

Sonatype Nexus OSS (Open Source Software)

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Introduction

Nexus is a repository manager allows to store and retrieve build artifacts.

Nexus Repository Manager is available from Sonatype, Inc. "Sonatype" and "Sonatype Nexus" are trademarks of Sonatype, Inc.

Before Stating installation need to verify the below software should install.

Java: Verify with java -version command.

Maven: Verify with mvn -version.

Installation

Nexus Repository Manager can be downloaded from below url.

<https://www.sonatype.com/download-oss-sonatype>

Windows

Download the Windows version of Nexus repository.

Nexus Repository Manager OSS 3.x

The latest version of Nexus Repository OSS, providing cutting-edge support for the formats below.

Note: More information can be found in the [documentation](#), [release notes](#), [upgrade notes](#) and the [Support Knowledge Base](#).

Manage these formats:

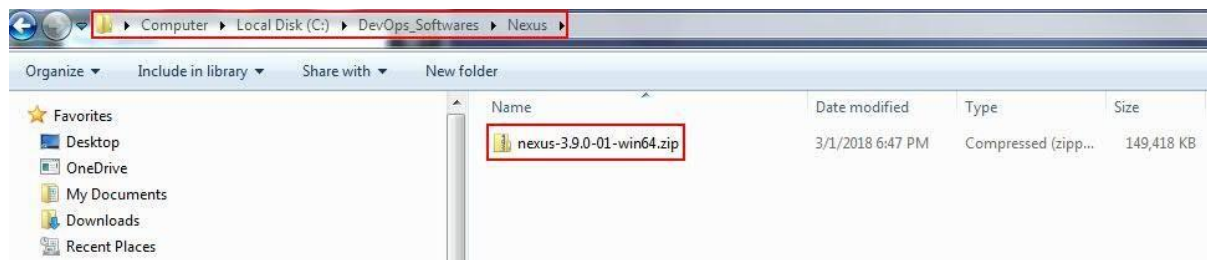
- | | | | | | |
|---------|-------------------|--------------------|---------|----------|---------|
| ✓ Bower | ✓ Docker | ✓ Git LFS | ✓ Maven | ✓ npm | ✓ NuGet |
| ✓ PyPI | ✓ Ruby Gems | ✓ Yum Proxy / Host | ✓ Apt* | ✓ Conan* | ✓ R* |
| ✓ CPAN* | ✓ Raw (Universal) | ✓ P2* | | | |

* Available from the Nexus Exchange Community

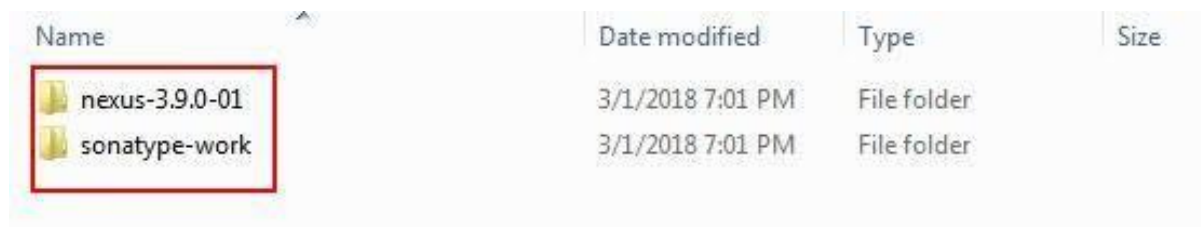
Choose your Nexus:

Nexus Repository Manager OSS 3.x - OS X	ASC	MD5	SHA1
Nexus Repository Manager OSS 3.x - Windows	ASC	MD5	SHA1
Nexus Repository Manager OSS 3.x - Unix	ASC	MD5	SHA1

Copy downloaded software (nexus-3.8.0-02-win64.zip) into one directory (C:\DevOps_Softwares\Nexus) .



Extract the zip file. Once you extract the zip file you will see the 2 directories.



Open the command prompt as Administrator and go to the directory (C:\DevOps_Softwares\Nexus\nexus-3.9.0-01\bin) where you have copied nexus software(nexus-3.8.0-02-win64.zip).

```
Administrator: C:\Windows\System32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\windows\system32>cd C:\DevOps_Softwares\Nexus\nexus-3.9.0-01-win64\nexus-3.9.0-01\bin
C:\DevOps_Softwares\Nexus\nexus-3.9.0-01-win64\nexus-3.9.0-01\bin>
```

Start the Nexus repository server as follows.

