Sorbonne Université Sciences

ARK Docker
User's manual

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May 2019

ARK Docker is a Docker image created at the ISIR, Sorbonne Université to provide an environment for ARK including all of the library it needs. It requires a Linux distribution to be used and it has been tested with the following configuration :

— OS : Ubuntu 18.04

— CPU : Intel Xeon W-2155 @ 3.3GHz

— GPU : 1x Nvidia Quadro P400 (RAM : 2Gb), 1x GeForce RTX 2080 Ti (RAM : 10Gb)

— RAM : 32Go de RAM

— SSD : 250Go

Docker setup

Docker

To run the Docker image in a container, you need to install Docker first. Just follow the instructions of the official guide : https ://docs.docker.com/install/linux/docker-ce/ubuntu/ .

Nvidia Docker

You will need to give to your container acces on your GPU. We use Nvidia Docker, a software made to handle the connection between the Docker container and your GPU. This guide on the offical GitHub will do the work : https ://github.com/nvidia/nvidia-docker/wiki/Installation-(version-2.0) .

Building and running the Docker image in a container

The Docker image is not available pre-built on Docker Hub because you need to build it on your own computer or it will not have the permission to use your display.
Just download or clone this repository : https ://github.com/AntoninARBERET/Pandroide-ARK . In the Docker directory you will find the Dockerfile, containing every instructions Docker needs to build the image. The two bash scripts with it just run the build and run command with the right parameters.

To build the image execute :
`build_ark_image.sh`
It doesn't need any parameters but it will access your user id and group id. This step takes several minutes. When it's done, the `docker images` command should show a new Docker image tagged ark :latest.

To run the image, execute :
`run_ark_image.sh nbcams ohc`
`nbcams` and `ohc` should be numbers, respectively the number of cameras you want to use in your Docker container and 0 if you don't want to use the overhead controller. Both have a default value and if you don't specify a value explicitly, the script considers four cameras and an OHC.
The container will be launched directly in the current terminal inside the directory containing ARK and ARK calibration.