Introduction to Vagrant

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What is VirtualBox?

- Software for managing virtual machines
- Basic version is GPL
- Advanced version has more features and usage restrictions
- Innotek -> Sun -> Oracle

What is Vagrant?

- Wrapper around VirtualBox (and other virtualisation software)
- Written in Ruby
- Automatically create, configure and provision virtual machines
- Open source and free software: MIT Licence (GPL-compatible)
- www.vagrantup.com

Why Vagrant?

- Automatically create and destroy clean, sandboxed environments for development
- Ensure development matches production: architecture, kernel, packages
- Ensure all developers in a team are using the same configuration, toolchain etc.
- Configuration file (Vagrantfile) can be included in project repository

Vagrantfile

- Plain text configuration file
- Cascades: system, box, user, project
- Create a default Vagrantfile: `vagrant init`

Boxes

- Containers for base images
- Saves having to install complete operating system each time
- Create once by manual installation in VirtualBox, or download examples
- `vagrant package --base [name] --output [file]`
- `vagrant box add [name] [url]`
- `vagrant box add precise32 http://files.vagrantup.com/precise32.box`

Basic Example

- Create Vagrantfile: `precise-vm/Vagrantfile`
- Boot VM: `vagrant up`
- Login: `vagrant ssh`
- Destroy VM: `vagrant destroy`

Manual Provisioning

- Boot VM: `vagrant up`
- Login: `vagrant ssh`
- Install Nethack: `sudo apt-get install -y nethack-common`
- Run: `nethack`
- Destroy VM: `vagrant destroy`
- Boot VM: `vagrant up`
- Confirm clean: `which nethack`

Automatic Provisioning

- Basic support within Vagrant for this, runs a script after booting
- More flexibility requires Puppet or Chef
- Can use built-in provisioning to bootstrap Puppet

What is Puppet?

- Configuration management and provisioning
- Apache 2.0 licence since v2.7, Enterprise platform available
- Describe desired state of server, Puppet makes it so
- Declarative vs imperative
- Vagrant has built-in support for Puppet manifests

Puppet Example

- Create `manifests/default.pp`
- Enable Puppet provisioning - one line in Vagrantfile
- Boot VM as normal: `vagrant up`
- Run: `nethack`
- Halt: `vagrant halt`
- Boot VM, Nethack already installed so no action taken

Questions

- Slides and scripts on GitHub under BSD Licence
- https://github.com/pwaring/vagrant-talk
- Vagrant: Up and Running, Mitchell Hashimoto (O'Reilly)