Execute the below command.

nexus.exe /run

```
C:\DevOps_Softwares\Nexus\nexus-3.9.0-01-win64\nexus-3.9.0-01\bin>nexus.exe /run
Preparing JRE ...
```

Once it started successfully, you will see below output.

```
Administrator: C:\Windows\System32\cmd.exe - nexus.exe /run
started [f2e9a1e67e8a325bcd6ee9f6790ff6c769e791d561f01] ...].
2018-03-01 19:14:58.393+0530 INFO [elasticsearch[52F3206A-0E443C79-D912C801-1F1CD1A4-856DBB12][clusterService#updateTask][IT#1]] *S
es [1], shards [1]/[0], mappings [component]
2018-03-01 19:14:58.455+0530 INFO [elasticsearch[52F3206A-0E443C79-D912C801-1F1CD1A4-856DBB12][clusterService#updateTask][IT#1]] *S
es [1], shards [1]/[0], mappings [component]
2018-03-01 19:14:58.502+0530 INFO [FelixStartLevel] *SYSTEM org.sonatype.nexus.extender.NexusLifecycleManager - Start CAPABILITIES
2018-03-01 19:14:58.514+0530 INFO [elasticsearch[52F3206A-0E443C79-D912C801-1F1CD1A4-856DBB12][clusterService#updateTask][IT#1]] *S
started [fb2b9b8f06274052a44b61ef3c7e887f0961d99c61f01] ...].
2018-03-01 19:14:58.755+0530 INFO [FelixStartLevel] *SYSTEM org.sonatype.nexus.extender.NexusLifecycleManager - Start TASKS
2018-03-01 19:14:58.755+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.bootstrap.osgi.BootstrapListener - Initialized
2018-03-01 19:14:58.780+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.rapture.internal.RaptureWebResourceBundle - UI plugin
2018-03-01 19:14:58.782+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.rapture.internal.RaptureWebResourceBundle - nexus-ra
2018-03-01 19:14:58.783+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.rapture.internal.RaptureWebResourceBundle - nexus-pr
2018-03-01 19:14:58.785+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.rapture.internal.RaptureWebResourceBundle - nexus-co
2018-03-01 19:14:58.785+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.rapture.internal.RaptureWebResourceBundle - nexus-pr
2018-03-01 19:14:58.815+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.internal.webresources.WebResourceServlet - Max-age: 36
2018-03-01 19:14:58.866+0530 INFO [jetty-main-1] *SYSTEM com.sonatype.mentors.ext.js.djn.servlet.DirectNginxServlet - Servlet GLOBAL
ThreadsPoolSize=80, batchRequestsMaxThreadsPerRequest=8, batchRequestsMaxThreadKeepAliveSeconds=60, gsonBuilderConfiguratorClass=or
Class=org.sonatype.nexus.extdirect.internal.ExtDirectJsonRequestProcessorThread, contextPath=--not specified: calculated via Javasc
2018-03-01 19:14:58.870+0530 INFO [jetty-main-1] *SYSTEM com.sonatype.mentors.ext.js.djn.servlet.DirectNginxServlet - Servlet GLOBAL
2018-03-01 19:14:58.898+0530 INFO [jetty-main-1] *SYSTEM com.sonatype.mentors.ext.js.djn.jscodegen.CodeFileGenerator - Creating sour
2018-03-01 19:14:58.935+0530 INFO [FelixStartLevel] *SYSTEM org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'Task lo
2018-03-01 19:14:59.035+0530 INFO [FelixStartLevel] *SYSTEM org.sonatype.nexus.scheduling.internal.TaskSchedulerImpl - Task 'Task
2018-03-01 19:14:59.128+0530 INFO [FelixStartLevel] *SYSTEM org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'Storage
2018-03-01 19:14:59.137+0530 INFO [FelixStartLevel] *SYSTEM org.sonatype.nexus.scheduling.internal.TaskSchedulerImpl - Task 'Stora
2018-03-01 19:14:59.185+0530 INFO [FelixStartLevel] *SYSTEM org.sonatype.nexus.quartz.internal.QuartzSchedulerSPI - Scheduler put
2018-03-01 19:14:59.204+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.siesta.SiestaServlet - JAK-RS RuntimeDelegate: org.son
2018-03-01 19:14:59.257+0530 INFO [jetty-main-1] *SYSTEM org.jboss.resteasy.plugins.validation.i18n - RESTEasy008550: Unable to fi
2018-03-01 19:14:59.609+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.siesta.SiestaServlet - Initialized
2018-03-01 19:14:59.613+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.repository.httpbridge.internal.ViewServlet - Initializ
2018-03-01 19:14:59.658+0530 INFO [jetty-main-1] *SYSTEM org.eclipse.jetty.server.handler.ContextHandler - Started o.e.j.w.WebAppC
2018-03-01 19:14:59.730+0530 INFO [jetty-main-1] *SYSTEM org.eclipse.jetty.server.AbstractConnector - Started ServerConnector@273ec
2018-03-01 19:14:59.732+0530 INFO [jetty-main-1] *SYSTEM org.eclipse.jetty.server.Server - Started @48141ms
2018-03-01 19:14:59.733+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.bootstrap.jetty.JettyServer -

Started Sonatype Nexus OSS 3.9.0-01
```

Mac

Download the Mac version of Nexus repository.

