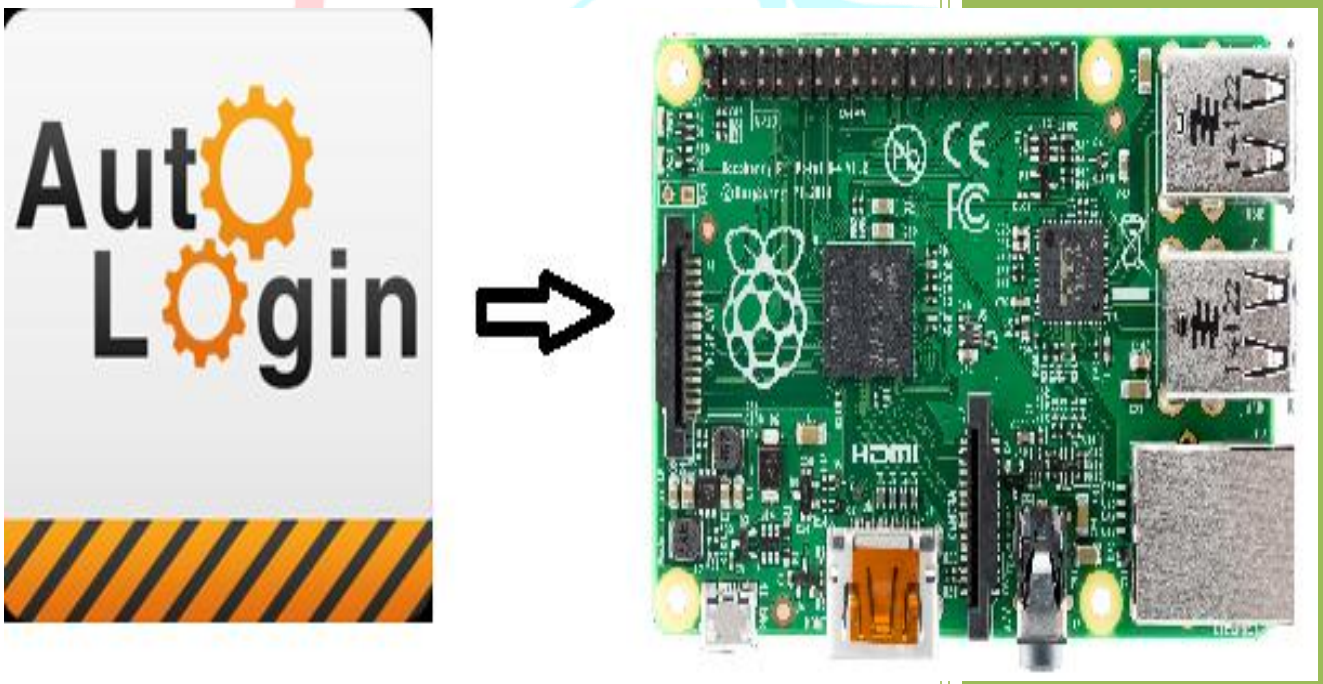
TENET TECHNETRONICS

2014

AUTO LOGIN AND AUTO START IN RASPBERRY PI



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Introduction:

There are loads of ways of running a command at start-up in raspbian but my favoured approach is to create an initialisation script in /etc/init.d and register it using update-rc.d. This way the application is started and stopped automatically when the system boots / shut downs.

Hardware requriment:

- ✓ Raspberry pi board
- ✓ 8GB sd card
- ✓ Micro usb Power supply

Software requriment :

- ✓ Raspbian.

Raspberry pi:

The raspberry pi is a credit-card size computer that plugs into your TV and a keyboard.it is a capbable little computer which can be used in electronics projects and for many of the things that your desktop pc does,like spreadsheets, word-processing, games and it also plays high-definition video. More info please click here

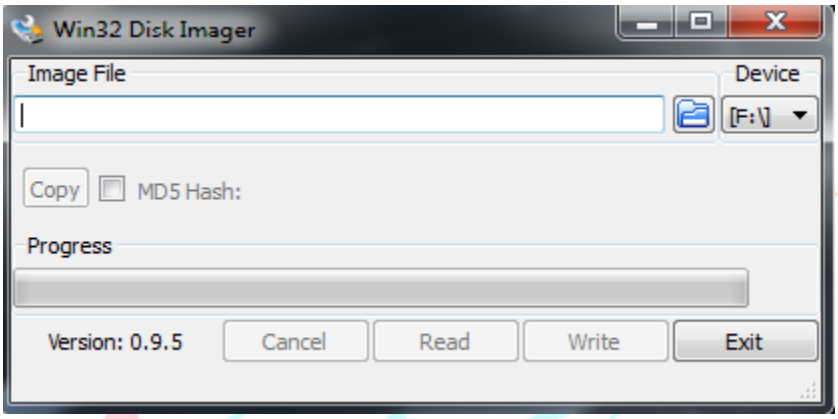
Booting with raspbian:

Step 1: Download the desired raspbian image from the downloads section of the raspberry pi. for downloading this operating system please click here.

