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# memo Documentation

*Release 0*

**kuma35**

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## Ubuntu Linux CUI

---

### 2.1

GRUBlinux...ro systemd.unit=multi-user.target

#### 2.1.1

Ubuntu 15.04 GRUB CUI ()

<http://qiita.com/ikwzm/items/5514b0fe9a8728e8aecb>

### 2.2

```
$ systemctl get-default  
$ sudo systemctl set-default multi-user.target
```

#### 2.2.1

systemd

[https://access.redhat.com/documentation/ja-JP/Red\\_Hat\\_Enterprise\\_Linux/7/html/System\\_Administrators\\_Guide/sect-Managing\\_Services\\_with\\_systemd-Targets.html](https://access.redhat.com/documentation/ja-JP/Red_Hat_Enterprise_Linux/7/html/System_Administrators_Guide/sect-Managing_Services_with_systemd-Targets.html)





console-setup

---

## SSH

---

### OpenSSH

```
$ sudo apt-get install openssh-server
```

### clientmevius

```
$ ssh-keygen -t rsa -f ~/.ssh/id_rsa.mevius
```

```
.ssh id_rsa.mevius id_rsa.mevius.pub
```

```
authorized_key
```

```
$ cat id_rsa.mevius.pub >> authorized_keys
```

### ssh .ssh/config

```
Host 192.168.1.1
IdentityFile ~/.ssh/id_rsa.mevius
User hideo
```

```
$ ssh 192.168.1.1
```

```
~/ssh/id_rsa.mevius
```

```
id_rsa.mevius.pubauthorized_key
```



---

**lighttpd**

---

on Ubuntu Linux 15.10 i386

```
$ sudo apt-get install lighttpd
```





```
$ sudo systemctl | grep cups
cups.path                loaded active running    CUPS Scheduler
cups-browsed.service    loaded active running    Make remote CUPS printers available locally
cups.service            loaded active running    CUPS Scheduler
cups.socket             loaded active running    CUPS Scheduler

$ sudo systemctl disable cups.path cups-browsed.service cups.service cups.socket
```



---

**/ttyUSB0**

---

(ubuntu 15.10 i386)hideodialout

```
$ sudo adduser hideo dialout
```



---

**Python3pip**

---

```
$ sudo apt-get install python3-pip  
$ pip3 install pyserial
```



---

---

(Ubuntu 15.10 i386)

```
$ sudo update-alternatives --config editor
```

update-alternatives

```
$ update-alternatives --get-selections
```

## 9.1

<http://c4se.hatenablog.com/entry/20111007/1317988362>





---

## pyenv on Ubuntu 15.10 i386

---

```
sudo apt-get install libssl-dev libbz2-dev libreadline-dev libsqlite3-dev
```

```
pyenv install 3.5.1
```

### 10.1

[http://qiita.com/Kodaira\\_/items/feadfef9add468e3a85b](http://qiita.com/Kodaira_/items/feadfef9add468e3a85b)



---

## CAPSCTRL(Ubuntu 15.10)

---

### 11.1 CAPSCTRL(Ubuntu 15.10)(on X Window)

```
dconf reset /org/gnome/settings-daemon/plugins/keyboard/active
```

Caps Lock/org/gnome/desktop/input-sources/xkb-options

```
dconf read /org/gnome/desktop/input-sources/xkb-options
```

Caps LockCaps LockCtrlCtrl

Caps LockCtrl(CtrlCtrl)

```
dconf write /org/gnome/desktop/input-sources/xkb-options "['ctrl:nocaps']"
```

#### 11.1.1

[http://l-w-i.net/t/ubuntu/key\\_002.txt](http://l-w-i.net/t/ubuntu/key_002.txt)

### 11.2 CAPSCTRL(Ubuntu 15.10)(console)

/etc/default/keyboard

```
# XKBOPTIONS=""  
XKBOPTIONS="ctrl:nocaps"           # CapsLock --> Ctrl  
# XKBOPTIONS="ctrl:swapcaps"      # CapsLock <-> Ctrl
```

```
$ sudo dpkg-reconfigure -phigh console-setup
```

