Setting up GAE and GAE Objectify

NetDB

CS, NTHU,

Fall, 2013

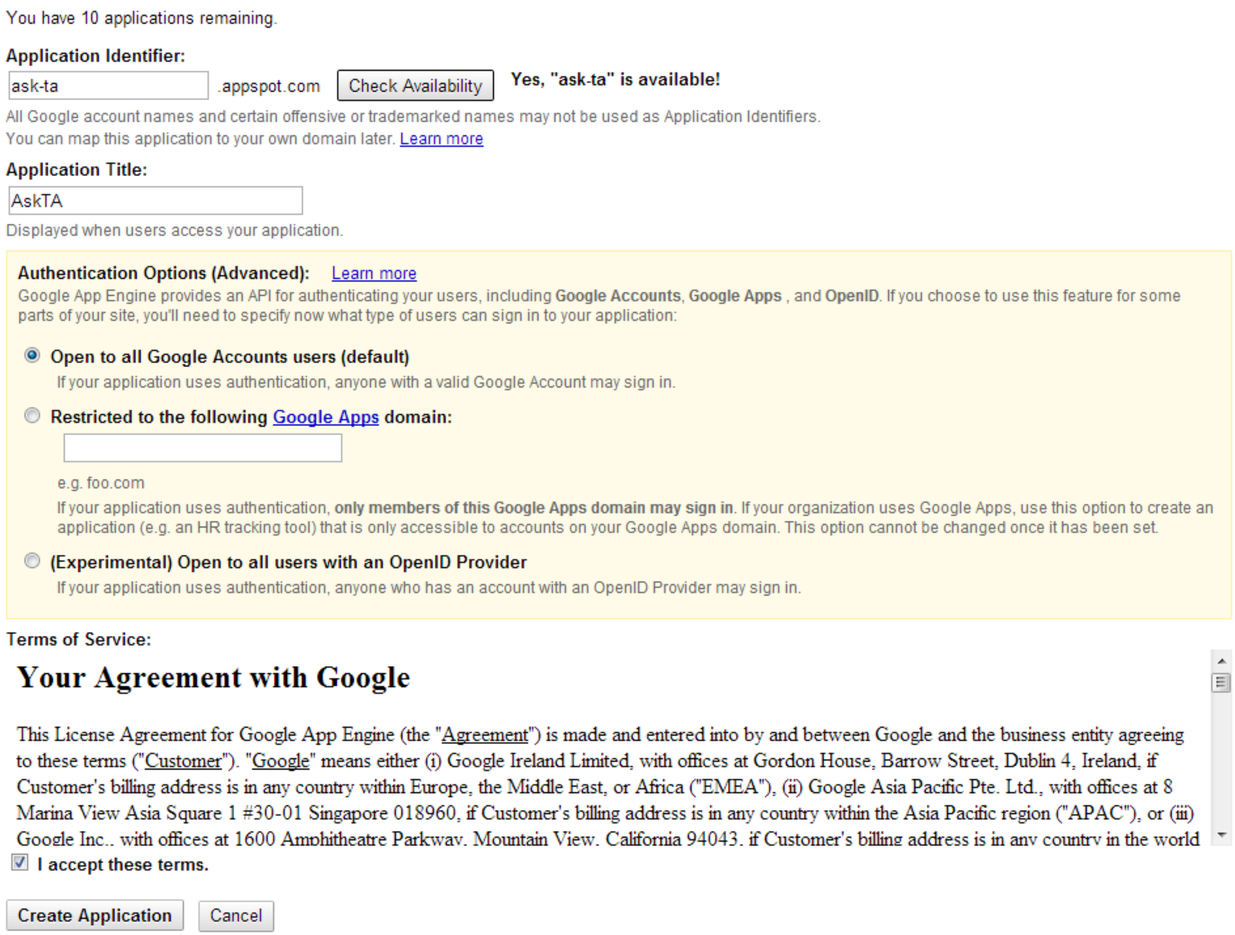
Today’s Topics

- We will teach you how to run the “AskSite” project from checkout to deploy.
- GAE Objectify

Using GAE

- Checkout “AskSite” project
  - Url:http://netdb.cs.nthu.edu.tw/svn/courses/software_studio/2013_fall/samples/asksite
- The first step to use GAE:
  - Activate GAE service for your Google account
  - Register your application ID
  - ID of your project
    - E.g. studio-<student-id>
  - Your application will be hosted at “http://<app-id>.appspot.com” in the future

Create GAE Application



You have 10 applications remaining.

Application Identifier:

ask-ta .appspot.com **Yes, "ask-ta" is available!**

All Google account names and certain offensive or trademarked names may not be used as Application Identifiers.
You can map this application to your own domain later. Learn more

Application Title:

AskTA

Displayed when users access your application.

