Roles

Giving Your Nodes a Role
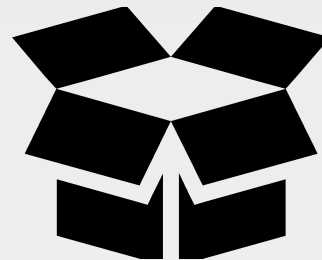
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Objectives

After completing this module, you should be able to

➢ Assign roles to nodes so you can better describe them and configure them in a similar manner.
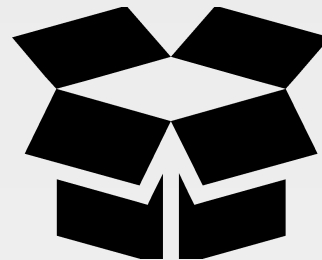
Roles

A role describes a run list of recipes that are executed on the node.

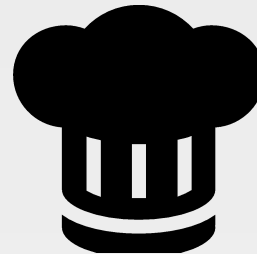A role may also define new defaults or overrides for existing cookbook attribute values.

Roles

When you assign a role to a node you do so in its run list.

This allows you to configure many nodes in a similar fashion.

Roles for Everyone

We will give our nodes a role to better describe them and so we can configure them in a similar manner.

Objective:

- ❑ Give our load balancer node a "load_balancer" Role
- ❑ Give our web nodes a "web" Role

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What Can 'knife role' Do?

```
$ cd ~/chef-repo

$ knife role --help
```

```
** ROLE COMMANDS **
knife role bulk delete REGEX (options)
knife role create ROLE (options)
knife role delete ROLE (options)
knife role edit ROLE (options)
knife role env_run_list add [ROLE] [ENVIRONMENT] [ENTRY[,ENTRY]] (options)
knife role env_run_list clear [ROLE] [ENVIRONMENT]
knife role env_run_list remove [ROLE] [ENVIRONMENT] [ENTRIES]
knife role env_run_list replace [ROLE] [ENVIRONMENT] [OLD_ENTRY]
[NEW_ENTRY]
knife role env_run_list set [ROLE] [ENVIRONMENT] [ENTRIES]
knife role from file FILE [FILE] (options)
```
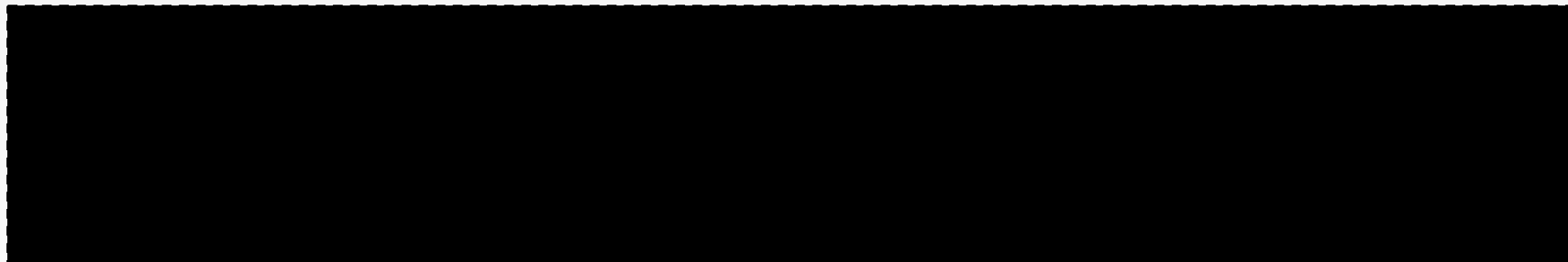
Run 'knife role list'

```
$ knife role list
```
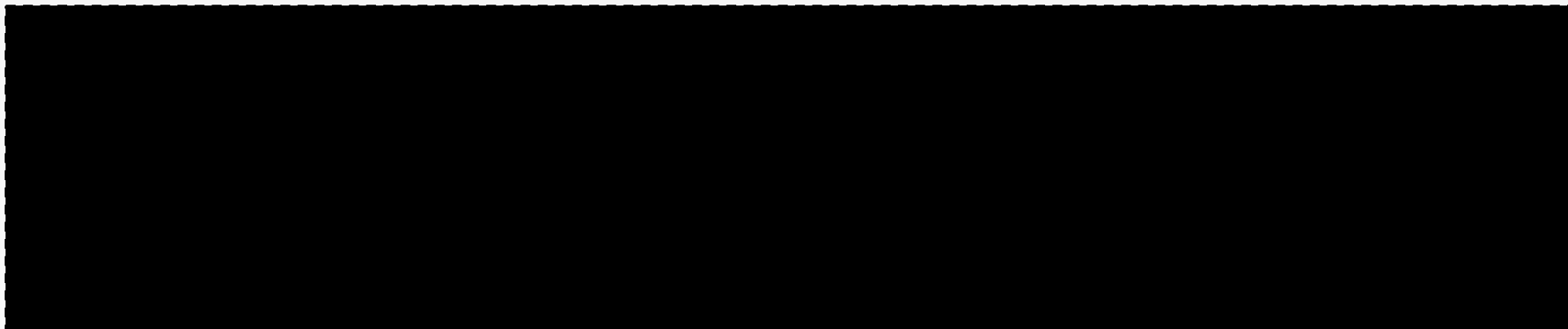
Create a Roles Directory

```
$ mkdir roles
```

