



Hauptwerk 4.0.0 Release Notice

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Release Notice

Version 4.0.0

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Overview

Hauptwerk 4 is a major new version of Hauptwerk, superseding versions 1-3, with its user interface and MIDI implementations redesigned from the ground up to make Hauptwerk extremely easy and intuitive to use, requiring almost no technical, MIDI or computer expertise, but without compromising Hauptwerk's flexibility or realism.

There are a *huge* number of other major usability, functional and performance enhancements, based firmly on what organists have told us they wanted from virtual organ software over the past ten years (covering the majority of features we've been asked for, in fact), and we hope and believe that Hauptwerk 4 will hugely benefit every existing virtual organist, as well as helping to broaden the appeal and accessibility of pipe organs, both real and virtual.

Please have a look through the *Changes in version 4.0.0* section for to find out what's included. We hope you enjoy it!

The most current source of information about Hauptwerk is the Hauptwerk website: www.hauptwerk.com. Please have a look there too for updated information, downloads, tutorials, known bugs, and lots more.

Compatibility, Support and Licensing Policies

Version 4 is fully and seamlessly backwardly-compatible with versions 2-3, and your settings, combinations and voicing can be preserved (although you have the option to reset and re-detect your settings automatically using version 4's 'MIDI learn' capability). Some new version 4 functions may require updates to a small number of sample sets for maximum compatibility, but all sample sets that worked in versions 2-3 should work in version 4 at least as well as they did in versions 2-3. Sample sets in Hauptwerk version 1 format can be imported and used in this version. It's our intention that all future Hauptwerk versions remain fully and seamlessly backwardly-compatible with this version.

We believe version 4 is better in every way than versions 1-3: it's easier to use, with many more features, greater realism and better performance. Versions 1 and 2 are thus now considered obsolete and are no longer available, developed or supported. If you have a license for versions 1-2 then you must upgrade to a licensed version 4 edition in order to receive support from us.

Version 3.30 will continue to be supported for a maximum period of 12 months from the date you purchased a license for it (either a new license or an upgrade). After that you must upgrade to the current version in order to continue receiving support from us. There will be no more version 3 releases, and we reserve the right not to assist with issues that would be resolved by upgrading to the current version. In other cases we will attempt to provide reasonable assistance and, if necessary, work-arounds to supported customers.

Reasonably-priced upgrades can be purchased from the Hauptwerk on-line shop or from your re-seller. In particular, very affordable upgrades are available to the lower-cost version 4 Basic Edition.

Upgrades between minor Hauptwerk versions (for example between 4.0.0 and 4.1.0) are free to supported users, but a license upgrade must be purchased to upgrade between major versions (for example between version 3.30 and version 4.0.0).

Media, Downloads, Installation and Upgrading

We strongly recommend that you read the *Hauptwerk User Manual*, which includes important prerequisites and installation instructions, and is included on the Hauptwerk DVD and on-line on the Hauptwerk website, before attempting to install or upgrade Hauptwerk. Please follow the instructions in the relevant installation section.

In particular, please ensure that you have at least 2 GB of memory, and at least 6 GB of free disk space, otherwise Hauptwerk's installer may not function correctly. On Windows platforms, please also ensure that you have 64-bit Windows 7 (recommended) or 32-bit Windows 7 or 32/64-bit Windows Vista or 32/64-bit Windows XP with all current service packs and updates installed. On Intel Macs you need OS X Snow Leopard 10.6.7 or later, and on PowerPC G4/G5 Macs you need OS X Leopard 10.5.8 or later. Please also make sure you have all current operating system and driver updates applied. (*)

A small hardware USB 'dongle', termed the Hauptwerk USB key, is used to license Hauptwerk and some third-party sample sets for it.

Hauptwerk licenses, license upgrades and evaluation/update DVDs can be ordered from the Hauptwerk on-line shop or from your re-seller. The software itself can also be downloaded for free from the Hauptwerk website. The software is identical in all cases, and contains the full Hauptwerk software and installer at the latest version. The installer will install Hauptwerk on the computer if Hauptwerk version 2 or later is not already installed on it, or will upgrade your existing Hauptwerk installation to the latest version if version 2 or later is already installed. No settings will be lost when upgrading and no sample set sets need to be re-installed.

