

Chapter 1: Installation and Setup

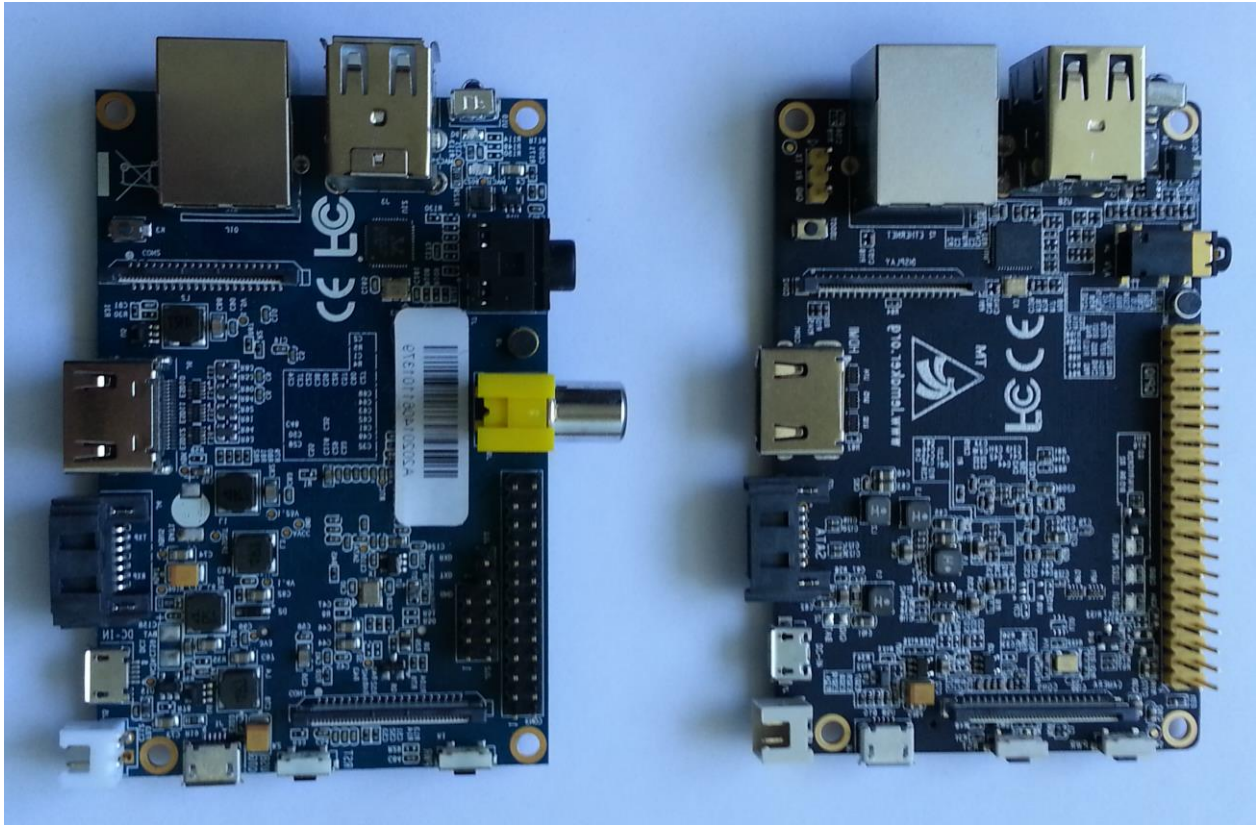






Image Files

Products

- Banana Pro
- Banana Pi

 <p>Open Media Vault For BananaPi updated : Mon Jun 15, 2015 05:35</p> <p>download</p>	 <p>ArchLinux For BananaPi updated : Mon Jun 15, 2015 05:34</p> <p>download</p>
 <p>OpenWrt For BananaPi updated : Mon Jun 15, 2015 05:34</p> <p>download</p>	 <p>Gentoo For BananaPi updated : Mon Jun 15, 2015 05:33</p> <p>download</p>

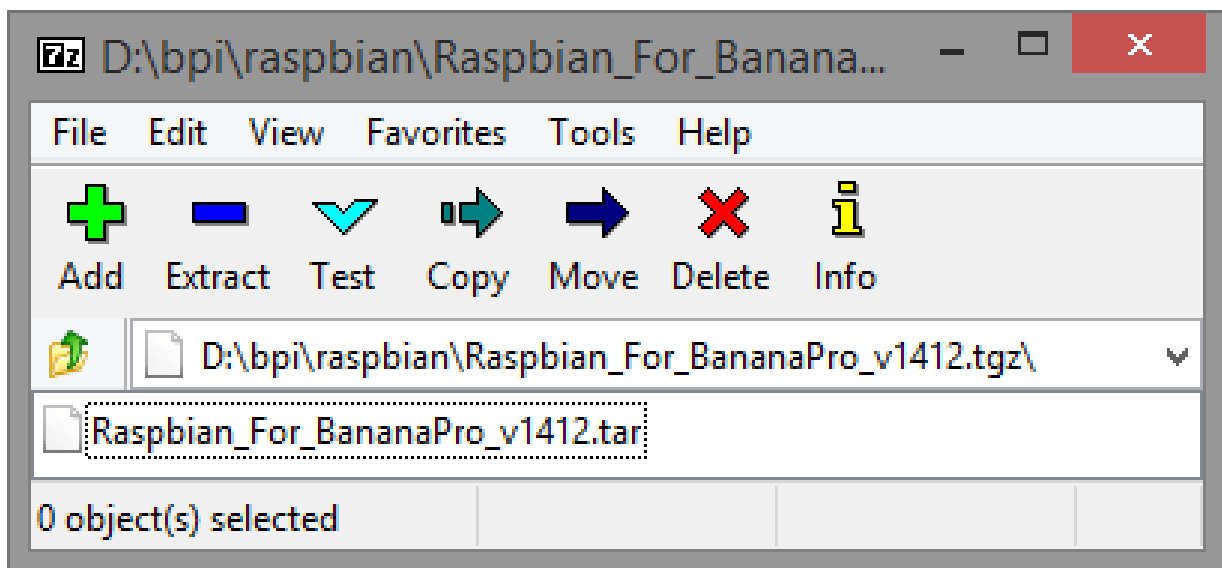
Raspbian For BananaPro

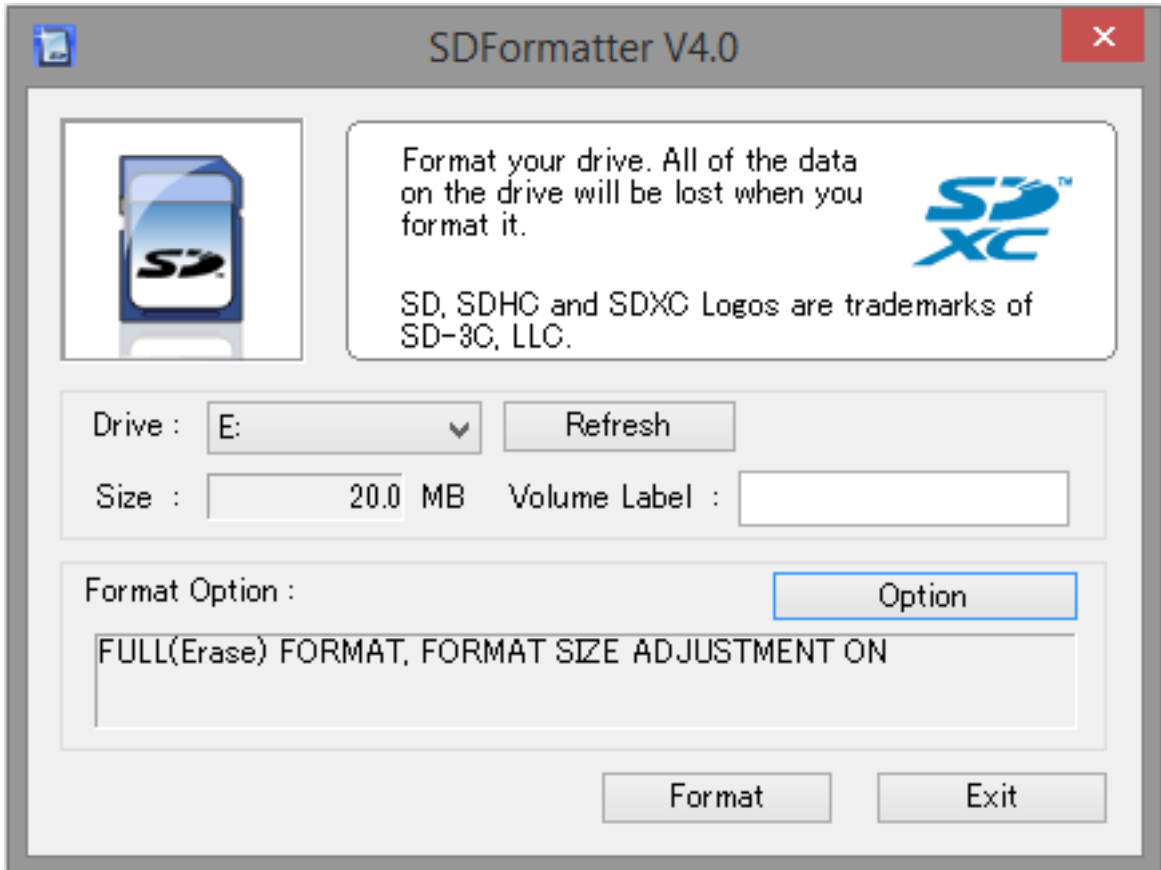
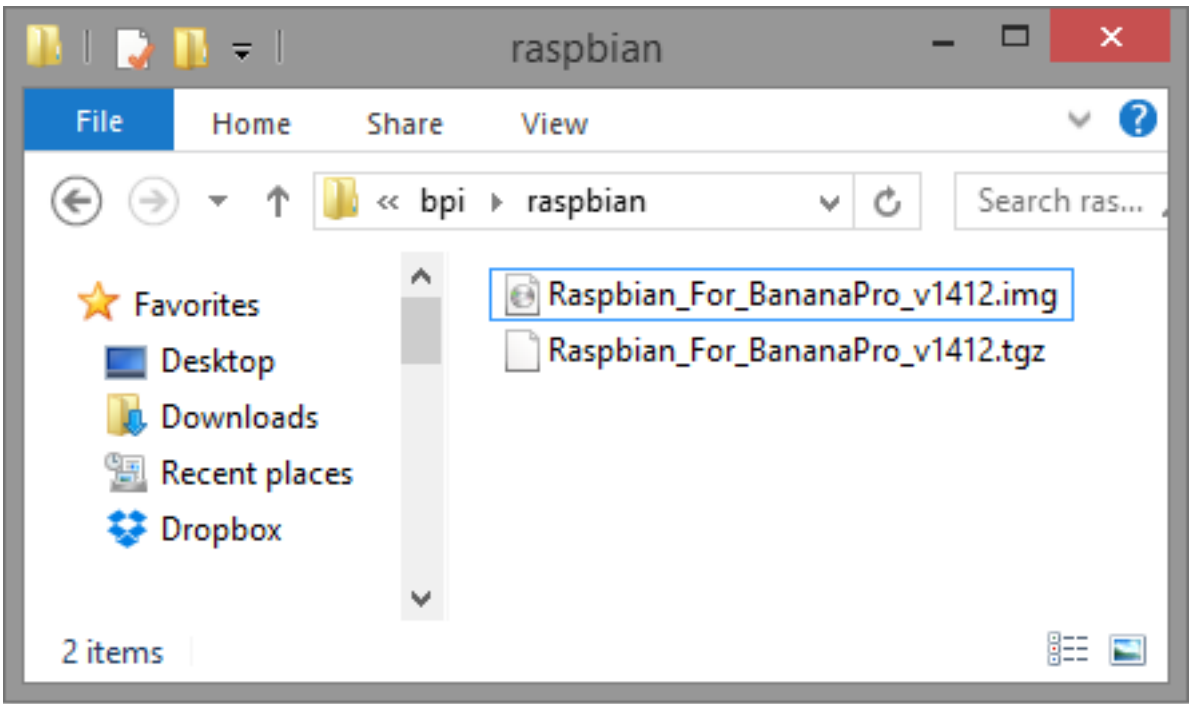
2014-12-30 21:52:00

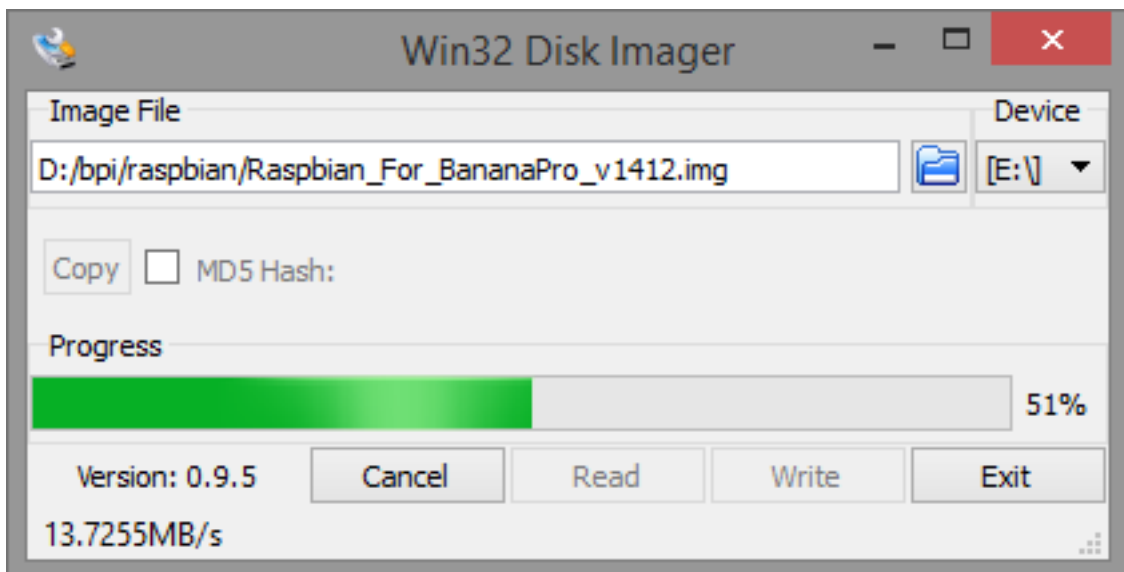
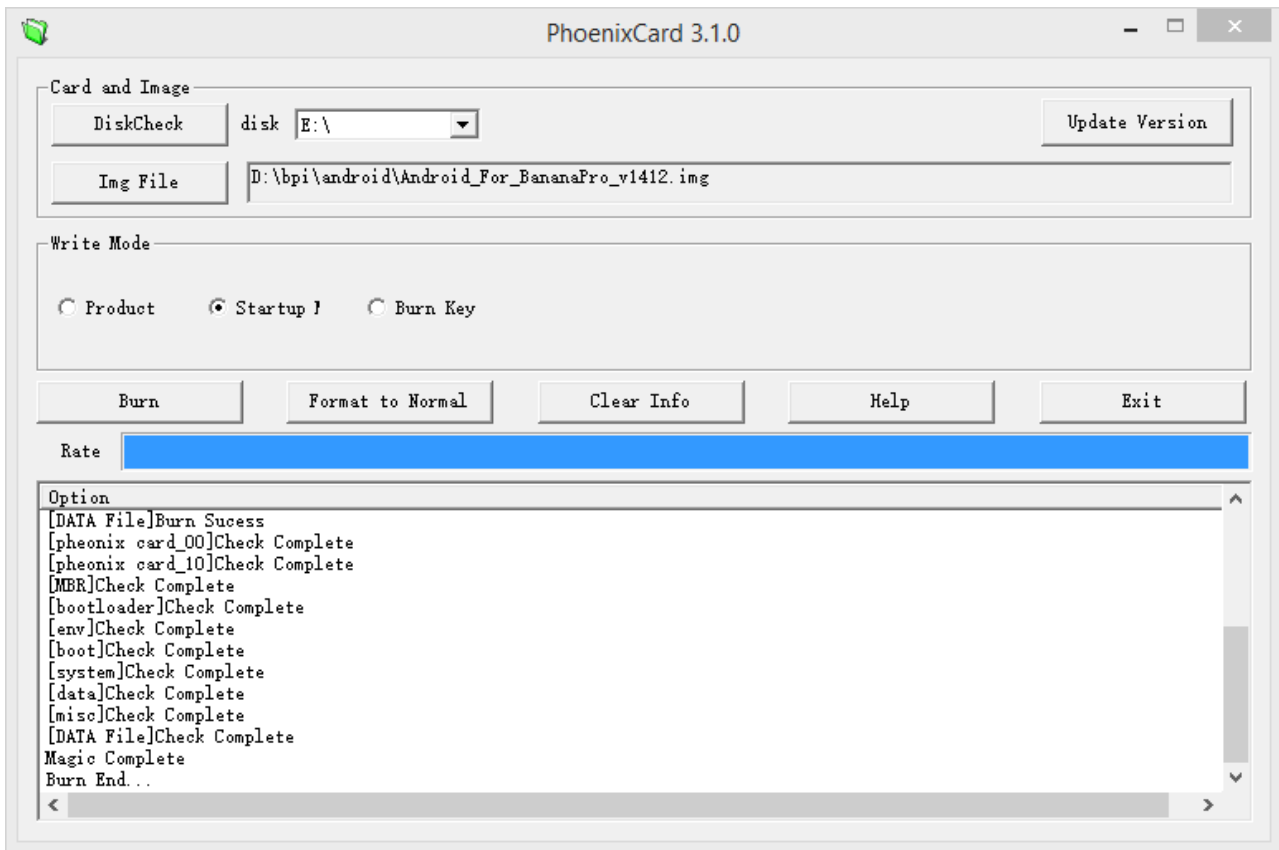
If you want to download the OS image version for Banana Pi, please click here:

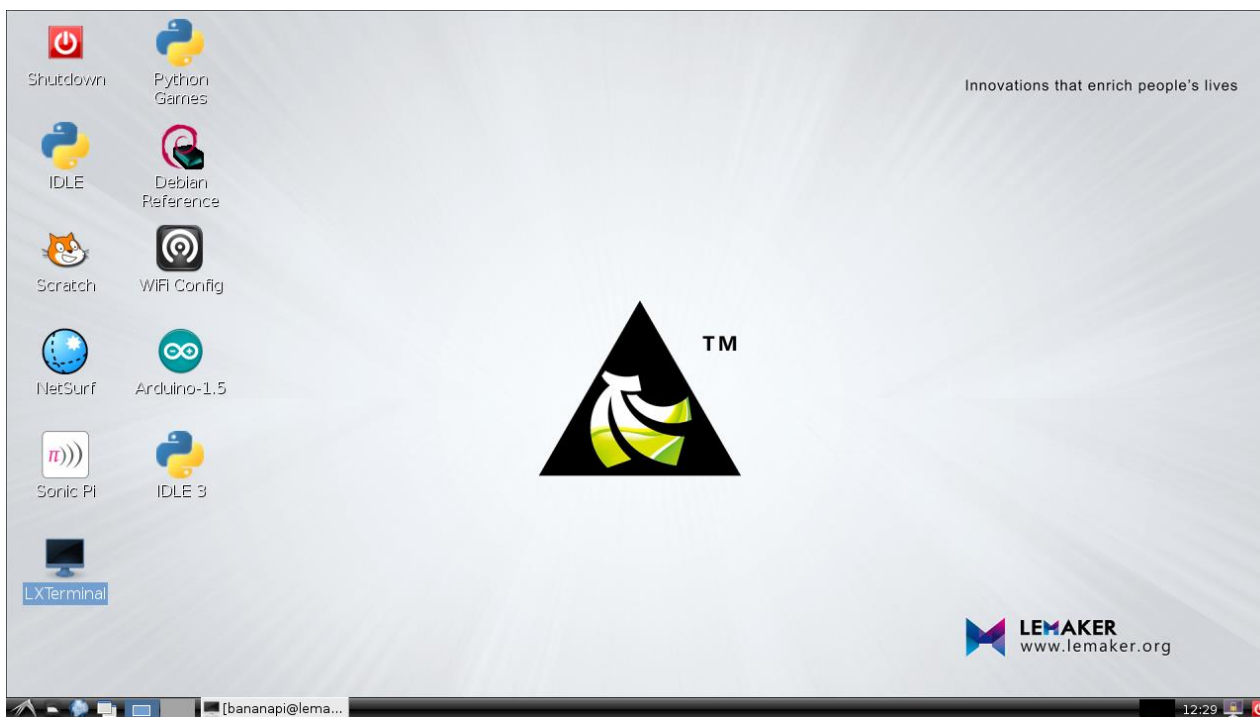
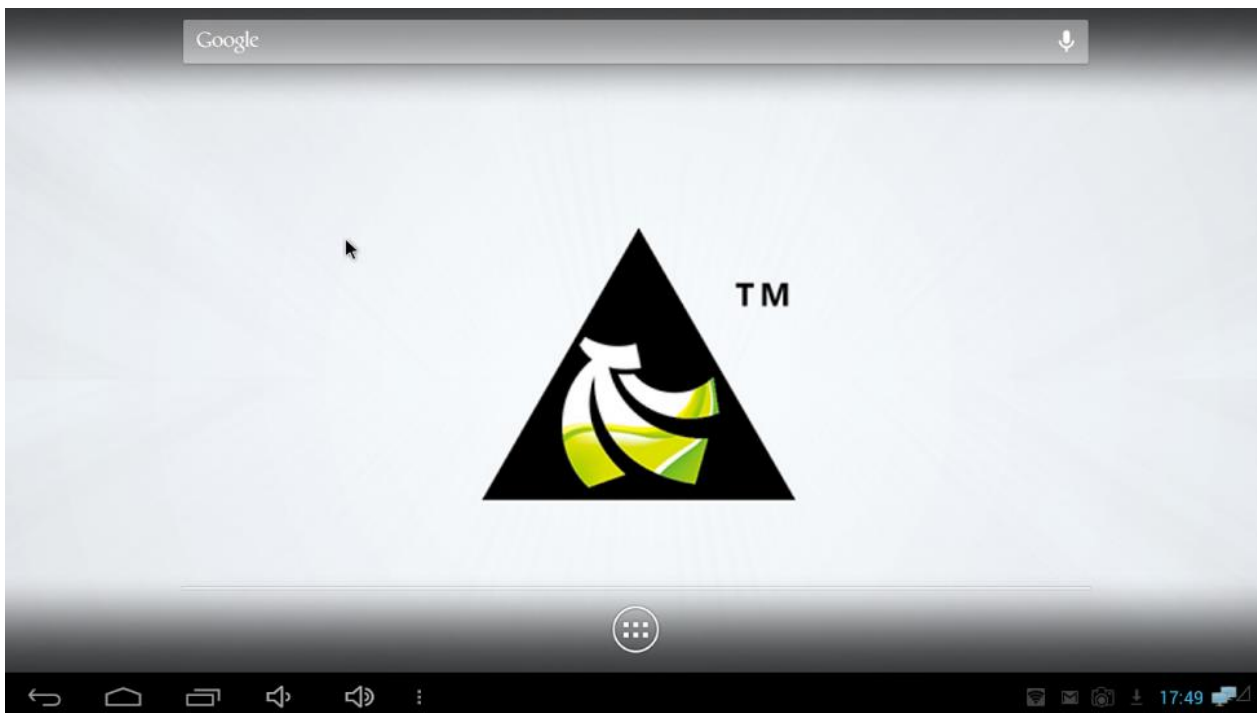


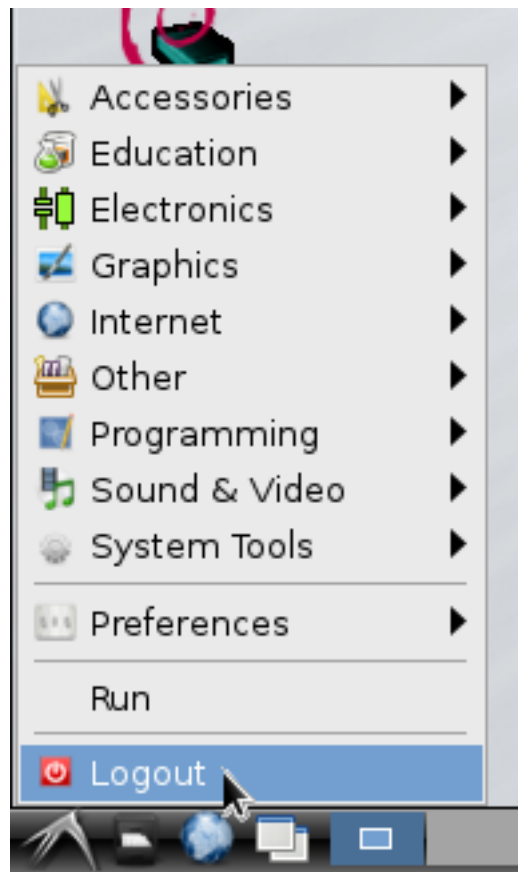
Raspbian For BananaPro v1412

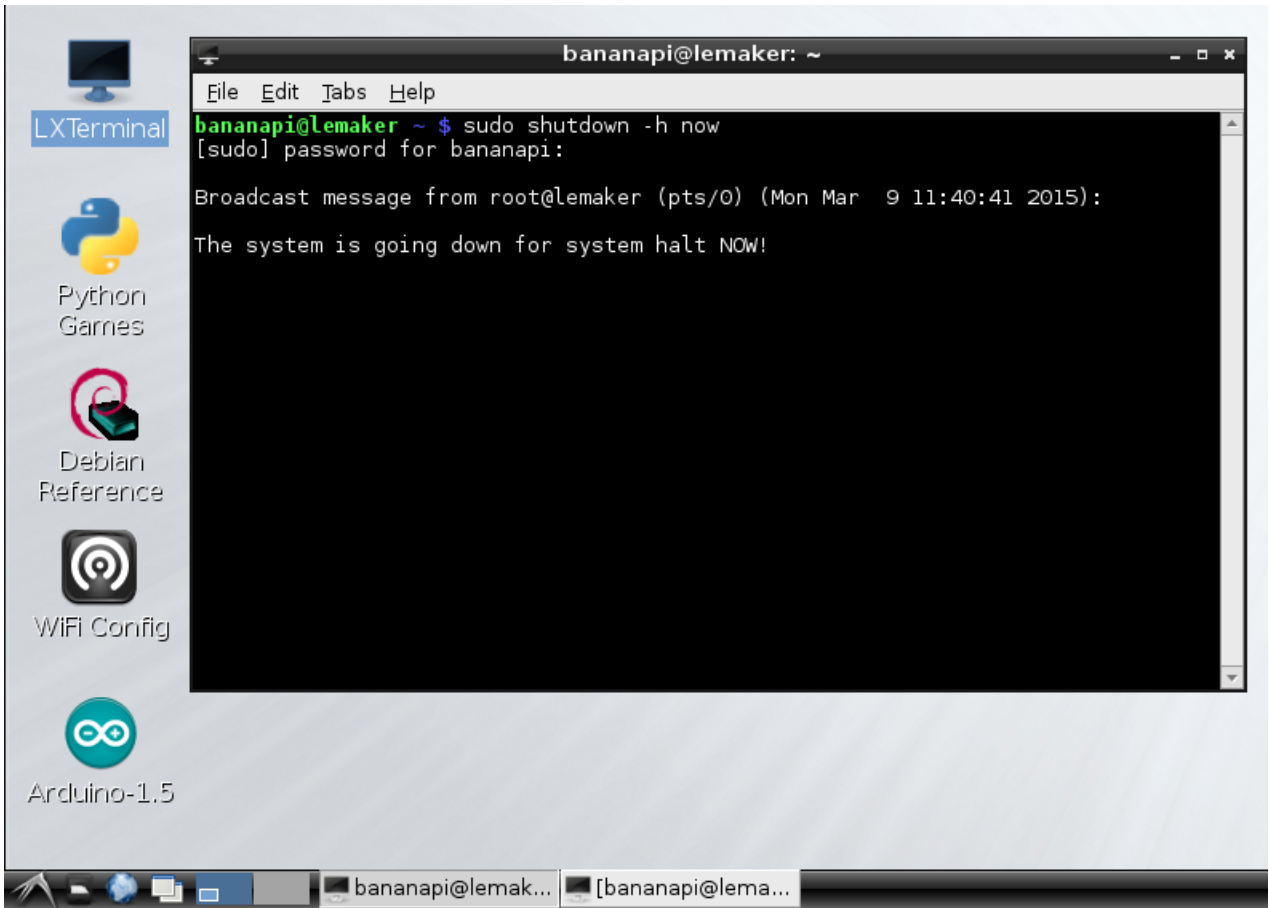










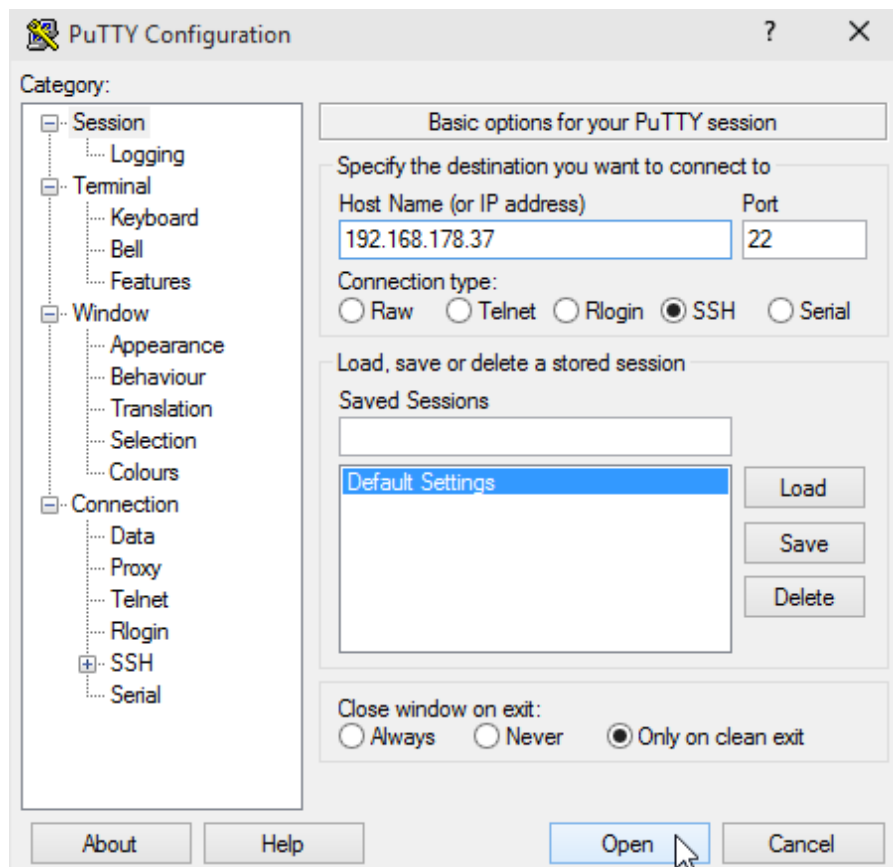


Chapter 2: Administration

```
bananapi@lemaker ~ $ ifconfig eth0
eth0      Link encap:Ethernet  HWaddr 02:05:04:80:f6:b0
          inet addr:192.168.178.37  Bcast:192.168.178.255  Mask:255.255.255.0
          inet6 addr: fe80::5:4ff:fe80:f6b0/64  Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:299 errors:0 dropped:0 overruns:0 frame:0
          TX packets:235 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:28645 (27.9 KiB)  TX bytes:39482 (38.5 KiB)
          Interrupt:117 Base address:0xc000

bananapi@lemaker ~ $ hostname
lemaker
bananapi@lemaker ~ $ █
```

```
bananapi@lemaker ~ $ ifconfig eth0 | grep "inet addr"
      inet addr:192.168.178.37  Bcast:192.168.178.255  Mask:255.255.255.0
bananapi@lemaker ~ $ █
```




```
bananapi@lemaker: ~  
login as: bananapi  
bananapi@192.168.178.37's password:  
Linux lemaker 3.4.103 #4 SMP PREEMPT Thu Dec 18 12:55:58 CST 2014 armv7l  
  
The programs included with the Debian GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent  
permitted by applicable law.  
bananapi@lemaker ~ $ █
```

```
Terminal - bananapi@lemaker: ~  
File Edit View Terminal Tabs Help  
rel@gs70 ~ $ ssh bananapi@lemaker  
The authenticity of host 'lemaker (192.168.178.37)' can't be established.  
ECDSA key fingerprint is a3:0c:f2:26:f5:8e:a7:3d:ab:63:a9:b5:dc:92:7c:98.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added 'lemaker,192.168.178.37' (ECDSA) to the list of known  
hosts.  
bananapi@lemaker's password:  
Linux lemaker 3.4.103 #4 SMP PREEMPT Thu Dec 18 12:55:58 CST 2014 armv7l  
  
The programs included with the Debian GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent  
permitted by applicable law.  
bananapi@lemaker ~ $ █
```

```
bananapi@lemaker ~ $ sudo useradd -m -s /bin/bash alice
bananapi@lemaker ~ $ groups
pi adm dialout cdrom sudo audio video plugdev games users netdev input indiecity
spi gpio
bananapi@lemaker ~ $ sudo usermod -a -G pi,adm,dialout,cdrom,sudo,audio,video,plugdev,games,users,netdev,input,indiecity,spi,gpio alice
bananapi@lemaker ~ $ sudo passwd alice
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
bananapi@lemaker ~ $
```

```
bananapi@lemaker ~ $ id
uid=1000(bananapi) gid=1000(pi) groups=1000(pi),4(adm),20(dialout),24(cdrom),27(sudo),29(audio),44(video),46(plugdev),60(games),100(users),105(netdev),999(input),1001(indiecity),1002(spi),1003(gpio)
```

```
bananapi@lemaker ~ $ apt-cache search solitaire
ace-of-penguins - penguin-themed solitaire games
aisleriot - GNOME solitaire card game collection
freecell-solver-bin - Library for solving Freecell games
jester - board game similar to Othello
kmahjongg - mahjongg solitaire game
kpat - solitaire card games
kshisen - Shisen-Sho solitaire game
libfreecell-solver-dev - Library for solving Freecell games (Development files)
libfreecell-solver0 - Library for solving Freecell games
mah-jong - Original Mah-Jong game
mahjongg - classic Eastern tile game for GNOME
ncurses-examples - test programs and examples for ncurses
peg-e - peg elimination solitaire game
peg-solitaire - Board game for one player with pegs
pegsolitaire - An education game similar to Hi-Q
pysolfc - collection of more than 1000 solitaire card games
sgt-puzzles - Simon Tatham's Portable Puzzle Collection - 1-player puzzle games
vdr-plugin-solitaire - Plugin to vdr that implements the card game "Solitaire"
xmahjongg - tile-based solitaire game
xsol - Solitaire game for the X Window system
```

