Pre-Course Materials

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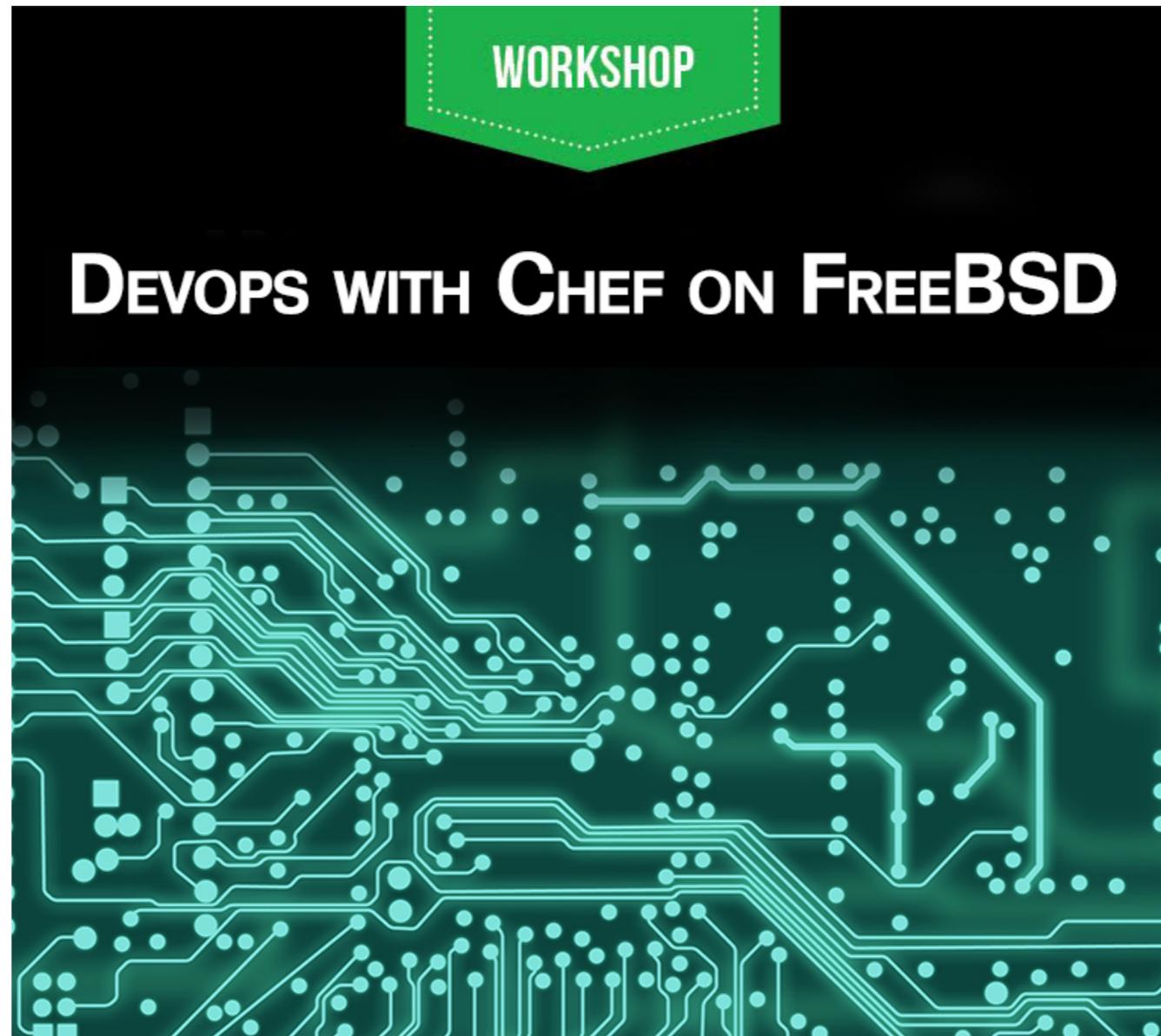
Dear Participants,

