

Vagrant Demonstration & Installation Workshop

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What is Vagrant?

Vagrant is a tool for building and managing virtual machine environments in a single workflow. Vagrant provides easy to configure, reproducible, and portable work environments that can be up and running in seconds for consistent application development or localized testing.

Virtual machines can be provisioned on top of VirtualBox, VMware, AWS, etc. Then, provisioning tools such as shell scripts, Chef, or Puppet, can automatically install and configure software on the virtual machine.

Who is Vagrant for?

- **Developers:** Vagrant will isolate dependencies and their configuration within a single disposable, consistent environment, without sacrificing any of the tools you are used to working with (editors, browsers, debuggers, etc.).
- **Operators:** Vagrant gives you a disposable environment and consistent workflow for developing and testing infrastructure management scripts. You can quickly test things like shell scripts, Chef cookbooks, Puppet modules, etc.
- **QA Engineers:** Vagrant can give you multiple client environments to quickly test different OSes, Browsers, etc. in scenarios where automated testing is not available or sufficient for end user testing.

What do I need to use Vagrant?

- Vagrant: <https://www.vagrantup.com/downloads.html>
- A hypervisor: Virtualbox, VMware*, EC2
- Vagrantfile
- A Vagrant box (VM image): <https://atlas.hashicorp.com/boxes/search>
- Vagrant plugins: <https://www.vagrantup.com/docs/plugins/>

* VMware requires purchase of a \$80 license from Hashicorp

Vagrantfile

The primary function of the Vagrantfile is to describe the type of machine required for a project, and how to configure and provision these machines.

- **VM Config:** Box name/version, CPU/memory settings
- **Networking:** hostname, ip settings, port-forwarding
- **Provisioning:** scripts, file copies, mounted directories

Vagrantfile

```
Vagrant.configure("2") do |config|
  config.vm.box = "centos/7"
  config.vm.communicator = "ssh"
  config.vm.hostname = "#{Socket.gethostname.split(/\./)[0]}.vm"
  config.vm.network "forwarded_port", guest: 80, host: 8000
  config.vm.provider "virtualbox" do |vbl|
    vb.cpus = "2"
    vb.memory = "4096"
  end
  config.vm.provision :shell, path: "scripts/bootstrap.sh"
end
```

Vagrant boxes

Boxes are the package format for Vagrant environments. The `vagrant box` utility provides all the functionality for managing boxes:

- `vagrant box list`
- `vagrant box add USER/BOX`
- `vagrant box remove USER/BOX`
- `vagrant box update USER/BOX`

For example: `vagrant box add hashicorp/precise64`. You can also quickly initialize a Vagrant environment with `vagrant init hashicorp/precise64`.

Vagrant plugins

Vagrant comes with many great features out of the box. Sometimes, however, you want to change the way Vagrant does something or add additional functionality.

This can be done via Vagrant plugins:

- `vagrant plugin list`
- `vagrant plugin install`
- `vagrant plugin uninstall`
- `vagrant plugin update`

Exercises

<https://github.com/claflico/vagrant-demo>