DORICO

Version history
Known issues & solutions

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Dorico 3.0.10

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Improvements

Guitar tablature

It is now possible to use the digits on the numeric keypad (if your keyboard has one) to specify fret numbers when inputting and editing tablature.

Harp pedaling

A new quick filter for harp pedal changes has been added: choose **Edit** ▸ **Filter** ▸ **Harp Pedal Changes** to select or deselect all harp pedal changes within the current selection.

Issues resolved

ID #	Component	Issue
	Audio engine	EastWest Play, UVIWorkstation and other VST 3 plug-ins that use PACE Anti-Piracy copy protection are no longer blacklisted by Dorico (Mac only).
	Audio export	Under rare circumstances, Dorico could crash when starting audio export. This problem has now been fixed.
	Bar numbers	Nudging bar numbers in Engrave mode with **Alt**+arrow keys now updates the score display immediately.
	Chord diagrams	The line thickness for O and X symbols for open and unplayed strings at the top of a chord diagram now scales correctly when chord diagrams are drawn at very small sizes.
STEAM-9777	*Chord diagrams*	Chord diagrams no longer appear larger than expected when enabling them in projects created in earlier versions of Dorico.
STEAM-9784	*Comments*	Comments no longer cause multi-bar rests to split.
STEAM-9671	*Condensing*	Tied notes and glissandos were often spaced more narrowly on condensed staves than on regular staves; this problem has now been fixed.
STEAM-9704	*Condensing*	Under rare circumstances, the presence of an octave line with an (impossible) negative duration could cause slurs not to appear in condensed staves; this problem has been fixed.
STEAM-9749	*Condensing*	It is now possible to edit or hide player labels that appear both above and below the staff at the same position without affecting the label on the opposite side of the staff.
STEAM-9786	*Condensing*	When player numbers are stacked vertically in staff labels for condensed staves, they are now stacked in ascending order rather than in the order they are assigned to voices.
STEAM-9861	*Condensing*	Music following an instrument change on a system where condensed staves are present is no longer incorrectly narrowly-spaced.

ID #	Component	Issue
STEAM-9815	*Flows*	When switching off **Export layouts as separate files** in the **Export Flows** dialog, Dorico resets the selection of layouts to be exported, ensuring that the full score will be exported.
	Font styles	Changing the font, size or style in **Engrave ▸ Font Styles** now always saves correctly, even if an item using that font style does not yet exist in the project.
STEAM-9603	*Guitar bends*	The position of the control points for guitar bends no longer jumps unexpectedly when releasing the mouse at the end of a drag operation in Engrave mode.
STEAM-9603	*Guitar bends*	If tied notes are set to be hidden in tablature, the target note for a release will still appear if **Fret number appearance for release** is set for it to show.
STEAM-9758	*Guitar bends*	The position of the endpoints for guitar bends relative to the stem side of beamed notes has been improved.
STEAM-9760	*Guitar bends*	The appearance of multiple simultaneous pre-bends in tablature has been improved.
STEAM-9807	*Guitar bends*	Guitar bends that cross a system break now draw correctly on both sides of the break.
STEAM-9700	*Guitar tablature*	Notes with pre-bends are now assigned to the correct string by default.
STEAM-9759	*Harmonics*	Natural harmonics on grace notes no longer incorrectly extend to the following rhythmic note.
STEAM-9764	*Harmonics*	Changing the harmonic type from artificial to natural no longer sometimes results in two fret numbers being incorrectly shown in tablature.
	Harp pedaling	When a harp pedal change is hidden in the current layout, the pedals are now listed in the signpost in the correct order, i.e. D, C, B, E, F, G, A.
STEAM-9891	*Harp pedaling*	A partial pedal change consisting only of pedals on the left-hand side of the harp no longer incorrectly contains a line break between the first and subsequent pedals.
	Licensing	A problem with the Soft-eLicenser that causes some **File ▸ Export** options to be missing on some Macs has been resolved (Mac only).
	Localization	Tunings for fretted instruments are now translated in non-English versions of Dorico.
	Lyrics	Various fixes to the **Edit Line of Lyrics** dialog to improve handling for individual lyrics including spaces, and accented characters.
STEAM-9778	*Lyrics*	Nudging lyrics vertically in Engrave mode no longer moves by a different amount depending on how many lyrics of which kind are selected.
	Navigation	Navigating between system-attached items, such as rehearsal marks, in systems with multiple staves using the arrow keys in Write mode now works more reliably.
	Note input	Under rare circumstances, Dorico could crash when using undo during step-time input. This problem has now been fixed.
	Note input	Explicit rests are now always created when Force Duration is enabled during note input; otherwise, Dorico simply selects the appropriate existing implicit rest.

ID #	Component	Issue
	Note input	Double-clicking on a string in tablature to start note input now always shows the caret on the appropriate string.
	Note input	When confirming a popover, the focus is now explicitly returned to the score view, so that navigating around the music works as expected.
STEAM-9639	*Note input*	Advancing the caret with **Space** now correctly advances by the same amount when it spans multiple staves.
STEAM-9799	*Note input*	If the caret is already expanded across all staves, typing the up or down arrow key now resets the caret to span just one staff and navigates it between staves as normal.
STEAM-9812	*Note input*	The feature to retrospectively improve the enharmonic spelling of notes input via a MIDI keyboard was inadvertently disabled in Dorico 3; it now works correctly once more.
STEAM-9843	*Note input*	When inputting notes with multiple windows on the same project open, the score view will no longer try to follow the caret in inactive windows.
STEAM-9846	*Note input*	Starting note input from a selected barline or other system-attached item now shows the correct caret if the top instrument in the system is shown as tablature.
STEAM-9781	*Percussion*	When inputting multiple notes onto a percussion kit using a MIDI keyboard, playing techniques are now correctly created for the appropriate instrument.
STEAM-9798	*Percussion*	When moving through different instruments in the kit with the up and down arrow keys, the last chosen playing technique is remembered for each instrument during the input session.
STEAM-9803	*Percussion*	It is now possible to input rests onto a percussion kit using a MIDI keyboard if rest mode is active.
	Performance	Having the system track visible could result in occasional delays while moving the mouse around the score; this problem has now been resolved.
STEAM-9882	*Playback templates*	Clicking **Reset to Default** in **Play ▸ Expression Maps** and **Play ▸ Percussion Maps** now resets back to the state defined in the current playback template.
STEAM-9793	*Play mode*	Long names for VST instruments that cause them to appear elided in the **VST Instruments** panel no longer cause Dorico to use excessive CPU or, in rare circumstances, freeze.
STEAM-9810 STEAM-9814	*Play mode*	It is now possible to change the port and channel correctly in the **Chords** track in Play mode.
STEAM-9813	*Play mode*	Edits made to the velocity of grace notes are now correctly respected in playback.
STEAM-9822	*Play mode*	If a project had been saved with a VST plug-in window open, and that plug-in is no longer available when the project is reopened, Dorico could hang. This has now been resolved.
STEAM-9830	*Play mode*	When enabling independent voice routing in Play mode, Dorico now always ensures that additional sounds are loaded for extra voices.
STEAM-9831	*Play mode*	The **Duplicate** button in the action bar at the bottom of the VST Instruments panel in Play mode now works as expected.
STEAM-9833	*Play mode*	Under rare circumstances, Dorico could hang when starting playback. This problem has now been fixed.

ID #	Component	Issue
STEAM-9870	*Play mode*	When independent voice routing is enabled, the display of automation lanes for each voice could get confused; this problem has now been fixed.
STEAM-9885	*Play mode*	When the **Sends** section is visible in the Mixer, it was not possible to start playback; this problem has now been fixed.
STEAM-7799	*Playing techniques*	The **Horizontal offset for text playing techniques** option on the **Playing Techniques** page of Engraving Options works correctly once more.
STEAM-9341	*Playing techniques*	Grouping a playing technique that shows a *sim.* continuation with a later playing technique no longer results in the *sim.* marking remaining in addition to the correct transition line.
STEAM-9654	*Playing techniques*	If a playing technique continuing over a system break would be sufficiently wide that it would result in the line being unable to draw, the playing technique will not appear.
STEAM-9709	*Playing techniques*	Under some circumstances, playing techniques drawn as repeated glyphs would not update correctly when editing or undoing edits to their notes. This has now been fixed.
STEAM-9776	*Playing techniques*	Edits to factory playing techniques made in previous versions of Dorico are no longer unexpectedly lost when opening that project in Dorico 3 for the first time.
STEAM-9804	*Playing techniques*	Deleting a bar or otherwise removing time from the middle of an ongoing playing technique now always correctly updates the duration of the playing technique.
STEAM-9884	*Playing techniques*	When ungrouping one or more selected playing techniques, Dorico no longer crashes if the selection also includes an implicit rest.
	Project files	Under rare circumstances, Dorico could crash when opening a project created in an earlier version. This problem has now been fixed.
	Project files	Dorico no longer crashes when opening projects created in an earlier version in which instruments that have no set standard or advanced playable ranges are used.
STEAM-9869	*Repeat markers*	A repeat marker, such as a segno, positioned at the start of the flow now appears as expected in galley view.
	Setup mode	It is now possible to drag an instrument from another player and drop it onto a section player in the Players panel, provided that section player is currently empty-handed.
	Staff labels	Clicking **Reset to Default** in the **Edit Names** dialog now also resets the state of the **Show transposition** option to its default value.
STEAM-9789	*Tablature*	If both staff notation and tablature are shown, lyrics now appear only on the regular notation staff.
	Text	Dorico no longer incorrectly reports that certain fonts are missing when opening projects created in earlier versions of the application.
	Text	When creating a new paragraph style, the font chosen by default will now reflect the choice for **Default text font family** in Preferences.
STEAM-5536	*Text*	Entering text into a frame from a master page with non-default properties (e.g. vertical justification, border) no longer causes those properties to be lost.
STEAM-9829	*Text*	When overriding the default choice of font for an existing font, paragraph or character style, if the weight requested by the original choice is not available, choose the Regular weight.

ID #	Component	Issue
STEAM-9792	*Tokens*	The resolved values for date and time tokens now follow the operating system's regional and language settings (Windows only).
STEAM-9799	*Tokens*	All SMuFL codepoints are now correctly resolved from tokens.
STEAM-9387	*Tuplets*	It is once again possible to flip a tuplet number/bracket using **Edit ▸ Flip**.
	User interface	When migrating user settings from a previous installed version of Dorico, the migrated preferences are now used on the first run of the application, instead of needing a restart.
	User interface	When a modal child dialog opened via the Preferences dialog is open, it is no longer possible to close the Preferences dialog until the child dialog has been closed.
	User interface	The padding of the buttons in the **Accidentals** section of the **Key Signatures** panel in Write mode has been adjusted so that up to five columns of accidentals can appear.
	User interface	The **Length** field in the **Expression Maps** dialog now correctly saves and restores the value entered there, but it still currently has no effect on playback.
	User interface	The font menu in the **Paragraph Styles** and **Character Styles** dialogs once again appears as as a single scrollable list rather than as a cascading menu that fills the whole screen.
	User interface	When macOS Dark appearance is active, the background of the editor for accidentals, chord symbols, music symbols etc. is now white rather than black.
	User interface	When choosing a graphic to use as a music symbol or playing technique, the preview of the graphic is now constrained to the size of the panel.
	User interface	If you have changed project info values in **Project Info** but not yet applied them, copying info from the project to a flow will correctly use the updated values, not the old saved ones.
	User interface	It is now possible to set custom key commands for the pencil, line, erase, and percussion tools in Play mode on the **Key Commands** page of Preferences.
	User interface	When clicking e.g. **Save as Default**, the **Close** button in the options dialog will be disabled until the operation completes, to avoid a crash when closing while it is ongoing.
	User interface	The selection in the list of flows in the **Project Info** dialog is no longer unexpectedly changed when clicking **Apply**.
STEAM-9722	*User interface*	Attachment lines now always correctly appear for selected items; previously they could disappear if they were exactly axis-aligned.
STEAM-9775	*User interface*	The Pages and Master Pages panels in Engrave mode have been reworked so that scrolling them with a trackpad or mouse wheel is now much smoother.
STEAM-9780	*User interface*	Hitting **Return** in the **Project Info** dialog no longer causes a new flow to be added to the list of flows; instead, **Return** (like **Tab**) now advances through the text fields on the right.
STEAM-9827	*User interface*	Under some circumstances, Dorico could crash when showing a menu over a button in the Mixer or in the track headers in Play mode; these buttons have been reworked to solve this.
STEAM-9863	*User interface*	Changing the page margins for multiple selected layouts in Layout Options from **Same** to **Different** no longer results in a crash.

ID #	Component	Issue
STEAM-9867	*User interface*	Opening a project from Dorico Pro last saved in Engrave mode in Dorico Elements no longer shows incorrect properties in the Properties panel.
STEAM-9048	*Video*	Closing the Video window by clicking its close button no longer causes the video to fail to display when the window is subsequently re-shown.

Dorico 3.0

2 September 2019

New features

Condensing

When producing performance materials for a large ensemble, one of the challenges is producing a practical full score for the conductor. If each player's music is written on its own staff, there might be dozens of staves that all need to fit into the limited vertical space provided by the paper size; even using a large-format paper size like A3 or Tabloid (11" x 17"), staves might end up as small as 3.5mm (0.14"), or around half the size of the staff on a typical instrumental part, which is too small to read comfortably. Even when hiding staves belonging to players who are not playing for a particular system, balancing legibility with the physical constraints of the paper can be very difficult.

The usual solution to this is to produce a condensed conductor's score, in which music for multiple players is shown on a smaller number of staves, achieved by assigning music for two or more players to a single staff. This is a complex editorial process: to ensure that it is always clear to the conductor how the music is split between the players sharing the staff, it should be written as clearly and unambiguously as possible. Among the tools experienced editors use to achieve this are changing the staff labels in the left-hand margin, adding numeric labels to individual entries to make clear which of the players assigned to the staff is playing, and, most crucially, ensuring that the music itself is written as clearly as possible.

If the music is unison, i.e. the pitches and rhythms for all players assigned to the staff are identical, then it should be written as a single voice, appropriately labelled. If the music is in rhythmic unison, i.e. the rhythms for all players assigned to the staff are identical, but the pitches are not, then it should if possible be written as a single voice with two or more noteheads on the same stem, provided the notes for player 2 are always lower than player 1; if a note in player 2's music is higher than a note in player 1's music, then the music must be written on two stems. If the music is neither in melodic or rhythmic unison, then each player's music must be given its own stem, and consideration given to whether the music crosses in pitch; if the down-stem voice often crosses above the up-stem voice, it may be clearer simply to write the music for these players on separate staves.

These considerations become more complex when more than two players are involved: the number of possible combinations for the disposition of music for, say, four horns into a smaller number of staves is immediately far greater than the

possible combinations for just, say, two flutes. And, of course, since the texture, density and character of music changes over the course of a composition, sometimes changing very rapidly, the ideal solution for one passage of music will not be ideal for the next, so the way in which the music is distributed between staves will change over time.

These and other considerations mean that the task of producing a condensed conductor's score is, to reiterate, a complex and time-consuming one, leaving aside the not insignificant issue that typically music notation software offers little to no assistance with any part of the process. There is an entirely separate dimension of complexity associated with realising that editorial process of determining the ideal result in the software used to produce the performance materials.

It is possible to produce the instrumental parts from a full score, and increasingly it is possible for even complex parts to be produced using linked or dynamic parts where the instrumental parts are part of the same project as the full score, meaning that revisions to one are automatically reflected in the other. However, as soon as there is a requirement to produce a condensed conductor's score, it is impractical to produce both the full score and instrumental parts from the same project: the music must exist in at least two unlinked locations in the project: once in the staff that is the source of the instrumental part, and at least once more in other staves that are shown in the score. The music must be manually copied and pasted between or edited separately in these locations, reducing or entirely eliminating the benefits of having the full score and instrumental parts in the same project. The logistical challenges of managing a set of additional staves that can accommodate all of the required combinations for, say, four horns to be condensed throughout a large work are non-trivial.

In this age of ever-shorter deadlines and ever-tighter budgets, the net result of the time-consuming nature both of the editorial decision-making that goes into producing a condensed score and of the practical challenges of realising those editorial decisions in music notation software is that it is increasingly rare for new works to be produced with condensed conductor's scores. The consequence is that music is often performed from impractical, hard-to-read scores, an obstacle to the ideal connection between conductor and ensemble that must be overcome to produce a successful performance.

The new condensing features in Dorico 3 aim to provide solutions to these problems, both in terms of providing assistance in the editorial decision-making process required to determine the clearest way for music to be distributed between staves, and in terms of reducing the practical and logistical issues involved in producing both a condensed score and individual parts from the same project.

The approach. Other commercial software has taken faltering steps towards providing partial solutions to these problems, but always from the point of view of producing individual instrumental parts from a score in which the user has produced the condensed result manually. The software has to make a determination about how the condensed music is intended to be distributed to the individual players, and as such it places significant constraints on how the music can be written in the score in terms of the use of voices, and when and where the use of those voices can change, and how the music can be displayed. The user must adapt not only their workflow, but also accept restrictions on how the music can be notated, in order to work within the limitations of the software's ability to infer the correct result from the manually condensed music.

Dorico comes at the problem from the other direction entirely: you as the user take the responsibility for writing the music for each individual player exactly as you would like it to appear, and Dorico takes the responsibility for determining the ideal condensed result. This is the only practical approach, since only if the music is written completely unambiguously and separately for each player can appropriate decisions be taken about how that music can be condensed. It also has the great benefit of providing the greatest possible reduction in the time and effort required to produce a conductor's score, since there is no duplication of effort: you simply produce the parts you want the players to see, and leave the vast majority of the work in producing the conductor's score to the software. The result is a profound increase in the practicality of producing a condensed conductor's score.

No software has attempted to solve these problems before in this way or to this level of sophistication, and there is an almost infinite complexity and variation in the way music can be notated. Many years of research and development work have gone into the condensing features that are introduced here in Dorico 3, but they represent only the starting point, and we not only have concrete plans for further development in these areas, but also look forward to the feedback from composers, arrangers and editors who will use these features to find ways that we can further enrich them to provide greater power and flexibility in future versions.

The basics. Using Dorico's condensing features is incredibly simple. The basic steps are:

- Write the music in the usual way, without thinking about the condensed score.
- Enable condensing in the full score once the music is written.
- Check the condensed score in page view, changing system formatting where necessary to change the disposition of music between staves.
- Make any necessary graphical tweaks in Engrave mode.

In outline, that's all there is to it. But the next several pages will explore all of this in more detail.

What can condense. When you enable condensing, Dorico automatically determines which instruments in the layout can be condensed, assigning them to groups. A group normally consists of solo players adjacent in the score (i.e. next to each other vertically in the layout) who play similar instruments, for example Flute 1 and Flute 2, or Trumpet 1, Trumpet 2 and Trumpet 3. A group can contain a maximum of 16 players.

Music will only be condensed if a single voice is active on the source instrument: if there are multiple voices active on the source instrument, it is impossible to produce an unambiguous condensed result.

Solo players can be condensed, while section players currently cannot, with the exception of section players with vocal instruments (such as SATB voices in a four-part choir). If a solo player holds multiple instruments, only the first instrument held by the player will be considered for condensing: when any instrument other than the first is active, that player will not be condensed along with the other instruments in its group.

Only instruments that normally have a single staff can currently be condensed, so it is not possible to condense, for example, two harps or two pianos. Solo players with unpitched percussion instruments are also excluded from condensing; it is already possible to show their music in a more condensed form in the full score than their individual parts by choosing to show, say, a grid or five-line staff in the score.

Section players are typically used for string sections and choirs. It would be unusual for, say, Violin I and Violin II to be condensed together as a single group, but when writing complex *divisi* passages, it would be useful for *divisi* writing to appear on a smaller number of staves in the full score layout than in the instrumental parts. This kind of condensing is not currently possible, but is planned for future releases.

When writing for large wind and brass ensembles, you may typically choose to use section players where the part will be played by a large number of, say, clarinets. If you want to use condensing with these ensembles, you should use solo players instead for the time being. To move music belonging to a section player to a solo player, create a new empty-handed solo player in the Players panel in Setup mode, expand the card for the existing section player to reveal the instrument held by the player, and drag and drop it onto the new solo player. You can then remove the now empty-handed section player.

