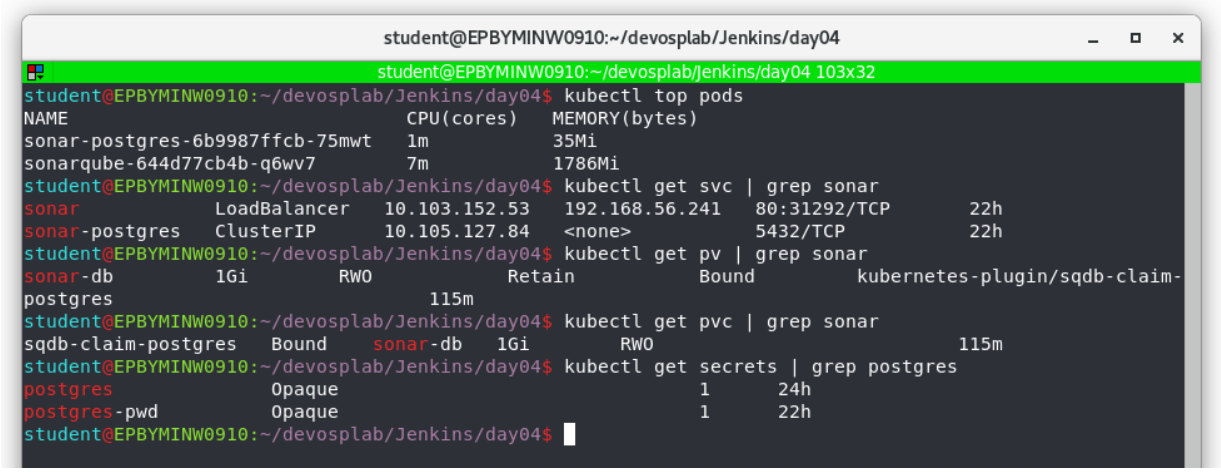
Task 1. Automated Code Analysis

Review

SonarQube and Postgres will be installed (via ansible). Public Java-based project will be setup in Jenkins job with Sonar analysis

