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Compete DevOps Package

GIT: -

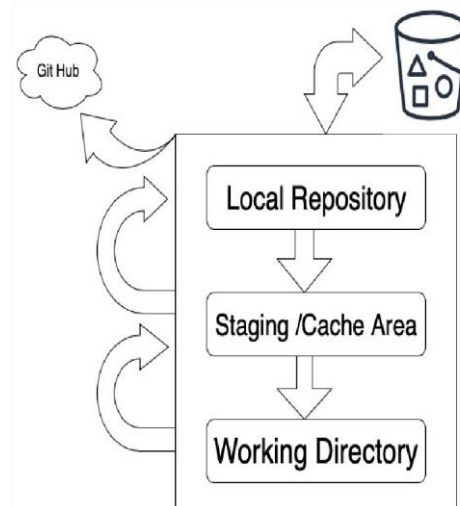
Git is a distributed version-control system for tracking changes in source code during software development. It is designed for coordinating work among programmers, but it can be used to track changes in any set of files. Its goals include speed, data integrity, and support for distributed, non-linear workflows.

Git was created by Linus Torvalds in 2005 for development of the Linux kernel, with other kernel developers contributing to its initial development. Its current maintainer since 2005 is Junio Hamano. As with most other distributed version control systems, and unlike most client-server systems, every Git directory on every computer is a full-fledged repository with complete history and full version-tracking abilities, independent of network access or a central server.

Install git: -

You should be running a server with any Ubuntu 16.04 LTS release. You will need to log in to SSH via the root user.

First, as always, we should start out by running general OS and package updates. On Ubuntu we'll do this by running:



>>

apt-get update

>> apt-get install git-core

>> git --version

Installing GIT - apt-get install git

Telling the GIT to track this folder - git init

Colours – Red colour = Files in working directory

Green colour = Files in staging / cache Area

Status Check – git status (for checking the tracking of files)

Commit Id's – generally called as SHA1 number

Git init: -

To track the particular folder and git will only take care about the files but not folders For checking whether it is installed or not check the hidden files

>> ls -a (or) ls -al

>> git config --global user.name "XXnameXX"

>> git config --global user.email "XXemail IDXX"

>> git add filename (or) .[for adding complete files]

>> git commit -m "message for that task"

>> git commit -am "message for the task"

>> git log - -oneline

>> git show commitid

>> vi .gitignore

*.html

```
*.jpg  
! filename.html  
>> "git add -f filename"  
>> "git checkout filename"
```

Git Server:-

Development of the GitHub platform began on October 19, 2007. Projects on GitHub can be accessed and manipulated using the standard Git command-line interface and all of the standard Git commands work with it. GitHub also allows registered and unregistered users to browse public repositories on the site. Multiple desktop clients and Git plugins have also been created by GitHub and other third parties that integrate with the platform.

The site provides social networking-like functions such as feeds, followers, wikis (using wiki software called Gollum) and a social network graph to display how developers work on their versions ("forks") of a repository and what fork (and branch within that fork) is newest.

A user must create an account in order to contribute content to the site, but public repositories can be browsed and downloaded by anyone. With a registered user account, users are able to have discussions, manage repositories, submit contributions to others' repositories, and review changes to code. GitHub began offering unlimited private repositories at no cost in January 2019 (limited to three contributors per project). Previously, only public repositories were free.

Installation :-

```
>> JAVA 8 version need to be installed  
>> Terminal should be updated  
>> Should have gitbucket .war should be downloaded  
>> IP Address should be Reserved and should fix manually
```

>>

```
>> Change to Root user - sudo su -root
>> Install the Vim software – apt-get install vim
    apt-get install software-properties-common
>> apt-get update
>> apt-get install default-jre
>> apt-get install default-jdk
>> add-apt-repository – rppa:webupdsteam/java
>> apt-get update
>> apt-get install oracle-java8-installer
>> java --version
>> Download Gitbucket.war
>> Go to the path where the gutbucket.war file was situated
>> Java -jar gutbucket.war
>> java -jar gutbucket.war --port =8018
>> apt – get install git
```

Using local Git bucket :-

```
>> mkdir myproject – Create a directory
>> cd myproject – navigate to directory
>> git init – initialize the git
>> touch tarun – create a file in myproject
>> git status
>> git add tarun
>> git commit –m ‘commit message’
>> git log
>> gibucket – sign In – root/root (username & password)
>> Goto system Administration – New user – Create user with
credentials – sign out - sign in with newly created user >> New
repository - Create a repository
>> git remote add origin URL
>> git push –u origin master
>> View the file called “.gitbucket” (hidden folder)
```

>> Give the command “- tree .gitbucket “ to view the files in the repository

Git Branches:-

Branching, in version control and software configuration management, is the duplication of an object under version control (such as a source code file or

a directory tree) so that modifications can occur in parallel along multiple branches.

Branches are also known as trees, streams or codelines. The originating branch is sometimes called the parent branch, the upstream branch (or simply upstream, especially if the branches are maintained by different organizations or individuals), or the backing stream. Child branches are branches that have a parent; a branch without a parent is referred to as the trunk or the mainline.

```
>> git branch
>> git branch newbranchname
>> git checkout branchtochange
>> git merge branchnametomerge
>> git checkout master
>> git branch -D branchname
>> git push origin --delete branchname
```

Stash Area:-

```
>> git add .
>> git stash save filename
>> git stash list - To view the stashed files
```

Play with data in Stash Area

```
>> Copy + paste = Take a copy from stash area and use it in normally
git stash apply stashID
```

>>

>> Cut + paste = Move a file from stash and use it normally git stash pop stashID

>> Delete = Remove files from stash

Area >> git stash drop stashID

Creating Version tags:-

>> git tag version number = Creating a version tag

>> git tag = Wrapping the files and pushing into version

>> git push -u myproject version number = Pushing into github

>> git tag -d version number = Remove versions locally

git push -u myproject --delete version number = Delete the release in the git hub

Email Notification

>> Whatever happens in the github will be notified through email

>> Steps to activate email notification

>> Login into Git Hub - myproject – Settings – Notifications – Add - Email Address

Backup and Restore

>> For taking the backup of the files of the git bucket .It is a hidden folder.

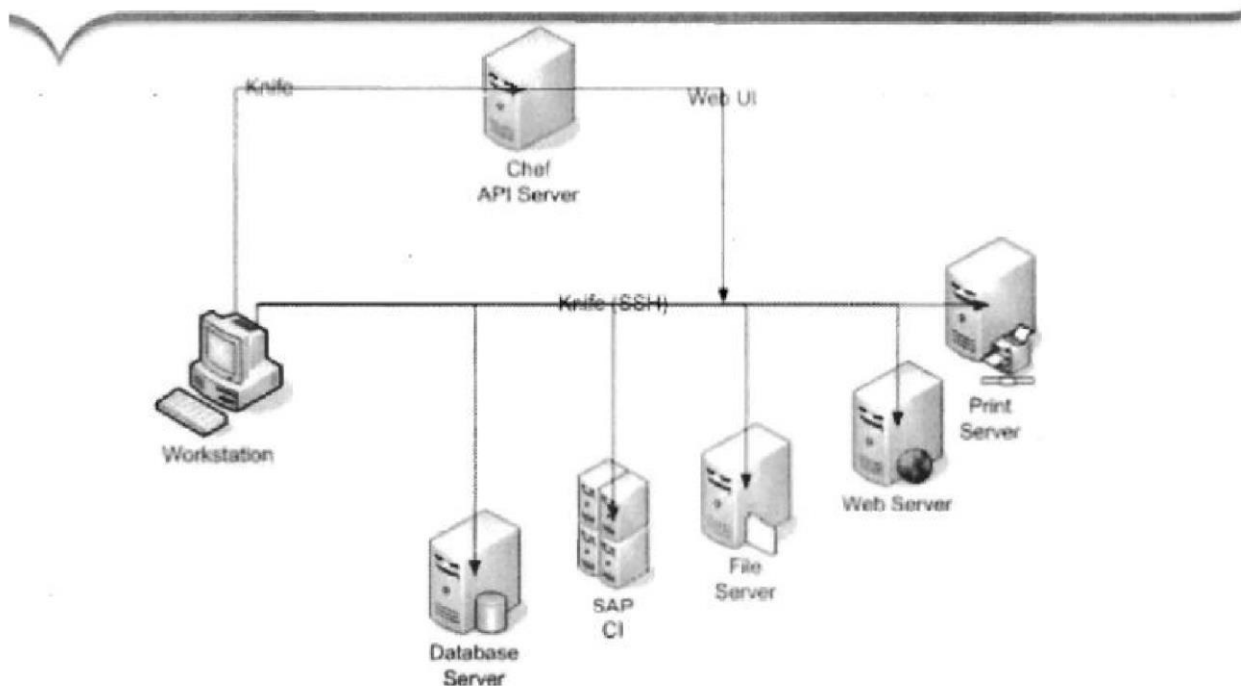
>> ls -a (View hidden files)

>> open the .gitbucket fil

>> we can see the files which were pushed

CHEF:-

Chef Architecture



Chef is a company and the name of a configuration management tool written in Ruby and Erlang. It uses a pure-Ruby, domain-specific language (DSL) for writing system configuration "recipes". Chef is used to streamline the task of configuring and maintaining a company's servers.

The user writes "recipes" that describe how Chef manages server applications and utilities (such as Apache HTTP Server, MySQL, or Hadoop) and how they are to be configured. These recipes (which can be grouped together as a "cookbook" for easier management) describe a series of resources that should be in a particular state: packages that should be installed, services that should be running, or files that should be written. These various resources can be configured to specific versions of software to run and can ensure that software is installed in the correct order based on dependencies.

>>

Chef can run in client/server mode, or in a standalone configuration named "chef-solo". In client/server mode, the Chef client sends various attributes about the node to the Chef server. The server uses Elasticsearch to index these attributes and provides an API for clients to query this information.

