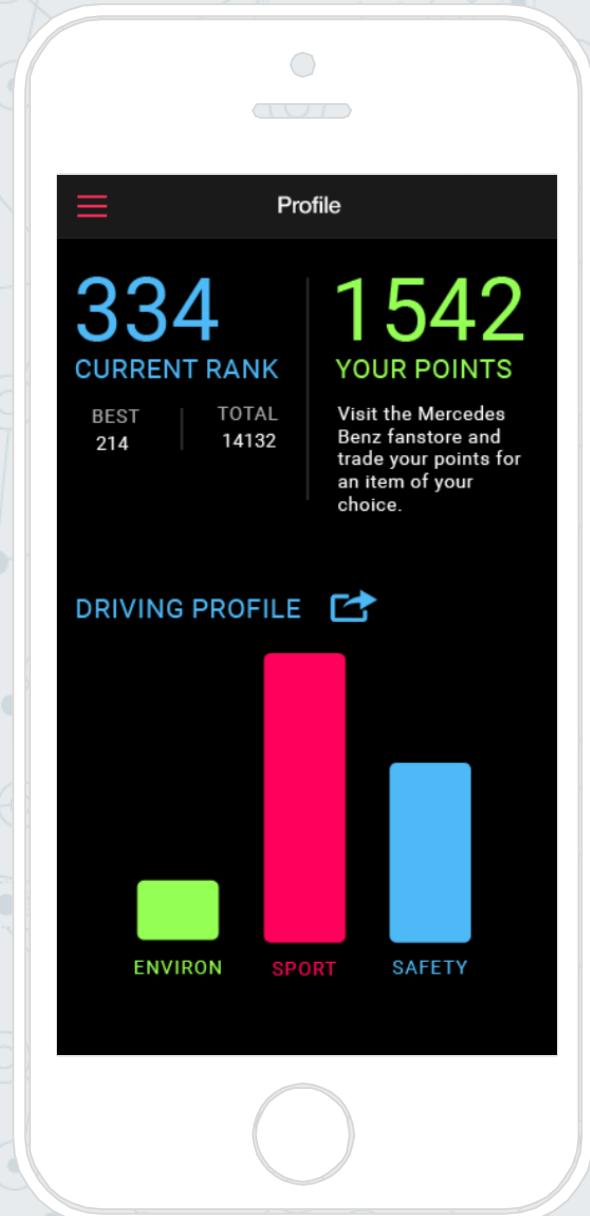


Continuous Integration

for an iPhone App

Projekt "badgeMe"

- iOS & Apple Watch Application
- Kooperation mit Daimler
- Backend zur Aufbereitung der Auto-Daten
- Auswertung von Fahreigenschaften (z.B. Geschwindigkeit, zurückgelegte Strecke, Benzinverbrauch, ...)
- Gamification mit Badges
- Erstellen eines Profils mit echten Daten
- Verwendung bei Drittanbietern

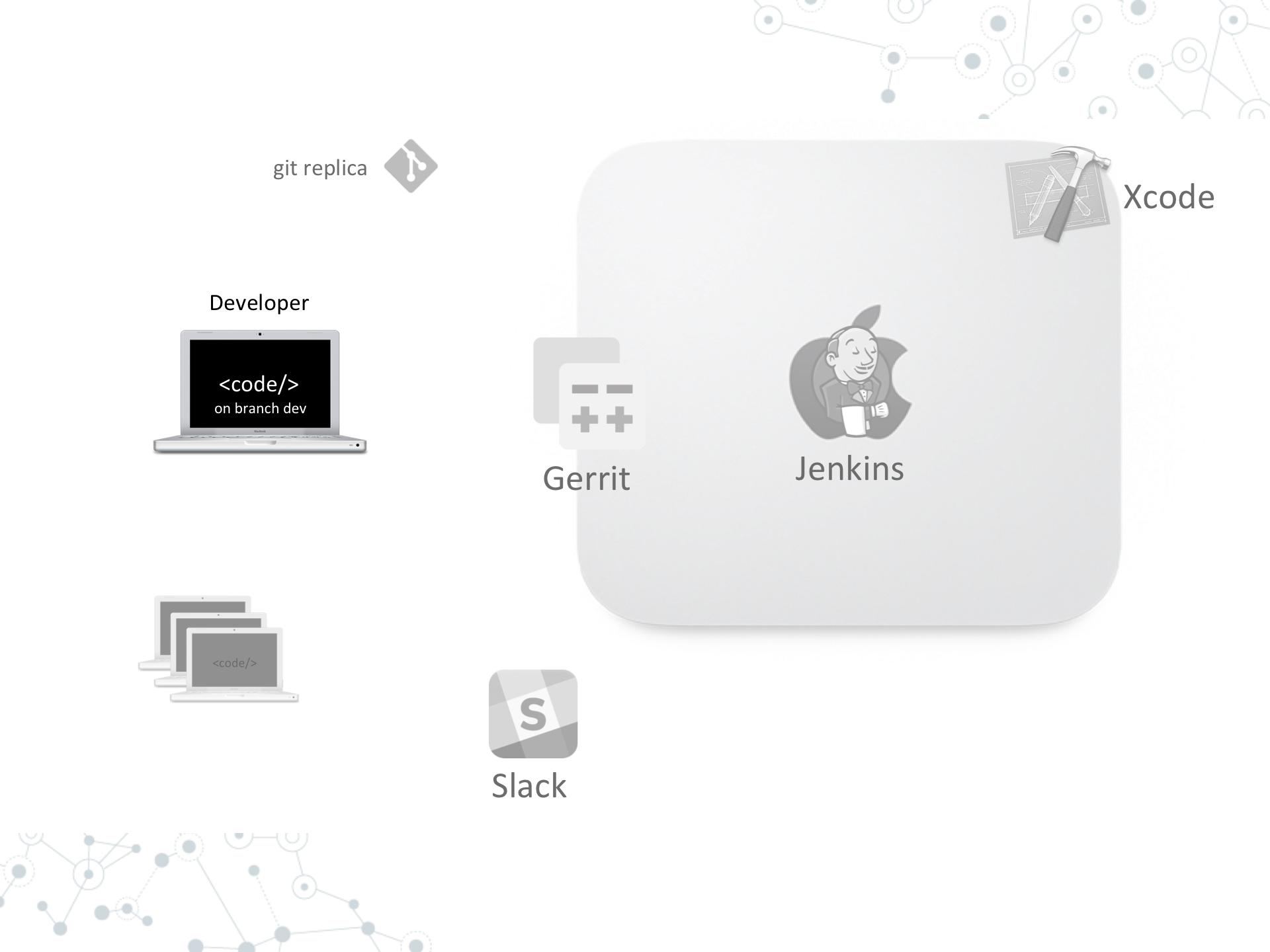


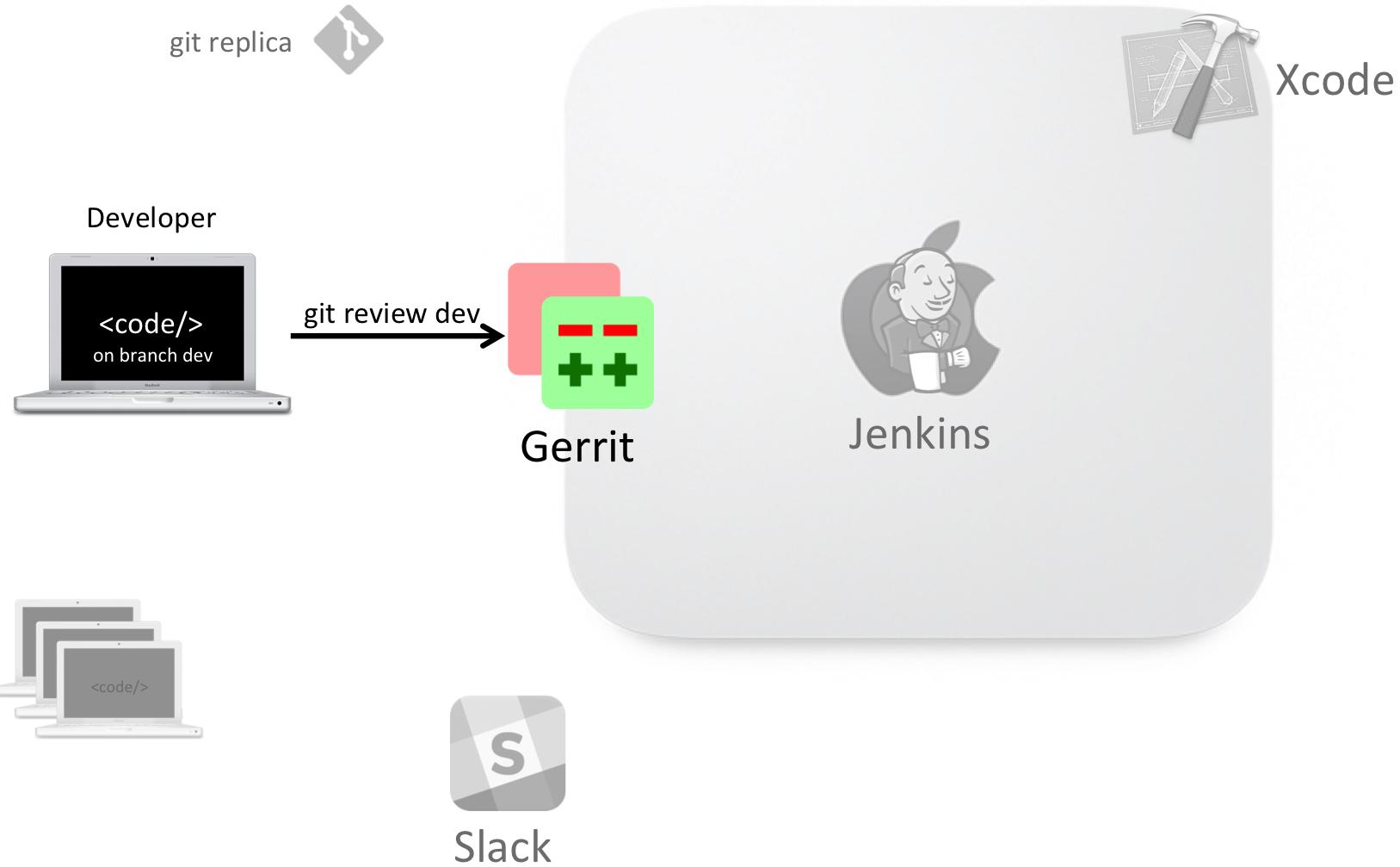
BadgeMe

Apple Watch & iOS App



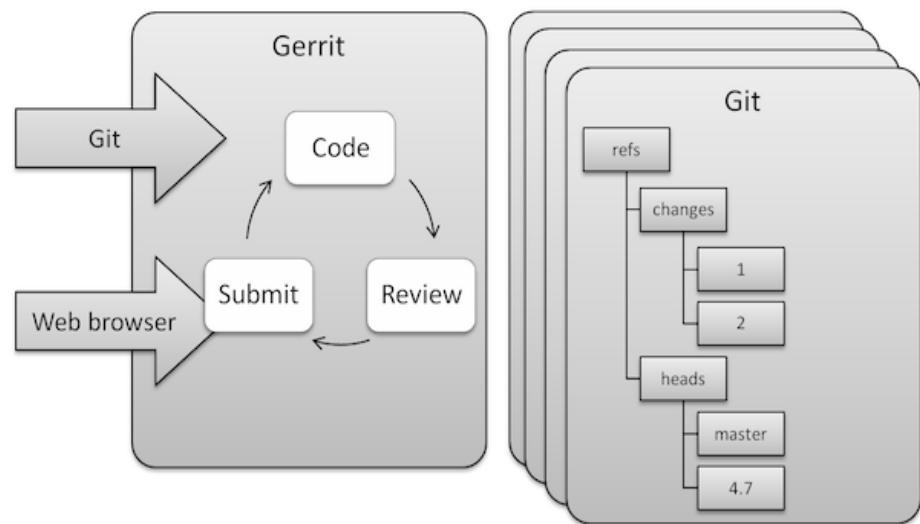
Development Stage





Gerrit

- Webbasiertes Code-Reviewing
- Erstellt interne Git-Repositories
- Side-by-side Änderungsansicht
- Hinzufügen von Anmerkungen
- Code-Änderungen im Browser möglich
- Möglichkeit, neue Patchsets zu erstellen



