing techniques and define your own by clicking the **Edit** button to the right of the **Playing technique** menu, which shows the following dialog:
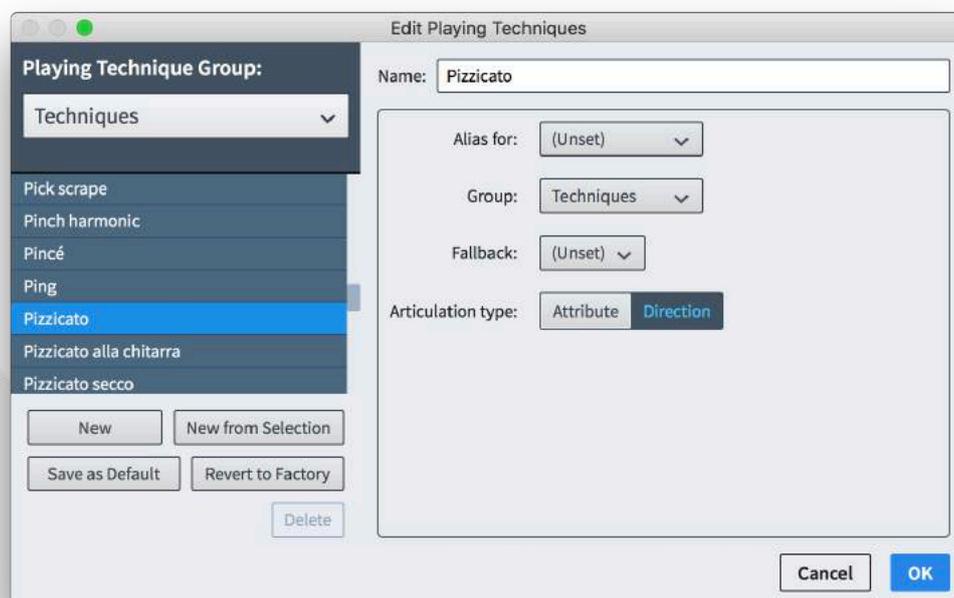
The **Playing Technique Group** menu at the top left-hand corner allows you to choose which group of playback playing techniques to edit. These groups are defined in the VST Expression Maps format and specify the type of behavior that will be produced during playback:

- **Techniques**: playing techniques that affect the overall quality of the sound.
- **Dynamics**: playing techniques that affect the volume or attack of the sound.
- **Lengths**: playing techniques that affect the played duration of notes, and qualities such as *legato* and *détaché*.
- **Ornaments**: playing techniques that include additional or different notes to the written pitch, or changes to the pitch or vibrato of the note.

The **Name** on the right-hand side determines how this playing technique will appear in the lists in the **Engrave ▸ Playing Techniques**, **Play ▸ Expression Maps** and **Play ▸ Percussion Maps** dialogs. The values that can be set for each playback playing technique are as follows:

- **Alias for**: specifies another playback playing technique, with which the present one is equivalent.
- **Group**: specifies which group this playback playing technique appears in.
- **Fallback**: specifies another playback playing technique that can be used if the present playing technique is not available.

- **Articulation type**: specifies the duration over which the playback playing technique takes effect; **Attribute** applies only to the note at the rhythmic position where the playing technique is found (for example, a staccato articulation), while **Direction** applies to all following notes until it is countermanded by another playing technique (for example, a *pizzicato* instruction).

Once you have made the necessary changes, click **OK**. The edited or new playback playing technique will now be available in this project.

Making edited playing techniques available to other projects. All of the edits made in **Engrave ▸ Playing Techniques** apply only to the current project by default. To make a new or edited playing technique available in all future projects, select the playing technique from the list on the left-hand side of the dialog and click **Save as Default**: this new or edited technique will then be reflected in every new project created subsequently.

To revert an edit made to one of the default playing techniques, select the playing technique from the list on the left-hand side of the dialog and click **Revert to Factory**.

Petaluma handwritten music font

A new handwritten music font family called Petaluma is included with Dorico 2. The family consists of three fonts: Petaluma, Petaluma Text, and Petaluma Script. Petaluma is the main font used for all of the musical symbols in the score; Petaluma Text is used for musical symbols drawn in text-like items like metronome marks, chord symbols, dynamics, and so on; Petaluma Script is a script font suitable for use for all other text in the score.

The Petaluma family is loosely based on the hand copying style of a popular series of books containing jazz standards, although it contains a repertoire of more than 1350 musical symbols and 500 letter forms, a far greater variety of symbols than are found in any single set of publications.

To use Petaluma in your project, choose **Engrave ▸ Music Fonts**, choose **Petaluma** from the list of available music fonts, and click **OK**. Doing so will also set Petaluma Script as the default text font for the project: if you want to use another

text font, edit **Default text font style** in **Engrave ▸ Font Styles** and **Default text** in **Engrave ▸ Paragraph Styles**.

