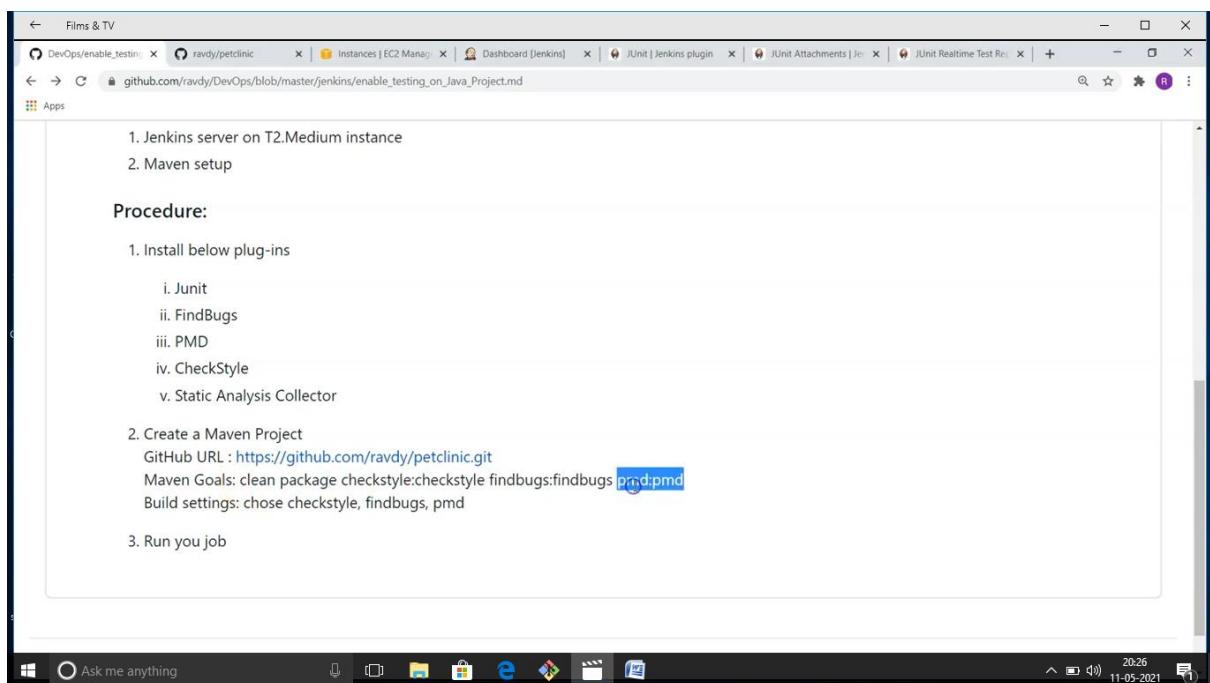
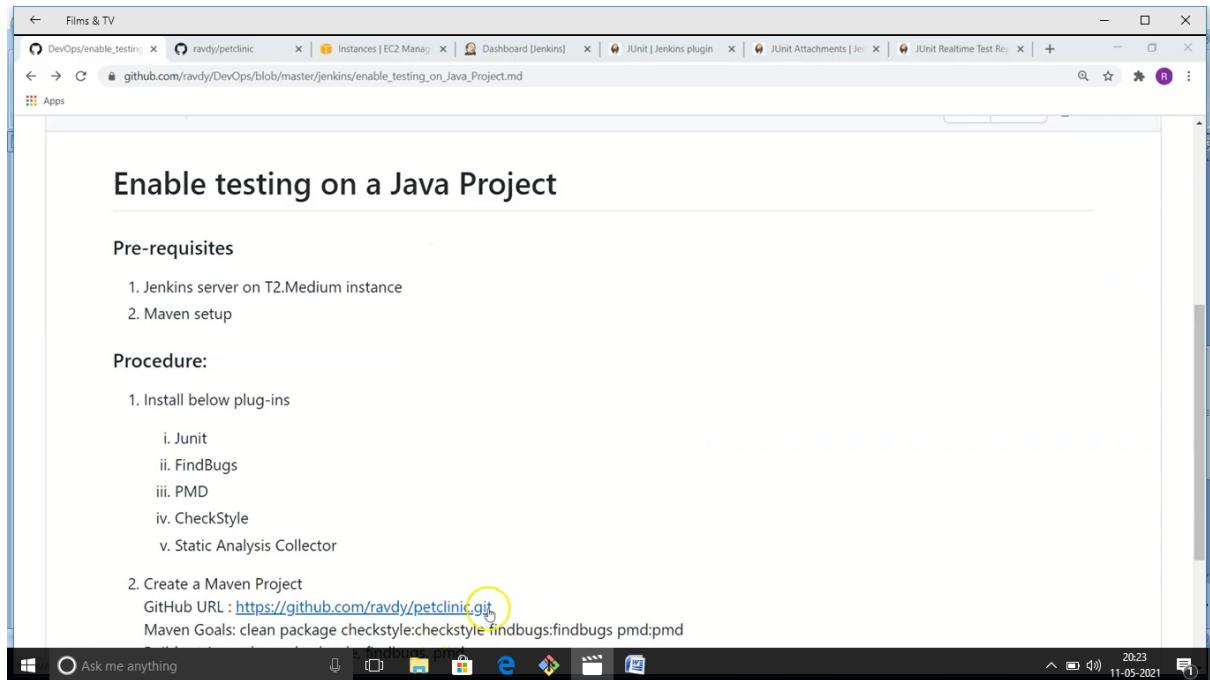


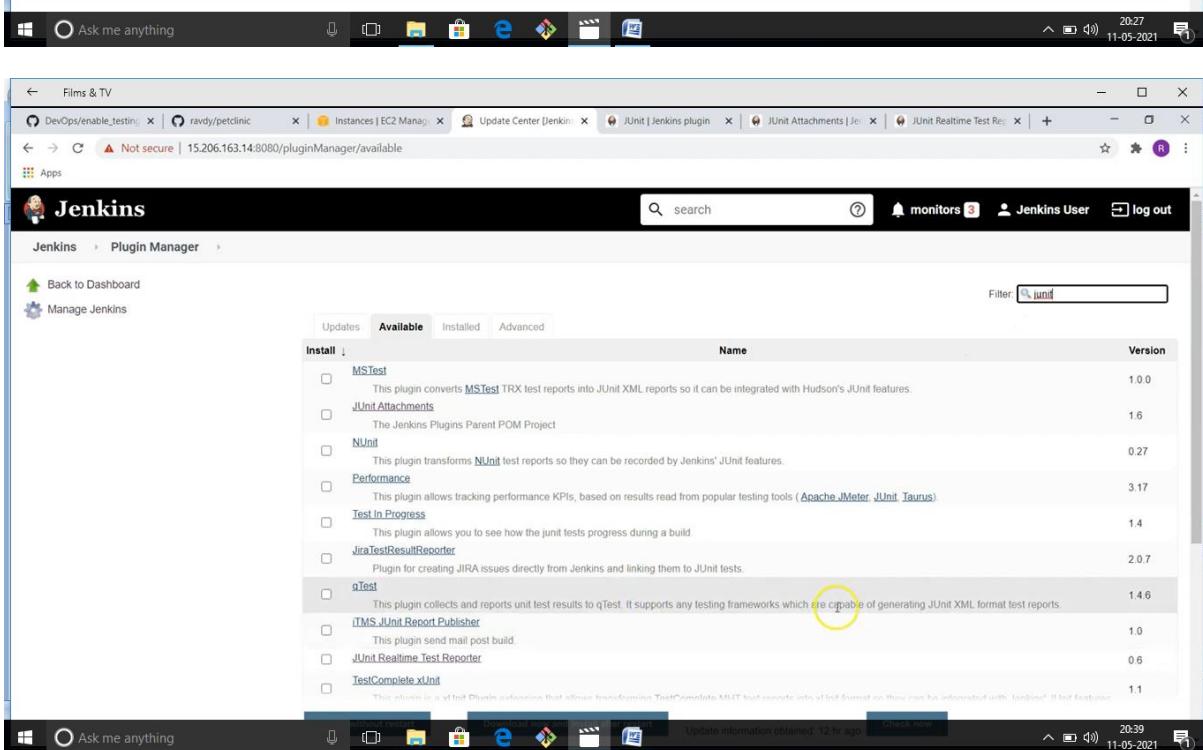
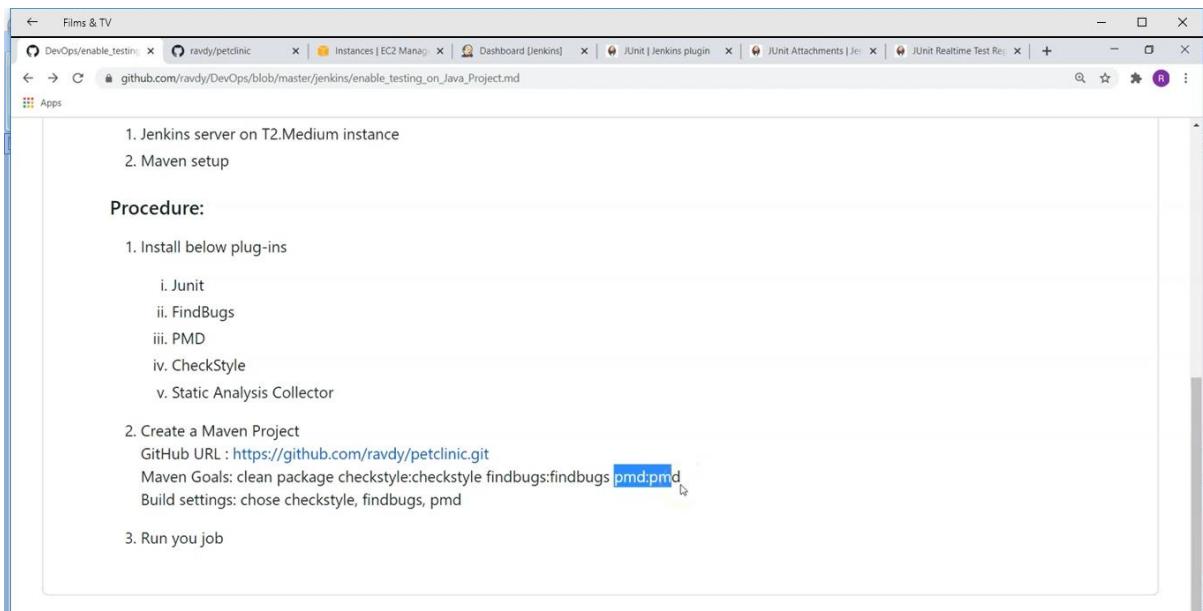


