

# DevOps Prerequisite Setup

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# Setup

## 1. Overview

In our DevOps session we would be dealing with a lot of tools. “Vagrant” is a very easy way to export and use a VM. This setup comes with a pre-created vagrant which has a host of tools already installed. So this VM will be our sandbox to try out tools which can assist us in our DevOps session.

Even before we can bring up our vagrant we need to install a couple of softwares and follow a few steps to bring up the vagrant. Both the softwares required, come along with this material and you will not have to download any of them. The softwares required to bring up a vagrant are as below:

- a. Oracle VM Virtual Box – Freely available virtualization product. (<https://www.virtualbox.org/>)
- b. Vagrant – Freely available software to create portable environments. This integrates very well with Virtual Box. (<https://www.vagrantup.com/>)

It is a prerequisite for the DevOps session to have this vagrant up and running. Below are the setup instructions to get your vagrant up.

**Duration: ~1 hour**

## 2. Virtual Box

### 2.1 Install virtual box

**Step 1:** Install virtual box by clicking on devops/setup/virtualbox/VirtualBox-5.1.6-110634-Win.exe

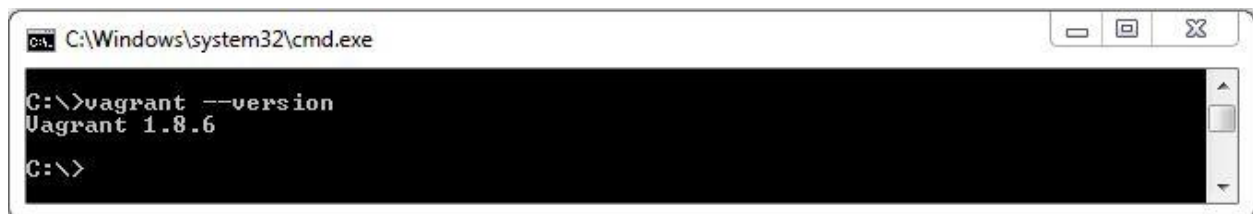
## 3. Vagrant

### 3.1 Install vagrant

**Step 1:** Install vagrant by clicking on devops/setup/vagrant/vagrant\_1.8.6.exe

### 3.2 Vagrant checkpoint

**Step 1:** Open command prompt and type in “vagrant --version”



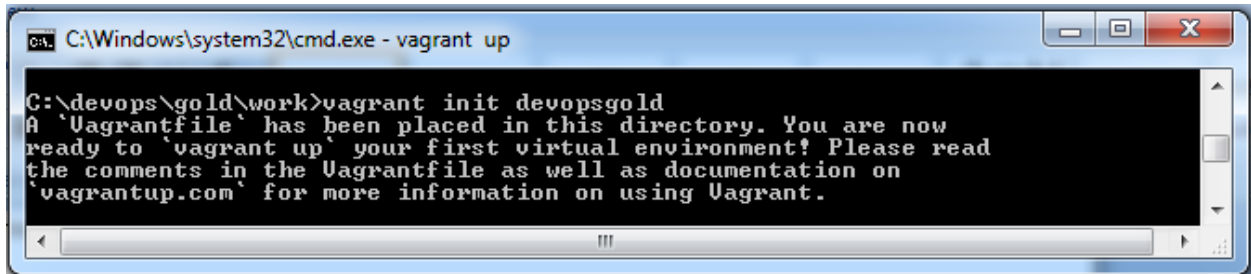
```
C:\Windows\system32\cmd.exe
C:\>vagrant --version
Vagrant 1.8.6
C:\>
```

## 4. Bringing my “vagrant up”

**Step 1:** Copy the file devops/setup/system/devopsgold to a folder of your choice. In the example below its “C:\devops\gold\work\”

**Step 2:** Open command prompt and navigate to the folder where you have stored your “devopsgold” file in “Step 1”

**Step 3:** Execute the command “vagrant init devopsgold”



```
C:\Windows\system32\cmd.exe - vagrant up
C:\devops\gold\work>vagrant init devopsgold
A 'Vagrantfile' has been placed in this directory. You are now
ready to 'vagrant up' your first virtual environment! Please read
the comments in the Vagrantfile as well as documentation on
'vagrantup.com' for more information on using Vagrant.
```

