

Using Chef's Community Cookbooks from Chef Supermarket

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Description

Chef Supermarket hosts a vast collection of **community cookbooks** contributed by Chef users worldwide, allowing users to reuse proven recipes for common configurations. These cookbooks reduce development time, providing pre-built configurations for services like Motd, Apache, MySQL, Nginx, and more.

Problem Statement

Creating cookbooks from scratch for every new application or configuration can be time-consuming. By using **Chef Supermarket community cookbooks**, you can:

- Quickly provision common software and configurations.
- Customize existing configurations to suit specific requirements.
- Save time and effort by leveraging community-contributed resources.

Prerequisites

Software Required

- **Chef Workstation:** To download, modify, and apply cookbooks.
- **Chef Server** or **Chef Client:** To upload and apply cookbooks in your environment.

Hardware Requirement

- **Chef Workstation:** 2 GB RAM, 2 CPU cores

Implementation Steps

Step-1: Search for a Community Cookbook

1. Search for the Cookbook

- To see a list of all community cookbooks available from Supermarket, run the following:

```
knife supermarket list
```

```
C:\Users\Administrator>knife supermarket list
WARNING: No knife configuration file found. See https://docs.chef.io/config_rb/ for details.
301                                alfresco-webserver
3cx                                algosec
7dtd                              alphard-artifactory
aa_consul_template               alphard-aws
aag_infoblox                     alphard-chef-artifactory
abiquo                           alphard-chef-awscli
acadock                          alphard-chef-deploy
accel-ppp                        alphard-chef-loggly
accounts                         alphard-chef-newrelic
accumulator                      alphard-chef-newrelic-infrastructure
acd                              alphard-chef-s3cmd
ack                              alphard-chef-sbt
acl                              alphard-cron
acme                             alphard-java
acmesmith                       alphard-python
acpi                             alternate_search
activelamp_composer              alternatives
activelamp_drupal               alteryx-server
activelamp_symfony              ama-docker-compose
ad-auth                          ama-linux-user-management
adium                           ama-ssh-private-keys
ad-join                         amazon_dns
adjoin_fx                       AmazonEC2Tag
admin-user                      amazon-ecs-agent
aegir                           amazon_s3cmd
aegir2                          ambari
aegir3                          amiga-ppp
aem                              aminor
aerospike                       amoeba_basenode
aerospike-cluster               anaconda
aerospike-platform              analgesic
aet                              android-sdk
afw                              an_minimart
agilefant                       annoyances
agit                            ansible-tower
air                              antennahouse
airflow                         aolserver
aix                              apache
aix-base-setup                  apache2
ajenti                          apache2-git-site
akibanserver                    apache2-global-customlog
```

- Open the Chef Supermarket website: [Chef Supermarket](#)(Optional).
- Search for the **motd** cookbook.

2. Download the Cookbook

- Run the following command on the Chef Workstation to download the cookbook:

```
knife supermarket download motd
```

```
C:\Users\Administrator\Downloads\chef-starter\chef-repo\cookbooks>knife supermarket download motd
INFO: Using configuration from C:/Users/Administrator/Downloads/chef-starter/chef-repo/.chef/knife.rb
Downloading motd from Supermarket at version 1.0.1 to C:/Users/Administrator/Downloads/chef-starter/chef-repo/cookbooks/motd-1.0.1.tar.gz
Cookbook saved: C:/Users/Administrator/Downloads/chef-starter/chef-repo/cookbooks/motd-1.0.1.tar.gz
C:\Users\Administrator\Downloads\chef-starter\chef-repo\cookbooks>_
```

- Extract the tar.gz file into cookbooks folder

3. Verify Installation

- The cookbook will be downloaded to the **cookbooks** directory in your Chef repository. Verify the structure:

```
ls chef-repo/cookbooks/motd
```

Step-2: Configure Test Kitchen

1. Initialize Test Kitchen:

- Navigate to your Chef repository and initialize Test Kitchen:

```
kitchen init
```

