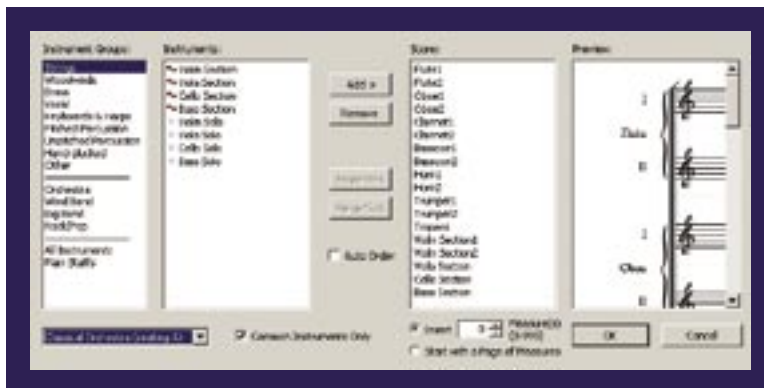


FIG. 1: Notion's Score Setup screen allows you to easily and quickly create your score. You can choose a standard template or create a unique orchestration by selecting instruments individually.



VIRTUOSOWORKS Notion 1.0.6 (Win)

Bring the London Symphony Orchestra into your studio. By Peter Hamlin

VirtuosoWorks Notion, a new notation and orchestral-performance program for Windows, is the brainchild of renowned composer and programmer Dr. Jack M. Jarrett. Jarrett, a former head of the Composition Department at Berklee College of Music and a longtime conductor of orchestral music, is the creator of Music Printer Plus, one of the first notation programs for the PC. This time around, his goal was to develop software that would give musicians a “user-friendly, notation-based music writing interface combined with the auditory aid of full-fidelity orchestral playback.” Given his many years of experience, Jarrett has clear ideas about what a notation and performance program should do.

Ready, Set, Install

Notion arrives on three CDs (needed to accommodate the sample library) with a compact manual, a handy cardboard Quick Reference guide, information about registration that gives you access to Notion's technical support, and a small iLok USB Smart Key for copy protection. Installation is smooth, and after about five minutes, you're asked to plug in the small iLok USB Smart Key for a brief hardware install, and then reboot your

computer. (You can install Notion on as many computers as you like, but you need your iLok to run the program.)

After launching the program, it's easy to create a score. **Fig. 1** shows Notion's Score Setup screen. You can select from a number of templates (band, orchestra, brass quintet, and so on) or create a score from scratch using the available instruments, which are organized into handy categories. If you have a favorite configuration, you can create a customized template.

After you complete the score setup, you'll see a large Score area to the right and a Sidebar area to the left. The Sidebar provides access to four menus labeled Tools, Entries, Expressions, and Properties (see **Fig. 2**).

The Sidebar can be placed to either the left or the right of your score depending on your preference. The size of the Sidebar font can be adjusted, and you can even select an auto-hide feature (much like the auto-hide tool on the Windows task bar), which makes the Sidebar visible only when you move the cursor to that side of the screen. A timeline showing measures (as shown in **Fig. 2**) or time is located above the score, and you can click on any measure number (or time) to navigate to that position in the music. Overall, the user interface is clear, logical, and easy to learn for new users and those familiar with other notation programs.

Nothing to Curse At

Notion's cursor has two modes. The first, called the Pointer, is represented by a small arrow and is used for editing. The second is called the Music Cursor, and it takes different shapes depending on what kind of music information you are working with.

After the score layout is created, you are prompted to create a time signature—now you're ready to enter music. To enter notes, open the Sidebar's Entries section, click on Notes/Rests, and select a note or a rest value. **Fig. 3** shows the palette of notes and rests. The Music Cursor changes to that type of note, and you click on the staff where you want the note or the rest to appear. Instead of selecting a quarter note from the Sidebar, you can press the Q key, one of many shortcut keys available. For example, an eighth note is the letter E, a dot is D, a diamond note shape is Shift + D, and so on. (Pressing F2 brings up a Keyboard Shortcuts screen for handy reference.) I like the efficient way that shortcut keys are handled. For example, there is one key (F) that cycles through forte dynamics when you press it repeatedly—*mf*, *f*, *ff*, *fff*, *ffff*, *fffff*, then back to *mf*—which seems easier to use than assigning a separate key to each of those values.

