



Using Nexus Artifact Management in the Enterprise

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1. What is Nexus and why we need it
2. Nexus features
3. Using Nexus in an enterprise company for multiple projects

Part 1

Why do we need an artifact manager?

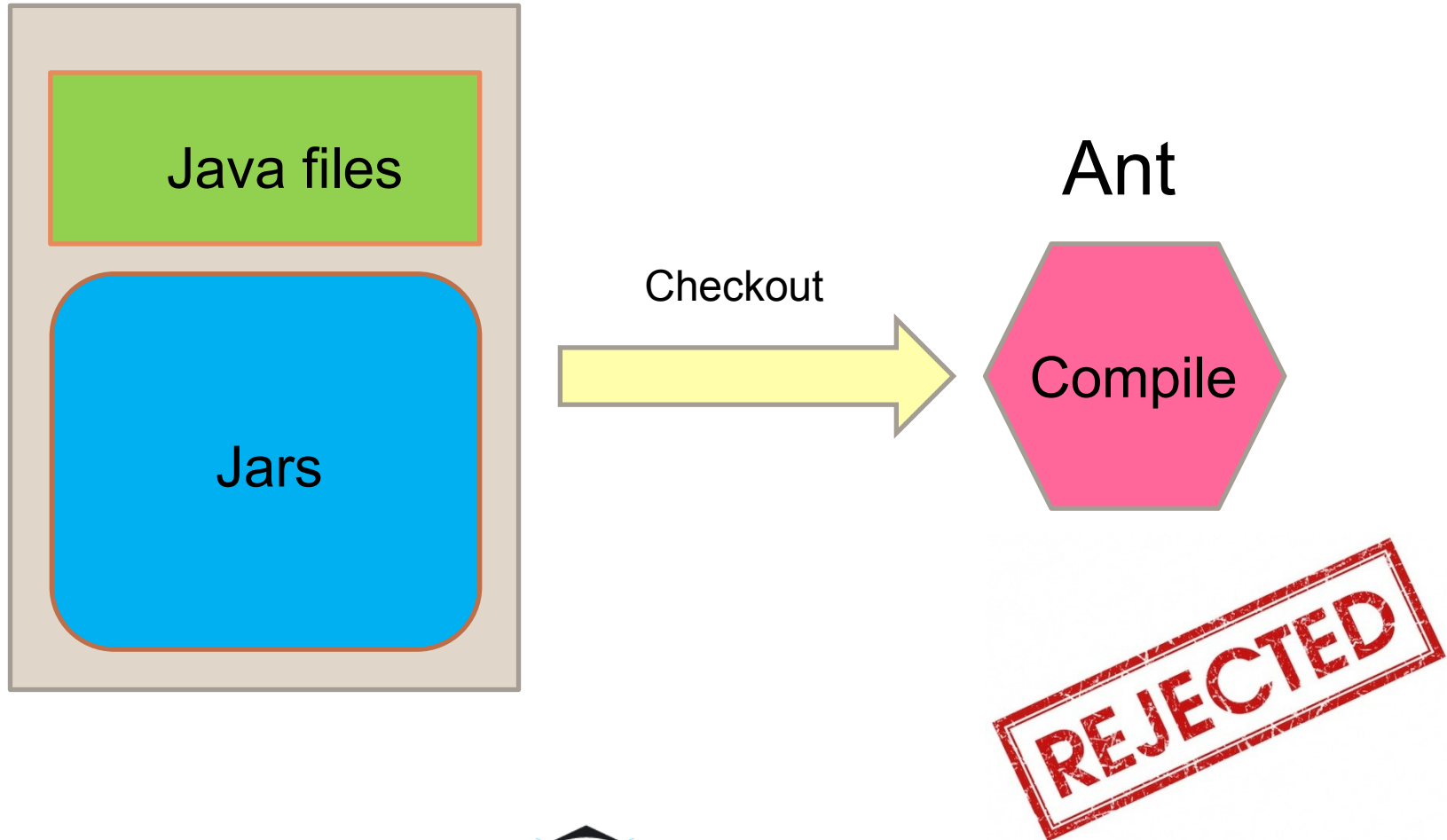
A bit of history



The problem of using Ant (especially with CVS)

