# 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                             aminator
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
```
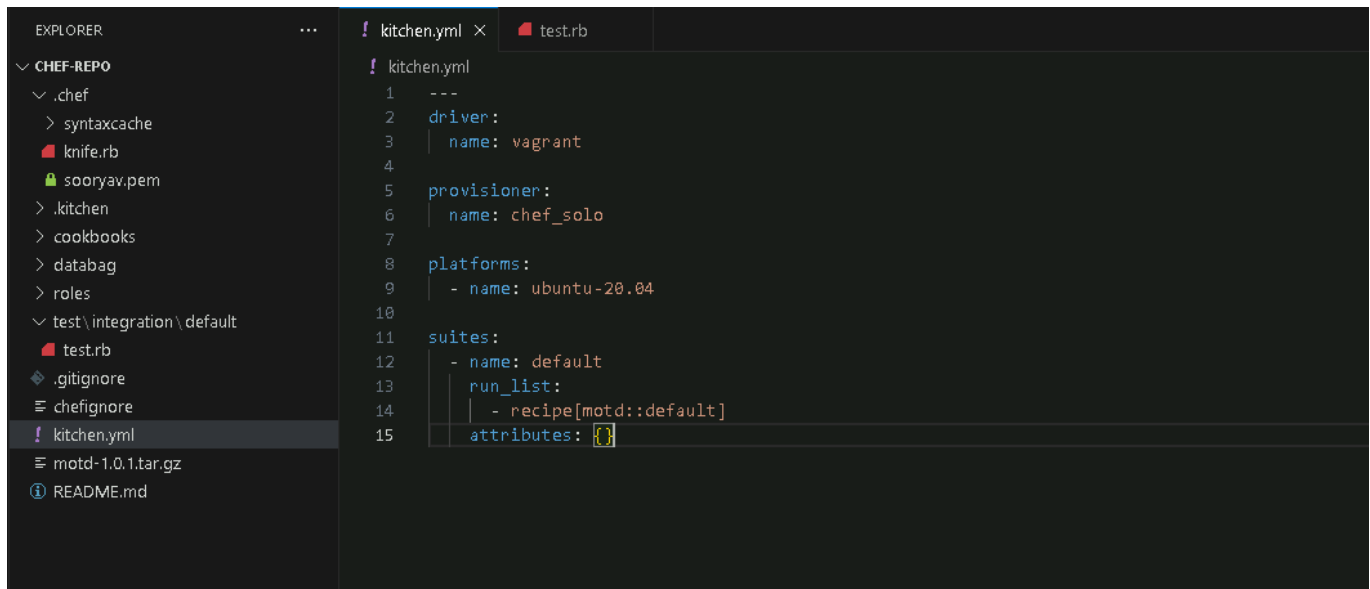
### 2. Edit `.kitchen.yml`:
Update the file to include the **motd** cookbook:

```yaml
---
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%2Fs3%2Faws4_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%2Fs3%2Faws4_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 = 1f69b07e068ef445002699dd1bdddc
60) to https://hosted-chef-production-cookbooks.s3-external-1.amazonaws.com:443/organization-205d51beaa25de254812efc9396014fb/checksum-1f69b07e068ef445002699
dd1bdddc60?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIA5K3LHHXZDSX75XAF%2F20241120%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20241120T084721Z&X-Am
z-Expires=900&X-Amz-SignedHeaders=content-md5%3Bcontent-type%3Bhost&X-Amz-Signature=5629b82976c91faf384b52d25aaeed4b5ac4311218ec8a6b857cd900fd654181
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%2Fs3%2Faws4_request&X-Amz-Date=20241120T084721Z&X-Amz-Ex
pires=900&X-Amz-SignedHeaders=content-md5%3Bcontent-type%3Bhost&X-Amz-Signature=0745055a471e6e5525d0fc28fc3107bbd2917aea662d0cf6b6df021947dad789
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%2Fs3%2Faws4_request&X-Amz-Date=20241120T084721Z&X-Amz-Expires=9
00&X-Amz-SignedHeaders=content-md5%3Bcontent-type%3Bhost&X-Amz-Signature=d716737acd1c754ca14c80d833833115279da11a7b3d5810cd1bdfcf0ed906af
```

# 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/