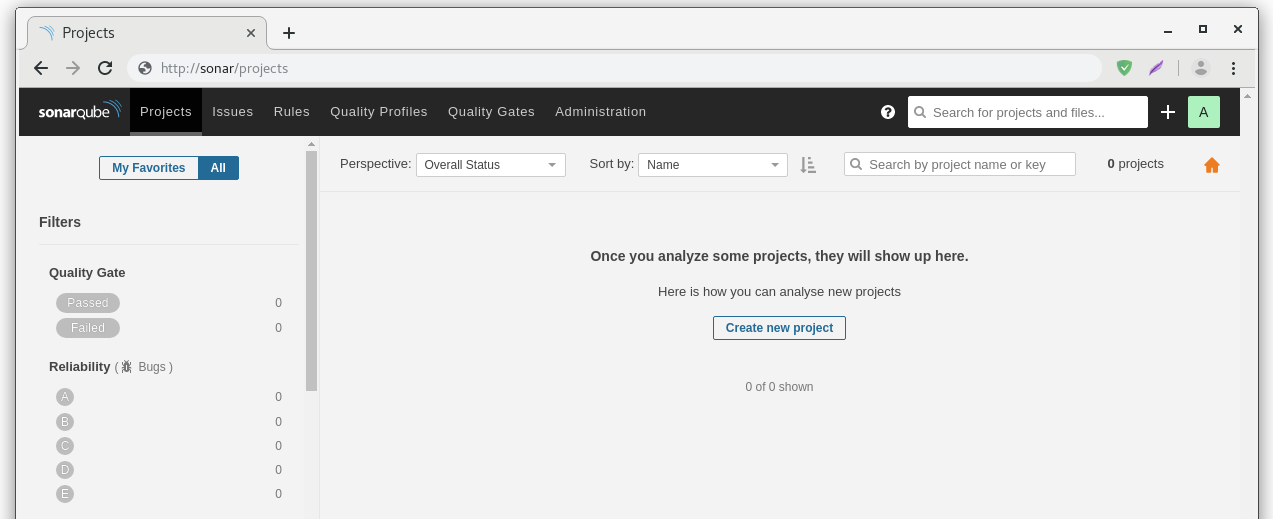
Task

1. Develop kubernetes definitions for the deployments:
   a) PostrgeSQL
   b) Sonar server
   c) Service/Ingress



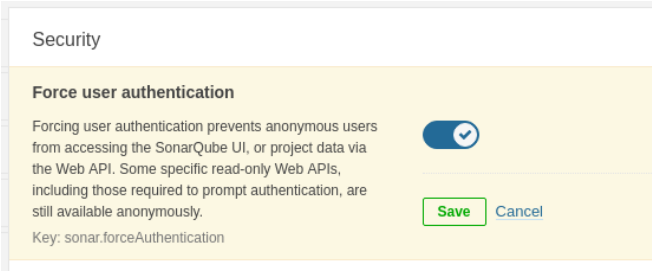
Picture 1.1

Configure Sonar with Nginx, so that it accessible via http://sonar



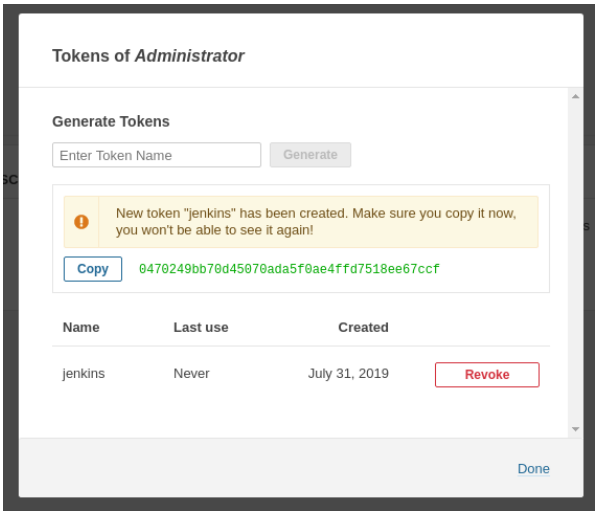
