

R E L E A S E N O T E S

**grand**



S E C O N D E D I T I O N

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## Release Notes 2.7.3

This is a maintenance release of GrandVJ 2.7 with the following list of fixes.

### Change List

#### General

- Fix crashes when opening LEDMapper or Kling-Net mapper on macOS.
- Fix crash during application shutdown.

## Release Notes 2.7.2

This is a maintenance release of GrandVJ 2.7 with the following list of fixes.

### Change List

#### General

- Fix crashes related to keyboard, midi and osc mapping.
- Fix black frame when switching sources in the mixer.

## Release Notes 2.7.1

This release of GrandVJ adds back missing support for keystone in instant mode.

### Change List

#### General

- Add back missing support for keystone in instant mode.

## Release Notes 2.7

This new release of GrandVJ mainly introduces the following features or improvements:

- Support for NewTek NDI inputs and outputs.
- Additional color and blend control for surfaces in the VideoMapper.
- Selection of control decks for TC-Net.
- Improved support for latest macOS.

The version also includes a set of fixes reported in the previous releases.

### Change List

#### General

- **Support for NewTek NDI inputs and outputs.**
- Improved support on all macOS versions, particularly while going fullscreen.
- Update FFmpeg to support HAP with transparency.
- Fixed saving Mixer State with Positions when Copy Position mode is on.
- Added check on startup for CPU compatibility.
- Fixed crash during Cell selection.
- Fixed crash when closing GrandVJ.
- Fixed crash when pausing a movie.
- Fixed issue while browsing through visuals with Next Visual button.

#### VideoMapper

- **Surface control for RGB, brightness, contrast, dimmer and blend mode.**
- Fixed handling of white parts of masks as opaque.

#### TrackDJ

- Added option to select control deck for TC-Net.

#### LEDMapper

- Fixed crash when dragging Fixtures.

## Release Notes 2.6.5

This release of GrandVJ adds support for TCNet communication with Pioneer PRO DJ LINK bridge and ShowKontrol software.

### Change List

#### TrackDJ

- Added support for TCNet (Pioneer PRO DJ LINK Bridge and ShowKontrol).

## Release Notes 2.6.3

This is a maintenance release of GrandVJ 2.6 that mainly fixes some issues related to the asynchronous starting of movies introduced to avoid some stalls and fixes some communication issues between TrackDJ and ShowKontrol.

The following list details all improvements and fixes.

### Change List

#### General

- Fixed issues related to the asynchronous starting of movies to avoid stalls.
- Fixed issue with some frames appearing from layers below.
- Fixed issue when dragging a movie back from mixer to a bank.
- Fixed issue where triggering a visual would restart same visual on other layers.
- Fixed saving of mixer state with all parameters.

#### TrackDJ

- Fixed communication issues between TrackDJ and ShowKontrol.

#### Audio

- Fixed issues with audio files who only played when triggered through a cell.

#### Syphon and Spout

- Fixed issue with Spout outputs also listed in the inputs.

## Release Notes 2.6.2

This is a maintenance release of GrandVJ 2.6 with the following list of improvements or fixes.

### Change List

#### General

- Moving "Begin Loop" cursor automatically adjust "Start Point".
- Hints added to better recognize Begin Loop, End Loop and Start Point controls.
- Fixed issue where frame 0 of a visual could be displayed before jumping to Start Point.

#### Audio

- Fixed issue with audio not restarting at correct position.

#### VideoMapper

- Fixed surface names not properly restored on project load.

# Release Notes 2.6.1

This is a maintenance release of GrandVJ 2.6 with the following list of improvements or fixes.

## Change List

### General

- Fixed drag and drop of effects to a layer.
- Editable Start Point of a visual.
- Fix crash when closing GrandVJ in Mixer mode.

### Beat and TrackDJ

- Mixxx application is now signed for Windows.
- Fixed only first track assigned to a source was restored for Track DJ.

### VideoMapper

- Fixed VideoMapper crash on startup or when going fullscreen on MacOS 10.12.

