



Lab Experiment – 9
Uploading Artifacts on Nexus Server using
command Line

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COURSE – B. Tech CSE- DevOps Batch 1

SUBJECT – Continuous Integration and Deployment

SEMESTER – 5th semester

Submitted To:

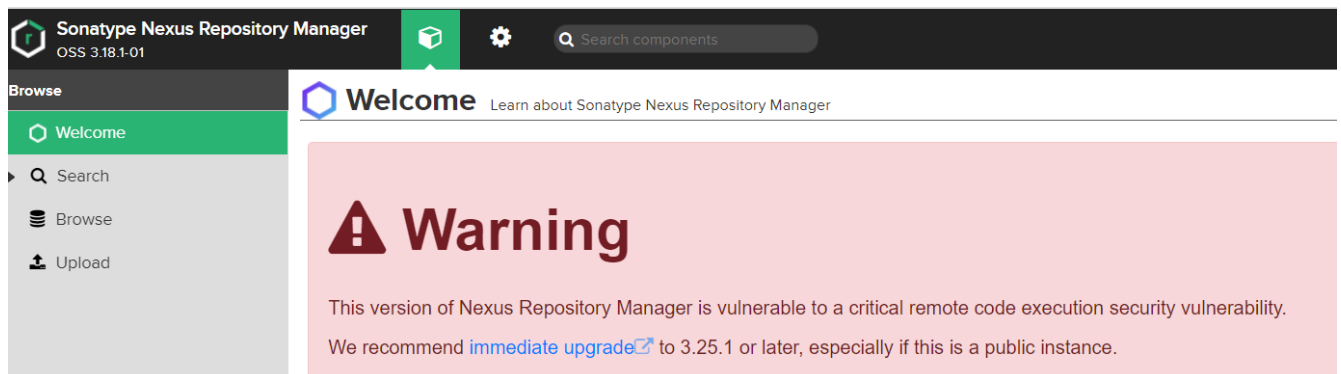
Dr. Hitesh Kumar Sir

Experiment for demonstrating Uploading Artifacts on Nexus Server using command Line

