



VAGRANT

# Cloud Computing Research

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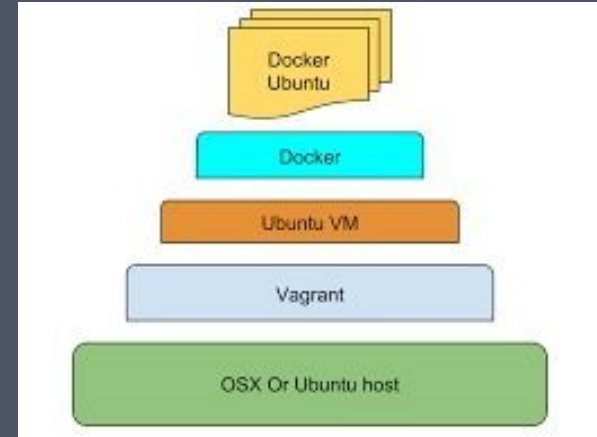
# What is Vagrant



“Vagrant is a tool for building complete development environments, sandboxed in a virtual machine. ”



# What is Vagrant





# Vagrant Context



Vagrantfile



Box

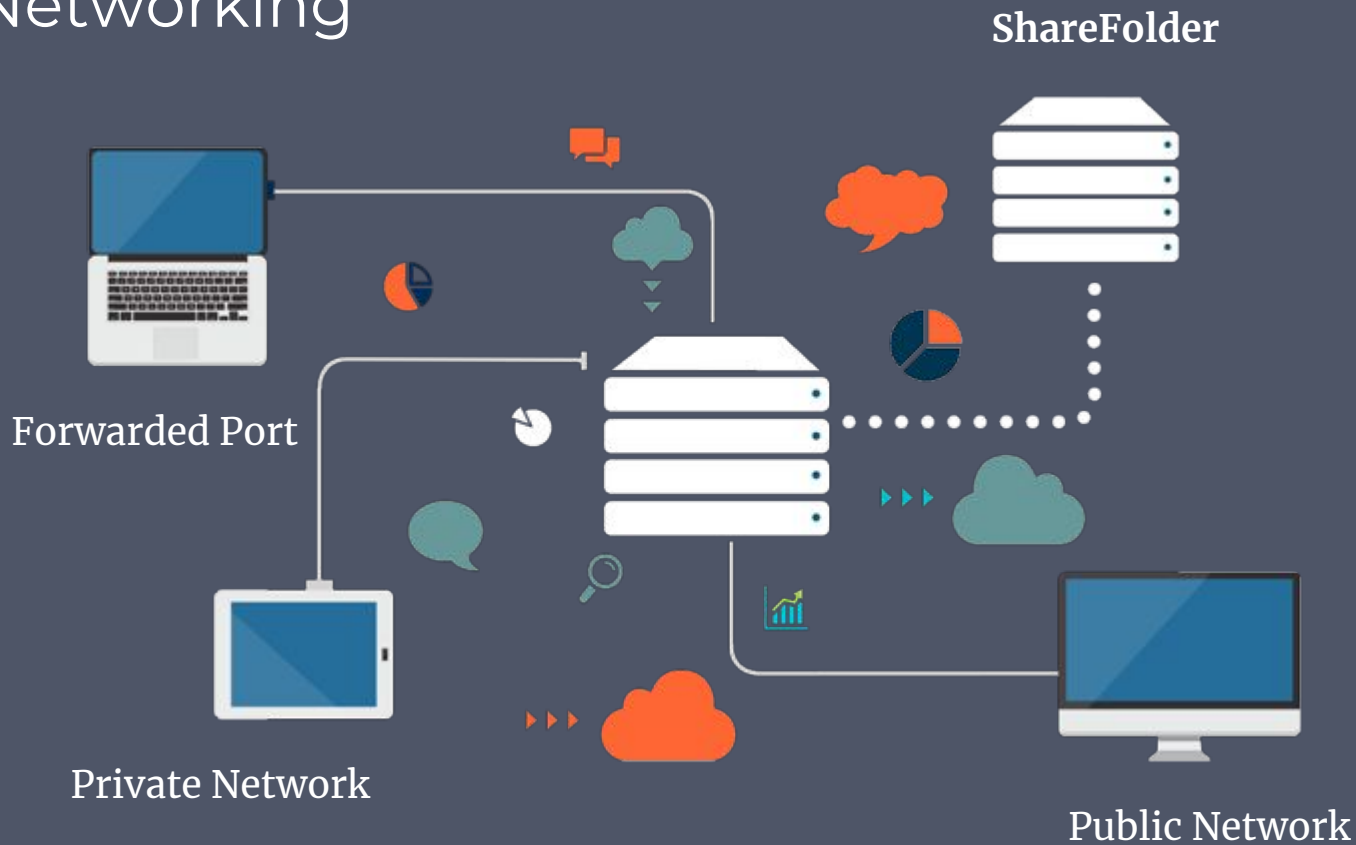


# Provisioning



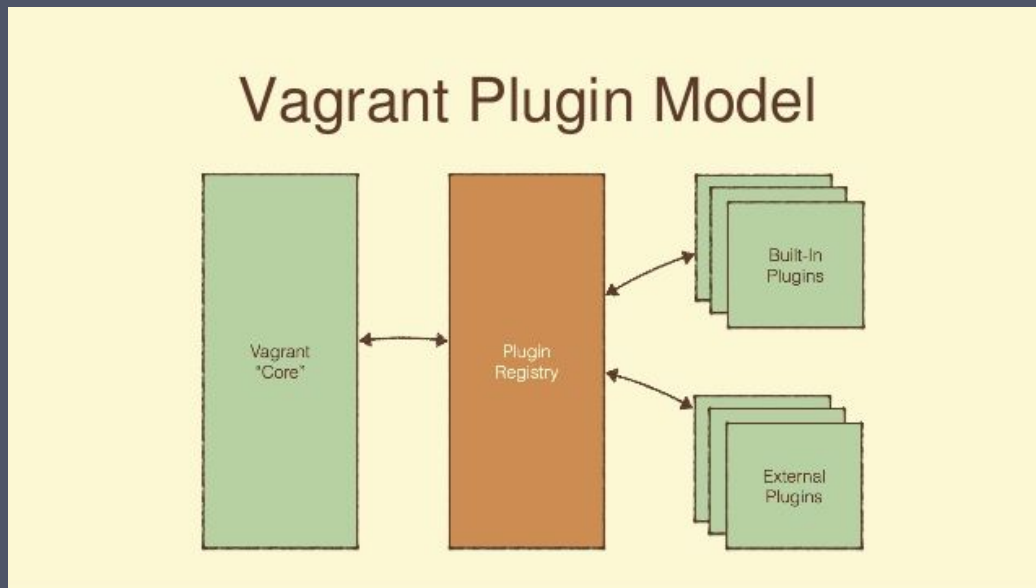


# Networking





# Extending with Plug-Ins



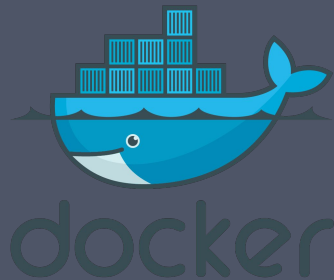


# Alternatives of Vagrant

Virtual machine



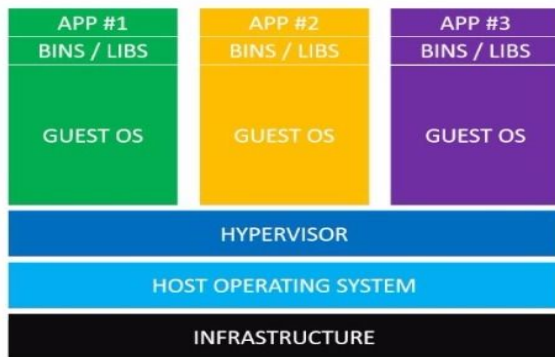
Container



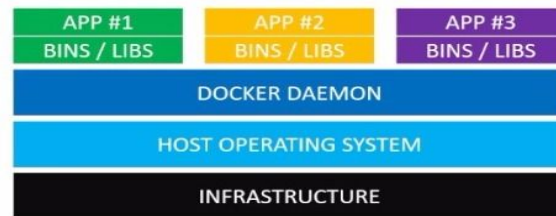




# Alternatives of Vagrant



Virtual Machines



Docker Containers



# Alternatives of Vagrant

Feature	Docker	Vagrant
Virtualization type	VE	VM
Guaranteed resources at hardware level?	No	Yes
Supported OS platforms	Linux only	Linux, Unix, Windows
Startup time for created machine	A few seconds	A few minutes
Isolation level for created virtual systems	Partial	Full
Weight of the created virtual systems	Very lightweight	Heavy (still better than full VM)
Other advantages	Quick, easy to learn	Intergration with CM tools