You can obtain the current Hauptwerk software either as a free download or on DVD at a minimal cost. Both are available via our website. Whether the software functions as licensed software or as an evaluation/Free Edition is determined by the presence or absence of the Hauptwerk USB key, and whether it contains a valid license for the version of the software you have installed.

If you do not have a license for Hauptwerk version 4 the software will function as a Free Edition/evaluation copy. If you had an evaluation copy of versions 2-3 installed then the installer will upgrade it to a Free Edition/evaluation copy of version 4.

If you do not have a license for Hauptwerk versions 2-4 and you buy a license for version 4 then you will be sent the necessary Hauptwerk USB key as well as a copy of the software DVD containing the latest version of Hauptwerk.

If you currently have a license for Hauptwerk versions 2-3 then you need to purchase an upgrade to version 4 in order to be able to use this version as licensed software. Once you have purchased an upgrade we, or your re-seller, will contact you to arrange to update your existing USB key remotely to enable version 4 on it. This is a simple process that requires exchanging two small files by email, and full instructions will be sent to you following your order. If your Hauptwerk computer does not have an Internet connection you can transfer the files via a USB memory stick, writeable CD/DVD, floppy disk, or similar.

Important: If your license is for version 2 or 3 and you do not update your license for version 4 before installing, Hauptwerk will revert to running in Free Edition/evaluation mode but allow you to apply the license upgrade at any time to restore full licensed functionality. A computer can only have one version of Hauptwerk installed on it at any one time. Once a new version has been installed it is not possible to revert to a previous version without uninstalling Hauptwerk completely (selecting the option to remove all settings and files) then re-installing the older version, which would wipe any existing settings. Hence there is no easy way to revert to a licensed version 2 or 3 installation once version 4 has been installed other than by purchasing a license upgrade.

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If you have a license for the version 4 Basic Edition of Hauptwerk and wish to evaluate the additional features of the Advanced Edition with a view to upgrading your license, simply disconnect your Hauptwerk USB key temporarily (although never connect or disconnect it whilst Hauptwerk is actually running). Hauptwerk will then start in Free Edition/evaluation mode, allowing all of the features of the Advanced Edition to be evaluated (except for the wind supply model). No settings will be lost in the process, and you simply need to reconnect your Hauptwerk USB key to revert it to the licensed Basic Edition.

() Please note: PowerPC G4/G5 Macs are still supported for this version of Hauptwerk for backward compatibility only, but we plan to drop support for them in version 4.1.0. Windows XP and Vista are also still supported for this version of Hauptwerk for backward compatibility only. We might drop full support for them in or after version 4.1.0, although Hauptwerk should continue to be usable on them.*

Changes to Hauptwerk

All Hauptwerk releases since version 2 are cumulative, thus each includes all changes from previous Hauptwerk versions.

Changes in version 4.0.0

Since so much of Hauptwerk's user interface has been redesigned from the ground up, we're not going to try to give an itemized list of every detailed change. Instead we thought it would be more helpful and readable to summarize the notable ones, only going into full detail if there's something you specifically need to be aware of. Please (re-)read through the *Hauptwerk User Manual* to learn how to use the new features and new user interface.

So here are some of the highlights first:

Hauptwerk has always aimed to provide the most realistic model possible of a pipe organ on current computer hardware. For version 4 we've tried to make the entire experience of using and setting up a well-integrated, powerful and flexible virtual organ system extremely quick, easy, and intuitive, even for those with little or no MIDI, computer or technical experience or inclination. Hauptwerk now automatically detects and configures MIDI settings for most makes and models of MIDI organ console and MIDI hardware. If you're using a theatre organ, it will even set up second-touch for you! Right-clicking on a virtual control allows its MIDI settings to be configured (automatically or manually). You can alternatively access the (redesigned) MIDI settings screens via the menu, as before.