RankingController.swift | m... X

mrs.mmlab.mintern.mi.hdm-stuttgart.de:8081/#/c/64/1/badgeme+WatchKit+Extension/InterfaceController/RankingController.swift

All Projects Documentation

Search term

Register | Sign In

badgeme-app / badgeme WatchKit Extension/InterfaceController/RankingController.swift

Patch Set Base 1

similarity index 74%
rename from badgeme WatchKit Extension/RankingController.swift
rename to badgeme WatchKit Extension/InterfaceController/RankingController.swift
... skipped 3 common lines ...

```
4 //  
5 /// Created by Manuel Kalla on 09/06/15.  
6 /// Copyright © 2015 HdM. All rights reserved.  
7 ///  
8  
9 import Foundation  
10 import WatchKit  
11  
12  
13 class RankingController: WKInterfaceController {  
14     @IBOutlet var rankingLabel: WKInterfaceLabel!  
15     var rank:Int = 14  
16     var maxRank:Int = 1324  
17  
18  
19     override func awakeWithContext(context: AnyObject?) {  
20         super.awakeWithContext(context)  
21         // Configure interface objects here.  
22     }  
23  
24     override func willActivate() {  
25         // This method is called when watch view controller is about to be visible to user  
26         super.willActivate()  
27         AnimationController.sharedInstance.startLabelAnimation(rankingLabel, _startValue:maxRank, _endValue:rank  
28         //WKInterfaceDevice().playHaptic(.Success)  
29     }  
30  
31     override func didDeactivate() {  
32         // This method is called when watch view controller is no longer visible  
33         super.didDeactivate()  
34 }
```

Patch Set 1

... skipped 3 common lines ...

```
4 //  
5 /// Created by Manuel Kalla on 09/06/15.  
6 /// Copyright © 2015 HdM. All rights reserved.  
7 ///  
8  
9 import Foundation  
10 import WatchKit  
11  
12  
13 class RankingController: WKInterfaceController {  
14     @IBOutlet var rankingLabel: WKInterfaceLabel!  
15     let rank:Int = 14  
16     let maxRank:Int = 1324  
17  
18  
19  
20     // MARK: Application Lifecycle  
21  
22     override func awakeWithContext(context: AnyObject?) {  
23         super.awakeWithContext(context)  
24         // Configure interface objects here.  
25     }  
26  
27  
28     override func willActivate() {  
29         // This method is called when watch view controller is about to be visible to user  
30         super.willActivate()  
31         AnimationController.sharedInstance.startLabelAnimation(rankingLabel, _startValue:maxRank, _endValue:rank  
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33     }  
34  
35     override func didDeactivate() {  
36         // This method is called when watch view controller is no longer visible  
37         super.didDeactivate()  
38     }  
39  
40 }
```

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All My Projects People Plugins Documentation Search term Search Manuel Schwandt

Open Merged Abandoned

Change 147 - Needs Verified

added Backend and Pushnotification test

Change-Id: I8d22255f4e5a750dac1832c26d1517f5c5609c54

Owner Manuel Kalla
Reviewers Add...
Project badgeme-app
Branch dev_demo
Topic
Strategy Merge if Necessary
Uploaded 2 seconds ago

Cherry Pick Rebase Abandon Follow-Up

Code-Review
Verified

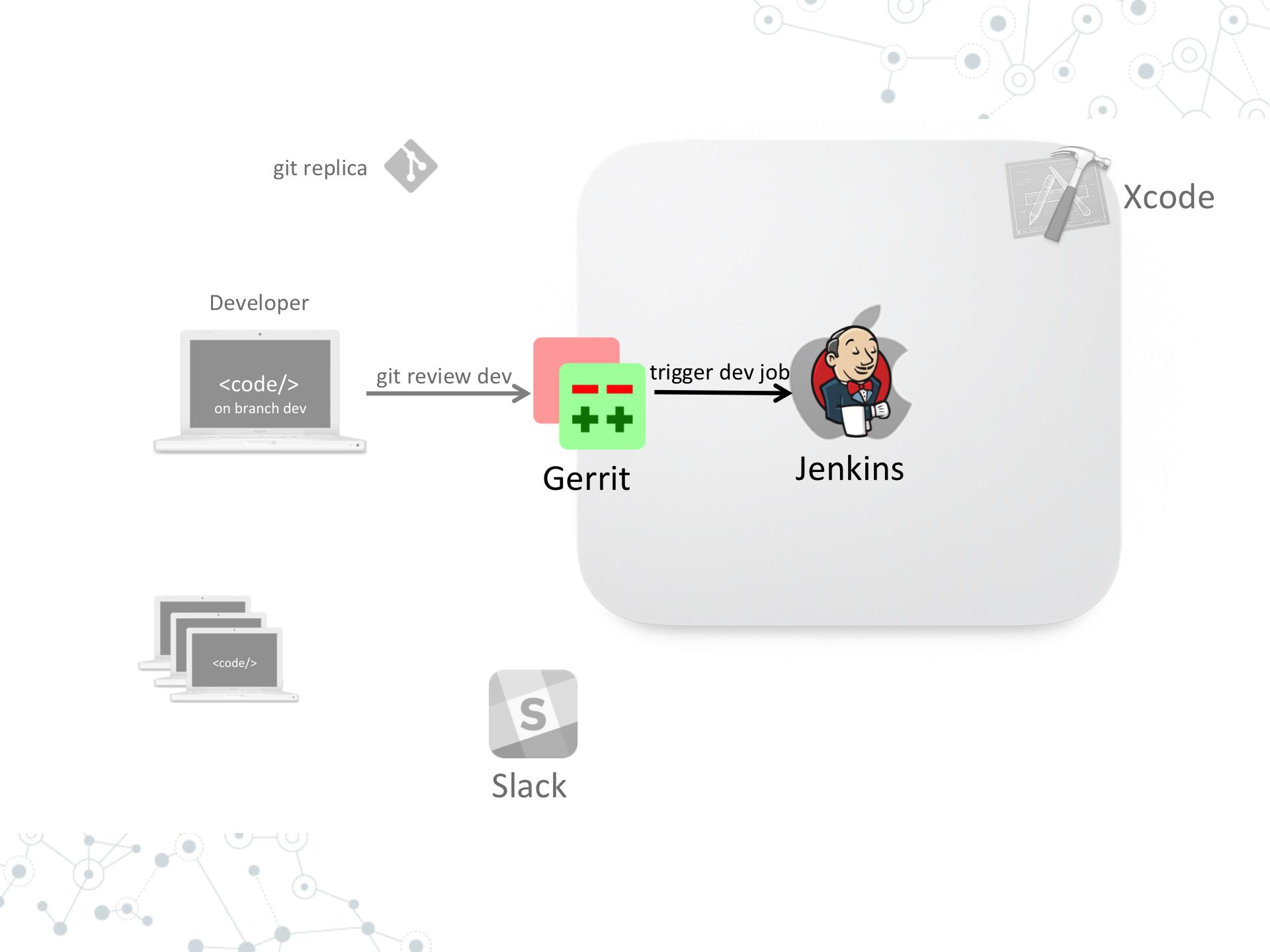
Author Manuel K <mkalla@gmx.net> Jun 17, 2015 5:00 PM
Committer Manuel K <mkalla@gmx.net> Jun 17, 2015 5:00 PM
Commit 3b0738ddb75b2c765106035250e1b485f305f549
Parent(s) 1e536d44b0c72213a871aae1a9cf4088d2cd50a
Change-Id I8d22255f4e5a750dac1832c26d1517f5c5609c54

Files Open All Diff against: Base Edit

File Path Comments Size
Commit Message 14
badgemeTests/badgemeTests.swift +13, -1

History Expand All
Manuel Kalla Uploaded patch set 1. 5:00 PM

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Jenkins



Jenkins

- Continuous Integration Service
- Unterstützt Version Control Systems (CVS, SVN)
- Ausführung / Überwachung von sich wiederholenden Jobs
 - Builden von Software-Projekten
 - Automatisierte Testdurchführung
- Erweiterbar durch Plugins
- REST-basierte Schnittstelle



Jenkins Konfiguration

○ Plugins

- Git
- Xcode
- Slack
- Gerrit-Trigger

○ Jobkonfiguration

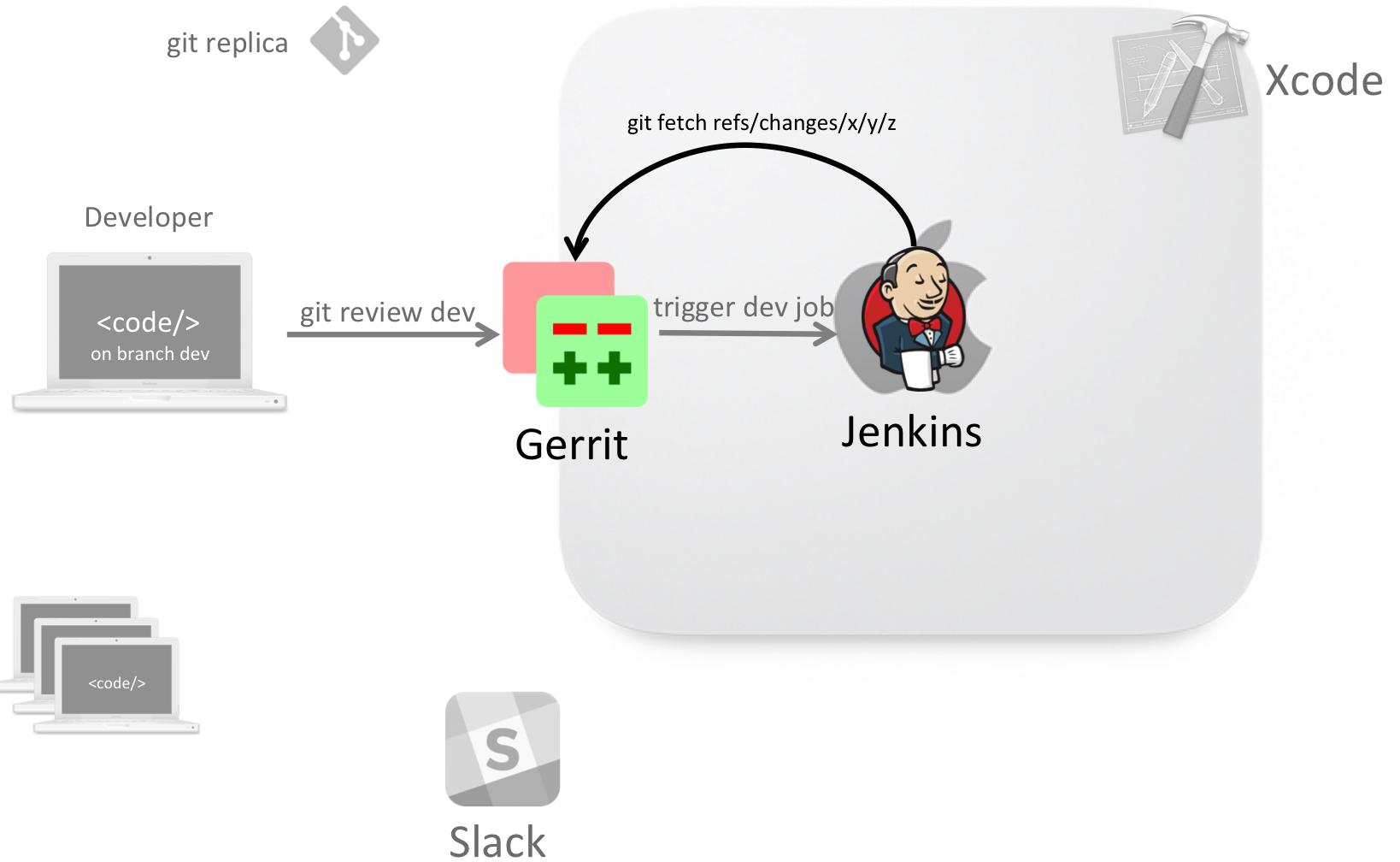
- Allgemeine Job-Einstellungen
- Pre-build
- Einzelne build-steps
- Post-build

