

Chef Automation on AWS

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Part 1:

In this lab three things were implemented:

1.Setup Chef Workstation

2.Configure a chef resource through a basic Chef recipe

3.Configure run list and run the cookbook.

Step1: Setup EC2 instance t2.micro and install Chef Workstation.

a) Launch Ubuntu 16.04 instance(t2.micro)

Launch instance wizard | EC2 M... x

← → ↻ <https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard> ☆ 🔍 ⚙️

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)
An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace, or you can select one of your own AMIs.

Cancel and Exit

Search: ubuntu

Quick Start (5)

My AMIs (0)

AWS Marketplace (228)

Community AMIs (33829)

Free tier only ⓘ

1 of 5 AMIs

AMI ID	AMI Name	Architecture	Root Device Type	Virtualization Type	ENA Enabled	Free Tier Eligible
ami-0a313d6098716f372	Ubuntu Server 18.04 LTS (HVM), SSD Volume Type	64-bit (x86)	ebs	hvm	Yes	Yes
ami-01ac7d9c1179d7b74	Ubuntu Server 18.04 LTS (HVM), EBS General Purpose (SSD) Volume Type	64-bit (x86)	ebs	hvm	Yes	Yes
ami-036ede09922dad9b	Ubuntu Server 16.04 LTS (HVM), SSD Volume Type	64-bit (x86)	ebs	hvm	Yes	Yes
ami-05a36d3b9aa4a17ac	Ubuntu Server 14.04 LTS (HVM), SSD Volume Type	64-bit (x86)	ebs	hvm	Yes	Yes
ami-66ca1419	Ubuntu Server 16.04 LTS (HVM) with SQL Server 2017 Standard	64-bit (x86)	ebs	hvm	Yes	No

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b) Create Security settings and keep open ports :22(SSH) 80(HTTP) and 443(HTTPS) for inbound traffic.

Launch instance wizard | EC2 Management Console

Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group ☐ Select an existing security group

Security group name:

Description:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
HTTP	TCP	80	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
HTTPS	TCP	443	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop

Add Rule

Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel Previous **Review and Launch**

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c) Instance is up and running now

Instances | EC2 Management Console

Services Resource Groups

Launch Instance Connect Actions

search: i-0ea6a88fc0ecb09f7 Add filter

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs
	i-0ea6a88fc0ecb09f7	t2.micro	us-east-1b	pending	Initializing	None	ec2-34-238-121-150.co...	34.238.121.150	-

Instance: i-0ea6a88fc0ecb09f7 Public DNS: ec2-34-238-121-150.compute-1.amazonaws.com

Description Status Checks Monitoring Tags

Instance ID: i-0ea6a88fc0ecb09f7
Instance state: pending
Instance type: t2.micro
Elastic IPs: -

Public DNS (IPv4): ec2-34-238-121-150.compute-1.amazonaws.com
IPv4 Public IP: 34.238.121.150
IPv6 IPs: -
Private DNS: ip-172-31-89-42.ec2.internal

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d) Connect to the instance and install Chef Workstation

```
ubuntu@ip-172-31-89-42: ~  
  
This is often the latter case due to running a prerelease or RC version of chef  
or a gem version which was only pushed to rubygems and not omnitruck.  
  
You may be able to set your knife[:bootstrap_version] to the most recent stable  
release of Chef to fix this problem (or the most recent stable major version num  
ber).  
  
In order to test the version parameter, adventurous users may take the Metadata  
URL  
below and modify the '&v=<number>' parameter until you successfully get a URL th  
at  
does not 404 (e.g. via curl or wget). You should be able to use '&v=11' or '&v=  
12'  
successfully.  
  
If you cannot fix this problem by setting the bootstrap_version, it probably mea  
ns  
that ubuntu is not supported.  
  
Metadata URL: https://omnitruck.chef.io/stable/chef-workstation/metadata?v=0.2.4  
.1&p=ubuntu&pv=16.04&m=x86_64  
ubuntu@ip-172-31-89-42:~$ curl https://omnitruck.chef.io/install.sh |sudo bash -s -- -P chef-workstation -c stable  
-v 0.2.53  
  
libfontconfig.so.1 => not found  
You can then launch the App by running 'chef-workstation-app'.  
The App will then be available in the system tray.  
  
Thank you for installing Chef Workstation!  
You can find some tips on getting started at https://chef.sh/  
  
ubuntu@ip-172-31-89-42:~$
```

