The Chef Infra Server

A Hub for Configuration Data

1W

CHEF

Objectives

After completing this module, you should be able to

- Describe the purpose of the Chef Infra Server
- Clone cookbooks from a GitHub repository
- Connect your local workstation (laptop) to a Chef Infra Server
- Bootstrap two nodes

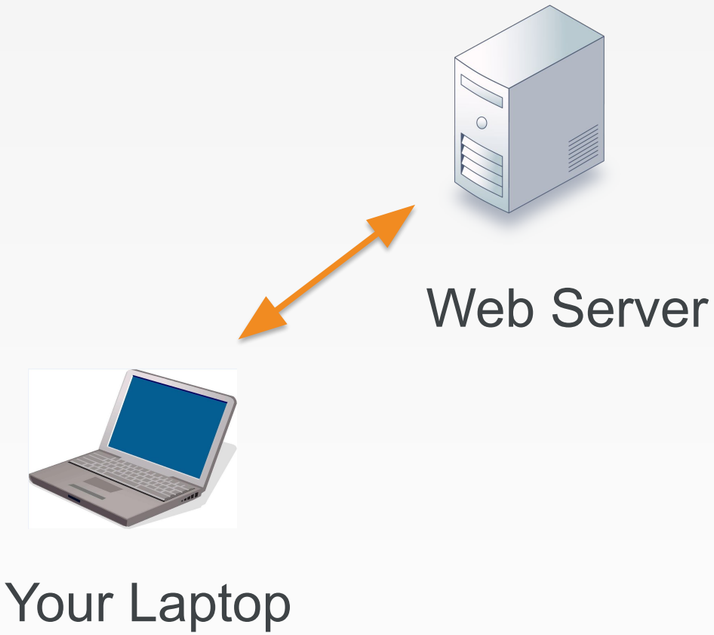
Managing an Additional System Without Chef Infra Server

To manage another system, you would need to:

1. Log into and provision a new node within your company or appropriate cloud provider with the appropriate access to login to administer the system.
2. Install the Chef tools.
3. Transfer the cookbook(s) to the new node.
4. Run chef-client on the new node to apply the cookbook's recipe(s).

