Linux on the Sony PlayStation 2

1 Hardware

PlayStation 2 Features and Specs	
CPU	128-bit Playstation 2 CPU, MIPS R5900 v2.0 (variant of MIPSel) built in a 0.18 micron process by Toshiba.
System Clock Frequency	294.912 MHz
Cache Memory	Instruction: 16KB, Data: 8KB + 16KB(ScrP)
Main Memory	Direct Rambus (Direct RDRAM)
Memory Size	32MB
Memory Bus Bandwidth	3.2GB per Second
Co-processor	FPU (Floating Point Unit) Floating Point Multiply Accumulator x 1, Floating Point Divider x 1
Vector Units	VU0 and VU1 Floating Point Multiply Accumulator x 9, Floating Point Divider x 3
FP Performance	6.2 GFLOPS
3D CG Geometric Transf.	66 Million Polygons per second
Compressed Image Decoder	MPEG2
Graphics Synthesizer	
Clock Frequency	147.456MHz
Embedded DRAM	4MB
DRAM Bus bandwidth	48GB per Second
DRAM Bus width	2560 Bits
Pixel Configuration	RGB:Alpha:Z Buffer (24:8:32)
Polygon Drawing Rate	75 Million Polygons per Second
Screen Resolution	Variable from 256 x 224 to 1280 x 1024
Sound "SPU2+CPU"	
Number of Voices	ADPCM: 48ch on SPU2 plus definable, software programmable voices
Sound Memory	2MB
Output Frequency	Variable up to 48 KHz (DAT quality)
I/O Processor	
CPU Core	PlayStation (current) CPU
Clock Frequency	33.8688MHz or 36.864MHz (Selectable)
IOP Memory	2MB
Sub Bus	32-bit
Interface Types	IEEE1394 i.Link , USBx2

2 Models, it's known to run on

- SCPH-10000 (Japanese Model)
- SCPH-15000 (Japanese Model)

- SCPH-18000 (Japanese Model)
- Some beta-releases of European PS2 without FireWire, but with a hard-disk (Eduard Bloch)

3 Linux

Before, Linux was used to simulate and develop software for the PlayStation 2, but after a petition of over 6000 people to work on a project to release Linux on PS2, Sony put out a Development Kit (called SCPH-10270K) for the Japanese Models of PlayStation 2.

Now, it seems, as if there is no reason (except for the different video output PAL/NTSC), why this version should be different from the European version (according to a telephone call with Sony-Germany in Neu-Isenburg, this is true).

The version of the distribution seems to be Redhat 6.2. The Linux Kit is available for $ 200 and includes a DVD with Software, a 40 GB hard drive, a keyboard and a mouse.

The site containing the Linux Beta 1 kit (`http://www.ps2linux.scea.com/`), states in `http://www.ps2linux.scea.com/key_features.html`:

- DVD-ROM containing Beta Release 1 of Linux for PS2
- 40 GByte Hard Disc Drive (Ultra ATA-100)
- 10 BASE-T/100 BASE-TX Ethernet Interface (pictures sugest PCMCIA?)
- USB Keyboard
- USB Mouse
- PlayStation 2 VGA AV Connector (HD 15 plus Stereo Audio) – requires "sync on green" monitor

Included on the DVD Disc is:

- "PlayStation 2" System Manual Set
- "PlayStation 2" Runtime Environment
- PS2 Linux Beta Release 1 Install Kit
- Linux Kernel 2.2.1
- XFree86 3.3.6
- gcc 2.95.2
- glibc 2.2.2

4 References

Link	Description
http://www.ps2linux.com	Official home of project (**japanese**)
http://www.pslug.org	PlayStation User Group (**japanese**)
http://www.runix.ru	Version of Linux for PSX (PlayStation 1) (**english**)
http://news.cnet.com/news/0-1006-200-5756218.html	News about Sony release of Linux for PS2
http://news.cnet.com/news/0-1006-200-6157865.html	News about Czech Company Blokman Trading, releasing the Linux 2.4 kernel for PSX/PSone (PlayStation 1)
http://yoshi.sytes.net	Web-Server powered by PlayStation 2!
http://www.gifu-nct.ac.jp/archi/ryos/ps2linux/ps2manual/index.html	Site about installation instruction (**japanese**)
http://ps2l1.maru.ne.jp	Site about PS2 info, output of free and /proc/cpuinfo et al (try second link on left side)!!! (**japanese**)
http://www.anarchists.co.uk	Nice site about PS2 development. (**english**)
http://ps2dev.sourceforge.net	THE Resource on PS2 development! (**english**)

Telephone-Hotlines (Germany):

- German PS2 Hotline: 0180 / 57669 77
- German Sony PS2 Sales Center, Neu-Isenburg: 06102 / 4330

5 Contributions

Thanks to people, who contributed to this document:

- Eduard Bloch