



OpenVINO

Quick Installation Guide

AI Core X series

AI Core X, AI Core XM, AI Core XP

Revision History

The following table contains the information regarding the history and revisions of this living document.

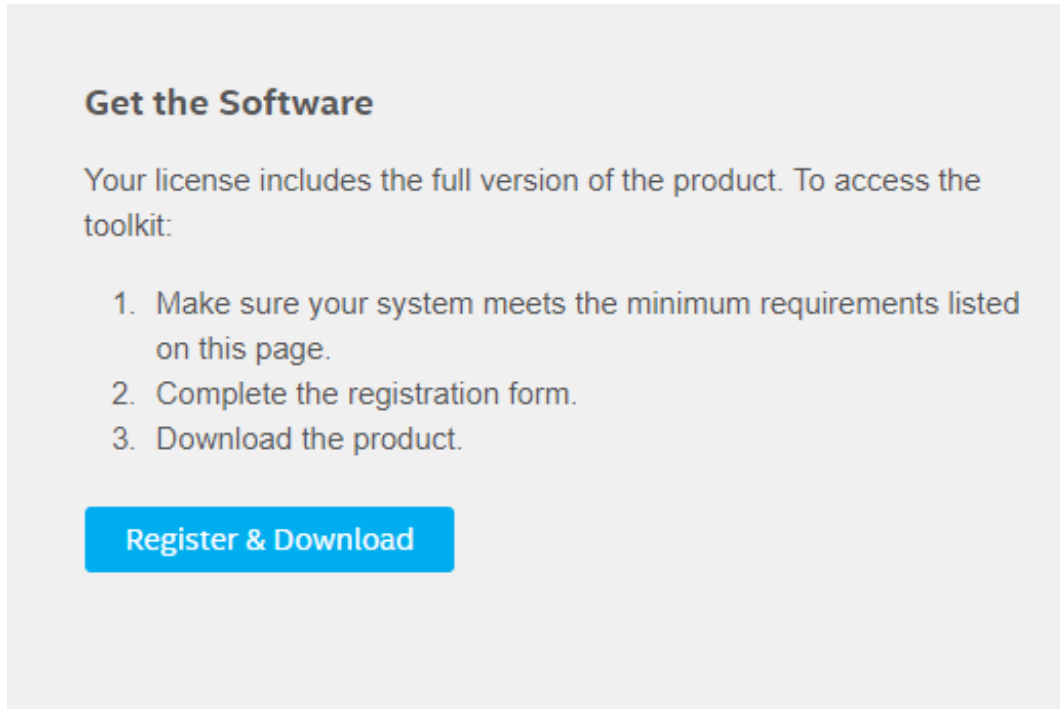
Version	Date	Contributor	Changes Description
0.1	01/ Jan/ 2019	Junying Lai	Initial version

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1 1.OPENVINO Install

#1 Download OPENVINO : <https://software.intel.com/en-us/opencvino-toolkit/choose-download/free-download-linux>



#2 Extract OPENVINO on Downloads

#3 Type: `cd ~/Downloads/l_openvino_toolkit_p_2018.5.445/`

```
Documents/ Downloads/
a@a:~$ cd ~/Downloads/l_openvino_toolkit_p_2018.5.445/
a@a:~/Downloads/l_openvino_toolkit_p_2018.5.445$ sudo
```

