

Yocto

eigene Embedded GNU/Linux Distro bauen

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FSFE Fellowship Gruppe Zürich



www.bitzgi.ch/presentation/

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Motivation



If you can't hack it, you don't own it

Yocto





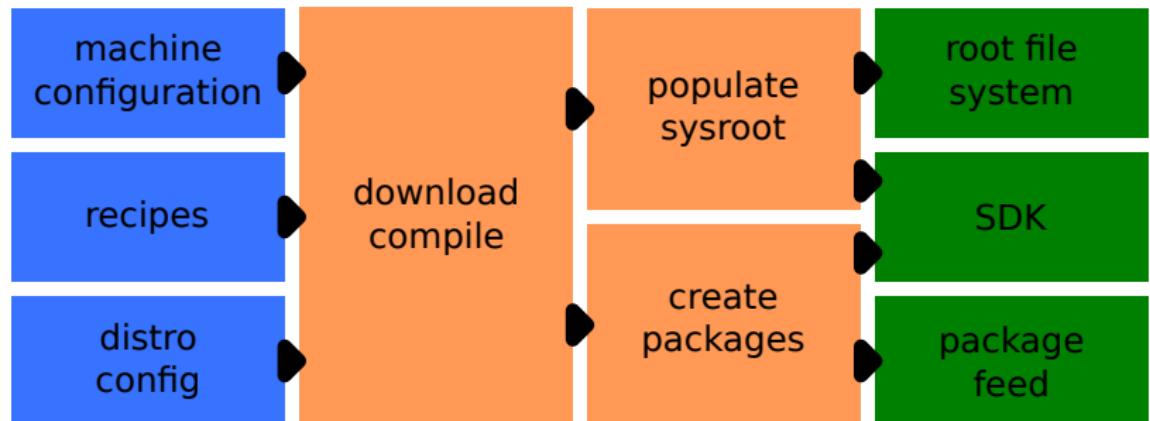
- Linux Foundation



■ Linux Foundation

- AMD, LG Electronics, Renesas, Long Term Support Initiative (LTSI), Juniper Networks, O.S. Systems, Huawei, Mentor Graphics, Texas Instruments, Sakoman, Inc., OpenEmbedded eV, MontaVista Software, LSI Corporation, Intel Corporation, Freescale Semiconductor, Enea AB, Wind River Systems, Dell, Dynamic Devices, SDG Systems, Silica, GENIVI Alliance, Nefedia, Eukréa Electromatique, minnowboard.org, NetModule AG, Move Innovation, DENX Software Engineering, ChargeStorm AB, Qtechnology, KOAN, The Ångström Distribution, Sidebranch, Gumstix, Timesys, Tilera, Secret Lab Technologies, RidgeRun, NetLogic Microsystems, Panasonic, Mindspeed, Cavium Networks

Build Übersicht



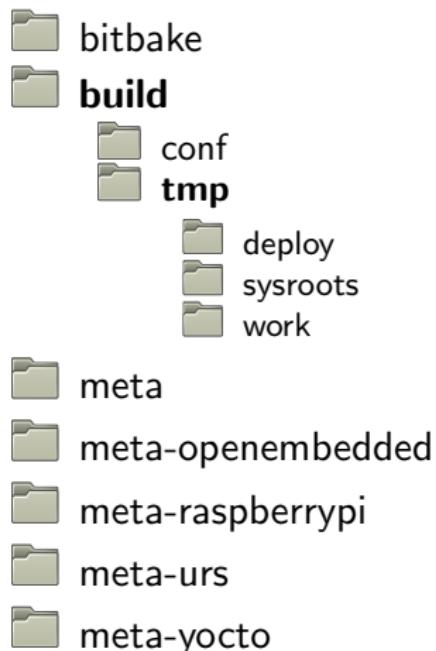
Verzeichnisstruktur

-  bitbake
-  build
-  meta
-  meta-openembedded
-  meta-raspberrypi
-  meta-urs
-  meta-yocto

Verzeichnisstruktur

-  bitbake
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 -  conf
 -  tmp
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-  bitbake
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-  **meta-raspberrypi**
 -  **recipes-multimedia**
 -  omxplayer
-  meta-urs
-  meta-yocto

