

UPX-EDGE i11 DevCup Ubuntu 20.04 Installation Guide

REVISION HISTORY

Revision	Date	Comments	Author(s)
R0.1	2021.08.31	Initial release	Gary

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1. UPX-EDGE i11 *1
2. 12V Power adapter *1
3. Power cord- US type *1

1. Optimize Performance

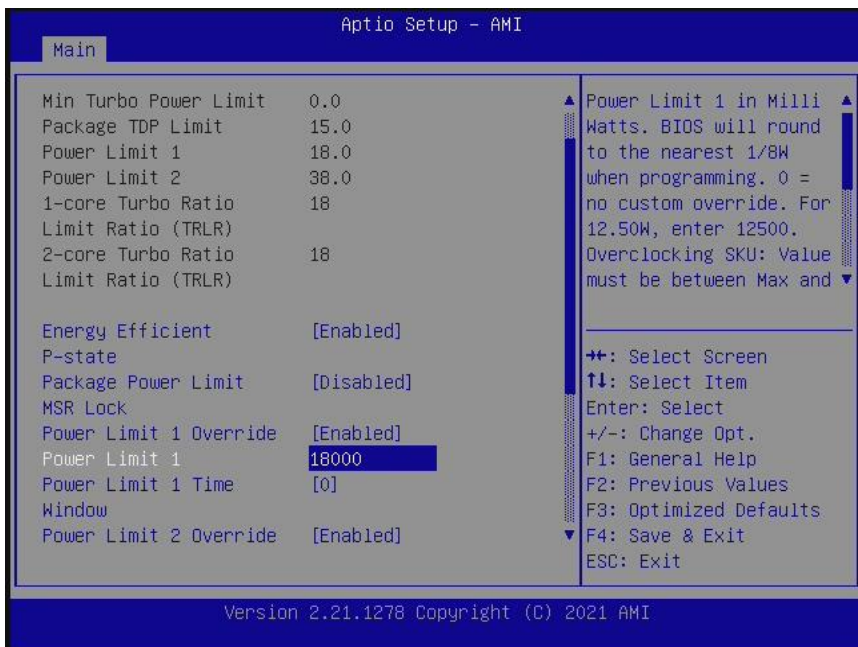
#1 This step is only required for Intel Celeron 6305E, and is otherwise optional.

#2 Press the delete (Del) key when powering on the system to enter BIOS settings program

#3 Enter the admin password to open CRB settings. Default passwords is “upassw0rd”.

#4 Navigate the menus as follows: CRB Setup -> CRB Advanced -> Power & Performance

#5 Set Power Limit 1 to 18000



#6 Save the settings and reboot the system.

