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## BitBake cheat sheet



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## 1 Command-line options

Here are a few commonly-used command line options for BitBake.

Option	Meaning
-c <task>	execute <task> for the image or recipe being built. ex: bitbake -c fetch busybox. Some of the possible tasks are: fetch, configure, compile, package, clean
-f	force execution of the operation, even if not required
-b	execute tasks from a specific .bb recipe directly. This does not handle any dependencies from other recipes. <pre>bitbake -b ../meta-st/meta-st-cannes2/recipes-multimedia/gstreamer/gstreamer1.0-plugins-stm_local.bb -f -c compile</pre>
-v	show verbose output
-DDD	show lots of debug information
-s	show recipe version information
-e	output recipe environment variables <pre>bitbake -e &lt;recipe&gt;</pre>
--help	get usage help
-c listtasks <image-or-recipe-name>	show the tasks associated with an image or individual recipe
-g <recipe>	output dependency tree in graphviz format <pre>bitbake -g &lt;recipe&gt; dot -v -Tpng -o package-depends.png package-depends.dot dot -v -Tpng -o pn-depends.png pn-depends.dot dot -v -Tsvg -o task-depends.svg task-depends.dot</pre>

### Command-line options

Here are a few examples of command line options for BitBake.



How to	Command	Comment
How to get the version of packages	bitbake -s	
How to get the Image package list	bitbake <image> -g	Then: cat pn-buildlist
How to clean a module	bitbake <module> -f -c cleanall	
How to clean an image	bitbake <image> -c cleanall	
How to load the packages to a local hard drive	bitbake <image> -f -c fetchall	
How to get the list of tasks	bitbake <image> -f -c listtasks	
How to display all appends	bitbake-layers show-appendes	
How to display all layers	bitbake <recipe-or-image-name> -g -u depexp	
How to configure the kernel	bitbake <kernel_module> -c menuconfig	
How to make an SDK relocatable image	bitbake <image> -c populate_sdk	self-extracting image available in tmp-glibc/deploy/sdk

### Main command lines commands



## 2 .bb file syntax

This table lists some of the syntaxes found in recipe (.bb) files.

Syntax	Meaning	Notes
<code>VAR = "foo"</code>	simple assignment	
<code>VAR ?= "foo"</code>	assign if no other value is already assigned (default assignment)	
<code>VAR ??=foo</code>	weak default assignment	takes lower precedence than ?=
<code>VAR = "stuff \${OTHER_VAR} more"</code>	variable expansion	OTHER_VAR expanded at time of reference to VAR
<code>VAR := "stuff \${OTHER_VAR} more"</code>	immediate variable expansion	OTHER_VAR expanded when parsing this line
<code>VAR += "foo"</code>	append with space	
<code>VAR =+ "foo"</code>	prepend with space	
<code>VAR .= "foo"</code>	append without space	
	prepend without	



Syntax	Meaning	Notes
<code>VAR =. "foo"</code>	space	
<code>VAR_append = "foo"</code>	append without space	
<code>OVERRIDES=" string1:string2" VAR = "foo" VAR_string1 = "bar"</code>	alternate/override value	if string1 is listed in OVERRIDES, use "bar" for value of VAR, otherwise use "foo"
<code>OVERRIDES=" string1:string2" VAR = "foo" VAR_append_string 1 = " bar"</code>	conditional append	if string1 is in OVERRIDES, then append " bar" to the value of VAR
<code>BBVERSIONS="1.0 1.8 string" VAR=" foo" VAR_string=" bar"</code>	range-specific conditional	If the version of the package is in the specified range (1.0-1.8 in this example), then perform an override on the indicated variable
<code>VAR = "foo \${@&lt;line-of- python-code&gt;}"</code>	python code expansion	ex: VAR = "the date is: \${@time.strftime('%Y%m%d',time.gmtime())}"
<code>include foo</code>	include file	include file named "foo", search BBPATH
<code>require [&lt;path&gt; foo</code>	require file	include file named "foo", failing if not found exactly where specified



Syntax	Meaning	Notes
<pre>do_sometask() {   &lt;shell code&gt; }</pre>	define a task using shell code	
<pre>python do_sometask {   &lt;python code&gt; }</pre>	define a task using python code	
<pre>addtask sometask (before after) other_task</pre>	add a task	adds a defined task to the list of tasks, with a specific ordering. Zero or more 'before' or 'after' clauses can be used.
<pre>VAR [some_flag]=" foo"</pre>	associate a subsidiary flag value to a variable	<p>a few subsidiary flag value names are well-defined: "dirs", "cleandirs", "noexec", "nostamp", "fakeroot", "umask", "deptask", "rdeptask", "recdeptask", "recrdeptask" %%%</p> <p>Flag values appear to be used exclusively with task definitions (i.e. do_sometask)</p>

### .bb file syntax



### 3 Additional BitBake-related command

Syntax	Meaning	Notes
bitbake-layers	Shows information about layers and recipes	Included in the bitbake/bin directory in openembedded source tree.
bitbake-whatchanged <image>	Shows all changes made since the last generation of image	<pre>bitbake st-image-weston # Edit the recipes bitbake-whatchanged st-image-weston</pre>
bitbake -g -u depexp <recipe-or-image-name>	Shows dependency information in a graphical interface	
bitbake -u goggle st-image-weston	simple graphical interface	This is a simple graphical wrapper over the streaming text output of BitBake. It shows collapsible trees for the logs for sub-tasks for each recipe.

#### Additional BitBake-related command





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## 4 Useful links

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- [https://www.openembedded.org/wiki/BitBake\\_\(user\)](https://www.openembedded.org/wiki/BitBake_(user))
- [http://www.openembedded.org/wiki/Main\\_Page](http://www.openembedded.org/wiki/Main_Page)
- Yocto Project Development Manual
- BitBake User Manual

Software development kit (A programming package that enables a programmer to develop applications for a specific platform.)