#4 Type: `sudo -E ./install_cv_sdk_dependencies.sh`

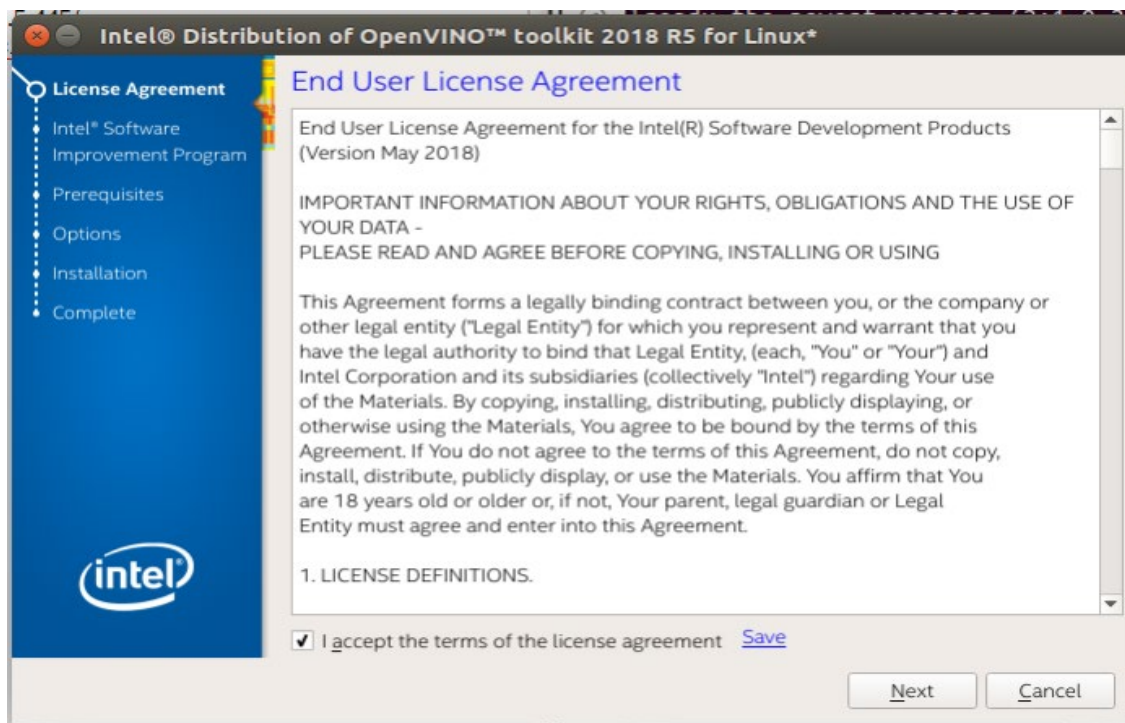
```
a@a: ~/Downloads/l_openvino_toolkit_p_2018.5.445
a@a:~/Downloads/l_openvino_toolkit_p_2018.5.445$ sudo -E ./install_cv_sdk_dependencies.sh
[sudo] password for a:

This script installs the following OpenVINO 3rd-party dependencies:
1. FFmpeg and GStreamer libraries required for OpenCV and Inference Engine
2. libusb library required for Myriad plugin for Inference Engine
3. build dependencies for OpenVINO samples
```

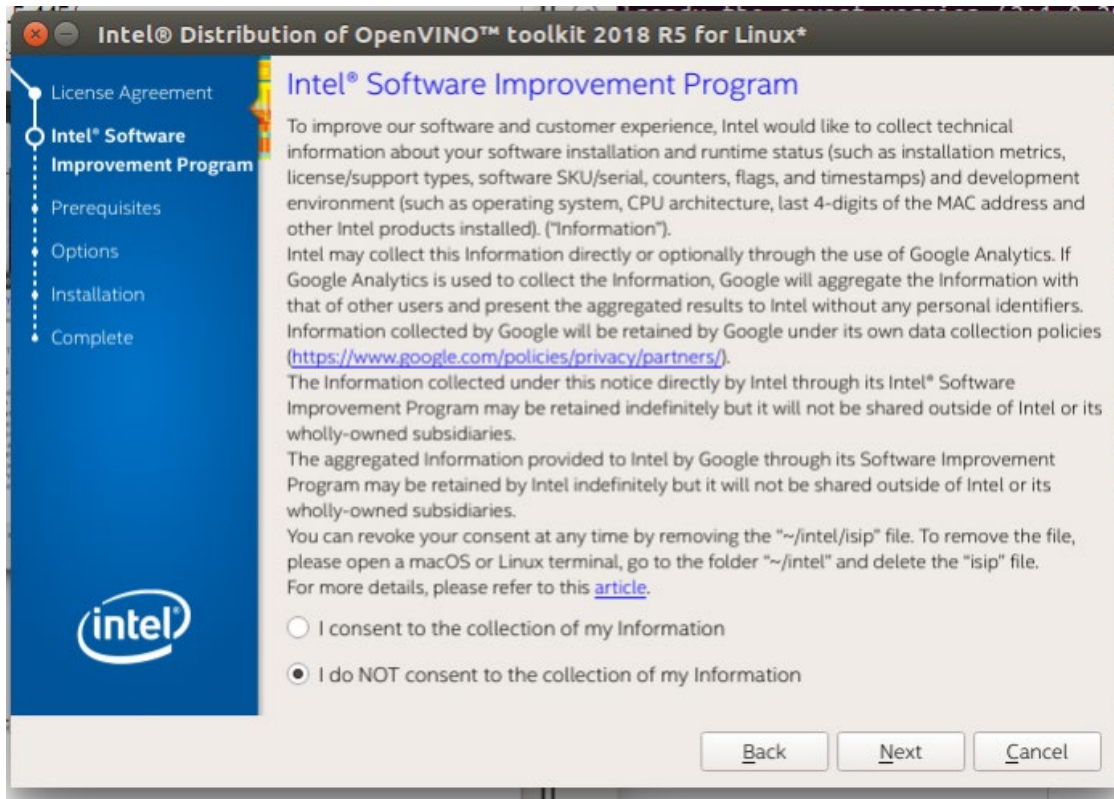
#5 Type: `sudo ./install_GUI.sh`

```
a@a:~/Downloads/l_openvino_toolkit_p_2018.5.445$ sudo ./install_GUI.sh
```