Chef-server installation:-

```
>> hostname -f
```

```
>> cd ~
```

```
wget https://opscode-omnibus-  
packages.s3.amazonaws.com/ubuntu/12.04/x86_64/chef-  
server_11.0.101.ubuntu.12.04_amd64.deb
```

```
>> sudo dpkg -i chef-server*
```

```
>> sudo chef-server-ctl reconfigure
```

```
>> https://server_domain_or_IP
```

```
>> Default Username: admin
```

```
>> Default Password: p@ssw0rd1
```

```
>> mkdir -p ~/chef-repo/.chef
```

```
>> https://server_domain_or_IP
```

```
>> #chef-manage-ctl reconfigure
```

```
>> #chef-server-ctl user-create student student student  
"student@pivotal.com"
```

```
"redhat" -f student.pem
```

```
>> #chef-server-ctl org-create myorg "pivotalsoft" -a student -f  
myorgvalidator.pem
```

```
>> #chef-server-ctl restart (for restart)
```

```
>> #chef-server-ctl start (for start)
```

```
>> #chef-server-ctl stop (for stop)
```

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chef node installation:-

```
>> updat ip & hostadd
>> #dpkg -i chef-
client..... >> mkdir -p
/etc/chef copy both
.pem files
>> cd /etc/chef >> vi
client.rb log_level
:info log_location
STDOUT
chef_server_url 'https://chefserver.pivotal.com/organizations/myorg'
validation_client_name 'myorg-validator' validation_key
'/etc/chef/myorg-validator.pem'
client_key          '/etc/chef/student.pem'
trusted_certs_dir   '/etc/chef/trusted_certs'

>> knife ssl fetch -s https://chefserver.pivotal.com
>> knife ssl check -s https://chefserver.pivotal.com
>> useradd rishi
>> passwd rishi
>> usermod -aG sudo rishi
>> apt-get install ssh
>> ssh-keygen
```

Chef workstation installation:-

```
>> update ip and host address
>> dpkg -i chef-work..... >> cd
/root/chef-repo/.chef copy both
.pem files into .chef folder
>> ls
>> vi knife.rb
```

```
log_level          :info
log_location       STDOUT
node_name
'student'
client_key          '/root/chef-repo/.chef/student.pem'
validation_client_name 'myorg-validator'
validation_key      '/root/chef-repo/.chef/myorg-validator.pem'
chef_server_url
'https://chefserver.pivotal.com/organizations/myorg'
cookbook_path      ['/root/chef-repo/cookbooks']
>> knife ssl fetch / knife ssl fetch -s https://chefserver.pivotal.com
>> knife ssl check / knife ssl check -s https://chefserver.pivotal.com
>> knife bootstrap 192.168.0.221 --ssh-user rishi --sudo --identity-file
~/.ssh/id_rsa --node-name chefnode.pivotal.com
#knife node list
```

Chef cookbooks:-

Writing cookbooks/recipes

sample cookbooks:-

```
>> chef generate cookbook sample_file
>> vi /chef/cookbook/sample_file/recipes/default.rb
file "/tmp/test.txt" do
  owner "root"
  group "root"
  mode "0644"
  content "haiii this is test file"
  action :create
end
>> knife cookbook upload sample_file
>> knife node run_list add chefnode.pivotal.com sample_file
>> go to chefnode add type "chef-client"
```

Creates the sysadmin group and users:-

```
users_manage 'sysadmin' do
  group_id 2300
  action [:create]
end
```

Creates the testgroup group, and users

```
users_manage 'testgroup' do
  group_id 3000
  action [:create]
  data_bag 'test_home_dir' end
```

Creates the nfsgroup group, and users

```
users_manage 'nfsgroup' do
  group_id 4000
  action [:create]
  data_bag 'test_home_dir'
manage_nfs_home_dirs false end
```

```
>> knife cookbook upload users
```

```
>> knife node run_list add chefnode.pivotal.com sample_file
```

```
>> go to chefnode add type "chef-client"
```

recipe for apache server:-

```
>> chef generate cookbook apache
```

service['apache2'] is defined in the apache2_default_install resource but other resources are currently unable to reference it. To work around this issue, define the following helper in your cookbook:

```
service 'apache2' do
  extend Apache2::Cookbook::Helpers
  service_name lazy { apache_platform_service_name }
  supports restart: true, status: true, reload: true
  action :nothing
end
```

```
apache2_install 'default_install'
apache2_module 'headers'
apache2_module 'ssl'
```

```
apache2_default_site 'foo' do
  default_site_name 'my_site'
  template_cookbook 'my_cookbook'
  port '443'
  template_source 'my_site.conf.erb'
  action :enable
end
```

```
>> knife cookbook upload sample_file
>> knife node run_list add chefnode.pivotal.com apache
>> go to chefnode add type "chef-client"
```

Chef roles:-

```
>> knife role bulk delete REGE
>> knife role create ROLE_NAME (options)
>> knife role create role1
>> knife role edit ROLE_NAME
```

```
{
  "name": "role1",
  "default_attributes": {
  },
  "json_class": "Chef::Role",
  "run_list": ["recipe[cookbook_name::recipe_name]",
    "role[role_name]"
  ],
  "description": "",
  "chef_type": "role",
  "override_attributes": {
```

```
}  
}  
>> knife role show ROLE_NAME  
>> knife cookbook upload recipe  
>> knife node run_list add chefnode.pivotal.com apache
```

To uninstall:-

```
>> chef-server-ctl uninstall  
>> chef-manage-ctl cleanse  
>> opscode-analytics-ctl uninstall  
>> opscode-reporting-ctl uninstall  
>> dpkg -P chefdk  
>> rpm -qa *chef*  
>> yum remove <package>  
>> dpkg --get-selections | grep chef # or dpkg --get-architecture chef  
>> dpkg -P chef  
>> sudo rm -rf  
/opt/chef >> sudo rm -  
rf /etc/chef
```

Maven:-

Maven is a build automation tool used primarily for Java projects. Maven can also be used to build and manage projects written in C#, Ruby, Scala, and other languages. The Maven project is hosted by the Apache Software Foundation, where it was formerly part of the Jakarta Project.

Maven addresses two aspects of building software: how software is built, and its dependencies. Unlike earlier tools like Apache Ant, it uses conventions for the build procedure, and only exceptions need to be written down. An XML file describes the software project being built, its dependencies on other external modules and components,

the build order, directories, and required plug-ins. It comes with pre-defined targets for performing certain well-defined tasks such as compilation of code and its packaging. Maven dynamically downloads Java libraries and Maven plug-ins from one or more repositories such as the Maven 2 Central Repository, and stores them in a local cache. This local cache of downloaded artifacts can also be updated with artifacts created by local projects. Public repositories can also be updated.

Maven is built using a plugin-based architecture that allows it to make use of any application controllable through standard input.

Maven installation:-

```
>> sudo apt-get update -y
>> sudo apt-get upgrade -y
>> add-apt-repository ppa:webupd8team/java
>> apt-get update -y
>> apt-get install oracle-java8-installer
>> java -version
>> wget http://www-
eu.apache.org/dist/maven/maven3/3.3.9/binaries/apache-maven-
3.3.9-bin.tar.gz
>> tar -xvzf apache-maven-3.3.9-bin.tar.gz
>> mv apache-maven-3.3.9 maven
>> nano
/etc/profile.d/mavenenv.sh export
M2_HOME=/opt/maven export
PATH=${M2_HOME}/bin:${PATH}
>> chmod +x
/etc/profile.d/mavenenv.sh
>> source /etc/profile.d/mavenenv.sh
>> tar -xvf apache-maven -C /opt/
```

```
>> vi /etc/profile.d/apache-maven.sh
export JAVA_HOME=/usr/lib/jvm/java-
8-oracle export M2_HOME=/opt/apache-
maven export
MAVEN_HOME=/opt/apache-maven
export PATH=${M2_HOME}/bin:${PATH}
>> apt-get install maven
>> mvn --version
>> mvn archetype:generate
>> 1352
groupid:pivotal
architect:sampl
e Y
>> tree sample
>> mvn
validate >>
mvn compile
>> mvn test
>> mvn package
>> tree sample
>> root@ubuntu:/home/student# mvn --help
```

Options:

-am,--also-make	If project list is specified, also build projects required by the list
-amd,--also-make-dependents	If project list is specified, also build projects that depend on projects on the list
-B,--batch-mode	Run in non-interactive (batch) mode
-b,--builder <arg>	The id of the build strategy to use.

-C,--strict-checksums	Fail the build if checksums don't match
-c,--lax-checksums	Warn if checksums don't match
-cpu,--check-plugin-updates	Ineffective, only kept for backward compatibility
-D,--define <arg>	Define a system property
-e,--errors	Produce execution error messages
-emp,--encrypt-master-password <arg>	Encrypt master security password
-ep,--encrypt-password <arg>	Encrypt server password
-f,--file <arg>	Force the use of an alternate POM file (or directory with pom.xml).
-fae,--fail-at-end	Only fail the build afterwards; allow all non-impacted builds to continue
-ff,--fail-fast	Stop at first failure in reactorized builds
-fn,--fail-never	NEVER fail the build, regardless of project result
-gs,--global-settings <arg>	Alternate path for the global settings file
-gt,--global-toolchains <arg>	Alternate path for the global toolchains file
-h,--help	Display help information
-l,--log-file <arg>	Log file where all build output will go.
-llr,--legacy-local-repository	Use Maven 2 Legacy Local Repository behaviour, ie no use of <code>_remote.repositories</code> . Can also be activated by using <code>-Dmaven.legacyLocalRepo=true</code>

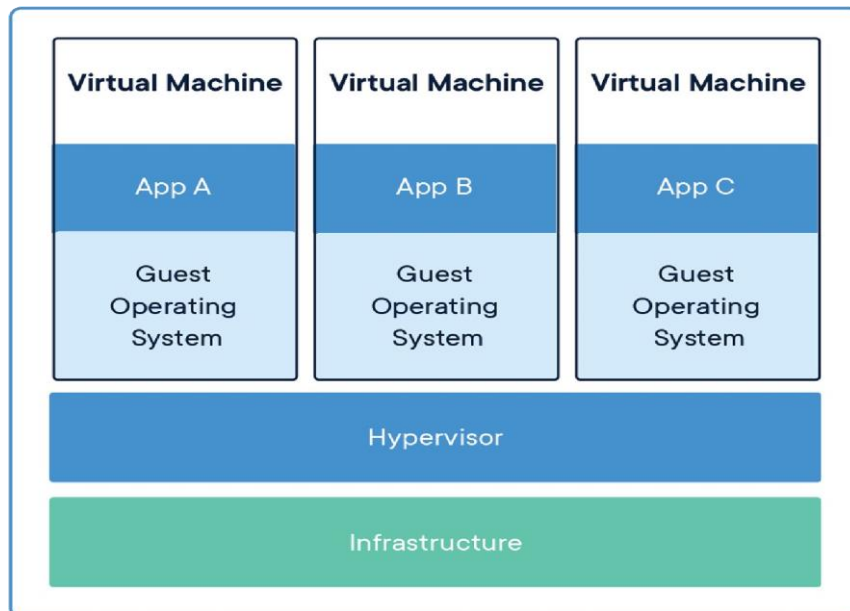
-N,--non-recursive	Do not recurse into sub-projects
-npr,--no-plugin-registry	Ineffective, only kept for backward compatibility
-npu,--no-plugin-updates	Ineffective, only kept for backward compatibility
-nsu,--no-snapshot-updates	Suppress SNAPSHOT updates
-o,--offline	Work offline
-P,--activate-profiles <arg>	Comma-delimited list of profiles to activate
-pl,--projects <arg>	Comma-delimited list of specified reactor projects to build instead of all projects. A project can be specified by [groupId]:artifactId or by its relative path.
-q,--quiet	Quiet output - only show errors
-rf,--resume-from <arg>	Resume reactor from specified project
-s,--settings <arg>	Alternate path for the user settings file
-t,--toolchains <arg>	Alternate path for the user toolchains file
-T,--threads <arg>	Thread count, for instance 2.0C where C is core multiplied
-U,--update-snapshots	Forces a check for missing releases and updated snapshots on remote repositories
-up,--update-plugins	Ineffective, only kept for backward compatibility
-v,--version	Display version information
-V,--show-version	Display version information WITHOUT stopping build

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Docker :-

Docker is a tool designed to make it easier to create, deploy, and run applications by using containers. Containers allow a developer to package up an application with all of the parts it needs, such as libraries and other dependencies, and ship it all out as one package. By doing so, thanks to the container, the developer can rest assured that the application will run on any other Linux machine regardless of any customized settings that machine might have that could differ from the machine used for writing and testing the code. In a way, Docker is a bit like a virtual machine. But unlike a virtual machine, rather than creating a whole virtual operating system, Docker allows applications to use the same Linux kernel as the system that they're running on and only requires applications be shipped with things not already running on the host computer. This gives a significant performance boost and reduces the size of the application.

