**Configuration**

|  |  |
| --- | --- |
| Login | User = pi, Password = raspberry |
| Go to sysadmin/root mode | sudo su |
| Change password | passwd |
| Main configuration and update | raspi-config |
| Get IP adderess | Ifconfig |
| Shutdown | shutdown -h now |
| restart | shutdown -r now (or sudo reboot) |
| Network restart | /etc/init.d/networking restart |
| Manual/documentation for “tree” package | man tree |
| Update all packages | apt-get update |
| Upgrade all packages | apt-get upgrade |
| Scripts / BAT files | bash go.sh |
| Text editor | nano abc.txt |
|  |  |
| Delete file | rm abc.txt |
| Delete folder and content | rm -r folder1/ |
|  |  |
| Find file by mask | find . -name "libpi4j.so" |
|  |  |
| Linux version | uname -a |
|  |  |
| Services and status | service --status-all |

**Updates**

apt-get update (update all packages)

apt-get upgrade (upgrade all packages)

**sample install-deinstall tree package**

apt-get install tree –y

man tree (manual documentation for tree package)

apt-get remove tree (or sudo apt-get purge tree)

**QEMU**

**Extend image size**

qemu-img resize <imagename> +2G

fdisk /dev/sda (remember start block, delete partition 2, add partition with start block)

reboot

resize2fs /dev/sda2

**Remote access**

**QEMU SSH Redirecting:**

Add to RUN.BAT:

-redir tcp:230::3389 -redir tcp:22::22 -redir tcp:8999::8999

22= SSH Putty, 230=Remote Desktop, 8999=Java Remote Run

**Bridge Network**

So, you may have to do some surfing around to find it, but the basic idea is:

1) Install openvpn on your Windows system. This will install one or more "TAP" network devices on your system. I have no idea what the letters "TAP" stand for.

2) Use the "network control panel" to setup a "bridge" between your real connection (usually ethernet) and the "TAP" device.

3) Change your QEMU.BAT file to say -net nic -net if=tap

**Allow SSH**

<http://www.maketecheasier.com/static-ip-address-setup-ssh-on-raspberry-pi/>

sudo nano /etc/network/interfaces

iface eth0 inet static

address 192.168.1.20

netmask 255.255.255.0

gateway 192.168.1.1

sudo raspi-config

then enable SSH server

### RaspberryPi Current Limiter

<http://dumbpcs.blogspot.com/2014/07/usb-power-adapter-cables-whats-best-for.html>

nano /boot/config.txt

max\_usb\_current=1

safe\_mode\_gpio=4

When you plug in your external HDD, look at the RED LED of your Pi, if it is flickering, it means that you may NOT have enough voltage/current. The RED LED goes off when the voltage drops below 4.6V (under voltage indicator)

**Remote desktop**

<http://www.maketecheasier.com/enabling-remote-desktop-access-on-raspberry-pi/>

sudo apt-get install xrdp

**Putty**

<http://raspberrypi4dummies.wordpress.com/2013/03/17/connect-to-the-raspberry-pi-via-ssh-putty/>

**Development**

**Install Java**

apt-get update

apt-get install oracle-java7-jdk

**Install Wiring Pi**

<http://wiringpi.com/download-and-install/>

apt-get install git-core

**Install P4J**

curl -s get.pi4j.com | sudo bash

**Java Remote Debug**

Simple: <http://remotevm.abstracthorizon.org/eclipse-tutorial.html>

**On Client:**

Add to lib (pi4j+client)

Add to build path pi4j-core and client

Create lunch config:

**On Server:**

wget <http://repository.abstracthorizon.org/maven2/abstracthorizon.snapshot/org/ah/java/remotevmlauncher/remotevmlauncher-agent/1.0-SNAPSHOT/remotevmlauncher-agent-1.0-20140103.103618-5.jar>

java -jar remotevmlauncher-agent-1.0-20140103.103618-5.jar -d 1

java -jar remotevmlauncher-agent-1.0-SNAPSHOT.jar -d 3

Grant access:

sudo su

chmod -R ugo+rw .remotevm

chmod -R ugo+rw /opt/pi4j/lib/

**Eclipse Launcher**

Class = org.ah.java.remotevmlauncher.client.LaunchRemote

Arguments:

192.168.0.103:8999

sandbox.remotedebug.GpioRemote

--

**Download Files from Internet (WGET)**

<http://www.simplehelp.net/2008/12/11/how-to-download-files-from-the-linux-command-line/>

apt-get install wget

wget <http://server.lv/filename.zip>

**Autostart Java Application**

<http://stackoverflow.com/questions/11809191/linux-launch-java-program-on-startup-ec2-instance>

**Maven**

[http://maven.apache.org/download.cgi#Installation](http://maven.apache.org/download.cgi)

**Share folder on Linux**

<http://www.howtogeek.com/176471/how-to-share-files-between-windows-and-linux/>

sudo apt-get install samba

apt-get install samba-common-bin

smbpasswd -a pi

sudo nano /etc/samba/smb.conf

Add to the end:

[share]

path = /home/pi/share

available = yes

valid users = pi

read only = no

browsable = yes

public = yes

writable = yes

[root\_share]

path = /home/root/share

available = yes

valid users = root

read only = no

browsable = yes

public = yes

writable = yes

sudo service samba restart

**Power off HDMI to save power**

/opt/vc/bin/tvservice –off

**Magnetometer MPU-6050**

<http://blog.bitify.co.uk/2013/11/interfacing-raspberry-pi-and-mpu-6050.html>

nano /etc/modules

i2c-bcm2708  
i2c-dev

nano /etc/modprobe.d/raspi-blacklist.conf

#blacklist spi-bcm2708

#blacklist i2c-bcm2708

apt-get install i2c-tools

i2cdetect -y 1

i2cget -y 1 0x1e 0x75

# Multiple I2C

sudo nano /boot/config.txt

dtparam=i2c\_arm=on

dtparam=spi=on

dtparam=i2s=on

dtparam=i2c=on

**dtparam=i2c1=on**

**dtparam=i2c0=on**

**Install C for Raspberry Pi**

<http://www.airspayce.com/mikem/bcm2835/>

wget <http://www.airspayce.com/mikem/bcm2835/bcm2835-1.37.tar.gz>

tar zxvf bcm2835-1.xx.tar.gz

cd bcm2835-1.xx

./configure

make

sudo make check

sudo make install

**Install wiringpi**

<https://projects.drogon.net/raspberry-pi/wiringpi/download-and-install/>

git clone git://git.drogon.net/wiringPi

cd wiringPi

git pull origin

./build

gpio readall

## C++ Compile

gcc -o sonar sonar.c -l wiringPi

# WiFi

<http://www.ghacks.net/2009/04/14/connect-to-a-wireless-network-via-command-line/>

ifconfig wlan0 up

iwlist wlan0 scan

iwconfig wlan0 essid dm key AAABBBCC

dhclient wlan0

## Install Wifi Utils (auto start wifi)

<http://raspberrypi.stackexchange.com/questions/4120/how-to-automatically-reconnect-wifi>

sudo apt-get install wicd-curses

sudo wicd-cruses

# Video Camera

https://www.youtube.com/watch?v=T8T6S5eFpqE

sudo raspi-config

* Enable camera

raspistill -o test.jpg

raspivid -o test.h264 -t 60000

# C++ Install on Windows and Pi

<http://help.eclipse.org/luna/index.jsp?topic=%2Forg.eclipse.ptp.rdt.doc.user%2Fhtml%2Fgettingstarted%2Fserver_installation.html>

In Windows:

1. Eclipse CDT
2. MinGW: <http://max.berger.name/howto/cdt/>
3. Download <http://www.eclipse.org/ptp/downloads_5_0.php>

Pi:

tar -xvf rdt-server-linux-5.0.7.tar

su –l root

cd /home/pi/share/rdt-server/

perl ./daemon.pl 4075 10000-10010

# Netbeans

<https://netbeans.org/kb/docs/cnd/remotedev-tutorial.html>

sudo su

chmod -R ugo+rw .netbeans/

# Audio via USB

<http://computers.tutsplus.com/articles/using-a-usb-audio-device-with-a-raspberry-pi--mac-55876>

<http://plugable.com/2014/11/06/how-to-switch-to-usb-audio-on-raspberry-pi>

lsusb

amixer

sudo nano /etc/modprobe.d/alsa-base.conf

options snd-usb-audio index=0

options snd\_bcm2835 index=1

alsamixer

**My AUDIO (disable integrated):**

[**https://www.raspberrypi.org/forums/viewtopic.php?f=66&t=18573**](https://www.raspberrypi.org/forums/viewtopic.php?f=66&t=18573)

sudo nano /etc/modules

#snd-bcm2835