Step2 : Create a Chef recipe

a. (Create and Configure an MOTD file(Message of the Day))

```
ubuntu@ip-172-31-89-42: ~/chef-repo  
GNU nano 2.5.3 File: hello.rb Modified  
file '/temp/motd' do  
  content 'hello world'  
end  
  
ubuntu@ip-172-31-89-42: ~/chef-repo  
ubuntu@ip-172-31-89-42:~$ mkdir ~/chef-repo  
ubuntu@ip-172-31-89-42:~$ cd ~/chef-repo  
ubuntu@ip-172-31-89-42:~/chef-repo$ sudo nano hello.rb  
ubuntu@ip-172-31-89-42:~/chef-repo$ sudo chmod u+x hello.rb  
ubuntu@ip-172-31-89-42:~/chef-repo$ sudo chef-client --local-mode hello.rb
```

```
ubuntu@ip-172-31-89-42: /tmp
ubuntu@ip-172-31-89-42:/tmp$ sudo chmod u+x hello.rb
ubuntu@ip-172-31-89-42:/tmp$ sudo chef-client --local-mode hello.rb
[2019-05-08T07:44:11+00:00] WARN: No config file found or specified on command line, using command line options.
[2019-05-08T07:44:11+00:00] WARN: No cookbooks directory found at or above current directory. Assuming /tmp.
Starting Chef Client, version 14.10.9
resolving cookbooks for run list: []
Synchronizing Cookbooks:
Installing Cookbook Gems:
Compiling Cookbooks...
[2019-05-08T07:44:13+00:00] WARN: Node ip-172-31-89-42.ec2.internal has an empty run list.
Converging 1 resources
Recipe: @recipe_files::/tmp/hello.rb
  * file[/tmp/motd] action create
    - create new file /tmp/motd
    - update content in file /tmp/motd from none to b94d27
    --- /tmp/motd      2019-05-08 07:44:13.016435140 +0000
    +++ /tmp/.chef-motd20190508-3862-17rov34      2019-05-08 07:44:13.016435140 +0000
    @@ -1 +1,2 @@
    +hello world

Running handlers:
Running handlers complete
Chef Client finished, 1/1 resources updated in 01 seconds
ubuntu@ip-172-31-89-42:/tmp$

ubuntu@ip-172-31-89-42:/tmp$ more /tmp/motd
hello world
ubuntu@ip-172-31-89-42:/tmp$
```

b.Update MOTD contents and run chef-client again

```
ubuntu@ip-172-31-89-42: /tmp
ubuntu@ip-172-31-89-42:/tmp$ more /tmp/motd
hello world
ubuntu@ip-172-31-89-42:/tmp$ sudo chef-client --local-mode hello.rb
[2019-05-08T07:47:11+00:00] WARN: No config file found or specified on command line, using command line options.
[2019-05-08T07:47:11+00:00] WARN: No cookbooks directory found at or above current directory. Assuming /tmp.
Starting Chef Client, version 14.10.9
resolving cookbooks for run list: []
Synchronizing Cookbooks:
Installing Cookbook Gems:
Compiling Cookbooks...
[2019-05-08T07:47:13+00:00] WARN: Node ip-172-31-89-42.ec2.internal has an empty run list.
Converging 1 resources
Recipe: @recipe_files::/tmp/hello.rb
  * file[/tmp/motd] action create (up to date)

Running handlers:
Running handlers complete
Chef Client finished, 0/1 resources updated in 01 seconds
ubuntu@ip-172-31-89-42:/tmp$
```

Updated the content

```
ubuntu@ip-172-31-89-42: /tmp
GNU nano 2.5.3      File: hello.rb

file '/tmp/motd' do
  content 'hello chef'
end
```

Run Chef-client again and you can see Chef has applied the action:

```
ubuntu@ip-172-31-89-42: /tmp
ubuntu@ip-172-31-89-42:/tmp$ sudo chmod u+x hello.rb
ubuntu@ip-172-31-89-42:/tmp$ sudo chef-client --local-mode hello.rb
[2019-05-08T07:49:30+00:00] WARN: No config file found or specified on command line, using command line options.
[2019-05-08T07:49:30+00:00] WARN: No cookbooks directory found at or above current directory. Assuming /tmp.
Starting Chef Client, version 14.10.9
resolving cookbooks for run list: []
Synchronizing Cookbooks:
Installing Cookbook Gems:
Compiling Cookbooks...
[2019-05-08T07:49:31+00:00] WARN: Node ip-172-31-89-42.ec2.internal has an empty run list.
Converging 1 resources
Recipe: @recipe files::/tmp/hello.rb
  * file[/tmp/motd] action create
    - update content in file /tmp/motd from b94d27 to c38c60
    --- /tmp/motd      2019-05-08 07:44:13.016435140 +0000
    +++ /tmp/.chef-motd20190508-4411-9g83d9  2019-05-08 07:49:31.467459434 +0000
    @@ -1,2 +1,2 @@
    -hello world
    +hello chef

Running handlers:
Running handlers complete
Chef Client finished, 1/1 resources updated in 01 seconds
ubuntu@ip-172-31-89-42:/tmp$
```

