Ruby, DevOps and Chef (5 days)

Overview

With the advent of cloud computing, resource provisioning (launching servers etc.) became really fast while configuration management & managing the fleet of large number of cloud servers still remains a bottleneck for a long time. Chef (previously OpsCode Chef) is an enterprise tool that fills the gap and makes resource management very agile.

This course covers the concepts of DevOps & configuration management tool Chef in specific. As part of this course, you'll also execute lab some exercises that'll give you a good balance of both theory & labs. You'll learn about the concepts of cookbooks, recipes, roles & attributes. And how to use a central chef-server to manage the configuration while working with large fleet of machines.

Objectives

At the end of Ruby, Advance Ruby, DevOps and Chef, participants will be able to:

- Configure and install Ruby
- Learn the basics of the Ruby language.
- Learn DevOps Concepts
- Learn Infrastructure Management using Chef

Duration 5 Days

Prerequisites -The participants taking Ruby and ChefTraining course must be familiar with the general principles of object oriented programming (OOP). Familiarity with IT environments & server administration for at least 6 months would be beneficial.

Who Should Attend ?

Developers who wants to explore the system administration & configuration domain.

IT professionals who want to get started with a DevOps tool.

System Admins who are managing large scale server fleet & wants to bring in automation to their fleet.

IT professionals who are using on-premise or cloud servers for their application & want to reduce the time it takes to configure these servers before they can use it.

IT Architects who want to learn about configuration automation & want to have hands on experience on chef.

System Administrators that want to be able to manage cloud servers and networks without

really doing it manually.

Decision makers who want to evaluate Chef for their companies.

Day 1 Introduction to Ruby and Data Structure

- Introduction to Ruby
- Running Ruby Programs
- IRB (Interactive Ruby)
- What's New in Ruby?
    - Array and Hashes
    - Control Structures
    - Blocks and Iterators
    - Reading and Writing
    - Classes, Objects, And Variables
    - Containers, Blocks, and Iterators
    - Standard Types
    - Expressions
- Exceptions, Catch, and Throw
- Objects and Methods
    - Sending messages to objects
    - Messages and methods
    - Catching non-existent methods
- Strings and Numbers
    - String literals and interpolation
    - String operations
- Numerics
    - Arithmetic operators
    - Arithmetic operators methods!
    - Symbols

- Basic Input and Output
- Arrays
    - Arrays as method return values
    - Array operations
    - Getting items from an array
    - Setting array items
    - Hands on Examples using Array.

Day 2. Object Oriented Programming and File Handling

- Hashes
    - Hash operations
    - Determining hash key uniquenes
    - Alternate hash key syntax
    - Hands on Examples using Hashes
- Modules
    - Modules as namespaces
    - Modules as class mixins
- Classes
    - Inheritance
    - Classes as objects
    - The accessor & setter methods
- The instance methods
    - The class methods & variables
    - Bank Application using Ruby OOPs

- Regular Expressions
- Ruby File I/O, Directories
- File.new, OpenMethod
- Summary

Day 3. Introduction to DevOps

DevOps vs Agile Framework

DevOps Architecture

Multiple Tools For DevOps

- Chef Basics
- Virtual Machine Configuration for Chef
- Chef Server Installation on Ubuntu Server / CentOS
- Chef Client Installation on Ubuntu / CentOS/Windows
- Chef Configuration for Server and Client
- Chef Management Server Installation and Configuration
- Chef Commands
- **Conclusion and Summary**

Day 4. Introduction to DevOps & Chef

- Cookbooks /Recipes
- Ohai
- Policies
- Resources
- Chef Client
- Configure Chef Solo
- Use Knife to Create Cookbooks
- Templates

- Attributes
- Hands-on: Use Chef-Solo or Chef Client- Server
- Work with cookbook files & templates
- Conclusion and Summary

Day 5 Chef Cookbooks for Infrastructure Automation

- Chef Server
- Enterprise Chef
- Open Source Chef
- Using Hosted (Enterprise) Chef
- Hands-on: Upload already created cookbook to Chef Server using Knife. Bootstrap a node with uploaded cookbook
- Chef Roles
- Setting up roles
- Setting up run-list
- Hands-on: Enhance already created cookbooks for a web-server role. Create additional cookbook for database server role (MySQL)
- Summary and Conclusion