#### 11.2.1

<http://lambdalisue.hatenablog.com/entry/2013/09/27/212118>



## 12.1 PC

/etc/systemd/logind.conf

HandleLidSwitch=ignore

### 12.1.1

<http://qiita.com/tukiyo3/items/9db97f9ffea8a26b364b>

## 12.2

/etc/systemd/logind.conf

**HandleSuspendKey**

**HandleHibernateKey**

HandleSuspendKey=ignore

HandleHibernateKey=ignore

### 12.2.1

<https://wiki.archlinuxjp.org/index.php/%E9%9B%BB%E6%BA%90%E7%AE%A1%E7%90%86>



---

**Read the Docs**

---

1. github
2. Read the Docs
3. Read the Docsgithuburl
4. githubwebhookreadthedocs
5. githubpushRead the Docs





## 14.1 USB-TTL/485(FT-UBF-TTL485)

USB-TTL/485(FT-UBF-TTL485) <sup>1</sup> Arudino NANO /dev/ttyUSB%n /dev/ttyUSB0 /dev/ttyUSB1  
FT2322ATTR{serial}

Bus 001 Device 010: ID 0403:6001 Future Technology Devices International, Ltd FT232 USB-Serial  
(UART) IC

ATTRS{serial}

```
$ udevadm info -q all -n /dev/ttyUSB0
```

/etc/udev/rules.d/ 62-ft485r.rules

```
# for USB-TTL/485 convertor FT-UBF-TTL485
ATTRS{idVendor}=="0403",ATTRS{idProduct}=="6001",ATTRS{serial}=="A7039N11",KERNEL=="ttyUSB*",SYMLINK=
```

### 14.1.1

<http://qiita.com/caad1229/items/309be550441515e185c0>

## 14.2 24DIP-IC FT232RL USB-

USB- FT232RL <sup>2</sup>

/etc/udev/rules.d/ 62-ft232r.rules

```
# for USB-TTL/232 convertor FT232RL
ATTRS{idVendor}=="0403",ATTRS{idProduct}=="6001",ATTRS{serial}=="AH01JKEI",KERNEL=="ttyUSB*",SYMLINK=
```

## 14.3 [N328P] <sup>3</sup>

Arduino nano

<sup>1</sup> aitendo1,250( <http://www.aitendo.com/product/10245> ) 20163

<sup>2</sup> 950( <http://akizukidenshi.com/catalog/g/gK-01977/> ) 20163

<sup>3</sup>aitendo1,250( <http://www.aitendo.com/product/10700> ) 20163

Bus 001 Device 019: ID 1a86:7523 QinHeng Electronics HL-340 USB-Serial adapter

/etc/udev/rules.d/ 62-arduino-nano.rules

```
# for Arduino nano compatible N328P
ATTRS{idVendor}=="1a86",ATTRS{idProduct}=="7523",KERNEL=="ttyUSB*",SYMLINK+="ttyN328P"
```

## 14.4 LifeCam HD-5000

mjpg-streamerrealpath

Bus 002 Device 003: ID 045e:076d Microsoft Corp. LifeCam HD-5000

/etc/udev/rules.d/ 63-ms-hd5000.rules

```
# for MS LifeCam HD-5000
ATTRS{idVendor}=="045e",ATTRS{idProduct}=="076d",KERNEL=="video*",SYMLINK+="webcam1"
```

## 14.5 HD Web LifeCam Studio Q2F-00020

mjpg-streamerrealpath

Bus 001 Device 008: ID 045e:0772 Microsoft Corp. LifeCam Studio

/etc/udev/rules.d/ 63-mslifecam.rules

```
# for MS LifeCam Studio Q2F-00020
ATTRS{idVendor}=="045e",ATTRS{idProduct}=="0772",KERNEL=="video*",SYMLINK+="webcam2"
```

## 14.6 USB

40-rocketlauncher.rules

```
SUBSYSTEM=="usb", ENV{DEVTYPE}=="usb_device", ACTION=="add", SYSFS{idVendor}=="1941", SYSFS{idProduct}
SUBSYSTEM=="usb", ENV{DEVTYPE}=="usb_device", ACTION=="add", SYSFS{idVendor}=="0a81", SYSFS{idProduct}
SUBSYSTEM=="usb", ENV{DEVTYPE}=="usb_device", ACTION=="add", SYSFS{idVendor}=="1130", SYSFS{idProduct}
```

---

## mjpg-streamer

---

```
$ sudo apt-get install subversion libjpeg-dev imagemagick
```

```
svncheckout/usr/bin/mjpg-streamerignore-externals
```

```
$ cd
$ svn checkout --ignore-externals http://svn.code.sf.net/p/mjpg-streamer/code/ mjpg-streamer-code
$ cd ~/mjpg-streamer-code/mjpg-streamer
$ make
```