You can enter notes using a MIDI controller. Step Time Input allows you to enter a note or a chord individually. Real Time Input gives you the ability to enter

a passage in tempo. Stretch Time Input lets you tap the rhythm while playing so that you can enter notes at any convenient tempo. MIDI entry works well, although the means of selecting MIDI modes could be streamlined. According to VirtuosoWorks, that will be a feature in a forthcoming release, available in early spring 2006. It would also be nice if the program remembered the users' last preference the next time Notion is launched. A feature called Advance On Entry lets you automatically move to the next note without using the mouse, which is a helpful time-saver. When you come to the bar line, however, you have to manually use the mouse to jump to the next bar.



FIG. 2: This figure shows Notion's Workspace, with the Score Area to the right and the Sidebar to the left. The current measure indicator, measure timeline, and playback controls are just above the score. At the bottom right is a reminder that the cursor is on the Violins staff.

According to the manufacturer, that is a bug that will be fixed in the next patch.

There are two shortcut-key methods for tuplets. The first uses the keypad. The Num Lock key defaults to the on position when Notion is opened, and each number on the keypad is the corresponding tuplet (3 is a triplet, 4 a quadruplet, and so on). To enter an eighth-note triplet, press E for eighth note and then 3 for tuplet. The tuplet sign will remain activated until you press Esc or use another feature. The second method uses the Alt key, which is especially handy for laptop users (those without a keypad). Pressing the Alt key and then a number between 2 and 9 on the standard keyboard works in the same way that the keypad method does: press E for an eighth note, then press Alt and then 3 for a triplet.

Notion has a number of note-entry options that make it particularly elegant and distinctive. For example, you can apply microtonal accidentals (quarter tones above and below a normal accidental) that play back in quarter tones, and you can create nontraditional key signatures that include microtonal accidentals. If you place one of those symbols in your custom key signature, that note will always be adjusted by that particular microtonal interval. Rehearsal numbers are handled well: you enter them using the mouse, and their sequence is automatically managed. If you insert or delete a rehearsal number, all subsequent rehearsal numbers or letters in the series are automatically updated.

I also like little touches such as crescendo and diminuendo markings (hairpins) that automatically adjust their placement to the best position. Notion will leave the correct amount of distance from other nearby symbols, so you don't have to make those fine and tedious adjustments. Also, when you enter a grace note, the program creates a correctly placed slur, another small but welcome feature.

PRODUCT SUMMARY

VIRTUOSOWORKS Notion 1.0.6

music notation software

\$599.99

\$399.99 (academic price)

\$299.99 (competitive upgrade)

OVERALL RATING (1 THROUGH 5): 4

PROS: Elegant and clean user interface. Exceptional sound. High degree of expressive control over tempo and instrumental sound. Very little or no tweaking needed for high-quality sound and score appearance.

CONS: No support for advanced features, including lyrics, reading and writing MIDI files, importing and exporting graphics, and Web posting of scores. Some instruments not yet supported by the sample library. Not all notation symbols supported in sample library.

MANUFACTURER

VirtuosoWorks, Inc.

www.notionmusic.com

What's on the Menu?

In addition to notes, there's a large selection of symbols available in the Sidebar menus. The Tools menu lets you create and edit beams, ties, arpeggios, and slurs. You can automatically fill all empty measures with rests, attach a text box to any note or symbol, and enter and edit titles and text.

The Entries menu is used to enter notes and rests, diamond notes, accidentals, clefs, key signatures, time signatures, repeats, and tuplets. The Expressions menu contains symbols for dynamics, articulations, tempo markings, ornaments and grace notes, and special expression marks for strings, winds and brass, percussion, keyboard, guitar, and harp. You can click on any dynamic marking on the submenu to change the Music Cursor to that symbol, then click on any note to attach the marking to the note. (Remember that you also have shortcut keys available to select symbols such as dynamic markings without having to find them on the submenu.)