- Start Nexus using command prompt in your local system.

```
Command Prompt - nexus.exe /run
2020-09-26 09:02:47,134+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.rapture.internal.RaptureWebResourceBundle - nexus-repository-nuget
2020-09-26 09:02:47,135+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.rapture.internal.RaptureWebResourceBundle - nexus-repository-rubygems
2020-09-26 09:02:47,136+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.rapture.internal.RaptureWebResourceBundle - nexus-repository-docker
2020-09-26 09:02:47,143+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.internal.webresources.WebResourceServlet - Max-age: 30 days (2592000 seconds)
2020-09-26 09:02:47,164+0530 INFO [jetty-main-1] *SYSTEM com.sonatype.oss.extdirect.internal.ExtDirectGsonBuilderConfigurator, dispatcherClass=com.sonatype.oss.extdirect.internal.ExtDirectGsonRequestProcessorThread, contextPath=--not specified: calculated via Javascript--., createSourceFiles=true
2020-09-26 09:02:47,165+0530 INFO [jetty-main-1] *SYSTEM com.sonatype.oss.extdirect.internal.ExtDirectGsonRequestProcessorThread, contextPath=--not specified: calculated via Javascript--., createSourceFiles=true
2020-09-26 09:02:47,177+0530 INFO [jetty-main-1] *SYSTEM com.sonatype.oss.extdirect.internal.ExtDirectGsonRequestProcessorThread, contextPath=--not specified: calculated via Javascript--., createSourceFiles=true
2020-09-26 09:02:49,905+0530 INFO [quartz-3-thread-1] *SYSTEM org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'Task log cleanup' [tasklog.cleanup] state change WAITING -> RUNNING
2020-09-26 09:02:49,907+0530 INFO [quartz-3-thread-2] *SYSTEM org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'Storage facet cleanup' [repository.storage-facet-cleanup] state change WAITING -> RUNNING
2020-09-26 09:02:50,302+0530 INFO [quartz-3-thread-3] *SYSTEM org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'Cleanup service' [repository.cleanup] state change WAITING -> RUNNING
2020-09-26 09:02:50,322+0530 INFO [quartz-3-thread-1] *SYSTEM org.sonatype.nexus.tasklog.TaskLogCleanup - Cleaning up log files in F:\Nexus and Sonatype\sonatype-work\nexus3\log\tasks older than 30 days
2020-09-26 09:02:50,471+0530 INFO [quartz-3-thread-1] *SYSTEM org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'Task log cleanup' [tasklog.cleanup] state change RUNNING -> WAITING (OK)
2020-09-26 09:02:50,473+0530 INFO [quartz-3-thread-3] *SYSTEM org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'Cleanup service' [repository.cleanup] state change RUNNING -> WAITING (OK)
2020-09-26 09:02:51,104+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.siesta.SiestaServlet - JAX-RS RuntimeDelegate: org.sonatype.nexus.siesta.internal.resteasy.SisuResteasyProviderFactory@b7e55c1
2020-09-26 09:02:51,530+0530 INFO [quartz-3-thread-2] *SYSTEM org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'Storage facet cleanup' [repository.storage-facet-cleanup] state change RUNNING -> WAITING (OK)
2020-09-26 09:02:51,861+0530 INFO [jetty-main-1] *SYSTEM org.jboss.resteasy.plugins.validation.i18n - RESTEASY008550: Unable to find CDI supporting ValidatorFactory. Using default ValidatorFactory
2020-09-26 09:02:52,096+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.siesta.SiestaServlet - Initialized
2020-09-26 09:02:52,099+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.repository.httpbridge.internal.ViewServlet - Initialized
2020-09-26 09:02:52,490+0530 INFO [jetty-main-1] *SYSTEM org.eclipse.jetty.server.handler.ContextHandler - Started o.e.j.w.WebAppContext@346e7413[Sonatype Nexus,,file:///F:/Nexus%20and%20Sonatype/nexus-3.18.1-01/public/,AVAILABLE]
2020-09-26 09:02:54,847+0530 INFO [jetty-main-1] *SYSTEM org.eclipse.jetty.server.AbstractConnector - Started ServerConnector@38203db4[HTTP/1.1,[http/1.1]]{0.0.0.0:8081}
2020-09-26 09:02:54,935+0530 INFO [jetty-main-1] *SYSTEM org.eclipse.jetty.server.Server - Started @163375ms
2020-09-26 09:02:54,937+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.bootstrap.jetty.JettyServer -
-----
Started Sonatype Nexus OSS 3.18.1-01
-----
2020-09-26 09:04:33,878+0530 INFO [qtp1924160651-70] *UNKNOWN org.apache.shiro.session.mgt.AbstractValidatingSessionManager - Enabling session validation scheduler...
2020-09-26 09:04:33,895+0530 INFO [qtp1924160651-70] *UNKNOWN org.sonatype.nexus.internal.security.anonymous.AnonymousManagerImpl - Loaded configuration: AnonymousConfiguration{enabled=false, userId='anonymous', realmName='NexusAuthorizingRealm'}
2020-09-26 09:04:50,631+0530 INFO [qtp1924160651-175] *UNKNOWN org.ehcache.jsr107.ConfigurationMerger - Configuration of cache shiro-activeSessionCache will be supplemented by template nexus-default
2020-09-26 09:04:50,634+0530 INFO [qtp1924160651-175] *UNKNOWN org.ehcache.core.EhcacheManager - Cache 'shiro-activeSessionCache' created in EhcacheManager.
2020-09-26 09:04:50,635+0530 INFO [qtp1924160651-175] *UNKNOWN org.ehcache.jsr107.Eh107CacheManager - Registering Ehcache MBean javax.cache:type=CacheConfiguration,CacheManager=file:/F:/Nexus%20and%20Sonatype/nexus-3.18.1-01/etc/fabric/ehcache.xml,Cache=shiro-activeSessionCache
2020-09-26 09:04:50,641+0530 INFO [qtp1924160651-175] *UNKNOWN org.ehcache.jsr107.Eh107CacheManager - Registering Ehcache MBean javax.cache:type=CacheStatistics,CacheManager=file:/F:/Nexus%20and%20Sonatype/nexus-3.18.1-01/etc/fabric/ehcache.xml,Cache=shiro-activeSessionCache
2020-09-26 09:04:50,647+0530 INFO [qtp1924160651-175] admin org.sonatype.nexus.rapture.internal.security.SessionServlet - Created session for user: admin
2020-09-26 09:10:00,015+0530 INFO [quartz-3-thread-4] *SYSTEM org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'Storage facet cleanup' [repository.storage-facet-cleanup] state change WAITING -> RUNNING
2020-09-26 09:10:00,058+0530 INFO [quartz-3-thread-4] *SYSTEM org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'Storage facet cleanup' [repository.storage-facet-cleanup] state change RUNNING -> WAITING (OK)
2020-09-26 09:20:00,015+0530 INFO [quartz-3-thread-5] *SYSTEM org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'Storage facet cleanup' [repository.storage-facet-cleanup] state change WAITING -> RUNNING
2020-09-26 09:20:00,052+0530 INFO [quartz-3-thread-5] *SYSTEM org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'Storage facet cleanup' [repository.storage-facet-cleanup] state change RUNNING -> WAITING (OK)
```

- Open your browser and run your Nexus using localhost:8081 where 8081 is the default port number for Nexus.



- Create a new repository in Nexus.

