

# Bitbake: making and managing recipes for CCGX

To build all the CCGX rootfs or images with all the existing recipes, see instructions here:

<https://github.com/victronenergy/venus/blob/master/README>.

Below guide is an introduction on how to add recipes and create/debug them.

Start bitbake:

```
make bb
```

Build a single recipe:

```
bitbake -b dbus-modbus tcp_0.7.2.bb
```

That probably didn't work, because dependencies are missing. To build the recipe including dependencies, do:

```
bitbake dbus-modbus tcp
```

when changing the source code that is fetched by the recipe, make sure to do a cleanall before running the recipe again (note I changed from the dbus-modbus tcp example to vrmportal:

```
bitbake -c cleanall vrmportal
```

To see what happened, and where all the source files are, see here (replace vrmportal with the recipe you are working on):

```
/media/venusbuilds/venus/build/tmp-eglibc/work/armv7a-vfp-neon-ve-linux-gnueabi/vrmportal-0.01-r0/
```

After successfully building a package, it is somewhere in the deploy folder. In above case it is here:

```
matthijs@matthijs-VirtualBox:/media/venusbuilds/venus/deploy/ipk/armv7a-vfp-neon$ ls -al vrm*
-rw-r--r-- 1 matthijs matthijs 18381088 sep 20 13:19 vrmportal_0.01-r0_armv7a-vfp-neon.ipk
-rw-r--r-- 1 matthijs matthijs      818 sep 20 13:19 vrmportal-dbg_0.01-r0_armv7a-vfp-neon.ipk
-rw-r--r-- 1 matthijs matthijs      828 sep 20 13:19 vrmportal-dev_0.01-r0_armv7a-vfp-neon.ipk
```

As you can see there is a dbg and dev as well, see internet for more explanation on those. Now, to test the package on a ccgx, copy the package to it: scp vrmportal\_0.01-r0\_armv7a-vfp-neon.ipk root@192.168.51.67:~/

and then login with ssh and install it:

```
root@ccgx:~# opkg install vrmportal_0.01-r0_armv7a-vfp-neon.ipk
```

some more tips and trick I wish that I knew before hand:

- use bitbake -k [packagename] when building packages with lots of dependencies. It will then continue instead of stopping on the first error.
- after pressing ctrl-c once, wait to bitbake to finish the remaining tasks. Instead of being impatient and pressing it again immediately. It will mess up the cache causing errors on your next build.
- there are several ways/levels of cleaning up:
  - bitbake -c clean [packagename]
  - bitbake -c cleansstate [packagename]
  - bitbake -c cleanall [packagename] (this one also deletes downloaded sources)
  - and to clean everything, exit bitbake and do a make clean in the root folder of venus

## running local pkg repo

instead of testing with manually installing a package, which is nice to test a single install, the other way to test if all the R-numbers and dependencies are done in the right way is to host them yourself.

see here for instructions:

<http://www.jumpnowtek.com/yocto/Using-your-build-workstation-as-a-remote-package-repository.html>

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