### Audio

- Fixed audio issue not restarting at the beginning of the visual.

## Release Notes 2.6

This new release of GrandVJ adds the following key features:

- TrackDJ source to synchronize visual playback to external DJ controllers.
- Support for Timecode over Art-Net.
- More precise beat synchronization of visuals.
- New mode to apply changes done on a layer back to the cell for live editing.
- Improved support for spans to split output in the VideoMapper.
- Better software responsiveness.

It also includes many improvements and fixes that are listed in the change list below with more details.

All features have been documented in the user manual.

### Change List

#### General

- New TrackDJ source added to synchronize visual playback to audio tracks.
- Starting visuals and particularly Flash content cannot stall GrandVJ anymore.
- New mode to apply changes done on a layer back to the cell for live editing.
- Saving of full mixer state in the project.
- Pause button for visuals in Synth mode.
- Fixed crash issue when playing visuals with audio.
- Fixed missing codec info in pop-up on cells.
- Fixed saving bank order.
- Fixed issue with relative path when moving project files.
- Fixed issue refreshing parameters when a transition preset is selected.
- Fixed multiple issues when using Spout with other applications.
- Fixed to avoid crashing when loading invalid movies.

#### Synchronization

- Support for Timecode over Art-Net.
- Precise Beat synchronization, also through TrackDJ protocol.
- Toggle to switch display of timecode, beat and track name.
- TrackDJ compatibility with Pioneer CDJ controllers.
- TrackDJ compatibility with Mixxx open source DJ software.
- Option to assign the current audio track playing to a visual with TrackDJ.
- Improved editing of Timecode offsets.
- Fixed beat synchronization when editing Loop In / Loop Out segment.

#### VideoMapper

- Easier collapse and expand of the cropping and output panels and UI redesign.
- Fixed responding issue when closing the VideoMapper while being full-screen.

- Support for 4x1, 1x4 and 2x2 spans particularly to split 4K displays to Full-HD.
- Fixed mask issue that was upside down when closing the VideoMapper.
- Fixed issue if the mask file path was containing international characters.
- Option to set the arrangement of the spans horizontally or vertically.

## Capture Cards

- Stalling issue with Datapath when reducing intensity to 0 is fixed with Datapath through their latest drivers.

## Getting started with TrackDJ



TrackDJ is a new synchronization protocol so that DJ software and controllers can automatically communicate all information about the sound track playing: the time in the track, the artist and track name, the BPM and the beat information.

Here is a list of some exciting new possibilities in GrandVJ:

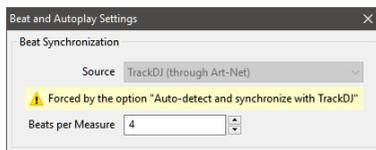
- Visuals will automatically follow the music the DJ is playing.
- Visuals will be precisely in-sync with the music (lip-sync, subtitles, etc.).
- Visuals can automatically and precisely pulse on the beat of the music.
- DJ has immediate control on the visual performance by changing track, BPM and executing loops.

## Activating TrackDJ in the Preferences

In the General Preferences make sure the synchronization source TrackDJ is selected.



Also in the "Beat and Autoplay Settings", select the source TrackDJ if you want the beat to be synchronized. A simpler alternative is to select the option above "Auto-detect and synchronize". In this case, as soon as a TrackDJ source is detected the beat source will automatically synchronize.



At this point, the BPM should automatically update to the track that is playing on your TrackDJ source and Beat or Timecode information in the toolbar as well.

## TrackDJ Source

The TrackDJ source can be found in the Automated Inputs category and will automatically play a visual based on the music track triggered by a DJ. For this feature, a DJ software or controller compatible with TrackDJ needs to be used.



