Apache Ambari Tutorial

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Prerequisites

- VirtualBox (https://www.virtualbox.org/wiki/Downloads)
- Vagrant (http://vagrantup.com/)

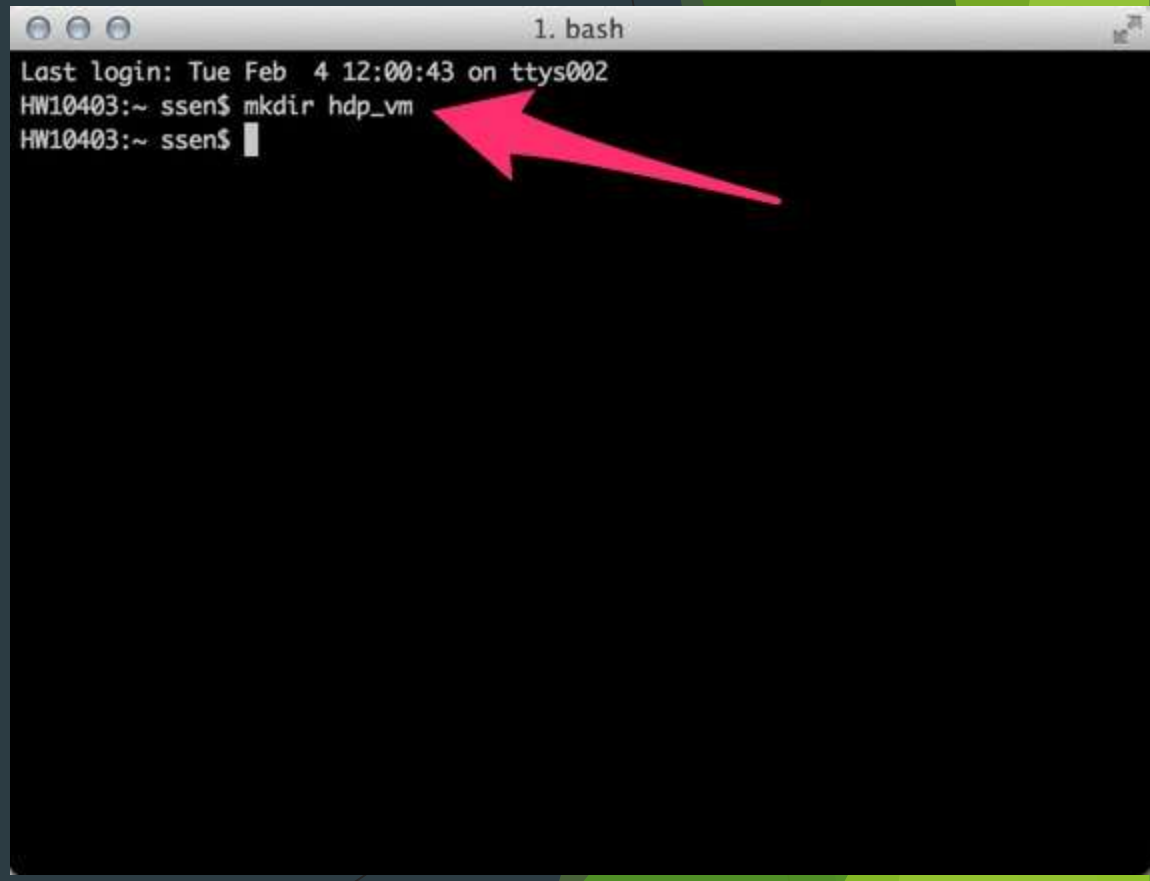
System Requirements

- Minimum 4GB RAM for the VM
- Virtualization enabled on BIOS

Prepare VM using Vagrant

Folder Creation

- Create a folder for this VM

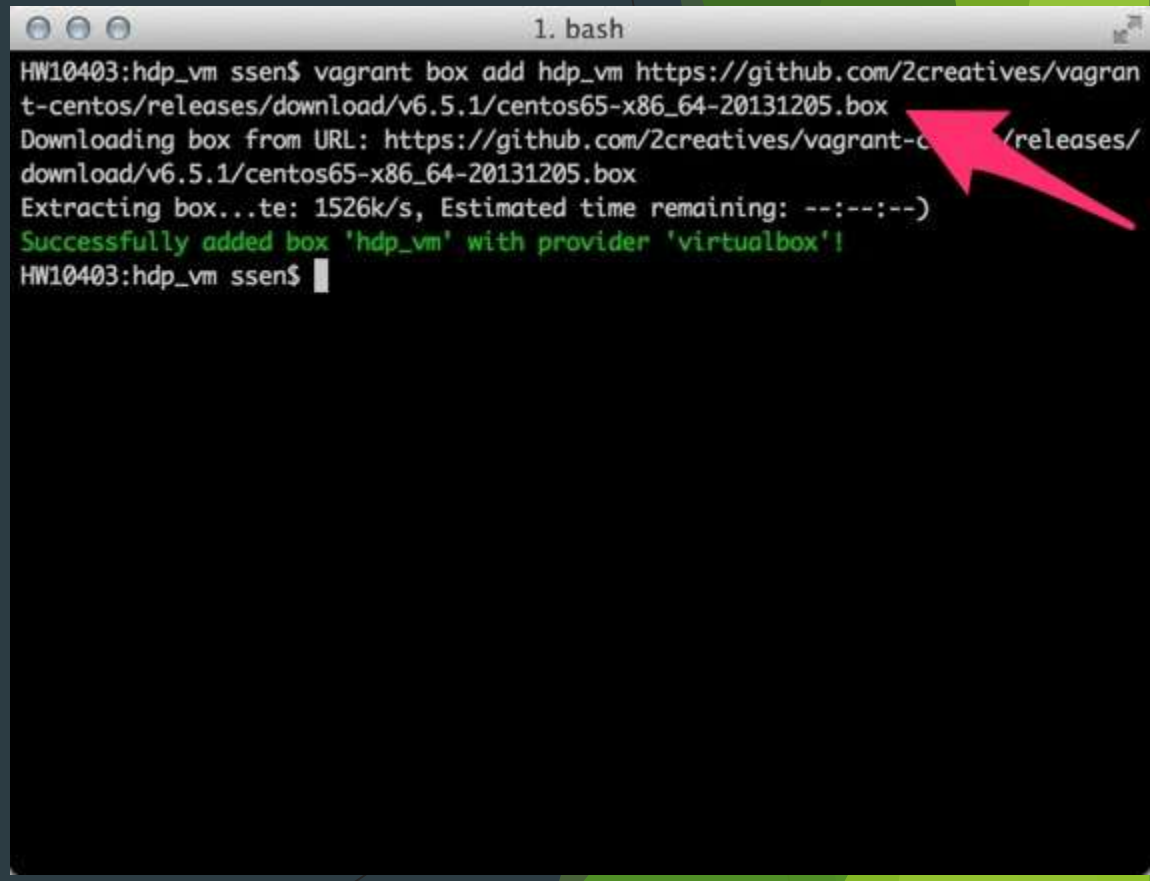


Prepare VM using Vagrant

Adding Vagrant Box

- If you have Virtual Box and Vagrant installed on your system, change directory to it and issue the following command:

```
vagrant box add hdp_vm
https://github.com/2creatives/vagrant-
centos/releases/download/v6.5.1/centos65-
x86_64-20131205.box
```