# Hands-on

- Up and Running
  - Baby Steps
  - Networking
  - Shared Folders
- Provisioning
- Multemachine Environment





# Baby Steps



Vagrantfile



Vagrant up

```
Command Prompt - vagrant ssh

C:\Users\Batu>vagrant ssh
Welcome to Ubuntu 12.04 LTS (GNU/Linux 3.2.0-23-generic x86_64)

 * Documentation:  https://help.ubuntu.com/
New release '14.04.5 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Welcome to your Vagrant-built virtual machine.
Last login: Fri Sep 14 06:23:18 2012 from 10.0.2.2
vagrant@precise64:~$
```



```

1 1 #! -*- mode: ruby -*-
2 2 vi: set ft=ruby :
3
4 # All Vagrant configuration is done below. The "2" in Vagrant.configure
5 # configures the configuration version (we support older styles for
6 # backwards compatibility). Please don't change it unless you know what
7 # you're doing.
8 Vagrant.configure("2") do |config|
9   # The most common configuration options are documented and commented below.
10   # For a complete reference, please see the online documentation at
11   # https://docs.vagrantup.com.
12
13   # Every Vagrant development environment requires a box. You can search for
14   # boxes at https://vagrantcloud.com/search.
15   config.vm.box = "hashicorp/precise64"
16
17   # Disable automatic box update checking. If you disable this, then
18   # boxes will only be checked for updates when the user runs
19   # 'vagrant box outdated'. This is not recommended.
20   config.vm.box_check_update = false
21
22   # Create a forwarded port mapping which allows access to a specific port
23   # within the machine from a port on the host machine. In the example below,
24   # accessing "localhost:8080" will access port 80 on the guest machine.
25   # NOTE: This will enable public access to the opened port
26   config.vm.network "forwarded_port", guest: 80, host: 8080
27
28   # Create a forwarded port mapping which allows access to a specific port
29   # within the machine from a port on the host machine and only allow access
30   # via 127.0.0.1 to disable public access.

```

```

C:\Users\Batu>vagrant reload
==> default: Attempting graceful shutdown of VM...
==> default: Checking if box 'hashicorp/precise64' is up to date...
==> default: Clearing any previously set forwarded ports...
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
default: Adapter 1: nat
==> default: Forwarding ports...
default: 80 (guest) => 8080 (host) (adapter 1)
default: 22 (guest) => 2222 (host) (adapter 1)
==> default: Booting VM...
==> default: Waiting for machine to boot. This may take a few minutes...
default: SSH address: 127.0.0.1:2222
default: SSH username: vagrant
default: SSH auth method: private key
==> default: Machine booted and ready!
==> default: Checking for guest additions in VM...
default: The guest additions on this VM do not match the installed version of
default: VirtualBox! This is fine, but in some cases it can
default: prevent things such as shared folders from working properly. If you see
default: shared folder errors, please make sure the guest additions within the
default: virtual machine match the version of VirtualBox you have installed on
default: your host and reload your VM.
default:
default: Guest Additions Version: 4.2.0
default: VirtualBox Version: 5.2
==> default: Mounting shared folders...
default: /vagrant => C:/Users/Batu
==> default: Machine already provisioned. Run 'vagrant provision' or use the '--provision'
==> default: flag to force provisioning. Provisioners marked to run always will still run.

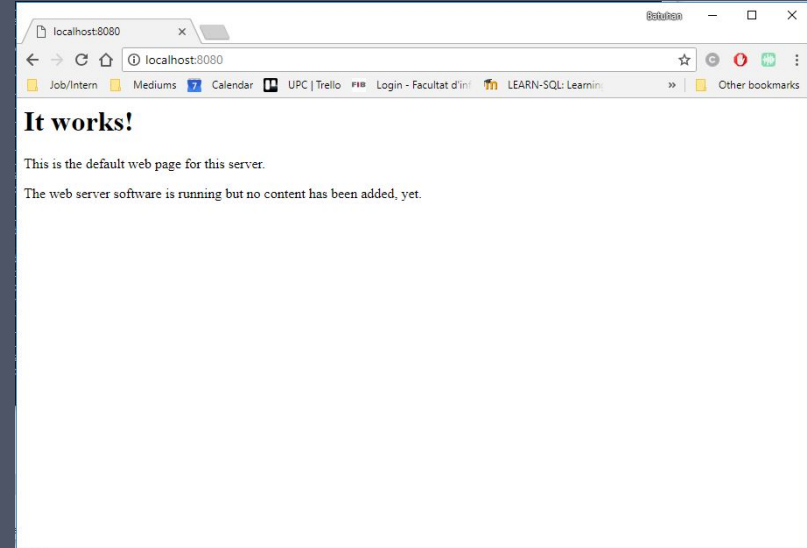
```



