Mt Wilson

Building Open Source Projects

# Background

There are open source projects that need to be compiled automatically as part of the Mt Wilson build process. The sources are available for download on the Internet but we don’t want to depend on an Internet connection to download and build them. We also don’t want to put the sources for external projects in our own source control repository.

# Architecture

Use a Maven repository hosted by Intel IT to store the open source packages (Artifactory).

Build servers and individual developers add Artifactory to their Maven settings (~/.m2/settings.xml)

A Maven distribution (“dist”) project is created for each open source project to be built. The Maven coordinates for the “dist” project are the same as for the open source project but the artifactId is suffixed with “dist”, the classifier is changed to “generic” or a specific architecture like “linux-x64”, and the type is set to “zip” regardless of the original open source package type. For example, org.openssl:openssl:1.0.2a:sources:tgz becomes org.openssl:openssl-dist:1.0.2a:linux-x64:zip.

The Maven distribution project contains a “build.sh” script which knows how to build the open source project. The pom.xml automatically downloads the source artifact from the Maven repository, extracts it, runs “build.sh”, then creates a zip file with the compiled binaries and other resources. The zip file can then be extracted in another build step to provide its contents or it can be extracted in the target deployment environment under /usr/local or an application directory like /opt/mtwilson in order to provide its content, which is structure as if it were under /usr/local with “bin”, “lib”, “include”, etc. directories.

# Adding or updating packages

Upload the open source package to Artifactory and define the Maven “coordinates” (groupId, artifactId, version, classifier, type).

The groupId is a Java-style package name which is a reversed domain name. For example, the site “openssl.org” becomes the groupId “org.openssl”. It is entirely lowercase with dots as separators.

The artifactId is the simple name of the open source project, for example “openssl”, “trousers”, or “tpm-tools”. It is entirely lowercase with hyphens as separators.

The version is the version number of the open source package, as described by its author. For example OpenSSL has a version “1.0.2a”, Java has a version “1.7.0\_55” (the version number reported by the JVM, not “7u55” as shown on the Java download), and TPM Tools has a version number “1.3.8”.

The classifier is always “sources” when uploading open source packages.

The type is either “zip” or “tgz” depending on the format of the open source package. If the package extension is “.tar.gz” then use “tgz”.