Ensure MOTD contents are not changed by anyone:

```
ubuntu@ip-172-31-89-42: /tmp
ubuntu@ip-172-31-89-42:/tmp$ sudo echo 'hello robots' >/tmp/motd
-bash: /tmp/motd: Permission denied
ubuntu@ip-172-31-89-42:/tmp$
```

c.Delete MOTD file

```
ubuntu@ip-172-31-89-42: /tmp
GNU nano 2.5.3 File: goodbye.rb Modified
file '/tmp/motd' do
  action:delete
end
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page M-^ First Line
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Linter ^_ Go To Line ^V Next Page M-^ Last Line
```

```
ubuntu@ip-172-31-89-42: /tmp
ubuntu@ip-172-31-89-42:/tmp$ sudo echo 'hello robots' >/tmp/motd
-bash: /tmp/motd: Permission denied
ubuntu@ip-172-31-89-42:/tmp$ sudo nano goodbye.rb
ubuntu@ip-172-31-89-42:/tmp$ sudo chmod u+x goodbye.rb
ubuntu@ip-172-31-89-42:/tmp$ sudo chef-client --local-mode goodbye.rb
[2019-05-08T08:24:28+00:00] WARN: No config file found or specified on command line, using command line options.
[2019-05-08T08:24:28+00:00] WARN: No cookbooks directory found at or above current directory. Assuming /tmp.
Starting Chef Client, version 14.10.9
resolving cookbooks for run list: []
Synchronizing Cookbooks:
Installing Cookbook Gems:
Compiling Cookbooks...
[2019-05-08T08:24:30+00:00] WARN: Node ip-172-31-89-42.ec2.internal has an empty run list.
Converging 1 resources
Recipe: @recipe_files::/tmp/goodbye.rb
  * file[/tmp/motd] action delete
    - delete file /tmp/motd

Running handlers:
Running handlers complete
Chef Client finished, 1/1 resources updated in 01 seconds
ubuntu@ip-172-31-89-42:/tmp$
```

Ensure MOTD file is deleted:

```
ubuntu@ip-172-31-89-42: /tmp
ubuntu@ip-172-31-89-42:/tmp$ more /tmp/motd
more: stat of /tmp/motd failed: No such file or directory
ubuntu@ip-172-31-89-42:/tmp$
```

Step 3: Configure a Package and a Service

Install Apache package and update the cache everyday:

```
ubuntu@ip-172-31-89-42: ~/chef-repo
GNU nano 2.5.3 File: webserver.rb Modified
apt_update 'Update the apt cache daily' do
  frequency 86_400
  action:periodic
end
package 'apache2'
```

Run chef-client

```
ubuntu@ip-172-31-89-42: ~/chef-repo
ubuntu@ip-172-31-89-42:~/chef-repo$ sudo nano webserver.rb
ubuntu@ip-172-31-89-42:~/chef-repo$ sudo chmod u+x webserver.rb
ubuntu@ip-172-31-89-42:~/chef-repo$ sudo chef-client --local-mode webserver.rb
[2019-05-08T08:42:03+00:00] WARN: No config file found or specified on command line, using command line options.
[2019-05-08T08:42:03+00:00] WARN: No cookbooks directory found at or above current directory. Assuming /home/ubuntu/chef-repo.
Starting Chef Client, version 14.10.9
resolving cookbooks for run list: []
Synchronizing Cookbooks:
Installing Cookbook Gems:
Compiling Cookbooks...
[2019-05-08T08:42:05+00:00] WARN: Node ip-172-31-89-42.ec2.internal has an empty run list.
Converging 2 resources
Recipe: @recipe_files::/home/ubuntu/chef-repo/webserver.rb
  * apt_update[Update the apt cache daily] action periodic (up to date)
  * apt_package[apache2] action install
    - install version 2.4.18-2ubuntu3.10 of package apache2

Running handlers:
Running handlers complete
Chef Client finished, 1/2 resources updated in 15 seconds
ubuntu@ip-172-31-89-42:~/chef-repo$
```