Nexus Repository Manager OSS 3.x

The latest version of Nexus Repository OSS, providing cutting-edge support for the formats below.

Note: More information can be found in the [documentation](#), [release notes](#), [upgrade notes](#) and the [Support Knowledge Base](#).

Manage these formats:

✓ Bower

✓ Docker

✓ Git LFS

✓ Maven

✓ npm

✓ NuGet

✓ PyPI

✓ Ruby Gems

✓ Yum Proxy /
Host

✓ Apt*

✓ Conan*

✓ R*

✓ CPAN*

✓ Raw (Universal)

✓ P2*

* Available from the [Nexus Exchange Community](#)

Choose your Nexus:

Nexus Repository Manager OSS 3.x - OS X	ASC	MD5	SHA1
Nexus Repository Manager OSS 3.x - Windows	ASC	MD5	SHA1
Nexus Repository Manager OSS 3.x - Unix	ASC	MD5	SHA1

Copy downloaded software (nexus-3.7.1-02-mac.tgz) into one directory and extract it.

Go to the directory where you have copied nexus software(nexus-3.7.1-02-mac.tgz) and extract it using the below commands.

```
#gunzip nexus-3.7.1-02-mac.tgz
```

```
#tar xvf nexus-3.7.1-02-mac.tar
```

Start the Nexus repository server as follows.

```
#cd NEXUS_HOME/bin
```

```
#./nexus start (OR) ./nexus run (OR) ./nexus \run ----> Mac/Linux
```

```
Bhaskars-MacBook-Air:bin bhaskarreddyl$ ./nexus start
Starting nexus
Bhaskars-MacBook-Air:bin bhaskarreddyl$
```

(OR)

```
Bhaskars-MacBook-Air:bin bhaskarreddyl$ ./nexus \run
```

(OR)

```
Bhaskars-MacBook-Air:bin bhaskarreddyl$ ./nexus run
```

Nexus Repository Manager is a Java application that requires a Java Runtime Environment. When you start the repository manager, It runs within a servlet container called Eclipse Jetty, and it is started with a native service wrapper called the Tanuki Java Service Wrapper.

Once the nexus repository manager has been started, its web interface can be accessed under this URL:

<http://localhost:8081/> ---> 3.x Releases

<http://localhost:8081/nexus> ---> 2.x Releases

The default credentials are **admin/admin123**.

Nexus Repository 2.14.5 is now available with support for upgrading to Nexus Repository Manager 3.5.0 or higher.

Once you installed successfully, do the below changes.

a) **Change the Administrative Email and Password as follows.**

Click on username (admin , on right side top corner) and update the email as follows



Account Manage your account

ID:

This is used as your username.

admin

First name:

Administrator

Last Name:

User

Email:

devopstrainingblr@gmail.com

Save

Discard

Change password

Authenticate



Changing password requires validation of your credentials.

admin

.....

Authenticate

Cancel

Change Password



New password:

Confirm password:

Change password

Cancel

Then click on Save button.

b)Configure the SMTP Settings

The screenshot shows the Nexus Repository Manager interface. On the left is the 'Administration' sidebar with categories like Repositories, Content Selectors, Security, Support, Analytics, Logging, Metrics, System Information, System, API, Bundles, Capabilities, HTTP, Licensing, Recent Connections, Nodes, and Tasks. The 'Email Server' option under 'Capabilities' is highlighted. The main panel is titled 'Email Server' with the subtitle 'Manage email server configuration'. It contains the following fields and options:

- Enabled:** A checked checkbox.
- Host:** A text field containing 'smtp.gmail.com'.
- Port:** A dropdown menu set to '465'.
- Use the Nexus truststore:** A section with a checkbox 'Use certificates stored in the Nexus truststore to connect to external systems' (unchecked) and a 'View certificate' button.
- Username:** A text field containing 'devopstrainingblr@gmail.com'.
- Password:** A text field with masked characters (dots).
- From address:** A text field containing 'devopstrainingblr@gmail.com'.
- Subject prefix:** A text field containing 'Nexus Artifactory Repository'.
- SSL/TLS options:** A section with three checkboxes:
 - 'Enable STARTTLS support for insecure connections' (unchecked)
 - 'Require STARTTLS support' (unchecked)
 - 'Enable SSL/TLS encryption upon connection' (checked)
 - 'Enable server identity check' (unchecked)

At the bottom are three buttons: 'Save' (highlighted), 'Discard', and 'Verify email server'.