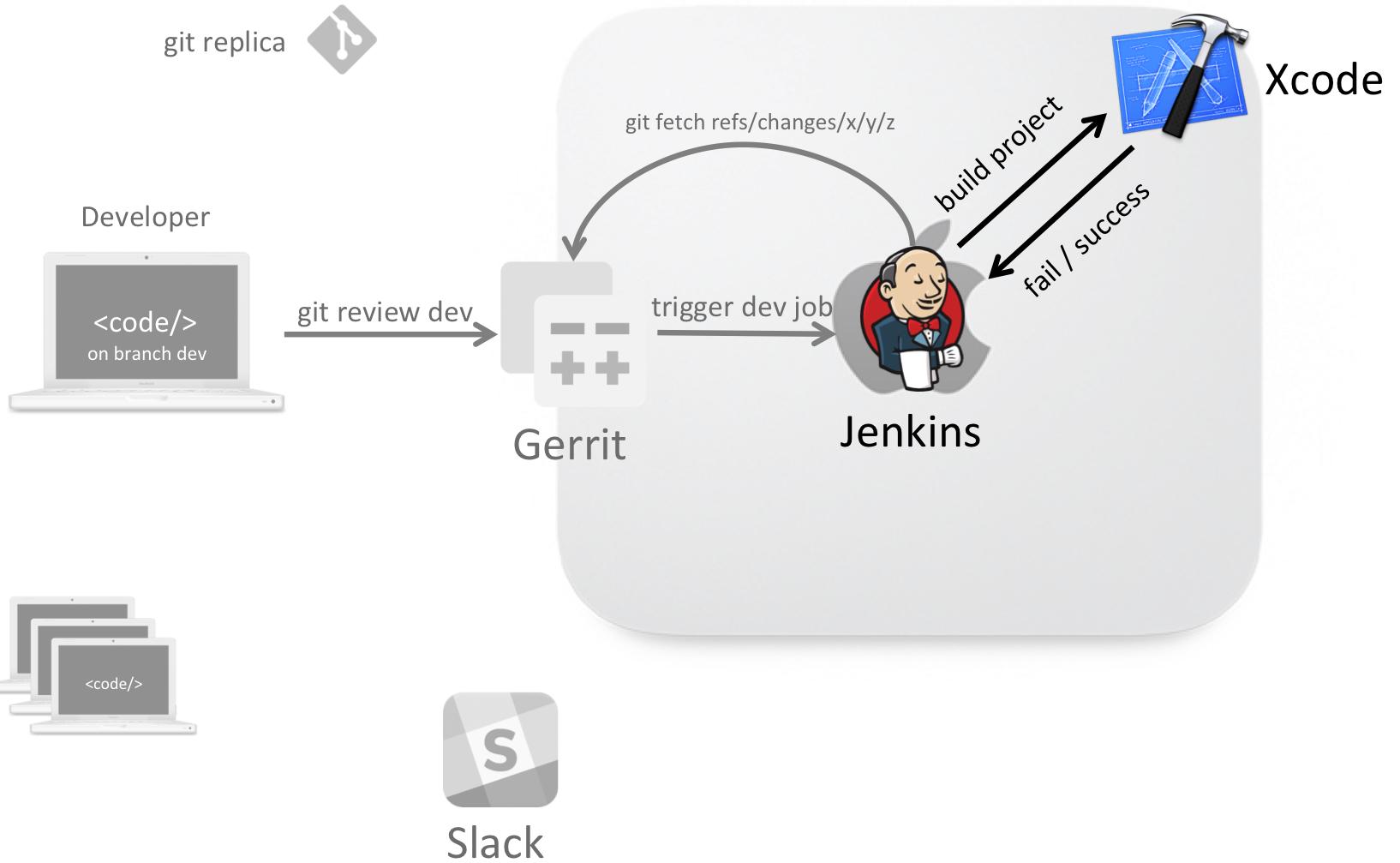


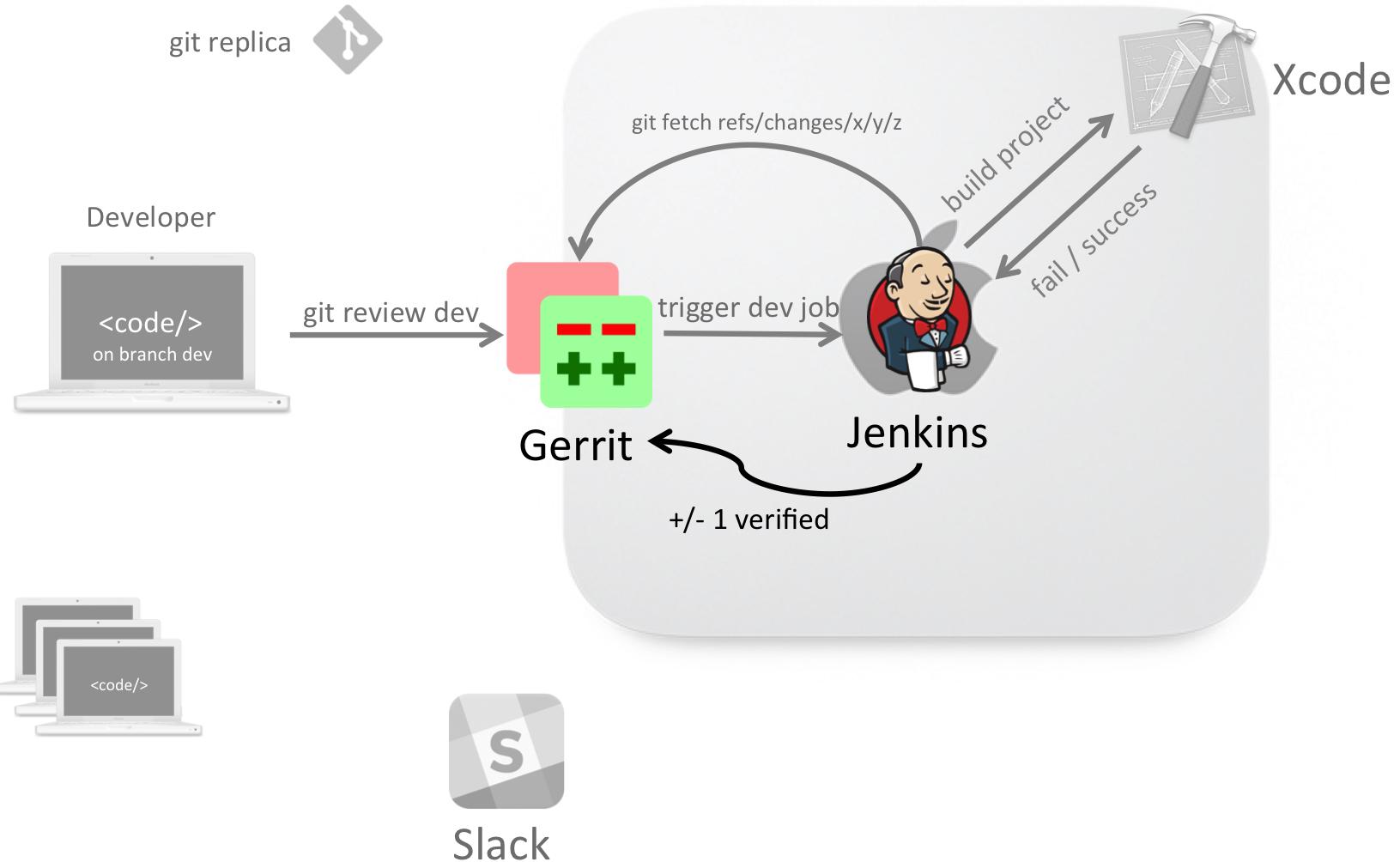
Job: "Build and test patchset on dev"

- Allgemeine Einstellungen:
 - Einstellungen für Slack vornehmen
- Pre-Build:
 - Source Code Management
 - Änderungen vom Gerrit-Repository abrufen
- Build-Steps:
 - Build project (Xcode Plugin)
 - Tests anstoßen (Shell command)
- Post-Build
 - Benachrichtigungen via Slack (Success / Failure)









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All My Projects People Plugins Documentation

Changes Drafts Draft Comments Watched Changes Starred Changes Groups

Search term Search Manuel Schwandt

Change 147 - Needs Code-Review

added Backend and Pushnotification test

Change-Id: I8d22255f4e5a750dac1832c26d1517f5c5609c54

Reply... **Code-Review+2**

Owner Manuel Kalla
Reviewers jenkins x Add...

Project badgeme-app Branch dev_demo Topic

Strategy Merge if Necessary Updated 2 seconds ago

Cherry Pick Rebase Abandon Follow-Up

Patch Sets (1/1) ▾ Download ▾

Code-Review +1 jenkins
Verified +1 jenkins

Author Manuel K <mkalla@gmx.net> Jun 17, 2015 5:00 PM
Committer Manuel K <mkalla@gmx.net> Jun 17, 2015 5:00 PM
Commit 3b0738ddb75b2c765106035250e1b485f305f549
Parent(s) 1e536d44b0c72213a871aae1a9cf4088d2cd50a
Change-Id I8d22255f4e5a750dac1832c26d1517f5c5609c54

