EVA SDK Installation Guide for x86

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Preface

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Revision History

Revision	Description	Date
1.0	Initial release	2020-10-07
1.1	Release for EVA SDK R3.5	2021-07-30

Table of Contents

1 Introduction

This chapter describes the installation of the following software.

- GStreamer, Gstreamer RTSP Plugin and GStreamer Python Plugin
- NIVIDA® DeepStream, NIVIDA® CUDA and NIVIDA® TensorRT
- Intel® OpenVINO
- Intel® Media SDK for GStreamer
- Pylon Software
- Hikrobot Software
- FLIR Software
- ADLINK EVA SDK

The following table lists the specified software versions.

Item	Version
OS	Ubuntu 18.04 64-bit
GStreamer	1.14.5
NVIDIA® CUDA[1]	11.0
NVIDIA® TensorRT™[1]	7.1.3
NVIDIA® DeepStream[1]	5.1
Intel® OpenVINO™[2]	2021.1.110
Media SDK for GStreamer[2]	1.14.5 (in gst-plugins-bad)
OpenCV[3]	4.2.0 or higher
Python	3.6
pylon	6.1.1
Hikrobot MVS	2.0.0
Flir Spinnaker SDK	2.0.0.147

Notes:

[1] If the NVIDIA solution is used for inference, NVIDIA® DeepStream, NVIDIA® CUDA®, and NVIDIA® TensorRT™ must be installed.

[2] If the Intel solution is used for inference, Intel® OpenVINO™ must be installed. To use the Media SDK in GStreamer, install Media SDK for GStreamer.

[3] OpenCV is required by the ADLINK EVA SDK. If Intel® OpenVINO is not installed on the system, build and install it. Refer to https://docs.opencv.org/4.5.0/d7/d9f/tutorial_linux_install.html for installation information. Refer to https://opencv.org/ for more information.

The following table lists the estimated installation space required when installing the software under Ubuntu 18.04 64-bit. The required installation space includes the install file (.deb, .run, .tgz) package size.

Software	Required Installation Space
GStreamer	550MB
GStreamer Python Plugin	600MB
NVIDIA Driver	750MB
NVIDIA® CUDA	7.9GB (deb file: 2.3GB)
NVIDIA® TensorRT™	7.3GB (deb file: 1.3GB)
librdkafka	150MB
NVIDIA® DeepStream	800MB (tar file: 500MB)
Intel® OpenVINO™	1.7GB (tgz file: 500MB)
Media SDK for GStreamer	300MB
Pylon	430MB (deb file: 90MB)
Hikrobot MVS	400MB (zip file: 132MB)
Flir Spinnaker SDK	300MB (gz file: 72MB)

2 Installing GStreamer on Ubuntu

The recommended installation configuration requires installing Gstreamer 1.14.5 on Ubuntu 18.04.

2.1 Install GStreamer on Ubuntu

```
$ sudo apt-get update

$ sudo apt-get install git libgstreamer1.0-0 gstreamer1.0-plugins-base
gstreamer1.0-plugins-good gstreamer1.0-plugins-bad gstreamer1.0-plugins-
ugly gstreamer1.0-libav gstreamer1.0-doc gstreamer1.0-tools gstreamer1.0-x
gstreamer1.0-alsa gstreamer1.0-gl gstreamer1.0-gtk3 gstreamer1.0-qt5
gstreamer1.0-pulseaudio
```

Reference: https://gstreamer.freedesktop.org/documentation/installing/on-linux.html?gi-language=c

2.2 Check the GStreamer Installation

```
$ gst-launch-1.0 videotestsrc ! videoconvert ! autovideosink
```

After executing the command, a window with an animated video pattern should display on-screen. Use CTRL+C in the terminal to stop the program.

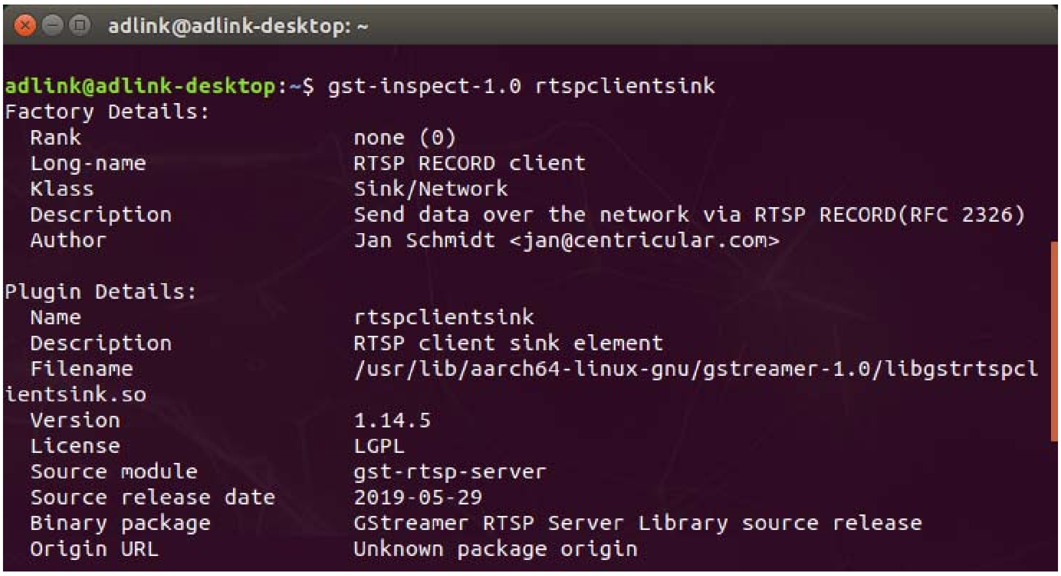
2.3 Install RTSP Plugin for GStreamer (Optional)

If the data will be sent over an RTSP server, the system must have the RTSP plugin installed with the following command for GStreaming.

```
$ sudo apt install gstreamer1.0-rtsp
```

Use the following command to verify the installation.

```
$ gst-inspect-1.0 rtspclientsink
```



```
adlink@adlink-desktop:~$ gst-inspect-1.0 rtspclientsink
Factory Details:
  Rank                     none (0)
  Long-name                RTSP RECORD client
  Klass                    Sink/Network
  Description              Send data over the network via RTSP RECORD(RFC 2326)
  Author                   Jan Schmidt <jan@centricular.com>

Plugin Details:
  Name                     rtspclientsink
  Description              RTSP client sink element
  Filename                 /usr/lib/aarch64-linux-gnu/gstreamer-1.0/libgstrtspcl
ientsink.so
  Version                  1.14.5
  License                  LGPL
  Source module            gst-rtsp-server
  Source release date      2019-05-29
  Binary package           GStreamer RTSP Server Library source release
  Origin URL               Unknown package origin
```

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3 Installing the GStreamer Python Plugin

GStreamer is built on the GLib and GObject portable libraries which are compatible with Python. Gstreamer can be used in two ways: by writing GStreamer applications, or by writing GStreamer Python elements that can be scanned by the GStreamer Python plugin loader and registered as a plugin in GObject. The following sections describe how to install the GStreamer Python plugin.

3.1 Install the Required Packages

```
$ sudo apt-get install python3-pip python-gi-dev python3-gst-1.0
```

If your platform is using Python 2.7, change the python3-gst-1.0 package to python-gst-1.0.

3.2 Install the GStreamer Python Plugin Loader

Currently, the Debian GStreamer Python package includes GObject Introspection files but does not include the GStreamer Python plugin loader, requiring the use of a GStreamer Python application.

GStreamer Python plugins cannot be scanned and registered in applications like gst-launch-1.0 or gst-inspect-1.0, so a GStreamer Python plugin loader must be built.

1. Clone the GStreamer gst-python repository

```
$ git clone -b 1.14 https://github.com/GStreamer/gst-python.git
```

2. Install the build tool

```
$ pip3 install --user meson ninja
```

When using Python 2.7, call pip instead of pip3.

3. Add the Python binary search path

```
$ export PATH=~/.local/bin:$PATH
```

If installing the meson package via apt installs an old version of meson, make sure the meson binary installed by pip3 can be found by first specifying where to access the Python binary.

4. Build and install gst-python

```
$ cd gst-python

$ meson _build -Dprefix=$PWD/local

$ ninja -C _build install
```

At this point, it is important not to overwrite the previously installed GStreamer Python files which can possibly have a negative impact on the system. Instead, install GStreamer Python to a local folder and then copy only the required files.

5. Copy GStreamer Python plugin loader

The previous build steps generated two kinds of files, GObject introspection files and the GStreamer Python plugin loader in the following directory structure.

Gst-python install directory structure

```
local
└── lib
    ├── python3.6
    │   └── site-packages
    │       └── gi
    │           └── overrides
    │               ├── _gi_gst.cpython-36m-x86_64-linux-gnu.so
    │               ├── GstPbutils.py
    │               └── Gst.py
    └── x86_64-linux-gnu
        └── gstreamer-1.0
            └── libgstpython.so
```

Copy libgstpython.so to the GStreamer system plugin folder, or other plugin folders as necessary.

Copy the required library

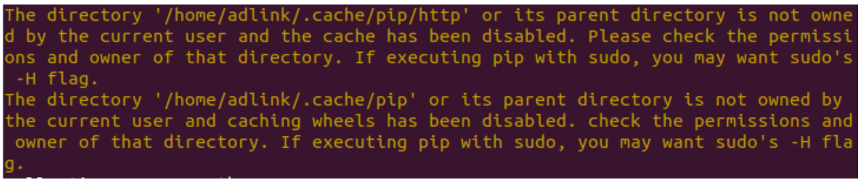
```
$ sudo cp local/lib/x86_64-linux-gnu/gstreamer-1.0/libgstpython.so
/usr/lib/x86_64-linux-gnu/gstreamer-1.0
```

6. Install the required Python packages

```
$ pip3 install --upgrade pip

$ sudo pip3 install scikit-build cmake boto3

$ sudo pip3 install opencv-python numpy
```

Notes:

1. If the CPU is an Intel® Atom™ series processor, installation of opencv-python will take about 1 to 1.5 hours. Do not interrupt the installation process.
2. The following message can be ignored when executing pip with sudo.



```
The directory '/home/adlink/.cache/pip/http' or its parent directory is not owne
d by the current user and the cache has been disabled. Please check the permissi
ons and owner of that directory. If executing pip with sudo, you may want sudo's
 -H flag.
The directory '/home/adlink/.cache/pip' or its parent directory is not owned by
the current user and caching wheels has been disabled. check the permissions and
 owner of that directory. If executing pip with sudo, you may want sudo's -H fla
g.
```

7. Check for installed Python plugins

```
$ cd .. # Stay in gst-python will cause python local wrong gi module in
gst-python folder

$ GST_DEBUG=pyplugin:7 gst-inspect-1.0 python
```

If the Python plugins are found, the installation has been successful.

4 Installation Process for NVIDIA Solution (Optional)

The ADLINK EVA SDK also supports the NVIDIA inference solution based on your specific system configuration requirements.

For ADLINK EVA SDK with the NVIDIA solution, the following components must be installed on Ubuntu 18.04:

- GStreamer 1.14.x
- NVIDIA Driver 450.51 or higher
- CUDA 11.0
- TensorRT 7.1.3
- DeepStream 5.1 (optional)

This chapter will describe the installation and uninstallation steps provided on the NVIDIA official website.

If you are not using an NVIDIA inference solution, this chapter can be skipped.

4.1 Uninstall Non-specified Version

This section describes how to unistall a non-specified version of the NVIDIA solution software. After the components have been removed, you must reboot the system.

4.1.1 Remove DeepStream

Check the DeepStream Version

```
$ deepstream-app --version-all
```

DeepStream 3.0 or earlier version removal:

```
$ sudo rm -rf /usr/local/deepstream /usr/lib/x86_64-linux-gnu/gstreamer-
1.0/libgstnv* /usr/bin/deepstream* /usr/lib/x86_64-linux-gnu/gstreamer-
1.0/libnvdsgst* /opt/nvidia/deepstream/deepstream* /usr/lib/x86_64-linux-
gnu/gstreamer-1.0/deepstream*

$ sudo rm -rf /usr/lib/x86_64-linux-
gnu/libv41/plugins/libcuvidv4l2_plugin.so
```

DeepStream 4.0 or later version removal:

1. Open the uninstall.sh file in /opt/nvidia/deepstream/deepstream/

2. Set PREV_DS_VER as the version number (e.g: 4.0)

3. Run the following command script

```
$ sudo ./uninstall.sh
```

Reference: https://docs.nvidia.com/metropolis/deepstream/5.1/dev-guide/text/DS_Quickstart.html#remove-all-previous-deepstream-installations

4.1.2 Remove TensorRT

Check the TensorRT version

```
$ dpkg -l | grep nvinfer
```

Remove TensorRT

```
$ sudo apt-get --purge remove "*tensorrt*"

$ sudo apt-get --purge remove "libnvinfer*"

$ sudo apt-get autoremove
```

Reference: https://docs.nvidia.com/deeplearning/tensorrt/install-guide/index.html#uninstalling.