Typically, only alike instruments are condensed together, but there are some common exceptions: for example, in orchestral writing, trombone and tuba often share a staff; in choral writing, sopranos and altos often share a staff, likewise tenors and basses. Similarly, instruments are typically condensed in ascending numeric order, so when you have more than two players, they might be paired up as 1+2 and 3+4, but with certain instruments, typically horns, they may be paired in an interlocking fashion, e.g. 1+3 and 2+4. Instruments that are generically similar but have different transpositions, for example Trumpets in B♭ and Trumpets in C, will likewise not be grouped automatically.

Dorico does not automatically produce these kinds of groups, but you can specify them yourself as custom condensing groups. You can also specify which instruments should not be condensed. These settings are made on the **Players** page of Layout Options, in the new **Condensing** section.
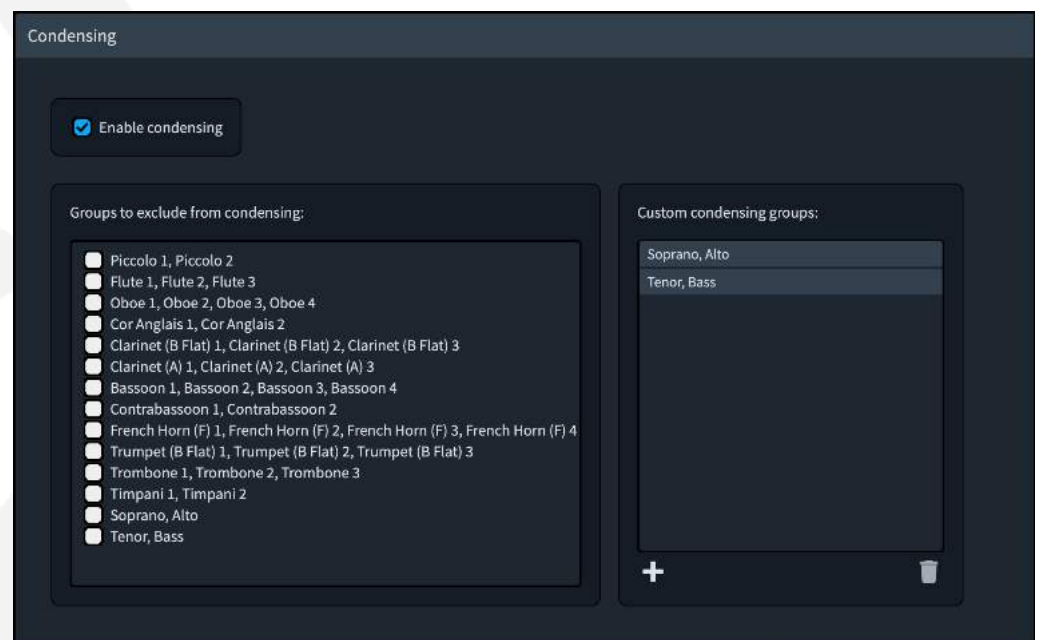
Groups to exclude from condensing lists all of the automatically-generated and custom condensing groups for the current layout. To prevent a group from condensing throughout the layout, activate its checkbox in this list.

Custom condensing groups lists any custom condensing groups you have created yourself. To add a new custom group, click the **New Group** button, which opens a simple dialog in which all eligible players are listed: select the instruments you want to be grouped, and click **OK**. Any players you add to a custom condensing group will, of course, be removed from any automatic groups to which Dorico had previously assigned them.

You can also specify whether condensing is enabled for this layout by activating or deactivating **Enable condensing**. You can also enable or disable condensing by

choosing **Edit ▸ Condensing**; if necessary you can also assign a key command to this function on the **Key Commands** page of Preferences.

Editing condensed music. When condensing is enabled, the music on condensed staves in page view is completely non-editable; like the music in cues, it cannot even be selected in Write mode. To help visually distinguish condensed music from non-condensed music, you can activate **View ▸ Note and Rest Colors ▸ Condensed Music**, which shows the notes and rests on condensed staves in grey.

Condensing is not shown in galley view, so switching to galley view will show each player on its own staff, allowing you to input and edit their music as normal. You may even find it helpful to have two views on the same layout in the same window, by choosing **Window ▸ Horizontal Split**, and showing one view in page view and the other in galley view.

Condensed music can be selected in Engrave mode, however, in order to allow you to make graphical tweaks to the placement of items like slurs, stems, beams, and so on. Properties set on condensed music are typically not reflected in the source music, so you can for example adjust the shape, placement and position of slurs without affecting the source music; however, if you change the line style of the slur from solid to dashed, say, that change will be reflected in the source music.

Note input for condensing. If you habitually prefer to input music in short score – for example, you prefer to input the music for two flutes on a single staff as dyads and then explode it later on – this workflow can still be used, but you should of course explode the music before you enable condensing, as Dorico will not attempt to infer which music is intended to belong to each player: you must enter the music for each player individually. However, Dorico 3 also introduces some new tools to make inputting music for multiple players easier: you can now extend the caret to multiple staves by typing **Shift**+↑ or **Shift**+↓, and any music you input is either distributed between or duplicated on all selected staves. For more information, see **Note input** on page 64.

How music is condensed. Many factors are considered when Dorico is determining how the music should be condensed. This includes determining chunks of music to consider together, and the constraints of how the music can be notated.

Because the texture, density and character of music changes over the course of a piece, Dorico examines the music for each player in chunks, using an algorithm that crudely approximates the way music is divided into phrases. In simple terms, this means that Dorico will consider any run of notes without any intervening rests as a phrase, though phrases will be extended by any ongoing item that straddles a rest; slurs, ties, gradual dynamics, playing techniques, glissando lines, etc. will all cause

a phrase to be extended until the end position of all such ongoing items. These phrases are the indivisible units of condensing: Dorico will not change the way the music for a player is condensed within a phrase, though the way these phrases can be combined together can change, since phrases belonging to the different players in the group will often not start and stop at the same time.

Once Dorico has determined the phrases for each player, it can then examine the possible combinations of these phrases to determine the optimal condensed result. Each condensed staff can show a maximum of two voices, one up-stem and one down-stem, though each stem may include music from multiple players.

From most to least condensed, the possible results are:

- *Unison*: the pitches and rhythms for all players are the same within the phrase, producing a single stem with a single notehead.
- *Shared stem*: the rhythms for all players are the same within the phrase, but the pitches are not; but the pitches differ in such a way that the notes belonging to the player or players with higher numbers (i.e. Flute 2 has a higher number than Flute 1) are lower than the notes belonging to the player or players with lower numbers, producing a single stem with multiple noteheads, one for each player.
- *Shared staff*: neither the rhythms nor the pitches for all players are the same, but the music belonging to the player or players that will be written using the down-stem voice does not cross the music in the up-stem voice in pitch sufficiently often to make the music difficult to read.
- *Not condensed:* the rhythms are not the same, and the pitches of the music belonging to the players in the group cross too often to even be written on the same staff; this means that no condensation is possible, and the music will be written on separate staves.

In order to produce a unison or shared stem result, the starts of phrases for the music to be written on the same stem must be at the same position. When music is written in two voices on the same staff, if the starts of phrases between the two voices align, and provided there are no other notations present that would make the result ambiguous, then notes in the down-stem voice that are the same duration as those in the up-stem voice and are lower in pitch can be *amalgamated* into the up-stem voice. This allows Dorico to use only one stem for the notes of the phrase where there is rhythmic unison, only breaking into the down-stem voice where the rhythms diverge. Dorico will not amalgamate notes within the span of a beam or a tuplet unless all of the notes in that span can be amalgamated.

It must be understood that it is not only the pitches and rhythms of the notes themselves that are considered when determining the optimal condensed result: all

other notations are considered too, including articulations, dynamics, slurs, playing techniques, ornaments, and so on. For example, if the notes belonging to two players are unison and their phrases align, but they happen to be written with different slurs or dynamics, or with slurs of the same duration but conflicting properties, then the maximum condensation possible for that passage is for those two players to share a staff, with each player's music written in its own voice, and with its own slurs or dynamics written on the appropriate side of the staff.

One exception to this is clefs and octave lines: Dorico will allow instruments in the same group but written with different clefs, or music where one player has an octave line and another does not, to be condensed. The clefs and octave lines belonging to the first player in the up-stem voice will appear on the condensed staff, while clefs and octave lines from other players in the group will be omitted completely. The music for the other players will therefore be written on the condensed staff according to the clefs and octave lines belonging to that player.

Music written for otherwise compatible instruments in different time or key signatures will not be condensed.

Music is condensed system by system, moving from left to right. Because the condensed music may require different rhythmic spacing than the uncondensed source music – for example, when single notes a second apart on individual staves are written on a condensed staff, they will take up considerably more space because the resulting dyad includes a back-note – enabling condensing will often cause the casting off for the layout to change. Dorico will not change the condensation in the middle of a system, so a player cannot appear on one staff at the start of the system and then move to another staff midway through the system.

However, condensation will often change from one system to the next, even if a phrase is ongoing; for example, it is possible for Trumpets 1 and 2 to be written in the up-stem voice on one system, with Trumpet 3 written in the down-stem voice on the same staff, but on the next system, the next phrase in Trumpet 3 crosses above the music of Trumpet 1 and 2, preventing Trumpet 3 from sharing a staff any longer.

Beyond a handful of options (described below), you cannot currently influence the condensed result directly, though this is planned for future releases. For the time being, you can influence the result by inserting system breaks, because Dorico will respect any forced system layout and will then produce the optimal condensed result in can within the constraints of that fixed casting off.

Notation Options. The new **Condensing** page of Notation Options provides some options that govern key aspects of Dorico's decision-making for condensing, as follows:

- **Pitch crossing approach** specifies whether Dorico should consider pitches in the down-stem voice crossing pitches in the up-stem voice as a factor in determining whether the players can share a staff; by default, **Limit pitch crossing** is chosen, which means that Dorico will not allow more pitch crossing within a range of aligned phrases than the value specified in **Maximum number of pitch crosses in region**, which is set to 1 by default. If you prefer to always allow players to share the same staff even when pitches cross, set **Pitch crossing approach** to **Allow unlimited pitch crossing**.
- **Amalgamation approach** specifies whether Dorico should be allowed to amalgamate notes from the down-stem voice into the up-stem voice. When the phrases in the up-stem and down-stem voices align but there is sufficient rhythmic divergence that it is not possible for the players to share a single stem, Dorico will by default amalgamate down-stem notes of the same duration as notes in the up-stem voice into the up-stem voice so that two voices are used only in those positions where the rhythms diverge. If you would prefer Dorico to consistently use two voices in these situations, choose **Prevent amalgamation**.
- **Condensing for inactive players** determines how players in the condensing group who are resting should be considered. There are three possible approaches:
  - **Pair with active player** will allow the inactive player to be assigned as the up-stem or down-stem voice on a condensed staff, with the other voice occupied by an active player, and the inactive player will show rests as appropriate.
  - **Include in staff label** will allow the inactive player to be silently assigned to the condensed staff, so that both the up-stem and down-stem voices are available for active players. The inactive player appears only in the staff label in the left margin.
  - **Do not condense** excludes inactive players from condensing for the affected region, so that the inactive player appears on its own non-condensed staff. This option is useful if you choose to hide empty staves.

Currently, Dorico will not condense multiple inactive players together into a single stem, so if you choose **Pair with active player** and have a condensing group containing multiple resting players, each inactive player will occupy a stem, meaning that a maximum of two inactive players can be assigned to a staff. Further options for this will be added in a future release.

These options all apply to all condensing groups for the whole flow. In a future release it will be possible to change these options for each condensing group individually at any system break.

Labelling condensed music. In order to make it as clear as possible which players are playing at any given moment, Dorico both updates the staff labels in the left margin from system to system and adds *player labels* at points along the system to specify which players are included on the staff.

At each point where the condensation changes, for example when a new phrase begins, Dorico will add labels above and, if appropriate, below the staff. If a single player is playing, a single number for that player is shown; if all players assigned to the staff are playing, a "to *n* players" label is shown, in the form e.g. **a 3**; if multiple players share a stem but one or more players is assigned to the other stem or is not playing, then the label will say e.g. **1.2 a 2**, making clear which players are currently assigned to the stem.

Options for player labels are found on the new **Condensing** page of Engraving Options. These allow you to change the default horizontal and vertical positioning relative to the staff, as well as to specify whether the numbers corresponding to players should be separated and appended with full stops (periods).

You can nudge or drag player labels in Engrave mode and edit their text by activating the **Custom text** property in the new **Condensation Labels** group in the Properties panel. You can also hide an individual label by activating the **Hide** property in the same group. The final property is **Line break**, which can make player labels more horizontally compact by inserting a line break – for example, in a label like **1.2 a 2**, the line break is inserted before **a 2**; in a label like **1.2**, the line break is inserted between the two numbers.

To change the font, style or size of player labels, edit the **Condensation Labels** paragraph style in **Engrave ▸ Paragraph Styles**.

Staff labels. In addition to player labels, two new options have been added to the **Staff Labels** page of Engraving Options that dictate how Dorico labels condensed staves. **Player numbers for condensed players** allows you to choose between showing the player numbers in a column to the right of the instrument name (**Stack vertically**) or to append them in a row after the instrument name (**Stack horizontally**).

If you choose **Stack vertically**, the exact arrangement of the player numbers will be determined by the adjacent option, **When stacking player numbers for condensed players vertically**: choose **Consider stem allocation** if you want Dorico to put the player numbers corresponding to the up- and down-stem voices on the staff in the same row (e.g. 1.2 instead of 1 above 2), or choose **Ignore stem allocation** if you always want a single column of player numbers, without considering which players are allocated to the up- or down-stem voices on that system.

When you have multiple condensed staves for similar instruments, the **Staff labels for identical adjacent solo instruments** option also takes effect; choose **Group between staves** to center e.g. "Flutes" between two condensed staves, which are themselves numbered as "1.2" and "3".

Handling of different items. Beyond notes, Dorico has to determine how other notations are handled when condensing music. Generally speaking, notations need to match – in position, duration, and appearance – across all players in the group if a unison or shared stem condensation is to be produced. If they do not match, it is typically still possible for the players to share a stave, but they must be notated in separate voices. A couple of notations, however, prevent condensing altogether. In summary:

- *Arpeggio signs.* These will only allow a shared stem to be produced in the case of unison chords in all source players.
- *Articulations.* Articulations must match on all source players to allow a unison or shared stem condensation; if any articulation does not match, the maximum possible condensation is a shared staff.
- *Bar repeats.* Bar repeat regions will allow condensation provided their position, duration and repeat bar count type match for all source players. If they do not match, the players cannot share a staff.
- *Beams.* Beams are considered when determining whether unison or shared stem condensation is possible; if the rhythms are identical but the beam groups differ, then the maximum possible condensation is a shared staff.
- *Chord symbol regions.* Chord symbol regions from the first player in the up-stem voice will appear on the condensed staff; regions belonging to any other player will be omitted. Chord symbol regions do not limit the maximum possible condensation result.
- *Clefs.* Clefs from the first player in the up-stem voice will appear on the condensed staff; clefs belonging to any other player will be omitted. Clefs do not limit the maximum possible condensation result.
- *Cues.* Cues do not appear on condensed staves, and do not limit the maximum possible condensation result.
- *Dynamics.* Dynamics are considered when determining whether unison or shared stem condensation is possible; if the dynamics differ, then the maximum possible condensation is a shared staff. The placement of dynamics is overridden on condensed staves with two voices, so that they can be more clearly associated with the up-stem or down-stem voice. Dynamics are considered group by group, so if you have two otherwise identical groups in which only one dynamic differs, each dynamic group will appear on either side of the staff.

- *Glissando lines.* Glissando lines are considered when determining whether unison or shared stem condensation is possible. If the glissando lines differ, the maximum possible condensation is a shared staff.

- *Grace notes.* Grace notes are subject to the same rules as rhythmic notes, and are considered when determining whether unison or shared stem condensation of the associated rhythmic notes is possible. If the grace notes differ, the maximum possible condensation is a shared staff.

- *Guitar bends.* Guitar bends are considered when determining whether unison or shared stem condensation is possible. If the bends differ, the maximum possible condensation is a shared staff.

- *Holds and pauses.* Fermatas and caesuras are system-attached items and do not limit the maximum possible condensation result. The position of breath marks on all source staves must match; if they differ, the players cannot condense.

- *Jazz articulations.* Jazz articulations are considered when determining whether unison or shared stem condensation is possible. If the jazz articulations differ, the maximum possible condensation is a shared staff.

- *Key signatures.* If key signatures differ between the source players, they cannot condense.

- *Lyrics.* Lyrics are considered when determining whether unison or shared stem condensation is possible. If they differ, the maximum possible condensation is a shared staff. The current approach to handling lyrics is simplistic, and does not account for lyrics whose effective duration is identical but whose actual duration is different (for example, a pair of passing notes versus a single note), resulting in lyrics being shown both above and below the staff more often than is ideal.

- *Octave lines.* Staff-attached octave lines from the first player in the up-stem voice will appear on the condensed staff; octave lines belonging to any other player will be omitted. Voice-specific octave lines, by contrast, will prevent condensation altogether.

- *Ornaments and trills.* Ornaments and trills are considered when determining whether unison or shared stem condensation is possible. For trills, both the duration and the effective interval is considered. If the ornaments differ, the maximum possible condensation is a shared staff.

- *Rhythm slash regions.* Rhythm slash regions cannot currently be condensed, and any player with a slash region cannot be condensed for that duration.

- *Slurs.* Slurs are considered when determining whether unison or shared stem condensation is possible. If the position, duration or line style of slurs differ, the maximum possible condensation is a shared staff. If, on the other hand, the slurs belonging to all players are identical, then Dorico will amalgamate the

slurs so that only a single set of slurs appears on one side of the condensed staff.

- *Text.* Text items are considered when determining whether unison or shared stem condensation is possible. If the placement or content of text items differ, the maximum possible condensation is a shared staff.
- *Ties.* Ties between voices – including ties from grace notes to rhythmic notes – cannot currently be condensed. They do not prevent condensation, but they will not appear on the condensed staff. More generally, ties within a note in a single voice are considered when determining whether unison or shared stem condensation is possible: if a note's duration has been overridden by Force Duration, then it will only be allowed to share a stem if all notes on the stem have been overridden in the same way. If the ties or rhythmic offsets differ, the maximum possible condensation is a shared staff. *Laissez vibrer* ties will appear in condensed staves, and if they differ between the source players, the maximum possible condensation is a shared staff.
- *Time signatures.* If time signatures differ between the source players, they cannot condense.
- *Tuplets.* Tuplets are considered when determining whether unison or shared stem condensation is possible. Not only the effective duration but also the unit and ratio must match. If tuplets differ, the maximum possible condensation is a shared staff.

System-attached items – tempos, rehearsal marks, markers, chord symbols, and repeat endings – all appear on condensed staves if appropriate, as determined by the options chosen on the **Staves and Systems** page of Layout Options.

Because instruments with multiple staves are not condensed, pedal lines and harp pedal changes are not shown on condensed staves. Similarly, where an instrument has an extra staff or an *ossia*, those passages cannot be condensed.

Troubleshooting. If you do not get the kind of condensation result you expect, there are a few things to check:

- Check that you are not unnecessarily using more voices than necessary on the source staves: use **View ▸ Note and Rest Colors ▸ Voice Colors** to check that all of the material is in the same voice. If it is not, select all the material and choose **Edit ▸ Voice ▸ Change Voice ▸ Up-stem Voice 1** to move all of the music into a single voice.
- Check that the items you are trying to condense do not have conflicting properties. Notes with forced stem directions, forced durations, forced accidentals and so on will all limit the maximum possible condensation. Try selecting the affected music and choosing **Edit ▸ Reset Appearance**.

If these tips don't help, then please visit the forum and provide a minimal example of the problem you're having, and the development team will be pleased to help.

Future plans. Further improvements and expanded capabilities for condensing will be added in future releases. We welcome your feedback on the condensing feature in its current state, and invite you to visit the forum at www.dorico.com/forum to discuss the feature with the development team and your fellow users.

Guitar tablature

Dorico now provides tablature for guitar and other fretted instruments, including support for a number of idiomatic notations specific to guitar, custom string tunings, different conventions for representing rhythms on tab, and so on. One unique advantage that Dorico provides in this area over other notation software is that the music can be shown on a regular notation staff and in tablature at the same time, and an edit in one representation then automatically affects the other.