A screenshot of a GitHub repository page for 'ravdy/DevOps'. The page title is 'enable\_testing\_on\_Java\_Project.md'. The content of the file is visible, starting with the heading 'Enable testing on a Java Project'. The GitHub interface includes a navigation bar with 'Code', 'Issues', 'Pull requests', 'Marketplace', and 'Explore' buttons. Below the file content, there is a commit history showing a single commit from 'yankils' with the message 'updated git url'. The GitHub footer includes standard links like 'Raw', 'Blame', and 'Edit'.



Pmd plug in enables code quality

(predefined code available that follows by different developers)



The screenshot shows the Jenkins Plugin Manager interface. The 'Available' tab is selected. A search bar at the top right contains the text 'checkstyle'. The results table lists several plugins:

Name	Version
Violations	0.7.11
<b>Checkstyle</b>	4.0.0
Box UK - JSLint	0.8.2
Report Info	1.0

Below the table are three buttons: 'Install without restart', 'Download now and install after restart', and 'Check now'. A status message 'Update information obtained: 12 hr ago' is displayed.

This screenshot is identical to the one above, except the 'FindBugs' plugin is highlighted with a yellow circle. The 'Available' tab is selected, and the search bar contains 'findbug'.

Jenkins Plugin Manager

Available tab selected. Filter: pmd

Name	Version
Violations	0.7.11
PMD	4.0.0
NOPMD verify_Trac	0.9
NOPMD check	0.9
Report Info	1.0

Install without restart | Download now and install after restart | Check now

Update Center

## Installing Plugins/Upgrades

Preparation

- Checking internet connectivity
- Checking update center connectivity
- Success

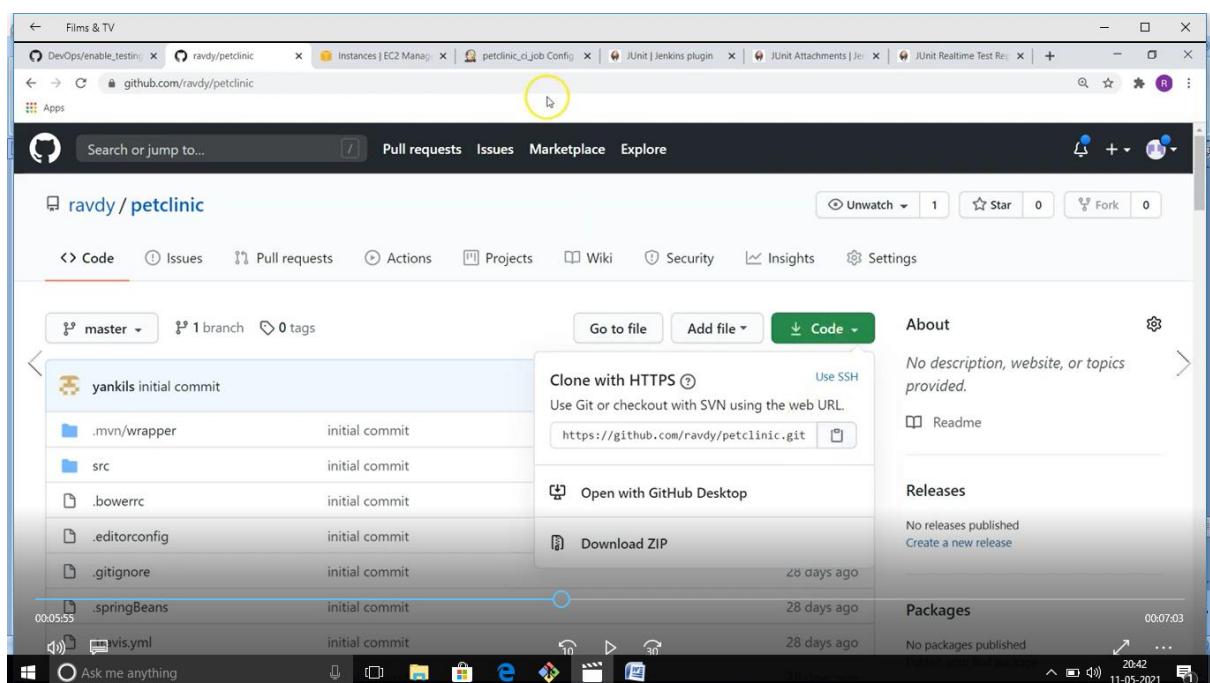
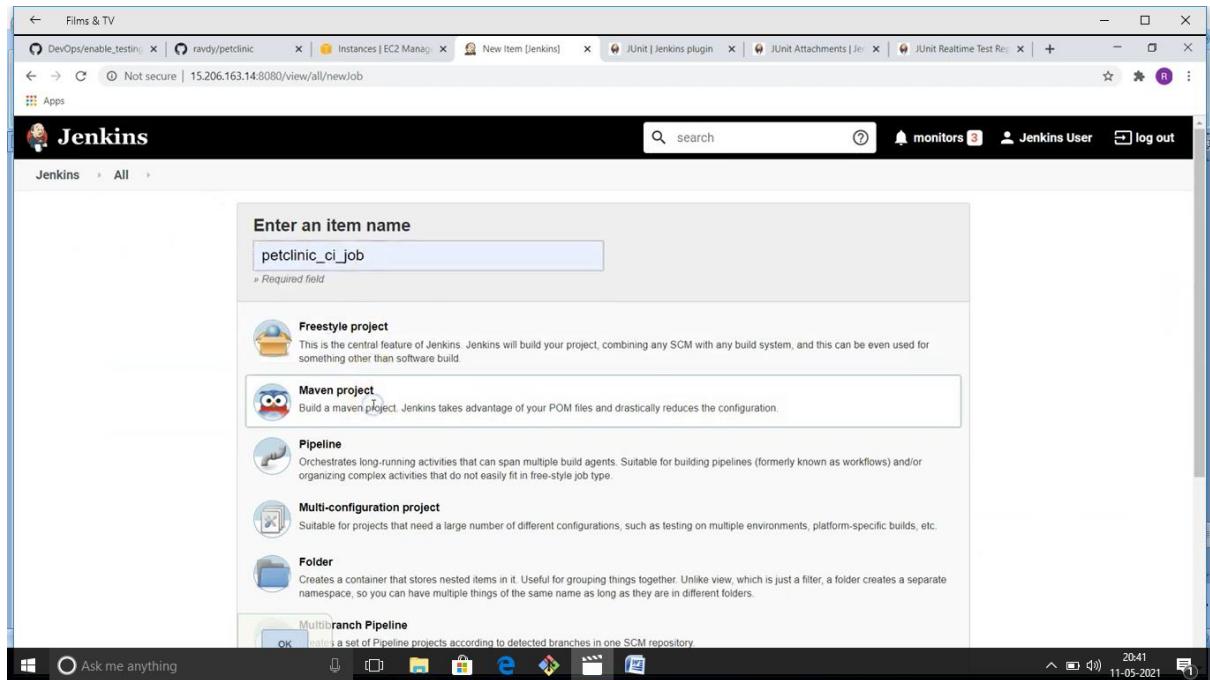
Checkstyle: Downloaded Successfully. Will be activated during the next boot