Managing Additional Systems

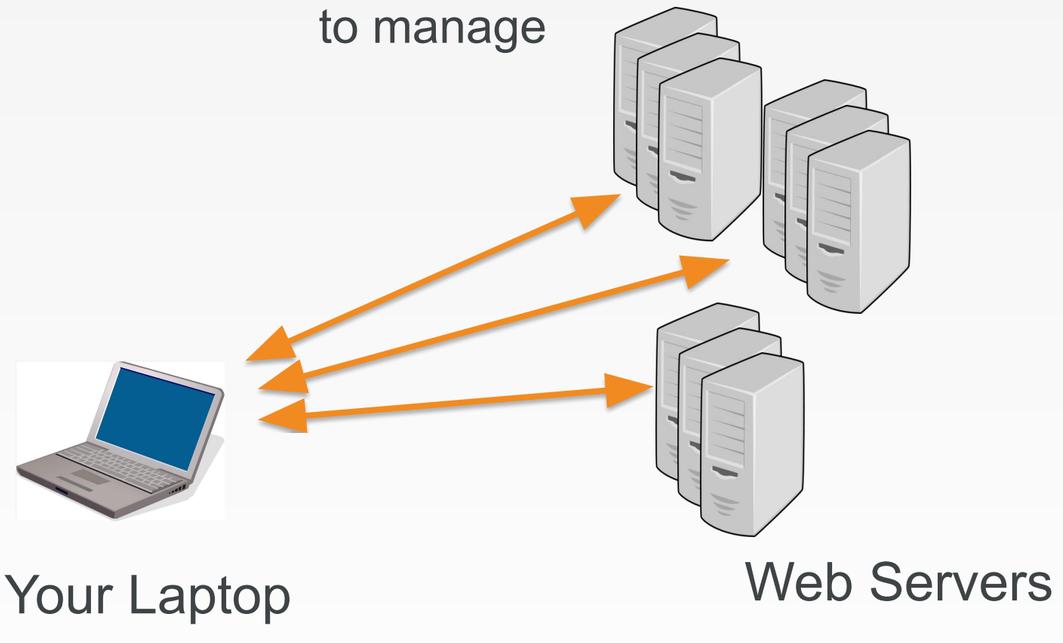
Now



Future

More complex

to manage



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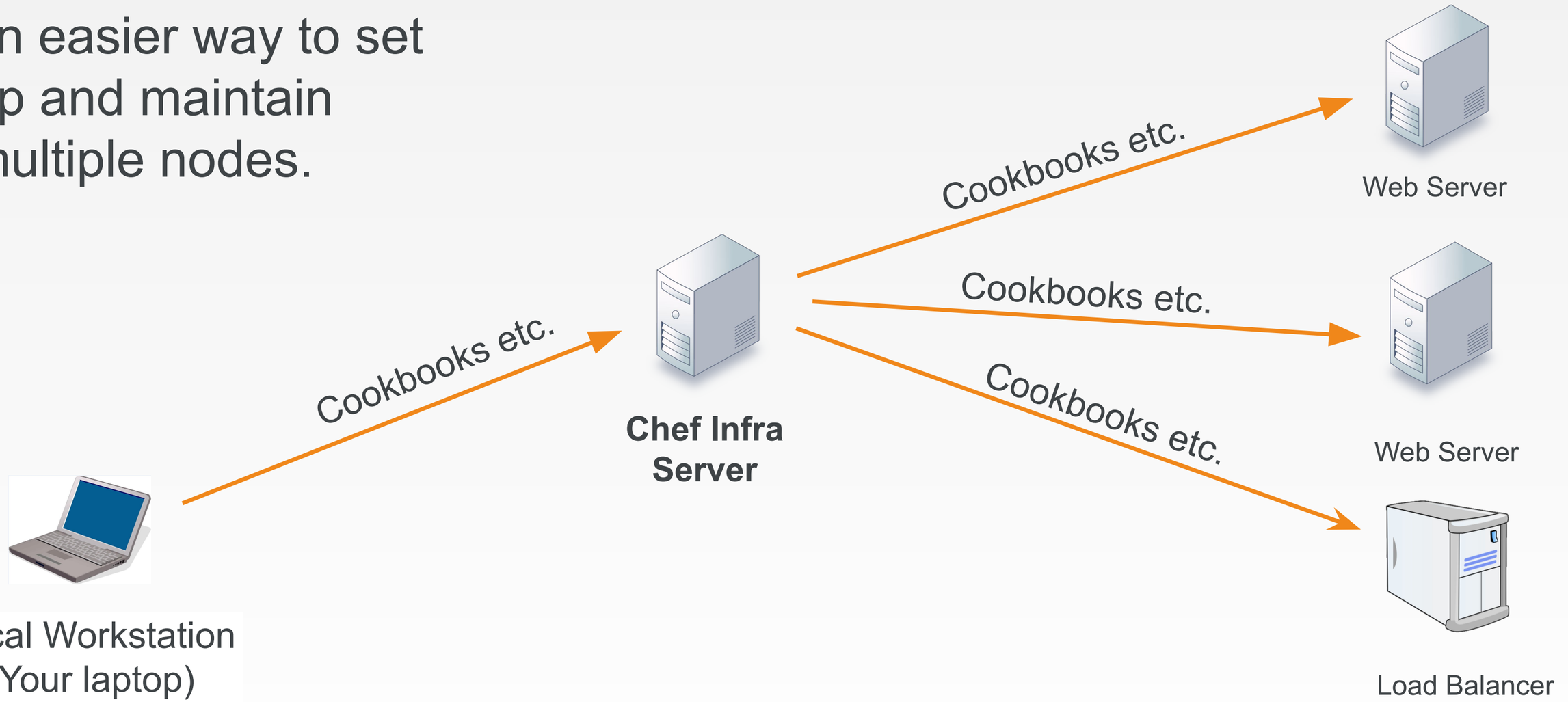
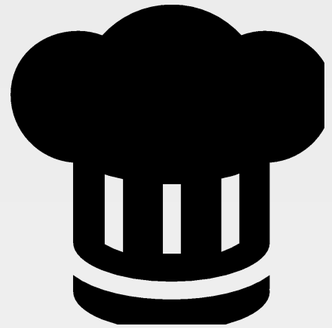
The Chef Infra Server

An easier way to set up and maintain multiple nodes.