Authentication Options (Advanced): Learn more

Google App Engine provides an API for authenticating your users, including **Google Accounts**, **Google Apps** , and **OpenID**. If you choose to use this feature for some parts of your site, you'll need to specify now what type of users can sign in to your application:

● **Open to all Google Accounts users (default)**

If your application uses authentication, anyone with a valid Google Account may sign in.

○ **Restricted to the following Google Apps domain:**

e.g. foo.com

If your application uses authentication, **only members of this Google Apps domain may sign in**. If your organization uses Google Apps, use this option to create an application (e.g. an HR tracking tool) that is only accessible to accounts on your Google Apps domain. This option cannot be changed once it has been set.

○ **(Experimental) Open to all users with an OpenID Provider**

If your application uses authentication, anyone who has an account with an OpenID Provider may sign in.

Terms of Service:

Your Agreement with Google

This License Agreement for Google App Engine (the "Agreement") is made and entered into by and between Google and the business entity agreeing to these terms ("Customer"). "Google" means either (i) Google Ireland Limited, with offices at Gordon House, Barrow Street, Dublin 4, Ireland, if Customer's billing address is in any country within Europe, the Middle East, or Africa ("EMEA"), (ii) Google Asia Pacific Pte. Ltd., with offices at 8 Marina View Asia Square 1 #30-01 Singapore 018960, if Customer's billing address is in any country within the Asia Pacific region ("APAC"), or (iii) Google Inc., with offices at 1600 Amphitheatre Parkway, Mountain View, California 94043, if Customer's billing address is in any country in the world

☑ **I accept these terms.**

Entering Your Account/Password in .m2/settings.xml

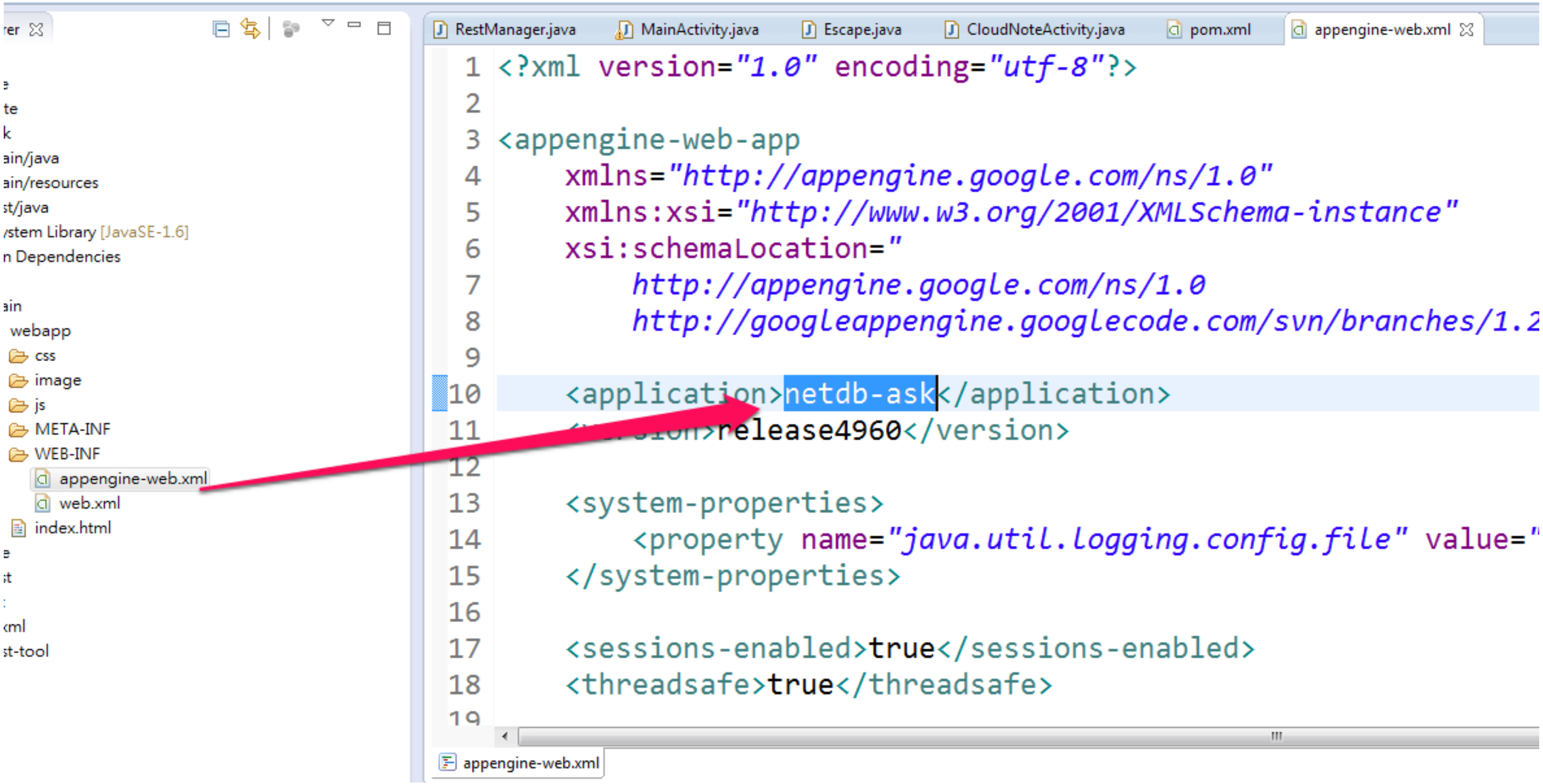
- .m2 path:
  - Windows: C:\Users\{your-username}\.m2
  - Mac: ~/.m2
- You have to create settings.xml by yourself, if settings.xml does not exist.