4.1.3 Remove CUDA

Check the CUDA version

```
$ /usr/local/cuda/bin/nvcc --version
```

Remove the CUDA Toolkit

```
$ sudo apt-get --purge remove "*cublas*" "*cufft*" "*curand*" "*cusolver*"
"*cusparse*" "*npp*" "*nvjpeg*" "cuda*" "nsight*"

$ sudo apt-get autoremove
```

Notes:

1. If using a runfile for installation, refer to https://docs.nvidia.com/cuda/cuda-installation-guide-linux/index.html#handle-uninstallation
2. Reference: https://docs.nvidia.com/cuda/cuda-installation-guide-linux/index.html#removing-cuda-tk-and-driver

4.1.4 Remove NVIDIA Drivers

Check the driver

```
$ nvidia-smi
```

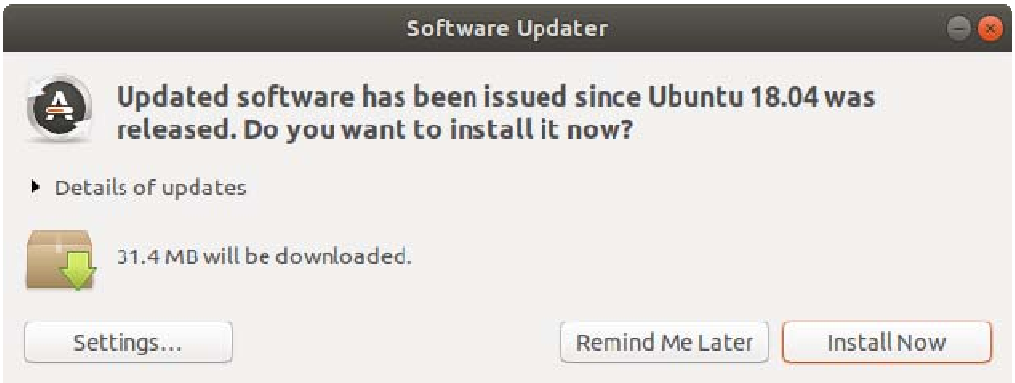
Remove NVIDIA Drivers

```
$ sudo apt-get --purge remove "nvidia-driver*"

$ sudo apt-get autoremove

$ sudo reboot
```

Reference: https://docs.nvidia.com/cuda/archive/11.0/cuda-installation-guide-linux/index.html#removing-cuda-tk-and-driver

4.2 Installing NVIDIA Drivers

Before installing the NVIDIA graphics driver, use the “Software Updater” to install updated software first.

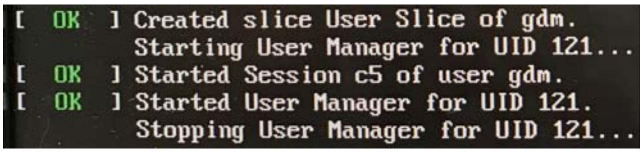


Software Updater

Updated software has been issued since Ubuntu 18.04 was released. Do you want to install it now?

31.4 MB will be downloaded.

If the system software is not updated, after installing the NVIDIA driver and rebooting, the system can hang with the following message: “Stopping User Manager for UID 121”.



```
[  OK  ] Created slice User Slice of gdm.
         Starting User Manager for UID 121...
[  OK  ] Started Session c5 of user gdm.
[  OK  ] Started User Manager for UID 121.
         Stopping User Manager for UID 121...
```

Insert the NVIDIA graphics card and follow the steps below to install the drivers.

1. Add the graphics-drivers repository to advanced package tool (apt)

```
$ sudo add-apt-repository ppa:graphics-drivers/ppa

$ sudo apt update
```

2. Check the NVIDIA Driver list

```
$ ubuntu-drivers devices
```

In this example, the system must have an NVIDIA device with a recommend driver version of 450 or later.

```
$ ubuntu-drivers devices
==
/sys/devices/pci0000:00/0000:00:1c.0/0000:02:00.0/0000:03:01.0/0000:04:00.0
==
modalias : pci:v000010DEd00001CFAsv0000144Asd00004200bc03sc00i00
vendor   : NVIDIA Corporation
driver   : nvidia-driver-450 - distro non-free
driver   : nvidia-driver-460 - third-party free recommended
driver   : nvidia-driver-450-server - distro non-free
driver   : xserver-xorg-video-nouveau - distro free builtin
```

3. Install the NVIDIA Driver

```
$ sudo apt install nvidia-driver-450

$ sudo reboot
```

4. Check the driver

```
$ nvidia-smi
```

In this example, the system installed driver version is 450 and supports CUDA driver version 11.

```
$ nvidia-smi

Wed Jan 27 14:32:01 2021
+-----------------------------------------------------------------------------+
| NVIDIA-SMI 450.102.04   Driver Version: 450.102.04   CUDA Version: 11.0     |
|-------------------------------+----------------------+----------------------+
| GPU  Name        Persistence-M| Bus-Id        Disp.A | Volatile Uncorr. ECC |
| Fan  Temp  Perf  Pwr:Usage/Cap|         Memory-Usage | GPU-Util  Compute M. |
|                               |                      |               MIG M. |
|===============================+======================+======================|
|   0  Quadro P2000        Off  | 00000000:04:00.0  On |                  N/A |
| N/A   39C    P0    N/A /  N/A |    301MiB /  4037MiB |      0%      Default |
|                               |                      |                  N/A |
+-------------------------------+----------------------+----------------------+

+-----------------------------------------------------------------------------+
| Processes:                                                                  |
|  GPU   GI   CI        PID   Type   Process name                  GPU Memory |
|        ID   ID                                                   Usage      |
|=============================================================================|
|    0   N/A  N/A       992      G   /usr/lib/xorg/Xorg                220MiB |
|    0   N/A  N/A      1223      G   /usr/bin/gnome-shell               77MiB |
+-----------------------------------------------------------------------------+
```

4.3 Installing CUDA Toolkit 11

Download the CUDA Toolkit 11.0 original archive from https://developer.nvidia.com/cuda-11.0-download-archive?target_os=Linux&target_arch=x86_64&target_distro=Ubuntu&target_version=1804&target_type=deblocal

The target platform must conform to the following requirements:

- Operation System: Linux
- Architecture: x86_64
- Distribution: Ubuntu
- Version: 18.04
- Installer Type: deb(local)

Run the following installation commands.

```
$ wget
https://developer.download.nvidia.com/compute/cuda/repos/ubuntu1804/x86_64/cuda-
ubuntu1804.pin

$ sudo mv cuda-ubuntu1804.pin /etc/apt/preferences.d/cuda-repository-pin-600

$ wget
http://developer.download.nvidia.com/compute/cuda/11.0.2/local_installers/cuda-
repo-ubuntu1804-11-0-local_11.0.2-450.51.05-1_amd64.deb

$ sudo dpkg -i cuda-repo-ubuntu1804-11-0-local_11.0.2-450.51.05-1_amd64.deb

$ sudo apt-key add /var/cuda-repo-ubuntu1804-11-0-local/7fa2af80.pub

$ sudo apt-get update

$ sudo apt-get -y install cuda
```

4.4 Installing TensorRT 7.1.3

Download TensorRT 7.1.3 for Linux from https://developer.nvidia.com/compute/machine-learning/tensorrt/secure/7.1/local_repo/nv-tensorrt-repo-ubuntu1804-cuda11.0-trt7.1.3.4-ga-20200617_1-1_amd64.deb

Select **Log in** or **Join now**.

After downloading, install TensorRT from the debian local repository package with the following commands:

```
$ sudo dpkg -i nv-tensorrt-repo-ubuntu1804-cuda11.0-trt7.1.3.4-ga-20200617_1-
1_amd64.deb

$ sudo apt-key add /var/nv-tensorrt-repo-cuda11.0-trt7.1.3.4-ga-
20200617/7fa2af80.pub

$ sudo apt-get update

$ sudo apt-get install tensorrt
```

Refer to the Debian installation online document for more information at https://docs.nvidia.com/deeplearning/tensorrt/archives/tensorrt-713/install-guide/index.html#installing-debian

4.5 Installing DeepStream 5.1 (Optional)

If you are not using a DeepStream SDK, this section can be skipped.

The NVIDIA DeepStream SDK first requires installation of the following components:

- GStreamer
- NVIDIA Driver
- CUDA
- TensorRT

1. Install packages

Enter the following command to install the necessary packages before installing the DeepStream SDK:

```
$ sudo apt install libssl1.0.0 libgstreamer1.0-0 gstreamer1.0-tools
gstreamer1.0-plugins-good gstreamer1.0-plugins-bad gstreamer1.0-plugins-
ugly gstreamer1.0-libav libgstrtspserver-1.0-0 libjansson4
```

2. Install librdkafka

librdkafka enables the Kafka protocol adaptor for message brokering.

Clone the librdkafka repository from GitHub

```
$ git clone https://github.com/edenhill/librdkafka.git
```

Configure and build the library

```
$ cd librdkafka

$ git reset --hard 7101c2310341ab3f4675fc565f64f0967e135a6a

$ ./configure

$ make

$ sudo make install
```

Copy the generated libraries to the DeepStream directory

```
$ sudo mkdir -p /opt/nvidia/deepstream/deepstream-5.1/lib

$ sudo cp /usr/local/lib/librdkafka* /opt/nvidia/deepstream/deepstream-5.1/lib
```

3. Install the DeepStream SDK 5.1

Download the DeepStream 5.1 dGPU tar package from https://developer.nvidia.com/deepstream-sdk-v510-x86-64tbz2.

Navigate to the location of the downloaded DeepStream package to extract and install the DeepStream SDK.

```
$ sudo tar -xvf deepstream_sdk_v5.1.0_x86_64.tbz2 -C /

$ cd /opt/nvidia/deepstream/deepstream-5.1/

$ sudo ./install.sh

$ sudo ldconfig
```

Note:

NVIDIA provides three methods for installing the DeepStream SDK. The tar package **MUST** be used for installation. Attempting to use the Debian package or apt-server to install, will result in compatibility issues.

4.5.1 Verify DeepStream

After installing DeepStream, follow these steps to verify the installation.

1. Check version information

```
$ deepstream-app --version-all
```

2. Check the plugin in GStreamer

```
$ gst-inspect-1.0 | grep nv
```

3. Verify the plugin via `gst-launch`

```
gst-launch-1.0 videotestsrc num-buffers=1000 ! videoconvert ! "video/x-
raw,format=(string)I420" ! nvvideoconvert ! nvv4l2h264enc ! h264parse !
matroskamux ! filesink location=videotestsrc.mkv
```

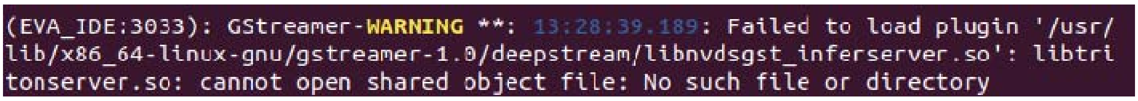
The following is an example of a properly installed package.

```
$ gst-inspect-1.0 | grep nv

nvdsgst_jpegdec: nvjpegdec: JPEG image decoder
nvdsgst_osd: nvdsosd: NvDsOsd plugin
nvdsgst_msgconv: nvmsgconv: Message Converter
nvdsgst_tracker: nvtracker: NvTracker plugin
nvdsgst_ofvisual: nvofvisual: nvofvisual
nvdsgst_infer: nvinfer: NvInfer plugin
nvdsgst_eglglessink: nveglglessink: EGL/GLES vout Sink
nvdsgst_msgbroker: nvmsgbroker: Message Broker
nvdsgst_dsexample: dsexample: DsExample plugin
nvdsgst_multistream: nvstreammux: Stream multiplexer
```

```
nvdsgst_multistream: nvstreamdemux: Stream demultiplexer
nvdsgst_dewarper: nvdewarper: nvdewarper
nvvideo4linux2: nvv4l2decoder: NVIDIA v4l2 video decoder
nvvideo4linux2: nvv4l2h264enc: V4L2 H.264 Encoder
nvvideo4linux2: nvv4l2h265enc: V4L2 H.265 Encoder
nvvideo4linux2: nvv4l2vp8enc: V4L2 VP8 Encoder
nvvideo4linux2: nvv4l2vp9enc: V4L2 VP9 Encoder
nvvideoconvert: nvvideoconvert: NvVidConv Plugin
nvdsgst_multistreamtiler: nvmultistreamtiler: Stream Tiler DS 4.0
nvdsgst_of: nvof: nvof
nvdsgst_segvisual: nvsegvisual: nvsegvisual

$ deepstream-app --version-all

deepstream-app version 5.1.0
DeepStreamSDK 5.1.0
CUDA Driver Version: 11.0
CUDA Runtime Version: 11.0
TensorRT Version: 7.1
cuDNN Version: 8.0
libNVWarp360 Version: 2.0.1d3

$ gst-launch-1.0 videotestsrc num-buffers=1000 ! videoconvert !
"video/x-raw,format=(string)I420" ! nvvideoconvert !
nvv4l2h264enc ! h264parse ! matroskamux ! filesink
location=videotestsrc.mkv

Setting pipeline to PAUSED ...
Pipeline is PREROLLING ...
Redistribute latency...
Pipeline is PREROLLED ...
Setting pipeline to PLAYING ...
New clock: GstSystmeClock
Got EOS from element "pipeline0".
Execution ended after 0:00:00.410818101
Setting pipeline to PAUSED ...
Setting pipeline to READY ...
Setting Pipeline to NULL ...
Freeing pipeline ...
```