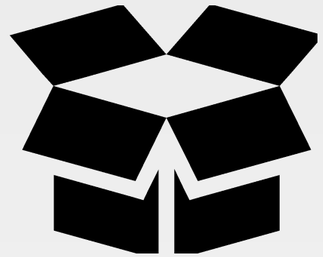


GL: Download Cookbooks and Bootstrap Nodes

We'll download copies of the cookbooks we wrote previously in this course and test our connection to Chef Infra Server

Objective:

- ❑ Download and copy the required cookbooks to your local machine
- ❑ Confirm that you can connect to the Chef Infra Server
- ❑ Bootstrap two nodes

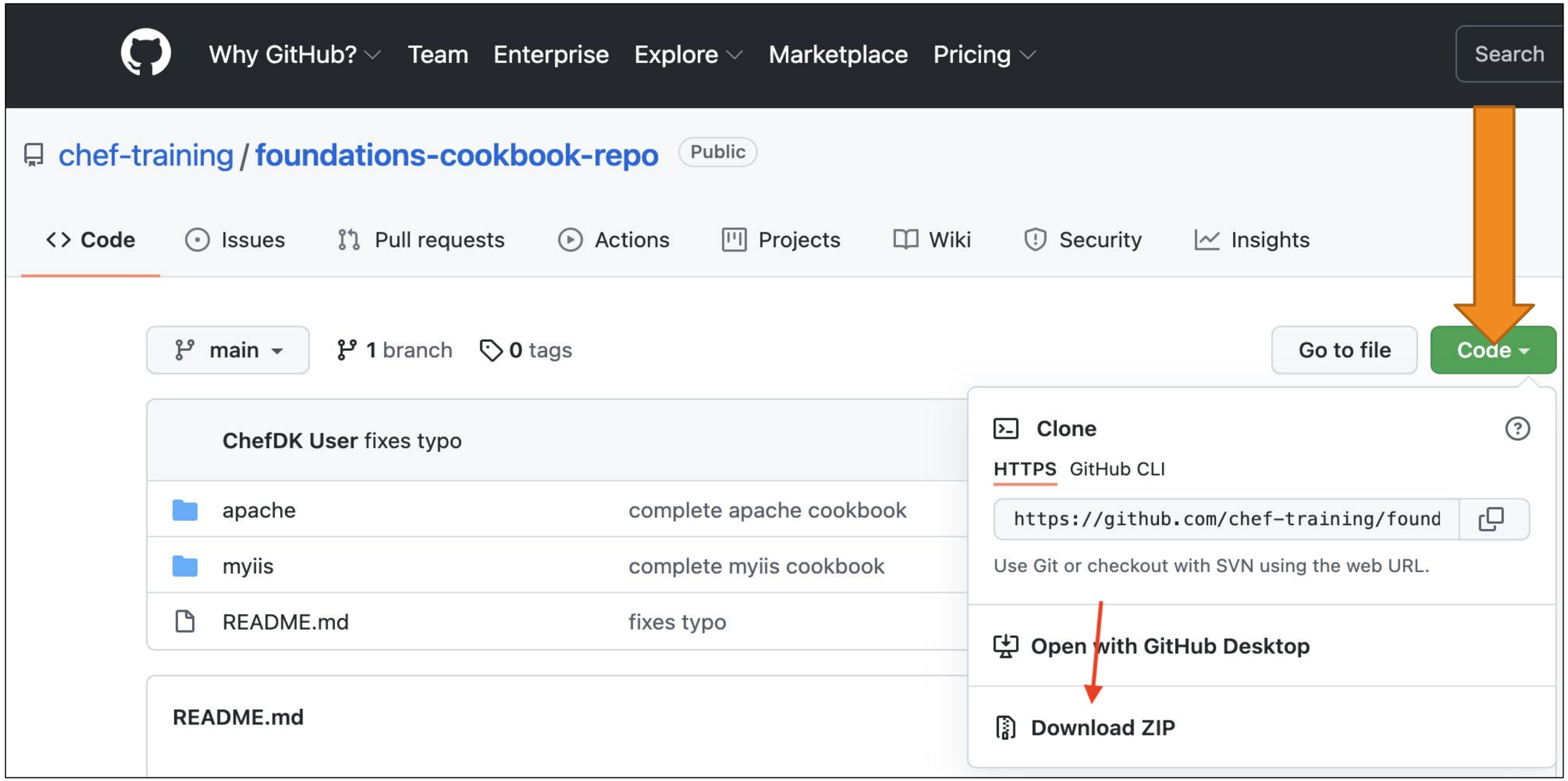


GL: Code Repository

This GitHub repository contains copies of the work that you have done up to this point for the ‘myiis’ and ‘apache’ cookbooks:

https://github.com/chef-training/foundations-cookbook-repo

GL: Download the Cookbooks Repository



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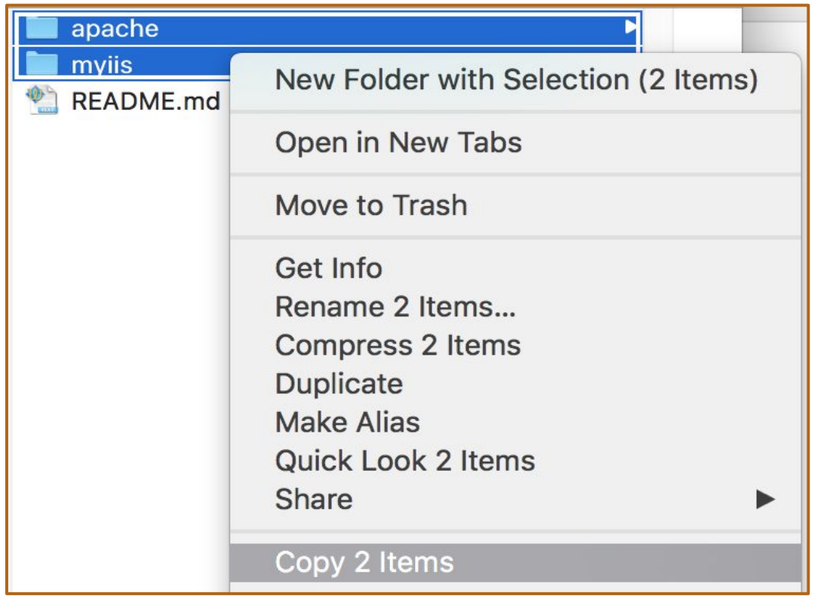
GL: Move Cookbooks to the Cookbooks Folder

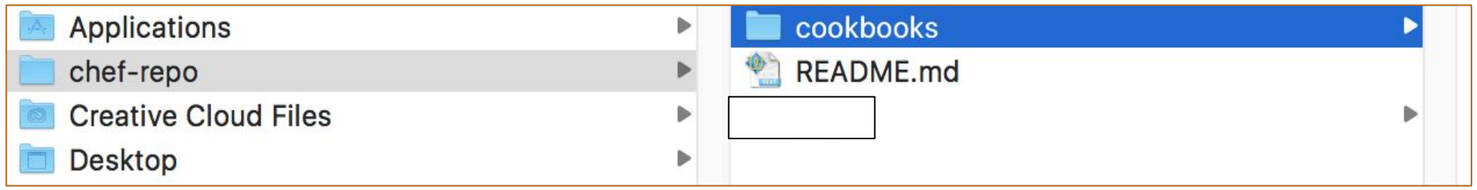
Steps:

1. Open the downloaded **foundations-cookbook-repo** zip file and then copy **only** the **apache** and **myiis** folders.
2. Paste the **apache** and **myiis** folders into the **cookbooks** folder of your chef-repo directory in your local laptop.

foundations-cookbooks-repo-master



chef-repo/cookbooks



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GL: Navigate to the cookbooks Directory

```
$ cd ~/chef-repo/cookbooks
$ ls
```

```
Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d----          8/31/2021    9:23 AM                apache
d----          8/31/2021    5:53 AM                example
d----          8/31/2021    9:23 AM                myiis
-a---          8/31/2021    5:53 AM           3185 README.md
```


CHEF

GL: Navigate to the 'myiis' Directory

```
$ cd ~/chef-repo/cookbooks/myiis
$ ls -l (or dir if using Powershell)
```

```
Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d----          8/31/2021   9:23 AM                .delivery
d----          8/31/2021   9:23 AM                recipes
d----          8/31/2021   9:23 AM                spec
d----          8/31/2021   9:23 AM                templates
d----          8/31/2021   9:23 AM                test
-a---          8/31/2021   9:23 AM            196 .gitignore
-a---          8/31/2021   9:23 AM            148 CHANGELOG.md
-a---          8/31/2021   9:23 AM           1176 chefignore
-a---          8/31/2021   9:23 AM            741 kitchen.yml
-a---          8/31/2021   9:23 AM             70 LICENSE
-a---          8/31/2021   9:23 AM            717 metadata.rb
-a---          8/31/2021   9:23 AM            504 Policyfile.rb
```


CHEF

GL: Navigate to the 'apache' Directory

```
$ cd ~/chef-repo/cookbooks/apache
$ ls -l (or dir if using Powershell)
```

```
d----          8/31/2021   9:23 AM                .delivery
d----          8/31/2021   9:23 AM                recipes
d----          8/31/2021   9:23 AM                spec
d----          8/31/2021   9:23 AM                templates
d----          8/31/2021   9:23 AM                test
-a---          8/31/2021   9:23 AM            196 .gitignore
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-a---          8/31/2021   9:23 AM             70 LICENSE
-a---          8/31/2021   9:23 AM            722 metadata.rb
-a---          8/31/2021   9:23 AM            507 Policyfile.rb
-a---          8/31/2021   9:23 AM             54 README.md
```

We will upload these cookbooks to Chef Server later in this course via a Policyfile.

