Devops-test

```
Local  --push code / developer-->  Git hub  --pull code automatically by using jenkins-->  Test/staging
```

Git hub

Local

developer
push code

pull code automatically
by using jenkins

Test/staging

deploy code to various environment by passwdless authentication

Pre-prod/UAT
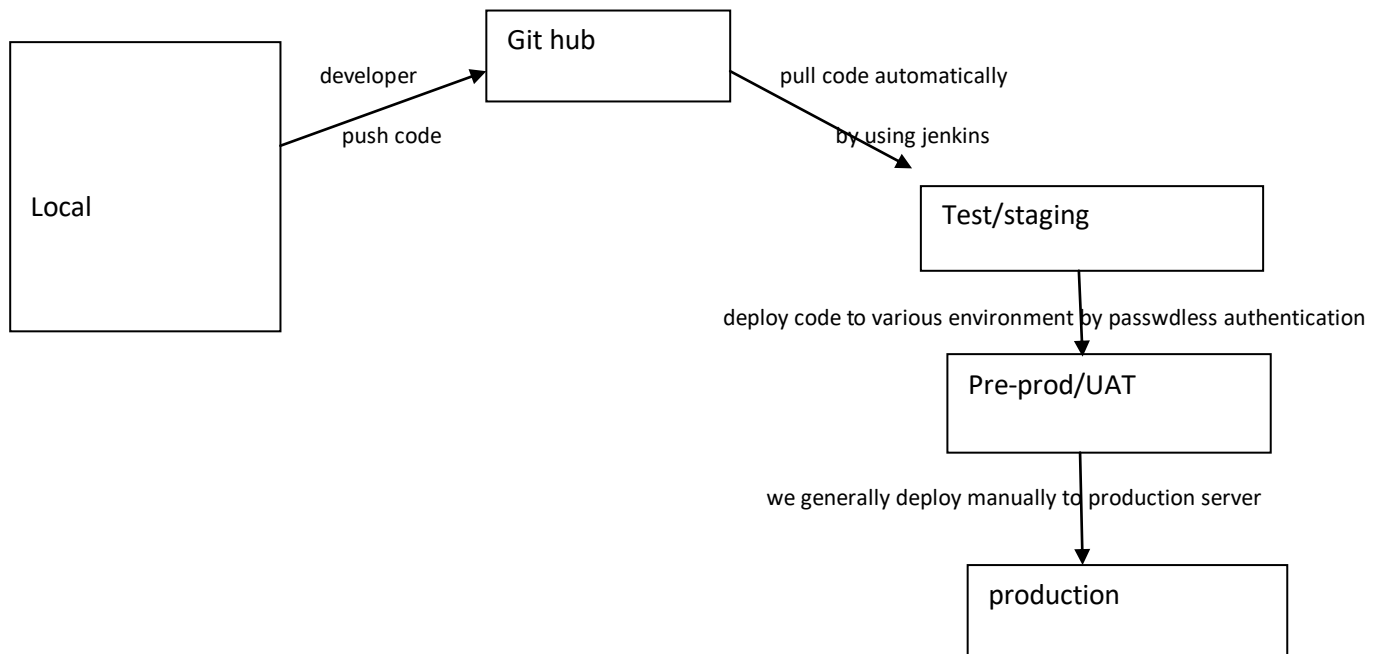
we generally deploy manually to production server

