



DrumGizmo

What is it all about?

Who we are

Bent Bisballe Nyeng - [deva]

- Founder, developer and lead programmer

Lars Muldjord - [muldjord]

- Developer, tester, GUI, logo and community manager

Jonas Suhr Cristensen - [suhr]

- Developer and programmer

Why?

Eric S. Raymond:

“Every good work of software starts by scratching a developer’s personal itch”

Why?

- We want to build a virtual drummer
- Existing plugins are not free and doesn't run natively on Linux
- We want to be able to sample our own drum kits

So what is a virtual drummer?

We wanted to emulate a real drum recording with all the bells and whistles

- Complete microphone setup
 - Many microphones recording simultaneously
- Instrument bleed
- Sample randomization
- Humanization
- Instrument awareness
 - A closing hi-hat is aware of the previous open hi-hat hit etc.



Drum kit file format

Flexibility

Xml based format

- Easily editable in a text editor

Instrument editor very usable. Next up is the drum kit editor

- Currently manual editing is needed to bind instruments together
- Midimap

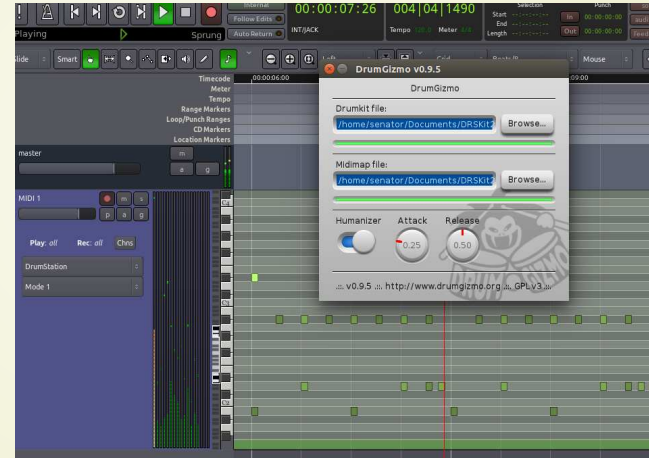
Converters for other popular formats still in planning stages

- Will be prioritized when DrumGizmo functionality has stabilized

Aiming for simplicity

We do stuff others don't

- FOSS
- Committed to cross-platform
 - Linux, Windows and (shortly) Mac
 - Multiple plugin formats
- Completely open file format
- Drum kit editor included
 - Create your own kit, define your music
- Our drum kits are free!
- Simple approach
 - No in-plugin mixing - this is done in DAW as it should be!



