OpenMoko

Shakthi Kannan

October 2007
Version 1.1

Build online

Add the following /etc/apt/sources.list

deb http://www.openembedded.org/dl/ packages/

Install openembedded

apt-get update
apt-get install openembedded-essential

mkdir /home/<user>/moko
cd /homo/<user>/moko

Build online

Install dependancy packages

```
apt-get install python-pysqlite2 help2man \
                gcc-3.4 gcc-3.4-base
apt-get install zliblg zliblg-dev libqt4-core libqt4-gui
```

Install openmoko

```
wget http://www.rwhitby.net/files/openmoko/Makefile
make setup
make openmoko-devel-image
```

Build offline

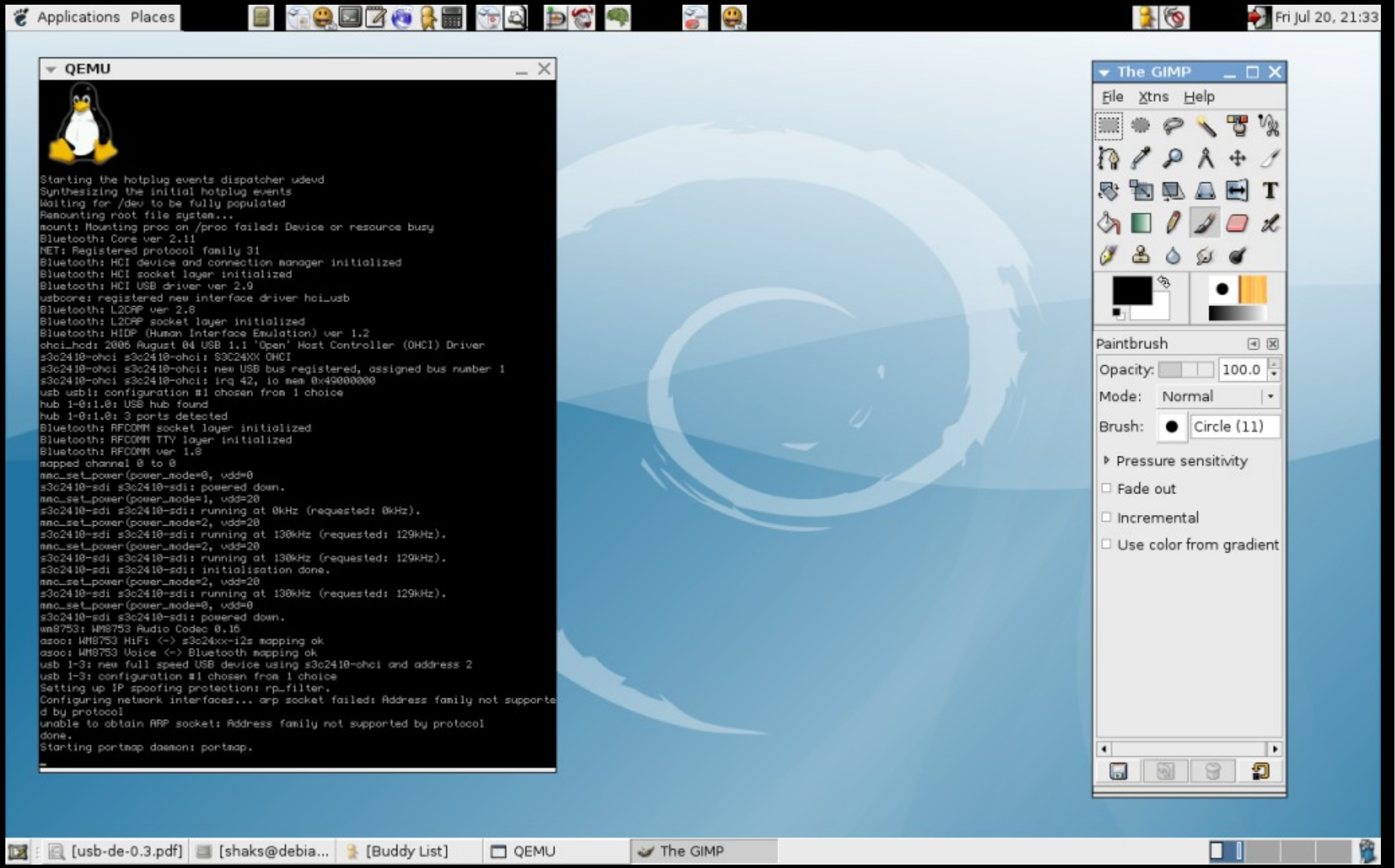
Initial downloads/setup

```
wget http://www.rwhitby.net/files/openmoko/Makefile
make setup
source setup-env
bitbake -c fetchall openmoko-devel-image
```