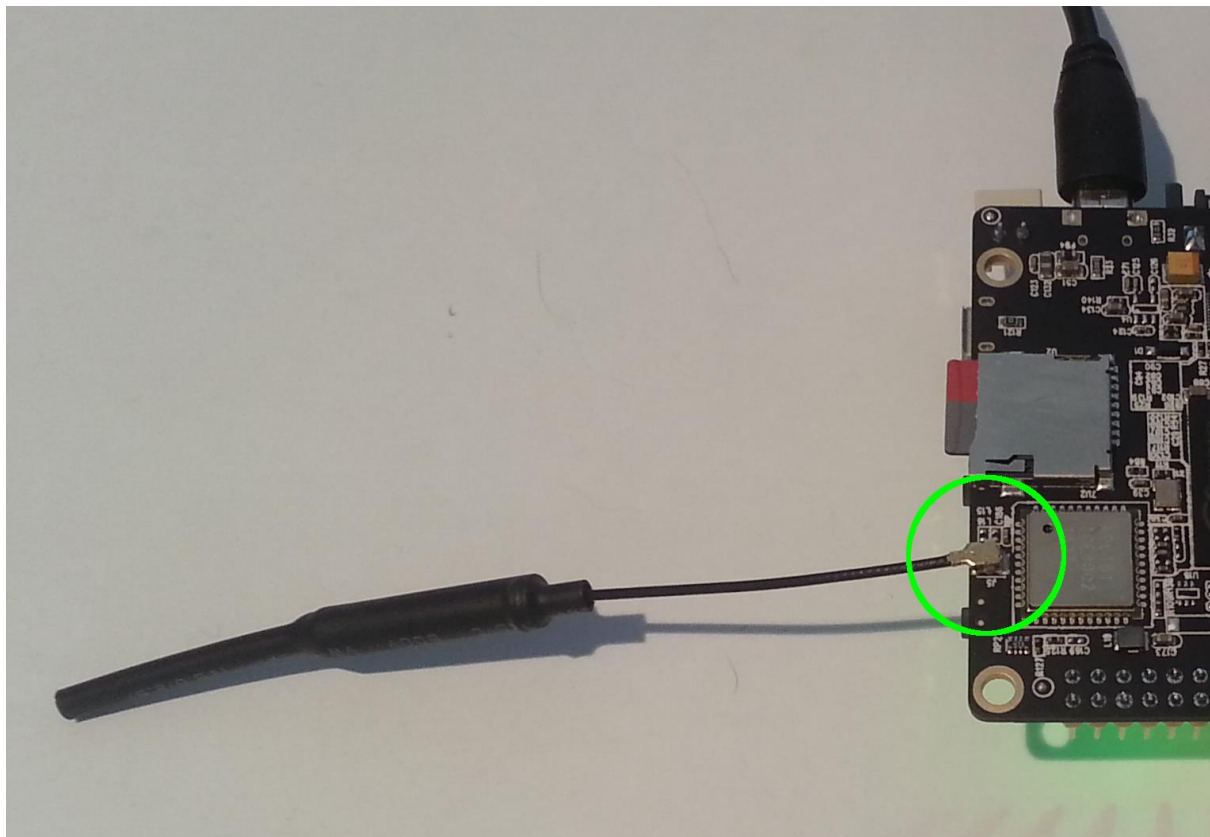
```
bananapi@lemaker ~ $ sudo apt-get install ace-of-penguins
[sudo] password for bananapi:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  ace-of-penguins
0 upgraded, 1 newly installed, 0 to remove and 36 not upgraded.
Need to get 264 kB of archives.
After this operation, 578 kB of additional disk space will be used.
Get:1 http://mirrordirector.raspbian.org/raspbian/ wheezy/main ace-of-penguins armhf 1.3-8 [264 kB]
Fetched 264 kB in 5s (49.4 kB/s)
Selecting previously unselected package ace-of-penguins.
(Reading database ... 67876 files and directories currently installed.)
Unpacking ace-of-penguins (from ../ace-of-penguins_1.3-8_armhf.deb) ...
Processing triggers for desktop-file-utils ...
Processing triggers for hicolor-icon-theme ...
Processing triggers for menu ...
Processing triggers for man-db ...
Setting up ace-of-penguins (1.3-8) ...
Processing triggers for menu ...
bananapi@lemaker ~ $
```



```
bananapi@lemaker ~ $ sudo apt-get update
Get:1 http://archive.raspberrypi.org wheezy Release.gpg [490 B]
Get:2 http://mirrordirector.raspbian.org wheezy Release.gpg [490 B]
Get:3 http://mirrordirector.raspbian.org wheezy Release [14.4 kB]
Get:4 http://archive.raspberrypi.org wheezy Release [10.2 kB]
Get:5 http://raspberrypi.collabora.com wheezy Release.gpg [836 B]
Get:6 http://raspberrypi.collabora.com wheezy Release [7,514 B]
Get:7 http://mirrordirector.raspbian.org wheezy/main armhf Packages [6,897 kB]
Get:8 http://archive.raspberrypi.org wheezy/main armhf Packages [108 kB]
Get:9 http://raspberrypi.collabora.com wheezy/rpi armhf Packages [2,214 B]
Hit http://repository.wolfram.com stable Release.gpg
Hit http://repository.wolfram.com stable Release
Hit http://repository.wolfram.com stable/non-free armhf Packages
Ign http://raspberrypi.collabora.com wheezy/rpi Translation-en_GB
Ign http://raspberrypi.collabora.com wheezy/rpi Translation-en
Ign http://archive.raspberrypi.org wheezy/main Translation-en_GB
Ign http://archive.raspberrypi.org wheezy/main Translation-en
Ign http://repository.wolfram.com stable/non-free Translation-en_GB
Ign http://repository.wolfram.com stable/non-free Translation-en
Hit http://mirrordirector.raspbian.org wheezy/contrib armhf Packages
Hit http://mirrordirector.raspbian.org wheezy/non-free armhf Packages
Hit http://mirrordirector.raspbian.org wheezy/rpi armhf Packages
Ign http://mirrordirector.raspbian.org wheezy/contrib Translation-en_GB
Ign http://mirrordirector.raspbian.org wheezy/contrib Translation-en
Ign http://mirrordirector.raspbian.org wheezy/main Translation-en_GB
Ign http://mirrordirector.raspbian.org wheezy/main Translation-en
Ign http://mirrordirector.raspbian.org wheezy/non-free Translation-en_GB
Ign http://mirrordirector.raspbian.org wheezy/non-free Translation-en
Ign http://mirrordirector.raspbian.org wheezy/rpi Translation-en_GB
Ign http://mirrordirector.raspbian.org wheezy/rpi Translation-en
Fetched 7,041 kB in 19s (362 kB/s)
Reading package lists... Done
```

```
bananapi@lemaker ~ $ sudo apt-get dist-upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages will be REMOVED:
  libfm-gtk-bin libfm-gtk1 libfm1
The following NEW packages will be installed:
  init-system-helpers libfm-extra4 libfm-gtk-data libfm-gtk4 libfm-modules
  libfm4 libpng12-dev libqt4-network libssh-4 lxpanel-data
The following packages will be upgraded:
  apt apt-utils base-files bash ca-certificates cpio cups-bsd cups-client
  cups-common curl dbus dbus-x11 dosfstools e2fslibs e2fsprogs fake-hwclock
  file firmware-brcm80211 gnome-themes-standard-data gnupg gpgv krb5-locales
  libapt-inst1.5 libapt-pkg-dev libapt-pkg4.12 libarchive12 libavcodec53
  libavutil51 libc-bin libc-dev-bin libc6 libc6-dev libcomerr2 libcups2
  libcupsimage2 libcurl3 libcurl3-gnutls libdbus-1-3 libevent-2.0-5 libflac8
  libfm-data libfreetype6 libfreetype6-dev libgcrypt11 libgssapi-krb5-2
  libjasper1 libjavascriptcoregtk-3.0-0 libk5crypto3 libkeyutils1 libkrb5-3
  libkrb5support0 libmagic1 libpixmap-1-0 libsmbclient libss2 libssh2-1
  libssl1.0.0 libtasn1-3 libwbclient0 libwebkitgtk-3.0-0
  libwebkitgtk-3.0-common libxml2 libyaml-0-2 locales lxpanel mime-support
  multiarch-support ntp omxplayer openssl pcmanfm perl perl-base perl-modules
  raspberrypi-artwork raspi-config rsyslog samba-common smbclient sonic-pi
  sudo tzdata unzip wget wpagui wpasupplicant xdg-utils xserver-common
  xserver-xorg-core
89 upgraded, 10 newly installed, 3 to remove and 0 not upgraded.
Need to get 109 MB of archives.
After this operation, 24.4 MB of additional disk space will be used.
Do you want to continue [Y/n]? 
```

```
Configuration file `/etc/bash.bashrc'
==> Modified (by you or by a script) since installation.
==> Package distributor has shipped an updated version.
What would you like to do about it? Your options are:
  Y or I : install the package maintainer's version
  N or O : keep your currently-installed version
  D      : show the differences between the versions
  Z      : start a shell to examine the situation
The default action is to keep your current version.
*** bash.bashrc (Y/I/N/O/D/Z) [default=N] ? n
```



```
bananapi@lemaker ~ $ sudo modprobe ap6210
[sudo] password for bananapi:
bananapi@lemaker ~ $ lsmod
Module                Size      Used by
ap6210                 584133    0
mali_drm               2608      0
drm                   209226    1 mali_drm
mali                   111427    0
ump                    52415     1 mali
```

IDLE



Scratch



Sonic Pi



Python Games



Debian Reference



Shutdown



WiFi Config

wpa_

File Network Help

Adapter:

Network:

Current Status Man

Enabled

Disabled

Add Scan

NetworkConfig

SSID: my wireless network

Authentication: WPA2-Personal (PSK)

Encryption: CCMP

PSK: *****

EAP method: MD5

Identity:

Password:

CA certificate:

WEP keys:

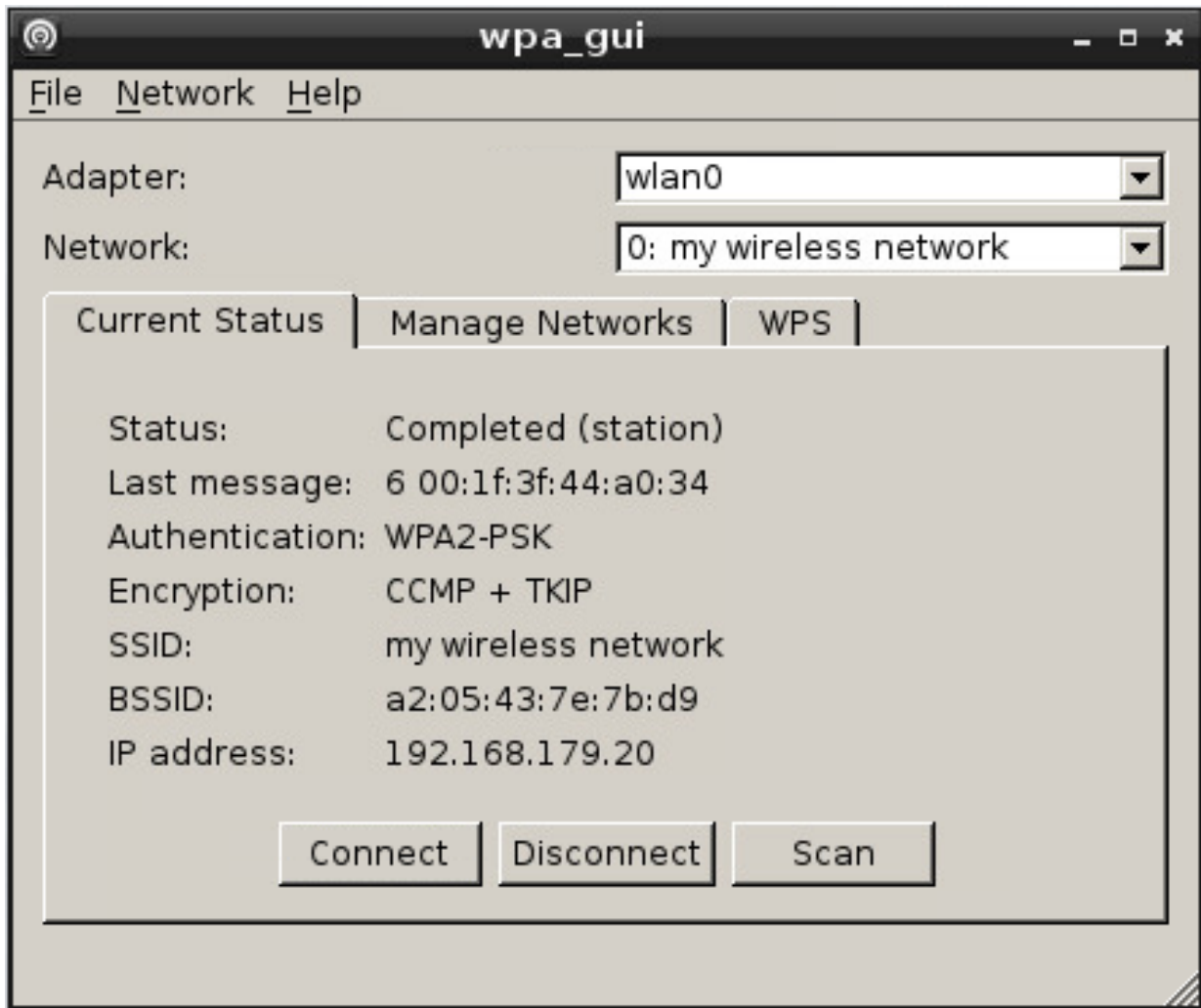
- key 0
- key 1
- key 2
- key 3

Optional Settings:

IDString: Priority: 0

Inner auth:

WPS Add Remove



```

GNU nano 2.2.6          File: interfaces          Modified
auto lo
iface lo inet loopback
iface eth0 inet dhcp

#allow-hotplug wlan0
#iface wlan0 inet manual
#wpa-roam /etc/wpa_supplicant/wpa_supplicant.conf
iface default inet dhcp

auto wlan0
iface wlan0 inet dhcp
    wpa-ssid "my wireless network"
    wpa-psk "TheBananaPiRocks"

```

[^]G Get Help [^]O WriteOut [^]R Read File [^]Y Prev Page [^]K Cut Text [^]C Cur Pos
[^]X Exit [^]J Justify [^]W Where Is [^]V Next Page [^]U UnCut Text [^]T To Spell

```

auto wlan0
iface wlan0 inet dhcp
    wpa-ssid "my wireless network"
    wpa-psk c0700763a5b29df7805d384877db846a72e1dc021bce7167f6e9d97ea72bc4df

```

PuTTY Security Alert



The server's host key is not cached in the registry. You have no guarantee that the server is the computer you think it is.

