Sources and Tutorials

**Create a partition and add swap**

The Exynos OdroidUX4 appears to be a powerful computing platform, but is there are any options for increasing the available RAM higher than 2GB because in order to run ROS we’re going to need a quite powerful RAM.

It seems the ARM platform is SOC (system on chip). So the RAM is built-in the chip together with CPU and interface logic. Then, there’s no possibility to add extra RAM but there is some program Linux uses to convert disk space into Virtual Memory by adding swap. So, in our case, we’ll use the SD card in order to create a disk space that will be converted into virtual memory and then we’ll add a swap. We’re using 32Gb SD card so we’ve decided to divide it into 8GB for booting of Ubuntu and the rest will be used as virtual memory.

Here’s is the link of the tutorial to create a partition on SD card:

<https://askubuntu.com/questions/735096/how-to-format-a-partitioned-sd-card>

Here’s is the link of the tutorial of how to add swap:

<https://www.digitalocean.com/community/tutorials/how-to-add-swap-space-on-ubuntu-16-04>

**Install ROS and Google Cartographer**

ROS (Robot Operating System) provides libraries and tools to help software developers create robot applications. It provides hardware abstraction, device drivers, libraries, visualizers, message-passing, package management, and more. ROS is licensed under an open source, BSD license.

Cartographer is a system that provides real-time simultaneous localization and mapping (SLAM) in 2D and 3D across multiple platforms and sensor configurations.

The link how to install ROS Kinetic on Ubuntu:

<http://wiki.ros.org/kinetic/Installation/Ubuntu>

The link how to install and run the demo of google cartographer:

<https://google-cartographer-ros.readthedocs.io/en/latest/compilation.html>

The link for the ROS package that publishes fake laser scan data:

<https://github.com/nicolasgallardo/ros-fake-laser-scan>