In a Maven project, the use of internal repository manager is recommended for its better usability though Maven central repository provides various advantages. In reality, an enterprise or organization provides one or more central repository and Nexus connects these external repositories like a proxy to provide a virtual repository connection point. Actually the internal developers request required artifacts depending Nexus repositories only. The following is how to use Nexus, a useful open source to use Maven.

Description

Nexus is a Maven repository manager, a tool that configures internal repositories required by a project or an enterprise.

Effects of Nexus

- 1. Apply a proxy concept to download libraries fast
 - More effective than to download from the central repository directly
- 2. Manage effectively the libraries that cannot be uploaded to open repositories
 - Use the libraries that cannot be distributed in public due to the license
 - 3rd party libraries
 - Libraries created as products by internal project
- 3. Library management consistent between project developers
 - Version management for libraries used in projects

Features of Nexus

- 1. Intuitive and highly usable UI
- 2. Easy and quick installation .war format file distribution
- 3. Indexing and search functions for artifacts
- 4. Interworking with m2eclipse
- 5. Artifact registration and management though a web UI

Nexus Diagram



Environmental settings

Download Nexus

Download the war-packaged open source distribution file from Sonatype Nexus.

- http://nexus.sonatype.org/downloads/

nexus-webapp-1.3.3-bundle.zip	4/17/09	12M
nexus-webapp-1.3.3-bundle.zip.asc	4/17/09	189
nexus-webapp-1.3.3-bundle.zip.asc.md5	4/17/09	32
nexus-webapp-1.3.3-bundle.zip.asc.sha1	4/17/09	40
nexus-webapp-1.3.3-bundle.zip.md5	4/17/09	32
nexus-webapp-1.3.3-bundle.zip.sha1	4/17/09	40
nexus-webapp-1.3.3.war	4/17/09	11M
nexus-webapp-1.3.3.war.asc	4/17/09	189
nexus-webapp-1.3.3.war.asc.md5	4/17/09	32
nexus-webapp-1.3.3.war.asc.sha1	4/17/09	40
nexus-webapp-1.3.3.war.md5	4/17/09	32
nexus-webapp-1.3.3.war.sha1	4/17/09	40
Nexus Migration Plugin for Nexus Bundle Installation		
nexus-migration-plugin-packaging-1.0-webapp.zip	3/19/09	280k
older/	4/9/09	
snapshot/	8/29/09	

Install Nexus

Distribute the downloaded nexus-webapp-1.3.3.war to the target WAS.

Rename the war file to nexus.war to set the Context Root as nexus.

- an example of using Tomcat

😑 webapps					
: 파일(E) 편집(<u>E</u>) 보기(<u>V</u>) 출	계찾기(<u>A</u>) 도구(<u>T</u>) 도움말(<u>H</u>)				1
🌀 ਸਵ - 🕥 - 🎓 🔎	김색 🌔 풀더 🛄 -				A
[주소(D) 🛅 D:\\Apache\apache-	tomcat-6.0.18-cxtWwebapps				🖌 🎦 미동
-	이름 🔺	크기	종류	수정한 날짜	
파일 및 폴더 작업 🔥 👘	CXFTutorial		파일 풀더	2009-02-01 오후	
~~ 파악 미르 배경	adocs 🔁		파일 졸건	2009-02-01 오후	
	🚞 examples		파일 폴더	2009-02-01 오후	
😼 ma na	🛅 host-manager		파일 쓸던	2009-02-01 오후	
🗋 파일 복사	🛅 hudson		파일 폴더	2009-05-14 오후	
🙆 파일을 쉽어 거시	🛅 manager		파일 풀더	2009-02-01 오후	
🍝 파일을 전자 메일로	🛅 nexus		파일 졸더	2009-05-13 오후	
의 보대기 ~~~~~~	BOOT		파일 풀더	2009-02-01 오후	
🗙 파일 삭제	nexus, war	12,674KB	알집 WAR 파일	2009-02-11 오후 ,	
×					