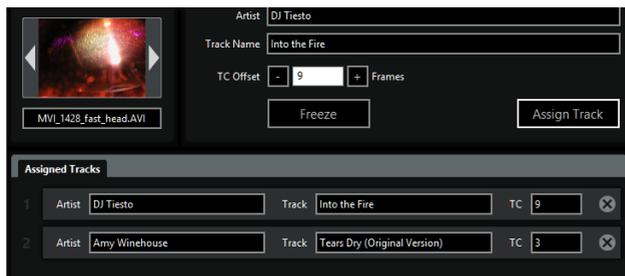
In Mixer mode you should trigger the TrackDJ source on a Layer. In Synth mode similarly you should trigger the TrackDJ source and use Latch mode to keep it on as long as you want.

## Assigning Tracks to Visuals

If a track is not assigned to any visual, then TrackDJ will automatically pick a visual from the VJ set with the following rule: it will take the visual with the filename that is closest to the track name received.

For more explicit control, TrackDJ lets you assign music tracks to visuals. Automatically when the track is played by the VJ, the corresponding visual will be played.

To open the TrackDJ Settings dialog, either right-click on a Visual and select the entry in the the context menu, or select the entry in the Options menu.



The Visual can be selected in the Visual panel. The “Track Playing” panel will automatically display the track currently played on the TrackDJ compatible software or controller. The “Assigned Tracks” panel will list all the music tracks assigned to the visual selected top left.

For each track a Timecode Offset can be set to tune how visual and audio should be played in perfect sync.

The “Freeze” button holds the current track to leave you more time for the assignment.

The “Assign Track” button adds the track playing to the list of tracks assigned to the visual.

The visual will be played in-sync with the track through the timecode information sent from the TrackDJ source. The timecode is the relative time in the music track. This allows precise subtitling or lip-syncing.

## Synchronizing on the Beat

TrackDJ also drives the beat of GrandVJ. Both BPM and the Beat information in the toolbar will be updated from the track playing on the source. This means that if a visual is played in Beat mode it will automatically pulse with the music controlled by the DJ. Any change in rhythm done on the DJ controller will automatically be reflected on the visuals.



## **TrackDJ Compatible Sources**

- Mixxx Open Source VJ Software
- Pioneer CDJ or DJM Controllers with ProDJ Link and ShowKontrol
- More to be announced soon

Check for latest info and downloads on [GrandVJ download page](#).

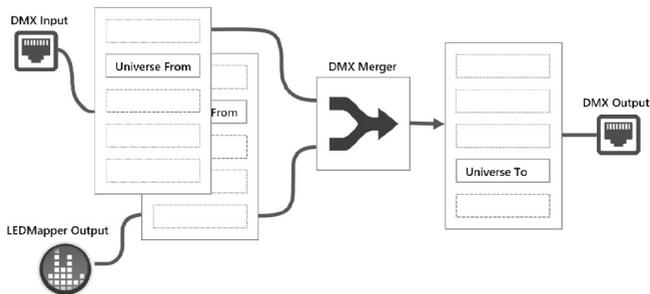
## Release Notes 2.5

This new release of GrandVJ adds highly anticipated features like:

- Spout output.
- The DMX Merger in the LEDMapper with GrandVJ XT.
- Support for complex DMX fixtures like moving heads.
- Improved Art-Poll based node discovery in the LEDMapper.
- Auto-unicast for easier and optimized Art-Net network setup.
- Support for Draft Devices in the Kling-Net Mapper to prepare shows offline.
- All applications running in 64 bits.

### LEDMapper and DMX Merger

LEDMapper gets support to merge Art-Net input from a Lighting Console with its own pixel output. This allows to control more advanced fixtures like Moving Heads with pan & tilt for instance. It also brings enhanced support for DMX charts with constant values, channel gaps and any channel layout for the pixel mapping.



How DMX Merger works in LEDMapper

Also opening LEDMapper and GrandVJ simultaneously have no restricting impact anymore even for ArtPoll and LED fixture discovery.

The Kling-Net Mapper also newly supports creation of Draft Devices to prepare the layout of a show and position devices even without having those devices connected.

The list below gives a detailed list of the improvements and fixes included in this release.

### Change List

#### General

- Spout output both in Instant and VideoMapper modes.
- All applications run now in 64 bits.
- Improved support for DPI display scaling.
- Improved support for international characters.
- Faster movie playback for ProRes on Mac and Windows.