Choosing the tuning. In order to be able to display tablature, Dorico needs to know how many strings the instrument has, the open pitch of each string, the number of frets, the starting fret (if a particular string starts beyond the nut, as the fifth string does on the banjo, for example), and the arrangement of frets (whether they proceed chromatically or diatonically, for example).

When you assign a fretted instrument to a player in Dorico, if that instrument has several different commonly-used tunings, you will see the tunings listed in the right-hand column in the instrument picker, allowing you to choose the desired tuning at the outset.

Any fretted instruments in projects created in earlier versions of Dorico will automatically have the standard or most common set of strings and tunings associated with them when the project is first opened in Dorico 3.

The quickest way to change the strings and tunings is to change that instrument to another instrument with the desired tuning. To change instrument, follow the procedure described in the Dorico Operation Manual here.

Editing strings and tunings. A wide variety of tunings for the commonly-used guitars and other fretted instruments are included by default, but if you need to create your own tuning or modify an existing tuning, a dialog to do this is provided.

In the Players panel in Setup mode, expand the card belonging to the player holding the fretted instrument whose tuning you want to change. Hover over the label corresponding to the fretted instrument such that the chevron **>** appears to indicate the presence of a context menu, then click to show the menu, and choose **Edit Strings and Tuning**. This dialog appears:

The strings belonging to the instrument are shown in a simple graphical representation, with the open pitch of the string followed by the number of frets. Click any of the strings to enable the row of editing controls below the strings:

- **Open pitch** specifies the open pitch of the string: type this using the note name and octave (middle C = C4), using **#** for sharp or **b** for flat if necessary.
- **No. of frets** specifies the number of frets for this string; this can be set independently for each string if necessary.
- **Starting fret** specifies the number of the first fret on this string. In the picture above, the fifth string of the banjo is chosen, which starts at the fifth fret.
- The **Tune Up Half-Step** and **Tune Down Half-Step** buttons provide a quick way to tune the selected string up or down.
- Activate **Irregular fret spacing** if the fret arrangement for this string is not chromatic. Some instruments, such as dulcimer, have fretboards corresponding to a particular scale, so the distance between the frets may be either a half-step or a whole-step. Specify the fret spacing by typing **1** for a half-step or **2** for a whole-step in a comma-separated list.

The **Select All** button allows you to quickly select all strings so that you can, for example, set the number of frets for all strings at once, or tune all of the strings up or down by a half-step.

The action bar at the bottom of the dialog allows you to add, reorder or delete strings. Clicking **Reset to Default** will return the strings and tunings to the factory default settings for this instrument.

Finally, you can click **Export Tuning** to export the current strings and tunings to a **.doricotuning** file that you can subsequently import to another instrument (either in the same project or in another project) by clicking **Import Tuning**.

Showing tablature. To show tablature for a fretted instrument, go to the new **Fretted Instruments** section of the **Players** page of Layout Options. Each player holding at least one fretted instrument will appear there, with four options to determine how the music for the fretted instrument appears:

- **Notation**, the default value, shows the music only on a regular notation staff.
- **Tab** shows the music only in tablature, and includes time signatures, stems, flags, beams, and so on, to show the rhythm of the music.
- **Notation and Tab** shows the music on a regular notation staff and in tablature below the notation staff; the tablature does not notate the rhythm, since the notation staff is included.
- **Tab (no rhythms)** shows the music only in tablature, but does not include time signatures, stems, beams, flags, and so on; this choice is only practical for music that is rhythmically very simple.

Automatic string allocation. In order to display music in tablature, the string on which a note is to be played must be specified. Music that is entered in tablature directly naturally includes this information, but music that is entered in notation does not by default include any explicit string allocation, so Dorico performs an automatic allocation of notes to strings when no specific string has been set. Dorico will do its best to avoid allocating two notes to the string, unless they are unison notes in opposing voices.

When two notes are allocated to the same string, they are shown positioned next to each other in tablature, colored green, so you can select either or both notes and make your own string allocation. Any impossible combinations – where two or more pitches cannot be played because the only possible locations on the instrument are on the same string – will be shown in purple. Normally in this situation you have no option but to delete one of these notes or otherwise change its pitch.

Changing the string for a note. To move a note to the string above or below, select it and type **N** to move it to the string above, or **M** to move it to the string below. Dorico will not move a note to a string on which it cannot be played. You can also specify the string for a note by activating the **String** property in the **Notes and Rests** group of the Properties panel, which identifies the strings both by their index and their fundamental pitch (so, for example, the bottom string on a guitar in standard tuning is identified as **6 (E2)**, while the top string is **1 (E4)**).

Notes out of range. If a note is too low (i.e. below the nut on the bottom string) or too high (i.e. above the last fret on the top string) to be notated in tablature, it will be drawn off the bottom or top of the tablature as a question mark. You should change or delete such notes, or possibly consider altering the instrument's tuning.

Note input for tab. To input music directly in tablature, select a note or other item in the tablature and type **Shift+N** or **Return** to show the caret and start note input; you can also use the up and down arrow keys to navigate the caret from a notation staff into the tablature.

Notes are input by specifying the fret number to be played, which is done using the number keys, used for specifying the note duration when inputting onto a notation staff. When inputting a note beyond the tenth fret, simply type the two digits in quick succession: to change (say) a note you have just input on the first fret to the second, wait a moment before you type **2**, and the existing note will instead be replaced.

You can also play a note on your MIDI keyboard or type a letter name **A**–**G** when inputting tablature, and Dorico will input the note on the current string; when using alphabetic input, the octave closest to the nut will be chosen.

Note durations can be specified either by clicking the desired duration in the left-hand notes panel, or using the key commands **=** to choose the next longest note duration, or **−** to choose the next shortest note duration; when inputting onto a notation staff, these keys are used to specify sharp and flat accidentals.

Chord input is effectively permanently enabled in tablature, so the caret does not move on its own: use up and down arrow to move the caret to the string above or below, and use left and right to move the caret to the previous or next grid position.

Rhythms in tablature. When tablature is shown with no notation staff, it is usually helpful to notate the rhythms in tablature. This entails including items that are usually excluded from tablature, such as time signatures, and adorning notes and chords with stems, flags and beams, and optionally adding further adornments to disambiguate half notes (minims) and whole notes (semibreves) from quarter notes (crotchets). The relevant options are found on the new **Tablature** page of Engraving Options.

Taking each of the sections of this page in turn:

- **Stems**: Different publishers and publications have different conventions for the notation of rhythms. For example, publications from Hal Leonard that show rhythms typically have stems pointing upwards by default, while the popular magazine *Guitar World* typically shows stems pointing downwards by default. (If two voices are active, stems will instead follow the direction dictated by their voice.) Likewise, stems in Hal Leonard publications typically only reach as far as the top string, so they are effectively shown only above or below the tablature, while stems in *Guitar World* reach into the staff, stopping shortly before the note on the lowest string. All of these conventions are easily accommodated using the options here.

- **Rhythm Dots**: Again, in Hal Leonard publications that show rhythms in tablature, rhythm dots are typically positioned outside the staff, at the inner end of the stem (choose **Outside staff**), while in *Guitar World* they are

typically positioned inside the staff, similar to their placement on a notation staff (choose **Next to notes**).

- **Enclosures**: *Guitar World* has popularized the use of elliptical enclosures around notes and chords that are longer than a quarter note (crotchet), since otherwise it is impossible to tell a quarter note and a half note (minim) apart. *Guitar World* uses elliptical enclosures (choose **Ellipse**), and Dorico also includes the more space-efficient option of using rectangles with rounded corners (choose **Rounded rectangle**). Other publications do not tend to differentiate between note values in this way, so by default no enclosure is used (choose **None**).

- **Ties**: *Guitar World* typically shows ties as dashed curves, while Hal Leonard publications tend to show them as solid curves, and either appearance is available by setting the **Tie appearance** option. There are also a number of different conventions about the extent to which ties are shown at all in tablature, and how tied notes after the initial attack are represented in tab; Dorico provides a comprehensive set of possibilities under the **Tied notes in tablature** option.

Beams in tablature are always horizontal and have no slant, except for on grace notes. They follow the stem length options described above, with as many beam lines allowed inside the default stem distance from the outermost string as long as the inner beam line is not less than half a space from the outermost string. The stems are then lengthened by multiples of the beam's thickness plus the gap between beam lines, so that additional beams appear above those for longer notes and everything lines up horizontally.

Dead notes. Notes that are muffled, muted or deadened are known by a number of different names among guitarists, but in Dorico we have settled on the term *dead note* to cover this playing technique. Dead notes are shown using cross noteheads on a notation staff, and using an **X** in tablature. You can make any note show as a dead note by activating the new **Dead note** property in the **Notes and Rests** group in the Properties panel.

Harmonics. Dorico now includes comprehensive support for the notation of harmonics, both for fretted instruments and more generally. See **Harmonics** on page 51 for more details.

Properties for tablature. Many properties can be set independently for an item when shown on a regular notation staff and when shown in tablature, including almost all positioning and placement properties.

Appearance of tablature numbers. To change the font, style or size of tablature numbers, edit **Tablature Numbers Font** in **Engrave ▸ Font Styles**. By default, the

numbers use the Lato Regular font at 8pt. The whole Lato font family (which is licensed under the SIL Open Font License) is now installed along with Dorico.

Some publishers prefer fret numbers in tablature to have an erased background while others prefer the horizontal string lines to pass right through the numbers. By default, fret numbers have an erased background: to change this, deactivate **Erase background around fret numbers** on the **Tablature** page of Engraving Options.

Scale factor for tablature. By default, the lines corresponding to each string are one and a half spaces apart, but if you want to change the spacing of the strings, you can do this on the **Staves** page of Engraving Options by adjusting **Scale factor between staff lines in tablature**.

Vertical spacing for tablature. A new option **Notation staff to tablature** on the **Vertical Spacing** page of Layout Options allows you to determine the default distance between the notation staff and its associated tablature below.

Clefs in tablature. Some publishers prefer that the tab clef appears only at the start of the first system in tablature. To achieve this, set the new option **Show tab clef on** to **First System Only** on the **Clefs** page of Engraving Options.

Guitar bends and pre-bends

One of the most idiomatic techniques in music for electric guitar is the bend and its relations, such as the pre-bend. Guitarists perform a bend by pushing the string out of its normal alignment, tightening it and thus increasing its pitch. The characteristic sliding sound of a bend is made by playing the note and then bending the string as it sounds. A pre-bend, on the other hand, involves bending the string before the note is played. The counterpart of the bend is the release, where the string is gradually allowed to return to its natural position.
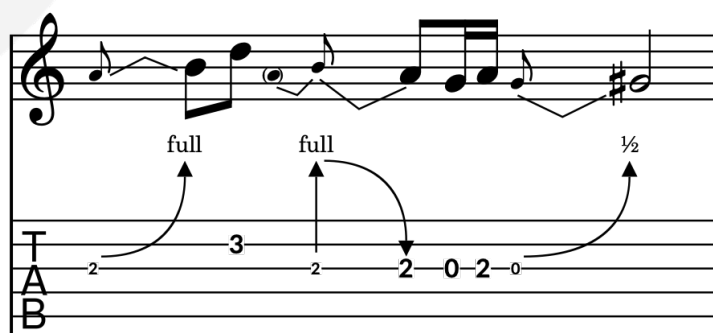
Bends, pre-bends and releases are all notated in the same way on staff notation: an angled line joins the start and end noteheads, positioned in a similar fashion to a slur, but using an angled line instead of a tapered curve. In tablature, however, bends, pre-bends and releases are notated differently, providing a more direct graphical representation of what happens to the string, with an upwards-pointing

curved arrow representing the bend and a downwards-pointing curved arrow representing the release; pre-bends are shown using a vertical arrow pointing straight upwards.

Creating a bend or release. Bends and releases always join two notes. You can create a bend or release either by first selecting both the start and end note, or by selecting only the start note: provided there is another abutting note in the same voice immediately following the one you select, Dorico can automatically determine the end note. Bends are found in the **Glissandi** section of the Ornaments panel in Write mode, and can be created by clicking the angled line button there. Alternatively, you can type **bend** into the **Shift+O** popover to create a bend or release from the selected note; you don't need to do anything different to create a release because Dorico automatically determines whether to create a release based on whether the end note is higher or lower than the start note.

Dorico will create an angled line between the start and end note on the notation staff, and in tablature the end note of a bend will be hidden, with an upward-pointing curved arrow labelled with a fraction for an interval or **full** for a whole step (tone) shown above its arrowhead. A release is shown with a downward-pointing curved arrow, arriving at the fret number for the end note.

If your workflow involves creating many bends, you may find it more efficient to assign a key command to the new **Create Guitar Bend** command in the **Note Input** category of the **Key Commands** page of Preferences.

Bend with hold. If a bend should be held for the duration of a tied note, sometimes a horizontal hold line is shown in tablature to show that the string should not yet be released. To do this, activate the **Show hold** property in the **Guitar Bends** group in the Properties panel. You can choose whether the hold should draw using a solid or dashed line on the **Guitar Bends** page of Engraving Options.

Bend direction. On a notation staff, bends, releases and pre-bends are automatically positioned on the notehead side when only one voice is active; if multiple voices are active, they are instead automatically flipped to the stem side. You can also flip any selected bend or release by selecting it and typing **F** or choosing **Edit ▸ Flip**. Pre-bends cannot be flipped with **F**, but you can activate the **Guitar pre-bend direction** property to override their calculated direction.

Creating a pre-bend. A pre-bend is created by activating the **Pre-bend interval** property in the new **Guitar Pre-bends** group in the Properties panel, and specifying the amount by which you want the string to be pre-bent. Defining a pre-bend interval causes a parenthesized auxiliary note with a bend to appear on the notation staff, while in tablature a pre-bend is shown by way of a grace-note sized fret number with a vertical arrow showing the pre-bend interval above as a fraction,

or as the word **full** for a whole step (tone). If for any reason you want to hide the accidental shown on a pre-bend if necessary, activate the **Accidental** property in the **Guitar Pre-bends** group and set it to **Hide**.

Engrave mode. You can edit the shape of every bend, release and pre-bend on both notation staves and in tablature in Engrave mode. On a notation staff, you can click and drag any of the three points of the angled bend line, or you can nudge any point with **Alt**+arrow keys; you can also type **Tab** to cycle through the three handles.

In tablature, a bend also shows three handles: one for each end of the arrow, and a third control point that controls the shape of the curve. As with the notation staff, you can use the mouse or **Alt**+arrow keys to adjust any of the points, and type **Tab** to cycle between them.

Bend intervals in tablature. If you would prefer to see **1** instead of **full** for a whole step (tone) bend, or if you would prefer to see **1/2** instead of ½ for a half-step (semitone) bend, change the relevant options on the new **Guitar Bends** page of Engraving Options.

Release appearance. Different conventions exist for how the note at the end of a release should appear in tablature, since it is not actively struck by the player: some publications show the fret number as normal, some show the fret number in parentheses, and still others hide the fret number altogether. Set **Fret number appearance for release** to the desired appearance in the **Design** section of the **Guitar Bends** page of Engraving Options.

Bends and rhythmic spacing. Dorico will automatically make room for bends on both notation staves and in tablature, and there are separate options for the minimum length of bends in each representation on the **Guitar Bends** page of Engraving Options. In some circumstances you may find that a bend arrow is a little narrower than you would like in tablature-only layouts, in which case you can either adjust the width of the bend arrow in Engrave mode, or manually increase the note spacing using the note spacing tools in Engrave mode.

Combining bends with rhythms in tablature. If you want to show rhythms in tablature and also write bends, you are recommended to change **Default stem direction** to **Down** on the **Tablature** page of Engraving Options, so stems and beams and bends naturally appear on opposite sides.

Playback of bends. There is no automatic playback of bends, releases or pre-bends in this release of Dorico, but this is under consideration for future versions of the software.

Guitar chord diagrams

Chord diagrams allow you to communicate a specific voicing for a chord to a guitarist in a compact and efficient way. In Dorico, chord diagrams are part of chord symbols and can be shown below a chord symbol on any player, and can reflect the tuning and string arrangement of any fretted instrument.
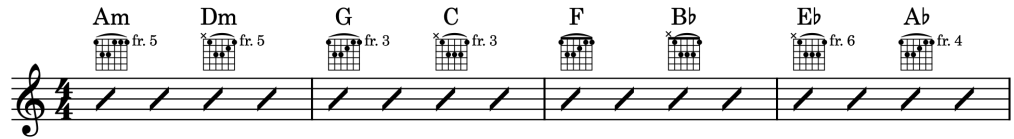
A library of hundreds of chord shapes for 6-string guitar (in standard, dropped D, open G, open D and DADGAD tunings), ukulele, mandolin and banjo is included, providing a wide variety of voicings for many different chords. Dorico takes the novel approach of defining the chords not in terms of matching a specific combination of fingered frets at a particular position on the neck of the instrument resulting in a specific set of pitches, but rather in terms of a shape that is playable by a human hand and, provided any open strings can be stopped by way of a barre, can be moved up and down the neck. This allows the same shape to be reused for different chords – and even for different tunings for instruments with a compatible set of strings.

When you edit or define a chord diagram, Dorico saves the chord shape rather than tying it to a specific chord definition, which means that if the shape can be moved up or down the neck, you will then see that shape offered to you for other chords, based on the pitches that Dorico calculates will be produced by applying that shape at different positions on the neck.

Showing chord diagrams. To show chord diagrams, switch to Setup mode and in the Players panel, right-click the card corresponding to the player for whom you want chord diagrams to appear. In the **Chord Diagrams** submenu you will find a long list of the available fretted instrument tunings: choose the desired tuning, for example, **Standard guitar tuning**.

Any existing chord symbols shown for this player will be updated to show a chord diagram below the chord symbol, and any chord symbols you create subsequently will also include a chord diagram. By default, Dorico will choose the simplest chord diagram for any given chord, meaning the chord symbol with the most open strings and with the fingered positions closest to the nut.

If no suitable chord diagram is found in the library, an empty chord diagram will appear, and you will need to provide an appropriate shape: in Engrave mode, double-click the chord diagram to open the editor, described below.

Alternative shapes. For most chord symbols, there are multiple playable shapes included in the library. Select the chord diagram and type **Shift+Alt+Q** to open a simple dialog showing the shapes that are valid for the current chord symbol: either select the desired alternative shape with the arrow keys or the mouse, and hit **Return** or click **OK**, or simply double-click the desired shape to confirm the dialog. You can also cycle through all of the available alternative shapes directly in the score by typing **Alt+Q** with a chord diagram selected.

The chosen shape will apply to all instances of the chord symbol at that rhythmic position for all players that share the same chosen fretted instrument tuning.

Editing a chord diagram. If your preferred shape is not provided in the library, you can provide your own shape by switching to Engrave mode, selecting the chord diagram fragment of the chord symbol, and either double-clicking or hitting **Return**. The following editor opens:
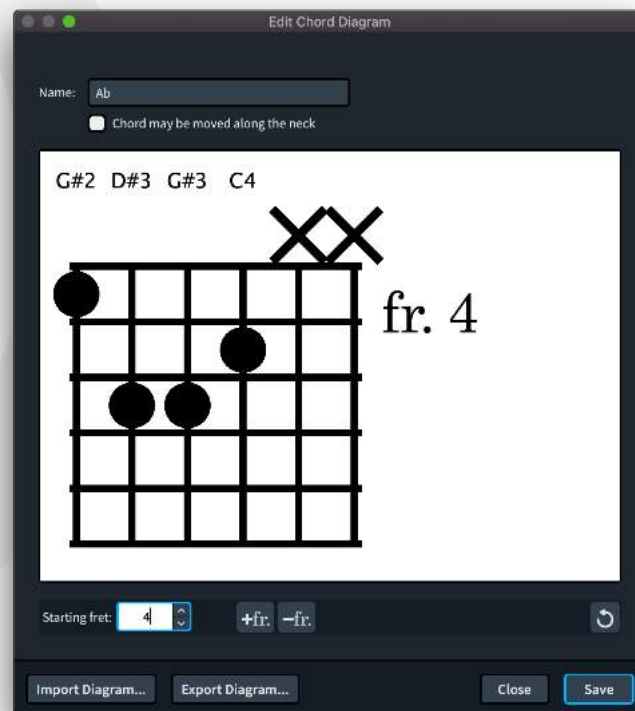
Each string can show a single dot, or the string can be open (showing an O at the top of the diagram) or omitted (showing an X at the top of the diagram). Click above the end of the string to cycle between omitted and open, or click on any fret on the diagram to move the dot there.