Nexus Directory structure

The installation directory having below directories:

bin
deploy
etc
lib
public
system

bin: contains the nexus startup script itself as well as startup-related configuration files.

etc: contains configuration files.

lib: contains binary libraries related to Apache Karaf.

public: contains public resources of the application.

system: contains all components and plugins that constitute the application.

Data Directory

The data directory, found by default at `../sonatype-work/nexus3`, includes subdirectories that contain all the components, repositories, configurations and other data presented by the repository manager. The subdirectories are listed as:

blobs/

This is the default location of the blob store. If you provided a fully qualified path when creating a new blob store, it may not end up in this directory.

cache/

This directory contains information on currently cached Karaf bundles

db/

This directory contains the OrientDB databases which are the primary storage for your repository manager's metadata

elasticsearch/

This directory contains the currently configured state of Elasticsearch

etc/

This directory contains the main runtime configuration and customization of the repository manager. The files are explained further in [Configuring the Runtime Environment](#).

health-check/

This directory contains cached reports from the Repository Health Check feature

keystores/

This contains the automatically generated key used to identify your repository manager

log/

This directory contains several log files that capture information about various aspects of the running repository manager. The `nexus.log` and `request.log` files are rotated every day so this directory also contains archived copies of these files. To reclaim disk space, you can delete old log files from the logs directory. Log files found in this directory include:

-
- **nexus.log** - The main repository manager application log. Log messages contain standard log output fields including date/time, log level, the associated thread, class and message.
- **request.log** - Used to log http access requests to a running repository manager. Log messages contain information such as client host, user and HTTP request attributes including status code, bytes, and user-agent header.
- **jvm.log** - Contains JVM stdout, stderr and thread dump messages
- **karaf.log** - This is the Apache Karaf container log file which contains messages specific to the repository manager startup

The **log** directory also contains a **tasks** subdirectory which contains separate, uniquely named (by date, time and task name) log output files for each task that is run. See [Task Logging](#) for more details concerning naming strategy and content of these files.

tmp/

This directory is used for temporary storage

How to stop the Nexus Server?

Ans) Go to the NEXUS_INSTALLATION_HOME Directory and execute the below command.

`#!/nexus stop`

```
Bhaskars-MacBook-Air:bin bhaskarreddyl$ ./nexus stop
Shutting down nexus
Stopped.
Bhaskars-MacBook-Air:bin bhaskarreddyl$
```

(OR)

The nexus server is started with run command like

`./nexus run` ---> Mac/Linux

`nexus.exe /run` ---> Windows

We will use Ctrl + c to stop the server.

How to change the port number?

To change the default HTTP port from 8081 to custom port, follow the below steps.

Go to the etc directory and open the **nexus-default.properties** file and update the port number from 8081 to your custom port.

`application-port=8081` ---> By default port number.

`application-port=9090` ---> Customised port number.

How to change the context root?

Go to the etc directory and open the **nexus-default.properties** file and update the context root as follows.

`nexus-context-path=` ---> By default context root

`nexus-context-path=/tejatechnologies` ---> Customised context root

Nexus provides for three different kinds of repositories: Proxy Repositories, Hosted repositories, and Virtual repositories.

Create the repositories














Login into Nexus repo with admin credentials and click on Administration Button  and expand the **Repository** and click on **Repositories** and click on Create repository.






Select the repository type.



Repositories / Select Recipe

	Recipe ↑
	bower (group)
	bower (hosted)
	bower (proxy)
	docker (group)
	docker (hosted)
	docker (proxy)
	gitlfs (hosted)
	maven2 (group)
	maven2 (hosted)
	maven2 (proxy)
	npm (group)
	npm (hosted)
	npm (proxy)

 **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

Maven Integration with Nexus

Add the below lines in MAVEN_HOME/conf/settings.xml file.

```
<servers>
  <server>
    <id>nexus</id>
    <username>admin</username>
    <password>*****</password>
  </server>
</servers>
```

Note: Here replace ***** with actual password.

update the pom.xml with below lines for each application.