And importantly, Docker is open source. This means that anyone can contribute to Docker and extend it to meet their own needs if they need additional features that aren't available out of the box.



Install Java on ubuntu Server

```
>> sudo apt-get update -y
>> sudo apt-get upgrade -y
>> add-apt-repository ppa:webupd8team/java
>> apt-get update -y
>> apt-get install oracle-java8-installer
>> java -version
>> sudo apt update
>> sudo apt-key adv --keyserver
hkp://ha.pool.skskeyservers.net:80 --recv-keys
58118E89F3A912897C070ADB76221572C52609D
>> sudo apt-add-repository "deb
https://apt.dockerproject.org/repo ubuntu-xenial main"
>> sudo apt update
>> sudo apt install docker-engine
>> sudo systemctl start docker
>> docker images
>> docker pull ubuntu
>> root@ubuntu:/home/student# docker --help
Options:
```

`--config` string Location of client config files (default
 `"/root/.docker"`)

`-D, --debug` Enable debug mode

`--help` Print usage

`-H, --host` list Daemon socket(s) to connect to

`-l, --log-level` string Set the logging level
 `("debug" | "info" | "warn" | "error" | "fatal")`
 (default `"info"`)

`--tls` Use TLS; implied by `--tlsverify`

`--tlscacert` string Trust certs signed only by this CA (default
 `"/root/.docker/ca.pem"`)

`--tlscert` string Path to TLS certificate file (default
 `"/root/.docker/cert.pem"`)

`--tlskey` string Path to TLS key file (default
 `"/root/.docker/key.pem"`)

`--tlsverify` Use TLS and verify the remote

`-v, --version` Print version information and quit Management

Commands:

`container` Manage containers

`image` Manage images

`network` Manage networks

`node` Manage Swarm nodes

`plugin` Manage plugins

`secret` Manage Docker secrets

`service` Manage services

`stack` Manage Docker stacks

`swarm` Manage Swarm

`system` Manage Docker

`volume` Manage volumes

Commands:

attach	Attach local standard input, output, and error streams to a running container
build	Build an image from a Dockerfile
commit	Create a new image from a container's changes
cp	Copy files/folders between a container and the local filesystem
create	Create a new container
diff	Inspect changes to files or directories on a container's filesystem
events	Get real time events from the server
exec	Run a command in a running container
export	Export a container's filesystem as a tar archive
history	Show the history of an image
images	List images
import	Import the contents from a tarball to create a filesystem image
info	Display system-wide information
inspect	Return low-level information on Docker objects
kill	Kill one or more running containers
load	Load an image from a tar archive or STDIN
login	Log in to a Docker registry
logout	Log out from a Docker registry
logs	Fetch the logs of a container
pause	Pause all processes within one or more containers
port	List port mappings or a specific mapping for the container
ps	List containers
pull	Pull an image or a repository from a registry
push	Push an image or a repository to a registry
rename	Rename a container
restart	Restart one or more containers
rm	Remove one or more containers
rmi	Remove one or more images

run Run a command in a new container
save Save one or more images to a tar archive (streamed to
STDOUT by default)
search Search the Docker Hub for images
start Start one or more stopped containers
stats Display a live stream of container(s) resource usage statistics
stop Stop one or more running containers
tag Create a tag TARGET_IMAGE that refers to SOURCE_IMAGE
top Display the running processes of a container
unpause Unpause all processes within one or more containers
update Update configuration of one or more containers
version Show the Docker version information
wait Block until one or more containers stop, then print their exit
codes

To run Images:>>

docker images

>> docker run -ti --rm ubuntu /bin/bash\

>> docker ps

>> docker ps -a

>> docker run -ti ubuntu /bin/bash

>> docker ps

>> docker ps -a

>> docker exec -ti <container id> /bin/bash

>> docker run -ti --name "ubuntul8" --hostname
"pivotal" ubuntu /bin/bash

>> docker start <container id>

>> docker stop <container id>

>> docker rm <container id>

>> docker image rm <image id>

Gitbucket Configuration on Docker:-

Need to maintain gitbucket.war file and Dockerfile in /root Dir.

```
>> vi Dockerfile
```

```
From java:latest
```

```
MAINTAINER student@pivotal.com
```

```
LABEL evn=production
```

```
ENV apparea /data/app
```

```
Run mkdir -p $apparea
```

```
ADD ./gitbucket.war $apparea
```

```
WORKDIR $apparea
```

```
CMD ["java", "-
```

```
jar", "gitbucket.war"] :wq!
```

```
>> docker build -t pivotal/git . (to build Dockerfile)
```

```
>> docker images
```

```
>> docker run -d -p 80:8080 pivotal/git (to port forwarding)
```

```
>> ifconfig
```

Open Firefox and give 192.168.0.151:80 to launch gitbucket server

Jenkins Configuration on Docker:-

Need to maintain gitbucket.war file and Dockerfile in /root Dir.

```
>> vi Dockerfile
```

```
From java:latest
```

```
MAINTAINER student@pivotal.com
```

```
LABEL evn=production
```

```
ENV apparea /data/app
```

```
Run mkdir -p $apparea
```

```
ADD ./jenkins.war $apparea
```

```
WORKDIR $apparea
```

```
CMD ["java", "-jar", "jenkins.war"]
```

```
:wq!
```



```
>> docker build -t pivotal/git . (to build Dockerfile)
```

```
>> docker images
```

```
>> docker run -d -p 80:8080 pivotal/jenkins (to port forwarding) >> ifconfig
```

Open Firefox and give 192.168.0.151:80 to launch gitbucket server

Apache tomcat server:-

Download apache-tomcat app from internet

```
#tar -xvf apache-tomcat -C /opt/
```

```
#cd /opt/apache-tomcat/bin
```

```
#./startup.sh #firefox &
```

```
http://192.168.149.159:80
```

```
80 set user Path-----
```

```
-
```

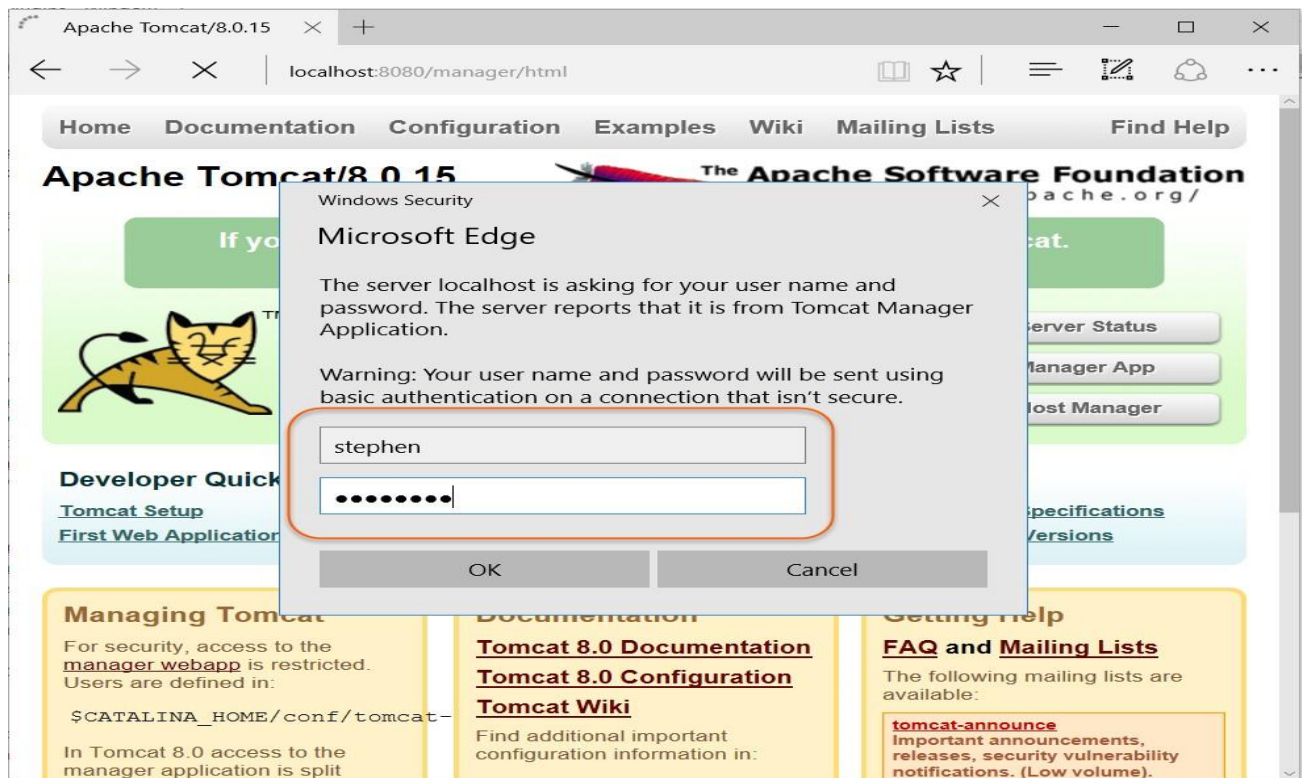
```
#vi /opt/apache-tomcat/conf/tomcat-users.xml
```

```
<role rolename="manager-gui"/>
```

```
<user username="student" password="redhat"
```

```
roles="manager-gui"/> </tomcat-users> :wq!
```

```
http://192.168.149.159:8080
```



open manager app and deploy .war files

ex:

`http://192.168.159.149:8080/sampleweb`
/

Install Apache Tomcat 8:-

```
>> apt-get update
```

```
>> apt-get install default-jdk
```

```
>> groupadd tomcat
```

```
>> useradd -s /bin/false -g tomcat -d /opt/tomcat tomcat
```

```
>> cd /tmp
```

```
>> curl -O http://apache.mirrors.ionfish.org/tomcat/tomcat-8/v8.5.5/bin/apache-tomcat-8.5.5.tar.gz
```

```
>> mkdir /opt/tomcat
```

```
>> tar xzvf apache-tomcat-8*tar.gz -C /opt/tomcat --strip-components=1
```

```
>> /opt/tomcat
```

```
>> chgrp -R tomcat /opt/tomcat
```

```
>> chmod -R g+r conf
```

```
>> chmod g+x conf
```

```
>> chown -R tomcat webapps/ work/ temp/ logs/
```

```
>> update-java-alternatives -l
```

```
>> /usr/lib/jvm/java-1.8.0-openjdk-amd64/jre
```

```
>> nano /etc/systemd/system/tomcat.service
```

```
[Unit]
```

```
Description=Apache Tomcat Web Application Container
```

```
After=network.target
```

```
[Service]
```

```
Type=forking
```

```
Environment=JAVA_HOME=/usr/lib/jvm/java-1.8.0-openjdk-amd64/jre
```

```
Environment=CATALINA_PID=/opt/tomcat/temp/tomcat.pid
```

```
Environment=CATALINA_HOME=/opt/tomcat
```

```
Environment=CATALINA_BASE=/opt/tomcat
```

```
Environment='CATALINA_OPTS=-Xms512M -Xmx1024M -server -XX:+UseParallelGC'
```

```
Environment='JAVA_OPTS=-Djava.awt.headless=true  
-Djava.security.egd=file:/dev/./urandom'
```

```
ExecStart=/opt/tomcat/bin/startup.sh
```

```
ExecStop=/opt/tomcat/bin/shutdown.sh
```

```
User=tomcat
```

```
Group=tomcat
```

```
UMask=0007
RestartSec=10
Restart=always
```

```
[Install]
```

```
WantedBy=multi-user.target
```

```
>> systemctl daemon-reload
>> systemctl start tomcat
>> systemctl status tomcat
>> ufw allow 8080
>> http://server_domain_or_IP:8080
>> systemctl enable tomcat
>> nano /opt/tomcat/conf/tomcat-users.xml
<tomcat-users . . .>
    <user username="admin" password="password" roles="manager-
gui,adminui"/>
</tomcat-users>
>> nano /opt/tomcat/webapps/manager/META-INF/context.xml
>> nano /opt/tomcat/webapps/host-manager/META-INF/context.xml
>> systemctl restart tomcat >>
http://server_domain_or_IP:808
0
```

Apache Tomcat/8.0.33



If you're seeing this, you've successfully installed Tomcat. Congratulations!



Recommended Reading:

[Security Considerations HOW-TO](#)

[Manager Application HOW-TO](#)

[Clustering/Session Replication HOW-TO](#)

[Server Status](#)

[Manager App](#)

[Host Manager](#)

Developer Quick Start

[Tomcat Setup](#)

[First Web Application](#)

[Realms & AAA](#)

[JDBC DataSources](#)

[Examples](#)

[Servlet Specifications](#)

[Tomcat Versions](#)

http://server_domain_or_IP:8080/manager/html

Tomcat Web Application Manager

Message: OK

Manager

[List Applications](#) [HTML Manager Help](#) [Manager Help](#) [Server Status](#)

Applications

Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/docs	None specified	Tomcat Documentation	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/examples	None specified	Servlet and JSP Examples	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/host-manager	None specified	Tomcat Host Manager Application	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/manager	None specified	Tomcat Manager Application	true	1	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes

Deploy

Deploy directory or WAR file located on server

Context Path (required):
XML Configuration file URL:
WAR or Directory URL:

WAR file to deploy

Select WAR file to upload No file chosen

Uploading Gitbucket and Jenkins:-

>> go to Tomcat manager
>> click on deploy option
>> context path /gitbucket
>> war or Directory URL /opt/gitbucket.war
>> deploy open Gitbucket
from Applications

Jenkins :-

>> go to Tomcat manager
>> click on deploy option

>> context path /jenkins

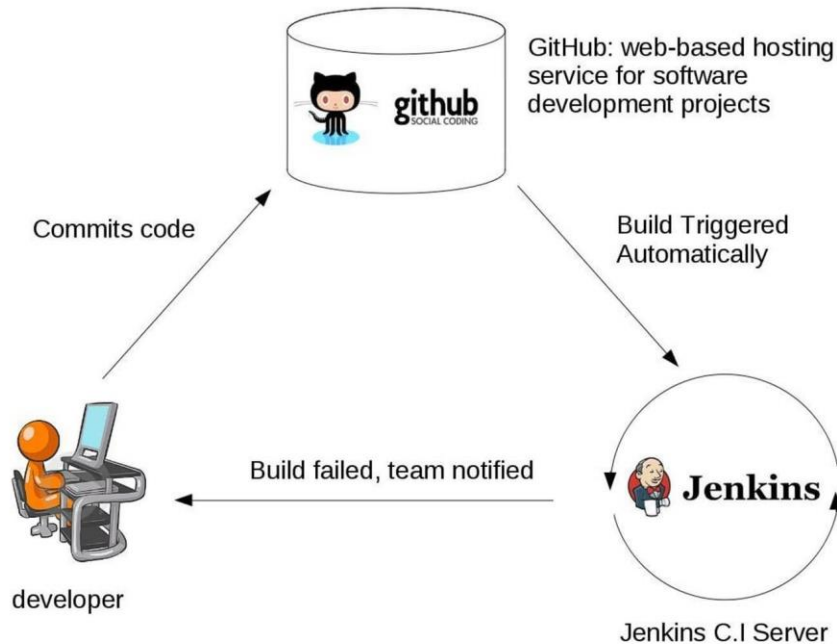
>> war or Directory URL /opt/jenkins.war >> deploy open Gitbucket from Applications

Jenkins:-

Jenkins is a self-contained, open source automation server which can be used to automate all sorts of tasks related to building, testing, and delivering or deploying software.

Jenkins can be installed through native system packages, Docker, or even run standalone by any machine with a Java Runtime Environment (JRE) installed.

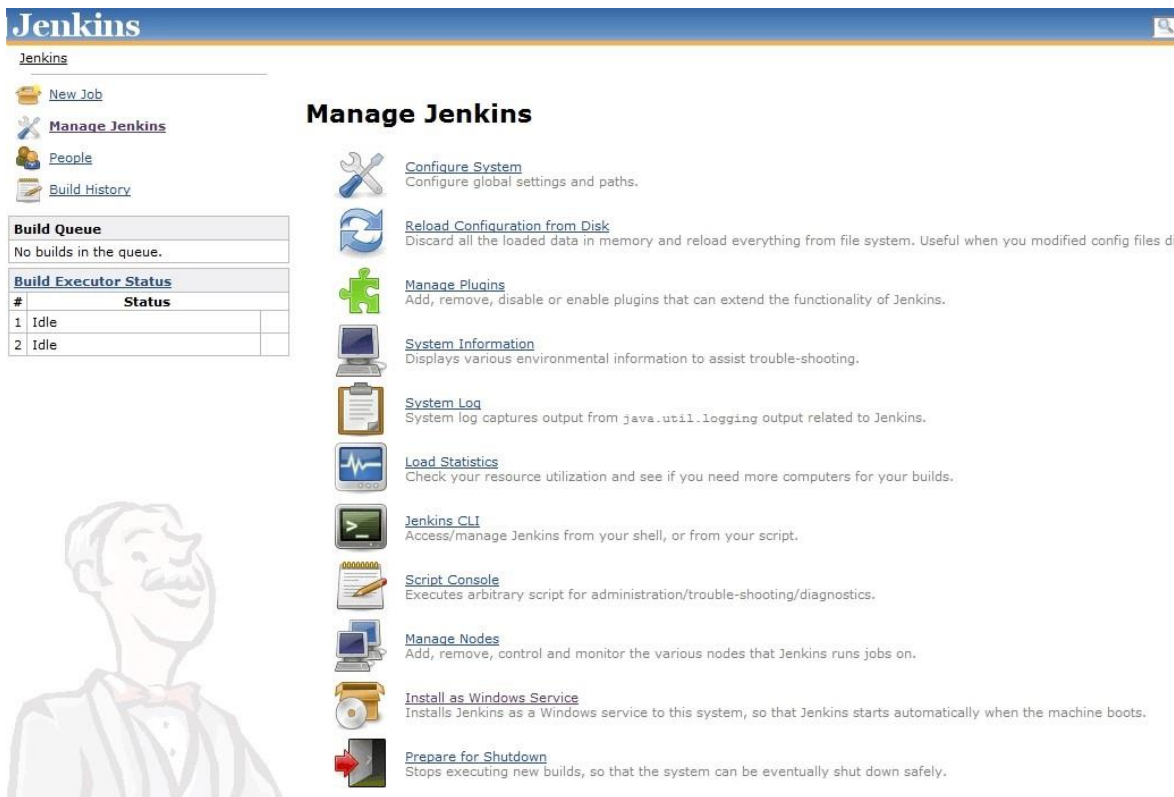
In Continuous Integration after a code commit, the software is built and tested immediately. In a large project with many developers, commits are made many times during a day. With each commit code is built and tested. If the test is passed, build is tested for deployment. If deployment is a success, the code is pushed to production. This commit, build, test, and deploy is a continuous process and hence the name continuous integration/deployment.



Jenkins Plugins:-

By default, Jenkins comes with a limited set of features. If you want to integrate your Jenkins installation with version control tools like Git, then you need to install plugins related to Git. In fact, for integration with tools like Maven you need to install respective plugins in your Jenkins.

Follow me here for more posts: [Shivam Agnihotri](#)



The screenshot shows the Jenkins web interface. At the top is the 'Jenkins' header. On the left sidebar, there are links for 'New Job', 'Manage Jenkins', 'People', and 'Build History'. Below these is a 'Build Queue' section showing 'No builds in the queue.' and a 'Build Executor Status' table with two idle executors. The main area is titled 'Manage Jenkins' and contains a list of administrative links, each with an icon: 'Configure System' (wrench), 'Reload Configuration from Disk' (refresh), 'Manage Plugins' (puzzle), 'System Information' (monitor), 'System Log' (notepad), 'Load Statistics' (heartbeat), 'Jenkins CLI' (terminal), 'Script Console' (notepad with pencil), 'Manage Nodes' (laptop), 'Install as Windows Service' (CD), and 'Prepare for Shutdown' (stop sign). A faint cartoon character is visible in the bottom left corner of the dashboard area.