Binaries should not be stored in VC

Version Control



Modern times

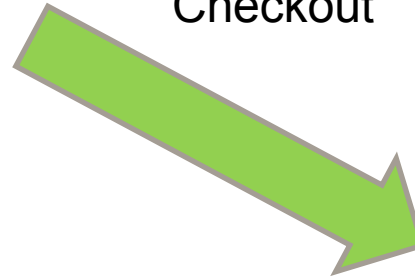


Binaries should not be stored in VC

Version Control

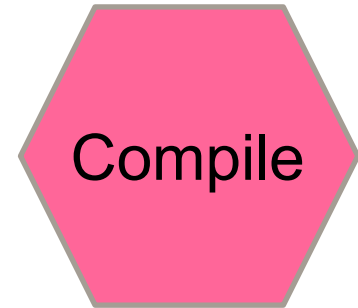


Checkout

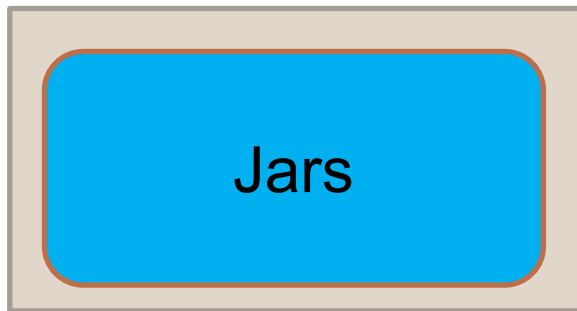


Maven

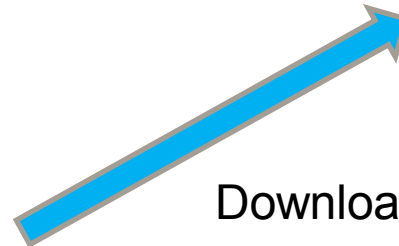
Compile



"Binary Repo"



Download



Maven Central

The screenshot shows a web browser window displaying the Maven Central search results for the term 'structr'. The browser's address bar shows the URL 'search.maven.org/#search%7Cga%7C1%7Cstructr'. The page header includes the Maven logo and the text 'The Central Repository'. Navigation links for 'SEARCH', 'ADVANCED SEARCH', 'BROWSE', and 'QUICK STATS' are visible. A search input field contains 'structr' and a 'SEARCH' button is present. Below the search bar, there are links for 'New: App Scan', 'Advanced Search', 'API Guide', and 'Help'. The main content area is titled 'Search Results' and shows a table of search results. The table has columns for 'GroupId', 'ArtifactId', 'Latest Version', 'Updated', and 'Download'. The results list several artifacts under the 'org.structr' group, all with the latest version '0.8.2' and an update date of '16-Nov-2013'. The artifacts include 'structr', 'structr-server', 'structr-rest', 'structr-core', 'structr-ui-archetype', 'structr-base-archetype', 'structr-simple-example-archetype', and 'structr-ui'. Each artifact has a 'Download' link with various file formats like 'pom', 'jar', 'javadoc.jar', 'sources.jar', 'deb', 'dist.tar.gz'. The page also includes a 'Feedback' button on the right side and a footer with 'Apache Maven Resources', 'About Sonatype', 'Privacy Policy', and 'Terms of Service'. A copyright notice at the bottom states 'Copyright ©2011 Sonatype, Inc.'.

The Central Repository

SEARCH | ADVANCED SEARCH | BROWSE | QUICK STATS

structr

[New: App Scan](#) | [Advanced Search](#) | [API Guide](#) | [Help](#)

SEARCH

Search Results

< 1 > displaying 1 to 8 of 8

GroupId	ArtifactId	Latest Version	Updated	Download
org.structr	structr	0.8.2	16-Nov-2013	pom
org.structr	structr-server	0.8.2	16-Nov-2013	pom jar javadoc.jar sources.jar
org.structr	structr-rest	0.8.2	16-Nov-2013	pom jar javadoc.jar sources.jar
org.structr	structr-core	0.8.2	16-Nov-2013	pom jar javadoc.jar sources.jar
org.structr	structr-ui-archetype	0.8.2	16-Nov-2013	pom jar sources.jar
org.structr	structr-base-archetype	0.8.2	16-Nov-2013	pom jar sources.jar
org.structr	structr-simple-example-archetype	0.8.2	16-Nov-2013	pom jar sources.jar
org.structr	structr-ui	0.8.2	16-Nov-2013	pom jar deb dist.tar.gz javadoc.jar sources.jar

