

Cloudera Manager Setup Using Chef [CentOS 6.6]

This cookbook [currently as of now] can be used to setup a Cloudera Manager Server (Management Server) running on MySQL database. But the intended use for this cookbook [rather a wishlist] is to do more. Simply put Auto Deployment of a Cloudera Hadoop Cluster using Chef, Python and Cloudera API. This will help create cluster for a development/test/preproduction/production environment on a click of a button.

- Attributes
- Recipe
- Usage

Get the Cookbook.

Can be downloaded from the link. Cloudera Manager Setup

How would the Setup Look like.

Nodes and the runlist which will be assigned.

- Cloudera Manager - Runlist `cm_setup` default runlist which will include all the installations.
- All Other nodes - Runlist, will be assigning the Role `base_node_install` which we will create below.

What does `cm_setup` default cookbook have.

Common installations, like disable `selinux` and `iptables`.

```
# Setting up commons
```

```
include_recipe 'cm_setup::commons'
```

Setting up `sysctl.conf` configuration optimized for Hadoop.

```
include_recipe 'cm_setup::sysctl_setup'
```

Installing and configuring `ntpd`

```
include_recipe 'cm_setup::ntpd_setup'
```

Creating user(s) for `cloudera-manager`.

```
include_recipe 'cm_setup::users_setup'
```

Creating `/etc/hosts` file as required by Hadoop cluster.

```
include_recipe 'cm_setup::hostfile_setup'
```

Creating a `mysql` setup. Setting up `cloudera-manager` on `mysql`.

```
include_recipe 'cm_setup::mysql_setup'
```

```
  include_recipe 'cm_setup::mysql_install'
```

```
  include_recipe 'cm_setup::mysql_configure'
```

```
  include_recipe 'cm_setup::mysql_user_setup'
```

Installing `mysql_connector`.

```
include_recipe 'cm_setup::mysql_connector_setup'
```

Installing `cloudera-daemons` and `agent`.

```
include_recipe 'cm_setup::cloudera_install_setup'
  configuring database using the db script.
  Autostarting `cloudera-scm-server`.
```

What does the base_node_install Role have.

Common installations, like disable selinux and iptables.

```
# Setting up commons
```

```
include_recipe 'cm_setup::commons'
```

Setting up sysctl.conf configuration optimized for Hadoop.

```
include_recipe 'cm_setup::sysctl_setup'
```

Installing and configuring ntpd

```
include_recipe 'cm_setup::ntpd_setup'
```

Creating user(s) for cloudera-manager.

```
include_recipe 'cm_setup::users_setup'
```

Creating /etc/hosts file as required by Hadoop cluster.

```
include_recipe 'cm_setup::hostfile_setup'
```

Role.

To setup non-mgmt nodes we can create a role and assign the nodes this role, so that the base setup on that node is completed. Below is a JSON for the Role for base setup.

```
{
  "name": "base_node_install",
  "description": "Base Installation for Node other than the Clouder Manager Node.",
  "json_class": "Chef::Role",
  "default_attributes": {

  },
  "override_attributes": {

  },
  "chef_type": "role",
  "run_list": [
    "recipe[cm_setup::commons]",
    "recipe[cm_setup::sysctl_setup]",
    "recipe[cm_setup::ntpd_setup]",
    "recipe[cm_setup::users_setup]",
    "recipe[cm_setup::hostfile_setup]"
  ],
  "env_run_lists": {

  }
}
```

Creating role on the Chef Server.

```
[ahmed] [zubair-HP-ProBook] [±] [master U:2 ] [~/work/chef-repo]
knife role create base_node_install
```

Add the contents above to the role. Once we are done then we can list then using below command.

```
[ahmed] [zubair-HP-ProBook] [±] [master U:2 ] [~/work/chef-repo]
knife role list
base_node_install
testrole
```

Now we add the role to each on the nodes which act as a managed node like a namenode, standbynamenode, resourcemanager etc.

Before we assign the Role.

Before we assign the role, we need to bootstrap the node so that it is added to the Chef Server. Below is the command to add the node to the Chef Server.

```
knife bootstrap <host_ip_address> --ssh-port <ssh_port> --ssh-user <username> --ssh-password <password> --sudo
```

NOTE : The user we use should have sudo privileges so that chef can install the client on the node. Here is the output for the vagrant node which was used to test the Cookbook.

```
[ahmed] [zubair-HP-ProBook] [±] [master ] [~/work/chef-repo/cookbooks/cm_setup]
  knife bootstrap 127.0.0.1 --ssh-port 2222 --ssh-user vagrant --ssh-password vagrant --sudo
Doing old-style registration with the validation key at /home/ahmed/work/chef-repo/.chef/happy-minds-validator
Delete your validation key in order to use your user credentials instead
```

```
Connecting to 127.0.0.1
127.0.0.1 ----> Installing Chef Omnibus (-v 12)
127.0.0.1 downloading https://omnitruck-direct.chef.io/chef/install.sh
127.0.0.1   to file /tmp/install.sh.3341/install.sh
127.0.0.1 trying wget...
127.0.0.1 el 6 x86_64
127.0.0.1 Getting information for chef stable 12 for el...
127.0.0.1 downloading https://omnitruck-direct.chef.io/stable/chef/metadata?v=12&p=el&pv=6&m=x86_64
127.0.0.1   to file /tmp/install.sh.3361/metadata.txt
127.0.0.1 trying wget...
127.0.0.1 sha1 44e71beed0cc0db2481c3e3d2108ad218c32dade
127.0.0.1 sha256 e51559dc7747c03b446f9d1a3cddb122f274352ba0ed7dd8fdac41e10514b9e2
127.0.0.1 url https://packages.chef.io/stable/el/6/chef-12.11.18-1.el6.x86_64.rpm
127.0.0.1 version 12.11.18
127.0.0.1 downloaded metadata file looks valid...
127.0.0.1 downloading https://packages.chef.io/stable/el/6/chef-12.11.18-1.el6.x86_64.rpm
127.0.0.1   to file /tmp/install.sh.3361/chef-12.11.18-1.el6.x86_64.rpm
127.0.0.1 trying wget...
127.0.0.1 Comparing checksum with sha256sum...
127.0.0.1 Installing chef 12
127.0.0.1 installing with rpm...
127.0.0.1 warning: /tmp/install.sh.3361/chef-12.11.18-1.el6.x86_64.rpm: Header V4 DSA/SHA1 Signature, key ID
127.0.0.1 Preparing... (1#####
127.0.0.1 1:chef (##### [
127.0.0.1 Thank you for installing Chef!
127.0.0.1 Starting the first Chef Client run...
127.0.0.1 Starting Chef Client, version 12.11.18
127.0.0.1 Creating a new client identity for localhost.localdomain using the validator key.
127.0.0.1 resolving cookbooks for run list: []
127.0.0.1 Synchronizing Cookbooks:
127.0.0.1 Installing Cookbook Gems:
127.0.0.1 Compiling Cookbooks...
127.0.0.1 [2016-06-24T15:25:45+02:00] WARN: Node localhost.localdomain has an empty run list.
127.0.0.1 Converging 0 resources
127.0.0.1
127.0.0.1 Running handlers:
127.0.0.1 Running handlers complete
127.0.0.1 Chef Client finished, 0/0 resources updated in 09 seconds
```