Real-time performance and activity meters and indicators and real-time adjustments make diagnosing and rectifying any performance and configuration issues quick and self-explanatory. If you have a performance problem you should be able to see instantly what's causing it (a meter will go into the red) and how to correct it. The meters also show clip indicators so that you can check that your recordings were perfect.

Hauptwerk's user interface has been redesigned from the ground up to be ultra-intuitive, with clearly laid-out control panels bringing all related functions together so that it's immediately obvious how functions are used, how they relate to each other, the functions that are available, and how to configure those functions for MIDI operation. For example, the 'Audio, MIDI and Performance' control panel shows audio CPU load, RAM usage, sound delay, polyphony usage, audio levels, sample rate and MIDI channel activity indicators and allows you to adjust polyphony limits and audio levels in real-time. Hovering over each item on a control panel gives a concise, meaningful explanation of its function and usage and right-clicking shows related functions.

Settings and settings screens have been completely redesigned to make them intuitive, without losing flexibility. Settings affecting a given object are now stored in at most one place (no longer are there organ settings and general settings that both affect a given virtual control, for example) and all MIDI settings and preferences are entirely organ-specific, unless they specifically relate to loading organs. Thus you can now configure a given MIDI piston to trigger a particular Hauptwerk master general combination for one organ, but instead to trigger a virtual combination piston included natively within a different organ, for example. This allows you to make the best use of your MIDI hardware according to the functionality and style of each virtual organ.

MIDI settings screens now work in real-time: you can open several at once and see and test the effects of changes instantly, with real-time MIDI activity indicators showing which virtual controls or functions are being triggered. So if you accidentally assign a given MIDI piston to both a virtual piston and virtual stop then you can immediately identify and rectify the issue, using the per-object MIDI activity indicators as guides. These make diagnosing any MIDI configuration issues very quick and easy.

Wizards help you to get Hauptwerk and each virtual organ set up correctly, quickly and easily.

Version 4's new user interface has also been optimized throughout for touch-screen use. Touch-screens provide a popular, convenient, intuitive and cost-effective way to control multiple virtual organs (most often used in combination with MIDI keyboards and MIDI pistons). The control panels make all of Hauptwerk's key functions readily accessible by touch and give clear visual feedback of all associated statuses. There are many 'mini' dockable control panels, with all control panel window positions being stored separately for each organ, so you can lay them out optimally according to the features and layout most appropriate for each particular virtual organ.

Similarly, there are also customizable, dockable 'piston toolbars', which remember the functions you assign to them, and their positions, separately for each organ.

Virtual console displays now support zooming, scrolling and full-screen mode to make best use of your valuable screen space. Virtual organs can optionally support multiple screen orientations and aspect ratios too (when supported by the virtual organ). To see it in action: select the left or right stop jamb virtual console pages in the included St. Anne's organ and drag the window between a wide shape (landscape) and a tall and narrow (portrait) shape. The stop jamb will toggle automatically between landscape and portrait layouts.

Hauptwerk can now natively record and play back MIDI files, completely independently of any MIDI settings or hardware. So you can now record a MIDI performance using whatever MIDI or touch-screen hardware you have and send it to any other user of the same virtual organ, and it will play back exactly as intended, regardless of his or her hardware or settings. It uses a specially-designed, fixed, hardware-independent MIDI implementation for its MIDI files to make that possible. It also records stop/coupler/tremulant on/off messages directly, so its MIDI files will play back correctly, regardless of what combination set you have loaded.

There's a lot of new functionality for operating Hauptwerk 'headless' (with no computer keyboard, mouse or screen), including a much more powerful LCD status output system that can now show all of Hauptwerk's statuses on multiple configurable real-time LCD status panels, and a completely new dedicated MIDI status output protocol for MIDI console builders.

Even the Basic and Free Editions now have full support for MIDI output, thus allowing the same seamless integration with your MIDI console that's possible with the Advanced Edition.