# Networking



Virtual Machine

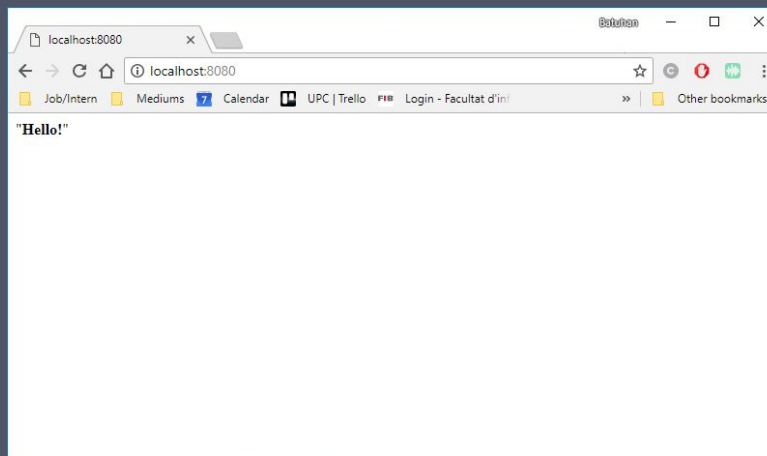


Host Machine



# Shared Folders

```
Command Prompt - vagrant ssh
vagrant@precise64:~$ ls /vagrant/
3D Objects          Local Settings      System32\oobe\
3D Objects\3DModel  MicrosoftEdgeBackup Recent             System32\oobe\
3D Objects\3DModel\  Music              Saved Games       System32\oobe\
Application Data     My Documents        Searches          System32\oobe\
Contacts             NetHood             SendTo            System32\oobe\
Cookies              NTUSER.DAT          Source            System32\oobe\
Desktop              NTUSER.DAT{7bb8e8fb-c3c0-11e7-bcfd-e6d813955d6a}.TM.bif  Start Menu
Documents            NTUSER.DAT{7bb8e8fb-c3c0-11e7-bcfd-e6d813955d6a}.TM.Container000000000000000001.regtrans-ms  Temp
Downloads            NTUSER.DAT{7bb8e8fb-c3c0-11e7-bcfd-e6d813955d6a}.TM.Container000000000000000002.regtrans-ms  Windows
edipr                 ntuser.dat.LOG1     Vagrantfile
edipr\work\workspace ntuser.dat.LOG2     Videos
Favorites            ntuser.ini          VirtualBox VMs
git                  OneDrive
IntelGraphicsProfile Pictures
Links                VentrHood
vagrant@precise64:~$
```





# Provisioning



Vagrantfile



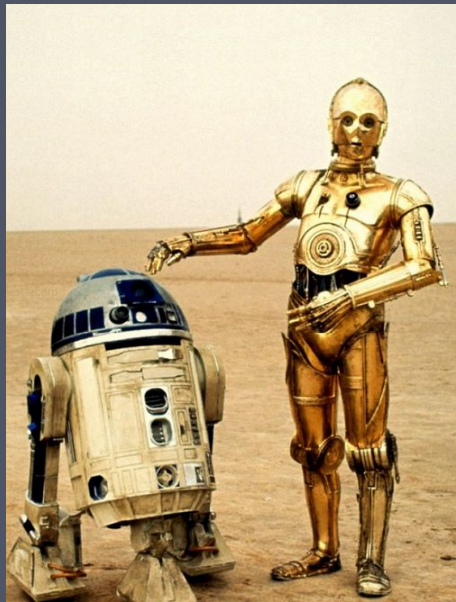
Vagrant up







# Multimachine Environment



Vagrantfile





# Multimachine Environment



Vagrantfile



# Multimachine Environment



Vagrantfile



Vagrant up





Thank you