UP Xtreme i12 Edge DevCup Ubuntu 22.04 Installation Guide

REVISION HISTORY

Revision	Date	Comments	Author(s)
1.00	2022/07/12	First Release	LouisChen

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1. UP Xtreme i12 Edge *1
2. 12V Power adapter *1
3. Power cord- US type *1

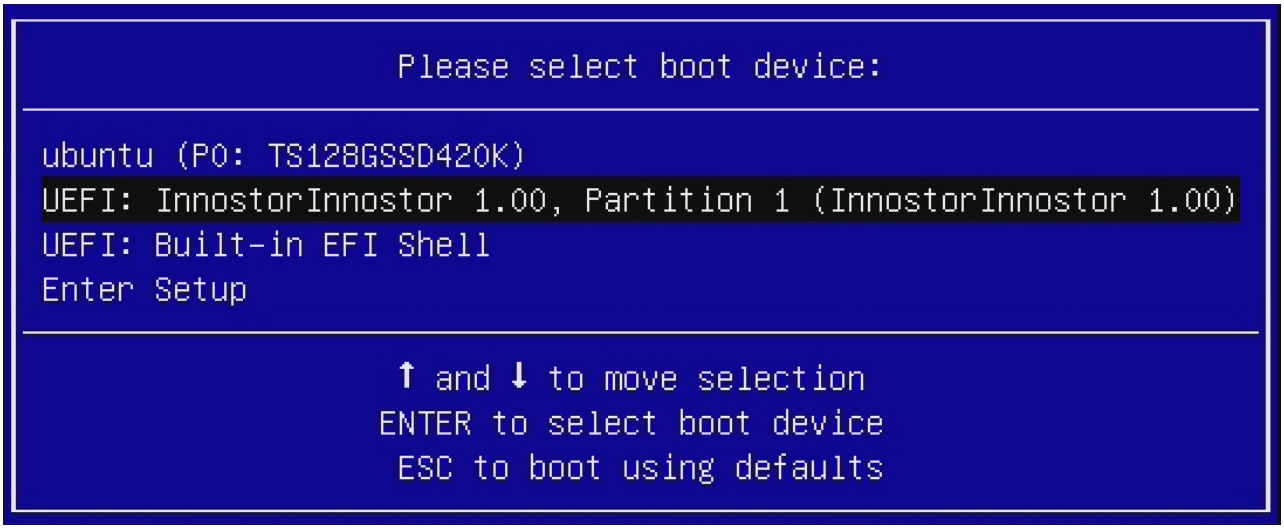
2. Install Ubuntu 22.04

#1 Prepare a bootable Ubuntu 22.04 live disk USB thumb drive

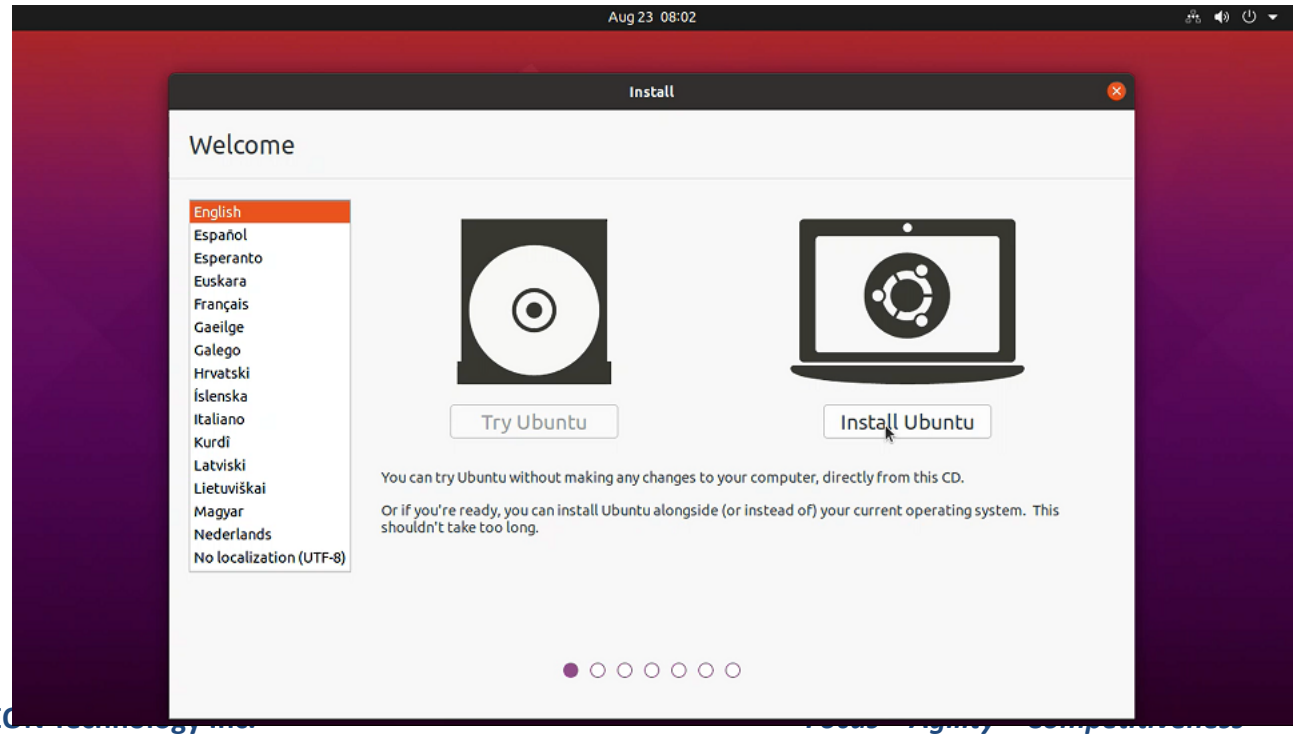
#2 Insert the USB drive into one of the USB ports on the UP Xtreme i12 Edge