Logon to Chef Server and Edit Run List.

Select Role to be Assigned.

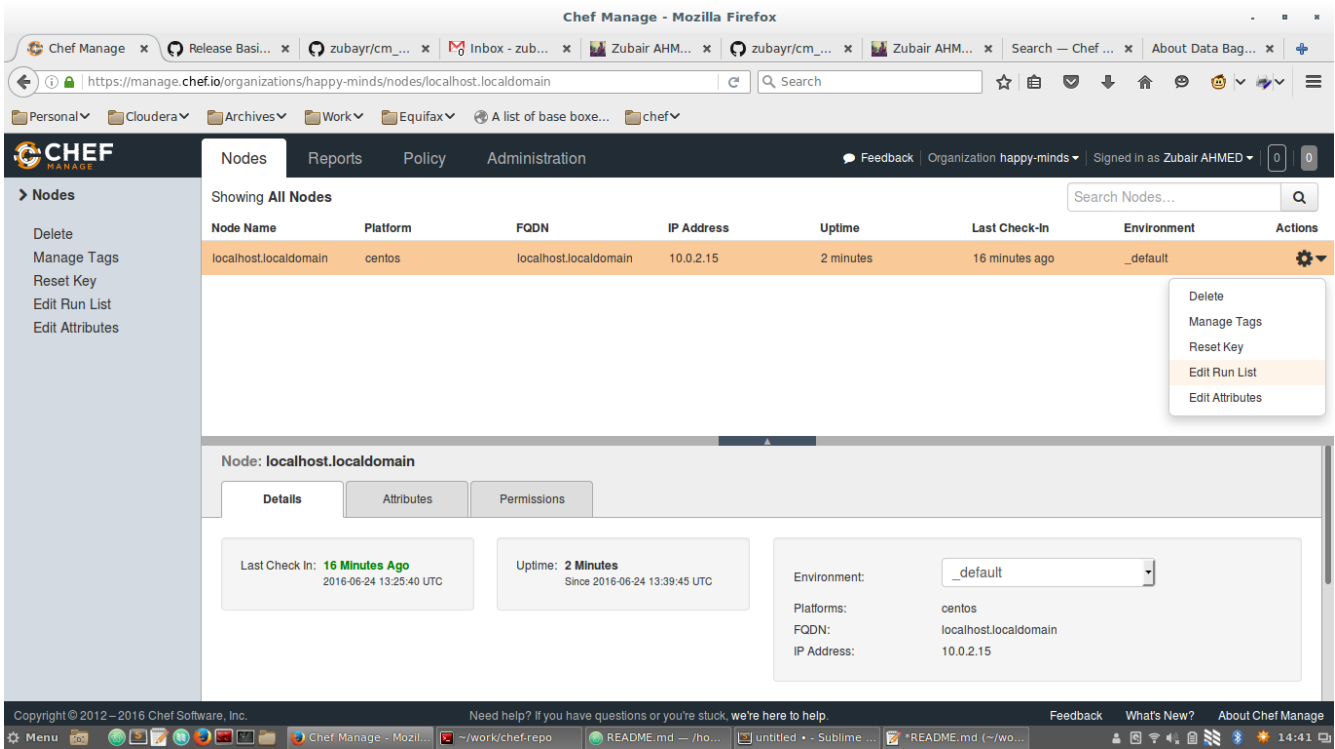


Figure 1: Chef Server and Edit Run List

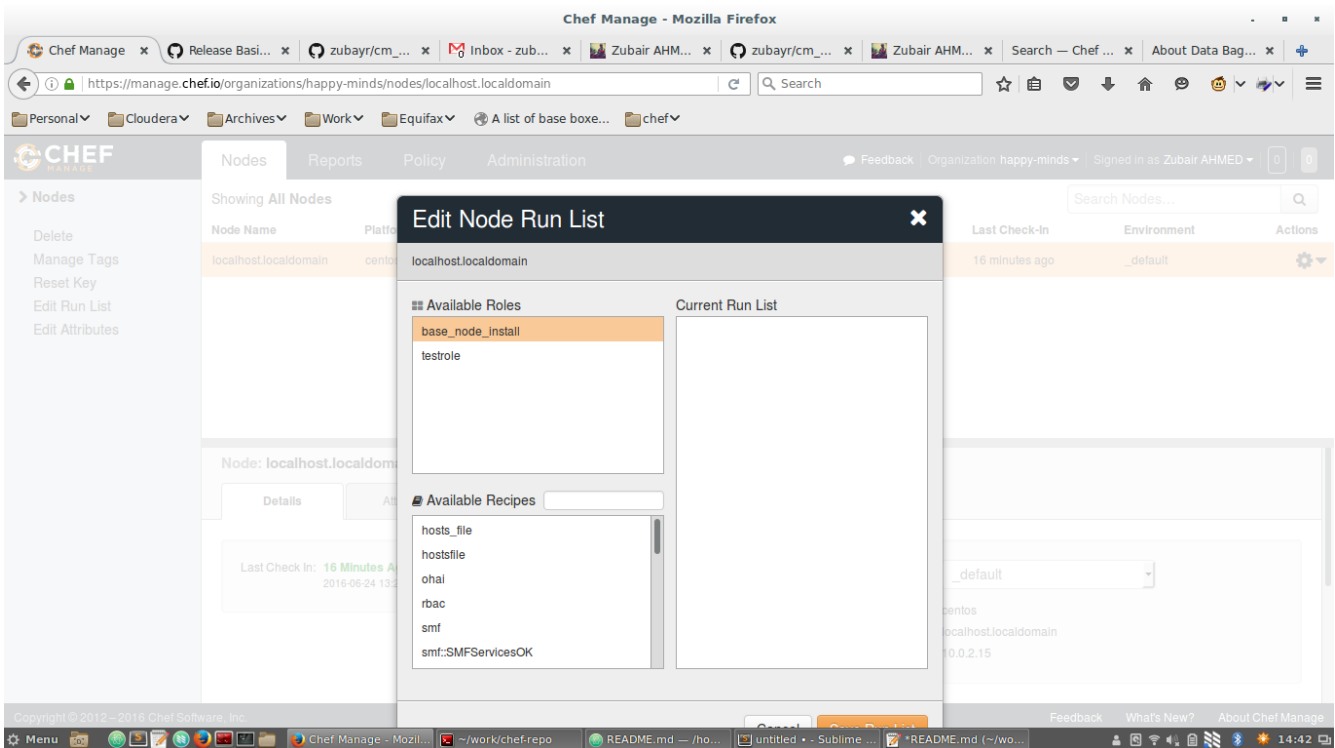