Nexus	main	screen
1 CAG5		5010011

🚱 🗣 🔳 http://1	192, 168, 1	00. 15:8061/nexus/index. ht	ml		V 😽 🗙 Live Search	0
파일(F) 편집(E) 보 면플 👩 SK C&C SSL V	.7I(⊻) /PN Serv	즐겨찾기(A) 도구(D) 5 fice @ SAMSUNG SDS P	:음말(H) UT WORKBEN	CH 👩 개발환경 Mair	🗃 배포작업목록 🤰 Manage Hudson (Hudson) 🗂 네이버 사진	
😭 🏘 🏾 🏉 Sonatype I	Nexus N	laven Repository Manager			👌 🔹 🔝 👘 🖶 🔹 🔂 베이지(P) - 🍈 도구(D)	•
Sonatype™ Nexu	Js™				L. Version 1	og 1.2.0
Sonatype Servers	44	Welcome 🗵	Repositories	M		
Nexus		BRefresh User Managed	Repositories 🔻			
Artifact Search	-	Repository -	Туре	Status	Repository Path	
	Q	Public Snapshot Reposite	ories group		http://192.168.100.15:8081/nexus/content/grou.	. 1
Advanced Search		Public Repositories	group		http://192.168.100.15:8081/nexus/content/grou	
		3rd party	hosted	In Service	http://192.168.100.15.8081/nexus/content/repo	
Views	-	3rd party Snapshots	hosted	In Service	http://192.168.100.15:8081/nexus/content/repo	
Browse Repositories		altassian	ргоку	In Service	http://192.168.100.15.8081/nexus/content/repo	
System Feeds		Apache Snapehota	proxy	In Service	http://192.168.100.15.8081/nexus/content/repo	
Help	-	Central M1 shadow	virtual	In Service	http://192.168.100.15.8081/nexus/content/repo	
		Codehaus Snapshots	ргоку	In Service	http://192.168.100.15.8081/nexus/content/repo	
		oildia	proxy	In Service	http://192.188.100.15:8081/nexus/content/repo	
		Repository Content				
		SRefresh Path Lookup:			Browse local storage *	
		Select a repository to	view it			

Modify the Maven local repository settings.xml file.

Add Nexus setting to <server> and <mirrors> in setting.xml, the Maven setup file.

<servers> Tag - list of authentication information to log in certain servers.

```
<servers>
<server>
<id>release </id>
<username>deployment</username>
<password>********</password>
</server>
</server>
```

✔ Modify username and password to the ones of distribution users set by Nexus.

<mirrors > Tag - list of mirrors used to download artifacts from remote repositories

```
<mirrors>
<mirrors>
<mirrors>
<mirrorOf>central</mirrorOf>
<url>http://[domain]:[port]/nexus/content/repositories/releases/</url>
</mirror>
<url>http://[domain]:[port]/nexus/content/groups/public-snapshots</url>
</mirrorOf>public-snapshots</mirrorOf>
<url>http://[domain]:[port]/nexus/content/groups/public-snapshots/</url>
</mirror>
</mirror>
```

✓ Modify URL to the location where Nexus is installed.

Setup the <distributionManagement> part in pom.xml

Define the target servers to distribute the created packages (war, jar, etc.).

```
<distributionManagement>
<!-- use the following if you're not using a snapshot version. -->
<repository>
<id>release</id>
<url>http://[domain]:[port]/nexus/content/repositories/releases/</url>
</repository>
<!-- use the following if you ARE using a snapshot version. -->
<snapshotRepository>
<id>snapshots</id>
<url>http://[domain]:[port]/nexus/content/repositories/snapshots/</url>
</snapshotRepository>
</distributionManagement>
```

✓ Modify URL to the location where Nexus installed.

Manual

1. Login

Open Nexus web screen and click the login link at the right top.

One account "admin and admin123" is provided as Username and Password, Once connected, you can change the password.

Welcome to the So	natype Nexus M	aven Repository Manager.			
Administrators may	login via the lin	nk on the top right.			
You may browse an	d search the rep	positories using the options of	the le	left.	
	Nexus Log In		×		
	Username:	admin			
	Password:	•••••			
		Forgot your usemame or password?			
		Log In			
			_		

2. Create users and grant permissions

Login as Admin account and use the Users, Roles and Privileges in the security menu in the left to set permissions.