Petaluma is a SMuFL-compatible music font, and is licensed under the SIL Open Font License, which means that it can be freely used, modified and distributed, provided any modifications are also released under the OFL. The Reserved Font Name for this family is "Petaluma", and any derivative fonts may not use this name. Finally, neither the Petaluma font family nor any derivative fonts can be sold separately, though they can be distributed as part of a package that is sold commercially.

Support for NotePerformer 3

Dorico 2 also introduces support for NotePerformer 3 from Wallander Instruments. NotePerformer is a virtual instrument specifically designed to produce playback from music notation software.

NotePerformer 3 is not included with Dorico 2, but is available for separate purchase from www.noteperformer.com, from where you can also download a 30-day trial version.

After you have purchased and installed NotePerformer 3, to use it in Dorico, open the project you would like to play back using NotePerformer and choose **Play ▸ Playback Templates**. Choose **NotePerformer** from the list of playback templates, and click **OK**.

If you would like to use NotePerformer for every new project, set **Default playback template** to **NotePerformer** in the **Play** section of the **General** page of Preferences.

Improvements

Accidentals

Microtonal accidentals now play back correctly via HALion Sonic SE or other VST Note Expression-capable VST 3 instruments, both during playback and when auditioned when notes are selected in the music.

Audio export

A progress dialog now appears during audio export on both Windows and Mac, and more accurately depicts the actual progress of the operation. (STEAM-5293)

Barlines

Hymnal-style repeat barlines. In some hymnals, such as *The New English Hymnal*, repeat barlines are drawn in a particular way: the dots are shown in each space, and instead of showing some combination of thin and thick barlines, repeats are indicated by two thin barlines, except at the start of a system, where no barlines are shown, and only the four dots are shown. This convention can now be followed in Dorico by setting **Coincident repeat barline appearance** to **Double thin barlines**, and setting **Repeat dot frequency** to **All spaces in the staff**, on the Barlines page of Engraving Options. (STEAM-7668)

Bar numbers

Ranges of bar numbers on multi-bar rests. Dorico can now display the bar numbers included in a multi-bar rest directly as a range directly below the multi-bar rest. To enable this, activate **Show ranges of bar numbers under multi-bar rests** on the **Bar Numbers** page of Layout Options.

New options on the **Rests** page of Engraving Options allow you to change the default distance below the staff for the range of bar numbers, and specify the separator to use between the first and last bar numbers in the range. (STEAM-7791)

Appearance of bar numbers in different layouts. A new **Paragraph style** option has been added to the **Bar Numbers** page of Layout Options, allowing you to choose which paragraph style should be used for each layout in your project. In new projects, full and custom score layouts use the **Bar numbers (score)** paragraph style, while part layouts use the **Bar numbers (parts)** paragraph styles; in existing projects, both score and part layouts use the **Bar numbers (score)** paragraph style, which is updated to match the appearance of the bar numbers font style used in Dorico 1.x, to ensure that the appearance of bar numbers does not change when these projects are opened in Dorico 2.

By default, both the **Bar numbers (score)** and **Bar numbers (parts)** paragraph styles look the same, but having separate styles makes it easy to change the font,

size or style of bar numbers in, say, the part layouts without affecting the full score. (STEAM-7813)

Chord symbols

Color. Chord symbols now respect the **Color** property in the **Common** group in Properties. (STEAM-6493)

Clefs

Specifying the clef to be used in concert and transposing pitch. Several of Dorico's preset instrument types use a different clef when displaying the music in concert and transposed pitch, and it is now possible for you to specify this directly for each clef in the flow if necessary. In the **Edit ▸ Clef** submenu there are now two new submenus, **Concert Pitch** and **Transposed Pitch**, from which you can choose any of the clefs available from the **Clefs** panel in Write mode. (STEAM-7676)

Dynamics

Erasing the background behind dynamics. When an immediate dynamic with a prefix or suffix or a text-based gradual dynamic crosses a barline, or in rare circumstances when a dynamic must be positioned within the staff, allowing the dynamic to blank out part of the barline or staff lines can make the dynamic considerably easier to read.

A new **Erase background** property has been added to the **Dynamics** group of the Properties panel, which appears only in Engrave mode. When activated, a small area around the dynamic is erased. The default amount of padding around the dynamic is determined by the new **Padding around dynamic with erased background** value on the **Dynamics** page of Engraving Options, and can be overridden by activating the new **Erasure padding** properties, also found in the **Dynamics** group of the Properties panel.

When determining the shape of the area to be padded, Dorico considers the prefix and suffix separately from the bold italic characters that indicate the dynamic level, which means that, for example, when padding a dynamic such as f *risoluto*, the padding will be taller for f than for *risoluto*. The padding by default takes into account any ascenders and descenders in the text, so depending on the exact position at which the dynamic crosses the barline, it may appear that the area of erasure is larger than it need to be; for example, if a dynamic has the suffix *espressivo*, but it crosses the barline at "s" rather than "p", the padding may appear too large below the dynamic. To resolve this, you can override the amount of padding on any of the four sides of the nominal bounding box that surrounds the dynamic, so you could reduce the bottom padding such that it no longer pads outside the descender, and thus make the area of erasure appear symmetrical both above and below the characters.

