

IoT: Client Devices

Embedded Kernels

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I'm not going to discuss the Linux kernel in depth.

Guidelines for Kernel

YOU MAY NOT HAVE MUCH CHOICE

- ▶ The kernel modules you need are dictated by hardware
- ▶ You'll likely have a fixed config file

BUILDROOT GIVES YOU SOME OPTIONS

- ▶ For the most part, use the defaults

Kernel

[*] Linux Kernel

```
    Kernel version (Custom version) --->
    (4.8.1) Kernel version
    () Custom kernel patches
    Kernel configuration (Using a custom (def)config file) --->
    (board/qemu/arm-versatile/linux-4.8.config) Configuration file path
    () Additional configuration fragment files
    Kernel binary format (zImage) --->
    Kernel compression format (gzip compression) --->
[*] Build a Device Tree Blob (DTB)
    Device tree source (Use a device tree present in the kernel.)
    (versatile-pb) Device Tree Source file names
[ ] Install kernel image to /boot in target
    Linux Kernel Extensions --->
    Linux Kernel Tools --->
```

Changing Defaults

If you do change defaults...
...back up your config(s) first!

```
[cclamb@ubuntu:~/buildroot-2016.11.1 $ head -20 board/qemu/arm-versatile/linux-4.8.config
CONFIG_SYSVIPC=y
CONFIG_MODULES=y
CONFIG_MODULE_UNLOAD=y
# CONFIG_ARCH_MULTI_V7 is not set
CONFIG_ARCH_VERSATILE=y
CONFIG_PCI=y
CONFIG_PCI_VERSATILE=y
CONFIG_AEABI=y
CONFIG_NET=y
CONFIG_PACKET=y
CONFIG_UNIX=y
CONFIG_INET=y
CONFIG_SCSI=y
CONFIG_BLK_DEV_SD=y
CONFIG_SCSI_SYM53C8XX_2=y
CONFIG_NETDEVICES=y
CONFIG_8139CP=y
CONFIG_PHYLIB=y
CONFIG_INPUT_EVDEV=y
CONFIG_SERIO_AMBAKMI=y
cclamb@ubuntu:~/buildroot-2016.11.1 $
```

Defconfig Files