Picture 1.2

2. Configure Sonar security – limit anonymous access to instance

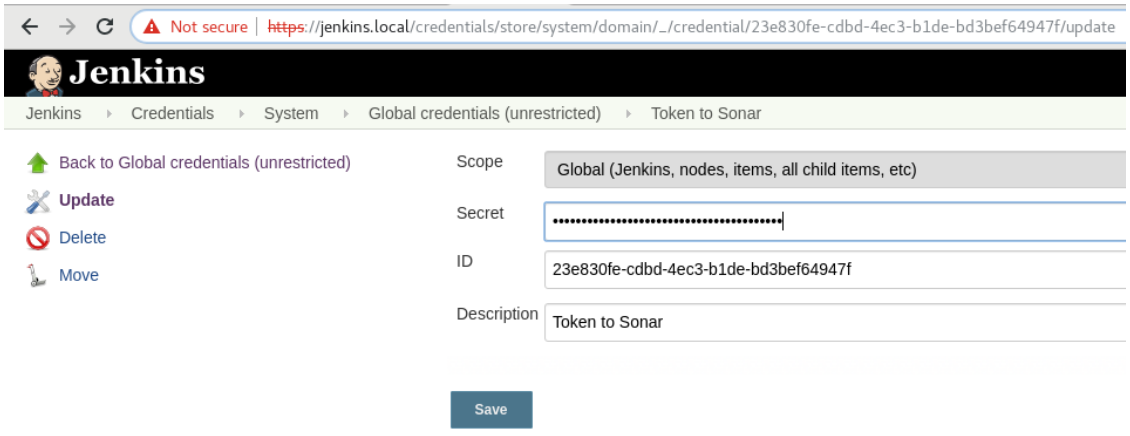


Picture 2

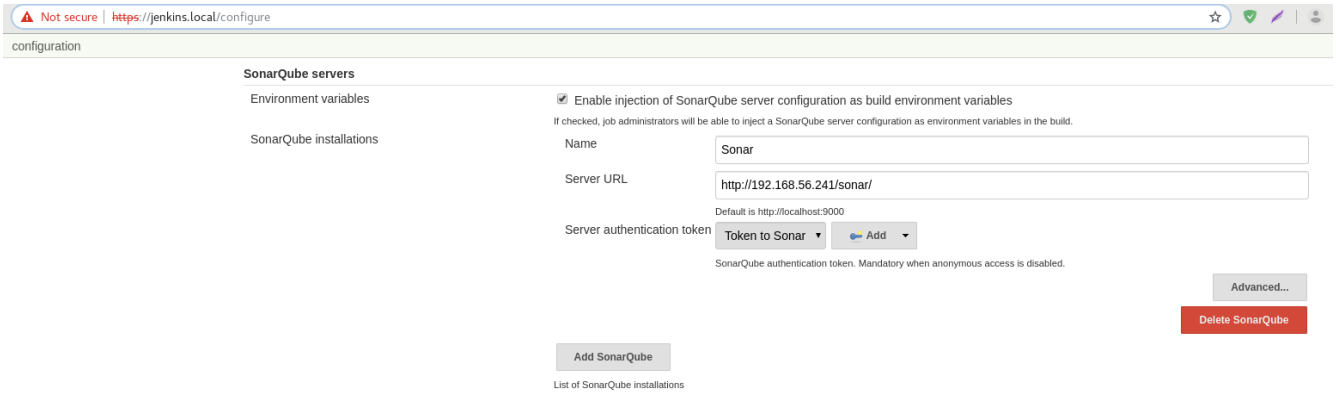
3. Configure Jenkins for Sonar analysis



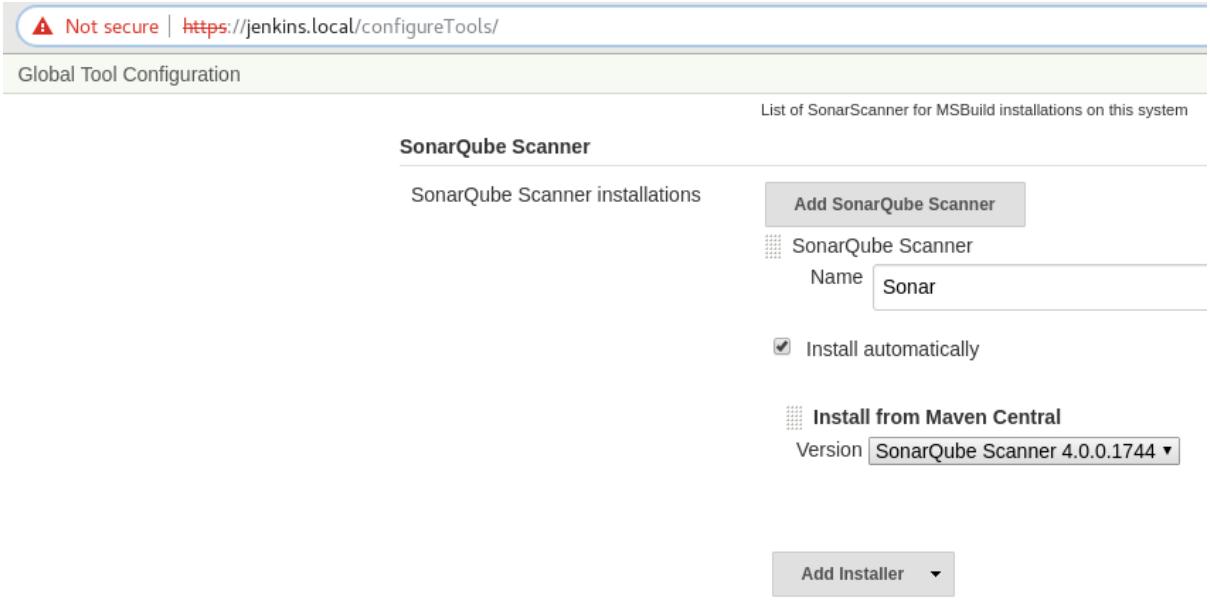
Picture 3.1 – Generate Token on SonarQube