Hauptwerk has an enormously powerful and flexible new combination system, in addition to any combinations that a virtual organ may include. There's a 1000-frame fully random-access stepper, replacing and extending version 3's registration sequencer, 20 'master generals', 60 'master scoped combinations' (you can configure each of them to affect any range of stops you wish, so you can make them behave as divisionals, generals, or perform any other special functions you wish, such as 'all tremos off', for example), a 4-bank 31-stage crescendo, and a basic set of common 'master couplers' that can complement the couplers a virtual organ has natively.

'Floating divisions' replace and extend version 3's 're-directable inputs'. You can now have up to five of them, they can now take divisional pistons and expression pedals with them, you can include any given virtual division in multiple routes, and you can even use them to switch the orders of virtual keyboards assigned to your MIDI keyboards on the fly.

Overall organ pitch is now adjustable independently from the temperament and temperaments no longer affect organ pitch. Temperaments are now remembered and assigned independently for each organ

There are now 32 'favorite' (previously known as 'stand-by') slots for organs, combination sets and temperaments, and new functions to cycle through ('cue') and select (load) them. In fact, you can now load any favorite organ, combination set or temperament from only four MIDI pistons in total (type, +, -, select). A single LCD status panel can be used to show the current and cued favorite items for all object types (organ, combination set, temperament).

The Hauptwerk 3 Windows VSTi has been replaced with a new 'Hauptwerk VST Link' for Windows and OS X and a 'Hauptwerk AU Link' for OS X. Hauptwerk itself now runs outside of your VST/AU host/sequencer and you just load the 'Hauptwerk VST/AU Link' in your sequencer. It's very easy to use and configure: in Hauptwerk you can just select the VST/AU link for audio output (you can optionally also select it for sequencer MIDI input/output). You no longer need any separate MIDI settings for sequencing, and no longer need to route MIDI from your MIDI console through the VST host. MIDI from your console goes directly to Hauptwerk.

The new VST/AU Link makes it especially easy to apply real-time reverb/convolution to Hauptwerk's audio output: just select the 'Hauptwerk VST/AU Link' entry as the audio output in Hauptwerk, then load the Hauptwerk VST/AU Link plug-in and a reverb/convolver plug-in in your VST/AU host.

The link can work across 32-bit/64-bit boundaries, so you can now use 64-bit Hauptwerk with any 32-bit VST/AU sequencer and with 32-bit convolvers. That's useful because there are relatively few native 64-bit VST/AU hosts and convolvers available currently.

Native 64-bit Hauptwerk is available for and fully supported on 64-bit Intel Macs in version 4 onwards.

Since you no longer need separate settings for MIDI/VST sequencing, the version 3 'stand-alone', 'MIDI sequencing' and 'VSTi' configurations have been replaced by four general-purpose configurations, allowing you to have up to four completely independent sets of settings. For example, you might want to set up one of the four configurations with audio routing to headphones or near-field monitors, suitable for use with wet sample sets, and another with multi-channel audio and convolution reverb (via the Hauptwerk VST/AU Link) for use with dry sample sets.

For those who like to create their own organ specifications, the Custom Organ Design Module now supports multiple release samples, automatically detects sample note ranges and sample formats for ranks, and allows up to two complete graphical virtual console layouts within any single organ definition (landscape and portrait or 4:3 and 12:9, for example). The included *ExampleCustomOrgan6-StAnnes-WithAllFrills* organ includes landscape and portrait layouts as an example.

Last but by no means least, the St. Anne's sample set included with Hauptwerk has been completely re-recorded and re-created from scratch to bring it up to the standards of today's high-end sample sets, now with multiple release samples for a realistic acoustic when playing fast and with 24-bit audio. As before, it's available in all Hauptwerk editions, including the Free Edition and for those evaluating Hauptwerk, demonstrating what Hauptwerk is capable of.

