OSP Wearable Getting Started Guide

http://openspeechplatform.ucsd.edu

Release 2019a

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Abstract

This document describes download, build, install and test steps for the Open Speech Platform (OSP) Release 2019a wearable software. This work is supported by Nation Institute of Health, NIH/NIDCD grant R01DC015436, "A Real-time, Open, Portable, Extensible Speech Lab" to University of California, San Diego. Please visit OSP Forum - Getting Started to report bugs and suggest enhancements.

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Chapter 1

Using the Wearable

1.0.1 Accessing the Terminal

1. **There are two ways of connecting to the terminal** We have included a uart port which logs you directly into root (usb uart ftdi chip with a baud of 115200) see figure 1.

2. **The other option is use a HDMI and keyboard** to login using the following information: Username: linaro ii. Password: linaro

1.0.2 Setting up Wifi

To get wifi with either WEP or WPA Personal authentication setup:

3. Type `sudo nmtui` and follow the prompts

4. When asked for "Device:" type `wlan0`

5. To get wifi working with WPA Enterprise authentication is a bit more complicated and requires knowledge of the settings used for that particular wifi network but here is an example of how it is done (There is an example in "/home/linaro/wifi_setup_example.sh"): . You can use `nmcli`

   If everything went well, your screen will look similar to Figure 1.2.

6. **To make sure wifi was set up correctly** do ping 8.8.8.8 and then run "/home/linaro/osp_update_script.sh" This will take a while.

Figure 1.1: This is where an image of the wearable unit.

1.0.3 Now that wifi is set up

7. **Once it finishes reboot the dragon board** with command `reboot`. (Make sure the Wifi is connected by `ping 8.8.8.8`. There is a system bug that occasionally Wifi is not successfully connected when system start-up though it's configured. So what to do is just rebooting again, **without** need to reconfigure as section 1.0.2)

```
# nmcli con add type wifi ifname wlan0 con-name CONNECTION_NAME ssid SSID
# nmcli con edit id CONNECTION_NAME
nmcli> set ipv4.method auto
nmcli> set 802-1x.eap peap
nmcli> set 802-1x.phase2-auth mschapv2
nmcli> set 802-1x.identity USERNAME
nmcli> save
nmcli> activate
```

Figure 1.2:   but here is an example of how it is done. This is an example in "/home/linaro/wifi_setup_example.sh")

8. **Upon every boot run** /home/linaro/audio_setup.sh"

9. **Now you are able to run OSP** by running /home/linaro/autorun.sh

10. **If you want OSP to run in the background** use sudo screen -dmS osp_background/home/linaro/autorun.sh

11. **Now you are able to run EWS by typing** ews

12. **If you want EWS to run in the background use** sudo screen -dmS ews_background ews

Chapter 2

Release 2019a Test and Validation

This chapter describes sanity tests to validate your versions of `osp` and `ews` on the wearable device.

2.1   Connecting Audio I/O Devices

There are many audio input/output options for OSX and Linux computers. One inexpensive option is the Andrea Communications 3D Surround Sound Recording CANS. They are supra-aural headsets, with left and right mics.

You can also use a high end audio device such as Zoom TAC-8 or Focusrite Scarlett 2i2.

2.2   Test RT-MHA

You can interact with RT-MHA from command line interface (CLI) to display and change the HA state.

1. Do not wear the headsets for now.

2. Open a terminal and issue `osp` command. The screen will show information similar to Figure **??**.

3. `-h` will generate help output as shown in Figure **??**.

4. `-p` will print the *complete state* of RT-MHA. Notice that the gain on the left and right channels is -20 dB, to account for overall gain of the system.

5. `-q` will exit RT-MHA.

6. `--gain -15` will make the system sound louder by 5 dB.

7. All the parameters in HA state can be changed with `--parameter` `value` in command in CLI.