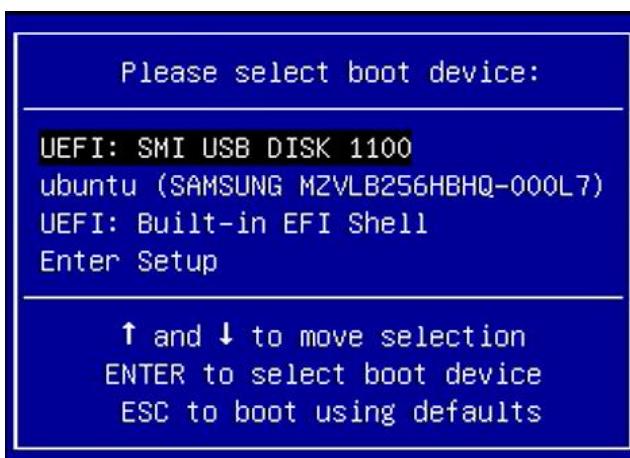
2. Install Ubuntu 20.04

#1 Prepare a bootable Ubuntu 20.04 live disk USB thumb drive

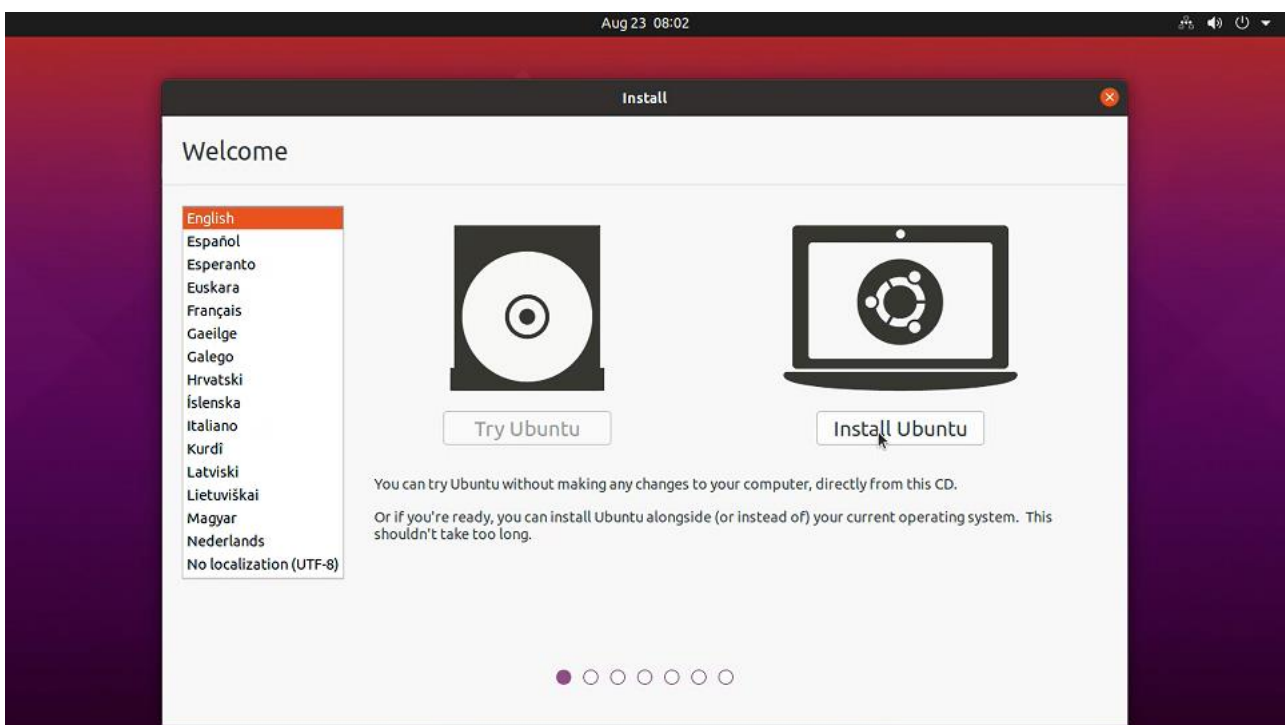
#2 Insert the USB drive into one of the USB ports on the UPX-TGL01

#3 Power on the UPX-TGL01 and press the F7 key to enter the boot order menu

#4 Select the Ubuntu 20.04 live USB drive



#5 After the drive boots, install Ubuntu 20.04 onto the system.



3. Enable HAT Functionality from User Space

#1 Install upboard-extras

```
sudo apt install upboard-extras
```

#2 Add Groups

GPIO

```
sudo usermod -a -G gpio ${USER}
```

LEDs

```
sudo usermod -a -G leds ${USER}
```

SPI

```
sudo usermod -a -G spi ${USER}
```

I2C

```
sudo usermod -a -G i2c ${USER}
```

UART

```
sudo usermod -a -G dialout ${USER}
```

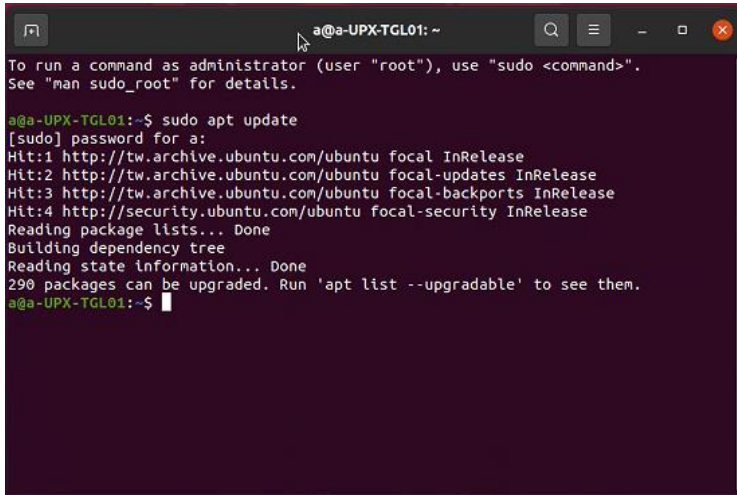
For More Details visit the following link:

[Ubuntu_20.04 · up-board/up-community Wiki · GitHub](#)

4. Setup and Run OpenVINO in Docker

#1 Install Docker Utility with the following commands:

```
sudo apt update
```



```
a@a-UPX-TGL01: ~
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

a@a-UPX-TGL01:~$ sudo apt update
[sudo] password for a:
Hit:1 http://tw.archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://tw.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:3 http://tw.archive.ubuntu.com/ubuntu focal-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu focal-security InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
290 packages can be upgraded. Run 'apt list --upgradable' to see them.
a@a-UPX-TGL01:~$
```

```
sudo apt-get remove docker docker-engine docker.io containerd runc
```

```
sudo apt install curl
```

```
curl -fsSL https://get.docker.com -o get-docker.sh
```

```
sudo sh get-docker.sh
```

```
sudo usermod -aG docker $USER
```



```
a@a-UPX-TGL01: ~
Version:      0.19.0
GitCommit:   de40ad0

=====

To run Docker as a non-privileged user, consider setting up the
Docker daemon in rootless mode for your user:

    dockerd-rootless-setuptool.sh install

Visit https://docs.docker.com/go/rootless/ to learn about rootless mode.

To run the Docker daemon as a fully privileged service, but granting non-root
users access, refer to https://docs.docker.com/go/daemon-access/

WARNING: Access to the remote API on a privileged Docker daemon is equivalent
to root access on the host. Refer to the 'Docker daemon attack surface'
documentation for details: https://docs.docker.com/go/attack-surface/

=====

a@a-UPX-TGL01:~$ sudo usermod -aG docker $USER
a@a-UPX-TGL01:~$
```

You will need to logout or reboot the system to run docker as non-root user

```
docker run hello-world
```

Reboot the system

```
reboot
```


Download Docker image

```
docker pull sertek/opencvino:2021.3_developer_models
```

```
a@a-UPX-TGL01: ~
9131d578ce6f: Pull complete
55807546e775: Pull complete
e0285978e808: Pull complete
c0442b538890: Pull complete
880a8dc5c605: Pull complete
aa24dc54974b: Pull complete
152dba6e8dbd: Pull complete
5fea4883ea37: Pull complete
5187b1784556: Pull complete
f10ba9055442: Pull complete
22d17c84a18b: Pull complete
7c1e5a1a36b7: Pull complete
b3f8bff7c690: Pull complete
0379cbcd784d: Pull complete
1d0679506fa1: Pull complete
32b82944d2ab: Pull complete
9c48d4444637: Pull complete
08f89d63225a: Pull complete
30f1fafc9c09: Pull complete
a3cc1802cb25: Pull complete
Digest: sha256:86ce9fb42c11e614680772be4e0670b7898aa8cee67dee6e9950e2fd920ecef
Status: Downloaded newer image for sertek/opencvino:2021.3_developer_models
docker.io/sertek/opencvino:2021.3_developer_models
a@a-UPX-TGL01: ~$
```

