

XILINX -ZC702

BOOT GUIDE



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1. Introduction

The hypervisor demo involves running two Linux guests on the Xilinx-ZC702 hardware platform. The first guest after bootup runs the Qt based video demo application and provides GUI based user interface. This requires LCD monitor with HDMI port, USB keyboard and USB mouse. The second guest uses UART based command line interface.

2. Testing

Board setup

Please refer <http://wiki.xilinx.com/zynq-base-trd-14-2#toc19>

Note : The binary provided with the release is built for 1280x720 resolution.

No video input device is required.

From the U-Boot prompt,

a. Load SierraTEE.bin to 0x3C000000

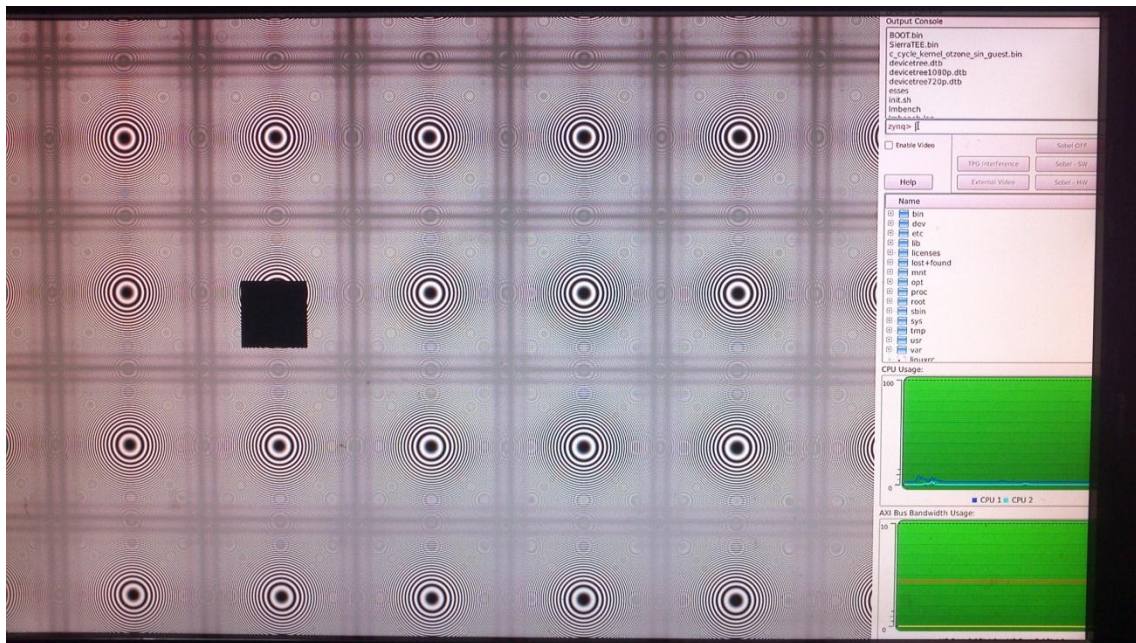
Note: prebuilt binary is available in bin directory.

b. go 0x3C000000

This will initiate the following sequence

a. Run secure world OS

b. Load and run the first guest



3. Testing Applications

- a. Go to `/root/otz/`
- b. Run the application
`./otz_tee_app.elf`

Here the output of the GUI screen.

The screenshot displays the boot console interface for a Zynq device. At the top, there is an "Output Console" area. Below it, the prompt "zynq> Command console shell" is visible. A section for "Enable Video" includes a checkbox and several buttons: "Sobel OFF", "TPG Interference", "Sobel - SW", "External Video", and "Sobel - HW". A "Help" button is also present. A file explorer shows a directory structure with folders: bin, dev, etc, lib, licenses, and lost+found. Below the file explorer are two performance graphs. The "CPU Usage:" graph shows two lines for CPU 1 (blue) and CPU 2 (light blue) on a scale from 0 to 100. The "AXI Bus Bandwidth Usage:" graph shows three lines for HP Port 0 (red), HP Port 1 (green), and HP Port 2 (yellow) on a scale from 0 to 10 Gb/s.