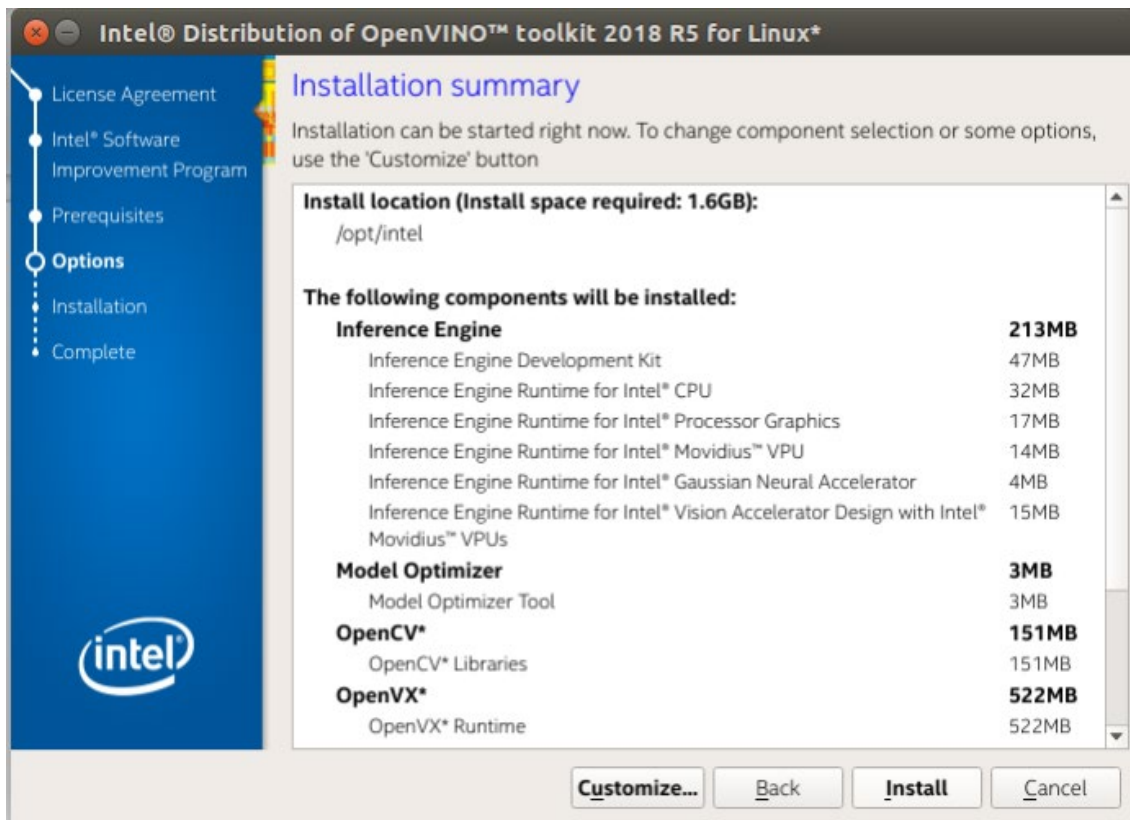
#6 Accept license agreement and click Next



