**ISC Integration with Findbugs**

**Overview:**

FindBugs is a static analysis tool that examines class or JAR files looking for potential problems by matching bytecodes against a list of bug patterns. With static analysis tools, we can analyze software without actually running the program. Instead the form or structure of the class files is analyzed to determine the program's intent.

**Findbugs priorities:**

FindBugs defines three bug priorities - high, normal, and low. These priorities are really the bug confidence, that is, how likely it is that the bug pattern is being detected correctly. At this phase we are going to focus on high priority bugs, i.e. bug patterns that are more likely to have been detected correctly. Findbugs Maven plugin allows this granularity by providing a so called “threshold” property. So we are certainly going to take advantage of this configuration option.

**Exclude Bug patterns:**

Findbugs maven plugin also supports exclusion of certain bug detectors. I have researched on this front and have looked at larger projects such as GlassFish who have also integrated with Findbugs to do static code analysis. This project for instance has decided to exclude some of the high priority bug detectors from its enforcement criteria. Similarly I have identified DefaultEncodingdetector as one of the checks that errors get reported based on which are not real problems. The maven property to exclude a bug detector is “omitVisitors”.

**Fail build on errors?**

There is an option in Maven plugin that allows build failure upon encountering a Findbugs error. However the downside to this is that the XML report of all the modules may not get generated. So for now we can simply disable this feature.

**Maven Findbugs Plugin Properties:**

The following options can be in the pom.xml to instruct maven on certain aspects of this integration:

**effort**: Defines the analysis level. With effort set to high, more memory is taken but the number of bugs found would potentially be higher.

**threshold**: As explained earlier in this document, threshold defines the confidence level of the bug patterns that should be searched.

**failOnError**: Decides if the build should fail upon encountering any bugs

**xmlOutput**: A Boolean flag that decides if the output report should be in XML format or plain text.

**omitVisitors**: Exclude some default bug patterns (comma separated).

There are other properties that can be used depending on the integration requirements.

**Findbugs report:**

Once the ISC build finishes, the Findbugs XML report will be available under each subproject target folder. However to see the reported bugs in a more readable fashion, you can go to any subproject path from command line and type:

***mvn  findbugs:gui***

This will result in Findbugs UI popping up with details of all the detected bugs