---

**Note:** (sudo make install)

---

video

```
$ sudo gpasswd --add <<username>> video
```

```
$ ./mjpg_streamer -i "./input_uvc.so -d /dev/video1 -y -r 1920x1080 -f 1" -o "./output_http.so -w www
```

## 15.1

Webport8080apache2/cam2

Web(192.168.1.2)

```
$ ./mjpg_streamer -i "./input_uvc.so -d /dev/video1 -r 1920x1080 -f 1 -y -n" -o "./output_http.so -p
```

Web(192.168.1.6) proxy.conf...

```
ProxyPass /cam2 http://192.168.1.2:808
ProxyPassReverse /cam2 http://192.168.1.2:8080
```

http://192.168.1.6/cam2 mjpeg

## 15.2

mjpg-streamerrealpath

```
$ ./mjpg_streamer -i "./input_uvc.so -d `realpath /dev/webcam2` -r 1920x1080 -f 1 -y -n" -o "./output
```

## 15.2.1

<http://www.hiramine.com/physicalcomputing/raspberrypi/webcamstreaming.html>

---

**startx**

---

```
$ sudo systemctl start lightdm
```

startx.sh ...



---

**X**

---

```
$ sudo systemctl stop lightdm
```





---

## 18.1 50

```
$ du -ch | sort -rh | head -n 50
```

## 18.2

```
$ find $HOME \(\ -type d -and \(\ -name '.cache' -or -name '.compiz-1' \) -and -prune \) -or \(\ -type f
```

### 18.2.1

<http://mollifier.hatenablog.com/entry/20090115/1231948700>

## 18.3 pip install ~/.local/bin

~/.profile

```
# for python pip install commands.  
if [ -d "$HOME/.local/bin" ]; then  
    PATH="$HOME/.local/bin:$PATH"  
fi
```

```
$ source ~/.profile
```



---

**ufw**


---

```
$ sudo ufw default DENY
$ sudo ufw allow OpenSSH
$ sudo ufw enable
```

```
/etc/ufw/applications.d/openssh-outer-server
```

```
[OpenSSH outer]
title=Secure shell server, an rshd replacement
description=OpenSSH is a free implementation of the Secure Shell protocol.
ports=10000/tcp
```

## 19.1

### 1.ufwdelete

```
$ sudo ufw allow 8080
```

```
$ sudo ufw delete allow 8080
```

2.

```
$ sudo ufw status numbered
```

```
:

```

	To	Action	From
	--	-----	----
[ 1]	9999/tcp	ALLOW IN	Anywhere
[ 2]	80	ALLOW IN	Anywhere
[ 3]	OpenSSH	ALLOW IN	Anywhere
[ 4]	Samba	ALLOW IN	Anywhere
[ 5]	8080	ALLOW IN	Anywhere
[ 6]	9999/tcp (v6)	ALLOW IN	Anywhere (v6)
[ 7]	80 (v6)	ALLOW IN	Anywhere (v6)
[ 8]	OpenSSH (v6)	ALLOW IN	Anywhere (v6)
[ 9]	Samba (v6)	ALLOW IN	Anywhere (v6)
[10]	8080 (v6)	ALLOW IN	Anywhere (v6)

```
$ sudo ufw delete 5
```

```
:  
allow 8080  
(y|n)? y
```

```
$ sudo ufw delete 10
```

## 19.2

insert <<number>> RULE

<<number>> RULE<<number>>RULE

---

**x11vnc**

---

Ubuntu15.10MATE(on Raspberry Pi 2 model B)

```
$ sudo apt install x11vnc
$ sudo x11vnc -storepasswd /etc/x11vnc.pass
```

/lib/systemd/system/x11vnc.service

```
[Unit]
Description=Start x11vnc at startup.
After=multi-user.target

[Service]
Type=simple
ExecStart=/usr/bin/x11vnc -auth guess -forever -loop -noxdamage -repeat -rfbauth /etc/x11vnc.pass -r

[Install]
WantedBy=multi-user.target
```

```
$ sudo systemctl daemon-reload
$ sudo systemctl enable x11vnc.service
```

5900

```
$ sudo ufw allow 5900
```

```
$ sudo reboot
```

```
$ sudo gvncviewer 192.168.1.2:0
```