< 1 > displaying 1 to 8 of 8

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[search.maven.org/#advancedsearch](#)

Feedback

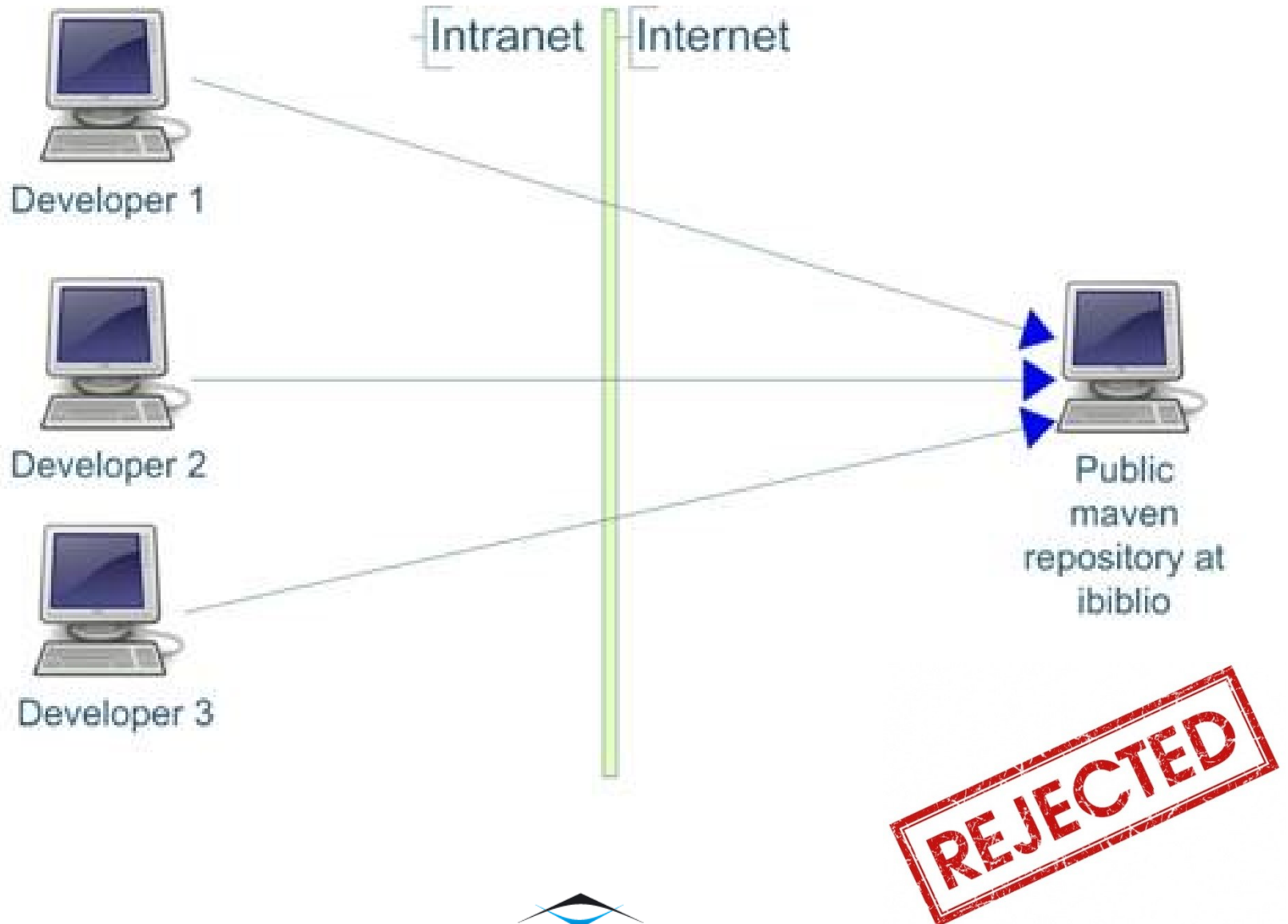
Maven complaints



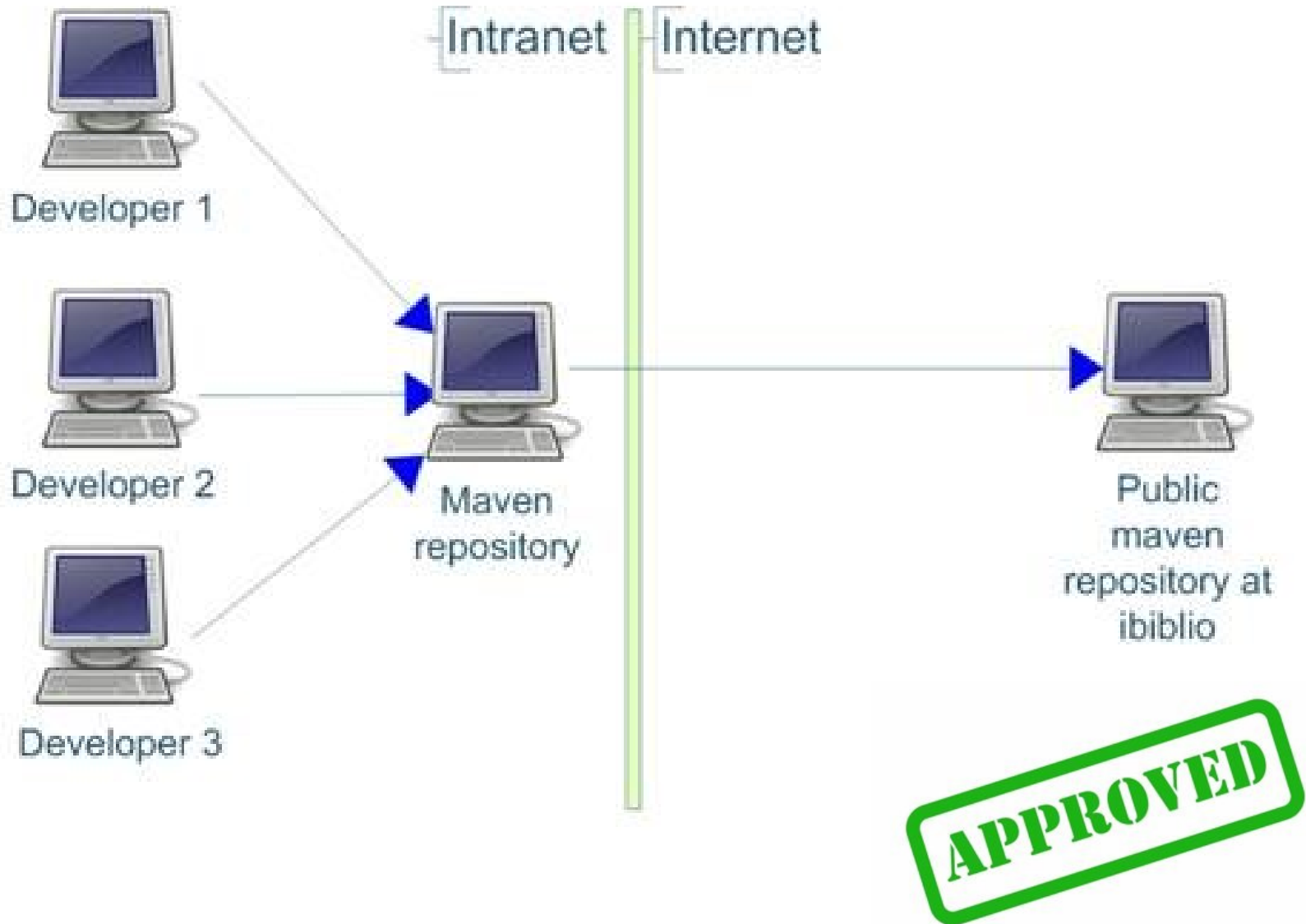
Common Maven complaints

- “Maven downloads the whole internet”
- “The central repository is down”
- “The central repository does not have the latest version”
- “Closed-source library X is not in the central repository”
- “I cannot publish my library in the central repository”
- “I still need to mail my colleague with my jar”

The wrong way



The correct way



- Is central really “central”?
- Some frameworks have their own repos
- Some libraries are not even “mavenised”
- Big companies need to publish artifacts as well
- Maven also has snapshots
- Other problems such as licences