#3 Power on the UP Xtreme i12 Edge and press the F7 key to enter the boot order menu

#4 Select the Ubuntu 22.04 live USB drive



#5 After the drive boots, install Ubuntu 22.04 onto the system.



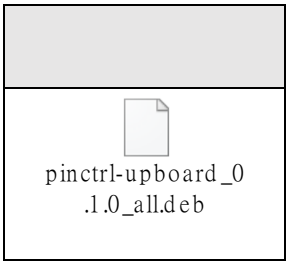
3. Install UP board new Linux pin controller driver

#1 Install DKMS

`sudo apt install dkms` (03:56)

#2 Install pin controller driver for HAT 40 pins

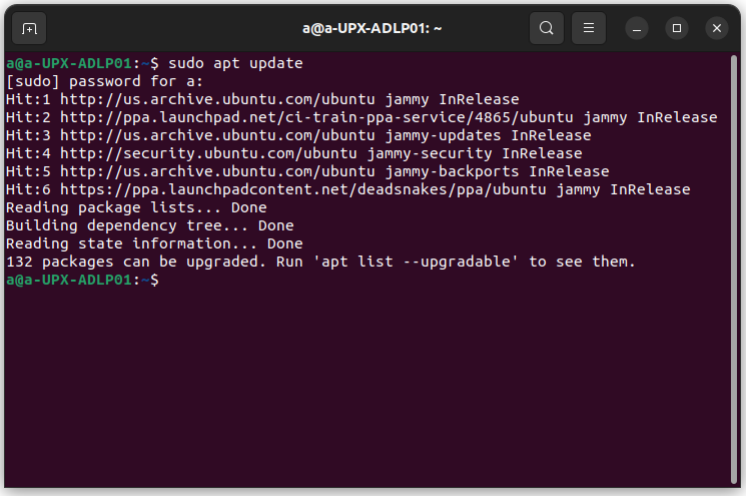
`sudo dpkg -i pinctrl-upboard_0.1.0_all.deb` (08:54)



4. Setup and Run OpenVINO in Docker

#1 Install Docker Utility with the following commands:

sudo apt update (10:01)