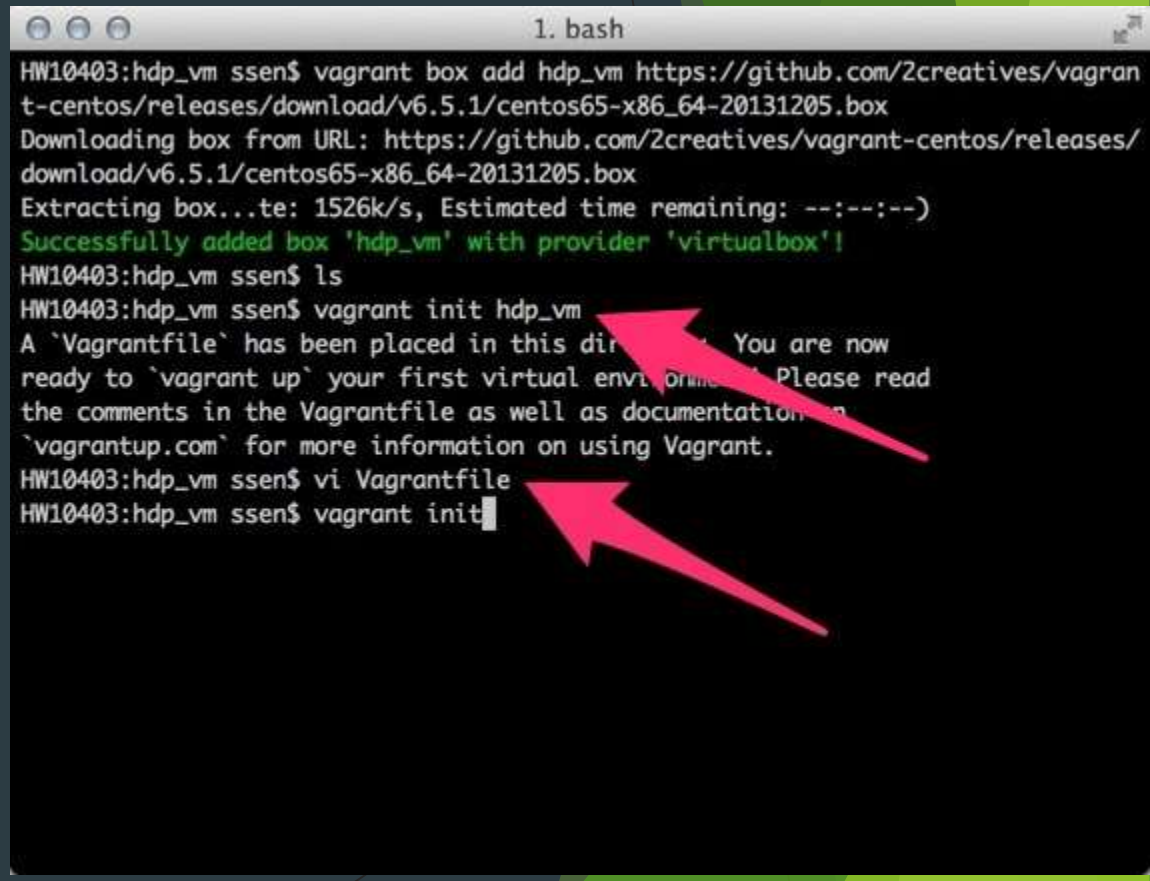
Prepare VM using Vagrant

Init the VM configuration

- Once it has completed the download and added to your library of VMs with the name hdp_vm, issue the command:

```
vagrant init hdp_vm
```

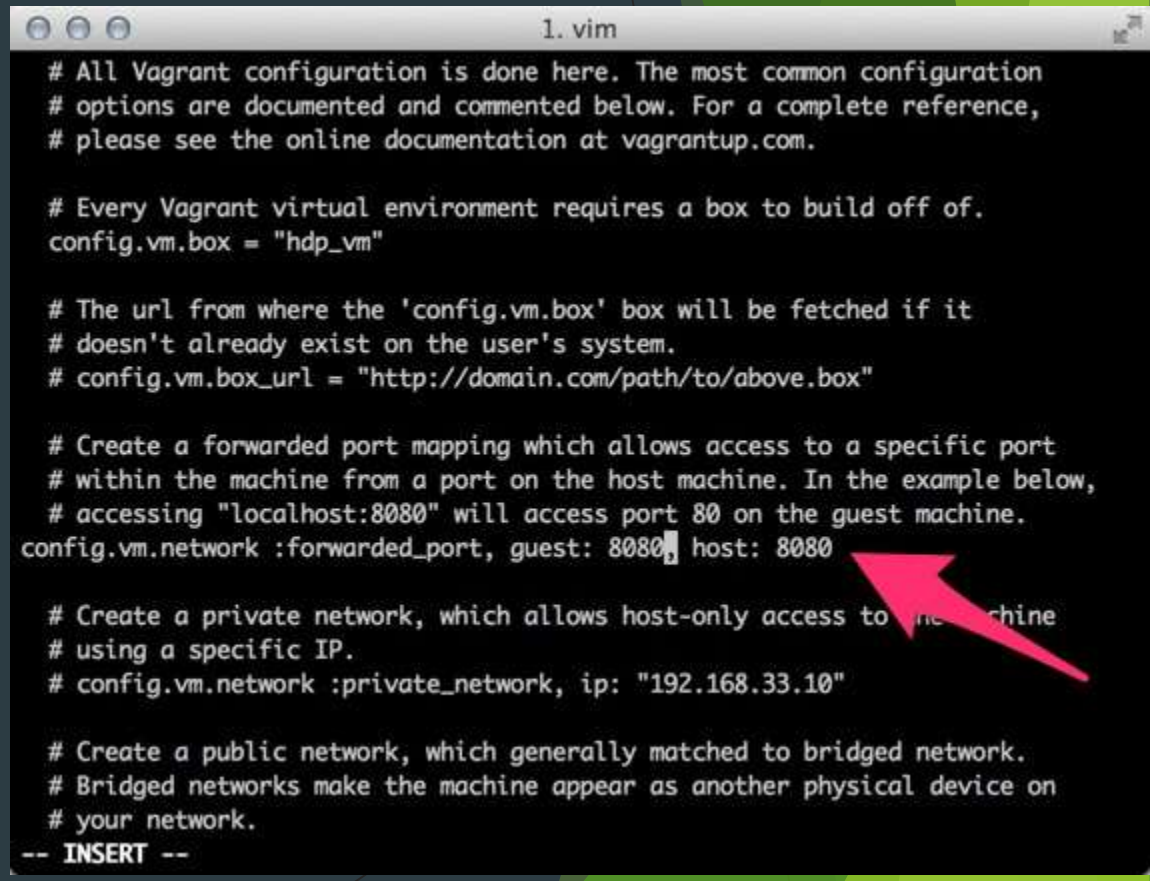
- This will create a file “Vagrantfile” in the folder. Open it in a text editor.



Prepare VM using Vagrant

Change Forwarded Port

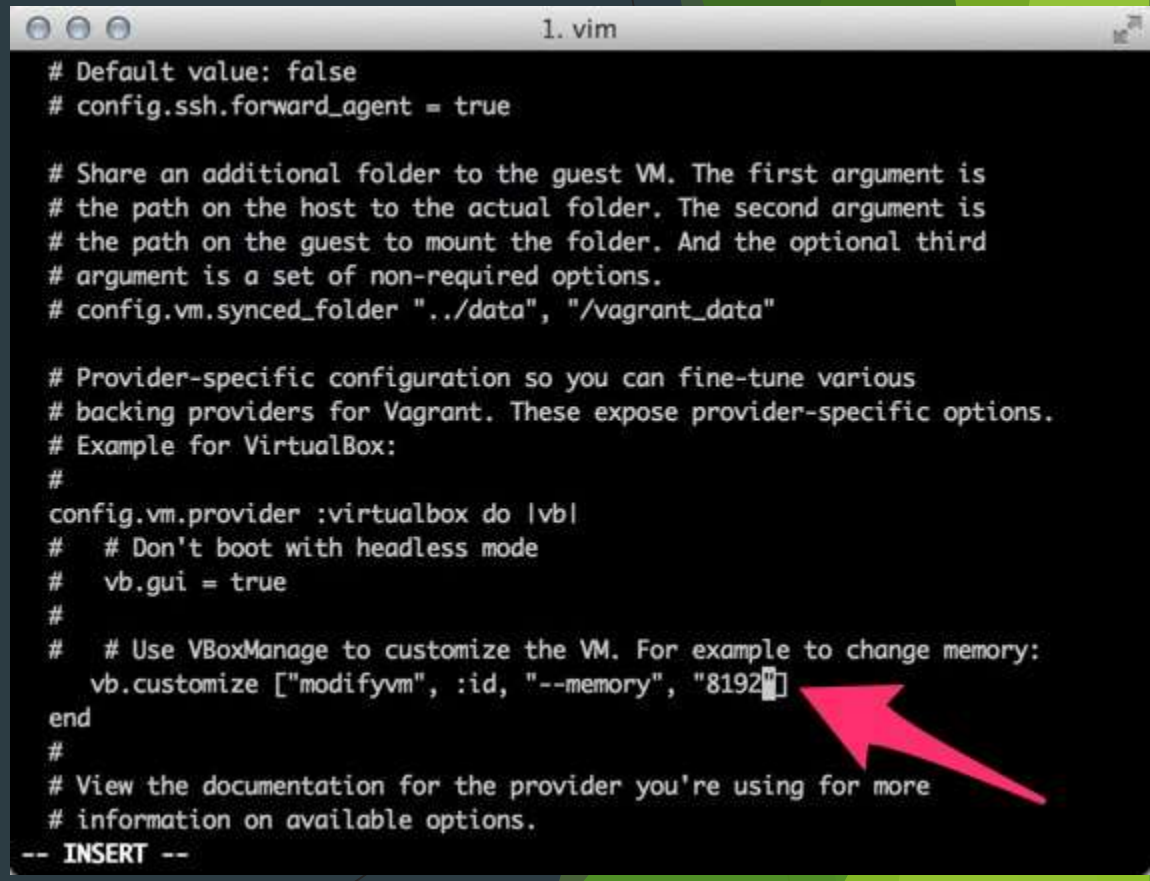
- Edit the ‘Vagrantfile’, so that port 8080 on the VM is forwarded to port 8080 on the host.
- If that port already use, change it to another port number.



Prepare VM using Vagrant

Change VM Memory Allocation

- Modify the settings so that the VM is assigned adequate memory once it launched.
- At least 4GB of RAM needed for this VM to run well.