Use case scenarios

When composing songs

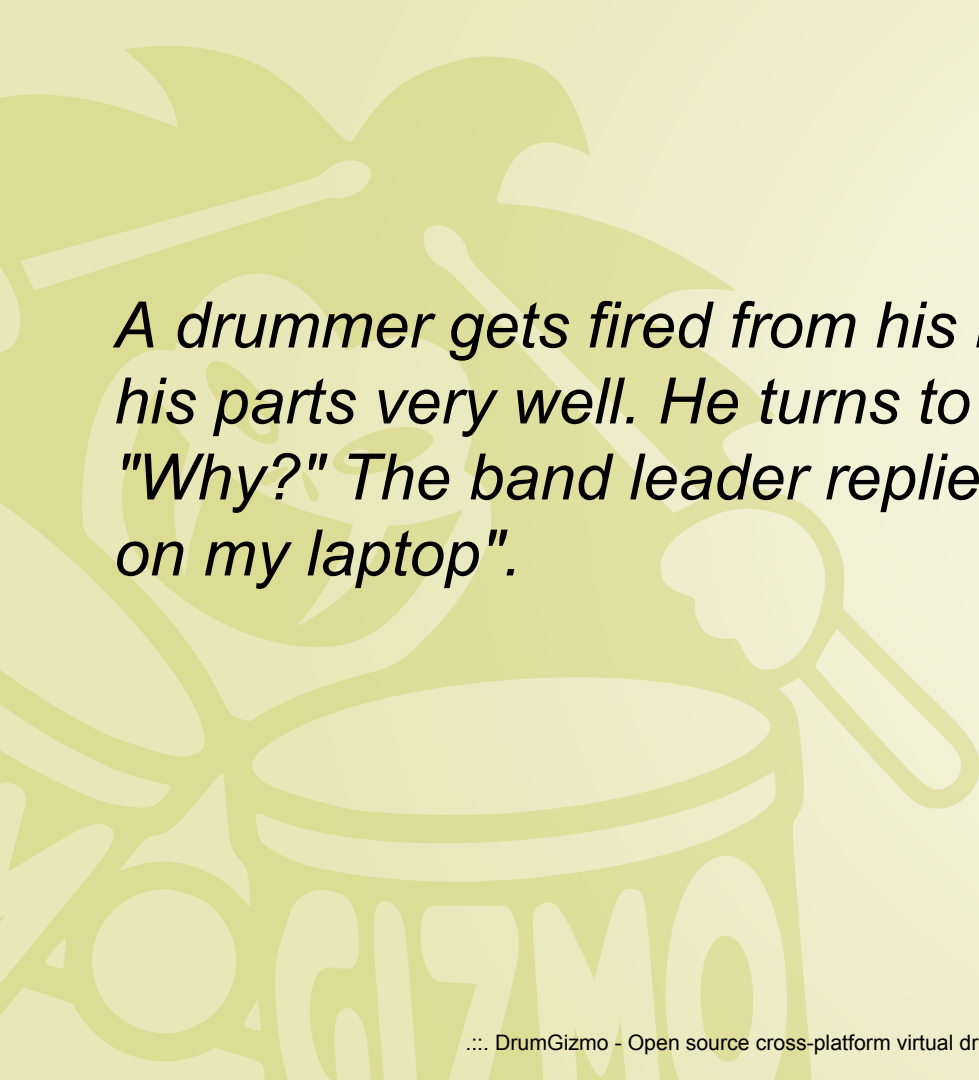
- Fast and easy to work with

When playing live

- Backing track
- Real-time sampler using midi
- Real-time sampler using triggers (planned)

For actual productions

- We believe it's that good
 - Muldjord: On upcoming album
 - DownPitch: On upcoming ep
 - Let us know!



A drummer gets fired from his band even though he played his parts very well. He turns to the band leader and asks "Why?" The band leader replies "I just installed DrumGizmo on my laptop".

Where are we now?

Most important changes since LAC2013

Multichannel support implemented

- One audio file per drum hit
- Paves the way for disk streaming

New velocity algorithm implemented

- No need to take the stairs, it's all smoooth sailing now

Where are we now?

Complete editor overhaul

- Real time auto generation
- Much more intuitive
- *Fixed* velocity groups removed
 - Now completely based on hit levels

Editor anno 2013

File

Listen Threshold Selections

Dock Widget

Auto Clear Export

Attack length:

Falloff:

Fadlength:

Player volume:

Prefix:

kick-r

Export path:

/home/deva/tmp/drumgizmoexport

Add files...

Files: (double-click to set as master)

AmbR	/home/nemo/DRSKit
BDrum_back	/home/nemo/DRSKit
BDrum_front	/home/nemo/DRSKit
Hihat	/home/nemo/DRSKit
OHL	/home/nemo/DRSKit
OHR	/home/nemo/DRSKit
Ride	/home/nemo/DRSKit
Snare_bottom	/home/nemo/DRSKit
m Snare_top	/home/nemo/DRSKit
Tam1	/home/nemo/DRSKit
Tam2	/home/nemo/DRSKit
Tam3	/home/nemo/DRSKit

0.030 0.081 0.165 0.366 0.640



DrumGizmo

How to mic a drum kit

What we need

- A drum kit
- A room
- Microphones

We also need recording equipment. Not the scope of this presentation.

Choosing your flavor

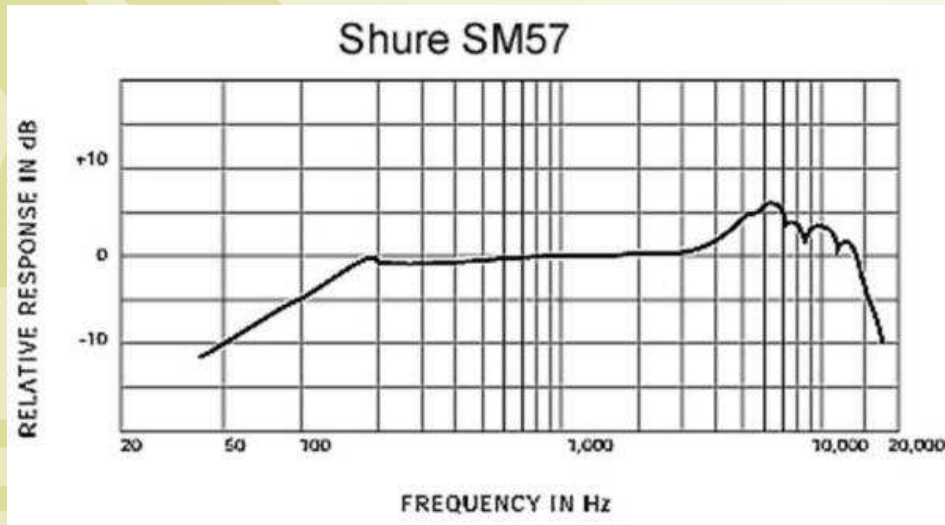
What is the kit for?