Picture 3.2 – Add Sonar Token to Jenkins

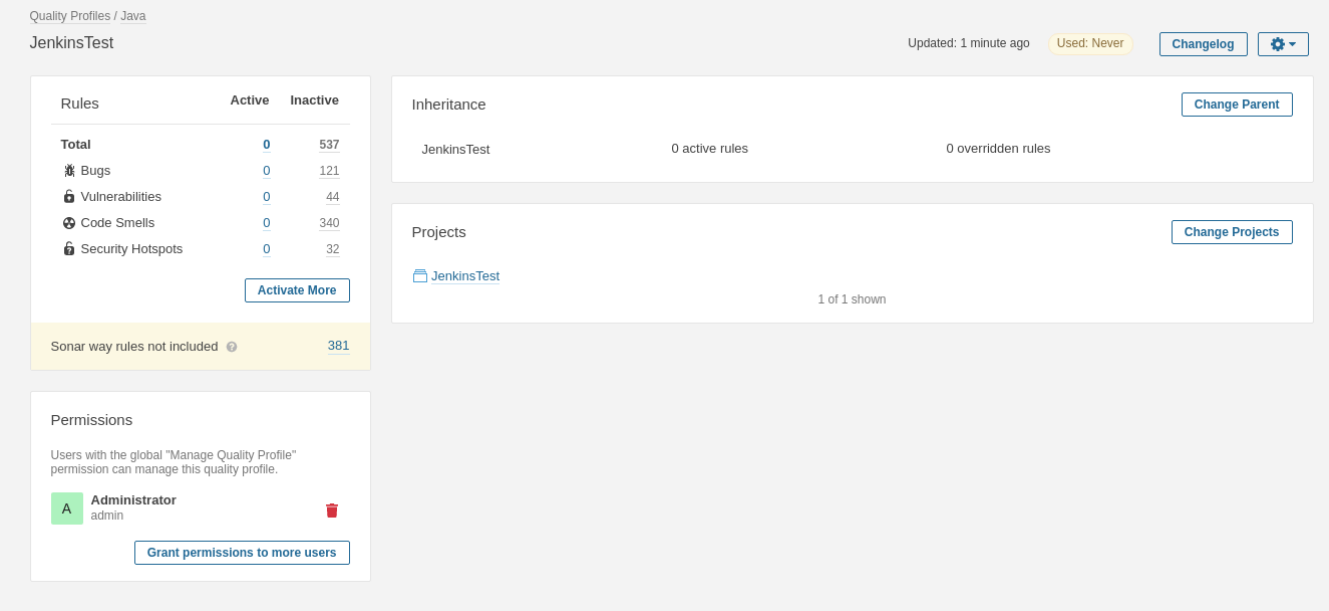


Picture 3.2 – Jenkins Configure System



Picture 3.3 – Jenkins Global Tools Configuration

4. Create Sonar analysis profile and add/modify/remove a couple of rules. Set is as the default profile.

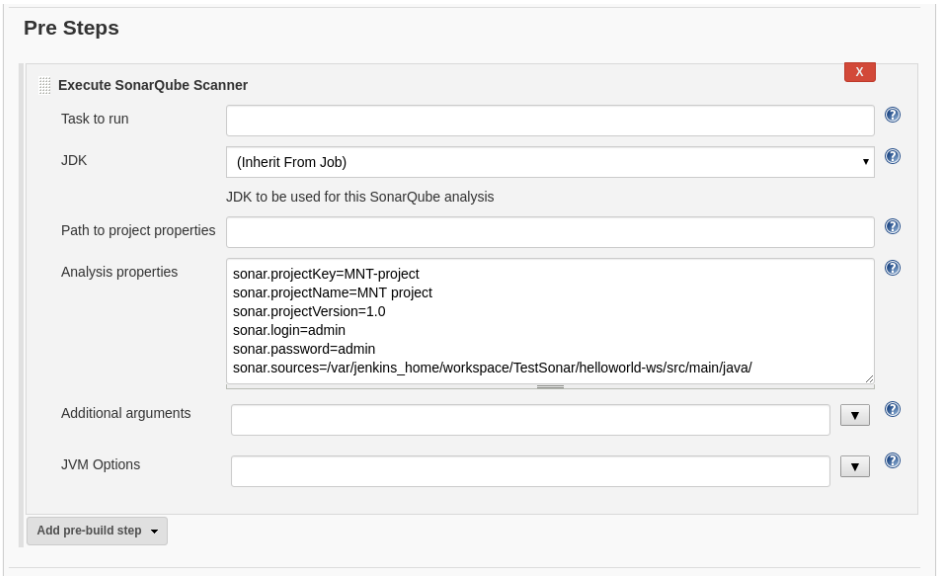


Picture 4

5. Choose some open-source project for building with Jenkins and create a regular build job (for example…https://github.com/MNT-Lab/build-t00ls/tree/master/helloworld-project/helloworld-ws).