Run a static website on Apache server

```

apt_update 'Update the apt cache daily' do
  frequency 86_400
  action:periodic
end

package 'apache2'

service 'apache2' do
  supports status:true
  action [:enable,:start]
end

file '/var/www/html/index.html' do
  content '<html>
<body>
<h1>I love Mizzou</h1>
<img src ="https://news.missouri.edu/wp-content/uploads/2013/02/20130221_winter_feature_105.jpg">
</img>
</body>'
end

```

Running Chef-client:

```

-      </p>
-    </div>
-
-
-
-    </div>
-  </div>
-  <div class="validator">
-    </div>
- </body>
+<html>
+<body>
+<h1>I love Mizzou</h1>
+<img src ="https://news.missouri.edu/wp-content/uploads/2013/02/20130221_winter_feature_105.jpg">
+</img>
+</body>
+</html>
-

```

Running handlers:

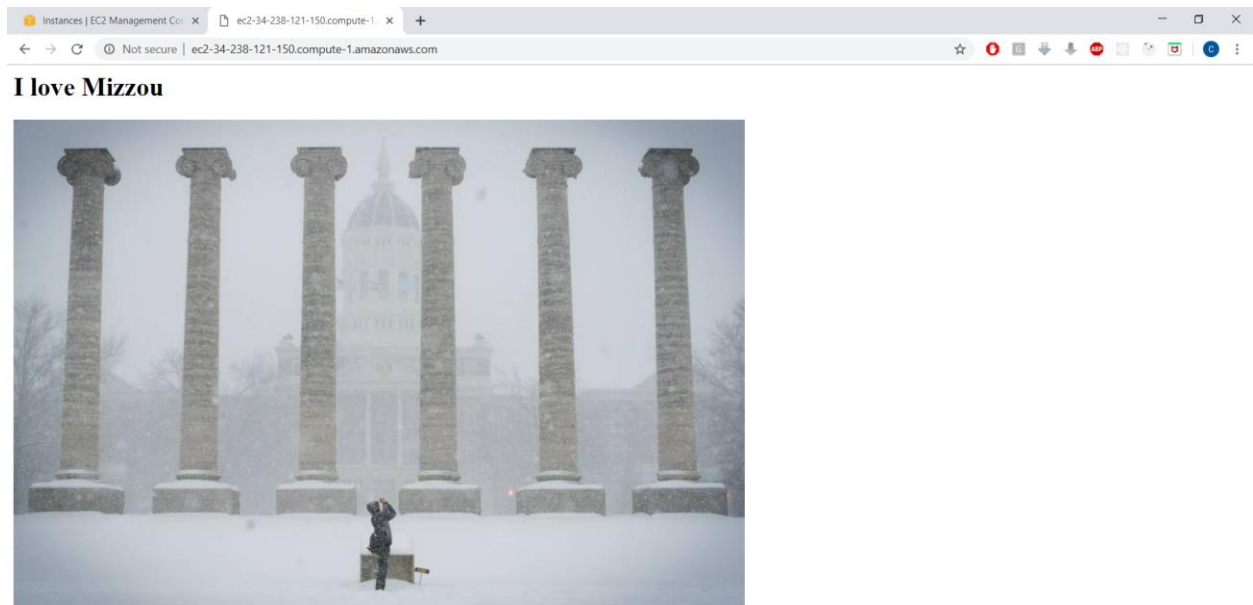
Running handlers complete

Chef Client finished, 1/5 resources updated in 01 seconds

ubuntu@ip-172-31-89-42: ~/chef-repo\$

```
ubuntu@ip-172-31-89-42: ~/chef-repo
ubuntu@ip-172-31-89-42:~/chef-repo$ curl localhost
<html>
<body>
<h1>I love Mizzou</h1>
<img src ="https://news.missouri.edu/wp-content/uploads/2013/02/20130221_winter_feature_105.jpg">
</img>
</body>
</html>ubuntu@ip-172-31-89-42:~/chef-repo$
```

Confirm that static website is running:



Step 4: Create Cookbook to manage web sever recipe:

```
ubuntu@ip-172-31-89-42: ~/chef-repo
ubuntu@ip-172-31-89-42:~/chef-repo$ chef generate cookbook cookbooks/learn_chef_apache2
Generating cookbook learn_chef_apache2
- Ensuring correct cookbook file content
- Committing cookbook files to git
- Ensuring delivery configuration
- Ensuring correct delivery build cookbook content
- Adding delivery configuration to feature branch
- Adding build cookbook to feature branch
- Merging delivery content feature branch to master

Your cookbook is ready. Type `cd cookbooks/learn_chef_apache2` to enter it.

There are several commands you can run to get started locally developing and testing your cookbook.
Type `delivery local --help` to see a full list.

Why not start by writing a test? Tests for the default recipe are stored at:

test/integration/default/default_test.rb

If you'd prefer to dive right in, the default recipe can be found at:

recipes/default.rb
ubuntu@ip-172-31-89-42:~/chef-repo$
```


Install tree utility:

```
ubuntu@ip-172-31-89-42: ~/chef-repo
ubuntu@ip-172-31-89-42:~/chef-repo$ sudo apt-get install tree
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  tree
0 upgraded, 1 newly installed, 0 to remove and 76 not upgraded.
Need to get 40.6 kB of archives.
After this operation, 138 kB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu xenial/universe amd64 tree amd64 1.7.0-3 [40.6 kB]
Fetched 40.6 kB in 0s (0 B/s)
Selecting previously unselected package tree.
(Reading database ... 95880 files and directories currently installed.)
Preparing to unpack .../tree_1.7.0-3_amd64.deb ...
Unpacking tree (1.7.0-3) ...
Processing triggers for man-db (2.7.5-1) ...
Setting up tree (1.7.0-3) ...
ubuntu@ip-172-31-89-42:~/chef-repo$
```

```
ubuntu@ip-172-31-89-42: ~/chef-repo
Setting up tree (1.7.0-3) ...
ubuntu@ip-172-31-89-42:~/chef-repo$ tree cookbooks
cookbooks
├── learn_chef_apache2
│   ├── Berksfile
│   ├── CHANGELOG.md
│   ├── cheffignore
│   ├── LICENSE
│   ├── metadata.rb
│   ├── README.md
│   ├── recipes
│   │   └── default.rb
│   ├── spec
│   │   ├── spec_helper.rb
│   │   ├── unit
│   │   │   └── recipes
│   │   │       └── default_spec.rb
│   └── test
│       ├── integration
│       │   └── default
│       │       └── default_test.rb
└── 8 directories, 10 files
ubuntu@ip-172-31-89-42:~/chef-repo$
```

Create a new Chef template and create a new static webpage inside index.html.erb

```
ubuntu@ip-172-31-89-42: ~/chef-repo
├── recipes
│   └── default.rb
├── spec
│   ├── spec_helper.rb
│   └── unit
│       └── recipes
│           └── default_spec.rb
└── test
    ├── integration
    │   └── default
    │       └── default_test.rb
8 directories, 10 files
ubuntu@ip-172-31-89-42:~/chef-repo$ cd templates
-bash: cd: templates: No such file or directory
ubuntu@ip-172-31-89-42:~/chef-repo$ chef generate template cookbooks/learn_chef_apache2 index.html
Recipe: code_generator::template
* directory[cookbooks/learn_chef_apache2/templates] action create
- create new directory cookbooks/learn_chef_apache2/templates
* template[cookbooks/learn_chef_apache2/templates/index.html.erb] action create
- create new file cookbooks/learn_chef_apache2/templates/index.html.erb
- update content in file cookbooks/learn_chef_apache2/templates/index.html.erb from none to e3b0c4
(diff output suppressed by config)
ubuntu@ip-172-31-89-42:~/chef-repo$
```

```
ubuntu@ip-172-31-89-42: ~/chef-repo/cookbooks/learn_chef_apache2/templates
* template[cookbooks/learn_chef_apache2/templates/index.html.erb] action create
- create new file cookbooks/learn_chef_apache2/templates/index.html.erb
- update content in file cookbooks/learn_chef_apache2/templates/index.html.erb from none to e3b0c4
(diff output suppressed by config)
ubuntu@ip-172-31-89-42:~/chef-repo$ tree cookbooks
cookbooks
├── learn_chef_apache2
│   ├── Berksfile
│   ├── CHANGELOG.md
│   ├── cheffignore
│   ├── LICENSE
│   ├── metadata.rb
│   ├── README.md
│   ├── recipes
│   │   └── default.rb
│   ├── spec
│   │   ├── spec_helper.rb
│   │   └── unit
│   │       └── recipes
│   │           └── default_spec.rb
│   └── templates
│       └── index.html.erb
└── test
    └── integration
```