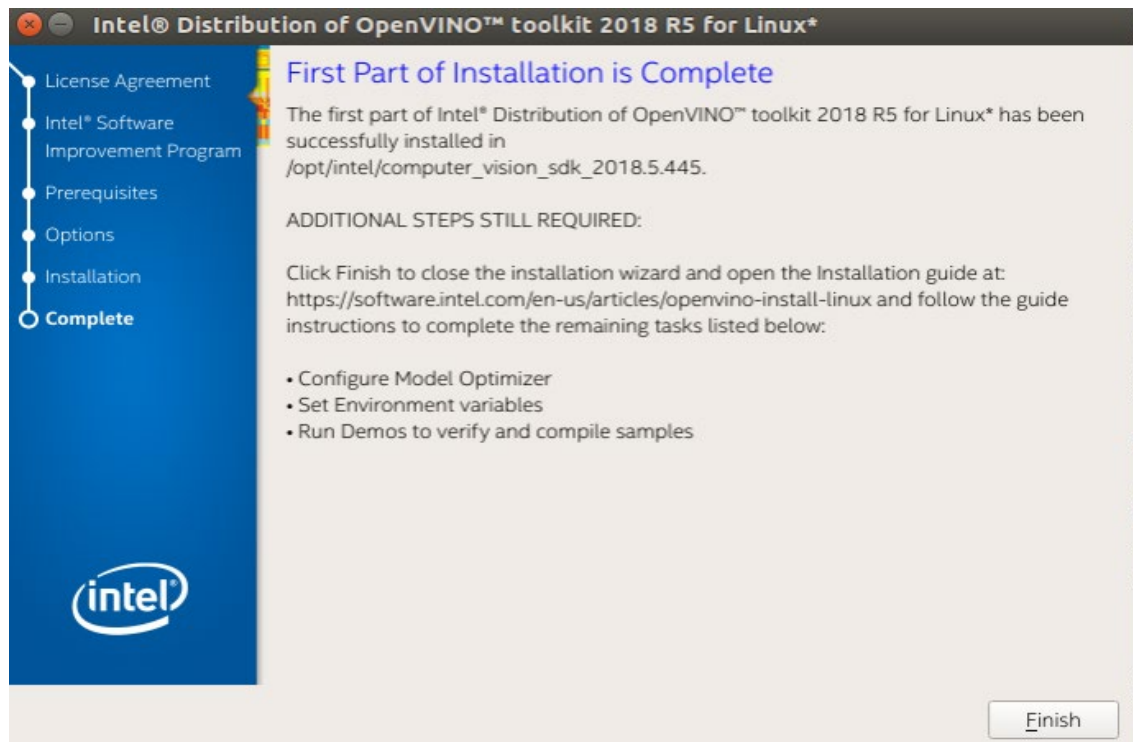
#7 click Next



#8 click install



#9 Finish install



2 2.Build Sample

#1 Type: `source /opt/intel/computer_vision_sdk/bin/setupvars.sh`

```
a@a:~/Downloads/l_openvino_toolkit_p_2018.5.445$ source /opt/intel/computer_vision_sdk/bin/setupvars.sh
[setupvars.sh] OpenVINO environment initialized
```

#2 Type: `cd /opt/intel/computer_vision_sdk/deployment_tools/model_optimizer/install_prerequisites`

```
[setupvars.sh] OpenVINO environment initialized
a@a:~/Downloads/l_openvino_toolkit_p_2018.5.445$ cd /opt/intel/computer_vision_sdk/deployment_tools/model_optimizer/install_prerequisites
a@a:/opt/intel/computer_vision_sdk/deployment_tools/model_optimizer/install_prerequisites$
```

#3 Type: `sudo ./install_prerequisites.sh`

```
a@a:/opt/intel/computer_vision_sdk/deployment_tools/model_optimizer/install_prerequisites$ sudo ./install_prerequisites.sh
Hit:1 http://security.ubuntu.com/ubuntu xenial-security InRelease
Hit:2 http://tw.archive.ubuntu.com/ubuntu xenial InRelease
Hit:3 http://tw.archive.ubuntu.com/ubuntu xenial-updates InRelease
Hit:4 http://tw.archive.ubuntu.com/ubuntu xenial-backports InRelease
Reading package lists... 34%
```

#4 Type: `cd /opt/intel/computer_vision_sdk/deployment_tools/demo`

```
a@a:/opt/intel/computer_vision_sdk/deployment_tools/model_optimizer/install_prerequisites$ cd /opt/intel/computer_vision_sdk/deployment_tools/demo
a@a:/opt/intel/computer_vision_sdk/deployment_tools/demo$
```

#5 Type: `./demo_squeezenet_download_convert_run.sh`

```

a@a:/opt/intel/computer_vision_sdk/deployment_tools/demo$ ./demo_squeezenet_down
load_convert_run.sh
target_precision = FP32

#####

Downloading the Caffe model and the prototxt
Installing dependencies
Run sudo -E apt -y install build-essential python3-pip virtualenv cmake libcairo
2-dev libpango1.0-dev libglib2.0-dev libgtk2.0-dev libswscale-dev libavcodec-dev
libavformat-dev libgstreamer1.0-0 gstreamer1.0-plugins-base
Hit:1 http://tw.archive.ubuntu.com/ubuntu xenial InRelease
Hit:2 http://tw.archive.ubuntu.com/ubuntu xenial-updates InRelease
Hit:3 http://tw.archive.ubuntu.com/ubuntu xenial-backports InRelease
0% [Connecting to security.ubuntu.com (91.189.88.152)]

