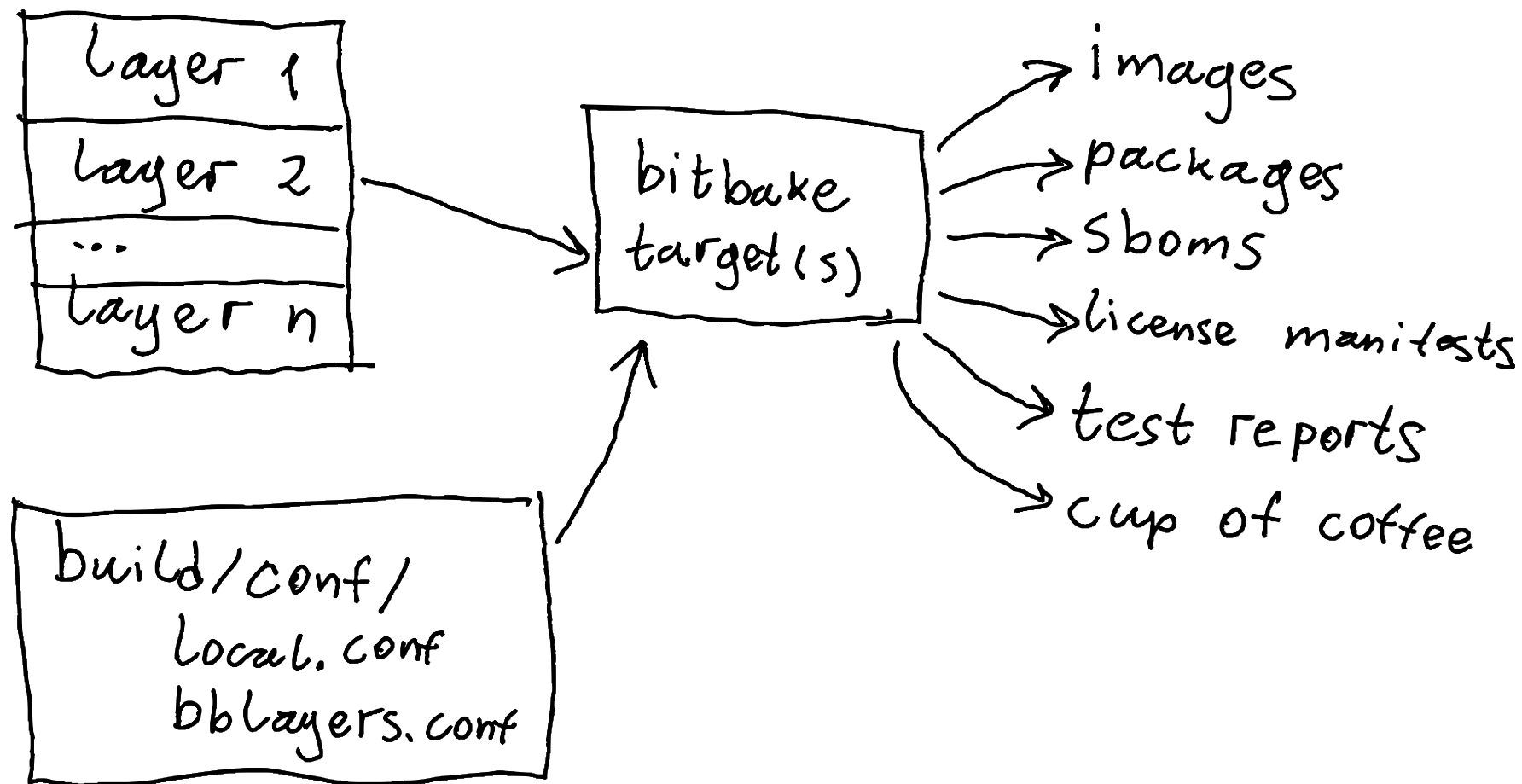


Bitbake-setup has shipped - Producing complete Linux systems from one file

All of Yocto on one diagram



Demo!

```
$ python3 -m venv ./bitbake-setup-venv (creates a python venv, only needs to be done once)
```

```
$ . ./bitbake-setup-venv/bin/activate
```

```
(bitbake-setup-venv) $ pip install bitbake-setup
```

```
(backup plan: $ git clone https://git.openembedded.org/bitbake )
```

```
$ bitbake/bin/bitbake-setup init
```

```
$ . /home/alex/bitbake-builds/yocto-master-.../build/init-build-env
```

```
$ bitbake core-image-minimal
```

(when this completes, there will be a complete Linux system image produced from sstate!)