Different kinds of Jars/libraries



The players

Sonatype Nexus

Apache Archiva

JBoss Artifactory



Part 2

Using Nexus

Step 1

In your .m2/settings.xml

```
<localRepository>c:/dbin/m2/repository</localRepository>
<mirrors>
  <mirror>
    <!--This sends everything else to /public -->
    <id>nexus</id>
    <mirrorOf>*</mirrorOf>
    <url>http://172.17.54.4:8080/nexus/content/groups/public/</url>
  </mirror>
</mirrors>
<profiles>
  <profile>
    <id>default</id>
    <activation>
      <activeByDefault>true</activeByDefault>
    </activation>
  </profile>
</profiles>
```

Remove all repo URLs
from your POM files.
Your project should
know nothing about
Maven repos

<http://blog.sonatype.com/2009/02/why-putting-repositories-in-your-poms-is-a-bad-idea/>

Search a jar

Keyword Search ▾ ✕ 🔍

Group	Artifact	Version	Most Popular Version
org.hibernate	hibernate-validator	Latest: 5.0.1.Final (Show All Versions)	i
org.hibernate	hibernate-validator-parent	Latest: 5.0.1.Final (Show All Versions)	i
org.hibernate	hibernate-validator-cdi	Latest: 5.0.1.Final (Show All Versions)	i
org.hibernate	hibernate-validator-annotation-processor	Latest: 5.0.1.Final (Show All Versions)	i

Displaying Top 8 records ✕ Clear Results

Refresh | Viewing Repository: **Maven Central**

Maven Central

- org
 - hibernate
 - hibernate-validator
 - 3.0.0.ga
 - 3.1.0.GA
 - 4.1.0.Final
 - 4.3.0.Final
 - 4.3.1.Final
 - 5.0.1.Final
 - hibernate-validator-5.0.1.Final-sources.jar
 - hibernate-validator-5.0.1.Final.jar

Maven Information | Artifact Information

Group: org.hibernate
Artifact: hibernate-validator
Version: 5.0.1.Final
Extension: jar

XML:

```
<dependency>  
<groupId>org.hibernate</groupId>  
<artifactId>hibernate-validator</artifactId>  
<version>5.0.1.Final</version>  
</dependency>
```

Search a jar (other)

Keyword Search ✕ 🔍

Group	Artifact	Version	Age
org.outerj	daisydiff	1.1	i

Displaying Top 1 records ✕ Clear Results

🔄 Refresh | Viewing Repository: 3rd party

- 3rd party
 - org
 - outerj
 - daisydiff
 - 1.1
 - daisydiff-1.1.jar

Maven Information | Artifact Information

Group: org.outerj
Artifact: daisydiff
Version: 1.1
Extension: jar
XML:

```
<dependency>
  <groupId>org.outerj</groupId>
  <artifactId>daisydiff</artifactId>
  <version>1.1</version>
</dependency>
```

Nexus repos

The screenshot displays the Sonatype Nexus web interface. The top navigation bar includes the Sonatype logo and the text "Sonatype™ Servers". The main content area is divided into two sections: "Repositories" and "Trasys".

Repositories Section:

Repository	Type	Quality	Format	Policy	Repository Status	Repository Path
EMA Repositories	group	ANALYZE	maven2			http://svn.trasys.gr:8080/nexus/content/groups/ema-group
Jenkins Public	group	ANALYZE	maven2			http://svn.trasys.gr:8080/nexus/content/groups/jenkins-public
Public Repositories	group	ANALYZE	maven2			http://svn.trasys.gr:8080/nexus/content/groups/public
Public Snapshot Repositories	group	ANALYZE	maven2			http://svn.trasys.gr:8080/nexus/content/groups/public-snapshots
3rd party	hosted	ANALYZE	maven2	Release	In Service	http://svn.trasys.gr:8080/nexus/content/repositories/thirdparty
Activiti third party	proxy	ANALYZE	maven2	Release	In Service	http://svn.trasys.gr:8080/nexus/content/repositories/activiti-third-party
Alfresco	proxy	ANALYZE	maven2	Release	In Service	http://svn.trasys.gr:8080/nexus/content/repositories/Alfresco
Apache Snapshots	proxy	ANALYZE	maven2	Snapshot	In Service	http://svn.trasys.gr:8080/nexus/content/repositories/apache-snapshots
buzzmedia	proxy	ANALYZE	maven2	Release	In Service	http://svn.trasys.gr:8080/nexus/content/repositories/buzzmedia

Trasys Section:

The "Trasys" section shows a "Browse Storage" view. It includes a "Refresh" button and a "Path Lookup:" input field. The file tree structure is as follows:

- Trasys
 - com
 - io
 - org
 - archetype-catalog.xml
 - archetype-catalog.xml.md5
 - archetype-catalog.xml.sha1

Nexus Repo types

Proxy

- 85%
- caching

Hosted

- 10%
- publishing

Virtual

- 1%
- Maven 1

Group

- 4%
- exposing

Proxy repos cache existing repos (central, JBoss, Spring etc)

You add new Proxy Repos as Admin in Nexus

Hosted repos used for
uploading our artifacts on
Nexus

You can upload manually (via
Web) or via the mvn
command line

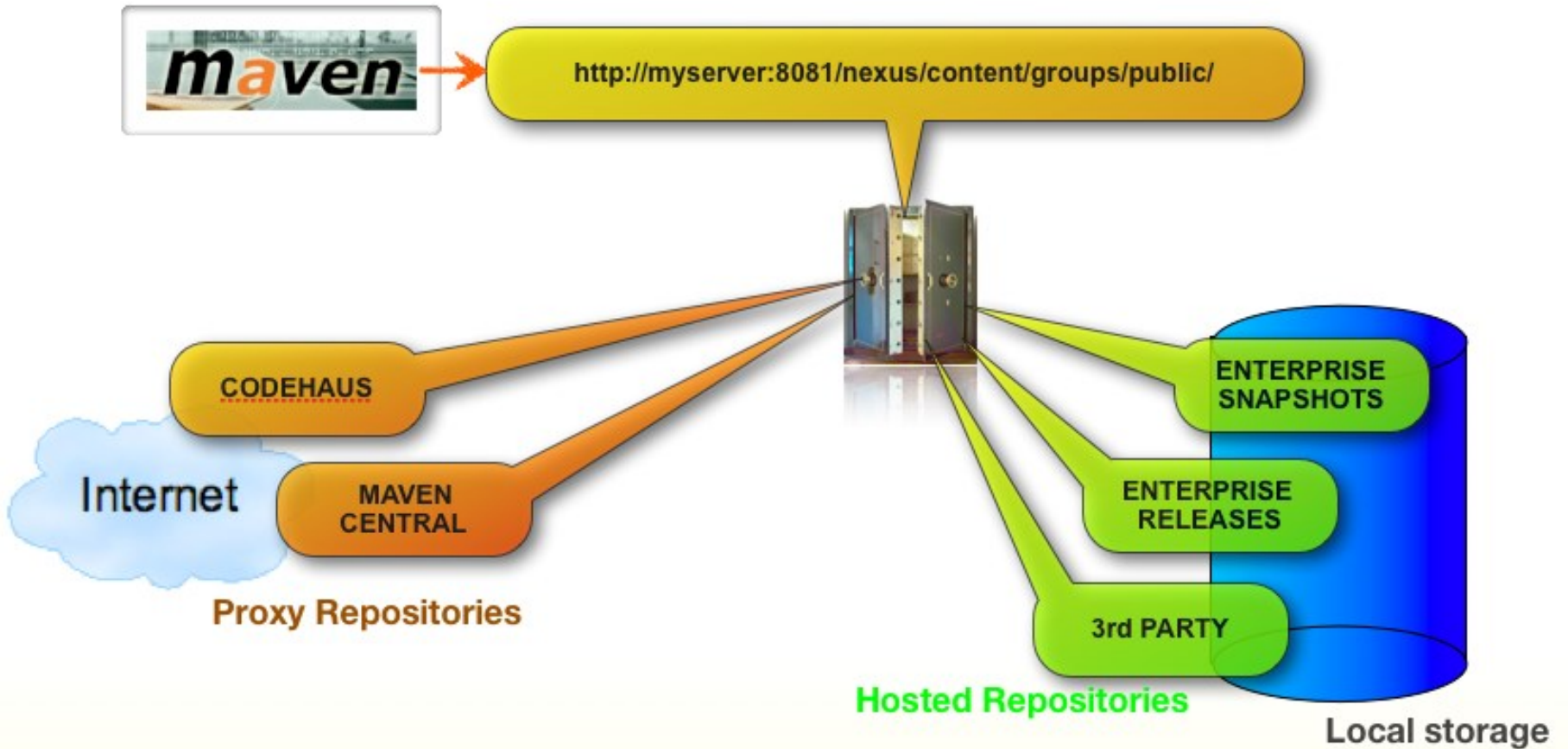
Virtual repos are used for
Maven 1 compatibility

We don't need this, ignore it.

