

CONTINUOUS INTEGRATION

Creative Software Architectures for
Collaborative Projects

CS 130

Donald J. Patterson



CONTINUOUS INTEGRATION

GOAL: RAPID UPDATES TO DEPLOYED CODE

- Prevent merge problems
 - Reducing the size of the changes in a branch
 - The longer a branch is checked out the more risk there is in merging it back into the main line
- Eventually, the master branch may become so different from the developers' baselines that they enter what is sometimes referred to as "merge hell", or "integration hell", [2] where the time it takes to integrate exceeds the



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GOAL: RAPID UPDATES TO DEPLOYED CODE

- Key feature: Automated Testing
 - Every time code is pushed to github
 - a server runs all the tests and reports the results
- Quality control



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EXAMPLE: TRAVIS CI

- All tests in the code base are run to make sure that the developers didn't break anyone else's code



Search all repositories



My Repositories +

✓ djp3/2016-09-Westmont-CS130-github-tutorial #3

⌚ Duration: 47 sec

📅 Finished: about 2 hours ago

✓ samkaufman/CurrencyRequestor #14

⌚ Duration: 3 min 29 sec

📅 Finished: about a year ago

✓ hammersmith/bookends #120

⌚ Duration: 2 min 46 sec

📅 Finished: 2 years ago

djp3 / 2016-09-Westmont-CS130-github-tutorial

build passing

Current Branches Build History Pull Requests

More options

✓ ticket_001 Testing Travis on a different branch

🔗 #3 passed

🔄 Restart build

📄 Commit 737e840

⌚ Elapsed time 47 sec

📄 Compare 737e84064be3

📅 about 2 hours ago

🌟 Don Patterson authored and committed

Job log

View config

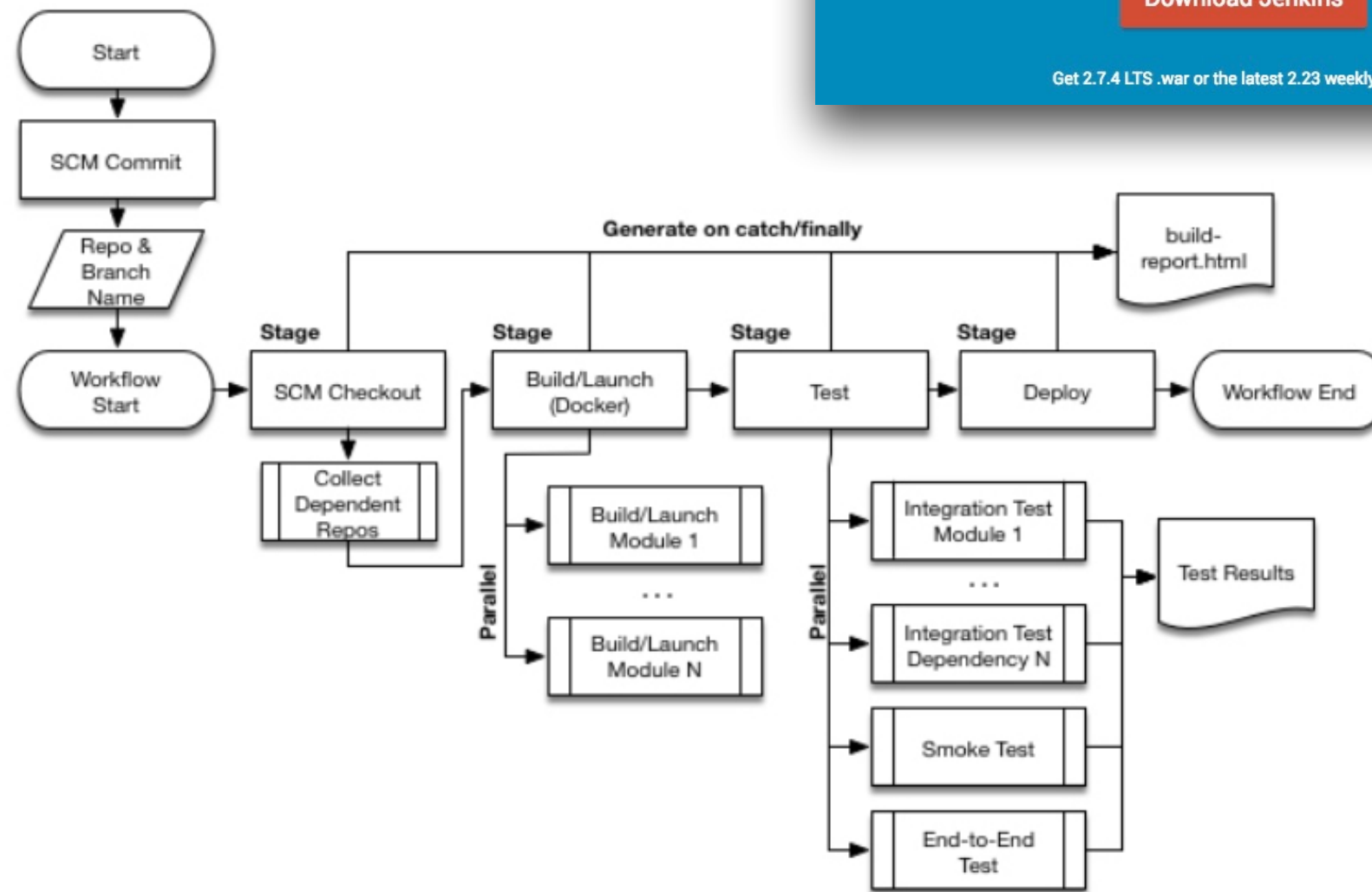
✖ Remove log

⌵ Raw log

```
1 Using worker: worker-linux-docker-6ddec97a.prod.travis-ci.org:travis-linux-10