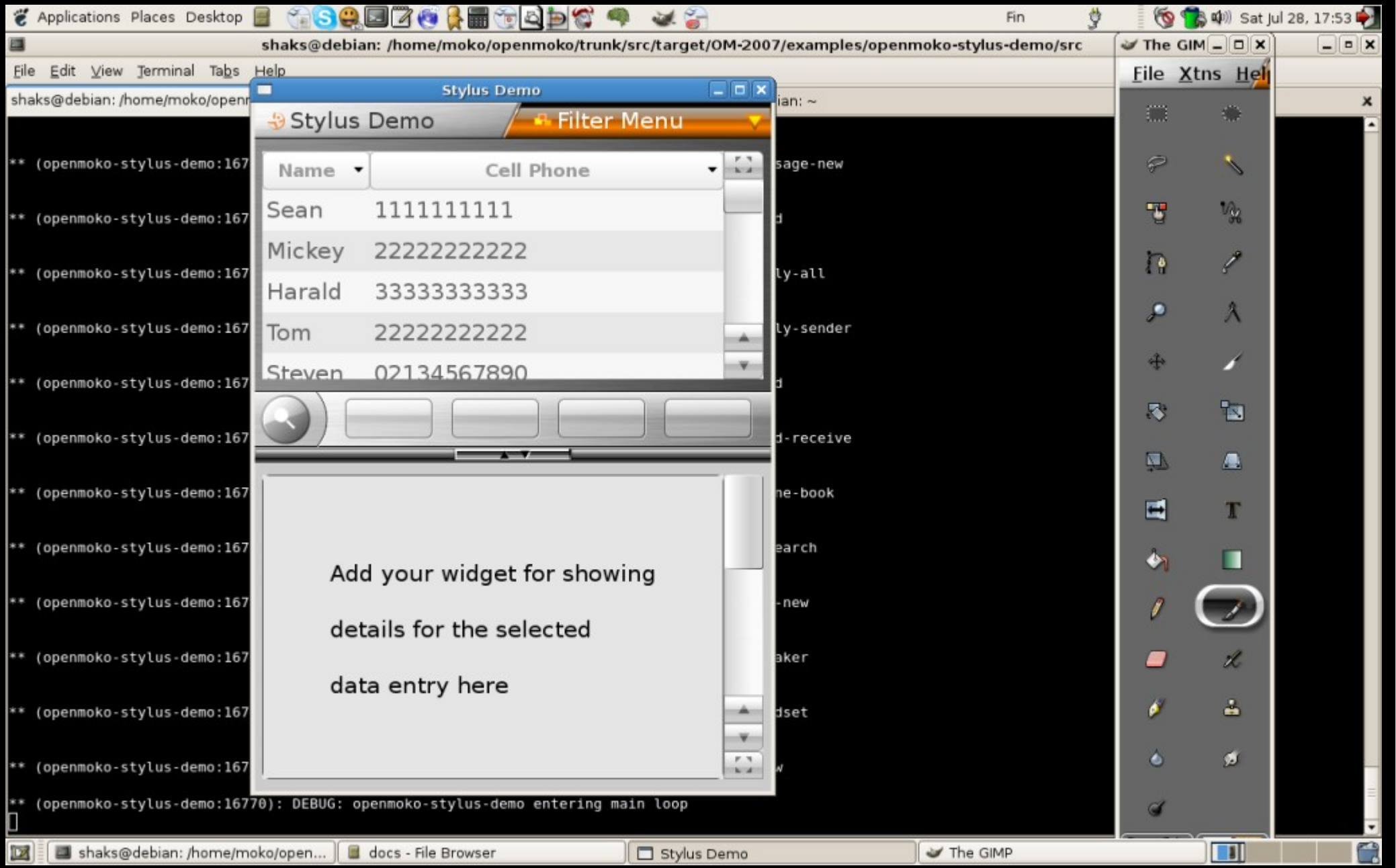
Then, you can build it offline

```
make openmoko-devel-image
```