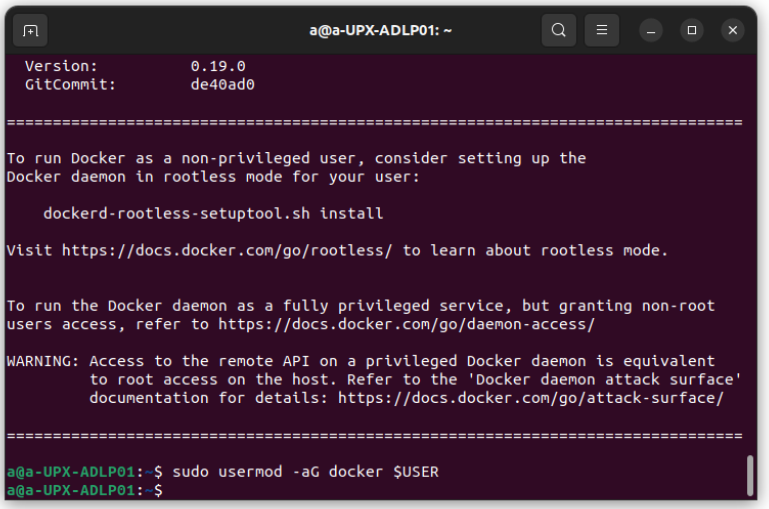
sudo apt-get remove docker docker-engine docker.io containerd runc (10:27)

sudo apt install curl (10:47)

curl -fsSL https://get.docker.com -o get-docker.sh (11:12)

sudo sh get-docker.sh (11:30)

sudo usermod -aG docker $USER (12:55)

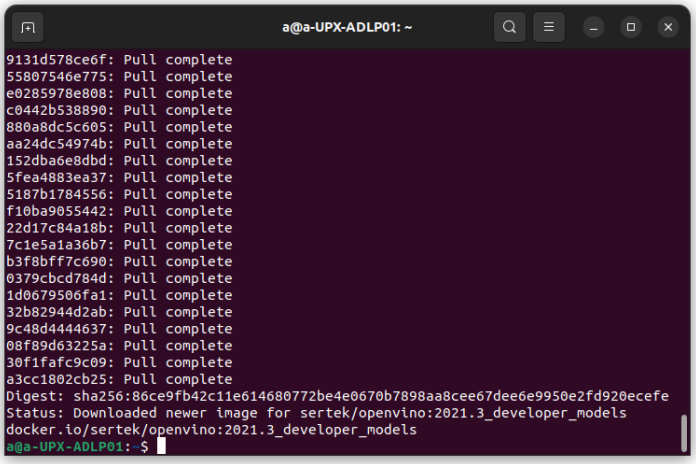


sudo docker run hello-world (13:08)

#2 Get docker image and verify installation

Download Docker image

sudo docker pull sertek/openvino:2021.3_developer_models (13:29)



Download Sample Video

wget -O ~/Downloads/NewVideo2.mp4 https://github.com/incluit/OpenVino-For-SmartCity/raw/master/data/NewVideo2.mp4 (19:26)

#2 Run Object Detection Demo

sudo docker run -it -v /tmp/.X11-unix:/tmp/.X11-unix -e DISPLAY=$DISPLAY -v ~/Downloads:/mnt --device /dev/dri:/dev/dri --group-add=$(stat -c "%g" /dev/dri/render*) --rm your_dockerhub_id/openvino:2021.3_developer_models (20:25)

cd (22:16)

