

SAP Jam Android

Wrap-up by Stev

Part I

Before we start...

- Setup Android development env:

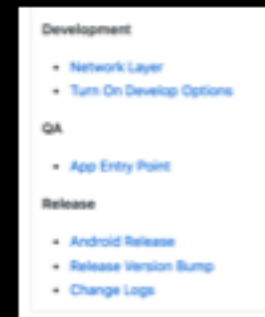
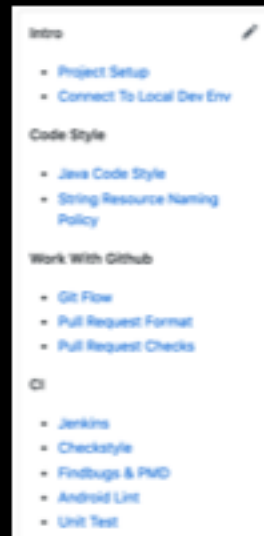
- <https://github.wdf.sap.corp/jamandroid/jamapp/wiki/Project-Setup>
- Google's official Android developer site:
 - d.android.com
 - <https://developer.android.com/docs/>

Our Project's setup

- Gradle based
- Use custom gradle wrapper -> dependencies from SAP nexus
- Modularized -> (not very well) `:app` `:commons`
- Mixed -> Java & Kotlin (preferred for newly built features)

Development Checks

- Please refer to wiki:
 - <https://github.wdf.sap.corp/jamandroid/jamapp/wiki>



Build Types

- **`debug`**

- Daily development
- Debug signature
- No proguard

- **`release`**

- Shipped version
- SAP signature
- Have proguard

- **`preview`**

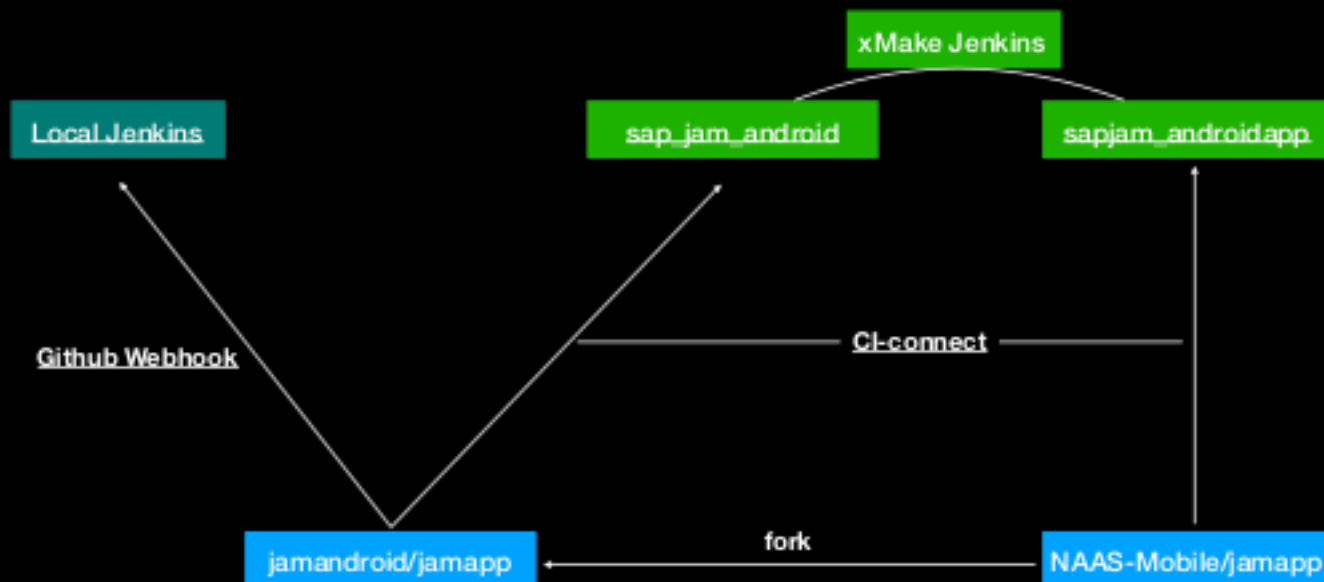
- Internal version
- Local signature
- Have proguard

Release Process

- Generate release build
- How: <https://github.wdf.sap.corp/jamandroid/jamapp/wiki/Android-Release>

- QA testing -> sign off
- PM approve -> Moma: <https://moma.mo.sap.corp/#/apps/91>
- Open a BCP ticket to NAAS team

CI Build Diagram



Local Jenkins

Mac 1

Docker Container

Jenkins Master
(executors: 0)

Android SDK
Xcode
Ruby Env
Appium
...

Slave Node 1 (Jam_Jenkins_0)

Mac 2

Android SDK
Xcode
Ruby Env
Appium
...

Slave Node 2 (Jam_Jenkins_1)

Feel free to close if this is not a real issue

Add more commits by pushing to the [bugfix/1982/CBB-48565](#) branch on [jamandroid/jamapp](#).



