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-----Setting up the AVR32 GNU Toolchain-----

-----Installing buildroot-----

Setting up the AVR32 GNU Toolchain

First avr32-gnu-toolchain needs to be installed.

login as root, then follow these steps

to activate login using GUI do these steps.

If GUI is not enable and only command line

Type startx

gnome-session and reboot

sudo /etc/init.d/gdm restart

Keyboard lock

Alt+any function key

Become root

Since you logged on as a simple user you don't have much install privileges. You can use the sudo command in order to execute each commando as being root but we still need to do a lot of work. Becoming root is discouraged for many good reasons however this is not a production server but a development system. To enable the root account (i.e. set a password) use: "sudo passwd root" and enter a root password. Next enable root to login in the GUI by using opening gdmsetup as root in a terminal. Type "sudo gdmsetup", go to Security and choose "Allow local system administrator login". Then close. Logoff and login as root.

computer->file system->/etc/apt --- and append in the sources.list

```
deb http://www.atmel.no/avr32/ubuntu/jaunty/binary/
```

or

```
deb http://www.atmel.no/avr32/ubuntu/karmic/
```

Note: jaunty refers to the Ubuntu development code name (hardy = version 8.04; jaunty = version 9.04; karmic = version 9.10).

Next use:

```
apt-get update
```

```
apt-get install avr32program avr32gdbproxy avr32trace avr32fwupgrade libavr32ocd  
libavrtools libelfdwarfparser
```

(note: install packages without verification)

Install the Toolchain package.

Use:

```
apt-get install avr32-gnu-toolchain (note: install packages without verification)
```

Installing buildroot

Download buildroot-avr32-v2.3.0.tar.bz2 from <http://www.atmel.no/buildroot/buildroot-src.html>

i have saved a copy of it if you need and place the bz2 file into the root directory. Use:

```
bunzip2 buildroot-avr32-v2.3.0.tar.bz2
```

```
tar xvf buildroot-avr32-v2.3.0.tar
```

The buildroot distribution will be extracted in the directory /buildroot-avr32-v2.3.0.

Check <http://buildroot.uclibc.org/buildroot.html>, <http://www.atmel.no/buildroot/buildroot-doc.html> or

<http://www.avrfreaks.net/index.php?name=PNphpBB2&file=viewtopic&p=625825> for addition information.

Change to directory /buildroot-avr32-v2.3.0 and use:

For default setting

```
make ARCH=avr32 CROSS_COMPILE=avr32-linux- atngw100_defconfig
```

make

for extra package installation

make menuconfig

Select Target, select packages etc

Then make

when you encounter problem like this

```
scripts/unifdef.c:209: error: conflicting types for 'getline'
```

```
/usr/include/stdio.h:651: note: previous declaration of 'getline' was here
```

```
make[2]: *** [scripts/unifdef] Error 1
```

```
make[1]: *** [__headers] Error 2
```

Go to file unifdef.c /root/buildroot-avr32-v2.3.0/toolchain_build_avr32/linux-2.6.27.6/scripts

make

Go to file unifdef.c /root/buildroot-avr32-v2.3.0/toolchain_build_avr32/uClibc-0.9.30/extra/scripts

and change getline() to parseline()

when you get this error

```
19:47:24 (29.14 KB/s) - `/home/richard/buildroot-avr32-v2.3.0/dl/index.html.1'  
saved [11550/11550]
```

```
zcat /home/richard/buildroot-avr32-v2.3.0/dl/avr32_linux_user_guide_2.0.0.tar.gz |  
tar -C /home/richard/buildroot-avr32-v2.3.0/build_avr32 -xf -  
gzip: /home/richard/buildroot-avr32-v2.3.0/dl/avr32_linux_user_guide_2.0.0.tar.gz:  
No such file or directory  
tar: This does not look like a tar archive  
tar: Error exit delayed from previous errors  
make: *** [/home/richard/buildroot-avr32-  
v2.3.0/build_avr32/avr32_linux_user_guide/.unpacked] Error 2
```

Then

run "make menuconfig" go to "Packages Selection for the target" and disable avr32-web-start and avr32-wiki-docs

```
export PATH=$PATH:/buildroot-avr32-v2.3.0/build_avr32/staging_dir/usr/bin
```

When done you can find:

- avr32-linux-gcc in /buildroot-avr32-v2.3.0/build_avr32/staging_dir/usr/bin

- a new kernel for the NGW100 in /buildroot-avr32-v2.3.0/binaries/atngw100

You can check or alter the buildroot configuration using:

```
cd /buildroot-avr32-v2.3.0
```

```
make menuconfig (this will open the Buildroot configuration screen).
```