Figure 2: Select Role to be Assigned

Assigned Role and Save.

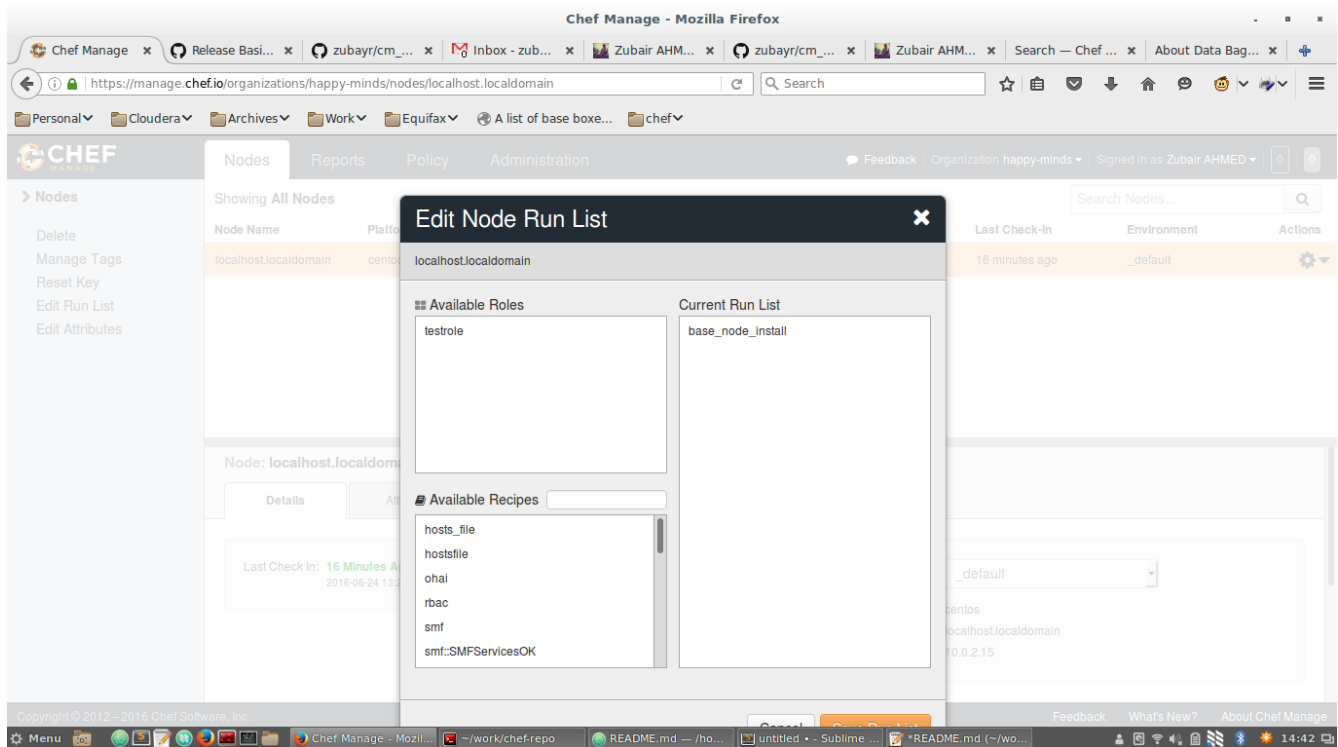


Figure 3: Assigned Role and Save

Chef Role is Assigned.

Executing `sudo chef-client` on Node.