- **Rock**
 - A full sound, but still a lot of close mic'ing
- **Metal**
 - Tighter sound
 - Close mic'ing all around
 - Overheads go closer to cymbals to lessen bleed
- **Jazz**
 - A roomy sound, almost unmixed
 - Close mic'ing almost not necessary
 - Overhead and ambience much more important



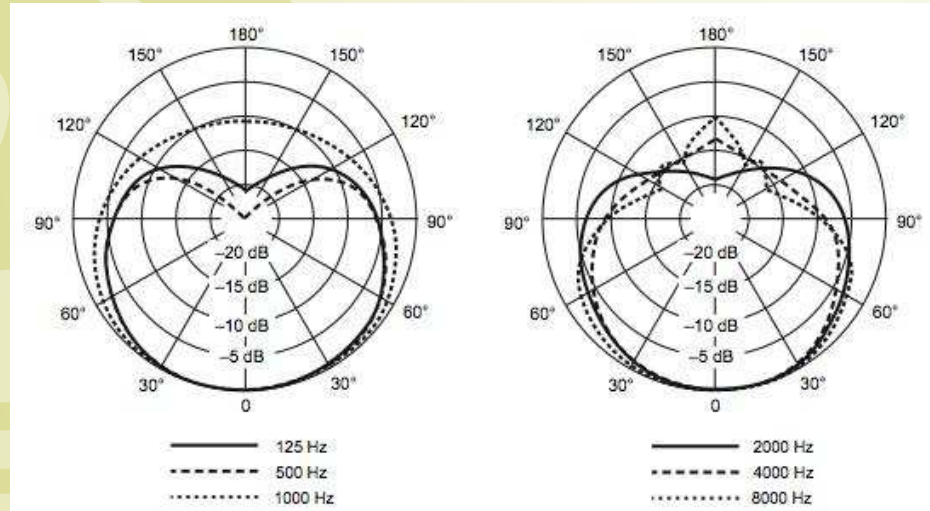
Microphones

Understanding frequency response, the microphone fingerprint



Microphones

Understanding the characteristics



Microphones

Dynamic microphones

- Low sensitivity
- No phantom power required

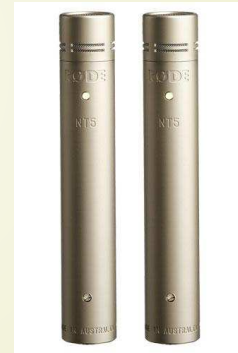
Condenser microphones

- High sensitivity
- Phantom power required

Ribbon microphones

- Medium sensitivity
- Quite uncommon

Other types that aren't really important in our case...



Creating your space

Overheads

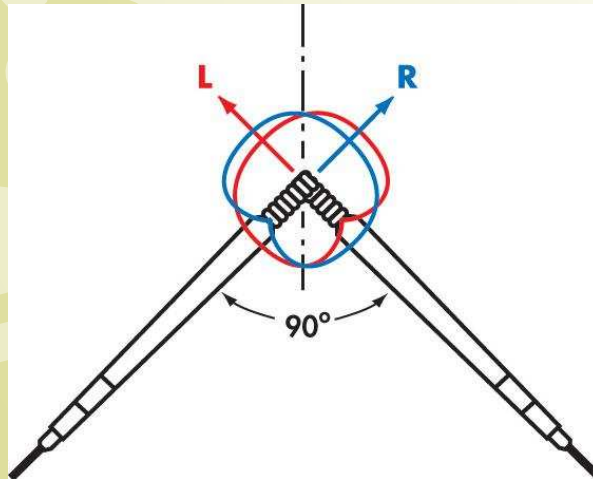
- Mostly captures your cymbals



Creating your space

The XY setup

- It's simple - too simple (I think). Stereo space is lacking
- Pretty much no phasing issues



Creating your space

Spaced pair / AB setup

- Phasing issues ahoy! Bring your measuring tape
- Great stereo space and control



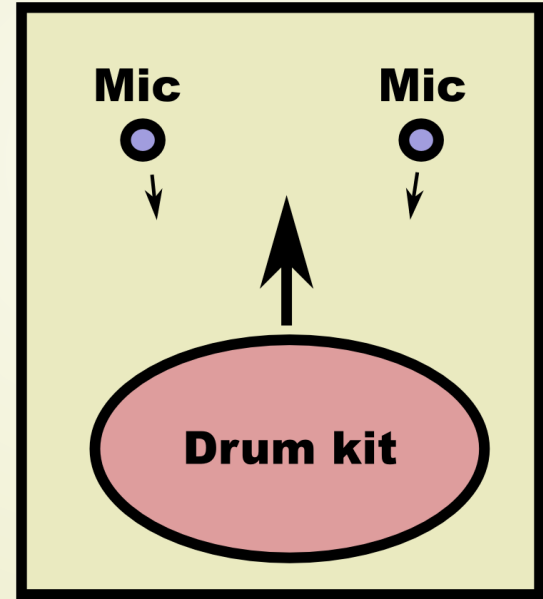
Creating your space

Ambience

- Step back please, we need some room!
- Basically applies the response from the room to your recordings
 - Floor, ceiling, walls, wood paneling
 - So much to consider, but take it easy...
- Useful instead of a reverb or with a reverb applied
- Dead rooms exist, but they'd suck for drum recording

Creating your space

Ambience mic placement



Creating your space

What microphones should I use?