**Step 3:** Step 2 creates a file called VagrantFile . Open this VagrantFile in a text editor of your choice. Make the below change/s

Uncomment the below line by removing the “#” in the beginning of the line. Change

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

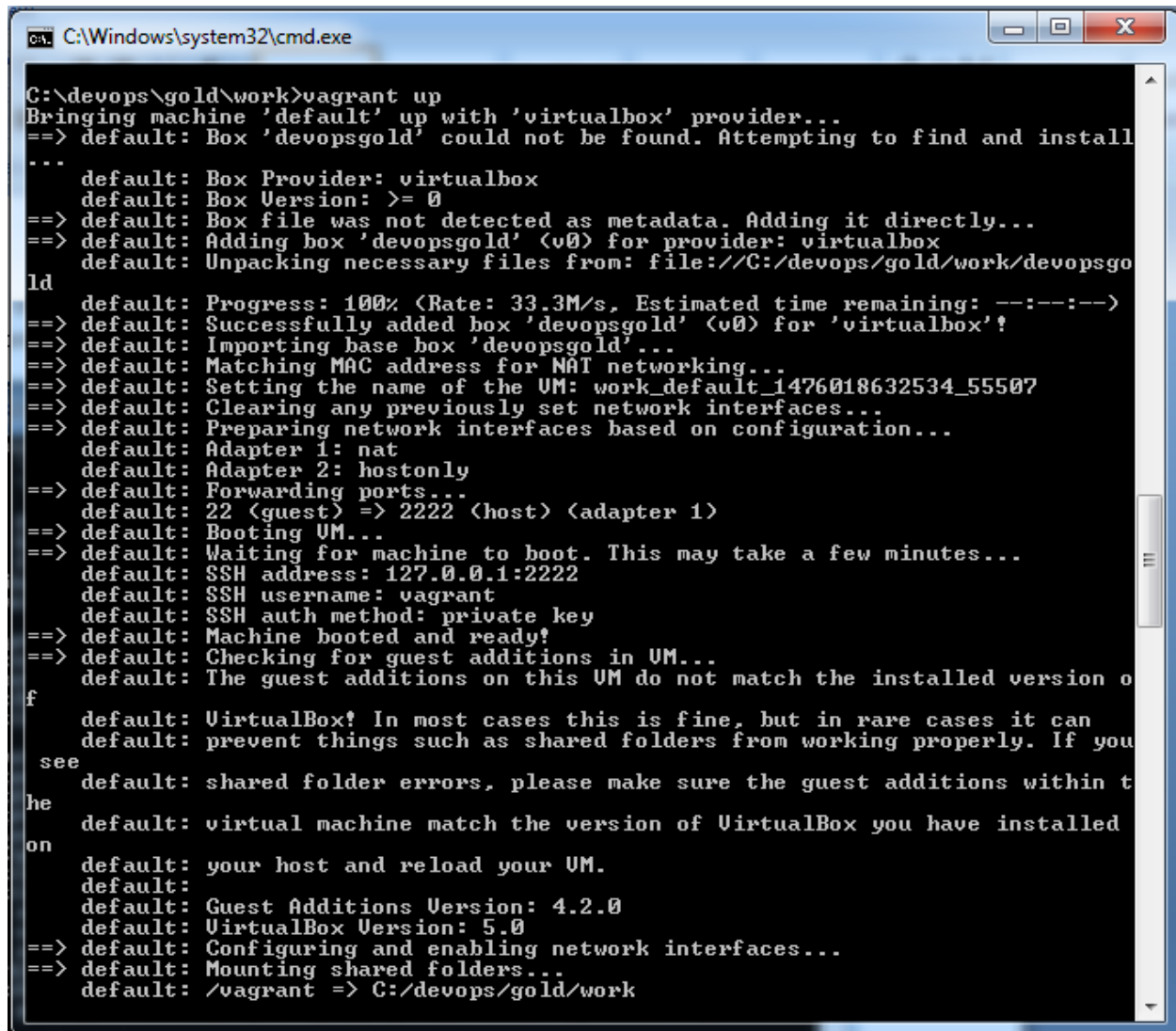
to

```
config.vm.network "private_network", ip: "192.168.33.10"
```

