(\* the following procedures must be strictly followed \*)（\*下列过程必现严格执行\*）

#### Switch source list source

1. Edit sudo VIM / etc / apt/ source.list , replace the relevant source content as follows(编辑sudo vim /etc/apt/source.list，替换相关的源内容，相关内容如下：)

*deb http://mirrors.aliyun.com/ubuntu-ports/ xenial main*

*deb-src http://mirrors.aliyun.com/ubuntu-ports/ xenial main*

*deb http://mirrors.aliyun.com/ubuntu-ports/ xenial-updates main*

*deb-src http://mirrors.aliyun.com/ubuntu-ports/ xenial-updates main*

*deb http://mirrors.aliyun.com/ubuntu-ports/ xenial universe*

*deb-src http://mirrors.aliyun.com/ubuntu-ports/ xenial universe*

*deb http://mirrors.aliyun.com/ubuntu-ports/ xenial-updates universe*

*deb-src http://mirrors.aliyun.com/ubuntu-ports/ xenial-updates universe*

*deb http://mirrors.aliyun.com/ubuntu-ports/ xenial-security main*

*deb-src http://mirrors.aliyun.com/ubuntu-ports/ xenial-security main*

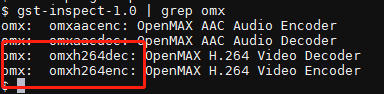
*deb http://mirrors.aliyun.com/ubuntu-ports/ xenial-security universe*

*deb-src http://mirrors.aliyun.com/ubuntu-ports/ xenial-security universe*

1. Execute command： sudo apt-get update
2. Execute command： sudo apt-get upgrade

#### Install the GStreamer component

1. .apt Mode installation, execute the command: （apt方式安装，执行命令：）
2. sudo apt-get install gstreamer1.0-alsa gstreamer1.0-clutter-3.0 gstreamer1.0-doc gstreamer1.0-espeak gstreamer1.0-fluendo-mp3 gstreamer1.0-libav gstreamer1.0-libav-dbg gstreamer1.0-nice gstreamer1.0-packagekit gstreamer1.0-plugins-bad gstreamer1.0-plugins-bad-dbg gstreamer1.0-plugins-bad-doc gstreamer1.0-plugins-base gstreamer1.0-plugins-base-apps gstreamer1.0-plugins-base-dbg gstreamer1.0-plugins-base-doc gstreamer1.0-plugins-good gstreamer1.0-plugins-good-dbg gstreamer1.0-plugins-good-doc gstreamer1.0-plugins-ugly gstreamer1.0-plugins-ugly-dbg gstreamer1.0-plugins-ugly-doc gstreamer1.0-pocketsphinx gstreamer1.0-pulseaudio gstreamer1.0-tools gstreamer1.0-x gstreamer-qapt -y
3. sudo apt-get install libgstreamer-plugins-\* -y
4. sudo apt-get install libgstreamer1.0\* -y
5. Verify success of OMX, execute command：gst-inspect-1.0 | grep omx



#### Switch gcc4.9

Execute the command as follows：

sudo apt-get install gcc-4.9 -y

ls /usr/bin/gcc\*

sudo update-alternatives --install /usr/bin/gcc gcc /usr/bin/gcc-4.9 100

sudo update-alternatives --config gcc

gcc -v

sudo apt-get install g++-4.9 -y

ls /usr/bin/g++\*

sudo update-alternatives --install /usr/bin/g++ g++ /usr/bin/g++-4.9 100

sudo update-alternatives --config g++

g++ -v

#### **Compiling opencv 3.3.1 environment**

1. **Unzip source package: default to $home directory（解压源码包：默认在$HOME目录下）**

**tar -zxvf opencv-3.3.1.tgz**

1. **Install dependent environment：**

sudo apt-get install -y \

cmake \

libavcodec-dev \

libavformat-dev \

libavutil-dev \

libeigen3-dev \

libglew-dev \

libgtk2.0-dev \

libgtk-3-dev \

libjasper-dev \

libjpeg-dev \

libpng12-dev \

libpostproc-dev \

libswscale-dev \

libtbb-dev \

libtiff5-dev \

libv4l-dev \

libxvidcore-dev \

libx264-dev \

libx265-dev \

zlib1g-dev \

pkg-config

1. **Create installation path and compilation path:（创建安装路径和编译路径：）**

cd opencv-3.3.1

mkdir -p build/

cd build

sudo mkdir -p /usr/local/opencv

sudo chmod a+wrx -R /usr/local/opencv/

1. **Execute the compile command:（执行编译命令：）**
2. time cmake -D CMAKE\_BUILD\_TYPE=RELEASE \