Console log output:

```
U-Boot 2011.03 (Jul 16 2012 - 10:45:50)

DRAM: 256 MiB
MMC: SDHCI: 0
Using default environment

In: serial
Out: serial
Err: serial
Net: zynq_gem
Hit any key to stop autoboot: 0
zynq-uboot> mmcinfo;fatload mmc 0 0x3c000000 SierraTEE.bin;go
0x3c000000
Device: SDHCI
Manufacturer ID: 3
OEM: 5344
Name: SU08G
Tran Speed: 25000000
Rd Block Len: 512
SD version 1.10
High Capacity: Yes
Capacity: 7948206080
Bus Width: 1-bit
reading SierraTEE.bin

24093142 bytes read
## Starting application at 0x3C000000 ...

SW: Entering Secure Main
board_map secure page table
SW: Enabling SCU...
Created GlobalACL for USER: 1 GROUP:1 to access DEVICE: 2711
USER: 2 added to GROUP: 1 DEVICE: 2711
USER: 3 added to GROUP: 1 DEVICE: 2711
USER: 4 added to GROUP: 1 DEVICE: 2711
USER: 5 added to GROUP: 1 DEVICE: 2711
USER: 6 added to GROUP: 1 DEVICE: 2711

SW: UART driver initialized successfully
zync: timer init
zync: timer init
zync: timer init
the mount file system is 32 and the value is 0
file system successfully mounted in FAT32
Testing storage API:
-----Allocating Memory For Create Object-----
-----Allocating Memory For Create Object members-----
*****TEE_AllocateTransientObject*****
128, 192, or 256 bits is set
```

```

the objectType is 0
the maxObjectsize is 800
Transient Object is successfully allocated
  the allocate transient function returns value is 1
***** create persistent object *****
write mode is set
WRITE MODE
File creation success
opened successfully
file descriptor : 3
***** write persistent object *****
-----
checking value of count and size is minimum or not?
value of count and size is not minimum
-----
checking value of count and size is maximum or not?
value of count and size is not maximum
-----
sw_flushbuffer
_write is called by sw_fwrite func
calculate total bytes
no of bytes write is 2e
Testing : no of bytes write is 2e
-----
sw_fwrite is successfully worked
-----
*****sw_fclose implementation*****
fclose:checking fopen maximum conditions
fclose:maximum file opened
WriteObjectData:file pointer is not closed
error in write of create
The create Persistent object funtion returns value is 8
-----
-----Allocating Memory For open Object-----
-----Allocating Memory For open Object members-----
*****TEE_AllocateTransientObject*****
Same as for RSA public key size
the objectType is a
the maxObjectsize is 800
Transient Object is successfully allocated
  the allocate transient function returns value is 1
***** open persistent object *****
read mode is set
READ MODE
opened successfully
file descriptor : 4
current opened file name is /test.dir/test.txt
current opened file length is 40
open successfully performed

