

Building, Testing & Deploying

Android Apps with Jenkins

Christopher Orr



iosphere



Slichtenhorst

Driedorp

Kruishaar

Appel

Hoogland

Hooglanderveen

Holkerveen

Nijk

Bunsenstraat

Amersfoort

Hoewel

Outputweg

Hogeweg

Amersfoort

Stoutenburg

Musschendam

Randweg

Leusden

Schutterhoef

Leusden-Zuid

Doornseweg

Rijksweg

broek

Roaming

12:47

91 %

Edit

My maps

Store



Paris



Venice



Vienna



Zurich



Sydney



Washington, D.C.





Android is the problem

CURRENT APK

Supported devices

3147

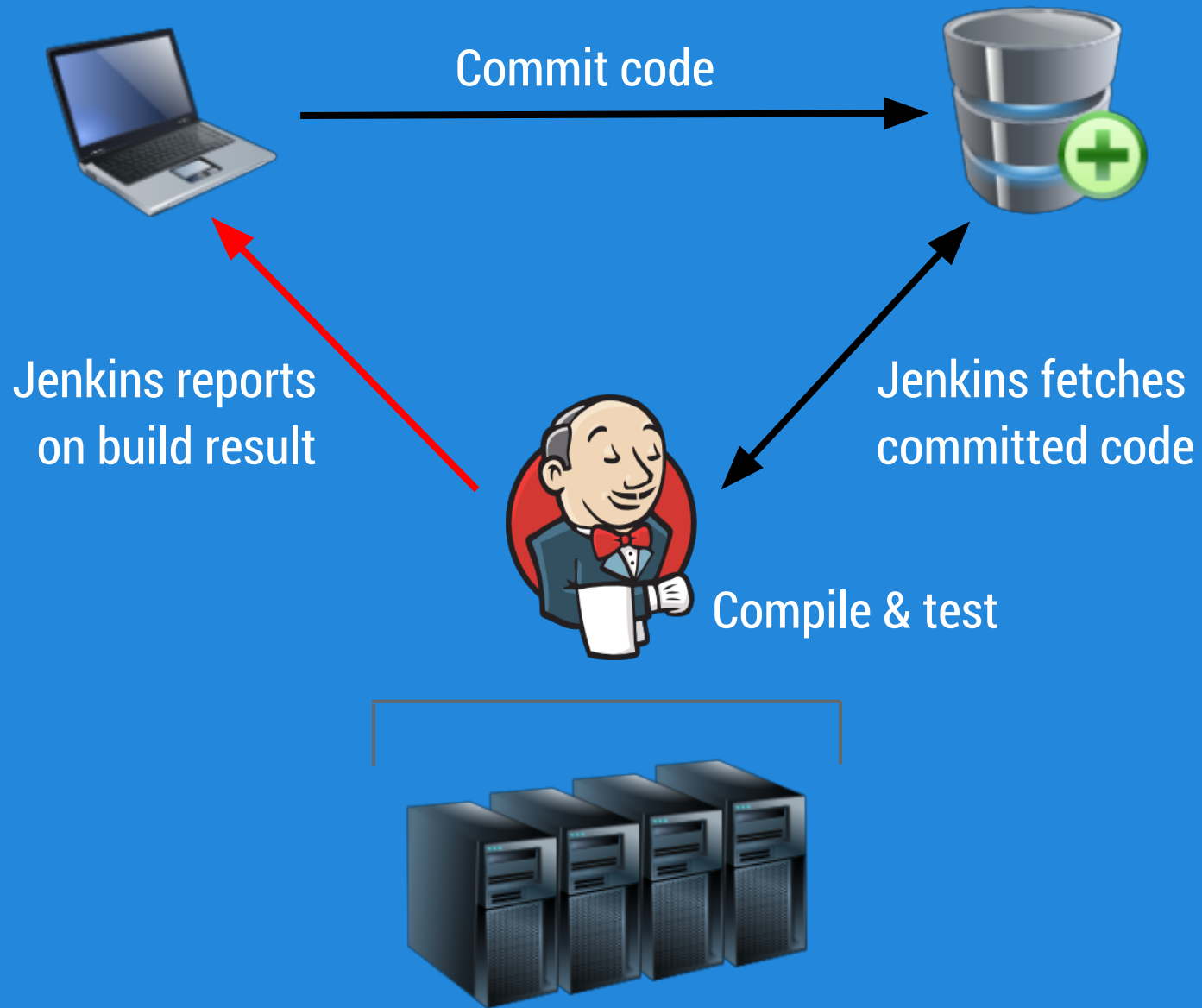
[See list](#)

Developers are the problem





Jenkins





Jenkins
jenkinsci

📍 Santa Clara, CA

🌐 <http://jenkins-ci.org/>

🕒 Joined on Jul 21, 2009

1.0k **511**
public repos members

Building



Building an Android app

Prerequisites



Jenkins

- Code
 - JDK
 - Java build tool
(Ant, Gradle, Maven)
 - Android SDK tools
 - Android platform
- Git plugin
(SVN, Mercurial, Perforce, ...)
 - Automated install
 - Automated install
 - Automated install
(Android "Emulator" plugin)