**Step 4:** Save and exit out of the text editor

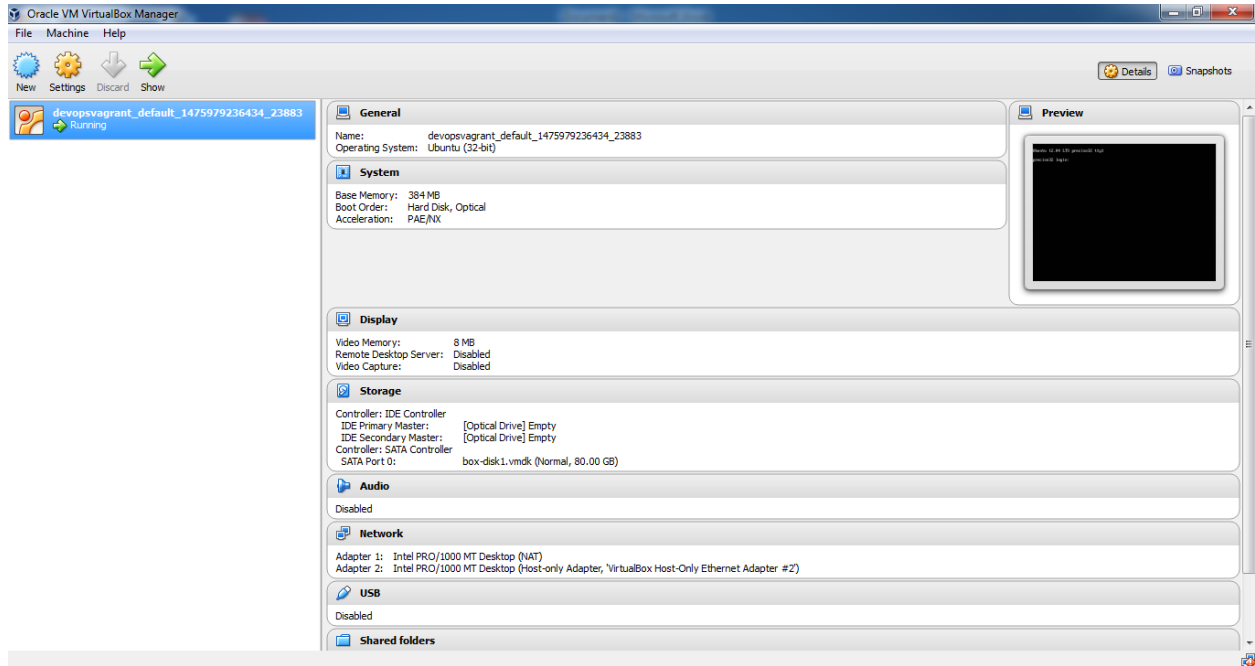
**Step 5:** Start your virtual box by clicking on the icon “Oracle VM VirtualBox” or by selecting “Oracle VM VirtualBox” through windows start button

**Step 6 :** Return back to your command prompt and execute the command “vagrant up”. This may take couple of minutes to complete. Your output may slightly vary from what is pasted below.