If two or more strings are fingered at the same fret, you can show a barre between those strings by clicking on any of the dots at that fret position. Click again to remove the barre.

The pitch of each stopped and open string is shown above the diagram. If any pitch does not fit with the chord symbol associated with the diagram, that pitch will be colored red as a warning.

To change the starting fret for the diagram, change the value of **Starting fret** in the action bar below the editor. To make the diagram show an additional fret, click **+fr.** in the action bar; similarly, to reduce the number of frets by one, click **–fr.** in the action bar.

The checkbox **Chord may be moved along the neck** tells Dorico whether this chord is movable, or whether it is only playable at the position on the neck at which it has been defined. A chord is generally movable provided any open strings can be played with a barre if the chord is moved up the neck, but Dorico does not attempt to make this determination itself: you should set this checkbox as appropriate for your final shape.

When you click **Save**, the chord shape is saved in the score and will be used for this chord diagram. Because of the way that Dorico stores chord diagrams by shape rather than with a fixed association to a specific chord symbol, this shape will then appear as an alternative choice for any other compatible chords.

Root notes. Dorico provides a few options for preferences concerning root notes in chord shapes. If you are writing for a guitarist in an ensemble with a bass player, for example, you might want to choose voicings that omit the root note of the chord, since that will be played by the bass player. Options for this are found on the new **Chord Diagrams** page of Note Input Options, and allow you to specify whether the root should be omitted entirely, and whether or not it should, if included, be the lowest note of the chord.

Chords with higher alterations. When writing chords with altered scale degrees of the ninth or higher, choices have to be made about which notes of the chord to omit. Options to influence Dorico's decisions can be found on the new **Chord Diagrams** page of Note Input Options:

- **Dominant sevenths or higher alterations**: choose whether or not the fifth can be omitted.
- **11 and 13 chords**: choose whether or not the ninth may be omitted.

Chord diagram library. If you want to define many new chord shapes – for example, to define shapes for an instrument or tuning not already included in Dorico's default library of shapes, you can choose **Engrave ▸ Chord Diagrams**. Choose the target tuning from the **Tuning** drop-down at the top of the dialog, which updates the list of shapes defined for that tuning, which are shown in the **Chords** drop-down. Define a memorable name for the chord shape you're defining in the **Name** edit

control, then edit the shape as described above. When you're done, click **Save**, and then either define a new chord diagram by typing a new name, or click **Close** to finish editing the library of chord shapes.

Engraving options. The new **Chord Diagrams** page of Engraving Options provides control over every aspect of the drawing of the chord diagram, from line thickness and dot diameter to string and fret spacing. Possibly the most important option is **Scale factor relative to chord symbol**, which provides an easy way of changing the size of all chord diagrams.

You can change the font, style and size of the fret number shown to the right of the chord diagram by editing **Chord Diagram Fret Number Font** in **Engrave ‣ Font Styles**.

Guitar fingering

Because of the technical complexity of performing the music, scores for classical guitar are often copiously annotated with fingerings for both the right and left hands. Dorico 3 includes comprehensive support for left- and right-hand fingering, with sophisticated automatic placement that produces results that are the equal of the finest published editions.
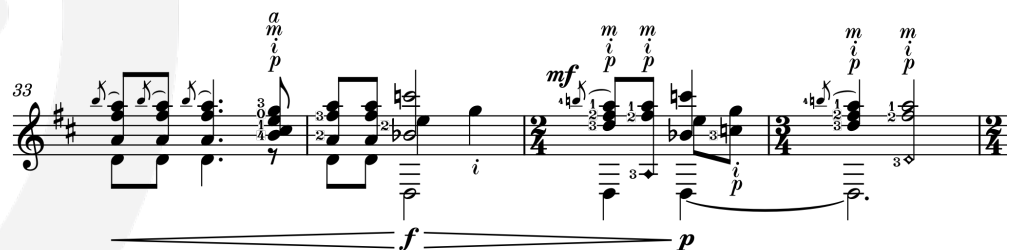
Fingering popover. Guitar fingering is added using the **Shift+F** popover, and the popover shows **L** or **R** to indicate that you are inputting left- or right-hand fingering. To switch from **L** to **R**, type ↓; likewise, to switch from **R** to **L**, type ↑.

Right-hand fingering commonly uses letters corresponding to the names of fingers in Spanish: **p** for *pulgar* (thumb), **i** for *indicio* (index finger), **m** for *medio* (middle finger), and **a** for *anular* (ring or third finger). There is less agreement about the initial for the little or pinky finger, and Dorico will accept **c**, **e**, **x**, or **o**.

Left-hand fingering, meanwhile, simply uses numbers, with **1** for index finger and **4** for the little or pinky finger (the thumb of the left hand is not usually used). Additionally, an open string is often indicated in the same way as a left-hand fingering, using the digit **0** (zero) rather than the letter O.

If you have multiple notes selected, you can input multiple fingerings into the popover provided you separate them with comma; for example, select a chord of

three notes, then type **Shift+F**, type ↓ to switch to right-hand fingering, then type **p,i,m** to specify **p** for the lowest note, **i** for the middle note, and **m** for the highest note.

For more information on how to use the fingering popover, consult the Operation Manual here.

Appearance of right-hand fingering. Options for which letters should be used for the thumb and each finger of the right hand are found on the **Fingering** page of Engraving Options, in the **Design** section, under the **Right-hand Plucked Fingering** subheading. You can choose between **p** and **t** for thumb, and between no fewer than six different options for the little or pinky finger (**e**, **q**, **c**, **s**, **o**, **x**).

By default, all right-hand fingering uses the traditional bold, italic look, but if you set **Fingering appearance** to **Plain font**, all fingering, including right-hand fingering for guitar, will use whatever font is set for the **Fingering Text Font** in **Engrave ▸ Font Styles**.

Placement for right-hand fingering. By default, right-hand fingering is positioned outside the staff, on the notehead side, though in some editions, fingering for the right thumb is positioned below the staff instead. You can change these defaults by setting **Default position of right-hand plucked fingerings** and **Default position of right-hand thumb plucked fingerings**, in the **Position** section of the **Fingering** page of Engraving Options.

Fingering for arpeggio signs. When using an arpeggio sign to show a spread chord, you may want to show which finger of the right-hand should be used to play all of the strings; such fingerings are shown at the bottom of the arpeggio sign. To add a fingering for an arpeggio sign, select the arpeggio sign and activate the **Finger** property in the **Plucked Fingering** group in the **Properties** panel.

In the **Position** section of the **Fingering** page of Engraving Options, you will find a handful of options relating to the placement of fingerings for arpeggio signs, including **Vertical position for arpeggio sign fingering**, which allows you to specify whether the fingering should be allowed inside the staff or forced outside.

Multiple strings picked by the same finger. It is common for multiple notes in a chord to be played with the same finger, often the thumb. This can be indicated by way of a vertical bracket spanning the common notes, with the fingering indicated below or next to the bracket. To achieve this notation, select all of the notes in the chord to be played by the same finger, and into the **Shift+F** popover, type ↓ to switch to right-hand fingering, then enter (say) **p,p,p**. By default, the fingerings will appear above or below the chord, but if you activate the **Vertical position** property

in the **Plucked Fingering** group of the Properties panel and choose **Next to note**, Dorico will add the bracket and adorn it with a single fingering.

Left-hand fingering. Left-hand fingering is typically positioned within the staff, to the left of the note to which it relates. This creates a good deal of complexity, because the fingering should not collide or even interfere with other items such as accidentals, rhythm dots, and so on. Dorico has the most sophisticated algorithms for the placement of left-hand fingering of any software, provides comprehensive options for placement, and, of course, allows you to tweak the positions of individual fingerings in Engrave mode if necessary.

Appearance of left-hand fingering. By default, left-hand fingering uses the same traditional, bold appearance as keyboard fingering, but you can use any font of your choosing by setting **Fingering appearance** to **Plain font** in the **Design** section of the **Fingering** page of Engraving Options. When shown within the staff next to notes, left-hand fingering is smaller than fingering shown above or below the staff; the default scale factor is 85%, which can be found in the **Advanced Options** subsection of the **Design** section of the **Fingering** page of Engraving Options.

In something of a departure from most published guitar music, by default Dorico erases the staff line to either side of left-hand fingerings shown next to notes in the staff to aid clarity. If you are a traditionalist and want to disable this, switch off **Erase background behind fingerings inside the staff**, also to be found in the **Advanced Options** subsection of the **Design** section of the **Fingering** page of Engraving Options.

Placement for left-hand fingering. Several self-explanatory options controlling the horizontal and vertical placement of left-hand fingerings shown within the staff can be found in the **Position** section of the **Fingering** page of Engraving Options.

To change the default placement of a specific left-hand fingering, activate the **Stopping finger position** property in the **Fingering** group of the Properties panel, which provides three options: **Left of note**, the default; **Right of note**, which moves the fingering to the right-hand side of the notehead; and **Outside staff**, which moves it outside the staff on the notehead side, or on the side of the staff corresponding to the voice's direction if multiple voices are active.

Fingering slides. To indicate that successive notes should be played by the same finger on the same string by sliding it up or down the neck of the instrument, an angled line is drawn joining the two fingerings, or, if the notes are particularly far apart, a shorter line is drawn to the left of the destination note.

First, ensure that the **String** property in the **Notes and Rests** group of the Properties panel is activated and that the same string is set for both the source and

destination notes. Second, likewise ensure that the **Finger or positions(s)** property in the **Fingering** group of the Properties panel is set identically for both the source and destination notes.

Once these prerequisites are satisfied, select the destination note and activate the **Slide in** property in the **Fingering** group of the Properties panel. If the two notes are sufficiently close, an angled line will be drawn between the fingerings. The fingerings themselves will not be moved, and instead the fingering slide will be drawn between the fingerings in their existing positions, avoiding any obstructions such as noteheads, accidentals and other fingerings that may be in the way.

If you are not satisfied with the automatic placement of the fingering slide, try nudging the fingerings at the start or end of the slide in Engrave mode; the angled line will automatically follow the fingerings. If necessary, you can also select either end of the angled slide line itself and move it with the mouse or by holding **Alt** and using the arrow keys. To reset the position of the fingering slide, deactivate the **Slide start** and/or **Slide end** properties in the **Fingering** group of the Properties panel in Engrave mode.

If the distance between the two notes is greater than the value specified for **Maximum distance between notes to join with a fingering slide** in the **Fingering Slides** section of the **Fingering** page of Engraving Options, the fingering slide will appear as an angled line of a fixed length immediately to the left of the destination fingering. You can override an individual fingering slide using the **Slide type** property, which appears in the **Fingering** group of the Properties panel in Engrave mode: set it to **Join** to draw the angled line between the source and destination notes, regardless of the distance between them; or set it to **Destination only** to draw a fixed-length line to the left of the destination note.

Projects created in earlier versions. To avoid changing the appearance of fingering in projects created in earlier versions, if an existing project contains a guitar instrument or has fingerings, the new features for showing left-hand fingering within the staff and right-hand fingering outside the staff will not be enabled by default. If you find that left-hand fingering will only appear outside the staff and you cannot create right-hand fingering at all, go to the **Fingering** page of Engraving Options, and in the **Advanced Options** subsection of the **Design** section, activate **Allow left-hand fingerings inside the staff for fretted instruments**. Beware that this will change the position of any existing fingerings on guitar or other fretted instruments in your project.

Guitar string indicators

Competing with left-hand fingering for space within the staff are string indicators, which are normally shown in circles to either side of the relevant note, or on

occasion outside the staff, sometimes with a dashed extender line to show which notes should be played on the same string.

String indicators above and below the staff can be created via the **Shift+P** popover by typing e.g. **string1** or **string3**.

String indicators shown to the left or right of the note are enabled by way of the Properties panel. With the note on which you want the string indicator to appear selected, activate the **Show** property in the new **String Indicators** group, and the string indicator will appear. If the **String** property in the **Notes and Rests** group is already set to an explicit value, the string number shown will reflect the choice there, but otherwise Dorico will display a calculated string number. If you intended a different string number to be shown, activate the **String** property and set it to the desired string number.

Open strings. By default, Dorico shows a bold zero for an open string instead of a circled string number, but you can change this by setting **Open string appearance** to **String indicator** on the new **String Indicators** page of Engraving Options.

Horizontal position. By default, Dorico positions string indicators to the left of the note provided no left-hand fingering is present, but if a fingering number is present, the string indicator will be switched to appear to the right of the note instead. Options to control this placement can be found in the **Position** section of the **String Indicators** page of Engraving Options. Further options are provided for the placement of string indicators for unison pitches in opposing voices.

Harp pedaling

The modern concert harp, which typically has a range of six and a half octaves, features a mechanical action that can raise or lower the pitch of its strings by a half-step (semitone), such that the harpist can play music in any key. The mechanical action is operated by way of pedals, each of which affect all of the strings of a specific pitch class across all octaves of the instrument. On the left side of the harp are three pedals (D, C, B), while there are four on the right (E, F, G, A). Each pedal has three positions: in its central position, the strings produce a natural, i.e. unmodified pitch; in its upper position, the strings produce a flattened (lowered) pitch; while in its lower position, the strings produce a sharpened (raised) pitch.

The pedals pose a unique technical challenge, not only for the harpist but also for the composer: it is crucial to understand that certain notes are simply not playable on the harp without changing the pedal positions, and care must be taken to ensure that the harpist is not being asked to make impractical pedal changes. Dorico offers a set of features to help write for the harp: support for harp pedal notation; a tool to calculate the pedal positions required to play a passage of music; and the ability to show notes in red if they cannot be played by the current pedal positions. Even composers who have a lot of experience in writing for the harp will find these tools helpful in proof-reading or assessing the practicality of their writing for this beautiful instrument.

Creating harp pedal diagrams. You can either create a harp pedal diagram manually, by specifying the pedal positions or note names corresponding to the pedal positions, or using the tool to calculate the pedal positions based on the music.

To create a harp pedal diagram manually, use the **Shift+P** popover for playing techniques. You can specify the pedal positions in one of two ways:

- *Describing the pedal positions*: use **^** for a pedal in its upper position (flat), **-** for a pedal in its central position (natural), and **v** for a pedal in its lower position (sharp). You can optionally include the pipe character **|** between the pedals on the left- and right-hand sides of the harp. You must specify positions for all seven pedals. For example, **--^|^--^** would produce a harp pedal diagram suitable for E♭ major, with a flattened B, E and A.
- *Specifying the pitches directly:* write each note name using an upper case letter **A**–**G**, use **b** for flat and **#** for sharp. You can choose to specify all of the pitches, or only those which are sharpened or flattened, but note that if you omit a pitch, it will always be interpreted as a natural, rather than being unmodified from the previous harp pedal settings, if there are any. So you could type either **CDEbFGAbBb** or just **EbAbBb** to produce a harp pedal diagram equivalent to the previous example above.

To create a harp pedal diagram automatically, select a note or other item on either staff of the harp at the position where you want the harp pedal diagram to be created, and choose **Write ▸ Calculate Harp Pedals**. Dorico will examine the music written from that point and calculate the necessary harp pedal settings, greedily trying to accommodate as much music as it can, assigning each pedal only once. Make sure **View ▸ Note and Rest Colors ▸ Notes Out Of Range** is switched on, as this will allow you to see the point at which the next change of harp pedal settings is needed, because one or more notes will appear in red. This calculation even takes into account trill intervals.

Appearance of harp pedal diagrams. By default, changes of harp pedal settings are not printed in full score or custom score layouts (instead being shown there using signposts), and appear as pedal diagrams in part layouts. To change these settings, go to the **Harp Pedaling** section of the **Players** page of Layout Options: activate **Show harp pedaling** to make harp pedal changes appear in the selected layout or layouts.

Harp pedal changes appear either as text, with the right pedals written above the left pedals (below left), or as a diagram (below right):

The new **Harp Pedaling** page of Engraving Options provides detailed options to control the appearance of both text and diagram appearance types. In particular, you can tweak the size, thickness, length and spacing of the components of the harp pedal diagrams, and specify their default vertical and horizontal position.

For harp pedal changes written as text, you can among other things specify the order of the left pedals (some harpists prefer the order **B C D** rather than **D C B**), whether the text should be enclosed with a border, and so on. To change the font or size of the text, edit the **Harp Pedal Settings** paragraph style in **Engrave ▸ Paragraph Styles**.

Partial pedal changes. When using the text-based appearance for harp pedal changes, you may choose to show only the pedals that are changed from the previous settings. Be aware that when you specify harp pedal changes yourself, any pedals for which you do not specify settings will be interpreted as being in their middle (natural) positions, rather than inheriting their position from the previous pedal change: however, Dorico can *display* partial changes, and indeed by default any pedal change that changes three or fewer of the seven pedals will appear as a partial change.

To override this default setting, either deactivate **Show partial pedal changes for changes up to** *n* **pedals**, or change the value of *n*, on the **Harp Pedaling** page of Engraving Options. You can also override this on a per-change basis: activate the **Partial pedaling** property, and Dorico will show only those note names that have changed since the previous change of pedals, regardless of how many pedals have changed. Likewise, by deactivating **Partial pedaling** you can make a partial pedal change appear as a full one, with all pedals shown.

By default, partial pedal changes written using note names are shown split over two lines, with right pedals over left pedals, but if you prefer to show them all in a single line, on the **Harp Pedaling** page of Engraving Options set **Partial pedal**

changes to **Allow on a single line**. This will show partial pedal changes on a single line up to the number of pedals specified in the adjacent option **Show partial pedal changes in single line if fewer than *n* pedals**.

Default pedals. If you do not specify the pedal settings at the start of a flow, it will be assumed that all seven pedals are in their central (natural) positions, which means that any sharp or flat notes will appear in the red "out of range" color. As such, you are recommended to specify the harp pedal settings at the start of the flow, which is quickly done using **Write ▸ Calculate Harp Pedals**.

Glissando playback. Dorico takes the harp's prevailing pedal settings into account when calculating the notes to be played for a glissando line. It is recommended that you create appropriate harp pedal changes to ensure you hear the expected scale in a harp glissando.

Viewing harp pedal signposts. By default, harp pedal changes will appear in layouts in which they should not be printed using signposts. If you do not want to see harp pedal changes, either hide all signposts by choosing **View ▸ Signposts ▸ Hide Signposts**, or toggle only **Harp Pedals** in the same submenu.

Projects created in earlier versions. When you first open a project created in an earlier version of Dorico that already contains a harp instrument, you will not be able to create a harp pedal change until you save, close and reopen the project. This is because Dorico 3 sets up some additional information in the existing harp instrument upon opening and updating the project which cannot be read and used until the project is reopened.

Playback templates

Playback templates bind together information about the instrument sounds, articulations and playing techniques provided by a virtual instrument or other playback device, how to obtain those sounds (defined in a VST Expression Map), and which of those sounds to choose for each instrument in your project. In previous versions of Dorico, you were limited to one or two playback templates supplied with the program to use the supplied HALion Sonic SE and HALion Symphonic Orchestra sounds, or to use NotePerformer, and any use of other sound libraries or virtual instruments required manual setup that had to be repeated in every project.

With the improvements in Dorico 3, it is now possible for you to set up your own playback templates, including custom combinations from different playback devices, and make everything reusable so it needs to be set up only once and can even be exported for use by other Dorico users.

The playback templates supplied with earlier versions of Dorico can be thought of as *automatic playback templates*, in that Dorico can load the necessary sounds into the HALion Sonic SE and NotePerformer virtual instruments automatically. In Dorico 3, you can now create *manual playback templates*, in which you load a virtual instrument, load the sounds you want to use, and provide the mapping between the instruments in your project and those sounds by assigning VST Expression Maps in the **Endpoint Setup** dialog. You can save the setups for multiple VST instruments into a single manual playback template, which bundles together each endpoint configuration, all referenced VST Expression Maps, and all playback playing techniques and playing technique definitions referenced by the VST Expression Maps.

