Сборк ядра для x86

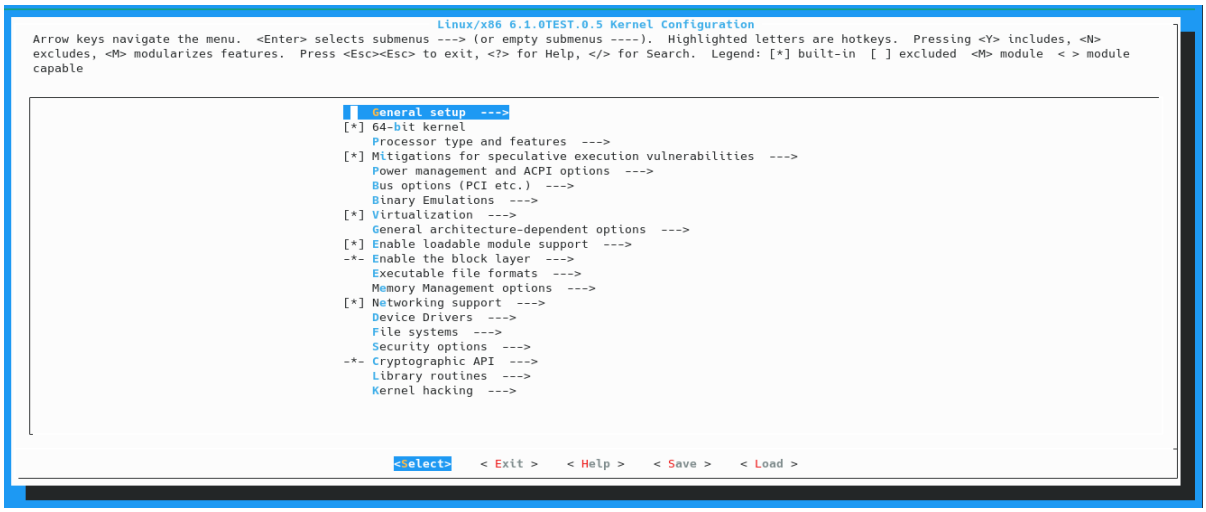
1. Скачал архив с “git.kernel.org”

Первая попытка (make defconfig)

```
user@debian:~/Embedded_linux/kernel/linux-6.1$ make defconfig -j2
  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/menu.o
  HOSTCC  scripts/kconfig/parser.tab.o
  HOSTCC  scripts/kconfig/preprocess.o
  HOSTCC  scripts/kconfig/symbol.o
  HOSTCC  scripts/kconfig/util.o
  HOSTCC  scripts/kconfig/lexer.lex.o
  HOSTLD  scripts/kconfig/conf
*** Default configuration is based on 'x86_64_defconfig'
#
# configuration written to .config
#
user@debian:~/Embedded_linux/kernel/linux-6.1$ 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
  HOSTLD  scripts/kconfig/mconf
configuration written to .config

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

user@debian:~/Embedded_linux/kernel/linux-6.1$
```




```
user@debian:~/Embedded_linux/kernel/linux-6.1$ make -j2 && make modules -j2
  SYNC    include/config/auto.conf.cmd
  SYSHDR  arch/x86/include/generated/uapi/asm/unistd_32.h
  WRAP    arch/x86/include/generated/uapi/asm/bpf_perf_event.h
  WRAP    arch/x86/include/generated/uapi/asm/errno.h
  WRAP    arch/x86/include/generated/uapi/asm/fcntl.h
  WRAP    arch/x86/include/generated/uapi/asm/ioctl.h
  WRAP    arch/x86/include/generated/uapi/asm/ioctls.h
  WRAP    arch/x86/include/generated/uapi/asm/ipcbuf.h
  WRAP    arch/x86/include/generated/uapi/asm/param.h
  WRAP    arch/x86/include/generated/uapi/asm/poll.h
  WRAP    arch/x86/include/generated/uapi/asm/resource.h
  WRAP    arch/x86/include/generated/uapi/asm/socket.h
  WRAP    arch/x86/include/generated/uapi/asm/sockios.h
  WRAP    arch/x86/include/generated/uapi/asm/termbits.h
  WRAP    arch/x86/include/generated/uapi/asm/termios.h
  WRAP    arch/x86/include/generated/uapi/asm/types.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
  HOSTCC  arch/x86/tools/relocs_32.o
  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
  UPD     include/config/kernel.release
  WRAP    arch/x86/include/generated/asm/early_ioremap.h
  WRAP    arch/x86/include/generated/asm/export.h
  WRAP    arch/x86/include/generated/asm/mcs_spinlock.h
  WRAP    arch/x86/include/generated/asm/irq_regs.h
  WRAP    arch/x86/include/generated/asm/kmap_size.h
  WRAP    arch/x86/include/generated/asm/local64.h
  WRAP    arch/x86/include/generated/asm/mmiowb.h
  WRAP    arch/x86/include/generated/asm/module.lds.h
```

