SiS-PM (Silver Shield PM) Control for Linux 3.0

(Silver Shield PM Control for Linux 3.0, (C) 2004-2011 Mondrian Nuessle)

To the sourceforge.net pages.

Overview

SIS-PM Control for Linux aka sispmctl is an application enabling the use of the *GEMBIRD (m)SiS-PM* device family under Linux.
The SiS-PM is an itelligent advanced surge protector with unique features: 4 sockets are manageable from the PC via USB port (GEMBIRD LTD).
The mSiS-PM is an itelligent advanced surge protector with unique features: 1 socket is manageable from the PC via USB port (GEMBIRD LTD).

The software works on many different platforms. I would be glad to here from you, on what platforms you are using this software. Also, send me any Howto's etc on how you got it to work on your router box etc.

This software comes with ABSOLUTELY NO WARRANTY; for details see the LICENCE file. This is free software, and you are welcome to redistribute it
under certain conditions; see the LICENCE file for details.

Thanks go out to Gembird for the kind support, the libusb project, the USB snoopy team, Andreas Neuper and the other contributors.

News

- version 3.0 released
- version 2.7 released
- the german computer magazine c't published a review of the SIS-PM in 06/08. They also put a link to this project up http://www.heise.de/ct/08/06/links/079.shtml :-)
- version 2.2 released on sourceforge
- moved to subversion on sourceforge
- version 2.1 released on sourceforge
- Started CVS repository on Sourceforge.net
- Started to move the project to Sourceforge.net. First version of the website available.
- Andreas Neuper contributed a lot of new stuff, available in the current 2.1 version. Check it out!
- Wolfram Schlich added sispm_ctl to the Gentoo/Portage tree. It is available there under sys-power/sispm_ctl (marked unstable).
- Uwe Herman added sispm_ctl to the Debian/Unstable tree.
- A lot of people pointed bugs out to me, I hope I fixed them all :-)

Changelog

version	
version 1.0b	Initial Release
version 1.1, 24 Feb 2005	Fixed small error in configure script, relaxed dependency for libusb to include version >=0.1.5, added new command line arguments -q and -v,added Troubleshooting section,added sispm_http from Marius Konitzer
version 1.2, 16 Jan 2006	Fixed type of variable c. Thanks to Michael Holzt.
version 2.0, 06 Feb 2006	new version with new functionality: multiple devices, built-in web interface, new options, man-page. Renamed to pmctl. Courtesy of **Andreas Neuper**
version 2.1, 09 Feb 2006	fixed several install/configure/make problems, cleaned up code
version 2.2, 03 Mar 2006	added better control for the webinterface including leaving it out of a compiled version, limiting it to a single network interface, small other fixes
version 2.3a, 23 Mar 2006	added experimental support for the mSiS-PM device, which is a one socket version of the SiS-PM. If anybody has such a device, please try the software, and contact me!
version 2.4a, 17 Aug 2006	dde fixed several bugs (thanks to Marius Konitzer); patch to support Solaris 10 (thanks to Casper Dik); several other fixes; added Python GUI script (see directory *extra* and there the README)
version 2.4b, 30 Oct 2006	small fix, return value of the application
version 2.5, 04 Dez 2007	mSIS is supported, usb_close fd bug fix
version 2.6, 03 Mar 2008	added support for devices with device of 0xfd13
version 2.7, 28 Mar 2008	added power supply status, first serial implementation, sorting of devs, bugfixes
version 3.0, 30 Mar 2011	added timer functionality, added gemplug script (see extras directory), added -D option to select device by serial number, several bugfixes and cleanups

Supported Devices & identifying devices

Gembird has produced a whole family of manageable surge protectors. The following table simmarizes the devices that are known to work with this software:

Name	USB id	description
SIS-PM Silver Shield aka Revolt Intelliplug...	04b4:fd11	original 4 socket, USB manageable
SIS-PMS Silver Shield	04b4:fd13	newer version (?) 4 socket, USB manageable
mSIS-PM	04b4:fd10	one socket, USB manageable
mSIS-PM	04b4:fd12	one socket, USB manageable

So you may find this device sold under different names. You can identify it, though, without opening the case by issuing the followin commands:
~ $ lsusb
[...]
Bus 001 Device 002: **ID 04b4:fd11** Cypress Semiconductor Corp.
[...]
Of course, the Bus and Device number will be different, depending on your setup. Different devices have different IDs, see table above.

Obtaining a device

In Germany you used to be able to buy a device from Pearl (PE-3057-908, ~30 Euros) sold under the name *Revolt "Intelli-Plug"*.
Today you can grab one for example from www.reichelt.de or www.conrad.com under the name Gembird SIS-PM.
In Denmark you can grab one for example from Elektronik Lavpris.

Anyone out there knows about other countries?