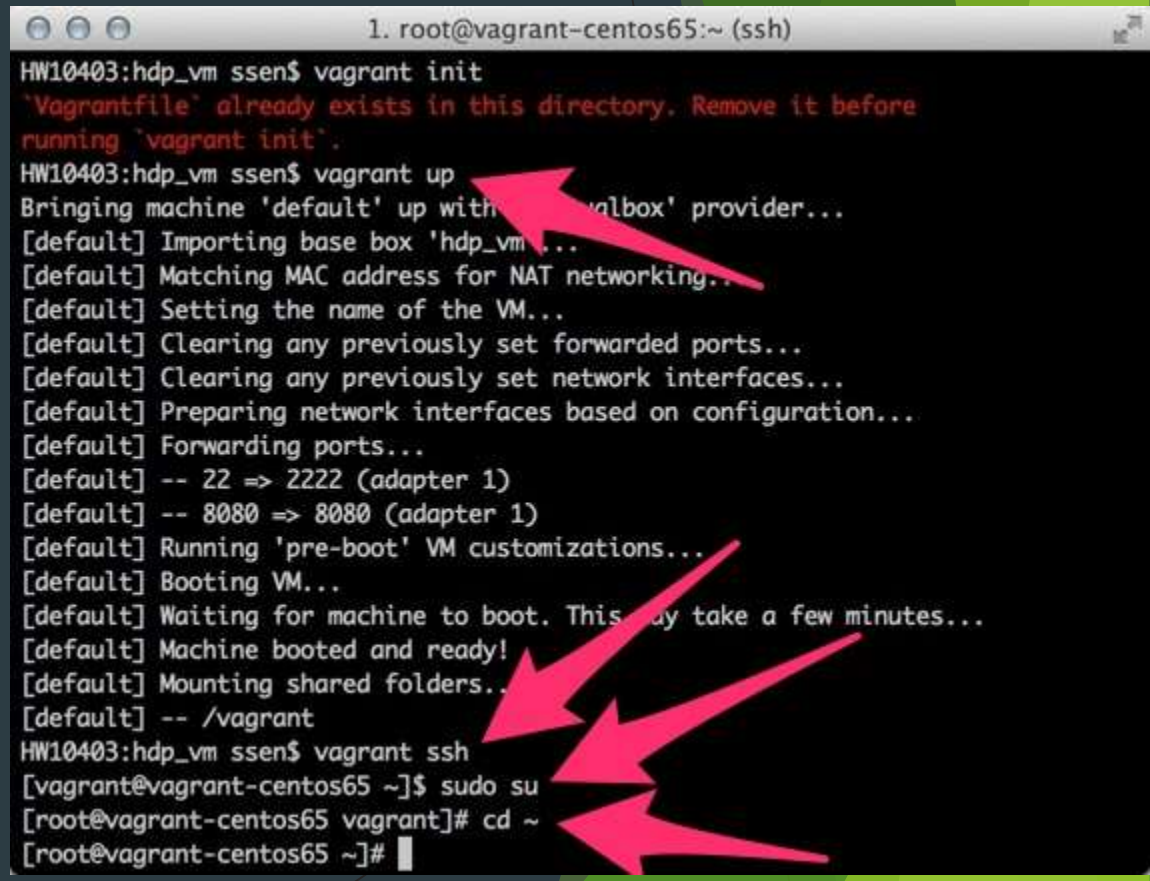
Prepare VM using Vagrant

Start up The VM

- Now you can start your VM using this command:

  ```
  vagrant up
  ```

- Once the VM launched, SSH in and login as root and change the home directory of the ‘root’.

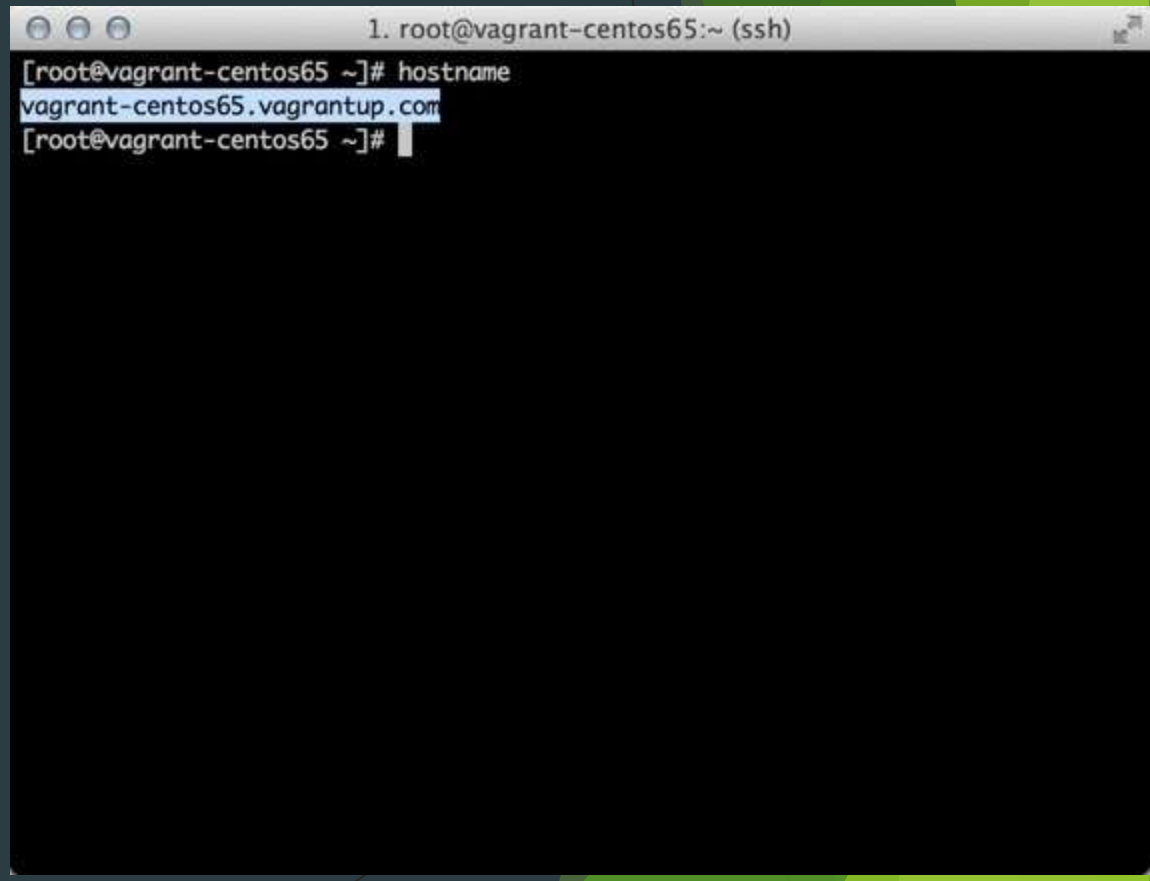


Configure the VM

Find out VM Hostname

- Find out the default hostname of the VM and note it down. You can type this command:

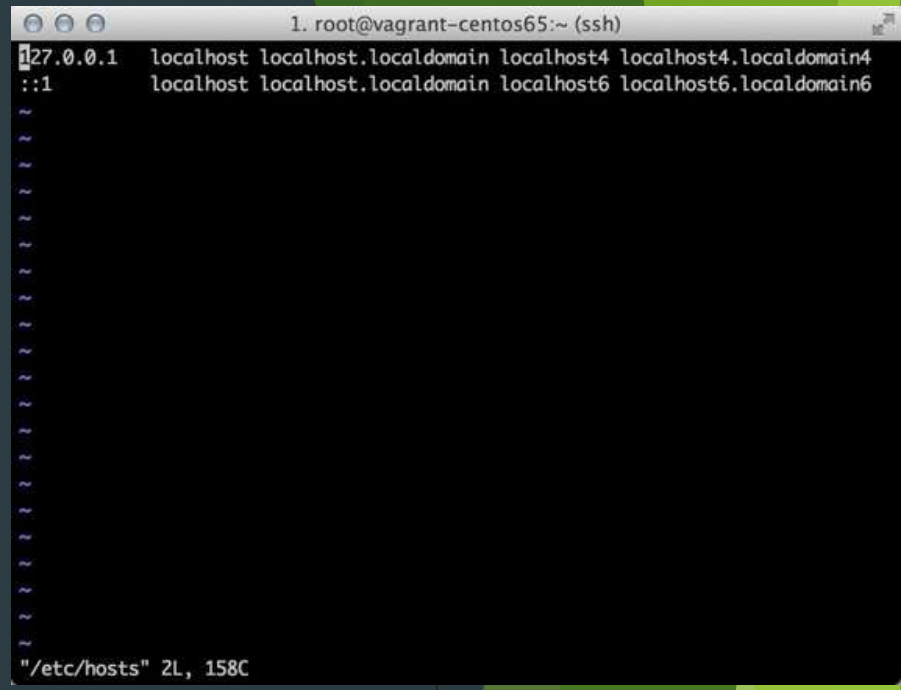
```
hostname
```

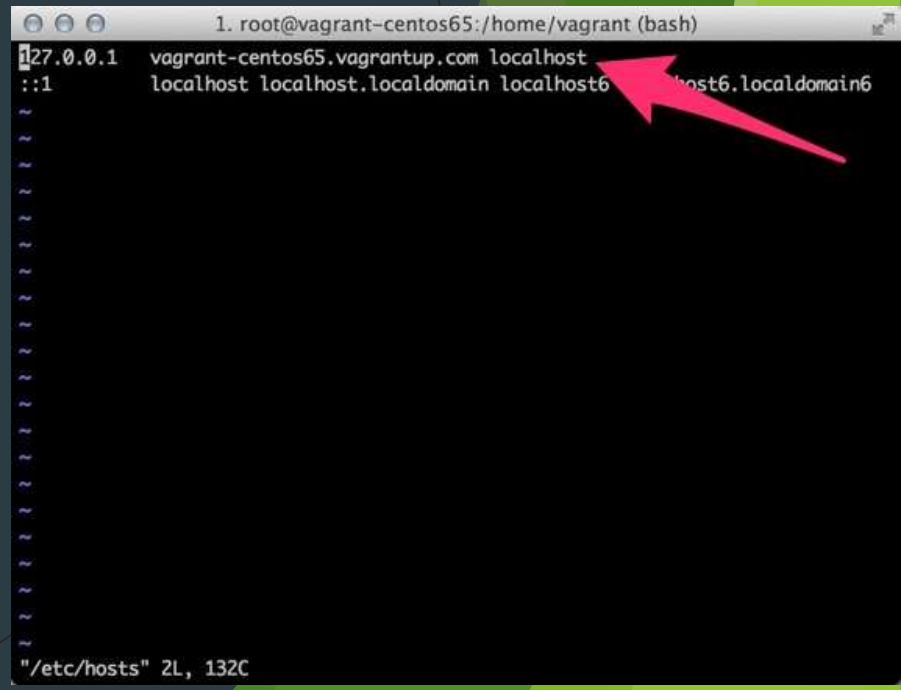


Configure the VM

Configure VM ‘/etc/hosts’

- Edit the ‘/etc/hosts’ file so that we have an entry of previous hostname that we retrieve.





Configure the VM

Install NTP service

- Install NTP service using this following command:

  ```
  yum install ntp
  ```

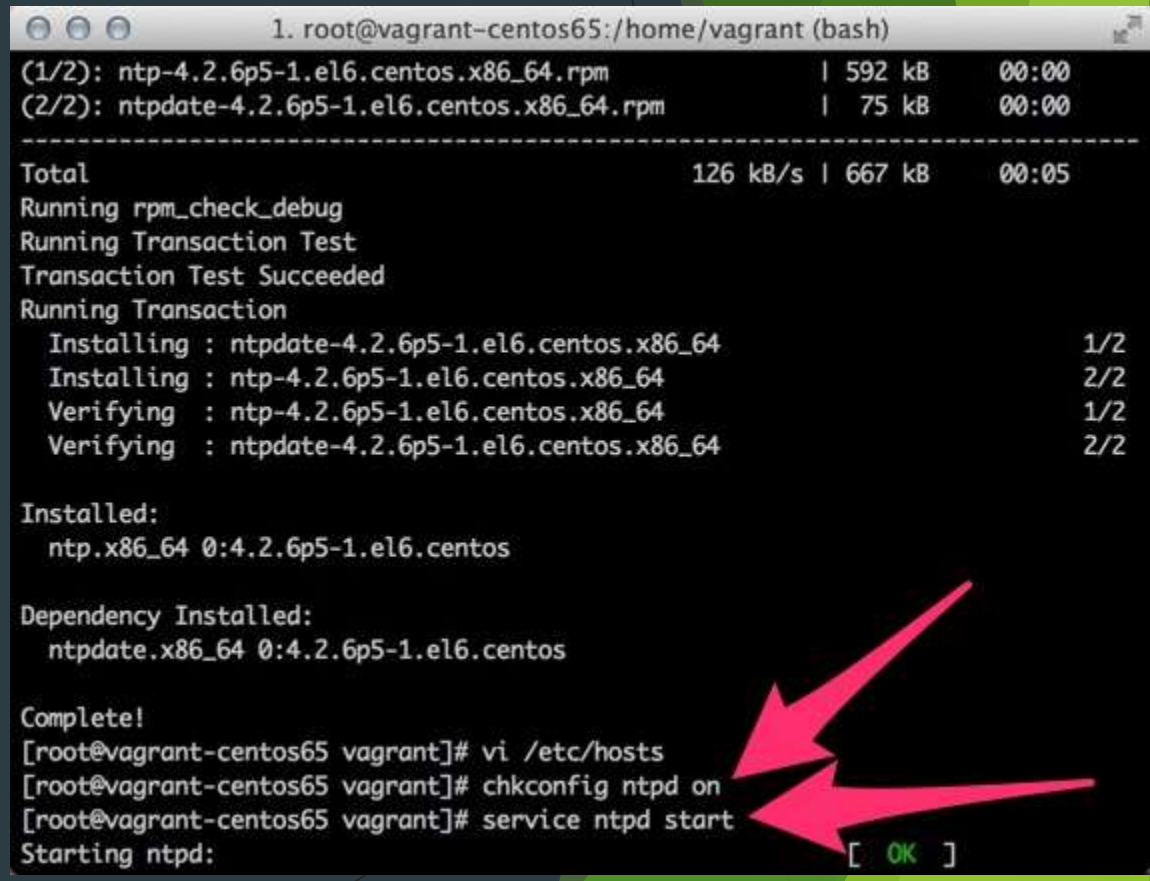
- Once installed, turn on the NTP service with these command:

  ```
  chkconfig ntpd on
  ```

  ```
  Service ntpd start
  ```

- Next we will install the wget utility with this following command:

  ```
  yum install wget
  ```



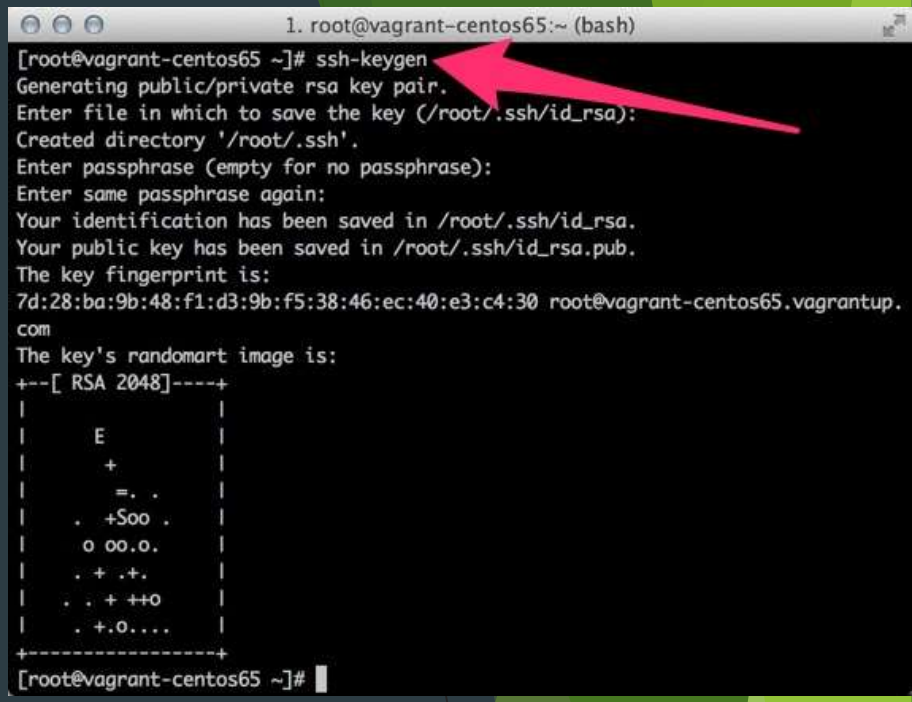
Configure the VM

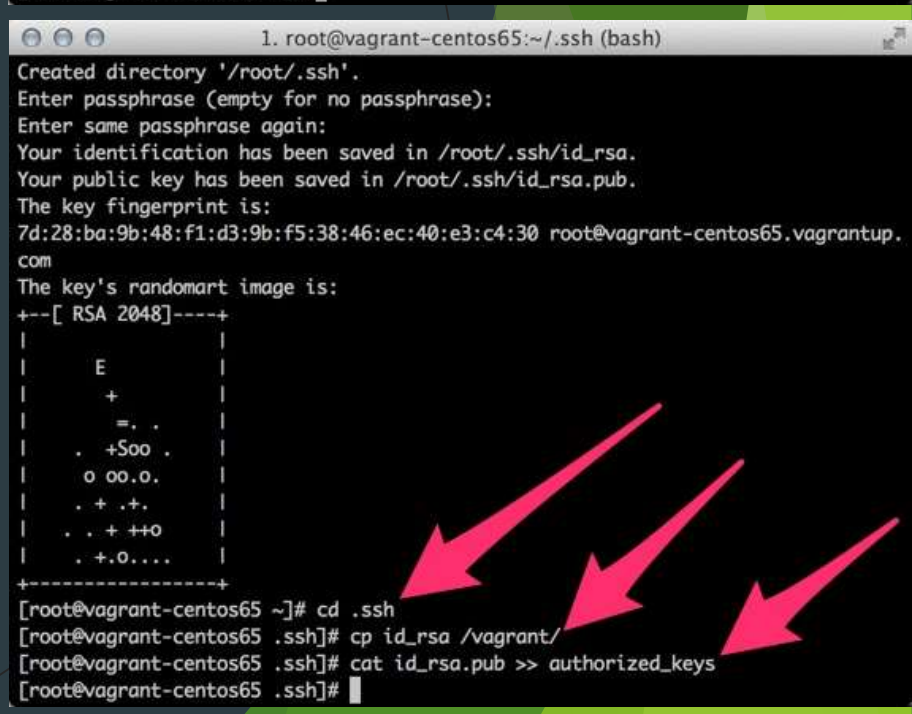
Setting up password-less SSH

- Get a pair of keys using this command:

  `ssh-keygen`

- The keys will be placed in the folder .ssh.
  - Copy the id_rsa file to /vagrant folder so that you can access the private key from the host machine as /vagrant is automatically the shared folder between host and guest OSs.
  - Also append id_rsa.pub, the public key to the authorized_keys keys file.