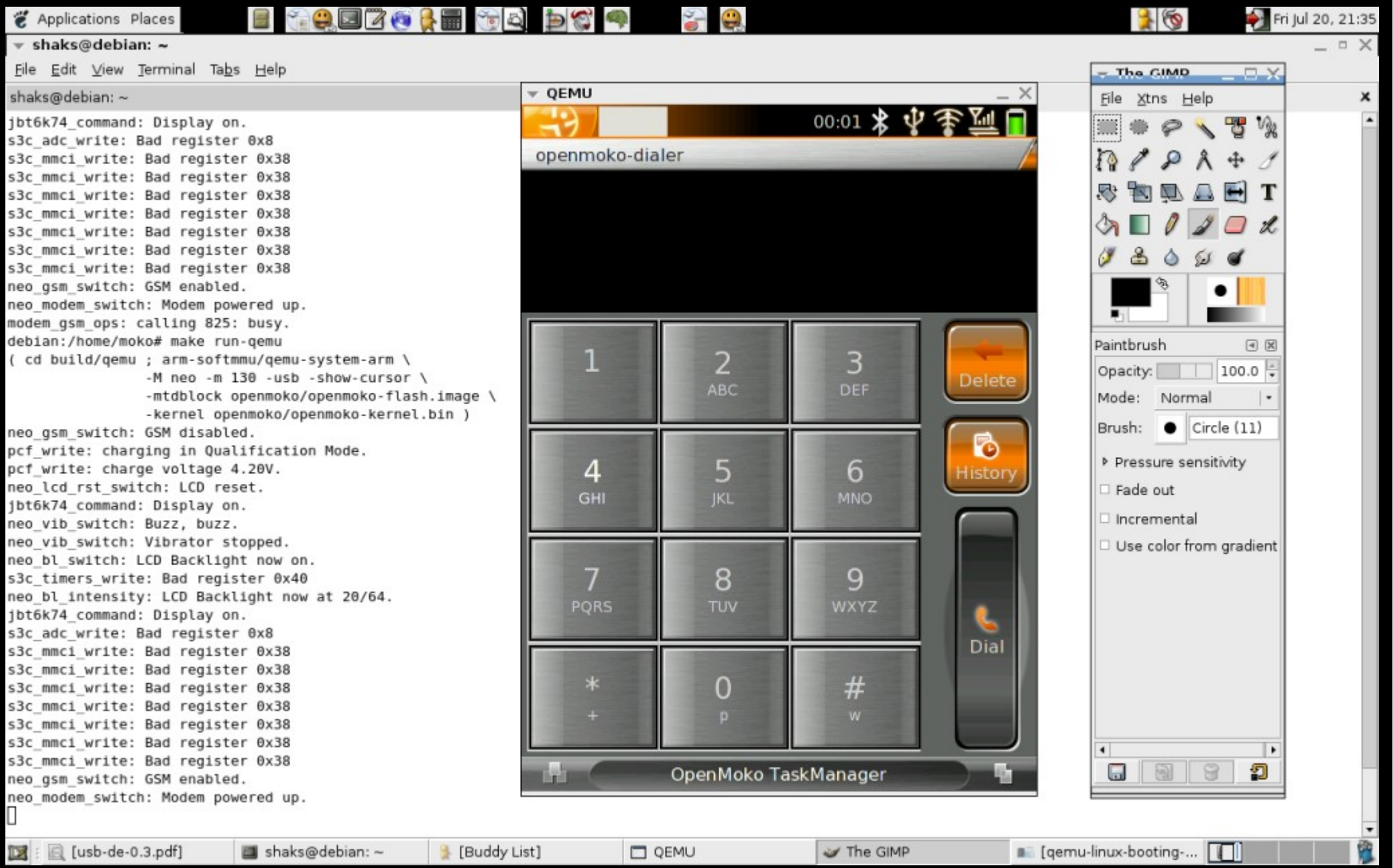
Qemu


Applications Places
Fri Jul 20, 21:33
QEMU
Starting the hotplug events dispatcher udevd
Synthesizing the initial hotplug events
Waiting for /dev to be fully populated
Remounting root file system...
mount: Mounting proc on /proc failed: Device or resource busy
Bluetooth: Core ver 2.11
NET: Registered protocol family 31
Bluetooth: HCI device and connection manager initialized
Bluetooth: HCI socket layer initialized
Bluetooth: HCI USB driver ver 2.9
usbcore: registered new interface driver hci_usb
Bluetooth: L2CAP ver 2.8
Bluetooth: L2CAP socket layer initialized
Bluetooth: HIDP (Human Interface Emulation) ver 1.2
ohci_hcd: 2006 August 04 USB 1.1 'Open' Host Controller (OHCI) Driver
s3c2410-ohci s3c2410-ohci: S3C24XX OHCI
s3c2410-ohci s3c2410-ohci: new USB bus registered, assigned bus number 1
s3c2410-ohci s3c2410-ohci: irq 42, io mem 0x49000000
usb usb1: configuration #1 chosen from 1 choice
hub 1-0:1.0: USB hub found
hub 1-0:1.0: 3 ports detected
Bluetooth: RFCOMM socket layer initialized
Bluetooth: RFCOMM TTY layer initialized
Bluetooth: RFCOMM ver 1.8
mapped channel 0 to 0
mmc_set_power(power_mode=0, vdd=0
s3c2410-sdi s3c2410-sdi: powered down.