Supported OS

Generally all operating systems with support of libusb and that are POSIX compatible should work.

- Gentoo Linux - This software is available a a Gentoo/Portage package called *sispmctl* (courtesy Wolfram Schlich)
- Debian Unstable - This software is also available from the Debian unstable tree, probably also for many derived distributions (courtesy Uwe Hermann)

There have been reports that siscpmctl was successfully compiled and worked under:

- SuSE Linux (all recent versions)
- Ubuntu
- Solaris 10
- MacOS X 10.4 and MacOS X 10.5

If you have gotten it to work on your box, and you use an OS/distro not mentioned here, feel free to send me a mail with your experience!

Supported architectures

siispmctl is mostly processor architecture agnostic. All 32-bit/64-bit related bugs etc should be fixed by now. sispmctl has been reported to run on

- X86
- x86-64
- PowerPC G5 (iMac G5)
- several embedded MIPS, ARM etc

processors.
Several people mentioned they are using it on there broadband router boxes at home, especially since a package is available for OpenWRT.
The following routers and NAS boxes have been reported to me to definetely work:

- ASUS WL500GP (running OpenWRT)
- Linksys NSLU2 (running Debian on ARM)

I would really like to get an overview of boxes sispmctl is used on, so please send me an email, if your box is not mentioned here (yet).

Reported Use-Cases

Reportedly sispmctl is used to control a host of different devices including

- Development machines for kernel level and BIOS level developments
- NAS devices
- Servers
- backup-disks
- flatbed document-scanner
- DLT tapeunit
- Printers
- even fish-tank related stuff...

Contributed Software

If you have software that uses sispm_ctl, mail me and I add it to the list below:

- SuperKaramba design to use your SiS-PM from the desktop:
  http://www.hopfenwiesen.de/projekte.php(only in German)
- dbus integration and GNOME applet for that. This is currently targeted vs. Ubuntu 7.10 (Gutsy Gibbon), but hoperfully will evolve also for other distros. See here for more info and download here.
- gemplug a wrapper script for sispmctl that is **much** more comfortable. It allows saving and recalling of outlet configuration, at controlled jobs and lots more. The gemplug script comes with man page documentation, an install script and is available in the extras directory of the sispmctl svn repository. Gemplug also comes with udev rules to enable simple acess to the device as non-priviliged user.
- a python module to access the sispm directly form your python scripts. This module is contributed by Mikael Lindqvist and is available in the extras directory within the sispmctl directory.

Download & Installation:

In short: Download latest sispm_ctl-XX.tar.gz (~156kB) from the sourceforge.net pages, unpack & follow the README file or see the release notes.

You need libusb-0.15 or newer installed on your system (if you have an older version of libusb it MIGHT work, you'll have to tweak configure.in though and call scripts/bootstrap. Nevermind if this is just glibberish for you :-)).

sis_pmctl is only available as sourcecode distribution. To install on your system run:

```
tar xzvf sispm_ctl-2.1.tar.gz
cd sispm_ctl-2.1
./configure
make
make install
```

Note: The compiled application is named sispmctl since 2.0 without the underscore!

This installs the applicationsis *pmctl* in /usr/local/bin. If you want to install the application to a different directory,
call ./configure --prefix=/your/preferred/dir.
The web-interface skins are installed under $prefix/httpd/sispm_ctl/skin?; the default skin is pre-selected with the doc symbolic link in the $prefix/httpd/sispm_ctl directory.

Documentation:

The sispmctl utility is called from the command line. The following documentation is from the man-page of sispmctl (included in distribution):
Somewhat outdated at the moment...

SYNOPSIS

sispmctl [-u <path>] [-p <#port>] -l

sispmctl -s

sispmctl [-q] [-n] [-d 1...] -b <on|off>

sispmctl [-q] [-n] [-d 1...] < -o | -f | -g > <1..4|all>

DESCRIPTION

sispmctl is a tool to switch the USB controlled outlets of Gembird Silver Shield PM. It is known by many names, e.g. Revolt Power Switch.
It is coded in C and does use the usb specific library (LibUSB). This allows you a portable and fast solution.

OPTIONS

-h   Print usage information
-s   Scan all universal serial buses for devices with the ID 04B4:FD11.

-l   stay listening on network port for http protocol.

-p   IP network port (default: 2638) for listener. There is no authentication implemented yet.

-u   give the directory path where pages lay, that are served (default: /usr/local/httpd/pmctl). The Web path component is completely ignored for security reasons.

-b   switch the buzzer on and off (I was not able to test it, mine does not hat it)

-o   switch the named outlet to "ON"

-f   switch the named outlet to "OFF"

-g   show the status of the named outlet

-d   Choose not the first but the named one in the sequence of detected devices (see scan option)

-n   do not print "ON" and "OFF", but "1" and "0" instead

-q   do neither print explanations nor disclaimers except it is requested

-v   print version & copyright

WEB INTERFACE

The sispmctl program provides a web interface when started with the -l option. No additional http server is needed. Each selected usb device is blocked by pmctl while running.

