

DEVOPS PROFESSIONAL CERTIFICATION PROGRAM

Lab – 1: Tools

- **Getting Started with topgear VDI – Ubuntu (TG-DevOps-OS)**
- **Check availability of tools**
- **Walk through Jenkins**

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1. Getting Started with Ubuntu (topgear VDI)

- ✓ Recap basic commands (not limited to)
 - Creating / Editing / Deleting Folder or Files
 - Constructing shell scripts and executing
 - View folder contents (including hidden folders)
 - Starting / Stopping/Killing services
 - Setting /Editing system proxy details

2. Check availability of necessary tools

- ✓ Check environment variable JAVA_HOME and PATH settings in the machine:

```
osgdev@TG-DevOps-OS004:~$ echo $JAVA_HOME
/usr/java/jdk1.8.0_162
```

```
osgdev@TG-DevOps-OS004:~$ echo $PATH
/home/osgdev/bin:/home/osgdev/.local/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/usr/java/jdk1.8.0_162/bin:/opt/apache-maven-3.5.2/bin:/usr/java/jdk1.8.0_162/bin:/opt/apache-maven-3.5.2/bin
```

- ✓ Availability of java:

```
osgdev@TG-DevOps-OS004:~$ java -version
java version "1.8.0_161"
Java(TM) SE Runtime Environment (build 1.8.0_161-b12)
Java HotSpot(TM) 64-Bit Server VM (build 25.161-b12, mixed mode)
```

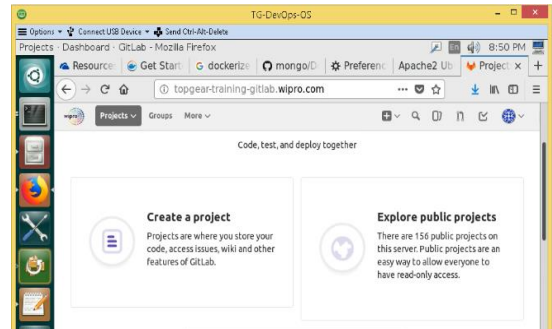
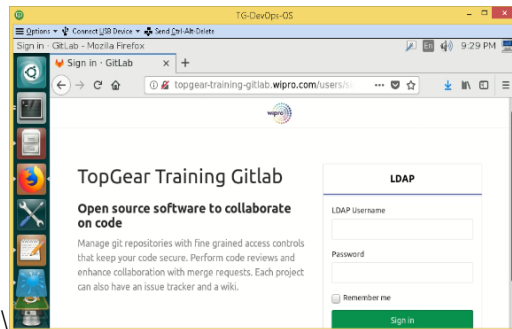
- ✓ Check availability of Git:

```
osgdev@TG-DevOps-OS004:~$ git --version
git version 2.7.4
```

- ✓ Check availability /Accessibility of Wipro's Enterprise Gitlab:

Access your account using your AD Credentials.

URL: http://topgear-training-gitlab.wipro.com/users/sign_in



- ✓ Check availability of Maven:

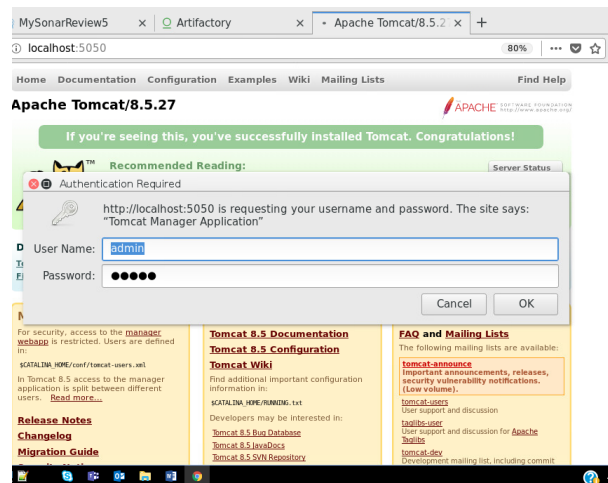
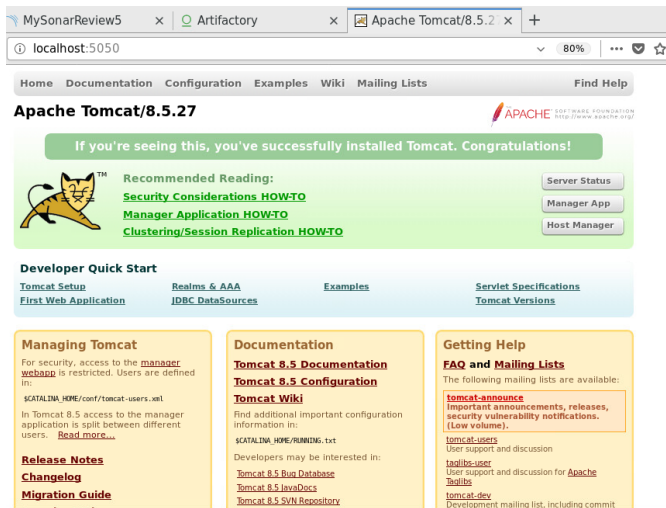
```
Osgd\ev@TG-DevOps-OS004:~$ mvn --version
Apache Maven 3.5.2 (138edd61fd100ec658bfa2d307c43b76940a5d7d; 2017-10-18T13:28:13+05:30)
Maven home: /opt/apache-maven-3.5.2
Java version: 1.8.0_162, vendor: Oracle Corporation
Java home: /usr/java/jdk1.8.0_162/jre
```

Default locale: en_US, platform encoding: UTF-8
OS name: "linux", version: "4.4.0-112-generic", arch: "amd64", family: "unix"

✓ Check availability of Apache Tomcat:

- Start tomcat service:
`sudo /opt/tomcat/apache-tomcat-8.5.27/bin/startup.sh`
password: osg@1234
- Apache tomcat will be running at port# 5050;
Localhost: 5050
Note: Manager credentials - admin/admin
- Stop tomcat service:
`sudo /opt/tomcat/apache-tomcat-8.5.27/bin/shutdown.sh`

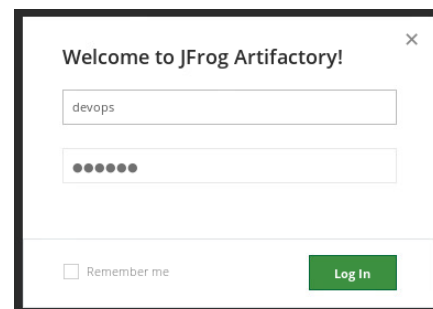
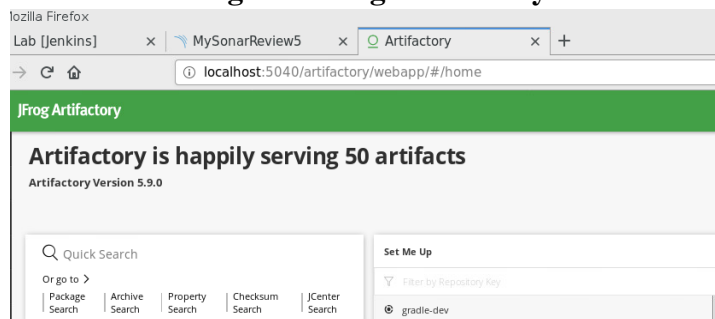
• Verify availability of tomcat @ port# 5050 and manager credentials too.



✓ Check availability of JFrog Artifactory:

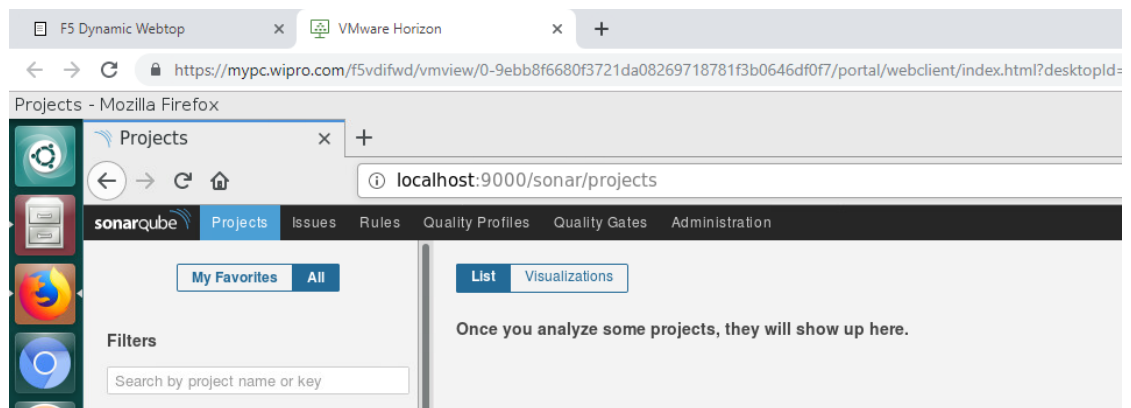
- Start Jfrog Artifactory
 - \$ systemctl stop artifactory.service ... type the password "osg@1234"
 - \$ sudo /opt/jfrog/artifactory/bin/artifactory.sh ... type the password "osg@1234"
 - Service available @ "http://localhost:5040/artifactory/"
 - Login with devops/devops (Default Admin credentials : admin/password)
- Stop Jfrog Artifactory
 - Use Ctrl+c
- Note
 - If any exceptions to start, use ps -ef | grep tomcat to find PID's of tomcat and kill them
 - Use Sudo kill -9 <PID>
 - To start service at the background use: nohup <./sh> &

○ Login to Jfrog Artifactory to view artifacts history (credentials: devops/devops)



✓ Check availability of SonarQube:

- Start SonarQube Service
\$ sudo /home/osgdev/mySonarQube/sonarqube-6.4/bin/linux-x86-64/sonar.sh start
Open browser to check: <http://127.0.0.1:9000/sonar>
- Stop SonarQube Service
\$ sudo /home/osgdev/mySonarQube/sonarqube-6.4/bin/linux-x86-64/sonar.sh stop
- To check SonarQube status
\$ sudo /home/osgdev/mySonarQube/sonarqube-6.4/bin/linux-x86-64/sonar.sh status
- Login to SonarQube to view reports (credentials: admin/admin)**



✓ Check availability of Firefox Webdriver (geckodriver):

```
$ whereis geckodriver
geckodriver: usr/bin/geckodriver
```

✓ Check availability of Docker:

```
osgdev@DevOpsOS-TR: ~
osgdev@DevOpsOS-TR:~$ docker --version
Docker version 17.12.1-ce, build 7390fc6
osgdev@DevOpsOS-TR:~$
```

✓ Check availability of Ansible:

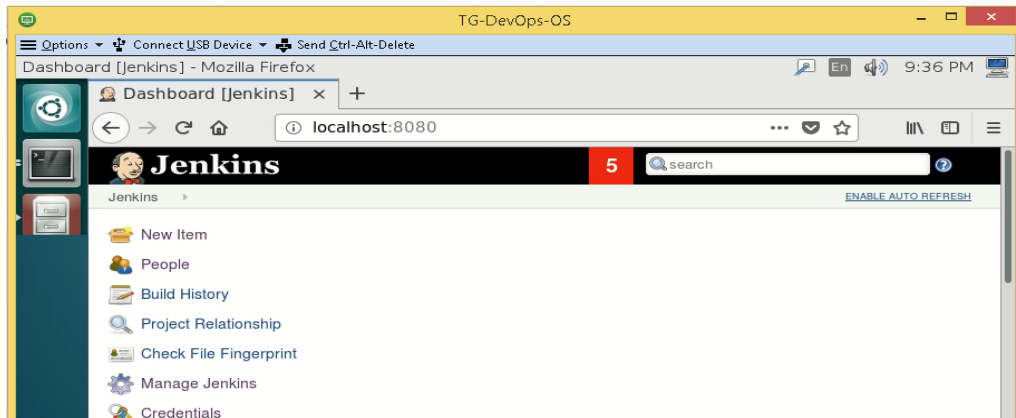
```
osgdev@DevOpsOS-TR:~$ ansible --version
ansible 2.4.2.0
  config file = /etc/ansible/ansible.cfg
  configured module search path = [u'/home/osgdev/.ansible/plugins/modules', u'/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python2.7/dist-packages/ansible
  executable location = /usr/bin/ansible
  python version = 2.7.12 (default, Dec  4 2017, 14:50:18) [GCC 5.4.0 20160609]
osgdev@DevOpsOS-TR:~$
```

✓ Check availability of Jenkins:

```
osgdev@TG-DevOps-OS004:~$ service jenkins status
â–¶ jenkins.service - LSB: Start Jenkins at boot time
   Loaded: loaded (/etc/init.d/jenkins; bad; vendor preset: enabled)
   Active: active (exited) since Thu 2018-03-29 13:21:06 IST; 2 weeks 6 days ago
     Docs: man:systemd-sysv-generator(8)
  Process: 1665 ExecStart=/etc/init.d/jenkins start (code=exited, status=0/SUCCESS)
    Tasks: 0
```

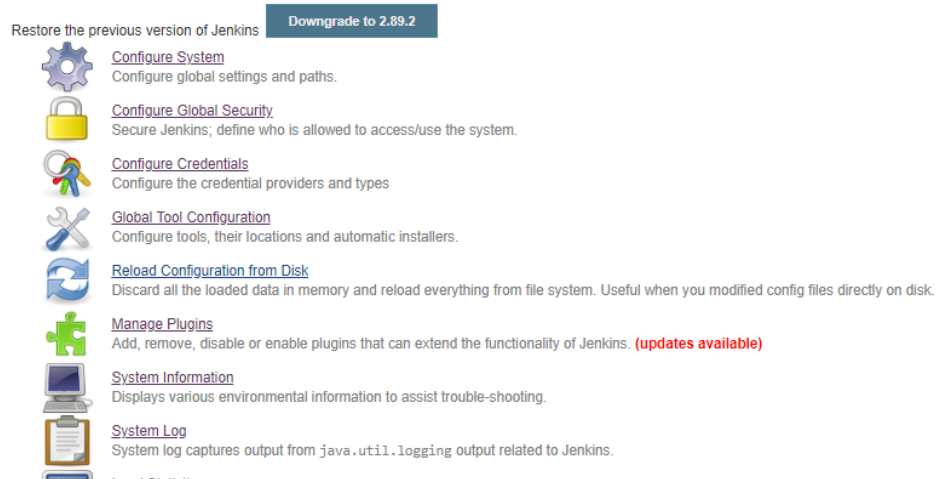
Memory: 0B
CPU: 0

You can access Jenkins on the browser using the URL: <http://localhost:8080/>



3. Walk through Jenkins

✓ Manage Jenkins



✓ Manage Plugins (Updates|installed|Available|Advanced)

- Select required plugins and install
- Set proxy details (if required)

✓ Global Tool Configuration

- **Configure Git, JDK, Maven, Sonar Scanner...**

1. JDK Configuration

The screenshot shows the 'Global Tool Configuration' page in Jenkins. Under the 'Maven Configuration' section, the 'Default settings provider' and 'Default global settings provider' are both set to 'Use default maven settings'. Under the 'JDK' section, there is a table with one entry: 'JDK' with 'Name' as 'JAVA_HOME' and 'JAVA_HOME' as '/usr/java/jdk1.8.0_102'. There is an 'Install automatically' checkbox and buttons for 'Delete JDK' and 'Add JDK'.

2. Git Configuration

The screenshot shows the 'Git' configuration page in Jenkins. Under the 'Git installations' section, there is a table with one entry: 'Git' with 'Name' as 'Default' and 'Path to Git executable' as 'git'. There is an 'Install automatically' checkbox and buttons for 'Delete Git' and 'Add Git'.

3. Sonar Scanner Configuration

The screenshot shows the 'SonarQube Scanner' configuration page in Jenkins. Under the 'SonarQube Scanner Installations' section, there is a table with one entry: 'SonarQube Scanner' with 'Name' as 'scan' and 'SONAR_RUNNER_HOME' as '/home/osgdev/sonar-scanner-3.2'. There is an 'Install automatically' checkbox and buttons for 'Delete SonarQube Scanner' and 'Add SonarQube Scanner'. Below the table, it says 'List of SonarQube Scanner installations on this system'.

4. Maven Configuration

The screenshot shows the 'Maven' configuration page in Jenkins. Under the 'Maven installations' section, there is a table with one entry: 'Maven' with 'Name' as 'MAVEN_HOME' and 'MAVEN_HOME' as '/opt/apache-maven-3.5.2'. There is an 'Install automatically' checkbox and buttons for 'Delete Maven' and 'Add Maven'. Below the table, it says 'List of Maven installations on this system'. Below this, there are sections for 'Ansible' and 'Docker', each with an 'Add' button and a note 'List of [tool] installations on this system'.

✓ Configure System

○ Configure Sonar Server, Artifactory, Gitlab & Email Notification

Jenkins > configuration

Tool Locations

SonarQube servers

Environment variables

☒ Enable injection of SonarQube server configuration as build environment variables

If checked, job administrators will be able to inject a SonarQube server configuration as environment variables in the build.

SonarQube installations

Name

Server URL

Server version

Server authentication token

SonarQube account login

SonarQube account password

Advanced...

Delete SonarQube

Save

Apply

Task View

GitLab

Enable authentication for 'project' end-point

GitLab connections

Connection name

GitLab host URL

Credentials

Advanced...

Test Connection

Delete

Add

Jenkins Location

Jenkins URL

System Admin e-mail address

Jenkins Job

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