Note:

When running a GStreamer command or EVA IDE, the following warning messaging will display.



```
(EVA_IDE:3033): GStreamer-WARNING **: 13:28:39.189: Failed to load plugin '/usr/
lib/x86_64-linux-gnu/gstreamer-1.0/deepstream/libnvdsgst_inferserver.so': libtri
tonserver.so: cannot open shared object file: No such file or directory
```

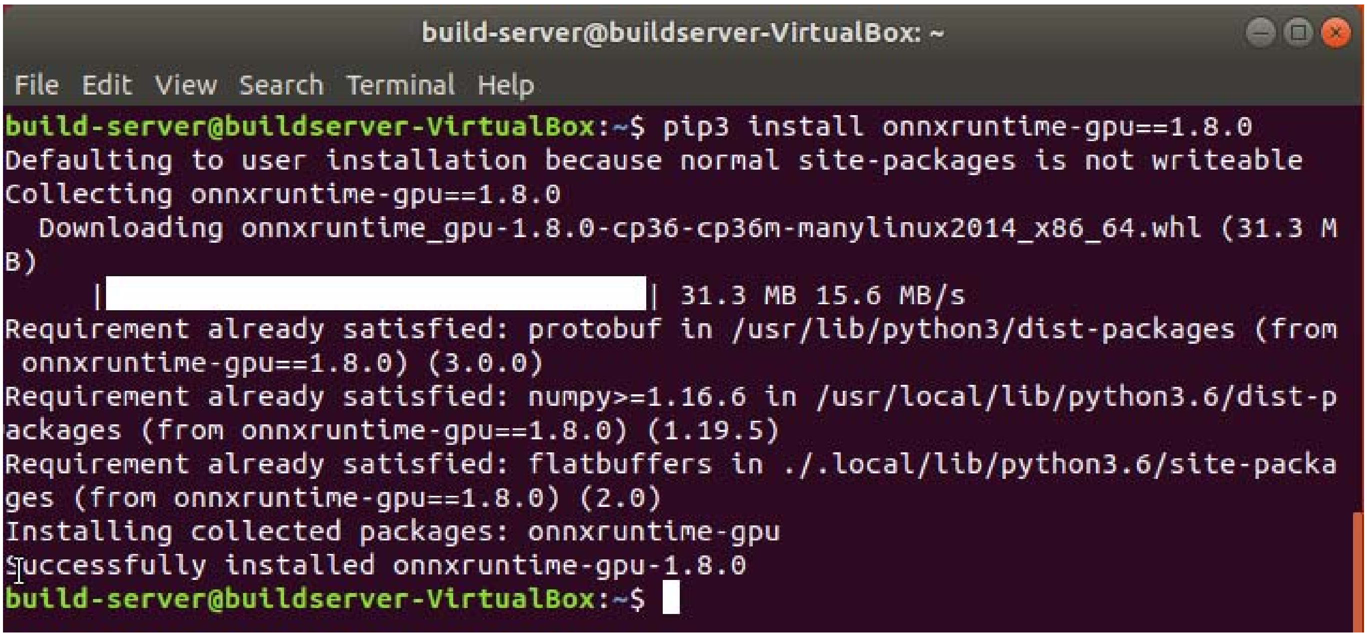
This is a harmless warning indicating that the DeepStream’s nvinferserver plugin cannot be used since “Triton Inference Server” is not installed on x86(dGPU) platforms.

Refer to NVIDIA troubleshooting for other solutions. https://docs.nvidia.com/metropolis/deepstream/dev-guide/text/DS_troubleshooting.html#errors-occur-when-deepstream-app-fails-to-load-plugin-gst-nvinferserver-on-dgpu-only

4.6 Installing ONNX Runtime

After installing the CUDA Toolkit, run the following command to install the ONNX Runtime packages.

```
> pip3 install pillow

> pip3 install onnxruntime-gpu==1.8.0
```



build-server@buildserver-VirtualBox: ~
File Edit View Search Terminal Help

```
build-server@buildserver-VirtualBox:~$ pip3 install onnxruntime-gpu==1.8.0
Defaulting to user installation because normal site-packages is not writeable
Collecting onnxruntime-gpu==1.8.0
  Downloading onnxruntime_gpu-1.8.0-cp36-cp36m-manylinux2014_x86_64.whl (31.3 M
B)
     |████████████████████████████████| 31.3 MB 15.6 MB/s
Requirement already satisfied: protobuf in /usr/lib/python3/dist-packages (from
 onnxruntime-gpu==1.8.0) (3.0.0)
Requirement already satisfied: numpy>=1.16.6 in /usr/local/lib/python3.6/dist-p
ackages (from onnxruntime-gpu==1.8.0) (1.19.5)
Requirement already satisfied: flatbuffers in ./.local/lib/python3.6/site-packa
ges (from onnxruntime-gpu==1.8.0) (2.0)
Installing collected packages: onnxruntime-gpu
Successfully installed onnxruntime-gpu-1.8.0
build-server@buildserver-VirtualBox:~$
```

Reference: https://www.onnxruntime.ai/

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5 Installation Process for Intel Solution (Optional)

The ADLINK EVA SDK also supports the Intel OpenVINO inference solution based on your specific system configuration requirements.

For ADLINK EVA SDK with the Intel solution, the following components must be installed on Ubuntu 18.04:

- OpenVINO 2021.1.110
- Intel Media SDK plugin for GStreamer (optional)

If you are not using the Intel® Distribution of OpenVINO™ toolkit, this chapter can be skipped.

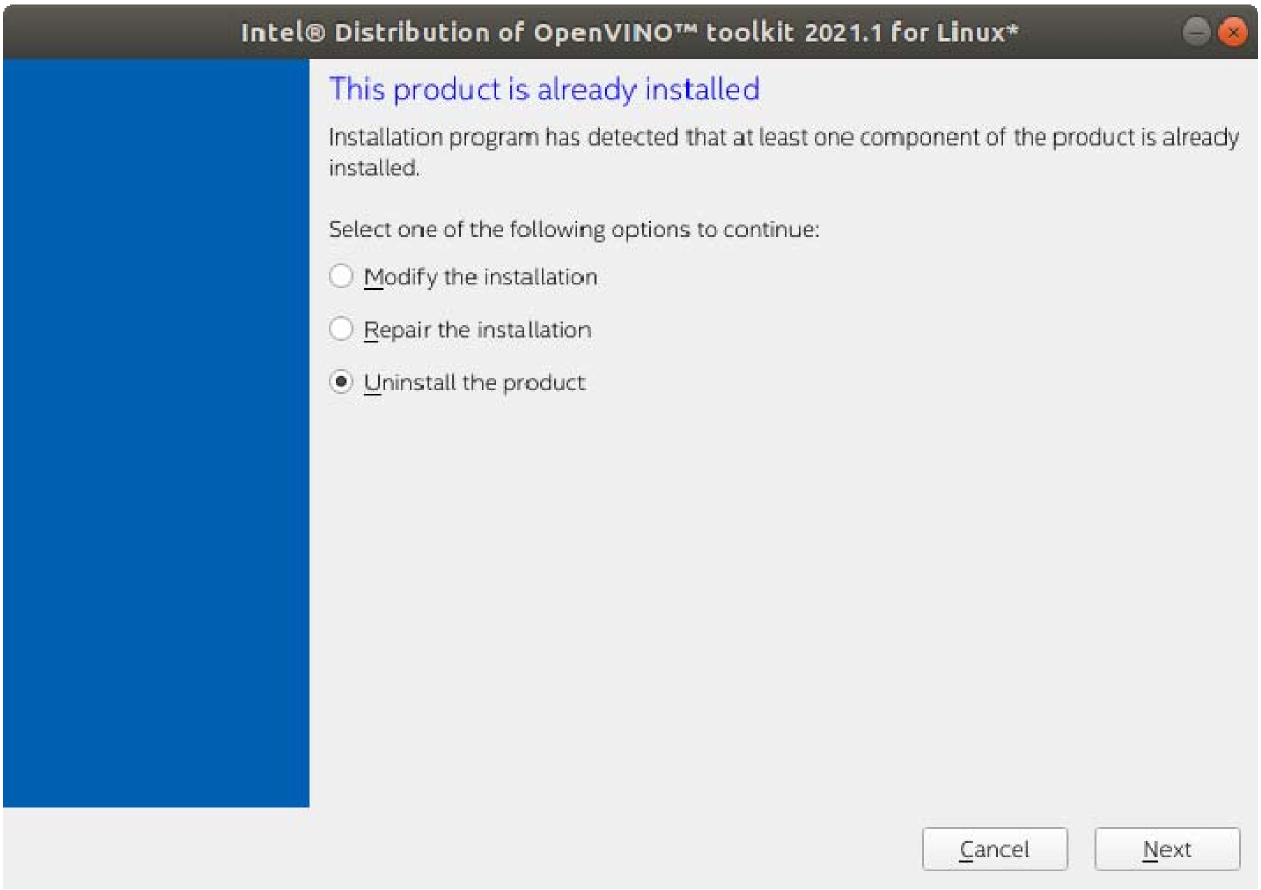
5.1 Uninstall Non-specified Version

If the system has a non-specified version of OpenVINO, use the OpenVINO toolkit installation package to uninstall it.

```
$ cd [OpenVINO toolkit installation package folder]
  ##Please move the path according to the actual directory location

$ sudo ./install_GUI.sh
```

Choose **Uninstall the product** and follow the instructions on the screen to uninstall.



This product is already installed

Installation program has detected that at least one component of the product is already installed.

Select one of the following options to continue:

○ Modify the installation

○ Repair the installation

● Uninstall the product

5.2 Installing the OpenVINO Toolkit

The Intel® Distribution of OpenVINO™ toolkit is a comprehensive toolkit for quickly developing applications and solutions that solve a variety of tasks including emulation of human vision, automatic speech recognition, natural language processing, recommendation systems, and many others.

The OpenVINO™ toolkit for Linux:

- Enables CNN-based deep learning inference on the edge
- Supports heterogeneous execution across Intel® CPU, Intel® Integrated Graphics, Intel® Movidius™ Neural Compute Stick, Intel® Neural Compute Stick 2, and Intel® Vision Accelerator Design with Intel® Movidius™ VPUs
- Speeds time-to-market via an easy-to-use library of computer vision functions and pre-optimized kernels
- Includes optimized calls for computer vision standards including OpenCV* and OpenCL™

For more details, refer tohttps://docs.openvinotoolkit.org/2021.1/openvino_docs_install_guides_installing_openvino_linux.html.

.

1. Install the Intel® Distribution of OpenVINO™ Toolkit Core Components

If you have a previous version of the Intel Distribution of OpenVINO toolkit installed, and the following directories exist, rename or delete them:

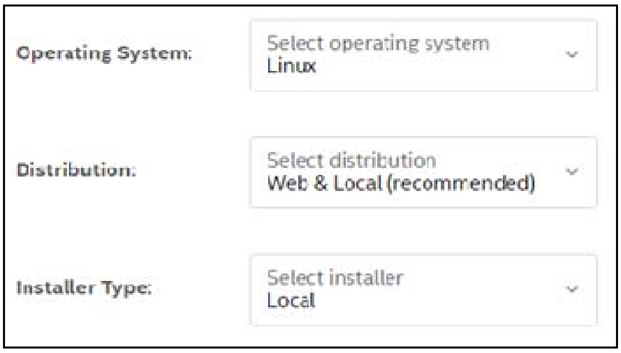
~/inference_engine_samples_build

~/openvino_models

Download the Intel® Distribution of OpenVINO™ toolkit package file from Intel® Distribution of OpenVINO™ toolkit for Linux* (https://software.intel.com/en-us/openvino-toolkit/choose-download)

Select the Intel® Distribution of OpenVINO™ toolkit for Linux package to download according to the following:

- Operation System: Linux
- Distribution: Web and Local Install
- Installer Type: Local



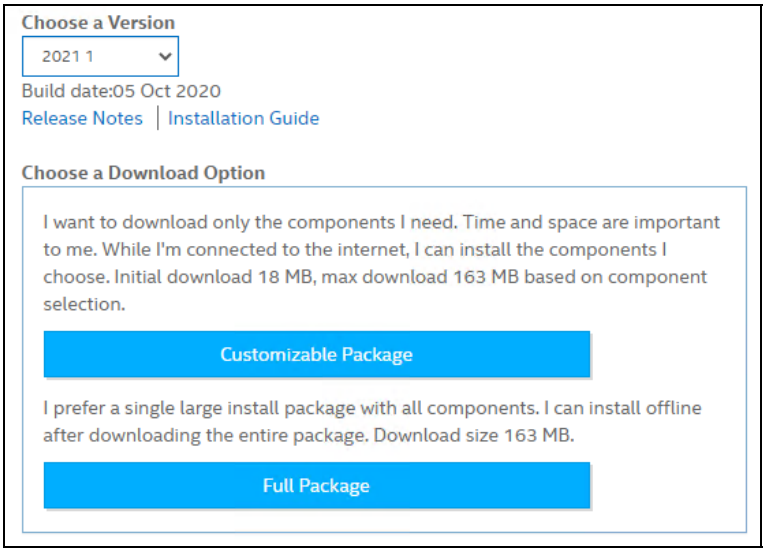
Operating System: Select operating system Linux

Distribution: Select distribution Web & Local (recommended)

Installer Type: Select installer Local

Click **Register & Download**, choose **Linux** and complete the registration form.

