

# **DevOps Master Workshop**

## **Duration**

4 Days

## **Pre-requisite**

- Development / Deployment / Testing Knowledge / Agile Knowledge

## **Target Audience**

Anyone working within DevOps or looking to transition to DevOps

**Application or Service Product Owners / Agile Scrum Masters / Project Managers /  
Test Managers / IT Service Managers / Process Managers / Lean IT Practitioners**

## **Certification Body**

EXIN

## **Certificate Nature**

International Certificate of Life time Validity that does not require any further investment in renewal.

## **Workshop Outline**

### **1. GIT and GITHUB:**

- 1.1 INTRODUCTION TO GIT
- 1.2 GIT INSTALLATION AND SETUP
- 1.3 WORKING WITH REMOTE REPOSITORIES (GITHUB)
- 1.4 GIT COMMONLY USED COMMANDS
- 1.5 BRANCHING AND MERGING IN GIT
- 1.6 GIT WORKFLOWS

### **2. Continuous Integration with Jenkins:**

- 2.1 AN OVERVIEW OF JENKINS
- 2.2 GETTING STARTED WITH JENKINS AND INSTALLATION OF JENKINS
- 2.3 PLUGINS AND ITS USES
- 2.4 SETTING UP YOUR BUILD JOBS

- 2.5 USING METRICS TO IMPROVE QUALITY
- 2.6 NODES AND MASTER-SLAVE CONFIGURATION
- 2.7 PERFORMING AUTOMATED DEPLOYMENT AND CONTINUOUS DELIVERY
- 2.8 PIPELINE EXECUTION OF CI CD JOBS
- 2.9 JENKINS ADMINISTRATION ACTIVITIES
  - 2.9.1 BACKUP AND RESTORE
  - 2.9.2 JENKINS UPGRADATION
  - 2.9.3 CHANGE OF HOME DIRECTORY OF JENKINS
  - 2.9.4 CHANGE OF PORT NUMBER OF JENKINS
  - 2.9.5 JENKINS COMMAND LINE EXECUTION OF JOBS
  - 2.9.6 ADMIN PASSWORD RESET AND SECURITY ADMINISTRATION
  - 2.9.7 EMAIL AND JIRA INTEGRATION WITH JENKINS
  - 2.9.8 CATLIGHT INSTALLATION AND NOTIFICATION OF JENKINS

### **3. DOCKER:**

- 3.1 DOCKER INTRODUCTION
- 3.2 DOCKER ARCHITECTURE AND ITS USAGES
  - 3.2.1 DOCKER VS OTHER VM's COMPONENTS DIFFERENCE
  - 3.2.2 DOCKER VS OTHER VM's COST AND TIME FACTORS
  - 3.3.3 DOCKER VS VIRTUALIZATION
- 3.3 DOCKER INSTALLATION AND CONFIGURATION
- 3.4 DOCKER COMMONLY USED COMMANDS
- 3.5 DOCKER NETWORKING
- 3.6 DOCKER BUILD AND DEPLOYMENT OF IMAGES
- 3.8 DOCKER HUB INTRODUCTION
- 3.9 DOCKER CLOUD INTRODUCTION AND INTEGRATION WITH AWS,AZURE
- 3.10 DOCKER COMPOSE INTRODUCTION AND CREATION OF IMAGES
- 3.11 DOCKER VOLUMES AND PORT FORWARDING INTRODUCTION
- 3.12 DOCKER SWARM INTRODUCTION

### **4. ANSIBLE:**

- 4.1 ANSIBLE INTRODUCTION
- 4.2 ANSIBLE INSTALLATION IN LINUX ENVIRONMENT
- 4.3 ANSIBLE CONFIGURATION WITH SSH ON OTHER SERVERS
- 4.4 BASICS OF CONFIGURATION MANAGEMENT ( PUSH VS PULL BASED)
- 4.5 CHEF VS PUPPET VS ANSIBLE VS SALT
- 4.6 ANSIBLE ADHOC COMMANDS
- 4.7 ANSIBLE PLAYBOOK EXECUTION
- 4.8 ANSIBLE VAULT AND ITS FEATURES
- 4.9 ANSIBLE GALAXY INTRODUCTION
- 4.10 ANSIBLE TOWER INTRODUCTION

