

## Title: Continuous Delivery Using Ansible and Docker

### Abstract:

This workshop aims to give an overview of the concepts of Continuous Integration, Delivery and Deployment. It will be demonstrated how to create a Continuous Delivery Workflow that tests, builds, releases and continuously deploys a web application in Docker containers. The Delivery Workflow is implemented using modern DevOps tools such as Jenkins, Ansible, Containers, GitHub and Docker Hub. A demo web application will be deployed to Amazon Web Services(AWS).

### Objectives:

- To understand the concept of Continuous Delivery
- To create a robust, production - class continuous delivery workflow
- To gain an understanding of how to use Docker and Ansible to develop and produce web applications.

### Prerequisites:

- Knowledge of Linux based Operating Systems.
- Knowledge of development of web application.
- Knowledge of Software Engineering and Agile Methodologies.

### Content:

1. Introduction:
  - Continuous Delivery Overview.
  - Why Docker?
  - Why Ansible?
  - Installing tools
2. Sample Application
  - Sample Application Overview
  - Unit and Integration Testing
  - Acceptance Testing
  - User Interface Testing
3. Integration Testing using Docker
  - Continuous Delivery Workflow
  - Creating the Development Image
  - Creating a Docker Compose Environment
  - Running Tests using Docker Compose
4. Building Artifacts
  - Building Application Artifacts
  - Test and Build Consistency
5. Creating Releases
  - Creating the Release Image
  - Testing the Release Image
  - Running Acceptance Tests
6. Continuous Delivery Automation
  - Creating a Makefile
  - Parameterising the Makefile
7. Continuous Delivery Using Jenkins
  - Setting up Jenkins
  - Configuring the Workflow
  - Publishing the Jenkins Image
  - Integrating Jenkins with GitHub and Docker Hub
8. Continuous Deployment Using Ansible
  - Creating and Ansible Deployment Playbook
  - Configuring Access to Amazon Web Services
  - Deploying the Application

- Creating a Jenkins Deployment Job
- Continuously Deploying New Releases