Group repos are used for exposing to the outside world the contents of Nexus

Once you add a proxy repo you also need to “expose” it

The big picture



Part 3

Using Nexus for multiple projects/clients

Default Nexus Repositories out of the box

Central

Snapshots

Releases

3rd Party

Maven 1

Public

Some real life observations



Do we release Quartz?

Repository ^	Type	Quality	Format	Policy	Repository Status
Primefaces Releases	proxy	ANALYZE	maven2	Release	In Service
Primefaces Snapshots	proxy	ANALYZE	maven2	Snapshot	In Service
Public online Restlet repository	proxy	ANALYZE	maven2	Release	In Service
Releases	hosted	ANALYZE	maven2	Release	In Service
repo.maven.apache.org	proxy	ANALYZE	maven2	Release	In Service
Smart GWT	proxy	ANALYZE	maven2	Release	In Service
Snapshots	hosted	ANALYZE	maven2	Snapshot	In Service
SoapUI	proxy	ANALYZE	maven2	Release	In Service
Sonatype	proxy	ANALYZE	maven2	Release	In Service

Releases

Browse Index **Browse Storage** Configuration Mirrors Summary Artifact Upload

Refresh Path Lookup:

- Releases
 - be
 - com
 - DG-CLIMA
 - eu
 - fop
 - opensymphony
 - org
 - apache
 - apache-flex-sdk
 - pdfbox
 - flexunit
 - swiftsuspenders
 - pdfbox
 - quartz
 - quartz
 - 1.6.0
 - maven-metadata.xml
 - maven-metadata.xml.md5
 - maven-metadata.xml.sha1

Is Eudra an external library?

Repository ^	Type	Quality	Format	Policy	Repository Status
EMA Repositories	group	ANALYZE	maven2		
Jenkins Public	group	ANALYZE	maven2		
Public Repositories	group	ANALYZE	maven2		
Public Snapshot Repositories	group	ANALYZE	maven2		
3rd party	hosted	ANALYZE	maven2	Release	In Service
Activiti third party	proxy	ANALYZE	maven2	Release	In Service
Alfresco	proxy	ANALYZE	maven2	Release	In Service
Apache Snapshots	proxy	ANALYZE	maven2	Snapshot	In Service
buzzmedia	proxy	ANALYZE	maven2	Release	In Service

3rd party

[Browse Index](#) [Browse Storage](#)

[Refresh](#) Path Lookup:

- 3rd party
 - be
 - com
 - commonj
 - eu
 - emea
 - emea-shared
 - eudradirectory
 - eudradirectory-Common
 - shared
 - gr
 - trasys
 - groovy
 - javax
 - jodconverter
 - net

Do we create apache POI?

Repository ▲	Type	Quality	Format	Policy	Repository Status	Re
repo.maven.apacne.org	proxy	ANALYZE	maven2	Release	In Service	nt
Smart GWT	proxy	ANALYZE	maven2	Release	In Service	ht
Snapshots	hosted	ANALYZE	maven2	Snapshot	In Service	ht
SoapUI	proxy	ANALYZE	maven2	Release	In Service	ht
Sonatype	proxy	ANALYZE	maven2	Release	In Service	ht
Spring Maven Release Repository	proxy	ANALYZE	maven2	Release	In Service	ht
Spring Roo Repository	proxy	ANALYZE	maven2	Release	In Service	ht
SpringSource Maven Repositor...	proxy	ANALYZE	maven2	Release	In Service - Remote Automatically Blo...	ht
Trasys	hosted	ANALYZE	maven2	Release	In Service	ht

Trasys

[Browse Index](#) [Browse Storage](#) [Configuration](#) [Mirrors](#) [Summary](#) [Artifact Upload](#)

Refresh Path Lookup:

- Trasys
 - com
 - io
 - org
 - apache
 - poi
 - tika
 - eclipse
 - archetype-catalog.xml
 - archetype-catalog.xml.md5
 - archetype-catalog.xml.sha1

