INSTALL: plc - PlasmaLabControl

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Contents

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info

before you install

Modules

plc needs the following modules (most of them are standard and already in your python installation from a package management)

- argparse
- ConfigParser
- cPickle
- cStringIO
- csv
- datetime
- distutils.core
- errno
- fnmatch
- Image
- ImageDraw

- ImageTk
- logging
- logging.handlers
- math
- matplotlib
- matplotlib.pyplot
- modulefinder
- numpy
- os
- os.path
- PIL.ImageOps
- pydc1394
- Queue
- random
- re
- serial
- signal
- SimpleHTTPServer
- socket
- SocketServer
- string
- struct
- subprocess
- sys
- tarfile
- tempfile
- threading
- time
- tkFileDialog
- Tkinter
- tkMessageBox
- ttk
- types
- usb
- zipfile

and the own modules plc_gui and plc_tools which comes with this package.

You can also asked the installation routine/script:

```
python setup.py --help
python setup.py --requires
```

There is also a small extra command to check for availability of necessary modules:

```
python setup.py check_modules
```

If you want to use this complete software you should have no modules which are not available.

Much more information you get from the following small extra command by using the modulefinder:

```
python setup.py check_modules_modulefinder
```

It is normal that there are many missing modules reported. Please look at the datails.

Python3

If you use Python3, you must convert to Python3 via 2to3:

```
tar xzf plc-*.tar.*
cd plc-*/
2to3 -w .
```

But keep in mind to have all modules in Python3.

2013-02-04: At the moment Python Imaging Library (PIL) http://www.pythonware.com/products/pil/ is not available for Python3.

Python 2.7 on Mac

To install Python 2.7 on am Mac, you can use fink package manager. The following lines will install what you need:

```
fink install python27 pyserial-py27 pil-py27
```

This works on fink 0.34.4. You can check, if Python 2.7 is avaliable using:

```
fink list | grep python27
```

install

global-install

To install this software global to / the following steps are to perform:

```
tar xzf plc-*.tar.*
cd plc-*/
python setup.py install
```

home-install

To install this software to your $HOME the following steps are to perform:

```
tar xzf plc-*.tar.*
cd plc-*/
python setup.py install --home=~
```

hints

- Keep in mind to have the right pathes.

  For the above installation to $HOME the software installs in:

  ```
  ~/bin
  ~/lib/python
  ```

  Please make sure to have these pathes in $PATH and $PYTHONPATH, respectively. For example:

  ```
  export PATH=$PATH:~/bin
  export PYTHONPATH=~/lib/python
  ```

- Keep in mind to have access to the devices of the control boxes and cameras. For example udev can help you.
- Additional Software: PyUSB

  We need PyUSB 1.x from: http://sourceforge.net/apps/trac/pyusb/

  For Ubuntu 12.04 (precise) you can find it in: https://launchpad.net/~cwayne18/+archive/fitbit

  PyUSB is used for the G-sensor.

- Additional Software: pydc1394

  You can find pydc1394 on https://launchpad.net/pydc1394

  You can get your branch to install by:

  ```
  mkdir ~/pydc1394
  cd ~/pydc1394
  bzr branch http://bazaar.launchpad.net/~sirver/pydc1394/trunk
  ```

  Like typical python software you can install by:

  ```
  cd ~/pydc1394/trunk/
  python setup.py install
  ```

  Or to install only in your home-directory type:

  ```
  cd ~/pydc1394/trunk/
  python setup.py install --home=~
  ```

  pydc1394 is used for the cameras. pydc1394 needs libdc1394 and numpy. Both are in many package management systems.

- For Linux Mint Debian Edition 201204 XFCE you need to install the following packages from the package management system:

- python-tk
- python-imaging-tk
- python-matplotlib

Useful packages are:

- coriander
- python-scipy

You also need the above mentioned software pydc1394 and pyusb.

- For Fedora 18 you need to install the following packages from the package management system:
  - libdc1394
  - numpy
  - pyserial
  - python-imaging
  - python-imaging-tk
  - tkinter

  Useful packages for Fedora 18 are:
  - coriander
  - scipy

  You also need the above mentioned software pydc1394 and pyusb.

  But the camera is not working in plc.py. You have to use camer_client.py instead.
- For Ubuntu 13.04 "Raring Ringtail" you need to install the following packages from the package management system:
  - python-numpy
  - python-imaging-tk
  - python-matplotlib

  Useful packages are:
  - coriander
  - python-scipy
- For Ubuntu 14.04 "Trusty Tahr" you need to install the following packages from the package management system:
  - python-numpy
  - python-pil.imagetk
  - python-matplotlib
  - libdc1394-22-dev

  Useful packages are:
  - coriander
  - python-scipy

after install

Now in your chosen pathes you have the python module

- plc_gui
- plc_tools

and the scripts

- plc.py
- plc_viewer.py
- digital_controller_server.py
- digital_controller_client.py
- multi_purpose_controller_server.py
- multi_purpose_controller_client.py
- camera_server.py
- camera_client.py
- acceleration_sensor_server.py
- acceleration_sensor_client.py
- acceleration_sensor_logger.py
- pressure_mks_651_server.py
- pressure_mks_651_client.py
- pressure_mks_900_server.py
- pressure_mks_900_client.py
- check_real_time_difference.py
- environment_sensor_5_logger.py
- rawmovie2pngs.py
- rawmovie2tiff.py
- rawmovies2recordings.py
- rawmovieviewer.py
- translation_stage_scan.py
- trigger.py
- and many other ones in this development status.

Normally it should be enough for you to use "plc.py". On your console you can start:

```
plc.py -h
```