После make и make modules запустил установку ядра

“make install -j2”

Результат:

завис экран grub;

при сборки по статьи «ядерная физика для домохозяек»

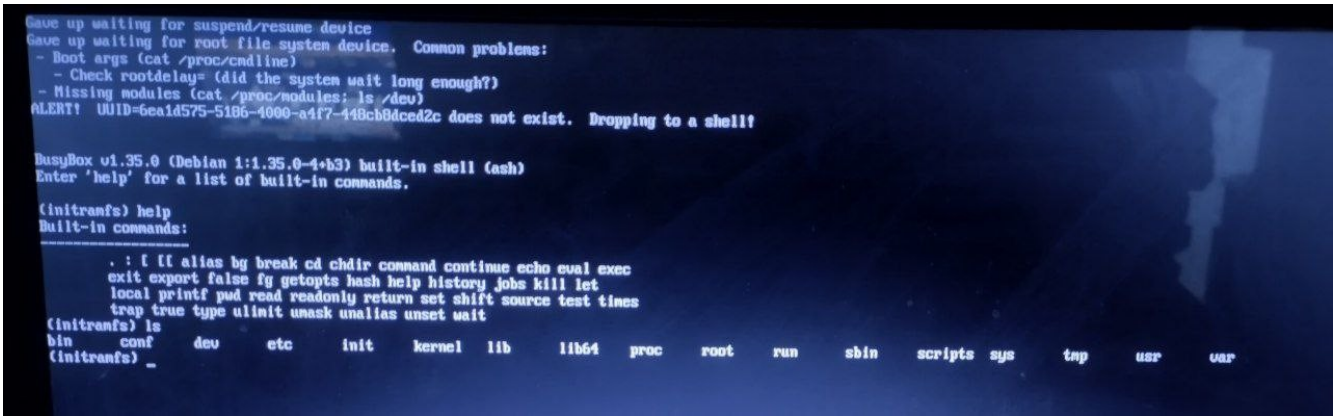
появляется окно загрузки, но зависает курсор.

Вторая попытка (скопировал своё рабочие ядро)

Так же изменил в menuconfig

Результат:

Запустился терминал



Сборка ядра под ARM

```
user@debian:~/Embedded_linux/kernel/linux-6.1$ ARCH=arm CROSS_COMPILE=arm-linux-gnueabihf- make multi_v7_defconfig -j2 zImage
  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/menu.o
  HOSTCC  scripts/kconfig/parser.tab.o
  HOSTCC  scripts/kconfig/preprocess.o
  HOSTCC  scripts/kconfig/symbol.o
  HOSTCC  scripts/kconfig/util.o
  HOSTCC  scripts/kconfig/lexer.lex.o
  HOSTLD  scripts/kconfig/conf
#
# configuration written to .config
#
  SYSHDR  arch/arm/include/generated/uapi/asm/unistd-oabi.h
  SYSHDR  arch/arm/include/generated/uapi/asm/unistd-eabi.h
  HOSTCC  scripts/dtc/dtc.o
  UPD     include/config/kernel.release
  HOSTCC  scripts/dtc/flattree.o
  UPD     include/generated/uapi/linux/version.h
  HOSTCC  scripts/dtc/fstree.o
  HOSTCC  scripts/dtc/data.o
  HOSTCC  scripts/dtc/livetree.o
  HOSTCC  scripts/dtc/treesource.o
  HOSTCC  scripts/dtc/srcpos.o
  HOSTCC  scripts/dtc/checks.o
  HOSTCC  scripts/dtc/util.o
  LEX     scripts/dtc/dtc-lexer.lex.c
  YACC    scripts/dtc/dtc-parser.tab.[ch]
  HOSTCC  scripts/dtc/libfdt/fdt.o
  HOSTCC  scripts/dtc/libfdt/fdt_ro.o
  HOSTCC  scripts/dtc/libfdt/fdt_wip.o
  HOSTCC  scripts/dtc/libfdt/fdt_sw.o
```

```
  CC      arch/arm/boot/compressed/fdt_wip.o
  CC      arch/arm/boot/compressed/fdt.o
  CC      arch/arm/boot/compressed/atags_to_fdt.o
  CC      arch/arm/boot/compressed/fdt_check_mem_start.o
  AS      arch/arm/boot/compressed/lib1funcs.o
  AS      arch/arm/boot/compressed/ashldi3.o
  AS      arch/arm/boot/compressed/bswapsdi2.o
  AS      arch/arm/boot/compressed/piggy.o
  LD      arch/arm/boot/compressed/vmlinux
  OBJCOPY arch/arm/boot/zImage
  Kernel: arch/arm/boot/zImage is ready
user@debian:~/Embedded_linux/kernel/linux-6.1$ file:///ho
```