(if bitbake complains about missing websockets, use \$ pip install websockets)

```
$ bitbake/bin/bitbake-setup status
```

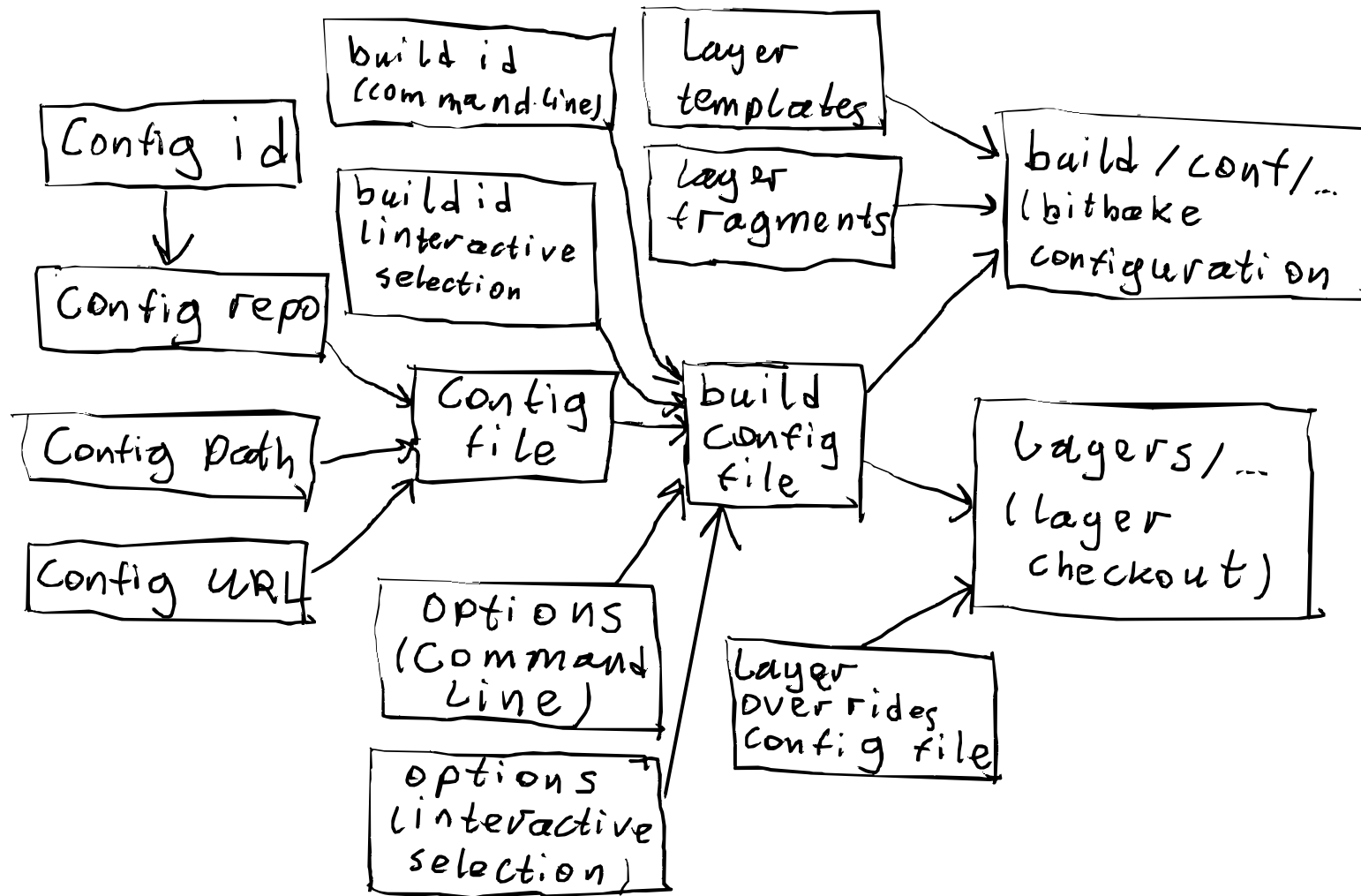
```
$ bitbake/bin/bitbake-setup update
```