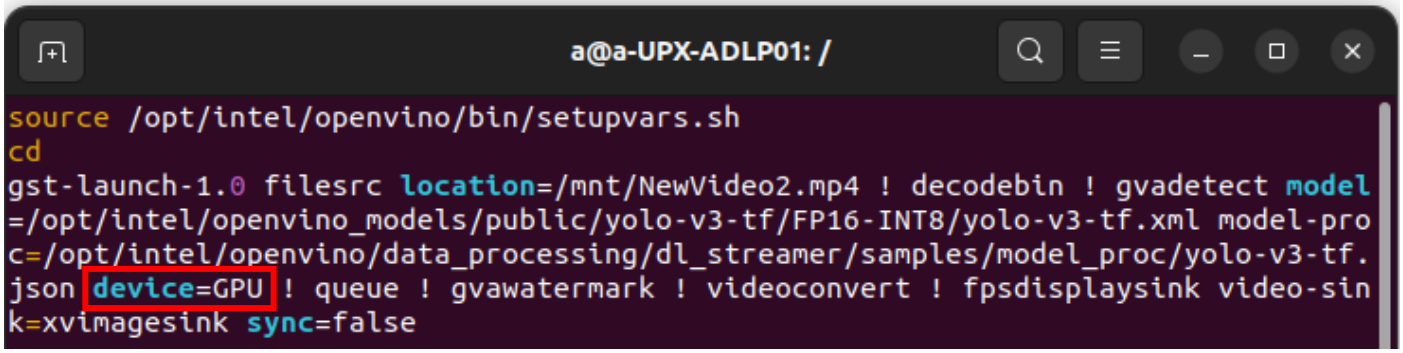
```
a@a-UPX-ADLP01:~$ sudo docker run -it -v /tmp/.X11-unix:/tmp/.X11-unix -e DISPLA
Y=$DISPLAY -v ~/Downloads:/mnt --device /dev/dri:/dev/dri --group-add=$(stat -c
"%g" /dev/dri/render*) --rm sertek/openvino:2021.3_developer_models
groups: cannot find name for group ID 110
error: XDG_RUNTIME_DIR not set in the environment.
[setupvars.sh] OpenVINO environment initialized
openvino@92d11d7fd3a1:/opt/intel/openvino_2021.3.394$ cd
openvino@92d11d7fd3a1:~$ ls -l
total 12648
-rwxrwxr-x 1 root root 12914374 Jun 21  2021 NewVideo2.mp4
-rwxrwxr-x 1 root root     2120 May 12  2021 benchmark_models_cmds.txt
-rwxrwxr-x 1 root root     3206 May 28  2021 bonus_classifications_cmds.txt
-rwxrwxr-x 1 root root     2601 May 29  2021 bonus_misc_cmds.txt
-rwxrwxr-x 1 root root     1192 May 31  2021 bonus_object_detections_cmds.txt
-rwxrwxr-x 1 root root     1036 Jun  2  2021 bonus_semantic_cmds.txt
-rwxrwxr-x 1 root root      435 Jun 21  2021 demo_smart_city_with_counting.sh
-rwxr-xr-x 1 root root      390 May 27  2021 my_demo.sh
-rwxr-xr-x 1 root root      786 May 12  2021 run_command.py
-rwxr-xr-x 1 root root      392 Jun 21  2021 smartcity_demo.sh
openvino@92d11d7fd3a1:~$
```

Open new terminal window

sudo docker cp <CONTAINER_DIR>/smartcity_demo.sh <HOST_DIR>/smartcity_demo.sh (23:13)

Replace GPU with CPU

vim <HOST_DIR>/smartcity_demo.sh (25:51)