mmc_set_power(power_mode=1, vdd=20
s3c2410-sdi s3c2410-sdi: running at 0kHz (requested: 0kHz).
mmc_set_power(power_mode=2, vdd=20
s3c2410-sdi s3c2410-sdi: running at 130kHz (requested: 129kHz).
mmc_set_power(power_mode=2, vdd=20
s3c2410-sdi s3c2410-sdi: running at 130kHz (requested: 129kHz).
s3c2410-sdi s3c2410-sdi: initialisation done.
mmc_set_power(power_mode=2, vdd=20
s3c2410-sdi s3c2410-sdi: running at 130kHz (requested: 129kHz).
mmc_set_power(power_mode=0, vdd=0
s3c2410-sdi s3c2410-sdi: powered down.
wm8753: WM8753 Audio Codec 0.16
asoc: WM8753 HiFi <-> s3c24xx-i2s mapping ok
asoc: WM8753 Voice <-> Bluetooth mapping ok
usb 1-3: new full speed USB device using s3c2410-ohci and address 2
usb 1-3: configuration #1 chosen from 1 choice
Setting up IP spoofing protection: rp_filter.
Configuring network interfaces... arp socket failed: Address family not supported by protocol
unable to obtain ARP socket: Address family not supported by protocol
done.
Starting portmap daemon: portmap.
The GIMP
File Xtns Help
Paintbrush
Opacity: 100.0
Mode: Normal
Brush: Circle (11)
Pressure sensitivity
Fade out
Incremental
Use color from gradient
[usb-de-0.3.pdf]
[shaks@debia...
[Buddy List]
QEMU
The GIMP