```

The open Persistent object funtion returns value is 1

```
*****Reset the open object*****
*****Reset the Transient Object*****
object values are reseted
***** open persistent object *****
read mode is set
READ MODE
opened successfully
file descriptor : 5
current opened file name is /test.dir/read.txt
current opened file length is 40
open successfully performed
The open Persistent object funtion returns value is 1
```

```
***** read persistent object *****
-----
*****sw_fclose implementation*****
fclose:checking fopen maximum conditions
fclose:maximum file opened
ReadObjectData:file pointer is not closed
The Read Persistent funtion returns value is 7
```

```
*****Reset the read object*****
*****Reset the Transient Object*****
object values are reseted
***** open persistent object *****
write mode is set
WRITE MODE
opened successfully
file descriptor : 6
current opened file name is /test.dir/write.txt
current opened file length is 40
open successfully performed
The open Persistent object funtion returns value is 1
```

```
***** write persistent object *****
-----
checking value of count and size is minimum or not?
value of count and size is not minimum
-----
checking value of count and size is maximum or not?
value of count and size is not maximum
-----
sw_flushbuffer
_write is called by sw_fwrite func
calculate total bytes
no of bytes write is 2d
Testing : no of bytes write is 2d
-----
```



```
sw_fwrite is successfully worked
-----
*****sw_fclose implementation*****
fclose:checking fopen maximum conditions
fclose:maximum file opened
WriteObjectData:file pointer is not closed
The write Persistent funtion returns value is 7

*****Reset the write object*****
*****Reset the Transient Object*****
object values are reseted
***** open persistent object *****
read mode is set
READ MODE
opened successfully
file descriptor : 7
current opened file name is /test.dir/write.txt
current opened file length is 40
open successfully performed
The open Persistent object funtion returns value is 1

***** read persistent object *****
-----
*****sw_fclose implementation*****
fclose:checking fopen maximum conditions
fclose:maximum file opened
ReadObjectData:file pointer is not closed
The Read Persistent funtion returns value is 7

*****TESTING:write persistent object*****
FAILURE
*****Reset the read object*****
*****Reset the Transient Object*****
object values are reseted
***** open persistent object *****
write mode is set
WRITE MODE
opened successfully
file descriptor : 8
current opened file name is /test.dir/truncate.txt
current opened file length is 40
open successfully performed
The open Persistent object funtion returns value is 1

***** truncate persistent object *****
the file name is /test.dir/truncate.txt
no of bytes to truncate a
truncate function is working successfully
truncate successfully performed
```