Entering Your Account/Password in .m2/settings.xml

```
<settings>
  <servers>
    <server>
      <id>appengine.google.com</id>
      <username>MyEmail@gmail.com</username>
      <password>MyPassword</password>
    </server>
  </servers>
  <profiles>
  </profiles>
</settings>
```

Settings

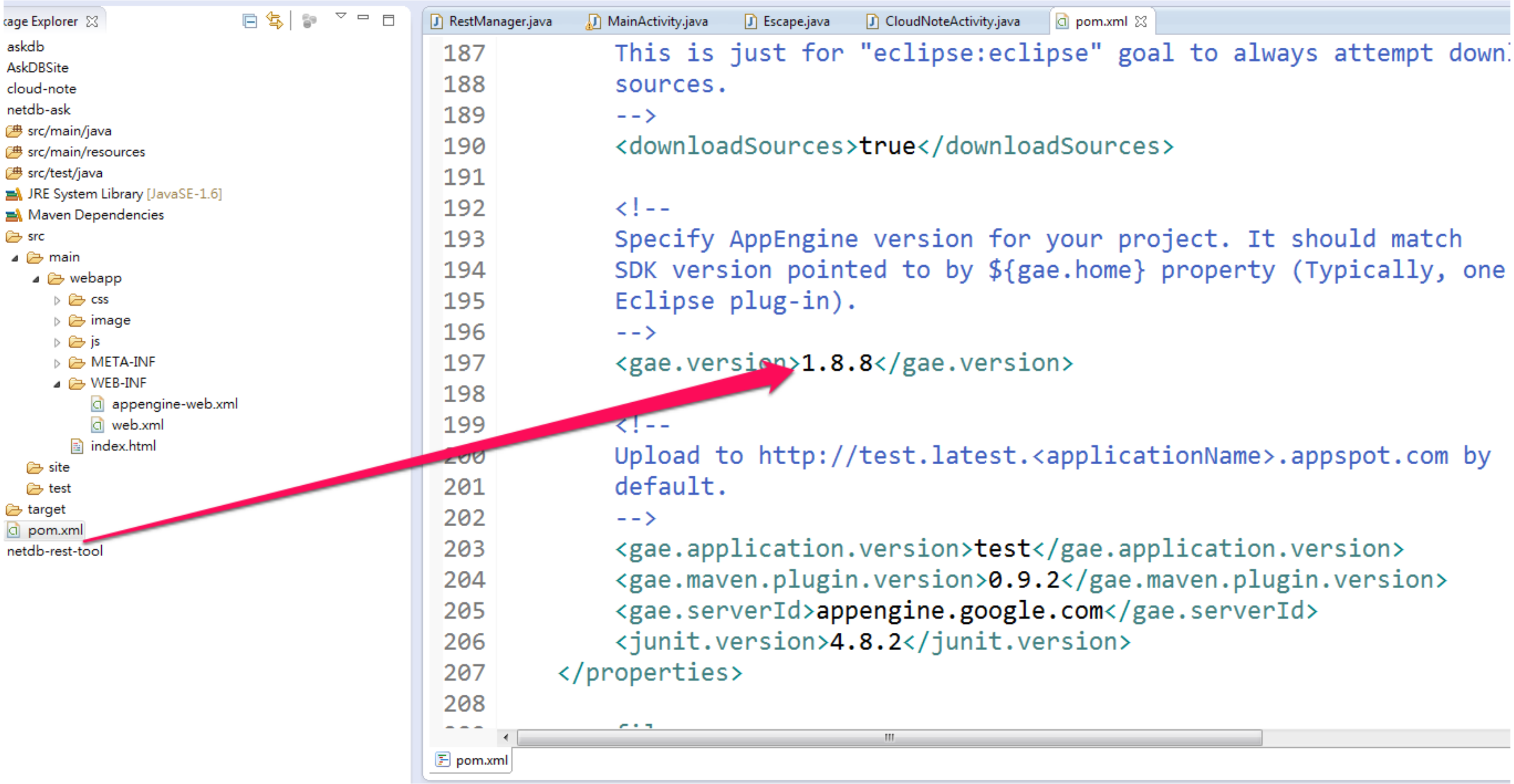
- Modify application ID in appengine-web.xml



```xml
<?xml version="1.0" encoding="utf-8"?>

<appengine-web-app
    xmlns="http://appengine.google.com/ns/1.0"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="
        http://appengine.google.com/ns/1.0
        http://googleappengine.googlecode.com/svn/branches/1.2

    <application>netdb-ask</application>
    <version>release4960</version>

    <system-properties>
        <property name="java.util.logging.config.file" value="
    </system-properties>

    <sessions-enabled>true</sessions-enabled>
    <threadsafe>true</threadsafe>
```