Install avr32 studio but not getting path

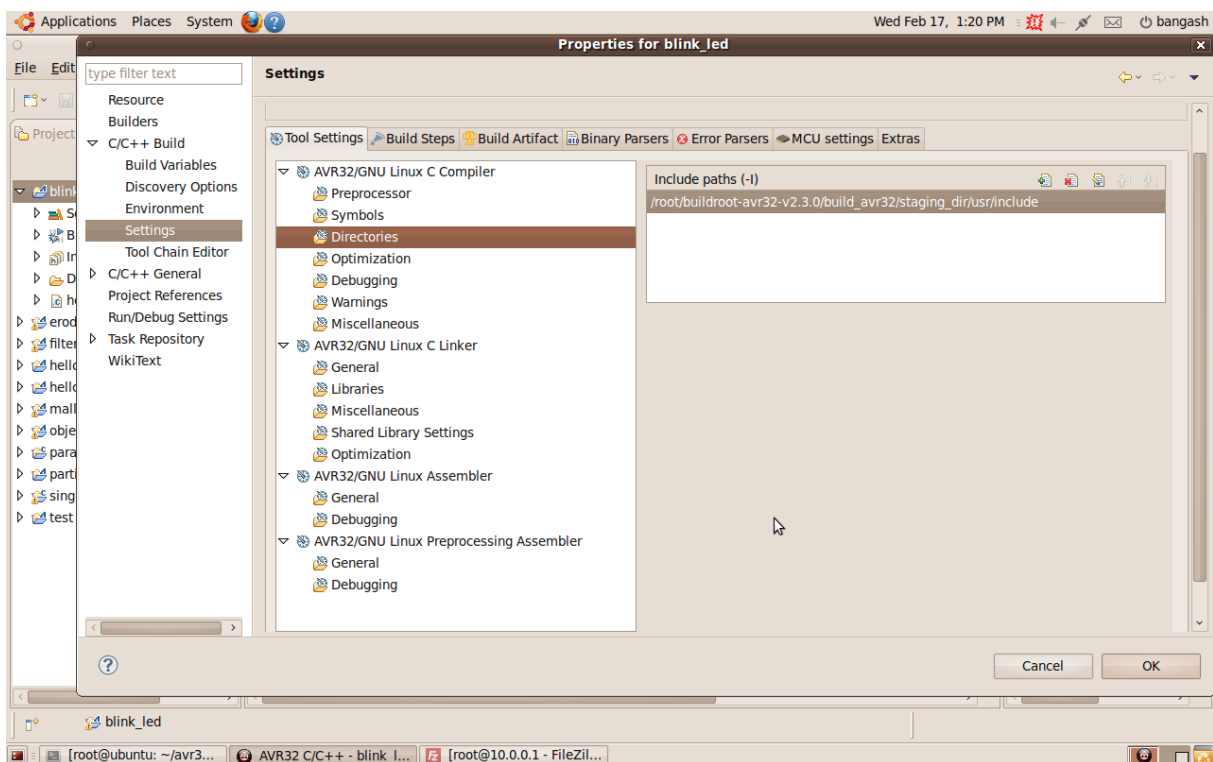
Go to from root to /etc and write in the file bash.bashrc at end

```
export PATH=$PATH:/root/buildroot-avr32-v2.3.0/build_avr32/staging_dir/usr/bin
```

install java virtual machine

```
sudo apt -get install sun-java-jre
```

to access header files correctly got



Enjoy!!!!