Jenkins installation and configuration:-

Configure tomcat server and Maven

- >> Download Jenkins.war and gitbucket.war files
- >> Deploy Jenkins.war and gitbucket.war to Tomcat server
- >> Open Jenkins console and gitbucket console through Firefox

Jenkins Plug in management:-

- >> Manage Jenkins Manage plugins

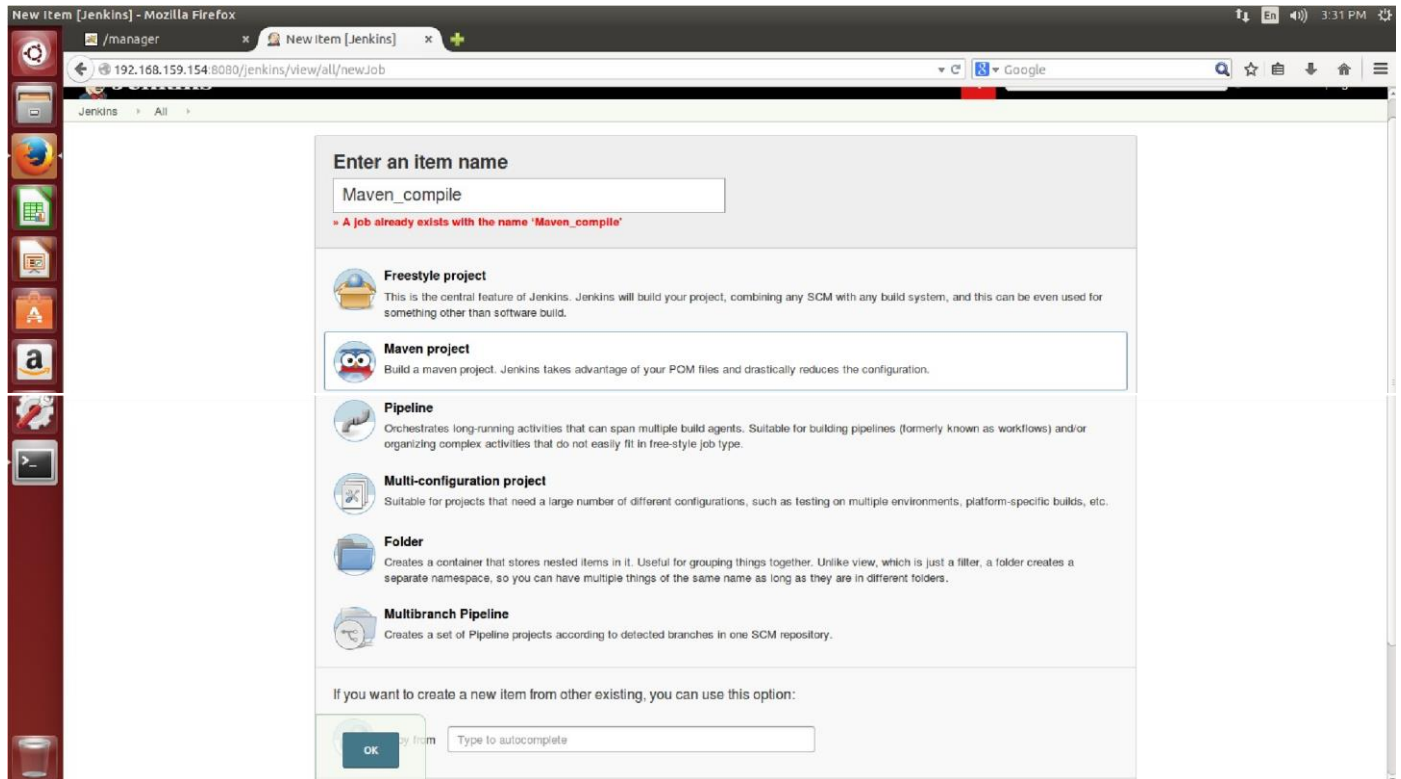
Available >> type your required package name >> install without restart.

Compile Maven code:-

- >> Go to Jenkins Dashboard
- >> New item item name

>> Select Maven project ok

>>



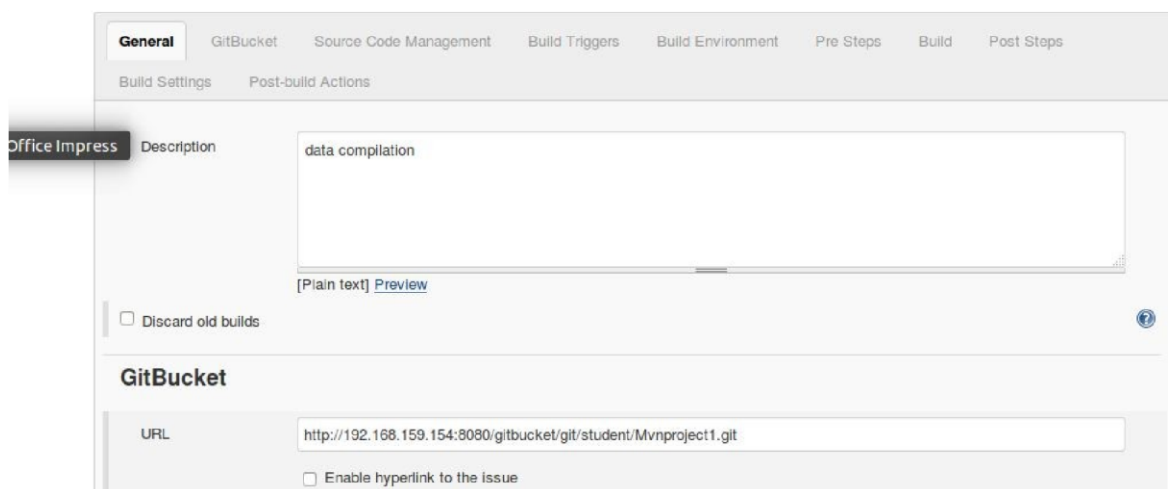
Description GitBucket Url Source code management

>> Gitbucket url

>> Delete workspace before build starts >>

Build Pom.xml location goal

command<compile> >> save.



Source Code Management

☐ None

☒ Git

Repositories

Repository URL

Credentials

 Add

Advanced...

Add Repository

Branches to build

Branch Specifier (blank for 'any')

Add Branch

Build Settings

☒ Delete workspace before build starts

Advanced...

☐ Execute shell script on remote host using ssh

☐ SSH Agent

Pre Steps

Add pre-build step

Build

Root POM

Goals and options

Advanced...

Post Steps

Test Maven code

(CB):>> Go to Jenkins

Dashboard

>> New item

>> item name

General GitBucket Source Code Management Build Triggers Build Environment Pre Steps Build Post Steps

Build Settings Post-build Actions

Description

[Plain text] [Preview](#)

☐ Discard old builds

GitBucket

URL

☐ Enable hyperlink to the issue

☐ This project is parameterized

☐ Throttle builds

☐ Disable this project

☐ Execute concurrent builds if necessary

[Advanced...](#)

Source Code Management

☐ None

☒ Git

Repositories

Repository URL

Credentials [Add](#)

[Advanced...](#)

[Add Repository](#)

Branches to build

Branch Specifier (blank for 'any')

[Add Branch](#)

>> Select Maven project >> ok

General GitBucket Source Code Management Build Triggers **Build Environment** Pre Steps Build Post Steps

Build Settings Post-build Actions

☒ Delete workspace before build starts

Advanced...

☐ Execute shell script on remote host using ssh ?

☐ SSH Agent

Pre Steps

Add pre-build step ▾

Build

Root POM ?

Goals and options ?

Advanced...

Post Steps

☐ Run only if build succeeds ☐ Run only if build succeeds or is unstable ☒ Run regardless of build result

Integrate Maven code in Jenkins:-

- >> Go to Jenkins Dashboard
- >> New item item name
- >> Select Maven project ok
- >> Comment
- >> git url
- >> Build whenever a SNAPSHOT dependency is built
- >> Delete workspace before build starts
- >> Set root pom path
- >> set branches path
- >> apply ok
- >> click on build icon

General

GitBucket

Source Code Management

Build Triggers

Build Environment

Pre Steps

Build

Post Steps

Build Settings

Post-build Actions

Description

Integration

[Plain text] Preview

☐ Discard old builds

GitBucket

URL

http://192.168.159.154:8080/gitbucket/git/student/Mvnproject1.git

☐ Enable hyperlink to the issue

☐ This project is parameterized

☐ Throttle builds

☐ Disable this project

☐ Execute concurrent builds if necessary

Advanced...

Source Code Management

☐ None

☒ Git

Repositories

Repository URL

http://192.168.159.154:8080/gitbucket/git/student/Mvnproject1.git

Credentials

student/*****

Add

Advanced...

Add Repository

Branches to build

Branch Specifier (blank for 'any')

*/branch1

Add Branch

Repository browser

(Auto)

Additional Behaviours

Add

☐ Subversion

Source Code Management

☐ None

☒ Git

Repositories

Repository URL

Credentials

 Add

Advanced...

Add Repository

Branches to build

Branch Specifier (blank for 'any')

Add Branch

Repository browser

(Auto)

Additional Behaviours

Add

☐ Subversion

General GitBucket Source Code Management **Build Triggers** Build Environment Pre Steps Build Post Steps

Build Settings Post-build Actions

☐ Subversion

Build Triggers

☒ Build whenever a SNAPSHOT dependency is built

☐ Schedule build when some upstream has no successful builds

☐ Trigger builds remotely (e.g., from scripts)

☐ Build after other projects are built

☐ Build periodically

☐ Build when a change is pushed to GitBucket

☐ Poll SCM

Build Environment

☒ Delete workspace before build starts

Advanced...

☐ Execute shell script on remote host using ssh

☐ SSH Agent

☐ With Ant

Build Settings

Post-build Actions

Add pre-build step

Build

Root POM

/Mwebapp/sampleweb/pom.xml

Goals and options

Advanced...

Post Steps

☐ Run only if build succeeds

☐ Run only if build succeeds or is unstable

☒ Run regardless of build result

Should the post-build steps run only for successful builds, etc.