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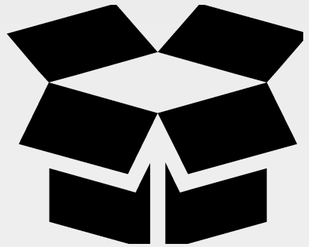
CONCEPT



knife

knife is a command-line tool that provides an interface between a local chef-repo and the Chef Infra Server.

GL: Run 'knife node --help'

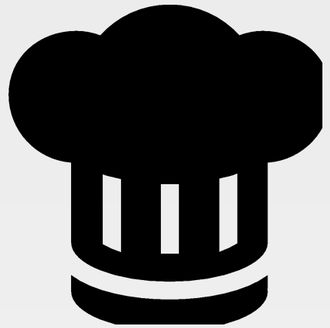
```
$ knife node --help
** NODE COMMANDS **
knife node bulk delete REGEX (options)
knife node create NODE (options)
knife node delete NODE (options)
knife node edit NODE (options)
knife node environment set NODE ENVIRONMENT
knife node from file FILE (options)
knife node list (options)
knife node run_list add [NODE] [ENTRY[,ENTRY]] (options)
knife node run_list remove [NODE] [ENTRY[,ENTRY]] (options)
knife node run_list set NODE ENTRIES (options)
knife node show NODE (options)
```


CHEF

GL: Run 'knife node list'

```
$ knife node list
```

We will use knife for a number of tasks in a moment.



GL: Download Cookbooks and Bootstrap Nodes

We'll download copies of the cookbooks we wrote previously in this course and test our connection to Chef Infra Server

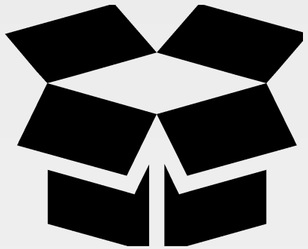
Objective:

- ✔ Download and copy the required cookbooks to your local machine
- ✔ Confirm that you can connect to the Chef Infra Server.
- ❑ Bootstrap two nodes

GL: Bootstrap Your Nodes

In this lab you will use a new Windows instance and bootstrap it as a managed node. You will do the same to Day 1 Linux node as well.

You'll need the FQDN or Public IP of those instances to perform this lab.



Bootstrapping a Node

Often, the node you are bootstrapping may not have Chef installed. It may also not have details of where the Chef Infra Server is located or the credentials to securely talk to that Server.

To add those credentials we can **bootstrap** that node to install all those components.

GL: Change to the chef-repo

```
$ cd ~/chef-repo
```


CHEF™

GL: Run 'knife bootstrap –help'

```
$ knife bootstrap --help
```

```
knife bootstrap FQDN (options)
        --bootstrap-curl-options OPTIONS
                                     Add options to curl when install chef-client
        --bootstrap-install-command COMMANDS
                                     Custom command to install chef-client
        --bootstrap-no-proxy [NO_PROXY_URL|NO_PROXY_IP]
                                     Do not proxy locations for the node being
bootstrapped; this option is used interna
lly by Opscode
        --bootstrap-proxy PROXY_URL  The proxy server for the node being bootstrapped
    -t TEMPLATE,                     Bootstrap Chef using a built-in or custom
template. Set to the full path of an erb
template or use one of the built-in templates.
```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GL: Bootstrap Your Windows Node

```
> knife bootstrap -o winrm IPADDRESS -U Administrator -P PWD -N iis_web
```

```
Connecting to 34.195.38.226
Creating new client for iis_web
Creating new node for iis_web
Bootstrap
 [34.195.                                    tin  "C:\che
…
[34.195.38.226] C:\Users\Administrator\Documents>chef-client -c c:/chef/client.rb -j
c:/chef/first-boot.json
 [34.195.38.226] +------------------------------
 [34.195.38.226] âœ” 2 product licenses accepted
 [34.195.38.226] +------------------------------
 [34.195.38.226] Starting Chef Infra Client, version 17.4.38
 [[34.195.38.226] [2020-07-22T20:49:28+00:00] WARN: Node iis_web has an empty run
list.
…
 [34.195.38.226] Running handlers complete
 [34.195.38.226] Chef Infra Client finished, 0/0 resources updated in 30 seconds
```

Fully Qualified Domain Name or IP

user name

password

node name

The licenses were accepted because we ran this command from our laptops which already have accepted the licenses.