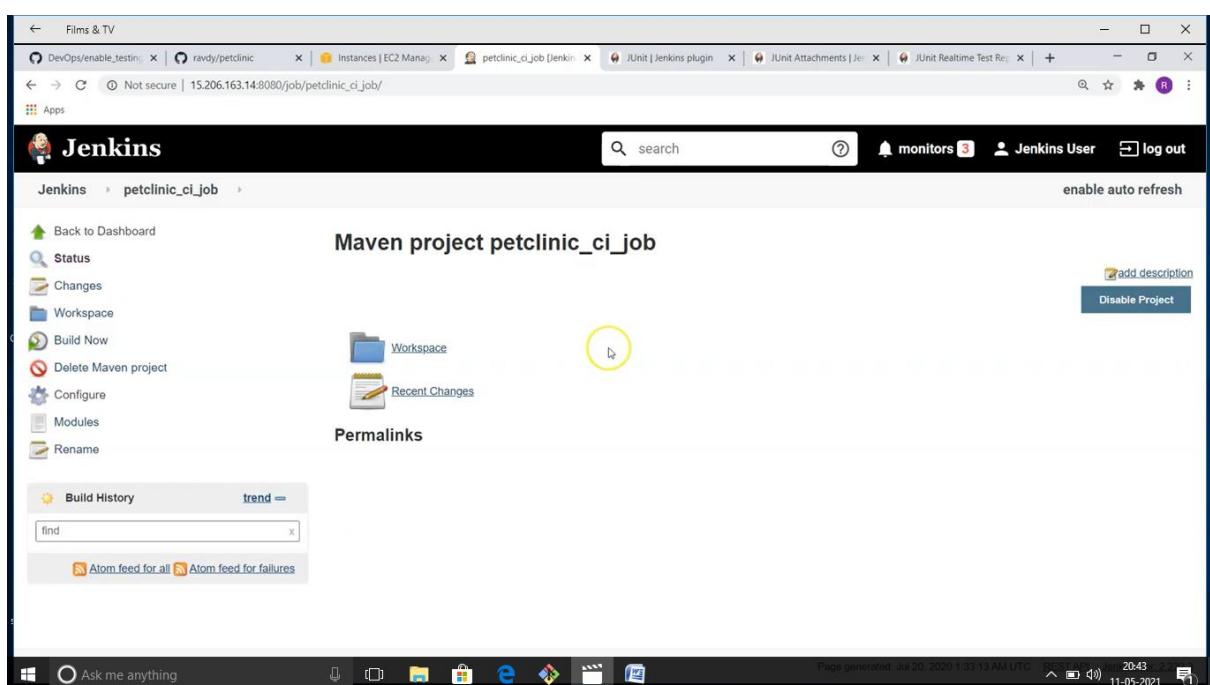
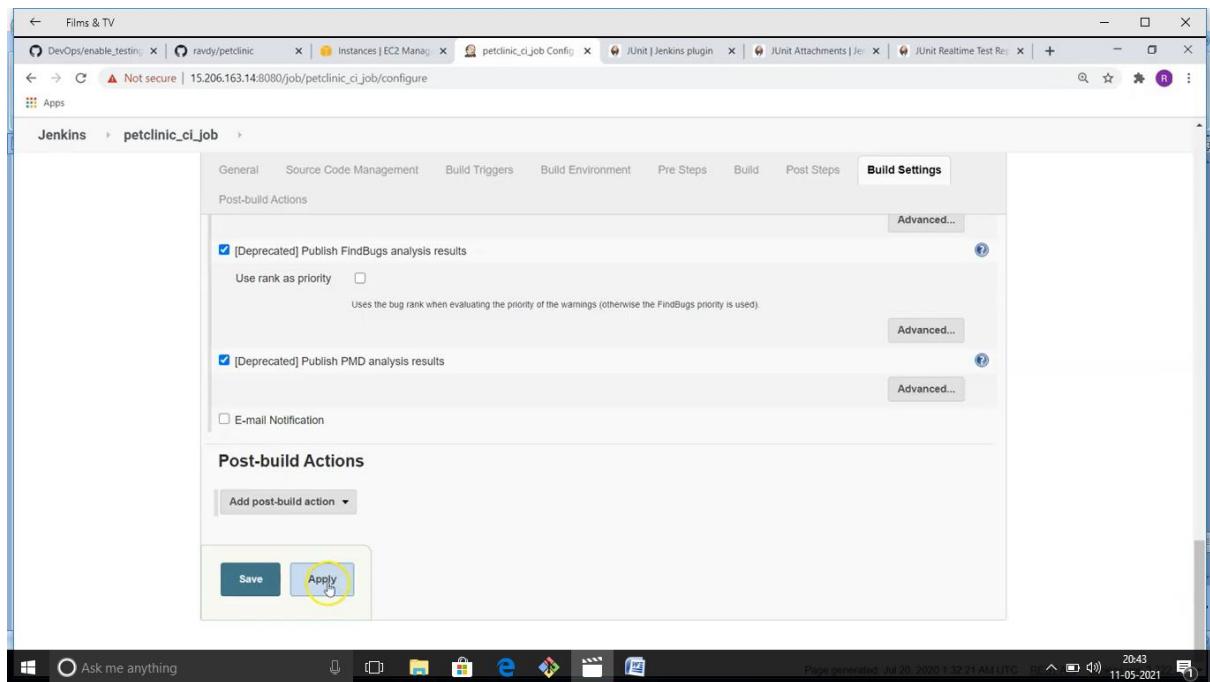
PMD: Downloaded Successfully. Will be activated during the next boot

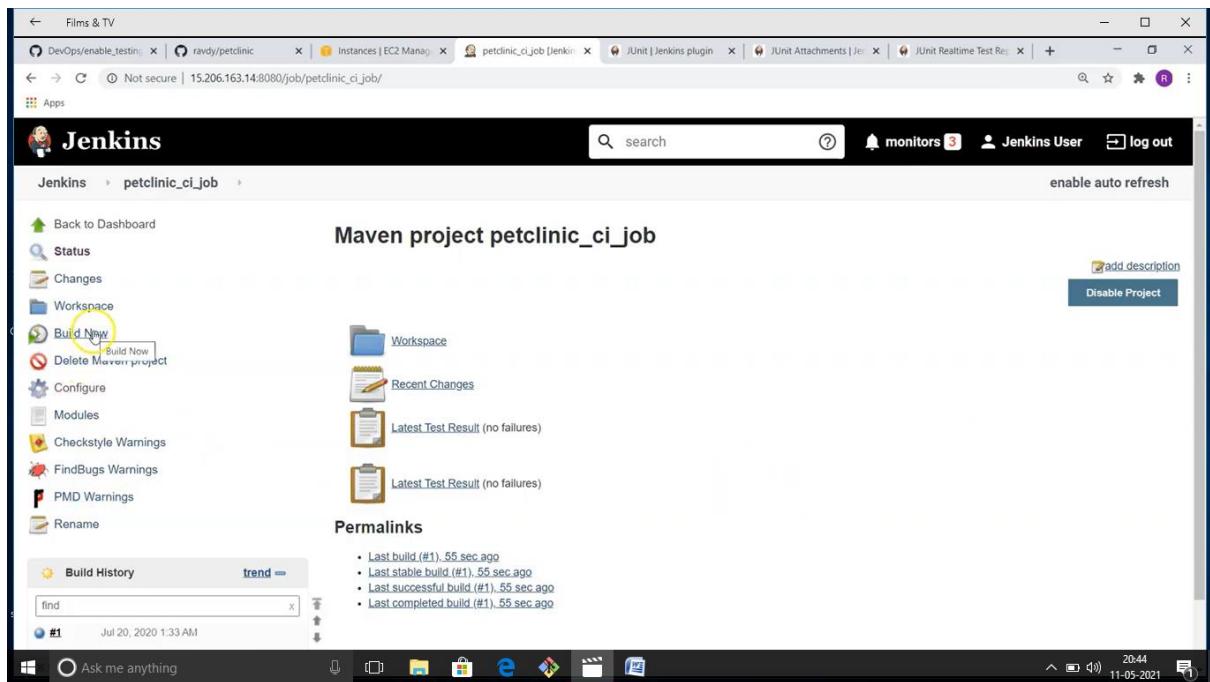
FindBugs: Downloaded Successfully. Will be activated during the next boot