The truncate Persistent funtion returns value is 1

```
*****Reset the truncate object*****
*****Reset the Transient Object*****
object values are reseted
***** open persistent object *****
read mode is set
READ MODE
opened successfully
file descriptor : 9
current opened file name is /test.dir/truncate.txt
current opened file length is 40
open successfully performed
The open Persistent object funtion returns value is 1
```

```
***** read persistent object *****
-----
*****sw_fclose implementation*****
fclose:checking fopen maximum conditions
fclose:maximum file opened
ReadObjectData:file pointer is not closed
The Read Persistent funtion returns value is 7
```

```
*****TESTING:truncate persistent object*****
FAILS
*****Reset the read object*****
*****Reset the Transient Object*****
object values are reseted
***** open persistent object *****
read+ mode is set
READ MODE
AND WRITE MODE
opened successfully
file descriptor : a
current opened file name is /test.dir/test.txt
current opened file length is 40
open successfully performed
The open Persistent object funtion returns value is 1
```

```
***** rename persistent object *****
the old file name is /test.dir/test.txt
the old file name length is 40
the new file name is /test.dir/new.txt
the new file name length is 40
File creation success
rename function is working successfully
-----
*****sw_fclose implementation*****
fclose:checking fopen maximum conditions
fclose:maximum file opened
```

```
old file pointer is not closed
The rename Persistent funtion returns value is 7

*****Reset the rename object*****
*****Reset the Transient Object*****
object values are reseted
***** open persistent object *****
read mode is set
READ MODE
opened successfully
file descriptor : d
current opened file name is /test.dir/new.txt
current opened file length is 40
open successfully performed
The open Persistent object funtion returns value is 1

***** read persistent object *****
-----
*****sw_fclose implementation*****
fclose:checking fopen maximum conditions
fclose:maximum file opened
ReadObjectData:file pointer is not closed
The Read Persistent funtion returns value is 7

*****TESTING:rename persistent object*****
FAILS
*****Reset the read object*****
*****Reset the Transient Object*****
object values are reseted
***** open persistent object *****
read+ mode is set
READ MODE
AND WRITE MODE
opened successfully
file descriptor : e
current opened file name is /test.dir/seek.txt
current opened file length is 40
open successfully performed
The open Persistent object funtion returns value is 1

***** seek persistent object *****
-----
*****sw_fclose implementation*****
fclose:checking fopen maximum conditions
fclose:maximum file opened
SeekObjectData:file pointer is not closed
The seek Persistent funtion returns value is 7

*****Reset the seek object*****
*****Reset the Transient Object*****
```

```
object values are reseted
***** open persistent object *****
read mode is set
READ MODE
opened successfully
file descriptor : f
current opened file name is /test.dir/delete.txt
current opened file length is 40
open successfully performed
The open Persistent object funtion returns value is 1
the removed file is /test.dir/delete.txt
the file is removed from the Mentioned Path
Deleted file name is /test.dir/delete.txt
delete the file successfully performed
*****Reset the close object*****
*****Reset the Transient Object*****
object values are reseted
***** open persistent object *****
read mode is set
READ MODE
Error Not Item Found
The open Persistent object funtion returns value is 5

*****TESTING:close and delete persistent object*****
SUCCESS
*****Reset the seek object*****
*****Reset the Transient Object*****
object values are reseted
*****InitRefAttributes the Transient Object*****
attribute ID is 1
*****Initial Reference attributes *****
buffer of attribute is And finally we tested GP_INTERNAL_STORAGE APP

length of attribute is 2e
Initial Reference attributes successfully assigned
*****Initial value Attributes *****
attribute ID is 20000000
value of a in attribute is 5
value of b in attribute is 7
Initial value Attributes successfully assigned
*****Populate the Transient Object*****
attribute ID is 20000000
value of a in attribute is a
value of b in attribute is b
attribute ID is 275
buffer of attribute is This will get populated sometimes in the test
fn

length of attribute is 31
attribute ID is 23425676
```

```

value of a in attribute is 1e
value of b in attribute is 1f
PopulateTransientObject is successfully performed
the populate transient function returns value is 1
*****Reset the populate object*****
*****Reset the Transient Object*****
object values are reseted
*****Copy Object Attributes *****
file name is /test.dir/crt.txt
file length is 40
attribute ID is 0
buffer of attribute is
length of attribute is 0
copy the object attributes is successfully performed
*****free the create object by call TEE_FreeTransientObject fn*****
*****Free the Transient Object*****
Allocated objects are freed
*****free the common object by call TEE_FreeTransientObject fn*****
*****Free the Transient Object*****
Allocated objects are freed
-----Program Successfully Terminated-----
Testing Arithmetic API:
#####ADD#####
00000000 | 00000000 | 2468acf1 | 3579bde0 | 2468acf1 | 3579bde0 |
2468acf1 | 3579bde0 | 2468acf1 | 3579bde0 | 2468acf1 | 3579bde0 |
2468acf1 |
#####SUB#####
00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
00000000 |
#####MULT#####
00000000 | 00000000 | 00000000 | 00000000 | 014b66dc | 33f6acdc |
a878d649 | 5a927ab9 | 4fa645b6 | 812e4895 | f6d3b523 | a7ca1672 |
9e012490 |
#####DIV#####
Q:
00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
00000000 |
starting secondary core 1 ..
wait for secondary core to wakeup...
val 0xa : 0xa
done
nsk load:load addr = 8000, startaddr = 3c700000, size = ffald6
Done
tzhyp_guest_context_init:context init for sec core 1
size of system context = 100
Created GlobalACL for USER: 1 GROUP:1 to access DEVICE: 1
Created GlobalACL for USER: 1 GROUP:1 to access DEVICE: 2
Created GlobalACL for USER: 1 GROUP:1 to access DEVICE: 3