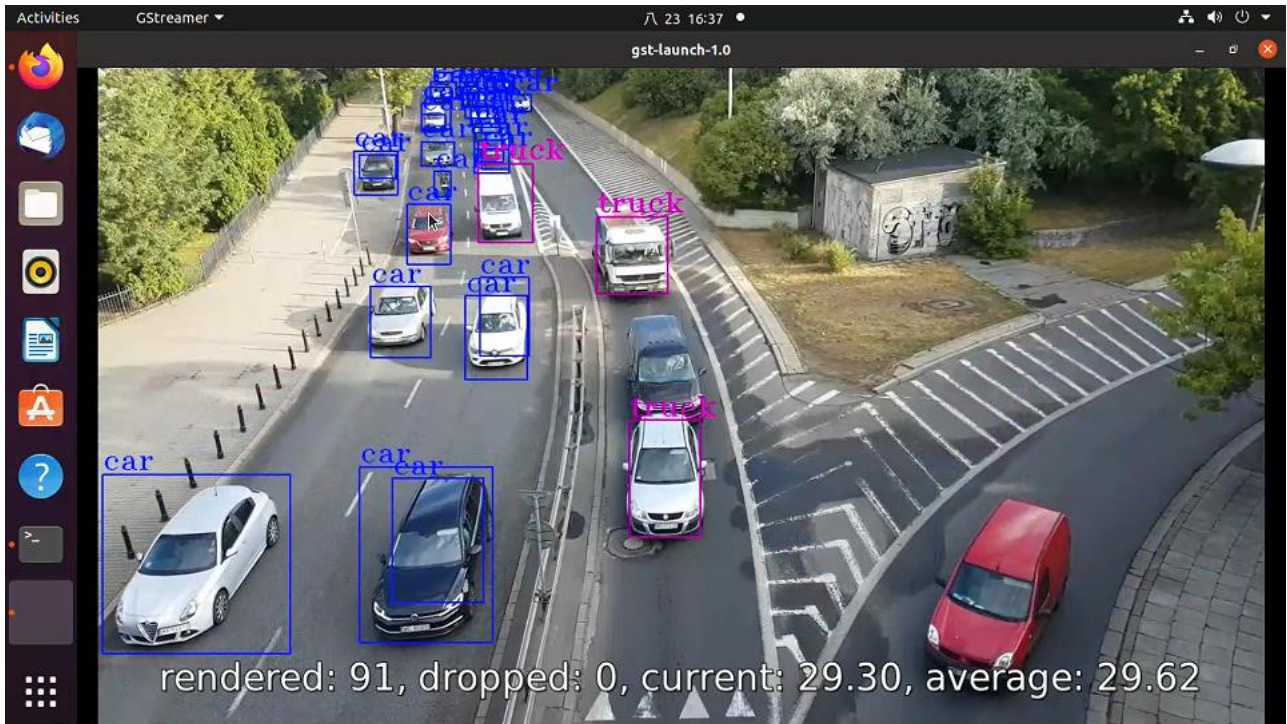
Run Object Detection Demo

```
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/opencvino:2021.3_developer_models
```

```
cd
```

```
./smartcity_demo.sh
```

```
opencvino@e316ad2126aa: ~
30f1fafc9c09: Pull complete
a3cc1802cb25: Pull complete
Digest: sha256:86ce9fb42c11e614680772be4e0670b7898aa8cee67dee6e9950e2fd920ecef
Status: Downloaded newer image for sertek/opencvino:2021.3_developer_models
docker.io/sertek/opencvino:2021.3_developer_models
a@a-UPX-TGL01: ~$ docker run -it -v /tmp/.X11-unix:/tmp/.X11-unix -e DISPLAY=$DIS
PLAY -v ~/Downloads:/mnt --device /dev/dri:/dev/dri --group-add=$(stat -c "%g" /
dev/dri/render*) --rm sertek/opencvino:2021.3_developer_models
groups: cannot find name for group ID 109
error: XDG_RUNTIME_DIR not set in the environment.
[setupvars.sh] OpenVINO environment initialized
opencvino@e316ad2126aa: /opt/intel/opencvino_2021.3.394$ cd
opencvino@e316ad2126aa: ~$ ./smartcity_demo.sh
[setupvars.sh] OpenVINO environment initialized
Setting pipeline to PAUSED ...
Pipeline is PREROLLING ...
error: XDG_RUNTIME_DIR not set in the environment.
Got context from element 'vaapiopostproc0': gst.vaapi.Display=context, gst.vaapi.
Display=(GstVaapiDisplay)"(GstVaapiDisplayGLX)"\ vaapidisplaylx0";
Pipeline is PREROLLED ...
Setting pipeline to PLAYING ...
New clock: GstSystemClock
Redistribute latency...
```



For more details, visit the following link:

[Intel AI Sales Kit - Object Detection Demo and Benchmark with YOLO v3 - HackMD](#)