Create the load_balancer.rb

`~/chef-repo/roles/web.rb`

```
name 'web'
description 'Web Server Role'
run_list 'recipe[workstation]','recipe[apache]'
```

Upload it to the Chef Server

```
$ knife role from file roles/web.rb
```

```
Updated Role web!
```

Validate Chef Server Received It

```
$ knife role list
```

```
web
```

View Details of the Role

```
$ knife role show web
```

```
chef_type:            role
default_attributes:
description:          Web Server Role
env_run_lists:
json_class:           Chef::Role
name:                 web
override_attributes:
run_list:
  recipe[workstation]
  recipe[apache]
```

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)
```

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Set the Web Role to web1

```
$ knife node run_list set web1 "role[web]"
```

```
web1:
  run_list: role[web]
```

Lab: Verify the New Node

```
$ knife node show web1
```

```
Node Name:    web1
Environment: _default
FQDN:         web1
IP:           192.168.10.43
Run List:     role[web]
Roles:
Recipes:      workstation, workstation::default, apache, apache::default,
workstation::setup, workstation::vagrant, apache::server
Platform:     centos 7.2.1511
Tags:
```

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Login to web1

```
$ vagrant ssh web1
```

```
Last login: Sat Dec 31 02:59:27 2016 from 10.0.2.2
[vagrant@web1 ~]$
```

Run chef-client to converge web1

```
[vagrant@web1 ~]$ sudo chef-client
```

```
Starting Chef Client, version 12.17.44
resolving cookbooks for run list: ["workstation", "apache"]
Synchronizing Cookbooks:
  - apache (0.2.1)
  - workstation (0.2.1)
Installing Cookbook Gems:
Compiling Cookbooks...
Converging 8 resources....
```

Return to your Workstation

```
[vagrant@web1 ~]$ exit
```

```
logout
Connection to 127.0.0.1 closed.
```

Lab: Verify the New Node

```
$ knife node show web1
```

```
Node Name:    web1
Environment: _default
FQDN:        web1
IP:          192.168.10.43
Run List:    role[web]
Roles:       web
Recipes:     workstation, workstation::default, apache, apache::default,
workstation::setup, workstation::vagrant, apache::server
Platform:    centos 7.2.1511
Tags:
```

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Set the Web Role to web2

```
$ knife node run_list set web2 "role[web]"
```

```
web2:
  run_list: role[web]
```

Lab: Verify the New Node

```
$ knife node show web2
```

```
Node Name:    web2
Environment: _default
FQDN:         web2
IP:           192.168.10.44
Run List:     role[web]
Roles:
Recipes:      workstation, workstation::default, apache, apache::default,
workstation::setup, workstation::vagrant, apache::server
Platform:     centos 7.2.1511
Tags:
```

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Login to web2

```
$ vagrant ssh web2
```

```
Last login: Sat Dec 31 02:59:27 2016 from 10.0.2.2
[vagrant@web2 ~]$
```

Run chef-client to converge web2

```
[vagrant@web2 ~]$ sudo chef-client
```

```
Starting Chef Client, version 12.17.44
resolving cookbooks for run list: ["workstation", "apache"]
Synchronizing Cookbooks:
  - apache (0.2.1)
  - workstation (0.2.1)
Installing Cookbook Gems:
Compiling Cookbooks...
Converging 8 resources....
```

Return to your Workstation

```
[vagrant@web2 ~]$ exit
```

```
logout
Connection to 127.0.0.1 closed.
```
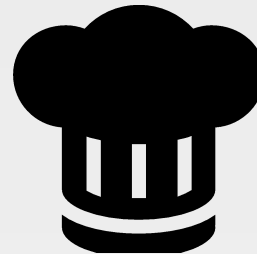
Lab: Verify the New Node

```
$ knife node show web2
```

```
Node Name:    web2
Environment: _default
FQDN:         web2
IP:           192.168.10.44
Run List:     role[web]
Roles:        web
Recipes:      workstation, workstation::default, apache, apache::default,
workstation::setup, workstation::vagrant, apache::server
Platform:     centos 7.2.1511
Tags:
```

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Roles for Everyone

We will give our nodes a role to better describe them and so we can configure them in a similar manner.

Objective:

✓ Give our web nodes a "web" Role
  Give our load balancer node a "load_balancer" Role

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