Go back to the top page  
(you can start using the installed plugins right away)

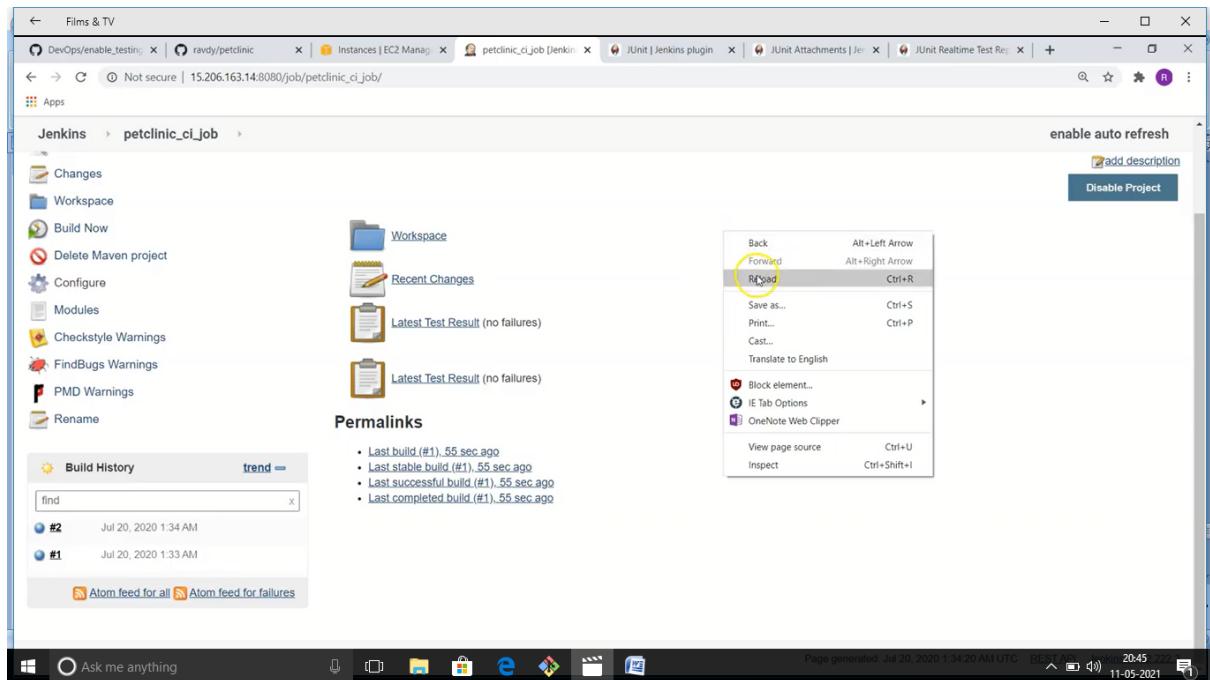
Restart Jenkins when installation is complete and no jobs are running







Run this job once again and reload the project



Test reports generated

← Films & TV

DevOps/enable\_testing | ravyd/petclinic | Instances | EC2 Manager | petclinic\_ci\_job [Jenkins] | JUnit | Jenkins plugin | JUnit Attachments | JUnit Realtime Test Results | + | - | × | Apps

Jenkins > petclinic\_ci\_job >

Build Now | Delete Maven project | Configure | Modules | Checkstyle Warnings | FindBugs Warnings | PMD Warnings | Rename

Workspace | Recent Changes | Latest Test Result (no failures) | Latest Test Result (no failures)

Build History trend →

- Last build (#2), 47 sec ago
- Last stable build (#2), 47 sec ago
- Last successful build (#2), 47 sec ago
- Last completed build (#2), 47 sec ago

Permalinks

Atom feed for all | Atom feed for failures

enable auto refresh

test Result Trend

Checkstyle Trend (just show failures) enlarge

FindBugs Trend

Enlarge Configure

PMD Trend

Enlarge Configure

Ask me anything

20:46 11-05-2021

This screenshot shows the Jenkins dashboard for the 'petclinic\_ci\_job' project. It includes a sidebar with options like 'Build Now', 'Checkstyle Warnings', and 'FindBugs Warnings'. The main area displays three bar charts: 'Checkstyle Trend' (blue bar, value 56), 'FindBugs Trend' (red bar, value 500), and 'PMD Trend' (yellow bar, value 2). Below the charts, a tooltip indicates '6 warnings (normal priority)' for the PMD chart.

← Films & TV

DevOps/enable\_testing | ravyd/petclinic | Instances | EC2 Manager | petclinic\_ci\_job [Jenkins] | JUnit | Jenkins plugin | JUnit Attachments | JUnit Realtime Test Results | + | - | × | Apps