Setup Ambari

Add Ambari Repository list

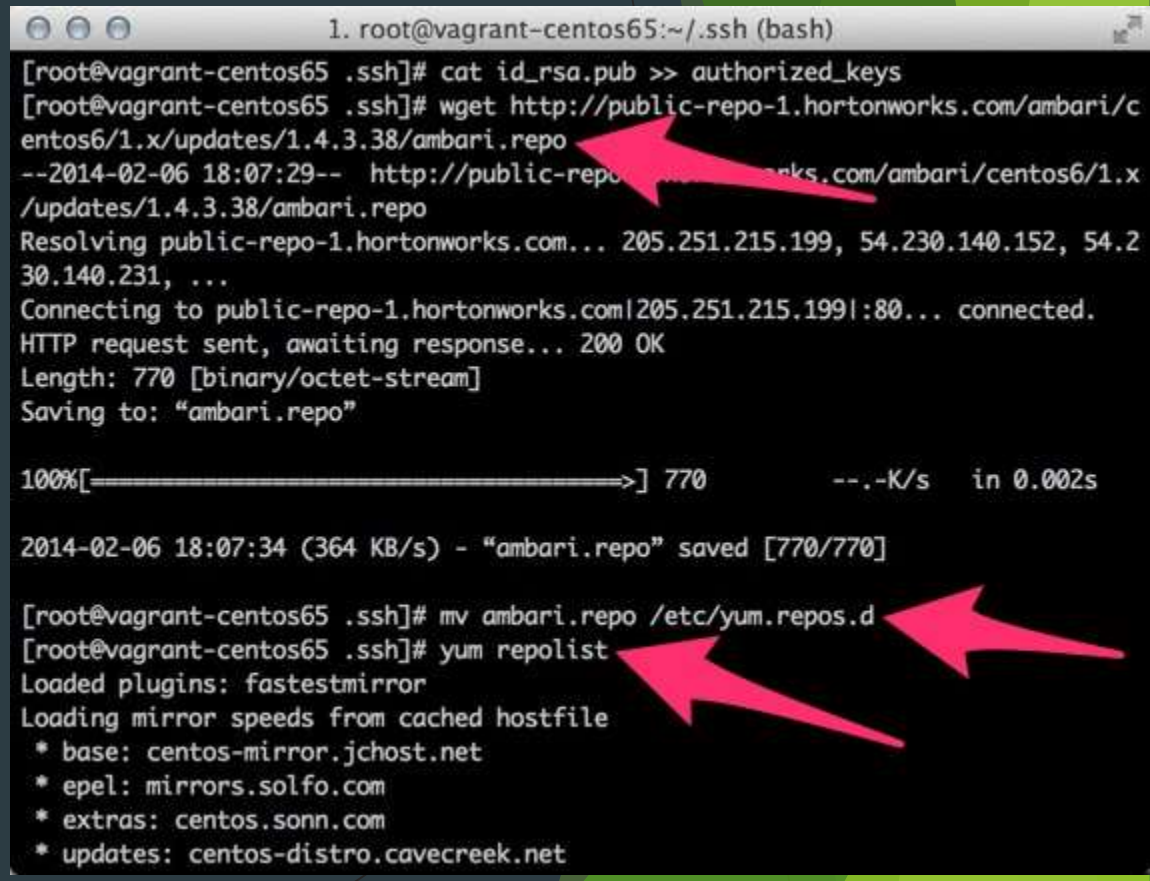
- Download and copy the Ambari repository bits to '/etc/yum.repos.d' :

```
wget http://public-repo-1.hortonworks.com/ambari/centos6/1.x/updates/1.4.3.38/ambari.repo

cp ambari.repo /etc/yum.repos.d
```

- Double check that repo has been configured correctly by run this command:

```
yum repolist
```

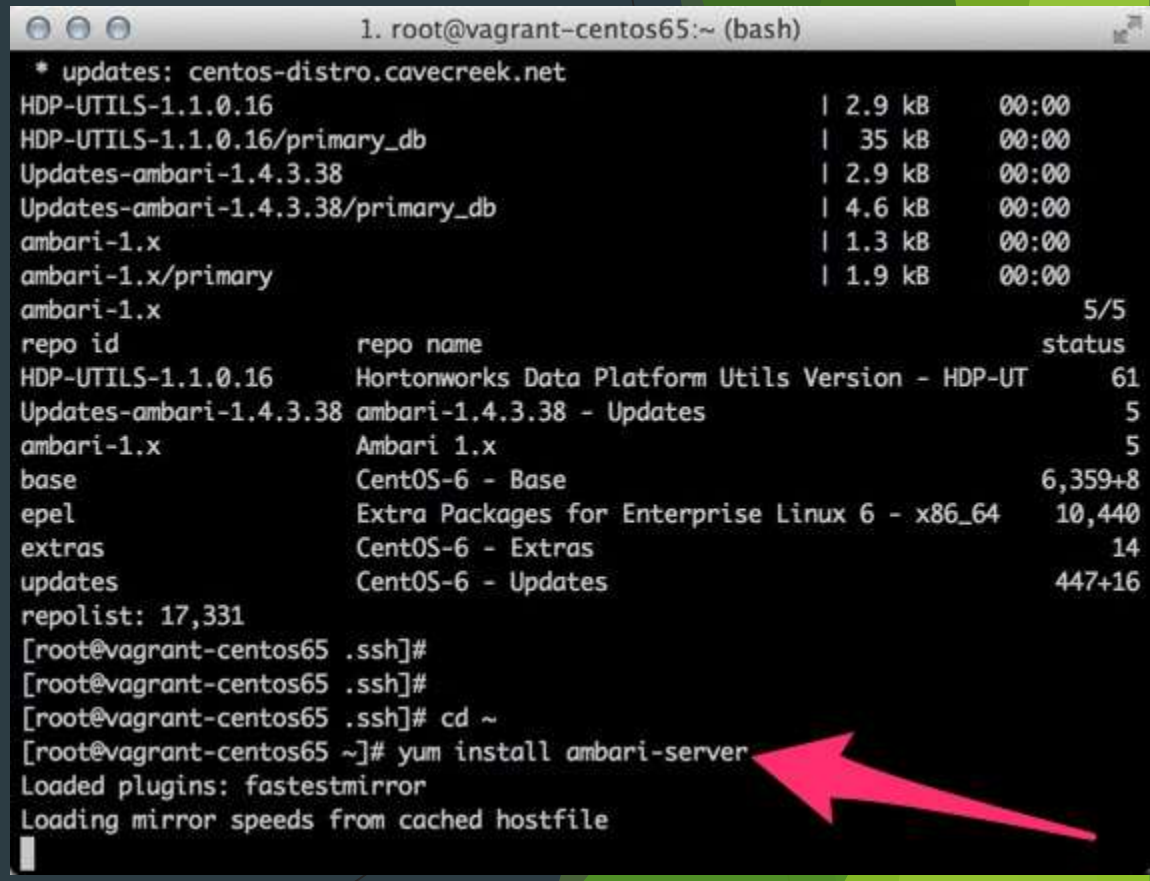


Setup Ambari

Installing Ambari

- Now, we can install Ambari Server using this command:

```
yum install ambari-server
```