On the Intel® Distribution of OpenVINO™ toolkit for Windows website, choose version ‘**2021 1’** and click **Full Package**.



Choose a Version

Build date:05 Oct 2020

Choose a Download Option

I want to download only the components I need. Time and space are important to me. While I'm connected to the internet, I can install the components I choose. Initial download 18 MB, max download 163 MB based on component selection.

I prefer a single large install package with all components. I can install offline after downloading the entire package. Download size 163 MB.

After downloading, install the OpenVino toolkit via by entering the following commands to start the installer GUI.

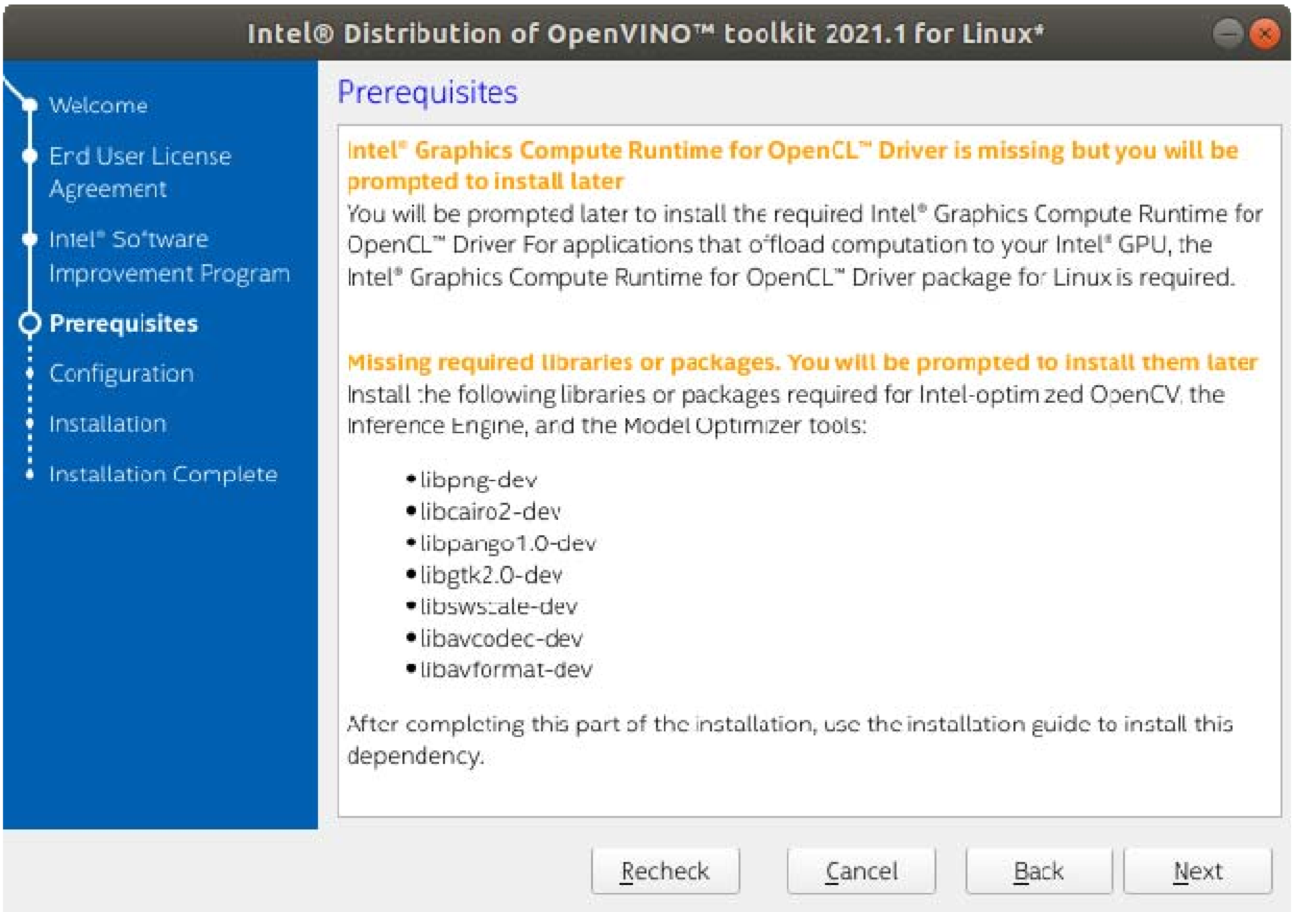
```
$ cd ~/Downloads/

$ tar -xvzf l_openvino_toolkit_p_2021.1.110.tgz

$ cd l_openvino_toolkit_p_2021.1.110

$ sudo ./install_GUI.sh
```

1. Follow the instructions on your screen. Watch for informational messages such as the following in case you must complete additional steps:



Intel® Distribution of OpenVINO™ toolkit 2021.1 for Linux*
Welcome
End User License Agreement
Intel® Software Improvement Program
Prerequisites
Configuration
Installation
Installation Complete
Recheck
Cancel
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Next

Prerequisites

Intel® Graphics Compute Runtime for OpenCL™ Driver is missing but you will be prompted to install later

You will be prompted later to install the required Intel® Graphics Compute Runtime for OpenCL™ Driver For applications that offload computation to your Intel® GPU, the Intel® Graphics Compute Runtime for OpenCL™ Driver package for Linux is required.

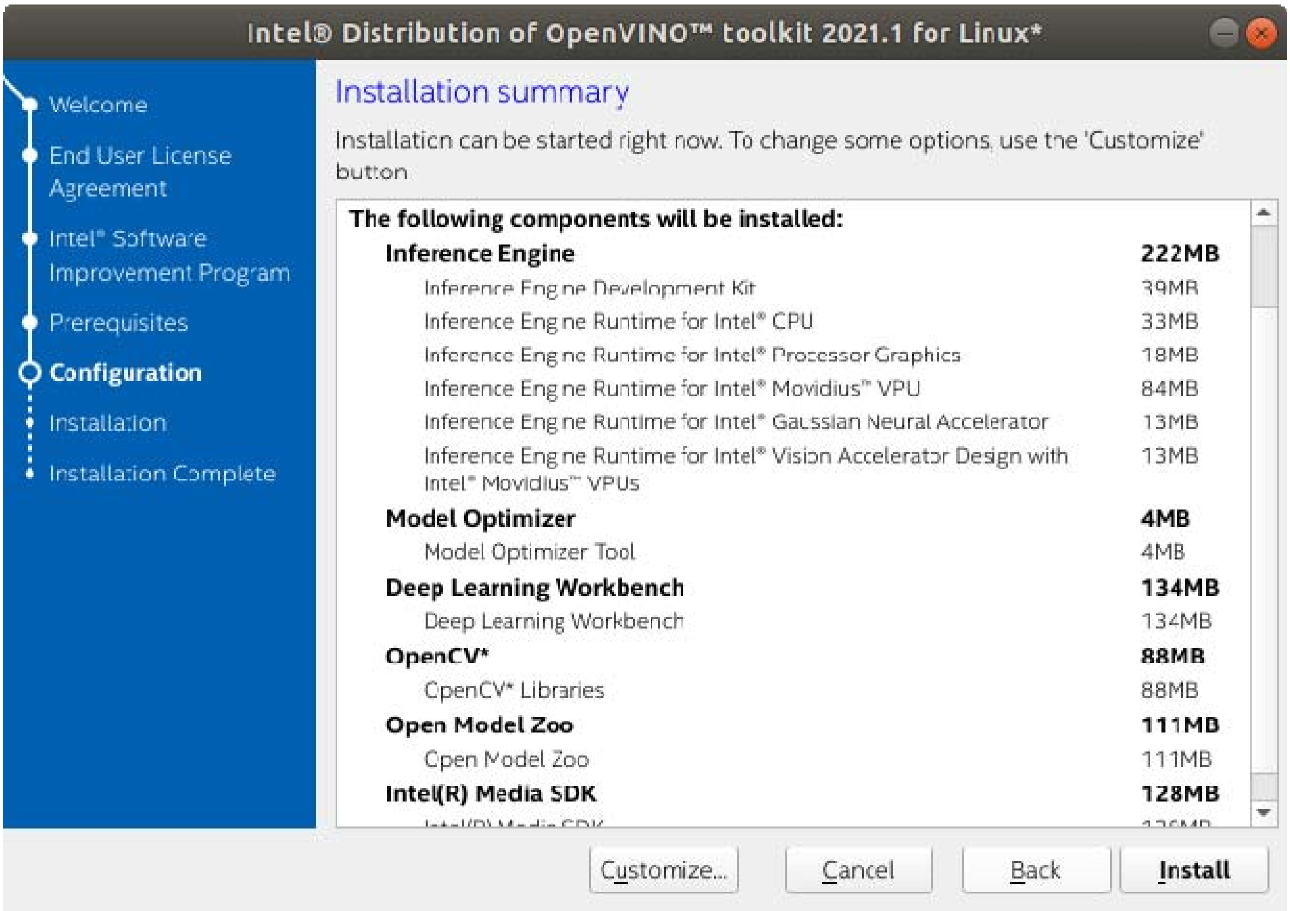
Missing required libraries or packages. You will be prompted to install them later

Install the following libraries or packages required for Intel-optimized OpenCV, the Inference Engine, and the Model Optimizer tools:

- libpng-dev
- libcairo2-dev
- libpango1.0-dev
- libgtk2.0-dev
- libswscale-dev
- libavcodec-dev
- libavformat-dev

After completing this part of the installation, use the installation guide to install this dependency.

2. Click **Customize…**


Intel® Distribution of OpenVINO™ toolkit 2021.1 for Linux*
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Configuration
Installation
Installation Complete
Customize...
Cancel
Back
Install

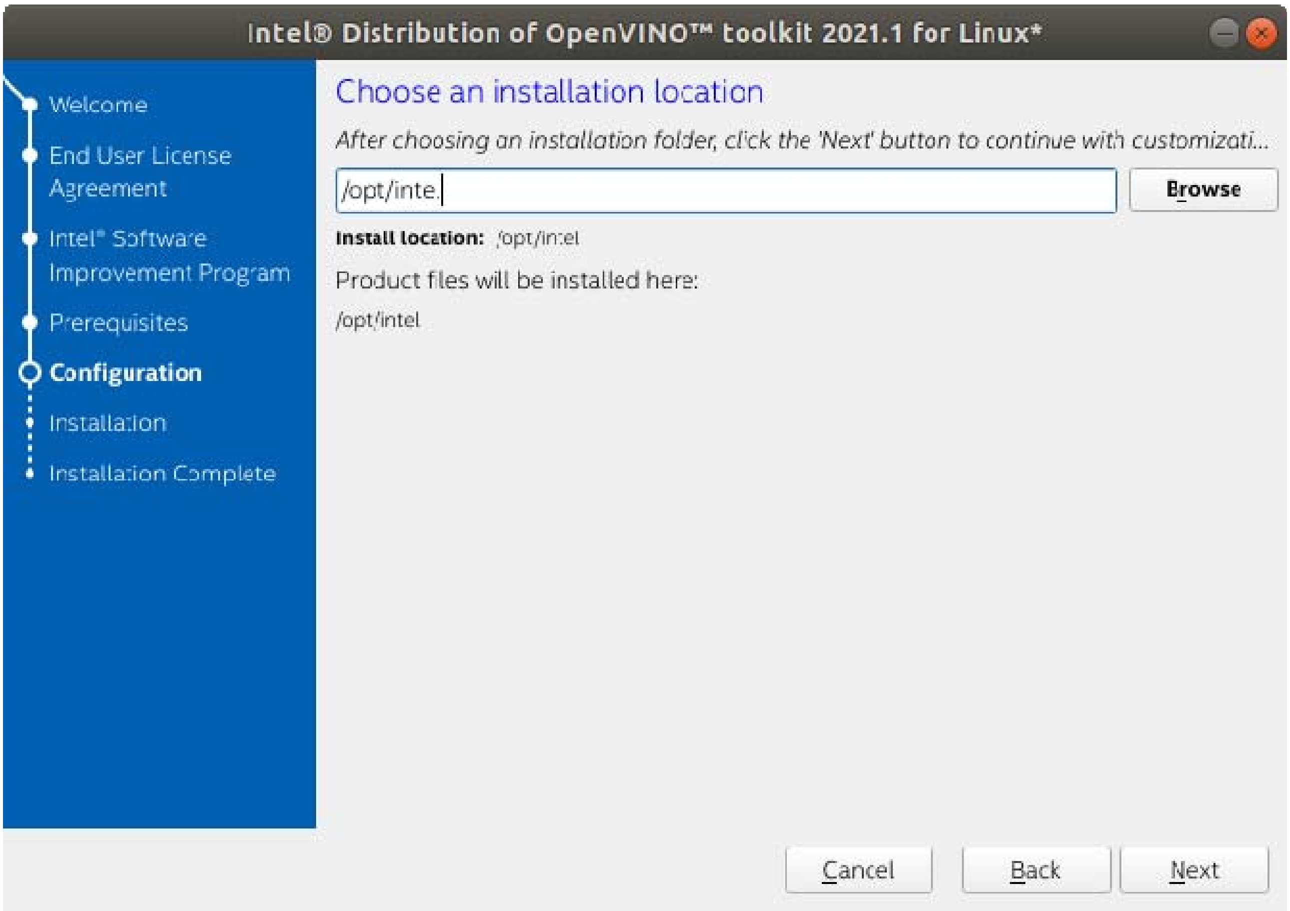
Installation summary

Installation can be started right now. To change some options, use the 'Customize' button