Nexus7vncVnc Viewer

## 20.1

<http://c-nergy.be/blog/?p=8361>



---

**mailmail**

---

ubuntu 15.10(i386)

gmail ssmtp

```
$ sudo apt install ssmtp
```

/etc/ssmtp/ssmtp.conf

hogehoge@gmail.com

fuga1234

root=hogehoge@gmail.com

mailhub=smtp.gmail.com:587

rewriteDomain=gmail.com

hostname=gmail.com

AuthUser=hogehoge@gmail.com

AuthPass=fuga1234

AuthMethod=LOGIN

UseSTARTTLS=YES

FromLineOverride=YES

## 21.1

test-mail.txt

To:hogehoge@gmail.com

From:hogehoge@gmail.com

Subject:test-mail

test-mail

```
$ sudo /usr/sbin/sendmail -t < test-mail.txt
```

Web

## 21.2 mail

mailUbuntu 16.04LTSapt

```
sudo apt install mailutils
```



---

**ffmpeg**


---

```
$ ffmpeg -f video4linux2 -list_formats all -i /dev/video1
```

```
ffmpeg version 2.7.6-0ubuntu0.15.10.1 Copyright (c) 2000-2016 the FFmpeg developers
```

```
built with gcc 5.2.1 (Ubuntu 5.2.1-22ubuntu2) 20151010
```

```
configuration: --prefix=/usr --extra-version=0ubuntu0.15.10.1 --build-suffix=-ffmpeg --toolchain=hardened --
libdir=/usr/lib/i386-linux-gnu --incdir=/usr/include/i386-linux-gnu --enable-gpl --enable-shared --disable-stripping
--enable-avresample --enable-avisynth --enable-frei0r --enable-gnutls --enable-ladspa --enable-libass --enable-libbluray
--enable-libbs2b --enable-libcaca --enable-libcdio --enable-libflite --enable-libfontconfig --enable-libfreetype --enable-
libfribidi --enable-libgme --enable-libgsm --enable-libmodplug --enable-libmp3lame --enable-libopenjpeg --enable-
openal --enable-libopus --enable-libpulse --enable-librtmp --enable-libschrödinger --enable-libshine --enable-libspeex
--enable-libtheora --enable-libtwolame --enable-libvorbis --enable-libvpx --enable-libwaypack --enable-libwebp
--enable-libxvid --enable-libzvb1 --enable-opengl --enable-x11grab --enable-libdc1394 --enable-libiec61883 --enable-
libzmq --enable-libssh --enable-libsoxr --enable-libx264 --enable-libopencv --enable-libx265 --disable-i686
```

```
libavutil 54. 27.100 / 54. 27.100
```

```
libavcodec 56. 41.100 / 56. 41.100
```

```
libavformat 56. 36.100 / 56. 36.100
```

```
libavdevice 56. 4.100 / 56. 4.100
```

```
libavfilter 5. 16.101 / 5. 16.101
```

```
libavresample 2. 1. 0 / 2. 1. 0
```

```
libswscale 3. 1.101 / 3. 1.101
```

```
libswresample 1. 2.100 / 1. 2.100
```

```
libpostproc 53. 3.100 / 53. 3.100
```

```
[video4linux2,v4l2 @ 0xa011d00] Raw : yuyv422 : YUYV 4:2:2 : 640x480 1280x720 960x544 800x448 640x360
424x240 352x288 320x240 800x600 176x144 160x120 1920x1080
```

```
[video4linux2,v4l2 @ 0xa011d00] Compressed: mjpeg : Motion-JPEG : 640x480 1920x1080 1280x720 960x544
800x448 640x360 800x600 432x240 352x288 176x144 320x240 160x120
```

```
[video4linux2,v4l2 @ 0xa011d00] Raw : Unsupported : YUV 4:2:0 (M420) : 640x480 1280x720 960x544 800x448
640x360 424x240 352x288 320x240 800x600 176x144 160x120 1920x1080
```



---

**bootstrap tips**

---

**23.1**

`modaldata-*on('click')...$(#modal).modal() data-toggle,data-targetbootstrap`



---

**beaker tips**

---

## 24.1 ID

```
session = request.environ.get('beaker.session')
logger.debug(request.get_cookie(session_opts['session.key']))
logger.debug(pformat(session.id))
```

session.id id get\_cookie'None'



---

## virtualenvvenv

---

Ubuntu 16.04LTS(Python 3.5.2)