Jenkins > petclinic\_ci\_job >

Jul 20, 2020 1:34 AM | Jul 20, 2020 1:33 AM

Atom feed for all | Atom feed for failures

enable auto refresh

FindBugs Trend

Enlarge Configure

PMD Trend

Enlarge Configure

PMD Trend

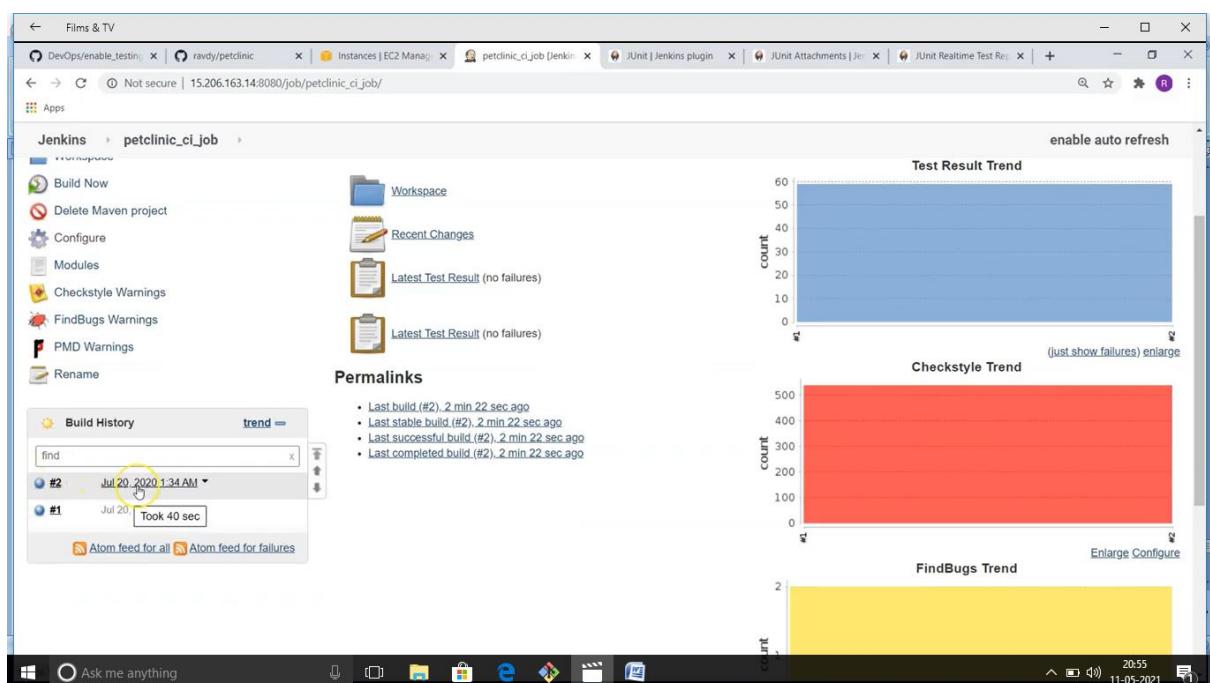
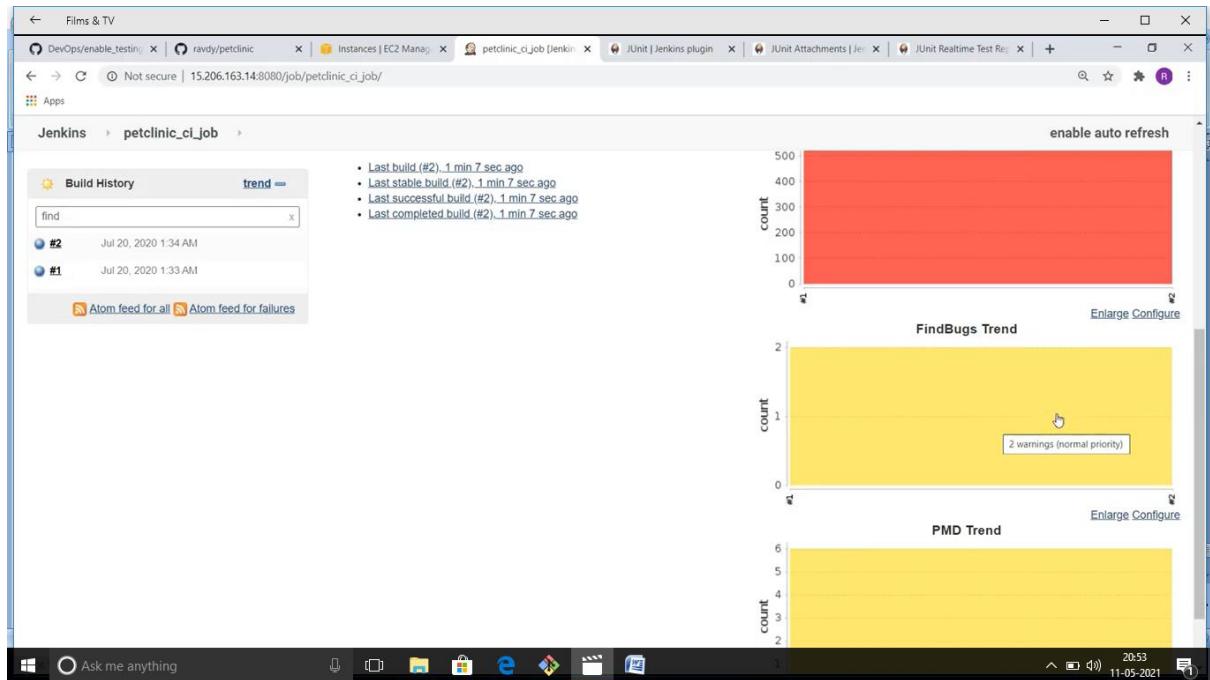
6 warnings (normal priority)

Enlarge Configure

Ask me anything

20:53 11-05-2021

This screenshot shows the Jenkins dashboard for the 'petclinic\_ci\_job' project. It includes a sidebar with build history from July 20, 2020. The main area displays three bar charts: 'FindBugs Trend' (red bar, value 100), 'PMD Trend' (yellow bar, value 2), and another 'PMD Trend' chart (yellow bar, value 6). A tooltip for the second PMD chart indicates '6 warnings (normal priority)'.



The screenshot shows the Jenkins interface for build #2. The main content area displays the build status as "Build #2 (Jul 20, 2020 1:34:58 AM)". On the left, a sidebar lists various Jenkins features like Status, Changes, and Test Result. The central area shows test results: "No changes.", "Started by user Jenkins User", "Revision: cafdc031cc5bdd110f4df5947994b2d79e2d5d8d", and "refs/remotes/origin/master". Below these are sections for "Test Result (no failures)", "Checkstyle Warnings" (with 538 warnings), "FindBugs Warnings" (with 2 warnings), and "PMD Warnings" (with 6 warnings). A "Module Builds" section indicates a build time of 32 seconds. A "Keep this build forever" button is visible in the top right.

The screenshot shows the Jenkins interface for the Checkstyle Warnings report. The title is "CheckStyle Result". It includes a "Warnings Trend" table and a "Summary" table. The "Summary" table shows the distribution of warnings: Total 538, High Priority 538, Normal Priority 0, and Low Priority 0. The "Details" section is titled "Packages" and shows a chart of warning counts by package. The data is as follows:

Package	Total	Distribution
org.springframework.samples.petclinic.model	132	Red bar
org.springframework.samples.petclinic.repository	25	Red bar
org.springframework.samples.petclinic.repository.jdbc	105	Red bar
org.springframework.samples.petclinic.repository.jpa	34	Red bar
org.springframework.samples.petclinic.repository.springdatajpa	13	Red bar
org.springframework.samples.petclinic.service	41	Red bar
org.springframework.samples.petclinic.util	90	Red bar
Total	148	Black bar

The screenshot shows the Jenkins interface for a CI job named 'petclinic\_ci\_job'. The 'Category Checks' section for 'BaseEntity.java' displays a summary table and a detailed table of errors. A yellow circle highlights the row for line 39, which has a 'Priority' of 'High'.

Total	High Priority	Normal Priority	Low Priority
1	1	0	0

File	Priority	Age	Author	Commit ID
BaseEntity.java:39	High	2	#	-

Parameter id should be final.

Line 39 error is occur

The screenshot shows the Jenkins interface for the 'petclinic\_ci\_job' build. The 'Checkstyle Warnings' section for 'BaseEntity.java' displays the Java code with line numbers. Line 39 is highlighted with a yellow bar, indicating it is the source of the error.

```
19 import javax.persistence.GenerationType;
20 import javax.persistence.Id;
21 import javax.persistence.MappedSuperclass;
22
23 /**
24 * Simple JavaBean domain object with an id property. Used as a base class for objects needing this property.
25 *
26 * @author Ken Krebs
27 * @author Juergen Hoeller
28 */
29 @MappedSuperclass
30 public class BaseEntity {
31     @Id
32     @GeneratedValue(strategy = GenerationType.IDENTITY)
33     protected Integer id;
34
35     public Integer getId() {
36         return id;
37     }
38
39     public void setId(Integer id) {
40         this.id = id;
41     }
42
43     public boolean isNew() {
44         return (this.id == null);
45     }
46
47 }
```

The screenshot shows a web browser window with multiple tabs open. The main content is the Jenkins job #2 details page for 'Checkstyle Warnings'. The 'Details' section is expanded, showing a list of warnings. One warning, 'Missing a Javadoc comment.', is highlighted with a yellow circle.

**Summary**

Total	High Priority	Normal Priority	Low Priority
538	538	0	0

**Details**

Packages	Files	Categories	Types	Warnings	Origin	Details
BaseEntity.java:24	LineLengthCheck	Priority: High				
Line is longer than 80 characters (found 109).						
Checks for long lines.						
Rationale: Long lines are hard to read in printouts or if developers have limited screen space for the source code, e.g. if the IDE displays additional information like project tree, class hierarchy, etc.						
BaseEntity.java:31	JavadocVariableCheck	Priority: High				
Missing a Javadoc comment.						
Checks that variables have Javadoc comments. Ignores serialVersionUID fields.						
BaseEntity.java:33	VisibilityModifierCheck	Priority: High				
Variable 'id' must be private and have accessor methods.						
Checks visibility of class members. Only static final, immutable or annotated by specified annotation members may be public; other class members must be private.						

The screenshot shows a web browser window with multiple tabs open. The main content is the Jenkins job #2 details page for the build summary. The 'Module Builds' section is expanded, showing the results for the 'petclinic' module. A 'FindBugs' warning is highlighted with a yellow circle.

**Build #2 (Jul 20, 2020 1:34:58 AM)**

enable auto refresh  
Keep this build forever

Started 5 min 5 sec ago  
Took 40 sec on master  
add description

No changes.

Started by user Jenkins User

Revision: cfdcd031cc5bdd110f4df5947994b2d79e2d5d8d  
refs/remotes/origin/master

Test Result (no failures)

Checkstyle: 538 warnings from one analysis.