Suggested roadmap



Suggested structure



Admin

Publish

Read only

Suggested structure

Common

- Releases/snapshots
- 3rd party

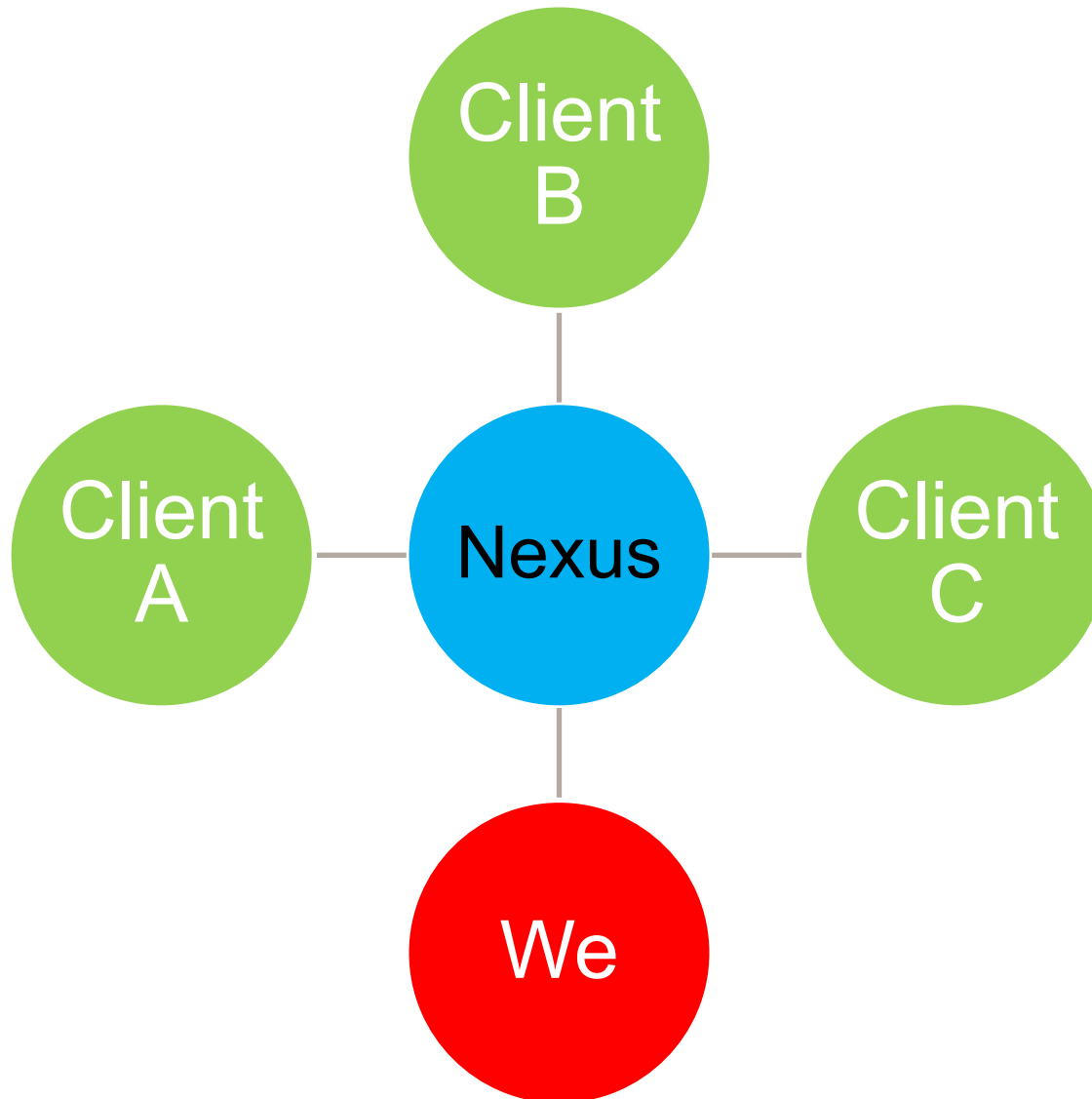
Project A

- Releases/snapshots
- Exposing group

Project B

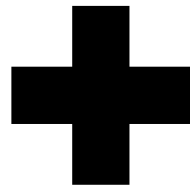
- Releases/Snapshots
- Exposing group

Suggested structure



What we give to the client

Project
Source
code



Project
Nexus
URL



Project
Release

Thank you



More?



Backup Slides