Picture 5

6. Add Sonar analysis in Jenkins job configuration.

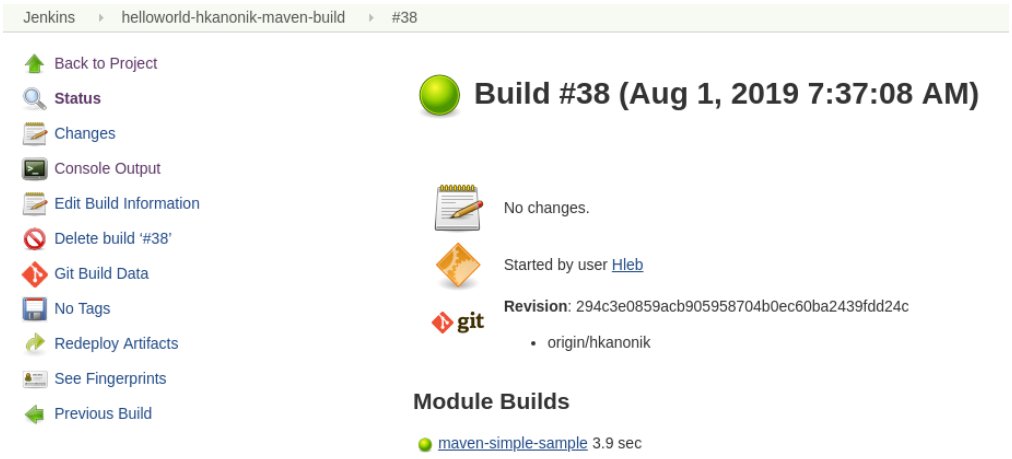


Picture 6

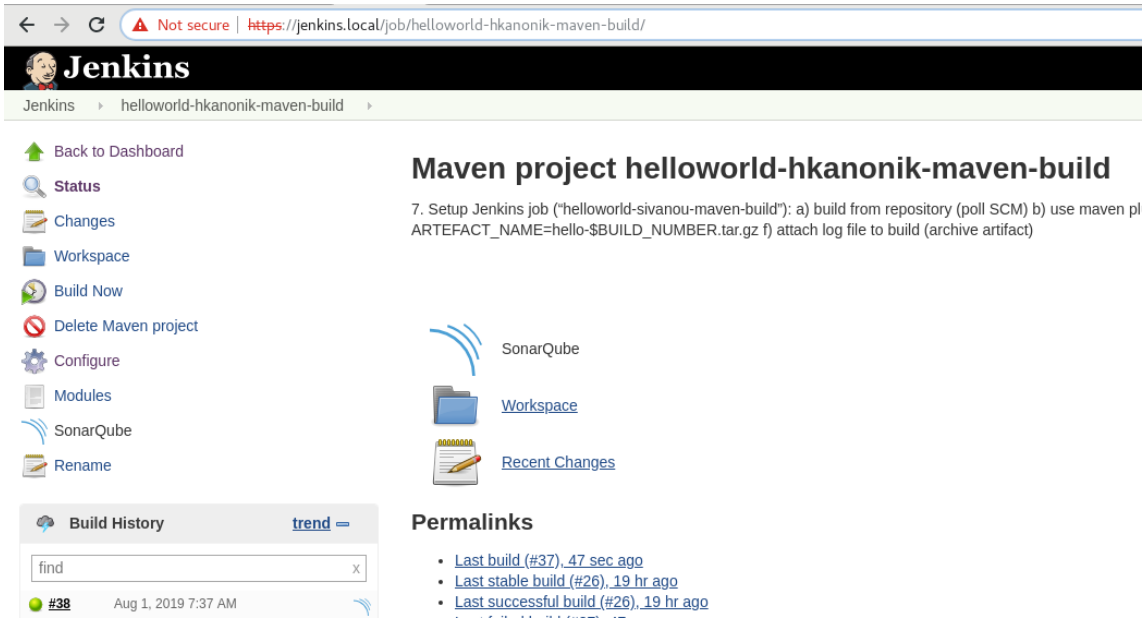
7. Add some lines in the code and Run configured job several times to see the difference.
8. Add some lines with bug (for example infinite loop (endless loop)) and check the results.

```
INFO: Project base dir: /var/jenkins_home/workspace/helloworld-hkanonik-maven-build
INFO: -------------  Scan MNT project
INFO: Load server rules
INFO: Load server rules (done) | time=60ms
INFO: Base dir: /var/jenkins_home/workspace/helloworld-hkanonik-maven-build
INFO: Working dir: /var/jenkins_home/workspace/helloworld-hkanonik-maven-build/.scannerwork
INFO: Source paths: /var/jenkins_home/workspace/helloworld-hkanonik-gradle-build/home-task/src/main/java/com/test
INFO: Source encoding: UTF-8, default locale: en
INFO: Index files
WARN: File '/var/jenkins_home/workspace/helloworld-hkanonik-gradle-build/home-task/src/main/java/com/test/Project.java' is ignored. It is not located
in module basedir '/var/jenkins_home/workspace/helloworld-hkanonik-maven-build'.
INFO: 0 files indexed
INFO: Sensor SonarJavaXmlFileSensor [java]
INFO: Sensor SonarJavaXmlFileSensor [java] (done) | time=0ms
INFO: Sensor Zero Coverage Sensor
INFO: Sensor Zero Coverage Sensor (done) | time=0ms
INFO: Sensor CPD Block Indexer
INFO: Sensor CPD Block Indexer (done) | time=0ms
INFO: Calculating CPD for 0 files
INFO: CPD calculation finished
INFO: Analysis report generated in 139ms, dir size=23 KB
INFO: Analysis reports compressed in 7ms, zip size=5 KB
INFO: Analysis report uploaded in 81ms
INFO: ANALYSIS SUCCESSFUL, you can browse http://192.168.56.241/sonar/dashboard/index/MNT-project
INFO: Note that you will be able to access the updated dashboard once the server has processed the submitted analysis report
INFO: More about the report processing at http://192.168.56.241/sonar/api/ce/task?id=AWxMHIWa5Y9jqPxjS15r
INFO: Task total time: 2.837 s
```