Settings

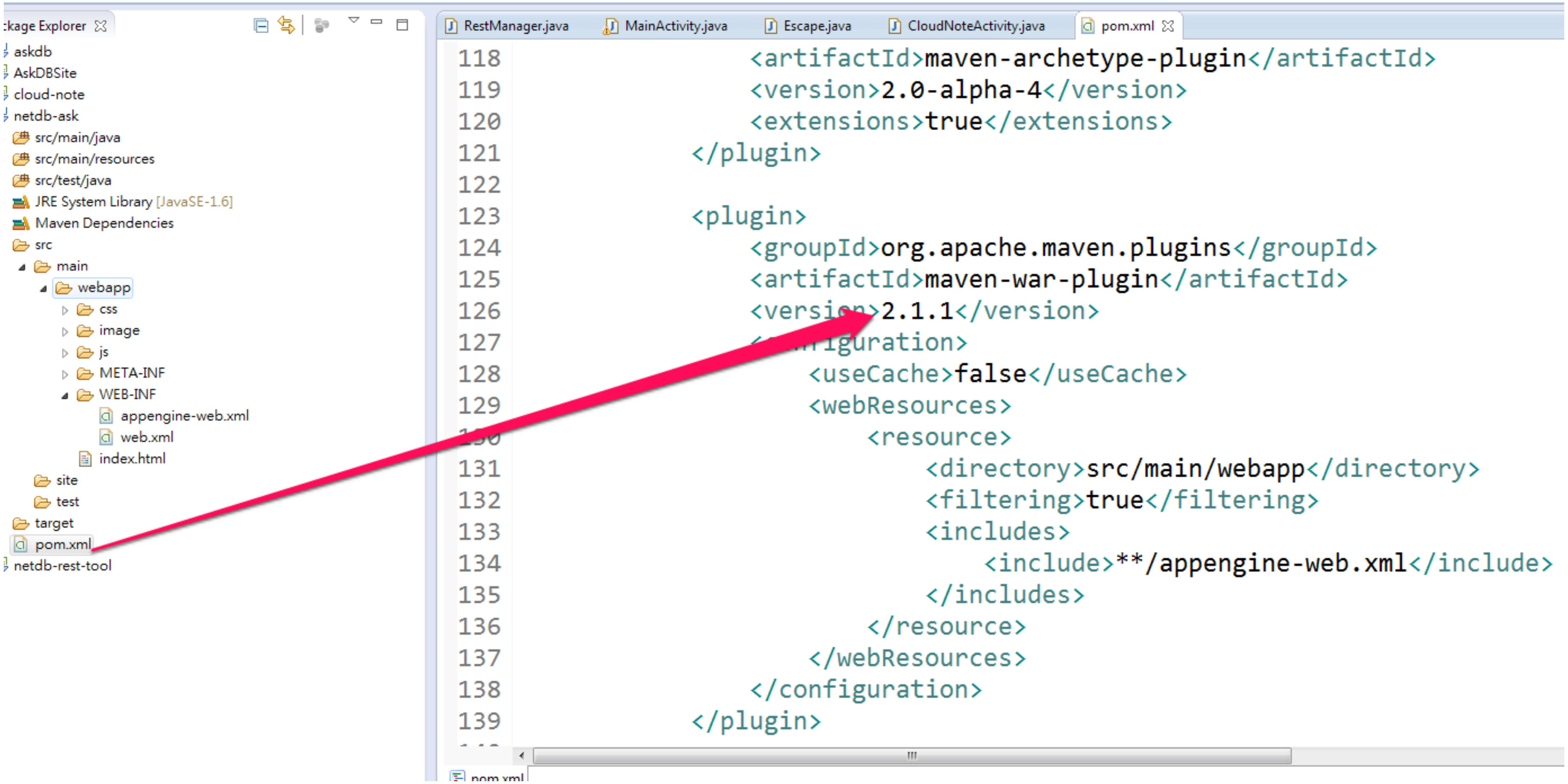
- Update GAE SDK version to 1.8.8



```
        This is just for "eclipse:eclipse" goal to always attempt down
        sources.
        -->
        <downloadSources>true</downloadSources>

        <!--
        Specify AppEngine version for your project. It should match
        SDK version pointed to by ${gae.home} property (Typically, one
        Eclipse plug-in).
        -->
        <gae.version>1.8.8</gae.version>

        <!--
        Upload to http://test.latest.<applicationName>.appspot.com by
        default.
        -->
        <gae.application.version>test</gae.application.version>
        <gae.maven.plugin.version>0.9.2</gae.maven.plugin.version>
        <gae.serverId>appengine.google.com</gae.serverId>
        <junit.version>4.8.2</junit.version>
    </properties>
```