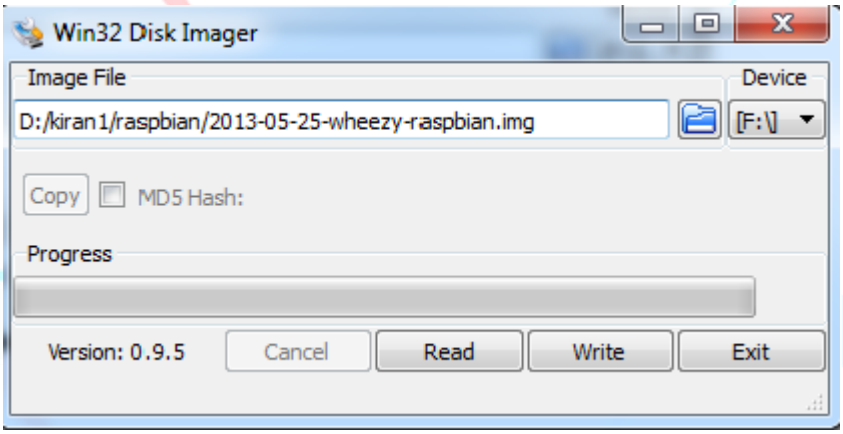
Step 2: SD card setup (copying the image to an SD card using on windows)

- Extract the image file 2013-05-25-wheezy-raspbian.img from the downloaded .zip file.
- Download the Win32DiskImager utility.

- Extract the executable from the zip file and run the Win32DiskImager utility. You may need to run the utility as Administrator
- Insert the SD card into your SD card reader and check what drive letter it was assigned.

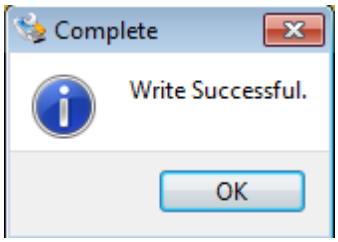


- You can easily see the drive letter (for example F:) by looking in the left column of Windows Explorer.
- If the card is not new, you should format it; otherwise Win32DiskImager may hang.
- Select the 2013-05-25-wheezy-raspbian.img image file you extracted earlier



- Select the drive letter of the SD card in the device box.
- Be careful to select the correct drive; if you get the wrong one you can destroy your computer's hard disk! .
- Click Write

- And wait for the write to complete.



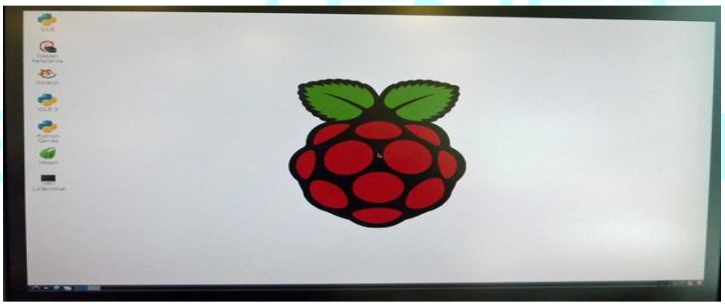
- Exit the imager and eject the SD card.

- Insert the card in the Raspberry Pi, power it on, and it should boot up. There is an option in the configure script that comes up to expand the partitions to use all of the SD card if you have used one larger than 4GB.