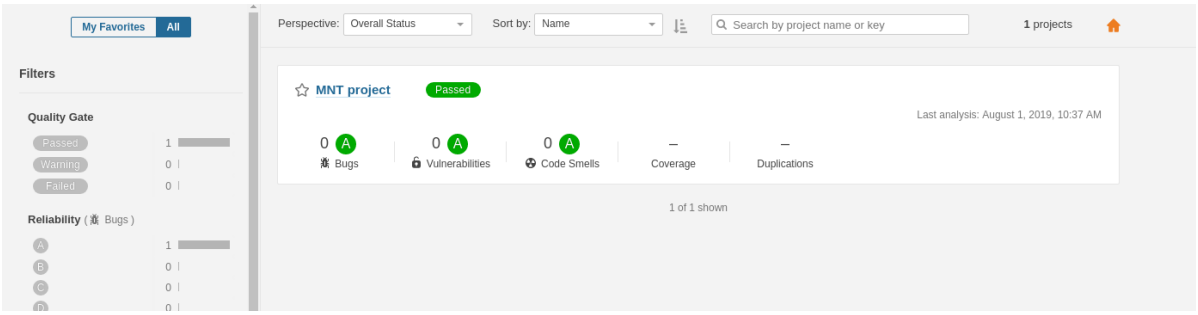
Picture 7-8.1



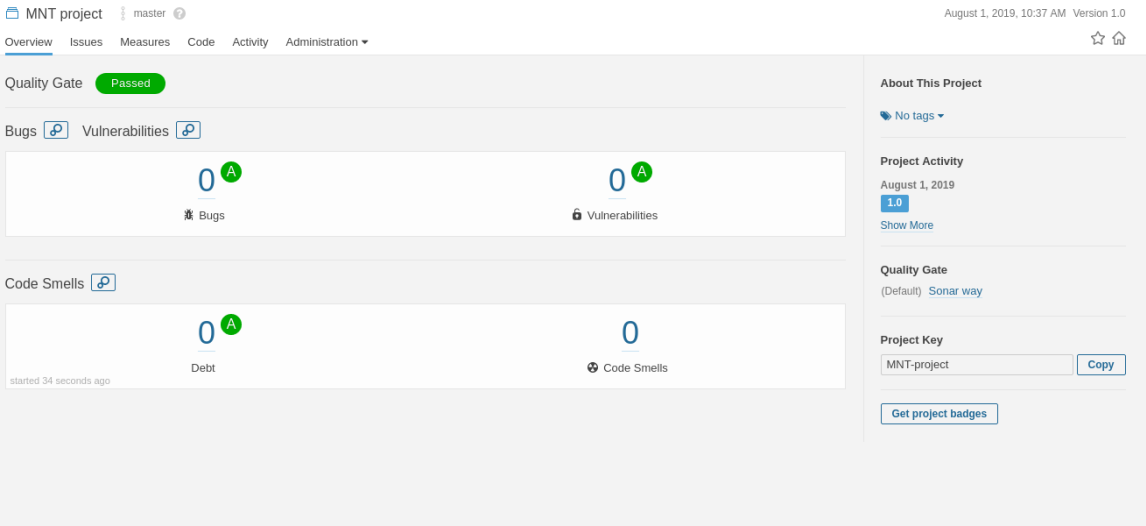
Picture 7-8.2



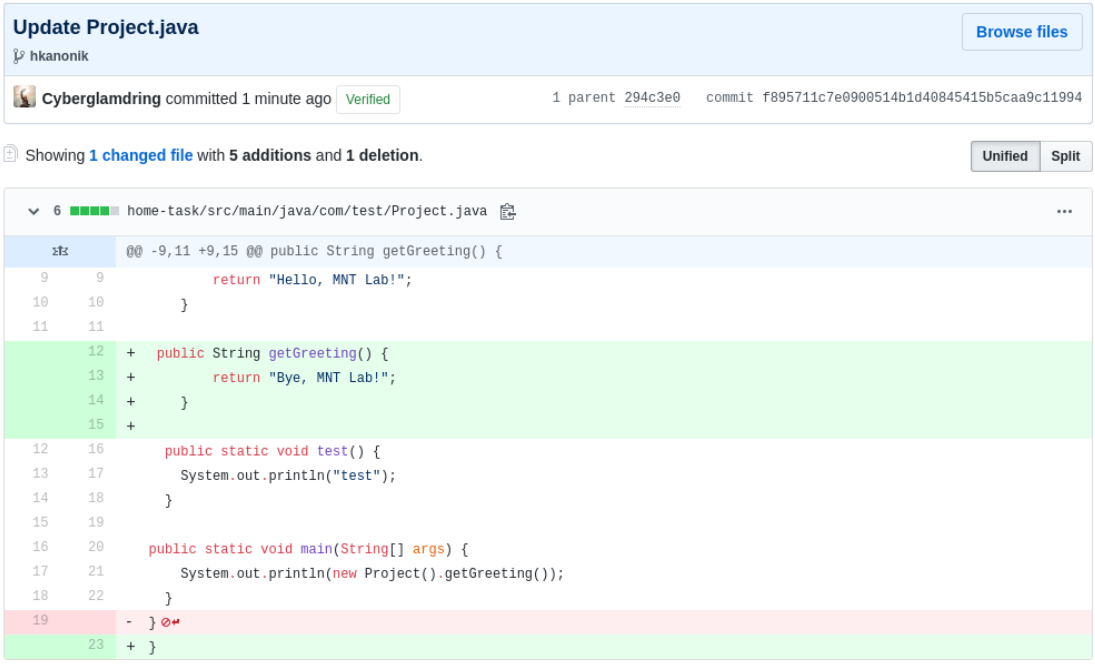
Picture 7-8.3



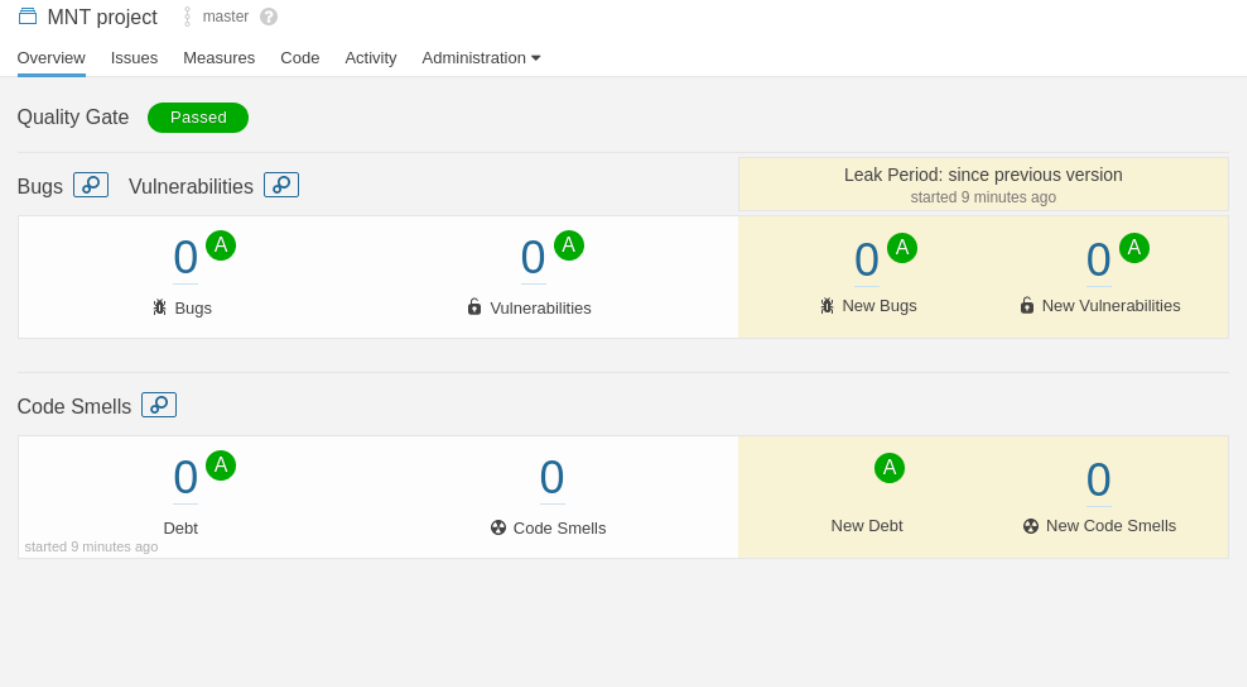