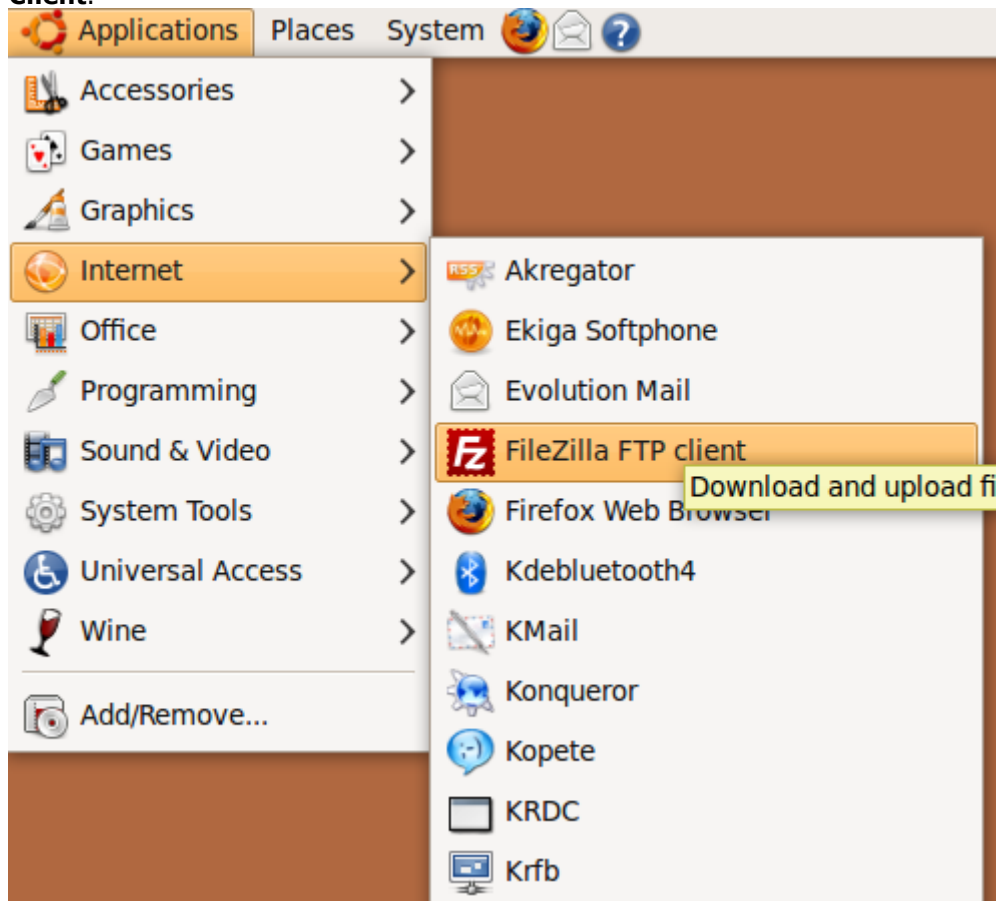
Checking version of ubuntu

Check the file in the /etc/lsb-release

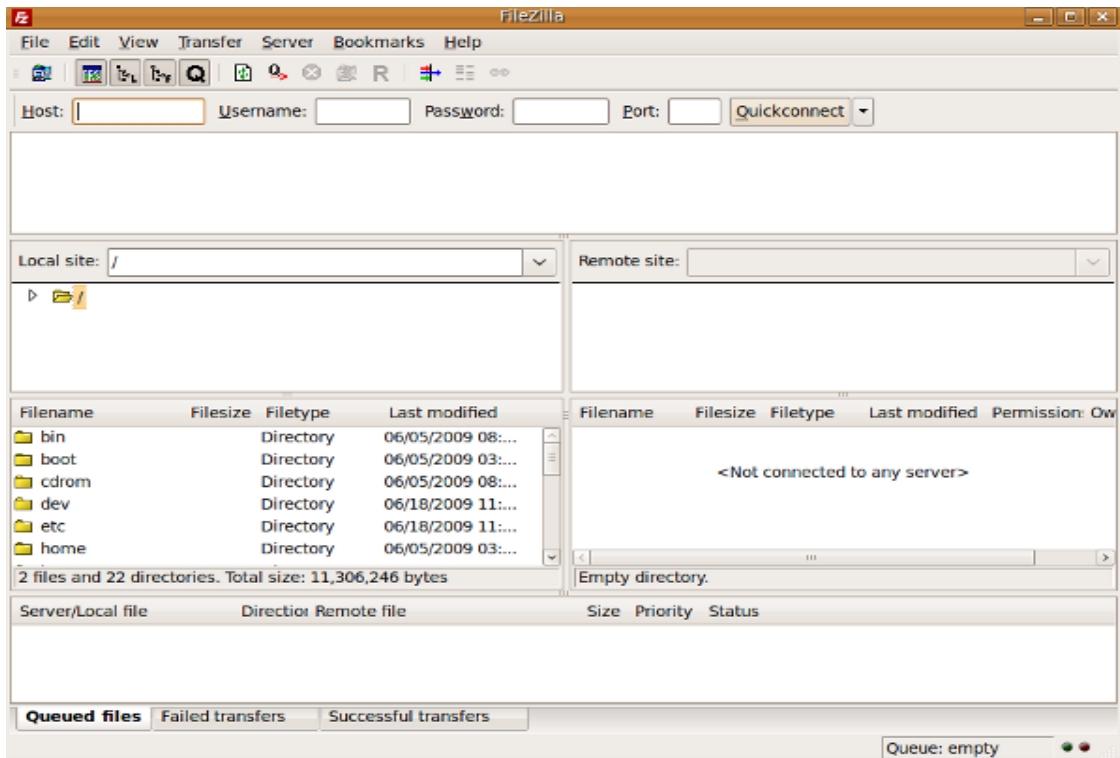
Installing firezella on ubuntu 9.10

sudo aptitude install filezilla if not as superuser otherwise exclude sudo

