

Environments

Using Environments to Reflect Organization Patterns and Workflow

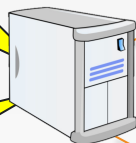
Objectives

After completing this module, you should be able to

- Create a production environment
- Deploy web1 and load-balancer nodes to the production environment

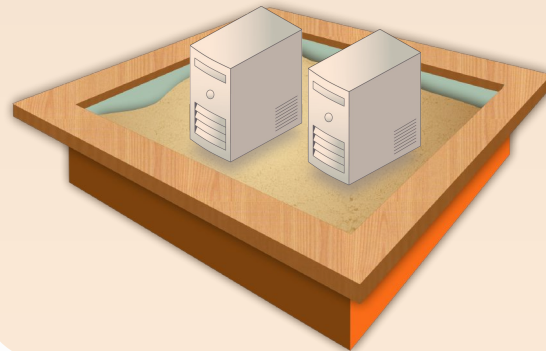
Keeping Your Infrastructure Current

Changing Needs
Changing Software
Growing Organization
Increased Website Popularity



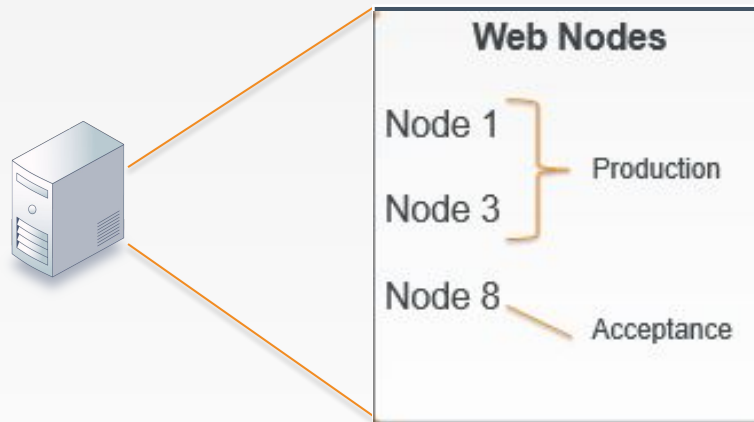
Production

Acceptance



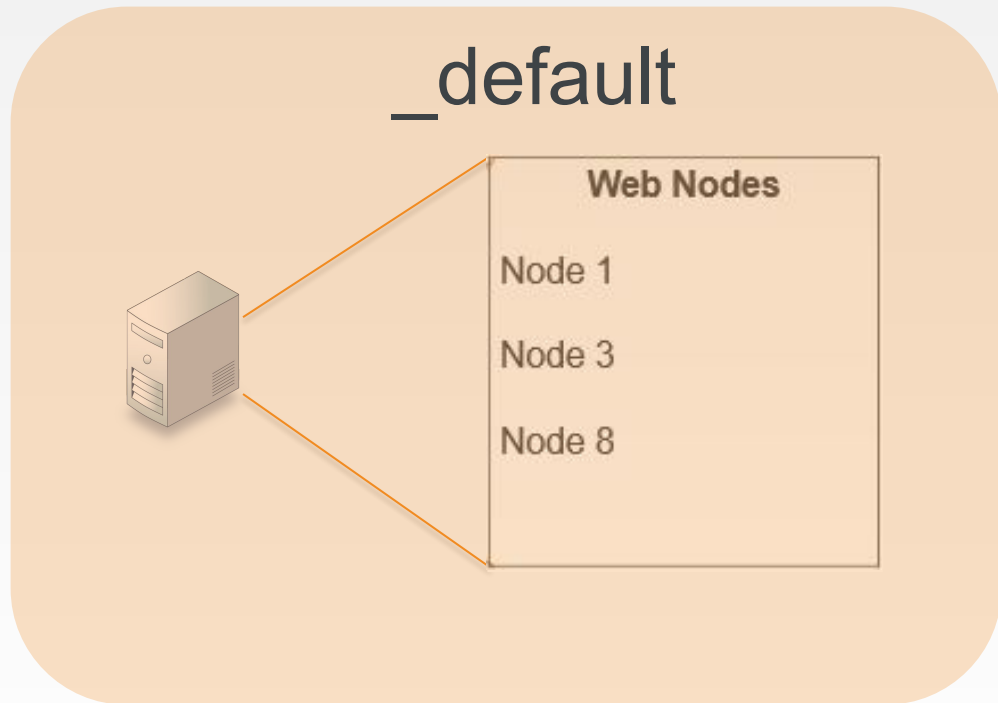
Environments

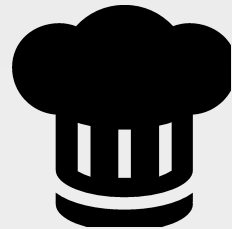
Environments can define different functions of nodes that live on the same system.