FindBugs: 2 warnings from one analysis.  
↳

PMD: 6 warnings from one analysis.

**Module Builds**

petclinic 32 sec

The screenshot shows the Jenkins interface for a job named 'petclinic\_ci\_job'. The build number is #2, and the status is 'Build #2 (Jul 20, 2020 1:34:58 AM)'. The build was started by Jenkins User and took 40 seconds on master. The build log indicates 'No changes.' and lists various analysis results: Checkstyle (538 warnings), FindBugs (2 warnings), and PMD (6 warnings). A 'Module Builds' section shows a single build for 'petclinic' taking 32 seconds. The Jenkins sidebar includes options like Status, Changes, Console Output, and Test Result.

When your job shows blue ball your job is success

The screenshot shows the Jenkins dashboard for the 'petclinic\_ci\_job'. On the left, there's a sidebar with options like Build Now, Workspace, Recent Changes, and Permalinks. The workspace section shows recent test results. The main area features three trend charts: 'Test Result Trend' (blue bar chart, mostly flat at 0), 'Checkstyle Trend' (red bar chart, high count around 500), and 'FindBugs Trend' (yellow bar chart, low count around 2). Below the charts, a 'Build History' table is shown, with the second build (#2) circled in yellow. The table includes columns for build number, date, and duration.

## PART-2

### BUILD TEST AND DEPLOY CODE QUALITY

The screenshot shows the Jenkins dashboard with the following details:

- Left sidebar:** Jenkins navigation menu with links like New Item, People, Build History, Project Relationship, Check File Fingerprint, Manage Jenkins, My Views, Lockable Resources, Credentials, and New View.
- Build Queue:** Shows "No builds in the queue."
- Build Executor Status:** Shows one master node with 1 idle executor.
- Job List:** A table with columns: All, W, Name, Last Success, Last Failure, and Last Duration. The table contains 13 rows of job information, each with a status icon (e.g., green circle with a sun, red circle with a rain cloud) and a link to the job's details page.

The screenshot shows the Jenkins Plugin Manager with the following details:

- Left sidebar:** Back to Dashboard and Manage Jenkins.
- Top tabs:** Available (selected), Updates, Installed, Advanced.
- Filter:** static a
- Plugin List:** A table with columns: Name and Version. The table lists several static analysis plugins:
  - PRQA (3.1.2)
  - Static Analysis Collector (2.0.0) - checked
  - Clang Scan-Build (1.8)
  - Code Dx (3.0.1)
  - Kiuwan (1.5.2)
  - Analysis Model API (8.2.0)
  - Warnings Next Generation (8.3.0)

## UPDATE PRET\_CLINIC JOB

The screenshot shows the Jenkins dashboard with a list of builds. The columns are: S (Status), W (Warning), Name, Last Success, Last Failure, and Last Duration. The builds listed are:

S	W	Name	Last Success	Last Failure	Last Duration
●	!	petclinic_ci_job	17 min - #2	N/A	40 sec
●	!	testjob	1 day 14 hr - #7	1 day 14 hr - #6	52 sec
●	!	Sonarqube_freestyle	20 days - #3	20 days - #2	25 sec
●	!	Sonarqube	20 days - #3	20 days - #2	51 sec
●	!	tomcat_app_deployment	1 mo 0 days - #7	N/A	32 sec
●	!	test_docker_job	1 mo 3 days - #15	1 mo 3 days - #14	34 sec
●	!	maven_job	1 mo 3 days - #1	N/A	25 sec
●	!	TestDependencyJob2	1 mo 21 days - #7	N/A	15 ms
●	!	TestDependencyJob	1 mo 21 days - #7	N/A	13 ms
●	!	artifactory_project1	1 mo 21 days - #6	1 mo 22 days - #4	7.7 sec
●	!	artifactory_project2	1 mo 22 days - #2	N/A	15 sec

SEE THE WARNINGS IN THE CURRENT JOB

WARNINGS ARE MORETHAN 200

WARNINGS UNSTABLE

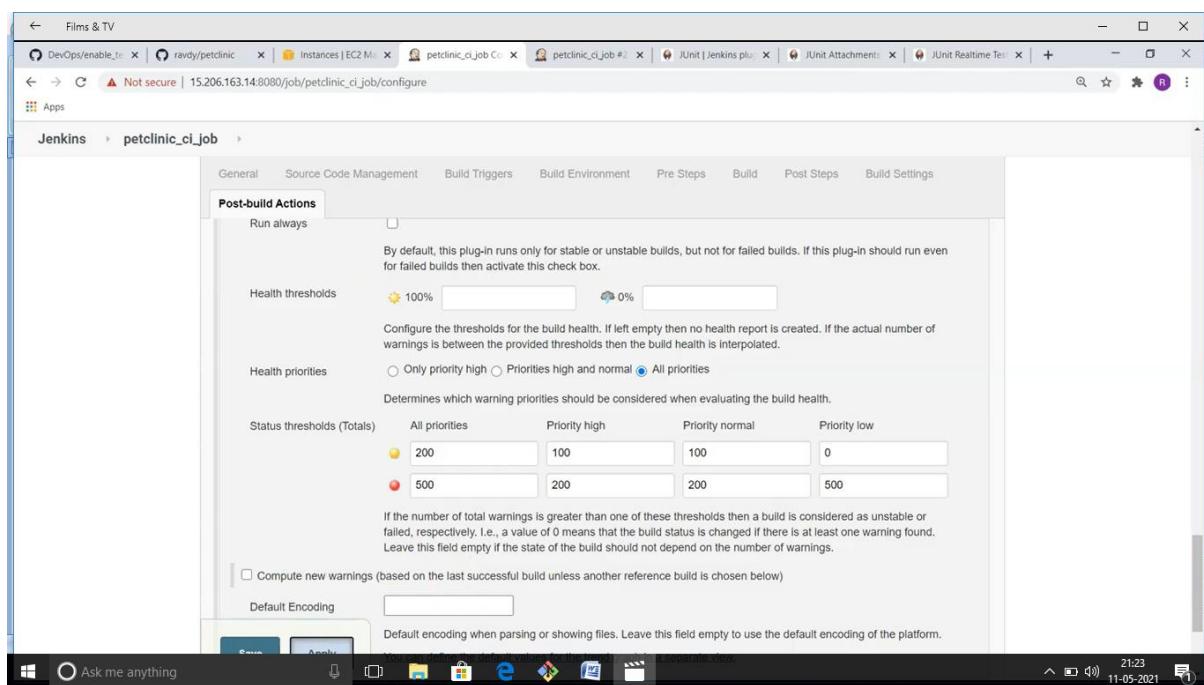
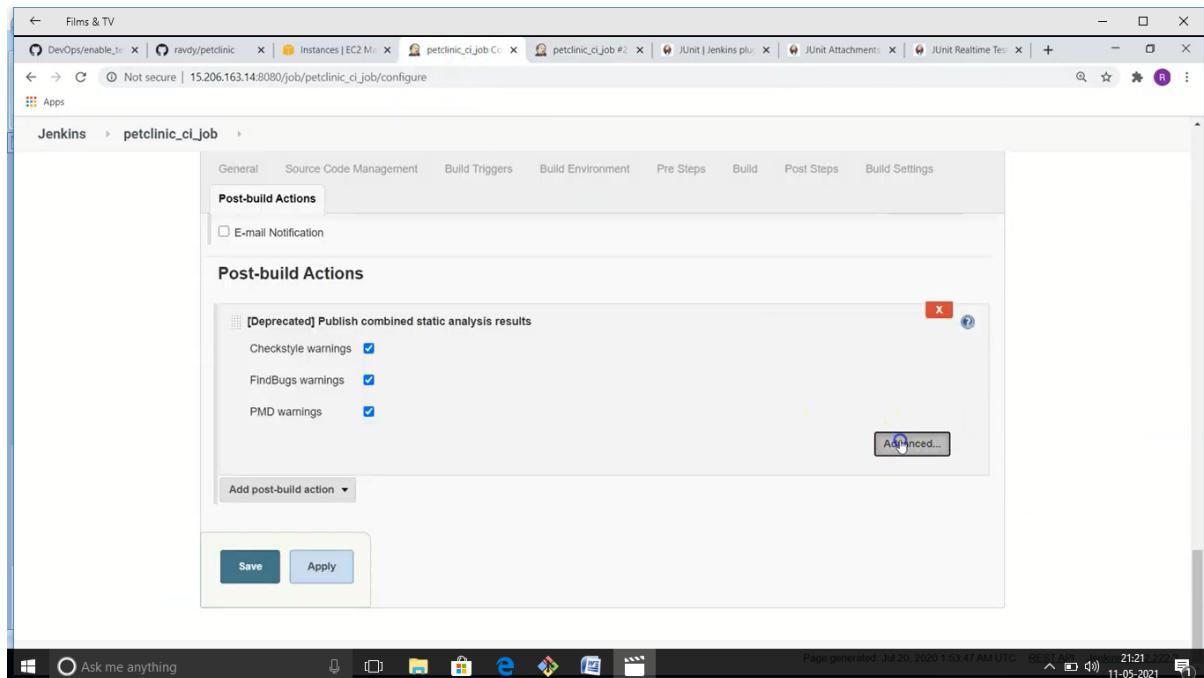
MORETHAN 500 MAKE IT AS A FAILEDONE.