2
3 Build system information system_info
70
71 $ export DEBIAN_FRONTEND=noninteractive fix.CVE-2015-7547
110 $ git clone --depth=50 --branch=ticket_001 https://github.com/djp3/2016-09-Westmont-CS130-github-tutorial.git djp3/2016-09- git.checkout 0.38s
120
121 This job is running on container-based infrastructure, which does not allow use of 'sudo', setuid and setgid executables.
122 If you require sudo, add 'sudo: required' to your .travis.yml
123 See https://docs.travis-ci.com/user/workers/container-based-infrastructure/ for details.
124 $ jdk_switcher use oraclejdk8
125 Switching to Oracle JDK8 (java-8-oracle), JAVA_HOME will be set to /usr/lib/jvm/java-8-oracle
126 $ java -Xmx32m -version
127 java version "1.8.0_31"
128 Java(TM) SE Runtime Environment (build 1.8.0_31-b13)
129 Java HotSpot(TM) 64-Bit Server VM (build 25.31-b07, mixed mode)
130 $ javac -J-Xmx32m -version
131 javac 1.8.0_31
132 $ mvn install -DskipTests=true -Dmaven.javadoc.skip=true -B -V install 18.43s
621 $ mvn test -B 5.53s
622 Java HotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=192m; support was removed in 8.0
623 [INFO] Scanning for projects...
624 [INFO]
625 [INFO] -----
626 [INFO] Building github-tutorial 0.0.1-SNAPSHOT
627 [INFO] -----
628 [INFO]
629 [INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ github-tutorial ---
630 [WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
631 [INFO] skip non existing resourceDirectory /home/travis/build/djp3/2016-09-Westmont-CS130-github-tutorial/src/main/resources
632 [INFO]
633 [INFO] --- maven-compiler-plugin:3.3:compile (default-compile) @ github-tutorial ---
```

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EXAMPLE: JENKINS





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— COMPUTING LAB —