

Maven

A outstanding build tool
—— by zyh

Outline

- POM
- Dependency
- Lifecycle
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- Profiles
- Repositories
- Site

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```
<project xmlns="http://maven.apache.org/POM/4.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
    http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <!-- The Basics -->
  <groupId>...</groupId>
  <artifactId>...</artifactId>
  <version>...</version>
  <packaging>...</packaging>
  <dependencies>...</dependencies>
  <parent>...</parent>
  <dependencyManagement>...</dependencyManagement>
  <modules>...</modules>
  <properties>...</properties>

  <!-- Build Settings -->
  <build>...</build>
  <reporting>...</reporting>

  <!-- More Project Information -->
  <name>...</name>
  <description>...</description>
  <url>...</url>
  <inceptionYear>...</inceptionYear>
  <licenses>...</licenses>
  <organization>...</organization>
  <developers>...</developers>
  <contributors>...</contributors>

  <!-- Environment Settings -->
  <issueManagement>...</issueManagement>
  <ciManagement>...</ciManagement>
  <mailingLists>...</mailingLists>
  <scm>...</scm>
  <prerequisites>...</prerequisites>
  <repositories>...</repositories>
  <pluginRepositories>...</pluginRepositories>
  <distributionManagement>...</distributionManagement>
  <profiles>...</profiles>
</project>
```

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POM: Inheritance

P:

```
<project xmlns="http://maven.apache.org/POM/4.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
    http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <groupId>org.codehaus.mojo</groupId>
  <artifactId>my-parent</artifactId>
  <version>2.0</version>
  <packaging>pom</packaging>
</project>
```

C:

```
<project xmlns="http://maven.apache.org/POM/4.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
    http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <parent>
    <groupId>org.codehaus.mojo</groupId>
    <artifactId>my-parent</artifactId>
    <version>2.0</version>
    <relativePath>../my-parent</relativePath>
  </parent>

  <artifactId>my-project</artifactId>
</project>
```

POM: Aggregation

```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <groupId>com.appchina.ios.mgnt_aggregate</groupId>
  <artifactId>mgnt_aggregate</artifactId>
  <version>1.0-SNAPSHOT</version>
  <packaging>pom</packaging>

  <name>mgnt_aggregate</name>
  <url>http://maven.apache.org</url>

  <properties>
    <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
  </properties>

  <modules>
    <module>../appchina-ios/ios-core</module>
    <module>../appchina-ios/ios-storereflect</module>
    <module>../appchina-ios/ios-app</module>
    <module>../appchina-ios/ios-mgnt</module>
  </modules>

</project>
```

Dependency

- Maven Coordinates
 - groupId, artifactId, version, packing, classifier
- Dependencies
 - groupId, artifactId
 - version, type
 - Scope
 - optional

```
<dependencies>
  <dependency>
    <groupId>junit</groupId>
    <artifactId>junit</artifactId>
    <version>4.0</version>
    <type>jar</type>
    <scope>test</scope>
    <optional>true</optional>
  </dependency>
  ...
</dependencies>
```

Dependency Transition

- Dependency mediation
 - “nearest definition”:
 - A -> B -> C -> D2.0
 - A -> E -> D 1.0

	compile	provided	runtime	test
compile	compile(*)	-	runtime	-
provided	provided	-	provided	-
runtime	runtime	-	runtime	-
test	test	-	test	-

- Excluded dependencies
- Optional dependencies

Lifecycle

- Clean
 - Pre-clean, clean, post-clean
- Build (Default)
 - validate, compile, test, package, integration-test, verify, install, deploy
- Site
 - pre-site, site, post-site, site-deploy

Plugins

- Binding
 - Plugin:Goal — lifecycle:phase
- Packaing: jar, war, pom, ear

process-resources	resources:resources
compile	compiler:compile
process-test-resources	resources:testResources
test-compile	compiler:testCompile
test	surefire:test
package	jar:jar
install	install:install
deploy	deploy:deploy

- Configuration:
 - mvn package -Dmaven.test.skip=true

Plugin Example

```
<plugin>
  <groupId>org.apache.maven.plugins</groupId>
  <artifactId>maven-surefire-plugin</artifactId>
  <version>2.18.1</version>
  <executions>
    <execution>
      <configuration>
        <skip>
          true
        </skip>
      </configuration>
    </execution>
  </executions>
</plugin>
```



Plugin Command

A. mvn lifecycle Command

- mvn install; mvn package
- mvn clean compile
 - Clean lifecycle and compile phase of build lifecycle
- mvn site:run
 - Site lifecycle, run phase

B. mvn plugin command (groupId:artifactId:version:goal)

- mvn help:describe -
Dplugin=org.apache.maven.plugins:maven-help-plugin
- org.apache.maven.plugins:maven-help-plugin:2.2:describe

profiles