After installation, the first of three web-interfaces is selected. The default location of the HTML files is /usr/local/httpd/sispm_ctl/doc which is a symbolic link to /usr/local/httpd/sispm_ctl/skin1.

The http capabilities of pmctl are limited. Technically speaking, only the first line of each http request is parsed. The terminating path component, i.e. file name, is looked up in the repository directory. If present the file is parsed and in absence of control sequences sent as is. The files must include the http header portion.

Control sequences start and end with double dollar `$$'.  They consist of a command portion separated by a question mark `?' from alternative outputs which are separated by the first colon `:'. The command portion is a token followed by an embraced number that references the outlet, e.g. $$command(1)?positive:negative$$ while command is one of status , toggle, off , on . I strongly recommend to avoid the on/off/toggle commands in pages that may be reloaded. Best is to redirect to other pages that only include status requests.

EXAMPLES

Switch off the first outlet of the first SiS-PM and the third outlet of the second SiS-PM:

$ sispmctl -f 1 -d 1 -f 3

Print the status of the forth outlet as zero or one:

$ sispmctl -nqg 4

Run pmctl on the second device as a web-server:

$ sispmctl -d 1 -l

You can connect to it from the same machine by pointing to http://localhost:2638 with your webbrowser

Troubleshooting:

Question

- My kernel supports USB, I loaded all the correct modules but when I plug in the device,

  it does not appear in the output of lsusb,
  sispmctl does not work,
  the following output is added to the system log (output *dmesg*):
  usb 1-2: new low speed USB device using address 2
  usb 1-2: Product: Gembird Silver Shield PM
  usb 1-2: Manufacturer: Gembird Electronics
  drivers/usb/input/hid-core.c: couldn't find an input interrupt endpoint
  hid: probe of 1-2:1.0 failed with error -5

(possible) Solution:

  This may happen if you have not mounted usbfs.

Try "*mount usbfs*" as root. This could possibly fix your problem.
(Thanks to Martin Koniczek for pointing this out to me).

Permissions

Per default, only root is allowed to use devices directly, therefor the SiS-PM
also only works as root. If you use a Linux distribution that is using the
ressource manager package (resmgrd), you can add a line to */etc/resmgr.conf*.
The following line is an example for SuSE 10.0. It MAY be different on your system.

add usb:vendor=0x04b4,product=0xfd11 usb

This adds the SiS-PM device to the USB class which can be used by logged in users on SuSE 10.0.
If you are using a mSiS-PM device you need to use the product ID of *0xFD10* or *0xFD12* (dependant
on hardware revision, see output of */sbin/lsusb -v*).

*Actually this solution works for all kinds of USB devices, that you want to directly
access as normal user, i.e. your USB handheld, USB scanner etc.
Instead of identifying the device by vendor and product ID, you can also use the
Bus/device addressing scheme (see also man resmgr.conf)!*

Older Versions:

Older Releases are also available from the sourceforge.net release section of the project. See [Releases](). In the
following list, these releases are described shortly:

- Version 1.0b

  ```
  Usage of old vesions:
  sispm_ctl -o 1..4     - turn on the specified socket
  sispm_ctl -o all      - turn on all sockets
  sispm_ctl  -f 1..4    - turn off specified sockets
  sispm_ctl  -f all     - turn off all sockets
  sispm_ctl  -g 1..4    - query status of socket (1 if on, 0 if off)
  sispm_ctl  -g all     - query and print status of all sockets
  sispm_ctl  -b on      - buzzer on
  sispm_ctl  -b off   - buzzer off
  Option -q disables output from following commands specified on the command line.
  Option -v prints detailed version and licence information
  sisspm_ctl returns 0 on success, 1 on error and 2 if no SIS-PM or compatible device could be found.
  ```

- Version 1.1

- Version 1.2

- Bash script to use webinterface for 1.x versions (not necessary with 2.x)

  Marius Konitzer wrote a bash script that enables control of the USB socket via a webbrowser.
  You need to download [sispm_http-0.1.tar.bz2]().

  ```
  tar xjvf sispm_http-0.1.tar.bz2
  cd sispm_http-0.1
  ```

  Follow the README file to install it.
  If you are using a Linux distro that uses xinetd, the following file [sispm]() can be copied into /etc/xinetd.d/
  to configure the xinetd to work with sispm_http.
  Thanks to Marius Konitzer for contributing this script. The original download can be found at
  [http://marko82.de/prog_sispm_http.php.]()

Contact

Post questions, bugreports, remarks the available [forum]() of sourceforge.net.
For other information send mail to **nuessle AT uni-mannheim.de**