Standalone Application Host



Qemu


Applications Places
Fri Jul 20, 21:35
shaks@debian: ~
File Edit View Terminal Tabs Help
shaks@debian: ~
jbt6k74_command: Display on.
s3c_adc_write: Bad register 0x8
s3c_mmci_write: Bad register 0x38
neo_gsm_switch: GSM enabled.
neo_modem_switch: Modem powered up.
modem_gsm_ops: calling 825: busy.
debian:/home/moko# make run-qemu
(cd build/qemu ; arm-softmmu/qemu-system-arm \
-M neo -m 130 -usb -show-cursor \
-mtdblock openmoko/openmoko-flash.image \
-kernel openmoko/openmoko-kernel.bin)
neo_gsm_switch: GSM disabled.
pcf_write: charging in Qualification Mode.
pcf_write: charge voltage 4.20V.
neo_lcd_rst_switch: LCD reset.
jbt6k74_command: Display on.
neo_vib_switch: Buzz, buzz.
neo_vib_switch: Vibrator stopped.
neo_bl_switch: LCD Backlight now on.
s3c_timers_write: Bad register 0x40
neo_bl_intensity: LCD Backlight now at 20/64.
jbt6k74_command: Display on.
s3c_adc_write: Bad register 0x8
s3c_mmci_write: Bad register 0x38
neo_gsm_switch: GSM enabled.
neo_modem_switch: Modem powered up.
QEMU
00:01
openmoko-dialer
1
2 ABC
3 DEF
Delete
4 GHI
5 JKL
6 MNO
History
7 PQRS
8 TUV
9 WXYZ
Dial
*
0 p
w
OpenMoko TaskManager
The GIMP
File Xtns Help
Paintbrush
Opacity: 100.0
Mode: Normal
Brush: Circle (11)
Pressure sensitivity
Fade out
Incremental
Use color from gradient
[usb-de-0.3.pdf]
shaks@debian: ~
[Buddy List]
QEMU
The GIMP
[qemu-linux-booting-...

Standalone Makefile

```
/* main.c */
#include <stdio.h>

int main (int argc, char** argv)
{
        printf("Hello World!\n");
        return 0;
}
```

~/.bashrc

```
export PKG_CONFIG_PATH= \
        /home/katie/moko/build/tmp/staging/ \
        arm-angstrom-linux-gnueabi/lib/pkgconfig
```

Standalone Makefile

```
TARGET = foo

OM=/home/katie/moko

CC = $(OM)/build/tmp/cross/arm-angstrom-linux-gnueabi/bin/gcc
LDFLAGS = -L$(OM)/build/tmp/staging/arm-angstrom-linux-gnueabi/lib \
  -Wl,-rpath-link,$(OM)/build/tmp/staging/arm-angstrom-linux-gnueabi/lib -Wl,-O1 \
  -g -o

SRC = main.c

PKG = `$(OM)/build/tmp/staging/i686-linux/bin/pkg-config --cflags --libs openmoko-
libs gtk+-2.0 libgsmd`

all:
	${CC} ${LDFLAGS} $(TARGET) $(SRC) $(PKG)

send:
	scp $(TARGET) root@neo:/home/root

clean:
	rm -f *~ $(TARGET)
```

Autotools

```
## src/Makefile.am

INCLUDES = \
	$(PACKAGE_CFLAGS)

AM_CFLAGS =\
	 -Wall\
	 -g

bin_PROGRAMS = helloworld

helloworld_SOURCES = \
	main.c

helloworld_LDFLAGS = `${OMDIR}/build/tmp/staging/i686-linux/bin/pkg-config
--cflags --libs libmokoui2 libgsmd`


helloworld_LDADD =  \
	$(PACKAGE_LIBS)
```

Autotools

```
## helloworld.bb

DESCRIPTION = "Hello World"
AUTHORS = "Katie Holmes"
HOMEPAGE = "http://free-opensource.qvantel.net
SECTION = "openmoko/pim"
PRIORITY = "optional"
LICENSE = "GPL"
DEPENDS += "libmokoui2 libgsmd"

inherit autotools

SRC_URI = "file:///home/katie/temp/helloworld.tar.bz2"

S = "${WORKDIR}/helloworld"
```

References

- http://wiki.openmoko.org
- http://free-opensource.qvantel.net