Review required

At least 1 approving review is required by reviewers with write access. [Learn more.](#)

[Show all reviews](#)



All checks have passed

4 successful checks

[Hide all checks](#)



| All JamAndroid JamAndroid_Dashboard JamiOS QA | | | |
|---|---|----------------------------|---|
| S | W | Name | Last Success |
| ! | 🔧 | JamAndroid_Branch_Build | 2 mo 27 days - #18 - origin/feature/1811/CUI/mobile-screens |
| ✓ | 🔧 | JamAndroid_Branch_Findbugs | 3 days 3 hr - #366 |

The screenshot displays a GitHub Pull Request (PR) interface. On the left, a 'Checks' section shows four status checks: 'Android Lint' (SUCCESS), 'Findbugs / PMD' (SUCCESS), 'Jam Android Unit Test' (SUCCESS), and 'MobileService/xmake-mobile-dev:PR-dockerrun' (PENDING). Below these, a message states 'This branch is out-of-date with the base branch' with an 'Update branch' button. A 'Squash and merge' button is also visible. On the right, a list of jobs is shown, each with a status icon, a name, and a duration. The jobs are: 'JamAndroid_Branch_PMD' (3 days 3 hr), 'JamAndroid_Develop_Build' (3 days 1 hr), 'JamAndroid_Develop_UnitTest' (3 days 1 hr), 'JamAndroid_PR_Checkstyle' (8 mo 16 days), 'JamAndroid_PR_CodeQualityAssurance' (3 days 3 hr), 'JamAndroid_PR_Lint' (3 days 3 hr), 'JamAndroid_PR_UnitTest' (3 days 3 hr), 'JamAndroid_Preview_Build' (2 mo 23 days), 'JamAndroid_Release_Automation_Build' (1 mo 10 days), 'JamAndroid_Release_Build' (7 mo 26 days), and 'JamAndroid_Release_Upgrade_Build' (7 mo 26 days). At the bottom left, there is a 'Write' tab and a 'Preview' tab, with a 'Leave a comment' text area. At the bottom right, there is a 'Join' button and a 'S M L' link.

| Status | Job Name | Duration |
|--------|-------------------------------------|---------------------------------------|
| ✓ | JamAndroid_Branch_PMD | 3 days 3 hr - #389 |
| ✓ | JamAndroid_Develop_Build | 3 days 1 hr - #305 |
| ✓ | JamAndroid_Develop_UnitTest | 3 days 1 hr - #318 |
| ✗ | JamAndroid_PR_Checkstyle | 8 mo 16 days - #238 |
| ✓ | JamAndroid_PR_CodeQualityAssurance | 3 days 3 hr - #393 |
| ✓ | JamAndroid_PR_Lint | 3 days 3 hr - #393 |
| ✓ | JamAndroid_PR_UnitTest | 3 days 3 hr - #460 |
| ✓ | JamAndroid_Preview_Build | 2 mo 23 days - #27 - preview/v1.14.10 |
| ✓ | JamAndroid_Release_Automation_Build | 1 mo 10 days - #1 - release/release |
| ✓ | JamAndroid_Release_Build | 7 mo 26 days - #5 - v1.13.4 |
| ✓ | JamAndroid_Release_Upgrade_Build | 7 mo 26 days - #1 - origin/develop |

Basic Knowledge

- Java -> ART and Dalvik <https://source.android.com/devices/tech/dalvik>
- Kotlin
 - <https://kotlinlang.org/>
- Gradle
 - <http://google.github.io/android-gradle-dsl/current/>

- Android Fundamentals
 - <https://developer.android.com/guide/components/fundamentals>

Advanced

- [UI] Activity / Fragment lifecycle
- Data persistence
 - Shared Preference
 - SQLite -> android-sqlcipher
 - DataVault -> SFSecureStore
- Push Notification -> FCM
- [UI] WebView
 - <https://developers.google.com/web/tools/chrome-devtools/remote-debugging/>
 - <https://developer.android.com/guide/webapps/webview#Binding.JavaScript>

Advanced (continued)

Advanced (continued)

- [UI] ListView (obsoleted) / RecyclerView
 - [Google I/O 2010 - The world of ListView - YouTube](#)
 - [RecyclerView ins and outs - Google I/O 2016](#)
- [UI] ConstraintLayout
 - <https://developer.android.com/training/constraint-layout/>
- [Testing] Espresso
 - <https://developer.android.com/training/testing/espresso/>

Pro

- [Android Jetpack](#)
- [Android Architecture Components](#)
 - Data-binding
 - LiveData / ViewModel -> MVVM

- Room Persistence Library
- Navigation
- Work Manager
- Pagination Library
- Modern Android Development
 - <https://www.youtube.com/watch?v=IrMw7MEgADk>
 - <https://plus.google.com/+DianneHackborn/posts/FXCCYxapsDU> (backup)

Pro (continued)

- Kotlin-Java interpro
 - <https://kotlinlang.org/docs/reference/java-interop.html>
- Kotlin Android Extensions
 - <https://kotlinlang.org/docs/tutorials/android-plugin.html>
- Kotlin Standard Library
 - <https://kotlinlang.org/api/latest/jvm/stdlib/index.html>

Pro (continued)

- OkHttp / Retrofit
 - <https://square.github.io/retrofit/>
- Gson (alternatives: Jackson / fastjson)
- Picaso / Glide

Pro (continued)

- RxJava
 - RxKotlin
 - RxAndroid
 - RxBinding
- Event Bus build upon RxJava:
 - <https://github.wdf.sap.corp/jamandroid/jamapp/pull/1165>

Pro (continued)

- Dagger 2 <https://google.github.io/dagger/>

Pro (continued)

- Profile your app performance
 - <https://developer.android.com/studio/profile/>

Next Step High Priorities

- Performance
 - **Data cache** (requires architecture change)
- Crashes
 - <https://jira.successfactors.com/browse/CUB-47976>
 - **SyncAdapter** <https://developer.android.com/training/sync-adapters/>
- Testing
 - <https://jira.successfactors.com/browse/CUB-47977>
 - **Unit Test / Automation**

“Stay hungry, stay foolish.”

– Steve Jobs (1955 - 2011)