Here are some of the other changes of note since version 3:

- Full native support for draw-knobs/tabs, pistons, expression pedals and keyboards for digital organ MIDI implementations of most makes/models (including Allen, Rodgers, Johannus, Content, Viscount, Wyvern, Makin, Ahlborn, Classic MIDI Works, Hoffrichter).
- Automatic MIDI output configuration for digital organ draw-knobs/tabs (matches to MIDI input settings).
- Each virtual control can be controlled from up to two independent MIDI controls (e.g. you can now control any virtual piston from up to two MIDI pistons).
- All MIDI settings screens have 'auto detect' and 'test' buttons.
- General and organ options re-designed to make them easier to understand/use, to automate them where possible, and also to make them as robust as possible against accidentally choosing inappropriate options/values.
- All MIDI settings and MIDI settings screens re-designed for ease and speed of use. Please note: unrelated/asymmetrical switch engaging and disengaging event types are no longer allowed (e.g. MIDI note-on to engage a given stop, with a MIDI program change to disengage it). Switches also allow a

maximum of 8 bytes for generic constant MIDI sys-ex message event types (previously 16), but separate native/dedicated event types now handle sys-ex MIDI implementations for common makes/models of digital organs.

- No longer any duplication of options at general and organ-specific levels to avoid confusion. All options now (only) organ-specific when possible.
- A MIDI interface with MIDI IN and OUT port(s) is no longer a requirement for launching Hauptwerk, so it can now be used or evaluated using just mouse clicks or with just a USB music keyboard connected.
- Pop-up 'tool tips' for all functions and settings. Hover over any control to learn what it does and how to use it.
- New MIDI output protocol allows MIDI consoles direct access to all Hauptwerk status information, so that it can be displayed in custom formats on custom external display hardware (e.g. for headless consoles). Please see the *Hauptwerk User Manual* for full details.
- Theatre organ second-touch detected and configured automatically if your MIDI keyboards support it. (Hauptwerk automatically selects the most realistic method that your hardware supports, e.g. real 2T contacts, MIDI key aftertouch, MIDI channel aftertouch or MIDI velocity.)
- Theatre organ second-touch settings for a given virtual keyboard stored alongside the 'first touch' settings for the keyboard.
- MIDI key ranges and key-shift now possible, so that you can split a single MIDI keyboard to play multiple virtual organ keyboards.
- Auto-detect ('MIDI learn') also works with computer keys.
- Basic native MIDI piston de-bounce.
- Adjustable response curves for MIDI expression pedals (ranges detected automatically).
- Adjustable MIDI velocity curves.
- MIDI draw-knob/tabs no longer need to echo state changes.
- Native baroque short-octave option for keyboards/pedalboards (operates at MIDI note level), even for sample sets with modern key layouts.
- User-customizable dock-able/floatable piston toolbars allow access to all relevant Hauptwerk functions. Up to 4 toolbars per console window (Advanced Edition; only 1 for the Basic and Free Editions), with 16 pistons on each. Right-click to assign functions.
- Main window positions/sizes no longer organ-specific.
- Up to four complete graphical virtual console layouts allowed within any single organ definition (e.g. 4:3 portrait + landscape and 12:9 portrait + landscape). Hauptwerk automatically and dynamically picks the orientation/aspect ratio that best fits the aspect ratio of each window and virtual console display tab. Sample set producers: please consult '*The Console Display*' section in the Hauptwerk 4 *Creating Sample Sets for Hauptwerk* guide for full details.
- Right-click on any control panel functions/buttons to configure them for MIDI (automatic MIDI learn or manual configuration).
- Swipe your finger/mouse across multiple draw-knobs/tabs to turn them all on or off at once.
- Virtual expression pedals/knobs now support click/press-drag and mouse scroll.
- Right-click on a stop to adjust its voicing (Advanced Edition) if the stop affects just a single rank.
- Favorite combination files now show/retain their specified names.