```

#6 Type: ./demo_security_barrier_camera.sh

```

a@a:/opt/intel/computer_vision_sdk/deployment_tools/demo
#####

Demo completed successfully.

a@a:/opt/intel/computer_vision_sdk/deployment_tools/demo$ ./demo_security_barrie
r_camera.sh
target_precision = FP32
Run sudo -E apt -y install build-essential cmake libcairo2-dev libpango1.0-dev l
ibglib2.0-dev libgtk2.0-dev libswscale-dev libavcodec-dev libavformat-dev libgst
reamer1.0-0 gstreamer1.0-plugins-base
Hit:1 http://tw.archive.ubuntu.com/ubuntu xenial InRelease
Hit:2 http://tw.archive.ubuntu.com/ubuntu xenial-updates InRelease
Hit:3 http://tw.archive.ubuntu.com/ubuntu xenial-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu xenial-security InRelease [107 kB]
Fetched 107 kB in 2s (47.5 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
20 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree
Reading state information... Done
build-essential is already the newest version (12.1ubuntu2).
libcairo2-dev is already the newest version (1.14.6-1).
libpango1.0-dev is already the newest version (1.38.1-1).
cmake is already the newest version (3.5.1-1ubuntu3).
gstreamer1.0-plugins-base is already the newest version (1.8.3-1ubuntu0.2).
libglib2.0-dev is already the newest version (2.48.2-0ubuntu4.1).
libgstreamer1.0-0 is already the newest version (1.8.3-1-ubuntu0.1).
libgtk2.0-dev is already the newest version (2.24.30-1ubuntu1.16.04.2).
libavcodec-dev is already the newest version (7:2.8.15-0ubuntu0.16.04.1).
libavformat-dev is already the newest version (7:2.8.15-0ubuntu0.16.04.1).
libswscale-dev is already the newest version (7:2.8.15-0ubuntu0.16.04.1).
0 upgraded, 0 newly installed, 0 to remove and 20 not upgraded.
Reading package lists... Done
Building dependency tree
Reading state information... Done
libpng12-dev is already the newest version (1.2.54-1ubuntu1.1).

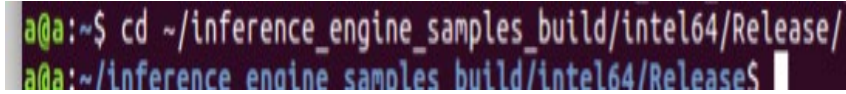
```

#7 Type: `cd ~/inference_engine_samples_build/intel64/Release/`

```
a@a:~$ cd ~/inference_engine_samples_build/intel64/Release/  
a@a:~/inference_engine_samples_build/intel64/Release$
```

3 3.Run demo face detection by use MYRIAD

#1 Type: `cd ~/inference_engine_samples_build/intel64/Release/`



```
a@a:~$ cd ~/inference_engine_samples_build/intel64/Release/
a@a:~/inference_engine_samples_build/intel64/Release$
```

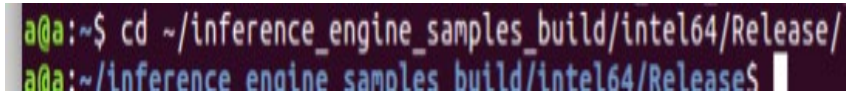
#2 Type: `sudo su`

#3 Type: `source /opt/intel/computer_vision_sdk/bin/setupvars.sh`

#4 Type: `./interactive_face_detection_demo -i "cam" -m /opt/intel/computer_vision_sdk/deployment_tools/intel_models/face-detection-adas-0001/FP16/face-detection-adas-0001.xml -d MYRIAD`

4 4.Run demo face detection by use CPU

#1 Type: `cd ~/inference_engine_samples_build/intel64/Release/`



```
a@a:~$ cd ~/inference_engine_samples_build/intel64/Release/
a@a:~/inference_engine_samples_build/intel64/Release$
```

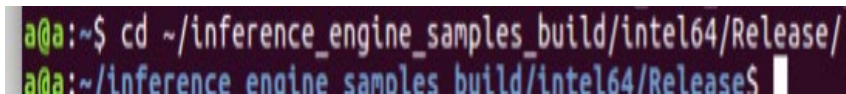
#2 Type: `sudo su`

#3 Type: `source /opt/intel/computer_vision_sdk/bin/setupvars.sh`

#4 Type: `./interactive_face_detection_demo -i "cam" -m /opt/intel/computer_vision_sdk/deployment_tools/intel_models/face-detection-adas-0001/FP16/face-detection-adas-0001.xml -d CPU`

5 5.Run demo face detection by use GPU

#1 Type: `cd ~/inference_engine_samples_build/intel64/Release/`



```
a@a:~$ cd ~/inference_engine_samples_build/intel64/Release/
a@a:~/inference_engine_samples_build/intel64/Release$
```

#2 Type: `sudo su`

#3 Type: `source /opt/intel/computer_vision_sdk/bin/setupvars.sh`
#4 Type: `./interactive_face_detection_demo -i "cam" -m /opt/intel/computer_vision_sdk/deployment_tools/intel_models/face-detection-adas-0001/FP16/face-detection-adas-0001.xml -d GPU`

