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# DevOps

**Total Duration:**

5 days

**Audience:**

This workshop is intended for developers who need to understand DevOps basic along with the tools used.

**Course Objectives:**

At the end of the course, participants will have knowledge of

- ➢ What is DevOps
- ➢ Tools used for DevOps
- ➢ Container Managed

**Pre-requisites:**

- ➢ Networking Basics
- ➢ Understanding of Web Application Development

**Course Contents:**

**Day 1 –**

Monoliths to Micro Services
What is DevOps?
History of DevOps
Dev and Ops
DevOps definitions
DevOps and Software Development Life Cycle
DevOps main objectives
Infrastructure As A Code
IaaS Overview
Paas Overview
DevOps on the Cloud
Tools (Jenkins, Chef, Docker, Vagrant and so on.)
Continuous Testing and Integration
Continuous Release and Deployment
Continuous Application Monitoring

**Day 2 – Gits And Jenkins**

Git Basics
Getting Started With Git
GitHub and Remotes
Branching Merging And Rebasing in GIT

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Jenkins Basics
Getting Jenkins
Installing
Command line Options
Creating a simple Job

Understanding Jenkins Plugins

**Day 3 –**
Puppet
Why Puppet?
Puppet Fundamentals
Language Fundamentals
Working with Modules and classes
Working with Files and Template
Chef
Covers Introduction
Building the Cook Book
Node Object & Search
Data-bags
Chef environment
Roles
Deploying Nodes in Production and using the Open Source Chef Server
Ansible
Covers Introduction
Setup & Configuration
Ansible Playbooks
37 Ansible Modules
Different Roles and Command Line usage

**Day 4 – Docker**
Understand the architecture
What can I use Docker for?
What are the major Docker components?
What is Docker's architecture?
The Docker daemon
The Docker client
Inside Docker
How does a Docker image work?
How does a Docker registry work?
How does a container work?
What happens when you run a container?

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The underlying technology
     Namespaces
     Control groups
     Union file systems
     Container format
Installing Docker
    Installation from binaries
      on Linux
      on Windows
Running a Docker Container
    From the Docker Quickstart Terminal
    Using Docker from Windows Command Line Prompt (cmd.exe)

    Using Docker from PowerShell
    Container port redirection
    Login with PUTTY instead of using the CMD

Getting started with Docker Hub
    Dockerizing applications: A "Hello world"
    Working with containers
    Working with Docker images
    Linking containers together
    Managing data in containers
    Working with Docker Hub

**Day 5 –**
    Overview of Docker Compose
     Installation and set-up
     Create a Docker image
     Define services
     Build and run your app with Compose

    Work with development container
     Clean your host of Docker artifacts
     Build an image
     Start a container and run a test
     Restart a container with your source

    Work with YML
     image
     build
     dockerfile
     command

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extra_hosts
ports
links/external_links