- Faster YUV color conversion for all codecs on Mac.
- Fixed issues with Flash player.
- Fixed issue playing ProRes movies.
- New dialog to easily report errors and send crash reports to ArKaos support.
- Upgraded Spout version to 2.006 for increased texture sharing compatibility.
- Fixed compatibility issue with Kling-Net Mapper and LEDMapper on macOS 10.9.
- Fixed crash on AsciiArt and PopArt effects.
- Fixed issue with Autoplay always playing from bank 1.
- Fix to support Lumen application as a Syphon input.
- Fix for mouse wheel movement to scroll the mixer panel.
- Fix for handling international characters in mask filenames.
- Fix for the Blackout toggle.
- Fixed memory leaks.

### **LEDMapper**

- Support for merging Art-Net input with LEDMapper output.
- Editor to create fixtures with any DMX pixel mapping including channel gaps.
- Support to set constant values for some DMX fixture channels.
- New option for automatic Unicast through ArtPollReply discovery.
- UI and MIDI control to set the blending mode and intensity of the DMX Merger.
- Clearer mapping file operations with Import, Export and Save.
- Fixed issue detecting a network adapter plugged after LEDMapper is started.
- Fixed discovery issue on the Robe Spiider related ArtPollReply.
- Fixed compatibility issues to support broader range of Art-Net fixtures.
- Fixed issue when saving mapping files or saving the library of fixtures.
- Added fixture for the Spiider™ from Robe.
- Added fixtures for the ArKnator app.
- Added Apply button in the edit fixture dialog.
- Support for pixel formats with Red, Green or Blue component only.
- Improved selection of network adapter.
- Fixed issue sending Art-Net packets with wrong sizes.

### **Kling-Net Mapper**

- Added support to prepare and position Draft devices when working disconnected.
- Support for any component order for WS2812 LED protocol.
- Fix so that Kling-Force control panel gets always updated.
- Fix when Kling-Force control panel was sometimes displaying wrong info on startup.
- Fixed support for horizontal and vertical flips and previews.

### **VideoMapper**

- Fixed issue with disconnected and draft displays shown with wrong letters.
- Fixed issue in Fullscreen.

- Fixed crash when selecting any matrix size different than 1xN or Nx1.
- Fix for the order of surfaces that was not always preserved.
- Fixed naming of Draft Displays.

## Effects

- Fix for transition effect parameters having no influence.

## Quicktime and 64 Bits

Since all applications are now in 64 bits and Apple does not provide QuickTime in 64 bits, GrandVJ now uses FFmpeg to read all QuickTime codecs.

There is no need anymore to install QuickTime on Windows. In the previous versions of GrandVJ, QuickTime was used to play ProRes encoded videos.

## How to use Spout output

GrandVJ automatically sends output through Spout. Application will only perform a transfer if a Spout receiver is listening.

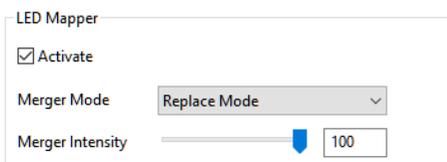
## Getting started with the DMX Merger

In the toolbar of the LEDMapper, the two following buttons have been added. The first button is to toggle on and off the Merger. The second one is to setup the Merger.

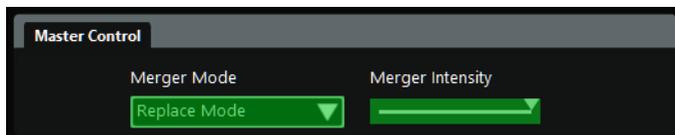


Make sure you setup correctly the subnet and universe from where you want to merge from and similarly to where you want to merge to and then toggle on the Merger by pressing the merging arrows button.

In the preferences of GrandVJ, under the display tab, there are two new settings to configure the Merger Mode and the Merger Intensity for all pixels that the DMX Merger will process. The Mode indicates how colors should be merged and the Intensity indicate the percentage of influence of the Merger to the output. A value of zero would mean that DMX input data are passed through the Merger unchanged and 100% would mean that the Merger result is fully output to the light fixtures.



