Pre-Course Materials

INSTRUCTOR: ARUN TOMAR
Dear Participants,
Welcome to the course DevOps with Chef on FreeBSD. In this course, we'll cover lot of theory and practical aspects. We'll focus on the core topics as mentioned in the agenda, and we assume that you already know the prerequisites. If not, then you might have to learn additional topics such as Git, Ruby and FreeBSD first.

The learning curve for Chef is a little steep at times. Therefore, just be patient and keep working on it, and you'll eventually be done with the course. We'll certainly help you throughout the course. But, be prepared to do a lot of self-study as well. Bear in mind that the best way to learn Chef is to just use it.

What is DevOps?
According to Wikipedia, “DevOps (a clipped compound of development and operations) is a culture, movement or practice that emphasizes the collaboration and communication of both software developers and other information-technology (IT) professionals while automating the process of software delivery and infrastructural changes.”

What is automation?
Its definition depends on the context and situation. In general, automation is a non-manual way of performing certain set of tasks. In automation of IT infrastructure, this set of tasks could be: creating new servers and infrastructure, managing existing servers, deploying applications, updating both servers and applications, monitoring servers and apps, gathering metrics, graphs, scaling up or down the infrastructure and many more.
Why is it needed?

Virtualization and Cloud have forced the need for automation. In the earlier days (The Iron Age), IT infrastructure growth was dependent on the physical hardware purchasing cycle. It used to take weeks from ordering an actual server to it being delivered, and then deploying the OS and having the server ready for use.

What are the different tools/platforms available?

The most popular tools/platform available, as of now, for IT infrastructure automation are:

- Chef.
- Puppet.
- Ansible.

What is Chef?

Chef is a powerful automation platform that transforms infrastructure into code. It's open source and its DSL is written in Ruby. Moreover, it's supported by almost all major Linux, Unix, Windows, Cloud and container platforms. Chef was released under Apache2 license. The project was started in 2008, and has been growing ever since. It has a large community and is backed by a commercial for-profit company/entity called “Chef”.

What is a Resource?

A resource is a building block of recipes. They represent a piece of a system, e.g., a package or directory, file, net, work, service, etc. It describes:

- The desired state of the configured element/item.
- The steps needed to achieve that desired state.
- Additional properties (called resource properties), if necessary.
- The type of resource.

Resource Syntax:

A resource is a Ruby block with four components: a type, a name, one (or more) properties (with values), and one (or more) actions.

How to setup the workstation?

You can watch the video (available in the course) or follow the following steps:

- Install Ruby, rubygems, Chef on FreeBSD.

```.pkg install ruby ruby22-gems-2.6.4```

```
gem install chef
```

- Install vim, emacs or another other text/code editor of your choice.

``` pkg install vim ```

- Install git version system, wget and curl.

``` pkg install git wget curl ```

- Create an account on hosted Chef and down, load the starter kit using the link below:
  - [https://manage.chef.io/signup/](https://manage.chef.io/signup/)

- Configure and test your Chef workstation.
  - Unzip the starter kit.
  - Change to the starter kit directory.

``` knife client list ```