

1. INTRODUCTION TO DEVOPS

- What is DevOps?
- History of DevOps
- Dev and Ops
- DevOps definitions
- DevOps and Software Development Life Cycle
- DevOps main objectives
- Infrastructure As A Code
 - o IaaS Overview
 - o Paas Overview
- DevOps on the Cloud
- Prerequisites for DevOps

- Tools (Jenkins, Chef, Docker, Vagrant and so on.)
- Continuous Testing and Integration
- Continuous Release and Deployment
- Continuous Application Monitoring

2. CLOUD COMPUTING and VIRTUALIZATION

- History and evolution of cloud
- Cloud computing concepts
- Grid Computing vs. Cloud Computing
- Characteristics and Benefits of Cloud
- Cloud service models (NIST)
- IaaS, PaaS and SaaS
- Cloud service model implementations

- Cloud Deployment Models (NIST)
- Virtualization
- Virtual Machines
- Virtual bootable OS Images
- Cloud Storage
- SOA and Cloud
- Virtual Private Cloud (VPC)

- Risk in Cloud and DevOps security concerns
- Introduction to AWS and AZURE

3. DEVOPS ADOPTION

- TOOLS
- o Things to Look For and Avoid
- o IT Assets Ownership
- o Viewing Applications As Products, not Projects
- o DevOps in the Enterprise
- o IT Governance
- o Governance and Risk Mitigation
- o DevOps Adoption Steps
- o Select DevOps Techniques and Practices
- o Service Quality Metrics
- o The Choice of Cloud Platform
- o IaaS for DevOps
- o PaaS for DevOps
- o Containerization Tools

- o System Configuration Automation and Management
- o Continuous Integration (CI) Systems
- o Build and Dependency Management Systems
- o Select DevOps Tools
- o Collaborative Lifecycle Management Solutions from IBM
- o Rational Team Concert (RTC)
- o Rational Quality Manager (RQM)
- o Rational DOORS Next Generation (DNG)

4. DEVOPS TOOLS: CHEF

- Overview of Chef
- Workstation Setup
- Organization Setup
- o Common Chef Terminology (Server, Workstation, Client, Repository etc.)
- o Servers and Nodes
- o Chef Configuration Concepts
- o How to configure knife
- o Execute some commands to test connection between knife and workstation
- o Create organization
 - Test Node Setup
 - Databags
 - Node Objects and Search
 - Environments
 - Advanced Chef
- o Add yourself and node to organization
- o Create a server and add to organization

- o Check node details using knife
- o How to create Databags
- o Add Databags to organization
- o How to Add Run list to Node
- o Check node Details
- o How to create Environments
- o Add servers to environments
- o Create roles
- o Add Roles to organization
- o What is foodcritic and TestKitchen
- o Improve and expand on the existing recipes
- o One-click system launching

DEVOPS TOOLS: PUPPET

- Introduction to Puppetp
- Installation and Configuration of Master server and agents
- Managing Manifests
- Creating and Managing modules
- Version control with Puppet

DEVOPS TOOLS: VAGRANT

- Introduction
- Installation and Configuration
- Provisioning with Vagrant
- o What is Vagrant
- o Uses of Vagrant in an environment

- o How to install Vagrant in Windows and Linux
- o Configure Vagrant
- o How to use Vagrant to create small virtual
- o Add required Images to Vagrant
- Using Vagrant
- o Using Vagrant in Chef for Testing

DEVOPS: SOURCE CODE MANAGEMENT

- GIT REPOSITORY

CONTINUOUS INTEGRATION

- INTRODUCTION TO JENKINS-CI
- o Continuous Integration with Jenkins Overview
- o Installation
- o Configure Jenkins as stand-alone application
- o Configure Jenkins on an Application Server
- o Jenkins management
- o Support for the Git version control systems
- o Different types of Jenkins Jobs
- o Setting up a Jenkins job
- o Scheduling build Jobs
- o Maven Build Scripts
- o Securing Jenkins
- o Jenkins Plugin
- Authentication
- Authorization
- Confidentiality

- Creating users
- Installing Jenkins Plugins
- SCM plugin
- Build and test
- Analyzers
- o Distributed builds with Jenkins
- o Best Practices for Jenkins
 - SonarQube integration
 - Cobertura Coverage tool
- o Nexus artifact repository

9. DEVOPS: MONITORING

- NAGIOS
- ZENOSS
- o How to monitor the Servers in Nagios
- o Trigger Alerts in Nagios
- o How to apply blackouts and remove blackouts
- o How to monitor the Servers in Zenoss
- o Trigger Alerts in Zenoss
- o How to apply blackouts and remove blackouts
- o How to check events; CPU,Memory and RAM Graphs for servers

.GENERAL ENVIRONMENT SETUP STEPS IN AWS and NTTA

- Creating Servers and Networks in Cloud
- Setting up rules and Application
- Difficult Scenarios in environments.
- Scaling

o Environment testing

o Monitoring logs

13. MISCELLANEOUS

Other Tools used in DevOps,Docker