Files Open All Diff against: Base Edit

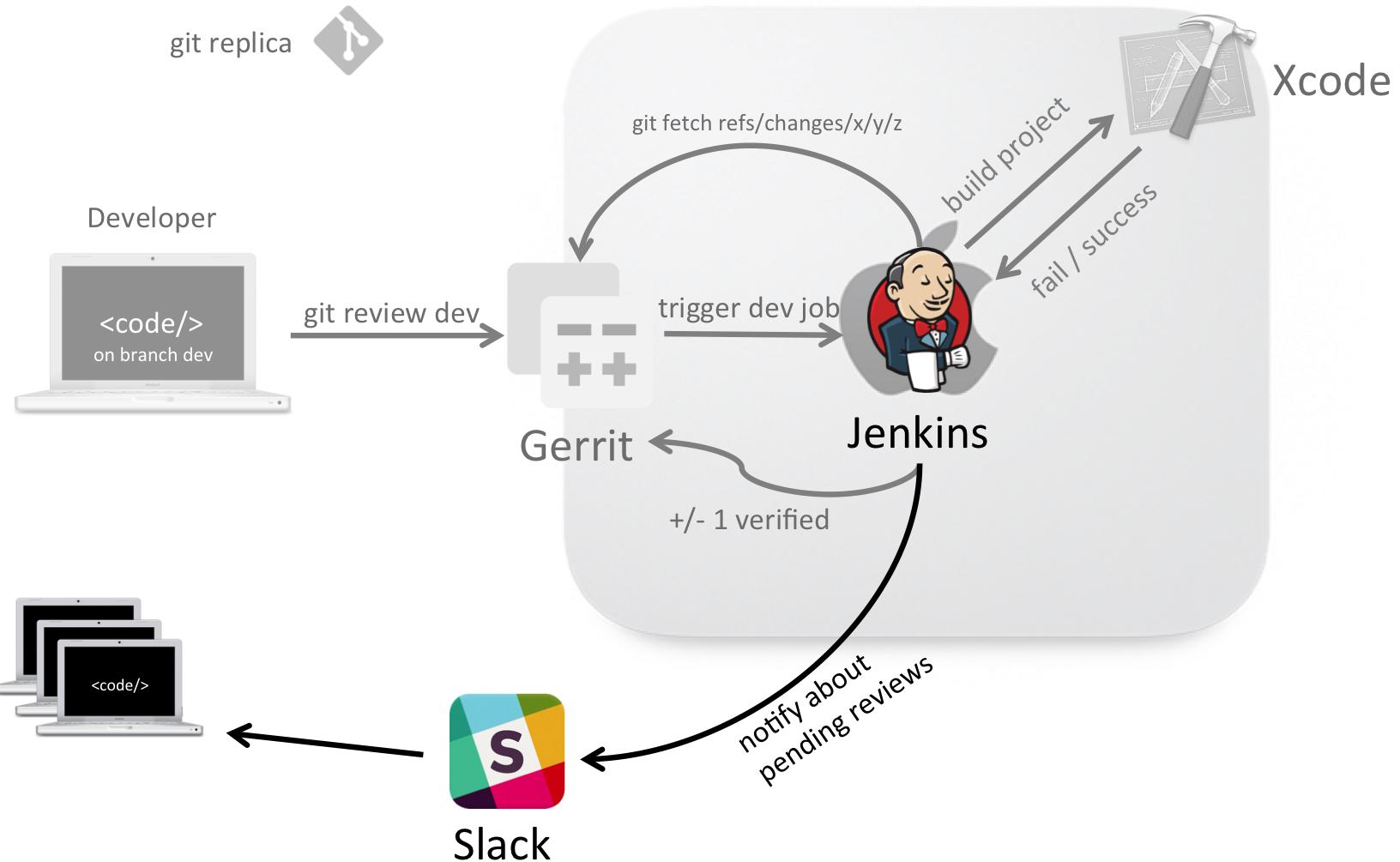
File Path Comments Size

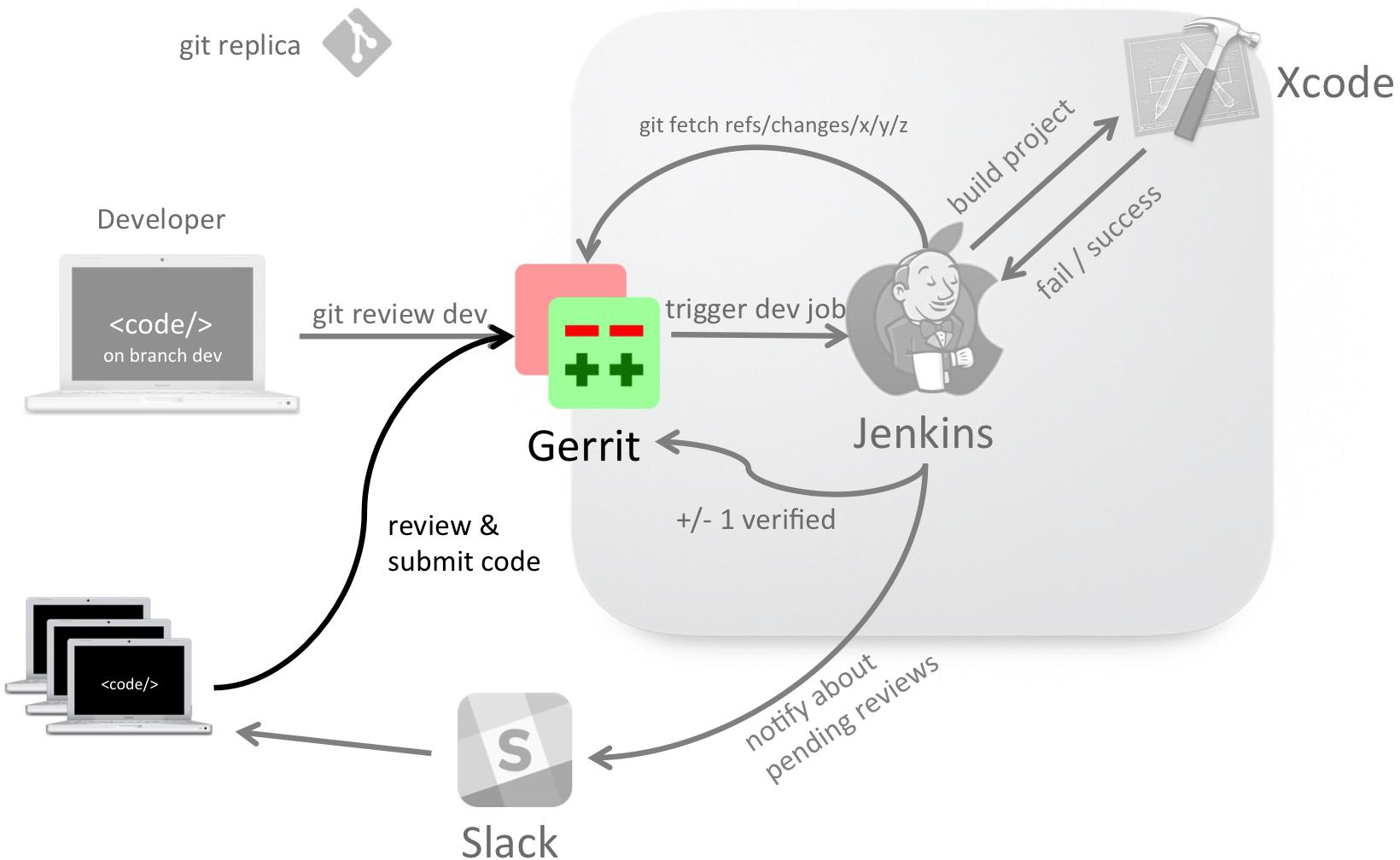
Commit Message 14
badgemeTests/badgemeTests.swift +13, -1

History Expand All

Manuel Kalla Uploaded patch set 1. 5:00 PM
jenkins Patch Set 1: Build Started http://192.168.8.10:8080/job/Build%20and%20test%20PatchSet%20on%20dev/12/ 5:00 PM
jenkins Patch Set 1: Code-Review+1 Verified+1 Build Successful http://192.168.8.10:8080/job/Build%20and%20test%20PatchSet%20on%20dev/12/ : SUCCESS 5:00 PM

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All My Projects People Plugins Documentation

Changes Drafts Draft Comments Watched Changes Starred Changes Groups

Search term Search Manuel Schwandt

Change 147 - Ready to Submit

added Backend and Pushnotification test

Change-Id: I8d22255f4e5a750dac1832c26d1517f5c5609c54

Reply... Patch Sets (1/1) ▾ Download ▾

Owner Manuel Kalla
Reviewers Manuel Schwandt x jenkins x Add...

Project badgeme-app Branch dev_demo Topic

Strategy Merge if Necessary Updated 0 seconds ago

Cherry Pick Rebase Abandon Follow-Up

Submit

Code-Review +2 Manuel Schwandt
+1 jenkins
Verified +1 jenkins

Author Manuel K <mkalla@gmx.net> Jun 17, 2015 5:00 PM
Committer Manuel K <mkalla@gmx.net> Jun 17, 2015 5:00 PM
Commit 3b0738ddb75b2c765106035250e1b485f305f549
Parent(s) 1e536d44b0c72213a871aae1a9cf4088d2cd50a
Change-Id I8d22255f4e5a750dac1832c26d1517f5c5609c54

Files Open All Diff against: Base Edit

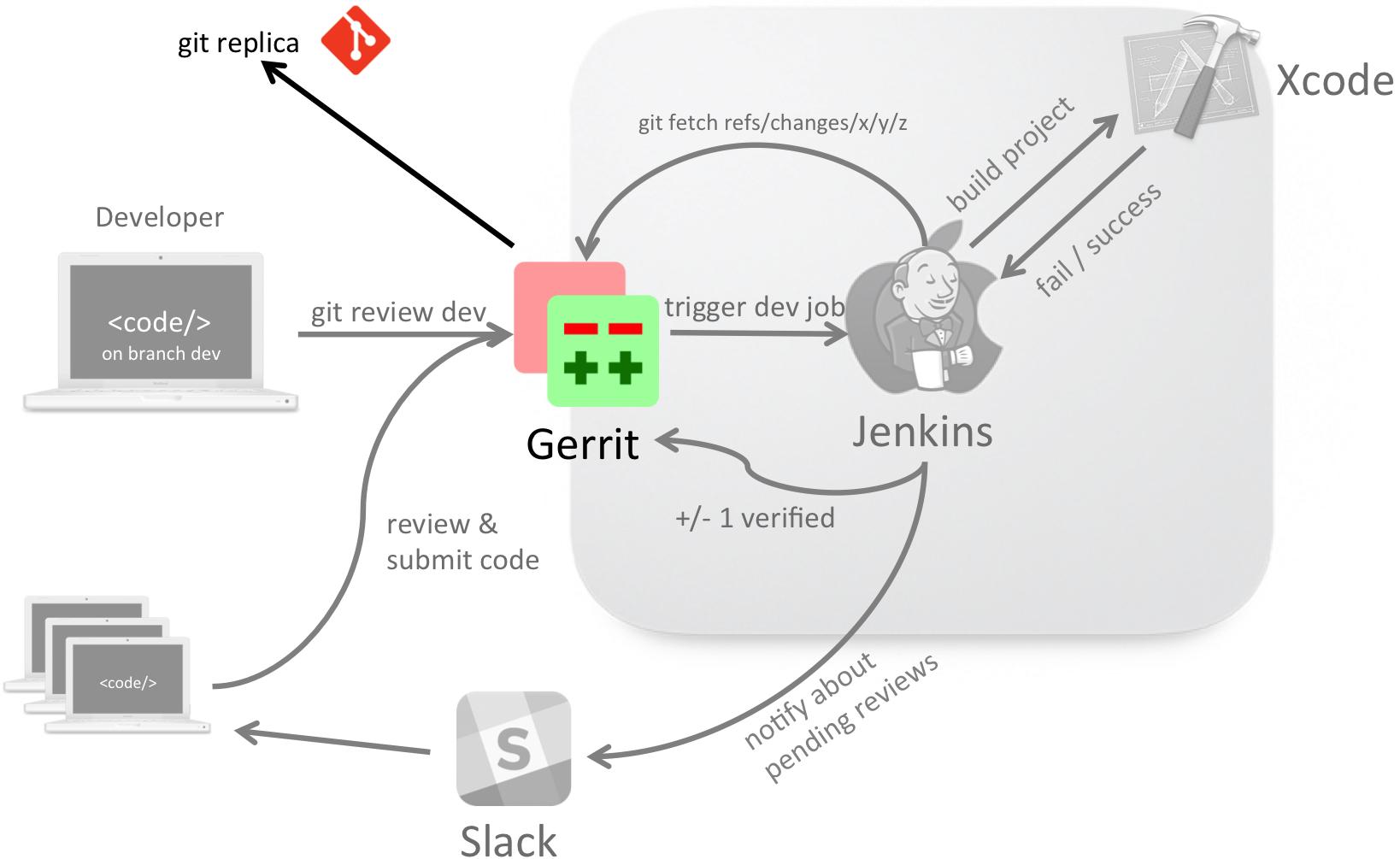
File Path Comments Size

Commit Message 14
badgemeTests/badgemeTests.swift +13, -1

History Expand All

Manuel Kalla	Uploaded patch set 1.	5:00 PM
jenkins	Patch Set 1: Build Started http://192.168.8.10:8080/job/Build%20and%20test%20PatchSet%20on%20dev/12/	5:00 PM
jenkins	Patch Set 1: Code-Review+1 Verified+1 Build Successful http://192.168.8.10:8080/job/Build%20and%20test%20PatchSet%20on%20dev/12/ : SUCCESS	5:00 PM
Manuel Schwandt	Patch Set 1: Code-Review+2	5:01 PM