The padded area of erasure is considered part of the dynamic's bounding shape for the purposes of collision avoidance. (STEAM-7656)

Hairpins with flared ends. A hairpin with a flared open end is used by some composers to indicate a rapid increase or decrease in dynamic level, sometimes colloquially referred to as an "exponential hairpin." To make a hairpin show a flared end, select it and activate the new **Flared end** property; this property is only available for gradual dynamics drawn as hairpins, and only for hairpins drawn with a solid line.

The default size of the flared end can be specified by changing the options in the new **Flared end design** group in the **Gradual Dynamics** section of the **Dynamics** page of Engraving Options. The size of the flared end for an individual hairpin can also be adjusted in Engrave mode by changing the new **Flare size W** (width) and **H** (height) properties. (STEAM-7778)

Filters

New filters for markers, bar repeat regions and rhythm slash regions have been added to the **Edit** ‣ **Filter** menu. The **Filter** menu is now also included in the right-click context menu for easier access.

Fingering

Custom scale factor. A new **Scale** property has been added to the **Fingering** group of the Properties panel, which appears only in Engrave mode, and which allows the scale factor of a fingering to be changed independently from the scale factor of the note to which it applies. (STEAM-7346)

Appearance of cautionary fingerings. It is now possible to override the appearance of individual cautionary fingerings via the new **Cautionary** property in the **Fingering** group of the Properties panel, which appears only when a note (and not a fingering) is selected, and only in Engrave mode. The property can only be activated for a note that has a cautionary fingering: it will otherwise be deactivated automatically. When the property is activated, you can choose between the following values: (STEAM-7345)

- **Default**: uses the appearance for cautionary fingerings defined in Engraving Options.
- **No parentheses**: show the fingering without parentheses.
- **With parentheses**: show the fingering enclosed in parentheses.
- **Suppress**: hide the cautionary fingering altogether.

Circled or underlined fingerings. It is now possible to specify that a fingering should either be enclosed in a circle, or underlined; these adornments are sometimes used for accordion fingering to indicate that a finger is playing in a help

row. To enable this, select a fingering number and activate the new **Decoration** property in the **Fingering** group of the Properties panel, which appears only in Engrave mode. A number of options for the size of the circular enclosure, the thickness of the line, and so on, can be found by disclosing the **Advanced Options** subsection of the **Design** section of the **Fingering** page of Engraving Options. (STEAM-7308)

Galley view

The size and position of the staff labels in the margin and the bar numbers above the top staff has been improved.

HALion Sonic SE (STEAM-7672)

Dorico 2 now includes HALion Sonic SE 3. For an updated Operation Manual for the new version, please visit:

https://steinberg.help/vst-manuals/halion/halion-sonic-se-3/

Mixer

You can now **Ctrl**+click (Windows) or **Command**-click (Mac) on a volume fader or pan control to reset the value back to its default. (STEAM-8046)

Notes

Stemless notes. A new **Hide stem** property has been added to the **Notes and Rests** group of the Properties panel, only appearing in Engrave mode. When activated, the stem of the selected note will not be drawn; any flag will also be hidden. If the selected note is part of a beamed group, then the stem will be hidden, but the beam will continue to be shown as normal, unless every note in the beamed group has the **Hide stem** property set, at which point the beam will also be hidden. (STEAM-7494)

Note input

Scale existing notes into a tuplet. It is now possible to scale a selection of existing notes into one or more tuplets: select the notes that should be made into tuplets, and type ; (semicolon). The tuplet popover opens, with a suggested ratio based on the number and durations of the selected notes already filled in; you can either accept the suggested ratio by hitting **Return**, or type the desired ratio, then hit **Return** to confirm the popover. If the selected notes fit into a single tuplet of the specified ratio, then only one tuplet will be created, but if the specified ratio is insufficient to scale all of the selected notes, further tuplets will be created until all of the selected notes are contained within a tuplet.

It is now possible to specify the beat unit of the tuplet directly into the tuplet popover by appending either the letter that corresponds to a note duration (**2h** = double whole, **w** = whole, **h** = half, **q** = quarter, **e** = eighth, etc.) or the number

that corresponds to the default key command for that duration in note input (**9** = double whole, **8** = whole, **7** = half, **6** = quarter, **5** = eighth, etc.), and then appending one or more full stop (period) characters to specify a dotted beat unit. When using a number to specify the duration, you must separate the beat unit from the number of beats either using a space or a hyphen. By way of example, **5:4q.** means "5 in the time of 4 dotted quarters", while **3:2-2w** means "3 in the time of 2 double whole notes". (STEAM-4129)

Note spacing

Opposing stems. Stem tips are now padded a little such that opposing stems on adjacent staves cannot abut: instead, the staves are forced further apart. (STEAM-7490)

Percussion

Percussion legends. Percussion legends are now positioned inside rehearsal marks and tempo text. (STEAM-7602)

Playback templates (STEAM-7760)

Playback templates describe the rules that Dorico uses to allocate sounds from VST instruments or MIDI devices to instruments in your project. Until now, there has been only a single default playback template, which uses instances of HALion Sonic SE and the included HALion Symphonic Orchestra and HALion Sonic SE library content to play back your projects. It has been possible to override the use of this default playback template by making your own assignment of sounds or VST instruments; thereafter, Dorico would no longer assign sounds on its own, until you instructed it to apply the default playback template.