The following components will be installed:

Inference Engine	**222MB**
Inference Engine Development Kit	39MB
Inference Engine Runtime for Intel® CPU	33MB
Inference Engine Runtime for Intel® Processor Graphics	18MB
Inference Engine Runtime for Intel® Movidius™ VPU	84MB
Inference Engine Runtime for Intel® Gaussian Neural Accelerator	13MB
Inference Engine Runtime for Intel® Vision Accelerator Design with Intel® Movidius™ VPUs	13MB
Model Optimizer	**4MB**
Model Optimizer Tool	4MB
Deep Learning Workbench	**134MB**
Deep Learning Workbench	134MB
OpenCV*	**88MB**
OpenCV* Libraries	88MB
Open Model Zoo	**111MB**
Open Model Zoo	111MB
Intel(R) Media SDK	**128MB**

3. DO NOT modify the installation location. Click **Next**.



Choose an installation location

After choosing an installation folder, click the 'Next' button to continue with customizati...

/opt/intel

Install location: /opt/intel

Product files will be installed here:

/opt/intel

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Installation Complete
Browse
Cancel
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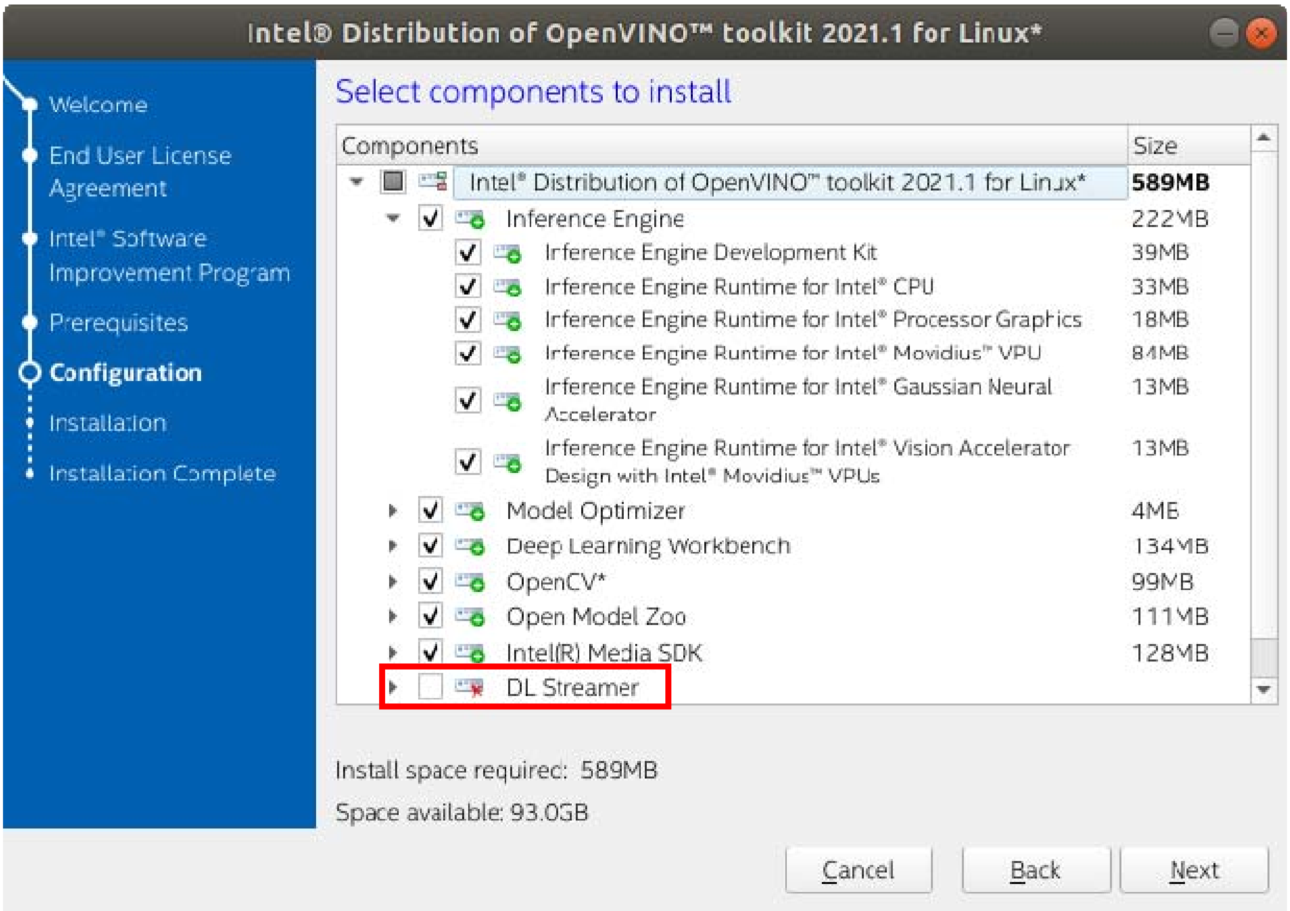
Next

4. Disable **DL Streamer** and then click **Next**.


Intel® Distribution of OpenVINO™ toolkit 2021.1 for Linux*
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Prerequisites
Configuration
Installation
Installation Complete
Cancel
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Next

Select components to install

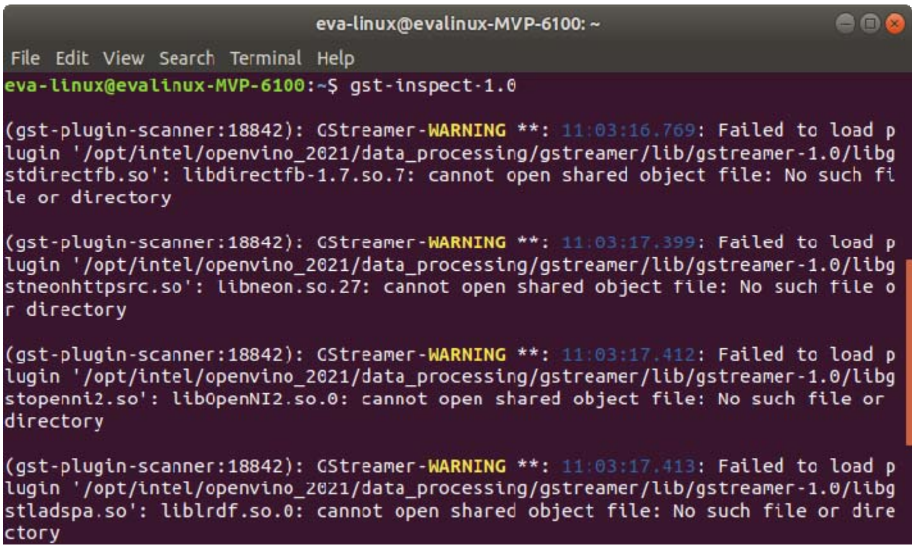
Components	Size
▣ Intel® Distribution of OpenVINO™ toolkit 2021.1 for Linux*	**589MB**
☑ Inference Engine	222MB
☑ Inference Engine Development Kit	39MB
☑ Inference Engine Runtime for Intel® CPU	33MB
☑ Inference Engine Runtime for Intel® Processor Graphics	18MB
☑ Inference Engine Runtime for Intel® Movidius™ VPU	84MB
☑ Inference Engine Runtime for Intel® Gaussian Neural Accelerator	13MB
☑ Inference Engine Runtime for Intel® Vision Accelerator Design with Intel® Movidius™ VPUs	13MB
☑ Model Optimizer	4MB
☑ Deep Learning Workbench	134MB
☑ OpenCV*	99MB
☑ Open Model Zoo	111MB
☑ Intel(R) Media SDK	128MB
☐ DL Streamer	

Install space required: 589MB

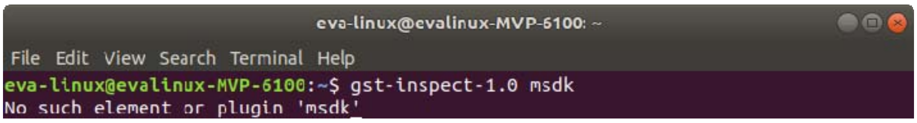
Space available: 93.0GB

Note:

If the DL streamer is installed, GStreamer will display warning messages after installing OpenVINO and the msdk plugin will not work after installing Intel Media SDK for GStreamer.

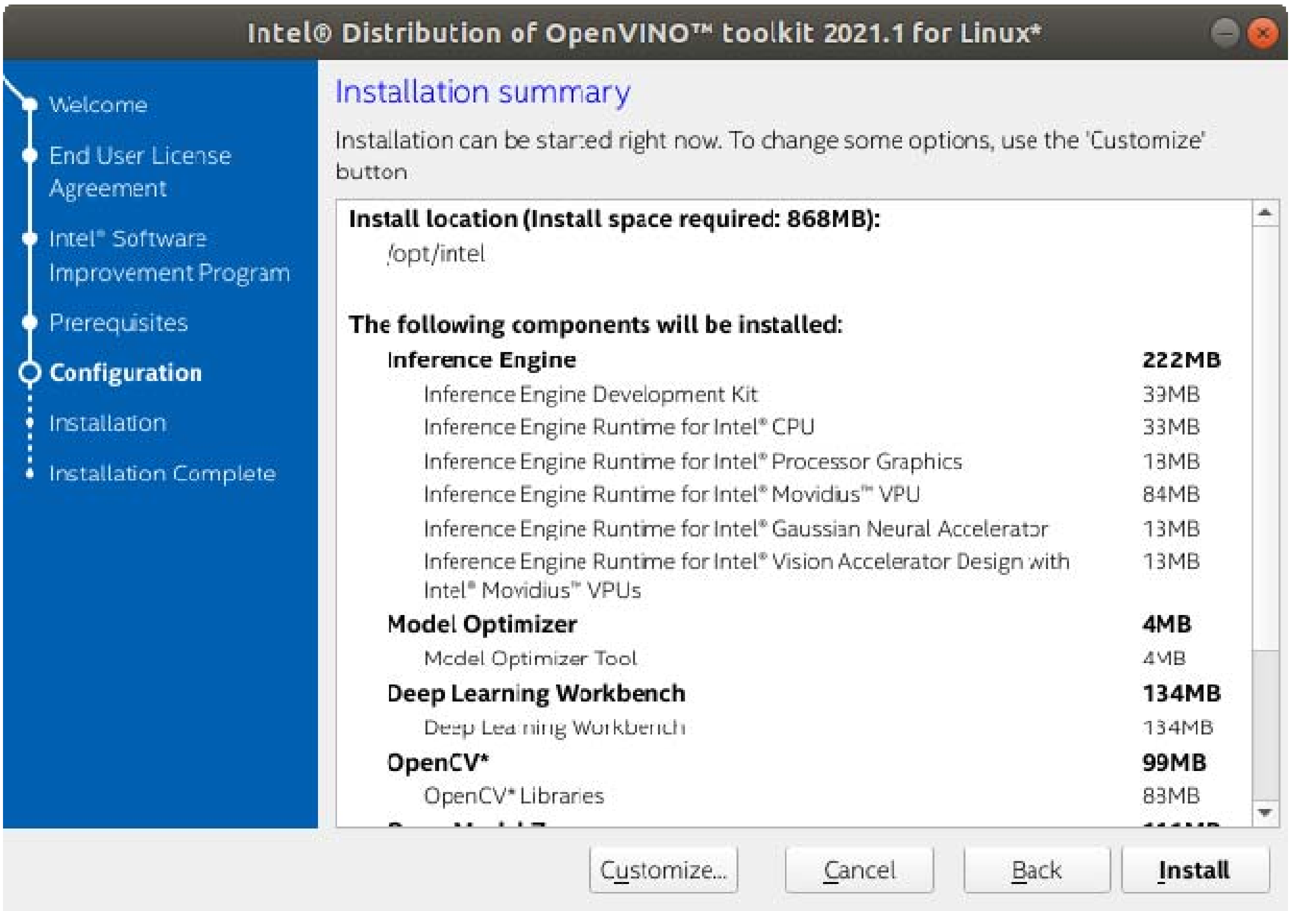

eva-linux@evalinux-MVP-6100: ~
File Edit View Search Terminal Help

```
eva-linux@evalinux-MVP-6100:~$ gst-inspect-1.0

(gst-plugin-scanner:18842): GStreamer-WARNING **: 11:03:16.769: Failed to load p
lugin '/opt/intel/openvino_2021/data_processing/gstreamer/lib/gstreamer-1.0/libg
stdirectfb.so': libdirectfb-1.7.so.7: cannot open shared object file: No such fi
le or directory

(gst-plugin-scanner:18842): GStreamer-WARNING **: 11:03:17.399: Failed to load p
lugin '/opt/intel/openvino_2021/data_processing/gstreamer/lib/gstreamer-1.0/libg
stneonhttpsrc.so': libneon.so.27: cannot open shared object file: No such file o
r directory

(gst-plugin-scanner:18842): GStreamer-WARNING **: 11:03:17.412: Failed to load p
lugin '/opt/intel/openvino_2021/data_processing/gstreamer/lib/gstreamer-1.0/libg
stopenni2.so': libOpenNI2.so.0: cannot open shared object file: No such file or
directory

(gst-plugin-scanner:18842): GStreamer-WARNING **: 11:03:17.413: Failed to load p
lugin '/opt/intel/openvino_2021/data_processing/gstreamer/lib/gstreamer-1.0/libg
stladspa.so': liblrdf.so.0: cannot open shared object file: No such file or dire
ctory
```