Notion allows you to customize the behavior of various symbols using the Properties menu, which automatically expands when one of those symbols is selected.

For example, if you're working with tuplets, you can change how many tuplets fit into what rhythmic value, where the tuplet indication is placed (for example, at the note head or at the side of the bar), whether to include a bracket, whether to show the tuplet as a ratio, and whether to hide it. The customization menus are only two layers deep, so you have ready access to a rich supply of features.

There are other nice touches that help move your work along quickly. For example, using the Add Special command, you can add a series of articulations to many notes with one command or erase marked area. I wish more items were supported by that feature. In the current version of Notion, ornaments

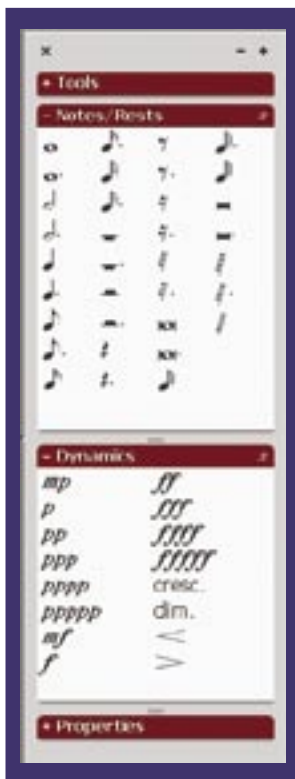


FIG. 3: In this figure, two of the Sidebar menus have been expanded to show their submenus. To select rhythmic values for notes and rests, choose the Notes/Rests submenu of the Entries menu. You can set dynamic markings in the Dynamics submenu of the Expressions menu.



FIG. 4: Notion's NTempo is used to create custom rhythmic patterns that you "perform" to indicate tempo. The rhythmic pattern shown above the staff will be used as the pulse.

and instrument-specific markings, such as string harmonics, are not supported by those group-edit commands.

Payback Is in the Playback

One of the biggest and most noticeable strengths of Notion is that playing scores, often without any tweaking, sounds wonderful. That is due in large part to the inclusion of an extensive orchestral sample library of recordings by the London Symphony Orchestra (see the sidebar "Play That Tune" for a list of what is and isn't included in the sample library). The samples faithfully reproduce nuances of musicianship, such as articulation and dynamics. In addition, Notion supports many techniques that are unique to a particular instrument family. For example, applying a trill to a flute calls up a sample of a recorded flute trill rather than a synthetic trill created by alternating rapidly between two different samples. The difference is significant.

Not all of the notation indications, however, can be realized during playback. You can enter symbols for string harmonics, tremolo, and *sul ponticello* (playing at the bridge), but samples are not yet available to playback those sounds. According to VirtuosoWorks, the company has recorded 26 London Symphony Orchestra expansion kits, which are already available for sale at a rate of one or two per month. Another reason for Notion's good sound quality is that dynamics are controlled within the program, and the dynamic resolution is far greater than what MIDI can provide. That means you don't have to worry about "staircase" effects during crescendos and decrescendos. And if you like thick chords, Notion claims to support a maximum of 1,000-note polyphony.

Notion has an elegant feature called NTempo that lets you "conduct" a performance to get just the right changes of tempo. NTempo lets you control the playback tempo by tapping any of the middle keys on your computer keyboard. You can save different performances as NTempo files and reload them as needed. NTempo allows you to use any rhythmic value as the pulse. Or, for even more rhythmic control, you can create an NTempo staff in your score (see Fig. 4), then enter a rhythmic pattern on that staff corresponding to whatever tapping pattern you want to use to control

PLAY THAT TUNE

Notion has a large but incomplete sample library. The traditional orchestral sections are covered for the most part. There are excellent samples of violin, viola, cello, and bass sections, but no samples of solo bowed strings. Most of the common orchestral woodwinds are available, but not contrabassoon or the saxophone family. Horn, trumpet, tenor and bass trombone, and tuba are included in the brass family, but not euphonium. There are no vocal samples of any kind, though VirtuosoWorks has already recorded a children's chorus and plans to record and release adult chorus and solo voices.