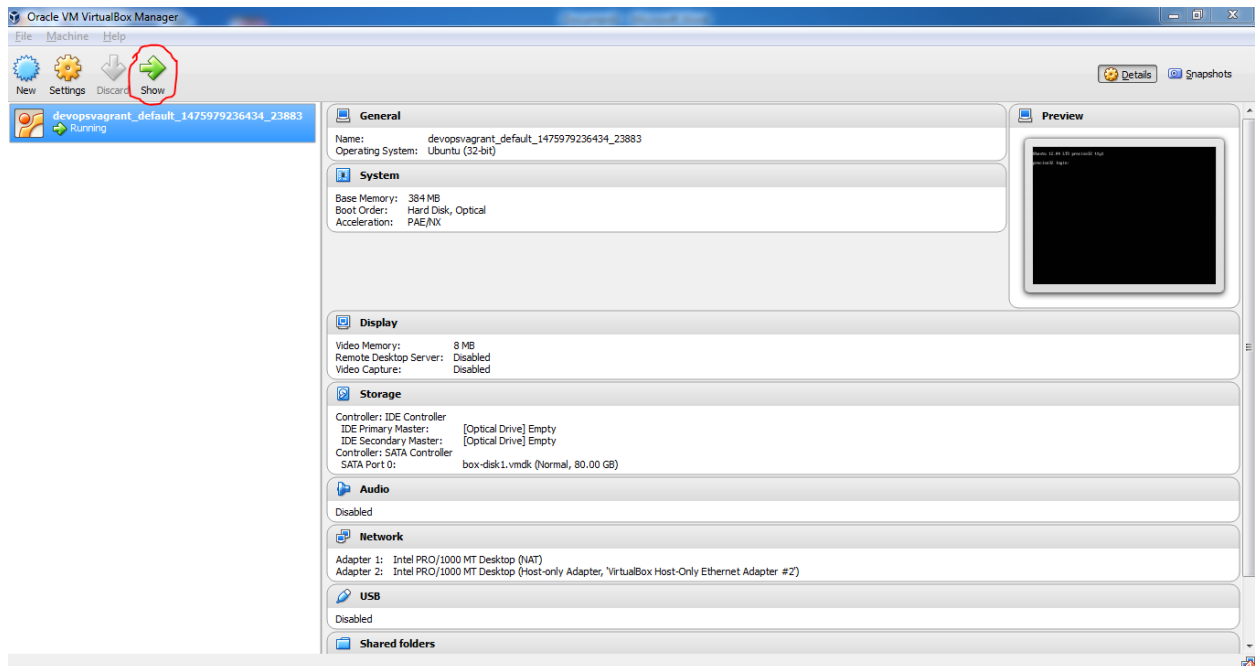


```
C:\Windows\system32\cmd.exe
C:\devops\gold\work>vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Box 'devopsgold' could not be found. Attempting to find and install
...
default: Box Provider: virtualbox
default: Box Version: >= 0
==> default: Box file was not detected as metadata. Adding it directly...
==> default: Adding box 'devopsgold' (v0) for provider: virtualbox
default: Unpacking necessary files from: file://C:/devops/gold/work/devopsgo
ld
default: Progress: 100% (Rate: 33.3M/s, Estimated time remaining: --:--:-->)
==> default: Successfully added box 'devopsgold' (v0) for 'virtualbox'!
==> default: Importing base box 'devopsgold'...
==> default: Matching MAC address for NAT networking...
==> default: Setting the name of the VM: work_default_1476018632534_55507
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
default: Adapter 1: nat
default: Adapter 2: hostonly
==> default: Forwarding ports...
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 o
f
default: VirtualBox! In most cases this is fine, but in rare cases it can
see
default: prevent things such as shared folders from working properly. If you
he
default: shared folder errors, please make sure the guest additions within t
on
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: 5.0
==> default: Configuring and enabling network interfaces...
==> default: Mounting shared folders...
default: /vagrant => C:/devops/gold/work
```

**Step 7:** Check your Oracle VM VirtualBox . Step 6 creates a VM entry as shown below. Note: The unique id numbers at the end of the VM name will vary.