The server's rsa2 key fingerprint is:
ssh-rsa 2048 5f:b7:5b:b6:e6:48:e6:32:21:8e:f4:8b:b9:ed:60:e0

If you trust this host, hit Yes to add the key to PuTTY's cache and carry on connecting.

If you want to carry on connecting just once, without adding the key to the cache, hit No.

If you do not trust this host, hit Cancel to abandon the connection.

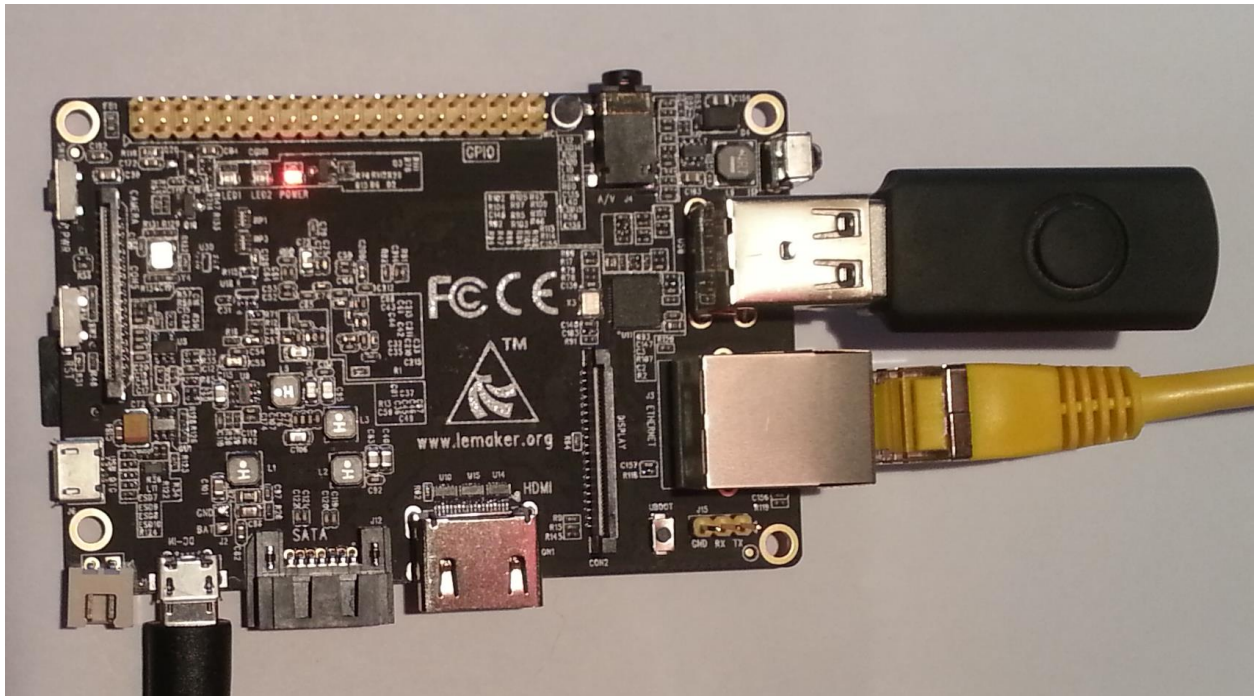
Yes

No

Cancel

Help

Chapter 3: External Disks



```
bananapi@lemaker ~ $ sudo fdisk -l
[sudo] password for bananapi:

Disk /dev/sda: 16.3 GB, 16307384320 bytes
60 heads, 24 sectors/track, 22118 cylinders, total 31850360 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x1bbef84

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1                2048     31850359    15924156   b   W95 FAT32

Disk /dev/mmcblk0: 7948 MB, 7948206080 bytes
4 heads, 16 sectors/track, 242560 cylinders, total 15523840 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00090806

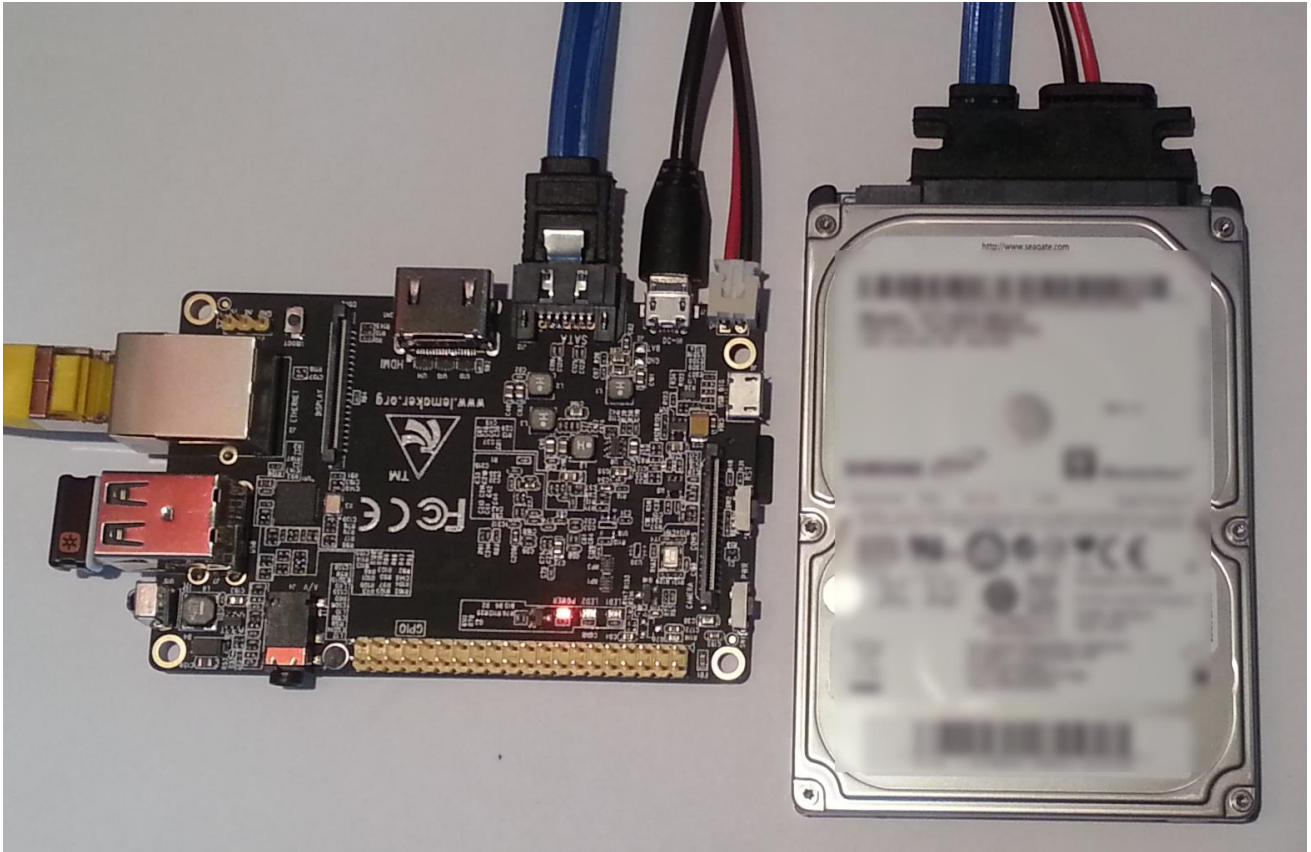
   Device Boot      Start         End      Blocks   Id  System
/dev/mmcblk0p1            8192     122879       57344    c   W95 FAT32 (LBA)
/dev/mmcblk0p2       122880     6399999    3138560    83   Linux
```

```
bananapi@lemaker ~ $ mount | grep sda
/dev/sda1 on /media/USB FLASH type vfat (rw,nosuid,nodev,relatime,uid=1000,gid=1000,fmask=0022,dmask=0077,codepage=cp437,ioccharset=ascii,shortname=mixed,showexec,utf8,flush,errors=remount-ro,uhelper=udisks)
```

```

bananapi@lemaker ~ $ sudo mkdir /media/usb_drive
bananapi@lemaker ~ $ sudo mount -o umask=000 /dev/sda1 /media/usb_drive
bananapi@lemaker ~ $ ls -la /media/usb_drive
total 36
drwxrwxrwx 4 root root 8192 Jan  1  1970 .
drwxr-xr-x 3 root root 4096 Mar 14  07:29 ..
drwxrwxrwx 2 root root 8192 Mar 14  07:27 another_directory
-rwxrwxrwx 1 root root  15 Mar 14  07:27 hello_world.txt
drwxrwxrwx 2 root root 8192 Mar 14  07:27 nice_directory

```



```

bananapi@lemaker ~ $ sudo blkid
/dev/mmcblk0p1: SEC_TYPE="msdos" LABEL="boot" UUID="787C-2FD4" TYPE="vfat"
/dev/mmcblk0p2: UUID="3d81d9e2-7d1b-4015-8c2c-29ec0875f762" TYPE="ext4"
/dev/sda1: UUID="c4f56218-9353-4758-a5f9-1a2eac08130d" TYPE="ext4"
/dev/sda2: UUID="298E-093C" TYPE="vfat"
/dev/sda3: UUID="7C4F20B572AAB23E" TYPE="ntfs"

```

```

GNU nano 2.2.6      File: /etc/fstab      Modified
proc                /proc              proc              defaults          0          0
/dev/mmcblk0p1     /boot              vfat              defaults          0          2
/dev/mmcblk0p2     /                  ext4              defaults,noatime  0          1
#/dev/sda1         /                  ext4              defaults,noatime  0          1
# a swapfile is not a swap partition, so no using swapon|off from here on, use $
/dev/sda1          /mnt/ext4_partition ext4              defaults          0          2
/dev/sda2          /mnt/fat_partition vfat              defaults          0          0
/dev/sda3          /mnt/ntfs_partition ntfs              defaults          0          0

```

[^]G Get Help [^]O WriteOut [^]R Read File [^]Y Prev Page [^]K Cut Text [^]C Cur Pos
[^]X Exit [^]J Justify [^]W Where Is [^]V Next Page [^]U UnCut Text [^]T To Spell

```
bananapi@lemaker ~ $ sudo fdisk /dev/sda
```

The device presents a logical sector size that is smaller than the physical sector size. Aligning to a physical sector (or optimal I/O) size boundary is recommended, or performance may be impacted.

```
Command (m for help): p
```

```
Disk /dev/sda: 1000.2 GB, 1000204886016 bytes
255 heads, 63 sectors/track, 121601 cylinders, total 1953525168 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
Disk identifier: 0x0005fd05
```

Device	Boot	Start	End	Blocks	Id	System
/dev/sda1		2048	1468008447	734003200	7	HPFS/NTFS/exFAT
/dev/sda2		1468008448	1953521663	242756608	83	Linux

```
Command (m for help): d
Partition number (1-4): 1
```

```
Command (m for help): d
Selected partition 2
```

```
Command (m for help): n
Partition type:
  p   primary (0 primary, 0 extended, 4 free)
  e   extended
```

```
Select (default p):
```

```
Using default response p
```

```
Partition number (1-4, default 1):
```

```
Using default value 1
```

```
First sector (2048-1953525167, default 2048):
```

```
Using default value 2048
```

```
Last sector, +sectors or +size{K,M,G} (2048-1953525167, default 1953525167):
```

```
Using default value 1953525167
```

```
Command (m for help): p
```

```
Disk /dev/sda: 1000.2 GB, 1000204886016 bytes
255 heads, 63 sectors/track, 121601 cylinders, total 1953525168 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
Disk identifier: 0x0005fd05
```

Device	Boot	Start	End	Blocks	Id	System
/dev/sda1		2048	1953525167	976761560	83	Linux

```
Command (m for help): w
The partition table has been altered!
```

```
Calling ioctl() to re-read partition table.
Syncing disks.
```

```
aload_script=fatload $device $partition 0x43000000 script.bin;  
aload_kernel=fatload $device $partition 0x48000000 uImage;bootm 0x48000000  
uenvcmd=run aload_script aload_kernel  
$tput_mode=EDID:1280x720p60 hdmi.audio=EDID:0 root=/dev/sda1 rootfstype=ext4 el$
```

```
^G Get Help    ^O WriteOut   ^R Read File  ^Y Prev Page  ^K Cut Text    ^C Cur Pos  
^X Exit        ^J Justify    ^W Where Is   ^V Next Page  ^U UnCut Text ^T To Spell
```

Chapter 4: Networking

```
bananapi@lemaker ~ $ smbclient -L localhost -U%
Domain=[WORKGROUP] OS=[Unix] Server=[Samba 3.6.6]

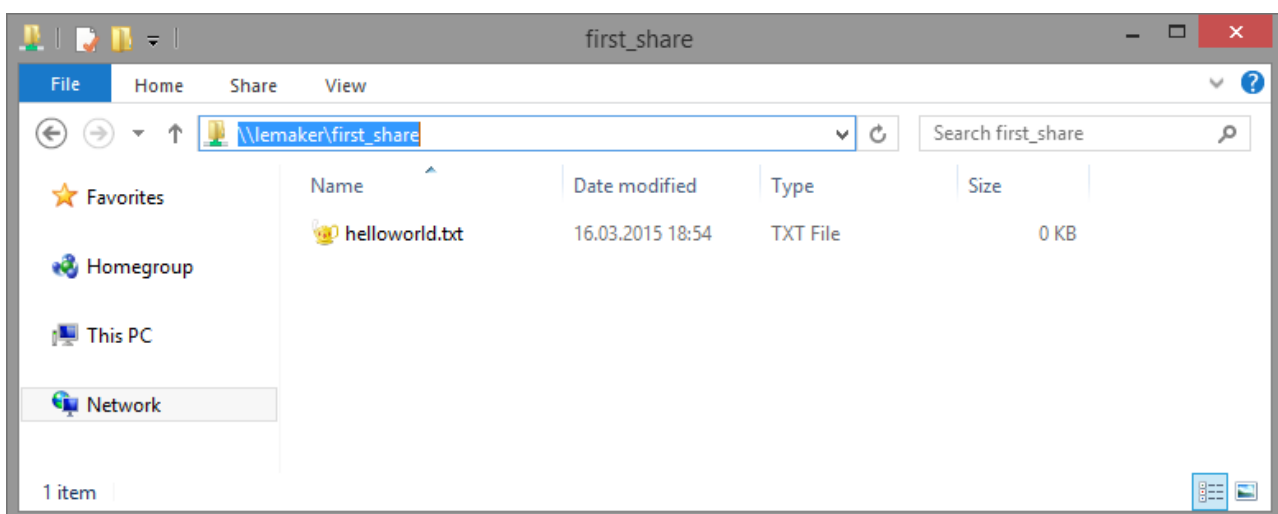
  Sharename      Type            Comment
  -----      -
  print$         Disk           Printer Drivers
  first_share    Disk           My first share
  IPC$           IPC            IPC Service (lemaker server)
Domain=[WORKGROUP] OS=[Unix] Server=[Samba 3.6.6]

  Server          Comment
  -----
  LEMAKER         lemaker server

  Workgroup       Master
  -----
  WORKGROUP
```

```
bananapi@lemaker ~ $ smbclient -U bananapi //localhost/first_share
Enter bananapi's password:
Domain=[WORKGROUP] OS=[Unix] Server=[Samba 3.6.6]
smb: \> dir
.                D           0   Mon Mar 16 17:54:18 2015
..               D           0   Mon Mar 16 17:14:06 2015
helloworld.txt   0   Mon Mar 16 17:54:18 2015

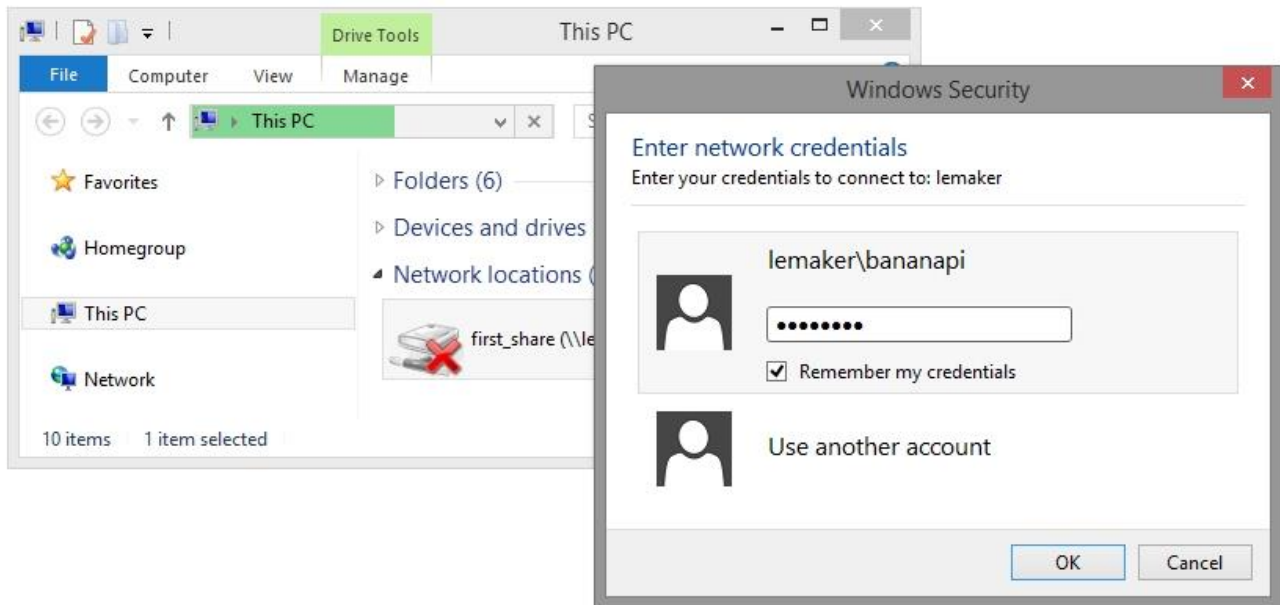
                          48269 blocks of size 65536. 8510 blocks available
smb: \>
```



```
C:\Windows\system32\cmd.exe

C:\Users\rel>net use X: \\lemaker\first_share /P:Yes
The command completed successfully.

C:\Users\rel>
```