Settings

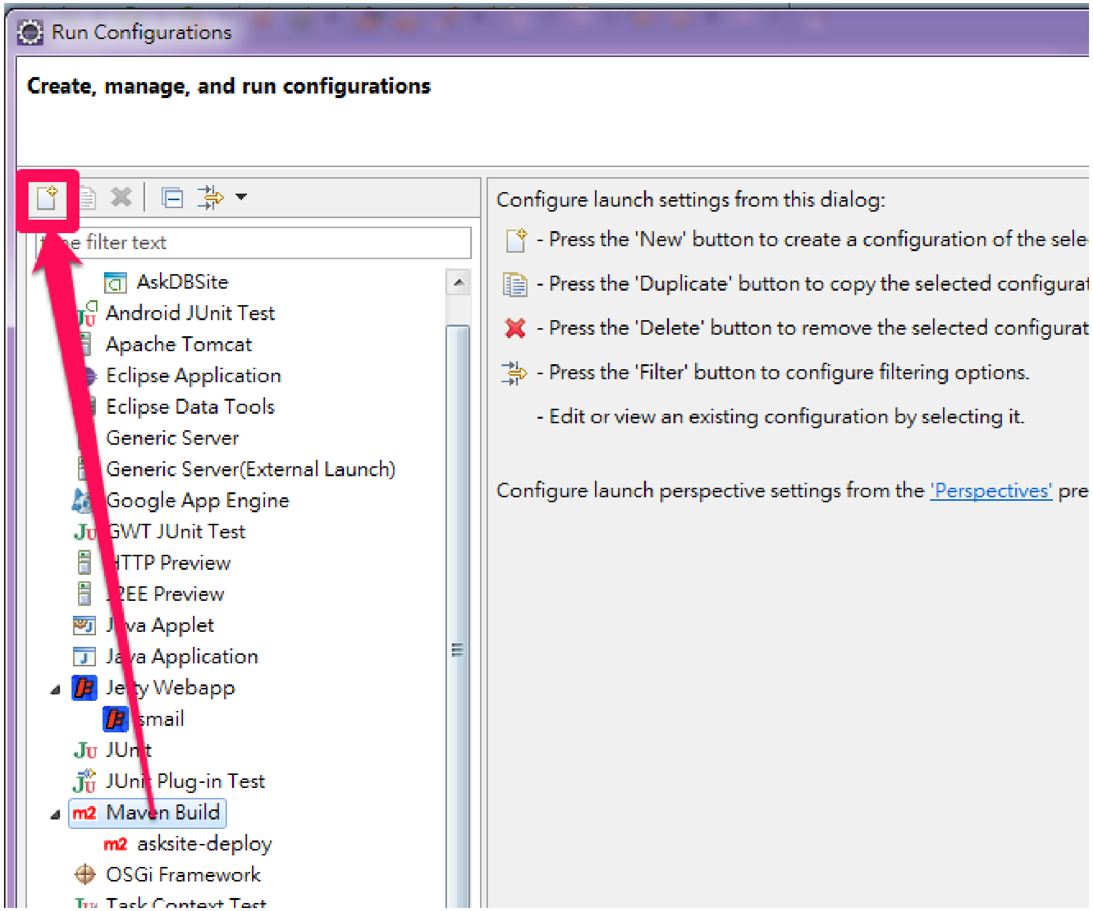
- Update Maven plugin version to 2.1.1



```
            <artifactId>maven-archetype-plugin</artifactId>
            <version>2.0-alpha-4</version>
            <extensions>true</extensions>
        </plugin>

        <plugin>
            <groupId>org.apache.maven.plugins</groupId>
            <artifactId>maven-war-plugin</artifactId>
            <version>2.1.1</version>
            <configuration>
                <useCache>false</useCache>
                <webResources>
                    <resource>
                        <directory>src/main/webapp</directory>
                        <filtering>true</filtering>
                        <includes>
                            <include>**/appengine-web.xml</include>
                        </includes>
                    </resource>
                </webResources>
            </configuration>
        </plugin>
```