Picture 7-8.4



Picture 7-8.5



Picture 7-8.6 – Update code

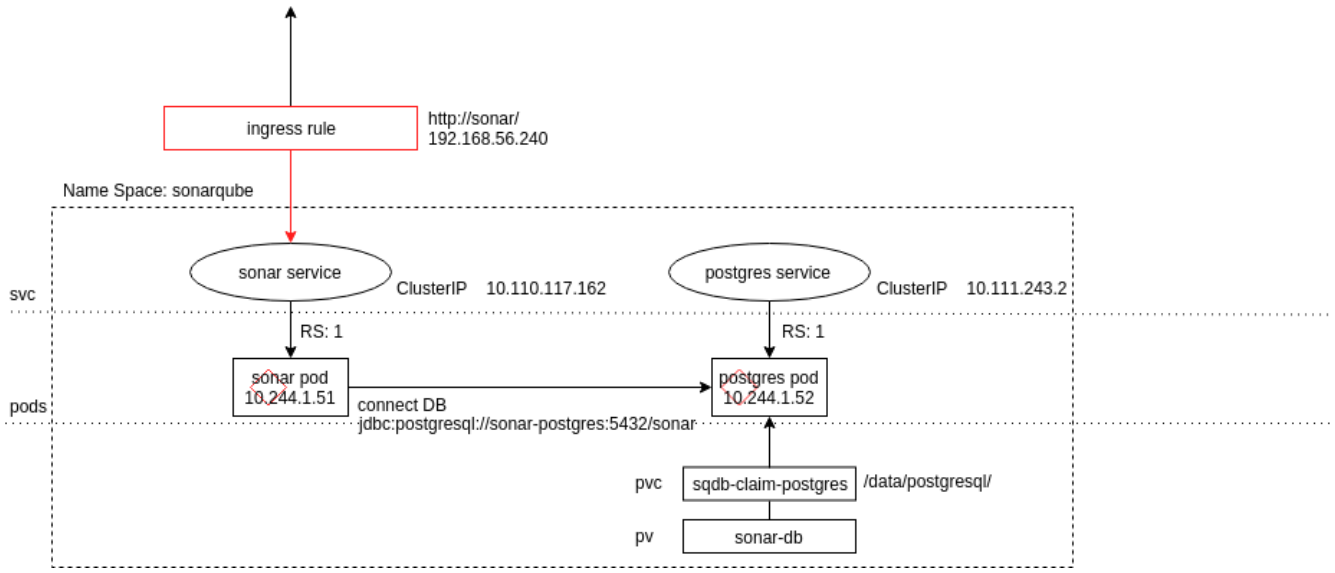


Picture 7-8.7 – Changes in sonar

9. Prove by screenshots and links to GitHub.

Link: https://github.com/MNT-Lab/build-t00ls/tree/hkanonik

10. Create a diagram which describes the interaction between the items in Kubernetes (pods: Jenkins, sonar; their services, ingresses, etc)



Picture 9