```

```

Created GlobalACL for USER: 1 GROUP:1 to access DEVICE: 4
Created GlobalACL for USER: 1 GROUP:1 to access DEVICE: 5
Created GlobalACL for USER: 1 GROUP:1 to access DEVICE: 6
SW: dispatch task id 0x111
Booting Linux on physical CPU 0
Linux version 3.3.0-14.2-build1 (root@sierra) (gcc version 4.4.1
(Sourcery G++ Lite 2010q1-202) ) #3 SMP PREEMPT Mon Dec 17 17:45:01
IST 2012
CPU: ARMv7 Processor [413fc090] revision 0 (ARMv7), cr=18c5387d
CPU: PIPT / VIPT nonaliasing data cache, VIPT aliasing instruction
cache
Machine: Xilinx Zynq Platform, model: Xilinx Zynq ZC702
bootconsole [earlycon0] enabled
Memory policy: ECC disabled, Data cache writealloc
PERCPU: Embedded 7 pages/cpu @c148b000 s5696 r8192 d14784 u32768
Built 1 zonelists in Zone order, mobility grouping on. Total pages:
129920
Kernel command line: console=tty0 console=ttyPS0,115200 root=/dev/ram
rw initrd=0x800000,8M ip=192.168.0.91:::255.255.255.0:ZC702:eth0
earlypriM
PID hash table entries: 2048 (order: 1, 8192 bytes)
Dentry cache hash table entries: 65536 (order: 6, 262144 bytes)
Inode-cache hash table entries: 32768 (order: 5, 131072 bytes)
Memory: 512MB = 512MB total
Memory: 506316k/506316k available, 17972k reserved, 0K highmem
Virtual kernel memory layout:
   vector   : 0xffff0000 - 0xffff1000   (   4 kB)
   fixmap   : 0xffff0000 - 0xffffe000   ( 896 kB)
   vmalloc   : 0xe0800000 - 0xff000000   ( 488 MB)
   lowmem    : 0xc0000000 - 0xe0000000   ( 512 MB)
   pkmap     : 0xbfe00000 - 0xc0000000   (   2 MB)
   modules   : 0xbf000000 - 0xbfe00000   (  14 MB)
   .text     : 0xc0008000 - 0xc04195a0   (4166 kB)
   .init     : 0xc041a000 - 0xc043f640   ( 150 kB)
   .data     : 0xc0440000 - 0xc046e020   ( 185 kB)
   .bss     : 0xc046e044 - 0xc048841c   ( 105 kB)
Preemptible hierarchical RCU implementation.
   Verbose stalled-CPU detection is disabled.
NR_IRQS:128
xlnx,ps7-ttc-1.00.a #0 at 0xe0800000, irq=43
Console: colour dummy device 80x30
console [tty0] enabled
Calibrating delay loop... 1332.01 BogoMIPS (lpj=6660096)
pid_max: default: 32768 minimum: 301
Mount-cache hash table entries: 512
CPU: Testing write buffer coherency: ok
CPU0: thread -1, cpu 0, socket 0, mpidr 80000000
smp_twd: clock not found: -2
Calibrating local timer... 333.56MHz.

