

# Buildroot workshop



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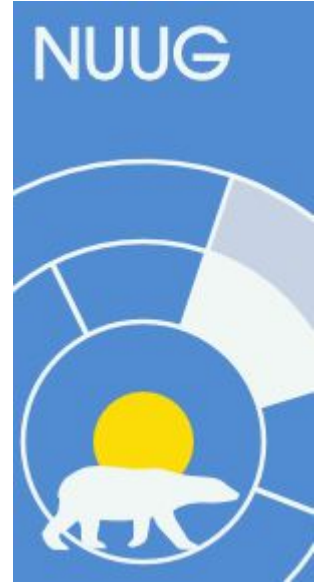
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8A90 6ED0 8C2E B23A 6645

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# NUUG - Norwegian UNIX User Group

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



# Agenda

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

# Buildroot - Making Embedded Linux Easy

- Uses same build system as Linux kernel
  - The system is easy to optimize (boot time, size, etc).
  - Simple source based package management.
  - Gives you full control of your options.
- Mature healthy project
  - Open source with active development.
  - Extensive documentation (PDF, HTML).
  - Stable release every 3. month.
  - Started in 2001.

# Who is using Buildroot?

- [Google Fiber](#)
- [Marvell](#)
- [Atmel](#)
- ....

# 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
```

```
cd $version
```

```
# You can also visit
```

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

# Building Buildroot

```
make help
```

```
make qemu_x86_64_defconfig
```

```
make menuconfig # modify config
```

```
make busybox-menuconfig # optional
```

```
make linux-menuconfig # optional
```

```
make
```

# Boot ISO

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

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

# Summary

Thank you and may the Source be with you.

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