CHEF

GL: Run 'knife node list'

```
$ knife node list
```

```
iis_web
```

GL: View More Information About Your Node

```
$ knife node show iis_web
```

```
Node Name:   iis_web
Environment: _default
FQDN:        WIN-DQFQCUFHDCP.ec2.internal
IP:          3.88.178.251
Run List:
Roles:
Recipes:
Platform:    windows 6.3.9600
Tags:
```


CHEF

Chef Automate WebGUI View: iis_web

- ❑ Sign In to Chef Automate.
- ❑ Click on Infrastructure tab and Go to Chef Infra Servers (Under Left Navigation Panel)
- ❑ Click on Listed Chef Infra Server - 'cheftraining'
- ❑ Click on the organization - 'studentxx'
- ❑ Click on Nodes tab to view iis_web.

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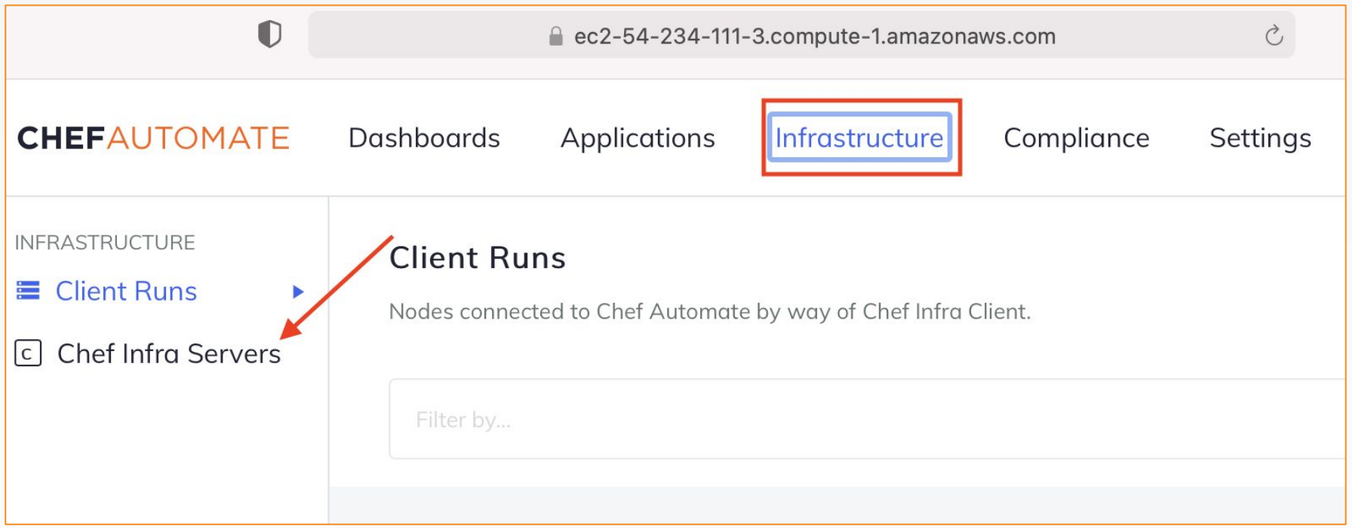

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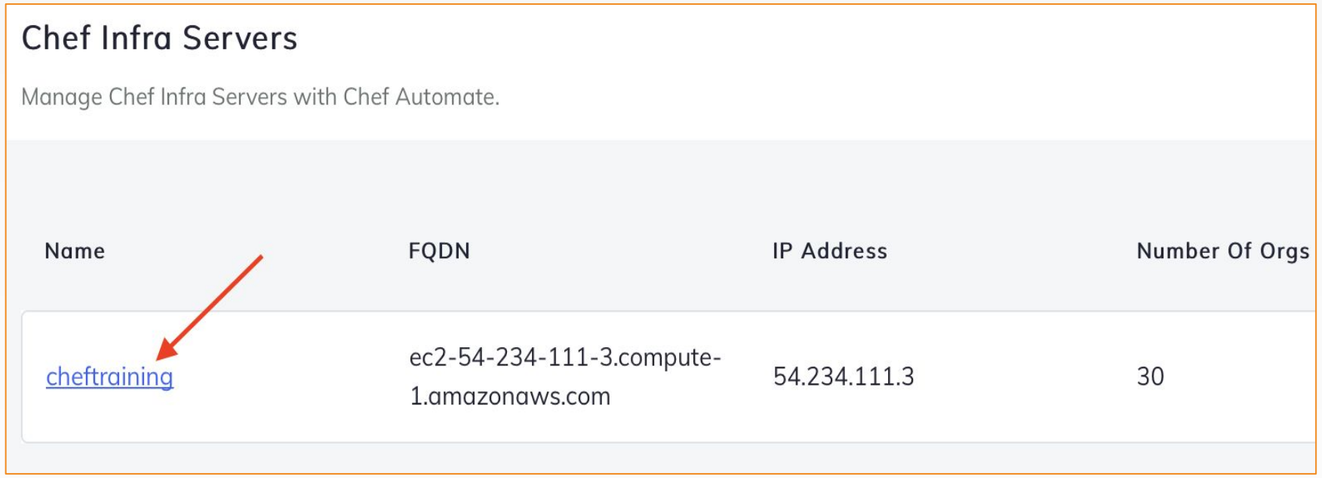

