DevOps
Lab Book

Document Revision History

Date	Revision No.	Author	Summary of Changes
April 2017		Rahul Vikash	Created new lab book as per revised course contents

Table of Contents

Getting Started

Overview

This lab book is a guided tour for learning DevOps. It comprises 'To Do' assignments. Follow the steps provided to work out the 'To Do' assignments given.

Setup Checklist for DevOps

Here's what is expected on your machine for the lab in order to work.

Minimum System Requirements

- Intel Pentium 90 or higher (P166 recommended)
- Microsoft Windows XP, Windows 7 or Windows 8
- Memory: 2GB of RAM (1GB or more recommended)
- Google Chrome 36.0 or Mozilla Firefox 31.0 or Internet Explorer 10 or above

Please ensure that the following is done:

- Java is installed, maven, Jenkin, sonar configuration done .Git bash &Ui installed .IBM bluemix account should be created

Instructions

- Create a directory by your name in drive <drive>. In this directory, create a subdirectory DevOps_assgniment. For each lab exercise create a directory as lab <lab number>.
  You may also look up the on-line help provided in

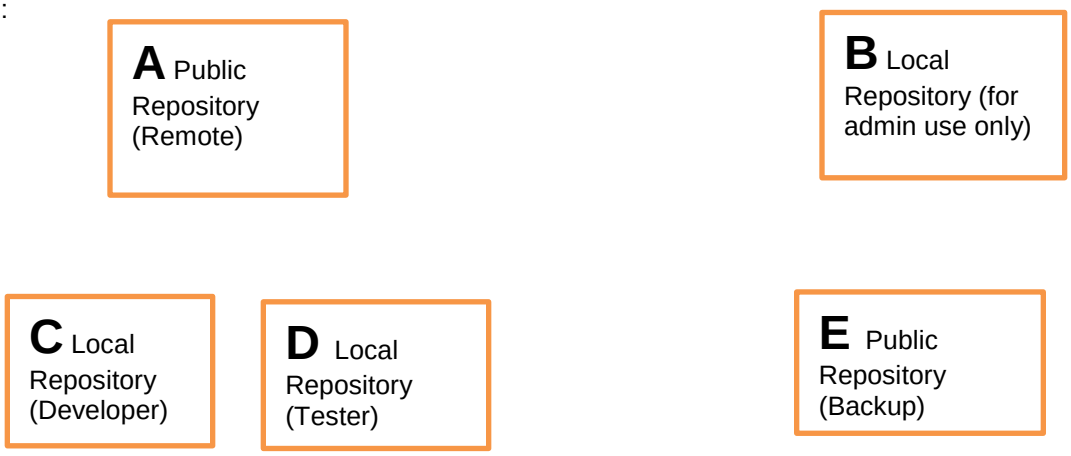
Learning More

- https://www.cloudbees.com/jenkins/about
- https://www.sonarqube.org/
- https://git-scm.com/
- https://maven.apache.org/
- https://www.ibm.com/cloud-computing/bluemix/what-is-bluemix?lnk=hm
- https://en.wikipedia.org/wiki/DevOps

Lab 1. Git with DevOps

Goals	▪ Working with Git-Local & remotely
Time	60 minutes

1:



Significance of the repositories:
A: Public repository used for data storage, all clients pushes and pull here
B: Initial directory structure and branches are created here to be pushed
C and D: These are local repositories which will have working tree
E: Public repository meant for backup purpose.

Perform following operations:

Note: Participants are required to submit commands used for each question in a word document

1) Create all the repositories.
2) Operations in B: Create a file info.txt containing text “Project”. Commit it and then create 2 branches in master. Branches are to be named as Development and Testing .Push all branches to A.
3) Pull Development branch on C and Testing branch on D
4) Now, on C add a file MyJavaCode.txt, stage it and commit it. On D add file MyJUnitTestCase.txt, stage and commit it. Goto D and pull all files from C.
5) Goto D and edit file MyJavaCode.txt (Assume that it is some file which is accidently edited). Stage it, commit it. Now, push data from D to A. Then goto C and pull from A. It needs resolving conflict. While resolving conflict, use text from C and discard all changes in MyJavaCode.txt made in D. Commit C and push from C to A.
6) Pull from A to C. Push from C to E. Assume that A is down. Create file Source2.java in C. Stage it, commit it and push to E. Create file HttpdTest.txt in D. Stage it and commit it. Pull from E and then Push to E. Now, assume A is up. Now D is in sync with E. So, pull A to D and then push from D to A.

Using rebase change order of commit in any of the above repository.

2. Create the account in GitHub-, push the calculator Application in remote repository, next user pull it to local repository & make the change & again push changed application to remote repository.

2.1 Extend the above application create a dynamic web calculator application.Push the data into github repository.

Note: Participants are required to submit commands used for each question in a word document

Lab 2. Jenkin with Sonar

Goals	▪ Working with Jenkin with sonar
Time	30 minutes

3. Create a Job in Jenkin, pull the calculator application (same application push in assignment 2) from GitHub repository ,build with maven & analyze with sonarqube

3.1. Create a Job in Jenkin, pull the calculator application (same application push in assignment 2.1) from GitHub repository, build with maven & analyze with sonarqube

Note: Participants are required to submit commands used for each question in a word document

Lab 3: IBM BlueMix

Goals	▪ Working with delivery pipeline with IBM bluemix
Time	120 minutes

4 Create IBM bluemix account, deploy Web based calculator application using eclipse & CLI.

4.1 Extend above assignment & create delivery pipeline of above application. Make change in Git repository & again see the build.