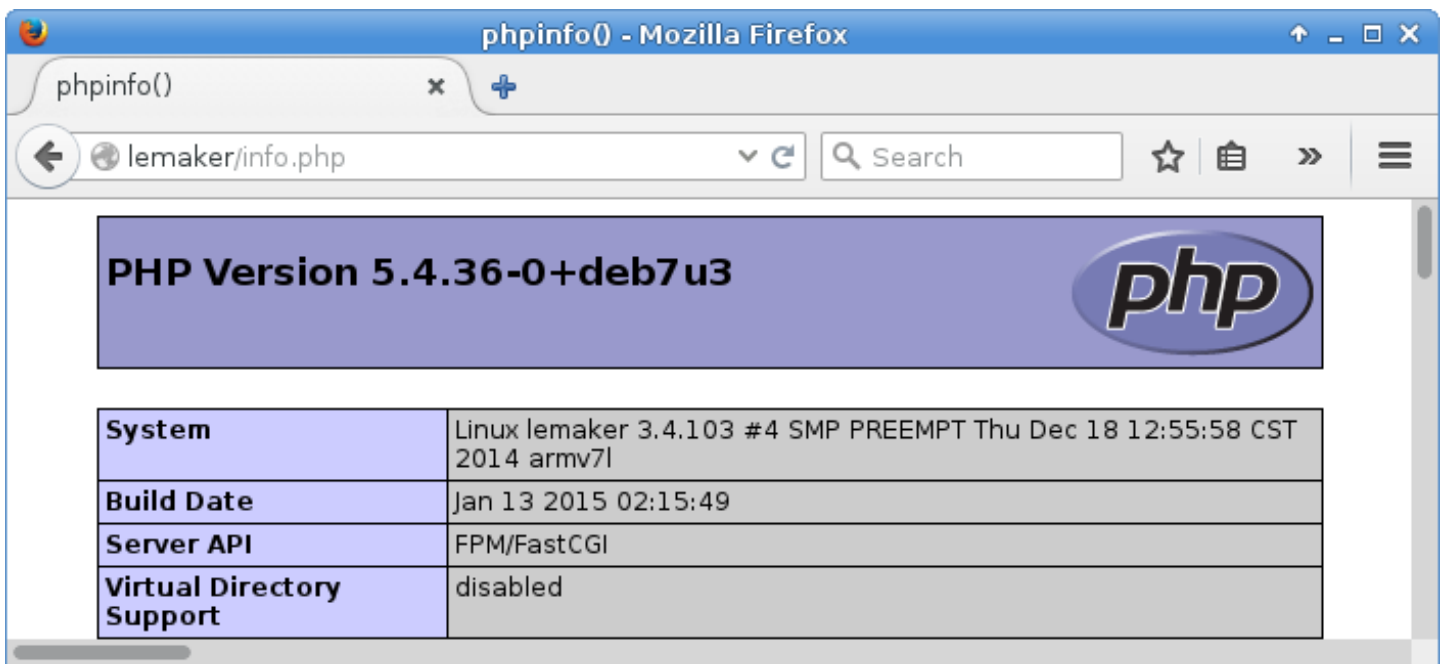
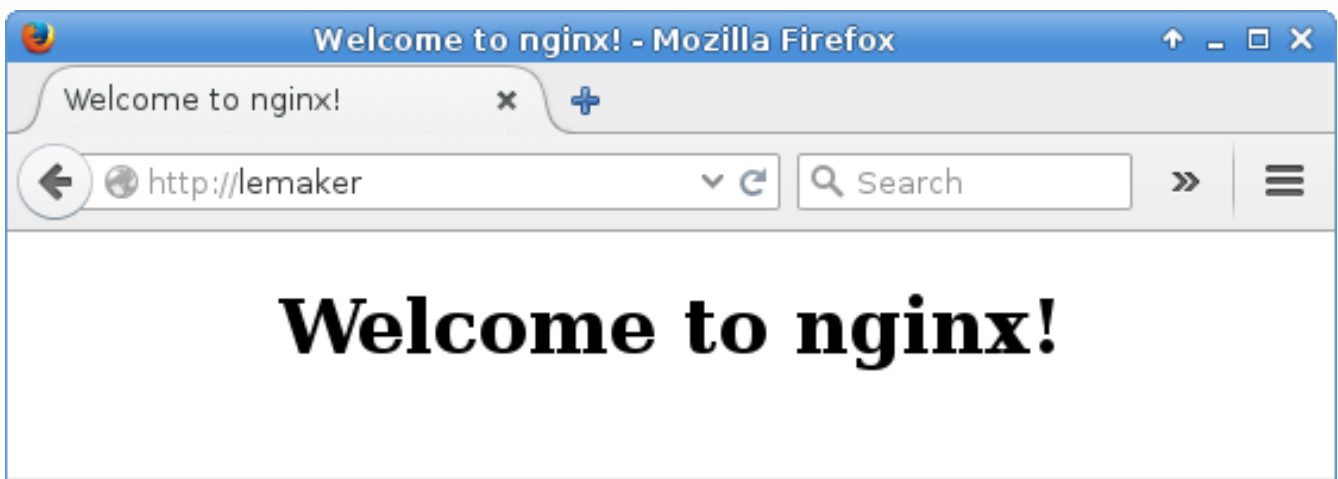
```
rel@gs70 ~ $ sudo mkdir /mnt/samba_share
[sudo] password for rel:
rel@gs70 ~ $ sudo mount -t cifs //lemaker/first_share /mnt/samba_share/ -o user=bananapi,password=bananapi
rel@gs70 ~ $ ls -la /mnt/samba_share
total 4
drwxr-xr-x 2 rel 1000  0 Mar 16 18:54 .
drwxr-xr-x 6 root root 4096 Mar 17 13:26 ..
-rw-r--r-- 1 rel 1000  0 Mar 16 18:54 helloworld.txt
```

```
GNU nano 2.2.6      File: /etc/nginx/sites-available/default      Modified
#
location ~ /\.php$ {
    fastcgi_split_path_info ^(.+\.(php|php5))(/.+)$;
    # NOTE: You should have "cgi.fix_pathinfo = 0;" in php.ini

    # With php5-cgi alone:
    # fastcgi_pass 127.0.0.1:9000;
    # With php5-fpm:
    fastcgi_pass unix:/var/run/php5-fpm.sock;
    fastcgi_index index.php;
    include fastcgi_params;
}

# deny access to .htaccess files, if Apache's document root
# concurs with nginx's one
#
#location ~ /\.ht {
#    deny all;
#}

^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text    ^C Cur Pos
^X Exit      ^J Justify   ^W Where Is   ^V Next Page  ^U UnCut Text ^T To Spell
```



Package configuration

Configuring mysql-server-5.5

While not mandatory, it is highly recommended that you set a password for the MySQL administrative "root" user.

If this field is left blank, the password will not be changed.

New password for the MySQL "root" user:

<Ok>

```
bananapi@lemaker /usr/share/nginx/www $ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 50
Server version: 5.5.41-0+wheezy1 (Debian)

Copyright (c) 2000, 2014, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE DATABASE wordpress;
Query OK, 1 row affected (0.00 sec)

mysql> GRANT ALL PRIVILEGES ON wordpress.* TO wordpress@localhost IDENTIFIED BY
"wordpress_password";
Query OK, 0 rows affected (0.00 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)

mysql> EXIT
Bye
bananapi@lemaker /usr/share/nginx/www $
```



```
// ** MySQL settings - You can get this info from your web host ** //
/** The name of the database for WordPress */
define('DB_NAME', 'wordpress');

/** MySQL database username */
define('DB_USER', 'wordpress');

/** MySQL database password */
define('DB_PASSWORD', 'wordpress_password');

/** MySQL hostname */
define('DB_HOST', 'localhost');

/** Database Charset to use in creating database tables. */
define('DB_CHARSET', 'utf8');

/** The Database Collate type. Don't change this if in doubt. */
define('DB_COLLATE', '');

/**#@+
 * Authentication Unique Keys and Salts.
 *
 * Change these to different unique phrases!
 * You can generate these using the {@link https://api.wordpress.org/secret-key/
 * You can change these at any point in time to invalidate all existing cookies.
 *
 * @since 2.6.0

```

```
^G Get Help      ^O WriteOut     ^R Read File    ^Y Prev Page    ^K Cut Text      ^C Cur Pos
^X Exit          ^J Justify      ^W Where Is     ^V Next Page    ^U UnCut Text   ^T To Spell
```

Success!

WordPress has been installed. Were you expecting more steps? Sorry to disappoint.

Username bananapi_user

Password *Your chosen password.*

Log In

Quick Draft ▲

My first blog

Hello Internet,
This is my first blog on the Banana Pi!

Save Draft


Add New Post

My first blog post

Permalink: <http://lemaker/wordpress/?p=6>

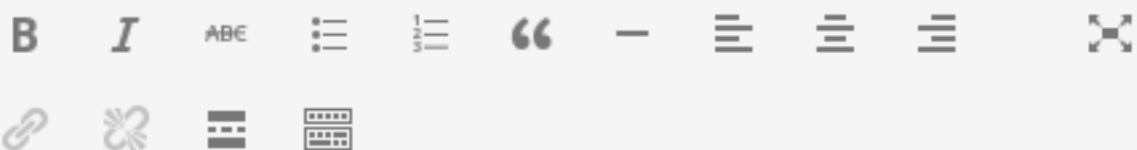
Change Permalinks

View Post

 Add Media

Visual

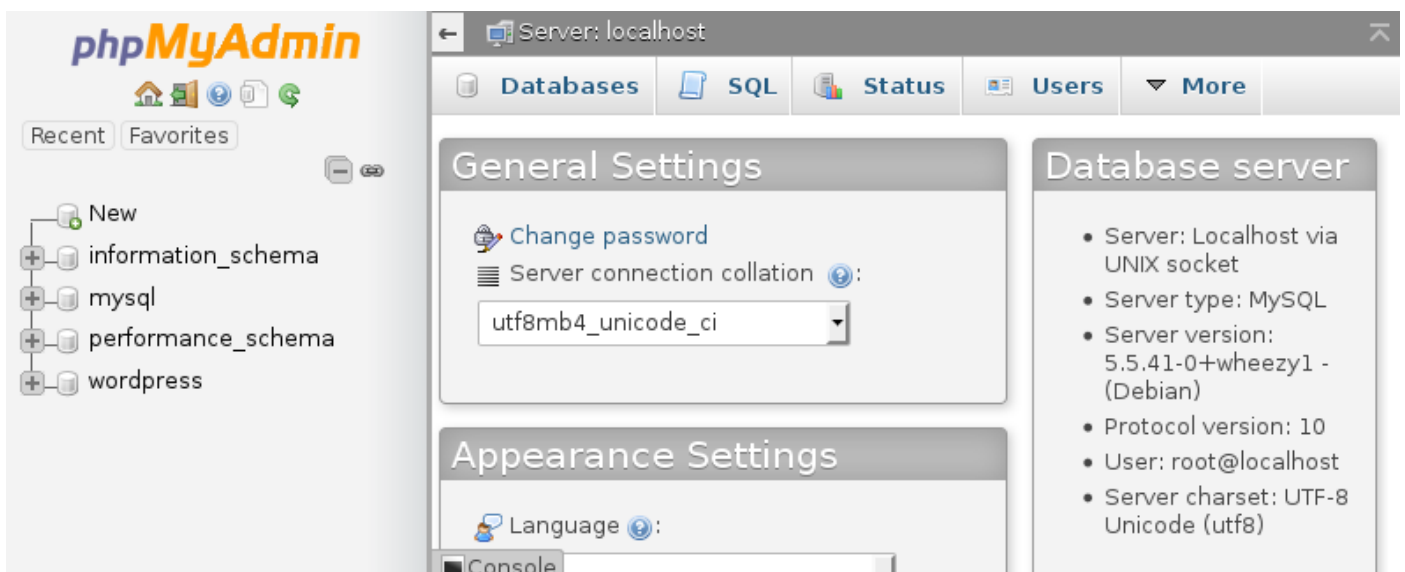
Text



Hello Internet,
This is my first blog post on my Banana Pi!

My first blog post

Hello Internet,
This is my first blog post on my Banana Pi!



The screenshot displays the phpMyAdmin web interface for a MySQL server on localhost. The interface is organized into several sections:

- Navigation:** Includes 'Recent' and 'Favorites' tabs, and a tree view on the left showing databases: 'New', 'information_schema', 'mysql', 'performance_schema', and 'wordpress'.
- Server: localhost:** The main header area with tabs for 'Databases', 'SQL', 'Status', 'Users', and 'More'.
- General Settings:** Contains a 'Change password' link and a 'Server connection collation' dropdown menu currently set to 'utf8mb4_unicode_ci'.
- Appearance Settings:** Shows a 'Language' dropdown menu.
- Database server:** A summary panel listing server details:
 - Server: Localhost via UNIX socket
 - Server type: MySQL
 - Server version: 5.5.41-0+wheezy1 - (Debian)
 - Protocol version: 10
 - User: root@localhost
 - Server charset: UTF-8 Unicode (utf8)
- Console:** A small panel at the bottom left.

```
bananapi@lemaker /etc/ssl $ sudo -s
[sudo] password for bananapi:
root@lemaker:/etc/ssl# openssl genrsa 2048 > lemaker.key
Generating RSA private key, 2048 bit long modulus
.....+++
.....+++
e is 65537 (0x10001)
root@lemaker:/etc/ssl# openssl req -new -x509 -nodes -sha1 -days 3650 -key lemaker.key > lemaker.crt
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [AU]:US
State or Province Name (full name) [Some-State]:CA
Locality Name (eg, city) []:LA
Organization Name (eg, company) [Internet Widgits Pty Ltd]:Banana Pi
Organizational Unit Name (eg, section) []:Banana Pi
Common Name (e.g. server FQDN or YOUR name) []:lemaker
Email Address []:
root@lemaker:/etc/ssl# openssl x509 -noout -fingerprint -text < lemaker.crt > lemaker.info
root@lemaker:/etc/ssl# chmod 400 lemaker.key
root@lemaker:/etc/ssl# exit
bananapi@lemaker /etc/ssl $ █
```

```
GNU nano 2.2.6 File: /etc/nginx/sites-available/default
```

```
server {
    #listen 80; ## listen for ipv4; this line is default
    #listen [::]:80 default_server ipv6only=on; ## listener

    listen 80;
    listen 443 ssl;
    ssl_certificate /etc/ssl/lemaker.crt;
    ssl_certificate_key /etc/ssl/lemaker.key; █

    root /usr/share/nginx/www;
    index index.html index.htm index.php;
}
```