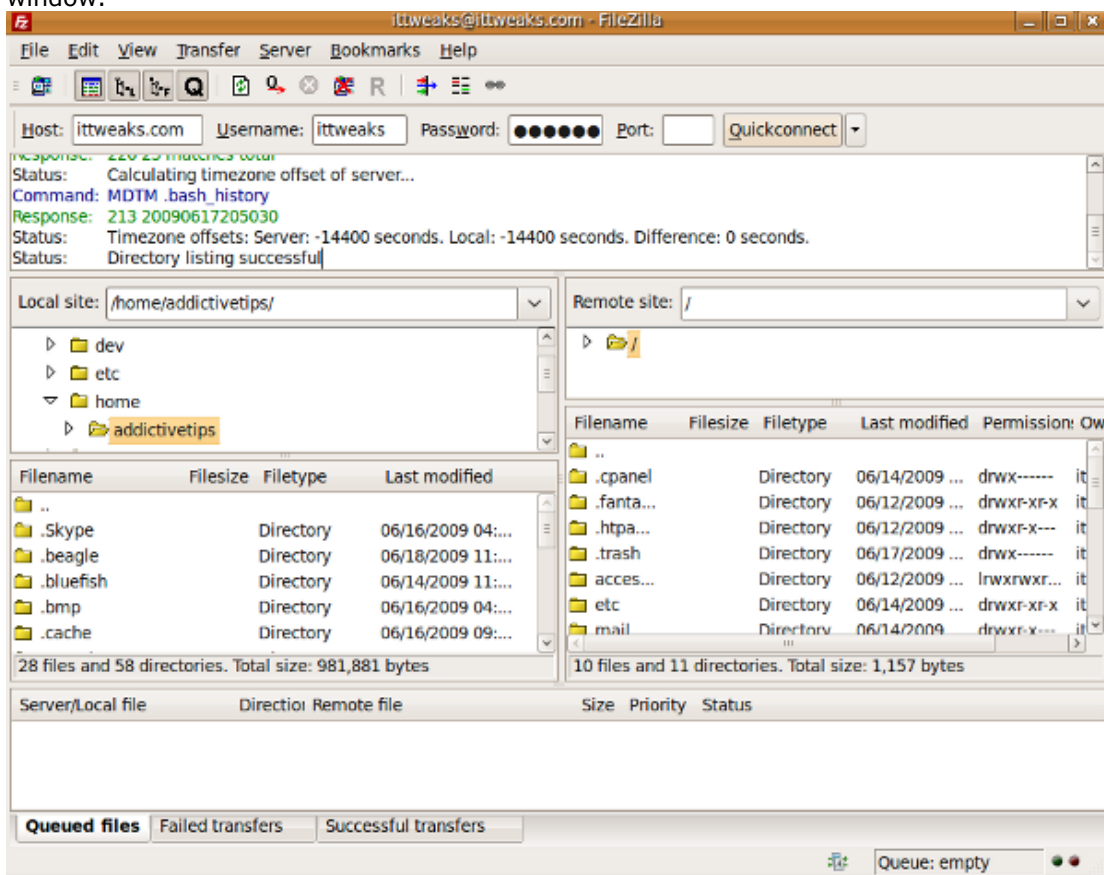
Once installation is complete, it can be loaded from **Applications > Internet > File Zilla FTP Client.**



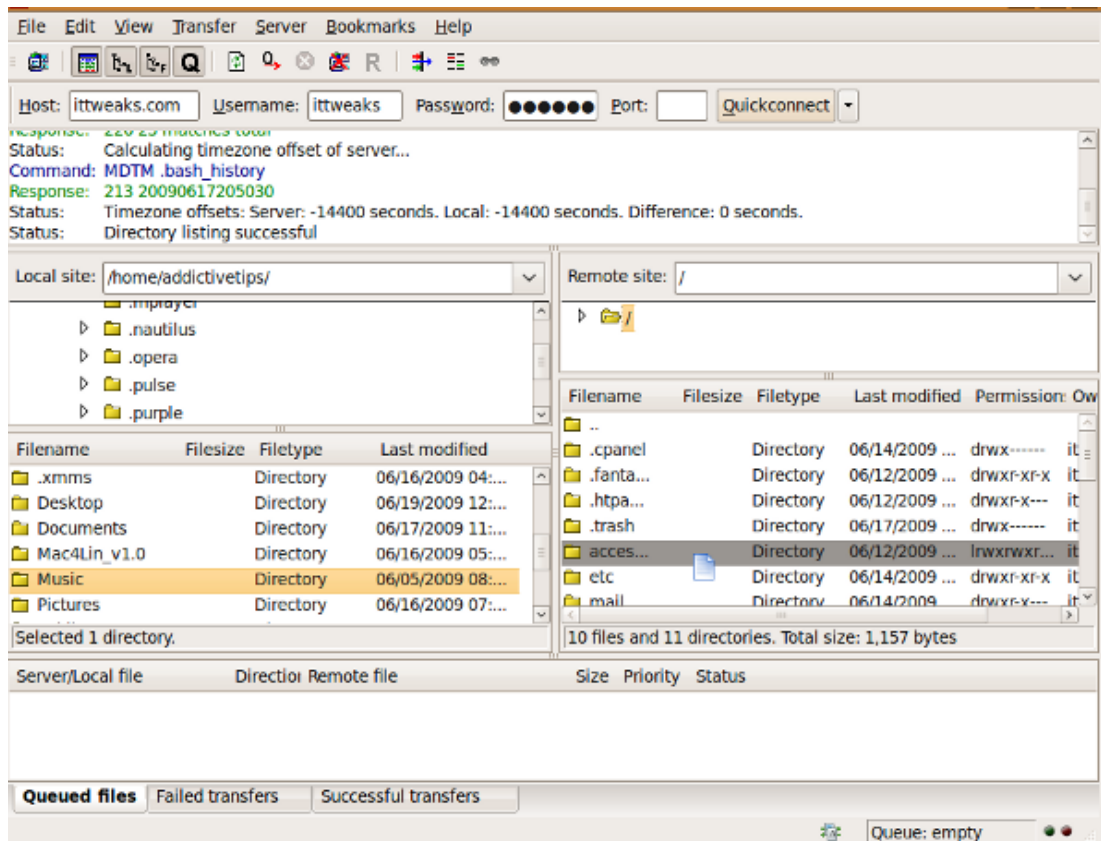
Here is screen shot showing the main screen of FileZilla.



