

# Installing and using joysticks

# THE GAME- PLAYER'S TOOL

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USB joysticks can be used without problems (provided the distribution is prepared for it like SuSE and Mandrake). The range of supported devices leaves many commercial competitors standing. However, the power gamer must sacrifice the cool force feedback entirely.

## Joystick module pre-compiled

The commissioning of a joystick under Linux is easy, provided you understand the logic behind it. Normally, game program libraries (like SDL, for example) use the joystick that is connected with the aid of the device files `/dev/js0` to `/dev/js3`. If these interfaces haven't already been set up in the Linux installation, the command `mknod /dev/jsX c 15 X` provides a remedy (where `X` is a wildcard for the numbers 0 to 3).

The choice of supported devices is a slight disadvantage when it comes to selecting the correct kernel driver module for its input device. In many distributions all joystick modules are already pre-compiled and ready for deployment in the corresponding driver folder (e.g. `/lib/modules/2.2.16/misc`).

## The agony of choice

If you don't have one of the gamer tools shown in Table 1 you must check compatibility before it is commissioned. Joysticks for the analogue game port (*Classic PC analogue*) are commonly found. The appropriate kernel module should be loaded first with `modprobe joy-analogue`. To do this, you must be logged in as the `root` user. You can check that the joystick has been successfully initialised using the command `dmesg`. The last two lines of the resulting text should look as follows;

```
js: Joystick driver v1.2.15 (c) 1999 Vojtech
h Pavlik
<vojtech@suse.cz>
js0: Analogue 3-axis 4-button 1-hat joystick
with CHF extensions at
0x201 [TSC timer, 448 MHz clock, 1234 ns res]
```

In this example, a three-axis joystick (0-2:X/Y/Thrust) with four fire buttons and a "hat stick" was recognized. The all-round view lever can be used in games in the form of two further axes (3 and 4).

## Anything else?

This additional function is not automatically recognized. It requires an additional module option which (along with the device file joystick module allocation) can be entered in `/etc/conf.modules`. The driver is then automatically loaded as soon as a game accesses a device file (`/dev/js*`):

```
alias char-major-15 joy-analogue joy-analog
alog
js_an=0x201,0x2fb
```

The parameters following `js_an` are indicated by the base address of the game port and the special settings for the hat stick. The exact allocation of the special functions (Pad Buttons, CHF and FCS Hats) can be input `/usr/src/linux/Documentation/joystick.txt`.

## Troubleshooting

The analogue game port is normally integrated on the sound card. In very old models the port's location is fixed at the usual base address `0x201`. Older PNP ISA bus cards must be given a helping hand using `isapnp`. In the case of PCI sound cards a simple kernel module parameter in `/etc/conf.modules` is usually all that is required:

```
alias sound char-major-14 alias char-major-12
4 es1371
options es1371 joystick=0x200
```

In this example the sound driver for SoundBlaster PCI64/128 (`es1371`) is informed that the joystick port is located at address `0x200`. The joystick module cannot work correctly without sound drivers in such cases, but the sound driver is automatically unloaded. If no sound output occurs, the line `/sbin/modprobe -r sound; /sbin/modprobe sound` should be appended in the boot script (`/etc/rc.d/rc.local` for Red Hat and Mandrake) in order to make the driver resident.

More information on the subject of joysticks and how to commission them under Linux can be found on the developer pages of Czech Vojtech Pavlik, who (sponsored by SuSE) tirelessly develops Linux drivers for input devices. ■

**Linux has a dozen different joystick systems. In addition to the usual analogue game port, it even offers drivers for exotic C64 and Amiga joysticks.**

**Table 1: Supports joystick systems**

Classic PC analog	joy-analog.o
FPGaming and MadCatz A3D	joy-assassin.o
Gravis GriP	joy-gravis.o
Logitech ADI	joy-logitech.o
Microsoft SideWinder	joy-sidewinder.o
ThrustMaster DirectConnect	joy-thrustmaster.o
Creative Labs Blaster	joy-creative.o
PDPI Lightning 4 card	joy-lightning.o
Trident 4DWave	joy-lightning.o
Aureal Vortex gameportMagellan	joy-magellan.o
Space Mouse	joy-magellan.o
SpaceTec SpaceOrb 360	joy-spaceorb.o
SpaceBall Avenger	joy-spaceorb.o
SpaceTec SpaceBall 4000 FLX	joy-spaceball.o
Logitech WingMan Warrior	joy-warrior.o
NES, SNES, PSX, N64, Multi	joy-console.o
Sega, Multi	joy-db9.o
TurboGraFX interface	joy-turbografx.o