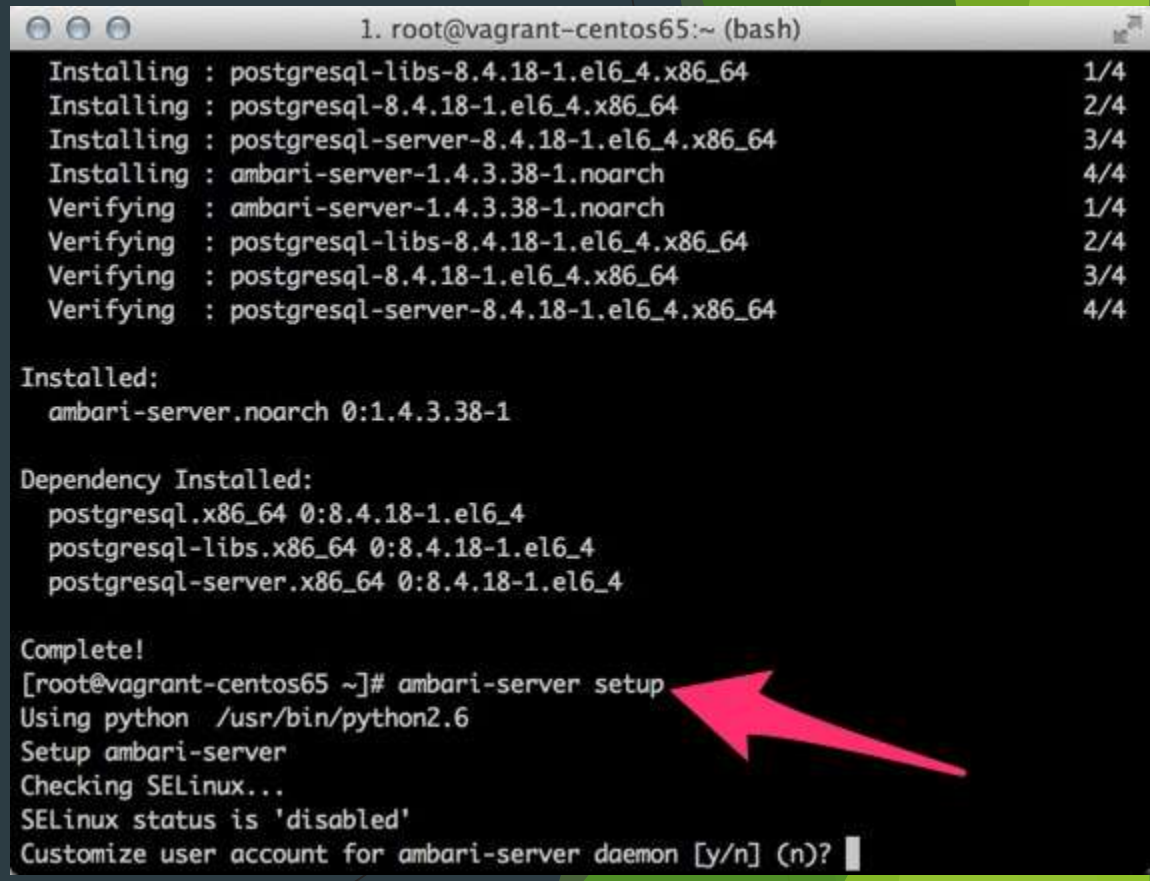
Setup Ambari

Configuring Ambari

- After the installation finish, we can configure Ambari using this command:

```
ambari-server setup
```

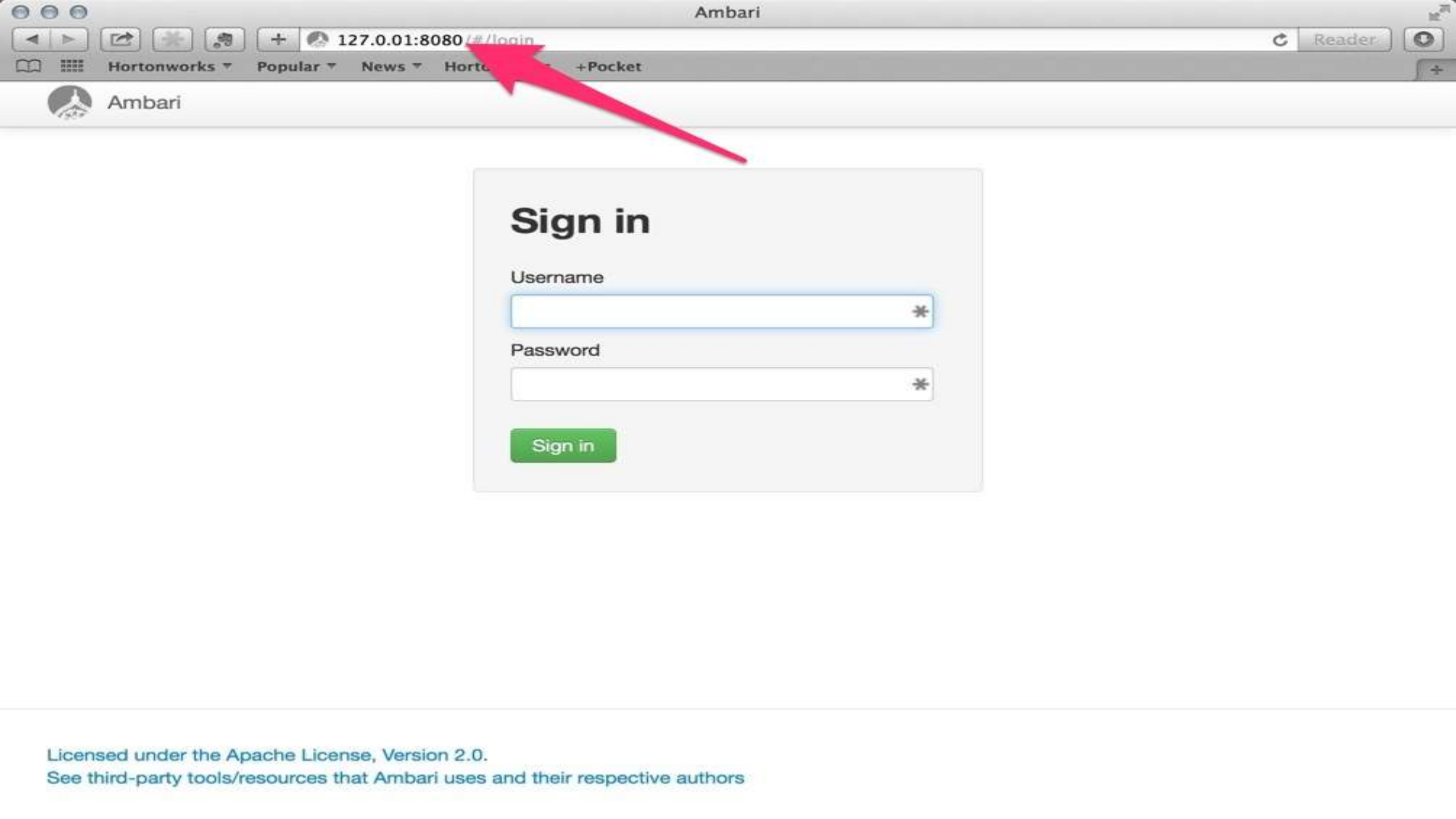
- You can proceed with the default configuration during the process.



Setup Ambari

Pseudo-cluster with Ambari

- After finishing the configuration, you can access Ambari from your host machine using your web browser.
- Access URL is http://localhost:8080, or change 8080 with your defined port in the configuration phase before.
- Default username and password is ‘admin’ and ‘admin’.


