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Singularity

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Running Singularity with Vagrant (Mac)

These docs are for Singularity Version 2.5.2. For older versions, see our [archive](#)

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This recipe demonstrates how to run Singularity on your Mac via Vagrant and Ubuntu. The recipe requires access to **brew** which is a package installation subsystem for OS X. This recipe may take anywhere from 5-20 minutes to complete.

Setup

First, install brew if you do not have it already.

```
/usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"
```

Next, install Vagrant and the necessary bits.

```
brew cask install virtualbox
brew cask install vagrant
brew cask install vagrant-manager
```

Option 1: Singularityware Vagrant Box

We are maintaining a set of Vagrant Boxes via Vagrant Cloud [↗](#), one of Hashicorp [↗](#) many tools that likely you've used and haven't known it. The current stable version of Singularity is available here:

- [singularityware/singularity-2.4](#) [↗](#)

For other versions of Singularity see our Vagrant Cloud repository [↗](#).

```
mkdir singularity-vm
cd singularity-vm
```

Note that if you have installed a previous version of the vm, you can either destroy it first, or create a new directory.

```
vagrant destroy
```

Then issue the following commands to bring up the Virtual Machine:

```
vagrant init singularityware/singularity-2.4
vagrant up
vagrant ssh
```

You are then ready to go with Singularity 2.4!

```
vagrant@vagrant:~$ which singularity
/usr/local/bin/singularity
vagrant@vagrant:~$ singularity --version
2.4-dist

vagrant@vagrant:~$ sudo singularity build growl-llo-world.simg shub://vsoch/hello-world
Cache folder set to /root/.singularity/shub
Progress |=====| 100.0%
Building from local image: /root/.singularity/shub/vsoch-hello-world-master.simg
Building Singularity image...
Singularity container built: growl-llo-world.simg
Cleaning up...
vagrant@vagrant:~$ ./growl-llo-world.simg
RaawwwWWWWRRRR!!
```

Note that when you do **vagrant up** you can also select the provider, if you use vagrant for multiple providers. For example:

```
vagrant up --provider virtualbox
```

although this isn't entirely necessary if you only have it configured for virtualbox.

Option 2: Vagrant Box from Scratch (more advanced alternative)

If you want to get more familiar with how Vagrant and VirtualBox work, you can instead build your own Vagrant Box from scratch. In this case, we will use the Vagrantfile for **bento/ubuntu-16.04**, however you could also try any of the other bento boxes [🔗](#) that are equally delicious. As before, you should first make a separate directory for your Vagrantfile, and then init a base image.

```
mkdir singularity-2.4
cd singularity-2.4
vagrant init bento/ubuntu-16.04
```

Next, build and start the vagrant hosted VM, and you will install Singularity by sending the entire install script as a command (with the **-c** argument). You could just as easily shell into the box first with `vagrant ssh`, and then run these commands on your own. To each bento, his own.

```
vagrant up --provider virtualbox
```

Run the necessary commands within the VM to install Singularity

```
vagrant ssh -c /bin/sh <<EOF
sudo apt-get update
sudo apt-get -y install build-essential curl git sudo man vim autoconf libtool
git clone https://github.com/singularityware/singularity.git
cd singularity
./autogen.sh
./configure --prefix=/usr/local
make
sudo make install
EOF
```

At this point, Singularity is installed in your Vagrant Ubuntu VM! Now you can use Singularity as you would normally by logging into the VM directly

```
vagrant ssh
```

Remember that the VM is running in the background because we started it via the command **vagrant up** . You can shut the VM down using the command **vagrant halt** when you no longer need it.

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