Hostname

TTL



seconds

Address

✓ Create Host

YDNS version 2.1.6

GNU nano 2.2.6 File: /home/bananapi/scripts/ydns_update.sh Modified

```
#!/bin/bash
```

```
USER=my_email@my_provider.com
```

```
PASS=bananapi
```

```
HOST=bananapi.ydns.eu
```

```
curl --user $USER:$PASS https://ydns.eu/api/v1/update/?host=$HOST
```

```
^G Get Help      ^O WriteOut     ^R Read File    ^Y Prev Page    ^K Cut Text     ^C Cur Pos
^X Exit          ^J Justify      ^W Where Is     ^V Next Page    ^U UnCut Text  ^T To Spell
```

Port Forwarding

Port forwarding enabled for **Other applications** ▾

Name

Protocol **TCP** ▾

From port through port

to computer **lemaker** ▾

to IP address

To port



owncloud

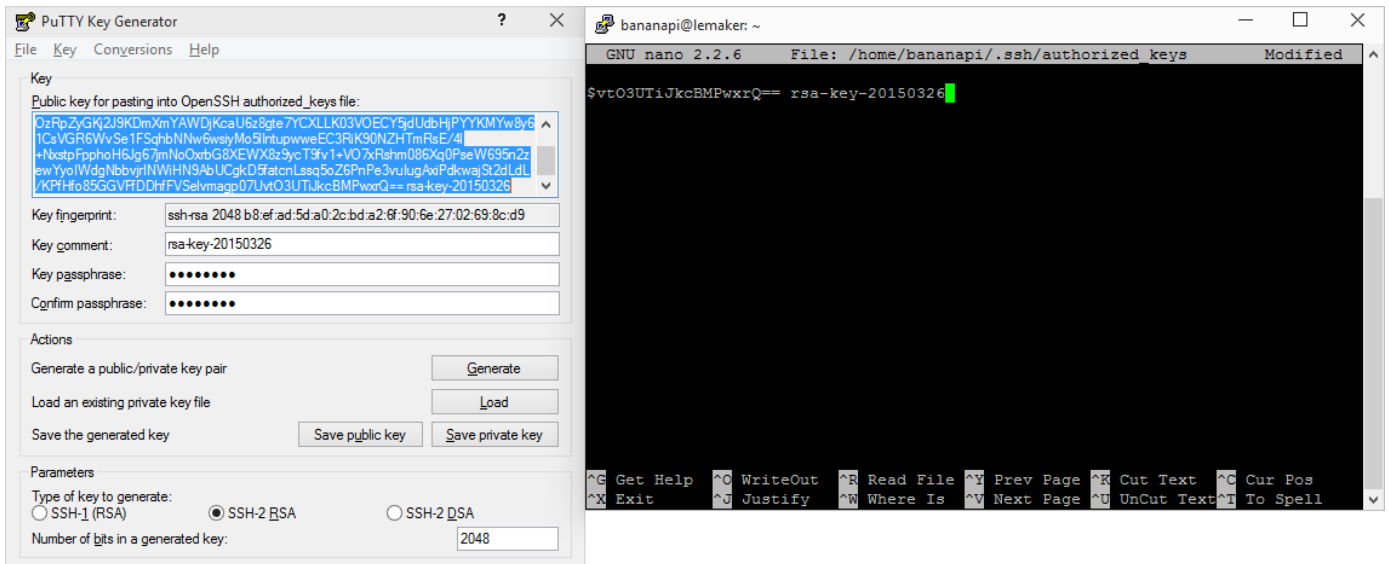
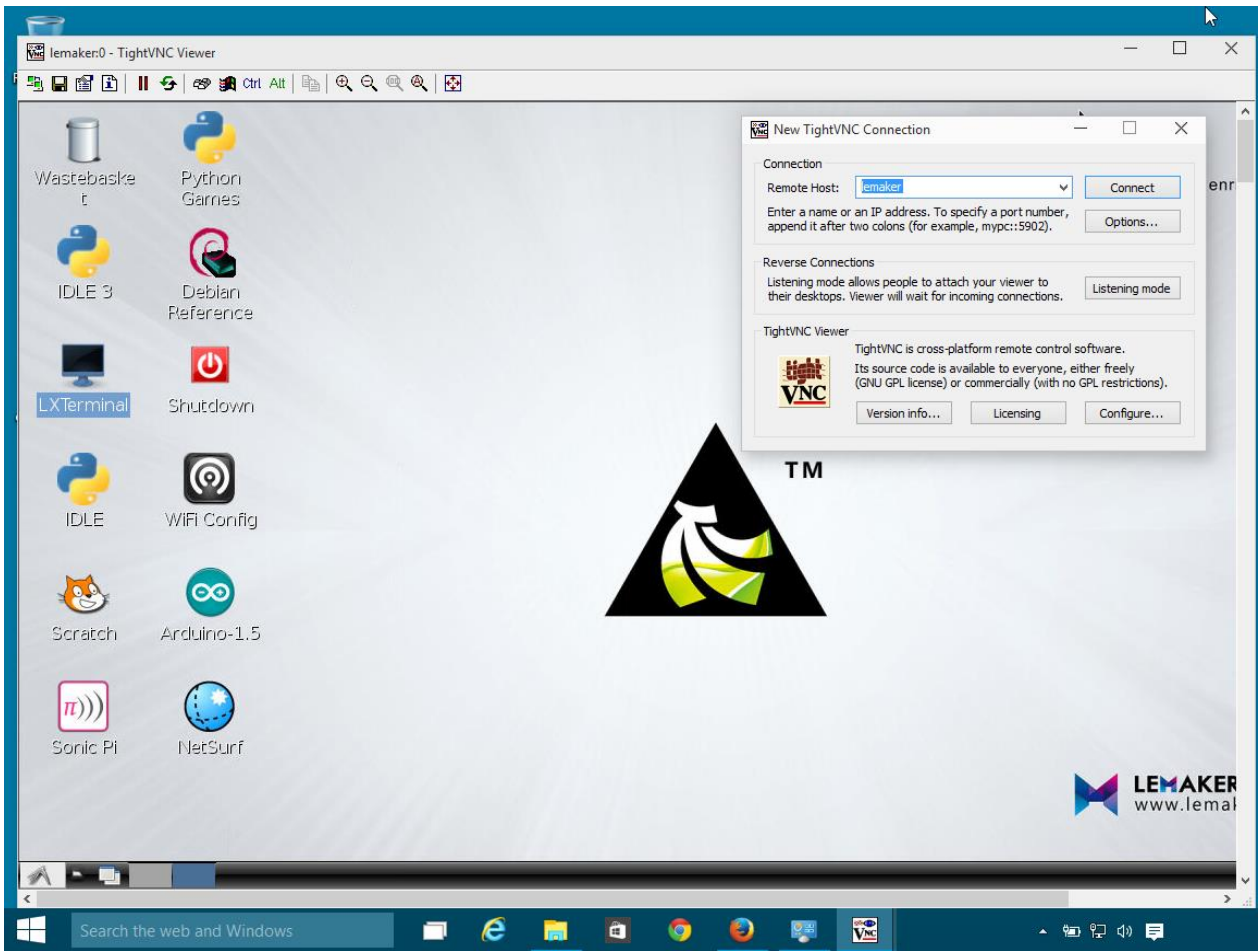
Create an admin account

Storage & database ▾

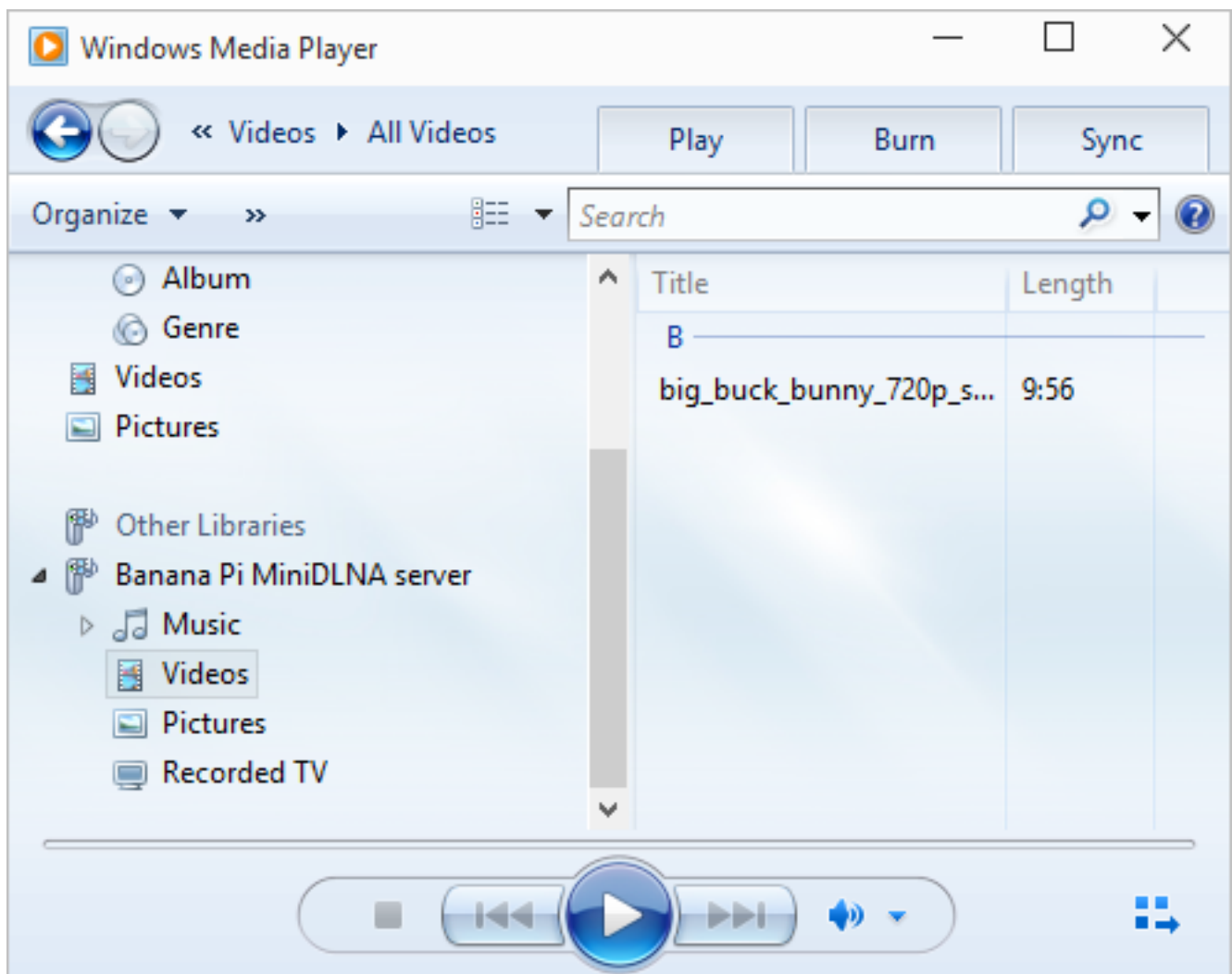
Data folder

Configure the database

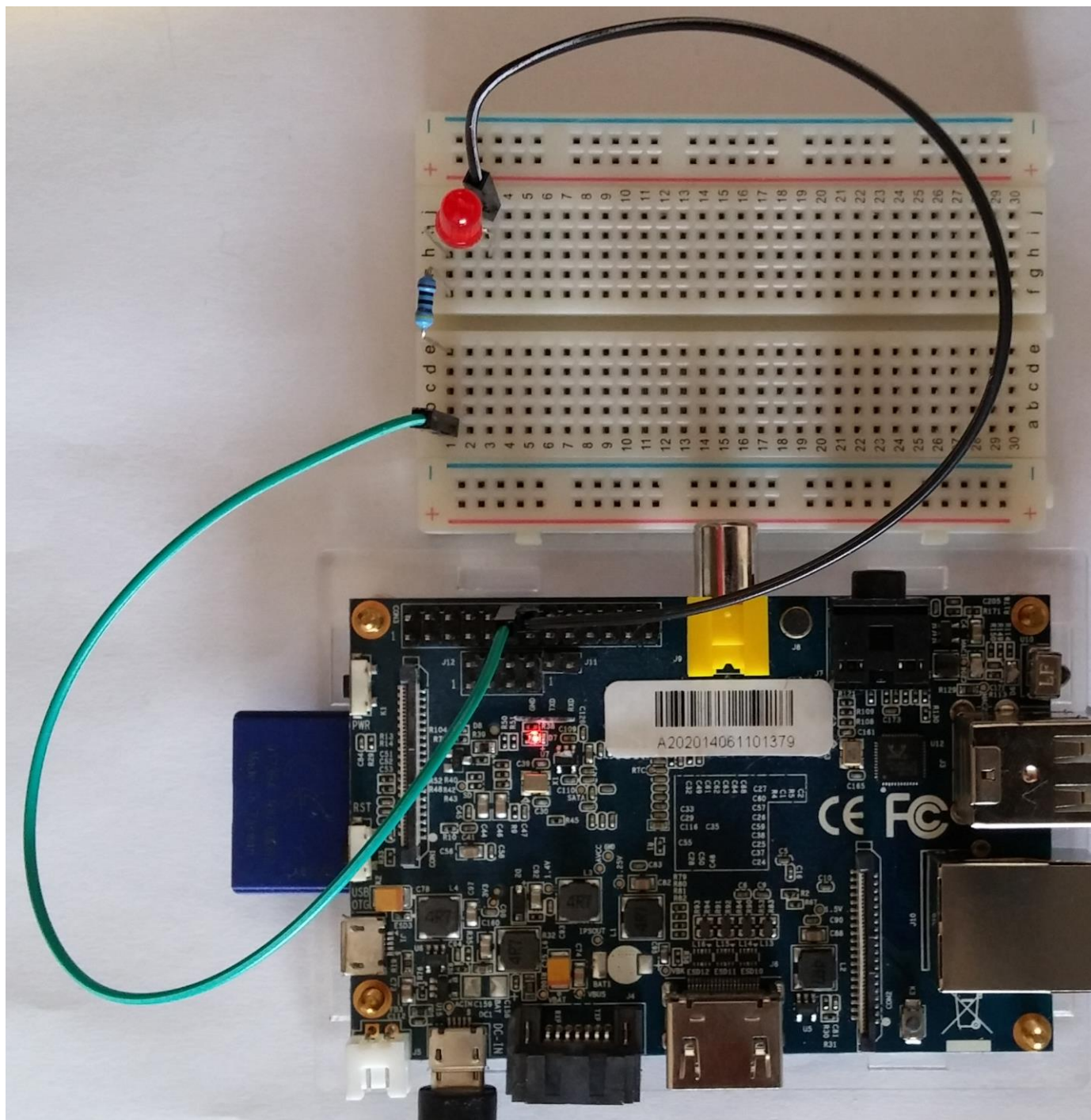
Only MySQL/MariaDB is available..