eva-linux@evalinux-MVP-6100: ~
File Edit View Search Terminal Help

```
eva-linux@evalinux-MVP-6100:~$ gst-inspect-1.0 msdk
No such element or plugin 'msdk'
```

5. Click **Install** to start installing.



Intel® Distribution of OpenVINO™ toolkit 2021.1 for Linux*
Welcome
End User License Agreement
Intel® Software Improvement Program
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Configuration
Installation
Installation Complete
Customize...
Cancel
Back
Install

Installation summary

Installation can be started right now. To change some options, use the 'Customize' button

Install location (Install space required: 868MB):
/opt/intel

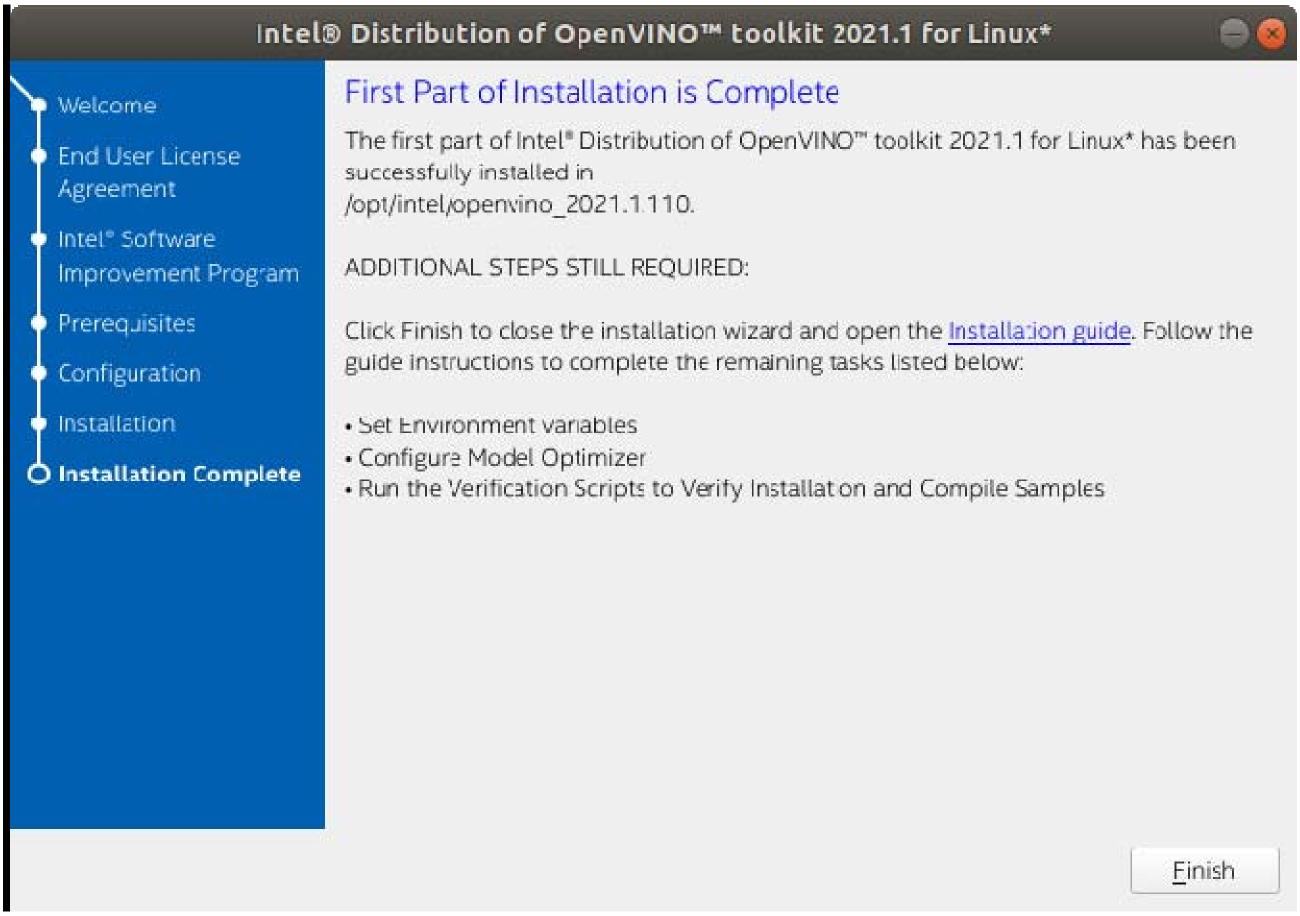
The following components will be installed:

Inference Engine	**222MB**
Inference Engine Development Kit	39MB
Inference Engine Runtime for Intel® CPU	33MB
Inference Engine Runtime for Intel® Processor Graphics	13MB
Inference Engine Runtime for Intel® Movidius™ VPU	84MB
Inference Engine Runtime for Intel® Gaussian Neural Accelerator	13MB
Inference Engine Runtime for Intel® Vision Accelerator Design with Intel® Movidius™ VPUs	13MB
Model Optimizer	**4MB**
Model Optimizer Tool	4MB
Deep Learning Workbench	**134MB**
Deep Learning Workbench	134MB
OpenCV*	**99MB**
OpenCV* Libraries	83MB

Note:

The Intel® Media SDK component is always installed in the /opt/intel/mediasdk directory regardless of the OpenVINO installation path chosen.

6. A Complete screen indicates that the core components have been installed:



Intel® Distribution of OpenVINO™ toolkit 2021.1 for Linux*
Welcome
End User License Agreement
Intel® Software Improvement Program
Prerequisites
Configuration
Installation
Installation Complete
Finish

First Part of Installation is Complete

The first part of Intel® Distribution of OpenVINO™ toolkit 2021.1 for Linux* has been successfully installed in
/opt/intel/openvino_2021.1.110.

ADDITIONAL STEPS STILL REQUIRED:

Click Finish to close the installation wizard and open the Installation guide. Follow the guide instructions to complete the remaining tasks listed below:

- Set Environment variables
- Configure Model Optimizer
- Run the Verification Scripts to Verify Installation and Compile Samples

2. Install External Software Dependencies

These dependencies are required for:

- Intel-optimized build of OpenCV library
- Deep Learning Inference Engine
- Deep Learning Model Optimizer tools

Install the external software dependencies

```
$ cd /opt/intel/openvino_2021/install_dependencies

$ sudo -E ./install_openvino_dependencies.sh
```

3. Set the Environment Variables

Set environment variables for OpenVino

```
$ source /opt/intel/openvino_2021/bin/setupvars.sh
```

Optional: The OpenVINO environment variables are removed when you close the shell. As an option, you can permanently set the environment variables as follows:

1. Open the `.bashrc` file

   ```
   $ gedit ~/.bashrc
   ```

2. Add this line to the end of the file

   ```
   source /opt/intel/openvino_2021/bin/setupvars.sh
   ```

3. To test your change, open a new terminal. You should see `[setupvars.sh] OpenVINO environment initialized`.

4. Optional Steps for Intel® Processor Graphics (GPU)

The steps in this section are required only if you want to enable the toolkit components to use processor graphics (GPU) on your system.

Install OCL driver

```
$ cd /opt/intel/openvino_2021/install_dependencies/

$ sudo -E su

$ ./install_NEO_OCL_driver.sh
```

You may see the following command line output:

- Add OpenCL user to video group
- Run script to install the 4.14 kernel script

Ignore those suggestions and continue.

5. Optional Steps for Intel® Movidius™ Neural Compute Stick and Intel® Neural Compute Stick 2

These steps are only required if you want to perform inference on Intel® Movidius™ NCS powered by the Intel® Movidius™ Myriad™ 2 VPU or Intel® Neural Compute Stick 2 powered by the Intel® Movidius™ Myriad™ X VPU.

Add the current Linux user to the users group

```
$ sudo usermod -a -G users "$(whoami)"
```

Log out and log in for it to take effect.

To perform inference on Intel® Movidius™ Neural Compute Stick and Intel® Neural Compute Stick 2, install the USB rules as follows.

```
$ sudo cp /opt/intel/openvino_2021/inference_engine/external/97-myriad-usbboot.rules /etc/udev/rules.d/

$ sudo udevadm control --reload-rules

$ sudo udevadm trigger

$ sudo ldconfig
```

Note:

You may need to reboot your machine for this to take effect.

5.3 Installing the Intel Media SDK Plugin for Gstreamer (Optional)

If you would like to use Media SDK plugin in GStreamer, install OpenVino^{TM} first. It will include Intel Media SDK and the related libraries such as VAAPI, LibVA, and gmmlib.

The Intel Media SDK plugin source code is in gst-plugins-bad module, but as of Aug. 23, 2019, the GStreamer package installed via apt-get does not contain the msdk plugin, so it must be built and installed.

For more details, refer to https://github.com/Intel-Media-SDK/MediaSDK/wiki/Build-and-use-GStreamer-with-MediaSDK.

1. Prepare the environment and dependencies

Install OpenVino and export environment variables.

- export LIBVA_DRIVER_NAME=iHD
- export LIBVA_DRIVERS_PATH=/path/to/iHD_driver
- export LD_LIBRARY_PATH=/path/to/msdk/lib:$LD_LIBRARY_PATH
- export PKG_CONFIG_PATH=/path/to/msdk/lib/pkgconfig:$ PKG_CONFIG_PATH

Notes:

1. /path/to/iHD_driver: use the MediaSDK iHD driver path. If you install OpenVino for Media SDK, the path should be /opt/intel/mediasdk/lib64.
2. /path/to/msdk/lib: use the MediaSDK library's path. If you install OpenVino for Media SDK, the path should be /opt/intel/mediasdk/lib64.
3. You may need to set the environment for the system permanently.
   a. Open the .bashrc file in your home directory, for example:
      $ gedit ~/.bashrc
   b. Add export environment variables to the last line of the file, for example:
      - export LIBVA_DRIVER_NAME=iHD
      - export LIBVA_DRIVERS_PATH=/opt/intel/mediasdk/lib64
      - export LD_LIBRARY_PATH=/opt/intel/mediasdk/lib64:$LD_LIBRARY_PATH
      - export PKG_CONFIG_PATH=/opt/intel/mediasdk/lib64/pkgconfig:$PKG_CONFIG_PATH
   c. Save the .bashrc file.
   d. Restart your terminal.

2. Download and build the source code

Because GStreamer 1.14.5 is required, download the 1.14 branch from gst-plugins-bad git.

Download the source code

```
$ git clone -b 1.14 https://gitlab.freedesktop.org/gstreamer/gst-plugins-bad.git
```

Before building, install the following package

```
$ sudo apt-get update

$ sudo apt-get install gtk-doc-tools libgstreamer1.0-dev libgstreamer-plugins-base1.0-dev libgudev-1.0-dev
```

Build and install the source code

```
$ cd gst-plugins-bad

$ ./autogen.sh --prefix=$PWD/local

$ make -j $(nproc) && make install

$ sudo cp $PWD/local/lib/gstreamer-1.0/libgstmsdk.so /usr/lib/x86_64-linux-gnu/gstreamer-1.0
```

Note:

Check the configuration for included MSDK plugins.