Harp, piano, and celeste are supported, but not organ or harpsichord. Timpani, xylophone, and orchestral bells are found in the pitched percussion library, but not bongos, crotoles, vibraphone, and marimba. Plucked string instruments that are not part of a traditional orchestra, such as guitar, banjo, and mandolin, are not in the library. As indicated, VirtuosoWorks has ambitious plans for expanding the sample library and, for now, you can sometimes find an acceptable substitution (for example, substituting the bassoon for contrabassoon works reasonably well). If an instrument isn't included in the sample library, Notion plays a default piano sound.

The sample library for supported instruments does include a rich collection of multisamples (different samples for loud and soft playing, different attacks, trills, and so on), and the quality of the current sample library is high. If you're writing for a traditional orchestra, you'll find the instruments that you need.

the tempo. That allows you to control tempo changes at any rhythmic level (for example, using 16th notes for a section that requires a lot of detail in the tempo changes, or using whole notes where that kind of detail is not required). NTempo is easy to use, responsive, and powerful. It largely contributes to the realism and musicality of playback. Check out the sound files at the EM Web site (www.emusician.com) for examples of NTempo and other playback features (see **Web Clips 1** through **5**).

Notion does not use MIDI for playback, so it has no channels or choices for external MIDI ports, software synthesizers, and so on. Notion uses only its own integrated sample library. Although that may seem like a limitation, the advantage is that the instrumental sounds are tightly integrated into the program. Another benefit is that the balances between instrument families are consistent and predictable, which would not be true if you were using different sound modules for playback.

Pick a Part

Extracting parts is done using the Import/Export option in the File menu. That feature allows you to extract all the parts in one batch or select one or more individual parts. You can also change page-setup settings for all parts in one batch, an important feature for those who want parts to conform to a consistent format. Notion can split merged staves into separate parts (for example, if you combined First and Second Flutes on one staff in the orchestral score, you can automatically print them out on two separate parts).

A Page Setup dialog box in the File menu is for setting margins, paper size, portrait or landscape orientation, and whether to print hidden characters. Here you can also change the size of your score by selecting a different music font size. There are 9 choices between 5 and 35 points (some programs use a continuous scale of percentage values). There is only one font for notation symbols, called Stava. You

can't substitute other fonts for music symbols, although you can, of course, select any font from your computer's installed fonts for text items.

The Double Bar

The big question is, if you're looking for a notation program, should you buy Notion? Generally speaking, Notion is a full-featured program that serves the needs of many composers. There are, however, features common to other notation programs that you won't find in Notion. For example, though the Attached Text Box allows you to attach a short text fragment to a note, that feature is not practical for lyrics. You can't edit lyrics in a separate text editor, and there are no features to shift a group of lyrics left or right, to add dashes to separate syllables, or to add lines to indicate that a syllable is held over more than one note. (According to the manufacturer, a lyrics feature will be released in a forthcoming upgrade.) Additionally, there is not a way to place graphics in a score or to copy selections to a graphics format for use in other documents, nor does Notion read or write MIDI files. Although the program can import (but not export) MusicXML files, there's no way to post Notion scores on the Web. (According to VirtuosoWorks, many of those features are planned for

a future version. A Mac version will also be available by the time you read this.)

Still, for a first notation program, Notion is definitely worth considering. Its straightforward interface is easy to learn, and the program is a pleasure to use. If you already own another notation program, perhaps one that you find overly complicated, I suggest giving Notion a try. It is especially useful for people concerned with the quality of score playback (for example, if you are producing demos that need to be high quality or creating scores for video projects). And although it doesn't do everything that the most advanced notation programs do, it does what it does very well.

There is no such thing as an ideal music-notation program. One person's essential feature is another person's unnecessary complication. Striking the right balance between ease of use, flexibility, and power is more art than science. Even in this early version, Notion has struck a balance that will hit the sweet spot for many composers, arrangers, educators, and students.



Peter Hamlin teaches at Middlebury College in Vermont. In addition to his work as a composer, he performs in the live-electronic improv band Data Stream.