Linux (for PlayStation 2) CONSOLE YOURSELF

Is Sony taking a big gamble in releasing Linux (for PlayStation 2)? Giving over a software development kit to a group of hackers seems like a strange thing to do, after all. Colin Murphy finds out whether Sony's gamble just might pay off

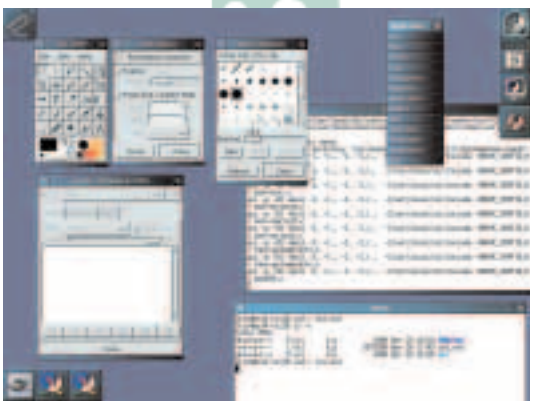
PlayStation 2 Linux Community

By the time you read this, excited Linux developers and users should be able to get their hands on this special piece of kit from Sony, which will enable you to use a PlayStation 2 console as a full, Linux-powered desktop computer. That's not its primary goal however, the real power comes from being able to develop your own games and applications that will run on Linux (for PlayStation 2).

What do you get

Included with the Linux (for PlayStation 2) kit is a 40Gb internal hard drive, a 10/100 Base-T Ethernet network adaptor and two sets of discs. The first contains the proprietary runtime environment, as well as some very comprehensive system manuals.

The second disc will contain a special Linux distribution and a wide selection of software packages. Since the PS2 uses a MIPs processor, most of the standard packages that you would find in a Mandrake or SuSE distribution won't work 'out of the box'. This is not too great a hurdle because you are provided with all the software you need to recompile anything you have the source code for.



Who would have guessed it was a PlayStation 2?

Use and abuse

The fact that you're going to be called upon to compile software yourself is a very good indication of exactly who the Linux (for PlayStation 2) is aimed at: the computer literate enthusiast. You will need to have a PlayStation 2 already and a monitor. The Linux kit also has a mouse and keyboard thrown in for good measure. There is one proviso with the monitor: it must be capable of accepting a sync-on-green signal, and not all monitors do. There is a list of known supported monitors available for consultation at the Linux (for PlayStation 2) community Web site, as well as a utility that should allow you to check for suitability.

Once you've used a monitor to install Linux (for PlayStation 2), you then have the option of using a TV as a display. None of the commercial games, at the moment, provide a VESA display output mode, so even if you do have suitable monitor don't expect to play your current games on it.

Community support

Sony has managed to create a bridge between itself and this seemingly untapped community of computer hackers and enthusiasts. The whole project seems to have been brought about by no more than consumer pressure: enough people said what an original idea it would be to release an Open development system at an attractive and affordable price point. It's turning out to be quite a big community as well, over 9,000 people have registered an interest in Linux (for PlayStation 2) on the SCEE Web site.

This isn't the first time that Sony has opened up to small-scale developers. Net Yaroze allowed PlayStation users to develop their own games, which relied on an additional PC to do the development work. Despite the relatively high price – almost twice the price of Linux (for PlayStation 2) – a strong community of developers formed around it, which exchanged tips, tricks and, most interestingly for an Open Source community, samples of code.

It should not come as too much of a surprise then that the next generation of a PlayStation 'hobbyist' development kit should be built around Linux, especially

What you get

The Linux (for PlayStation 2) hardware kit comprises:

- 40Gb hard drive
- 10/100Mb network adaptor
- Monitor adaptor cable
- USB keyboard and mouse
- Two DVDs with Linux software and manuals

The first DVD contains the proprietary Sony code documentation and drivers. The second DVD has a collection of much-needed Linux utilities, like the *gcc* compiler, but compiled to run on the MIPs processor, which lies at the heart of the PS2.

The kit laid out

when you understand that the operating system had already played an important role as a platform on which the libraries and compiler for PlayStation 2 development are released.

Linux (for PlayStation 2) also goes much further with the degree of documentation provided and the sets of libraries available, which should give programmers pretty much unfettered access to the hardware.

Limitations

Ever cautious of piracy, you will find that the use of the DVD drive under Linux (for PlayStation 2) has some serious limitations – it will only be able to read restricted official PlayStation discs; CD-Rs and DVD-R discs won't work in the drive. That said, the USB ports on the unit are standard, and some USB CD-ROM drives and CD writers are supported under Linux, so could be used with the Linux kit. With the increase in demand, it's likely that more USB devices will emerge in the near future.

From a programming point of view, there are graphics libraries provided: libSDL (a fast, 2D graphics library), mesa, and ps2gl (a simplified GL clone, which will make use of the PlayStation 2's hardware). With enough effort, it would be possible to create graphics comparable with those of commercial games.

The PlayStation 2 system manuals (provided) include detailed specifications on the vector processing units VU0 and VU1, the DMA Controller, the Emotion Engine CPU, the Graphics Synthesizer (GS) and the IPU (MPEG decode assist). Software libraries, tools, device drivers, source code and examples are provided to show how to access this hardware.

The PlayStation 2 contains a subsystem for operating peripherals and audio including the SPU2 (Sound Processing Unit), the IOP, the HDD, the DVD drive, controllers, memory cards, USB and other peripherals. The hardware specification for these units is not disclosed.

Access to the I/O devices is only available by making calls to a runtime engine, which must be loaded from the distribution DVD, even before the Linux kernel is booted. Although this is another anti-piracy measure it also serves as another string to the hacker community's bow, who now see this as their chance to boot their own software to achieve maximum performance.

You should not confuse the provision of the hard drive and the availability of the network for those that Sony will provide soon for its games consumer market, which won't be available until August at the very latest. You will not be able to play commercial games under Linux (for PlayStation 2), so access to these devices will not be available.

The community aspect is obvious when you take a look at the Linux (for PlayStation 2) Web site. Here you will find the all-important FAQ which will help you decide if the kit is for you, as well as project areas so you can see what is being developed and offering you the chance to join in.

Odd though it may seem, the Linux (for PlayStation 2) came about as a direct result of public demand. It is hard to see Sony making a fortune out of this line of development, in fact the hardware alone seems very reasonably priced. It is good to see a company as large as Sony taking the time to look at the bigger picture and at what some of its consumers want. Maybe Sony does have a streak of altruism running through it. Maybe we just underestimate the true weight of 'pester power'. We do know that Linux (for PlayStation 2) is causing a great deal of excitement, and only something good can come of that.

Acknowledgement

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Linux (for PlayStation 2)	
Supplier	Sony
Price	US$199 or 249 euros
Web	http://playstation2-linux.com/
For	Create applications for the PS2
Against	Monitor issues, restrictive anti-piracy measures
rating	