Building an Android app

1. Check out code

2. Run "Create Android build files" step

- ↳ Android SDK & platforms are downloaded
- ↳ Android Ant build files are created/updated

3. Run build tool with `sdk.dir=$ANDROID_HOME`

- ↳ Project is compiled; .apk is created

Demo



Testing

Test frameworks & tools



Calabash.sh



JUnit support built-in



















xUnit plugin

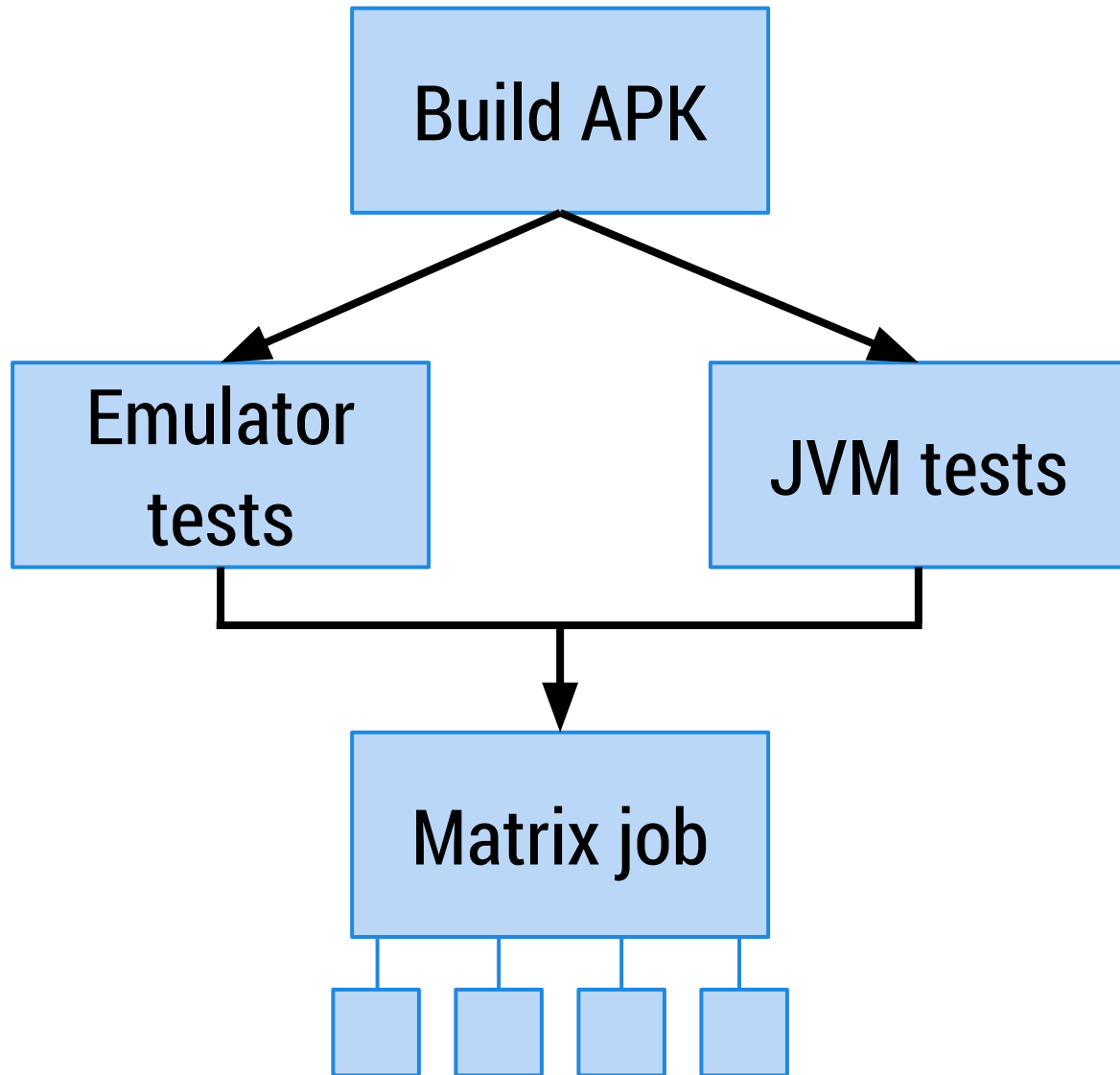
Build Failure Analyser

Creating a test job

1. Enable "Run an Android emulator during build"
 - ↳ Automatically creates an emulator if required
2. Copy APKs from previous job
 - ↳ "Copy Artifact" plugin
3. Run "Install Android package" step
4. Run "Execute shell" step: `adb shell am instrument`
5. Get JUnit XML output from emulator
6. Parse the JUnit XML

Matrix jobs

Configuration Matrix		2.3.3	3.0	4.2
en_GB	ldpi			
	xhdpi			
de_DE	ldpi			
	xhdpi			
nl_NL	ldpi			
	xhdpi			



Demo



Deploy

Deploying an APK

Basic

- ↳ Push to webserver with "Publish over..." plugins

Third-party solutions

- ↳ Plugins available for all the most popular services

HockeyApp

TestFlight

Zubhium

Still waiting for a Google Play API to appear...