Bitbake-setup (~~Prototype! Subject to change!~~) (Shipped! Available in bitbake master and wrynose LTS)

Four basic operations:

- List
 - Lists available configurations
- Init
 - Initializes a yocto build using a specified configuration
- Status
 - Checks if the configuration has been updated upstream
- Update
 - Updates a previously initialized configuration

How bitbake-setup works



Configuration repository (also a prototype!)

<https://git.openembedded.org/bitbake/tree/default-registry/configurations>



index : bitbake

Bitbake Development tree

master

gromirror use

[about](#) [summary](#) [refs](#) [log](#) **tree** [commit](#) [diff](#) [stats](#)

log msg

path: [root/default-registry/configurations](#)

Mode	Name	Size				
-rw-r--r--	oe-nodistro-master.conf.json	1599	log	stats	plain	
-rw-r--r--	oe-nodistro-whinlatter.conf.json	1685	log	stats	plain	
-rw-r--r--	oe-nodistro-wrynose.conf.json	1589	log	stats	plain	
-rw-r--r--	poky-master.conf.json	3062	log	stats	plain	
-rw-r--r--	poky-whinlatter.conf.json	2794	log	stats	plain	
-rw-r--r--	poky-wrynose.conf.json	3054	log	stats	plain	

Configuration fragments (available since walnascar (spring 2025) release)

```
$ cat meta/conf/fragments/yocto/sstate-mirror-cdn.conf
```

... (let's see in actual layer)

```
$ bitbake-config-build -help
```

...

list-fragments List available configuration fragments

enable-fragment Enable a fragment in the local build configuration

disable-fragment Disable a fragment in the local build configuration

„enable-fragment“ writes to conf/toolcfg.conf:

```
OE_FRAGMENTS += "core/yocto/sstate-mirror-cdn distro/poky machine/qemux86-64"
```

Built-in configuration fragments (available since whinlatter (autumn 2025))

Writing out a fragment file for any possible machine would be madness, so meta/conf/bitbake.conf defines:

```
OE_FRAGMENTS_BUILTIN ?= "machine:MACHINE distro:DISTRO"
```

and then „machine/xxx“ would become MACHINE = "xxx" for any value of xxx

Reproducible build *environment*

- **Option 1 (out of 1): substitute host executables in PATH**

bitbake-setup install-buildtools

- Optional enforcement in configs: strict source URI fetching and integrity check:

```
"install-buildtools": {  
    "url": "https://example.com/buildtools/x86_64-buildtools-extended-nativesdk-  
standalone-5.0.sh",  
    "sha256sum": "af76648b..."  
},
```

- **Containers? Full isolation from host userspace? We hear you. Next slide :)**

Yocto Project Reference Containers

- It is actually happening, and it's going to be awesome: <https://sched.co/2RadD>
- Action plan:
 - Talk to Tim (or Bruce)
 - Play with the infrastructure in meta-virtualization
 - Propose a plan for bitbake-setup integration
 - Patches!

The Plan

- ~~Bitbake-setup moves from master-next into master~~ done at the end of 2025
- ~~Bitbake-setup is published in pip~~ done in august 2026
- ~~Support for site-specific settings (number of threads, where to put downloads and sstate, etc.)~~ done at some point in winter 2026
- Multiple sets of sources in a single file – avoids mostly duplicate configuration files
- Support for build targets definitions in configurations
 - Proposal exists but if you ask five people about it you will get seven different opinions
- With the last item in place, we will have:

Producing complete Linux systems from one file

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Thanks for your
attention

Any questions ?