production

```
2. 3.86.207.121 (ubuntu)

Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-digest/1.0/plexus-digest-1.0.pom (1.1 kB at 212 kB/s)
Downloading from fusesource.m2: https://repo.fusesource.com/nexus/content/groups/public/org/codehaus/plexus/plexus-components/1.1.7/plexus-components-1.
1.7.pom
Downloading from fusesource.ea: https://repo.fusesource.com/nexus/content/groups/ea/org/codehaus/plexus/plexus-components/1.1.7/plexus-components-1.1.7.
pom
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-components/1.1.7/plexus-components-1.1.7.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-components/1.1.7/plexus-components-1.1.7.pom (5.0 kB at 622 kB/
s)
Downloading from fusesource.m2: https://repo.fusesource.com/nexus/content/groups/public/org/codehaus/plexus/plexus/1.0.8/plexus-1.0.8.pom
Downloading from fusesource.ea: https://repo.fusesource.com/nexus/content/groups/ea/org/codehaus/plexus/plexus/1.0.8/plexus-1.0.8.pom
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus/1.0.8/plexus-1.0.8.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus/1.0.8/plexus-1.0.8.pom (7.2 kB at 904 kB/s)
Downloading from fusesource.m2: https://repo.fusesource.com/nexus/content/groups/public/org/codehaus/plexus/plexus-container-default/1.0-alpha-8/plexus-
container-default-1.0-alpha-8.pom
Downloading from fusesource.ea: https://repo.fusesource.com/nexus/content/groups/ea/org/codehaus/plexus/plexus-container-default/1.0-alpha-8/plexus-cont
ainer-default-1.0-alpha-8.pom
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-container-default/1.0-alpha-8/plexus-container-default-1.0-alp
ha-8.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-container-default/1.0-alpha-8/plexus-container-default-1.0-alph
a-8.pom (7.3 kB at 1.5 MB/s)
Downloading from fusesource.m2: https://repo.fusesource.com/nexus/content/groups/public/org/codehaus/plexus/plexus-utils/3.0.5/plexus-utils-3.0.5.jar
Downloading from fusesource.m2: https://repo.fusesource.com/nexus/content/groups/public/org/codehaus/plexus/plexus-digest/1.0/plexus-digest-1.0.jar
Downloading from fusesource.ea: https://repo.fusesource.com/nexus/content/groups/ea/org/codehaus/plexus/plexus-utils/3.0.5/plexus-utils-3.0.5.jar
Downloading from fusesource.ea: https://repo.fusesource.com/nexus/content/groups/ea/org/codehaus/plexus/plexus-digest/1.0/plexus-digest-1.0.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utils/3.0.5/plexus-utils-3.0.5.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-digest/1.0/plexus-digest-1.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-digest/1.0/plexus-digest-1.0.jar (12 kB at 847 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utils/3.0.5/plexus-utils-3.0.5.jar (230 kB at 10 MB/s)
[INFO] Installing /opt/devops-test/target/postpaidservice.war to /root/.m2/repository/paytm/postpaidservice/1.0-SNAPSHOT/postpaidservice-1.0-SNAPSHOT.wa
r
[INFO] Installing /opt/devops-test/pom.xml to /root/.m2/repository/paytm/postpaidservice/1.0-SNAPSHOT/postpaidservice-1.0-SNAPSHOT.pom
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  01:49 min
[INFO] Finished at: 2021-03-03T13:06:21Z
[INFO] ------------------------------------------------------------------------
ubuntu@ip-172-31-87-37:/opt/devops-test$
```
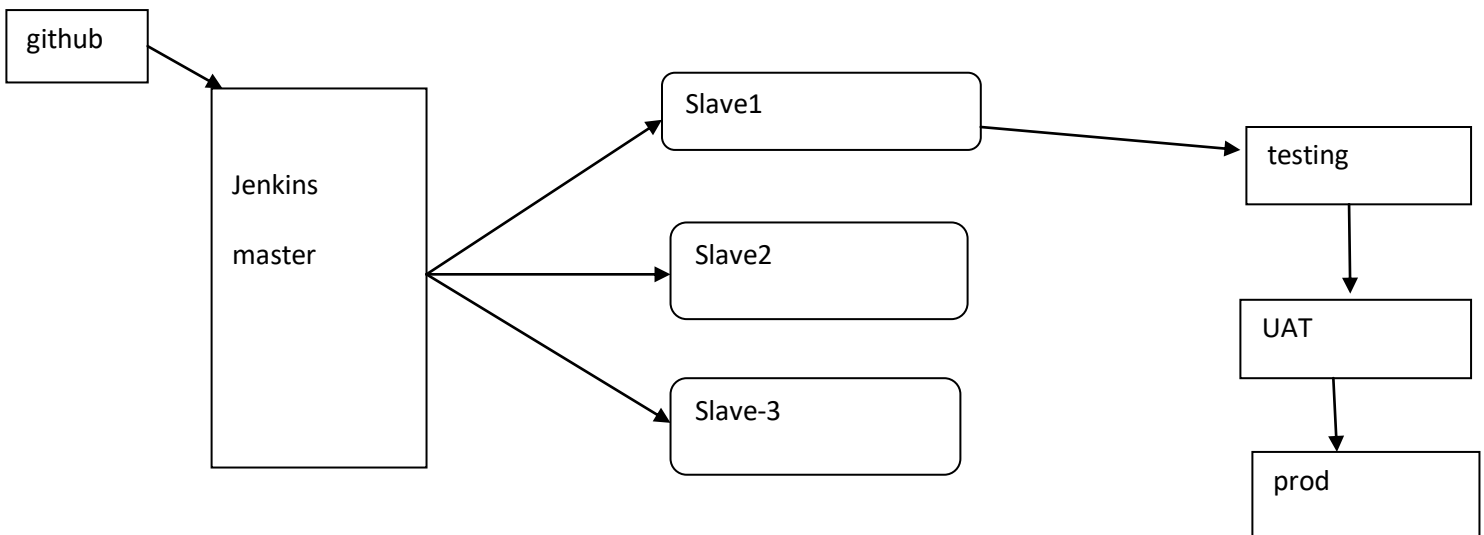
Activate Windows
Go to Settings to activate Windows.