Default playback templates. The new entry-level Dorico Elements product does not include the HALion Symphonic Orchestra sounds, and hence relies entirely on the HALion Sonic SE library content for default playback. As such, Dorico Pro now provides two default playback templates: **HSSE + HSO (Pro)** and **HSSE only (Elements)**. The former is equivalent to the default playback template in Dorico 1.x; the latter does not use any sounds from HALion Symphonic Orchestra, and is equivalent to the default playback template in Dorico Elements.

To specify which playback template Dorico should use for newly-created projects, a new **Default playback template** option has been added to the **Play** section of the **General** page of Preferences.

To choose a different playback template for the current project, or to apply one of the default playback templates, choose **Play ‣ Playback Template**, and choose the desired playback template from the list.

Adding further playback templates. Dorico will load data for further playback templates from subfolders within folders called **PluginPresetLibraries** and **PlaybackTemplateGenerators** in system-wide or user-specific application data folders, i.e.

- Windows: **%PROGRAMDATA%\Steinberg\Dorico 2** (system-wide) or **%APPDATA%\Steinberg\Dorico 2** (user-specific)
- macOS: **/Library/Application Support/Steinberg/Dorico 2** (system-wide) or **~/Library/Application Support/Steinberg/Dorico 2** (user-specific)

The name of each subfolder within these folders determines the name of the playback template as it will appear in Dorico.

The two files loaded from the named subfolder within **PluginPresetLibraries** are:

- **presets.xml**: a list of all of the presets or patches in a virtual instrument's library, defining for each the name of its corresponding expression map or percussion map.
- **presets_for_instruments.xml**: a list of all of the default instrument types that can be created in Dorico and the preset that should be loaded by default for that instrument.

The named subfolder within **PlaybackTemplateGenerators** must contain a file called **playbacktemplategen.xml**, which specifies the UID of the VST instrument to load, the **PluginPresetLibraries** data to use, and some other parameters (such as the number of MIDI channels provided by the instrument, the number of audio outputs, and default send levels for the effects channel). The subfolder may also optionally contain a **.pluginstate** file that should be loaded into the VST instrument when it is instantiated.

It is not intended that end users should need to create their own playback templates using these data files: this information is provided for the benefit of third party VST instrument and sound library developers.

Playback

Note shortening. The **Play as % of written duration** option on the **Timing** page of Playback Options has been constrained so that longer notes, or music played at a slow tempo, are not excessively shortened. A note will be shortened to the specified amount if it is a quarter note (crotchet) or shorter in duration; if it is longer than a quarter note, then only the final quarter note portion of the note will be shortened. This quarter note portion also takes the prevailing tempo into account, so the maximum amount by which a note can be shortened is the defined percentage of a quarter note at 120 quarters per minute. (STEAM-7984)

Move playhead to selection. A new default key command, **Alt**+**P**, has been added to move the playhead to the position of the first selected item. This is very useful when working with attached video, as it allows you to see which frame corresponds to a specific rhythmic position. (STEAM-5811)

Playing techniques

Hiding playing techniques. It is sometimes desirable to hide playing techniques, for example to avoid unnecessary repetition. To hide a playing technique, select it and activate the new **Hidden** property in the **Playing Techniques** group in Properties. A signpost will appear, which can itself be hidden from view if desired by choosing **View** ‣ **Signposts** ‣ **Playing Techniques**. (STEAM-7646)

Erasing the background behind text-based playing techniques. When a playing technique crosses a barline, it can be useful to erase the background around the playing technique to make it easier to read. To allow this, a new **Erase background** property has been added to the **Playing Techniques** group in the Properties panel, which appears only in Engrave mode. The default amount of padding around the playing technique is determined by the new **Padding around playing technique with erased background** option on the **Playing Techniques** page of Engraving Options, and can be overridden for an individual playing technique by activating the **Erasure padding** properties. (STEAM-7669)

Horizontal offset for text-based techniques. A new option Horizontal offset for text playing techniques has been added to the **Playing Techniques** page of Engraving Options. This is set to zero spaces by default, but if for example you want text-based playing techniques to appear slightly to the left of the note or chord to which they apply, set this new option to a small negative value. (STEAM-7709)

Repeats

Repeats playback. Dorico now has limited support for playback of repeat structures: repeat endings and repeat barlines are now played back. The bar/beat and time display in the Transport reflects the current position in the repeat structure. Audio and MIDI export both also include repeats. (STEAM-3910)

Shift+R popover. A new popover has been added with the default key command **Shift**+**R** for the creation of repeat endings, single- and multi-stem tremolos, rhythmic slash regions and bar repeat regions. The terms that can be input into the popover are as follows: (STEAM-7636)

Single-stem tremolos			
/	\	1	One stroke
//	\\	2	Two strokes
///	\\\	3	Three strokes
////	\\\\	4	Four strokes

z	**zonstem**		Z on stem
0	**clear**		Remove tremolo
Multi-stem tremolos			
/	****	**1**	One stroke
//	****	**2**	Two strokes
///	****	**3**	Three strokes
////	****	**4**	Four strokes
0	**clear**		Remove tremolo
Repeat endings			
end	**ending**		New repeat ending
add			Add segment to existing repeat ending
Rhythmic slash region			
slash			New rhythmic slash region
Bar repeat region			
%	**%1**		Repeat last bar
%2			Repeat last two bars
%4			Repeat last four bars
%1,2			Repeat last bar, group in twos
%1,4			Repeat last bar, group in fours

Tempo

Editing the beat unit of existing tempos. A new **Beat unit** property has been added to the **Tempo** group of the Properties panel, allowing you to edit the beat unit of a selected tempo item: for example, to change the note value shown in a metronome mark from a quarter note (crotchet) to a dotted quarter note, simply select the tempo item, then activate the rhythm dot button shown in the row of buttons. (STEAM-7462)

Tempo range separator. By default, Dorico uses an en dash to separate the lower and upper numbers shown for a tempo range. If you would prefer to use a different separator, you can set the new **Separator for tempo range** option on the **Tempo** page of Engraving Options to **Custom separator**, and then specify exactly which characters should be used. (STEAM-7708)

Metronome marks. The spacing of rhythm dots relative to notes in metronome marks has been improved. (STEAM-7473)

Text

Borders. A new **Border** property has been added to the **Text** group in the Properties panel. When activated, a border will be drawn around the text item, with the default thickness of the border determined by the new **Border thickness** option on the **Text** page of Engraving Options. The thickness of the border can also be overridden for an individual text item by activating the new **Border thickness** property, which appears only in Engrave mode. The default padding between the text and its border is determined by the **Padding around text with erased background** value on the **Text** page of Engraving Options, and can be

overridden by setting the **Erasure padding** properties in the Text group of the Properties panel. (STEAM-7658)

Collision avoidance. A new **Avoid collisions** property has been added to the **Text** group in the Properties panel, allowing you to override the default setting for collision avoidance as specified on the **Text** page of Engraving Options. When the property is unset, text is drawn at its default vertical position above or below the staff, and no other item will avoid colliding with it: you can tweak its position in Engrave mode in the usual manner. (STEAM-7670)

Furthermore, a new **Minimum distance from protruding items** option has been added to the **Text** page of Engraving Options, allowing you to specify how much padding should be left between a text item and another item (such as a note or slur) that protrudes from the staff; previously, the text item would have been allowed to touch the protruding item. (STEAM-7696)

Tokens for page numbers. The following new tokens have been added in Dorico 2, and can be entered in text frames:

- **{@pageCount@}** – the total number of pages in the layout
- **{@flowPage@}** – the number of this page within the current flow, counting from 1 for the first page of the flow (i.e. not the displayed page number)
- **{@flowPageCount@}** – the total number of pages in the current flow
- **{@flow*n*FirstPage@}** – the displayed page number of the page on which flow *n* begins; insert the number of the flow as shown in the Flows panel in Setup mode in place of *n*, e.g. **{@flow5FirstPage@}**.

The **{@flowPage@}** and **{@flowPageCount@}** tokens only consider the flow that is active at the beginning of the first system of the music frame closest to the top left-hand corner of the page on which the tokens are used. (STEAM-7755, STEAM-7766)

Paragraph Styles dialog. The default selection in the **Engrave ▸ Paragraph Styles** dialog is initialized from the first selected text item, if any. (STEAM-7972)

User interface

Visual refresh. The look and feel of the Dorico project window has been subtly updated, reducing the width and height of panels by a small amount where possible to ensure that the maximum amount of space is available for the music area. The Hub window has also been redesigned: more space is devoted to the list of recent projects, and the lists of blog posts and videos, of which only one was previously visible at once, are now both shown in order to make it easier to see when new content is available.

Multiple selections in the Players and Layouts panels. When you need to perform an operation on multiple selected players or layouts, for example to assign multiple players to a flow, when clicking on a checkbox to include or exclude the player or layout, you can then hold **Shift** and click on another checkbox, which will include or exclude all players or layouts in the range between the first and second click. (STEAM-7287)

Multiple selections in the Edit Percussion Kit dialog. A number of operations in the **Edit Percussion Kit** dialog can now operate on multiple selected instruments in the dialog, including changing voice direction and index, setting the size of gaps between instruments on adjacent grid lines, removing or deleting instruments from the kit, and changing the order of instruments in the kit. (STEAM-7289)

Undo and redo. **Edit ‣ Undo** and **Redo** now bring the selection into view if necessary. A new preference, **Follow selection on undo and redo**, has been added to the **Editing** section of the **General** page of Preferences, which can be switched off to restore the behavior to that of Dorico 1.2.10. (STEAM-7564, STEAM-8026)

Updating from Dorico 1.x

When you first run Dorico Pro 2, your existing user data and preferences from Dorico 1.x are automatically migrated to the new update. This includes: key commands; preferences; the list of recent projects; saved default layout, notation, engraving, playback and note input options; and any saved default tonality systems, paragraph styles, and character styles. Furthermore, any VST 2.x plug-ins that you added to the **vst2whitelist.txt** file for Dorico 1.x will automatically be added to the whitelist for Dorico 2. (STEAM-7664)

Issues resolved

ID #	Component	Issue
STEAM-4241 STEAM-4294	*Accidentals*	Changing the pitch of a grace note before a barline no longer incorrectly considers the accidental state of the following bar.
STEAM-5539	*Accidentals*	When using the Second Viennese School accidental system, grace notes are now considered correctly when determining whether or not to repeat an accidental.
STEAM-7472	*Accidentals*	Under some rare circumstances, it was not possible to change the pitch of a note that had been respelled in a part layout; this problem has now been resolved.
STEAM-7910	*Accidentals*	The enharmonic spelling of rising chromatic passages in minor keys has been improved.
STEAM-7905	*Audio export*	A progress dialog now appears during audio export on both Windows and Mac, and accurately reflects the actual progress through the operation.
STEAM-7047	*Barlines*	Dashed barlines to show subdivisions in additive time signatures no longer fail to appear if the bar is split across a break.
STEAM-7077	*Barlines*	Creating a time signature change at a dashed subdivision no longer causes previous dashed subdivisions to appear in the wrong place.
STEAM-7134	*Barlines*	Repeat barlines no longer draw incorrectly at the end of a system if they coincide with a key change to a key with no accidentals.
STEAM-7301	*Barlines*	Inserting a barline at the same rhythmic position as an existing dashed subdivision in an aggregate time signature now works correctly.
STEAM-4846	*Beaming*	Dragging the end of a stemlet now works correctly when the stemlet belongs to an implicit rest.
STEAM-7562	*Chord symbols*	Toggling the **Show as mode** property on and back off again for a diminished half/whole scale chord symbol no longer results in the chord symbol showing as a different chord.
STEAM-7504	*Collision avoidance*	Mysterious problems where deleting an item can cause an item in another bar to move vertically in galley view have been resolved.
STEAM-7716	*Collision avoidance*	The extent of items is now always correctly considered for collision avoidance when editing an item that is graphically wider than its rhythmic position and duration.
STEAM-7018	*Cues*	If a cue abuts the end of a flow, a redundant restorative clef change is no longer created.
STEAM-7029	*Cues*	Cues are now automatically removed if they are invalid under more circumstances.
STEAM-7505	*Cues*	Edits that affect where instrument changes occur no longer sometimes cause system objects to disappear if a cue is located within the range affected by the edit.
STEAM-5064	*Dynamics*	**Edit ▸ Reset Appearance** and **Reset Position** now work correctly on dynamics.
STEAM-6385	*Dynamics*	If a dynamic has a color set via Properties, it now shows correctly in the blue linked color rather than the orange selection color when another dynamic in the group is selected.
STEAM-6651	*Dynamics*	A series of gradual dynamics interspersed with immediate dynamics and shown as a single hairpin no longer draws incorrectly in galley view.

ID #	Component	Issue
STEAM-7328	*Dynamics*	Under rare circumstances, edits that affect the vertical placement of gradual dynamics would not be propagated to all music frame chains; this has now been resolved.
STEAM-7742	*Dynamics*	Adding an immediate dynamic to the end of an existing group of dynamics now correctly extends the length of the flow if required.
STEAM-7782	*Dynamics*	Hairpins that extend precisely to the end of the flow now draw correctly in galley view.
STEAM-7257	*Fingering*	The **Indicate shift to next note** and **Shift direction** properties for string fingering shift indications are now correctly reset when pasting notes onto non-string instruments.
STEAM-7384	*Fingering*	Deferred fingering substitution now works correctly on notes and chords that are tied between different voices.
STEAM-7409	*Fingering*	Under some circumstances, fingering substitutions could fail to draw as slurs, despite the options or properties; this problem has been resolved.
STEAM-7217	*Flows*	**Duplicate Flow** and **Split Flow** now correctly copy the flow info for the original flow into the new one.
STEAM-7697	*Graphics export*	Imported graphics are now exported at a much higher resolution when exporting PDF files.
STEAM-7767	*Graphics export*	It is no longer possible to change focus to another project in the middle of a graphics export operation, which could cause graphics from the wrong project to be exported.
STEAM-7848	*Holds and pauses*	In some circumstances, a fermata on a bar rest could be incorrectly positioned at the start of the bar, rather than over the bar rest; this has now been resolved.
STEAM-4826	*Key signatures*	Adding a clef change at the same location as a key change now always correctly updates the cancellation naturals, if shown.
STEAM-7618	*Key signatures*	Changing the current tonality system in the **Tonality System** section of the **Key Signatures** panel now always takes effect correctly.
STEAM-7628	*Key signatures*	Creating a key signature from the **Used in this flow** section now always uses the tonality system selected in the **Tonality System** section of the **Key Signatures** panel.
STEAM-7796	*Key signatures*	The tonality system shown in the panel in Write mode is now always used when creating a key signature.
STEAM-7374	*Localization*	Changing the keyboard language on the **Key Commands** page of Preferences now works correctly when there are unsaved changes to the key commands in the current language.
STEAM-7563	*Localization*	The default key command for **Write ‣ Respell ‣ Respell Using Note Above** now works correctly in the German-language version (Windows only).
STEAM-7361	*Lyrics*	Using the left or right arrow key to navigate off the first or last lyric no longer incorrectly loses any edit made to that lyric.
STEAM-6243	*Multi-bar rests*	Multi-bar rests are now broken by both the starts and ends of repeat ending segments.
STEAM-7065	*Multi-bar rests*	The presence of a system break no longer sometimes causes the width of a multi-bar rest at the end of the previous system to change.

ID #	Component	Issue
STEAM-7423	*MusicXML export*	Exporting with **Export layouts as separate files** switched off now correctly finds and uses the most appropriate full score layout for the selected flow.
STEAM-6118	*MusicXML import*	Imported MusicXML and MIDI files now respect the **Default text font family** preference.
STEAM-7391	*MusicXML import*	A problem that could cause Dorico to crash when importing MusicXML files from PDFtoMusic Pro has been resolved.
STEAM-7957	*Navigation*	Moving the selection between non-note items with the arrow keys no longer sometimes causes the selection to jump unexpectedly to the start of the previous system in page view or backwards several bars in galley view.
STEAM-7487	*Notation options*	The **Overlapping notes in the same voice in a kit or grid presentation** option on the **Percussion** page of Notation Options now works correctly for chords split by a barline.
STEAM-5499	*Note input*	Inputting the first note in a new voice between rhythmic grid positions now works correctly.
STEAM-5555	*Note input*	Under some circumstances, extending the duration of a note that ends within a tuplet in Insert mode could cause other later notes in the same voice to be deleted; this problem has now been resolved.
STEAM-6546	*Note input*	Changing the voice of a selection of notes no longer sometimes causes the notes to be moved to a different rhythmic position if items already exist in the destination voice.
STEAM-7411	*Note input*	Pasting a selection beginning with implicit rests immediately followed by a tuplet no longer causes some non-note items to be offset incorrectly.
STEAM-7411	*Note input*	Pasting a selection that begins with implicit rests followed by a tuplet no longer results in non-note items being pasted into incorrect rhythmic positions.
STEAM-7425	*Note input*	Pasting a selection including tuplets into an existing passage with identical tuplets with chord mode active no longer sometimes results in some of the material being offset.
STEAM-7449	*Note input*	Pasting material of the same duration as an existing tuplet will now remove the tuplet, instead of pasting the material into the tuplet.
STEAM-7561	*Note input*	Undoing the creation of a tuplet no longer sometimes fails if a non-note item is located within the range of the added tuplet.
STEAM-7609	*Note input*	Making a selection on a percussion kit using the five-line staff presentation type now correctly uses the extent of the selection from all components, rather than only the first.
STEAM-7657	*Note input*	Copy and paste for instruments within a percussion kit using the single-line instruments presentation type now works more reliably.
STEAM-7748	*Note input*	Dorico no longer hangs when attempting to shorten with **Shift**+**Alt**+left arrow a note or rest of the minimum valid duration (1024th note).
STEAM-7880	*Note input*	Moving the caret after priming a new voice no longer causes a voice with the wrong direction to be created.
STEAM-7939	*Note input*	When multiple items are selected, hitting **Return** now starts note input, rather than attempting to edit the first selected item.
STEAM-7490	*Notes*	Stems in opposing directions on adjacent staves are padded by a small amount to prevent them from becoming so close they may appear to touch.