Creating manual playback templates. To create a manual playback template:

- First add players holding the target instruments to your project in Setup mode.
- Switch to Play mode and load the VST instrument you want to configure into the VST Instruments panel, show its interface by clicking the **Edit Interface** button (its icon is a lower-case **e**), and load the sounds you want to use for the instruments in your project.
- Use the track header controls on the left-hand side of the event display in Play mode to assign each instrument to the appropriate channel of your VST instrument.
- In the VST Instruments panel, click the corresponding **Endpoint Setup** button (its icon is a cog) to open the **Endpoint Setup** dialog. If you are not familiar with the **Endpoint Setup** dialog, please refer to the Operation Manual [here](#). For each entry in the table, check that the **Port**, **Channel** and **Assigned Instruments** columns are all correct, and assign an appropriate VST Expression Map using the menu in the **Expression Map** column. If no appropriate VST Expression Map yet exists, create one using **Play ▸ Expression Maps** (refer to the Operation Manual [here](#)). If the instrument is a percussion kit, assign an appropriate percussion map using the menu in the **Percussion Map** column, too.

Once these steps are complete, you can either save a single manual playback template for this VST instrument by clicking the **Save Manual Playback Template** button in the **Endpoint Setup** dialog, or you can repeat the above steps for one or more additional VST instruments, then click the **Save Manual Playback Template** button in the action bar at the bottom of the VST Instruments panel, which saves a manual playback template that contains data for all of the instruments currently in the rack.

Creating playback templates. Once you have created one or more manual playback templates, you can combine them, together with Dorico's default automatic
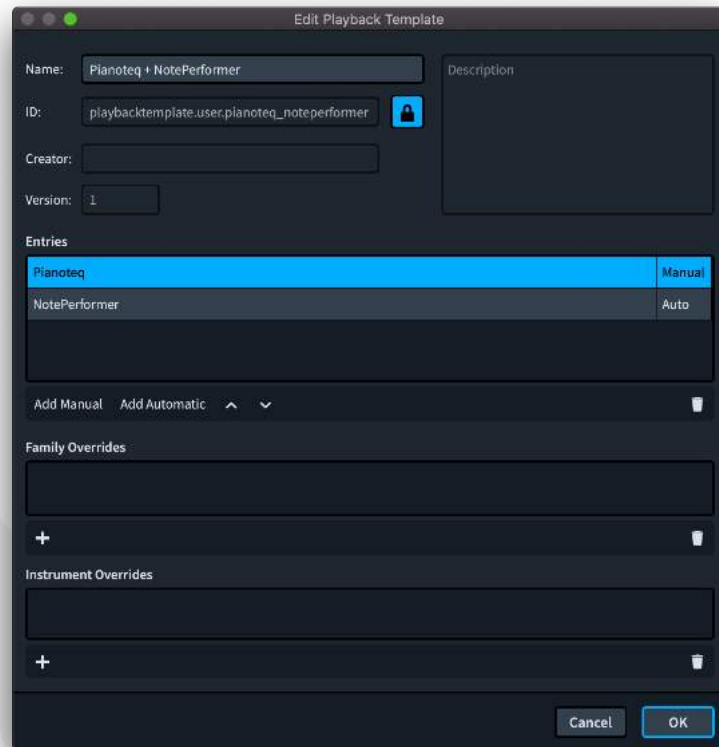
playback templates, into your own playback templates. To do this, choose **Play ▸ Playback Template**. This dialog has been revamped as follows:
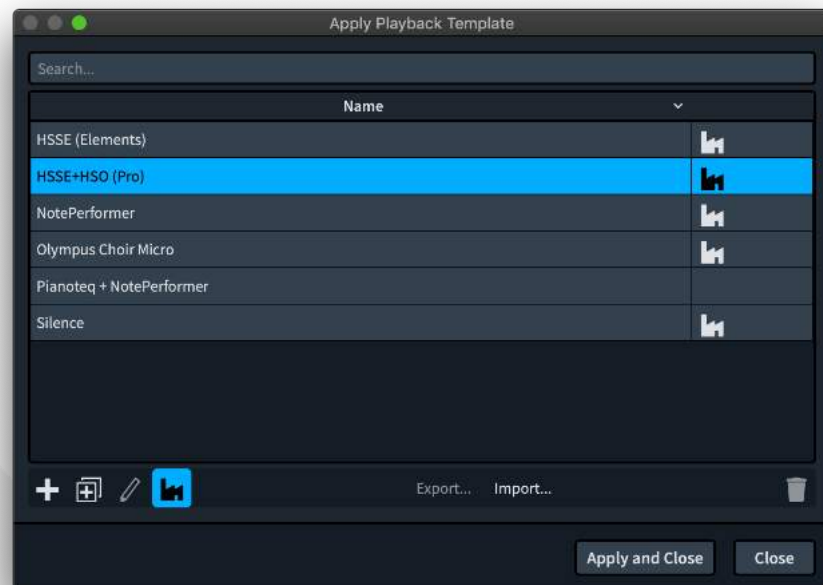
At the top of the dialog is a search field to allow you to filter the table of playback templates. The table itself can be sorted by name, or by whether or not the playback template is a factory default, in which case it will show the factory icon in the second column. The action bar below the table contains the following options, from left to right:

- **Add**: creates a new empty playback template.
- **Duplicate**: creates a new playback template, based on the selected playback template.
- **Edit**: edits the selected playback template.
- **Show Factory**: determines whether the factory default playback templates should be shown in the table, switched on by default.
- **Export**: exports the selected playback template as a file that can be installed on another computer.
- **Import**: allows you to find an existing playback template and import it so that it is available on this computer.
- **Delete**: deletes the selected user-defined playback template.

To create a playback template, click the **+** button in the action bar at the bottom of the dialog. The **Edit Playback Template** dialog opens:

Specify the **Name** for your new playback template at the top of the dialog; Dorico will populate the ID field automatically, though you can edit it yourself if you click the lock icon to enable editing of the **Creator**, **Version** and **Description** fields. These fields are not consumed by Dorico directly, but particularly if you anticipate sharing your playback template with other users, you may want to provide some details here, and consider incrementing the **Version** number when you revise an existing playback template.

The **Entries** table lists the manual and automatic playback templates that are used by the overall playback template, and they are listed in descending order of preference: that is to say, when applying the playback template, Dorico will attempt to assign each instrument to the first entry in the list, then the next entry in the list, and so on. Place the playback templates with your favourite sounds, or your specific choices for particular instruments, at the top of the list, and include a fallback – for example, one of Dorico's default automatic playback templates – at the end of the list so that you can be sure that any instrument you add to your project will end up assigned to a sound automatically.

The buttons in the action bar for the **Entries** table are as follows:

▪ Clicking **Add Manual** pops up a menu listing all of the manual playback templates found on your computer, and choosing one from the menu adds it to the **Entries** table.

- Similarly, the **Add Auto** button pops up a menu listing all of Dorico's default automatic playback templates, and choosing one adds it to the **Entries** table.
- The move up/move down buttons move the selected playback template higher or lower in the **Entries** table, affecting its preference order.
- **Delete** removes the manual or automatic playback template from this playback template, but does not delete it altogether.

The **Family Override** and **Instrument Override** tables allow you to create specific overrides for families of instruments, or individual instruments, for each manual or automatic playback template. For example, you might want to specify that although your manual playback template for Vienna Symphonic Library includes solo and ensemble string instruments, you want to use a solo violin from EastWest Hollywood Strings instead: in that case, you would select the manual playback template for Hollywood Strings in the **Entries** table, then click **+** in the action bar for the **Instrument Override** table, and from the instrument picker that appears, choose **Violin**.

In general, unless you have multiple manual playback templates in the same playback template that each provide sounds for the same instruments, you will not normally need to set any family or instrument overrides: it will usually suffice to ensure the playback templates are listed in preference order in the **Entries** table.

All playback templates you create are available in all projects you create or open on your computer.

Using a playback template. To use one of your own playback templates, simply choose **Play ▸ Playback Template**, either select the playback template from the table and click **Apply and Close**, or simply double-click the playback template, which automatically closes the dialog.

Importing a playback template. If you receive an exported Dorico playback template, with file extension **.dorico_pt**, you can install it simply by dragging and dropping it onto the Dorico project window. After installation it will be available in **Play ▸ Playback Template** for the current and any future projects.

Independent voice playback

Play mode now allows you to specify that each voice belonging to each instrument should now be routed to a separate endpoint, making it possible to handle complex requirements like needing a separate MIDI channel for each sound in a virtual organ, or playing back *divisi* passages with the appropriate smaller sectional sounds.
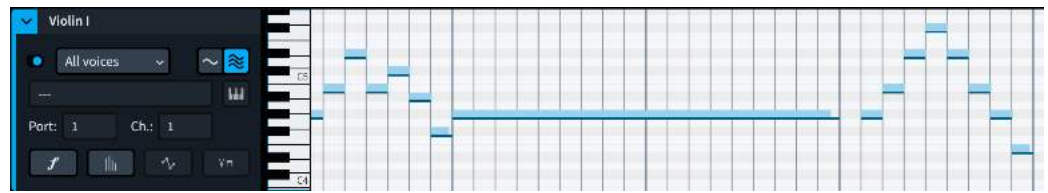
Independent voice playback is enabled using the slide switch at the top of the instrument track header in Play mode. When activated, Dorico will automatically assign the additional voices to separate channels: it will fill empty channels in a remaining instance of the appropriate virtual instrument or add a new instance as required.

Once independent voice playback is enabled, the drop-down immediately to the right of the slide switch is enabled and allows you to choose which voice's information should appear in the controls below; by default, **All voices** is chosen, which means that the controls for output device, port and channel are all disabled. The piano roll display displays notes from all voices when **All voices** is chosen, and it is still possible to edit note velocity for these notes, but the automation and playing techniques lanes are disabled.

When one of the individual voices is chosen from the drop-down, all of these controls become enabled, allowing you to override the routing for an individual voice.

By default, Dorico maps the settings for a given voice – for example, **Down-stem voice 1** – to the appropriate voice in all flows of the project, so you don't have to make or adjust the setting for every flow. However, under some circumstances you may need to route voices independently even between flows, in which case you can click **Set for This Flow** (⊠), which allows you to set the routing independently for each flow. This might be useful in complex multi-movement works with extended *divisi* and solo passages, for example: in the first movement, **Up-stem Voice 1** might correspond to the solo violin in a *divisi* passage, but in the second movement, it could be the default voice for the violin section. You also have the option of adding an extra voice that you use only for a single passage in a single flow, as provided it doesn't have any equivalent in another flow, you can set its routing independently but keep all other voices routed consistently for all flows, by setting **Set for All Flows** (⊠).

Independent voice playback cannot be set for unpitched percussion kits.

Velocity and pitch bend editing

Play mode now includes two new editors to expand the tools available for tweaking MIDI: a new velocity editor, and the addition of pitch bend editing to the existing MIDI controller editor.

Velocity editor. The velocity editor is hidden or shown for an instrument by clicking the new button in its track header. The velocity editor opens below the piano roll, and shows a vertical bar for every note; for chords, the vertical bars are stacked on top of each other, and you can bring one particular bar to the fore by selecting its note in the piano roll editor. The precise velocity value for a single selected note is shown in the spin control in the velocity editor's track header, allowing you to specify the velocity value numerically by typing it in and hitting **Return**.

The following tools in the Play mode toolbox operate on the velocity editor:

- **Object Selection** (arrow): using this tool you can click and drag any note's velocity bar to increase or decrease the velocity value, or click anywhere within the existing height of the velocity bar to decrease the value.
- **Draw** (pencil): using this tool you can draw a freehand curve or other shape across a range of velocity bars by clicking and dragging; when you release the mouse pointer, the appropriate velocity bars will be edited according to the drawn contour.
- **Line**: using this tool you can click and drag to describe a straight line between two points; when you release the mouse pointer, the intervening velocity bars will be edited according to the angle of the drawn line.

To remove edits to note velocity, select the notes whose velocities you want to reset and choose **Play ▸ Reset Playback Overrides**. This will also reset any other playback offsets you have created for those notes.

Pitch bend editor. The pitch bend editor is integrated into the existing MIDI controller editor. The MIDI controller editor opens below the piano roll editor (and below the velocity editor, if that is shown). Choose **Pitch Bend** from the menu of MIDI controllers, and the editor display to the right will update, showing a central horizontal line representing the unmodified pitch. Points above the central line raise the pitch, while points below the line lower the pitch.

You can use the **Object Selection** tool to select and drag any existing pitch bend data points, use the **Draw** (pencil) tool to draw in new points freehand, or use the **Line** tool to draw in a straight line between two points. Regardless of the grid resolution used when you enter the data points, the resulting pitch bend is discretized at a resolution of 1/32 quarter notes (crotchets) to ensure that it is played back smoothly. Pitch bend is expressed on a scale of -100 to +100, describing a maximum of one whole step (two semitones) in either direction from the written note. (STEAM-3886, STEAM-8123, STEAM-9533)

Soundiron Olympus Choir Micro

Dorico Pro 3 and Dorico Elements 3 now includes the complete Olympus Choir Micro choral sound library from Soundiron. Olympus Choir Micro has been

available for the Kontakt platform for some time, but the team at Soundiron has now re-engineered the library for HALion Sonic SE to take advantage of all of its capabilities.

About the library. Olympus Choir Micro draws on the recordings Soundiron captured for their full Olympus Symphonic Choir library, assembling 63 singers from the San Francisco Choral Society, Volti and the San Francisco Symphony Chorus, under the direction of Robert Geary. The singers were recorded in a large, acoustically-optimal A-frame chapel hidden away in the wooden canyons of Montclair, in the San Francisco Bay Area. More than 90 hours of recordings were made, combining traditional deep sampling methods with Soundiron's own specialized techniques to deliver a capable and comprehensive symphonic choral library. Olympus Choir Micro is an introductory sample library focused on the main close microphone position. The provided patches include a pair of standard vowel sustains – "ah" and "oo" – including both soft *piano* and strong *fortissimo* dynamics, sung by the full ensemble over the whole SATB range.

The Olympus Choir Micro sounds are used by default for vocal instruments in new projects created in Dorico Pro 3 and Dorico Elements 3, and can be applied to projects created in earlier versions of Dorico by applying the default playback template.

Controls. If you open the HALion Sonic SE interface and choose the **Edit** page of its interface, you will see the controls for the Olympus Choir Micro patches:

Layer 1 corresponds to the lower, male voices, while **Layer 2** corresponds to the higher, female voices. The circular button to the left of each of the **Layer** titles

toggles that layer on and off; if the button is switched off, that layer will produce no sound.

The drop-down directly below the **Layer** title allows you to choose between the "ah" and "oo" vowel sounds, and the sustain, marcato and staccato articulations.

The six knobs below the drop-dpwn are as follows:

- **Swell** controls the dynamic volume of the layer.
- **Pan** adjusts the stereo panorama of the layer.
- **Attack** controls the initial note attack time of the layer. Low values are quick, but higher values can be used to sweep up in volume over a longer period of time.
- **Offset** controls the sample start offset of the layer. Turning the knob up causes the sample playback to start further into the sample.
- **Release** controls the release fade time of the layer. This controls the amount of time it takes for the sound to reach silence once a note is released.
- **Rel. Vol.** adjusts the volume of release samples only.

At the bottom of each **Layer** panel is a **Dynamics** slider, which adjusts how dynamics from *piano* to *forte* are controlled between note velocity and MIDI CC. When the slider is all the way to the left, only velocity controls dynamic change, and when it is all the way to the right, dynamics are fully controlled by the **Swell** knob (mapped by default to MIDI controllers 72 and 73).

The central column between the two **Layer** panels contains a **Blend** toggle button: when switched off, both layers will sound at the same time, on top of one another; when switched on, the **Blend** slider can be used to morph between the two layers.

Below the Blend slider, the central column shows different controls depending on whether you click the **Legato**, **Vibrato** or **Keys** button. The **Legato** controls are:

- **Legato 1** toggle button enables or disables the simulated legato for the men's voices layer.
- **Legato 2** toggle button enables or disables the simulated legato for the women's voices layer.
- The **Time** knobs control the speed of the legato transition for each layer. Slower values mean a longer crossfade during the transition.
- The **Bend** knobs add and adjust a simulated pitch bend to the legato transition for each layer.

The **Vibrato** controls are:

- **Vibrato 1** toggle button enables or disables the simulated vibrato for the men's voices layer.

- **Vibrato 2** toggle button enables or disables the simulated vibrato for the women's voices layer.
- The **Level** knobs control the depth and speed of vibrato, or the pitch/volume modulation. At low values this creates a subtle, slow vibrato, while increasing the value makes it more pronounced and faster.

The **Keys** controls allows you to specify the lower and upper bounds for the men's and women's voice layers, which can be extended a little in both directions to expand the playable range of the patches.

More information. For more information on the full version of the Olympus Symphonic Choir, visit Soundiron at www.soundiron.com/olympus

Comments

Comments allow you to mark up the score, attaching a comment bubble to a particular position (or rhythmic range) on a given staff. The comment consists of some text, which can be edited by double-clicking the comment bubble or selecting it and typing **Return**, and seen in the new Comments panel in Write mode. It's also possible to reply to an existing comment, making it possible to use comments to discuss changes to a project, which is useful in a multi-person workflow.

Identifying the author. By default, Dorico uses the account name of the current user account to determine the author of the comment. On Mac, this uses the long account name, e.g. **GHolst**, while on Windows it will look up the full name associated with the account, e.g. **Gustav Holst**. The author's full name appears associated with each comment in the Comments panel, while a two-letter pair of initials (if there are any capitals in the user name, it will use the first two; otherwise it will use the first two characters of the user name) appears inside the comment bubble in the music, if shown.

If Dorico is unable to determine an appropriate account name by default, the first time you create a comment, it will prompt you to enter both your chosen full name and initials. These choices can be changed later on at any time on the **General** page of Preferences, though the name of the author saved in any existing comments will not be updated automatically.

Adding a comment. To add a comment, select an item in the music at the position where you want the comment to appear (or make a multiple selection, since a comment can refer to a range of bars, although there's no visual feedback of this in the score itself; it is, however, shown in the Comments panel), and choose **Write ▸ Create Comment**, use the default key command **Alt+C**, or click the **+** button in the action bar at the bottom of the Comments panel in Write mode. If the caret is shown, the comment will be added at the caret's location, ignoring the selection.

A simple dialog opens, allowing you to type the comment. Simply hit **Return** or **Enter** to confirm the comment and add it to the score. To make it as quick as possible to add a comment, **Return** and **Enter** will always confirm the dialog. To add a line break to a comment, type **Shift+Return** instead.

A comment bubble appears in the score above the selected staff, showing the initials of the author inside it. The comment also appears in the Comments panel.

Editing a comment. To edit an existing comment, simply select the comment in the score and hit **Return** or **Enter**. Alternatively, double-click the comment in the Comments panel in Write mode, or select the comment in the Comments panel and click the pencil icon in the action bar at the bottom of the panel.

The same dialog used to create a comment appears, showing the comment's current text. Make any required changes and hit **Return** or **Enter** to confirm the dialog. The timestamp for the comment is updated, but the original author is retained.

Replying to a comment. To reply to an existing comment, select it in the score and choose **Write ▸ Reply to Comment** or use the default key command **Alt+R**. Alternatively, click the reply button in the action bar at the bottom of the Comments panel in Write mode.

A dialog opens, allowing you to type your reply. Simply hit **Return** or **Enter** to confirm the comment and add it to the score.

The reply will appear as a separate comment bubble in the score, directly below the comment it is replying to. In the Comments panel in Write mode, replies are shown indented immediately below the comment they reply to; there is only a single level of indentation, so any subsequent replies are also indented to the same level.

Deleting a comment. To delete a comment, simply select it in the score and hit **Delete**, or select it in the Comments panel and click the delete icon in the action bar at the bottom of the panel.

Exporting comments. It is possible to export the comments from a project in tabular form: click the export button in the action bar at the bottom of the Comments panel to export an HTML file, which is saved alongside the project file, and which automatically opens in your default web browser. Comments for all flows in the project are included.

Comments panel. The Comments panel in Write mode shows all of the comments in the current flow. Each comment is shown in order of its rhythmic position (i.e. from the start of the flow to the end of the flow). Replies to comments are shown

inline directly beneath the comment to which they reply, indented by a small amount.

Each comment shows the full name of its author, the date on which it was created (or last edited), and the name of the instrument and bar (or bars) in which it is found. The complete text of the comment is shown as well.

If the Comments panel is visible, selecting a comment bubble in the music will also select it in the panel. The converse is also true: selecting a comment in the panel will select it in the score, and move the score view to bring the comment into view.

The action bar at the bottom of the panel allows you to add a new comment (the button is enabled if there is a selection in the score), edit an existing comment (enabled if a comment is selected in the list), reply to an existing comment (again, enabled if a comment is selected in the list), export the comments in tabular form (enabled if there is at least one comment in the current flow), or delete an existing comment (enabled if a comment is selected in the list).