- Default login and password

  User name: pi

  Password: raspberry

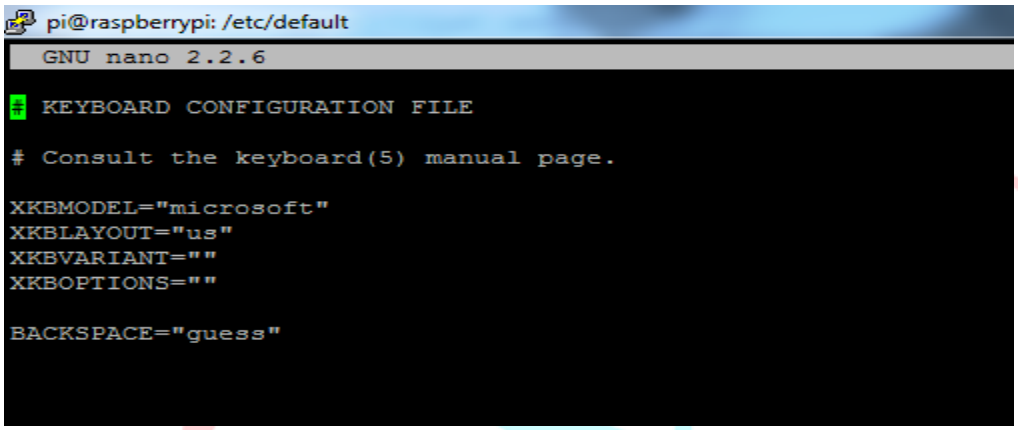


Connect ethernet cabel to raspberry pi

Step 3 :

The default keyboard settings are for a generic keyboard in a UK-style layout. If you want they keys to do what they're labeled to do. we can change the key board layout to US-style.

Give command as sudo nano /etc/defult/keybord make change as



First we have create python file to started and stopped exicution automatically when the system boots / shutdowns. a in my case I created a **sudo nano led.py**

Code :

```
import RPi.GPIO as GPIO ## Import GPIO library
from time import sleep
GPIO.setwarnings(False)
GPIO.setmode(GPIO.BOARD) ## Use board pin numbering
GPIO.setup(7, GPIO.OUT) ## Setup GPIO Pin 7 to OUT
while 1:
    GPIO.output(7,True) #pin 7 is now high
    sleep(2)
    GPIO.output(7,False)#pin7 is now low
    sleep(2)
```

The code is pretty straight forward. It starts by initializing the GPIO library. Then it sets the GPIO PIN7 to be an output. Next the code goes into an infinite loop. The loop turns the bulb off, then sleeps for a second, then turns the bulb on, and finally sleeps for one second

Create script in /etc/init.d

sudo nano /etc/init.d/NameOfYourScript

Change the name of the script and the command to start and stop it and it would work for any command**.**

```
#! /bin/sh
# /etc/init.d/tenettech

### BEGIN INIT INFO
# Provides:          noip
# Required-Start:    $remote_fs $syslog
# Required-Stop:     $remote_fs $syslog
# Default-Start:     2 3 4 5
# Default-Stop:      0 1 6
# Short-Description: Simple script to start a program at boot
# Description:       A simple script from www.stuffaboutcode.com which will sta$
### END INIT INFO

# If you want a command to always run, put it here

# Carry out specific functions when asked to by the system
export HOME
case "$1" in
  start)
echo "Starting script"
    # run application you want to start
    sudo /usr/bin/python /home/pi/led.py 2>&1 &
    ;;
```

```
  stop)
    echo "Stopping script"
    # kill application you want to stop
    PID='ps auxwww |grep led.py | head -1 | awk '{print $2}''
    kill -9 $PID
     killall NameOfYourScript
;;
  *)
    echo "Usage: /etc/init.d/NameOfYourScript {start|stopsudo  sudo ls}"
    exit 1
    ;;
esac

exit 0
```

Make script executable

sudo chmod 755 /etc/init.d/NameOfYourScript

Test starting the program

sudo /etc/init.d/NameOfYourScript start

To register your script to be run at start-up and shutdown, run the following command:

sudo update-rc.d NameOfYourScript defaults

If you ever want to remove the script from start-up, run the following command:

sudo update-rc.d -f NameOfYourScript remove

Raspberry PI Auto Run Application on Raspbian

How to automatically login to Raspberry Pi console as pi user.

Step 4: Disable the getty program.

Navigate to the following line in inittab

1:2345:respawn:/sbin/getty 115200 tty1

And add a # at the beginning of the line to comment it out

#1:2345:respawn:/sbin/getty 115200 tty1

Step 5: Add login program to inittab.

Add the following line just below the commented line

1:2345:respawn:/bin/login -f pi tty1 </dev/tty1 >/dev/tty1 2>&1

This will run the login program with pi user and without any authentication

Step 6: Save and Exit.

Press Ctrl+X to exit nano editor followed by Y to save the file and then press Enter to confirm the filename.

Reboot the pi and it will boot straight on to the shell prompt pi@raspberrypi without prompting you to enter username or password.

Step 7: Open a terminal session and edit inittab file.

Open start manager showing hidden files press ctrl+H

open **.bashrc** add application to run at bottom of the file.

Omxplayer ki.mp4

Ki.mp4 is the saved video in our raspberry pi

Save the file and reboot it Video will automatically play at power up.

Training

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/home/pi/opencv-2.4.9/PiAUISuite/VoiceCommand