Attributes.

Below are the set of attributes which can be changed as per requirement.

```
[ahmed] [zubair-HP-ProBook] [±] [master ] [~/work/chef-repo/cookbooks/cm_setup/attributes]
tree
.
|___hosts_attr.rb
|___default.rb
|___mysql_attr.rb
|___sudo_attr.rb
|___cdh_attr.rb
|___sysctl_attr.rb
|___security_sssd_attr.rb
|___security_krb5_attr.rb
|___ntp_attr.rb
```

hosts_attr File

This file has the host information which need to be populated in the `/etc/hosts` file.

hostsfile cookbook <https://github.com/customink-webops/hostsfile>.

```
[ahmed] [zubair-HP-ProBook] [±] [master ] [~/work/chef-repo/cookbooks/cm_setup/attributes]
cat hosts_attr.rb

#
# Server informatoin for the `/etc/hosts` file changes this as required
```

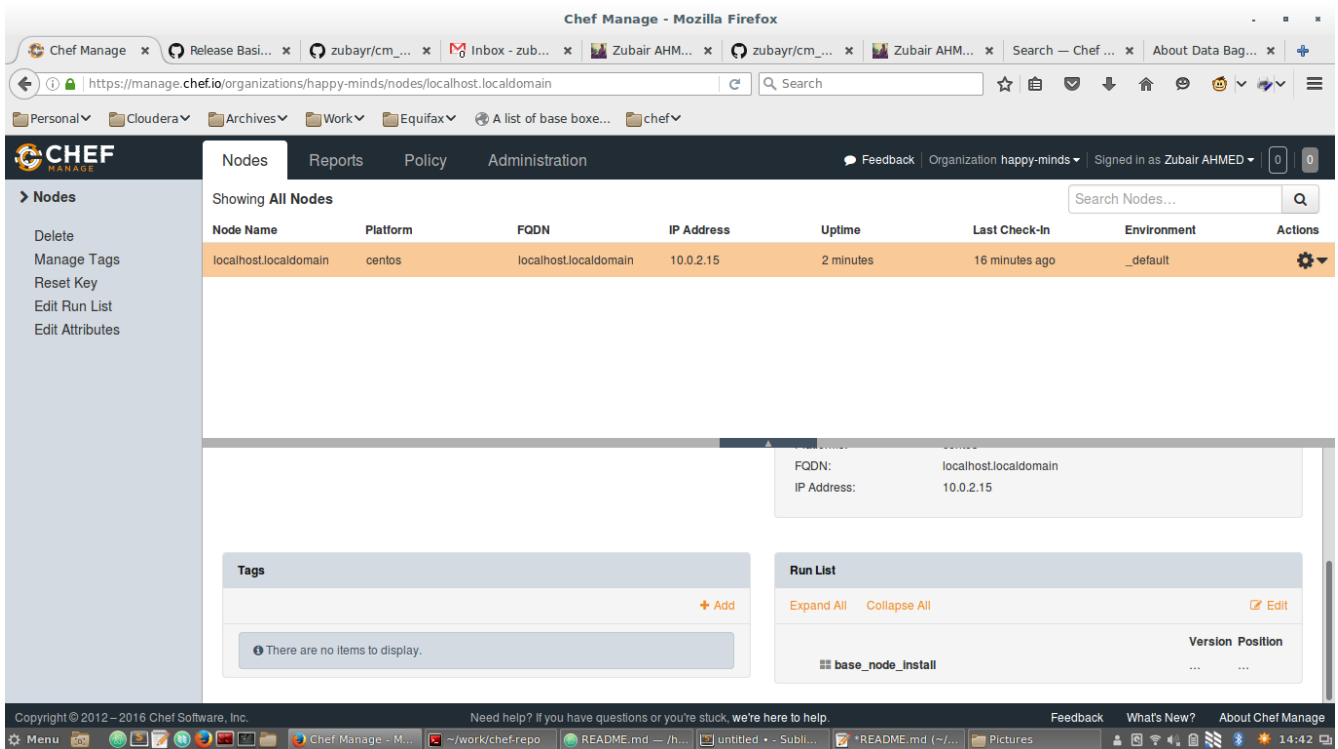


Figure 4: Chef Role is Assigned

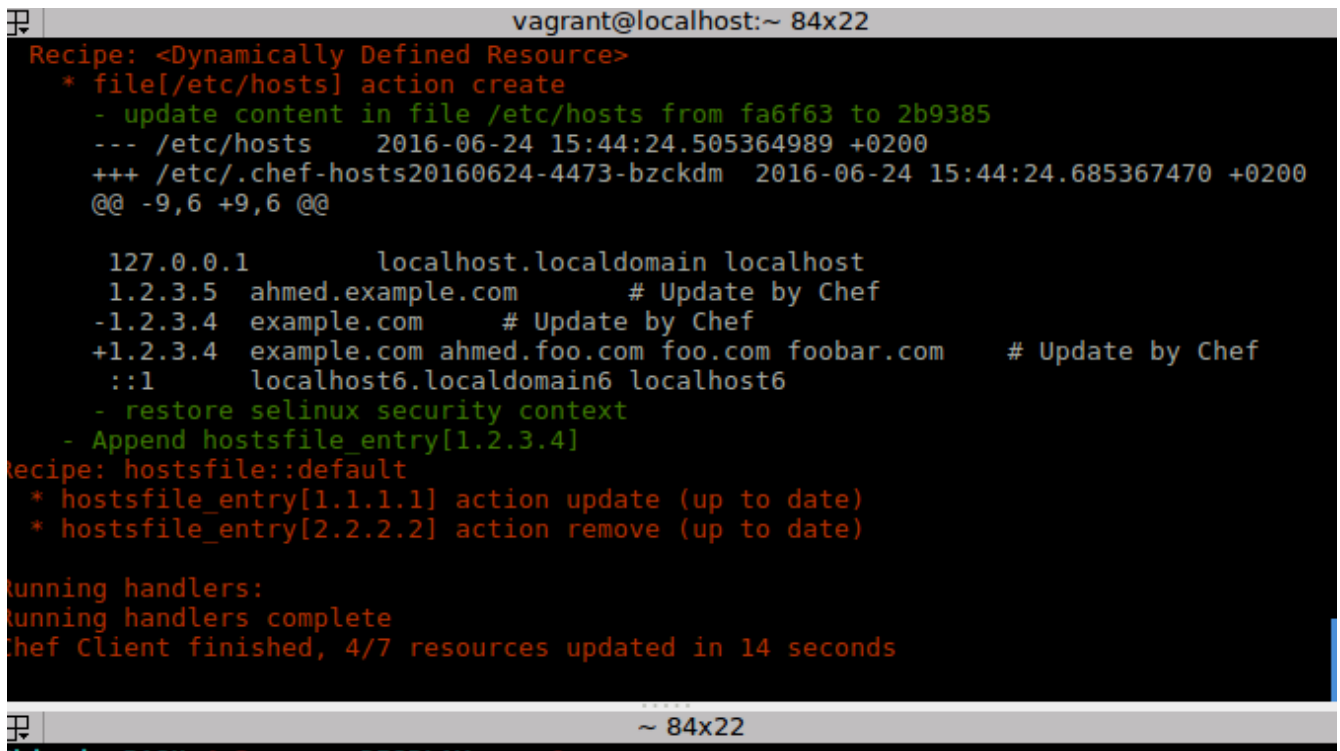


Figure 5: Executing sudo chef-client on Node

```
#
default['etc_hosts_entries']['9.1.1.1']['hostname'] = 'server9.ahmed.com'
default['etc_hosts_entries']['9.1.1.1']['aliases'] = ['server9']
default['etc_hosts_entries']['9.1.1.1']['comment'] = 'Server9'
default['etc_hosts_entries']['9.1.1.1']['action'] = :create_if_missing
```

mysql_attr File.

This has parameters related to `mysql` more attributes can be twicked more information can be found on the base cookbook `mysql`, `mysql_connector`, `database`.

`mysql` cookbook for creating the `mysql` instance. `mysql_connector` cookbook for creating the connector. `database` cookbook to create database and database users.

- `mysql` Base cookbook <https://github.com/chef-cookbooks/mysql>.
- `mysql_connector` Base cookbook https://supermarket.chef.io/cookbooks/mysql_connector.
- `database` Base cookbook <https://github.com/chef-cookbooks/database>.

File here.

```
[ahmed] [zubair-HP-ProBook] [±] [master ] [~/work/chef-repo/cookbooks/cm_setup/attributes]
cat mysql_attr.rb
#
# MySQL connector attributes
# => https://supermarket.chef.io/cookbooks/mysql_connector
# => https://supermarket.chef.io/cookbooks/mysql_connector/download
#

default['mysql_connector']['j']['install_paths'] = ['/usr/share/java']