The screenshot shows the Jenkins build details page for build #2. The build was started by Jenkins User on Jul 20, 2020 at 1:34:58 AM. It took 40 sec on master. The build status is "No changes". The build log shows:

- Started by user Jenkins User
- Revision: cafcd031cc5bdd110f4df5947994b2d79e2d5d8d
  - refs/remotes/origin/master
- Test Result (no failures)
- Checkstyle: 538 warnings from one analysis.
- FindBugs: 2 warnings from one analysis. (This line is circled in yellow)
- PMD: 6 warnings from one analysis.

DEFINE ABOVE RULES

## GOTO ADVANCED OPTION



THIS PROJECT WARNINGS MORETHAN THRESHOLD VALUE

WHICH LEADS TO FAILUE ONE

DEVELOPER MAY FIX THESE ERRORS TO PUSH REPOSITORY.

```

[INFO] [FINDBUGS] PARSING A TOTAL OF /var/lib/jenkins/workspace/petclinic_ci_job/target/findbugsXml.xml
[FINDBUGS] Successfully parsed file /var/lib/jenkins/workspace/petclinic_ci_job/target/findbugsXml.xml of module petclinic with 2 unique
warnings and 0 duplicates.
[FINDBUGS] Computing warning deltas based on reference build #2
[INFO]
[INFO] --- maven-pmd-plugin:3.13.0:pmd (default-cli) @ spring-petclinic ---
[WARNING] Unable to locate Source Xref to link to - DISABLED
[PMD] Searching for all files in /var/lib/jenkins/workspace/petclinic_ci_job/target that match the pattern pmd.xml
[PMD] Parsing 1 file in /var/lib/jenkins/workspace/petclinic_ci_job/target
[PMD] Successfully parsed file /var/lib/jenkins/workspace/petclinic_ci_job/target/pmd.xml of module petclinic with 6 unique warnings and 0
duplicates.
[PMD] Computing warning deltas based on reference build #2
[WARNING] Attempt to (de-)serialize anonymous class org.jfrog.hudson.maven2.MavenDependenciesRecorder$1; see:
https://jenkins.io/redirect/serialization-of-anonymous-classes/
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 34.341 s
[INFO] Finished at: 2020-07-20T01:57:15Z
[INFO]
Waiting for Jenkins to finish collecting data
[JENKINS] Archiving /var/lib/jenkins/workspace/petclinic_ci_job/pom.xml to org.springframework.samples/spring-petclinic/4.2.5-
SNAPSHOT/spring-petclinic-4.2.5-SNAPSHOT.pom
[JENKINS] Archiving /var/lib/jenkins/workspace/petclinic_ci_job/target/petclinic.war to org.springframework.samples/spring-
petclinic/4.2.5-SNAPSHOT/spring-petclinic-4.2.5-SNAPSHOT.war
channel stopped
[ANALYSIS-COLLECTOR] Ignore new warnings since this is the first valid build
[ANALYSIS-COLLECTOR] Plug-in Result: Failed - <a href="analysisResult">546 warnings</a> exceed the threshold of 500 by 46
Build step [Deprecated] Publish combined static analysis results' changed build result to FAILURE
Finished: FAILURE

```

Page generated: Jul 20, 2020 1:57:25 AM UTC REST API Jenkins ver. 2.222.3

## AGAIN BUILD PROJECT BY CHANGING PRIORITIES OF WARNINGS

**Maven project petclinic\_ci\_job**

- Build Now
- Recent Changes
- Latest Test Result (no failures)
- Latest Test Result (no failures)

**Permalinks**

- Last build (#3), 1 min 55 sec ago
- Last stable build (#2), 23 min ago
- Last successful build (#2), 23 min ago
- Last failed build (#3), 1 min 55 sec ago
- Last unsuccessful build (#3), 1 min 55 sec ago
- Last completed build (#3), 1 min 55 sec ago

**Test Result Trend**

**Checkstyle Trend**

The screenshot shows a Jenkins job log for 'petclinic\_ci\_job' build #4. The log output indicates a failure due to static analysis warnings:

```

[INFO] : SUCCESSFULLY FOR DUE TO /var/lib/jenkins/workspace/petclinic_ci_job/target/classes/linu6241 AND OF MODULE petclinic WITH 2 UNIQUE
warnings and 0 duplicates.
[INFO] Computing warning deltas based on reference build #3
[INFO]
[INFO] --- maven-pmd-plugin:3.13.0:pmd (default-cli) @ spring-petclinic ---
[WARNING] Unable to locate Source XRef to link to - DISABLED
[PMD] Searching for all files in /var/lib/jenkins/workspace/petclinic_ci_job/target that match the pattern pmd.xml
[PMD] Parsing 1 file in /var/lib/jenkins/workspace/petclinic_ci_job/target
[PMD] Successfully parsed file /var/lib/jenkins/workspace/petclinic_ci_job/target/pmd.xml of module petclinic with 6 unique warnings and 0 duplicates.
[PMD] Computing warning deltas based on reference build #3
[WARNING] Attempt to (de-)serialize anonymous class org.jfrog.hudson.mavenDependenciesRecorder$1; see:
https://jenkins.io/redirect/serialization-of-anonymous-classes/
[INFO]
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 33.410 s
[INFO] Finished at: 2020-07-20T01:59:24Z
[INFO] -----
Waiting for Jenkins to finish collecting data
[JENKINS] Archiving /var/lib/jenkins/workspace/petclinic_ci_job/pom.xml to org.springframework.samples/spring-petclinic/4.2.5-SNAPSHOT/spring-petclinic-4.2.5-SNAPSHOT.pom
[JENKINS] Archiving /var/lib/jenkins/workspace/petclinic_ci_job/target/petclinic.war to org.springframework.samples/spring-petclinic/4.2.5-SNAPSHOT/spring-petclinic-4.2.5-SNAPSHOT.war
channel stopped
[ANALYSIS-COLLECTOR] Ignore new warnings since this is the first valid build
[ANALYSIS-COLLECTOR] Plug-in Result: Failed - <a href="analysisResult">538 warnings</a> of <a href="analysisResult/HIGH">priorities HIGH</a>
exceed the threshold of 200 by 338
Build step [Deprecated] Publish combined static analysis results' changed build result to FAILURE
Finished: FAILURE

```

Page generated: Jul 20, 2020 1:59:30 AM UTC REST API Jenkins ver. 2.222.3

## AGAIN CHANGING PRIORITIES OF WARNINGS AND BUILD TO SUCCESS

The screenshot shows the 'Post-build Actions' configuration page for the 'petclinic\_ci\_job'. The 'Health priorities' section is highlighted, showing the configuration for build health based on warning thresholds:

Status thresholds (Totals)	All priorities	Priority high	Priority normal	Priority low
<span style="color: yellow;">!</span>	600	550	100	0
<span style="color: red;">!</span>	1000	600	200	500

If the number of total warnings is greater than one of these thresholds then a build is considered as unstable or failed, respectively. I.e., a value of 0 means that the build status is changed if there is at least one warning found. Leave this field empty if the state of the build should not depend on the number of warnings.

Compute new warnings (based on the last successful build unless another reference build is chosen below)

Default Encoding: \_\_\_\_\_

Trend graph: You can define the default values for the trend graph in a separate view.

Buttons at the bottom: Add post-build action, Save (highlighted with a yellow circle), Apply.

