

# Building Mamona

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# What is it?

- OpenEmbedded is a build system.
- OE uses compilation and configuration caching at most levels to increase developer productivity.
- It is a tool which allows developers to create a fully usable Linux base for various embedded systems.
- OE uses the Bitbake task executor in combination with the OpenEmbedded metadata to do all of the above, and it's using monotone as its version control system.

# Basic Files

For BitBake there is nothing else but variables and tasks organized as:

- `build/conf/local.conf` - The file where bitbake gets its first instructions.
- `distro.conf` - The distribution policy. It can overlap some variables previously set in `local.conf`
- `machine.conf` - Main arguments to cross compilation
- `.bb` files - packages specification. Variables and some specific functions
- `.bbclass` files - Generic functions to run for each package. For instance, `package_deb.bbclass` that has functions to generate the `.deb` packages
- `.inc` files - Secondary files just to organize the other ones.

# build/conf/local.conf - part1

- DL\_DIR - to specify where BitBake should place the downloaded sources into.
- BBFILES - to specify which .bb files to consider for your build.
- BBMASK - to not consider some .bb files.
- TMPDIR - where BitBake should create its temporary files.
- MACHINE - to specify a machine to build for.
- TARGET\_OS - to specify the target operating system.

## build/conf/local.conf - part2

- DISTRO - to select a distribution policy.
- ASSUME\_PROVIDED - a list of packages that should be assumed as provided.
- MACHINE\_KERNEL\_VERSION - to select a particular major kernel version if the MACHINE setting supports more than one major kernel version.
- INHERIT - A list of bbclass that should be executed.
- IMAGE\_FSTYPES - Add the required image file system types below.
- BBINCLUDELOGS - to emit the log if a build fails.

# distro conf

The most important variables for a distro conf file:

- DISTRO\_NAME
- DISTRO\_VERSION
- DISTRO\_TYPE
- TARGET\_VENDOR
- INHERIT
- TARGET\_OS
- TARGET\_FPU
- FEED\_ARCH
- MACHINE\_KERNEL\_VERSION
- PREFERRED\_PROVIDERS
- PREFERRED\_VERSION(s),  
e.g.: PREFERRED\_VERSION\_glibc-initial ?= '2.5'

# machine conf

The most important variables for a distro conf file:

- `TARGET_CC_ARCH = '-march=armv5te -mtune=arm926ej-s'`
- `PACKAGE_ARCH = 'armv5te'`
- `TARGET_FPU = 'hard'`
- `EXTRA_IMAGECMD_jffs2_nokia800 = '-pad -little-endian -eraseblock=0x20000 -n'`
- `IMAGE_FSTYPES = 'jffs2'`
- `SERIAL_CONSOLE = '115200 ttyS0'`
- `EXTRA_IMAGEDEPENDS += '0xffff-native'`

# .bb files

This type of file must contain:

- SRC\_URI - source package location
- DEPENDS - list of depends
- RDEPENDS - list of runtime depends
- functions to replace the autotools standard of OE

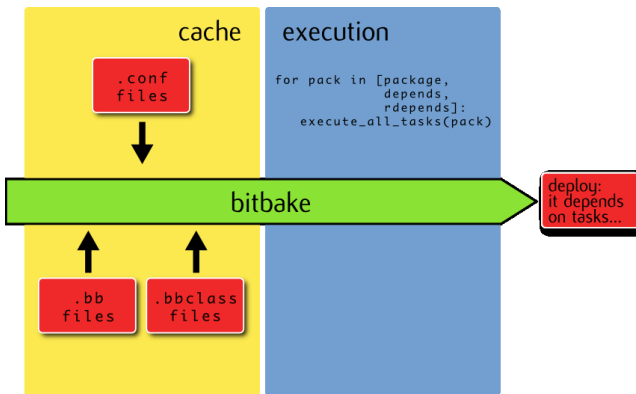


# .bbclass files

This file contains functions in shell script or python that can do everything you want. All that you need is to code the function and choose where it fits, e.g

- `python do_create_dsc () {...}`
- `addtask create_dsc before do_configure after do_patch`

# Overview



# Our mission (considering OE work)

## Provide/Maintain:

- build/conf/local.conf for bitbake
- a distro conf file: mamona.conf
- nokia800 and nokia770 conf files
- bb files: task-mamona, meta-mamona and osso packages newer version
- bbclass: .deb and .dsc full generation

# Let's see the code!

Why are you showing this? Show the code...

## ■ Links

- <http://osmtc.indt.org/projects/mamona>
- <http://www.openembedded.org/>