After getting .war file >>> we copy .war file to tomcat/webapps directory

After services are UP by using tomcat web application

We also use Jenkins for automation our jobs

we use master and slave concept for deploy services into various environment

```
          github ──────┐
                       ▼
                  ┌──────────┐      ┌──────────┐        ┌──────────┐
                  │          │─────▶│  Slave1  │───────▶│  testing │
                  │ Jenkins  │      └──────────┘        └──────────┘
                  │          │      ┌──────────┐              │
                  │ master   │─────▶│  Slave2  │              ▼
                  │          │      └──────────┘        ┌──────────┐
                  │          │      ┌──────────┐        │   UAT    │
                  └──────────┘─────▶│  Slave-3 │        └──────────┘
                                    └──────────┘              │
                                                              ▼
                                                        ┌──────────┐
                                                        │   prod   │
                                                        └──────────┘
```

```
⌂   2. 3.86.207.121 (ubuntu)          ×    +                                          📎
   daemon
The following NEW packages will be installed:
   daemon jenkins
0 upgraded, 2 newly installed, 0 to remove and 6 not upgraded.
Need to get 66.8 MB of archives.
After this operation, 67.6 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 daemon amd64 0.6.4-1build1 [99.5 kB]
Get:1 https://pkg.jenkins.io/debian-stable binary/ jenkins 2.263.4 [66.7 MB]
Fetched 66.8 MB in 2s (30.8 MB/s)
Selecting previously unselected package daemon.
(Reading database ... 74040 files and directories currently installed.)
Preparing to unpack .../daemon_0.6.4-1build1_amd64.deb ...
Unpacking daemon (0.6.4-1build1) ...
Selecting previously unselected package jenkins.
Preparing to unpack .../jenkins_2.263.4_all.deb ...
Unpacking jenkins (2.263.4) ...
Setting up daemon (0.6.4-1build1) ...
Setting up jenkins (2.263.4) ...
Processing triggers for systemd (237-3ubuntu10.44) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Processing triggers for ureadahead (0.100.0-21) ...
ubuntu@ip-172-31-87-37:/opt$ sudo systemctl status jenkins
● jenkins.service - LSB: Start Jenkins at boot time
   Loaded: loaded (/etc/init.d/jenkins; generated)
   Active: active (exited) since Wed 2021-03-03 13:37:18 UTC; 1min 23s ago
     Docs: man:systemd-sysv-generator(8)
    Tasks: 0 (limit: 1140)
   CGroup: /system.slice/jenkins.service

Mar 03 13:37:17 ip-172-31-87-37 systemd[1]: Starting LSB: Start Jenkins at boot time...
Mar 03 13:37:17 ip-172-31-87-37 jenkins[9202]: Correct java version found
Mar 03 13:37:17 ip-172-31-87-37 jenkins[9202]:  * Starting Jenkins Automation Server jenkins
Mar 03 13:37:17 ip-172-31-87-37 su[9253]: Successful su for jenkins by root
Mar 03 13:37:17 ip-172-31-87-37 su[9253]: + ??? root:jenkins
Mar 03 13:37:17 ip-172-31-87-37 su[9253]: pam_unix(su:session): session opened for user jenkins by (uid=0)
Mar 03 13:37:17 ip-172-31-87-37 su[9253]: pam_unix(su:session): session closed for user jenkins
Mar 03 13:37:18 ip-172-31-87-37 jenkins[9202]:    ...done.
```

We use freestyle jobs for deploying by using triggering jobs

Also we use pipeline jobs for deploying by using Groovy scripting

And we also use docker for Building images and store in dockerhub registry.