Viewing comments. Comments can be hidden or shown in the score by choosing **View ▸ Comments**. Comments are shown by default.

Comments are not printed by default, but they can be included when printing by activating **View menu options** in the **Annotations** section of the right-hand options panel in Print mode.

Harmonics

Dorico now supports various conventions for the notation of harmonics on stringed and fretted instruments, including both natural and artificial harmonics, including calculating the correct pitch to be notated for the second through sixth harmonics. Harmonics are numbered according to the nodes (or divisions into equal parts) of the string: the second harmonic divides the string in half; the third divides the string in thirds; the fourth divides the string in quarters; and so on. (STEAM-9265)

Natural harmonics are produced by touching an open string at one of its nodes and then bowing or plucking it; the second harmonic is an octave above the open string pitch, the third a further perfect fifth higher, the fourth a further perfect fourth higher, the fifth a further major third higher, and the sixth a further minor third higher. Artificial harmonics, meanwhile, are produced by touching a stopped string at one of the nodes of its stopped length. This requires the player to both fully stop the string and touch the string at the node, which is a more difficult technique for the performer to master than playing a natural harmonic.

Adding a harmonic. To add a harmonic, write the open or stopped string pitch, then activate the new **Type** property in the new **Harmonics** group of the Properties panel, and choose **Artificial** or **Natural** as needed. By default, the second

harmonic (i.e. an octave above the written pitch) is assumed, and for an artificial harmonic is written with a white diamond notehead above the nominal pitch; for a natural harmonic, the harmonic circle symbol is shown above the nominal pitch, except on guitar, where instead the nominal pitch is drawn with a black diamond notehead.

Changing the node. To change to the third through sixth harmonic, activate the **Partial** property, and choose the number of the node at which the string should be touched: **2** is the second harmonic, **6** is the sixth harmonic. If the harmonic is shown using an additional white diamond notehead, the pitch of the white diamond notehead will be updated.

Changing the appearance of natural harmonics. For natural harmonics, there are three possible appearances, accessed by activating the **Style** property:

- **Circle above**: this shows the harmonic circle symbol on the notehead side of the nominal note (and can be forced to the other side by activating the **Harmonic placement** property).
- **Diamond notehead**: this changes the notehead of the nominal note to a diamond notehead; filled when the note is a quarter note (crotchet) or shorter, and white or unfilled when the note is a half note (minim) or longer.
- **White diamond notehead**: this changes the notehead of the nominal note to a white diamond notehead, unfilled regardless of the note's duration.

Changing the type of artificial harmonics. For artificial harmonics, four different types of harmonic are supported, accessed by activating the **Style** property:

- **Normal**: shows two noteheads, the stopped pitch and the touched pitch (calculated based on the **Harmonic** property, or assuming the second harmonic if it is not set); in tablature, the stopped fret is shown, and immediately to its right, in parentheses, the touched fret (or position between two frets) is shown.
- **Pinch**: specifically a guitar technique, a pinch harmonic (also sometimes called a *false harmonic* or a *squeal*) is produced by the player catching the string at a node near the pick-ups after it is picked, which cancels out the fundamental tone of the string, and lets one of the higher overtones dominate, producing a high-pitched squeal. On a notation staff, a pinch harmonic shows two noteheads, the stopped position and the sounding pitch; in tablature, only the stopped position is shown.
- **Single notehead (sounding)**: on a notation staff, this shows only the sounding pitch, i.e. the resulting harmonic; in tablature, this shows the stopped fret, and immediately to its right, in parentheses, the sounding pitch.

- **Single notehead (stopped)**: on a notation staff, this shows only the stopped pitch; in tablature, this shows the stopped fret, and immediately to its right, in parentheses, the touched fret (or position between two frets) is shown.

Accidentals on harmonics. If necessary, you can override whether or not the accidental on the white diamond notehead is shown, hidden, or shown in parentheses by activating the **Accidental** property in the **Harmonics** group (as opposed to the one in the **Notes and Rests** group, which applies to the main notehead, rather than the harmonic notehead). As you can for accidentals on normal notes, you can also override the column in which the accidental appears by setting the **Accidental column** property (a value of 0 means the right-most column, with increasing numbers corresponding to each successive column to the left), and the precise horizontal position of the accidental relative to its column by setting the **Accidental X offset** property.

Harmonics playback. As of this release, there is no specific playback support for harmonics.

Grouped playing techniques

Playing techniques can now display their duration using a continuation line, and they can now be grouped, allowing the notation of the transition from one playing technique to another with automatic alignment of all of the playing techniques in the group.
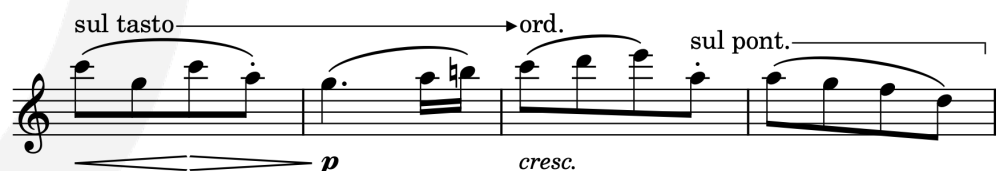
There are three ways to create grouped playing techniques: during step-time input; from a selection; or by grouping existing playing techniques.

Step-time input. To create a group of playing techniques in step-time input, show the caret and type **Shift+P** to open the popover. Type the name of the playing technique you want at the start of the group, followed immediately by **->**, a crude approximation of an arrow. This tells Dorico that you want to extend the playing technique as you input and will follow it with another playing technique at a later rhythmic position. To input the example shown above, you would enter **sul tasto->** into the popover, then hit **Return**, and either advance the caret with **Space** or by inputting more notes; when you are at the position at which you want the next playing technique to appear, type **Shift+P** again and type **ord.** and hit **Return**. To keep the group going, instead type **ord.->** and then continue to advance the caret.

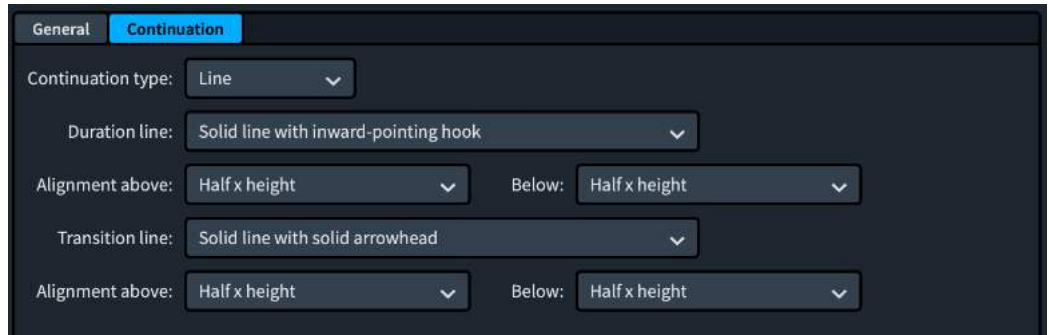To end the current playing technique without entering a new one, enter **?** into the **Shift+P** popover.

Creating from a selection. You can create groups containing a pair of playing techniques from a selection: select the first position at which you want the first playing technique to appear, and the position at which you want the second playing technique to appear. These positions should be on the same staff; if you make a selection spanning multiple staves, the grouped playing techniques will be created only on the top selected staff. Type **Shift+P** to show the popover and enter, say, **sul pont->sul tasto** and hit **Return**.

Grouping existing playing techniques. If you already have playing techniques in your score that you want to group, select them and choose **Edit ▸ Playing Techniques ▸ Group Playing Techniques**. The duration of all of the selected playing techniques other than the final one will be adjusted such that they all abut. Provided all of the playing techniques in the group are set to show transition lines, each of the abutting playing techniques will be joined with a transition line.

Removing a playing technique from a group. You can remove a single playing technique from a group by selecting it and choosing **Edit ▸ Playing Techniques ▸ Remove Playing Technique from Group**. This does not edit the duration of the playing technique, so if you no longer want the playing technique to show a duration line, you should select it and shorten its duration with **Shift+Alt**+left arrow.

Duration and transition lines. Most of the default playing techniques accessible via the panel in Write mode or the **Shift+P** popover are set to show default lines: duration is typically indicated by a solid line with an inward-pointing hook (the hook points towards the staff), while transition is typically indicated by a solid line with a right-pointing solid arrowhead. For text-based playing techniques, the duration and transition lines proceed from half of the x-height of the font used; for glyph-based playing techniques, they proceed from the vertical center of the glyph.

The choice of duration and transition line, and their vertical placement relative to the playing technique, can be edited on the new **Continuation** tab in **Engrave ▸ Playing Techniques**:

It is not currently possible for you to define your own duration or transition line styles, but this is planned for a future release.

The default horizontal position of the start of the line is determined by options in the new **Continuation** section of the **Playing Techniques** page of Engraving Options.

Overriding appearance. Flexible control over the appearance of the duration and transition lines, including separate control over the line body style (solid, dashed, double, wedge, etc.) and the end cap (arrowhead, hook, terminal line, etc.), is provided via new properties in the **Playing Techniques** section of the **Properties** panel, which appear only in Engrave mode.

Changes made to the appearance of the lines can be removed by way of **Edit ▸ Reset Appearance**.

Order of playing techniques. You can specify the order in which playing techniques are stacked outside the staff by activating the new **Tucking index** property in the **Playing Techniques** group in the Properties panel. Changes to the tucking index apply to the whole group, but it is also possible to set the tucking index for a single, ungrouped playing technique.

Editing in Engrave mode. If you select the first playing technique in a group in Engrave mode, you will see a small red handle immediately to its left: this handle allows you to move the entire group vertically, maintaining any offsets of individual playing techniques in the group. Otherwise, you can select any playing technique and nudge or drag it, and if a line proceeds from its right, the start position of the line will move in step with the playing technique. Similarly, if you move a playing technique joined by a line to its left, moving the playing technique will move the end position of the line in step. You can also move each end of the line between two playing techniques freely, and those offsets will be maintained when the attached playing technique is moved.

Offsets made in Engrave mode can all be removed by selecting the grouped playing techniques and choosing **Edit ▸ Reset Position**.

Repeated glyph playing techniques. If you created any playing techniques that use the repeated glyph appearance in a previous version of Dorico – for example, a row of harmonics as a single playing technique with duration – be aware that, due to the changes required to show transition and duration lines for other playing techniques, those repeated glyph playing techniques will end one note earlier in Dorico 3 than they did in previous versions.

Improvements

Arpeggio signs

Slur-style arpeggio signs. On page 242 of Gardner Read's *Music Notation* he shows a picture of a slur rotated through 90 degrees such that it is vertical, enclosing the notes of a chord, as an alternative appearance for an arpeggio sign. Though Read argues that this is dubious notation, some composers use this notation in a distinct way from a normal wiggly arpeggio sign: the slur-like sign is an instruction to spread the chord only a little, while a wiggly arpeggio sign is interpreted as a more fulsome spread. Dorico now provides this slur-style arpeggio sign, which you can create by typing **slurarp** into the **Shift+O** popover, or by clicking the appropriate button in the **Arpeggiation** section of the **Ornaments** panel in Write mode.

The new option **Default curved arpeggio length** on the **Timing** page of Playback Options allows you to determine the playback effect of the slur-style arpeggio sign. (STEAM-9352)

Non-arpeggio signs. New options for the vertical placement of the ends of non-arpeggio brackets have been added to the **Endpoint Positioning** section of the **Arpeggio Signs** page of Engraving Options. (STEAM-8568)

Auto-save

Auto-save location. The preference allowing you to determine where the **AutoSave** folder Dorico uses for auto-save has been removed, and the **AutoSave** folder is now located inside your user-level application data folder, to prevent calamities where users inadvertently set their main project folder to the same folder as used by auto-save, resulting in projects getting deleted unexpectedly when closing Dorico when unneeded auto-saves are cleaned up. (STEAM-9359)

Bar numbers

Bar number placement. The options for bar number placement on the **Bar Numbers** page of Layout Options have been expanded; in previous versions, bar numbers could appear in only one place relative to the system, namely either above the top staff of the system or below the bottom staff of the system. In Dorico 3 it is now possible to show bar numbers in multiple places on the system: above the top staff of the system; below the bottom staff of the system; and optionally above the top staff belonging to specific players. (STEAM-9142)

Bar numbers and multi-bar rests. The following improvements have been made to the interaction of bar numbers and multi-bar rests:

- When bar numbers are set to be shown on every bar and the layout also shows multi-bar rests, Dorico will no longer hide a bar number on a multi-bar rest for a

single bar; the rest must contain at least two bars. When used in conjunction with the option to show ranges of bar numbers on multi-bar rests, this ensures a bar number appears between every pair of barlines. (STEAM-9399)

- If bar numbers are drawn centered on the barline, and the option to show ranges of bar numbers on multi-bar rests is set, the bar number at the start of a multi-bar rest will be hidden, to avoid redundantly showing the same bar number twice. (STEAM-9398)

Bar number enclosures. If a bar number is drawn inside a circular or rectangular enclosure, the enclosure now erases items in the background of the music, which improves the appearance of bar numbers if they are drawn on top of barlines. (STEAM-9127)

Chord symbols

Chord symbols in slash regions. In previous versions of Dorico, showing chord symbols for only a short passage is hard work, because you have to show them for the whole instrument, and then hide them everywhere you don't want them to appear. It's common for chord symbols to appear on melodic instruments only when they're expected to play a solo, in which case that will often be denoted by a region of slashes.

To accommodate this common scenario, a new option has been added to the **Chord Symbols** submenu in the Players panel in Setup mode: **Show in Chord Symbol and Slash Regions**, alongside the existing options to show them for all instruments held by the player, none of the instruments held by the player, or only for the rhythm section instruments held by the player.

When **Show in Chord Symbol and Slash Regions** is chosen, chord symbols appear for an instrument only in the ranges of bars and beats covered by a slash region. (STEAM-9400)

Chord symbol regions. Should you need to show chord symbols for a range of bars and beats in an instrument but you don't, for whatever reason, want to notate slashes in that region, you can instead create a new chord symbol region.

This can be created by selecting one or more items in the score and choosing **Write ▸ Create Chord Symbol Region**. The chord symbol region is shown as a solid line drawn against the top line of the staff, which can be selected and, when selected, shows handles in Write mode (it shows no handles in Engrave mode). Those handles can be dragged around with the mouse to change the extent of the region, and the usual **Alt**+left/right (to move the whole region) and **Shift**+**Alt**+left/right (to move the end of the region) shortcuts work as expected.

The staff itself also shows a highlight in the chord symbol region, which can be switched on or off via **View ▸ Highlight Chord Symbol Regions**.

When you create a chord symbol region on an instrument for the first time, if chord symbols are not already set to appear on that instrument, **Show in Chord Symbol and Slash Regions** (in the Chord Symbols submenu of the player's context menu in the Players panel in Setup mode) will be automatically set for that instrument, so that any chord symbols in the region will automatically appear as soon as the region is created. (STEAM-9445)

Clefs

Showing clefs according to layout transposition. You can choose what type of clef should be used for a given clef depending on the layout transposition, e.g. to show a treble clef in the transposed pitch part but show a bass clef in the concert pitch score. However, for some instruments – particularly those that comfortably cover the bass and treble clef ranges, such as tenor saxophone – it may be necessary to have a clef change that does not appear in one or other kind of transposition.

To accommodate this, a new **Show for transposition** property has been added to the **Clefs** group of the Properties panel. When the property is unset, the clef change will appear both in layouts set to concert pitch and in layouts set to transposed pitch. If the property is set, however, the clef will appear only in layouts using the chosen transposition type: in layouts that use the other transposition type, the clef will appear only as a signpost, and will not affect the staff position of notes. (STEAM-9449)

Explicit clefs at the start of the flow. An explicit clef at the start of the flow, which may be needed to change the default clef chosen by Dorico for a particular instrument, no longer prevents that staff from being hidden if it is otherwise empty. (STEAM-9466)

Dynamics

Position of poco/molto modifiers for hairpins. A new option **Position of modifier text on hairpin** has been added to the **Gradual Dynamics** section of the **Dynamics** page of Engraving Options, allowing you to choose between showing modifiers like *poco* and *molto* below or above the start of the hairpin, or centered on the hairpin, like this:

This appearance can also be chosen by way of the new **Modifier position** property in the **Dynamics** group in the Properties panel. In Engrave mode, a pair of **Modifier**

offset properties also appear, allowing you to adjust the position of the modifier relative to the hairpin. To aid legibility, the background around the modifier is always erased when it is centered on the hairpin, even if the **Erase background** property is not activated. (STEAM-9622)

Increasing and decreasing dynamic intensity. Two new key commands have been added to the **Note Editing** category on the **Key Commands** page of Preferences: **Decrease Dynamic Intensity** and **Increase Dynamic Intensity**. As their names suggest, these commands allow you to decrease the intensity of an immediate dynamic (e.g. to decrease mp to p), or conversely to increase it (e.g. to increase mp to mf). These commands have no effect on gradual dynamics, such as hairpins. (STEAM-9365)

Fingering

Removing fingering. A new command **Edit ▸ Fingering ▸ Reset Fingering** has been added, which removes all fingerings from the selected notes. (STEAM-9335)

Fingering for cross-staff chords. A new **Position for fingerings on cross-staff chords** option has been added to the **Position** section of the **Fingering** page of Engraving Options, allowing you to specify whether fingerings should be split between both staves, all positioned above the top staff, below the bottom staff, or on the notehead or stem sides. This provides considerably more flexibility for positioning fingerings on cross-staff chords than before.

A new property **On home staff** appears for selected notes with fingerings when **Position for fingerings on cross-staff chords** is set to any option other than **Ignore cross-staff chords**, which allows you to override the placement of an individual fingering such that it appears on the staff from which its note was originally crossed. (STEAM-9171)

Fingering within the staff. It is now possible to position fingerings for keyboard and other instruments inside the staff instead of above or below: select the note to which the fingering you want to move inside the staff belongs and enable the new **Inside staff** property in the **Fingering** group of the Properties panel. Fingering substitutions cannot be made to appear within the staff using this property.

The fingering will be positioned according to the options in the **Position** section of the **Fingering** page of Engraving Options, and can be nudged or dragged in Engrave mode. (STEAM-9170)

Glissando lines

Glissando playback. Glissando lines now play back using discrete notes; continuous sliding glissando playback is not yet supported, but is planned for a future version. When written for harp, glissando playback takes into account the

current harp pedal settings (or an assumed default of all pedals in their natural or central position if no explicit harp pedal settings are provided), while for other instruments, glissando playback uses the chromatic scale.

If the notes at either end of the glissando are written with ties, Dorico will take this into account: if the starting note of the glissando is tied, the glissando will start from the rhythmic position of the last notehead in the tie chain; if the ending note of the glissando is tied, the glissando will end at the rhythmic position of the first notehead of the tie chain.

To override the point at which the glissando begins to play back, activate the new **Delayed start** property, which will cause the glissando to start playing back halfway between the starting and ending note. You can additionally activate the **Delay** property and specify the exact starting point of the glissando using fractions of a quarter note. (STEAM-3908, STEAM-9312)

Lyrics

Adjusting the vertical position of a line of lyrics. It is now possible to adjust the vertical position of a whole line of lyrics independently on each system in Engrave mode. Select any lyric in the line and type **Alt**+up/down to nudge all of the lyrics in that line up or down; add **Ctrl** (Windows) or **Command** (Mac) to nudge the lyrics by a whole space at a time.

Only the lines of lyrics you select will move when you nudge a line of lyrics: if you want to adjust the position of all lyric lines in the system by a consistent amount, select at least one lyric in each line you want to adjust before you nudge them.

If the formatting of the music changes such that the rhythmic position of the music at the start of the system changes, any offsets for the lyrics on that system will be automatically removed.

