# CoroBot Robotic Operating System Drivers and Software Installation Guide

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This guide pertains to the installation of the ROS system on a CoroBot Classic or Explorer starting from a previous software version (Player/Stage, MRDS) or a blank disk. If using a restore drive from CoroWare, the software is included in the recovery image provided and no installs should be required.

## ROS Installation

# CoroBot® Robotic Operating System Drivers and Software Installation Guide

*Version 5.1*

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## 1.  Operating System Support

CoroWare's ROS system currently supports Ubuntu Linux 11.04, 11.10 and 12.04 in both 32 and 64 bit versions. Support for newer versions will be available soon.

## 2.  Required Drivers and Additional Packages

### 2.1.  General Pre-Requisites

Using either apt-get at the command line or the Synaptic graphical client, download and install the following packages:

```
sudo apt-get install build-essential cmake python-dev swig libcv-dev libcvaux-dev libstatgrab-dev libgdk-
pixbuf2.0-dev libgnomecanvas2-dev libboost-dev libboost-signals-dev libboost-thread-dev libusb-dev libqt4-dev
qt4-dev-tools subversion libgps-dev gpsd libwebcam0-dev libsdl1.2-dev libsdl-image1.2-dev gpsd-clients libgps-
dev libtheora0 libtheora-dev mjpegtools libmjpegtools-1.9 libmjpegtools-dev
```

### 2.2.  Phidgets® Drivers

Download the latest Linux source code from http://www.phidgets.com/drivers.php . Extract the contents of the archive and navigate to the extracted folder from the command line, then type the following commands:

```
./configure
make
sudo make install
sudo cp udev/* /etc/udev/rules.d/
sudo ldconfig
```

Next, download the Phidgets Python module from http://www.phidgets.com/programming_resources.php
Extract the archive and navigate to it, then enter:

sudo python setup.py install

## 3. Installing the CoroBot ROS System

CoroWare's ROS software is compatible with the Electric version of ROS.

### 3.1. Initial Configuation

Set up your computer to accept software from ROS.org.

**Ubuntu 11.04 (Lucid)**
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu lucid main" > /etc/apt/sources.list.d/ros-latest.list'

**Ubuntu 11.10 (Oneiric)**
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu oneiric main" > /etc/apt/sources.list.d/ros-latest.list'

**Ubuntu 12.04 (Precise)**
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu precise main" > /etc/apt/sources.list.d/ros-latest.list'

Set up your keys:

wget http://packages.ros.org/ros.key -O - | sudo apt-key add -

sudo apt-get update

### 3.2. Install ROS

Perform the following actions to install ROS:

sudo apt-get install ros-fuerte-desktop-full ros-fuerte-openni-kinect ros-fuerte-laser-drivers ros-fuerte-joystick-drivers ros-fuerte-qt-ros

### 3.3. Environmental Setup

Perform the following actions to set up the ROS environment:

echo "source /opt/ros/fuerte/setup.bash" >> ~/.bashrc

. ~/.bashrc

Using your preferred text editor, add the ROS_PACKAGE_PATH variable to your bash environment:

```
nano .bashrc

//To the end of this file, append the following line:
export ROS_PACKAGE_PATH=$ROS_PACKAGE_PATH:~/ros_packages/
```

Exit the terminal and start a new one before proceeding.

## 3.4.    Install the CoroWare ROS Packages

Use Subversion to check out the latest version of the code from Sourceforge:

```
svn checkout svn://svn.code.sf.net/p/roscorobot/code/trunk/Electric ros_packages
```

Note: The king specifies Electric (for ROS Electric) but the code is compatible ROS Fuerte.

Use rosmake to build all of the CoroBot packages along with the teleoperation utility

```
rosmake PhidgetMotor PhidgetServo corobot_arm corobot_camera corobot_gps
corobot_hokuyo corobot_joystick corobot_msgs corobot_pantilt corobot_phidgetIK
corobot_srvs corobot_ssc32 corobot_teleop
```

Or a simpler version is:

```
rosmake Corobot
```