default['mysql_connector']['j']['version'] = '5.1.36'

#
# MySQL user, Configuration and services
#
# #
# # Installing `mysqld`
# # => https://github.com/chef-cookbooks/mysql
# # => https://supermarket.chef.io/cookbooks/mysql#knife
# #
#
# #
# # Setting up user for the mysql database.
# # => https://github.com/chef-cookbooks/database
# # => https://supermarket.chef.io/cookbooks/database#knife
# #
#
#

default['mysql']['configuring']['database_service_name'] = 'default'
default['mysql']['configuring']['database_name'] = 'cmdb'
default['mysql']['configuring']['database_root_password'] = 'root@123'

default['mysql']['configuring']['database_user'] = 'cmadmin'
default['mysql']['configuring']['database_password'] = 'cmadmin@123'
default['mysql']['configuring']['database_user_privileges'] = [:all]
default['mysql']['configuring']['database_user_privileges_host'] = '%'

default['mysql']['configuring']['host_ip'] = '127.0.0.1'
default['mysql']['configuring']['port'] = '3306'
default['mysql']['configuring']['version'] = '5.5'
```

hostsfile File

Creating users and sudo users on the server.

- users cookbook <https://github.com/chef-cookbooks/users>.
- sudo cookbook <https://github.com/chef-cookbooks/users>.

Config File.

```
[ahmed] [zubair-HP-ProBook] [±] [master U:3 ] [~/work/chef-repo/cookbooks/cm_setup/attributes]
cat sudo_attr.rb
#
# Adding sudo attributes
#
#
# User Setup
#
# #
# # Creating a admin user/group for clouderamanager
# # https://github.com/chef-cookbooks/users
# # https://supermarket.chef.io/cookbooks/users#knife
#
default['users_setup']['groups'] = { 'sysadmin' => 2300, 'cmadmin' => 2301 }
#
# Creating sudo users
# => https://supermarket.chef.io/cookbooks/sudo#knife
# => https://github.com/chef-cookbooks/sudo
#
default['authorization']['sudo']['groups'] = ['cmadmin', 'sysadmin']
default['authorization']['sudo']['users'] = ['cmadmin', 'vagrant', 'sysadminuser']
default['authorization']['sudo']['passwordless'] = true
```

cdh_attr.rb File

Here we can configure information related to cdh.