Deploying the Project

- Run -> Run configurations -> New Maven Build



Create, manage, and run configurations

Configure launch settings from this dialog:

- Press the 'New' button to create a configuration of the sele

- Press the 'Duplicate' button to copy the selected configurat

- Press the 'Delete' button to remove the selected configurat

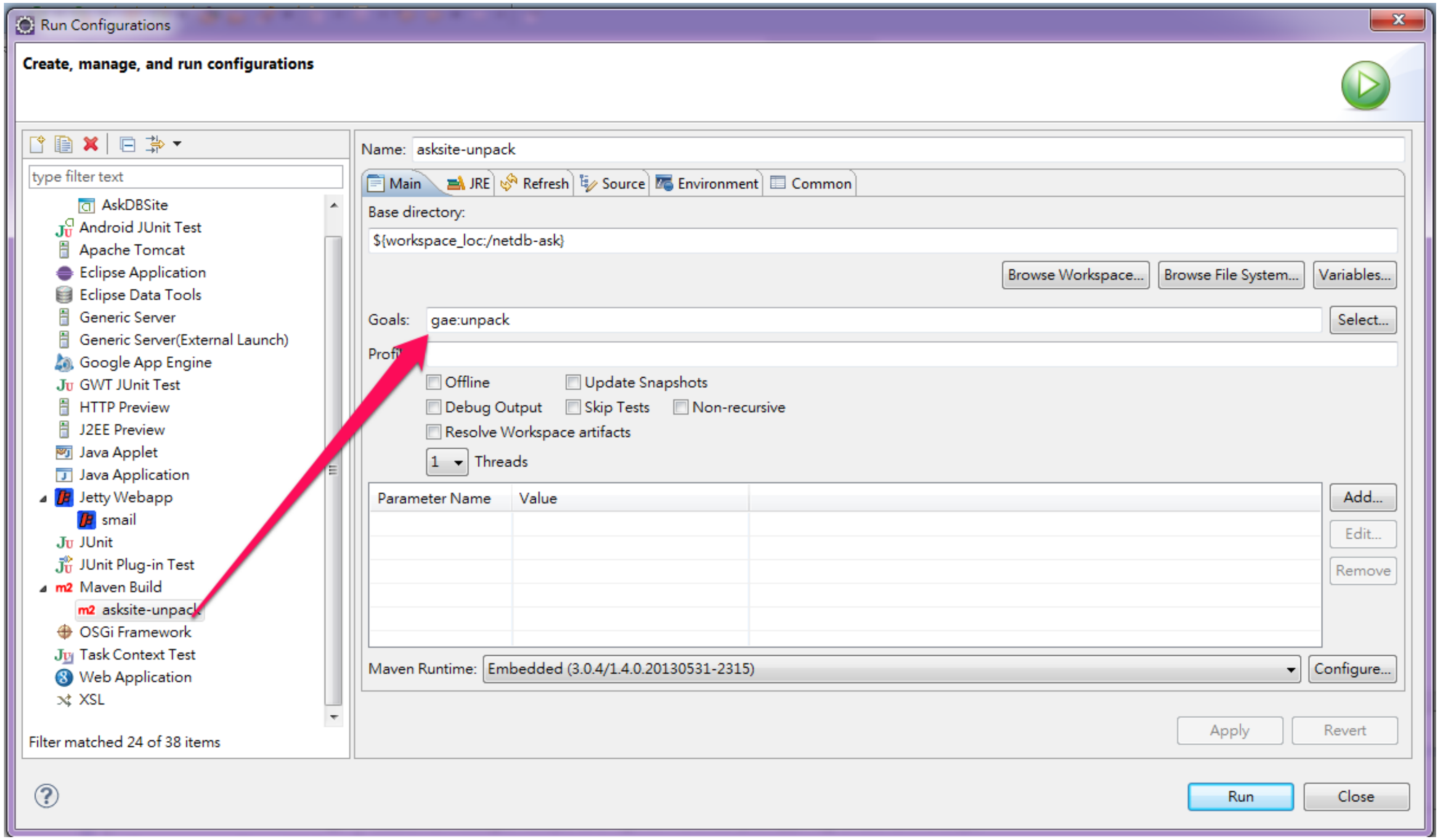
- Press the 'Filter' button to configure filtering options.

- Edit or view an existing configuration by selecting it.

