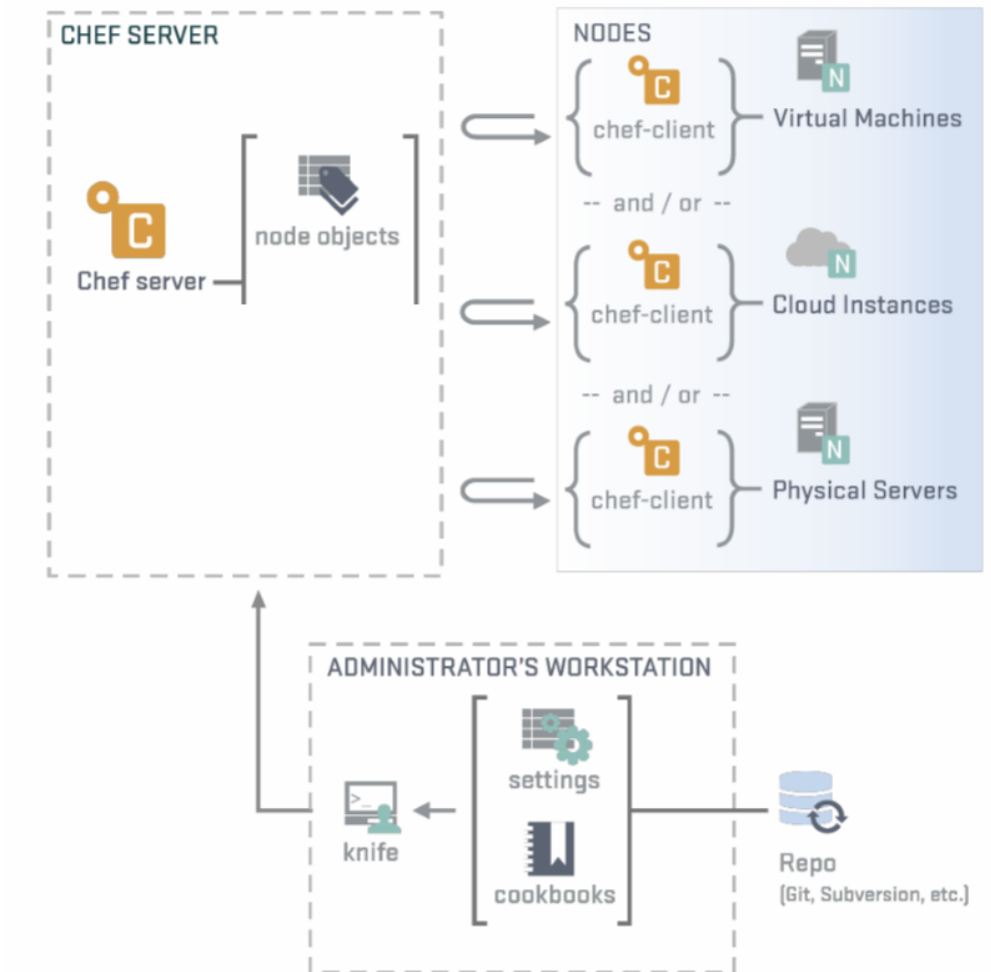# Using Chef in windows

Chef helps you to automate deployments. You can manage the machines/nodes from your workstation. Chef server contains all the codes to manage nodes. We interact with chef server from workstation using knife command.

The above picture shows a typical chef infrastructure. You need your workstation, chef server and node(s).

Prepare your Chef Server

1. To use chef server, you may choose hosted chef server by opscode which allows you to manage 5 nodes. Other option is to host chef server on premise. For this example, let's use hosted chef server by opscode.
2. Register at https://manage.opscode.com/signup. Provide a unique organization name.
3. After you sign up you can download a file called chef-starter.zip.
4. You can also download the starter kit by logging in to https://manage.opscode.com/login. In the Administration tab, select the organization and click on starter kit link.
5. Copy chef-starter.zip to your workstation.

Prepare your workstation

1. Unzip the chef-repo directory from chef-starter.zip to c:\users\<your user id> . Later you will always use knife command from c:\users\<user id>\chef-repo location
2. Download chef client from http://www.getchef.com/chef/install/ . Choose the right windows version and latest version of chef client.