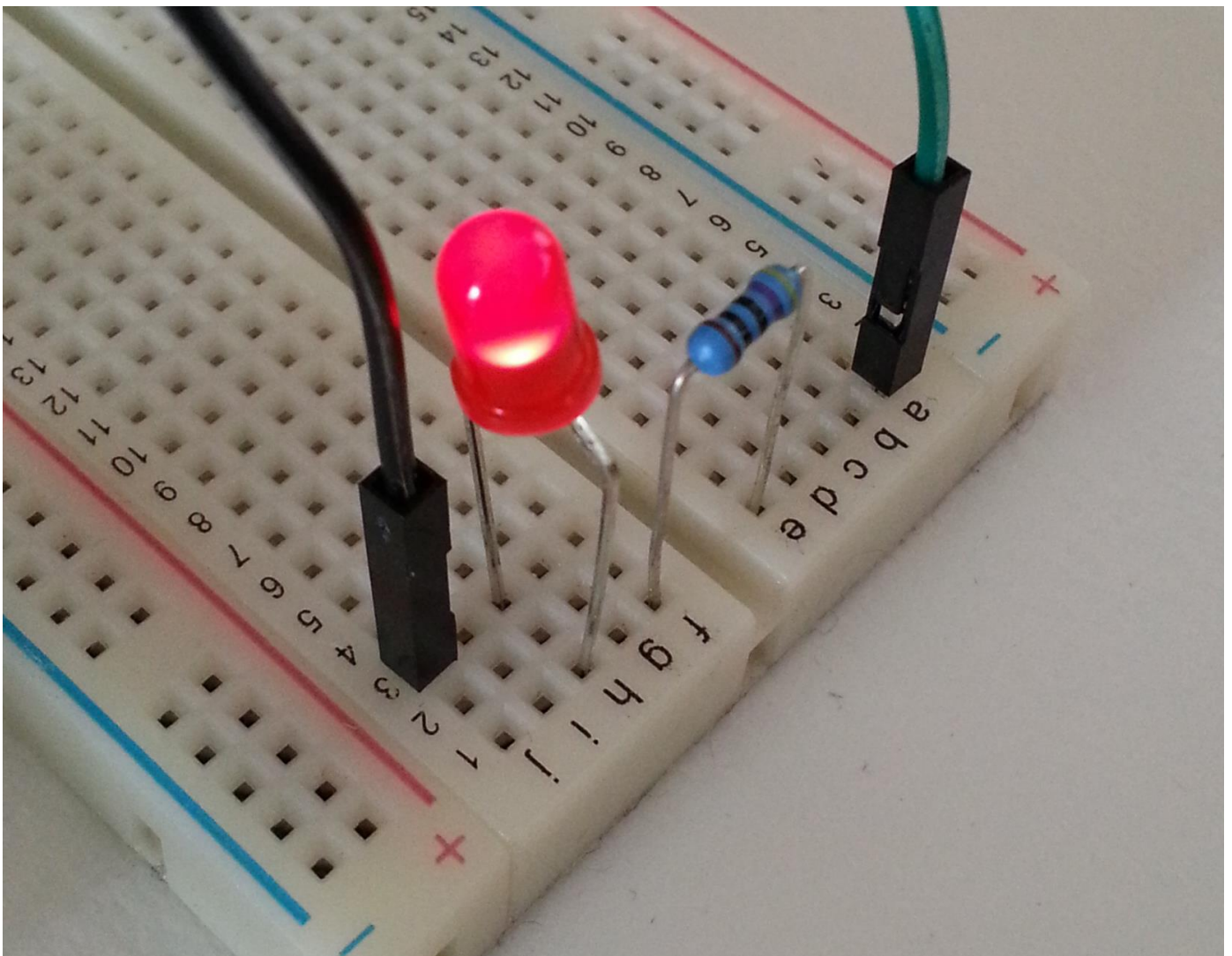
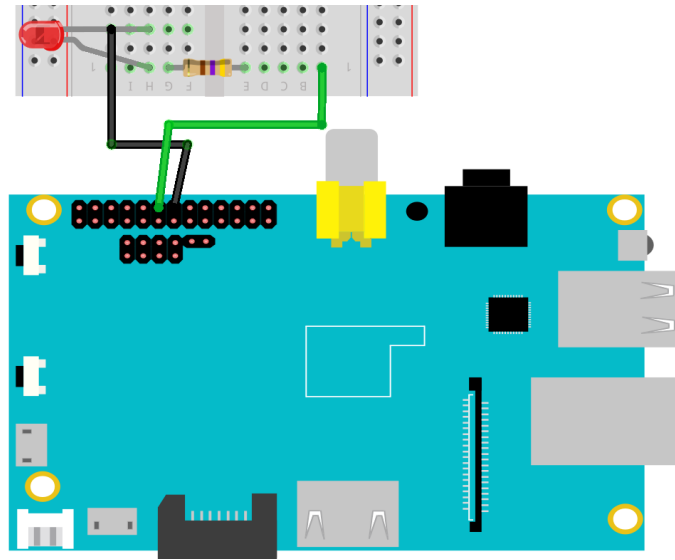


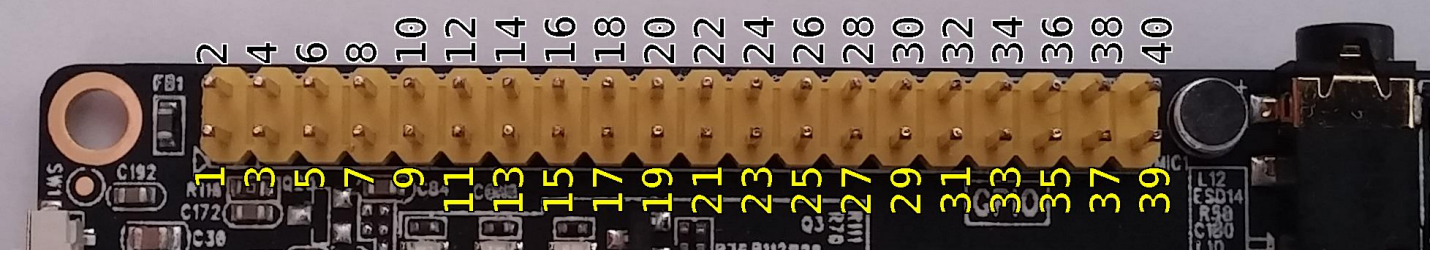
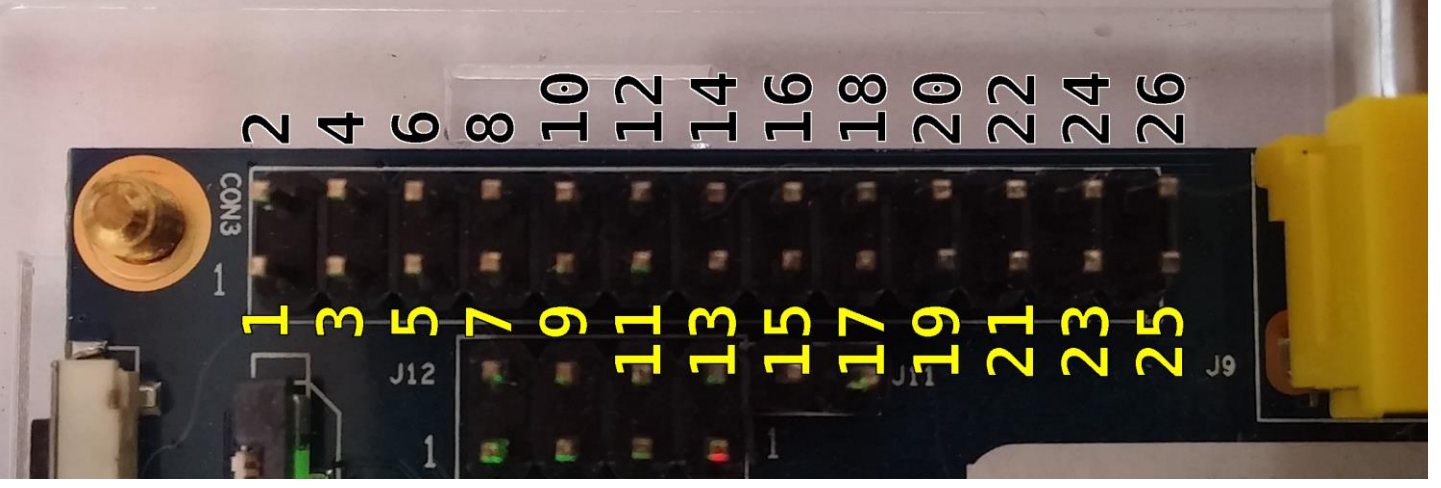
```
# Change to no to disable tunnelled clear text passwords
PasswordAuthentication no
```

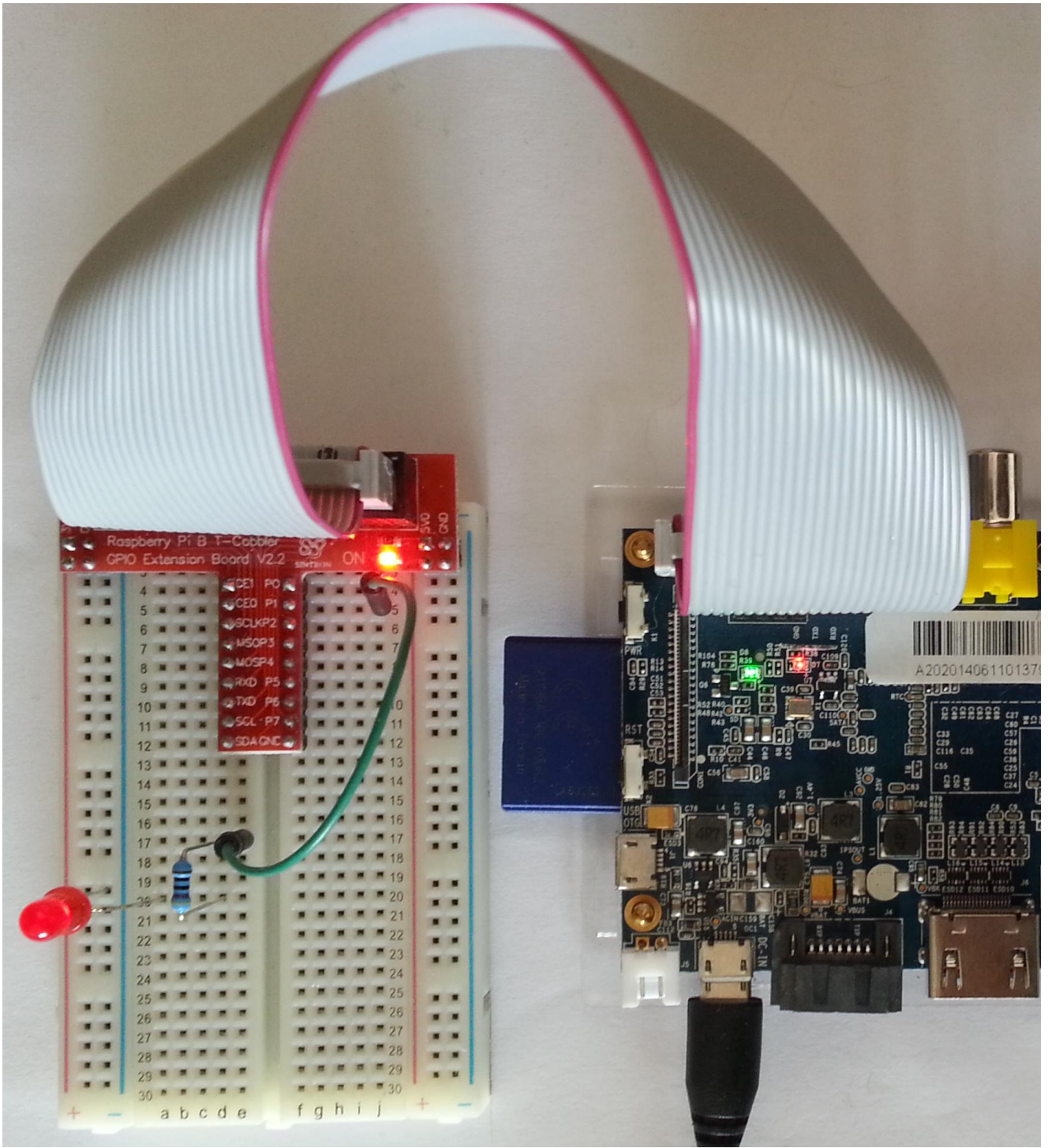


Chapter 5: Using the GPIO Pins









```
#include <wiringPi.h>

int main(void) {
    // setting up WiringPi and the GPIO 1 pin
    wiringPiSetup();
    pinMode(1, OUTPUT);

    // toggle a HIGH/LOW signal on the GPIO 1 pin
    while (1) {
        digitalWrite(1, HIGH);
        delay(1000);
        digitalWrite(1, LOW);
        delay(1000);
    }

    return 0;
}
```

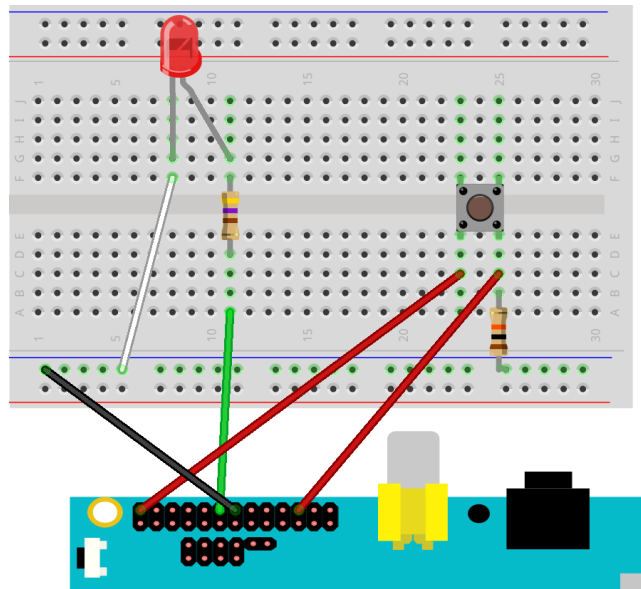
^G Get Help **^O** WriteOut **^R** Read File **^Y** Prev Page **^K** Cut Text **^C** Cur Pos
^X Exit **^J** Justify **^W** Where Is **^V** Next Page **^U** UnCut Text **^T** To Spell

```
import RPi.GPIO as GPIO
import time

PIN=12                            # pin 12 is the physical pin of GPIO 1
GPIO.setmode(GPIO.BOARD)        # setting up GPIO
GPIO.setup(PIN, GPIO.OUT)        # set GPIO 1 to OUTPUT

while True:
    GPIO.output(PIN, GPIO.HIGH)
    time.sleep(1)
    GPIO.output(PIN, GPIO.LOW)
    time.sleep(1)
```

^G Get Help **^O** WriteOut **^R** Read File **^Y** Prev Page **^K** Cut Text **^C** Cur Pos
^X Exit **^J** Justify **^W** Where Is **^V** Next Page **^U** UnCut Text **^T** To Spell



GNU nano 2.2.6 File: button test.c

```
#include <wiringPi.h>

int main(void) {
    // define constants
    static int const PIN_LED = 1;
    static int const PIN_BUTTON = 6;
    static int const TRUE = 1;

    // setting up WiringPi and the GPIO 1 and 6 pin
    wiringPiSetup();
    pinMode(PIN_LED, OUTPUT);
    pinMode(PIN_BUTTON, INPUT);

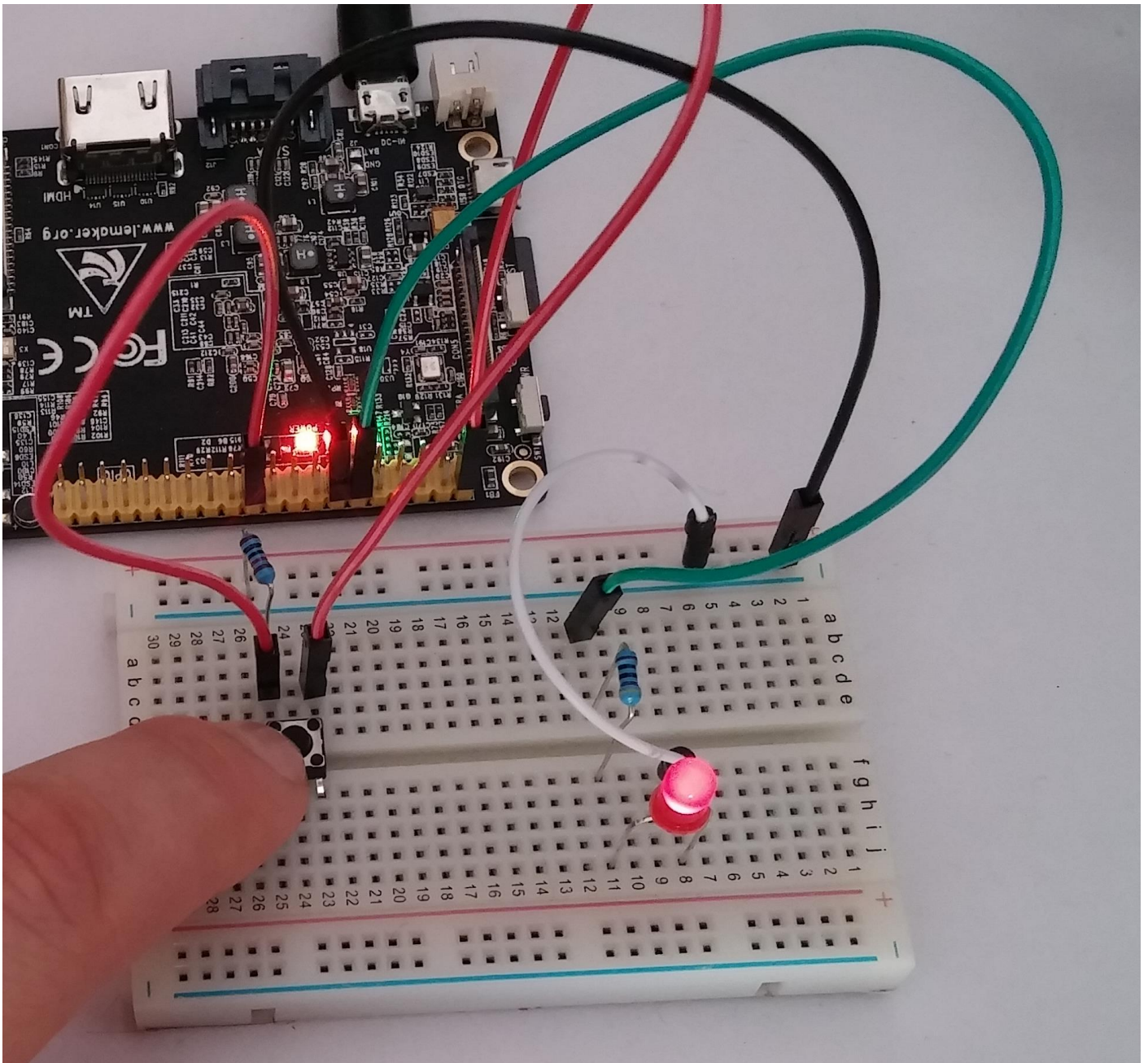
    // in this integer, we store the status of the pushbutton
    int buttonStatus;

    // loop forever
    while (TRUE) {
        // read the status of the PIN_BUTTON
        buttonStatus = digitalRead(PIN_BUTTON);

        if (buttonStatus == HIGH) {
            // status of PIN_BUTTON is a HIGH signal
            // switch on the LED
            digitalWrite(PIN_LED, HIGH);
        } else {
            // status of PIN_BUTTON is a LOW signal
            // switch off the LED
            digitalWrite(PIN_LED, LOW);
        }
    }

    return 0;
}
```

