

IoT: Client Devices

Vagrant & Buildroot

What is Buildroot?

EMBEDDED LINUX BUILD ENVIRONMENT

- Makes building embedded linux distributions easier

USES MAKE SEMANTICS

- Generate makefiles to build embedded linux images

VARIETY OF INTERFACES

- I use the basic interface, but you can use others

What is Vagrant

PORTABLE DEVELOPMENT ENVIRONMENTS

- ▶ Uniform development environments
- ▶ Great for distributed teams, QA, build

VAGRANT & BUILDROOT

- ▶ Buildroot supports Vagrant
- ▶ This is how we'll install it

DEPENDENCIES

- ▶ Vagrant uses Virtualbox natively, must pay for VMWare support

Installing Vagrant

VAGRANT BASE INSTALLATION

- ▶ Download: <https://www.vagrantup.com/>
- ▶ Virtualbox? you should be covered.
- ▶ VMWare? You'll need to buy the VMWare provider
 - ▶ I use VMWare, but tweaked Buildroot to do so
 - ▶ Easier if you use Virtualbox in this case

VAGRANT DOES NOT USE OWN VIRTUALIZATION

- ▶ Uses providers to attach to virtualization software
- ▶ Virtualbox provider installed by default, not VMWare

Installing Buildroot

BUILDROOT IS COMPLEX AND POWERFUL

- ▶ RTM: <https://buildroot.org/downloads/manual/manual.html>

GETTING STARTED

- ▶ Starting here
- ▶ RTM: <https://buildroot.org/downloads/manual/manual.html#getting-buildroot>

DOWNLOADS VAGRANTFILE, STARTS VAGRANT

- ▶ VagrantFile is an internal Ruby DSL
- ▶ Vagrant reads, downloads Linux VM, installs Buildroot

BuildRoot Running

BUILDROOT VM RUNNING

- ▶ The Buildroot VM should be running
- ▶ Useful Vagrant Commands:
 - ▶ vagrant port, vagrant ssh, vagrant halt, vagrant suspend
 - ▶ type 'vagrant' at command line to see more

PORTS USED

- ▶ vagrant port shows active ports
 - ▶ note your Vagrant VM is active on port 2222
 - ▶ You need this to SCP images from your Buildroot VM