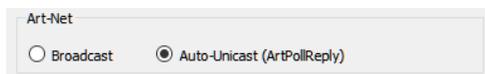
Those two parameters can also be mapped through MIDI, Keyboard or OSC similarly to other parameters in GrandVJ.



## How to use Auto-unicast

Auto-unicast will automatically optimize the network traffic by sending the Art-Net data only to the devices concerned. There is no extra setup because those information are shared through ArtPollReply and part of the Art-Net specifications.

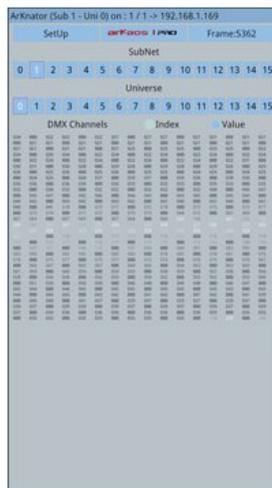
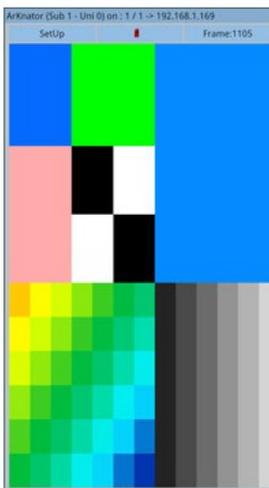
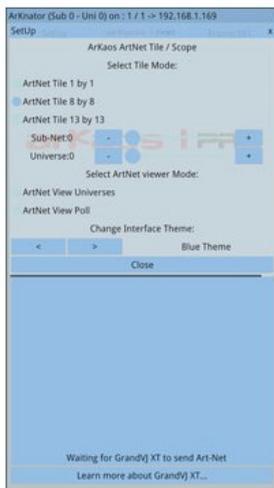
LEDMapper exposes a new option in the preferences to turn on this optimization.



## Using ArKnotor Mobile App

ArKaos offers a mobile app to better learn or experience with Art-Net concepts. It is particularly useful to get hands on the DMX Merger, Unicast and ArtPoll and helps to visualize the Art-Net traffic.

<http://www.arkaopro.com/software/mobile-applications>



# Release Notes 2.4

This new release of GrandVJ adds highly anticipated features like:

- Soft-Edge and Geometric Correction in the VideoMapper in GrandVJ XT.
- Visual playback synchronized on the Beat.
- Support for Ableton Link™ to synchronize with other music software.
- Support for macOS High Sierra.

The list below gives a detailed list of the improvements and bug fixes included in this release.

All features have been added to the updated User Manual of GrandVJ.

## Change List

### Synchronization

- New Beat Synchronization with Beat Time display.
- New play mode to play visual loops synchronized on the Beat.
- Autoplay and effects like Beat Glow synchronized on the Beat.
- Support for Ableton Link™ to play visuals synchronized and beat aligned with some music software.

### General

- Support for macOS High Sierra.
- Support to restrict the number of layers shown in GrandVJ.
- Fix for crash while saving & loading .xml files (affects preferences, templates and project files).
- Improved Luma and Chroma Keying.
- Layer 1 gets selected by default and view scrolling
- Fixed color discontinuity when adjusting RGB color values for a visual.
- Fixed issue when changing fullscreen resolution.

### Video Mapper

- Added Soft-Edge and Geometric Correction.
- Fixed issue when duplicating surfaces.
- Fixed crash when loading mapping with disconnected outputs.
- Fixed drag & drop issue where surfaces insert at the wrong place.

### Kling-Net Mapper

- Significant improvement for the detection of Kling-Net devices on the network.
- Improved device splitting and unsplitting.
- Custom color component order for some Kling-Force LED protocols.
- Snapping of multiple device.

- Fixed issue in the 2D sampler for devices such as the Spiider from Robe.