### 25.1

Ubuntu 16.04LTS(i386)pyvenv

```
sudo apt install python3-venv
```

### 25.2

`${HOME}/.virtualenvs/py3bottle` `${HOME}/work/pyvenv/py3bottle`

1

```
mkdir -p ${HOME}/work/pyvenv
```

remoteurl

```
cd ${HOME}/.virtualenvs/py3bottle  
git remote -v
```

originURL

```
cd ${HOME}/work/pyvenv  
git clone ${HOME}/.virtualenv/py3bottle
```

git remote -v clone

```
git remote set-url origin <<url>>
```

venv

```
pyvenv py3bottle
```

## 25.3

```
source ${HOME}/work/pyvenv/py3bottle/bin/activate
```

alias

```
alias py3bottle source ${HOME}/work/pyvenv/py3bottle/bin/activate;cd ${VIRTUAL_ENV}
```

py3bottle

```
cd $VIRTUAL_ENV
```

## 25.4 venv

deactivate

## 25.5

virtualenvvenv



---

## Python unittestlogging

---

### 26.1

Python 3.5.2(Ubuntu 16.04LTS(i386))

### 26.2 in setUp()

setUp()loggerstreamHandler FileHandlerlog\_file

```
def setUp(self):
    """Open serial port."""
    self.ser = serial.Serial(com_port,
                             com_boud,
                             timeout=com_timeout)

    self.logger = getLogger(__name__)
    formatter = Formatter('%(asctime)s - '
                          '%(levelname)s - '
                          '%(filename)s:%(lineno)d - '
                          '%(funcName)s - '
                          '%(message)s')

    self.sh = FileHandler(log_file, delay=True)
    self.sh.setLevel(DEBUG)
    self.sh.setFormatter(formatter)
    self.logger.setLevel(DEBUG)
    self.logger.addHandler(self.sh)
```

tearDown()shloggerself.shself.logger

### 26.3 in tearDown()

sh.close()loggershremoveHandler()

sh.close()2testResouce warnng unclosed file(tail -f)

Handlerremovesuite Handler

```
def tearDown(self):
    """Closing serial port."""
    self.ser.close()
```

```
self.sh.close();  
self.logger.removeHandler(self.sh)
```

## 26.4

setUp()tearDown()

---

## arduino-mk with Arduino IDE 1.6.12

---

### 27.1

Python 3.5.2(Ubuntu 16.04LTS(i386))

pyserial==3.1.1

### 27.2 Install arduino-mk

```
git clone https://github.com/sudar/Arduino-Makefile.git
```

```
$(HOME)/work/Arduino-Makefile
```

### 27.3 Get Arduino IDE 1.6.12

ArduinoLinux32

```
$(HOME)/.arduino/arduino-1.6.12
```

### 27.4 Makefile

```
# Arduino Make file. Refer to https://github.com/sudar/Arduino-Makefile
ARDUINO_DIR = $(HOME)/.arduino/arduino-1.6.12
AVR_TOOLS_DIR = $(ARDUINO_DIR)/hardware/tools/avr
ARDMK_DIR = $(HOME)/work/Arduino-Makefile
BOARD_TAG = uno
MONITOR_PORT = /dev/ttyACM0
AVRDUDE_CONF = $(ARDUINO_DIR)/hardware/tools/avr/etc/avrdude.conf
include $(HOME)/work/Arduino-Makefile/Arduino.mk
```

```
Arduino$(HOME)/sketchbook/libraries ARDUINO_LIBS
```

```
# Arduino Make file. Refer to https://github.com/sudar/Arduino-Makefile
ARDUINO_DIR = $(HOME)/.arduino/arduino-1.6.12
AVR_TOOLS_DIR = $(ARDUINO_DIR)/hardware/tools/avr
ARDMK_DIR = $(HOME)/work/Arduino-Makefile
BOARD_TAG = uno
```

```
MONITOR_PORT = /dev/ttyACM0
AVRDUDE_CONF = $(ARDUINO_DIR)/hardware/tools/avr/etc/avrdude.conf
ARDUINO_LIBS += Wire Adafruit_MotorShield
include $(HOME)/work/Arduino-Makefile/Arduino.mk
```

## 27.5 make

compile

```
make
```

compile

```
make upload
```

## 27.6

ino serial

---

## Indices and tables

---

- `genindex`
- `modindex`
- `search`