Add post-build step

Build Settings

☐ E-mail Notification

Post-build Actions

Build Settings

Post-build Actions

☐ E-mail Notification

Post-build Actions

Git Publisher

Push Only If Build Succeeds

☒

Merge Results

☐

If pre-build merging is configured, push the result back to the origin

Force Push

☒

Add force option to git push

Tags

Add Tag

Tags to push to remote repositories

Branches

Branch to push

master

Target remote name

origin

Add Branch

Branches to push to remote repositories

Package Maven code

(CB):>> Go to Jenkins

Dashboard

>> New item >> item name

>> Select Maven project >> ok

>> Description

>> git url

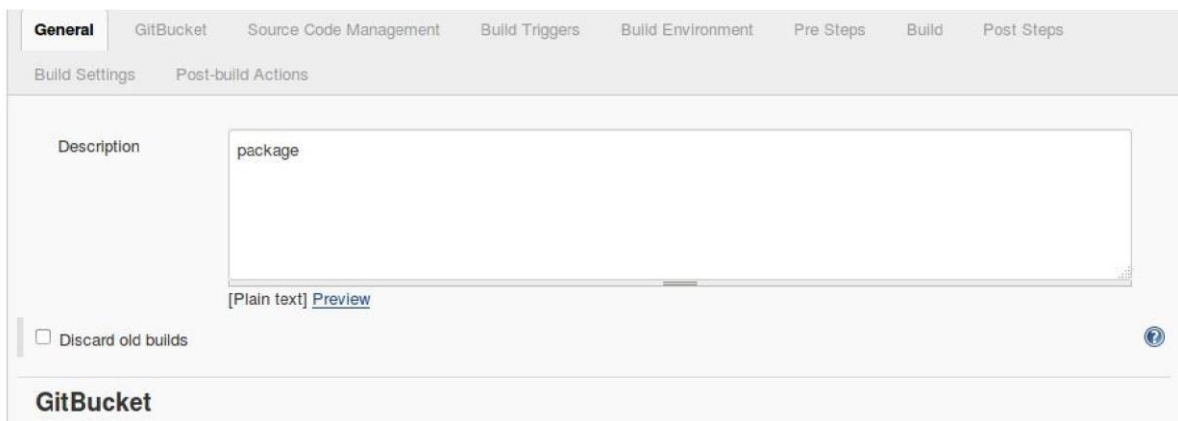
>> Build whenever a SNAPSHOT dependency is built

>> Delete workspace before build starts

>> Set root pom path

>> Goal package

>> set branches >> path >> apply >> save >> build now.



This screenshot shows the Jenkins job configuration interface. The 'General' tab is selected, displaying the 'Description' field with the text 'package'. Below the description, there is a checkbox for 'Discard old builds' which is currently unchecked. The 'GitBucket' section is visible at the bottom of the configuration page.

Source Code Management

☐ None

☒ Git

Repositories

Repository URL

Credentials

Branches to build

Branch Specifier (blank for 'any')

Repository browser

Additional Behaviours

☐ Subversion

Pre Steps

Add pre-build step ▾

Build

Root POM ?

Goals and options ?

Advanced...

Post Steps

☐ Run only if build succeeds
 ☐ Run only if build succeeds or is unstable
 ☒ Run regardless of build result

Should the post-build steps run only for successful builds, etc.

Add post-build step ▾

Build Settings

☐ E-mail Notification

Automation with Pipeline View: 1st step

>> Go to Maven_compile configuration

>> Build triggers

>> Build after other projects are built >>

Maven_integration >> Apply >> save.

2nd step

>> Go to Maven_test configuration

>> Build triggers

>> Build after other projects are built >> Maven_compile

>> Apply >> save.

3rd step

>> Go to Maven_Package configuration

>> Build triggers

>> Build after other projects are built

>> Maven_test

>> Apply >> save

Additional Behaviours

Add

☐ Subversion



Build Triggers

☒ Build whenever a SNAPSHOT dependency is built



☐ Schedule build when some upstream has no successful builds



☐ Trigger builds remotely (e.g., from scripts)



☒ Build after other projects are built



Projects to watch

Maven_integration

☒ Trigger only if build is stable

☐ Trigger even if the build is unstable

☐ Trigger even if the build fails

☐ Build periodically



☐ Build when a change is pushed to GitBucket



☐ Poll SCM



Build Environment

☒ Delete workspace before build starts

Advanced...

☐ Execute shell script on remote host using ssh



Save

Apply

With Ant



Amazon

Additional Behaviours

Add

☐ Subversion

Build Triggers

☒ Build whenever a SNAPSHOT dependency is built

☐ Schedule build when some upstream has no successful builds

☐ Trigger builds remotely (e.g., from scripts)

☒ Build after other projects are built

Projects to watch

Maven_compile

☒ Trigger only if build is stable

☐ Trigger even if the build is unstable

☐ Trigger even if the build fails

☐ Build periodically

☐ Build when a change is pushed to GitBucket

☐ Poll SCM

Build Environment

☒ Delete workspace before build starts

Advanced...

☐ Execute shell script on remote host using ssh

SSH Agent

Save

Apply

Build Triggers

☒ Build whenever a SNAPSHOT dependency is built

☐ Schedule build when some upstream has no successful builds

☐ Trigger builds remotely (e.g., from scripts)

☒ Build after other projects are built

Projects to watch

Maven_test

☒ Trigger only if build is stable

☐ Trigger even if the build is unstable

☐ Trigger even if the build fails

☐ Build periodically

☐ Build when a change is pushed to GitBucket

☐ Poll SCM

Build Environment

☐ Delete workspace before build starts

☐ Execute shell script on remote host using ssh

☐ SSH Agent

☐ With Ant

Pre Steps

Save

Apply

Pipeline

Installation: 1st Step

>> Manage Jenkins

>> Manage plugins

>> Available <type build pipeline package name> >> install without restart.

2nd step

>> Jenkins Dashboard

>> New view

>> Name

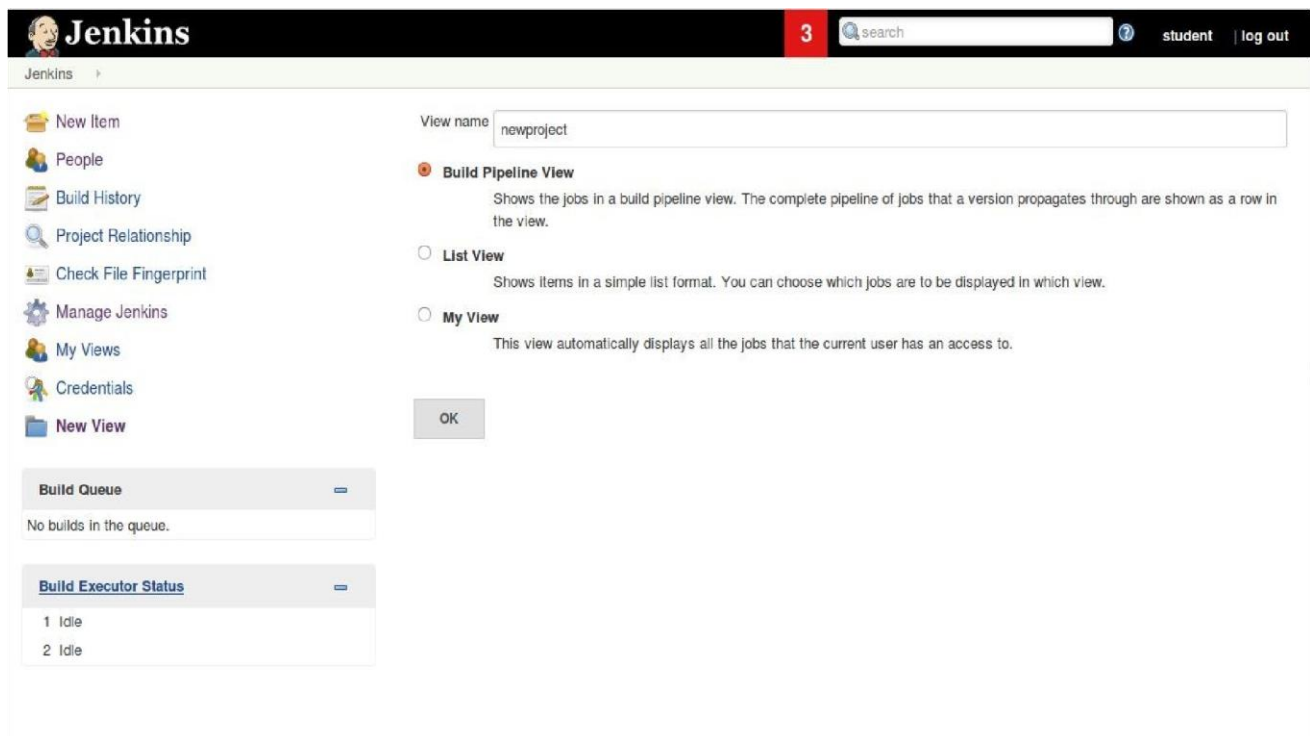
>> build pipeline view

>> apply >> save.

3rd Step

>> View configure Upstream / downstream config >> Select >> Maven_integration >>

Apply >> ok.



Jenkins > Project1

- Build History
- Edit View
- Delete View
- Project Relationship
- Check File Fingerprint
- Manage Jenkins
- My Views
- Credentials
- New View

Build Queue

No builds in the queue.

Build Executor Status

1	Idle
2	Idle

Filter build queue ☐

Filter build executors ☐

Build Pipeline View Title

Pipeline Flow

Layout: Based on upstream/downstream relationship

This layout mode derives the pipeline structure based on the upstream/downstream trigger relationship between jobs. This is the only out-of-the-box supported layout mode, but is open for extension.

Upstream / downstream config

Select Initial Job: Maven_integration

Trigger Options

Build Cards: Standard build card

Use the default build cards

Restrict triggers to most recent successful builds ☐ Yes ☒ No

Always allow manual trigger on pipeline steps ☐ Yes ☒ No

Jenkins

3

search

student | log out

Jenkins > Project1

ENABLE AUTO REFRESH

Build Pipeline

Run History Configure Add Step Delete Manage

Pipeline

Ubuntu Software Center

#10 Maven_integration

13 Apr, 2019 10:09:23 AM

20 sec

student

#8 Maven_compile

13 Apr, 2019 10:09:48 AM

15 sec

#8 Maven_test

13 Apr, 2019 10:10:13 AM

9.4 sec

#13 Maven_package

13 Apr, 2019 10:10:28 AM

13 sec

Fully Automation in Jenkins:-

1st Step

>> Go to Jenkins user
configure >> Add new
Token and copy >> Apply
Save.

2nd step


>> Go to Gitbucket
>> Account Settings
>> Service hooks Add payroll url(Jenkins
url) >> Past the Token >> tick on Push >>
save.

3rd step

>> Go to Jenkins
>> Maven_integaration
>> Configure
>> Build Triggers
>> Build when a change is pushed to Gitbucket >> apply
>> save.

4th step

>> Go to Terminal Push new code to Gitbucket server.

Jenkins

4

search

student | log out

Jenkins

New Item

LibreOffice Calc

Build History

Project Relationship

Check File Fingerprint

Manage Jenkins

My Views

Credentials

New View

Build Queue













No builds in the queue.