Update recipe to reference the HTML template inside default.rb:

```
ubuntu@ip-172-31-89-42: ~/chef-repo/cookbooks/learn_chef_apache2/recipes
GNU nano 2.5.3 File: default.rb Modified
#
# Cookbook:: learn_chef_apache2
# Recipe:: default
#
# Copyright:: 2019, The Authors, All Rights Reserved.
apt_update 'Update the apt cache daily' do
  frequency 86_400
  action:periodic
end
package 'apache2'
service 'apache2' do
  supports status:true
  action[:enable,:start]
end
template '/var/www/html/index.html' do
  source 'index.html.erb'
end
```

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Linter ^_ Go To Line ^V Next Page

Run the cookbook:

After adding new content to index.html.erb cookbook was run again

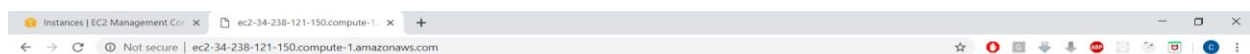
```
ubuntu@ip-172-31-89-42: ~/chef-repo/cookbooks/learn_chef_apache2/templates
ubuntu@ip-172-31-89-42:~/chef-repo/cookbooks/learn_chef_apache2/recipes$ cd ..
ubuntu@ip-172-31-89-42:~/chef-repo/cookbooks/learn_chef_apache2$ cd templates
ubuntu@ip-172-31-89-42:~/chef-repo/cookbooks/learn_chef_apache2/templates$ sudo nano index.html.erb
Use "fg" to return to nano.

[4]+  Stopped                  sudo nano index.html.erb
ubuntu@ip-172-31-89-42:~/chef-repo/cookbooks/learn_chef_apache2/templates$ ls
index.html.erb
ubuntu@ip-172-31-89-42:~/chef-repo/cookbooks/learn_chef_apache2/templates$ sudo nano index.html.erb
ubuntu@ip-172-31-89-42:~/chef-repo/cookbooks/learn_chef_apache2/templates$ sudo chmod u+x index.html.erb
ubuntu@ip-172-31-89-42:~/chef-repo/cookbooks/learn_chef_apache2/templates$ sudo chef-client --local-mode --runlist learn_chef_apache2
[2019-05-08T10:44:09+00:00] WARN: No config file found or specified on command line, using command line options.
Starting Chef Client, version 14.10.9
resolving cookbooks for run list: ["learn_chef_apache2"]
Synchronizing Cookbooks:
- learn_chef_apache2 (0.1.0)
Installing Cookbook Gems:
Compiling Cookbooks...
Converging 4 resources
Recipe: learn_chef_apache2::default
 * apt_update[Update the apt cache daily] action periodic (up to date)
 * apt_package[apache2] action install (up to date)
 * service[apache2] action enable (up to date)
 * service[apache2] action start (up to date)
```

```
ubuntu@ip-172-31-89-42: ~/chef-repo/cookbooks/learn_chef_apache2/templates
Compiling Cookbooks...
Converging 4 resources
Recipe: learn_chef_apache2::default
 * apt_update[Update the apt cache daily] action periodic (up to date)
 * apt_package[apache2] action install (up to date)
 * service[apache2] action enable (up to date)
 * service[apache2] action start (up to date)
 * template[/var/www/html/index.html] action create
  -- update content in file /var/www/html/index.html from 43dc5c to 4446ca
  --- /var/www/html/index.html      2019-05-08 10:42:49.796322840 +0000
  +++ /var/www/html/.chef-index20190508-20003-infdkk9.html    2019-05-08 10:44:10.939431536 +0000
  @@ -1,6 +1,6 @@
  <html>
  <body>
  <h1>I love Mizzou</h1>
  +<h1>Beautiful Lake of Ozarks</h1>
  <img src='https://storage.googleapis.com/idx-acnt-gs.ihouseprd.com/AR405440/file_manager/Fall-Lake-of-the-Ozarks-2017.jpg'>
  </img>
  </body>

Running handlers:
Running handlers complete
Chef Client finished, 1/5 resources updated in 01 seconds
ubuntu@ip-172-31-89-42:~/chef-repo/cookbooks/learn_chef_apache2/templates$
```

This rendered the new updated content I set in index.html.erb



Beautiful Lake of Ozarks



Conclusion:

- 1.Installed a Chef workstation
- 2.Created a recipe and deployed it on AWS Ec2
- 3.Create Cookbook ,managed recipe through a run list and deployed the cookbook