

## Building a debian arm root filesystem

Do the following as root

First of all you need to install the support packages on your pc

```
apt-get install qemu-user-static debootstrap binfmt-support
```

Next you need to choose the version of Debian in this case we are building a debian 4 etch filesystem.

```
targetdir=rootfs
distro=etch
```

Now we will build first stage of Debian rootfs :

```
mkdir $targetdir
/usr/sbin/debootstrap --arch=arm --foreign $distro $targetdir
```

Next copy the qemu-arm-static binary into the right place for the binfmt packages to find it and copy in resolv.conf from the host.

```
cp /usr/bin/qemu-arm-static $targetdir/usr/bin/
cp /etc/resolv.conf $targetdir/etc
```

If everything is right we now have a minimal Debian rootfs

```
/usr/sbin/chroot $targetdir
```

Inside the chroot we need to set up the environment again

```
distro=etch
export LANG=C
```

Now we are setup the second stage of debootstrap needs to run install the packages downloaded earlier

```
/debootstrap/debootstrap --second-stage
```

Once the package installation has finished, setup some support files and apt configuration.

```
cat <<EOT > /etc/apt/sources.list
# deb http://archive.debian.org/debian/ $distro main

deb http://archive.debian.org/debian/ $distro main non-free contrib
deb http://archive.debian.org/debian-security/ $distro/updates main non-free contrib

deb-src http://archive.debian.org/debian/ $distro main non-free contrib
deb-src http://archive.debian.org/debian-security/ $distro/updates main non-free contrib

EOT
```

Update Debian package database:

```
apt-get update
```

Set the path

```
export PATH=/bin:/sbin:/usr/bin:/usr/sbin:/usr/local/bin:/usr/local/sbin
```

## mount proc and devpts

```
mount proc /proc -t proc
mount devpts /dev/pts -t devpts
```

Set up locales dpkg scripts tend to complain otherwise, note in jessie you will also need to install the dialog package as well.

```
apt-get install locales dialog
```

```
dpkg-reconfigure locales
```

## Install some useful packages inside the chroot

```
apt-get install telnetd ntpdate mc ncurses-dev gcc make patch irda-utils ppp
```

## Set a root password so you can login

```
passwd
```

## Build a basic network interface file so that the board will DHCP on eth0

```
echo <<EOT >> /etc/network/interfaces
allow-hotplug eth0
iface eth0 inet static
    address 192.168.1.254
    netmask 255.255.255.248
    gateway 192.168.1.1
EOT
```

**Note:** Your board will be accessible over telnet on IP address defined above !

## Set the hostname

```
echo psion > /etc/hostname
```

## Enable the serial console, Debian sysvinit way

```
echo T0:2345:respawn:/sbin/getty -L ttyS0 115200 vt100 >> /etc/inittab
```

We are done inside the chroot, so quit the chroot shell

```
exit
```

## Tidy up the support files

```
rm $targetdir/etc/resolv.conf
rm $targetdir/usr/bin/qemu-arm-static
```

Now you have your Debian rootfs. Next step is to build a Kernel