- Native MIDI recorder/player's MIDI streams can be re-directed to/from a MIDI sequencer if you have one, for convenience of editing on the fly.
- MIDI recorder/player allows overdubbing.
- MIDI player can play standard MIDI files, although by default only the keys will play (no registration changes) if they were recorded with a different application or different sample set; use overdubbing to add the desired registration changes (back) to those files, after editing the notes' MIDI channels in those files to match the Hauptwerk MIDI recorder/player's fixed MIDI implementation if needed (see the Hauptwerk user guide for details) so that keys play on the desired virtual keyboards.
- MIDI recorder/player can also natively play any MIDI files that were recorded using Hauptwerk v2/v3's default 'MIDI sequencing' MIDI settings.
- You can now specify your own names for audio recordings (even with multi-channel audio) and can cancel/discard audio and MIDI recordings.
- Browse/delete/rename recordings and combination files.
- Audio and MIDI recording folders adjustable without needing to re-install.
- Overall volume and pitch can be controlled in real-time from MIDI expression pedals/knobs and/or a touch-screen.
- Polyphony limit adjustable in real-time. You can watch the polyphony meter as you play and fine-tune the limit accordingly, separately for each organ.
- Component installer: applying a sample set patch no longer causes other organs to re-cache.
- New 31-stage 'master crescendo' with four separate 'banks' (A/B/C/D), independent of any crescendo a virtual organ may include. It has to affect the virtual draw-knobs/tabs directly (but leaves any hand-registered stops untouched).
- Basic complement of common 'master couplers', independent of any couplers an organ may provide. These allow you to have, for example, a *Swell to Great* or *Bass Coupler*, even if using a historical sample set that doesn't have those couplers. Master coupler states are stored in the master generals, stepper and scoped combinations and master crescendo (but not within a virtual organ's native combinations). A small number of virtual organs aren't currently compatible with the master couplers. Sample set producers: please consult the '*Mouse interaction with displayed image objects*', '*Keyboard and key database entities*' and '*Division and key action database entities*' sections in the Hauptwerk 4 *Creating Sample Sets for Hauptwerk* guide for full details on how to make sample sets fully compatible.
- New 'Hand reg' piston restores registration to the point prior to selecting master generals or the stepper, effectively allowing the master generals and stepper to behave like a 'blind' combination system (even though they do affect the virtual draw-knobs/tab states).
- New registration copy and paste functions allow individual combinations to be copied between combination files. (More extensive combination file editing facilities planned for the longer-term.)
- Asks you whether to save combinations if any have changed.
- Automatically loads last-used combination files and temperaments.
- VST hosts should no longer significantly determine/limit Hauptwerk's performance.
- Equivalent 'Hauptwerk VST/AU Link' on Mac platform. Works with both VST (e.g. Cubase) and AudioUnit (e.g. Logic) hosts, thus giving full plug-in functionality on the Mac platform as well as on the PC. (Note: most AU hosts, including Logic, don't currently allow MIDI OUT from a plug-in, so you might prefer to use VST with the OS X versions of Cubase, Reaper or similar on the Mac platform.)
- MIDI sys-ex supported for VST and AU links (although many VST/AU hosts don't yet support sys-ex).