6 6.Run demo face detection by use HDDL

#1~#3 Just do it once

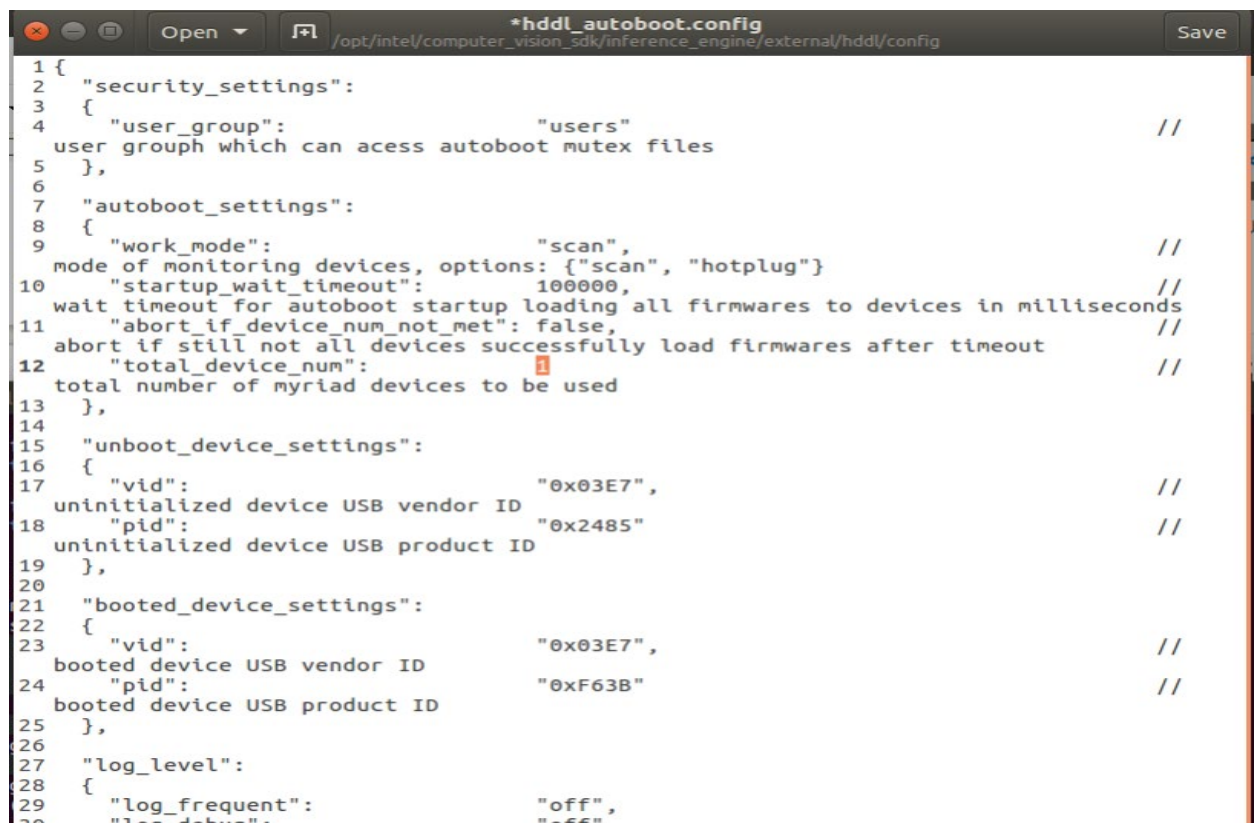
#1 Type: `sudo gedit`

`/opt/intel/computer_vision_sdk/inference_engine/external/hddl/config/hddl_autoboot.conf`



```
aqa:~/inference_engine_samples_build/intel64/Release$ sudo gedit /opt/intel/computer_vision_sdk/inference_engine/external/hddl/config/hddl_autoboot.conf
```

#2 edit `total_device_num` ,according to your myriadx device number to edit



```
1 {
2   "security_settings":
3   {
4     "user_group":          "users"                                //
5     user grouph which can access autoboot mutex files
6   },
7   "autoboot_settings":
8   {
9     "work_mode":          "scan",                                //
10    mode of monitoring devices, options: {"scan", "hotplug"}
11    "startup_wait_timeout": 100000,                                //
12    wait timeout for autoboot startup loading all firmwares to devices in milliseconds
13    "abort_if_device_num_not_met": false,                          //
14    abort if still not all devices successfully load firmwares after timeout
15    "total_device_num":    4,                                      //
16    total number of myriad devices to be used
17  },
18  "unboot_device_settings":
19  {
20    "vid":                 "0x03E7",                                //
21    uninitialized device USB vendor ID
22    "pid":                 "0x2485"                                //
23    uninitialized device USB product ID
24  },
25  "booted_device_settings":
26  {
27    "vid":                 "0x03E7",                                //
28    booted device USB vendor ID
29    "pid":                 "0xF63B"                                //
30    booted device USB product ID
31  },
32  "log_level":
33  {
34    "log_frequent":        "off",
35    "log_debug":           "off",
36  },
37 }
```