Repositories <small>Manage repositories</small>							
+ Create repository					Filter		
Name ↑	Type	Format	Status	URL	Health check	IQ Policy Viola...	
maven-central	proxy	maven2	Online - Ready to Connect	copy	Analyze	⊘	>
maven-public	group	maven2	Online	copy	⊘	⊘	>
maven-releases	hosted	maven2	Online	copy	⊘	⊘	>
maven-snapshots	hosted	maven2	Online	copy	⊘	⊘	>
nuget-group	group	nuget	Online	copy	⊘	⊘	>
nuget-hosted	hosted	nuget	Online	copy	⊘	⊘	>
nuget.org-proxy	proxy	nuget	Online - Ready to Connect	copy	Analyze	⊘	>

- You will find many options and select maven2(hosted).

Sonatype Nexus Repository Manager
 OSS 3.18.1-01




Administration

- Repository
 - Blob Stores
- Repositories**
- Content Selectors
- Cleanup Policies
- Routing Rules
- Security
 - Privileges
 - Roles
 - Users
 - Anonymous
 - LDAP
 - Realms
 - SSL Certificates
- IQ Server
- Support
- System

Repositories / Select Recipe

Recipe ↑
docker (hosted)
docker (proxy)
gitlfs (hosted)
go (group)
go (proxy)
maven2 (group)
maven2 (hosted)
maven2 (proxy)
npm (group)
npm (hosted)
npm (proxy)
nuget (group)
nuget (hosted)
nuget (proxy)
pypi (group)
pypi (hosted)
pypi (proxy)
raw (group)
raw (hosted)
raw (proxy)
rubygems (group)
rubygems (hosted)
rubygems (proxy)
vum (group)

- Give any name to your repository and in the Maven2 tab, select the Snapshot type of artifacts in the Version policy and in the deployment policy, allow redeploy.

 **Repositories** /  **Select Recipe** /  **Create Repository: maven2 (hosted)**

Name: A unique identifier for this repository

Online: ☒ If checked, the repository accepts incoming requests

Maven 2

Version policy:
 What type of artifacts does this repository store?

Layout policy:
 Validate that all paths are maven artifact or metadata paths

Storage


Blob store:
 Blob store used to store asset contents


Strict Content Type Validation:
☒ Validate that all content uploaded to this repository is of a MIME type appropriate for the repository format































Hosted

Deployment policy:
 Controls if deployments of and updates to artifacts are allowed

- Click on the Create repository, here the name of the repository is CICD.

 **Repositories** Manage repositories

 Create repository

Name ↑	Type	Format	Status	URL	Health check	IQ Policy Viola...
 CICD	hosted	maven2	Online	 copy		 >
 maven-central	proxy	maven2	Online - Ready to Connect	 copy	Analyze	 >
 maven-public	group	maven2	Online	 copy		 >
 maven-releases	hosted	maven2	Online	 copy		 >
 maven-snapshots	hosted	maven2	Online	 copy		 >
 nuget-group	group	nuget	Online	 copy		 >
 nuget-hosted	hosted	nuget	Online	 copy		 >
 nuget.org-proxy	proxy	nuget	Online - Ready to Connect	 copy	Analyze	 >

- In your local maven server, open the settings.xml and provide server details.

```

119
120     <server>
121         <id>deploymentRepo</id>
122         <username>repouser</username>
123         <password>repopwd</password>
124     </server>
125     -->
126
127     <!-- Another sample, using keys to authenticate.
128     <server>
129         <id>siteServer</id>
130         <privateKey>/path/to/private/key</privateKey>
131         <passphrase>optional; leave empty if not used.</passphrase>
132     </server>
133     -->
134
135     <server>
136         <id>CICD</id>
137         <username>admin</username>
138         <password>admin123</password>
139     </server>
140
141
142 </servers>
143

```

- Configure the pom.xml for the project and provide the distribution management key to the configuration file.

```

<properties>
    <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
    <maven.compiler.source>1.7</maven.compiler.source>
    <maven.compiler.target>1.7</maven.compiler.target>
</properties>

<distributionManagement>
<snapshotRepository>
<id>CICD</id>
<name>CICD</name>
<url>http://localhost:8081/repository/CICD/</url>
</snapshotRepository>
</distributionManagement>

<dependencies>
    <dependency>
        <groupId>junit</groupId>
        <artifactId>junit</artifactId>
        <version>4.11</version>
        <scope>test</scope>
    </dependency>
</dependencies>

