EigenD System Release Notes

Eigenlabs Ltd.
+44 (0) 1392 823000
support@eigenlabs.com

Release: **2.0.62-stable**
Release Category: Stable
Download location: http://www.eigenlabs.com/downloads/releases

Release Chronology:

- Release 2.0.62   16th August 2012   First Stable Release.

Contents:

1. Introduction: Major new features.
2. Other changes and improvements.
3. Bug fixes since the final Testing release.
4. Known issues.

1 – Introduction

The 2.0 series of EigenD is the first to include the Workbench, a graphical utility for manipulating and examining setups. Workbench is part of the EigenD Pro distribution.

The official documentation for EigenD 2.0 can be found on the wiki:

> http://www.eigenlabs.com/wiki/2.0/The_Official_Documentation/

Note that there are a series of tutorials that take you step-by-step through the creation of your own setups from scratch with Workbench:

> http://www.eigenlabs.com/wiki/2.0/Workbench/

As with the 1.4 release, the core elements of 2.0 are built from the open source EigenD repository which can be found on github:

> https://github.com/Eigenlabs/EigenD

Starting from 2.0, we are dropping support for Mac OSX 10.4 EigenD now requires Leopard or newer. Make sure that you have applied all the Apple updates to Leopard, this is needed for the EigenD installer to work.

Many aspects of EigenD have changed. In the past, quite a few functions depended on the Belcanto interpeter to work. Most of these have been re-architected so that they are more intuitive in a GUI environment, while retaining the ability to configure every aspect of EigenD using Belcanto. As such, existing setups and scripts from EigenD 1 aren't compatible with EigenD 2.

Fingerer

This release introduces a new Fingerer agent which simulates valved or fingered instruments.

It allows groups of keys to be fingered in monophonic fashion, while harnessing the sensitivity of the Eigenharp keys to produce interesting effects. It also provides additions that still allow for polyphonic playing.

Fingering patterns are very flexible, and you can create your own patterns and copy and modify the factory patterns. The Fingerer documentation can be found on the wiki:

> http://www.eigenlabs.com/wiki/2.0/Fingerer/

Illuminator

The Illuminator agent is also new in this release and provides an easy way to set up lighting patterns on the Eigenharp keyboards.

You can use the keyboard to capture patterns. Patterns can be saved and loaded through Belcanto for instant recall via Talkers.

The Illuminator also provides a web interface allowing you (or someone else, preferably!) to post scrolling messages to your keyboard. For programmers, there is also a RESTful api giving complete control of the lights using simple HTTP requests.

Its documentation can also be found on the wiki:

> http://www.eigenlabs.com/wiki/2.0/Illuminator/

Strummer

The Strummer agent is the third major new agent in the release. It allows one set of keys to act as 'strum' keys for another set of keys which act like strings, controlling the note to be played.

Like a guitar, effects such as hammer-on and pulling-off are possible as well as straightforward strumming. Sounding notes can be muted, and there is support for open strings. A breath controller can also be used as the strum input.

Strummer's documentation can be found on the wiki:

> http://www.eigenlabs.com/wiki/2.0/Strummer/

We are now skipping odd release numbers to allow for intermediate test releases and make it easier for people to build their own releases from the GPL source tree.

In the past, when factory setups have changed, we have automatically upgraded saved versions of these setups in line with the changes made to the factory setups. Because of the huge scope for customisation offered by Workbench in 2.0, we will no longer be doing this.

Now that 2.0 is stable, there will be no changes which will invalidate saved setups. If we make any changes to the factory setups (for example, changing the plumbing between Agents) we will provide upgrade scripts which you can run to make the same changes. You can also use Workbench, if available, to make equivalent changes to your own setups.

2.0 will now receive bug fixes only. Development of EigenD will continue with 2.1.

2 – Changes and Improvements

- Release 2.0.62-testing

  - EigenD

    - The Routing Matrix now shows a visual indicator of AU/VST parameter mappings when they're set to per-note. The MIDI channels that span over the adjacent parameters are now clearly indicated, making it much more intuitive to configure.
    - Lists of AU/VST plugins now include the plugin format and category and the displayed entry.
    - Available MIDI devices are now updated while EigenD is running, it's not necessary anymore to restart EigenD for this.
    - Previously selected MIDI output and input devices are automatically selected when the device is connected even after EigenD has already started up.
    - Improvements to audio interface support on MacOSX, now permitting very small buffer sizes.
    - Support for increased MIDI pitch bend ranges

      Added a configuration option in the MIDI settings for plugins and the midi converter to allow you to set the range of pitch bend that the device is using. You can use this to allow EigenD to bend notes further. This should be set to the same value that the plugin or MIDI device is using.

      Without this option, fingered AU instruments can't slur properly because the note can't bend more than 1 semitone either way. If the AU can be set up with an increased pitch bend range, you can change this value to match which will allow the fingerer to bend notes further.

    - If any agents are selected (brought to the foreground) only foregrounded wires are highlighted in red. This makes wire selection easier and means that wires in which you are not interested are not highlighted in preference to the foregrounded wires.

    - The version of JUCE has been updated to match that used by EigenD. This should fix some stability issues experienced by some windows users.

