

Recipe Inclusion, Data Bags, and Search

```
$ mkdir -p data_bags/users
$ knife data_bag create users
```

data_bags/users/bobo.json

```
{
  "id": "bobo",
  "comment": "Bobo T. Clown",
  "uid": 2000,
  "gid": 0,
  "home": "/home/bobo",
  "shell": "/bin/bash"
}
```

```
$ knife data_bag from file users bobo.json
```

Create another user in the users data bag called 'frank' (command hidden)

```
{
  "id": "frank",
  "comment": "Frank Belson",
  "uid": 2001,
  "gid": 0,
  "home": "/home/frank",
  "shell": "/bin/bash"
}
```

Use knife to upload frank's data_bag item(command hidden)

```
$ knife search users "*:*"
$ knife search users "id:bobo" -a shell
```

Create a data_bag called 'groups' (2 commands hidden)

data_bags/groups/clowns.json

```
{
  "id": "clowns",
  "gid": 3000,
  "members": [ "bobo", "frank" ]
}
```

Use knife to upload the 'clowns' data_bag item (command hidden)

Create a cookbook called 'users' (command hidden)

Edit the 'user' cookbook's default recipe and add the following

```
search(:users, "*:*").each do |user_data|
  user user_data["id"] do
    comment user_data["comment"]
    uid user_data["uid"]
    gid user_data["gid"]
    home user_data["home"]
    shell user_data["shell"]
  end
end
include_recipe "users::groups"
```

cookbooks/users/recipes/groups.rb

```
search(:groups, "*:*").each do |group_data|
  group group_data["id"] do
    gid group_data["gid"]
    members group_data["members"]
  end
end
```

Upload the 'users' cookbook (command hidden)

Use knife to add the 'users' cookbook's default receipt to node1's run list (command hidden)

Rerun 'chef-client' on node1 (command hidden)

```
chef@node1:~$ cat /etc/passwd
chef@node1:~$ cat /etc/group
```

Roles

roles/webserver.rb

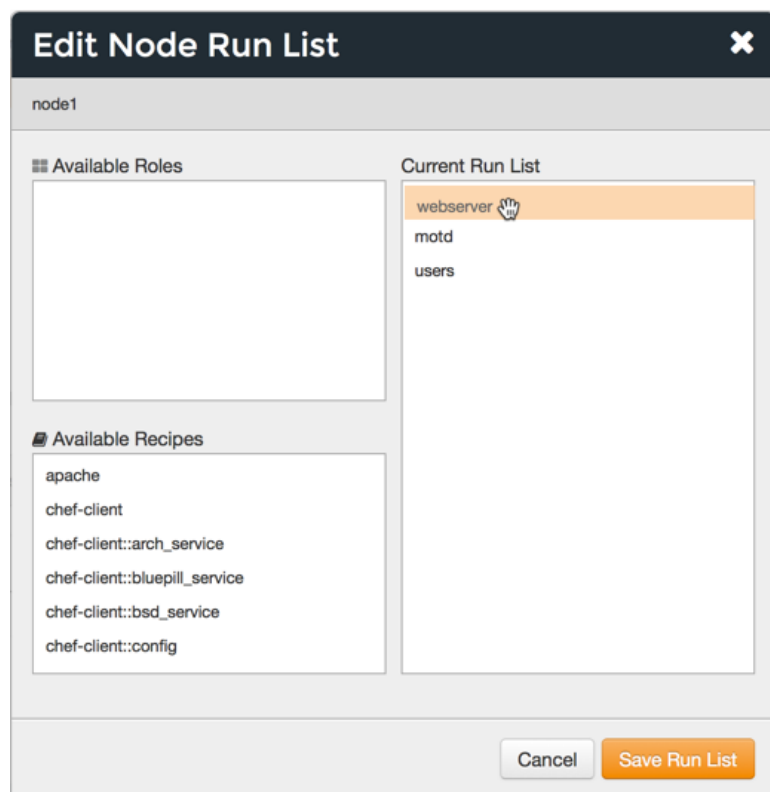
```
name "webserver"
description "Web Server"
run_list "recipe[apache]"
default_attributes({
  "apache" => {
    "sites" => {
      "admin" => {
        "port" => 8000
      }
    }
  }
})
```

```
$ knife role from file webserver.rb
```

```
$ knife role show webserver
```

Use knife to search for roles that have the apache cookbook's default recipe in its run_list (command hidden)

Replace recipe[apache] with role[webserver] in run list



```
chef@node1:~$ sudo chef-client
```

```
$ knife search node "role:webserver" -a apache.sites
```

roles/webserver.rb

```
name "webserver"
description "Web Server"
run_list "recipe[apache]"
default_attributes({
  "apache" => {
    "sites" => {
      "admin" => {
        "port" => 8000
      },
      "bears" => {
        "port" => 8081
      }
    }
  }
})
```

Use knife to upload this webserver role & rerun chef-client (commands hidden)

Use knife to Display the 'apache.sites' attribute on all nodes with webserver role (command hidden)

Edit the 'base' role (command hidden)

```
name "base"
description "Base Server Role"
run_list "recipe[motd]", "recipe[users]"
```

Upload the 'base' role to Chef server (command hidden)

Edit the 'webserver' role (command hidden)

```
name "webserver"
description "Web Server"
run_list "role[base]", "recipe[apache]"
default_attributes({
  "apache" => {
    "sites" => {
      "admin" => {
        "port" => 8000
      },
      "bears" => {
        "port" => 8081
      }
    }
  }
})
```