## **LEDMapper**

- Improved check if same universe is used both for unicast and broadcast.
- Optimized performance and reduced bandwidth usage.
- Litecraft and Elation LED fixtures added to the fixture library.
- Improved editing of properties for multi-selection.
- Fix for importing LEDMapper mappings.
- Fixed issue when moving multi-selection of LED devices.
- Fixed Art-Net DMX values starting at 1 instead of 0.
- Fixed Subnet and Universe value ranges.
- Fixed for next Art-Net universe/subnet/channel assignment.
- Fixed device resizes and sampling issues when resizing canvas.
- Fixed wrong message when opening a new file.
- Fixed leaked memory.

## **Audio**

- Fix for audio crash on Windows.

## Release Notes 2.3

This new release of GrandVJ adds highly anticipated features like the LED Mapper and Kling-Net Mapper to control LED fixtures in XT and support for 16 layers for both versions. It also includes a large set of fixes for issues that got reported in previous versions.

### Change List

#### General

- Support to playback 16 layers or 16 simultaneous Cells.
- Fix for Flash generators and flickering issue.
- Fix and significant improvement for Luma and Chroma Keying algorithms.
- Option to select the output of a Cell including Kling-Net and LED Mapper.
- Quick-start button in the toolbar to launch Kling-Net Mapper and LED Mapper.
- Order of banks is now correctly saved and restored.
- Fix for Hue cycling and issue when converting back from HSV color space.

#### Kling-Net Mapper

- Support to drive Kling-Net devices through GrandVJ XT.
- Support for new Kling-Force LED device from ArKaos.
- Support to split LED strips in multiple segments.
- Fixed freeze of GrandVJ for instance when sending mapping after a canvas resize.
- Fixed the need to restart Mapper if a network adapter was plugged only after Mapper was launched.
- After a device power cycle, a new image will be sent directly without the need to click in the interface.
- Support of multiple network adapters connected on a computer.
- Support to display only fixtures connected to some node.
- Support to search a connected device by name.
- Test Images are now displayed sampled on the canvas resolution.
- Undo system also works for rotations.
- Improved picking of surfaces and handlers.
- Fixed issue that surface selection handlers shape was influenced by canvas aspect ratio.
- With multi-selection, all surfaces were not snapped to grid.
- Top-left rotation handler as an alternative to center rotation handler for pixel-perfect setup.
- Fixed issue when plugging to network interfaces after software is started.
- Fixed pressing Del key in a property would delete the surface.
- Flashing of outputs when a Kling-Force LED node is selected.

## **LED Mapper**

- Support to drive Art-Net devices through GrandVJ XT.
- Support of Broadcast and Unicast Art-Net.
- Support to send a different universe content to different devices through Unicast.
- Automatic Art-Net nodes discovery.

## **VideoMapper**

- User can set an explicit Canvas size to render to each display for better control over the resolution.
- Fixed random Z-order insertion for new surfaces.
- Fixed drag and drop in the list of surfaces.

## **MIDI**

- Fixes for various MIDI issues like the selection of active MIDI controllers.
- Support for Akai APC mini + MIDIMIX combination with MIDI feedback.

## **Audio**

- Fixed audio crash on Windows when hot plugging audio hardware.

## Release Notes 2.2

This new release of GrandVJ 2 brings highly anticipated features like the support of Syphon and Spout, support for .HAP and .DXV codecs, as well as a first version of ASIO support.

It also includes some important fixes for the audio, the user interface and the transparency in the mixer.

### Change List

#### General

- New version of FFmpeg with new codecs and optimizations.
- Support for HAP and .DXV codecs.
- Fixed issue where the layout of property panels gets black and corrupted.

#### Syphon and Spout

- Support for Syphon IN and improvements for Syphon OUT.
- Support for Spout IN through system memory.

#### Mixer

- Outputs are always initialized transparent and not as opaque black anymore.

#### Audio

- Fixed audio issue with popular internal Realtek sound cards.
- Fixes for a first version of ASIO support with predetermined inputs & outputs.

## Release Notes 2.1.4

This is a maintenance release of GrandVJ 2 with the following list of improvements or fixes.