Default passwd for Jenkins is located in `/var/lib/jenkins/secrets/initialAdminPassword`

Dashboard > Devops-test >

Back to Dashboard

Status

Changes

Build Now

Configure

Delete Pipeline

Full Stage View

Rename

Pipeline Syntax

Pipeline Devops-test

add description

Disable Project

Recent Changes

Stage View

	pulling code from github to test server
Average stage times: (Average full run time: ~1s)	1s
#1 Mar 03 21:44 / No Changes	1s

Build History   trend ∧

find   x

🌐 #1   03-Mar-2021 16:14

Permalinks

Activate Windows
Go to Settings to activate Windows.

Dashboard > Devops-test >

Build Now

Configure

Delete Pipeline

Full Stage View

Rename

Pipeline Syntax

Recent Changes

Stage View

	pulling code from github to test server	building code using maven
Average stage times: (Average full run time: ~4s)	1s	6s
#2 Mar 03 21:46 / No Changes	383ms	6s
#1 Mar 03 21:44 / No Changes	1s	

Build History   trend ∧

find   x

🌐 #2   03-Mar-2021 16:16

🌐 #1   03-Mar-2021 16:14

🔊 Atom feed for all 🔊 Atom feed for failures

Permalinks

- Last build (#1), 2 min 12 sec ago
- Last stable build (#1), 2 min 12 sec ago
- Last successful build (#1), 2 min 12 sec ago
- Last completed build (#1), 2 min 12 sec ago

Activate Windows
Go to Settings to activate Windows.

🚫 Delete Pipeline

🔍 Full Stage View

📝 Rename

❓ Pipeline Syntax

⚙ **Build History**   trend ⌄

find   ✕

🌐 #3   03-Mar-2021 16:24
🌐 #2   03-Mar-2021 16:16
🌐 #1   03-Mar-2021 16:14

📡 Atom feed for all 📡 Atom feed for failures

Stage View

	pulling code from github to test server	building code using maven	creating image from output
Average stage times: (Average full run time: ~6s)	945ms	6s	1s
#3 Mar 03 21:54 No Changes	622ms	6s	1s
#2 Mar 03 21:46 No Changes	383ms	6s	
#1 Mar 03 21:44 No Changes	1s		

Activate Windows
Go to Settings to activate Windows.

Permalinks

- Last build (#2), 7 min 31 sec ago
- Last stable build (#2), 7 min 31 sec ago
- Last successful build (#2), 7 min 31 sec ago
- Last completed build (#2), 7 min 31 sec ago

⚙ Configure

🚫 Delete Pipeline

🔍 Full Stage View

📝 Rename

❓ Pipeline Syntax

🌐 **Build History**   trend ⌄

find   ✕

🌐 #6   03-Mar-2021 16:47
🔴 #5   03-Mar-2021 16:39
🔴 #4   03-Mar-2021 16:35
🌐 #3   03-Mar-2021 16:24
🌐 #2   03-Mar-2021 16:16
🌐 #1   03-Mar-2021 16:14

📡 Atom feed for all 📡 Atom feed for failures

Stage View

	pulling code from github to test server	building code using maven	creating image from output	pushing docker image to dockerhub
Average stage times: (Average full run time: ~8s)	846ms	6s	1s	310ms
#6 Mar 03 22:17 No Changes	793ms	7s	2s	744ms
#5 Mar 03 22:09 No Changes	764ms	6s	1s	113ms failed
#4 Mar 03 22:05 No Changes	683ms	6s	1s	75ms failed
#3 Mar 03 21:54 No Changes	622ms	6s	1s	

Activate Windows
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Now we have successfully created docker image and push to dockerhub by using jenkins