## **5. VAGRANT:**

- 5.1 VAGRANT INTRODUCTION AND ITS FEATURES
- 5.2 VAGRANT INSTALLATION AND CONFIGURATION
- 5.3 VAGRANT MOST USED COMMANDS
- 5.4 VAGRANT CLOUD
- 5.5 VAGRANT CREATION OF A NEW VM

## **6. JIRA:**

- 6.1 JIRA INTRODUCTION
- 6.2 JIRA FEATURES AND ITS USES
- 6.3 JIRA WORKFLOW FOR PROJECT , TASKS , ISSUES
- 6.4 JIRA INSTALLATION AND CONFIGURATION
- 6.5 JIRA DASHBOARDS AND REPORT GENERATIONS
- 6.6 JIRA NOTIFICATIONS
- 6.7 JIRA DIFFERENT PROJECT MODES (SCRUM , AGILE , CMMI)
- 6.8 JIRA WITH ZYPHER FOR TEST CASE EXECUTION

## **7. SPLUNK:**

- 7.1 SPLUNK INTRODUCTION
- 7.2 SPLUNK ARCHITECTURE AND ITS FEATURES
- 7.3 SPLUNK INSTALLATION IN WINDOWS AND CONFIGURATION
- 7.4 SPLUNK INDEXER , FORWARDER AND SEARCH HEAD
- 7.5 SPLUNK LICENSING
- 7.6 HOW TO CREATE AN INDEX AND CONFIGURE ITS
- 7.7 HOW TO SEE THE WINDOWS LOGS IN SPLUNK SEARCH HEAD
- 7.8 SPLUNK REPORTS AND DASHBOARD CREATION
- 7.9 SPLUNK NOTIFICATIONS AND ALERTS
- 7.10 SPLUNK QUERY LANGUAGE (SQL) AND SAMPLE QUERIES EXECUTION

## **8. KUBERNETES**

- 8.1 INTRODUCTION TO KUBERNETES
- 8.2 WHAT IS KUBERNETES?
- 8.3 HOW IT HAS GOT ORIGINATED?
- 8.4 WHAT IS SHORT FORM OF KUBERNETES?
- 8.5 WHY KUBERNETES?
- 8.6 WHAT ARE THE FEATURES OF KUBERNETES?
- 8.7 KUBERNETES ARCHITECTURE
- 8.8 BIG PICTURE OF KUBERNETES
- 8.9 WHAT DOES MASTER COMPONENT CONTAINS?
- 8.10 WHAT IS API SERVER?
- 8.11 WHAT IS CLUSTER STORE?
- 8.12 WHAT IS CONTROLLER?
- 8.13 WHAT IS SCHEDULER?
- 8.14 BIG PICTURE OF MASTER
- 8.15 DEEP DIVE ON NODE/MINIONS
- 8.16 NODE ARCHITECTURE

- 8.17 WHAT IS KUBELET?
- 8.18 WHAT IS CONTAINER ENGINE AND WHY WE NEED IT?
- 8.19 WHAT IS KUBE PROXY?
- 8.20 DEEP DIVE ON PODS
- 8.21 HOW TO SCALE PODS?
- 8.22 MULTICONTAINER PODS?
- 8.23 PODS LIFECYCLE
- 8.24 SERVICE DEEP DIVE
- 8.25 WHAT IS REPLICATION CONTROLLER?
- 8.26 WHAT ARE DEPLOYMENTS?
- 8.27 INSTALLATION OF KUBERNETES IN EKS

## **9. DEVOPS THEORY:**

- 9.1 DEVOPS INTRODUCTION
- 9.2 DEVOPS PRICIPLES
- 9.3 DEVOPS METHODOLOGIES
- 9.4 DEVOPS CONCEPTS SUCH AS CI, CD , CT ,CM
- 9.5 DEOVPS BEST PRACTICES
- 9.6 DEVOPS TOOLS LIFECYCLE