Note: After `</dependencies>` tag you can put below lines.

```
<distributionManagement>
  <repository>
    <id>nexus</id>
    <name>Teja Technologies Releases Nexus Repository</name>
    <url>http://localhost:8081/repository/Teja-technologies-releases</url>
  </repository>
  <snapshotRepository>
    <id>nexus</id>
    <name>Teja Technologies Snapshot Nexus Repository </name>
    <url>http://localhost:8081/repository/Teja-technologies-snapshots</url>
  </snapshotRepository>
</distributionManagement>
```

What is SnapShot and what is Release?

Create Users



Administration ---> Security ---> Users ---> Create local



Users / Create User

ID:

This will be used as the username

First name:

Last name:

Email:

Used for notifications

Password:

Confirm password:

Status:

Roles:

Available

nx-anonymous

Granted

nx-admin

>

<

Create local user

Cancel

How to deploy external artifacts into nexus using command?

```
mvn deploy:deploy-file -DgroupId=junit -DartifactId=junit -Dversion=3.8.1 -
DgeneratePom=true -Dpackaging=jar -DrepositoryId=nexus -
Durl=http://localhost:8086/tejatechnologies/repository/remoterepo-Teja-technologies -
Dfile=/Users/Tejareddy/Desktop/junit-3.8.1.jar
```

How to use the remote repository instead of default Maven central repository?

Ans) Add below code snippet in pom.xml before <deployments> element.

```
<repositories>
  <repository>
    <id>central</id>
    <url>http://localhost:8081/repository/flipkart-group/</url>
    <releases><enabled>true</enabled></releases>
    <snapshots><enabled>true</enabled></snapshots>
  </repository>
</repositories>

<pluginRepositories>
  <pluginRepository>
    <id>central</id>
    <url>http://localhost:8081/repository/flipkart-group/</url>
    <releases><enabled>true</enabled></releases>
    <snapshots><enabled>true</enabled></snapshots>
  </pluginRepository>
</pluginRepositories>
```

Possible Errors:

1) Error

```
[ERROR] Failed to execute goal org.apache.maven.plugins:maven-deploy-plugin:2.7:deploy (default-deploy) on project maven-java-project: Failed to deploy artifacts: Could not transfer artifact com.mt:maven-java-project:jar:2.0 from/to nexus (http://localhost:8081/mithuntechnologies/repository/mithun-releases/): Failed to transfer file: http://localhost:8081/mithuntechnologies/repository/mithun-releases/com/mt/maven-java-project/2.0/maven-java-project-2.0.jar. Return code is: 400, ReasonPhrase: Repository does not allow updating assets: mithun-releases. -> [Help 1]
```

Solution:

Login into Nexus server, go to that repository, in Hosted option select the Deployment policy as **“Allow redeploy”** option and click on **Save** button as follows.

Hosted

Deployment policy:

Controls if deployments of and updates to artifacts are allowed

Allow redeploy

Save

Discard

2) Error

```
[ERROR] Failed to execute goal org.apache.maven.plugins:maven-deploy-plugin:2.7:deploy (default-deploy) on project maven-java-project: Failed to deploy artifacts: Could not transfer artifact com.mt:maven-java-project:jar:2.0 from/to nexus (http://localhost:8081/mithuntechnologies/repository/mithun-releases/): Failed to transfer file: http://localhost:8081/mithuntechnologies/repository/mithun-releases/com/mt/maven-java-project/2.0/maven-java-project-2.0.jar. [Return code is: 401, ReasonPhrase: Unauthorized.] -> [Help 1]
```

Solution:

Open the settings.xml file and go to the servers section and verify the Nexus credentials.

```
<server>
  <id>nexus</id>
  <username>admin</username>
  <password>passw0rd</password>
</server>
```

3) Error

```
[ERROR] Failed to execute goal org.apache.maven.plugins:maven-deploy-plugin:2.7:deploy (default-deploy) on project maven-java-project: Failed to deploy artifacts: Could not transfer artifact com.mt:maven-java-project:jar:2.0 from/to nexus (http://localhost:8081/mithuntechnologies/repository/mithun-releases/): Failed to transfer file: http://localhost:8081/mithuntechnologies/repository/mithun-releases/com/mt/maven-java-project/2.0/maven-java-project-2.0.jar. [Return code is: 400, ReasonPhrase: Repository version policy: SNAPSHOT does not allow version: 2.0.] -> [Help 1]
```

Solution :

Login into Nexus repo and select that particular repo (maven-releases) and check the Maven2 option Version policy.

Maven 2

Version policy:

What type of artifacts does this repository store?

Snapshot



Change from **Snapshot** to **Release**.

Suppose if you put version as

SNAPSHOT

<version>0.0.1-SNAPSHOT</version>