^G Get Help
 ^O WriteOut
 ^R Read File
 ^Y Prev Page
 ^K Cut Text
 ^C Cur Pos
^X Exit
 ^J Justify
 ^W Where Is
 ^V Next Page
 ^U UnCut Text
 ^T To Spell



$$R = \frac{V}{I} = \frac{(3.3V - 2.0V)}{\frac{50mA}{17}} = 442\Omega$$

Chapter 6: Multimedia

```
GNU nano 2.2.6           File: /etc/asound.conf

pcm.!default {
    type hw
    card 1
    device 0
}
ctl.!default {
    type hw
    card 1
}

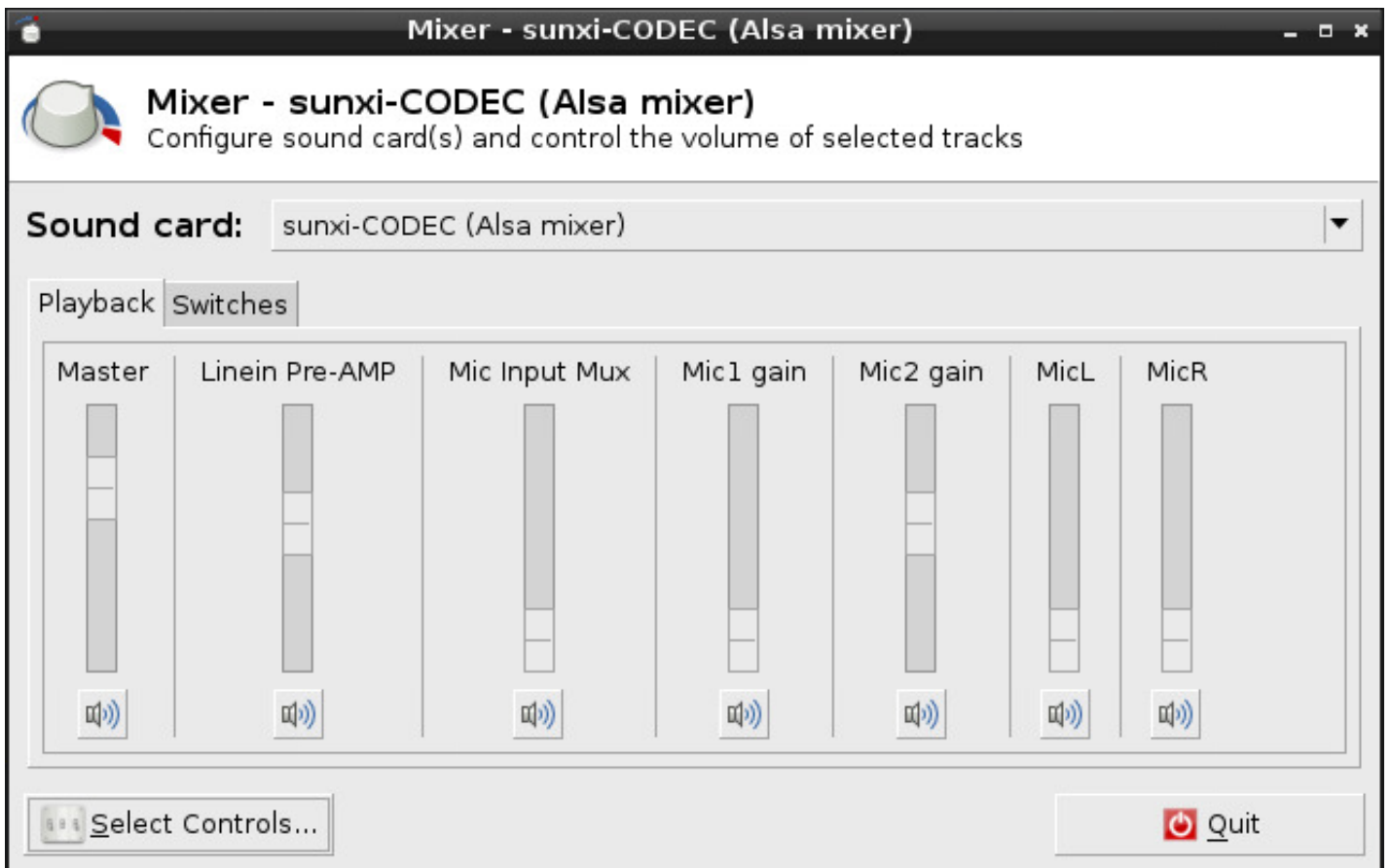
```

^G Get Help **^O** WriteOut **^R** Read File **^Y** Prev Page **^K** Cut Text **^C** Cur Pos
^X Exit **^J** Justify **^W** Where Is **^V** Next Page **^U** UnCut Text **^T** To Spell

AlsaMixer v1.0.25

Card: **sunxi-CODEC** F1: Help
Chip: **codec Mixer** F2: System information
View: **F3:[Playback]** F4: Capture F5: All F6: Select sound card
Item: **Master** Esc: Exit

71	00	MM	MM	57	0	MM	MM
< Master >	Master C	LineL	LineR	Linein P	Mic Inpu	Mic Powe	Mic1 Boo



```
GNU nano 2.2.6          File: /etc/X11/xorg.conf          Modified
Section "Screen"
    Identifier      "My Screen"
    Device          "Allwinner A10/A13 FBDEV"
    Monitor        "My Monitor"
EndSection

Section "Device"
    Identifier      "Allwinner A10/A13 FBDEV"
    Driver          "fbturbo"
    Option          "fbdev" "/dev/fb0"
    Option          "SwapbuffersWait" "true"
    Option          "AccelMethod" "G2D"
EndSection

Section "Monitor"
    Identifier      "My Monitor"
    Option          "DPMS" "false"
EndSection

^G Get Help   ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text    ^C Cur Pos
^X Exit       ^J Justify   ^W Where Is  ^V Next Page  ^U UnCut Text ^T To Spell
```

```

KERNEL=="mali", MODE="0660", GROUP="video"
KERNEL=="ump", MODE="0660", GROUP="video"
KERNEL=="disp", MODE="0660", GROUP="video"
KERNEL=="g2d", MODE="0660", GROUP="video"
KERNEL=="fb*", MODE="0660", GROUP="video"
KERNEL=="cedar_dev", MODE="0660", GROUP="video"

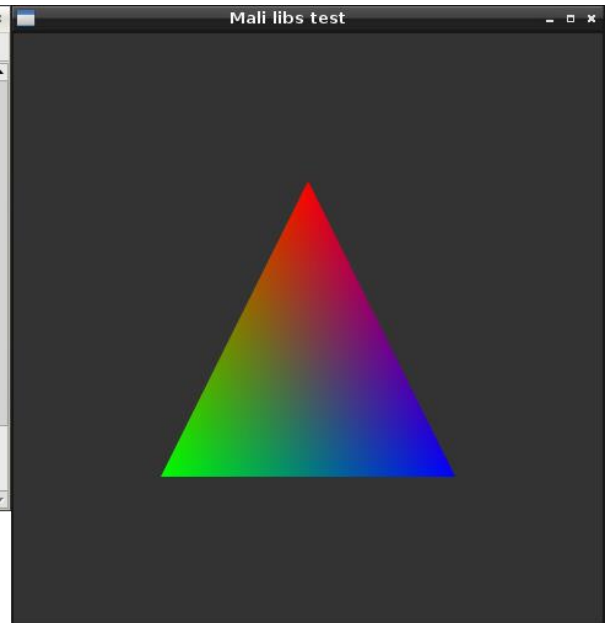
```

[^]G Get Help [^]O WriteOut [^]R Read File [^]Y Prev Page [^]K Cut Text [^]C Cur Pos
[^]X Exit [^]J Justify [^]W Where Is [^]V Next Page [^]U UnCut Text [^]T To Spell

```

bananapi@lemaker: ~/video_acceleration/sunxi-mali/test
bananapi@lemaker ~ $ cd ~/video_acceleration/sunxi-mali/test/
bananapi@lemaker ~/video_acceleration/sunxi-mali/test $ cc -Wall -o test test.c -lEGL -lGLESv2 -lX11
bananapi@lemaker ~/video_acceleration/sunxi-mali/test $ ./test
EGL Version: "1.4 Linux-r3p0-04rel0"
EGL Vendor: "ARM"
EGL Extensions: "EGL_KHR_image EGL_KHR_image_base EGL_KHR_image_pixmap EGL_KHR_gl_texture_2D_image EGL_KHR_gl_texture_cubemap_image EGL_KHR_gl_renderbuffer_image EGL_KHR_reusable_sync EGL_KHR_fence_sync EGL_KHR_lock_surface EGL_KHR_lock_surface2"
Surface size: 480x480
GL Vendor: "ARM"
GL Renderer: "Mali-400 MP"
GL Version: "OpenGL ES 2.0"
GL Extensions: "GL_OES_texture_npot GL_OES_compressed_ETC1_RGB8_texture GL_OES_standard_derivatives GL_OES_EGL_image GL_OES_depth24 GL_ARM_rgba8 GL_ARM_mali_shader_binary GL_OES_depth_texture GL_OES_packed_depth_stencil GL_EXT_texture_format_BGRA8888 GL_EXT_blend_minmax GL_OES_EGL_image_external GL_OES_EGL_sync GL_EXT_multisampled_render_to_texture GL_EXT_discard_framebuffer GL_OES_get_program_binary GL_EXT_shader_texture_lod"

```



```

bananapi@lemaker: ~/vid/movies
bananapi@le... | bananapi@le...
Detected file format: Matroska
VIDEO: [h264] 1920x1080 24bpp 24.000 fps 0.0 kbps ( 0.0 kbyte/s)
Load subtitles in
[VDPAA SUXKI] VE version 0x1523 opened.
Forced video codec: ffmpeg12vdpau
Forced video codec: ffh264vdpau
Opening video decoder: [ffmpeg] FFmpeg's libavcodec codec family
Selected video codec: [ffh264vdpau] vfm: ffmpeg (FFmpeg H.264 (VDPAA))
Opening audio decoder: [ffmpeg] FFmpeg/libavcodec audio decoders
AUDIO: 48000 Hz, 2 ch, s16le, 640.0 kbit/41.67% (ratio: 80000:-192000)
Selected audio codec: [ffac3] afm: ffmpeg (FFmpeg AC-3)
AO: [pulse] Init failed: Connection refused
Failed to initialize audio driver 'pulse'
AO: [alsa] 48000Hz 2ch s16le 12 bytes per sample
[AO_ALSA] unable to find simple control 'Master', 0.
Starting playback...
Movie aspect is 2.25:1 - prescaling to correct movie aspect.
VO: [vdpau] 1920x1080 => 1920x1080 H.264 VDPAA acceleration
[Vdpau] Get display refresh rate 60.000 Hz.
[Vdpau] If that value looks wrong give the vo vdpau:fps=x suboption manually.
[VDPAA SUXKI] Presentation time not supported
Q: 149.5 V: 149.5 A-V: 0.000 ctc: 0.000 of: 0.40% 21% 7.9% 43 0

```

Innovations that enrich people's lives

```
GNU nano 2.2.6 File: /home/bananapi/.mplayer/config Modified
# Write your default config options here!
vo=vdpau
vc=ffmpeg12vdpau,ffh264vdpau,
fullscreen=yes
quiet=yes
ao=alsa
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

```
GNU nano 2.2.6 File: /etc/apt/sources.list Modified
deb http://mirrordirector.raspbian.org/raspbian/ wheezy main contrib non-free r$
deb http://mirrordirector.raspbian.org/raspbian/ jessie main contrib non-free
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

```
GNU nano 2.2.6 File: /etc/apt/preferences Modified
Package: *
Pin: release n=wheezy
Pin-Priority: 900

Package: *
Pin: release n=jessie
Pin-Priority: 100
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

```
GNU nano 2.2.6 File: ...nanapi/.kodi/userdata/playercorefactory.xml Modified
<playercorefactory>
  <players>
    <player name="smplayer" type="ExternalPlayer" audio="true" video="true">
      <filename>/usr/bin/smplayer</filename>
      <args>-minigui -close-at-end -fullscreen "{1}"</args>
      <hidexbmc>>false</hidexbmc>
    </player>
  </players>
  <rules action="prepend">
    <rule filetypes="mkv" filename="*.*" player="smplayer"/>
  </rules>
</playercorefactory>
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell
```



```
GNU nano 2.2.6 File: ...e/bananapi/.config/lxsession/LXDE/autostart Modified
@kodi-standalone
^G Get Help      ^O WriteOut     ^R Read File    ^Y Prev Page    ^K Cut Text      ^C Cur Pos
^X Exit          ^J Justify      ^W Where Is    ^V Next Page    ^U UnCut Text   ^T To Spell
```



```
GNU nano 2.2.6      File: /etc/lirc/hardware.conf      Modified
# /etc/lirc/hardware.conf
#
# Arguments which will be used when launching lircd
LIRCD_ARGS=""

#Don't start lircmd even if there seems to be a good config file
#START_LIRCMD=false

#Don't start irexec, even if a good config file seems to exist.
#START_IEXEC=false

#Try to load appropriate kernel modules
LOAD_MODULES=true

# Run "lircd --driver=help" for a list of supported drivers.
DRIVER="devinput"
# usually /dev/lirc0 is the correct setting for systems using udev
DEVICE="/dev/input/event0"
MODULES=""

^G Get Help      ^O WriteOut     ^R Read File    ^Y Prev Page    ^K Cut Text      ^C Cur Pos
^X Exit          ^J Justify      ^W Where Is     ^V Next Page    ^U UnCut Text   ^T To Spell
```

```
GNU nano 2.2.6      File: /etc/lirc/lircd.conf      Modified
KEY_1            0x01000100000001
KEY_2            0x01000200000001
KEY_3            0x01000300000001
KEY_4            0x01000400000001
KEY_5            0x01000500000001
KEY_6            0x01000600000001
KEY_7            0x01000700000001
KEY_8            0x01000800000001
KEY_9            0x01000900000001
KEY_0            0x0100FF00000001 0x0000000000000000
KEY_ENTER       0x01008400000001 0x0000000000000000
end codes

end remote

^G Get Help      ^O WriteOut     ^R Read File    ^Y Prev Page    ^K Cut Text      ^C Cur Pos
^X Exit          ^J Justify      ^W Where Is     ^V Next Page    ^U UnCut Text   ^T To Spell
```

```
GNU nano 2.2.6      File: /home/bananapi/.lircrc    Modified
begin
  prog = irxevent
  button = KEY_UP
  config = Key_Up CurrentWindow
end

begin
  prog = irxevent
  button = KEY_DOWN
  config = Key_Down CurrentWindow
end
```

```
GNU nano 2.2.6 File: ...e/bananapi/.config/lxsession/LXDE/autostart Modified
@xinput disable sunxi-ir
@irxevent -d ~/.lircrc
^G Get Help    ^O WriteOut   ^R Read File  ^Y Prev Page  ^K Cut Text    ^C Cur Pos
^X Exit       ^J Justify    ^W Where Is   ^V Next Page  ^U UnCut Text ^T To Spell
```