Kompilacja jądra Linux

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1 stara metoda

make bzlmage

```
/usr/src/linux-5.12.12# make bzImage
SYNC include/config/auto.conf.cmd
CALL scripts/checksyscalls.sh
```

```
LD arch/x86/boot/setup.elf
OBJCOPY arch/x86/boot/setup.bin
BUILD arch/x86/boot/bzImage
Kernel: arch/x86/boot/bzImage is ready (#2)
```

make modules

/usr/src/linux-5.12.12# make modules CALL scripts/checksyscalls.sh

```
LD [M] sound/core/snd.ko
LD [M] sound/pci/ac97/snd-ac97-codec.ko
LD [M] sound/pci/snd-intel8x0.ko
LD [M] sound/soundcore.ko
```

make modules_install

```
INSTALL arch/x86/crypto/crc32-pclmul.ko
INSTALL drivers/acpi/ac.ko
INSTALL drivers/acpi/button.ko
INSTALL drivers/acpi/video.ko
INSTALL drivers/block/loop.ko
INSTALL drivers/char/agp/agpgart.ko
INSTALL drivers/char/agp/intel-agp.ko
INSTALL drivers/char/agp/intel-gtt.ko
```

```
INSTALL sound/core/snd.ko
INSTALL sound/pci/ac97/snd-ac97-codec.ko
INSTALL sound/pci/snd-intel8x0.ko
INSTALL sound/soundcore.ko
DEPMOD 5.12.1-smp
```

Utworzenie dysku ram

```
# mkinitrd_command_generator.sh revision 1.45
#
# This script will now make a recommendation about the command to use
# in case you require an initrd image to boot a kernel that does not
# have support for your storage or root filesystem built in
# (such as the Slackware 'generic' kernels').
# A suitable 'mkinitrd' command will be:
mkinitrd -c -k 5.12.1-smp -f ext4 -r /dev/sda1 -m ext4 -u -o /boot/initrd.gz
```

Dodanie nowego wpisy do konfiguracji bootloadera lilo

```
image = /boot/vmlinuz
root = /dev/sdal
label = "Slackware 14.2"
read-only

image = /boot/vmlinuz-custom-5.12.1-smp
root = /dev/sdal
initrd = /boot/initrd-custom-5.12.1-smp.gz
label = "kernel-custom"
read-only

image = /boot/vmlinuz-oldmethod-5.12.1-smp
root = /dev/sdal
initrd = /boot/initrd-oldmethod-5.12.1-smp.gz
label = "kernel-old"
read-only

image = /boot/vmlinuz-new-5.12.1-smp
root = /dev/sdal
initrd = /boot/initrd-new-5.12.1-smp
root = /dev/sdal
initrd = /boot/initrd-new-5.12.1-smp.gz
label = "kernel-new"
read-only

# Linux bootable partition config ends
```

2 Nowa metoda streamline_config.pl make bzImage

```
bash-4.3# make -j2 bzImage

CALL scripts/atomic/check-atomics.sh

CALL scripts/checksyscalls.sh

CHK include/generated/compile.h

CHK include/generated/compile.h

Kernel: arch/x86/boot/bzImage is ready (#1)

bash-4.3#
```

make modules

```
bash-4.3# make modules
CALL scripts/checksyscalls.sh
CALL scripts/atomic/check-atomics.sh

Building modules, stage 2.
MODPOST 3475 modules
bash-4.3#
```

make modules_install

```
bash-4.3# make modules_install
   INSTALL arch/x86/crypto/crc32-pclmul.ko
   INSTALL arch/x86/crypto/glue_helper.ko
   INSTALL arch/x86/crypto/serpent-sse2-i586.ko
   INSTALL arch/x86/kernel/cpu/mce/mce-inject.ko
   INSTALL arch/x86/kvm/kvm-amd.ko
```

```
INSTALL Sound/usb/snd-usbmidi-tib.ko
INSTALL sound/usb/usx2y/snd-usb-us122l.ko
INSTALL sound/usb/usx2y/snd-usb-usx2y.ko
INSTALL virt/lib/irqbypass.ko
DEPMOD 5.1.8-smp
bash-4.3#
bash-4.3# ls /lib/modules/5.1.8-smp
```

Utworzenie dysku ram

```
bash-4.3# /usr/share/mkinitrd/mkinitrd command generator.sh -k 5.1.8-smp
# mkinitrd command generator.sh revision 1.45
# This script will now make a recommendation about the command to use
# in case you require an initrd image to boot a kernel that does not
# have support for your storage or root filesystem built in # (such as the Slackware 'generic' kernels').
# A suitable 'mkinitrd' command will be:
mkinitrd -c -k 5.1.8-smp -f ext4 -r /dev/sdal -m ext4 -u -o /boot/initrd.gz
bash-4.3# mkinitrd -c -k 5.1.8-smp -f ext4 -r /dev/sda2 -m ext4 -u -o /boot/init
rd-custom-
32188 bloków
/boot/initrd-custom- created.
Be sure to run lilo again if you use it.
bash-4.3# 5.1.8-smp.gz
bash: 5.1.8-smp.gz: nie znaleziono polecenia
bash-4.3# mkinitrd -c -k 5.1.8-smp -f ext4 -r /dev/sda2 -m ext4 -u -o /boot/init
rd-custom-5.1.8-smp.gz
32188 bloków
/boot/initrd-custom-5.1.8-smp.gz created.
Be sure to run lilo again if you use it.
```

Dodanie nowego wpisy do konfiguracji bootloadera lilo

```
image = /boot/vmlinuz-new-5.12.1-smp
  root = /dev/sda1
  initrd = /boot/initrd-new-5.12.1-smp.gz
  label = "kernel-new"
  read-only
# Linux bootable partition config ends
```

```
bash-4.3# lilo
Warning: LBA32 addressing assumed
Added Slackware_14.2 *
Added kernel-custom +
Added kernel-old +
Added kernel-new +
One warning was issued.
bash-4.3#
```

3 Wnioski

Stara metoda jest szybsza nie mam dokładnych wyliczeń ale udało mi się ją zrobić szybciej.

Nowa metoda jest trochę wolniejsza ale prostsza w przygotowaniu.

Kompilowanie jądra nie jest dla mnie jest to bardzo pracochłonna prac jestem lepszym programistą niż administratorem sytemu