#3 Type: `reboot`

#4 Type: `cd ~/inference_engine_samples_build/intel64/Release/`

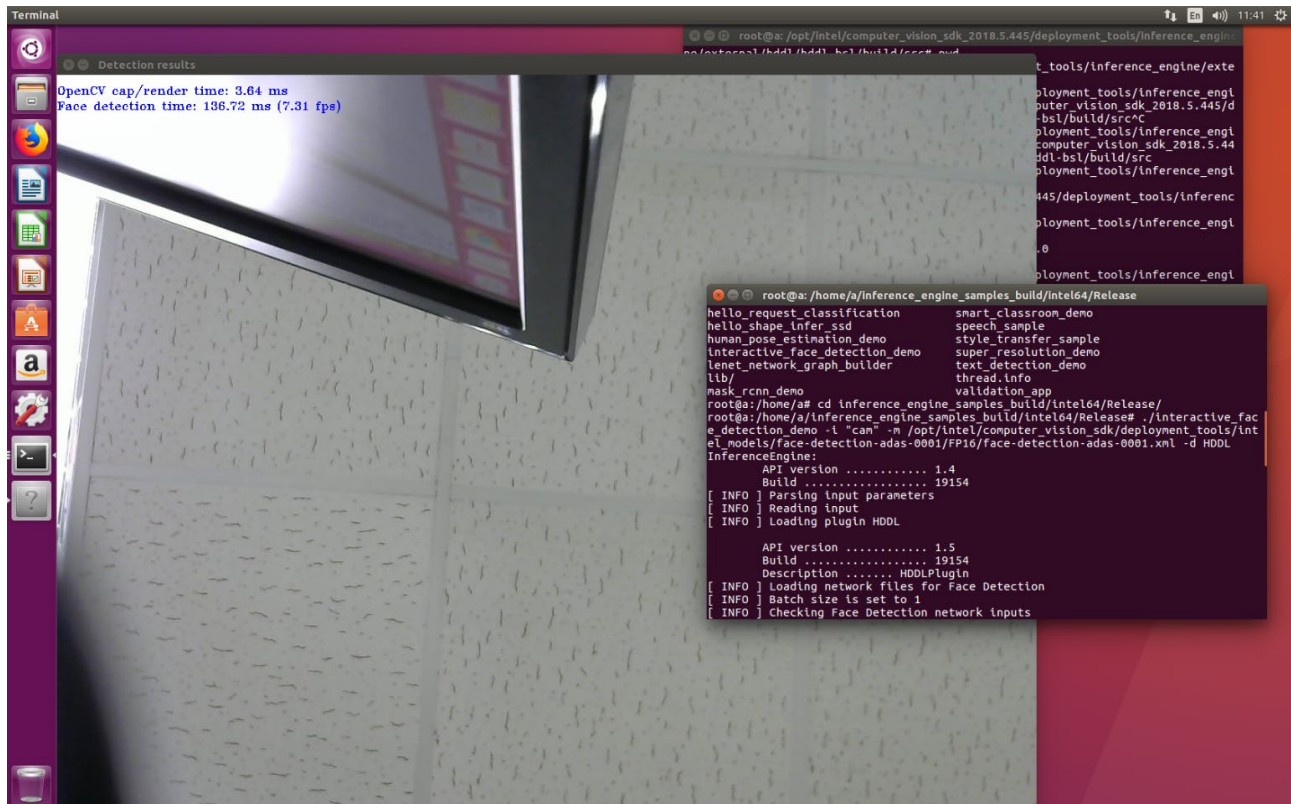
```
a@a:~$ cd ~/inference_engine_samples_build/intel64/Release/
a@a:~/inference_engine_samples_build/intel64/Release$
```

#5 Type: `sudo su`

#6 Type: `source /opt/intel/computer_vision_sdk/bin/setupvars.sh`

#7 Type: `./interactive_face_detection_demo -i "cam" -m`

`/opt/intel/computer_vision_sdk/deployment_tools/intel_models/face-detection-adas-0001/FP16/face-detection-adas-0001.xml -d HDDL`



7 7. Build Reset

#1 Type: `cd /opt/intel/computer_vision_sdk/inference_engine/external/hddl/hddl-bsl/`

```

a@a:~$ cd /opt/intel/computer_vision_sdk/inference_engine/external/hddl/hddl-bsl
a@a:/opt/intel/computer_vision_sdk/inference_engine/external/hddl/hddl-bsl$

```

#2 Type: `sudo apt-get install libudev1`

```

a@a:/opt/intel/computer_vision_sdk/inference_engine/external/hddl/hddl-bsl$ sudo
apt-get install libudev1
[sudo] password for a:
Reading package lists... Done
Building dependency tree
Reading state information... Done
libudev1 is already the newest version (229-4ubuntu21.10).
0 upgraded, 0 newly installed, 0 to remove and 20 not upgraded.
a@a:/opt/intel/computer_vision_sdk/inference_engine/external/hddl/hddl-bsl$

```

#3 Type: `sudo apt-get install libudev-dev libjson-c-dev`

```

a@a:/opt/intel/computer_vision_sdk/inference_engine/external/hddl/hddl-bsl$ sudo
apt-get install libudev-dev libjson-c-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
libjson-c-dev is already the newest version (0.11-4ubuntu2).
libudev-dev is already the newest version (229-4ubuntu21.10).