- Creating Repository
- Installation Packages
- Services

yum cookbook <https://github.com/chef-cookbooks/yum/>

```
[ahmed] [zubair-HP-ProBook] [±] [master U:5 ] [~/work/chef-repo/cookbooks/cm_setup/attributes]
cat cdh_attr.rb
#
# Cloudera Manager installation and services
#
default['cdh_install']['install_packages'] = [
    'oracle-j2sdk1.7',
    'cloudera-manager-daemons',
    'cloudera-manager-server'
]
default['cdh_install']['cm_services'] = [
    'cloudera-scm-server'
]
#
# Repository Configuration
```



```

#
# # Setting up repos
# # => https://supermarket.chef.io/cookbooks/yum
# # => https://github.com/chef-cookbooks/yum/
# #
#
# description 'Extra Packages for Enterprise Linux'
# mirrorlist 'http://mirrors.fedoraproject.org/mirrorlist?repo=epel-6&arch=$basearch'
# gpgkey 'http://dl.fedoraproject.org/pub/epel/RPM-GPG-KEY-EPEL-6'

default['yum_repository']['epel']['description'] = 'Extra Packages for Enterprise Linux'
default['yum_repository']['epel']['mirrorlist'] = 'http://mirrors.fedoraproject.org/mirrorlist?repo=epel-6&'
default['yum_repository']['epel']['gpgkey'] = 'http://dl.fedoraproject.org/pub/epel/RPM-GPG-KEY-EPEL-6'

# description 'Packages for Cloudera Manager, Version 5, on RedHat or CentOS 6 x86_64 '
# baseurl 'https://archive.cloudera.com/cm5/redhat/6/x86_64/cm/5/'
# gpgkey 'https://archive.cloudera.com/cm5/redhat/6/x86_64/cm/RPM-GPG-KEY-cloudera'

default['yum_repository']['cm']['description'] = 'Packages for Cloudera Manager, Version 5, on RedHat or CentOS 6 x86_64 '
default['yum_repository']['cm']['baseurl'] = 'https://archive.cloudera.com/cm5/redhat/6/x86_64/cm/5/'
default['yum_repository']['cm']['gpgkey'] = 'https://archive.cloudera.com/cm5/redhat/6/x86_64/cm/RPM-GPG-KEY-cloudera'

```

sysctl_attr File.

This file is to update `sysctl.conf`. All attributes are from the `sysctl` cookbook.

`sysctl` cookbook <https://github.com/svanzoest-cookbooks/sysctl>

```
[ahmed] [zubair-HP-ProBook] [±] [master U:5 ] [~/work/chef-repo/cookbooks/cm_setup/attributes]
cat sysctl_attr.rb
```

```

#
# Setting up custom sysctl configuration
# TODO: We need to make the parameter to be added from attributes.
#
# template '/etc/sysctl.conf' do
#   source 'sysctl.conf.erb'
# end
#
# Setting up sysctl.conf
# => https://supermarket.chef.io/cookbooks/sysctl
# => https://github.com/svanzoest-cookbooks/sysctl
#

```

security_sssd_attr File.

This file is to setup (install and configure) `sssd` on the node.

`sysctl_ldap` cookbook https://github.com/tas50/chef-sssd_ldap

```
[ahmed] [zubair-HP-ProBook] [±] [master U:5 ] [~/work/chef-repo/cookbooks/cm_setup/attributes]
cat security_sssd_attr.rb
```

```

#
# SSSD installation and configuration
#
#
#
#
# Installing and configuring SSSD
# => https://supermarket.chef.io/cookbooks/sssd_ldap
# => https://github.com/tas50/chef-sssd_ldap

```

```
#
```

security_krb5_attr File.

This file attributes are to install and configure `krb5` for a node.

`krb5` cookbook <https://github.com/atomic-penguin/cookbook-krb5>

```
[ahmed] [zubair-HP-ProBook] [±] [master U:5 ] [~/work/chef-repo/cookbooks/cm_setup/attributes]
  cat security_krb5_attr.rb
#
# krb5 installation and configuration
#

#
# Installing and configuring krb5
# => https://supermarket.chef.io/cookbooks/krb5
# => https://github.com/atomic-penguin/cookbook-krb5
#
```

ntp_attr File.

Setting up `ntp` on a node.

```
[ahmed] [zubair-HP-ProBook] [±] [master U:5 ] [~/work/chef-repo/cookbooks/cm_setup/attributes]
  cat ntp_attr.rb
#
# configuring servers
# => https://supermarket.chef.io/cookbooks/ntpd#knife
# => https://github.com/rogerdelph/cookbook-ntpd
#

default['ntp']['mode_servers'] = ['0.pool.ntp.org', '1.pool.ntp.org']
```

default Recipe Details.

Common installations, like disable `selinux` and `iptables`.

```
# Setting up commons
include_recipe 'cm_setup::commons'

Setting up sysctl.conf configuration optimized for Hadoop.
include_recipe 'cm_setup::sysctl_setup'

Installing and configuring ntpd
include_recipe 'cm_setup::ntpd_setup'

Creating user(s) for cloudera-manager.
include_recipe 'cm_setup::users_setup'

Creating /etc/hosts file as required by Hadoop cluster.
include_recipe 'cm_setup::hostfile_setup'

Creating a mysql setup. Setting up cloudera-manager on mysql.
include_recipe 'cm_setup::mysql_setup'
  include_recipe 'cm_setup::mysql_install'
  include_recipe 'cm_setup::mysql_configure'
  include_recipe 'cm_setup::mysql_user_setup'

Installing mysql_connector.
include_recipe 'cm_setup::mysql_connector_setup'
```

Installing cloudera-daemons and agent.

```
include_recipe 'cm_setup::cloudera_install_setup'  
  configuring database using the db script.  
  Autostarting `cloudera-scm-server`.
```

Installation and Configuration of sssd. [Unit Test complete - Need to do TEST on live environment]

Installation and Configuration of krb5. [Unit Test complete - Need to do TEST on live environment]

Configuration of Cloudera Using Cloudera API. [TODO]

Usage.

Below are the steps to setup and environment to execute this cookbook.

Update the .kitchen.yml file with below content [if required - OPTIONAL]

File can be found in the `#{CHEF_COOKBOOK_HOME}/.kitchen.yml`.

```
[ahmed] [zubair-HP-ProBook] [±] [master ] [~/work/chef-repo/cookbooks/cm_setup]  
  cat .kitchen.yml  
---  
driver:  
  name: vagrant  
  
provisioner:  
  name: chef_zero  
  
# Uncomment the following verifier to leverage Inspec instead of Busser (the  
# default verifier)  
# verifier:  
#   name: inspec  
  
platforms:  
  - name: grtjn/centos-6.5  
  
suites:  
  - name: default  
    run_list:  
      - recipe[cm_setup::default]  
    attributes:
```

Check the for the vagrant box which will be used.

Command

```
kitchen list
```

Output

```
[ahmed] [zubair-HP-ProBook] [±] [master ] [~/work/chef-repo/cookbooks/starter]  
  kitchen list  
Instance           Driver   Provisioner  Verifier  Transport  Last Action  
default-grtjn-centos-65  Vagrant  ChefSolo     Busser    Ssh        <Not Created>
```

create node.

Command

```
kitchen create
```

Output

```

[ahmed] [zubair-HP-ProBook] [±] [master ↑1 U:1 ?:3 ] [~/work/chef-repo/cookbooks/cm_setup]
kitchen create
-----> Starting Kitchen (v1.8.0)
-----> Creating <default-grtjn-centos-65>...
    Bringing machine 'default' up with 'virtualbox' provider...
    ==> default: Importing base box 'grtjn/centos-6.5'...
==> default: Matching MAC address for NAT networking...
    ==> default: Checking if box 'grtjn/centos-6.5' is up to date...
==> default: Setting the name of the VM: kitchen-starter-default-grtjn-centos-65_default_1466270503111_6
    ==> default: Fixed port collision for 22 => 2222. Now on port 2200.
    ==> default: Clearing any previously set network interfaces...
    ==> default: Preparing network interfaces based on configuration...
        default: Adapter 1: nat
    ==> default: Forwarding ports...
        default: 22 (guest) => 2200 (host) (adapter 1)
    ==> default: Booting VM...
    ==> default: Waiting for machine to boot. This may take a few minutes...
        default: SSH address: 127.0.0.1:2200
        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! 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 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: 4.3.8
        default: VirtualBox Version: 5.0
    ==> default: Setting hostname...
    ==> default: Machine not provisioned because `--no-provision` is specified.
    [SSH] Established
    Vagrant instance <default-grtjn-centos-65> created.
    Finished creating <default-grtjn-centos-65> (0m52.53s).
-----> Kitchen is finished. (0m52.65s)

```

Login to the node.

Command

```
kitchen login
```

Output

```

[ahmed] [zubair-HP-ProBook] [±] [master ↑1 U:1 ?:3 ] [~/work/chef-repo/cookbooks/cm_setup]
kitchen login
Last login: Sat Jun 18 17:22:13 2016 from 10.0.2.2
[vagrant@default-grtjn-centos-65 ~]$ cat /etc/hosts
127.0.0.1 default-grtjn-centos-65 localhost localhost.localdomain localhost4 localhost4.localdomain4
::1 localhost localhost.localdomain localhost6 localhost6.localdomain6
[vagrant@default-grtjn-centos-65 ~]$ exit
logout
Connection to 127.0.0.1 closed.

```

converge - Cookbook with the node.

Command

```
kitchen converge
```

Output

```

[ahmed] [zubair-HP-ProBook] [±] [master ↑1 U:2 ] [~/work/chef-repo/cookbooks/cm_setup]
kitchen converge
-----> Starting Kitchen (v1.8.0)
-----> Converging <default-grtjn-centos-65>...
    Preparing files for transfer
    Preparing dna.json
    Resolving cookbook dependencies with Berkshelf 4.3.3...
    Removing non-cookbook files before transfer
    Preparing data_bags
    Preparing validation.pem
    Preparing client.rb
-----> Installing Chef Omnibus (install only if missing)
    Downloading https://www.chef.io/chef/install.sh to file /tmp/install.sh
    Trying wget...
    Trying curl...
    Download complete.
    el 6 x86_64
    Getting information for chef stable for el...
    downloading https://omnitruck-direct.chef.io/stable/chef/metadata?v=&p=el&pv=6&m=x86_64
      to file /tmp/install.sh.1983/metadata.txt
    trying wget...
    sha1 44e71beed0cc0db2481c3e3d2108ad218c32dade
    sha256 e51559dc7747c03b446f9d1a3cddb122f274352ba0ed7dd8fdac41e10514b9e2
    url https://packages.chef.io/stable/el/6/chef-12.11.18-1.el6.x86_64.rpm
    version 12.11.18
    downloaded metadata file looks valid...
    downloading https://packages.chef.io/stable/el/6/chef-12.11.18-1.el6.x86_64.rpm
      to file /tmp/install.sh.1983/chef-12.11.18-1.el6.x86_64.rpm
    trying wget...
    trying curl...
    Comparing checksum with sha256sum...

```

WARNING WARNING WARNING WARNING WARNING WARNING WARNING WARNING WARNING

You are installing an omnibus package without a version pin. If you are installing on production servers via an automated process this is DANGEROUS and you will be upgraded without warning on new releases, even to new major releases. Letting the version float is only appropriate in desktop, test, development or CI/CD environments.