List of changes:

- [General] Fixed GrandVJ starting issue with non-English system languages.
- [General] Reduced memory usage and memory growth over time.
- [General] Fixed UI blinking and offsetting on synth keys and mixer edit button.
- [General] Improved UI feedback while importing a set of visuals in the library.
- [General] Fixed visual glitch in the output when previewing effects.
- [Capture] Better support of BlackMagic capture devices like the Intensity Pro 4K.
- [Capture] Fix for aspect ratio issue with BlackMagic capture devices.
- [ArKaosConnect] 64 bits support for the VST plugin on Windows.
- [ArKaosConnect] Fix for 32 bits and 64 bits versions of VST plugin on Mac.
- [Mixer] Fixes for transitions when using visuals with transparency.
- [Syphon] Fixes output with transparency.

## Release Notes 2.1.3

This is a maintenance release of GrandVJ 2 with the following list of fixes or improvements.

List of changes:

- [General] Logging fixes for windows due to special characters.
- [General] Fixed interface resizing issue when exiting fullscreen mode.
- [General] Fixed interface glitches on visual and output previews.
- [General] Reduced memory allocations and fixed memory leaks.
- [General] Fixed memory issue after playing and stopping many visual sources over time.
- [VideoMapper] Fixed permission issue to launch VideoMapper on Yosemite and El Capitan.
- [VideoMapper] Fixed reordering of surfaces by drag and drop.
- [VideoMapper] Improved surface reordering options in contextual menu.

## Release Notes 2.1.2

This is a maintenance release of GrandVJ 2 with the following list of fixes or improvements.

List of changes:

- [General] Fixed keyboard shortcuts on cells.
- [General] Improved playback of video codecs (ProRes, H264...).
- [General] Fixed transparency issue on the first mixer layer.
- [General] Fixed restoring of the panel layout.
- [General] Advanced option to give priority to using AV Foundation on Mac or not.
- [General] Import operation of many visuals in the bank shows progressively the imported thumbnails on Windows.
- [General] Fixed window stuck on (0,0) below top menu on mac.
- [General] Fixed misplaced master preview buttons on startup.
- [General] Stability fixes.
- [Flash] Improved support for Flash Player to correct rendering on Mac and Windows.
- [Flash] Fixes for the display of Flash texts.
- [Flash] Flash files with uppercase .SWF are now playing.
- [Quartz] Fixes for flipped Quartz effects.
- [Audio] Fixed many audio problems (crash at startup, switching audio input).
- [Audio] Fixed remaining noise when pausing a movie.
- [VideoMapper] Stability, startup and closing issues fixed.
- [MIDI] Fixed issue in MIDI Incremental mode when sensitivity is bigger than 1.
- [MIDI] Fixed how MIDI sliders can toggle buttons on and off.

## Release Notes 2.1.1

This is a maintenance release of GrandVJ 2 with the following list of fixes.

List of changes:

- [General] Fixed Video Mapper export issue.
- [General] Fixed mixer and effect behaviors with A and B channels.
- [General] Fixed master preview flicker.
- [General] Fixed keyboard view refresh after matrix resize.
- [General] Fixed interface glitches and optimized redraws.
- [General] Fixed multiple source of random crashes.
- [General] Added missing icons for a few effects.
- [General] Fixed crash due to audio service.
- [Flash] Fixed incorrect colors in Flash effects.
- [Flash] Fixed for incorrectly centered Flash animations.
- [VideoMapper] Fixed 90° rotated surfaces without output.

## Release Notes 2.1

This is a significant release of GrandVJ 2 with modernized architecture and frameworks to provide compatibility with latest OS like Yosemite, El Capitan and Windows 10. It is also packed with new features, new effects, new blend modes, timecode support, better MIDI controller support, as well as numerous fixes, improvements and performance boost.

