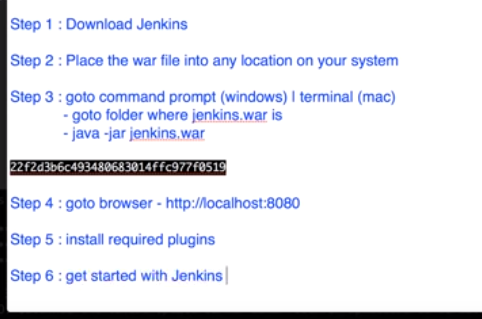
Jenkins

**What is Jenkins?**

* Jenkins is java application
* Used for continuous integration and continuous delivery



Admin password : 2354c8337d3841ce9def7b2a40ff259c

**How to setup Jenkins on Tomcat :-**

**Why we need to deploy Jenkins on Tomcat ?**

Jenkins comes by default with its own servlet container **Jetty/Winstone,** and we can also start and deploy our Jenkins on different servlet container like Tomcat. The main reason is we can start our all application on a single server, so that all our web application as well as Jenkins will be on the same server.

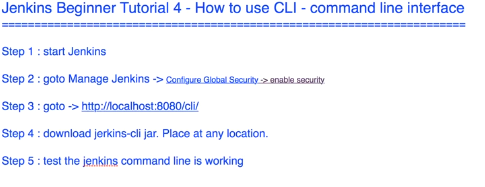
**Note :** It is not necessary to deploy Jenkins on Tomcat or any other server. it could be on its by default server Jetty/Winstone.



**How To Use Command line Interface ?**

**Why we should go with CLI as we already have its UI ?**

1. Easier
2. Faster
3. Memory management (efficient)
4. Continuous Integration



# How to create Users + Manage + Assign Roles :

# 

# 

# To create new user :

# Goto Manage Jenkins 🡪 manage users 🡪create user 🡪 provide all details

# How to manage a user :

# Goto Manage Jenkins 🡪 manage plugins 🡪

# Here we have different sections updates/Available/installed/Advanced

# So goto available section and search role strategy plugin

# Select that plugin and click on Download and restart button

# If that plugin is not available there it means it is already installed so goto installed section you can see that plugin there only.

# Once you get the plugin How do we use it ?

# Goto Manage Jenkins 🡪 Configure Global security 🡪Make sure enable security is checked and in Authorization section select Role Based strategy radio button🡪apply and save

# 

# Note : Now If we try to login Jenkins with a newly created user like bharat whose role is not assigned we will get an error message

# 

# Because we are using Role based strategy Authorization and no role is given to user bharat. so how to grant access this user?

# Goto Manage Jenkins 🡪Manage and assign role 🡪Manage Roles 🡪Here there are three roles are defined Global roles, Project roles and slave roles

# Here we are going to create an employee role on Global level and two roles named Developer and Tester at Project level.

# For Employee role we are giving the permission for read , view, edit and a developer is able to access any kind of operation which has a project pattern started with dev and same it is for tester whose project name will started with test

# 

# Finally we have to assign the roles to our user like bharat

# Goto Manage Jenkins 🡪Manage and assign roles 🡪 Assign roles

# So we add our user bharat to the global role

# We are creating assigning bharat as employee role at global role level and developer at item level

# 

# Jenkins Basic Configurations:

# Jenkins Getting started with JOBS:

# 

# Once we create a job and build it

# 

# Here first column s🡪 gives the status of last build ie it will be blue if last build will success and will gray if last build will be failure

# Second column w 🡪 gives the status of weather report and it’s colour depend upon last five build

# How can you trigger the job remotely :

# Select a project 🡪 goto configure 🡪Build triggers 🡪 select checkbox Trigger build remotely this will give the url . give any token number there like 12345.

# copy that url and paste into a new browser and in url replace JENKINS\_URL with localhost:8080(local machine Jenkins url) and TOKEN\_NAME with 12345

# 

# so your final url will be : <http://localhost:8080/job/Test1/build?token=12345>

# paste it into other tab of browser

# check that how many build are done for this job it is suppose build number 23 is there and in build queue no build is in queue

# 

# Once we put that url in other tab and enter a new build will be in queue and new build will be started

# 

# Note : we can run this job from any machine only need to change the url and in url replace localhost:8080 with ip

# How to chain job execution :

# Create two more jobs Test2 and Test3

# In Test2 goto configure🡪Build Triggers 🡪Select checkbox Build after other projects are build 🡪Put Test1 and select the radio button Trigger only if build is stable.

# Also in Post build action button 🡪select build other projects 🡪put Test3 and select the radio button Trigger only if build is stable.