Ambari
127.0.01:8080/#/login
Reader
Hortonworks
Popular
News
+Pocket
Ambari
Sign in
Username
Password
Sign in
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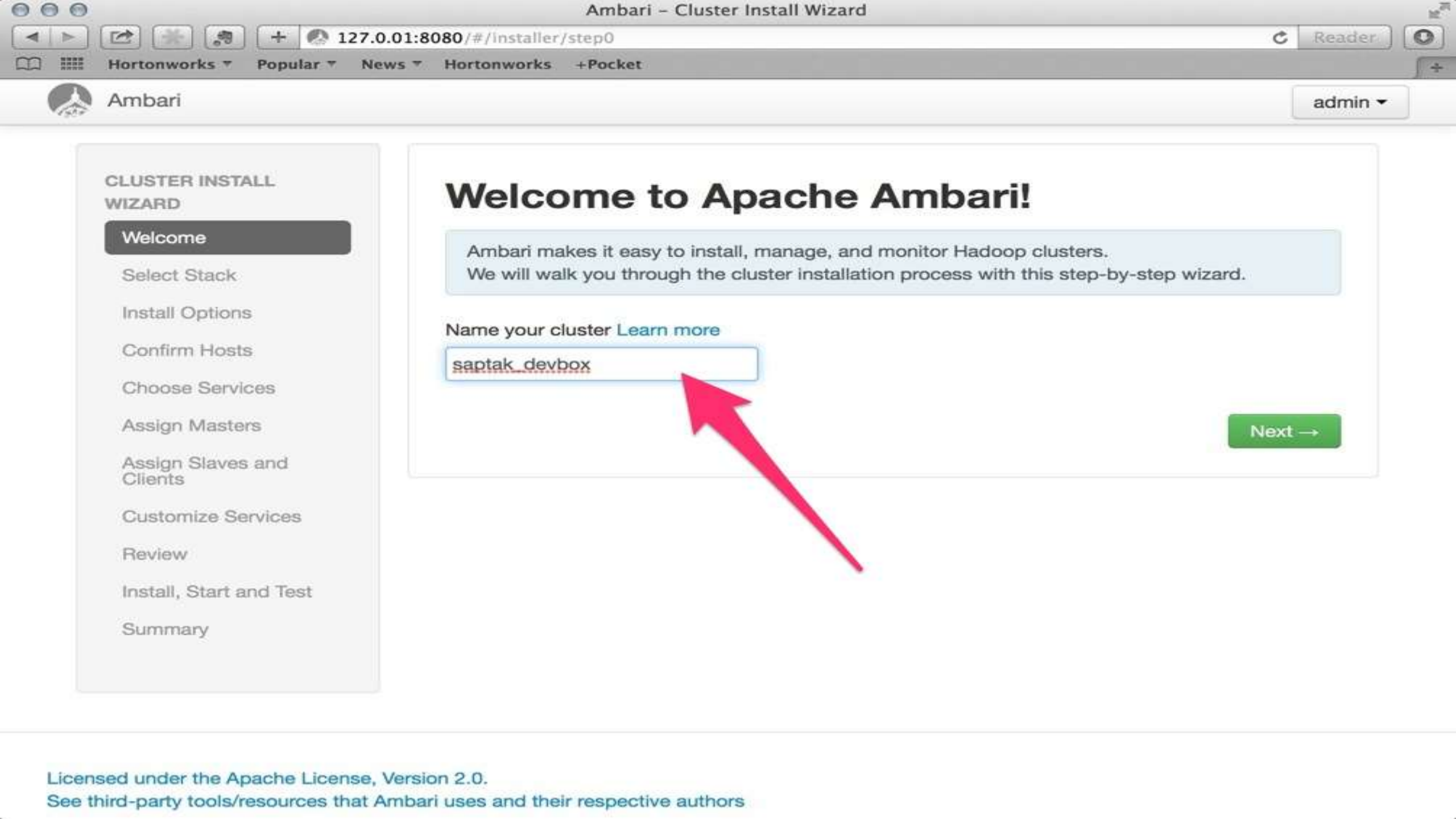
See third-party tools/resources that Ambari uses and their respective authors

Setup Ambari

Pseudo-cluster with Ambari (cont.)

- After login, if this your first time login to the Ambari, it will serve you wizard setup to create your cluster.
- Name your cluster.
- Select Hadoop version.
- Input the hostname of your VM and click on the Choose File button to upload your SSH private key before.
- Select services that you want to install.


Ambari – Cluster Install Wizard
127.0.01:8080/#/installer/step0
Reader
Hortonworks
Popular
News
Hortonworks
+Pocket
Ambari
admin
CLUSTER INSTALL WIZARD
Welcome
Select Stack
Install Options
Confirm Hosts
Choose Services
Assign Masters
Assign Slaves and Clients
Customize Services
Review
Install, Start and Test
Summary
Welcome to Apache Ambari!
Ambari makes it easy to install, manage, and monitor Hadoop clusters.
We will walk you through the cluster installation process with this step-by-step wizard.
Name your cluster Learn more
saptak_devbox
Next →
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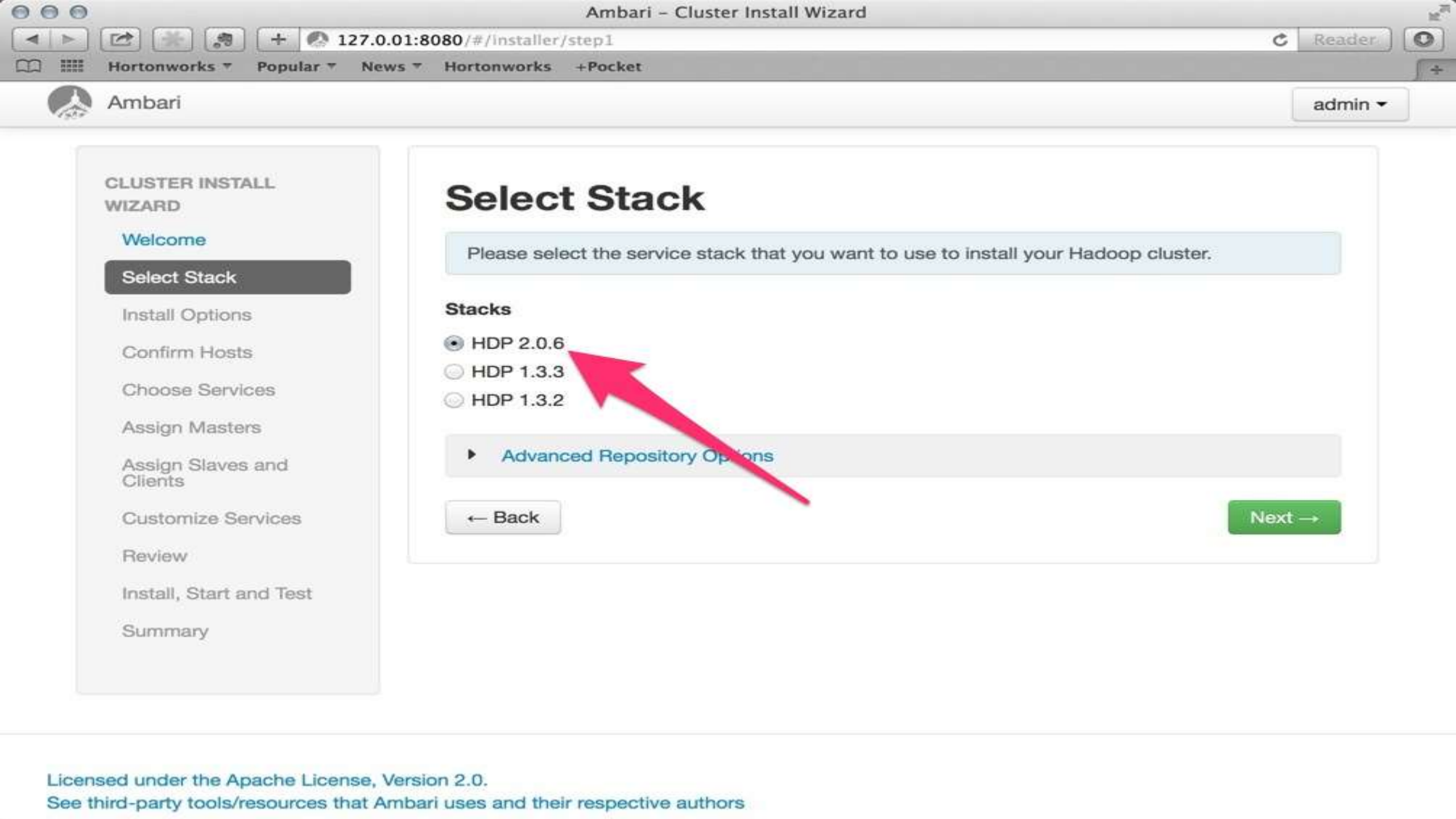
See third-party tools/resources that Ambari uses and their respective authors


Ambari – Cluster Install Wizard
127.0.01:8080/#/installer/step1
Reader
Hortonworks
Popular
News
Hortonworks
+Pocket
Ambari
admin
CLUSTER INSTALL WIZARD
Welcome
Select Stack
Install Options
Confirm Hosts
Choose Services
Assign Masters
Assign Slaves and Clients
Customize Services
Review
Install, Start and Test
Summary
Select Stack
Please select the service stack that you want to use to install your Hadoop cluster.
Stacks
HDP 2.0.6
HDP 1.3.3
HDP 1.3.2
Advanced Repository Options
← Back
Next →
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WIZARD

- Welcome
- Select Stack
- Install Options
- Confirm Hosts
- Choose Services
- Assign Masters
- Assign Slaves and Clients
- Customize Services
- Review
- Install, Start and Test
- Summary

Install Options

Enter the list of hosts to be included in the cluster and provide your SSH key.

