

Compilando o Kernel Linux

Fonte: <http://www.digitalhermit.com/linux/Kernel-Build-HOWTO.html>

Atribuindo uma versão única

- Evitar que os módulos do kernel atual sejam modificados indevidamente
- Arquivo Makefile
 - VERSION = 2
 - PATCHLEVEL = 4
 - SUBLEVEL = 22
 - **EXTRAVERSION = -1** (Coloque sua versão aqui)
- Os módulos serão gerados dessa forma:
 - /lib/modules/\$VERSION.\$PATCHLEVEL.\$SUBLEVEL-\$EXTRAVERSION.

Limpendo a configuração antiga

- Apaga arquivos resultantes de compilações anteriores
- O código-fonte retorna ao estado original
 - **make mrproper**

Configurando o Kernel 2.6.x

- Três formas:
 - Config: modo texto, perguntas realizadas sequencialmente
 - Menuconfig: modo texto, menus auxiliam na configuração
 - Xconfig: modo gráfico
- **make menuconfig**

Opções (1)

- **Code Maturity Level Options**
 - This option allows configuration of alpha-quality software or obsoleted drivers. It is best to disable this option if the kernel is intended for a stable production system.
- **General Setup**
 - This section contains options for **sysctl** support, a feature allowing run-time configuration of the kernel. A new feature, kernel .config support, allows the complete kernel configuration to be viewed during run-time. This addresses many requests to be able to see what features were compiled into the kernel.
- **Loadable Module Support**
 - You will almost certainly want to enable module support. If you will need third-party kernel modules you will also need to enable *Set Version Information on All Module Symbols*.
- **Processor Type and Features**
 - This is perhaps the most important configuration choice. In the Preparation section we determined our processor type by examining /proc/cpuinfo and we use that information here to select the appropriate processor. Included in this submenu are features such as *Preemptible Kernel* which can improve desktop responsiveness, *Symmetric Multi-processing Support* for machines with multiple CPUs, and *High Memory Support* for machines with more than 1G of RAM.

Opções (2)

- **Power Management Options**
 - Found here are options for ACPI and CPU Frequency Scaling which can dramatically improve laptop power usage. Read the Documentation/power file for more information.
- **Bus Options (PCI, PCMCIA, EISA, MCA, ISA)**
 - Here are found options for all system bus devices. On modern machines the ISA and MCA support can often be disabled.
- **Executable File Formats**
 - Interesting features here include the kernel support for miscellaneous binaries, which can allow seamless operation of non-Linux binaries with a little userland help.
- **Device Drivers**
 - All the device-driver configuration options that were previously scattered throughout the 2.4.x menus are now neatly organized under this option. Features such as SCSI support, graphic card optimizations, sound, USB and other hardware are configured here.
- **File Systems**
 - Found here are options for filesystems which are supported by the kernel, such as EXT2 and ReiserFS. It is best to build support for the root filesystems directly into the kernel rather than as a module.
- **Security Options**
 - Interesting options here include support for NSA Security Enhanced Linux and other, somewhat experimental, features to increase security.

Importante

- Desligue a carga dinamica de módulos
- Escolha somente os drivers realmente necessário para executar o sistema operacional
- Arquivo de configuração:
www.inf.ufrgs.br/~marcio/SO

Compilando

- make clean
- make
 - Caso ocorram problemas, utilize make zImage
- make install
- Veja no diretório /boot se o kernel foi copiado

Modificando o GRUB

- Insira a seguinte linha no GRUB (/boot/grub/menu.lst)
- title Test Kernel (2.6.0)
 root (hd0,1) kernel /boot/bzImage-2.6.0(Coloque aqui o nome do kernel gerado) ro root=LABEL=/
- Reinicialize o sistema
- Verificar a versão do kernel: `uname -a`