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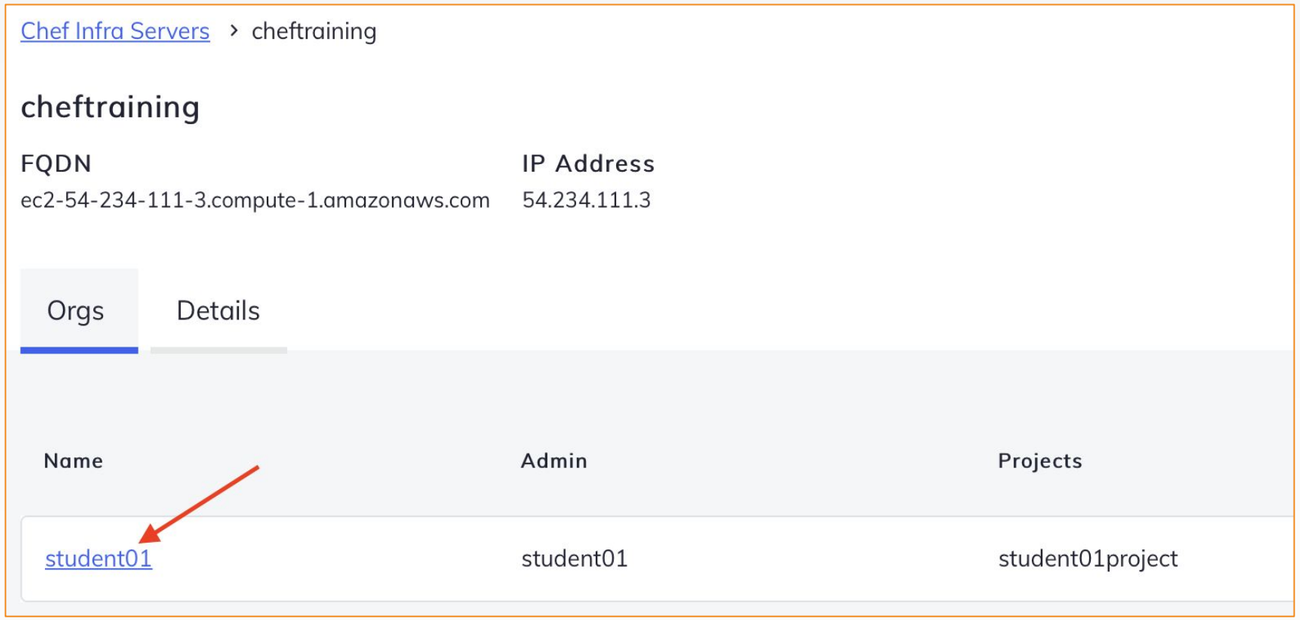

CHEF

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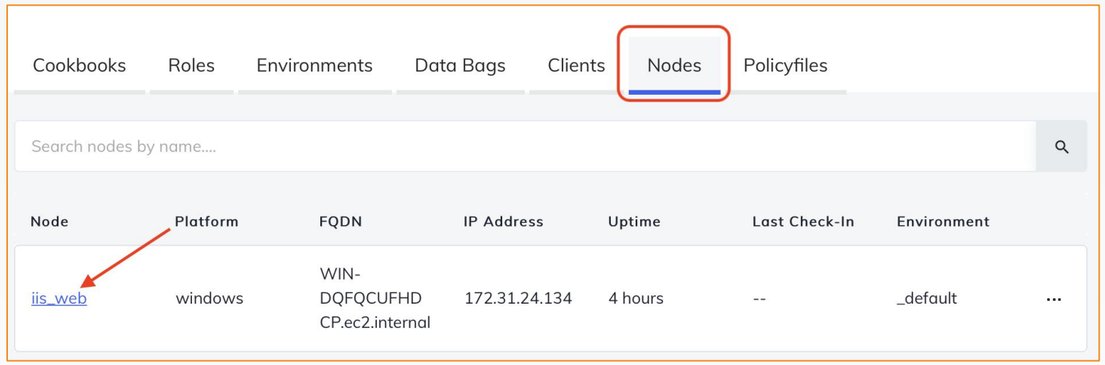


