

### Creating the Vagrantfile

[-- indicate Indent Spaces]

```
# -- mode: ruby --
# vi: set ft=ruby :
Vagrant.configure("2") do |config|
  --- config.vm.box = "hashicorp/bionic64"
  --- config.vm.provider "virtualbox"
  -----vb.memory = 2048 [optional]
  -----vb.cpus = 1 [optional]
  --- config.vm.provision :shell, path: "bootstrap.sh"
end
```

### Optional Commands to Add Into Vagrantfile

```
---# config.vm.box_check_update = false

---# config.vm.network "forwarded_port", guest: 80, host: 8080
# NOTE: This will enable public access to the opened port

---# config.vm.network "forwarded_port", guest: 80, host: 8080, host_ip: "127.0.0.1"
# via 127.0.0.1 to disable public access

---# config.vm.network "private_network", ip: "192.168.33.10"

---# config.vm.network "public_network" more info needed

---# config.vm.synced_folder "../data", "/vagrant_data"
# Synced Folder

OR

---#config.vm.synced_folder "/host/path", "/guest/path"

---#config.vm.synced_folder '.', '/vagrant', disabled: true
#Disables Folder Sharing

---#config.vm.hostname = "myhost.ostechnix.example"
# Hostname

-----#vb.gui = true
# Display the VirtualBox GUI when booting the machine

-----#vb.memory = "1024"
# Customize the amount of memory on the VM:

-----#vb.gui = true
# Headless vs. Non-Headless

## cp ./files/my.cnf /etc/mysql/conf.d
```

### Provisioning within a VM

```
--- config.vm.provision "shell", inline: <<-SHELL
-----apt-get update
-----apt-get install -y apache2
-----service apache2 start
----- SHELL
```

### Provisioning

```
#!/bin/bash
apt-get update
apt-get install -y
```

### Option #1 Multiple Machines Utilizing a Loop

```
Vagrant.configure("2") do |config|

(2..4).each do |i|
  config.vm.define "vm-#{i}" do |web|
    web.vm.box = "ubuntu/trusty64"
    web.vm.network "private_network", ip: "192.168.33.#{i}", auto_config: false
    web.vm.provision "shell", inline: "echo hello #{i}"
    web.vm.synced_folder "code/", "/app/code"
  end
end
end
```

### Option #2.0 Multi-Machine w/ Private Network

```
# -- mode: ruby --
# vi: set ft=ruby :

# Every Vagrant development environment requires a box. You can search for
# boxes at https://atlas.hashicorp.com/search.
BOX_IMAGE = "bento/ubuntu-16.04"
NODE_COUNT = 3

Vagrant.configure("2") do |config|
  ---config.vm.define "Ansible" do |subconfig|
    -----subconfig.vm.box = "ansible/tower"
    -----subconfig.vm.hostname="ansible"
    -----subconfig.vm.network :private_network, ip:"10.10.2.5"
  ---end
```

### Option 2.1 – Continued From Above –

```
--config.vm.define "node-01" do |subconfig|
  -----subconfig.vm.box = "generic/debian10"
```

```
-----subconfig.vm.hostname="node-01"
-----subconfig.vm.network :private_network, ip:"10.10.2.11"
--end

--config.vm.define "node2" do |subconfig|
-----subconfig.vm.box = "generic/debian10"
-----subconfig.vm.hostname="node-02"
-----subconfig.vm.network :private_network, ip:"10.10.2.12"
--end
end
```

#### Option #2.2 -- Continued From Above --

```
# Install avahi on all machines
--config.vm.provision "shell", inline: <<-SHELL
apt-get install -y avahi-daemon libnss-mdns
SHELL
end
```



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### Networking

[---- indicate Indent Spaces]

#### Port Forwarding

```
---#config.vm.network "forwarded_port", guest: 80, host: 8080
end
```

```
---#config.vm.network "forwarded_port", guest: 80, host: 8080,
auto_correct: true
```

```
---#config.vm.usable_port_range = (2200..2250)
```

#### Change Network Protocol

```
---#config.vm.network "forwarded_port", guest: 80, host: 8080,
auto_correct: true protocol: "udp"
```

#### Set-up Private Network

```
---#config.vm.network "private_network", ip: "192.168.121.60"
```

```
---#config.vm.network "private_network", type: "dhcp"
```

```
---#config.vm.network "public_network"
```

```
---#config.vm.network "public_network", ip: "192.168.121.61"
```

#### Setup Private Named Network

```
---#config.vm.network 'private_network', name: 'example', type:
'dhcp'
```

```
---#config.vm.network 'private_network', name: 'example', ip: '111.2-
22.111.222'
```

### Bridged Network

```
---#config.vm.network "bridged"
```

\*\*1 VM w/ Multiple Networks

```
---#config.vm.forwarded_port 80, 8080
```

```
---#config.vm.network "hostonly", "192.168.33.10"
```

```
---#config.vm.network "bridged"
```

### 1 VM w/ Multiple Network Options

#### 1 VM w/ Multiple Network Options

```
---#config.vm.hostname = "myhost.ostechnix.example"
```

```
---#config.vm.network "forwarded_port", guest: 80, host: 8080,
auto_correct: true
```

```
---#config.vm.network "private_network", ip: "192.168.121.60"
```

#### 1 VM w/ Multiple IP Address

```
---#config.vm.network "private_network", ip: "192.168.121.60"
```

```
---#config.vm.network "private_network", ip: "192.168.121.61"
```

### One VM | CentOs | 512 RAM | 1 CPU | Private IP

```
Vagrant.configure("2") do |config|
```

```
config.vm.box = "bento/centos-7.2"
```

```
config.vm.provider :virtualbox do |vb|
```

```
vb.memory = 512
```

```
vb.cpus = 1
```

```
end
```

```
config.vm.define "srv-1" do |config|
```

```
config.vm.provision :shell, :inline => "ip addr | grep 'inet' | awk
'{print $2}'"
```

```
config.vm.network "private_network", ip: "192.168.50.11", virtualbo-
x__intnet: "true"
```

```
end
```

```
end
```

### Provisioning with Ansible

```
Vagrant.configure("2") do |config|
```

```
-- ...
```

```
--- config.vm.provision "ansible" do |ansible|
```

```
---- ansible.playbook = "vagrant.yml"
```

```
---end
```

```
end
```

### --Continuation from Above--

```
config.vm.define "db" do |db|
```

```
db.vm.box = "ubuntu/trusty64"
```

```
db.vm.network "private_network", ip: "192.168.33.30"
```

```
db.vm.synced_folder "data/", "/db/data"
```

```
db.vm.provider "virtualbox" do |vb|
```

```
vb.memory = 2048
```

```
vb.cpus = 1
```

```
end
```

```
end
```

```
end
```

### Multiple VMs within One Vagrantfile

```
Vagrant.configure("2") do |config|
```

```
config.vm.provision "shell", inline: "echo Hello"
```

```
config.vm.define "web" do |web|
```

```
web.vm.box = "ubuntu/trusty64"
```

```
web.vm.network "private_network", ip: "192.168.33.20"
```

```
web.vm.synced_folder "code/", "/app/code"
```

```
web.vm.provider "virtualbox" do |vb|
```

```
vb.memory = 1048
vb.cpus = 1
end
end
```

#### Thank You -

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