Environments

Every organization or infrastructure starts with the `_default` environment.





Production

Let's create a reliable environment for our nodes.

Objective:

- ☐ Deploy Our Site to Production

Using 'knife environment --help'



```
$ cd ~/chef-repo  
$ knife environment --help
```

```
** ENVIRONMENT COMMANDS **  
knife environment compare [ENVIRONMENT..] (options)  
knife environment create ENVIRONMENT (options)  
knife environment delete ENVIRONMENT (options)  
knife environment edit ENVIRONMENT (options)  
knife environment from file FILE [FILE..] (options)  
knife environment list (options)  
knife environment show ENVIRONMENT (options)
```

View List of Defined Environments



```
$ knife environment list
```

```
_default
```


Viewing the _default Environment



```
$ knife environment show _default
```

```
chef_type:          environment
cookbook_versions:
default_attributes:
description:        The default Chef environment
json_class:         Chef::Environment
name:               _default
override_attributes:
```

Searching All of Our Nodes



```
$ knife search node "*:*
```

```
3 items found
```

```
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:
```

Create an environments Directory



```
$ mkdir environments
```



Create a New Environment File

```
~/chef-repo/environments/production.rb
```

```
name 'production'  
description 'Where we run production code'  
  
cookbook 'apache', '= 0.2.1'  
cookbook 'myhaproxy', '= 1.0.0'
```

Upload the production.rb File



```
$ knife environment from file production.rb
```

```
Updated Environment production
```

View the List of Environments



```
$ knife environment list
```

```
_default  
production
```

View the Production Environment



```
$ knife environment show production
```

```
chef_type:          environment
cookbook_versions:
  apache:           = 0.2.1
  myhaproxy:         = 1.0.0
default_attributes:
description:         Where we run production code
json_class:          Chef::Environment
name:                production
override_attributes:
```

Viewing '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)
```


Viewing 'knife node set --help'



```
$ knife node environment set --help
```

```
knife node environment set NODE ENVIRONMENT
```

```
-s, --server-url URL           Chef Server URL
--chef-zero-host HOST          Host to start chef-zero on
--chef-zero-port PORT          Port (or port range) to start chef-zero on. Port
ranges like 1000,1010 or 8889-9999 will try all given ports until one works.
-k, --key KEY                  API Client Key
--[no-]color                  Use colored output, defaults to false on Windows,
true otherwise
-c, --config CONFIG           The configuration file to use
--defaults                    Accept default values for all questions
-d, --disable-editing         Do not open EDITOR, just accept the data as is
-e, --editor EDITOR           Set the editor to use for interactive commands
```

Using 'knife environment node set'



```
$ knife node environment set web1 production
```

```
web1:  
  chef_environment: production
```

Lab: Verify the New Node



```
$ knife node show web1
```

```
Node Name:    web1
```

```
Environment:  production
```

```
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:
```

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.
```

Set proxy node's Environment to Production



```
$ knife node environment set load-balancer production
```

```
load-balancer:  
  chef_environment: production
```

Verify the Run List



```
$ knife node show load-balancer
```

```
Node Name:    load-balancer
Environment:  production
FQDN:         load-balancer
IP:           10.0.2.15
Run List:     role[load-balancer]
Roles:        load-balancer
Recipes:      myhaproxy, myhaproxy::default, haproxy::default, haproxy::install_package
Platform:     centos 7.2
Tags:
```


Login to Load Balancer



```
$ vagrant ssh load-balancer
```

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

Converge the Load Balancer



```
[vagrant@load-balancer ~]$ sudo chef-client
```

```
Starting Chef Client, version 12.17.44
resolving cookbooks for run list: ["myhaproxy"]
Synchronizing Cookbooks:
  - myhaproxy (0.1.0)
  - haproxy (2.0.0)
  - build-essential (7.0.3)
  - seven_zip (2.0.2)
  - windows (2.1.1)
  - ohai (4.2.3)
....
```

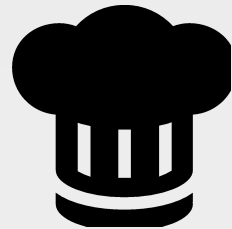
Return to your Workstation



```
[vagrant@load-balancer ~]$ exit
```

```
logout
```

```
Connection to 127.0.0.1 closed.
```



Production

Let's create a reliable environment for our nodes.

Objective:

- ✓ Deploy our site to Production