Target Hosts

Enter a list of hosts using the Fully Qualified Domain Name (FQDN), one per line. Or use Pattern Expressions

vagrant-centos65.vagrantup.com

Host Registration Information

Provide your SSH Private Key to automatically register hosts

Choose File no file selected

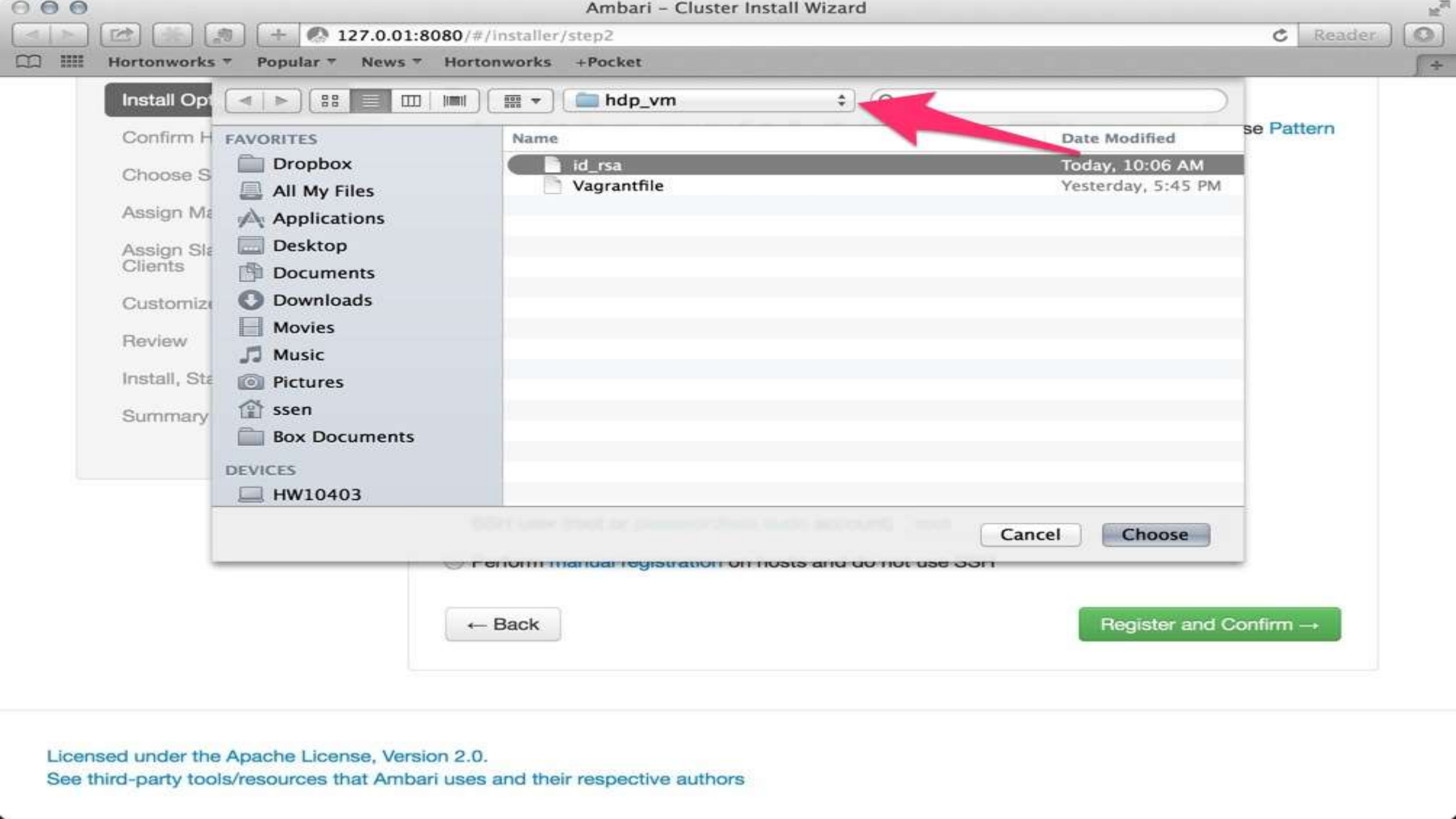
```
-----BEGIN RS  VATE KEY-----
MIIEogIBAAKCAQEA5Mx  ldqm0ijAcq81KnoMX9PQ6U6ydlnVeIPpdTFyTqvBM
r
```

SSH user (root or passwordless sudo account) root

Perform manual registration on hosts and do not use SSH

← Back

Register and Confirm →


Ambari – Cluster Install Wizard
127.0.01:8080/#/installer/step2
Reader
Hortonworks
Popular
News
Hortonworks
+Pocket
Install Op
Confirm H
Choose S
Assign Ma
Assign Sla
Clients
Customize
Review
Install, Sta
Summary
hdp_vm
FAVORITES
Dropbox
All My Files
Applications
Desktop
Documents
Downloads
Movies
Music
Pictures
ssen
Box Documents
DEVICES
HW10403
Name
Date Modified
id_rsa
Today, 10:06 AM
Vagrantfile
Yesterday, 5:45 PM
Cancel
Choose
se Pattern
← Back
Register and Confirm →
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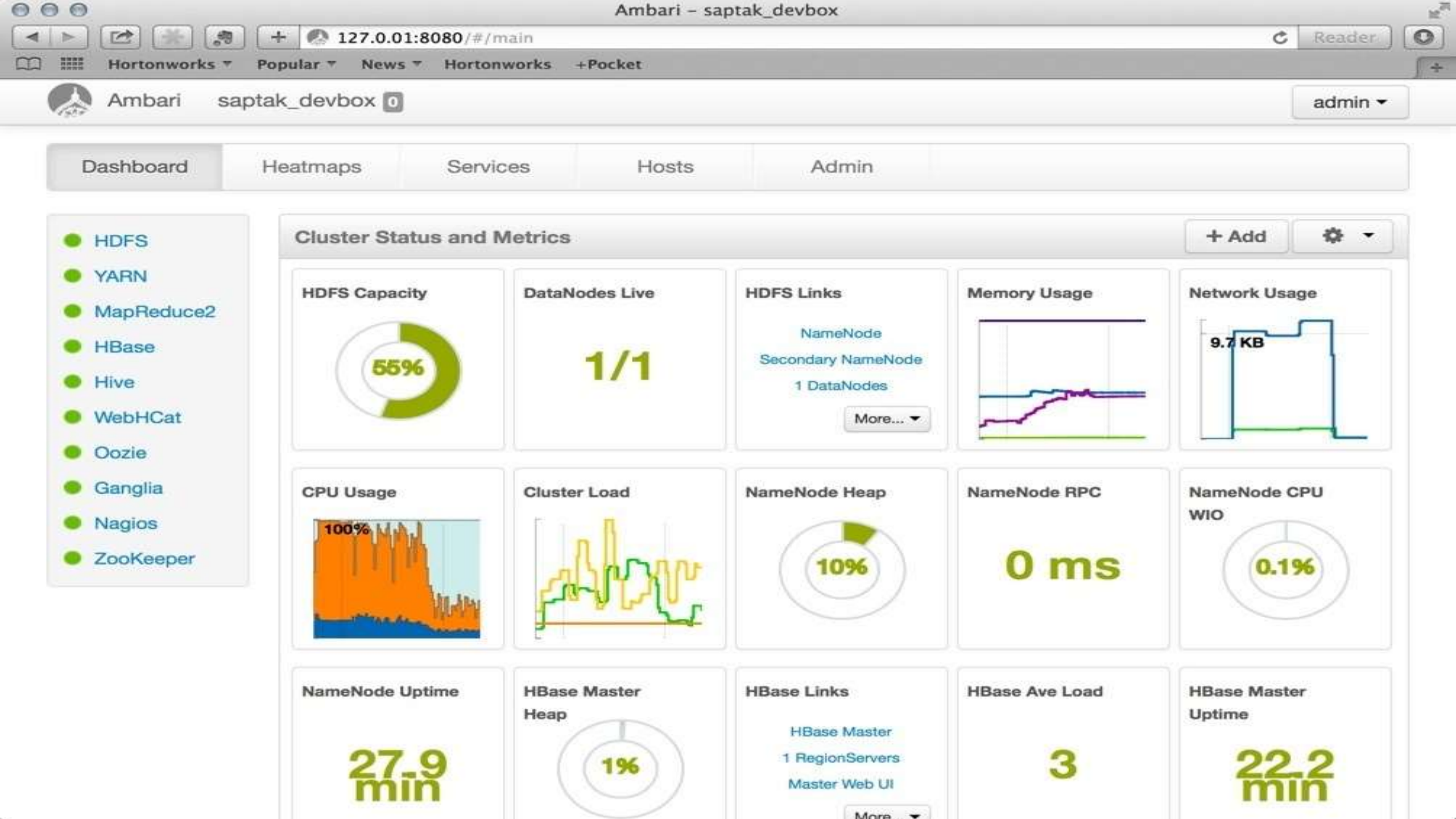
See third-party tools/resources that Ambari uses and their respective authors

Setup Ambari

Pseudo-cluster with Ambari (cont.)

- Finish the wizard.
- And now we have our Hadoop VM installed.


Ambari – saptak_devbox
127.0.01:8080/#/main
Reader
Hortonworks
Popular
News
Hortonworks
+Pocket
Ambari
saptak_devbox
0
admin
Dashboard
Heatmaps
Services
Hosts
Admin
HDFS
YARN
MapReduce2
HBase
Hive
WebHCat
Oozie
Ganglia
Nagios
ZooKeeper
Cluster Status and Metrics
+ Add
HDFS Capacity
55%
DataNodes Live
1/1
HDFS Links
NameNode
Secondary NameNode
1 DataNodes
More...
Memory Usage
Network Usage
9.7 KB
CPU Usage
100%
Cluster Load
NameNode Heap
10%
NameNode RPC
0 ms
NameNode CPU WIO
0.1%
NameNode Uptime
27.9 min
HBase Master Heap
1%
HBase Links
HBase Master
1 RegionServers
Master Web UI
More
HBase Ave Load
3
HBase Master Uptime
22.2 min

감사합니다
Thank You