

```
user@vm:/CLINUX/kernel/linux$ make defconfig
HOSTCC scripts/basic/fixdep
HOSTCC scripts/kconfig/conf.o
HOSTCC scripts/kconfig/confdata.o
HOSTCC scripts/kconfig/expr.o
LEX scripts/kconfig/lexer.lex.c
YACC scripts/kconfig/parser.tab.[ch]
HOSTCC scripts/kconfig/lexer.lex.o
HOSTCC scripts/kconfig/menu.o
HOSTCC scripts/kconfig/parser.tab.o
HOSTCC scripts/kconfig/preprocess.o
HOSTCC scripts/kconfig/symbol.o
HOSTCC scripts/kconfig/util.o
HOSTLD scripts/kconfig/conf
*** Default configuration is based on 'x86_64_defconfig'
#
# configuration written to .config
#
```

```
user@vm:/CLINUX/kernel/linux$ make menuconfig
UPD scripts/kconfig/mconf-cfg
HOSTCC scripts/kconfig/mconf.o
HOSTCC scripts/kconfig/lxdialog/checklist.o
HOSTCC scripts/kconfig/lxdialog/inputbox.o
HOSTCC scripts/kconfig/lxdialog/menubox.o
HOSTCC scripts/kconfig/lxdialog/textbox.o
HOSTCC scripts/kconfig/lxdialog/util.o
HOSTCC scripts/kconfig/lxdialog/yesno.o
HOSTCC scripts/kconfig/confdata.o
HOSTCC scripts/kconfig/expr.o
LEX scripts/kconfig/lexer.lex.c
YACC scripts/kconfig/parser.tab.[ch]
HOSTCC scripts/kconfig/lexer.lex.o
HOSTCC scripts/kconfig/menu.o
HOSTCC scripts/kconfig/parser.tab.o
HOSTCC scripts/kconfig/preprocess.o
HOSTCC scripts/kconfig/symbol.o
HOSTCC scripts/kconfig/util.o
HOSTLD scripts/kconfig/mconf

*** End of the configuration.
*** Execute 'make' to start the build or try 'make help'.
```

```
user@vm:/CLINUX/kernel/linux$ make -j 12 CC=gcc-10
SYNC include/config/auto.conf.cmd
SYSHDR arch/x86/include/generated/uapi/asm/unistd_32.h
SYSHDR arch/x86/include/generated/uapi/asm/unistd_64.h
SYSHDR arch/x86/include/generated/uapi/asm/unistd_x32.h
SYSTBL arch/x86/include/generated/asm/syscalls_32.h
SYSHDR arch/x86/include/generated/asm/unistd_32_ia32.h
SYSHDR arch/x86/include/generated/asm/unistd_64_x32.h
SYSTBL arch/x86/include/generated/asm/syscalls_64.h
HOSTCC arch/x86/tools/relocs_32.o
HOSTCC arch/x86/tools/relocs_64.o
```

```
ld: warning: arch/x86/boot/compressed/vmlinux: missing .note.GNU-stack section implies executable stack
ld: NOTE: This behaviour is deprecated and will be removed in a future version of the linker
ld: warning: arch/x86/boot/compressed/vmlinux has a LOAD segment with RWX permissions
ZOFFSET arch/x86/boot/zoffset.h
OBJCOPY arch/x86/boot/vmlinux.bin
AS arch/x86/boot/header.o
LD arch/x86/boot/setup.elf
ld: warning: arch/x86/boot/pmjump.o: missing .note.GNU-stack section implies executable stack
ld: NOTE: This behaviour is deprecated and will be removed in a future version of the linker
ld: warning: arch/x86/boot/setup.elf has a LOAD segment with RWX permissions
OBJCOPY arch/x86/boot/setup.bin
BUILD arch/x86/boot/bzImage
Kernel: arch/x86/boot/bzImage is ready (#1)
```

```
user@vm:/CLINUX/kernel/linux$ make -j 12 CC=gcc-10 modules
DESCEND objtool
CALL scripts/atomic/check-atomics.sh
CALL scripts/checksyscalls.sh
```

```
user@vm:/CLINUX/kernel/linux$ sudo make modules_install
[sudo] password for user:
INSTALL /lib/modules/5.19.0Levin_DD_kernel-dirty/kernel/drivers/thermal/intel/x86_pkg_temp_thermal.ko
INSTALL /lib/modules/5.19.0Levin_DD_kernel-dirty/kernel/fs/efivarfs/efivarfs.ko
INSTALL /lib/modules/5.19.0Levin_DD_kernel-dirty/kernel/net/ipv4/netfilter/iptable_nat.ko
INSTALL /lib/modules/5.19.0Levin_DD_kernel-dirty/kernel/net/netfilter/nf_log_syslog.ko
INSTALL /lib/modules/5.19.0Levin_DD_kernel-dirty/kernel/net/netfilter/xt_LOG.ko
INSTALL /lib/modules/5.19.0Levin_DD_kernel-dirty/kernel/net/netfilter/xt_MASQUERADE.ko
INSTALL /lib/modules/5.19.0Levin_DD_kernel-dirty/kernel/net/netfilter/xt_addrtype.ko
INSTALL /lib/modules/5.19.0Levin_DD_kernel-dirty/kernel/net/netfilter/xt_mark.ko
INSTALL /lib/modules/5.19.0Levin_DD_kernel-dirty/kernel/net/netfilter/xt_nat.ko
DEPMOD /lib/modules/5.19.0Levin_DD_kernel-dirty
```

```
user@vm:/CLINUX/kernel/linux$ sudo make install
INSTALL /boot
run-parts: executing /etc/kernel/postinst.d/initramfs-tools 5.19.0Levin_DD_kernel-dirty /boot/vmlinuz-5.19.0Levin_DD_kernel-dirty
update-initramfs: Generating /boot/initrd.img-5.19.0Levin_DD_kernel-dirty
dpkg: warning: version '5.19.0Levin_DD_kernel-dirty' has bad syntax: invalid character in version number
dpkg: warning: version '5.19.0Levin_DD_kernel-dirty' has bad syntax: invalid character in version number
dpkg: warning: version '5.19.0Levin_DD_kernel-dirty' has bad syntax: invalid character in version number
dpkg: warning: version '5.19.0Levin_DD_kernel-dirty' has bad syntax: invalid character in version number
run-parts: executing /etc/kernel/postinst.d/unattended-upgrades 5.19.0Levin_DD_kernel-dirty /boot/vmlinuz-5.19.0Levin_DD_kernel-dirty
run-parts: executing /etc/kernel/postinst.d/update-notifier 5.19.0Levin_DD_kernel-dirty /boot/vmlinuz-5.19.0Levin_DD_kernel-dirty
run-parts: executing /etc/kernel/postinst.d/vboxadd 5.19.0Levin_DD_kernel-dirty /boot/vmlinuz-5.19.0Levin_DD_kernel-dirty
VirtualBox Guest Additions: Building the modules for kernel
5.19.0Levin_DD_kernel-dirty.
VirtualBox Guest Additions: Look at /var/log/vboxadd-setup.log to find out what
went wrong
run-parts: executing /etc/kernel/postinst.d/xx-update-initrd-links 5.19.0Levin_DD_kernel-dirty /boot/vmlinuz-5.19.0Levin_DD_kernel-dirty
run-parts: executing /etc/kernel/postinst.d/zz-update-grub 5.19.0Levin_DD_kernel-dirty /boot/vmlinuz-5.19.0Levin_DD_kernel-dirty
Sourcing file '/etc/default/grub'
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-6.5.0-42-generic
Found initrd image: /boot/initrd.img-6.5.0-42-generic
Found linux image: /boot/vmlinuz-6.5.0-41-generic
Found initrd image: /boot/initrd.img-6.5.0-41-generic
Found linux image: /boot/vmlinuz-5.19.0Levin_DD_kernel-dirty
Found initrd image: /boot/initrd.img-5.19.0Levin_DD_kernel-dirty
Found linux image: /boot/vmlinuz-5.19.0Levin_DD_kernel-dirty.old
Found initrd image: /boot/initrd.img-5.19.0Levin_DD_kernel-dirty
Found memtest86+x64 image: /boot/memtest86+x64.bin
Warning: os-prober will be executed to detect other bootable partitions.