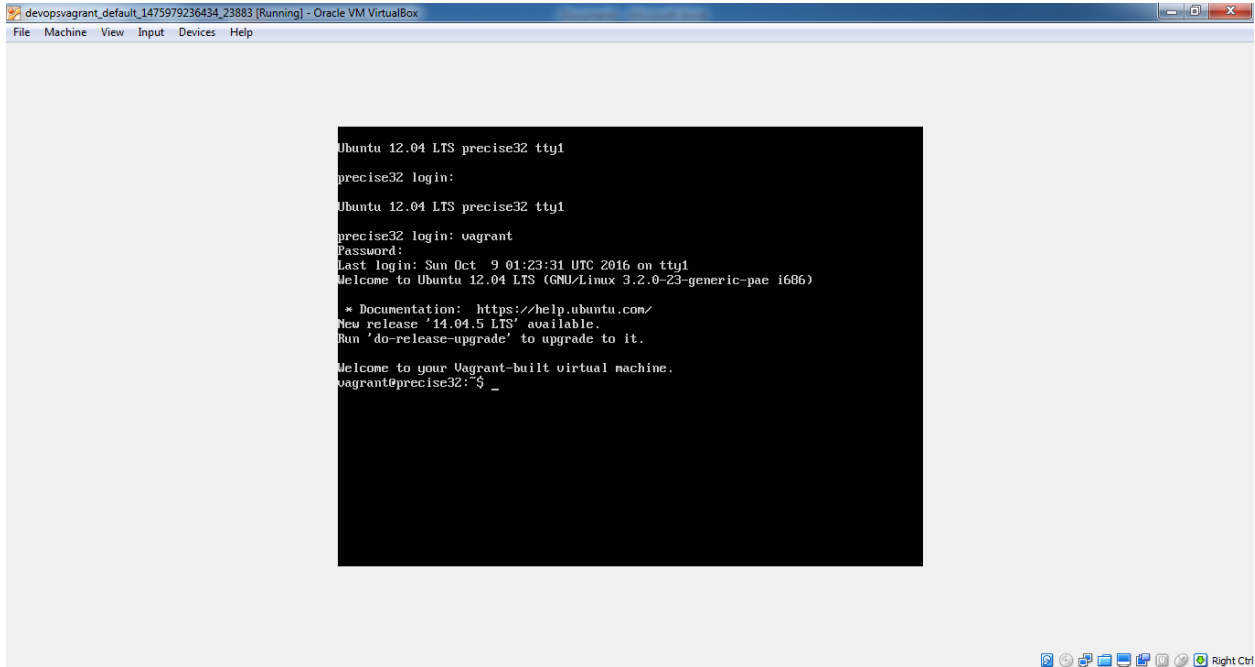
**Step 8 :** Select the entry and click on “Show” icon (marked below). A VM should come up waiting for you to enter your username password.( If the screen has gone blank, then click on the screen and press enter.)



**Step 9:** enter username and password.

username : vagrant

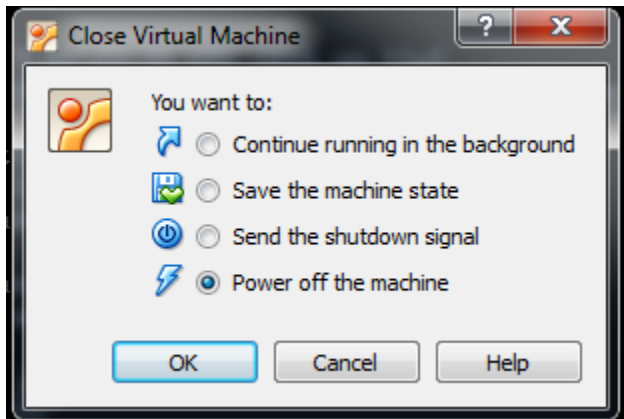
password : password



At this point you are inside of the virtual machine running on your host windows machine

## 5. Shutting down my vagrant/VM

On your VM window Click on file-> close. The below pop-up shows up. Choose power off the machine.