Configure launch perspective settings from the 'Perspectives' pre

Deploying the Project

- Run -> Run configurations -> New Maven Build
  - Goals: gae:unpack (just unpack at first time)



Run Configurations

Create, manage, and run configurations

Name: asksite-unpack

Base directory:
${workspace_loc:/netdb-ask}

Goals: gae:unpack

Profiles:

□ Offline □ Update Snapshots
□ Debug Output □ Skip Tests □ Non-recursive
□ Resolve Workspace artifacts

1 Threads

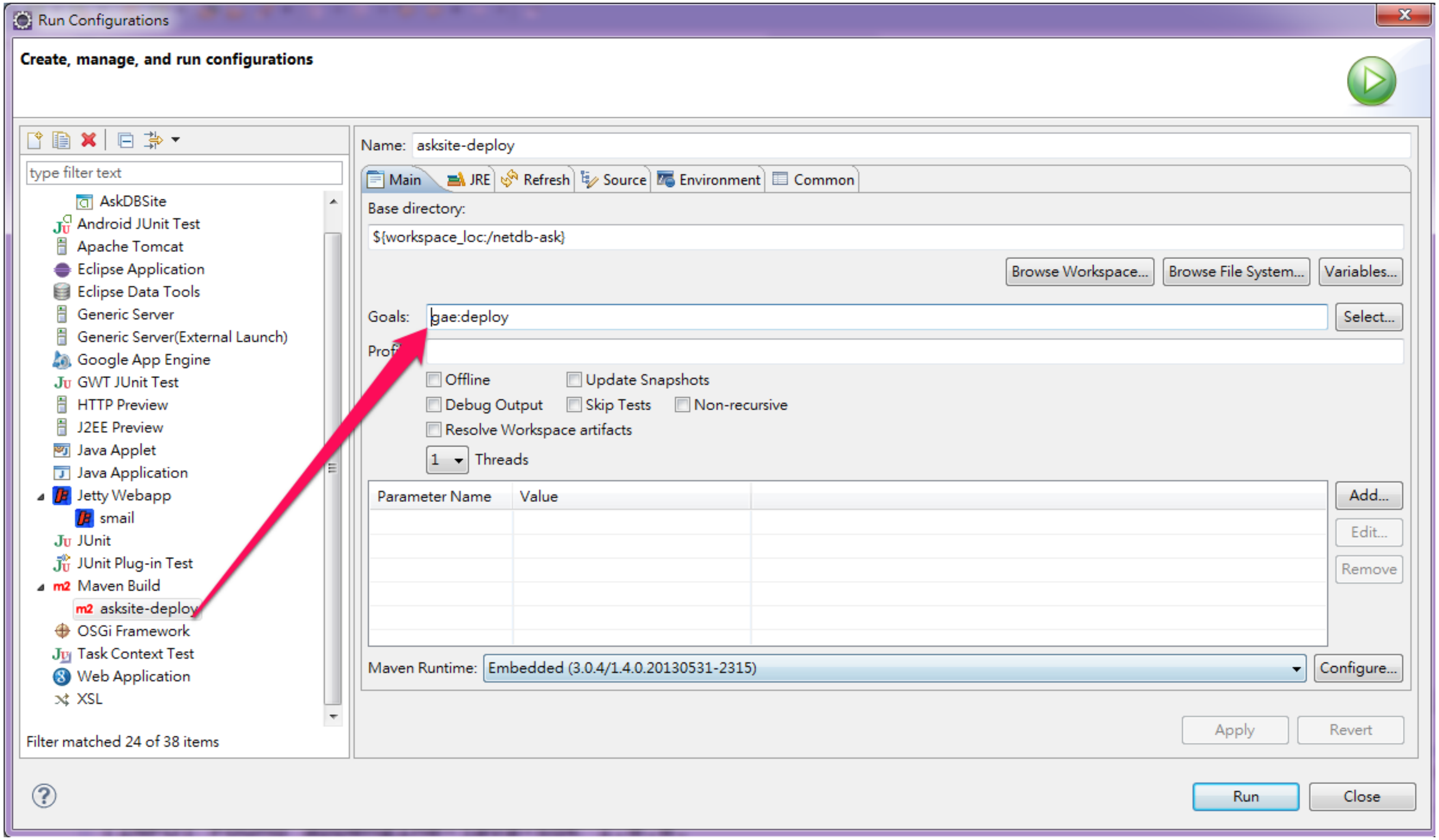
Parameter Name	Value

Maven Runtime: Embedded (3.0.4/1.4.0.20130531-2315)