-D CMAKE\_INSTALL\_PREFIX=/usr/local/opencv \

-D ENABLE\_FAST\_MATH=ON \

-D WITH\_CUBLAS=ON \

-D WITH\_LIBV4L=ON \

-D WITH\_GSTREAMER=ON \

-D WITH\_GSTREAMER\_0\_10=OFF \

-D WITH\_OPENGL=ON \

../

1. make install

#### **FireDetectApp operation environment and execution environment**

1. % running process must be switched to root user on aikit local terminal for running and compiling(**源代码环境描述，目录结构如下：)**

└── FireDetectApp

├── out Compile output file(编译输出文件)

├── config ini profile management module(配置文件处理模块)

│   ├── include

│   ├── iniparser

│   ├── out

│   └── src

├── ai\_client Detection algorithm of cloud fireworks client module

│   ├── include

│   ├── src

│   ├── extend

│   ├── lib

├── lib Dependency Library

├── bin exe

├── include Header file of dependent Library

├── external Open source library resources

└── yuv

├── bin

├── include

└── lib

1. **Project compilation steps(工程编译步骤：)**
2. **Compile source code：**
3. Mkdir out&&cd out
4. Cmake ../
5. make
6. **Running environment settings(运行环境设置：)**
7. **After compiling, verify the output to run app(编译完毕后，验证输出运行bin:)**

cd FireDetectApp/bin

The related running bin file is as follows:(相关的运行bin文件如下：)

├── fire\_detect\_app

#### Instructions for use of pyrotechnic detection algorithm（烟火检测算法使用说明）

The fireworks detection application is the fireworks detection algorithm of Baidu public cloud service. The development refers to the easymonitor video monitoring development platform. There are very detailed use documents in the platform, and developers need to register their own account to obtain cloud services.（烟火检测应用的是百度公有云服务的烟火检测算法，开发参考EasyMonitor 视频监控开发平台，平台内有非常详细的使用文档，需要开发者自行注册账号获取云服务。）

1. preparation（准备工作）
2. Get access\_ Token is used for permission of cloud service interface(获取access\_token用于云服务接口使用权限)
3. Register baidu account(注册百度账号）
4. Log in <https://ai.baidu.com/easymonitor#/dashboard> to get AK/SK（登录https://ai.baidu.com/easymonitor#/dashboard获取AK/SK)



1. AK / SK replace get\_ accecctoken.sh AK / SK, and run the script to extract "access" from the result\_ Value of the token field.(AK/SK替换get\_accecctoken.sh里的AK/SK,并运行脚本，运行结果中提取出“access\_token”字段的值。)
2. Modify local configuration(修改本地配置)

Compile FireDetectApp / include / res.h, and set AK, SK, access\_ Token replaces the corresponding field.(编译FireDetectApp /include/res.h，将AK、SK、access\_token替换相应字段)

Note: cloud in res.h\_ DEV\_ Name represents the name of the virtual device to be registered to the cloud server.(备注:res.h中的CLOUD\_DEV\_NAME代表要注册到云服务端的虚拟设备名称。)

1. Recompile AI\_ Client module(重新编译ai\_client模块)
2. cd FireDetectApp
3. cd out
4. cmake ../
5. Make
6. Baidu cloud reference link(百度云参考链接)

<https://ai.baidu.com/solution/easymonitor?track=cp:ainsem|pf:pc|pp:chanpin-EasyMonitor|pu:EM-yanhuojiance|ci:|kw:10012109> //EasyMonitor

<https://ai.baidu.com/easymonitor#/dashboard> //AK/SK

<https://ai.baidu.com/easymonitor#/eventsoverview/4U3J-Z2OZ-12WA-DRLJ> //EasyMonitor Equipment management

Thank you for reading. I hope it will help you!(感谢阅览，希望对您有所帮助！)