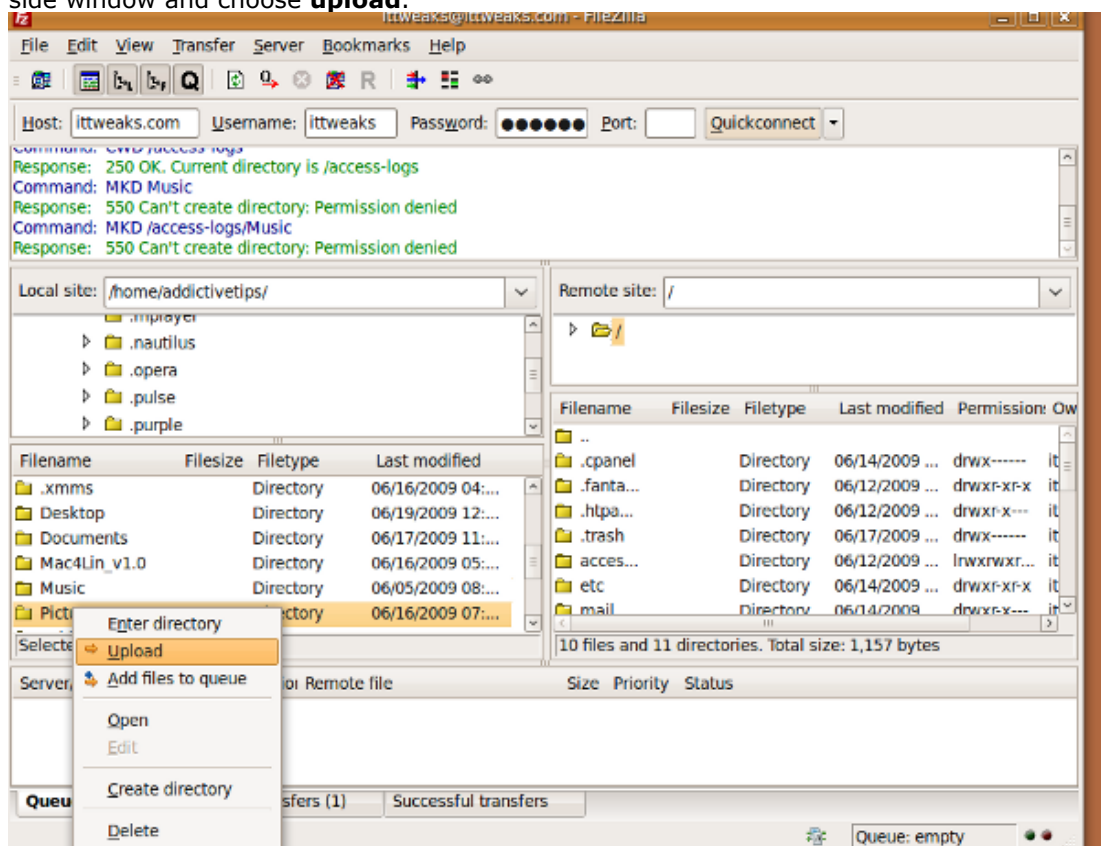
Specify your host name (IP address) and other login details and click **Quick Connect** to connect to your remote site. It has a basic dual window interface, once your connection is successfully established, you will be able to see remote files on right side window and local files on left side window.