    - The belcanto to create an agent in a rig has been changed. It was easy to inadvertantly create an agent in all rigs. To create an agent in a rig, use:

      ```
      eigend hey illuminator in rig 1 create
      ```

    - Improved number handling so that lists of numbers can be expressed in Belcanto. Extended the scale manager to allow scales to be expressed as lists of numbers as well as names. The net result of all this is that you can say something like:

      ```
      synth rig scaler hey scale to 0 , 2 , 5 , 4.6 , 12 set
      main keygroup scale to 0 , 1 , 4 , 6 set
      ```

- Added new 'identify' verb. Use this in commander to explore the system and test out parts of belcanto sentences. For example:

```
all talker identify
```

  will show the results of 'all talker'

- Separate enabling of tail time idling from the actual idling timeout. A new port, 'tail time enable' controls whether idling is enabled

- Keygroup outputs can now be individually enabled or toggled through Belcanto

- Alpha and Tau debouncing system is now configurable:

  The default is 20000 us.
  This seems to cause missing key presses quite easily with stickier keys (ie, coefficient of friction between finger and key is high) The same effect seems to happen on other keyboards, to greater or lesser extent. For instruments with maple keys, setting this to 25000 or higher should help. The maximum is 31500 (31.5ms). Below is a Belcanto example to change the debounce delay:

```
keyboard 1 debounce to 25000 set
```

- The note player has been extracted from the Recorder agent into a new Player agent
- Generic dialog handler for Return and Escape keys
- Alpha, Tau and Pico startup behaviour is more efficient
- EigenD now allows agents to coin their own words
- New save button to save over the current setup, if it's not a factory setup
- Connect verb now has channel support
- Improved key group mapping

  The key group now maintains completely separate mappings for musical and physical keys. Workbench supports this with a specialised editor

- Changed Kgroup to Keygroup
- Agents now occupy relocatable directories
- EigenD includes enough headers and import libraries to build Agents without needing the full source
- Reference build scripts included for building Agents
- There is now a geometrical and a musical layout for keygroups. The talkers are tied to the geometrical layout and not to the musical. By defining courses you change the order of the musical layout and the geometrical layout adapts by taking the bounding shape for each row. This means that if you keep a keygroup of the same surrounding shape, you can rearrange the keys in any order and the talkers will remain at the same spot

- - - Light signals are now also coordinates and can be either geometrical and musical
    - Rigs provide modularity to setups, simplifying a setups visual appearance. Subsequent releases will build on this to provide slots for interchangeable instruments.
    - Keygroup slaving is now done explicitly by connecting the 'enabled' port for each output as opposed to previously connecting kgroups as a whole. This means that the order and name of outputs can change without losing the slave relationship
    - Keygroup course offset values less than 5000 are now interpreted as steps, above they're interpreted as notes, starting from 10000 as a baseline
    - Initial implementation of a scaler light output that highlights the tonics of the active scale in green, this will be improved upon and become configurable.
    - AU/VST and MIDI routing matrix parameter 16 isn't a special 'key number' parameter anymore. Any parameter input can behave as such by simply connecting a key signal into it

  - Stage

    - The widget increments are now useful by default

3 – Bug fixes

- Release 2.0.62-stable

  - EigenD

    - EigenD could sometimes becomes unresponsive at exit, this has been improved. Note that this is often related to AU/VST plugins and in certain cases there's little we can do about this. Closing the plugin GUI before quitting can sometimes help.
    - Certain AudioUnits could crash EigenD when deleted while their GUI window was still open.
    - The delay inputs of the ADHSR agent was not functional.
    - EigenD now works with user home directories on Windows 7 that have international characters in their name.
    - Stability improvements for AudioUnits destroy at close and EigenD shutdown.
    - MIDI note 0 wasn't sending a note off message.
    - Fix to audio device handling where the current buffer size wasn't always determined correctly, especially with ASIO devices.
    - Changes to connected MIDI devices are now detected after EigenD startup.
    - The Pico mode key lights could sometimes be wrong.
    - Loading a new setup while another setup wasn't finished loading could put EigenD into an inconsistent state.
    - The MIDI routing matrix now doesn't use 0 for the return to origin

functionality for the pitchwheel mapping, but uses 8192 instead, which is the rest value for pitch bend.
- Stability improvements to AU/VST host
- Stability improvements to Midi Converter
- Tempo ranges from 0 to 500 are now accepted in the metronome, as opposed to 30-240 before
- Important stability improvements (fast allocator)
- Setting delay agent tempo to 0 crashed EigenD
- Setting ladder filter agent temperature to 100 made it stop working
- Clocking fixes to improve latency
- Stability improvements, especially with respect to switching setups
- Changed installer test to copy better with symlinks and improve Lion compatibility
- New key number streams. Keys are now identified by coordinate rather than a single number. Keys have two coordinates, 'Musical' and 'Physical' which the key groups can independently remap. This allows the musical order of a playing area to be changed without affecting non musical aspects such as talker key positions.
- Fix bug reporter

- Stage

- Widget updates could come in out of order and prevent the right values to be shown, sometimes resulting in red values
- The agent browser would collapse to the first level after creating a widget

4 – Known issues in this release

- EigenD

- EigenD should prompt user to save setup before quitting

- Workbench

- Cannot close tabs other than by deleting rig or restarting Workbench
- Property editor requires better layout and various improvements
- Wiring trunks is fiddly
- Audio buffer size incorrectly shown as zero
- Z-order for hooks and trunks wrong when dragging a group of items
- Trunks should be hidden if only used by hidden wires
- Can't make a port on a rig gateway a reverse connection
- Boxes moved automatically do not remember more than 1 level of position
- Can't shrink a trunk round a corner in a single drag