2. Edit **.kitchen.yml**:

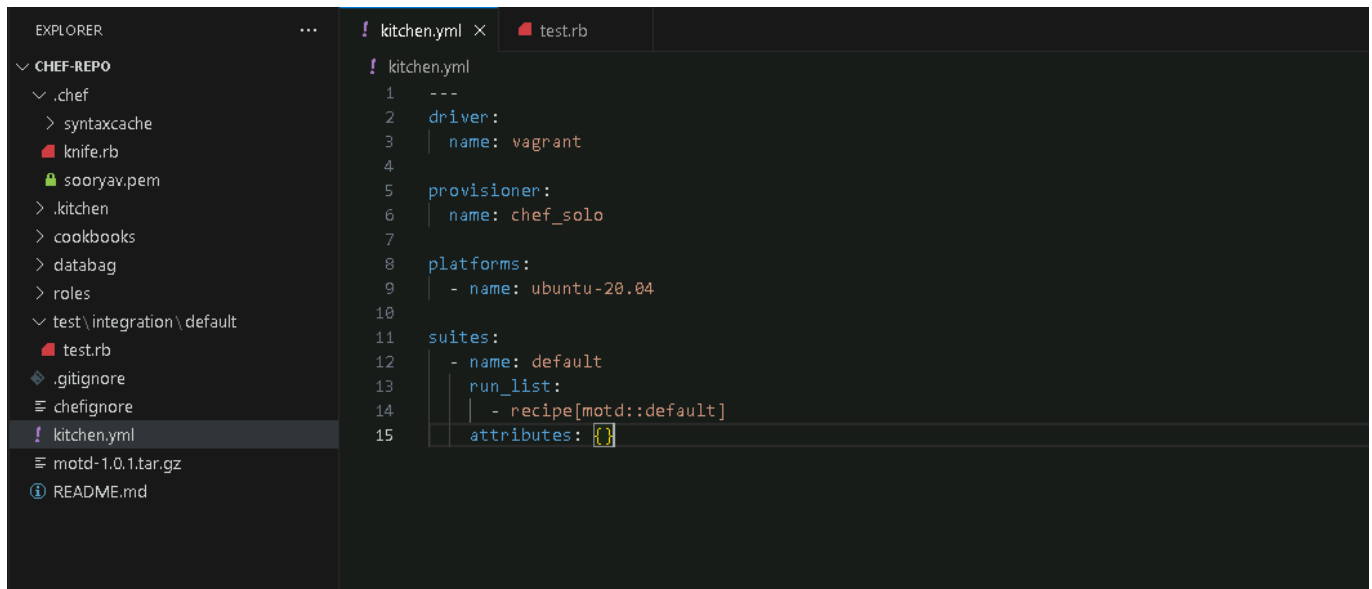
Update the file to include the **motd** cookbook:

```
---
driver:
  name: vagrant

provisioner:
  name: chef_zero

platforms:
  - name: ubuntu-20.04

suites:
  - name: default
    run_list:
      - recipe[motd::default]
    attributes:
      motd:
        message: "Welcome to the Chef-Managed Server!"
```



Step-3: Write InSpec Tests for the Cookbook

1. Navigate to the Test Directory:

```
cd test/integration/default
```

2. Create a New InSpec Test:

Write a test to validate that the `motd` package is installed and the service is running:

```
# Ensure the /etc/motd file exists
describe file('/etc/motd') do
  it { should exist }
  it { should be_file }
  its('content') { should match(/Welcome to your Chef-managed system!/) }
end
```

Step-4: Run Tests with Test Kitchen

1. Create the Test Instance:

```
kitchen create
```

```
C:\Users\Administrator\Downloads\chef-starter\chef-repo>kitchen create
-----> Starting Test Kitchen (v3.6.0)
-----> Creating <default-ubuntu-2004>...
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Checking if box 'bento/ubuntu-20.04' version '202407.23.0' is up to date...
==> default: Machine not provisioned because '--no-provision' is specified.
[SSH] Established
Vagrant instance <default-ubuntu-2004> created.
Finished creating <default-ubuntu-2004> (0m14.68s).
-----> Test Kitchen is finished. (0m16.51s)

C:\Users\Administrator\Downloads\chef-starter\chef-repo>_
```

- This command starts the container or virtual machine based on your `.kitchen.yml` configuration.