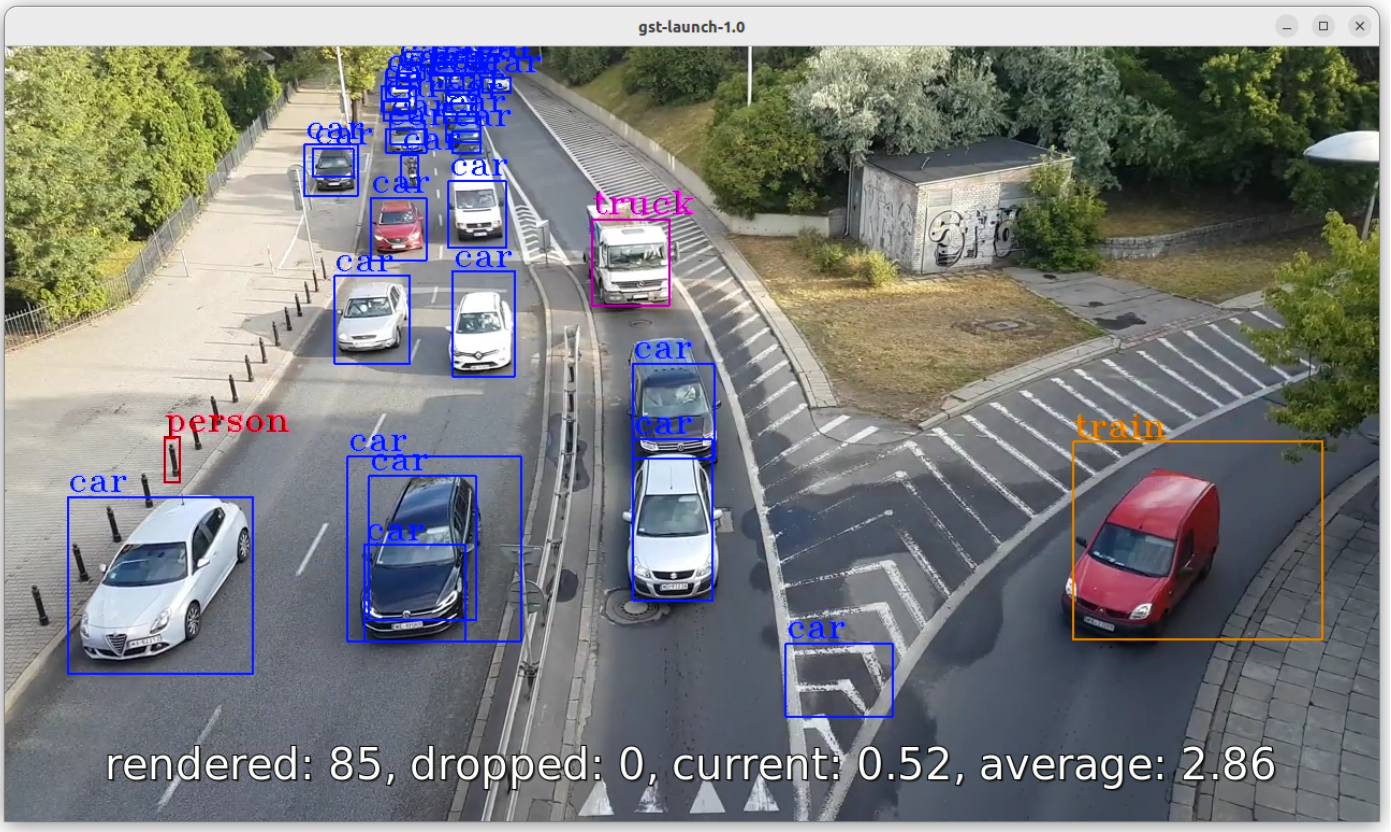
```
source /opt/intel/openvino/bin/setupvars.sh
cd
gst-launch-1.0 filesrc location=/mnt/NewVideo2.mp4 ! decodebin ! gvadetect model
=/opt/intel/openvino_models/public/yolo-v3-tf/FP16-INT8/yolo-v3-tf.xml model-pro
c=/opt/intel/openvino/data_processing/dl_streamer/samples/model_proc/yolo-v3-tf.
json device=CPU ! queue ! gvawatermark ! videoconvert ! fpsdisplaysink video-sin
k=xvimagesink sync=false
```

`sudo docker cp <HOST_DIR>/smartcity_demo.sh <CONTAINER_DIR>/smartcity_demo.sh` (27:03)

Go back to previous terminal window

`./smartcity_demo.sh` (28:11)

```
-rwxrwxr-x 1 root     root     12914374 Jun 21  2021 NewVideo2.mp4
-rwxrwxr-x 1 root     root         2120 May 12  2021 benchmark_models_cmds.txt
-rwxrwxr-x 1 root     root         3206 May 28  2021 bonus_classifications_cmds.
txt
-rwxrwxr-x 1 root     root         2601 May 29  2021 bonus_misc_cmds.txt
-rwxrwxr-x 1 root     root         1192 May 31  2021 bonus_object_detections_cmd
s.txt
-rwxrwxr-x 1 root     root         1036 Jun  2  2021 bonus_semantic_cmds.txt
-rwxrwxr-x 1 root     root          435 Jun 21  2021 demo_smart_city_with_counti
ng.sh
-rwxr-xr-x 1 root     root          390 May 27  2021 my_demo.sh
-rwxr-xr-x 1 root     root          786 May 12  2021 run_command.py
-rwxr-xr-x 1 openvino openvino      392 Jul 19 08:50 smartcity_demo.sh
openvino@92d11d7fd3a1:~$ ./smartcity_demo.sh
[setupvars.sh] OpenVINO environment initialized
error: XDG_RUNTIME_DIR not set in the environment.
Setting pipeline to PAUSED ...
Pipeline is PREROLLING ...
Redistribute latency...
Pipeline is PREROLLED ...
Setting pipeline to PLAYING ...
New clock: GstSystemClock
Redistribute latency...
```



For more details, visit the following link:

https://hackmd.io/oRH7WWxHS_SyvZehevA8vg