Build Executor Status




1 Idle

2 Idle

AllProject1+

S	W	Name ↓	Last Success	Last Failure	Last Duration	
		Maven_compile	2 hr 36 min - #10	N/A	12 sec	
		Maven_integration	2 hr 36 min - #11	3 days 3 hr - #3	21 sec	
		Maven_package	2 hr 35 min - #16	20 hr - #10	14 sec	
		Maven_test	2 hr 35 min - #10	N/A	12 sec	

Icon: [S](#) [M](#) [L](#)

[Legend](#)  [RSS for all](#)  [RSS for failures](#)  [RSS for just latest builds](#)

Builds

Configure

My Views

Credentials

Jenkins

4

search

student | log out

Jenkins > student

People

LibreOffice Calc

Builds

Configure

My Views

Credentials

Full Name

student

Description

API Token

Current token(s)

Token created on 2019-04-13T10:13:55.463+05:30

Created 0 day(s) ago

Never used

Add new Token

Credentials

Credentials are only available to the user they belong to

E-mail

E-mail address

student@pivotal.com

Your e-mail address, like joe.ching@sun.com

My Views

Default View

Profile

Applications

Service Hooks

Notifications

Webhook / Manage webhook

Payload URL

http://192.168.159.154:8080/jenkins/

Test Hook

Content type

application/x-www-form-urlencoded

Security Token

Token created on 2019-04-13T10:13:55.463+05:30

Which events would you like to trigger this webhook?

☐ Create

Branch, or tag created.

☐ Gollum

Wiki page updated.

☐ Issue comment

Issue commented on.

☐ Issues

Issue opened, closed.

☐ Pull request

Pull request opened, closed, or synchronized.

☐ Pull request review comment

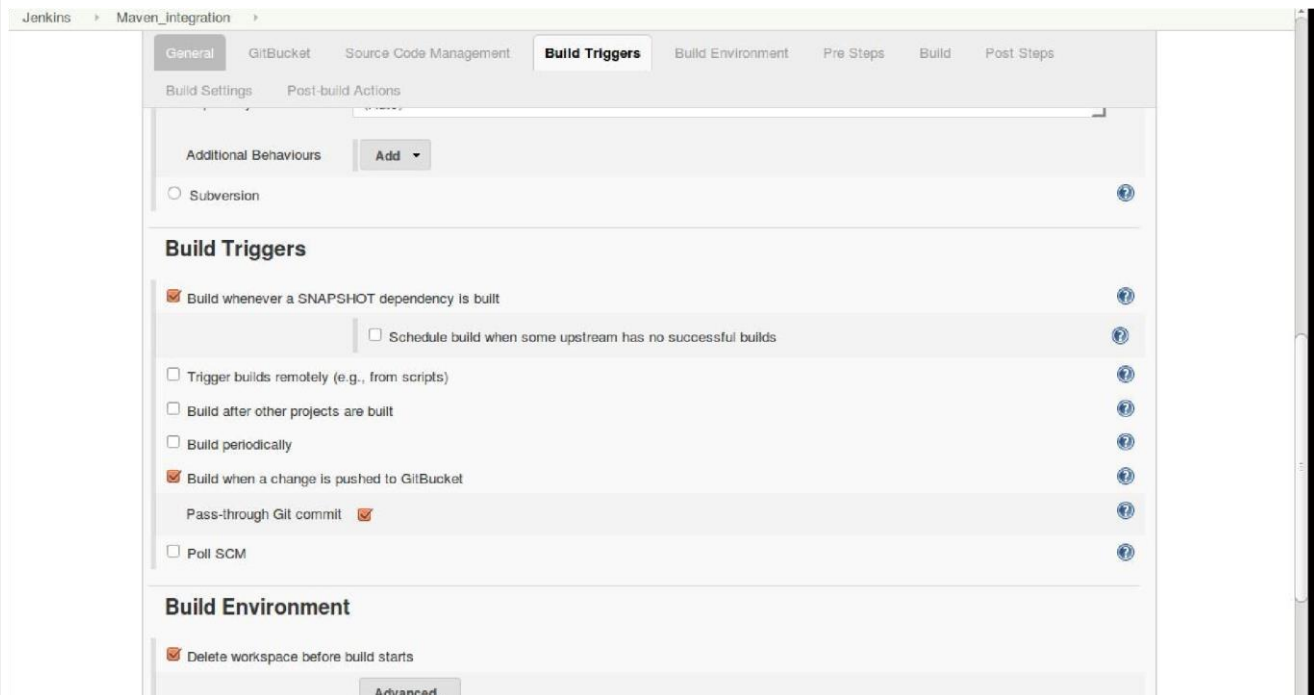
Pull request diff commented on.

☒ Push

Git push to a repository.

Update webhook

Delete webhook



Continues Deploy:-

1st step

>> Go to Jenkins Dashboard

>> Manage Jenkins

>> Manage Plugins >> Available >> Deploy to
container >> install without restart >> ok. 2nd
step

>> Go to Jenkins Dashboard

>> Maven_Package Configure

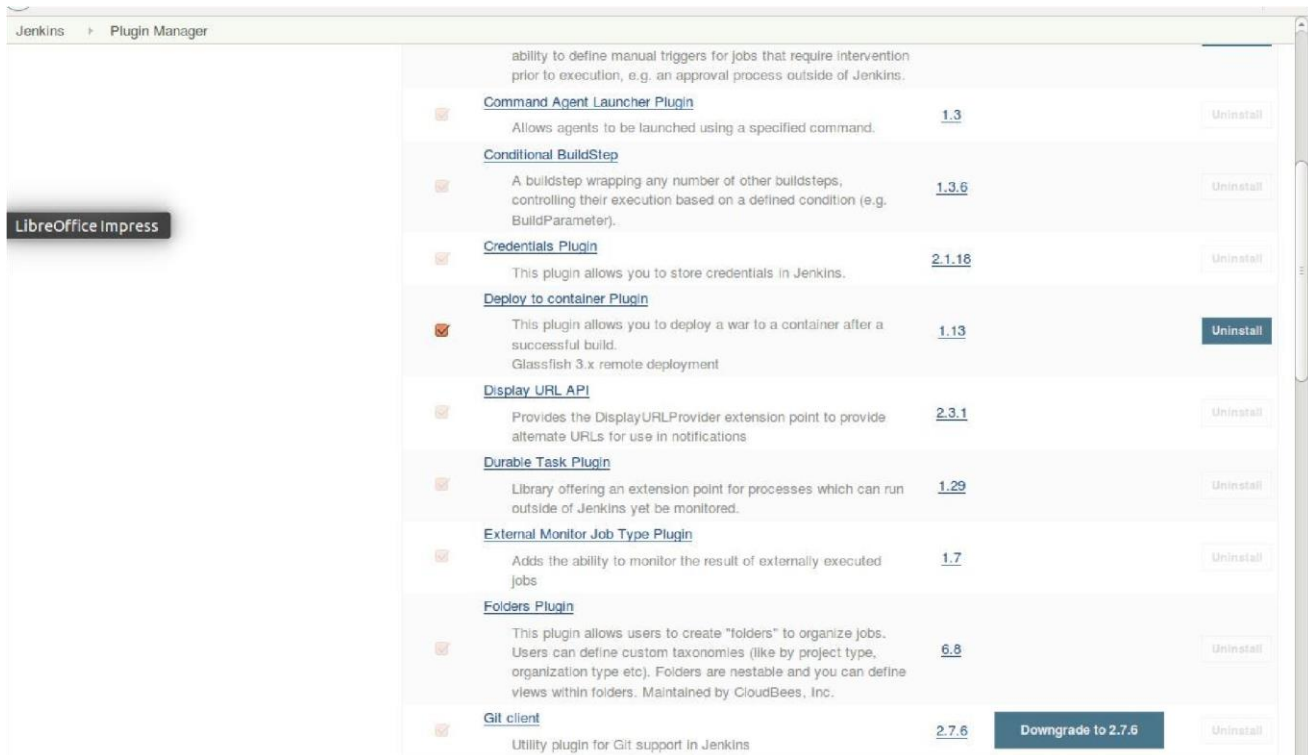
>> Post-build Actions

>> Deploy war/ear to container >> war/ear
files=**/*.war >> Context path=/sampleweb >>
credentials >> Tomcat Url Apply Save.

3rd Step

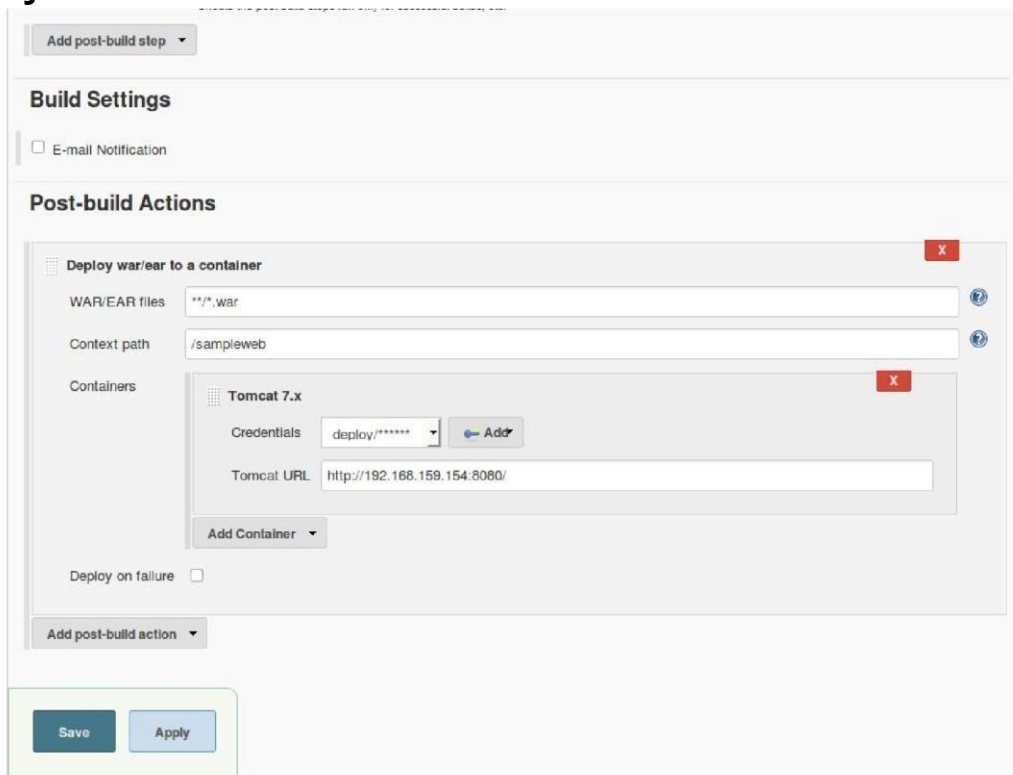
>> Go to Terminal push some new code to Gitbucket than see the
changes in firefox.