2. Provision the Test Environment:

Spin up a virtual machine and apply the cookbook:

```
kitchen converge
```

```
C:\Users\Administrator\Downloads\chef-starter\chef-repo>kitchen converge
-----> Starting Test Kitchen (v3.6.0)
-----> Converging <default-ubuntu-2004>...
Preparing files for transfer
Preparing dna.json
Preparing cookbooks from project directory
Removing non-cookbook files before transfer
Preparing roles
Preparing solo.rb
-----> Chef installation detected (install only if missing)
Transferring files to <default-ubuntu-2004>
Chef Infra Client, version 18.5.0
Patents: https://www.chef.io/patents
Infra Phase starting
Resolving cookbooks for run list: ["motd::default"]
Synchronizing cookbooks:
- motd (1.0.1)
Installing cookbook gem dependencies:
Compiling cookbooks...
Loading Chef InSpec profile files:
Loading Chef InSpec input files:
Loading Chef InSpec waiver files:
Converging 2 resources
Recipe: motd::cow
  * motd[50-cow] action create
    * template[/etc/update-motd.d/50-cow] action create
      - create new file /etc/update-motd.d/50-cow
      - update content in file /etc/update-motd.d/50-cow from none to 330da8
        (new content is binary, diff output suppressed)
      - change mode from '' to '0755'
      - change owner from '' to 'root'
      - change group from '' to 'root'

Recipe: motd::knife_status
  * motd[98-knife-status] action create
    * template[/etc/update-motd.d/98-knife-status] action create
      - create new file /etc/update-motd.d/98-knife-status
      - update content in file /etc/update-motd.d/98-knife-status from none to 4f24e6
        (new content is binary, diff output suppressed)
      - change mode from '' to '0755'
      - change owner from '' to 'root'
      - change group from '' to 'root'
```

```
Running handlers:
Running handlers complete
Infra Phase complete, 4/4 resources updated in 03 seconds
Downloading files from <default-ubuntu-2004>
Finished converging <default-ubuntu-2004> (0m9.34s).
-----> Test Kitchen is finished. (0m11.35s)

C:\Users\Administrator\Downloads\chef-starter\chef-repo>
```

3. Run InSpec Tests:

Verify the cookbook's behavior:

```
kitchen verify
```

```
C:\Users\Administrator\Downloads\chef-starter\chef-repo>kitchen verify
-----> Starting Test Kitchen (v3.6.0)
-----> Setting up <default-ubuntu-2004>...
    Finished setting up <default-ubuntu-2004> (0m0.00s).
-----> Verifying <default-ubuntu-2004>...
    Preparing files for transfer
    Transferring files to <default-ubuntu-2004>
    Downloading files from <default-ubuntu-2004>
    Finished verifying <default-ubuntu-2004> (0m0.01s).
-----> Test Kitchen is finished. (0m2.08s)

C:\Users\Administrator\Downloads\chef-starter\chef-repo>
```

4. Destroy the Test Environment:

Once testing is complete, clean up:

```
kitchen destroy
```

```
C:\Users\Administrator\Downloads\chef-starter\chef-repo>kitchen destroy
-----> Starting Test Kitchen (v3.6.0)
-----> Destroying <default-ubuntu-2004>...
    ==> default: Destroying VM and associated drives...
    Vagrant instance <default-ubuntu-2004> destroyed.
    Finished destroying <default-ubuntu-2004> (0m18.33s).
-----> Test Kitchen is finished. (0m24.08s)
```

5. Upload the Cookbook to Chef Server:

Push the validated cookbook to the Chef server:

```
knife cookbook upload motd
```

```

C:\Users\Administrator\Downloads\chef-starter\chef-repo\cookbooks>knife cookbook upload motd
INFO: Using configuration from C:/Users/Administrator/Downloads/chef-starter/chef-repo/.chef/knife.rb
Uploading motd [1.0.1]
INFO: Validating ruby files
INFO: Validating templates
INFO: Syntax OK
INFO: Saving motd
INFO: Uploading files
INFO: Uploading C:/Users/Administrator/AppData/Local/Temp/d20241120-8980-j4tf20/motd/chefignore (checksum hex = 03485640b005eb1083c76518764053dd) to https://
hosted-chef-production-cookbooks.s3-external-1.amazonaws.com:443/organization-205d51beaa25de254812efc9396014fb/checksum-03485640b005eb1083c76518764053dd?X-Am
z-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIA5K3LHHXZDSX75XAF%2F20241120%2Fus-east-1%2F%3Faws4_request&X-Amz-Date=20241120T084721Z&X-Amz-Expires=900&X
-Amz-SignedHeaders=content-md5%3Bcontent-type%3Bhost&X-Amz-Signature=a95343d0956dee11d1d74d321f657c0fd1ea1cd0eaba56860fc3caeb4e8a5a94
INFO: Uploading C:/Users/Administrator/AppData/Local/Temp/d20241120-8980-j4tf20/motd/recipes/knife_status.rb (checksum hex = 13da717b4b7ffe89f7b889c18eca17de
) to https://hosted-chef-production-cookbooks.s3-external-1.amazonaws.com:443/organization-205d51beaa25de254812efc9396014fb/checksum-13da717b4b7ffe89f7b889c1
8eca17de?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIA5K3LHHXZDSX75XAF%2F20241120%2Fus-east-1%2F%3Faws4_request&X-Amz-Date=20241120T084721Z&X-Amz-
Expires=900&X-Amz-SignedHeaders=content-md5%3Bcontent-type%3Bhost&X-Amz-Signature=bb8ef49c4ab510370079ed7347fc0f215235c15d8c8ca2fd3814b861be5eb2ed
INFO: Uploading C:/Users/Administrator/AppData/Local/Temp/d20241120-8980-j4tf20/motd/templates/default/cow.erb (checksum hex = 1f60b07e068ef445002699dd1bddd
60) to https://hosted-chef-production-cookbooks.s3-external-1.amazonaws.com:443/organization-205d51beaa25de254812efc9396014fb/checksum-1f60b07e068ef445002699
dd1bddd60?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIA5K3LHHXZDSX75XAF%2F20241120%2Fus-east-1%2F%3Faws4_request&X-Amz-Date=20241120T084721Z&X-Am
z-Expires=900&X-Amz-SignedHeaders=content-md5%3Bcontent-type%3Bhost&X-Amz-Signature=5620b02076c91faf384b52d25aaed4b5ac4311218ec8a6b857cd900fd654181
INFO: Uploading C:/Users/Administrator/AppData/Local/Temp/d20241120-8980-j4tf20/motd/libraries/matchers.rb (checksum hex = 2494d3375359d0aea48ef4b52c52c0a9)
to https://hosted-chef-production-cookbooks.s3-external-1.amazonaws.com:443/organization-205d51beaa25de254812efc9396014fb/checksum-2494d3375359d0aea48ef4b52c
52c0a9?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIA5K3LHHXZDSX75XAF%2F20241120%2Fus-east-1%2F%3Faws4_request&X-Amz-Date=20241120T084721Z&X-Amz-Ex
pires=900&X-Amz-SignedHeaders=content-md5%3Bcontent-type%3Bhost&X-Amz-Signature=07450654471e6e5525d0fc28fc3107bbd2917aea662d0cf6b6df021947dad789
INFO: Uploading C:/Users/Administrator/AppData/Local/Temp/d20241120-8980-j4tf20/motd/recipes/cow.rb (checksum hex = 3209a530c8a97afa4991e570999a88d7) to http
s://hosted-chef-production-cookbooks.s3-external-1.amazonaws.com:443/organization-205d51beaa25de254812efc9396014fb/checksum-3209a530c8a97afa4991e570999a88d7?
X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIA5K3LHHXZDSX75XAF%2F20241120%2Fus-east-1%2F%3Faws4_request&X-Amz-Date=20241120T084721Z&X-Amz-Expires=9
00&X-Amz-SignedHeaders=content-md5%3Bcontent-type%3Bhost&X-Amz-Signature=d716737acd1c754ca14c80d833833115279da11a7b3d5810cd1bdcf0ed900af

```

References

1. **Chef Supermarket Documentation:** <https://supermarket.chef.io>
2. **Test Kitchen Documentation:** <https://kitchen.ci/>
3. **Chef InSpec Documentation:** <https://www.chef.io/products/chef-inspec>
4. **Chef Official Documentation:** <https://docs.chef.io/>