Nexus Refresh @ Add* @ Delete @ Map User Roles Artifact Search User D Realn Name A Email Roles admin default Administrator changeme@yourcompany.com Nexus Administrator Role Advanced Search Image: Search Image: Search Refresh @ Add* @ Delete @ Map User Roles Views Image: Search Image: Search Refresh @ Add* @ Delete @ Map User Roles Browse Repositories System Feeds Refresh @ Add* @ Delete @ Map User Roles Nexus Anonymous User changeme2@yourcompany.com Nexus Anonymous Role, F Security Image: Security		(8)	Prtvleges		Ro		Users	(M)	Welcome	-	ionatype Servers
Artifact Search User D Realm Name ▲ Email Roles Advanced Search admin default Administrator changeme@yourcompany.com Nexus Administrator Role Advanced Search default Deployment User changeme@yourcompany.com Nexus Administrator Role Views A Browse Repositories System Feeds Logs and Config Files Nexus Anonynmous User changeme@yourcompany.com Nexus Anonymous Role, F Administration • • • • • Security • • • • User ID • declorement • •						lap User Roles	Delete	Add	SRefresh 🔘		Nexus
admin defaut Administrator changeme@yourcompany.com Nexue Administrator Role Advanced Search deployment defaut Deployment User changeme@yourcompany.com Nexue Administrator Role Views Image: System Feeds Image: System Feeds Nexue Anonynmous User changeme@yourcompany.com Nexue Anonymous Role, Feeds Logs and Config Files Image: Security Imad		Rolee		Email			Name •	Realm	User D		Artifact Search
Advanced Search deployment default Deployment User changeme1@yourcompany.com Repo: Al Repositories Ful anonymous default Nexus Anonymous User changeme2@yourcompany.com Nexus Anonymous Role, Ful Security Deployment User Deployment	le	Nexus Administrator Role	mpany.com	changeme@yourcor		tor	Administra	default	admin	Q	
Aews anonymous defaut Nexus Anonymous User changeme2@yourcompany.com Nexue Anonymous Role, F Browse Repositories System Feeds Logs and Config Files Administration • Change Password User	Full Control), Nexus Deploym	Repo: All Repositories (Full Con	ompany.com	changeme1@yourcompany.com		Deployment User		default	deployment		Advanced Search
Administration Change Password User Deployment User	a, Repo: All Repositories (Read)	Nexus Anonymous Role, Repo:	ompany.com	changeme2@yourco	r	onynmous User	Nexus An	default	anonymous		
Browse Repositories System Feeds Logs and Config Files Vanimistration										1	news
Administration Security Deployment User Deployment User User ID Deployment (User ID)											Browse Repositories System Feeds Logs and Config Files
Security Deployment User Change Password User ID doctorment											Administration
Change Password								lser	Deployment U	-	security
Roles Name	1	0			t	deployment			User ID		Change Password Users Roles
Privileges Deployment User		88			t Use	Deployment			Name		Privileges

3. Add a repository

Nexus can multiple central repositories and use the proxy concept to provide the development an easiness to interwork repositories

3.1 Click Add button in the menu and select Proxy.

Welcome	×	Users	×.	Roles	(H	Prtvleges	(X)	Nexus	(8)	Repository Config	
Repositories											
SRefresh C) Add 🔻 🤤	Delete 📷 Tra	ish .								
Repository	Hosted	Туре	Policy	Repository Path							
Central M1 :	Proxy	virtual		http://192.168.100	15:8081/	nexus/content/repo	stories/cer	ntrai-m1			
Codehaua S	Virtual Y	ргоху	enapehot	http://192.168.100	15:8081/	nexua/content/repo	eltories/con	ionlegane-suanal	18		
ibiblio		proxy	release	http://192.168.100	15:8081/	nexus/content/repo	eitories/ibit	lio			
ibiblioplug		proxy	release	http://192.168.100	.15:8081/	nexus/content/repo	sitories/ibib	lioplug			
joossRep		proxy	release	http://192.168.100	15:8081/	nexus/content/repo	sitories/jbo	ssRep			
Harren Cambral				Lu	12.00014			danal.			

3.2 Enter the value for the repository to be added.

• Register ibiblio repository as one of the typical Maven Central Repositories.

Repository Configuration			
Repository ID 🔹	bbio	0	
Repository Name	ibiblio	9	
Repository Type	ргоху		
Format 👱	maven2		
Repository Policy 🔹	Release 👻 😣		
Default Local Storage Location	file:/C:/product/nexus-webapp-1.2	.0.2/nexus-webapp-1.2.0.2/bin/jsw/windows-x86-32////sonatype-work/nexus/storage/bbbo/	0
Override Local Storage Location			0
Remote Repository Acce	55		
Remote Storage Location	http://mirrors.biblo.org/pub/min	rors/maven2/	0
Download Remote Indexes	True 💙 😟		
Checksum Policy	🕴 Wam 💉 😡		
— 🗌 Authentication (option	al)		
Access Settings			
Allow File Browsing	True 🝸 😡		
Include in Search	True 👻 🥹		
		Save Cancel	

4. Register an artifact

In Nexus repository, register and use the 3rd party libraries used in the project or war- or jar-packaged Maven artifacts created in the project.

4.1 Select a repository for uploading

• In the 3rd party repository, register egovframework-basic-web artifact created in the development of egovernment standard framework.

SRefresh User Managed Report	itories *	
Repository .	Type Statua	Repository Path
Public Snapshot Repositories	group	http://192.168.100.15/8081/nexue/content/groups/public-enapehota
Public Repositories	group	http://192.168.100.15/8081/nexue/content/groups/public
3rd party	hosted in Service	http://192.168.100.15.8081/nexus/content/repositories/thirdparty
3rd party Snapshots	Mew	http://192.168.100.15.8081/nexus/content/repositories/3rd-party-snapshots
atassian	Put Out of Service	http://192.168.100.15:8081/nexus/content/repositories/atassian
Apache Snapshots	Expire Cache	http://192.168.100.15:8081/nexus/content/repositories/apache-snapshots
Central M1 shadow	Re-Index	http://192.168.100.15:8081/nexus/content/repositories/central-m1
Repository Content	Rebuild Attributes	
SRefresh Path Lookup:	Upload Artifact	P C Browse local storage -

Select a 3rd party repository and then Upload Artifact from the context.