```

```
hw perfevents: enabled with ARMv7 Cortex-A9 PMU driver, 7 counters
available
Setting up static identity map for 0x2fedc8 - 0x2fedfc
sec cmd cpul boot
start kernel on secondary core
wait for secondary core to wakeup...done
CPU1: Booted secondary processor
CPU1: thread -1, cpu 1, socket 0, mpidr 80000001
Brought up 2 CPUs
SMP: Total of 2 processors activated (2664.03 BogoMIPS).
devtmpfs: initialized
NET: Registered protocol family 16
L310 cache controller enabled
l2x0: 8 ways, CACHE_ID 0x410000c8, AUX_CTRL 0x72360000, Cache size:
524288 B
registering platform device 'pl330' id 0
registering platform device 'arm-pmu' id 0
hw-breakpoint: found 5 (+1 reserved) breakpoint and 1 watchpoint
registers.
hw-breakpoint: maximum watchpoint size is 4 bytes.
xslcr xslcr.0: at 0xF8000000 mapped to 0xE0808000
bio: create slab <bio-0> at 0
gpiochip_add: registered GPIOs 0 to 245 on device: xgpiops
xgpiops e000a000.gpio: gpio at 0xe000a000 mapped to 0xe080a000
Xilinx DMA driver
xilinx-dma 40090000.axivdma: Probing xilinx axi dma engines
xvdma @ 40090000
xilinx-dma 400b0000.axivdma: Probing xilinx axi dma engines
xvdma @ 400b0000
SCSI subsystem initialized
usbcore: registered new interface driver usbfs
usbcore: registered new interface driver hub
usbcore: registered new device driver usb
Switching to clocksource xttcpss_timer1
NET: Registered protocol family 2
IP route cache hash table entries: 4096 (order: 2, 16384 bytes)
TCP established hash table entries: 16384 (order: 5, 131072 bytes)
TCP bind hash table entries: 16384 (order: 5, 196608 bytes)
TCP: Hash tables configured (established 16384 bind 16384)
TCP reno registered
UDP hash table entries: 256 (order: 1, 8192 bytes)
UDP-Lite hash table entries: 256 (order: 1, 8192 bytes)
NET: Registered protocol family 1
RPC: Registered named UNIX socket transport module.
RPC: Registered udp transport module.
RPC: Registered tcp transport module.
RPC: Registered tcp NFSv4.1 backchannel transport module.
Trying to unpack rootfs image as initramfs...
rootfs image is not initramfs (no cpio magic); looks like an initrd
Freeing initrd memory: 8192K
```

```

xscugtimer xscugtimer.0: ioremap fe00c200 to e080c200 with size 400
pl330 dev 0 probe success
JFFS2 version 2.2. (NAND) (SUMMARY) © 2001-2006 Red Hat, Inc.
msgmni has been set to 1004
io scheduler noop registered
io scheduler deadline registered
io scheduler cfq registered (default)
xvdma xvdma.0: Xilinx VDMA probe successful
                Devices Scanned 2
xsobel 400d0000.axi-sobel: Xilinx Sobel at 0x400D0000 mapped to
0x400D0000
e00i: [ttyPS0] enabled, bootconsole disabled
console [ttyPS0] enabled, bootconsole disabled
xdevcfg f8007000.devcfg: ioremap f8007000 to e0860000 with size 100
brd: module loaded
loop: module loaded
m25p80 spil.0: n25q128 (16384 Kbytes)
7 ofpart partitions found on MTD device spil.0
Creating 7 MTD partitions on "spil.0":
0x0000000000000-0x0000000080000 : "qspi-fsbl"
0x0000000080000-0x0000000100000 : "qspi-u-boot"
0x0000000100000-0x0000000600000 : "qspi-linux"
0x0000000600000-0x0000000620000 : "qspi-device-tree"
0x0000000620000-0x0000000700000 : "qspi-user"
0x0000000700000-0x0000000800000 : "qspi-scratch"
0x0000000800000-0x0000001000000 : "qspi-rootfs"
xqspips e000d000.spi: at 0xE000D000 mapped to 0xE0862000, irq=51
GEM: BASEADDRESS hw: e000b000 virt: e0864000
XEMACPS mii bus: probed
eth0, pdev->id -1, baseaddr 0xe000b000, irq 54
ehci_hcd: USB 2.0 'Enhanced' Host Controller (EHCI) Driver
xusbps-ehci xusbps-ehci.0: Xilinx PS USB EHCI Host Controller
xusbps-ehci xusbps-ehci.0: new USB bus registered, assigned bus number
1
xusbps-ehci xusbps-ehci.0: irq 53, io mem 0x00000000
xusbps-ehci xusbps-ehci.0: USB 2.0 started, EHCI 1.00
hub 1-0:1.0: USB hub found
hub 1-0:1.0: 1 port detected
Initializing USB Mass Storage driver...
usbcore: registered new interface driver usb-storage
USB Mass Storage support registered.
Xilinx PS USB Device Controller driver (Apr 01, 2011)
mousedev: PS/2 mouse device common for all mice
i2c /dev entries driver
xi2cps e0004000.i2c: 100 kHz mmio e0004000 irq 57
si570 1-005d: registered si570 with default frequency 156250000 Hz
si570 1-005d: set initial output frequency 148500000 Hz
i2c i2c-0: Added multiplexed i2c bus 1
i2c i2c-0: Added multiplexed i2c bus 2
at24 3-0054: 1024 byte 24c08 EEPROM, writable, 1 bytes/write

