50 things you did not know you could do with Ardour

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x42

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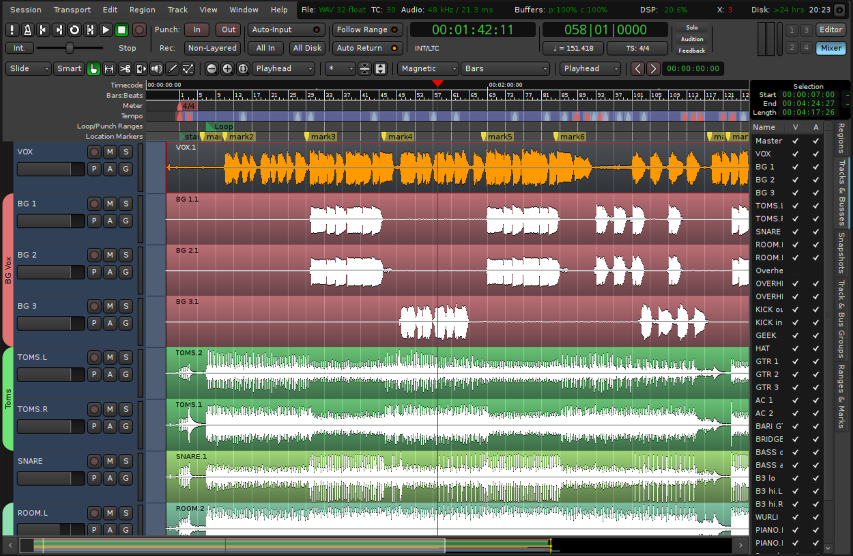
The Ardour Digital Audio Workstation (DAW)


Session
Transport
Edit
Region
Track
View
Window
Help
File: WAV 32-float
TC: 30
Audio: 48 kHz / 21.3 ms
Buffers: p:100% c:100%
DSP: 20.6%
X: 3
Disk: >24 hrs
20:23
Punch:
In
Out
Auto-Input
Follow Range
00:01:42:11
058|01|0000
Solo
Audition
Feedback
Editor
Mixer
Int.
Stop
Rec:
Non-Layered
All In
All Disk
Auto Return
INT/LTC
♩ = 151.418
TS: 4/4
Slide
Smart
Playhead
Magnetic
Bars
Playhead
00:00:00:00
Timecode
Bars:Beats
Meter
Tempo
Loop/Punch Ranges
Location Markers
00:00:00:00
00:02:00:00
4/4
Loop
start
mark2
mark3
mark4
mark5
mark6
Selection
Start 00:00:07:00
End 00:04:24:27
Length 00:04:17:26
VOX
VOX.1
BG 1
BG 1.1
BG 2
BG 2.1
BG 3
BG 3.1
BG Vox
TOMS.L
TOMS.2
TOMS.R
TOMS.1
Toms
SNARE
SNARE.1
ROOM.L
ROOM.2
M
S
P
A
G
Name
V
A
Master
VOX
BG 1
BG 2
BG 3
TOMS.L
TOMS.R
SNARE
ROOM.L
ROOM.R
Overhe
OVERHE
OVERHE
KICK ou
KICK in
GEEK
HAT
GTR 1
GTR 2
GTR 3
AC 1
AC 2
BARI G
BRIDGE
BASS d
BASS a
B3 lo
B3 hi.L
B3 hi.R
WURLI
PIANO.L
PIANO.R
Regions
Tracks & Busses
Snapshots
Track & Bus Groups
Ranges & Marks

Introduction - Who uses a DAW?

- Musicians

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- Musicians
- Audio Engineers

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- Multimedia Artists

Introduction

/Me

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/Me

- is a musician, physicist and GNU/Linux user

Introduction

/Me

- is a musician, physicist and GNU/Linux user
- married a movie director in need of soundtracks

Introduction

/Me

- is a musician, physicist and GNU/Linux user
- became an audio engineer and soundtrack composer

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- works full time on Ardour and Harrison Mixbus since 2017

Introduction

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- Remote Control

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- Remote Control
- Customize / Hack / Misc.

Introduction

What defines a DAW?

- Unlimited multichannel tracks
- Non destructive (media files once on disk never change)
- Non linear editing
- Automated real-time effects
- ...

Overview

The average Ardour user only uses 10% of its capabilities.

Workflow dependent, every user requires a different subset of Ardour's features.

Ardour accumulated various obscure features over the decades.