Сборка .dtb (ARCH=arm make dtbs -j2)

```
DTC     arch/arm/boot/dts/mmp2-brownstone.dtb
DTC     arch/arm/boot/dts/mmp2-olpc-xo-1-75.dtb
DTC     arch/arm/boot/dts/mmp3-dell-ariel.dtb
DTC     arch/arm/boot/dts/imx50-kobo-aura.dtb
DTC     arch/arm/boot/dts/imx50-evk.dtb
DTC     arch/arm/boot/dts/imx51-apf51.dtb
DTC     arch/arm/boot/dts/imx51-apf51dev.dtb
DTC     arch/arm/boot/dts/imx51-babbage.dtb
DTC     arch/arm/boot/dts/imx51-digi-connectcore-jsk.dtb
DTC     arch/arm/boot/dts/imx51-eukrea-mbimxsd51-baseboard.dtb
DTC     arch/arm/boot/dts/imx51-ts4800.dtb
DTC     arch/arm/boot/dts/imx51-zii-rdu1.dtb
DTC     arch/arm/boot/dts/imx51-zii-scu2-mezz.dtb
DTC     arch/arm/boot/dts/imx51-zii-scu3-esb.dtb
DTC     arch/arm/boot/dts/imx53-ard.dtb
DTC     arch/arm/boot/dts/imx53-cx9020.dtb
DTC     arch/arm/boot/dts/imx53-kp-ddc.dtb
DTC     arch/arm/boot/dts/imx53-kp-hsc.dtb
DTC     arch/arm/boot/dts/imx53-m53evk.dtb
```

```
user@debian:~/Embedded_linux/kernel/ARM$ QEMU_AUDIO_DRV=none qemu-system-arm -M v
express-a9 -kernel zImage -dtb vexpress-v2p-ca9.dtb -nographic -append "console=t
tyAMA0"
```

```
[    5.846840] 010c           65536 ram12
[    5.846896]  (driver?)
[    5.847534] 010d           65536 ram13
[    5.847591]  (driver?)
[    5.848745] 010e           65536 ram14
[    5.848834]  (driver?)
[    5.849527] 010f           65536 ram15
[    5.849580]  (driver?)
[    5.850196] 1f00          131072 mtdblock0
[    5.850313]  (driver?)
[    5.851528] Kernel panic - not syncing: VFS: Unable to mount root fs on unknown-block(0,0)
[    5.852857] CPU: 0 PID: 1 Comm: swapper/0 Not tainted 6.1.0TEST.0.5 #1
[    5.853734] Hardware name: ARM-Versatile Express
[    5.855881]  unwind_backtrace from show_stack+0x10/0x14
[    5.858237]  show_stack from dump_stack_lvl+0x40/0x4c
[    5.858848]  dump_stack_lvl from panic+0x108/0x328
[    5.859623]  panic from mount_block_root+0x174/0x20c
[    5.860428]  mount_block_root from prepare_namespace+0x150/0x18c
[    5.861075]  prepare_namespace from kernel_init+0x18/0x12c
[    5.861686]  kernel_init from ret_from_fork+0x14/0x2c
[    5.862393] Exception stack(0xc8825fb0 to 0xc8825ff8)
[    5.863450] 5fa0:                                     00000000 00000000 00000000 00000000
[    5.864304] 5fc0: 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
[    5.865067] 5fe0: 00000000 00000000 00000000 00000000 00000013 00000000
[    5.867701] ---[ end Kernel panic - not syncing: VFS: Unable to mount root fs on unknown-block(0,0) ]---
```