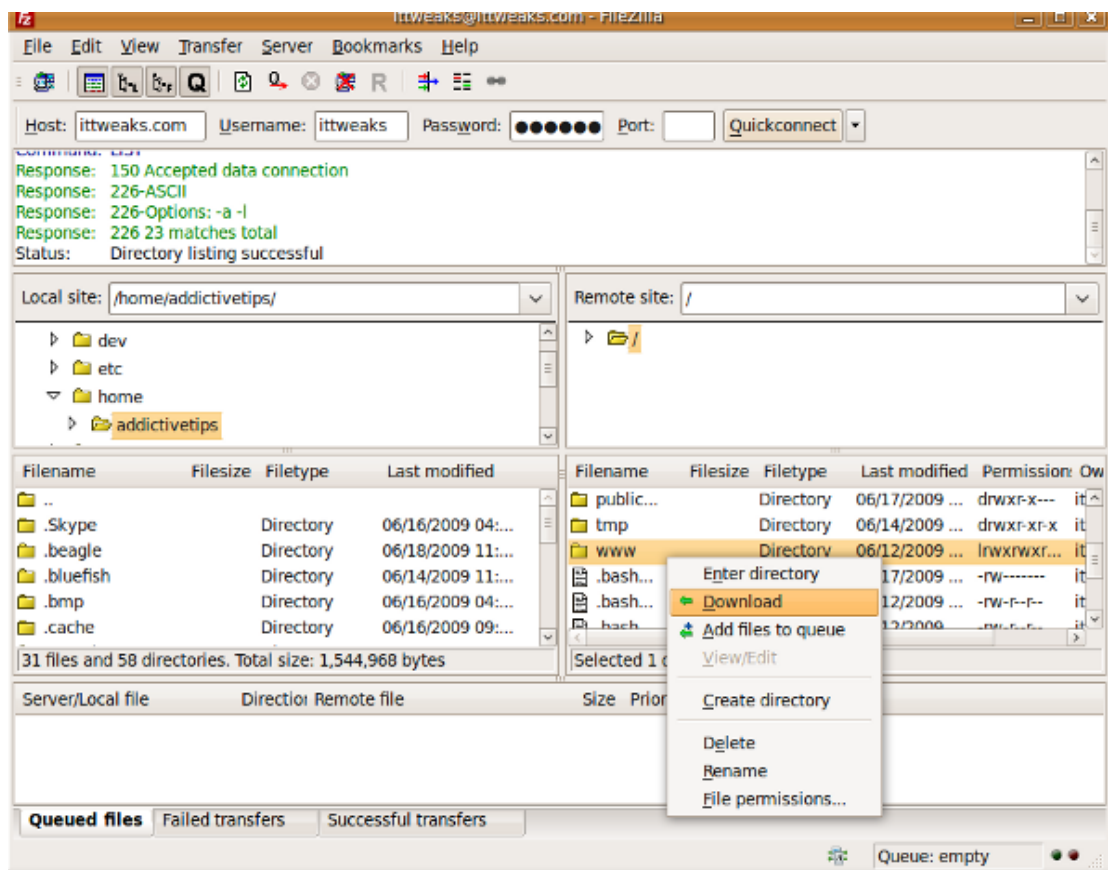
Now, to upload some file, drag and drop the file from your local drive to remote server.



Alternatively you can also transfer files without drag and drop, right click the file or folder in left side window and choose **upload**.



Similarly, to download files/folders, right click the respective file/folder and choosed**download**.



Renaming remote file/folder and changing permissions is also possible. You can track successful, failed, and queued transfers from the transfers window at the bottom. If you are looking forward to use search feature in FileZilla then go [here](#). Enjoy!

