
L.I.S.A Linux Client Documentation

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About

This is the Linux Client. Actually, there is no speech recording input as it isn't stable enough to have something production ready. This client will connect to LISA and will vocalize sentence received.

A good use case is to let your home automation box use the LISA Server API to vocalize a string somewhere in your house.

In the future, this client will use different engines (pocketsphinx, google speech) to record sentences, and with a keyword spotting. Keep in touch !

Install

2.1 LISA Client

First, install the LISA application :

```
git clone https://github.com/Seraf/LISA-CLIENT-Linux.git
```

or if you don't have git (update will be easier with git):

```
curl -L https://github.com/Seraf/LISA-CLIENT-Linux/tarball/master | tar xz
```

You now have to install some things to make it working :

```
sudo apt-get install python-dev python-openssl python-setuptools
```

If you don't have "pip" to install python packages, I recommend it ! :

```
sudo easy_install pip
```

Then, install the python dependencies for LISA :

```
sudo pip install twisted
```

2.2 Speech Dispatcher

LISA Linux Client rely on Speech Dispatcher software. You will be able to add new tts engine in Speech Dispatcher as module. You won't have to add new code on LISA, just tell in the config file the module you want to use.

The install of Speech Dispatcher is easy :

```
sudo apt-get install speech-dispatcher python-speechd
```

Be carefull, on latest packages (depending your distro), python-speechd is for python3. You need to find the python 2.7 version (maybe on old packages) or install it from sources. The Linux client actually use python 2.7, I'm stuck to this version because of Twisted. Twisted is currently migrating to python 3, and when it will be done, it will play fine.

Now you have to "configure" new modules. If you want to use the pico libtts (best free engine on Linux) you have to edit /etc/speech-dispatcher/speechd.conf to uncomment the line :

```
AddModule "pico-generic" "sd_generic" "pico-generic.conf"
```

2.3 Raspberry

2.3.1 Pico libtts

On raspberry pi, there is no libtts pico build. You can install it with the package I have compiled on a Raspbian Wheezy :

```
sudo dpkg -i package/libtts_pico0_1.0+git20110131-2_armhf.deb package/libtts_pico-data_1.0+git20110131-
```

2.3.2 PulseAudio

Raspberry is funny but when you have to play with audio configuration (and generally on all Linux), it quickly become a nightmare. Here is what I have done to make it working : First, install Pulseaudio :

```
sudo apt-get install gstreamer0.10-pulseaudio libao4 libasound2-plugins libgconfmm-2.6-1c2 libgladem
```

Setup ALSA :

```
sudo cp -pf /etc/asound.conf /etc/asound.conf.ORIG
sudo echo 'pcm.pulse {
    type pulse
}

ctl.pulse {
    type pulse
}

pcm.!default {
    type pulse
}

ctl.!default {
    type pulse
}' > /etc/asound.conf
```

Change default sound driver from alsa to pulseaudio :

```
sudo cp -fvp /etc/libao.conf /etc/libao.conf.ORIG
sudo sed -i "s,default_driver=alsa,default_driver=pulse,g" /etc/libao.conf

sudo cp -fvp /etc/pulse/daemon.conf /etc/pulse/daemon.conf.ORIG

sudo echo "
high-priority = yes
nice-level = 5
exit-idle-time = -1
resample-method = src-sinc-medium-quality
default-sample-format = s16le
default-sample-rate = 48000
default-sample-channels = 2" >> /etc/pulse/daemon.conf
```

Add pi user to the pulse access group :

```
sudo adduser pi pulse-access
```

Don't forget to reboot to apply all these modifications :

```
sudo shutdown -r now
```

Configuration

3.1 LISA

In the configuration/lisa.json file, you will find parameters to replace according your needs.

lisa_url: You can setup in this field a dns or an ip, pointing to your LISA Server.

lisa_engine_port: This is the communication port you have setup on the LISA Server. By default the value is 10042.

lisa_engine_port_ssl: This is the secure communication port you have setup on the LISA Server. By default the value is 10043.

enable_secure_mode: This value define if the client should connect to the server with SSL or not. By default the value is false.

debug_input: If this value is true, all data received will be displayed on the stdout or logged in a file. By default this value is true.

debug_output: If this value is true, all data sent will be displayed on the stdout or logged in a file. By default this value is true.

zone: Define the zone where is located the client. By default this value is “zone1”. There can be more than one client per zone.

tts: You can setup the module that will be used by speech-dispatcher here.

lang: This is the language the tts will use.

Indices and tables

- `genindex`
- `modindex`
- `search`