1. After executing autogen.sh,the configuration log must contain:
    - configure: *** Plug-ins with dependencies that will be built: should include **msdk**.
    - configure: *** checking feature: Intel MediaSDK ***
      configure: *** for plug-ins: msdk ***
      checking for G_UDEV... yes
      checking for LIBMFX... yes
      checking for LIBVA_DRM... yes
      configure: *** These plugins will be built: msdk
2. If msdk is not included, check the environment variable settings and that the libraries above exist. If a library does not exist, install it. For example, checking for G_UDEV... no, install libgudev-1.0.dev.

Check for the msdk plugin

```
$ gst-inspect-1.0 | grep msdk
```

The following is an example of the installed package.

```
$ gst-inspect-1.0 | grep msdk
msdk: msdkh264dec: Intel MSDK H264 decoder
msdk: msdkh264enc: Intel MSDK H264 encoder
msdk: msdkh265dec: Intel MSDK H265 decoder
msdk: msdkh265enc: Intel MSDK H265 encoder
msdk: msdkmjpegdec: Intel MSDK MJPEG decoder
msdk: msdkmjpegenc: Intel MSDK MJPEG encoder
msdk: msdkmpeg2dec: Intel MSDK MPEG2 decoder
msdk: msdkmpeg2enc: Intel MSDK MPEG2 encoder
msdk: msdkvp8dec: Intel MSDK VP8 decoder
msdk: msdkvp8enc: Intel MSDK VP8 encoder
msdk: msdkvc1dec: Intel MSDK VC1 decoder
```

6 Installing Pylon Software (Optional)

If you are not using a Basler camera, you can skip this chapter.

6.1 Uninstall Non-specified Version

If the system has a non-specified version of the Pylon software, uninstall it.

If the installer is installed via deb, refer to the following command to remove pylon.

```
$ sudo apt-get remove pylon
```

6.2 Install pylon Software

If Basler cameras are used, the Pylon Software must be installed.

Download the pylon camera software from the Basler website at: https://www.baslerweb.com/en/sales-support/downloads/software-downloads/

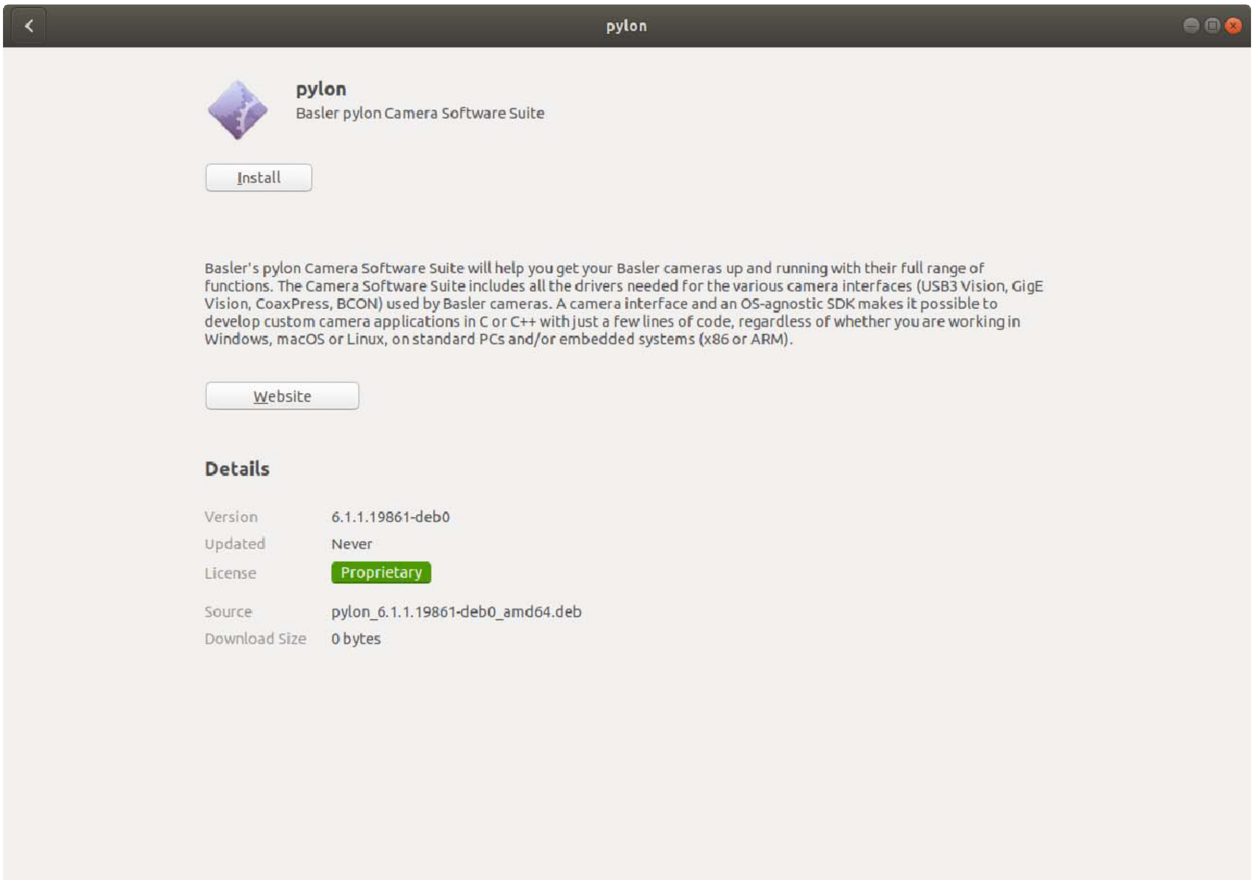
The recommended software versions are:

- Software Category: pylon Software
- Version: 6.1.1
- Operating System: Linux x86-64 bit

Also, you can use the link https://www.baslerweb.com/en/sales-support/downloads/software-downloads/#type=pylonsoftware;language=all;version=6.1.1;os=linuxx8664bit

Download the **Debian Installer Package** and double-click the file.

Click **Install** to begin installing pylon.



pylon

Basler pylon Camera Software Suite

Basler's pylon Camera Software Suite will help you get your Basler cameras up and running with their full range of functions. The Camera Software Suite includes all the drivers needed for the various camera interfaces (USB3 Vision, GigE Vision, CoaxPress, BCON) used by Basler cameras. A camera interface and an OS-agnostic SDK makes it possible to develop custom camera applications in C or C++ with just a few lines of code, regardless of whether you are working in Windows, macOS or Linux, on standard PCs and/or embedded systems (x86 or ARM).

Details

Version	6.1.1.19861-deb0
Updated	Never
License	Proprietary
Source	pylon_6.1.1.19861-deb0_amd64.deb
Download Size	0 bytes

Optionally, you can use the following install command.

```
$ sudo dpkg -i pylon_6.1.1.19861-deb0_amd64.deb
```

After the installation is completed, set the pylon library path environment variable with LD_LIBRARY_PATH.

For example, if the pylon library path is /opt/pylon/lib, execute the following command:

```
$ export LD_LIBRARY_PATH=/opt/pylon/lib:$LD_LIBRARY_PATH
```

Note:

You may need to set the environment for the system permanently.

1. Open the .bashrc file in your home directory, for example:
   $ gedit ~/.bashrc
2. Add export environment variables to the last line of the file, for example:
   - export LD_LIBRARY_PATH=/opt/pylon/lib:$LD_LIBRARY_PATH
3. Save the .bashrc file.
4. Restart your terminal.

Verify the Basler's USB3/GigE Vision cameras with pylon

- After installing pylon, run the pylonviewer tool to test the camera.
- The file should be at /opt/pylon/bin.
- Refer to the following Basler document on using the pylonviewer:
  https://docs.baslerweb.com/overview-of-the-pylon-viewer.html

7 Installing Hikrobot Software (Optional)

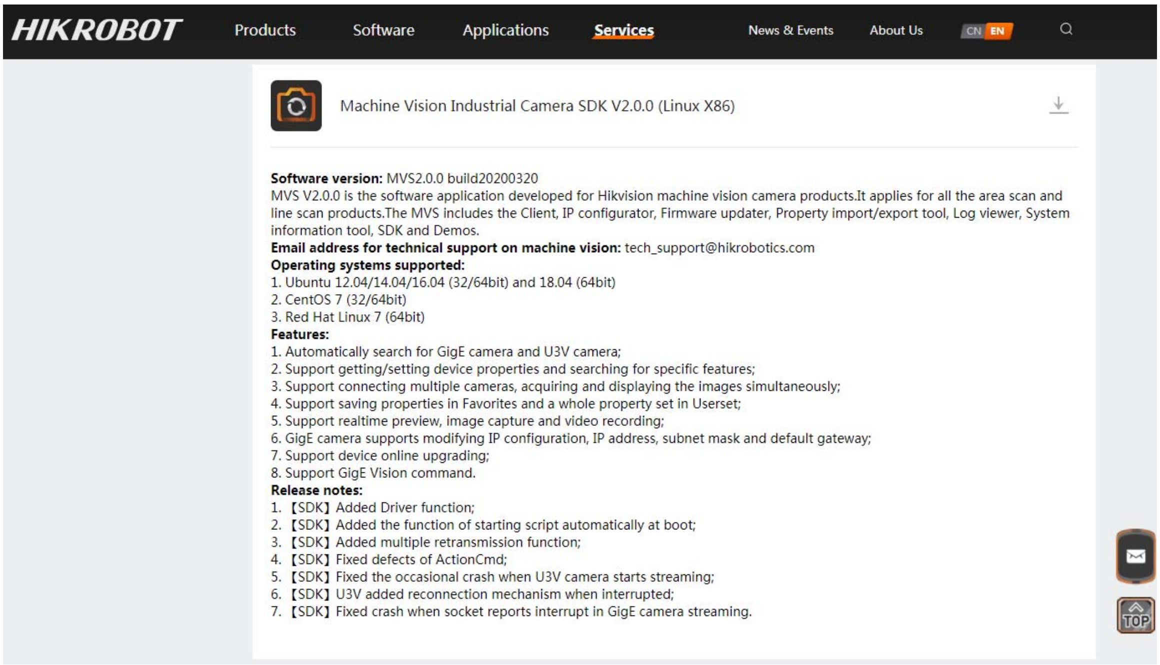
If you are not using a Hikrobot camera, you can skip this chapter.

If Hikrobot cameras are used, the Hikrobot MVS Software must be installed.

Download the Hikrobot installer from: https://en.hikrobotics.com/machinevision/service/download?module=0

The recommended software versions are:

- Version: Machine Vision Industrial Camera SDK 2.0.0 (Linux X86)
- Operating System: Linux 64-bit



Machine Vision Industrial Camera SDK V2.0.0 (Linux X86)

Software version: MVS2.0.0 build20200320
MVS V2.0.0 is the software application developed for Hikvision machine vision camera products.It applies for all the area scan and line scan products.The MVS includes the Client, IP configurator, Firmware updater, Property import/export tool, Log viewer, System information tool, SDK and Demos.
Email address for technical support on machine vision: tech_support@hikrobotics.com
Operating systems supported:
1. Ubuntu 12.04/14.04/16.04 (32/64bit) and 18.04 (64bit)
2. CentOS 7 (32/64bit)
3. Red Hat Linux 7 (64bit)
Features:
1. Automatically search for GigE camera and U3V camera;
2. Support getting/setting device properties and searching for specific features;
3. Support connecting multiple cameras, acquiring and displaying the images simultaneously;
4. Support saving properties in Favorites and a whole property set in Userset;
5. Support realtime preview, image capture and video recording;
6. GigE camera supports modifying IP configuration, IP address, subnet mask and default gateway;
7. Support device online upgrading;
8. Support GigE Vision command.
Release notes:
1. 【SDK】Added Driver function;
2. 【SDK】Added the function of starting script automatically at boot;
3. 【SDK】Added multiple retransmission function;
4. 【SDK】Fixed defects of ActionCmd;
5. 【SDK】Fixed the occasional crash when U3V camera starts streaming;
6. 【SDK】U3V added reconnection mechanism when interrupted;
7. 【SDK】Fixed crash when socket reports interrupt in GigE camera streaming.

Run the following commands and then follow the screen instructions to install.

```
$ unzip "MVS_V2.0.0_200312(Linux X86).zip"

$ cd "MVS_V2.0.0_200312(Linux X86)"

$ tar xvfz MVS-2.0.0_x86_64_20200312.tar.gz

$ cd MVS-2.0.0_x86_64_20200312

$ sudo ./setup.sh
```

After installing, connect the camera and run the MVS software to verify that it works. The file should be at /opt/MVS/bin.

Note:

The above installation steps are for reference only. For more specific installation instructions, refer to the official documentation, or contact Hikrobot at https://en.hikrobotics.com/contactus.

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8 Installing FLIR Software (Optional)

This chapter covers the installation of required software for use with FLIR cameras.

If you are not using a FLIR camera, this chapter can be skipped.

8.1 Uninstall Non-specified Version

If the system has a non-specified version of the FLIR Spinnaker software, uninstall it.