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Deployment Stage



Developer

git replica



Gerrit



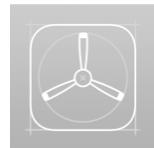
Jenkins



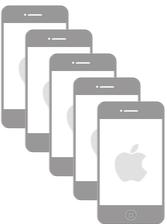
Xcode

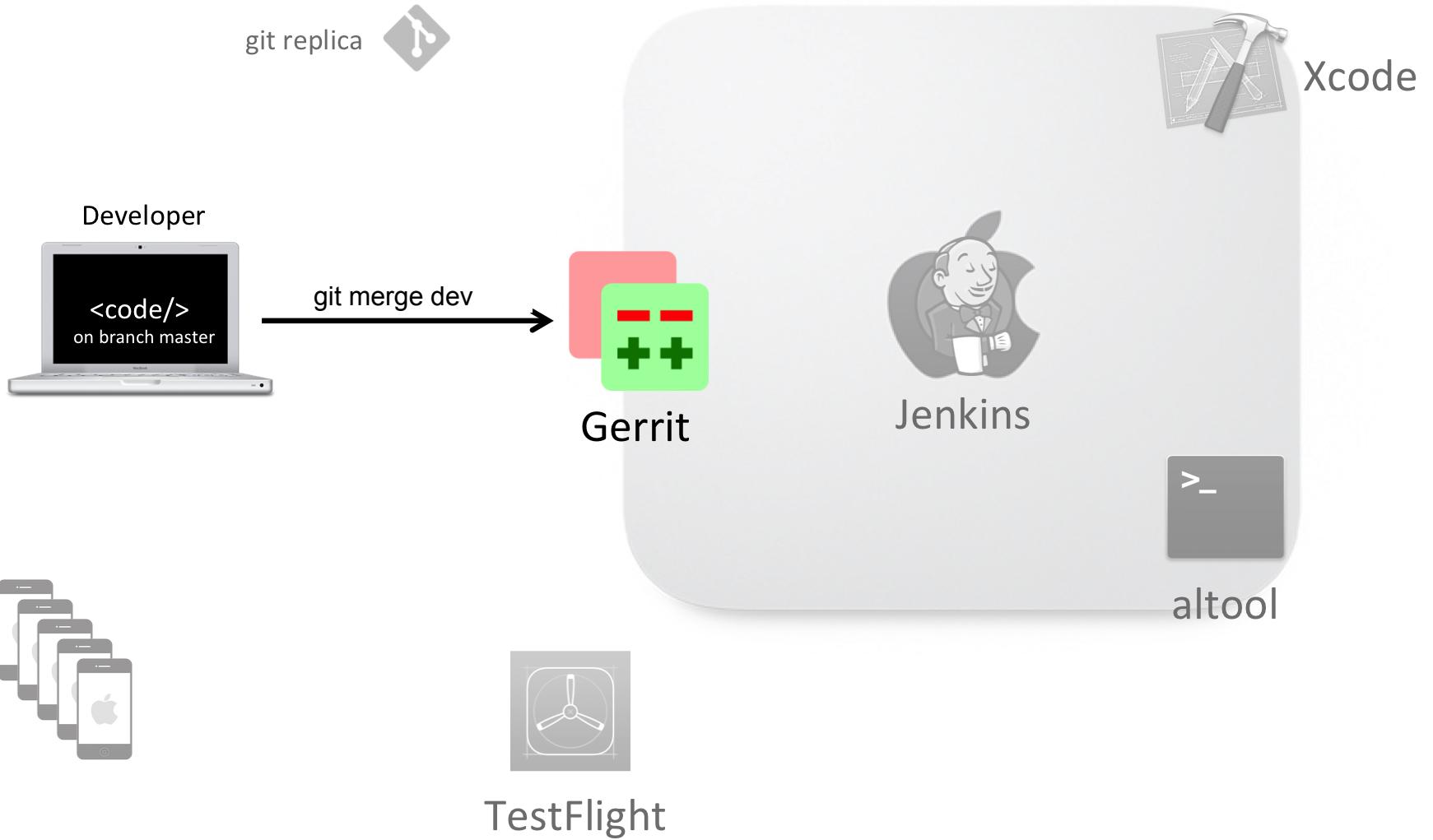


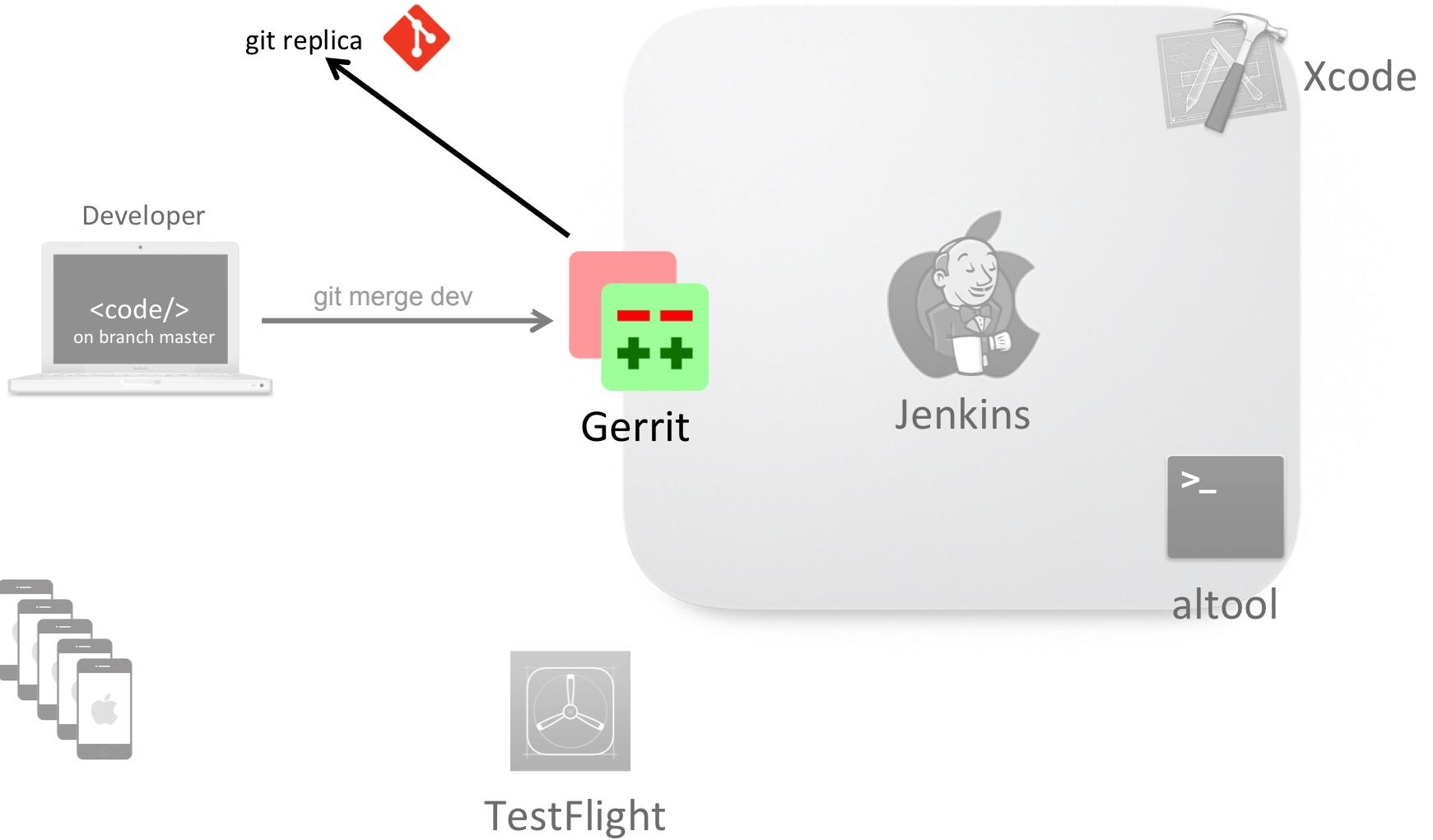
altool

