Buildroot workshop

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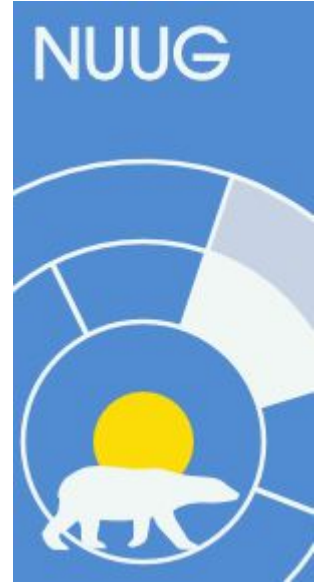
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NUUG - Norwegian UNIX User Group

- Non-profit foundation
- 300+ members
- Monthly meetings

Agenda

1. About Buildroot
2. Install Buildroot
3. QEMU Boot CD

What is embedded?

- Self contained hardware
    - Comes pre programmed with software / firmware.
    - Functions without outside dependencies.
    - Has very specific use case.

Buildroot

- Started in 2001
- Makes embedded Linux easy.
- Uses same build system as Linux kernel.
- Gives you full control of your options.
- Small memory footprint possible.
- Extensive documentation.

Who is using Buildroot?

- [Google Fiber](#)

- [Marvell](#)

- [Atmel](#)

- [Barco](#)

- ….

Installing the dependencies

- Debian
- Fedora

Fedora dependencies

```
dnf install -y @development-tools kernel-devel wget

dnf install -y which ncurses-devel gcc-c++ flex tar

dnf install -y perl-ExtUtils-MakeMaker findutils

dnf install -y bison cmake cpio python bc bzip2

dnf install -y libstdc++.i686 glibc-devel.i686

dnf install -y perl-Thread-Queue file
```

Debian dependencies

```
apt-get update

apt-get install -y wget build-essential unzip bc

apt-get install -y libncurses5-dev rsync cpio

apt-get install -y gcc-multilib python
```

Getting the source

```
version=buildroot-2017.02.tar.gz

wget https://buildroot.org/downloads/$version

tar xvf $version

# You can also visit

# https://buildroot.org/download.html
```

Building Buildroot

```
make qemu_x86_64_defconfig

make menuconfig # modify config

make busybox-menuconfig # optional

make
```

Boot ISO

```
iso=output/images/rootfs.iso9660

qemu-system-x86_64 -boot d -cdrom $iso -m 128
```

Summary

Thanks for attending

- [Quick kernel hacking with QEMU + buildroot](#)
- [Step by step installation guide](#)
- [Buildroot x86 installer](#)
- [Clipart](#)
- [NUUG](#)