- Custom Organ Design Module: up to two complete graphical virtual console layouts allowed within any single organ definition (e.g. landscape and portrait or 4:3 and 12:9). Please see the '*The custom display functionality*' section in the Hauptwerk 4 *Custom Organ Design Module User Guide* for full details.
- Custom Organ Design Module: automatically detects sample note ranges and sample formats for ranks and supports multiple release samples. Please see '*Table: Rank*' section in the Hauptwerk 4 *Custom Organ Design Module User Guide* for full details.
- Custom Organ Design Module: you can now specify a MIDI file that Hauptwerk will load automatically as a demo for the organ whenever the organ is loaded. Please see the documentation for the new `_General.CustomOrganInfo_MIDIDemoFilename` parameter in the Hauptwerk 4 *Custom Organ Design Module User Guide* for full details.
- Right-click on virtual controls to configure MIDI input/output (via MIDI learn and/or manual configuration). Some controls in a small number of virtual organs aren't currently compatible with right-clicking. Sample set producers: please consult the '*Mouse interaction with displayed image objects*', '*The Switch and SwitchLinkage entities*' and '*Continuous controls and their image sets*' sections in the Hauptwerk 4 *Creating Sample Sets for Hauptwerk* guide for full details on how to make sample sets fully compatible.
- Function to import combination sets. Also allows correct importing between distinct but compatible organs (e.g. multiple editions of a given virtual organ).
- Master tuning can be adjusted with a MIDI continuous control.
- 'MIDI master tuning' MIDI sys-ex supported for use with standard pipe temperature sensor hardware.
- LCD status panels can now show organ loading progress percentage.
- Rank routing/memory screen now only shows options the virtual organ supports (e.g. 16-bit/24-bit).
- Each state-ful function (e.g. SET mode) can now be toggled from a MIDI piston.
- Minimum prerequisite Mac OS X version now OS X 10.6.7 (Intel Macs) or 10.5.8 (PowerPC Macs). Upgrades to OS X 10.6 are very affordable.
- Oldest PC processors supported are now Intel Pentium III and AMD Athlon XP (pre-XP Athlons and Pentium II no longer supported).
- Performance: loading time for large/complex organ definitions hugely reduced.
- 'MIDI reset' MIDI messages ignored.
- Function to revert all settings to factory defaults (useful as a last resort if you really manage to mess up your settings!).
- Function to reset MIDI keyboard keys only (stuck MIDI keys).
- Hauptwerk 3 St. Anne's (mono, single releases) no longer included in Hauptwerk installer, but available for download separately from website in case anybody still wants to use it. Virtual organs that relied only on tremulants from the Hauptwerk 3 St. Anne's don't need it installed (the tremulants transparently redirect to Hauptwerk 4 versions). (Sample set developers: the package ID of the Hauptwerk 4 St. Anne's is 10. The Hauptwerk 3 St. Anne's with package ID 2 will no longer be present after upgrading to Hauptwerk 4, but Hauptwerk will provide a detailed message with download link if attempting to load an existing organ that requires it.)
- Settings and voicing saved with the Hauptwerk 3 St. Anne's (mono, single releases) won't apply to the Hauptwerk 4 St. Anne's. You'll need to configure MIDI settings and voicing from scratch. However, combination files will automatically be migrated.
- User guide extensively rewritten to facilitate easier/quicker learning.

- Voicing screen (Advanced Edition) remembers window size and position.
- Settings screens can be resized (especially useful for screens with long lists of items).
- Organ loading progress indicator displays name of virtual organ.
- Detects when switching between two organs with different filenames but the same internal ID (e.g. between two organ definitions for different screen resolutions) and automatically regenerates sample data cache for that organ.
- Combinations turn any required stops/couplers off before turning any on, thus avoiding momentary 'blip' from coupled divisions.
- More release truncation options for longer fades (1-5 seconds) on the rank routing screen.
- Performance: load balancing improved for multi-core CPUs, polyphony limit re-defaulted, moved to control panels, previous 'optimize for polyphony' renamed and defaults to off. Please note that you should check your polyphony limit settings for each organ and adjust them if required after upgrading. Also note that real-time or floating control panels and virtual console auto-zoom will consume some CPU resources; to get polyphony directly comparable to Hauptwerk 3.30 you might need to close control panels, turn off console zoom (on the View menu) and tick 'Reduce relay/MIDI/tremulant/model response/accuracy/quality for max polyphony?' ('Organ settings | Organ preferences | Audio Engine' screen).
- Ranges of some settings (e.g. audio output speaker level adjustments and audio engine randomization adjustments) reduced to minimize the risk of extreme/unnatural/distorted/unexpected results from accidentally changing them.
- LCD panel colour range increased to 0-127 with 127 meaning off/black.
- HyperThreading detection updated for Intel i7/i5/Nehalem CPUs.
- All Unicode character numbers in range 32-1023 can now be used as computer key codes for controlling pistons/stops/couplers/tremulants/switches for hardware devices that support them (e.g. X-Keys).
- Hauptwerk 1 organ import improved, names of imported objects tidied, and imported organs made compatible with Hauptwerk 4 features (e.g. right-clicking). Please re-import any Hauptwerk 1 sample sets for best results.
- Increased range of swell box amplitude voicing adjustment from +/-24 dB to +/- 36 dB (Advanced Edition).
- LCD status panels can now show organ continuous control positions (e.g. swell or crescendo pedal positions).
- Default audio recording format changed from 32-bit to 16-bit (for max. compatibility with CD writing software).
- Log never grows beyond a certain size to prevent disk space filling up and so that diagnostic files kept manageable sizes.
- Log automatically scrolls to the end when opened via menu. Note: you must re-open the log from the menu to refresh it (just refreshing in your browser won't work).
- Free disk space is checked before installing an organ or regenerating a sample data cache, with a warning displayed if running low.
- Hauptwerk folder structure inside */Applications* folder made more intuitive on OS X. Installer no longer subsequently breaks if you accidentally delete the Hauptwerk application without uninstalling it.
- Installer: you can now natively move installation folders by rerunning the installer and selecting custom, without needing to uninstall separately first.