Rezepte

```
1 SUMMARY = "A commandline OMX player for the Raspberry Pi"
2 LICENSE = "GPLv2"
3
4 DEPENDS = "libpcre libav virtual/egl boost freetype dbus"
5 RDEPENDS_${PN} += "bash procps"
6
7 SRCREV = "7af21f596378e5efeceebef9c4a298e2d06d98"
8 SRC_URI = "git://github.com/popcornmix/omxplayer.git;protocol=
9           file://0001-Remove-Makefile.include-which-includes
10
11 COMPATIBLE_MACHINE = "raspberrypi"
12
13 inherit autotools
14
15 do_install() { ... }
16
17 FILES_${PN} = "${bindir}/omxplayer* \
18                 ${libdir}/omxplayer/lib*${SOLIBS}"
19 ...
```

Schnellstart

- 1 Yocto von yoctoproject.org herunterladen

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- 4 Layer in `conf/bblayers.conf` eintragen

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- 5 anpassen von `conf/local.conf` (`MACHINE="raspberrypi"`)

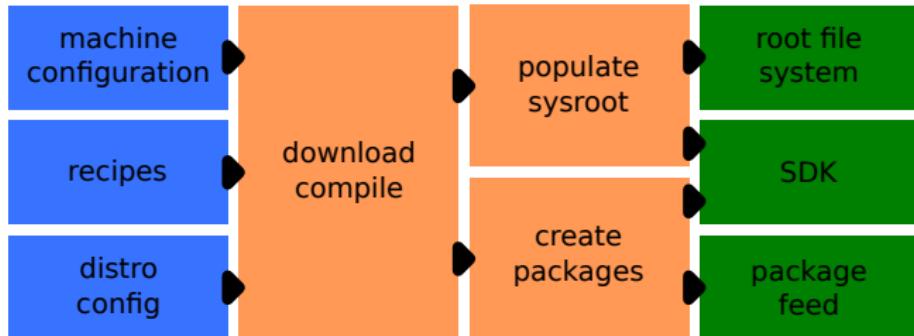
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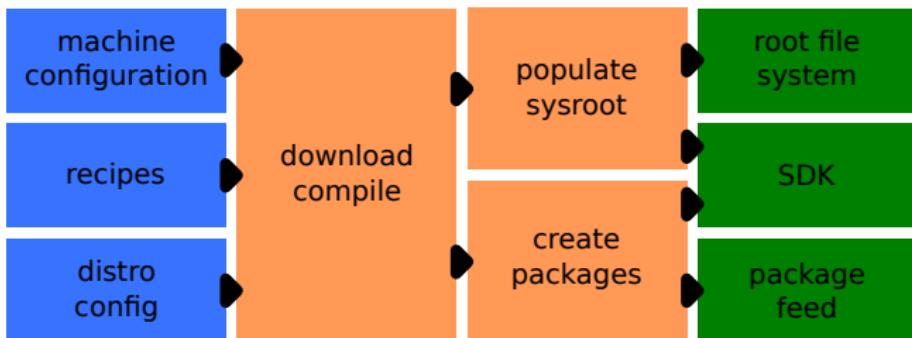
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- 7 Kaffee trinken, Mittag essen, Wochenendausflug, ...

Entwickertools



Entwickertools



- `bitbake meta-toolchain-sdk` für Cross Compiler
- `bitbake <image> -c populate_sdk` für Cross Compiler mit Sysroot

Weiteres

Hob

Image configuration

Images Settings

Select a machine

Your selection is the profile of the target machine for which you are building the image.

raspberrypi

Layers Add support for machines, software, etc.

⚠ 2 recipe parsing warnings View warnings

Select an image recipe

Image recipes are a starting point for the type of image you want. You can build them as they are or edit them to suit your needs.

rpi-basic-image

Advanced configuration Select image types, package formats, etc

A small image just capable of allowing a device to boot.

Edit image recipe Build image

■ Hob

Weiteres

The screenshot shows a web browser window titled "OpenEmbedded Metadata Index - layers - Iceweasel". The address bar displays the URL "layers.openembedded.org/layerindex/branch/master/layers/". The main content area is titled "OpenEmbedded Metadata Index". It features a navigation bar with tabs for "Branch: master" (selected), "Layers" (active), "Recipes", and "Machines". Below the navigation bar is a search bar with the placeholder "Search layers" and a "Filter layers" dropdown menu. A table lists three layers:

Layer name	Description	Type	Repository
meta-oe	Additional shared OE metadata	Base	git://git.openembedded.org/meta-openembedded
openembedded-core	Core metadata	Base	git://git.openembedded.org/openembedded-core
meta-bytesatwork	Official BSP layer for bytesatwork based platform	Machine (BSP)	https://github.com/bytesatwork/meta-bytesatwork.git

- Hob
- layers.openembedded.org

Fazit

- spezifische Embedded GNU/Linux Distro bauen
- SDK bauen

Fazit

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- SDK bauen
- selbst um Updates kümmern