Its output will be used to detect bootable binaries on them and create new boot entries.
Adding boot menu entry for UEFI Firmware Settings ...
done
```

GNU GRUB version 2.12~rc1

```
Ubuntu, with Linux 6.5.0-42-generic
Ubuntu, with Linux 6.5.0-42-generic (recovery mode)
Ubuntu, with Linux 6.5.0-41-generic
Ubuntu, with Linux 6.5.0-41-generic (recovery mode)
*Ubuntu, with Linux 5.19.0Levin_DD_kernel-dirty
Ubuntu, with Linux 5.19.0Levin_DD_kernel-dirty (recovery mode)
Ubuntu, with Linux 5.19.0Levin_DD_kernel-dirty.old
Ubuntu, with Linux 5.19.0Levin_DD_kernel-dirty.old (recovery mode)
```

Use the ↑ and ↓ keys to select which entry is highlighted.
Press enter to boot the selected OS, `e' to edit the commands
before booting or `c' for a command-line. ESC to return previous
menu.

```
user@vm:~$ uname -r
5.19.0Levin_DD_kernel-dirty
```

```

user@vm:/CLINUX/kernel/linux$ make -j 12
SYSHDR arch/x86/include/generated/uapi/asm/unistd_32.h
SYSHDR arch/x86/include/generated/uapi/asm/unistd_64.h
SYSHDR arch/x86/include/generated/uapi/asm/unistd_x32.h
SYSTBL arch/x86/include/generated/asm/syscalls_32.h
SYSHDR arch/x86/include/generated/asm/unistd_32_ia32.h
SYSHDR arch/x86/include/generated/asm/unistd_64_x32.h
SYSTBL arch/x86/include/generated/asm/syscalls_64.h
HOSTCC scripts/basic/fixdep
DESCEND objtool
HOSTCC arch/x86/tools/relocs_32.o
HOSTCC arch/x86/tools/relocs_64.o
HOSTCC arch/x86/tools/relocs_common.o
HOSTCC scripts/kallsyms
HOSTCC scripts/sorttable
HOSTCC scripts/asn1_compiler
HOSTCC scripts/selinux/genheaders/genheaders
HOSTCC scripts/selinux/mdp/mdp
HOSTCC /CLINUX/kernel/linux/tools/objtool/fixdep.o
HOSTLD /CLINUX/kernel/linux/tools/objtool/fixdep-in.o
LINK /CLINUX/kernel/linux/tools/objtool/fixdep
CC /CLINUX/kernel/linux/tools/objtool/exec-cmd.o
CC /CLINUX/kernel/linux/tools/objtool/help.o
CC /CLINUX/kernel/linux/tools/objtool/pager.o
CC /CLINUX/kernel/linux/tools/objtool/parse-options.o
CC /CLINUX/kernel/linux/tools/objtool/arch/x86/special.o
CC /CLINUX/kernel/linux/tools/objtool/weak.o
CC /CLINUX/kernel/linux/tools/objtool/check.o
CC /CLINUX/kernel/linux/tools/objtool/arch/x86/decode.o

```

```

user@vm:/CLINUX/kernel/linux$ make -j 12 modules
DESCEND objtool
CALL scripts/atomic/check-atomics.sh
CALL scripts/checksyscalls.sh
CC [M] fs/efivarfs/inode.o
CC [M] fs/efivarfs/file.o
CC [M] fs/efivarfs/super.o
CC [M] net/netfilter/nf_log_syslog.o
CC [M] net/netfilter/xt_mark.o
CC [M] net/netfilter/xt_nat.o
CC [M] net/netfilter/xt_LOG.o
CC [M] net/netfilter/xt_MASQUERADE.o
CC [M] net/netfilter/xt_addrtype.o
LD [M] fs/efivarfs/efivarfs.o
LDS scripts/module.lds

```