Presentation Layout

Short Description

During presentation: Ardour Demo

Slides: Text description

Lua Script Buttons

- Top right in Ardour's toolbar are buttons that can be assigned to custom scripted actions.
- Right-click to assign a new script.
- Scripts can be bound to keyboard shortcuts.
- *Preferences > Appearance > Toolbar*
- *Edit > Lua Scripts > Script Manager*
- *During the presentation this is used to skip to the next slide from within Ardour.*

Hotplug MIDI Devices

While the audio interface (which provides the clock) is fixed, MIDI devices can be added or removed dynamically.

See also *Preferences > MIDI* which allows to set properties.

Recorder View

- *Window > Recorder*
- Allows to directly monitor all physical inputs (incl. MIDI).
- Rename Inputs
- Create track(s) to record a given input
- Monitor Inputs (if a monitor section is present)

Recording

Recording File Format/Codec

e.g. FLAC

- Directly record to e.g. FLAC
- Reduce disk-space for long recordings
- Useful for interviews, podcasts
- Encode/decode of FLAC add a bit of CPU overhead
- *Session > Properties > File Format*

I/O Plugins

- Use a Plugin to pre-process input (or output)
- No mixer-strip required (outside of session context)
- e.g "Expander/Gate"
- Shown on the Recorder Page, like other physical inputs
- Listed as 'input-port' in connection list
- *Window > I/O Plugins*

Wet Recording

- *Processor box context menu > Disk I/O*
- Customize signal flow in each mixer-strip
- Pre: Input → Record → Play → ...
- Post: ... → Record → Play → Output
- Custom: allows to place plugins between Record and Play

Record Modes

- Layered - New regions are added on top
- Non-Layered - Splice regions, replace existing audio
- Sound-on-Sound - New *audibly transparent* regions are added on top

- *Dropdown top-center in the toolbar*
- *Track header context menu > Layers > Stacked*

Vari-speed Recording

- Set transport speed before recording *VS* transport control
- Can lead to a nice chorus effect when doubling vocals or guitars
- Hint: only do subtle shifts, +/-1 semitone.
- *Preferences > Signal Flow > I/O Resampler (vari-speed) quality*

Audition GM MIDI Files

- *Session > Import*
  Audition MIDI files before dropping them into the session
- Select a MIDI file, press play in the 'Info box'
- This play with default synth (General MIDI)
- Note: make sure auditioner audio ports are connected
  Window > Audio Connections

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Video Import Trick

Open Video to Import Audio

By default Ardour can only read files that Ardour can also record to.

- *Session > Open Video*
- Extract Audio only

This can decode any file that `ffmpeg` can decode.
Some examples:

- `.xma2` - Xbox Media Audio 2
- `.aac` - Apple/Advanced Audio Coding
- `.ac3` - Dolby Digital Audio Codec

Import Samples from Freesound

- *Session > Import > Freesound*

The Editor

CAUTION
HARD HATS
REQUIRED
BRADY SIGNMARK DIV. CATALOG NO. 74581
Y69574

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Vari-speed Playback

- Set transport speed during playback
- Optionally correct pitch using repitch plugin on master-bus
- `https://x42-plugins.com/x42/x42-repitch`

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Audition Range

- Select Range or regions, press *a*
- Solos selected track(s) and plays range

Edit Region Gain with Range Tool

- Press *r* to use *range-tool*
- make a range-selection on an audio-region
- Press *d* to select *draw-tool*
- Drag region-gain (or automation) range. This automatically adds guard-points

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Move Playhead to transients

Split at transients

- Select an Audio track and move to next/prev transient.
- Ardour automatically locates just before the transient, this way ‘split’ does not cut off the onset.
- *Transport > Playhead > Move to next transient*
- *Ctrl + Right-Arrow, Ctrl + Left-Arrow*
- *Preferences > Metering > Region Analysis*
- Ergonomic workflow using two keyboard shortcuts: *Ctrl + Right-Arrow*, then *s* to split

MIDI Step Entry

- *right-click on MIDI Track record-arm*
- Create MIDI regions using step-entry GUI

Live MIDI Step Entry

- *right-click on MIDI Track record-arm*
- Use MIDI keyboard or virtual keyboard to write MIDI Step by Step
- Send MIDI data to track while in step-edit mode

Poor Man's MIDI Sequencer

- Enable *Preferences > MIDI > Sound MIDI notes as they are selected*
- Select a MIDI region, switch to *e* - 'Internal-edit mode'
- Press *Tab* to select next MIDI note in the region
- Selection cycles at the end - "Poor man's variable MIDI step-looper"

MIDI Transform

Mathematically transform MIDI data.