List of changes:

- [General] Fixed compatibility with OS X Yosemite and El Capitan.
- [General] New effects (Hue masking, Beat glow, Earthquake, Color Cycling).
- [General] Autoplay mode to playback all visuals in a bank.
- [General] Random jump play mode (to randomly play parts of a movie).
- [General] Set of additional blending modes.
- [General] Tempo setting with tapping and entering value.
- [General] New Audio Sync time reference (for audio priority synchronization).
- [General] Fixed stability issue when playing Quartz composer effects and movies.
- [General] Reduced memory consumption.
- [General] Improved handling of big libraries.
- [General] Fixed memory leaks.
- [General] Improved speed for decoding movies on Mac.
- [General] Display Statistics (Preferences->Advanced) for troubleshooting.
- [General] Fix for audio seek problem.
- [General] Better handling of audio only files.
- [General] Fixed crash with invalid matrix sizes.
- [General] Updated FFmpeg to version 2.5.3.
- [General] Updated UI design framework for latest Mac OS X compatibility.

- [General] Modernized architecture for new Mac OS X.
- [General] Fixed crash on Mac OS 10.7 in Video Mapper mode.
- [General] Fixed next and previous did not cycle through all banks.
- [General] Removed noise generated on each key mapping on Mac.
- [General] Fixed cycling through visuals and cameras.
- [General] Fixed saving and restoring of window layout.
- [General] Transition presets are now filled with first available transitions.
- [General] Fixed audio input level indicator.
- [General] Extracting and closing matrix and keyboard fixed on Windows 8.
- [General] Improved UI layout, dialogs, toolbars and resize handling.
- [General] Fixed broken output and preview with effect only layers.
- [General] Fixed undo issues.
- [General] Fixed preview issue in the mixer.
- [General] Fixed copying a bank without name getting copied.
- [General] Split hide mouse and hide menu bar in fullscreen mode.
- [Effects] Flash text effects with international fonts for Japanese, Chinese, etc.
- [Effects] Improved beat glow effect.
- [Effects] Fixed pulsating ball effects and icon.
- [License] Fixed time token issue for software activation.
- [Camera] Fix for better DirectShow camera compatibility.
- [Timecode] SMPTE Timecode synchronization support (look for TC play mode).
- [Timecode] Display of timecode with troubleshoot feedback.
- [MIDI] Support for Akai MIDI controllers APC40 mkII, APC Mini and APC Key 25.

- [MIDI] Support for AlphaSphere MIDI controller.
- [MIDI] Support for Korg NanoPAD 2.
- [MIDI] MIDI light feedback on Akai APC40 mkII, APC mini and APC Key 25.
- [MIDI] Additional and improved MIDI mappable controls.
- [ArKaosConnect] Fixed error in .vst plugin.
- [VideoMapper] Fixed XML parser for previously corrupted mapping .xml files.
- [VideoMapper] Lock & Visible flags per surface are now correctly saved.
- [VideoMapper] Surface support now negative size for flipping.
- [VideoMapper] Fixed Ctrl-F to go out of fullscreen on Windows.
- [VideoMapper] Make output group with span optional.
- [VideoMapper] Fixed importing of mapping .
- [VideoMapper] Fixed missing names for outputs & output groups after importing.
- [VideoMapper] Fixed wrong connection status of outputs and output groups.
- [VideoMapper] Fixed output group size calculation.
- [VideoMapper] Fixed output group aspect ratio calculations.
- [VideoMapper] Fixed issue when exiting fullscreen on Mac.
- [VideoMapper] Fixed "Identify Display » button that revealed Windows toolbar.
- [VideoMapper] System DPI scaling options are now correctly taken into account.
- [VideoMapper] Fix for file paths containing international characters.

## Release Notes 2.0.3

This is a maintenance release of GrandVJ 2 with the following list of changes:

- [General] Fixed an issue about the audio analyzer precision that caused application to freeze after 24 hours.
- [General] Fixed multiple memory leaks.
- [General] Better memory handling when loading and playing many visuals.
- [General] Fixed contrast and brightness in mixer mode for preview.
- [General] Fixed contrast circular button behavior.
- [General] Added global brightness and contrast control for VideoMapper mode.
- [VideoMapper] New Video Mapper version with grouping of displays.