GL: Bootstrap Your Day 1 Linux Node

```
> knife bootstrap IP -U USER -P PWD --sudo -N apache_web
```

```
Bootstrapping 18.206.64.141
 [18.206.64.141] -----> Existing Chef Infra Client installation detected
 [18.206.64.141] Starting the first Chef Infra Client Client run...
 [18.206.                                ra Client, version 17.3.48
 [18.206.                                ks                      []
 [18.206.                                kbo
 [18.206.64.141] Installing Cookbook Gems:
Compiling Cookbooks...
[2020-02-10T21:53:19+00:00] WARN: Node apache_web has an empty run list.
 [18.206.64.141] Converging 0 resources
 [18.206.64.141]
Running handlers:
Running handlers complete
Chef Infra Client finished, 0/0 resources updated in 03 seconds
```

Fully Qualified Domain Name or IP

user name

password

node name

CHEF

GL: Run 'knife node list'

```
$ knife node list
```

```
apache_web
iis_web
```

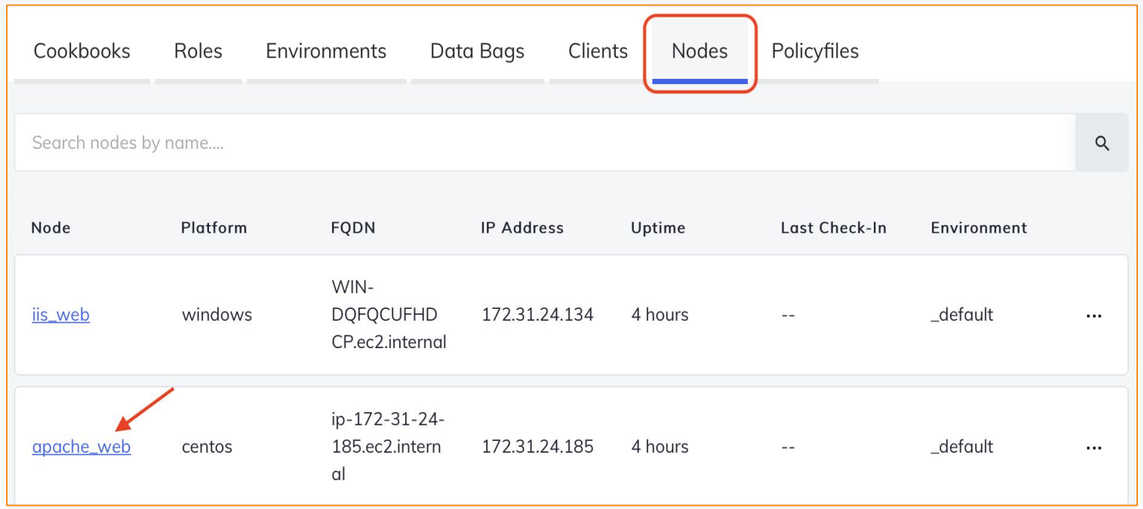
GL: View More Information About Your Node

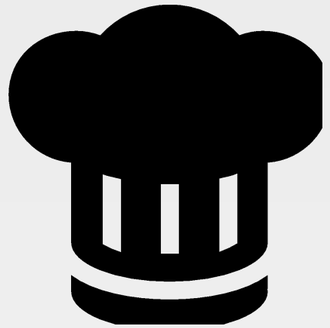
```
$ knife node show apache_web
```

```
Node Name:   apache_web
Environment: _default
FQDN:        ip-172-31-62-68.ec2.internal
IP:          18.206.64.141
Run List:
Roles:
Recipes:
Platform:    centos 7.6.1810
Tags:
```


CHEF

Verify The 'apache_web' Node Creation





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Review Questions

1. What is the benefit of storing cookbooks in a central repository?

2. What is the primary tool for communicating with the Chef Infra Server?

3. How did you add a node to your organization?

Q&A

What questions can you help you answer?

- Chef Infra Server
- knife
- Bootstrapping Nodes

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