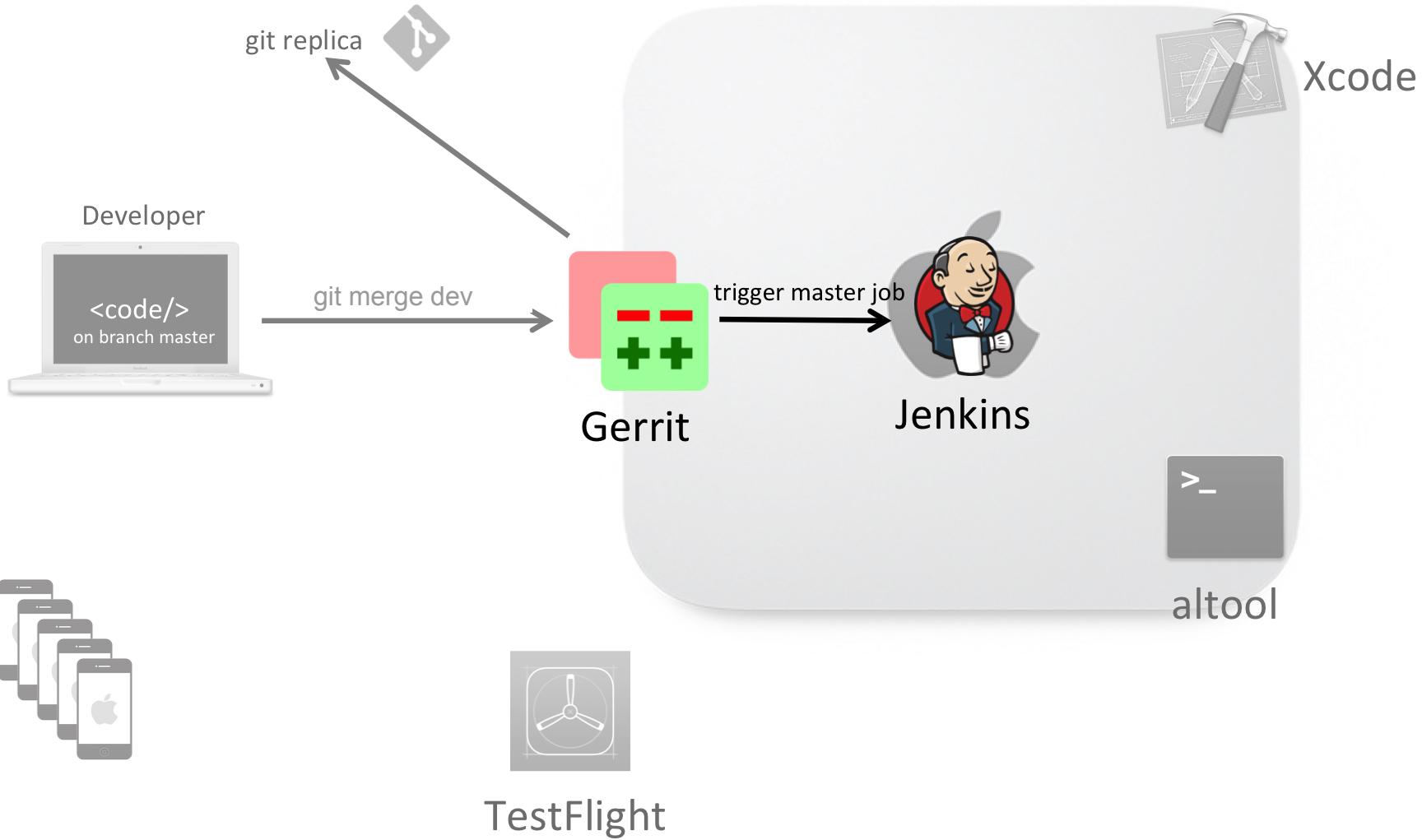


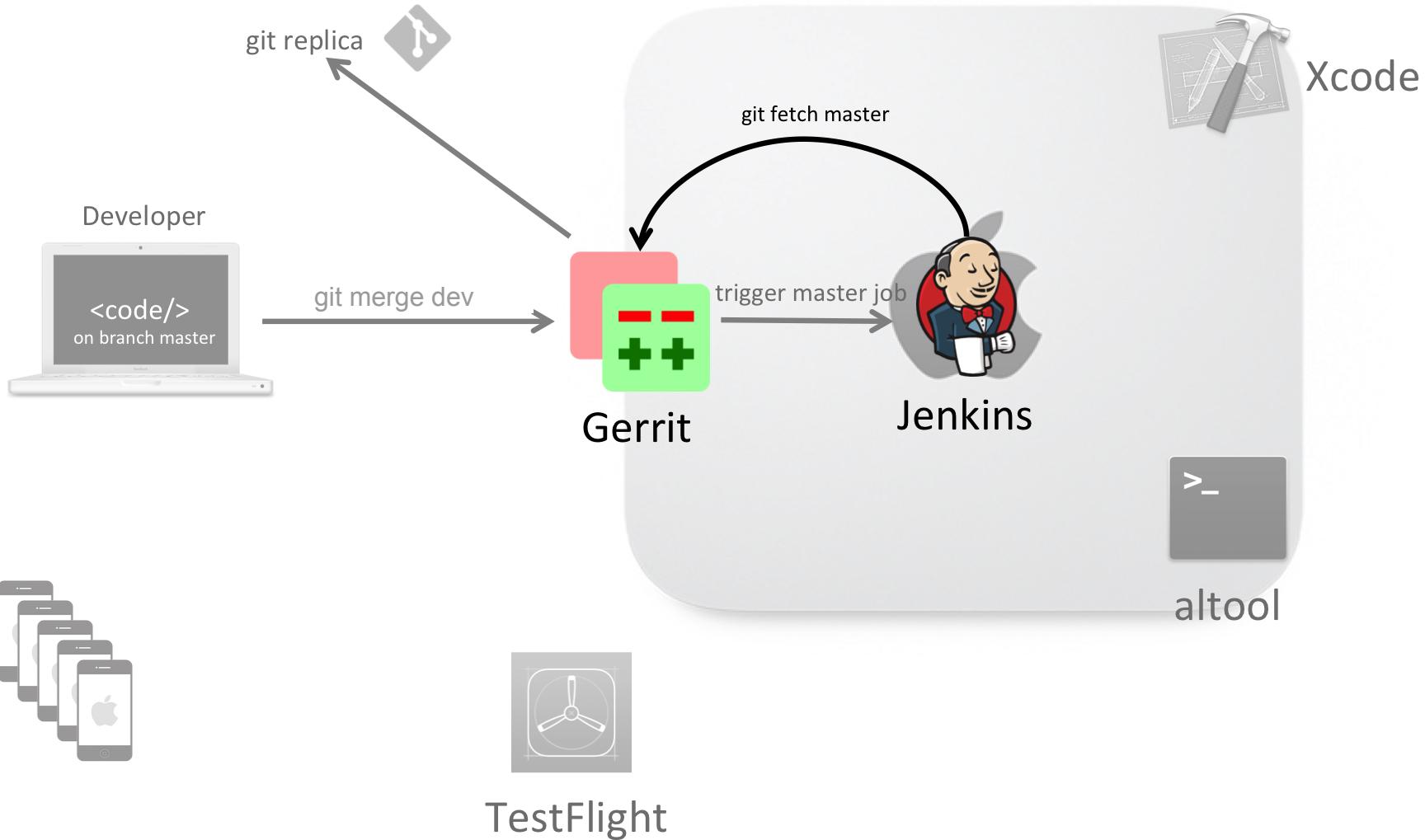
TestFlight

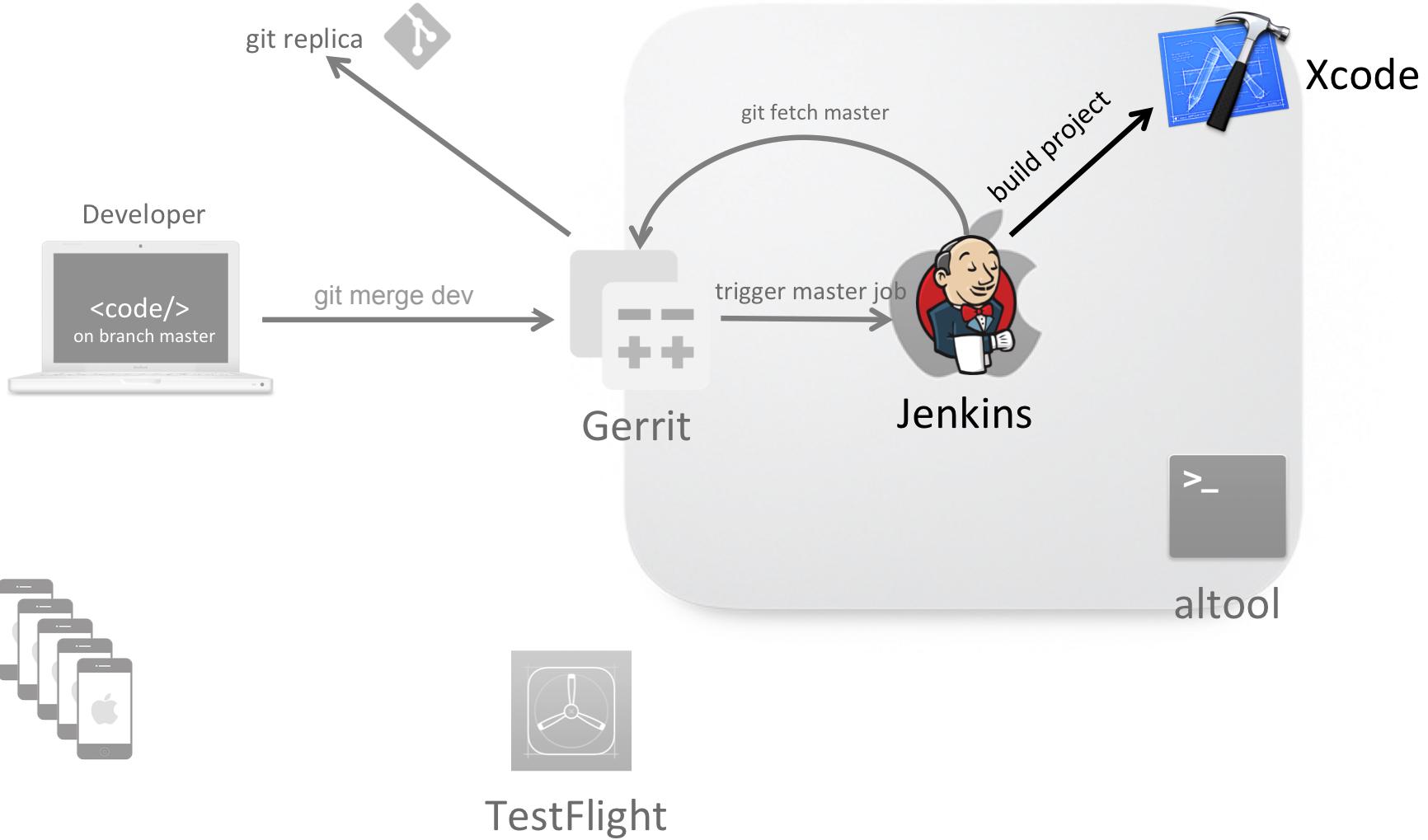






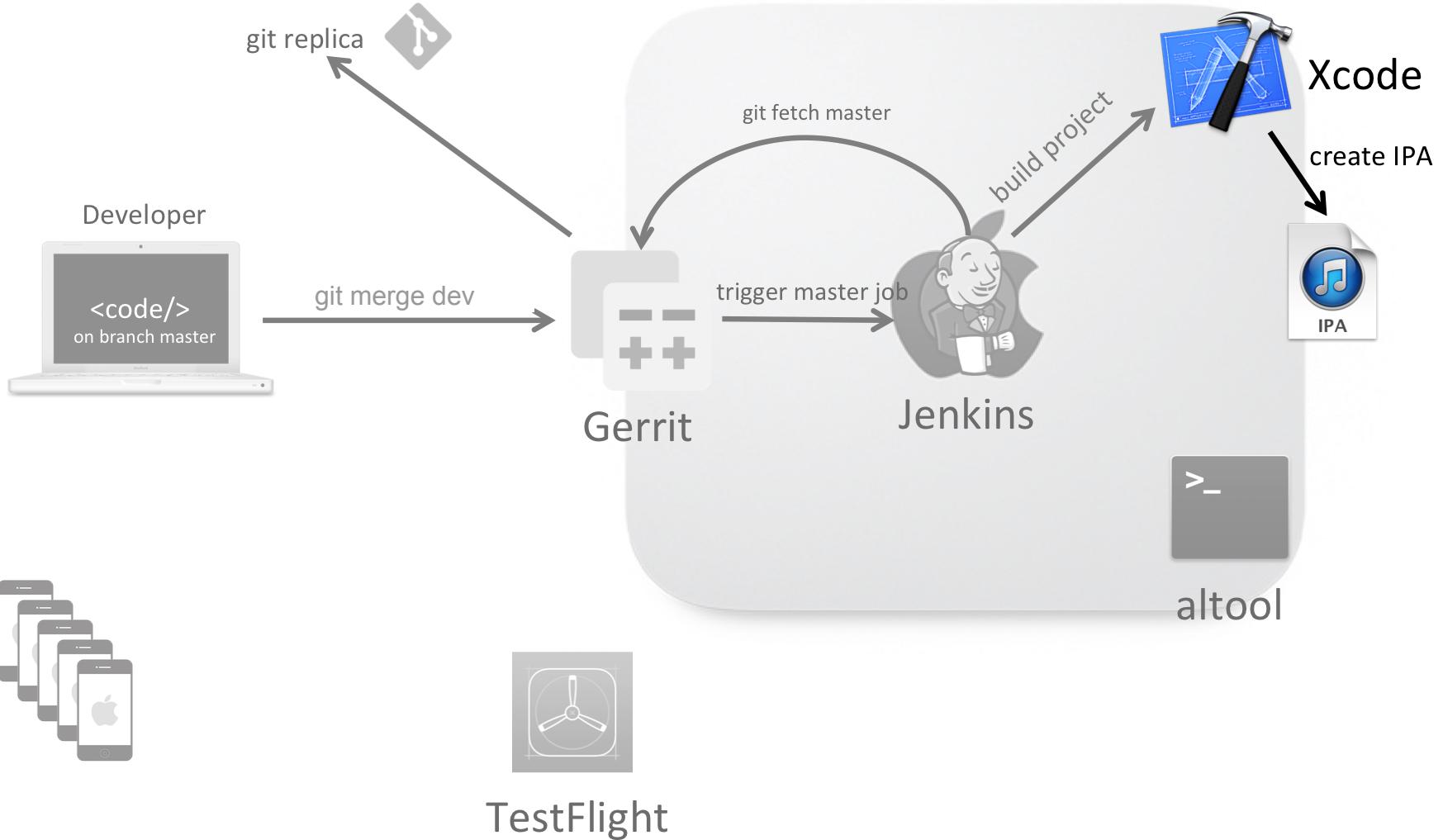


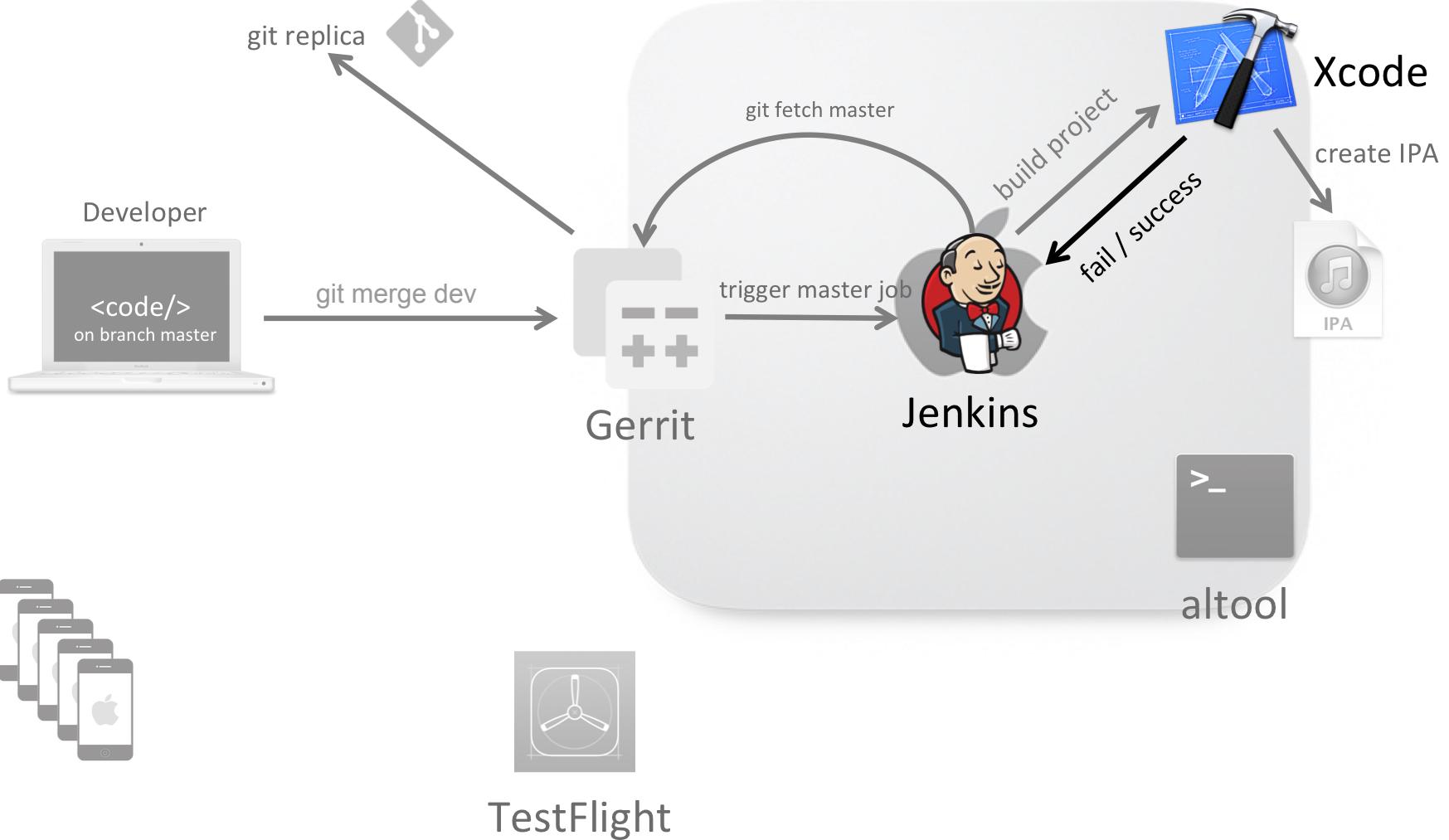


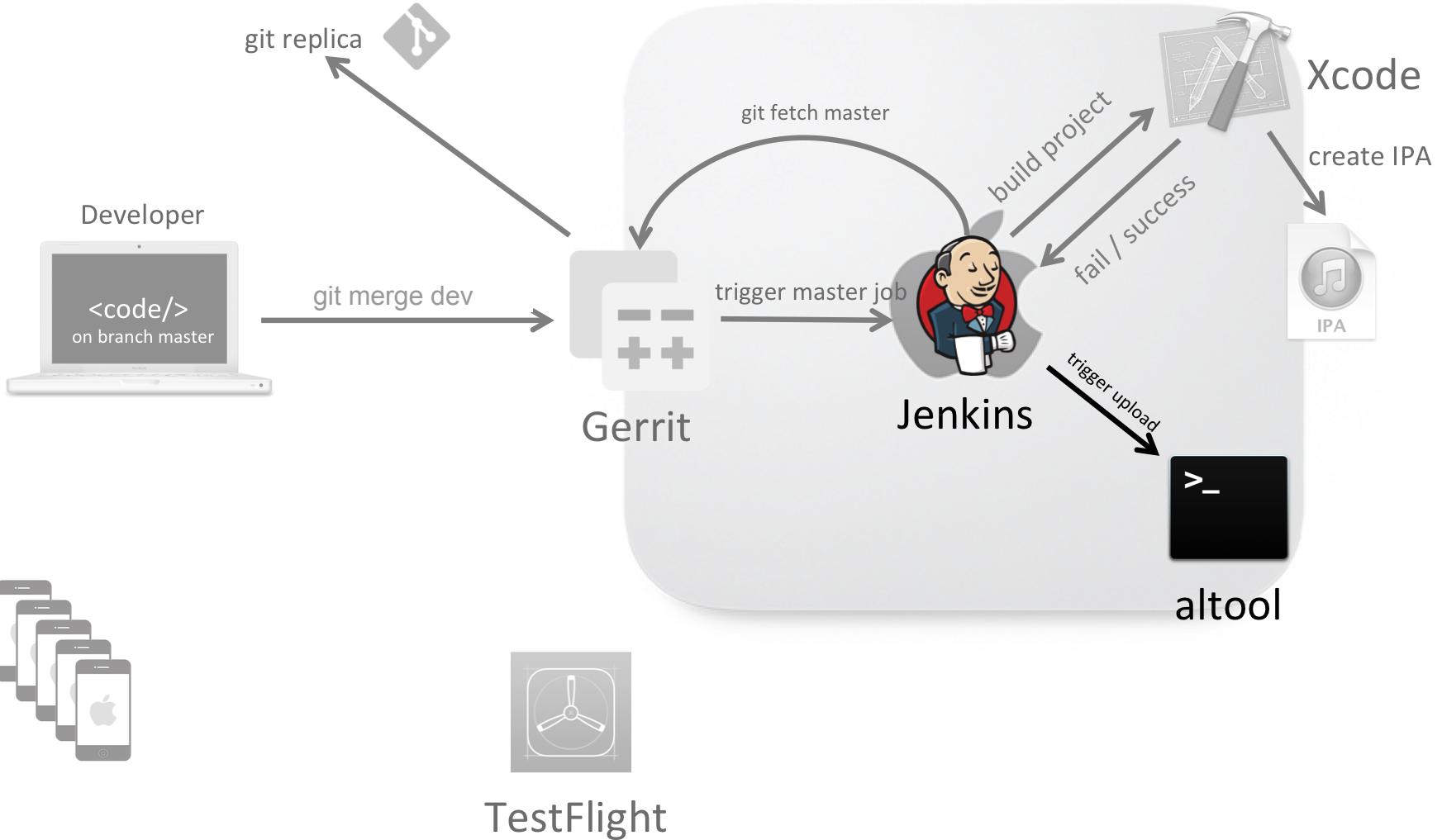


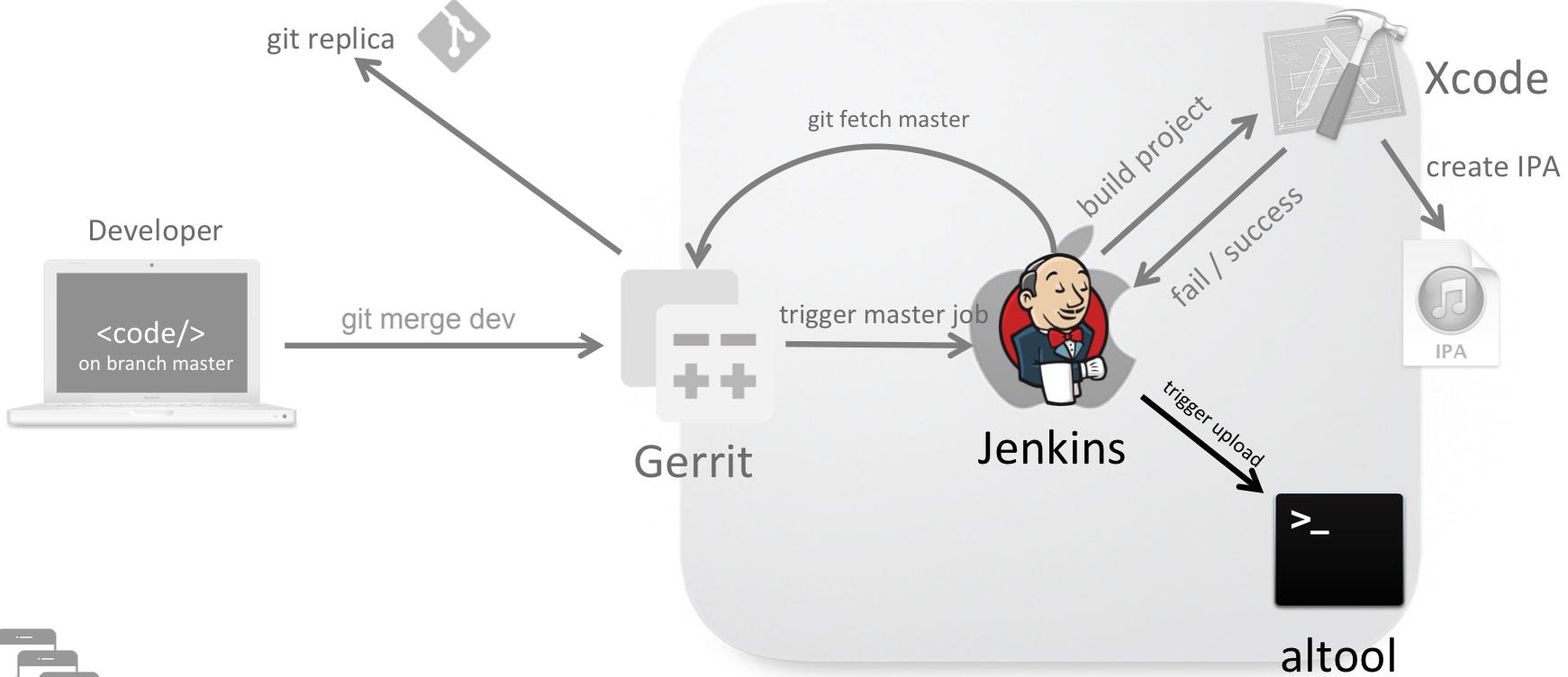
Besonderheiten der iOS-Entwicklung

- Kostenpflichtiger Dev Account
- Apps müssen mit Provisioning Profiles versehen werden
 - Provisioning Profile = Entwicklerzertifikat + AppID (+ DeviceID)
- Build-Vorgang benötigt:
 - Entwicklerzertifikat
 - Private Key
 - Provisioning Profile(s)