Region > MIDI > Transform...

- Set [length] to [this note's] [length] [/] [exactly] [2]

  (halves note duration)
- Set [Velocity] to [this note's] [velocity] / [exactly] 20 * [exactly] 20 + [exactly] 10

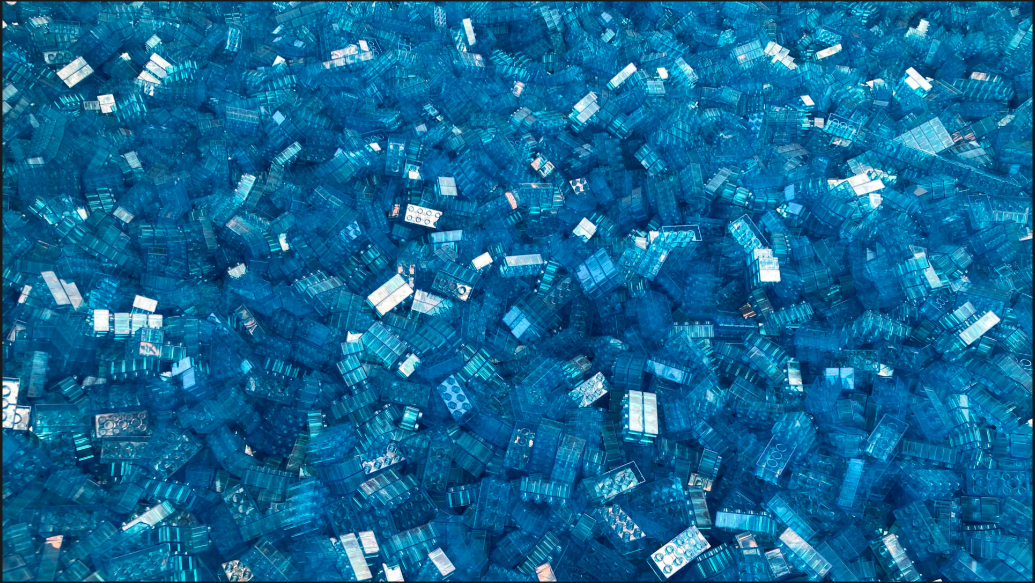
  (map [0 - 20] to 10, [20 - 40] to 30 etc.)
- Set [start time] to [this note's] [start time]
  * exactly 1000
  + a random number between 1 and 11
  - a random number between 1 and 11
  / exactly 1000.

  (micro timing, variation of less than 1/100th of a beat)

MIDI Busses

- Use a single synth for many MIDI busses
- Create MIDI tracks without synth plugin
  - group tracks, *right-click on group, add a subgroup bus*
  - or manually create a MIDI bus, and connect the track's to its input
- Add synth to MIDI bus

The Mixer & Plugins



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Momentary

Middle-click for momentary action

- Mute
- Solo
- Mixer Scene (!)

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Mixer Scenes

- Use Mixer Scenes to save/recall all automatable mixer parameters
- Partially restore scene by selecting tracks

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Monitor Section

- Add effects for monitoring only (not included in export)
- Adjust solo-in-font dim level
- Pre Fader Listen / After Fader listening path for use as live mixer

Mute Points

Ardour's Mute control does not directly mute the signal in the signal flow.
The signal is muted when it leaves the track:

- main output
- pre-fader sends
- post-fader sends
- listen (control out)

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VCA

Rather than groups to control volume, mute, solo

- Nested VCA
- Chained VCA

Adjust the drums with a Drum VCA, and also adjust the percussion (including Drums) with the Percussion VCA

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Track Templates

- *Mixer Strip Header, context menu > Save as Template*
- *Session > Add track or bus* - pick template
- *Window > Template Manager*

Tag Plugins

- Tag and organize your favorite plugins
- Benefit from 4830 existing tags

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DnD Plugins

- reorder
- copy settings
- create preset

- Drag & drop order of plugins, even post-fader
- Drag & Drop a plugin onto another plugin of the same type to copy its settings
- Drag & drop a plugin to the sidebar to mark it as favorite and create a preset
- Drag from sidebar to track to load plugin (optionally with preset)

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Pin Connections / Sidechain

- Use pin connections to connect sidechain plugin inputs
- use pin-connections for separate stereo processing