```

#4 Type: `sudo su`

#6 Type: `mkdir build`

```

root@a:/opt/intel/computer_vision_sdk_2018.5.445/deployment_tools/inference_engi
ne/external/hddl/hddl-bsl# mkdir build
root@a:/opt/intel/computer_vision_sdk_2018.5.445/deployment_tools/inference_engi
ne/external/hddl/hddl-bsl#

```

#7 Type: `cd build`

```

root@a:/opt/intel/computer_vision_sdk_2018.5.445/deployment_tools/inference_engi
ne/external/hddl/hddl-bsl# cd build
root@a:/opt/intel/computer_vision_sdk_2018.5.445/deployment_tools/inference_engi
ne/external/hddl/hddl-bsl/build#

```

#8 Type: make -j

#9 Type: make install

```
ne/external/hddl/hddl-bsl/build# make install
[ 50%] Built target bsl
[100%] Built target bsl_reset
Install the project...
-- Install configuration: ""
-- Installing: /usr/local/bin/bsl_reset
-- Installing: /usr/local/lib/libbsl.so.0
-- Installing: /usr/local/lib/libbsl.so
-- Installing: /usr/local/include/hddl-bsl.h
cp: cannot create regular file '/etc/udev/rules.d/98-hddlbsl.rules': No such file
or directory
-- /opt/intel/computer_vision_sdk_2018.5.445/deployment_tools/inference_engine/e
xternal/hddl/hddl-bsl/build/98-hddlbsl.rules was copied to /etc/udev/rules.d/98-
hddlbsl.rules
/sbin/ldconfig.real: /opt/intel/common/mdf/lib64/igfxcmrt64.so is not a symbolic
link
/sbin/ldconfig.real: /opt/intel/mediasdk/lib64/libva.so.2 is not a symbolic link
/sbin/ldconfig.real: /opt/intel/mediasdk/lib64/libva-x11.so.2 is not a symbolic
link
[ 40%] Building C object src/CMakeFiles/bsl.dir/med.c.o
[ 50%] Building C object src/CMakeFiles/bsl.dir/i2cbusses.c.o
[ 53%] Building C object src/CMakeFiles/bsl.dir/hid_f75114.c.o
[ 57%] Building C object src/CMakeFiles/bsl_reset.dir/smbus_linux.c.o
[ 61%] Building C object src/CMakeFiles/bsl.dir/hidapi_linux.c.o
[ 65%] Building C object src/CMakeFiles/bsl.dir/osl_linux.c.o
[ 69%] Building C object src/CMakeFiles/bsl_reset.dir/main.c.o
[ 73%] Building C object src/CMakeFiles/bsl.dir/thread_linux.c.o
[ 76%] Building C object src/CMakeFiles/bsl_reset.dir/bsl_cfg.c.o
```

8 8. Run Reset

#1 Type: cd

/opt/intel/computer_vision_sdk_2018.5.445/deployment_tools/inference_engine/external/hddl/hddl-bsl/build/src

```
a@a: /opt/intel/computer_vision_sdk_2018.5.445/deployment_tools/inference_engine/ex
a@a:~$ cd /opt/intel/computer_vision_sdk_2018.5.445/deployment_tools/inference_e
ngine/external/hddl/hddl-bsl/build/src
a@a:/opt/intel/computer_vision_sdk_2018.5.445/deployment_tools/inference_engine/
external/hddl/hddl-bsl/build/src$
```

#2 Type: sudo ./bsl_reset -i 224

*** 11100XXX : XXX is device 0-8 ,if device 0 , you should transform $(11100000)_2$ to $(224)_{10}$

```
a@a: /opt/intel/computer_vision_sdk_2018.5.445/deployment_tools/inference_engine/ex
a@a:~$ cd /opt/intel/computer_vision_sdk_2018.5.445/deployment_tools/inference_e
ngine/external/hddl/hddl-bsl/build/src
a@a:/opt/intel/computer_vision_sdk_2018.5.445/deployment_tools/inference_engine/
external/hddl/hddl-bsl/build/src$ sudo ./bsl_reset -i 224
[sudo] password for a:
HDDL BSL configure file is not found or load failed, scanning automatically
Reset device: 224
Success
```