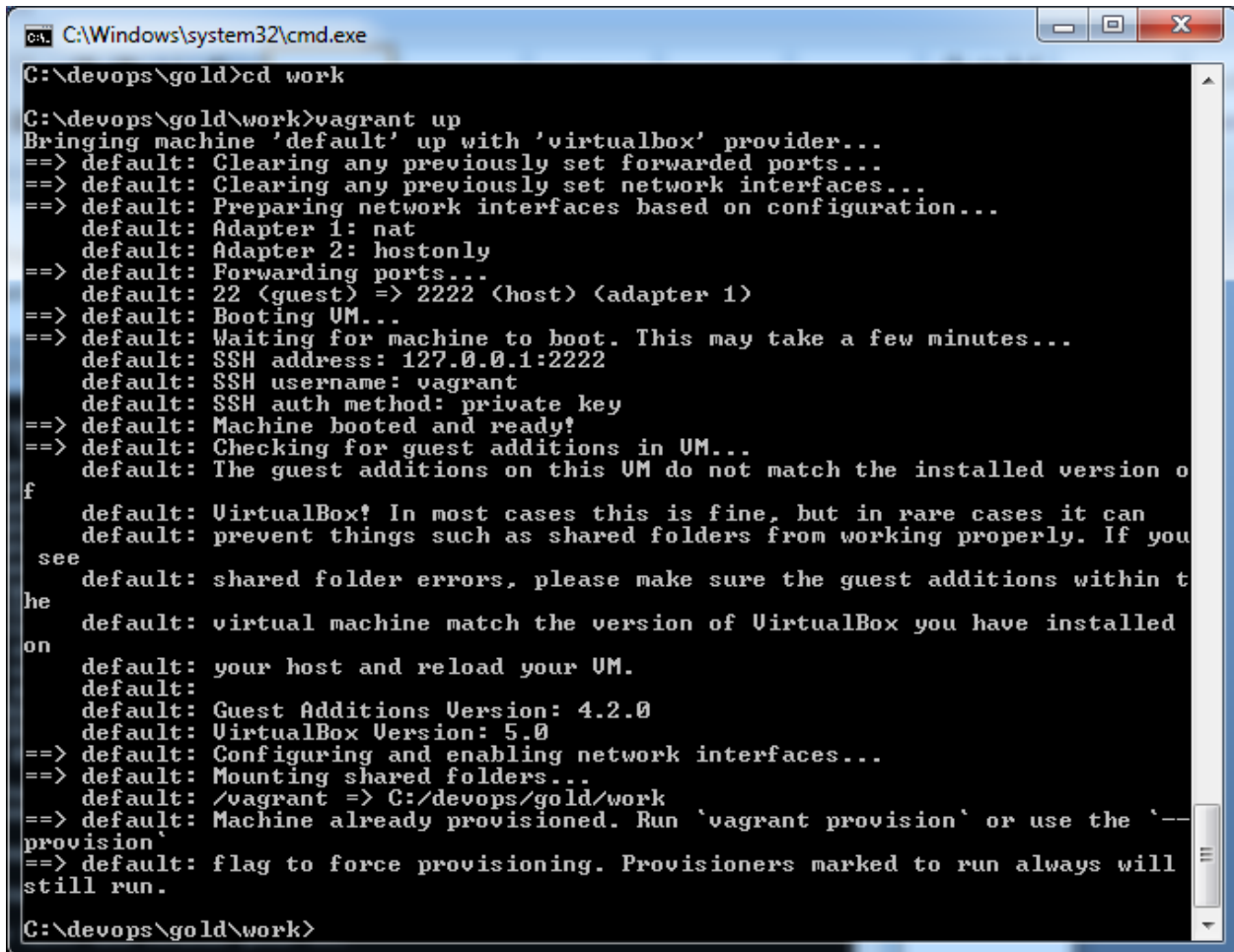


## 6. Starting my vagrant

Step 1: Bring up Oracle VM VirtualBox.

Step 2: Start command prompt and navigate to the folder where your vagrant box is and execute “vagrant up”

Always start your VM from the command prompt by navigating to the folder where your vagrant box is and executing a “vagrant up” command. This is necessary to set some network configurations



```
C:\Windows\system32\cmd.exe
C:\devops\gold>cd work
C:\devops\gold\work>vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> 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: Adapter 2: hostonly
==> default: Forwarding ports...
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
f
default: VirtualBox! In most cases this is fine, but in rare 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 t
he
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: 5.0
==> default: Configuring and enabling network interfaces...
==> default: Mounting shared folders...
default: /vagrant => C:/devops/gold/work
==> default: Machine already provisioned. Run `vagrant provision` or use the `--
provision`
==> default: flag to force provisioning. Provisioners marked to run always will
still run.
C:\devops\gold\work>
```

Step 3: on Oracle VM VirtualBox select the virtual machine and click on Show icon.