It's a matter of taste, but...

Overheads

- Condenser microphones
 - High sensitivity
 - Phantom power required

Ambience

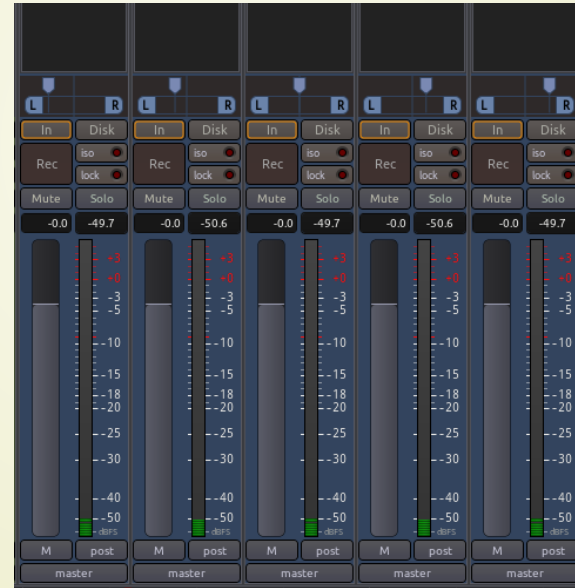
- Same as above or...
- Ribbon microphones
 - t.bone rb500 ← Cheap and sounds great!
 - Never requires phantom power? Audience?



Creating your space

Panning

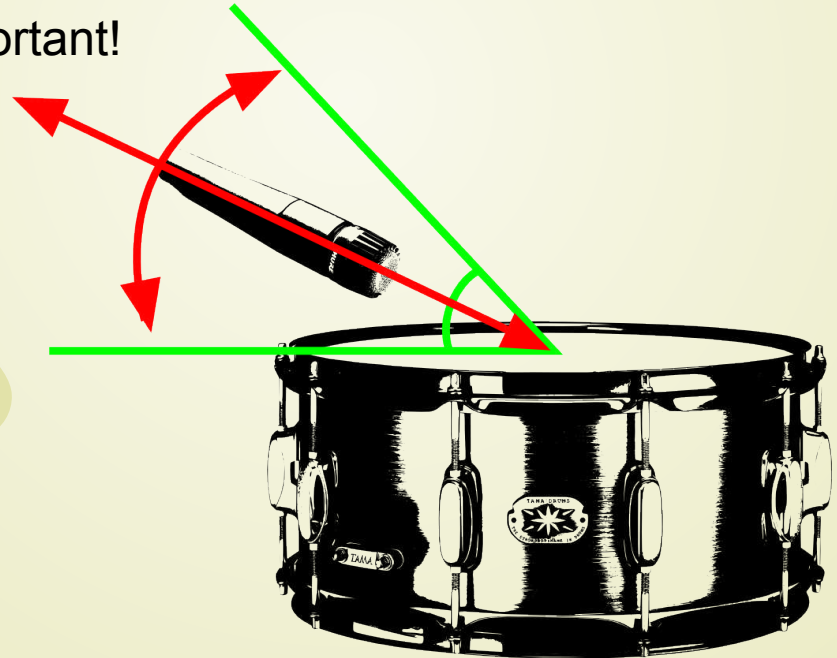
- Pan overheads left and right
- Pan ambience left and right
- Panning close mic'ed instruments
 - Snare and kicks go in the middle
 - Toms are spread out
 - Hihat
 - Ride cymbal
 - Cowbell



Closing in on the details

Microphone angling and distance

- Microphone characteristics are important!
- The attack
- The body
- In the end, it's a matter of taste



Closing in on the details

What microphones should I use when close mic'ing?

It's a matter of taste, but...

Snare drum, toms, hihat, ride cymbal

- Dynamic microphones
 - Low sensitivity, less bleed, less room noise
 - No phantom power required
- Condenser microphones
 - Not common for close mic'ing
 - Can be used on ride, maybe also for hihat
 - Problems with bleed



Closing in on the details

Applying the microphones

Snare

- Top mic: the attack
- Bottom mic: the sizzle

Toms

- Top mic: look for a nice warm sound, but don't forget the attack

Kick drum

- Inside the barrel, or in front at the beater

Ride cymbal, hi-hat, cowbell (mmmm, cowbell...)

- The volume is too damn low! (in the overheads)