- Custom Organ Design Module and sample set developers:
StopRank.RetriggerNotesWhenSwitchingBetweenNormalAndAlternateRanks was inverted. Please note: this may require organ definitions being updated accordingly.
- All default file extensions changed to use underscores instead of multiple dots to prevent accidental corruption by third-party software, to make it more difficult to change extensions accidentally (OS X Finder and Windows Explorer warn) or to accidentally open/extract them in the wrong application. Hauptwerk transparently migrates old file extensions whenever needed. Sample set developers: please use the new extensions and formats if developing organs that require Hauptwerk 4+.
- Sample set developers: issuing updates/extensions to organ definitions with additional *CombinationElements* no longer corrupts combination stepper frames for existing saved combination sets.
- Sample set developers: option to log switch states for debugging organ definitions. Please see the '*Diagnostic log options available*' section in the Hauptwerk 4 *Creating Sample Sets for Hauptwerk* guide for full details.
- Sample set developers: temperament short name length increased to 12 characters.
- Sample set developers: minimum and maximum organ console display sizes now 64x64 and 2048x2048 respectively.
- Sample set developers: new *ReevaluatelfCondSwitchChangesState* attribute (defaults to Y) for *SwitchLinkage* and *ContinuousControlLinkage* tables.
- Sample set developers: new *Switch*, *Keyboard* and *ContinuousControl* default assignment codes for misc. items (used as hints to allow right-clicking and to influence how MIDI is recorded for the object). Please see the code list appendixes in the Hauptwerk 4 *Creating Sample Sets for Hauptwerk* guide for full details.
- Sample set developers: *_General.Control_MinimumHauptwerkVersion* must be used to indicate full compatibility with all native Hauptwerk 4 features for future sample sets, otherwise Hauptwerk warns that some Hauptwerk 4 features might not work fully with it when loading for the first time. Please ensure that all Hauptwerk 4 features are truly fully supported before setting the setting to 4 or above.
- Sample set developers: can embed virtual controls for Hauptwerk's menu functions (e.g. master stepper controls/pistons). Sample set producers: please consult '*The Switch and SwitchLinkage entities*' and '*Continuous controls and their image sets*' sections in the Hauptwerk 4 *Creating Sample Sets for Hauptwerk* guide for full details.
- Sample set developers: you can now specify a MIDI file that Hauptwerk will load automatically as a demo for the organ whenever the organ is loaded. Please see the documentation for the new *_General.OrganInfo_MIDIDemoFilename* parameter in the Hauptwerk 4 *Creating Sample Sets for Hauptwerk* guide for full details.
- Sample set developers: please see the last appendix in the *Creating Sample Sets for Hauptwerk* guide for a list of changes to Hauptwerk file formats (new/changed entities/attributes/etc.) for version 4.0.0.
- Diagnostic files include lots of additional diagnostic info.
- Diagnostics: component installer logs exact sizes of all multi-part RAR files found prior to attempting to install them.
- All other existing known bugs fixed except those listed in the known bugs section on the website.

Coming next ...

Here are a couple of the major things we're planning for future Hauptwerk releases:

- Support for reverb/convolution or audio effect plug-ins directly within Hauptwerk so that you can apply reverb to Hauptwerk's audio output even more easily, without needing a separate third-party VST/AU host application.
- Redesigning audio routing to make it easier to configure and organ-specific. We'll also be looking at how best to accommodate easy switching between multiple audio configurations and sets of voicing.

As always, there will be plenty of other performance, usability and functional enhancements too.