## 7. Sanity Check

### 7.1 Java

After logging in into your Vagrant execute the below command

```
java -version
```

```
vagrant@precise32:~$ java -version
java version "1.7.0_111"
OpenJDK Runtime Environment (IcedTea 2.6.7) (7u111-2.6.7-0ubuntu0.12.04.2)
OpenJDK Client VM (build 24.111-b01, mixed mode, sharing)
```

### 7.2 Maven

Execute the below command in the command prompt of your vagrant VM

```
mvn -version
```

```
vagrant@precise32:~$ mvn -version
Apache Maven 3.0.4
Maven home: /usr/share/maven
Java version: 1.7.0_111, vendor: Oracle Corporation
Java home: /usr/lib/jvm/java-7-openjdk-i386/jre
Default locale: en_US, platform encoding: ISO-8859-1
OS name: "linux", version: "3.2.0-23-generic-pae", arch: "i386", family: "unix"
vagrant@precise32:~$
```

### 7.3 Git

Execute the below command in the command prompt of your vagrant VM

```
git --version
```

```
vagrant@precise32:~$ git --version
git version 1.7.9.5
vagrant@precise32:~$
```



## 7.4 Tomcat

Execute the below command in the command prompt of your vagrant VM

```
ps -ef | grep tomcat
```

```
vagrant@precise32:~$ ps -ef | grep tomcat
tomcat7 1035 1 3 02:57 ? 00:00:32 /usr/lib/jvm/java-7-openjdk-i386
/bin/java -Djava.util.logging.config.file=/var/lib/tomcat7/conf/logging.properties
-Djava.awt.headless=true -Xmx128m -XX:+UseConcMarkSweepGC -Djava.util.logging
.manager=org.apache.juli.ClassLoaderLogManager -Djava.endorsed.dirs=/usr/share/t
omcat7/endorsed -classpath /usr/share/tomcat7/bin/bootstrap.jar:/usr/share/tomca
t7/bin/tomcat-juli.jar -Dcatalina.base=/var/lib/tomcat7 -Dcatalina.home=/usr/sha
re/tomcat7 -Djava.io.tmpdir=/tmp/tomcat7-tomcat7-tmp org.apache.catalina.startup
.Bootstrap start
vagrant 1593 1413 0 03:13 tty1 00:00:00 grep --color=auto tomcat
vagrant@precise32:~$
```

## 7.5 Jenkins

Execute the below command in the command prompt of your vagrant VM

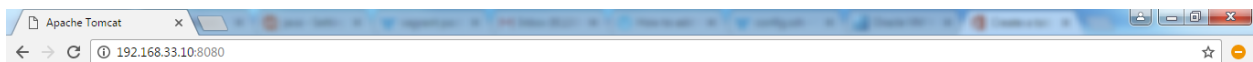
```
ps -ef | grep jenkins
```

```
vagrant@precise32:~$ ps -ef | grep jenkins
jenkins 803 1 3 02:57 ? 00:00:34 /usr/bin/java -jar /usr/share/je
nkins/jenkins.war --webroot=/var/run/jenkins/war --httpPort=8085 --ajp13Port=-1
--preferredClassLoader=java.net.URLClassLoader --logfile=/var/log/jenkins/jenkin
s.log
vagrant 1591 1413 0 03:13 tty1 00:00:00 grep --color=auto jenkins
```

## 7.6 Access tomcat

Tomcat is running on the vagrant VM on port 8080. The vagrant VM itself is running on IP 192.168.33.10. This IP is private to the host machine i.e. your windows box and not visible outside of your windows box.

On your windows box bring up chrome and visit <http://192.168.33.10:8080> . You should see a page like this



### It works !

If you're seeing this page via a web browser, it means you've setup Tomcat successfully. Congratulations!

This is the default Tomcat home page. It can be found on the local filesystem at: `/var/lib/tomcat7/webapps/ROOT/index.html`

Tomcat7 veterans might be pleased to learn that this system instance of Tomcat is installed with `CATALINA_HOME` in `/usr/share/tomcat7` and `CATALINA_BASE` in `/var/lib/tomcat7`, following the rules from `/usr/share/doc/tomcat7-common/RUNNING.txt.gz`.

You might consider installing the following packages, if you haven't already done so:

## 7.7 Access Jenkins

Jenkins is running on the vagrant VM on port 8085. The vagrant VM itself is running on IP 192.168.33.10. This IP is private to the host machine i.e. your windows box and not visible outside of your windows box.

On your windows box bring up chrome and visit <http://192.168.33.10:8085> . You should see a page like this

