Installing Alvar

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1 Introduction

This document will give a brief description on how to install Alvar. It is important to note that this is not AR Track Alvar, which is the ROS library for AR tracking, but just a standalone AR track software.

2 Installing Alvar

Installing Alvar is easy! All you do is just run the installalvar.sh script. This will download and build all dependencies for Alvar, including OpenCV and ROS. The most important thing to note is that the shell script must be located in build directory of the Alvar directory that can be downloaded from the Alvar website.

```
#!/bin/bash

#Install ROS

#Setup your sources.list
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu
    $(lsb_release -sc) main" > /etc/apt/sources.list.d/ros
    -latest.list'

#Set up your keys
sudo apt-key adv --keyserver hkp://pool.sks-keyservers.
    net:80 --recv-key 0xB01FA116

#Installation
sudo apt-get update
sudo apt-get install ros-jade-desktop-full

#Initialize rosdep
sudo rosdep init
rosdep update

#ROS Environment setup
echo "source /opt/ros/jade/setup.bash" >> ~/.bashrc
source ~/.bashrc

#Getting rosinstall
sudo apt-get install python-rosinstall

#Install opencv
version="$(wget -q -O - http://sourceforge.net/projects/
    opencvlibrary/files/opencv-unix | egrep -m1 -o
    '\"[0-9](\.[0-9]+)+' | cut -c2-)"
```

```
echo "Installing OpenCV" $version
mkdir OpenCV
cd OpenCV
echo "Removing any pre-installed ffmpeg and x264"
sudo apt-get -qq remove ffmpeg x264 libx264-dev
echo "Installing Dependenices"
sudo apt-get -qq install libopencv-dev build-essential
    checkinstall cmake pkg-config yasm libjpeg-dev
    libjasper-dev libavcodec-dev libavformat-dev
    libswscale-dev libdc1394-22-dev libxine-dev
    libgstreamer0.10-dev libgstreamer-plugins-base0.10-dev
     libv4l-dev python-dev python-numpy libtbb-dev libqt4-
    dev libgtk2.0-dev libfaac-dev libmp3lame-dev
    libopencore-amrnb-dev libopencore-amrwb-dev libtheora-
    dev libvorbis-dev libxvidcore-dev x264 v4l-utils
    ffmpeg cmake qt5-default checkinstall
echo "Downloading OpenCV" $version
sudo wget -O OpenCV-$version.zip http://sourceforge.net/
    projects/opencvlibrary/files/opencv-unix/$version/
    opencv-"$version".zip/download
echo "Installing OpenCV" $version
sudo unzip OpenCV-$version.zip
cd opencv-$version
mkdir build
cd build
sudo cmake -D CMAKE_BUILD_TYPE=RELEASE -D
    CMAKE_INSTALL_PREFIX=/usr/local -D WITH_TBB=ON -D
    BUILD_NEW_PYTHON_SUPPORT=ON -D WITH_V4L=ON -D
    INSTALL_C_EXAMPLES=ON -D INSTALL_PYTHON_EXAMPLES=ON -D
     BUILD_EXAMPLES=ON -D WITH_QT=ON -D WITH_OPENGL=ON ..
sudo make -j2
sudo checkinstall
sudo sh -c 'echo "/usr/local/lib" > /etc/ld.so.conf.d/
    opencv.conf'
sudo ldconfig
echo "OpenCV" $version "ready to be used"

# Download and extract alvar-2.0.0-sdk-linux64-gcc44.tar.
    gz
# Go into the /alvar-2.0.0-sdk-linux64-gcc44/build
sudo apt-get install build-essential cmake
sudo apt-get install freeglut3-dev
sudo apt-get install libopenscenegraph-dev
sudo apt-get install gcc-4.4
sudo apt-get install g++-4.4
sudo apt-get install cmake-qt-gui
```

```
chmod +x generate*.sh
sudo ./generate_gcc44.sh
cd build_gcc44_release
sudo make install
```