# 

# 

# Jenkins integration with GIT (SCM)

# 

# Step 1 :Create a java program

# Step 2 : Create a Jenkins job to run the java program :

# A job is created where build command we have to put like below

# 

# Job is created and we can build it now.

# Step 3 : Add project Git and GitHub

# First goto cmd prompt and initialize git by using command :

# git init 🡪git status 🡪 git add . 🡪git commit –m “adding java prog” 🡪after that we create a git repository and get the url git remote add origin url of github 🡪git push –u origin master

# Project is added to github now

# Step 4 : Add Github plugins to Jenkins :

# Jenkins 🡪manage Jenkins 🡪 Plugin manager 🡪 In available tab under search box put git plugin 🡪

# 

# Click on Download now and restart button.

# Step 5 : In Jenkins goto HelloWorld job

# Configure 🡪under Source Code Management 🡪select Git 🡪put github url 🡪add github credentials 🡪

# 

# In Build triggers select Poll SCM checkbox we put H/15 \* \* \* \* \* it means this job will check the git repository every 15 minutes and if there is any change added it will trigger this job.

# 

# How to use CATLIGHT using Jenkins :

# What is CATLIGHT?

# Catlight is notifier for developer. Catlight will notify you when builds , bugs & tasks need your attention.

# It is very handy and useful when you have to manage multiple jobs

# It is a notification app for developers. It shows the current status of continuous delivery, tasks & bugs in the project and informs when attention is needed.

# Automated Deployment :

# 

# 

# How to do Automated Deployment ?

# Step 1 : Start Jenkins

# Step 2 : Install Plugin : we have to install Deploy Plugin for Jenkins

# Jenkins-> manage Jenkins -> manage plugin -> Available tab -> search for Deploy to container plugin -> install and restart button

# Step 3 : Create a build job in Jenkins : This build will create a simple war file or ear file

# You just go to google and download a sample war file to be deployed on Tomcat

# After downloading war file put it under jenkin workspace C:\Users\Deepak\.jenkins\workspace\AutomatedDeploymentJob\sample.war

# Step 4 : Add post build action (Deply War/Ear in container) : To do so add values to the field.

# Once we select Add post build action 🡪 Deply War/Ear in container 🡪

# 

# In our project we set username=”deployer” and password=”deployer”

# 

# 

# Notifications - How to send Email from Jenkins:

# Jenkins 🡪manage Jenkins 🡪 Email Notification 🡪Under SMTP server you put smtp.gmail.com 🡪advanced settings 🡪bharatkumar353@gmail.com & its password (mail id from which mail will be send) Use ssl(465 for gmail) 🡪test mail receipient (mail id of receiver)

# Note : for gmail 🡪SMTP server is smtp.gmail.com & ssl port is 465

# For other domain we will have to google it :

# 

# 

# So email notification configuration is done if you still not get mail goto email from where we are sending the mail 🡪goto my account 🡪Signing in to the Google 🡪 You will find a section allow less secure apps : ON/OFF you make it ON

# Goto any Job 🡪configure 🡪Add post build action 🡪/ E mail notification 🡪put receipients mail id

# What is Pipeline in Jenkins :

# 

# 

# How to setup DELIVERY PIPELINE in Jenkins :

# Step1 : Chain required jobs in sequence: Add upstream/downstream jobs

# Eg: First Job is build job 🡪 deploy job 🡪 Test job will be triggered sequentially

# Step 2 : Install Delivery pipeline plugin:

# Jenkins-> manage Jenkins -> manage plugin -> Available tab -> search for Delivery pipeline -> install and restart button

# Step 3 : Add Delivery pipeline view Configure the view : Configure the view

# Press + icon and select Delivery pipeline view radio button

# Step 4 : run and Validate

# 

# How to setup BUILD PIPELINE in Jenkins:

# Step1 : Chain required jobs in sequence: Add upstream/downstream jobs

# Eg: First Job is build job 🡪 deploy jib 🡪 Test job will be triggered sequencially

# Step 2 : Install Build pipeline plugin:

# Jenkins-> manage Jenkins -> manage plugin -> Available tab -> search for Build pipeline -> install and restart button

# Step3: Add Build Pipeline view in Jenkins : Configure the view

# Press + icon and select Delivery pipeline view radio button

# Step 4 : run and Validate

# 

# Jenkins Blue Ocean ? How to get started?

# What is BLUE OCEAN ?

# Blue Ocean is new experience / new user interface for Jenkins which is design to reduce the clutter and increases the clarity

# IN Simple words : Blue Ocean is a new user interface for Jenkins and provides an interactive view for Jenkin pipelines ( and jobs).

# How to get Blue Ocean?

# Prerequisite:

# Jenkins must be 2.7 version or more

# Step 1 : Install Blue Ocean:

# User can switch any time from Blue Ocean to Jenkins classic view

# Jenkins How to Trigger Job with Email | Poll Mailbox Trigger Plugin:

# Based on certain mail subject a job is triggered.

# Jenkins How to create Build Monitor View: