

## Debian-Kernel-Compile-Howto (Kernel 2.4)

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In some cases you might want to compile your own kernel that suits your needs better than the standard kernel that comes with your distribution. I will describe how to do this on a Debian machine.

Be aware that there is some risk in doing so! For example, it could happen that your machine does not boot properly after you have installed the new kernel so you might be forced to boot from a rescue CD to repair your system. You have been warned! This document comes without warranty of any kind!

### Kernel-Compile-Howto

First login to your Debian machine on the command line as root. Install the prerequisites that we need to compile the new kernel:

```
apt-get install kernel-package ncurses-dev fakeroot wget bzip2
```

Then go to /usr/src:

```
cd /usr/src
```

Then get the latest Linux kernel source (or the kernel source you need) from <http://www.kernel.org/pub/linux/kernel/v2.4/>:

```
wget http://www.kernel.org/pub/linux/kernel/v2.4/linux-2.4.23.tar.bz2
```

Unpack the kernel sources:

```
tar xjf linux-2.4.23.tar.bz2
```

```
cd linux-2.4.23/
```

It is normally a good idea to take the configuration of your existing (working!) kernel as a starting point for the configuration of your new kernel. Usually the current kernel configuration is saved in a file under /boot, e.g. /boot/config-2.4.18-bf2.4. We will load this configuration and then do the changes we desire (e.g. add quota support, iptables support, etc.).

```
make menuconfig
```

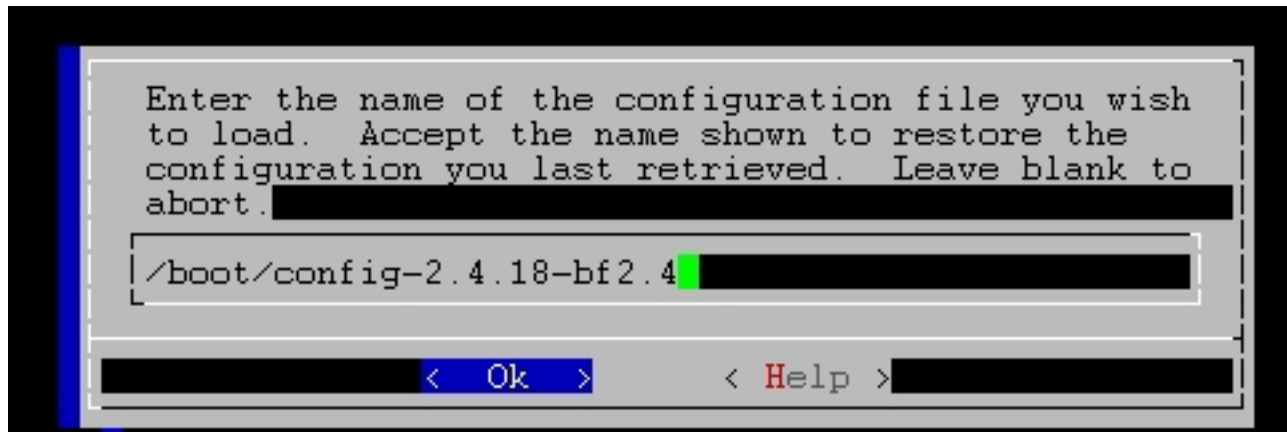
Select Load an Alternate Configuration File and enter the location of the configuration file of your current kernel:

```

Main Menu
Arrow keys navigate the menu. <Enter> selects submenus --->. Highlighted letters are hotkeys. Pressing <Y>
includes, <N> excludes, <M> modularizes features. Press <Esc><Esc> to exit, <?> for Help. Legend: [*] built-in
[ ] excluded <M> module < > module capable

Code maturity level options --->
Loadable module support --->
Processor type and features --->
General setup --->
Memory Technology Devices (MTD) --->
Parallel port support --->
Plug and Play configuration --->
Block devices --->
Multi-device support (RAID and LVM) --->
Networking options --->
Telephony Support --->
ATA/IDE/MFM/RLL support --->
SCSI support --->
Fusion MPT device support --->
I2O device support --->
Network device support --->
Amateur Radio support --->
IrDA (infrared) support --->
SDN subsystem --->
Old CD-ROM drivers (not SCSI, not IDE) --->
Input core support --->
Character devices --->
Multimedia devices --->
File systems --->
Console drivers --->
Sound --->
USB support --->
Bluetooth support --->
Kernel hacking --->
Cryptographic options --->
Library routines --->
---
Load an Alternate Configuration File
Save Configuration to an Alternate File

```



The configuration of your current kernel will be loaded, and you can now browse through the menu and change the configuration to suit your needs. When you are finished, save your new kernel configuration:



Then run the following commands:

```
make dep
make-kpkg clean
fakeroot make-kpkg --revision=custom.1.0 kernel_image
```

If the compilation stops with an error, run

```
make clean
```

and then re-run the previous commands starting with

***make menuconfig***

Change the kernel configuration where the error occurs (e.g., the compilation often gives back errors for some WAN modules, so leave them out if you do not need them). If no error occurs you will find the new kernel as a Debian package called `kernel-image-2.4.23_custom.1.0_i386.deb` under `/usr/src`.

```
cd ../
```

Now you can install the new kernel by doing the following:

```
dpkg -i kernel-image-2.4.23_custom.1.0_i386.deb
```

We are almost finished now. Run

```
lilo
```

to update your boot loader and reboot your machine:

***shutdown -r now***

and if everything is ok your machine should come up with the new kernel. You can run

***uname -a***

to verify that. Good luck!

Original location of this document: [http://www.falkotimme.com/howtos/debian\\_kernel2.4\\_compile/](http://www.falkotimme.com/howtos/debian_kernel2.4_compile/)