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## Magic SysRq Key

Linux is very stable, but sometimes a kernel panic could happen, sometimes this stops the X-server and you can't change to the console. What should be done? Hitting the reset button and risk filesystem integrity?

NO! There is a possibility to shut down the system cleanly or find out the source of the kernel panic.

For this purpose there is a kernel option called "Magic SysRQ Key" in the section kernel hacking.

If this option is enabled you can use a set of keyboard commands.

Alt+SysRq+r takes keyboard and mouse control from the X server. This can be useful if the X-Server crashed, you can change to a console and kill the X-Server or check the error log.

Alt+SysRq+k kills all processes on the current terminal. It's a bad idea to do this on a console where X is running. The graphic will stop and you can't see what you type.

Alt+SysRq+b is like a reset: a reboot without unmounting or sync.

Alt+SysRq+o shuts down via APM.

Alt+SysRq+s writes all data from the disc cache to the harddiscs, it's a sync.

Alt+SysRq+u remounts all mounted filesystems read-only. After using this key, you can reboot the system with Alt+SysRq+b without harming the system.

Alt+SysRq+m prints memory information to the console.

Alt+SysRq+e sends SIGTERM to all processes except init.

Alt+SysRq+i sends SIGKILL to all processes except init.

Alt+SysRq+l sends SIGKILL to all processes, inclusive init. (The system is not working after using this.)...

To shut down the system after a really bad kernel panic, do the following:

Alt+SysRq+e (sends TERM-signal, processes can shutdown properly (e.g. save data))

Alt+SysRq+u (a sync will be done when unmounting anyway)

Alt+SysRq+i (for the processes that didn't listen for the TERM signal, this is a kill -9 process)

Alt+SysRq+b (reboot).

To be able to use the SysRq feature, you need to do

```
echo "1" > /proc/sys/kernel/sysrq
```

or add an entry to /etc/sysctl.conf:

```
kernel.sysrq = 1
```

By the way, it's a good idea to print this out and store near your PC, when it happens, you can't check back here...

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