Triggering a deployment

No trigger

- ↳ Every successful build gets deployed

Manual

- ↳ Click the "Build now" button yourself

SCM-triggered

- ↳ Pushing a git tag triggers a build and deploy

Build promotion

- ↳ "Only manually-tested builds may be deployed"

Recipe plugin



Build promotion

Promotions



CuckooChess QA Approval

Promotion History

[_cuckoochess-android-QA » promotion » CuckooChess QA Approval #3](#)

Qualification (promoted 32 sec ago — 2 hr 37 min after build)

Manually Approved

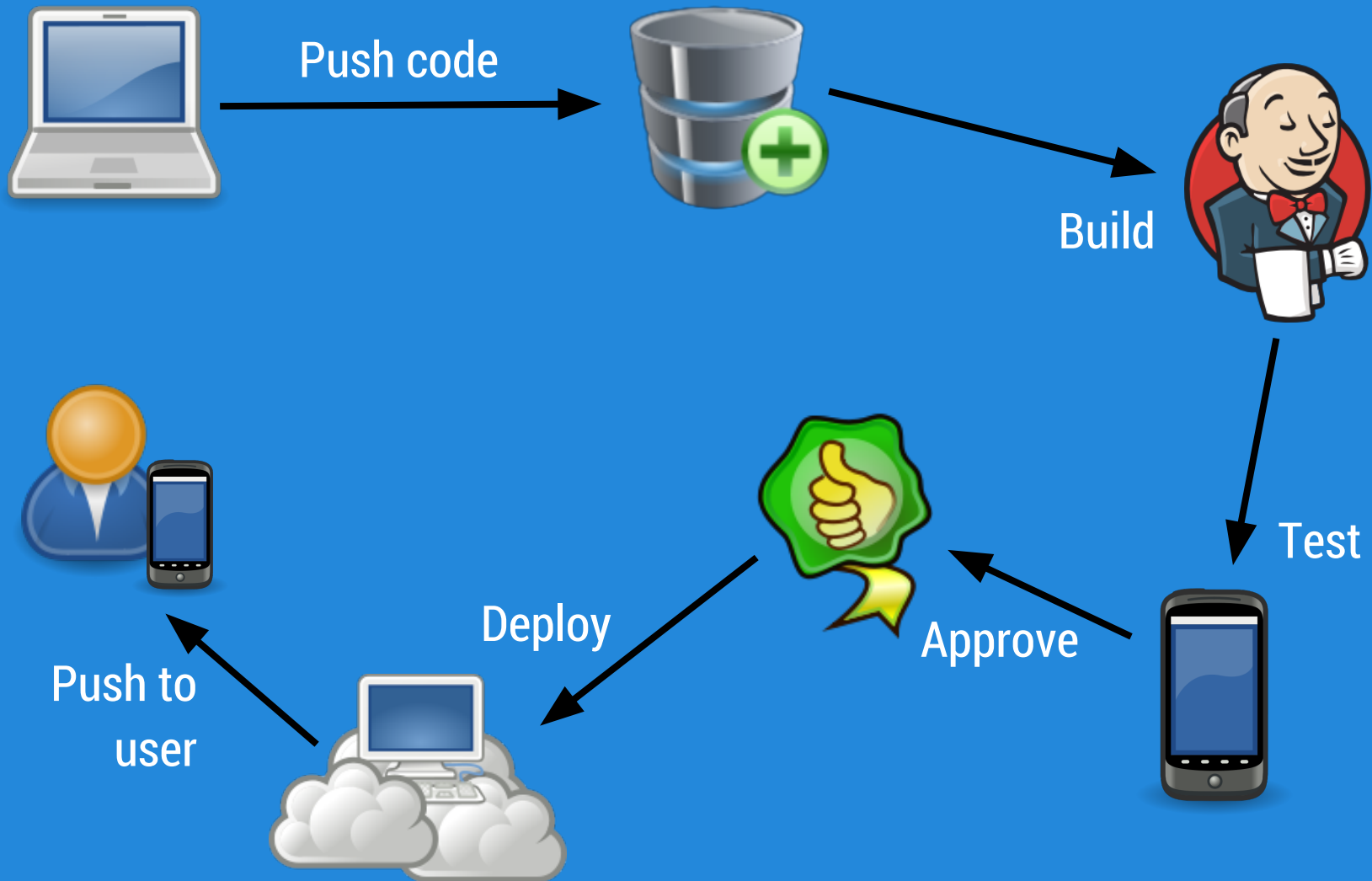
Approved by Mark Prichard

Status



Successfully promoted ([log](#))

Re-execute promotion



Plugins

Android Emulator

Android Lint

Build Failure Analyser

Build Flow

Build Promotion

Copy Artifact

Git

HockeyApp

JUnit Attachments

Publish Over...

Recipe

TestFlight

Workspace Cleaner

Zubhium

Android JUnit XML Test Runner

<https://github.com/jsankey/android-junit-report>

The end

chris@orr.me.uk

chris@iosphere.de

chris.orr.me.uk/+

github.com/orrc