3. Install it with default options.
4. Check if knife command in command prompt/powershell works. Try "knife --version" from chef-repo folder. If it does not work, check path variable. It should contain C:\opscode\chef\bin;C:\opscode\chef\embedded\bin"
5. From chef-repo directory, use command "knife client list" . It should return <org name>-validator. org name is the the organizaion name which you provided during sign up.
6. Install knife windows plugin with following command
   gem install knife-windows

Prepare node

1. Prepare a windows machine to be used as node and note it's IP address and FQDN (fully qualified domain name)
2. Setup windows remote management with the following commands in the command prompt
   winrm quickconfig -q
   winrm set winrm/config/winrs @{MaxMemoryPerShellMB="300"}
   winrm set winrm/config @{MaxTimeoutms="1800000"}
   winrm set winrm/config/service @{AllowUnencrypted="true"}
   winrm set winrm/config/service/auth @{Basic="true"}

3. Ensure that the Windows Firewall is configured to allow Windows Remote Management connections from the workstation. For example:

```
 netsh advfirewall firewall set rule name="Windows Remote Management (HTTP-In)" profile=public protocol=tcp localport=5985 remoteip=localsubnet new remoteip=any
```

Bootstrap the node

1. Check if you are able to connect to the windows using winrm.
   knife windows winrm -m <IP/FQDN> -x <Machine user name> -P <password> -N <node name> 'dir c:\'
2. From your workstation, from chef-repo directory, run the following command to bootstrap the node
   knife bootstrap windows winrm <IP/FQDN> -x <Machine user name> -P <password> -N <node name>

   You can use any name as node name.
   I found that there is a problem bootstrapping from windows 8 workstation to windows 2012 node. It could be because of firewall in my windows 8 workstation.

Create a Cookbook

Cookbook contains recipes. Recipe is the collection of resources with the actions to be performed on them. Resource is the primitive building block within your infrastructure. A resource defines a component and its desired state. such as a package that is to be installed, a file whose contents should be managed, etc.

 Let us create a very simple cookbook. It will create a test directory inside c:\temp folder.

1. From your workstation, from chef-repo directory, run the following command
   knife cookbook create cookbook1
2. This will create a cookbook1 folder inside c:\users\<user id>\chef-repo\cookbooks
3. Open cookbook1\recipes\default.rb for editing
4. Add the following to default.rb

   directory "c:\\temp\\test" do
   action :create
   end

   Here directory is a resource and create is the action.
5. Save default.rb
6. Run the following command to upload the cookbook to chef server
   knife cookbook upload cookbook1

Create a run list

A run list combines a node with a set of policies. A policy can be a cookbook, role, environment etc.

1. Login to https://manage.opscode.com/login . Click in Nodes tab and select the desired node.
2. In Details tab of the node, find Run List and click in edit
3. In Edit run list popup, drag cookcook1 from available recipes to the Current run list. Then save current run list.

Run chef-client

Running chef client will execute the run list. Here it means that cookbook1 will be executed in the selected node. You can run chef-client directly from your workstation or by logging in to the node.

1. To run chef-client directly from your workstation, run the following command from chef-repo directory
   knife winrm -m <IP/FQDN> 'chef-client -c c:/chef/client.rb' -m -x <Machine user name> -P '<password>'
2. If you want to run chef-client from the node, login to the node and run following command from command prompt
   chef-client

Now test folder should have been created in c:\temp

Useful links:

Best way to learn chef is to start with https://learnchef.opscode.com/screencasts/fundi-webinar-week-1/

https://learnchef.opscode.com

https://wiki.opscode.com/display/chef10/Fast+Start+Guide+for+Windows#FastStartGuideforWindows-Step8%3AAddaCookbooktotherunlist

http://docs.opscode.com/windows.html

http://www.getchef.com/solutions/windows/

http://www.getchef.com/blog/2013/08/27/cooking-on-windows-with-chef/

http://developer.rackspace.com/blog/bootstrapping-chef-on-windows.html

 http://www.youtube.com/watch?v=APBSff1_oVY

http://jtbennett.com/blog/2012/12/getting-started-with-opscode-chef-on-windows-part-1

http://jtbennett.com/blog/2012/12/getting-started-with-opscode-chef-on-windows-part-2