What is sisfb?

sisfb is a framebuffer device driver for SiS (Silicon Integrated Systems) graphics chips. Supported are:

- SiS 300 series: SiS 300/305, 540, 630(S), 730(S)
- SiS 315 series: SiS 315/H/PRO, 55x, (M)65x, 740, (M)661(F/M)X, (M)741(GX)
- SiS 330 series: SiS 330 ("Xabre"), (M)760

Why do I need a framebuffer driver?

sisfb is eg. useful if you want a high-resolution text console. Besides that, sisfb is required to run DirectFB (which comes with an additional, dedicated driver for the 315 series).

On the 300 series, sisfb on kernels older than 2.6.3 furthermore plays an important role in connection with DRM/DRI: Sisfb manages the memory heap used by DRM/DRI for 3D texture and other data. This memory management is required for using DRI/DRM.

Kernels >= around 2.6.3 do not need sisfb any longer for DRI/DRM memory management. The SiS DRM driver has been updated and features a memory manager of its own (which will be used if sisfb is not compiled). So unless you want a graphical console, you don't need sisfb on kernels >=2.6.3.

Sidenote: Since this seems to be a commonly made mistake: sisfb and vesafb cannot be active at the same time! Do only select one of them in your kernel configuration.

How are parameters passed to sisfb?

Well, it depends: If compiled statically into the kernel, use lilo's append statement to add the parameters to the kernel command line. Please see lilo's (or GRUB's) documentation for more information. If sisfb is a kernel module, parameters are given with the modprobe (or insmod) command.

Example for sisfb as part of the static kernel: Add the following line to your lilo.conf:

```
append="video=sisfb:mode:1024x768x16,mem:12288,rate:75"
```

Example for sisfb as a module: Start sisfb by typing:

```
modprobe sisfb mode=1024x768x16 rate=75 mem=12288
```

A common mistake is that folks use a wrong parameter format when using the driver compiled into the kernel. Please note: If compiled into the kernel, the parameter format is video=sisfb:mode:none or video=sisfb:mode:1024x768x16 (or whatever mode you want to use, alternatively using any other format described above or the vesa keyword instead of mode). If compiled as a module, the parameter format reads mode=none or mode=1024x768x16 (or whatever mode you want to use). Using a "=" for a ":" (and vice versa) is a huge difference! Additionally: If you give more than one argument to the in-kernel sisfb, the arguments are separated with ",". For example:

```
video=sisfb:mode:1024x768x16,rate:75,mem:12288
```

How do I use it?

Preface statement: This file only covers very little of the driver's capabilities and features. Please refer to the author's and maintainer's website at http://www.winischhofer.net/linuxsisvga.shtml for more information. Additionally, "modinfo sisfb" gives an overview over all supported options including some explanation.

The desired display mode can be specified using the keyword "mode" with a parameter in one of the following formats:

- XxYxDepth or
- XxY-Depth or
- XxY-Depth@Rate or
- XxY
- or simply use the VESA mode number in hexadecimal or decimal.

For example: 1024x768x16, 1024x768-16@75, 1280x1024-16. If no depth is specified, it defaults to 8. If no rate is given, it defaults to 60Hz. Depth 32 means 24bit color depth (but 32 bit framebuffer depth, which is not relevant to the user).

Additionally, sisfb understands the keyword "vesa" followed by a VESA mode number in decimal or hexadecimal. For example: vesa=791 or vesa=0x117. Please use either "mode" or "vesa" but not both.

Linux 2.4 only: If no mode is given, sisfb defaults to "no mode" (mode=none) if compiled as a module; if sisfb is statically compiled into the kernel, it defaults to 800x600x8 unless CRT2 type is LCD, in which case the LCD's native resolution is used. If you want to switch to a different mode, use the fbset shell command.

Linux 2.6 only: If no mode is given, sisfb defaults to 800x600x8 unless CRT2 type is LCD, in which case it defaults to the LCD's

native resolution. If you want to switch to another mode, use the stty shell command.

You should compile in both vgacon (to boot if you remove you SiS card from your system) and sisfb (for graphics mode). Under Linux 2.6, also "Framebuffer console support" (fbcon) is needed for a graphical console.

You should *not* compile-in vesafb. And please do not use the "vga=" keyword in lilo's or grub's configuration file; mode selection is done using the "mode" or "vesa" keywords as a parameter. See above and below.

X11

If using XFree86 or X.org, it is recommended that you don't use the "fbdev" driver but the dedicated "sis" X driver. The "sis" X driver and sisfb are developed by the same person (Thomas Winischhofer) and cooperate well with each other.

SVGALib

SVGALib, if directly accessing the hardware, never restores the screen correctly, especially on laptops or if the output devices are LCD or TV. Therefore, use the chipset "FBDEV" in SVGALib configuration. This will make SVGALib use the framebuffer device for mode switches and restoration.

Configuration

(Some) accepted options:

off	Disable sisfb. This option is only understood if sisfb is in-kernel, not a module.
mem:X	size of memory for the console, rest will be used for DRI/DRM. X is in kilobytes. On 300 series, the default is 4096, 8192 or 16384 (each in kilobyte) depending on how much video ram the card has. On 315/330 series, the default is the maximum available ram (since DRI/DRM is not supported for these chipsets).
noaccel	do not use 2D acceleration engine. (Default: use acceleration)
noypan	disable y-panning and scroll by redrawing the entire screen. This is much slower than y-panning. (Default: use y-panning)
vesa:X	selects startup videomode. X is number from 0 to 0x1FF and represents the VESA mode number (can be given in decimal or hexadecimal form, the latter prefixed with "0x").
mode:X	selects startup videomode. Please see above for the format of "X".

Boolean options such as "noaccel" or "noypan" are to be given without a parameter if sisfb is in-kernel (for example "video=sisfb:noypan). If sisfb is a module, these are to be set to 1 (for example "modprobe sisfb noypan=1").

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