WARNING WARNING WARNING WARNING WARNING WARNING WARNING WARNING WARNING

```

Installing chef
installing with rpm...
warning: /tmp/install.sh.1983/chef-12.11.18-1.el6.x86_64.rpm: Header V4 DSA/SHA1 Signature, key ID 83ef8
Preparing... (100%##### [
1:chef ( 1%##### [100
Thank you for installing Chef!
Transferring files to <default-grtjn-centos-65>
Starting Chef Client, version 12.11.18
Creating a new client identity for default-grtjn-centos-65 using the validator key.
resolving cookbooks for run list: ["cm_setup::default"]
Synchronizing Cookbooks:
- hostsfile (2.4.5)
- sudo (2.9.0)
- users (2.0.3)
- cm_setup (0.1.0)
- sysctl (0.7.5)
- mysql (7.1.1)
- yum (3.11.0)
- smf (2.2.8)

```

- ohai (3.0.1)
- database (5.1.2)
- build-essential (6.0.0)
- rbac (1.0.3)
- openssl (4.4.0)
- yum-mysql-community (0.2.0)
- apt (4.0.0)
- chef-sugar (3.3.0)
- mingw (1.2.0)
- seven_zip (2.0.1)
- postgresql (4.0.6)
- compat_resource (12.10.6)
- windows (1.43.0)
- chef_handler (1.4.0)

Installing Cookbook Gems:

Compiling Cookbooks...

```
[2016-06-18T17:40:28+00:00] WARN: Chef::Provider::AptRepository already exists! Cannot create deprecate
[2016-06-18T17:40:28+00:00] WARN: AptRepository already exists! Deprecation class overwrites Custom reso
[2016-06-18T17:40:28+00:00] WARN: Cloning resource attributes for hostsfile_entry[3.3.3.3] from prior res
[2016-06-18T17:40:28+00:00] WARN: Previous hostsfile_entry[3.3.3.3]: /tmp/kitchen/cache/cookbooks/cm_se
[2016-06-18T17:40:28+00:00] WARN: Current hostsfile_entry[3.3.3.3]: /tmp/kitchen/cache/cookbooks/cm_se
Converging 37 resources
```

```
##
##### VERBOSE #####
##
```

```
Recipe: cm_setup::cloudera_install_setup
  * yum_package[oracle-j2sdk1.7] action install (up to date)
  * yum_package[cloudera-manager-daemons] action install (up to date)
  * yum_package[cloudera-manager-server] action install (up to date)
Recipe: cm_setup::mysql_setup
  * mysql_service[default] action restart
    * service[default :restart mysql-default] action restart
      - restart service service[default :restart mysql-default]
```

```
Running handlers:
Running handlers complete
Chef Client finished, 20/106 resources updated in 07 minutes 05 seconds
Finished converging <default-grtjn-centos-65> (7m25.80s).
```

Above we have no issues and the cookbook converged successfully.

```
[ahmed] [zubair-HP-ProBook] [±] [master ] [~/work/chef-repo/cookbooks/cm_setup]
kitchen list
Instance          Driver  Provisioner  Verifier  Transport  Last Action
default-grtjn-centos-65  Vagrant  ChefZero     Busser    Ssh         Converged
```

Server Spec Verification using Kitchen.

Command

```
kitchen verify
```

Output.

```
[ahmed] [zubair-HP-ProBook] [±] [master U:1 ] [~/work/chef-repo/cookbooks/cm_setup]
kitchen verify
-----> Starting Kitchen (v1.8.0)
-----> Verifying <default-grtjn-centos-65>...
  Preparing files for transfer
-----> Busser installation detected (busser)
  Installing Busser plugins: busser-serverspec
```

```
Plugin serverspec already installed
Removing /tmp/verifier/suites/serverspec
Transferring files to <default-grtjn-centos-65>
-----> Running serverspec test suite
/opt/chef/embedded/bin/ruby -I/tmp/verifier/suites/serverspec -I/tmp/verifier/gems/gems/rspec-support-
```

```
cm_setup::default
  File "/etc/yum.repos.d/cloudera-manager.repo"
    should exist
  File "/etc/mysql-default/conf.d/default.cnf"
    should exist
    should be file
    should contain "max_connections = 550"
  File "/etc/sysctl.d/99-chef-attributes.conf"
    should exist
    should be file
    should contain "vm.dirty_ratio"
    should contain "vm.swappiness"
    should contain "vm.nr_hugepages"
  Package "ntp"
    should be installed
  Package "oracle-j2sdk1.7"
    should be installed
  Package "cloudera-manager-daemons"
    should be installed
  Package "cloudera-manager-server"
    should be installed
  File "/etc/hosts"
    should exist
    should be file
    should contain "namenode.ahmed.com"
    should contain "standbynamenode.ahmed.com"
    should contain "resourcemanager.ahmed.com"
  File "/etc/cloudera-scm-server/db.properties"
    should exist
    should be file
    should contain "user=cmadmin"
    should contain "name=cmdb"
  User "cmadmin"
    should exist
    should have home directory "/home/cmadmin"
  User "sysadminuser"
    should exist
    should have home directory "/home/sysadminuser"
  MySQL config parameters
  Mysql config "innodb_flush_log_at_trx_commit"
    value
      example at /tmp/verifier/suites/serverspec/default_spec.rb:55
  Mysql config "socket"
    value
      example at /tmp/verifier/suites/serverspec/default_spec.rb:59
  Mysql config "innodb_flush_method"
    value
      example at /tmp/verifier/suites/serverspec/default_spec.rb:66
  Mysql config "innodb_log_file_size"
    value
      example at /tmp/verifier/suites/serverspec/default_spec.rb:70
  Yumrepo "epel"
    should exist
    should be enabled
  Yumrepo "cloudera-manager"
```

should exist
should be enabled

Finished in 1.32 seconds (files took 0.52476 seconds to load)
34 examples, 0 failures

Finished verifying <default-grtjn-centos-65> (0m6.22s).
-----> Kitchen is finished. (0m6.66s)

Cloudera Manager UI.

Logon to the node and open up a browser and hit.

<http://127.0.0.1:7180/>

You will see the cloudera manager UI. **NOTE: This will take a while for the first time, as clouder will initialize the database for first time use.**