Next time if any developer do commit in git repository jenkins will all above jobs automatically

```
node{

   stage('pulling code from github to test server'){

   git credentialsId: 'ea896b10-7294-47fa-b897-03764dc41429', url:
'https://github.com/sunilkumar047/devops-test.git'

   }


   stage('building code using maven'){

   sh 'mvn clean install'

   }


   stage('creating image from output'){

   sh 'docker build -t sunilkumar0/devops:1 .'

   }


   stage('pushing docker image to dockerhub'){

   withCredentials([string(credentialsId: '5203da37-a614-4bf6-b37c-afea59d612a7',
variable: 'docker123')]) {

   sh "docker login -u sunilkumar0 -p ${docker123}"

}

   }

   sh 'docker push sunilkumar0/devops:1'


}
```

```
Login Succeeded
ubuntu@ip-172-31-87-37:/$ docker images
REPOSITORY              TAG        IMAGE ID       CREATED             SIZE
sunilkumar0/devops      1          168eaf566e51   2 minutes ago       540MB
sunilkumar0/devops-test v1         c7813a1f4441   6 minutes ago       540MB
<none>                  <none>     83e049175ded   17 minutes ago      540MB
<none>                  <none>     f1e352abd8e9   30 minutes ago      540MB
<none>                  <none>     c242a479851f   49 minutes ago      540MB
<none>                  <none>     c6b5f58260a5   About an hour ago   540MB
tomcat                  8          d09add1d9c91   3 weeks ago         533MB
ubuntu@ip-172-31-87-37:/$ docker push sunilkumar0/devops-test:1
The push refers to repository [docker.io/sunilkumar0/devops-test]
tag does not exist: sunilkumar0/devops-test:1
ubuntu@ip-172-31-87-37:/$ docker push sunilkumar0/devops-test:v1
The push refers to repository [docker.io/sunilkumar0/devops-test]
4116c6758fe5: Pushed
65aeacc8e0c2: Mounted from library/tomcat
fc8bcd5ed4ec: Mounted from library/tomcat
f72f65632142: Mounted from library/tomcat
02412b9dda81: Mounted from library/tomcat
d7b2c55f7e50: Mounted from library/tomcat
02f0a7f763a3: Mounted from library/tomcat
da654bc8bc80: Mounted from library/tomcat
4ef81dc52d99: Mounted from library/tomcat
909e93c71745: Mounted from library/tomcat
7f03bfe4d6dc: Mounted from library/tomcat
v1: digest: sha256:63c79133850cd9e449f152554a1306e95eb70b70af7337756e2ab9bd1d27b902 size: 2632
ubuntu@ip-172-31-87-37:/$ docker images
REPOSITORY              TAG        IMAGE ID       CREATED             SIZE
sunilkumar0/devops      1          c513a66f4d3b   18 minutes ago      540MB
<none>                  <none>     168eaf566e51   26 minutes ago      540MB
sunilkumar0/devops-test v1         c7813a1f4441   30 minutes ago      540MB
<none>                  <none>     83e049175ded   41 minutes ago      540MB
<none>                  <none>     f1e352abd8e9   54 minutes ago      540MB
<none>                  <none>     c242a479851f   About an hour ago   540MB
<none>                  <none>     c6b5f58260a5   About an hour ago   540MB
tomcat                  8          d09add1d9c91   3 weeks ago         533MB
ubuntu@ip-172-31-87-37:/$
```

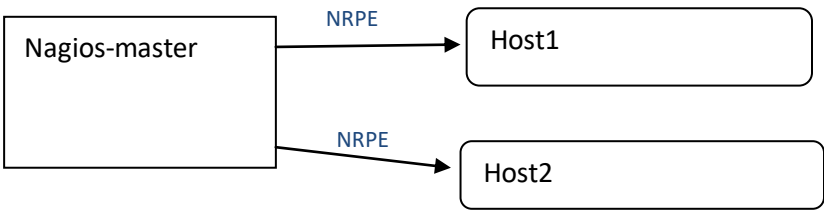Activate Windows
Go to Settings to activate Windows.

Checking of logs

All logs of services stored in apache2

I have used to check logs   in   >>> var/log apache2 directory

Monitoring

I used nagios to monitor all services,network,hosts etc from NAGIOS-Master by install nagios-NRPE plugin

NRPE-nagios remote plugin excutor

If any down time of server arises   then I used to make service with autoscaling   depending upon   LOAD on server