4.2 Set up an artifact file and pom.xml to upload.

Click the Browser button to designate a file to upload, which is located in the developer's PC.

elect a File For U	pload	
		Browse
ectfy Artifact II	formation .	
been hearinger u	normation	
POM File	POM	Browse
POM File Attributes	POM Classfier	Browse

Select the artifact and pom.xml to distribute from Maven local repository to Nexus.

마일 선택				?
찾는 위치(!):	D 1.0-SNAPSHOT	•	🗢 🗈 🖆 🛃 🕈	
Becent	 Biegovframework-basic-webapp- Biegovframe	1.0-SNAPSHOT Jan 1.0-SNAPSHOT pon	n	

Browse in the repository to find the newly registered artifact.

epository Content		
Refresh Path Lookup:	P Drowse local storage	6.
🔁 3rd party		
asodia 🧰 🖬		
🗉 🥅 ent		
🗈 🧫 com		
🖃 😁 egov framework		
🗃 🧰 com		
🖃 🛅 dev		
B 🚞 archetypes		
🖃 😋 egovframework-basic-webapp		
🖂 <u></u> 1.0		
egovframework-basic-webapp-1.0.jar	lh-	
egovframework-basic-webapp-1.0.jar.md5	50 C	
egovframework-basic-webapp-1.0 jar.sha1		
egovframework-basic-webapp-1.0.pom		

5. Check the artifact's pom.xml for Dependency setup

You have to set up dependency in pom.xml to set up artifacts created by a 3rd party or in a product. You can check the dependency information of the artifacts to be set up by browsing in Nexus

Example) Check dependency information to use jeus artifact

5.1. Select a 3rd party repository and select jeus-6.0.pom in jeus directory in the content area.

Repository A	Туре	Status	Repository Path					
Public Snapshot Repositories	group		http://192.168.100.15/8081/nexue/content/groups/public-enapshots					
Public Repositories	group		http://192.168.100.15:8081/nexue/content/groups/public					
3rd party	hosted	In Service	http://192.168.100.15:8081/nexus/content/repositories/thirdparty					
3rd party Snapshots	hosted	In Service	http://192.168.100.15:8081/nexus/content/repositories/3rd-party-snapshots					
altassian	Draxv	In Service	http://192.168.100.15.8081/nexus/content/repositories/attassian					
Repository Content								
BRefresh Path Lookup:			P Drowse local storage +					
jevax jcommone jeus javaee jeus jeus								

5.2. Right click it and select Download from the context menu to check the dependency information.



Copy and phase the pom.xml information and declare it in the project's pom.xml to use the jeus library.

Samples

Management of artifacts downloaded from the Central Repository

The artifacts requested by developers is cached by the Central Repository and managed by Nexus repository.

								Version 1.	2.0.		
Sonatype Servers	00	Welcome (X) Re	spository Cor	Nexus	(x)						
Nexus		SRefresh User Managed Repo	ositories 🔻								
Artifact Search		Repository +	Туре	Status				Repository Path			
Advanced Search	P	oldidi	proxy	In Service				http://192.168.100.15:8081/nexus/content/repo	ntent/repo 🔨		
		Ibiblioplug	proxy	In Service - checking remote				http://192.168.100.15:8081/nexus/content/repo			
	-	jbossRep	proxy	In Service			http://192.168.100.15:8081/nexus/content/repo	/content/repo			
Views		Maven Central	proxy	In Service				http://192.168.100.15:8081/nexus/content/repo			
Browse Repositories System Feeds Logs and Config Files		Reirrar	hosted	In Service				http://192.168.100.15:8081/nexus/content/repp	~		
		Repository Content									
		SRefresh PathLookup:						Browse local storage •			
Administration		9 Cal Mayer Central									
Server Repositories Groups Routing Scheduled Tasks		activation ant art ant ant ant							10		
Repository Targets		ant-1.5.jar									
		ant-1.5.jar.sh	a1								
Security		ant-1.5.pom							Y		

Management of artifacts created within a project

The Maven artifacts created in the parts of a project are distributed to Nexus and the artifacts distributed by other parts are referred to in order to progress projects.



✓ A repository named '3rd Party' is added to Nexus and the products developed in the e-government standard framework are distributed to this repository and used in the development.

References

Nexus: Maven Repository Manager [http://nexus.sonatype.org/]