
Elk
Audio OS

Elk Workshop ADC 19

Turn a JUCE plugin into a hardware instrument with Elk Audio OS

Stefano Zambon CTO
Ilias Bergström Senior Sw Engineer
Gustav Andersson Senior Sw Engineer

Steps of Workshop

1. Running and controlling plugins
2. Making a JUCE example plugin work on Elk
3. Glue app example for the above plugin
4. Advanced Topics / Experimentation
5. Q & A

Ensure that you have

1. JUCE 5.4.5 and Projucer built.
2. Terminal with SSH.
3. Headphones with 3.5mm plug.

If not, let us know and we will help

Running and controlling plugin: power

Power on boards, connect ROLI USB MIDI keyboard.

Running and controlling plugin: connect

Connect to board over our WiFi:

Connect your PC

WiFi: Elk_Workshop

PW: elk_at_adc

On your board, there is a sticker with a name, e.g. elkpi-3.

```
>$ ssh mind@elkpi-3.local
```

Pw: elk

Sharing a Board (Linux / OSX)

Two can connect to the same board with ssh, following the previous slide instructions.

Then, to both share it, one types:

```
>$ tmux
```

The other types:

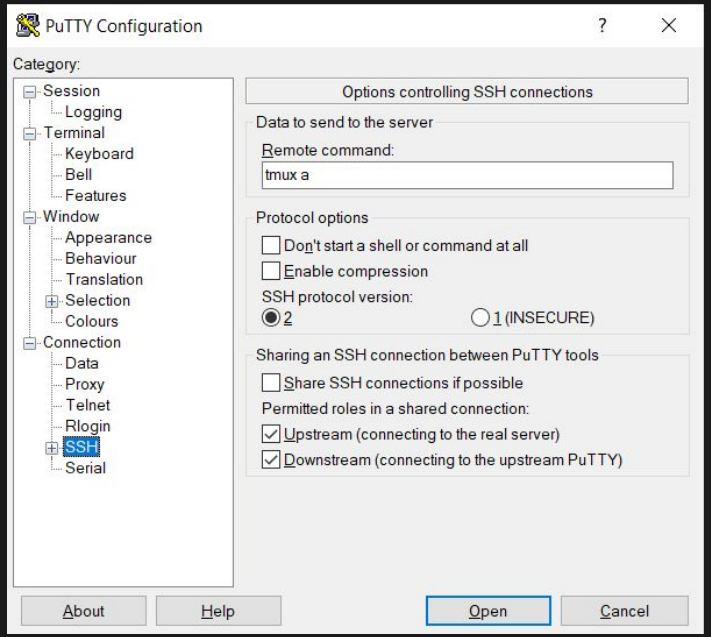
```
>$ ssh mind@elkpi-xx.local -t tmux a
```

...Unless you are on Windows - then read next slide:

Sharing a Board (Windows)

With PuTTY, one connects over SSH, then types '`tmux`'.

The other, has to change the custom command to '`tmux a`' in the SSH tab as in the picture, before opening their SSH connection.



Running and controlling plugin: file transfer

OSX: connect to samba folder with shortcut cmd-K from Finder.
Ubuntu: “Files” window, “Other Locations”, and in “Connect to Server” field, enter: smb://elkpi-3.local/
Win 10: right-click this PC. “Add a network location”. … in field “//elkpi-3.local”.

For all: User: mind PW: elk

If Samba doesn’t work:

```
>$ scp yourfile.so mind@elkpi-3.local:/udata
```

Running and controlling plugin: Sushi

```
>$ cd /udata/adc_workshop_files/adc_sequencer
>$ sushi -r -c sushi_config.json --osc-send-port=23023 -m2&

>$ aconnect -l
>$ aconnect sourceNumber(ROLI) destinationNumber(Sushi)
```

If you get the error “Connection failed (Invalid argument)” this is likely because the soundfont being loaded is large. Wait a few seconds and try again. Otherwise ask for help.

Running and controlling plugin: Sensei & Python

```
>$ sensei -f sensei_config &
```

Start python program

```
>$ ./main_app
```

Ctrl-C to kill main app when done playing.

```
>$ killall -2 sushi
>$ killall -2 sensei
```

Cross-Compiling a JUCE Plugin

Build and run JUCE VST example on your local computer:

Download from here - or ask us for files:

https://github.com/elk-audio/elk-adc-workshop-material

That repository contains all the material for the workshop.

Build ‘`elk_juce_example_projucer_source`’, using Projucer.

Sensei and creating a simple Glue App

We show the configuration files, discussing their content on the projector.

For Sushi, Sensei, Python

Try to edit, over Samba, the files of the examples. Stop and start the example to test:

```
>$ ./run_example
>$ ./stop_example
```

Run JUCE Plugin on board

Run the example on the board:

```
>$ cd /udata/adc_workshop_files/elk_juce_example
>$ ./run_example
```

If you modify the example plugin, zip the source folder contents, and upload it to this page: `http://elkbuild.local:5000/`
That server will cross-compile it, and directly place it on your board.

Advanced Topics / Experimentation

Set OSC callbacks to the Programming Example's GUI.

Monitoring a plugin's performance, detecting mode switches, and removing them.

Sequencer example:

- Edit the Python glue program.
- Install Open Stage Control, and interact with the synth over it.

Thank you!

Website	elk.audio
Forum	forum.elk.audio
Code	github.com/elk-audio