Filter matched 24 of 38 items

Deploying the Project

- Run -> Run configurations -> New Maven Build
  - Goals: gae:deploy



Run Configurations

Create, manage, and run configurations

Name: asksite-deploy

Base directory: ${workspace_loc:/netdb-ask}

Goals: gae:deploy

Prof

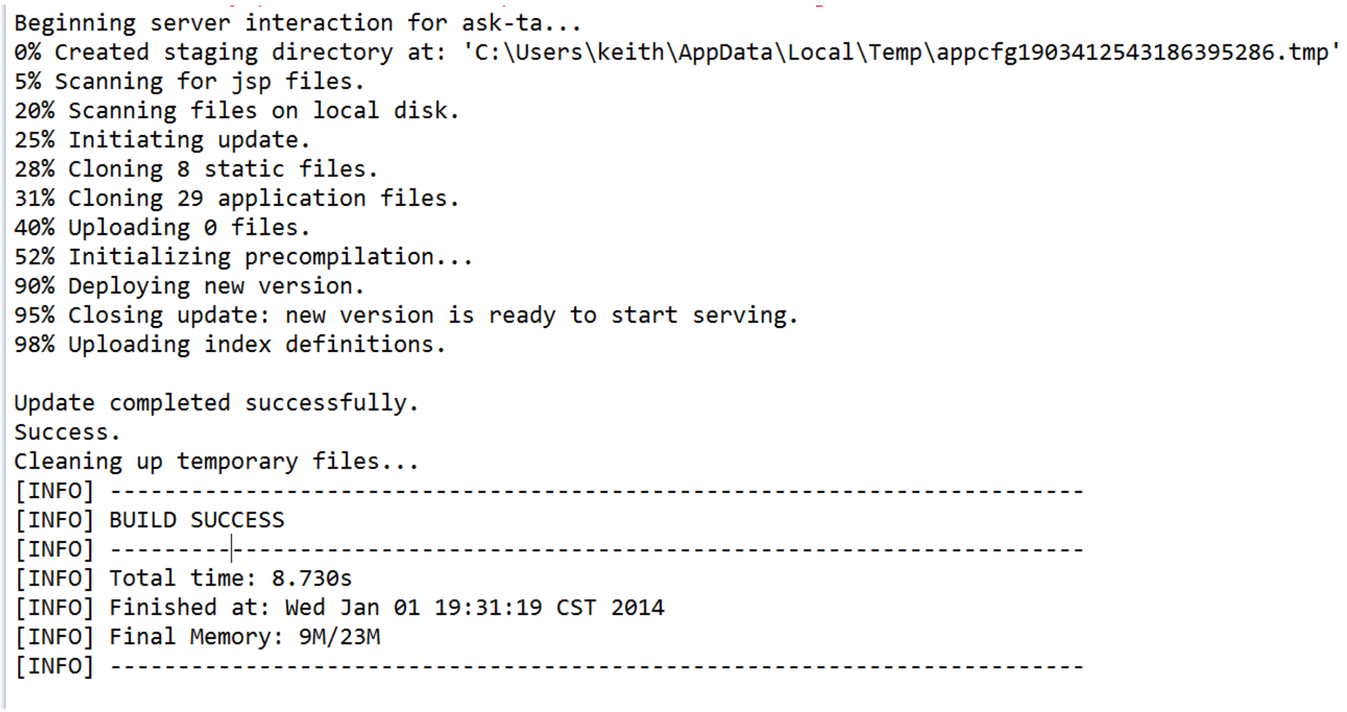
□ Offline □ Update Snapshots
□ Debug Output □ Skip Tests □ Non-recursive
□ Resolve Workspace artifacts
1 Threads

Parameter Name	Value

Maven Runtime: Embedded (3.0.4/1.4.0.20130531-2315)

Deploying the Project

- Congratulation:
  - You can use browser to see your web application at http://<appname>.appspot.com



```
Beginning server interaction for ask-ta...
0% Created staging directory at: 'C:\Users\keith\AppData\Local\Temp\appcfg1903412543186395286.tmp'
5% Scanning for jsp files.
20% Scanning files on local disk.
25% Initiating update.
28% Cloning 8 static files.
31% Cloning 29 application files.
40% Uploading 0 files.
52% Initializing precompilation...
90% Deploying new version.
95% Closing update: new version is ready to start serving.
98% Uploading index definitions.

Update completed successfully.
Success.
Cleaning up temporary files...
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time: 8.730s
[INFO] Finished at: Wed Jan 01 19:31:19 CST 2014
[INFO] Final Memory: 9M/23M
[INFO] ------------------------------------------------------------------------
```

GAE Objectify

- A framework used to access GAE storage system
- The first step:
  - Setup Objectify library maven dependency
    - groupId:com.googlecode.objectify
    - artifactId:objectify
    - Version:3.1

GAE Objectify

- It will register object you want to store at initial phase:
  - Implement a ServletContextListener to listen initialization of web application
  - Call ObjectifyService.*register() to register object class*

GAE Objectify

- Connect with GAE Objectify
  - Call ObjectifyService.*begin() to get Objectify connection.*
- *Query*
  - *Use Objectify.find(), Objectify.get() or Objectify.query() to get objects you want to get.*
- *Store*
  - *Use Objectify.put() to save your object.*