```
- <profile>
  <id>appserverConfig-dev</id>
  <activation>
    <property>
      <name>env</name>
      <value>dev</value>
    </property>
  </activation>
  <properties>
    <appserver.home>/path/to/dev/appserver</appserver.home>
  </properties>
</profile>

<profile>
  <id>appserverConfig-dev-2</id>
  <activation>
    <property>
      <name>env</name>
      <value>dev-2</value>
    </property>
  </activation>
  <properties>
    <appserver.home>/path/to/another/dev/appserver2</appserver.home>
  </properties>
</profile>
```

profiles

Types:

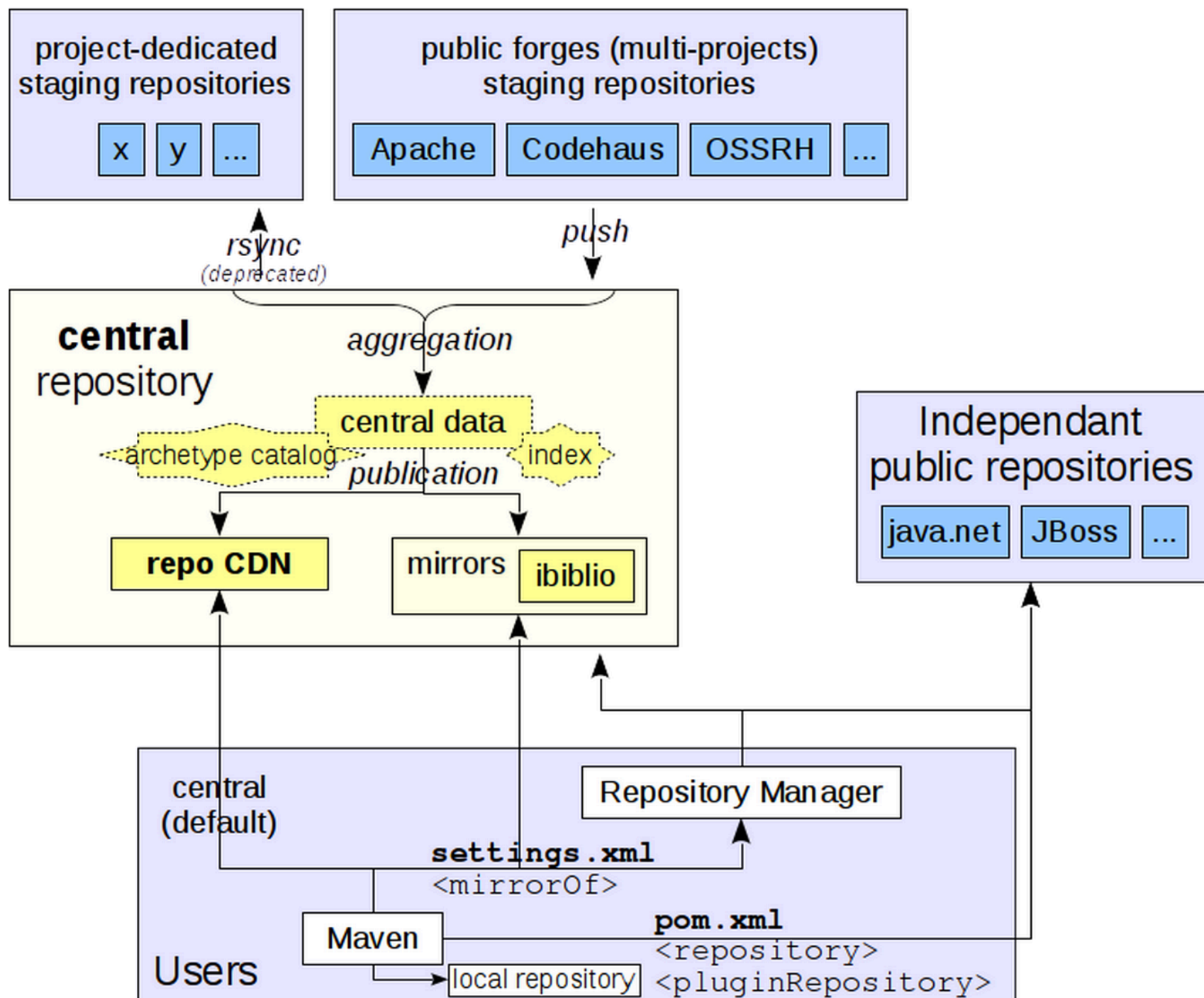
- pom.xml: current project
- setting.xml: current user global or system global

Activation

- Explicitly: `mvn groupId:artifactId:goal -P profile-1, profile-2`
- Through Maven settings
- Based on environment variables
- OS settings
- Present or missing files

Repositories

- Central Repository
- Independent Repository
- Custom Repository (Nexus)



Site