## UPDATE A CONFIGURATION

The screenshot shows the Jenkins job configuration interface for a job named 'petclinic\_ci\_job'. The 'Post-build Actions' section is open, displaying various actions that can be triggered after a build. One action, 'Deploy war/ear to a container', is highlighted with a yellow box and a cursor, indicating it is being selected or configured. Other actions listed include 'Publish combined static analysis results', 'Archive the artifacts', 'Build other projects', 'Deploy artifacts to Artifactory', 'Deploy artifacts to Maven repository', 'Maven Invoker Plugin Results', 'Record fingerprints of files to track usage', 'Stop Docker Containers', 'Git Publisher', 'SonarQube analysis with Maven', and 'Send build artifacts over SSH'. Below the actions are 'Save' and 'Apply' buttons.

This screenshot shows the same Jenkins job configuration interface, but the 'Post-build Actions' section has been expanded to show the details for the 'Deploy war/ear to a container' action. The 'WAR/EAR files' field is set to 'target/petclinic.war'. A tooltip for the 'target/petclinic.war' entry provides information about specifying Ant-style GLOBs. Other fields shown include 'Context path' (empty), 'Containers' (with an 'Add Container' button), and 'Deploy on failure' (unchecked). Below these fields are 'Save' and 'Apply' buttons.

UNDER WORKSPACE TARGET PATH GIVEN

Screenshot of Jenkins workspace for petclinic\_ci\_job on master:

**Workspace of petclinic\_ci\_job on master**

File list:

- git
- mvn/wrapper
- src
- target (highlighted)
- bowerc
- editorconfig
- .gitignore
- springBeans
- .travis.yml
- bower.json
- Jenkinsfile
- mvnw
- mvnw.cmd
- pom.xml
- readme.md
- Readme.txt
- sonar-project.properties

**Build History**

Time	Duration	Build Status
Jul 20, 2020 1:33:27 AM	45 B	view
Jul 20, 2020 1:33:27 AM	192 B	view
Jul 20, 2020 1:33:27 AM	61 B	view
Jul 20, 2020 1:33:27 AM	726 B	view
Jul 20, 2020 1:33:27 AM	31 B	view
Jul 20, 2020 1:33:27 AM	134 B	view
Jul 20, 2020 1:33:27 AM	1.88 KB	view
Jul 20, 2020 1:33:27 AM	6.95 KB	view
Jul 20, 2020 1:33:27 AM	4.92 KB	view
Jul 20, 2020 1:33:27 AM	16.71 KB	view
Jul 20, 2020 1:33:27 AM	8.32 KB	view
Jul 20, 2020 1:33:27 AM	26 B	view
Jul 20, 2020 1:33:27 AM	332 B	view

**(all files in zip)**

Screenshot of Jenkins workspace for petclinic\_ci\_job on master after build:

**Workspace of petclinic\_ci\_job on master**

File list:

- target/ (highlighted)
- classes
- generated-sources/annotations
- generated-test-sources/test-annotations
- maven-archiver
- maven-status/maven-compiler-plugin
- pmd/rulesets
- site
- spring-petclinic-4.2.5-SNAPSHOT
- surefire-reports
- test-classes/org/springframework/samples/petclinic
- checkstyle-cachefile
- checkstyle-checker.xml
- checkstyle-result.xml
- findbugsXml.xml
- petclinic.war
- pmd.xml

**Build History**

Time	Duration	Build Status
Jul 20, 2020 2:02:16 AM	1.37 KB	view
Jul 20, 2020 2:02:16 AM	7.74 KB	view
Jul 20, 2020 2:02:16 AM	128.18 KB	view
Jul 20, 2020 2:02:27 AM	41.25 KB	view
Jul 20, 2020 2:02:15 AM	39.98 MB	view
Jul 20, 2020 2:02:33 AM	3.55 KB	view

**(all files in zip)**

Waiting for 15.206.163.14...

The screenshot shows the Apache Tomcat 8.5.56 homepage. At the top, there is a navigation bar with links to Home, Documentation, Configuration, Examples, Wiki, and Mailing Lists. On the right, there is a "Find Help" search bar. Below the navigation bar, the title "Apache Tomcat/8.5.56" is displayed, along with the Apache logo. A green banner at the top says "If you're seeing this, you've successfully installed Tomcat. Congratulations!" Below the banner, there is a cartoon cat icon and a section titled "Recommended Reading" with links to Security Considerations How-To, Manager Application How-To, and Clustering/Session Replication How-To. To the right, there are three buttons: "Server Status", "Manager App", and "Host Manager". Below this, there is a "Developer Quick Start" section with links to Tomcat Setup, First Web Application, Realms & AAA, JDBC DataSources, Examples, Servlet Specifications, and Tomcat Versions. The main content area is divided into three columns: "Managing Tomcat", "Documentation", and "Getting Help". The "Managing Tomcat" column contains information about manager webapp access and links to Release Notes, Changelog, and Migration Guide. The "Documentation" column links to Tomcat 8.5 Documentation, Tomcat 8.5 Configuration, and Tomcat Wiki. The "Getting Help" column lists mailing lists like tomcat-announce, tomcat-users, taglibs-user, and tomcat-dev.

The screenshot shows the Jenkins job configuration for "petclinic\_ci\_job". The job path is "Jenkins > petclinic\_ci\_job". The configuration page has tabs for General, Source Code Management, Build Triggers, Build Environment, Pre Steps, Build, Post Steps, and Build Settings. The "Post-build Actions" tab is selected. Under "Deploy war/ear to a container", there is a "WAR/EAR files" field containing "target/petclinic.war". Below it is a "Context path" field. The "Containers" section shows a "Tomcat 8.x Remote" configuration with "Credentials" set to "deployer/\*\*\*\*\*" and "Tomcat URL" set to "http://13.233.140.224:8081". There is a "Deploy on failure" checkbox. At the bottom, there are "Save" and "Apply" buttons. A yellow circle highlights the "Deploy on failure" checkbox. The status bar at the bottom left shows "petclinic.war Canceled".

The screenshot shows a Jenkins job log for 'petclinic\_ci\_job #7'. The log output is as follows:

```
[PMD] Searching for all files in /var/lib/jenkins/workspace/petclinic_ci_job/target that match the pattern pmd.xml
[PMD] Parsing 1 file in /var/lib/jenkins/workspace/petclinic_ci_job/target
[PMD] Successfully parsed file /var/lib/jenkins/workspace/petclinic_ci_job/target/pmd.xml of module petclinic with 6 unique warnings and 0 duplicates.
[PMD] Computing warning deltas based on reference build #6
[WARNING] Attempt to (de-)serialize anonymous class org.jfrog.hudson.maven2.MavenDependenciesRecorder$1; see: https://jenkins.io/redirect/serialization-of-anonymous-classes/
[INFO]
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 33.725 s
[INFO] Finished at: 2020-07-20T02:07:46Z
[INFO] -----
Waiting for Jenkins to finish collecting data
[JENKINS] Archiving /var/lib/jenkins/workspace/petclinic_ci_job/pom.xml to org.springframework.samples/spring-petclinic/4.2.5-SNAPSHOT/spring-petclinic-4.2.5-SNAPSHOT.pom
[JENKINS] Archiving /var/lib/jenkins/workspace/petclinic_ci_job/target/petclinic.war to org.springframework.samples/spring-petclinic/4.2.5-SNAPSHOT/spring-petclinic-4.2.5-SNAPSHOT.war
channel stopped
[ANALYSIS-COLLECTOR] Computing warning deltas based on reference build #6
[ANALYSIS-COLLECTOR] Ignore new warnings since this is the first valid build
[ANALYSIS-COLLECTOR] Plug-in Result: Success - no threshold has been exceeded
[DeployPublisher][INFO] Attempting to deploy 1 war file(s)
[DeployPublisher][INFO] Deploying /var/lib/jenkins/workspace/petclinic_ci_job/target/petclinic.war to container Tomcat 8.x Remote with context null
    Redeploying [/var/lib/jenkins/workspace/petclinic_ci_job/target/petclinic.war]
    Undeploying [/var/lib/jenkins/workspace/petclinic_ci_job/target/petclinic.war]
    Deploying [/var/lib/jenkins/workspace/petclinic_ci_job/target/petclinic.war]
Deployed: SUCCESS
```

The log ends with 'Deployed: SUCCESS'.