Installing PuTTY

```
sudo apt-get install putty
```

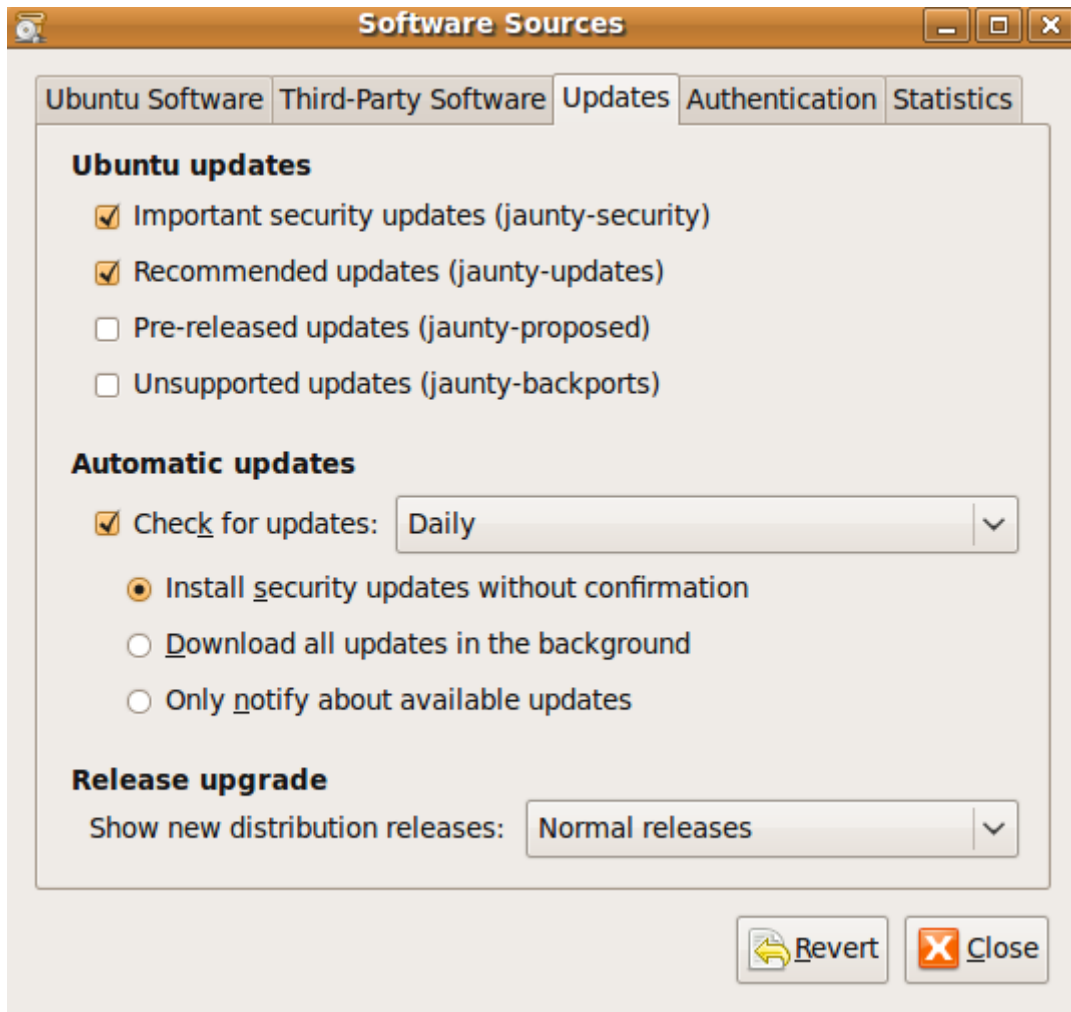
Securing your Ubuntu

Any computer which is connected with Internet has risk of getting infected from viruses and vulnerabilities. There are several approaches to security hardening. Although Ubuntu is much more secure than Windows, but still it is better to take some precautions. I have listed some simple tips to harden the security on your Ubuntu machine.

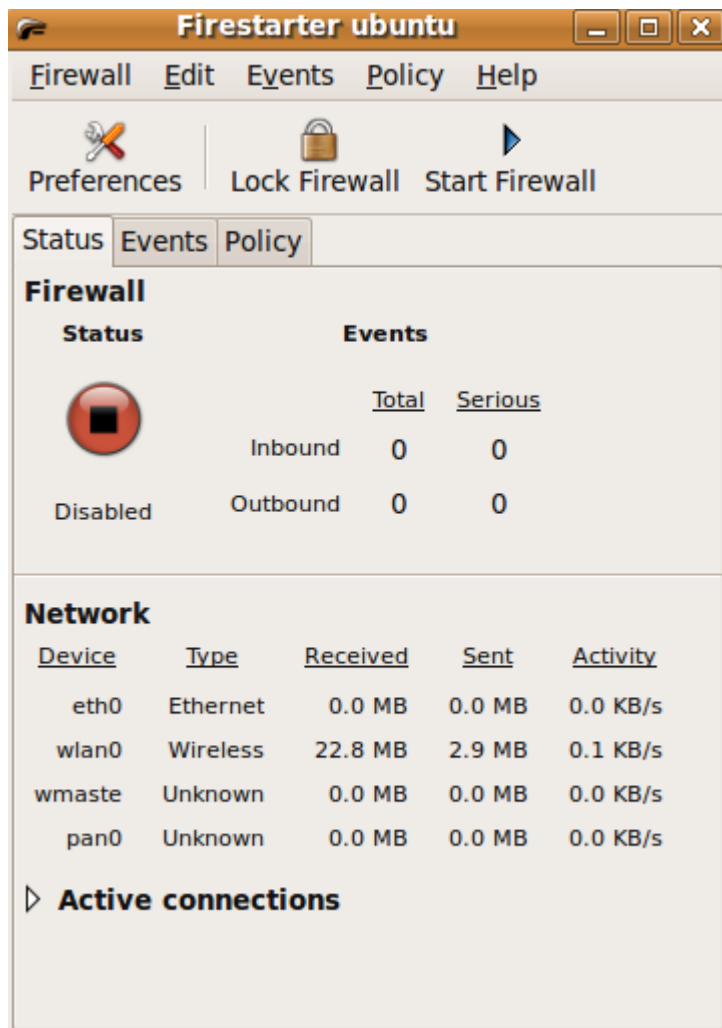
1. Keep softwares updated. To avoid any security vulnerability make sure that softwares installed on the ubuntu machine are at the latest stable release. There could be the couple of ways to get updates of software on Ubuntu, but the most commonly used method is to use **apt-get** to grab the updates of packages supported by Ubuntu. Run below command to get updates of packages in Ubuntu.

sudo apt-get update

Also make sure that the softwares that you are installing on your Ubuntu are from trusted vendors only. You can also enable automatic security updates on your Ubuntu. For enabling automatic security updates, go to System -> Administration -> software sources. Open up the "Updates" tab and select "Automatic updates", also select "Install security updates without confirmation".



2. Firewall. In Ubuntu all ports are blocked by default and you will have to open the ports which you need on your machine. For this purpose, you can get help of firestarter. Firestarter is a graphical tool of Ubuntu which helps you easily modify the firewall rules. You can launch firestarter from Application menu of your Ubuntu machine.



3. Avoid using root as user. By default Ubuntu has root user disabled for security reasons. By working as non root user, you can avoid so many mistakes. Modifications made by root user are often unrecoverable and any wrong command executed from root user can really put you in problem.