Welcome to the course DevOps with Chef on FreeBSD. In this course, we'll cover lot of theory and practical as, pects. We'll focus on the core topics as mentioned in the agenda, and we assume that you already know the pre, requisites. 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 communi, cation of both software developers and other information-technology (IT) professionals while automat, ing the process of software delivery and infrastructural changes."
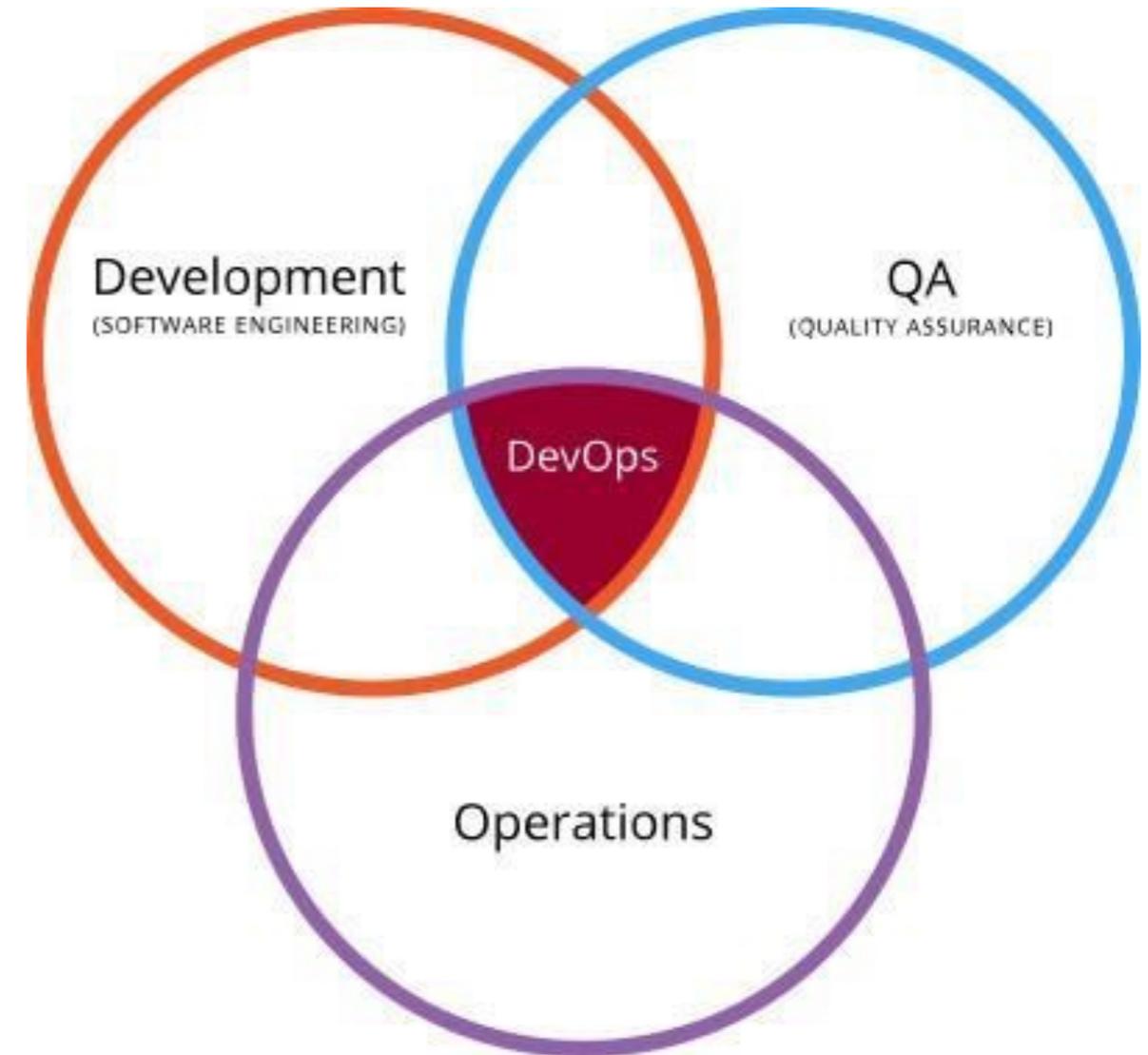
What is automation?

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 infra, structure, managing existing servers, deploying applica, tions, updating both servers and applications, monitor, ing 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 auto, mation. In the earlier days (The Iron Age), IT infrastruc, ture growth was dependent on the physical hardware pur, chasing cycle. It used to take weeks from ordering an ac, tual 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 plat, forms. Chef was released under Apache2 license. The pro, ject 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 proper, ties), 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 fol, low 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 ```
``` 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/**

- Configure and test your Chef workstation.

  - Unzip the starter kit.

  - Change to the starter kit directory.

````
``` knife client list ```
````