```

- Go to the location where your project is in your local machine, and run the appropriate commands like mvn clean and mvn deploy.

```
C:\Windows\System32\cmd.exe
F:\CI_CD_lab\Maven\my-app>mvn deploy
[INFO] Scanning for projects...
[WARNING]
[WARNING] Some problems were encountered while building the effective model for com.mycompany.app:my-app:jar:1.0-SNAPSHOT.
[WARNING] 'build.pluginManagement.plugins.plugin.(groupId:artifactId)' must be unique but found duplicate declarations
[WARNING]
[WARNING] It is highly recommended to fix these problems because they threaten the stability of your build.
[WARNING]
[WARNING] For this reason, future Maven versions might no longer support building such malformed projects.
[WARNING]
[INFO]
[INFO] -----< com.mycompany.app:my-app >-----
[INFO] Building my-app 1.0-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- maven-resources-plugin:3.0.2:resources (default-resources) @ my-app ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory F:\CI_CD_lab\Maven\my-app\src\main\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ my-app ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-resources-plugin:3.0.2:testResources (default-testResources) @ my-app ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory F:\CI_CD_lab\Maven\my-app\src\test\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ my-app ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 1 source file to F:\CI_CD_lab\Maven\my-app\target\test-classes
[INFO]
[INFO] --- maven-surefire-plugin:2.22.1:test (default-test) @ my-app ---
[INFO]
[INFO] -----
[INFO] T E S T S
[INFO] -----
[INFO] Running com.mycompany.app.AppTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.041 s - in com.mycompany.app.AppTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
```

```
[INFO]
[INFO]
[INFO] --- maven-jar-plugin:3.0.2:jar (default-jar) @ my-app ---
[INFO] Building jar: F:\CI_CD_lab\Maven\my-app\target\my-app-1.0-SNAPSHOT.jar
[INFO]
[INFO] --- maven-install-plugin:2.5.2:install (default-install) @ my-app ---
[INFO] Installing F:\CI_CD_lab\Maven\my-app\target\my-app-1.0-SNAPSHOT.jar to C:\Users\ASUS\AppData\Local\m2\repository\com\mycompany\app\my-app\1.0-SNAPSHOT\my-app-1.0-SNAPSHOT.jar
[INFO] Installing F:\CI_CD_lab\Maven\my-app\pom.xml to C:\Users\ASUS\AppData\Local\m2\repository\com\mycompany\app\my-app\1.0-SNAPSHOT\my-app-1.0-SNAPSHOT.pom
[INFO]
[INFO] --- maven-deploy-plugin:2.8.2:deploy (default-deploy) @ my-app ---
[INFO] Downloading from CICC: http://localhost:8081/repository/CICC/com/mycompany/app/my-app/1.0-SNAPSHOT/
[INFO] Uploading to CICC: http://localhost:8081/repository/CICC/com/mycompany/app/my-app/1.0-SNAPSHOT/
[INFO] Uploaded to CICC: http://localhost:8081/repository/CICC/com/mycompany/app/my-app/1.0-SNAPSHOT/
[INFO] Uploading to CICC: http://localhost:8081/repository/CICC/com/mycompany/app/my-app/1.0-SNAPSHOT/
[INFO] Downloading from CICC: http://localhost:8081/repository/CICC/com/mycompany/app/my-app/1.0-SNAPSHOT/
[INFO] Uploading to CICC: http://localhost:8081/repository/CICC/com/mycompany/app/my-app/1.0-SNAPSHOT/
[INFO] Uploaded to CICC: http://localhost:8081/repository/CICC/com/mycompany/app/my-app/1.0-SNAPSHOT/
[INFO] Uploading to CICC: http://localhost:8081/repository/CICC/com/mycompany/app/my-app/1.0-SNAPSHOT/
[INFO] Uploaded to CICC: http://localhost:8081/repository/CICC/com/mycompany/app/my-app/1.0-SNAPSHOT/
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] -----
[INFO] Total time: 8.595 s
[INFO] Finished at: 2020-10-06T13:09:01+05:30
[INFO] -----
```

- Go to the dashboard and check if the project has been uploaded. The output is shown below.

The screenshot displays the Sonatype Nexus Repository Manager interface. The left sidebar shows a tree view of the repository structure: **com** > **mycompany** > **app** > **my-app** > **1.0-SNAPSHOT**. The main panel shows the selected artifact path: **com/mycompany/app/my-app/1.0-SNAPSHOT/1.0-20201004.134711-1**. Below the path are buttons for **Delete component** and **Analyze application**. The **Summary** tab is active, displaying the following metadata:

Property	Value
Repository	CI-CD
Format	maven2
Group	com.mycompany.app
Name	my-app
Version	1.0-20201004.134711-1
Most popular version	1
Age	1
Popularity	1

The **Usage** tab is also visible, showing a dropdown menu set to **Apache Maven** and a button to copy the snippet. The snippet to be inserted into the `pom.xml` is:

```
<dependency>
  <groupId>com.mycompany.app</groupId>
  <artifactId>my-app</artifactId>
  <version>1.0-20201004.134711-1</version>
</dependency>
```