4. Default Settings. Be careful whenever you are going to change the default settings of your Ubuntu machine particularly network settings. Make sure that you have not allowed the remote logins to your Ubuntu machine.

5. Securing the web browsers. Most of the web sites are flash and Java script based now a days. To overcome any issues of security which you may face from web browser, make sure that you have denied all cookies and added trusted sites in your browser's settings. There could also be some other security measures which may vary from browser to browser.

There is no end to security measures. Following above guidelines will help you to secure your Ubuntu machine to much extent. Enjoy!

Accessing root by placing icon on the desktop of ubuntu 9.10

On desktop right click, go to launcher ,in Name field write **root** and in the command field write **gksudo nautilus**. Then press **Ok**.It is file from where u can access all folders and files of root

How to enter as super user (root) from the terminal

Sudo -s

How to give PATH in bashrc

First enter this in the terminal `sudo gedit /etc/bash.bashrc` , it will ask for password, give it and

Write at the end of file Path name u wish to give

```
export PATH=$PATH:/root/buildroot-avr32-v2.3.0/build_avr32/staging_dir/usr/bin
```

here is the place where avr32-linux-gcc is present so so avr32 studio will run correctly.

Deleting folder as superuser in ubuntu

`sudo rm -rf folder name` if folder has files

`sudo rmdir $nameofdir`

Transferring file from OS to NGW100

File cannot be transferred through telnet. One must use ftp. For example you can use filezilla to transfer your data.

If you transfer your file in `/media/` your file will be on SD card if you transfer it on `/bin`, `/sbin` ou `/usr/bin` it will be in internal dataflash memory so you don't need an SD card.

The IP address is 10.0.0.1. Be carefull the ngw100 ftp is in passive mode. Filezilla allow passive mode . specify username (root) and password (roota) to get to see the folders and files on the NGW100.

The SD card is mount on `/media/mcblk0p1`. Use the `cp` command to copy the file.

If you want to start your file at startup modify the `/etc/init.d/rcS` file to launch it.

What is your SD filesystem ?

You can see something on "dmesg" when you insert your SD ?

Run file from command `./file.elf`

Check for Imran

```
mount /dev/mmcblk0 media/sdcard
```

Activating any GPIO on NGW100

Go to shell

```
~ # mkdir /config/gpio/switch1
~ # cd /config/gpio/switch1
/config/gpio/switch1 # ls
enabled gpio_id oe_mask pin_mask
/config/gpio/switch1 # echo 4 > gpio_id
/config/gpio/switch1 # echo 0x00000008 > pin_mask           PE03(PIN 1of J7)
/config/gpio/switch1 # echo 0x00000008 > oe_mask           0 for input, 1 for output
/config/gpio/switch1 # echo 1 > enabled
/config/gpio/switch1 # cd /
~ # cd dev
/dev # ls
gpio3 loop2 mem mtd2ro mtblock3 root
/dev # cd ..
```

Turn on LED attach to PE03 (Pin 1 of J7)

```
~ # echo -ne "\x00\x00\x00\x00" > /dev/gpio3
~ # echo -ne "\x00\x00\x00\x08" > /dev/gpio3
```

Now it is turn for advance options

Through vi create any file (such as switch) and paste this there, this will create two gpios

```
mkdir /config/gpio/switch1
cd /config/gpio/switch1
echo 4 > gpio_id //echo 4 means PIOE
echo 0x00000008 > pin_mask
echo 0x00000008 > oe_mask
echo 1 > enabled
```

```
mkdir /config/gpio/switch2
cd /config/gpio/switch2
echo 4 > gpio_id
echo 0x00000010 > pin_mask
echo 0x00000010 > oe_mask
echo 1 > enabled
```

now running this file (switch) will create two gpios. If file(switch) is not running then run this command `chmod 755 switch`

Pin	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Bit	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	0
pin_mask	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
Hex	0				0				0				0				0				0				8								

pin_mask = 0x00000008

Pin	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Bit	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	0
oe_mask	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hex	0				0				0				0				0				0												

oe_mask = 0x00000000

Five PIO ports

PIOA	PIOB	PIOC	PIOD	PIOE
0	1	2	3	4

Each has several PINS and are physically connected like

PE01 (J7 Pin 25)

PE02 (J7 Pin 26)

PE03 (J7 Pin 1)

PE04 (J7 Pin 2)

References

http://www.alyda.nl/index.php?option=com_frontpage&Itemid=1

http://images.google.com/imgres?imgurl=http://www.addictivetips.com/wp-content/uploads/2009/06/filezilla-ftp.png&imgrefurl=http://www.addictivetips.com/ubuntu-linux-tips/install-and-use-filezilla-ftp-client-in-ubuntu-linux/&usq= H1-LOomWMBUT4mw-NKKmAOGCl3g=&h=449&w=493&sz=61&hl=en&start=6&um=1&itbs=1&tbnid=z2D_Asmc-3YDiM:&tbnh=118&tbnw=130&prev=/images%3Fq%3Dsetting%2Bfilezilla%2Bon%2Bubuntu%26hl%3Den%26sa%3DN%26um%3D1