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Plugin Analyser

- Plugin: Edit with Generic Controls, Plugin Analysis
- Analyze transfer function
- Show phase
- Plot live signal

Plugin DSP Load

- *Window > Plugin DSP Load*
- Measure DSP load of individual Plugins
- Shows proper statistics, incl. worst-case time to process
- Allows to identify plugins that may cause dropouts

Disable Plugin Delay Compensation

- *Preferences > Appearance > Toolbar > Latency Compensation*
- Makes Ardour assume that all plugins have no latency
- Direct signal is not delayed to align with latent tracks/busses

Show Automation Line on Touch

- Available for all touch-sensitive parameters
- Works with plugin-GUIs, incl. third part Plugin UIs.
- *Edit > Show Automation Lane on Touch*

Lua Scripting

Lua Scripting - DSP plugins 1/4

Toys

- Play Pong - add ACE
- Use Automation to play Pong :)

Lua Scripting - DSP plugins 2/4

Utilities

- “ACE-MIDI Monitor” - show MIDI data at any point in the signal flow
- “ACE Mute” - Mute anywhere in the signal chain via ACE Mute plugin
- “ACE 5.1 to Stereo” – decode 5.1 video surround sound to stereo

Lua Scripting - DSP plugins 3/4

Control/Use Ardour internals

- Activate transport roll for remote recording by inserting "Voice/Level Activate" plugin into the processor box and enabling record mode.
- "ACE Inline Scope"
- "ACE Inline Spectrogram"

Lua Scripting - DSP plugins 4/4

Complex Plugins using Ardour's Tempo Map

- Arpeggiator - complex script with presets
- Barlow & Raport Arp
- `https://github.com/Ardour/ardour/tree/master/share/scripts`

Lua Scripting - Session plugins and Callbacks

- Load Mixer scene when passing though a marker
- Periodically Save Snapshot
- Automatically snapshot on Export
- Turn on tally light when recording
- Rewind and play after loading session
- etc.

Lua Scripting - Editor Actions

- “Swing it”
- Create Plugin Automation
- Convert MIDI CC to Automation
- Split regions at Markers
- Collapse playlists
- etc.

Export

TOI® HYGIENE+
HYGIENE+

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Loudness Analyser

- *Preferences > Signal Flow > Master*
- "LAN" - Loudness Analysis and Normalization
- Available on the master bus
- Loudness targets Presets, only using gain

Export Multiple Files in One Go

- *Session > Export > Export to audio File*
- Take note the “Preset” dropdown at the top.
- Streaming Preset

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Post Export Analysis

- *Session > Export; Analyze Exported Audio*
- True peak values
- LUFS short-term with a time graph, integrated loudness, loudness range
- Waveform and Spectrogram
- *Preferences > General > Save loudness analysis as image after export*
- *Preferences > General > Save mixer screenshot after export*

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File Access

Bounce to export

- Audio/MIDI data is stored as files inside the session folder
- SMF (standard MIDI file) .mid
- Mono audio files (.wav, .flac)
- Media files are directly accessible
- *Double-click on ‘Path’ in Menubar*

Miscellaneous

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Media Download

- *Window > Library Downloader*
- *Editor Sidebar > Clips*
- *Cue Sidebar > Clips*

Bounce to Trigger Slot

- *Region Context menu > Bounce ..*
- Select Trigger Slot

Session Snapshots

- *Session > Snapshot and keep working on current version*
- *Session > Snapshot and switch to new version*
- Quickly switch between snapshots:
  Editor Sidebar > Snapshots

Connection Matrix

- *Window > Audio Connections*
- *Window > MIDI Connections*
- Connect multiple I/O by drawing a diagonal line

Remote Control

- *Preferences > Control Surfaces*
- Control Ardour from your phone with Open Stage Control
- Control Ardour from your phone with TouchOSC
- Control Ardour from your phone using any Web browser

  see Log Window; `http://localhost:3818`
- Control Ardour from commandline

  ```
  oscsend osc.udp://localhost:3819 /transport_start
  ```

Rhythm Ferret

- *Region > Edit > Rhythm Ferret*
- Analyze region, places transient marker on region
- Optionally move markers
- Split
- select all regions
- *Region > Position > Snap to Grid*

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Appearance

- Change the overall appearance of the program to use square buttons and/or a flat appearance
- Choose between several different color themes.
- LV2 Plugins are informed about theme and style

What else can you do with Ardour?

Make a living?!

Thank you for your attention!

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Kudos to Paul Davis for creating Ardour
& to Harrison Consoles.