How to Build an Appium Continuous Testing Pipeline

Step-by-Step Tutorial

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Today’s speakers

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Agenda

01 Why do we need continuous testing? 15 min
02 The continuous testing environment 5 min
03 Step-by-step demo 30 min
04 Q&A 10 min
Digital transformation impacts business

Customer empowerment

Digital is a key survival strategy

Frequent app releases (mobile: 2 weeks, web: daily, even hourly)

R&D organizations under pressure more, faster, better
Unique mobile market characteristics

- Device matrix large and constantly evolving
- Fast technology innovation & complex integration (Alexa/Siri, IoT, AR..)
- High cost of error - App/play stores create a distribution gap that makes rollback impossible

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<th>Scope</th>
<th>*</th>
<th>Velocity</th>
<th>*</th>
<th>Risk</th>
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SDLC Paradigm shift

Speed, agility and risk reduction

Agile

“Develop smaller chunks - we will probably change our mind”

DevOps

“get your team talking…”

CI/CD

“make sure you didn't break anything…”
What is Continuous Integration?

“a software development practice where members of a team integrate their work frequently...

Each integration is verified by an automated build... to detect integration errors as quickly as possible.”
There is no Continuous Integration without Continuous Testing
The estimated* impact of a shortened feedback loop

R&D productivity will increase from 10% to 35% since more time will be invested on Dev-test activities

* Data source: Experitest customers
Rapid feedback significantly increases R&D effectiveness.
Continuous testing in mobile - implications

- High scales simultaneous testing of different use cases, devices and network conditions
- Highly stable test suites
- Test environment management requires IT / Security expert
- Rapid result analysis and actionable feedback
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01 Why do we need continuous testing?
02 The continuous testing environment
03 Step-by-step demo
04 Q&A
The Continuous Testing process

1. Commit app code
2. Pull app source
3. Build app
4. Pull test source
5. Build test project
6. Load app to cloud
7. Trigger test execution
8. Consolidate test results
9. Version approved?
10. Debug / update test suite
Today’s demo environment

**Pre-prepared**
- Appium tests
- TestNG framework
- Jenkins server

**Tools used**
- Appium* Studio for Eclipse
- Eclipse*
- Jenkins*
- Git
- Gradle
- Experitest Digital Device Lab
- Experitest Reporter

**What we will do**
- Build Application (Jenkins)
- Pull tests from Git and build test project (Jenkins + Gradle)
- Upload application to the cloud - Jenkins (shell script)
- Run Tests (Jenkins + Digital Device Lab)
- Link test results to Jenkins

* Any test framework, IDE and CI tools can be used
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01 Why do we need continuous testing?

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04 Q&A
Configuration and setup
Executing from Jenkins
Recap

What we did

• Used CI server to build an application from repository
• Used CI server to build a test project from repository
• Used CI to upload application to digital device lab
• Used CI and digital device lab to installed application numerous devices and run tests in parallel on
• Used Reporter to link test results to CI and analyzed test results

Tools / frameworks used

• Appium*
• TestNG*
• Eclipse*
• Jenkins*
• Git
• Gradle
• Appium Studio for Eclipse
• Experitest Digital Device Lab
• Experitest reporter

* Any test framework, IDE and CI tools can be used
How the SeeTest platform support hands free continuous testing

Epic → Story thinning → Prototype → Acceptance Criteria → Functional Spec

- Epic: Product Owner, Analyst
- Story thinning: Product Owner, Analyst
- Prototype: Designer, Analyst
- Acceptance Criteria: Tester, Test Engineer
- Functional Spec: Dev Engineer

Dev-Test Feedback cycle - 1 hour

- Showcase / Demo Sign-off
  - Product Owner

Acceptance testing
- Tester

Automated testing
- Dev & Test Engineer

Build & Deploy
- DevOps Engineer

Code (incl. White box Test)
- Dev & Test Eng.

RESTful API to mass deploy application on targeted devices

Digital assurance Lab (SeeTestCloud)
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Thank You!