Upload the 'webserver' role to Chef server (command hidden)
Rerun 'chef-client' on node1 (command hidden)

Environments

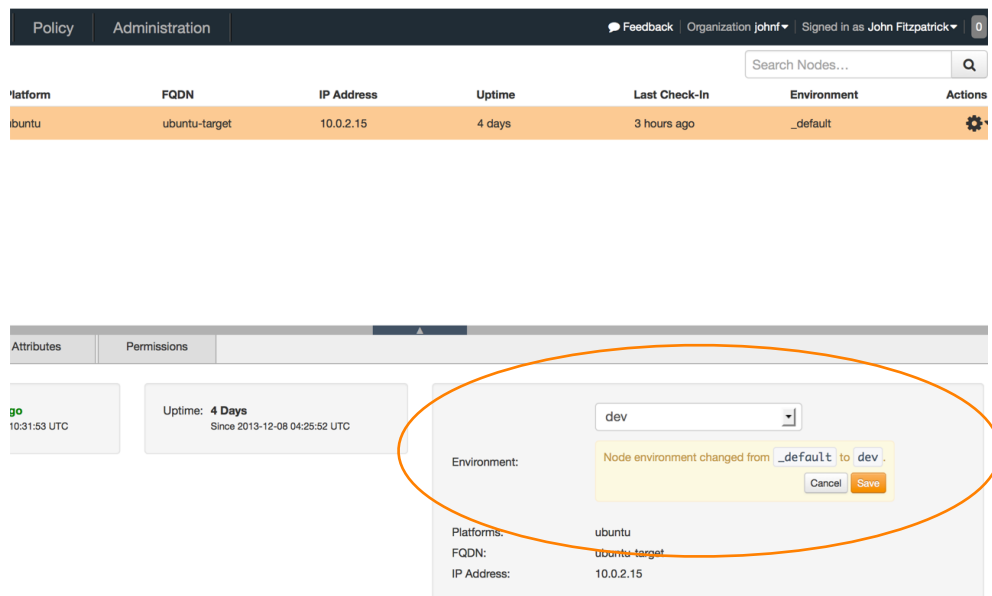
```
$ knife cookbook show apache
$ knife environment list
$ mkdir environments
```

environments/dev.rb

```
name "dev"
description "For developers!"
cookbook "apache", "= 0.2.0"
```

```
$ knife environment from file dev.rb
$ knife environment show dev
```

Use the UI to change your node's environment to "dev"



Rerun 'chef-client' on node1 (command hidden)

environments/production.rb

```
name "production"
description "For Prods!"
cookbook "apache", "= 0.1.0"
override_attributes({
  "pci" => {
    "in_scope" => true
  }
})
```

Use knife to upload this production environment (command hidden)

Use the UI to change your node's environment to "production"

(Screenshot hidden)

Rerun 'chef-client' on node1 (command hidden)

Using Community Cookbooks

```
$ knife cookbook site search chef-client
$ knife cookbook site show chef-client
$ knife cookbook site download chef-client
$ tar -zxvf chef-client*.tar.gz -C cookbooks/
```

cookbooks/chef-client/recipes/delete_validation.rb

```
unless chef_server?
  file Chef::Config[:validation_key] do
    action :delete
    backup false
    only_if { ::File.exists?(Chef::Config[:client_key]) }
  end
end
```

roles/base.rb

```
name "base"
description "Base Server Role"
run_list "recipe[chef-client::delete_validation]", "recipe[motd]",
"recipe[users]"
```

cookbooks/chef-client/recipes/default.rb

```
include_recipe "chef-client::service"
```

cookbooks/chef-client/recipes/service.rb


```

supported_init_styles = [
  'arch',
  'bluepill',
  'bsd',
  'daemontools',
  'init',
  'launchd',
  'runit',
  'smf',
  'upstart',
  'winsw'
]
init_style = node["chef_client"]["init_style"]

# Services moved to recipes
if supported_init_styles.include? init_style
  include_recipe "chef-client::#{init_style}_service"
else
  log "Could not determine service init style, manual intervention
  required to start up the chef-client service."
end

```

Use knife to upload the 'chef-client' cookbook (command hidden)
Use knife to download the 'cron' cookbook (command hidden)
untar the 'cron' cookbook into the cookbooks directory (command hidden)
Use knife to upload the 'cron' cookbook (command hidden)
Use knife to upload the 'chef-client' cookbook (command hidden)
Use knife to download the 'logrotate' cookbook (command hidden)
untar the 'logrotate' cookbook into the cookbooks directory (command hidden)
Use knife to upload the 'logrotate' cookbook (command hidden)
Use knife to upload the 'chef-client' cookbook (command hidden)

Edit the 'base' role (command hidden)
name "base"
description "Base Server Role"
run_list "recipe[chef-client::delete_validation]", "recipe[chef-client]", "recipe[motd]", "recipe[users]"

Upload the 'base' role to Chef server (command hidden)
Rerun 'chef-client' on node1 (command hidden)

Check the 'chef-client' service is running (command hidden)***Use knife to download the 'ntp' cookbook (command hidden)***
untar the 'ntp' cookbook into the cookbooks directory (command hidden)
Use knife to upload the 'ntp' cookbook (command hidden)

Edit the 'base' role (command hidden)

```
name "base"
description "Base Server Role"
run_list "recipe[chef-client::delete_validation]", "recipe[chef-client]", "recipe[ntp]", "recipe[motd]", "recipe[users]"
```

Upload the 'base' role to Chef server (command hidden)