```



```
i2c i2c-0: Added multiplexed i2c bus 3
i2c i2c-0: Added multiplexed i2c bus 4
rtc-pcf8563 5-0051: chip found, driver version 0.4.3
rtc-pcf8563 5-0051: low voltage detected, date/time is not reliable.
rtc-pcf8563 5-0051: retrieved date/time is not valid.
rtc-pcf8563 5-0051: rtc core: registered rtc-pcf8563 as rtc0
i2c i2c-0: Added multiplexed i2c bus 5
i2c i2c-0: Added multiplexed i2c bus 6
i2c i2c-0: Added multiplexed i2c bus 7
i2c i2c-0: Added multiplexed i2c bus 8
pca954x 0-0074: registered 8 multiplexed busses for I2C switch pca9548
Linux video capture interface: v2.00
gspca_main: v2.14.0 registered
uvcvideo: Unable to create debugfs directory
usbcore: registered new interface driver uvcvideo
USB Video Class driver (1.1.1)
WDT OF probe
xwdtps f8005000.swdt: Xilinx Watchdog Timer at 0xe086a000 with timeout
10 seconds
sdhci: Secure Digital Host Controller Interface driver
sdhci: Copyright(c) Pierre Ossman
sdhci-pltfm: SDHCI platform and OF driver helper
mmc0: Invalid maximum block size, assuming 512 bytes
mmc0: SDHCI controller on e0100000.sdhci [e0100000.sdhci] using ADMA
usbcore: registered new interface driver usbhid
usbhid: USB HID core driver
TCP cubic registered
NET: Registered protocol family 17
VFP support v0.3: implementor 41 architecture 3 part 30 variant 9 rev
4
Registering SWP/SWPB emulation handler
si570 1-005d: set new output frequency 148500000 Hz
xylonfb video mode: 1920x1080-16@60
Console: switching to colour frame buffer device 240x67
xylonfb 0 registered
mmc0: new high speed SDHC card at address aaaa
xylonfb 1 registered
xylonfb 2 registered
mmcblk0: mmc0:aaaa SU08G 7.40 GiB
  mmcblk0: p1
rtc-pcf8563 5-0051: low voltage detected, date/time is not reliable.
rtc-pcf8563 5-0051: retrieved date/time is not valid.
rtc-pcf8563 5-0051: hctosys: invalid date/time
GEM: lp->tx_bd ffdfb000 lp->tx_bd_dma 1ef85000 lp->tx_skb de812000
GEM: lp->rx_bd ffdfc000 lp->rx_bd_dma 1ef84000 lp->rx_skb def83c00
GEM: MAC 0x00350a00, 0x00002201, 00:0a:35:00:01:22
GEM: phydev def78a00, phydev->phy_id 0x1410e40, phydev->addr 0x7
eth0, phy_addr 0x7, phy_id 0x01410e40
eth0, attach [Marvell 88E1116R] phy driver
usb 1-1: new low-speed USB device number 2 using xusbps-ehci
```

```
IP-Config: Complete:
  device=eth0, addr=192.168.0.91, mask=255.255.255.0,
gw=255.255.255.255,
  host=ZC702, domain=, nis-domain=(none),
  bootserver=255.255.255.255, rootserver=255.255.255.255, rootpath=
RAMDISK: gzip image found at block 0
input: USB Optical Mouse as /devices/amba.0/e0002000.usb/xusbps-
ehci.0/usb1/1-1/1-1:1.0/input/input0
generic-usb 0003:0461:4D80.0001: input: USB HID v1.11 Mouse [USB
Optical Mouse] on usb-xusbps-ehci.0-1/input0
EXT2-fs (ram0): warning: mounting unchecked fs, running e2fsck is
recommended
VFS: Mounted root (ext2 filesystem) on device 1:0.
devtmpfs: mounted
Freeing init memory: 148K
Starting rcS...
++ Mounting filesystem
++ Setting up mdev
++ Starting telnet daemon
++ Starting http daemon
++ Starting ftp daemon
++ Starting dropbear (ssh) daemon
++ Running bootack to start second guest
++ Mounting SD Card at /mnt
rcS Complete
zynq>
zynq>
zynq>
zynq>
```