To remove the vertical adjustment on a particular system, select any lyric in any line on that system and choose **Engrave ▸ Lyric Offsets ▸ Remove Selected Systems**. You can remove all vertical adjustments in a particular music frame by selecting any lyric in that frame and choosing **Engrave ▸ Lyric Offsets ▸ Remove Selected Frames**. To remove all vertical adjustments for lyrics in the entire layout, choose **Engrave ▸ Lyric Offsets ▸ Remove Layout**. (STEAM-8926)

Copying and pasting lyrics. It is now possible to paste lyrics word by word or syllable by syllable so you can, for example, input the lyrics for one vocal part, copy them to the clipboard after selecting them (using **Edit ▸ Filter ▸ Lyrics** is a convenient way to make this selection), then select the note in another vocal part where the lyrics should begin, type **Shift+L** to open the lyrics popover, and then use **Ctrl+V** (Windows) or **Command**-**V** (Mac) to paste. Dorico will paste each

word or syllable in turn, so all you have to do is press **Space** or **–** (hyphen) to create any necessary melismas. As you paste, the contents of the clipboard are consumed until all words and syllables have been pasted.

This feature is not operable for lyrics written in Chinese, Japanese or Korean. (STEAM-9224, STEAM-9230)

Edit Lyrics dialog. Proof-reading lyrics can be challenging, because lyrics are always more widely spaced than regular text, and often oddly split up over impractically large horizontal distances.

To make it easier to find and fix typos and other mistakes in lyrics, a new command **Edit ▸ Lyrics ▸ Edit Line of Lyrics** has been added. It's only enabled when there is a selection, and it will be inoperable unless the selection includes at least one lyric: if more than one lyric is selected, it'll take the earliest lyric on the uppermost staff as the target to work out which lyrics it'll show in the dialog. Assuming it finds a target lyric, the new **Edit Lyrics** dialog opens.

The dialog shows the lyrics in that line in the current flow in a text editor, with hyphens and spaces as appropriate. At the bottom of the dialog is a read-out showing the number of lyrics in the text editor, and the target number of lyrics, i.e. the number of lyrics that exist already in that line in the flow. You can't add or remove lyrics here, nor can you change their duration (though you can change their type from e.g. being the start of a word to being a whole word on their own). The action bar in the dialog allows you to increase/decrease the size of the lyric text, which makes it easier to read and edit it.

The **OK** button will only be enabled and the dialog can only be confirmed by either clicking **OK** or hitting **Return** if the number of lyrics in the editor matches the target number. The read-out is updated as you type, so you can see when the target is reached.

When you confirm the dialog, Dorico rewrites the entire line of lyrics. In common with editing a lyric via the **Shift+L** popover, properties (like **Italic** etc.) will be removed when you confirm the dialog, because behind the scenes the lyrics are actually deleted and recreated. (STEAM-9231)

Multi-bar rests

Bar count appearance. It is now possible to change the appearance of the bar count digits that appear above or below the H-bar or old style rests in a multi-bar rest. A new option has been added to the **Rests** page of Engraving Options, **Bar count appearance**, allowing you to choose between **Music font** (which uses the **Multi-bar Rest Bar Count Font** font style) and **Plain font** (which uses the **Multi-bar Rest Bar Count Plain Font** font style). (STEAM-9141)

Position of bar count. A new option **Placement for bar count on single-staff instruments** has been added to the **Rests** page of Engraving Options, allowing you to specify that the bar count number should be shown above or below the staff. (STEAM-9590)

Breaking multi-bar rests. If an immediate dynamic follows a gradual dynamic and coincides with the start of a multi-bar rest, the dynamic – which will be drawn at the end of the bar of music before the first bar of the multi-bar rest – no longer causes the multi-bar rest to be split unexpectedly. Similarly, a divisi change at the start of an otherwise empty bar will no longer prevent that bar from being consolidated into a multi-bar rest. Beware that these changes can cause the casting-off of existing projects to change. (STEAM-9195, STEAM-9314)

Navigation

Navigation in Write mode. In previous versions of Dorico, navigation in both Write and Engrave modes was based on the graphical proximity of items in the direction of navigation. This approach works well in Engrave mode, where navigation is typically over shorter distances and there are a greater number of selection targets: for example, in Engrave mode a single note may have separate selection targets for its notehead, stem tip, accidental, rhythm dot, and so on, whereas in Write mode, that same notehead has a single, much larger selection target. The result of this approach was that in Write mode, it was hard to predict what item would be selected, and then moving back in the opposite direction would often not select the last item that had previously been selected. In order to make navigation with the arrow keys in Write mode quicker and more predictable, this aspect of the software has been revamped in Dorico 3.

The general principle is that in Write mode you will typically want to navigate using notes, rather than other items. As such, with a note selected:

- Typing ← or → will select the previous or next note in the same voice.
- Typing ↑ or ↓ will select the nearest note above or below the selected note on the same staff, if there is one; otherwise it will navigate to the staff above or below. When navigating to the staff above, it will select the lowest note starting or sounding at that position, and when navigating to the staff below, it will select the highest note; or a rest if no note is found.
- Typing **Ctrl**+← (Windows) or **Command**-← (Mac) or **Ctrl**+→ (Windows) or **Command**-→ (Mac) will navigate to the start of the previous or next bar on the current staff.
- Typing **Ctrl**+↑ (Windows) or **Command**-↑ (Mac) or **Ctrl**+↓ (Windows) or **Command**-↓ (Mac) will navigate to the top staff or bottom staff in the current system.

To select other kinds of items, type **Tab** to cycle forwards or **Shift+Tab** to cycle backwards through the other staff-attached items at the current rhythmic position on the selected staff. Whichever direction you cycle in, eventually the selection will return to the note or rest on the staff at that position. With a non-note or rest item selected, you can type ← or → to select the previous or next item of the same type on the same staff; this can be useful for navigating longer distances. You cannot cycle the selection onto a system-attached item (for example, a tempo, rehearsal mark, chord symbol, etc.) using **Tab** or **Shift+Tab**, but having selected a system-attached item, you can still type ← or → to select the previous or next item of the same type.

In previous versions of Dorico, **Tab** and **Shift+Tab** navigated to the next or previous barline. If you want to restore this behaviour, you can do so on the **Key Commands** page of Preferences. In the **Selection and Navigation** category, you can bind **Navigate to the Next Barline** to **Tab** and **Navigate to the Previous Barline** to **Shift+Tab**. The two new commands to cycle forwards and backwards through the other staff-attached items are **Navigate to Next Item at Position** and **Navigate to Previous Item at Position**, so you could instead assign these to alternative key commands.

Note input

Note input onto multiple staves. You can now extend the caret across multiple staves in order to input onto multiple staves at the same time. When the caret is visible, type **Shift+↑** to extend it to the staff above or **Shift+↓** to extend it to the staff below.

This is especially useful when inputting via a MIDI keyboard, since it allows you to, for example, extend the caret across four horn staves and play a four-note chord on your keyboard; Dorico will automatically assign each of the four notes to the four staves within the span of the caret.

If you would prefer Dorico to input all of the notes you play onto each of the staves instead of distributing them between all of the staves, on the **MIDI Input** page of Note Input Options, set **Chord played when caret spans multiple staves** to **Input all notes on each staff**.

You can also input slurs, dynamics and other markings on all of the staves within the span of the caret in the usual way using their respective popovers.

When the caret spans the two staves of a piano, Dorico follows the value of **Split at MIDI note number** on the **Play** page of Preferences when determining how the music should be distributed. (STEAM-9640)

Extending notes. Two new commands have been added to the **Write ▸ Edit Duration** submenu: **Extend to Next Note** and **Extend to End of Selection**.

- **Extend to Next Note** works its way through every selected rhythmic note (not grace notes) and finds the position of the next note in the voice, if there is one, effectively filling up any gaps between notes in the voice.
- **Extend to End of Selection** only operates on the selected note at the latest rhythmic position. It extends that note to the end of the selection using chord mode, so any intervening notes in the same voice will be merged together with the extended note. (STEAM-9273)

Lock Duration and grace notes. Engaging Lock Duration (default key command **L**) when the caret is at the position of a grace note now leaves the caret at the same position, rather than advancing it to the next rhythmic note. (STEAM-9343)

MIDI devices. Dorico can now detect when you connect or disconnect a MIDI input device while it is running, so you no longer need to restart Dorico after connecting a MIDI keyboard in order to use it for input. (STEAM-9575)

MIDI monitoring. When playing notes on your MIDI keyboard outside of note input, Dorico now changes the instrument sound used for auditioning based on the most recent staff on which you made a selection, so to change the sound used for auditioning, simply select something on the staff that uses the desired sound. (STEAM-9469)

MIDI thru. If you have a keyboard that makes sound, or if you have your keyboard hooked up to another sound source (e.g. an instance of Ivory in stand-alone mode), you might not want to hear any sounds echoed back when playing on your MIDI keyboard. A new option, **Enable MIDI thru**, has been added to the **Play** page of Preferences, switched on by default. When switched off, notes played on your MIDI keyboard will not be echoed by Dorico. (STEAM-9456)

MIDI activity indicator. There is a new MIDI activity indicator in the bottom right-hand corner of the project window. When Dorico receives MIDI data, it lights up green for a moment. If you see it lit up green constantly, that suggests that one or more of the hardware or software MIDI devices connected to your computer is flooding Dorico with data, and you should work out which device is causing the problem and eliminate it from your system. (STEAM-9632)

Ossias

Barline joins. A new option **Join ossia with systemic barline for systems with only one instrument** has been added to the **Ossias** section of the **Barlines** page of Engraving Options. By default this is switched off in new projects, but it is switched on in projects created in earlier versions. It is considered more correct for

a system consisting of a single main staff for a single instrument to not be joined to its ossia by a systemic barline at the left margin, and this option now provides that appearance. (STEAM-9580)

Page layout

Vertical justification. The calculations Dorico uses to vertically justify staves and systems to fill the height of a music frame have been revamped. In particular, when a frame's fullness is calculated to be between the threshold for justifying only the staves and justifying both staves and systems, the previous calculation would overcompensate for items protruding above or below the staff, even if there was sufficient space to spread the deviation between the other gaps. This is now handled much more elegantly.

Be warned that this may result in the vertical justification result being different than previous versions of Dorico for layouts with multiple systems per-frame, but you should find that you can use **Engrave ▸ Staff Spacing ▸ Reset Layout** to remove any spacing adjustments that you created to even out the result in a previous version and the new default result will be much more pleasing. (STEAM-9370)

Frame fullness indicator. When the staff spacing tool is active in Engrave mode, a new read-out at the bottom of each music frame shows how full it is, expressed as a percentage. (STEAM-9064)

Playback

Playback from a selection. When starting playback by selecting a note or other item and typing **P**, Dorico is now more lenient about the precise nature of the selection, and will play back all instruments even if more than one item at the same rhythmic position on a single instrument is selected. This means that if you accidentally select, say, a note and a slur at the same time and type **P**, Dorico will still play back the whole ensemble rather than just that staff. (STEAM-9133)

Metronome click. It is now possible to enable or disable the metronome click during playback, either by clicking the **Click** button in the mini-transport or by typing a custom key command assigned to the new **Enable Click** command in the **Play** category on the **Key Commands** page of Preferences. (STEAM-9457)

Swing 16ths. Dorico now supports the "swing 16ths" rhythmic feel, in which sixteenth notes (semiquavers) are swung, rather than eighths (quavers).

To choose one of the provided swing 16ths rhythmic feels as the default rhythmic feel for your project, choose your preferred feel from the **Default rhythmic feel** drop-down on the **Timing** page of Playback Options.

To use one of the swing 16ths rhythmic feels for a particular passage, open the **Shift+T** popover and type e.g. **Medium swing 16ths** to choose that rhythmic feel;

the various presets will appear in the list of suggestions while you are typing into the popover.

You can also edit the provided rhythmic feels or define new ones in the **Edit Rhythmic Feels** dialog, which is accessed by clicking **Edit** in the **Rhythmic Feel** section of the **Timing** page of Playback Options. (STEAM-9167)

Beat stress. The **Beat stress** options on the **Dynamics** page of Playback Options have been improved to better take account of compound meter and irregular beat groupings, and for the first time Dorico will now differentiate between the first and subsequent beats of a bar or other beat grouping, according to the two options provided. (STEAM-5437)

Playback of percussion kits. Dynamics entered on the five-line or grid presentation type are now respected in playback. Dorico builds up the dynamics to be played first by examining the dynamics written on the individual percussion instruments that comprise the kit, and merges in any dynamics that appear only in the five-line or grid presentation types. This means that it is now much simpler to add dynamics to drum sets and orchestral percussion kits. (STEAM-7093)

Manually assigning endpoints. When using an automatic playback template (one where Dorico can automatically load sounds, which in practice means one that uses HALion Sonic SE or NotePerformer), if you manually adjust the endpoint assignment of any instrument in Play mode, Dorico will now continue to automatically load sounds for any new instruments that are added to the project; in previous versions, changing any assignment would disable any further automatic sound loading altogether. In addition, choosing **Play ▸ Load Sounds for Unassigned Instruments** will now do exactly what it says: if any instruments do not have a valid endpoint assignment, Dorico will set new assignments and load the appropriate sounds. (STEAM-9356)

Renaming VST instruments. A new **Name** field has been added to the **Endpoint Setup** dialog, accessed by clicking the cog icon for a specific plug-in in the VST Instruments panel in Play mode. The chosen name will then appear both in the VST Instruments panel and in the Mixer. (STEAM-9148)

Numbering VST instruments. Each plug-in in the VST Instruments panel in Play mode is now numbered, and the same number appears in the title bar of the plug-in's window, when it is shown. The first instrument plug-in will normally be numbered **02**, because the DoricoBeep plug-in used for the metronome click will normally be numbered **01**. The number is not significant, other than to disambiguate each plug-in from the next and to help you to identify them, and it is not possible to reorder plug-ins in the panel. (STEAM-9415)

Missing VST instruments. If a project references a VST instrument that is not available, an entry for the missing plug-in will appear in the VST Instruments panel in Play mode, its name surrounded by exclamation marks: for example, **!! Kontakt !!**. (STEAM-6032)

Applying a playback template. When one of the automatic playback templates is applied (e.g. the built-in **HSSE+HSO (Pro)** playback template), the sounds loaded for each instrument into each instance of HALion Sonic SE will be loaded in score order, instead of in the order in which the instruments were originally created. (STEAM-9303)

Duplicate percussion map. A new **Duplicate** button has been added to the action bar in **Play ▸ Percussion Maps**, allowing you to duplicate an existing percussion map as the basis of a new one. (STEAM-9452)

Print mode

Navigating the print preview. You can now type **Home** or **End** to go directly to the first or last page in the print preview; if you would prefer to use a different key command, you can define your own shortcuts for the commands **Print Preview First Page** and **Print Preview Last Page** in the **Print** category on the **Key Commands** page of Preferences. (STEAM-9166)

Project Info

The **Project Info** dialog has been significantly reworked both to make it modeless (i.e. you can leave it open while you work, and click **Apply** to apply any pending changes, leaving the dialog open), to replicate as far as is possible the functionality of the Flows panel in Setup mode, and to make it possible to change the info for multiple selected flows at the same time.

Flows list. The flows list on the left of the **Project Info** dialog allows you to make a multiple selection of flows and the project itself. You can use **Shift**+click and **Ctrl**+click (Windows) or **Command**-click (Mac) to make your selection. Depending on what is selected in the list, the buttons in the action bar will enable/disable as appropriate:

- **Add Flow** is always enabled.
- **Duplicate Flow** is enabled only when a single flow (and not **Project**) is selected.
- **Rename Flow** is enabled only when a single flow (and not **Project**) is selected.
- **Move Up**/**Move Down** are enabled when one or more flows is selected, but not when **Project** is selected; **Move Up** is disabled when the first flow in the list is selected (because you can't move the first flow up above

Project), and **Move Down** is disabled when the last flow in the list is selected.

- **Delete Flow** is enabled when at least one flow (and not **Project**) is selected.

Clicking **Add Flow** adds a new flow to the end of the flows list. You can set info for that flow, and the flow itself will be created only when you click **Apply**.

Clicking **Duplicate Flow** will add a new flow after the selected flow in the flows list.

Clicking **Rename Flow** will bring up a simple modal dialog in which you can provide the new name of the flow. The flow will only be renamed when you click **Apply** in the parent dialog.

When you click **Move Up** or **Move Down**, if the selection of flows is discontiguous, the flows will be gathered together and then moved as a block up and down through the list of flows. Again, the actual operation to reorder the flows in the Flows panel and in the project will only be carried out when you click **Apply**.

When you click **Delete Flow**, the flow is removed from the list right away, but the edit will only be carried out when you click **Apply**.

Changing info for multiple flows. You can make a multiple selection in the flows list on the left-hand side of the dialog. The fields on the right-hand side will update to show any values in common between the flows (and the project info itself, if **Project** is selected). Common values, i.e. that are the same in all selected flows/the project, appear in the appropriate line edit, and this includes where the common value is that no value is set, i.e. the line edit will be empty. Values that differ between the selected flows/the project will instead show the placeholder text **Mixed** in the line edit. You can overtype this placeholder text to set the value for all selected flows/the project.

You can also copy the values from one flow or the project to all selected flows using the **Copy info from** drop-down on the right-hand side of the dialog. This list will only show flows (or the project itself) that are not selected in the flows list on the left, so if you select all rows, the drop-down and the **Copy** button will be disabled. If you choose a flow or the project from the drop-down and click **Copy**, all values from the chosen flow/project will be applied to all of the selected flows.

Applying the changes. When you click **Apply** (or **Close** and choose to apply the changes in the message box that appears), Dorico applies all of the pending changes. Some of these edits – in particular, adding, duplicating, deleting or reordering flows – can take a while to complete in larger scores. No progress dialog appears, but the busy pointer will appear while the operation is performed.

New default key command. **File ▸ Project Info** now has the default key command **Ctrl+I** (Windows) or **Command-I** (Mac). (STEAM-9476)

Staff labels

Numbering for transposing instruments. A new option **Numbering for similar instruments with different transpositions** has been added to the **Staff Labels** page of Engraving Options. The default value is **Number separately**, which is what Dorico has always done: *Horn in F 1.2* will be numbered separately from *Horn in D 1.2*. The other value is **Number together**, which means that for two Horns in F and two Horns in D, you would get *Horn in F 1.2* and *Horn in D 3.4*. (STEAM-9151)

Tempo

Tempo equations. The horizontal placement of tempo equations relative to the different kinds of special barlines has been improved. (STEAM-9095)

Muting tempos. If you activate the **Suppress playback** property (called **Muted** in previous versions of Dorico) for a selected tempo, that tempo will no longer have any effect in playback. (STEAM-5161)

Text

Tokens context menu. When you right-click in the text editor in a text frame, a context menu appears listing all of the non-indexed tokens (i.e. those that don't require the use of the flow number, e.g. **{@flow3title@}**), in categorized submenus. If you choose a token from the menu, it is inserted at the current cursor position in the editor.

Submenus are provided for **Project Info**, **Flow Info**, **Current Date**, **Project Save Date**, **Pages** (i.e. page counts/page numbers), **Music Symbols**, and a handful of miscellaneous tokens are added to the bottom of the menu.

The tokens for time and date, in the **Current Date** and **Project Save Date** submenus, show you how each token will be resolved rather than merely a description. Note that the **Project Save Date** menu also shows the current date/time rather than the date/time that will be shown in the frame itself. (STEAM-9272)

Music symbol tokens. You can now add flat, natural and sharp symbols to text in text frames using the new tokens **{@flat@}**, **{@natural@}** and **{@sharp@}**. When resolved, these tokens will change to the **Music text** character style (which uses Bravura Text by default) and insert the appropriate accidental symbol. You can insert any SMuFL symbol by specifying the code point as a token: for example, **{@U+E050@}** will insert a treble clef. You can find the necessary code points in the SMuFL specification here: https://w3c.github.io/smufl/gitbook/

You can also include these music symbol tokens in **Project Info** fields. For example, you can now write **Symphony in B{@flat@} major** into the **Title** field, and you'll get the expected result of "Symphony in B♭ major". (STEAM-9238)

Staff label tokens. New tokens **{@staffLabelsFull@}** and **{@staffLabelsShort@}** have been added, allowing you to insert the staff labels of the player or players in the current layout in a text frame. The value resolved by these tokens may not match exactly the staff labels as they appear to the left of the staff, but they do take into account the basic options for how transposition should appear, as found on the **Staves and Systems** page of Layout Options. These new tokens may be usefully used in place of **{@layoutName@}** for the name of the instrument at the top left-hand corner of the first page of a part layout. (STEAM-9274)

Standard text editing shortcuts. You can now toggle bold, italic and underline styles for fonts that support these styles when editing text using **Ctrl+B**, **Ctrl+I** and **Ctrl+U** (Windows) or **Command-B**, **Command-I** and **Command-U** (Mac). (STEAM-9271)

Missing Fonts dialog. You have a lot of control over which fonts are used in your Dorico projects, but when you send a project to another user or open it on another computer, you have until now had no way of knowing whether or not the fonts used in the project are present on that computer.