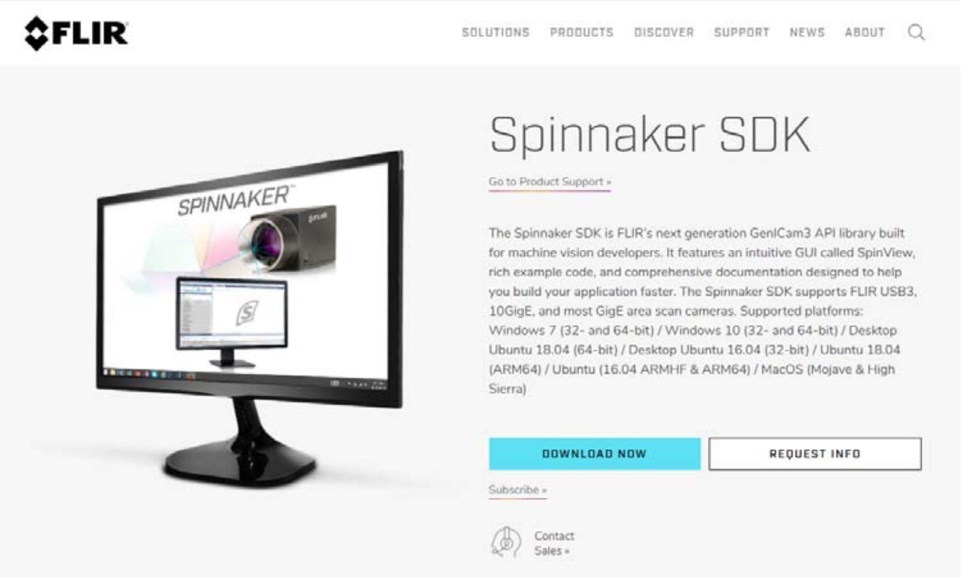
Run the uninstall script with the Spinnaker installation package.

```
$ cd spinnaker-<version>

$ sudo ./remove_spinnaker.sh
```

8.2 Install FLIR Spinnaker Software

If FLIR cameras are used, the FLIR Spinnaker Software Suite for Windows must be installed.

Download the FLIR Spinnaker installer from: https://www.flir.asia/products/spinnaker-sdk/



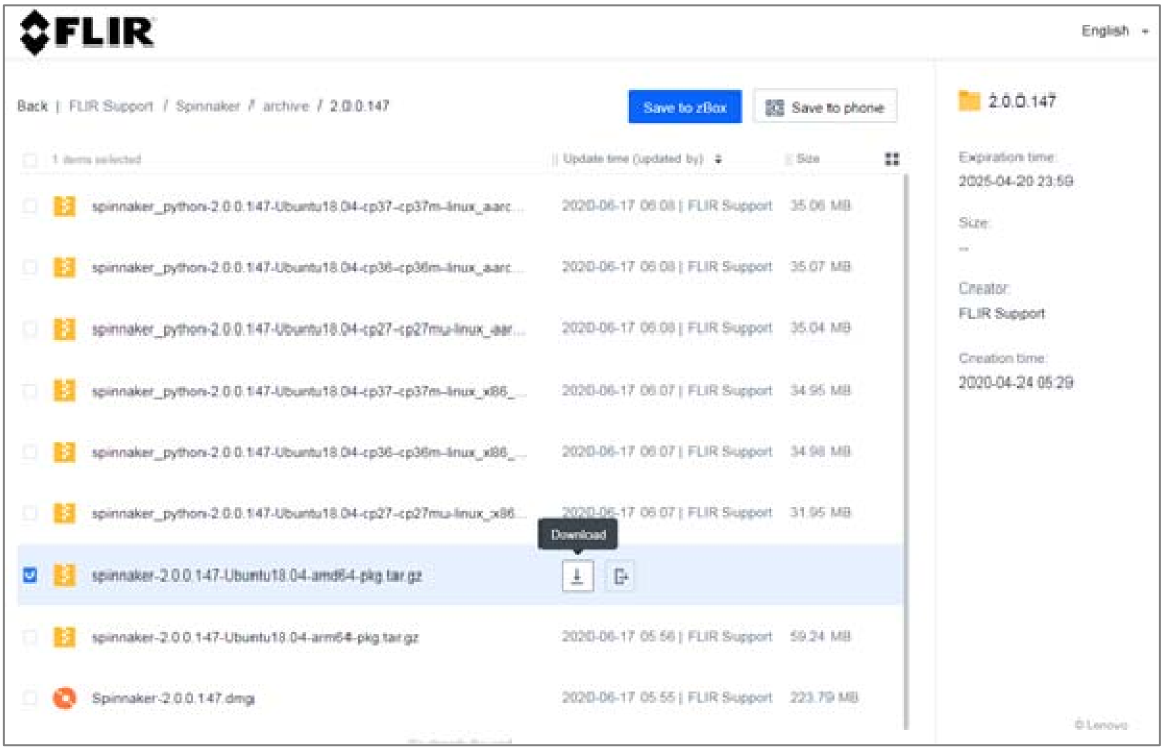
Spinnaker SDK

The Spinnaker SDK is FLIR's next generation GenICam3 API library built for machine vision developers. It features an intuitive GUI called SpinView, rich example code, and comprehensive documentation designed to help you build your application faster. The Spinnaker SDK supports FLIR USB3, 10GigE, and most GigE area scan cameras. Supported platforms: Windows 7 (32- and 64-bit) / Windows 10 (32- and 64-bit) / Desktop Ubuntu 18.04 (64-bit) / Desktop Ubuntu 16.04 (32-bit) / Ubuntu 18.04 (ARM64) / Ubuntu (16.04 ARMHF & ARM64) / MacOS (Mojave & High Sierra)

The recommended software versions are:

- Version: spinnaker-2.0.0.147-Ubuntu18.04-amd64
- Operating System: Linux 64 bit

File path: FLIR Support/Spinnaker/archive/2.0.0.147



Back | FLIR Support / Spinnaker / archive / 2.0.0.147

1 items selected	Update time (updated by)	Size
☐ spinnaker_python-2.0.0.147-Ubuntu18.04-cp37-cp37m-linux_aarc...	2020-06-17 06:08 | FLIR Support	35.06 MB
☐ spinnaker_python-2.0.0.147-Ubuntu18.04-cp36-cp36m-linux_aarc...	2020-06-17 06:08 | FLIR Support	35.07 MB
☐ spinnaker_python-2.0.0.147-Ubuntu18.04-cp27-cp27mu-linux_aar...	2020-06-17 06:08 | FLIR Support	35.04 MB
☐ spinnaker_python-2.0.0.147-Ubuntu18.04-cp37-cp37m-linux_x86_...	2020-06-17 06:07 | FLIR Support	34.95 MB
☐ spinnaker_python-2.0.0.147-Ubuntu18.04-cp36-cp36m-linux_x86_...	2020-06-17 06:07 | FLIR Support	34.98 MB
☐ spinnaker_python-2.0.0.147-Ubuntu18.04-cp27-cp27mu-linux_x86...	2020-06-17 06:07 | FLIR Support	31.95 MB
☑ spinnaker-2.0.0.147-Ubuntu18.04-amd64-pkg.tar.gz		
☐ spinnaker-2.0.0.147-Ubuntu18.04-arm64-pkg.tar.gz	2020-06-17 05:56 | FLIR Support	59.24 MB
☐ Spinnaker-2.0.0.147.dmg	2020-06-17 05:55 | FLIR Support	223.79 MB

2.0.0.147

Expiration time:
2025-04-20 23:59

Size:
--

Creator:
FLIR Support

Creation time:
2020-04-24 05:29

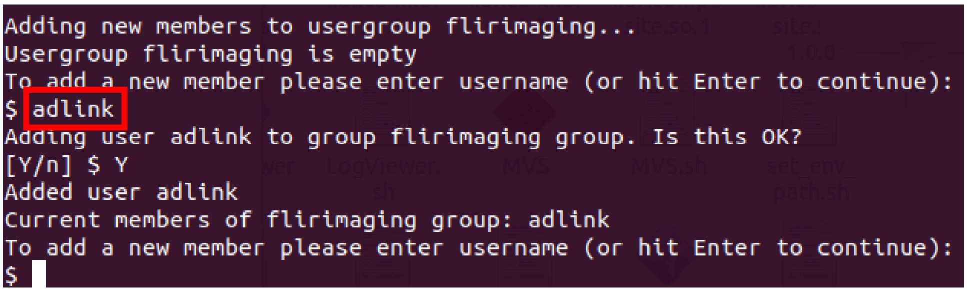
Run the following commands and then follow the on-screen instructions to complete the installation.

```
$ tar xvfz spinnaker-2.0.0.147-Ubuntu18.04-amd64-pkg.tar.gz

$ cd spinnaker-2.0.0.147-amd64

$ sudo ./install_spinnaker.sh

$ sudo reboot
```

Note:

During installation, you **MUST** enter a “username” to add a new member.

For example, enter ‘adlink’ for the user name.



```
Adding new members to usergroup flirimaging...
Usergroup flirimaging is empty
To add a new member please enter username (or hit Enter to continue):
$ adlink
Adding user adlink to group flirimaging group. Is this OK?
[Y/n] $ Y
Added user adlink
Current members of flirimaging group: adlink
To add a new member please enter username (or hit Enter to continue):
$ 
```

After installation, connect the camera and run the following command to verify that it works.

```
$ spinview
```

Note:

For more information, refer to https://www.flir.com/support-center/iis/machine-vision/application-note/using-spinnaker-on-arm-and-embedded-systems/

If you have any questions, go to https://www.flir.com/.

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9 Installing the ADLINK EVA SDK

9.1 Remove Previous ADLINK EVA SDK Versions

If you have a previously installed version of the ADLINK EVA SDK, remove it with the following command:

```
$ sudo /opt/adlink/eva/uninstall.sh
```

If the install path has been changed, specified the correct path with:

```
$ sudo [INSTALL_DIR]/uninstall.sh
```

INSTALL_DIR enters the specified path.

Note:

When uninstalling the ADLINK EVA SDK, the folder specified with INSTALL_DIR will be deleted.

9.2 Install the Required Package for EVA IDE

```
$ sudo apt-get install graphviz
```

9.3 Download and Install the ADLINK EVA SDK

Download the ADLINK EVA SDK installation package and copy it to your Linux Ubuntu 18.04 64-bit system.

Change mode and run install package

```
$ chmod +x EVA_SERP_xxxx.run

$ sudo ./EVA_SERP_xxxx.run
```

xxxx is the version and the install path is /opt/adlink/eva.

Select the EVA SDK plugins to be installed.

```
Select GStreamer plugin to install. (Separate with comma, for example,
“2,3,4”).
1. All plugins
2. OpenVINO inference plugin
3. TensorRT inference plugin
4. Pylon plugin
5. HIK plugin
6. FLIR plugin
```

For example, to install the TensorRT inference plugin and the Pylon plugin, enter 3,4. To install all plugins, including the OpenVINO inference plugin, TensorRT inference plugin, Pylon plugin, Hik plugin, and Flir plugin, enter 1.

Notes:

1. OpenVINO is only supported on Intel platforms.
2. TensorRT is only supported on NVIDIA platforms.
3. Before installing the EVA SDK, you must ensure the corresponding software packages have been installed. If the plugins are installed but there are no corresponding libraries, when the GStreamer command runs for the first time, it will display messages to warn that the related libraries are missing, and the installed plugins will not work.

Other commands can be used to install the ADLINK EVA SDK.

- Use the -s command option to install all the plugins in silent mode. The install path is /opt/adlink/eva.

```
$ sudo ./EVA_SERP_xxxx.run -- -s
```

9.4 Set Environment Variables

Set environment variables for the ADLINK EVA SDK

```
$ source /opt/adlink/eva/scripts/setup_eva_envs.sh
```

The script will set up the environment variables of the following installed software.

- OpenVINO
- MediaSDK
- Pylon
- ADLINK EVA SDK

If the software has no corresponding libraries, the script will not set up the corresponding environment variables.

Note:

The environment variables are removed when closing the command prompt or terminal.

Safety Instructions

Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.

- Please read these safety instructions carefully.
- Please keep this User‘s Manual for later reference.
- Read the specifications section of this manual for detailed information on the operating environment of this equipment.
- When installing/mounting or uninstalling/removing equipment, turn off the power and unplug any power cords/cables.
- To avoid electrical shock and/or damage to equipment:
    - Keep equipment away from water or liquid sources.
    - Keep equipment away from high heat or high humidity.
    - Keep equipment properly ventilated (do not block or cover ventilation openings).
    - Make sure to use recommended voltage and power source settings.
    - Always install and operate equipment near an easily accessible electrical socket-outlet.
    - Secure the power cord (do not place any object on/over the power cord).
    - Only install/attach and operate equipment on stable surfaces and/or recommended mountings.
    - If the equipment will not be used for long periods of time, turn off and unplug the equipment from its power source.
- Never attempt to fix the equipment. Equipment should only be serviced by qualified personnel.

Getting Service

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