Jenkins Backup and Restore:-



1st step

>> Go to Jenkins Dashboard



>> Manage Jenkins
>> Manage Plugins >> Available
>> Backup Plugin >> install without restart >> ok.
2nd step
>> Go to Jenkins Dashboard
>> Manage Jenkins
>> Backup manager
>> Setup >> Backup directory >> Format >> save.
3rd step
>> Go to Jenkins Dashboard
>> Manage Jenkins
>> Backup manager
>> Backup Hudson configuration >> Ok.
4th step
>> Go to Jenkins Dashboard
>> Manage Jenkins
>> Backup manager

>> Restore Hudson configuration >> Launch Restore.

Ansible:-

Ansible is a radically simple IT automation system. It handles configuration

Jenkins > Backup manager

New Item

People

Build History

Project Relationship

Check File Fingerprint

Manage Jenkins

My Views

Credentials

New View

System Settings

Build Queue

Build Executor Status

Backup config files

Backup configuration

Hudson root directory /root/.jenkins

Backup directory /home/student/Desktop

Format zip

File name template backup_@date@.@extension@

Custom exclusions

☒ Verbose mode

☒ Configuration files (.xml) only

☐ No shutdown

Backup content

☐ Backup job workspace

☒ Backup builds history

☒ Backup maven artifacts archives

☐ Backup fingerprints

Save

Jenkins > Backup manager

New Item

People

Build History

Project Relationship

Check File Fingerprint

Manage Jenkins

My Views

Credentials

New View

Backup manager

Available backup in /home/student/Desktop :

☒ VMwareTools-10.0.0-2977863.tar.gz

☐ vmware-tools-distrib

☐ backup_20190413_1441.zip

☐ backup_20190412_1828.zip

☐ Maven_compile1.png

☐ jenkins.war

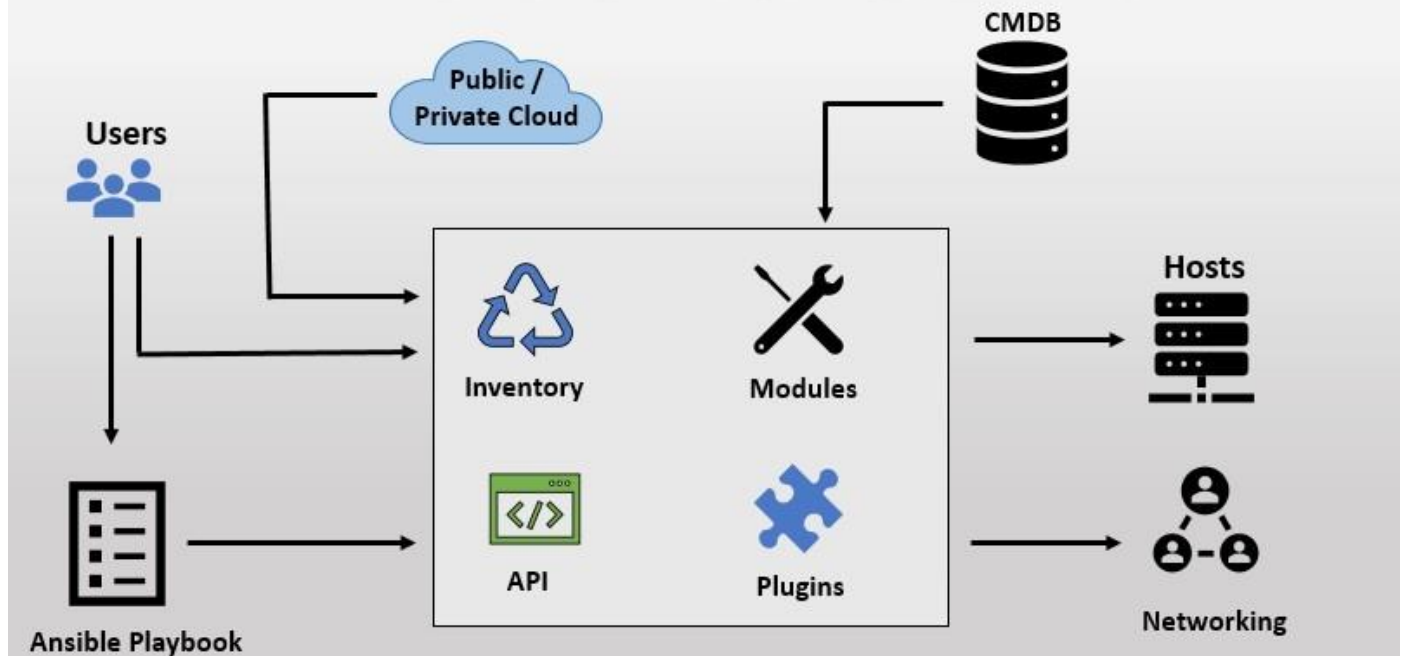
Launch restore

Build Queue

Build Executor Status

management, application deployment, cloud provisioning, ad-hoc task execution, network automation, and multi-node orchestration. Ansible makes complex changes like zero-downtime rolling updates with load balancers easy.

Ansible Architecture



- Minimal in nature. Management systems should not impose additional dependencies on the environment.[16]
- Consistent. With Ansible one should be able to create consistent environments.
- Secure. Ansible does not deploy agents to nodes. Only OpenSSH and Python are required on the managed nodes.[16][12]
- Highly reliable. When carefully written, an Ansible playbook can be idempotent, to prevent unexpected side-effects on the managed systems. [18] It is entirely possible to have a poorly written playbook that is not idempotent.
- Minimal learning required. Playbooks use an easy and descriptive language based on YAML and Jinja templates.

- Control machines have to be a Linux/Unix host (for example, Red Hat Enterprise Linux, Debian, CentOS, macOS, BSD, Ubuntu[11]), and Python 2.7 or 3.5 is required

Ansible Installation:-

Configure in System 1, System2 and System3 :-

```
>> set ip address and hostaddress
```

```
>> install ssh
```

```
>> install epel-release packages
```

```
>> install yum packages
```

```
>> sudo yum localinstall --nogpgcheck
```

```
https://download1.rpmfusion.org/free/el/rpmfusion-free-release-7.noarch.rpm
```

```
>> sudo yum localinstall --nogpgcheck
```

```
https://download1.rpmfusion.org/nonfree/el/rpmfusion-nonfree-release7.noarch.rpm
```

```
>> sudo yum localinstall --nogpgcheck
```

```
http://dl.fedoraproject.org/pub/epel/7/x86_64/Packages/e/epel-release-7.11.noarch.rpm
```

```
>> sudo yum localinstall --nogpgcheck
```

```
http://rpms.famillecollet.com/enterprise/remi-release-7.rpm
```

```
>> sudo rpm --import https://www.elrepo.org/RPM-GPG-KEY-
```

```
elrepo.org sudo rpm -Uvh http://www.elrepo.org/elrepo-release-7.03.el7.elrepo.noarch.rpm
```

```
>> sudo yum localinstall --nogpgcheck
```

```
http://repo.webtatic.com/yum/el7/webtatic-release.rpm
```

```
>> yum update
```

```
>> yum clean all >> yum install
```

```
ansible ssh-key has to setup on
```

```
both the nodes
```


Ansible server talks to managed nodes

using ssh Default location of inventory:

/etc/ansible/hosts add hosts to

/etc/ansible/hosts and configure

password less authentication

Generate ssh keys and setup password less authentication between server and clients

perform jobs either using ansible command line or playbooks.

Ansible command line:-

```
>> ansible all -m ping
```

```
>> ansible all -a "touch /tmp/hello"
```

```
>> ansible webserver -m
```

ping **Ansible**

playbooks:playbook for

file copying

```
- hosts: all  become_user: root
```

```
tasks:
```

```
- name: Copy file with owner and permissions    copy:
  src: /root/playfile
```

```
dest: /tmp
owner: root
group: root
mode: '0644'
```

```
>> ansible-playbook apache.yml --check
```

```
>> ansible-playbook filename
```

Web palybook:-

```
- hosts: all
  become_user: root
```

```
tasks:
```

```
- name: 1. Install Latest Version of HTTP/Apache
  yum: name=httpd state=present
```

```
- name: 2. start httpd service
  service: name=httpd state=started enabled=yes
```

```
- name: 3. copy the standard index.html file
  copy: src=/tmp/index.html dest=/var/www/html/index.html
mode=0664
```

```
- name: 4. Add apache iptable rule
  command: /sbin/iptables -I INPUT 1 -p tcp --dport http -j ACCEPT -m
comment --commnet "Apache on port 80"
```

```
- name: 5. Save iptable rule
  command: iptables-save
```

```
>> ansible-playbook apache.yml --check
```

>> ansible-playbook filename

users playbook:-

- hosts: all

become_user: root

tasks:

this task creates

groups - name: add a

group group:

name={{ item }}

state=present

with_items:

- demogrp

- demogrp1

tags: add_new_grp

this task creates users

- name: add a user

user:

name={{ item }}

state=present

password="redhat"

shell=/bin/bash

with_items:

- demouser1

- demouser2

```

- demouser3
  tags: add_new_user
  # this tasks is to delete the users
- name: delete several users
  user:
    name={{ item }}
state=absent
with_items:
- demouser1
  tags: remove_user
  # this task is to delete the groups
- name: delete groups      group:
    name={{ item }}
state=absent
with_items:
- demogrp
- demogrp1 tags: remove_group >> ansible-playbook apache.yml --
  check
>> ansible-playbook user.yml --list-tags
>> ansible-playbook user.ymo --tags add_net_user

- name: Patch Windows systems against Meltdown and Spectre  hosts:
  "{{ target_hosts | default('all') }}"

vars:
  reboot_after_update: no
registry_keys:
- path: HKLM:\SYSTEM\CurrentControlSet\Control\Session
  Manager\Memory Management
  name: FeatureSettingsOverride
  data: 0

```

type: dword

- path: HKLM:\SYSTEM\CurrentControlSet\Control\Session
Manager\Memory Management

name: FeatureSettingsOverrideMask

data: 3

type: dword

<https://support.microsoft.com/en-us/help/4072699>

- path:

HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\QualityComp
at

name: cadca5fe-87d3-4b96-b7fb-a231484277cc

type: dword

data: '0x00000000'

tasks:

- name: Install security updates win_updates:

category_names:

- SecurityUpdates

notify: reboot windows system

- name: Enable kernel protections win_regedit:

path: "{{ item.path }}"

name: "{{ item.name }}"

data: "{{ item.data }}"

type: "{{ item.type }}"

with_items: "{{ registry_keys
}}"

handlers:

- name: reboot windows system win_reboot:

```
shutdown_timeout: 3600
reboot_timeout: 3600
when: reboot_after_update
>> ansible-playbook apache.yml --check
>> ansible-playbook user.yml --list-tags
>> ansible-playbook user.yml --tags add_net_user
```

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