ID #	Component	Issue
STEAM-7508	*Notes*	Rhythm dots on stemless notes– i.e. a whole note (semibreve) or longer – in down-stem voices are no longer incorrectly snapped to spaces in the wrong direction.
STEAM-7436	*Ornaments*	Glissandos between invalid note positions (for example, two notes of the same pitch tied together) are now correctly automatically removed.
STEAM-7568	*Pedal lines*	Making a selection on the lower or left-hand staff of a piano instrument and then pasting the pedal line now works correctly.
STEAM-7684	*Pedal lines*	Pedal lines that span multiple systems no longer sometimes disappear when making unrelated edits.
STEAM-7487	*Percussion*	The notation option to remove overlaps for percussion kits did not always work correctly for a chord split across a barline; this problem has now been resolved.
STEAM-7568	*Piano pedaling*	Pasting piano pedal lines now works correctly when selecting something in the left-hand staff of the piano.
STEAM-7516	*Players*	It is no longer incorrectly possible to use the **Shift+I** key command to add an additional instrument to a section player.
STEAM-7290	*Print mode*	The chosen page range for printing is correctly preserved when leaving and re-entering Print mode.
STEAM-7323	*Print mode*	Choosing a page range that does not include the first page of the layout, then switching back to **All pages** now updates the print preview correctly.
STEAM-7764	*Print mode*	Cancelling a print or graphics export operation no longer sometimes causes a crash
STEAM-7199	*Repeat endings*	It is now possible to create a repeat ending when an explicit bar rest is selected.
STEAM-6760	*Rests*	Setting a property on an implicit rest no longer causes all other selected items to be removed from the selection.
STEAM-7012	*Rests*	The **Bar rest design in long time signatures** option on the **Rests** page of Notation Options now works correctly when adding bars to the end of the flow.
STEAM-7545	*Rests*	The presence of local time signatures on one staff no longer prevents multi-bar rests from appearing in the other staff if they line up with the bars of the global time signature.
STEAM-5501	*Setup mode*	Expanding a group in the Players panel will no longer cause the cards for the players within the group to be truncated incorrectly when the group is partially scrolled out of view.
STEAM-5817	*Tempo*	Tempo items with dx/dy offsets are no longer sometimes positioned inconsistently in relation to other items.
STEAM-7473	*Tempo*	The spacing of rhythm dots in metronome marks has been improved, particularly for durations shorter than a quarter note (crotchet).
STEAM-7706	*Tempo*	When the font style for gradual tempo items is set to absolute rather than staff-relative size, the dashed or dotted continuation line is now correctly drawn at absolute size too.
STEAM-7723	*Tempo*	Gradual tempo items with no drawn continuation line now draw a handle and attachment line at the right-hand end in Write mode.

ID #	Component	Issue
STEAM-6777	*Text*	System-attached text can now be edited correctly if the top staff of the system is hidden because it is empty.
STEAM-7536	*Text*	Right-aligned text is no longer sometimes slightly truncated within a text frame.
STEAM-7578	*Ties*	When considering ties for the purposes of collision avoidance, the inside of the tie was incorrectly being considered instead of the outside. This problem has now been resolved.
STEAM-7075	*Time signatures*	Under rare circumstances, notes and rests could be grouped incorrectly in irregular time signatures within an aggregate time signature; this problem has been resolved.
STEAM-7587	*Time signatures*	Undoing the addition of a local time signature to an individual instrument now always correctly reinstates the previous global time signature.
STEAM-7561	*Tuplets*	Undoing the creation of a tuplet where a non-note item's position overlaps with the new tuplet will no longer go wrong.
STEAM-3656	*User interface*	Drop-down menus in dialogs and panels no longer sometimes appear on the wrong display when running Dorico with multiple displays (Windows only).
STEAM-7510	*User interface*	Focus no longer gets lost after clicking the buttons in the note input toolbox, resulting in key commands not working until you click in the score (Windows only).
STEAM-7637	*User interface*	It is now possible to assign key commands to both **File ‣ Import ‣ Flows** and **File ‣ Export ‣ Flows**.
STEAM-7647	*User interface*	The various annotations that appear at the top and bottom of the caret are now correctly scaled relative to the current staff size.
STEAM-7663	*User interface*	Maximizing the document window while a modeless dialog was open could in rare circumstances lead to Dorico hanging; this has now been resolved (Mac only).

Known issues and solutions

Frequently asked questions

Answers to frequently asked questions about Dorico can be found online in the Dorico forum.

Knowledge base

For the latest information about issues and solutions you may encounter when running Dorico, please consult the Knowledge Base.

Entering the eLicenser Activation Code (Mac only)

When you first run Dorico and are prompted to enter your Activation Code, you may find that after you have successfully activated your Soft-eLicenser, you must quit and restart Dorico for the application to detect that it is fully licensed.

Key commands to transpose notes by an octave (Windows only)

The Intel Graphics Adaptor drivers used by many Windows computers define a default key command to flip the screen by 90, 180 and 270 degrees via a shortcut **Ctrl**+**Alt**+up/down/left/right arrows.

Ctrl+**Alt**+up/down option conflicts with the key commands in Dorico note input for transposing notes by an octave.

For information about how to disable the default Intel Graphics Adaptor key command, consult the Knowledge Base.