This may be particularly problematic when moving from Windows to macOS and back again: on Windows, fonts can only use four standard styles (regular, italic, bold, bold italic) and so fonts with extended weights end up effectively as separate families, e.g. "Minion Pro Condensed Regular" would be a separate family on Windows, whereas on macOS the "Minion Pro" family would list "Condensed" as one of its weights/styles.

To bring these issues to light, a new option **Warn when projects use fonts not installed on this computer** has been added to the **Files** section of the **General** page of Preferences, switched on by default.

When this option is switched on, during file loading Dorico checks all of the font styles, paragraph styles, character styles and text events in the project to see whether they refer to font families and styles that are not present on the computer.

If Dorico determines that one or more font or text styles used by items or text events in the project use a font that is not found on the system, it then shows a dialog in which it lists each font family and style, together with the type of entity/item by which it is referred. You can simply click **OK** to continue opening the project, in which case no changes will be made and the project will show the same warning next time it's opened.

To specify a replacement font, click under **Replacement Family** to open a font menu. Type the first few letters of the name of the font family you are choosing to narrow your search. Having chosen the desired font family, you can then choose the style (if you don't choose a style, it will assume you want the **Regular** weight).

Having chosen one or more replacement font families, when you click **OK** the project will be loaded, and the affected items will be updated to refer to the replacement families and styles. When you subsequently save the project, the edits made are permanently saved, so if you e.g. later send it back to the person who sent it to you, it'll now very likely show the **Missing Fonts** dialog on their system. (STEAM-9209)

Trills

Auxiliary notes. Dorico no longer hides auxiliary notes for trills when they describe an interval of a diminished second; instead it only hides them when the interval is a perfect unison. (STEAM-9620)

Doubly-diminished intervals. Under rare circumstances it is necessary to describe a trill interval to be played on a harp as a doubly-diminished third instead of a major second. The **Trill interval** property now allows you to choose a doubly-diminished interval. Use this power wisely. (STEAM-9636)

VST Expression Maps

Mutual exclusion for playing techniques. It is now possible to define groups of playing techniques in VST Expression Maps that are mutually exclusive, i.e. when a playing technique is chosen, any other playing techniques that might already be in force that are found in the same mutual exclusion group will be removed. By way of example: in most virtual instruments and sample libraries (though not necessarily for real musicians), the string techniques *pizzicato* and *arco* are mutually exclusive, i.e. it is not possible to play both plucked and bowed at the same time; similarly, for virtual or sampled brass instruments, the various kinds of mute, such as harmon mute and bucket mute, can also not be used at the same time.

Previous versions of Dorico applied a couple of simple default mutual exclusion groups to handle these kinds of common cases, but now you can define your own groups in the **Play ▸ Expression Maps** dialog. In the **Techniques** section you will see on the left a list of mutual exclusion groups defined for the selected VST Expression Map, and on the right a list of the playing techniques included in that group.

To add a new group, click the **+** button in the action bar below the left-hand **Mutual exclusion groups** list, and then give the new group a name of your choice. To add techniques to the group, click the **+** button in the action bar below the right-hand **Has techniques** list, then choose the techniques to be added from the

dialog that appears; you can select multiple techniques using **Ctrl**+click (Windows) or **Command**-click (Mac). (STEAM-6029)

Secondary volume control. Some sample libraries use both a continuous MIDI controller and note velocity to control the dynamic level for sustaining instruments. A new **Use secondary dynamic** option has been added to the **Play ▸ Expression Maps** dialog, allowing you to define an additional volume mechanism for each VST Expression Map. (STEAM-9376)

Changing channels in VST Expression Maps. Some sample libraries split different playing techniques and articulations between separate patches that must be loaded into separate slots or channels of a multi-timbral VST instrument. In order to create a VST Expression Map that can access all of these techniques, it is now possible to specify that switching to a particular playing technique requires either an absolute or relative channel change.

An absolute channel change requires you to specify the actual channel number where the patch that provides this playing technique is found: to add an absolute channel change, click **Abs Ch.** in the action bar in the **Actions** section of the **Expression Maps** dialog.

A relative channel change instead requires you to specify the delta between the current channel and the channel where the patch that provides this playing technique is found; for example, the *pizz.* technique might be found on the next channel, which is a relative change of 1; while the *col legno* technique might be found on the next but one channel, which is a relative change of 2. To add a relative channel change, click **Rel. Ch.** in the action bar in the **Actions** section of the **Expression Maps** dialog. (STEAM-9451)

User interface

Refined appearance. The dark and light themes for Dorico have been reworked to provide greater consistency and greater contrast. In the dark theme, all dialogs now have a dark background and light text as well as the main project window, to better align with the Dark Mode setting in macOS 10.14 and later; in addition, the title bars of dialogs and windows will use the dark appearance when Dorico's dark theme is chosen.

Voice and selection colors. The color used to show the other items in a linked group, when selecting an immediate dynamic grouped with a gradual dynamic, has been darkened a little, while the colors used for voices have been tweaked to provide better contrast between them. (STEAM-9257)

Undo and redo. The **Edit ▸ Undo** and **Redo** menu items are now appended with the name of the operation to be undone or redone. (STEAM-9033)

Installation and licensing

Running Dorico Pro as Dorico Elements or Dorico LE. If you have a license for Dorico Pro but want to run the application with the limitations of Dorico Elements or even Dorico LE, you can do this by holding a key down when you start the application: hold **Alt** to run as Dorico Elements, or hold **Ctrl** (Windows) or **Command** (Mac) to run as Dorico LE.

Content installer. Dorico now requires only two packages to be installed: the Dorico application installer itself, and the appropriate content installer for your chosen variant (Dorico Pro, Dorico Elements, or Dorico LE). The content installer includes HALion Sonic SE 3.2 and the HALion Sonic SE factory content. For Dorico Elements and Dorico Pro, it additionally includes the Soundiron Olympus Micro choral sounds. For Dorico Pro only, it additionally includes the HALion Symphonic Orchestra content.

Regardless of whether you are installing Dorico for the first time, are updating from a previous version, or are upgrading from Dorico Elements to Dorico Pro, you are recommended to run the provided content installer to ensure that all of the appropriate content and HALion Sonic SE itself is correctly installed.

Time-limited licenses. If you are using a time-limited license – for example, a 30-day trial license or a 1-year Dorico Pro 365 license – you can now see the expiry date of your license at any time in the **About Dorico** window (in the **Help** menu on Windows, and in the **Dorico** menu on Mac). If your license is time-limited, the expiry date or number of days remaining is shown at the bottom of the window; if your license is not time-limited, no expiry information will appear there.

Platform support

Deleting files. When Dorico deletes auto-saves, backup projects, key commands, etc., these files are all now moved to the Recycle Bin (Windows) or Trash (Mac) rather than being deleted immediately. (STEAM-9360)

Minimum supported operating system. Dorico now requires macOS 10.12 Sierra or later.

Issues resolved

ID #	Component	Issue
STEAM-9074	*Articulations*	Inputting an articulation on a single note in chord mode no longer incorrectly also adds the same articulation to the next note in that voice.
STEAM-9142	*Bar numbers*	Setting the **Color** property on a bar number now changes the color of the bar number's enclosure, if one is shown.
STEAM-9364	*Bar repeats*	When casting off the music, if both bars of a 2-bar repeat or all four bars of a 4-bar repeat do not fit on the system, that whole repetition will no longer be forced onto the system.
STEAM-9387	*Bar repeats*	Enabling consolidation of bar repeats in very large scores no longer sometimes causes Dorico to crash.
STEAM-9188	*Barlines*	It is now possible to copy a time signature and all its associated special barlines at the same time.
STEAM-9215	*Chord symbols*	Chord symbols whose position coincides with a change from one instrument to another on the same system are no longer drawn twice.
STEAM-9297	*Cues*	Dragging cue labels in Engrave mode now draws the attachment line correctly.
STEAM-9341	*Cues*	Microtonal accidentals now appear correctly in octave-shifted cues.
STEAM-9462	*Cues*	Dorico no longer draws the cue clef in the preamble if the cue clef matches the default clef of the destination instrument.
STEAM-9744	*Cues*	A problem whereby the wrong clef could be used for a cue has been fixed.
STEAM-5887	*Dynamics*	It was sometimes mysteriously impossible to create a dynamic at a position because an empty dynamic group had been left there; these empty groups are now removed.
STEAM-9202	*Dynamics*	Some situations in which replacing a dynamic in an existing group, or appending a dynamic to the end of a group, would produce an unwanted extra dynamic have been fixed.
STEAM-9228	*Dynamics*	Under some circumstances, gradual dynamics could move further away from the staff in galley view during note input; this problem has now been fixed.
STEAM-9488	*Dynamics*	Dynamics at the same position that are not part of the same group now play back correctly.
STEAM-9192	*Filters*	**Filter Notes by Pitch** now works correctly on divisi staves.
STEAM-9004	*Fingering*	Fingerings on grace notes now correctly respect the **Follow voice direction** engraving option.
STEAM-4925	*Glissando lines*	The snapping of glissando lines when the note at either end of the glissando either becomes tied or becomes notated as a single note has been improved.
STEAM-9464	*Grace notes*	Under some circumstances, grace notes in transposed pitch layouts could appear in the wrong position on the staff; this problem has now been fixed.
STEAM-7831	*Graphics export*	Text in exported SVG files is no longer too small (Windows only).

ID #	Component	Issue
STEAM-9117	*Graphics export*	Text items in exported PDFs no longer sometimes incorrectly use the stretch value defined for a different text item.
STEAM-9346	*Graphics export*	**Export All Layouts as PDF** no longer incorrectly exports only the first page of each layout.
STEAM-9362	*Holds and pauses*	Under some circumstances, edits to items in the vicinity of a fermata could cause the distance between staves to increase unexpectedly; this problem has now been fixed.
STEAM-9229	*Key signatures*	Custom key signatures with per-clef octave overrides for accidentals now display correctly in the preamble at the start of each system.
STEAM-9261	*Localization*	Instrument change warning labels now use the language as chosen on the **Language** page of Engraving Options, rather than the language chosen for the application's interface.
STEAM-9169	*Lyrics*	Under rare circumstances, Dorico could crash when processing lyrics; this problem has now been fixed.
STEAM-9212	*MIDI export*	Exporting a project containing a trill after the 374th quarter note (crotchet) beat as a MIDI file no longer causes additional unwanted notes to be exported at the start.
STEAM-9381	*MIDI export*	Notes where **Playback end offset** is set to a large enough negative value that the end of the note comes before their start positions are no longer exported to MIDI.
STEAM-9023	*MIDI import*	Drum set music exported from Dorico via MIDI and then reimported is now correctly identified as being for drums.
STEAM-9213	*Multi-bar rests*	Dorico no longer crashes when attempting to exclude single-bar multi-bar rests from spacing in the presence of local time signatures.
STEAM-9734	*Multi-bar rests*	Dorico will no longer show "tacet al fine" for a multi-bar rest that goes to the end of a flow if a repeat marker is positioned at the final barline.
STEAM-9361	*Music fonts*	When changing music font using **Engrave ▸ Music Fonts**, Dorico now updates all notehead sets, rather than only those notehead sets that are used in the project.
STEAM-5364	*Note input*	Selecting an implicit rest and typing **.** or clicking the dot button in the note input toolbox now changes the rest's duration as expected, rather than doing nothing.
STEAM-8950	*Note input*	It is now possible to navigate the caret left or right across the position where one instrument transitions to another in page view.
STEAM-9197	*Note input*	Pasting a selection that ends with non-note items would not always correctly extend the flow such that the last non-note item would appear; this problem is now fixed.
STEAM-9326	*Note input*	Glissando lines are no longer sometimes incorrectly overwritten or removed when copying and pasting.
STEAM-9328	*Note input*	Under some circumstances, pasting or repeating notes in one voice on a percussion kit would incorrectly overwrite music in another voice; this problem is now fixed.
STEAM-9421	*Note input*	Under some circumstances, paste operations (including **Reduce** and **Paste into Voice**) could cause notes to be incorrectly placed inside tuplets; this problem is now fixed.
STEAM-9450	*Note input*	It is once again possible to invoke the caret at the end of the flow by selecting the automatic final barline and typing **Return** or **Shift**+**N**.

ID #	Component	Issue
STEAM-9514	*Note input*	It is now possible to paste material onto an extra staff (e.g. an ossia) belonging to an unpitched percussion instrument.
STEAM-9174	*Note spacing*	Edits to system indents made in Engrave mode are now correctly respected for systems where the first spaced position comes after the very start of the system.
STEAM-9036	*Notes*	Overriding the **Voice column index** property for a cross-staff note no longer sometimes causes one or more noteheads on the cross-staff stem to become detached.
STEAM-9245 STEAM-9334	*Notes*	In general, editing operations that affect the duration of a note no longer remove any Forced Duration properties from that note unless absolutely necessary.
STEAM-9289	*Notes*	The **Rhythm dot consolidation** property now correctly takes precedence over the corresponding engraving option, so setting it for a chord will cause it to always take effect.
STEAM-9477	*Notes*	Rhythm dots moved horizontally to avoid note flags now correctly ignore the note-dot gap if the note itself is scaled.
STEAM-9395	*Ornaments*	It is once again possible to create an inverted turn in the **Shift**+**O** popover by typing **invturn**.
STEAM-9239	*Page layout*	**Wait for next frame break** now works as expected if applied to a frame break on a tacet.
STEAM-9354	*Page layout*	Setting **Wait for next system/frame break** now always works correctly in layouts where fixed casting-off, specifically a fixed number of systems per frame, is enabled.
STEAM-8433 STEAM-8892	*Performance*	The Mixer window now opens more quickly, and updates more quickly when hiding/showing different faders or sections.
STEAM-9092	*Performance*	The speed of loading sounds in NotePerformer has been increased.
STEAM-9389	*Performance*	Editing music in projects where large time signatures are drawn outside the staff at system item positions no longer incurs a performance penalty.
STEAM-9390	*Performance*	Inputting notes in a layout where bar rests are hidden (via Layout Options) is no longer much slower than when bar rests are shown as normal.
STEAM-9502	*Performance*	Dorico is now much more resilient to being flooded with MIDI data from external devices, so it should no longer exhibit unusually high CPU usage or hang altogether.
STEAM-9021	*Performance*	It is now much faster to change between the different options in **View ▸ Note and Rest Colors**.
STEAM-9118	*Play mode*	Clicking on a note in the piano roll editor with the selection tool no longer sometimes incorrectly results in the note being deleted.
STEAM-9338	*Play mode*	Swing is now calculated correctly for irregular or pick-up bars that start midway through a beat.
STEAM-9348	*Play mode*	Deleting players in Setup mode no longer causes stale information to be left behind in the Endpoint Setup dialog.
STEAM-9397	*Play mode*	Duplicating a plug-in in the VST Instruments rack in Play mode now correctly creates the appropriate MIDI channels in the Mixer.

ID #	Component	Issue
STEAM-9403	*Play mode*	Dorico no longer crashes if you attempt to change an instrument to use a different playback device in the track header after setting the MIDI channel to an invalid value.
STEAM-9405	*Play mode*	Keyswitches and MIDI controllers are now output in the same order in which they are defined in the VST Expression Map.
STEAM-9410	*Play mode*	The mouse cursor now correctly changes after choosing a different tool in Play mode.
STEAM-9428	*Play mode*	When jumping back to an earlier place in the music from a repeat, the tempo at the destination is now correctly chased.
STEAM-9448	*Play mode*	If explicit CC7 or CC10 automation data is present, the initial value from the MIDI fader in the Mixer is no longer output in preference to the automation when starting playback.
STEAM-9290	*Playing techniques*	The size of playing techniques now correctly updates immediately according to a change of staff size at a system break.
STEAM-9173	*Print mode*	The command **Export All Layouts as PDF** no longer incorrectly only exports the first page of each layout to PDF.
STEAM-9122	*Project files*	Saving an auto-backup no longer causes Dorico to crash if the filename of the project being saved contains an unmatched parenthesis.
STEAM-9643	*Repeat markers*	A right-aligned repeat marker positioned at the final barline of the flow no longer incorrectly collides with other items positioned within the final bar.
STEAM-9270	*Rhythm slashes*	Dragging the end handle of a slash region that crosses a start or end repeat barline no longer sometimes causes a crash.
STEAM-9475	*Rhythm slashes*	Under some circumstances, where rhythm slash regions are present on multiple staves, a slash region starting in the middle of a bar would not show correct rests; this is now fixed.
STEAM-9598	*Rhythm slashes*	Rhythm slashes no longer sometimes draw in the "out of range" color for instruments with large transpositions.
	Setup mode	It is no longer possible to drag an instrument from a solo player and drop it onto a section player; section players can only hold a single instrument.
STEAM-9024	*Slurs*	Slur on cross-staff notes no longer fail to draw if a staff has been removed by a staff count change.
STEAM-8776 STEAM-9264	*Slurs, tuplets*	The positioning of slurs, tuplets and articulations on notes crossed to another staff is now correct when extra staves belonging to the instrument are hidden.
STEAM-9191	*Staff labels*	The **Show instrument change label at start of flow** option is now switched on by default in part layouts, and only shows a label if the player holds multiple instruments.
STEAM-9372	*Tempo*	Tempo equations whose width to the left of the barline is greater than the width to the left of a coincident rehearsal mark no longer cause staves to unexpectedly be forced apart.
STEAM-6775	*Text*	Lower diacritics are now positioned correctly; this also corrects problems with the vertical positioning of ligatures in the Figurato font (Mac only).
STEAM-9201	*Text*	Stretching fonts now works correctly once more (Mac only).

ID #	Component	Issue
STEAM-9367	*Text*	Text items at grace note positions no longer cause collision avoidance to behave as if the text item were in fact positioned at the primary position.
STEAM-9380	*Text*	The positioning of multi-line text items above the staff when the staff itself does not have any protruding items has been improved.
STEAM-9193	*Time signatures*	Under some circumstances, typing **Return** with a barline selected in an open meter could cause Dorico to crash; this problem is now fixed.
STEAM-9115	*Tokens*	Tokens for resolving dates that show the day of the month as digits no longer include an extra space for single-digit days.
STEAM-9140	*Tremolos*	Resetting the beaming of a single-note tremolo no longer incorrectly causes that note to stop playing back.
STEAM-9178	*Tremolos*	Resetting the beaming of notes with two-note tremolos now correctly causes them to play back as normal, non-tremolo notes.
STEAM-9179	*Tremolos*	It is no longer possible to set both a single-note and multi-note tremolo on the same note.
STEAM-9253	*Tremolos*	Clearing tremolos using the **Shift+R** popover now redoes correctly when undone.
STEAM-9337	*Tremolos*	Tremolos on up-stem notes on single-line percussion instruments are no longer needlessly snapped upwards to avoid staff lines that are not drawn.
STEAM-9113	*User interface*	The status bar read-out for the transposition of the current layout no longer sometimes gets out of step with changes in transposition.
STEAM-9189	*User interface*	Dorico will now correctly navigate to the start of a flow when clicking on its card in the Flows panel in Setup mode if its first bar number is greater than 1.
STEAM-9207	*User interface*	Navigating left or right through the music in galley view with **Home**/**End** no longer incorrectly uses the total width of the first flow to determine the amount to move.
STEAM-9222	*User interface*	The **Use custom player order** control on the **Players** page of Layout Options is now always correctly enabled or disabled as appropriate.
STEAM-9279	*User interface*	Key commands typed while a modal **Open** or **Save** dialog is open no longer unexpectedly edits the project in the background (Mac only).
STEAM-9349	*User interface*	It is no longer possible to try to switch to galley view when no layout is currently visible in the music area.
STEAM-9368	*User interface*	It is no longer possible to resize the Mixer beyond the maximum size of its displayed faders.
STEAM-9397	*User interface*	When switching to Play mode from Engrave mode, the buttons from the Engrave mode toolbox no longer incorrectly appear in the toolbox in Play mode.
STEAM-9496	*User interface*	Clicking one of the buttons in the toolbox in Engrave mode when no layout is currently visible in the music area no longer causes Dorico to crash.

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.