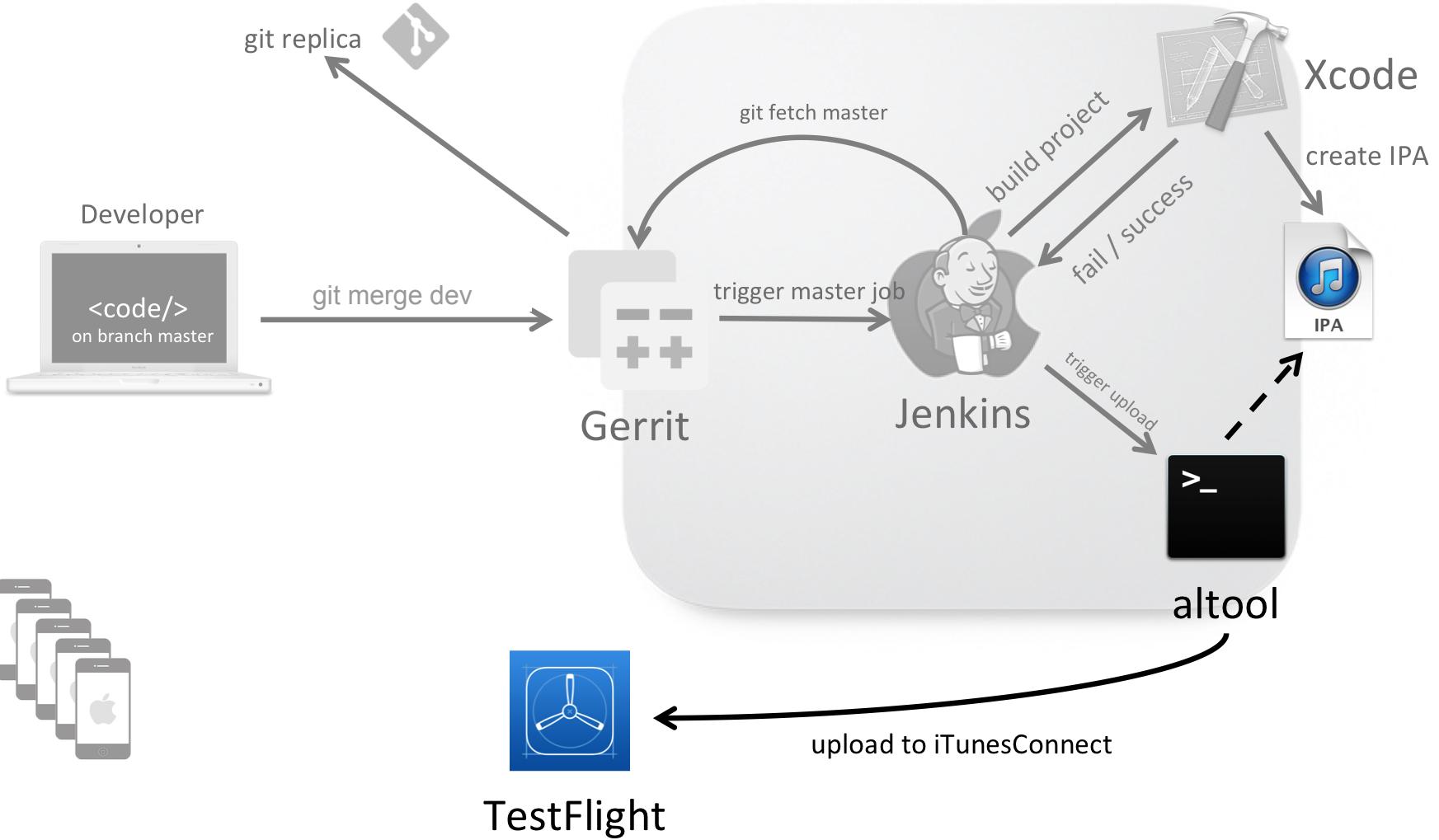






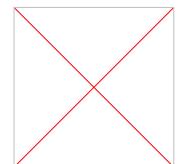


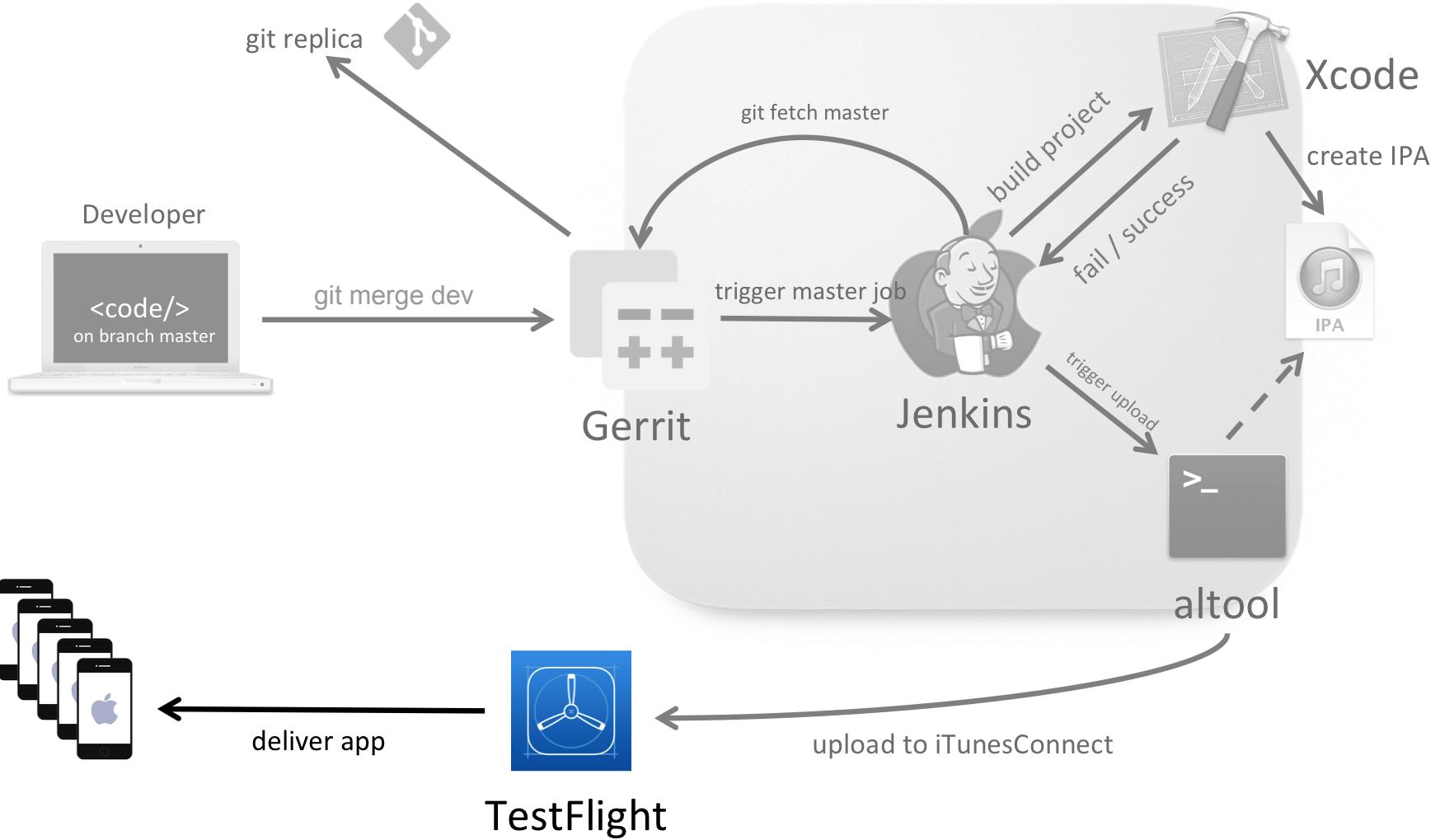
```
altool --upload-app -f [filepath] -u [username] -p [password]
```



iTunesConnect / Testflight

- Apple's Plattform für die Distribution von Apps
 - Release in App Store (erfordert Review-Prozess durch Apple)
 - Verteilung von Pre-release Apps über TestFlight
- Konfiguration der App
 - Preisgestaltung
 - Alterseinstufung
 - Bilder
 - ...
- App Analytics
 - Statistiken (z.B. Download-Zahlen, Geolocation, ...)

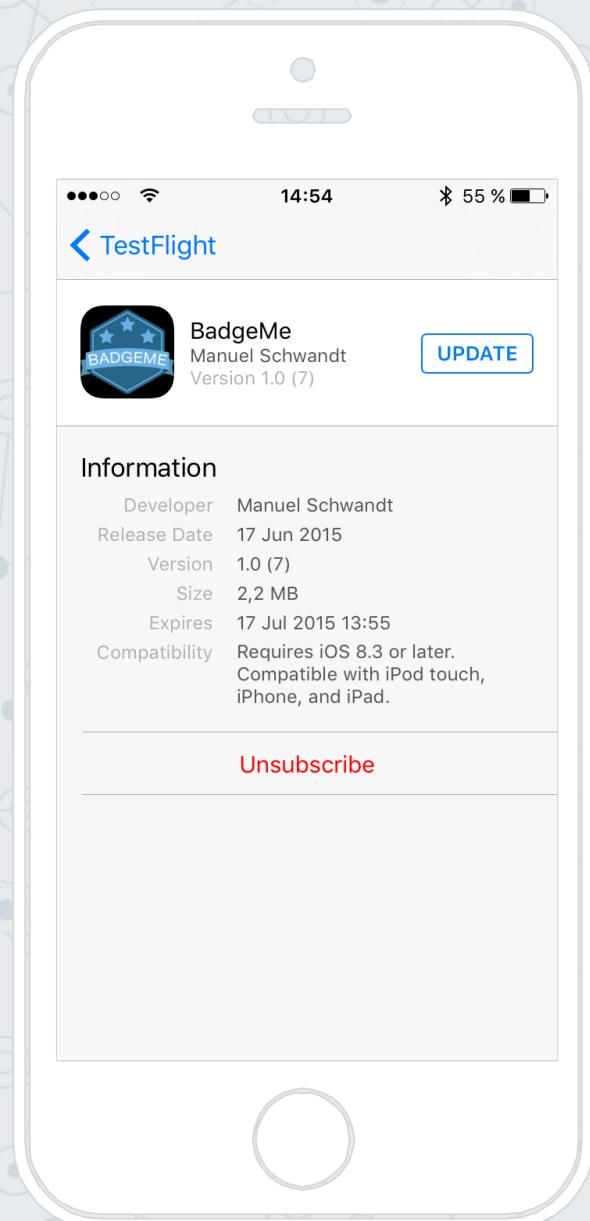




Demo

Testflight

Neue Version steht zum
Download bereit.



Probleme Gerrit

- User-Management / Authentifizierung:
 - Erster angemeldeter Benutzer wird automatisch Admin
 - Default authentication method: OpenID (nicht mehr von Google unterstützt)
 - Launchpad / Yahoo-Konto notwendig
 - Alternative: LDAP – allerdings schwierig (HdM)
- Löschen von Projekten
- Changelog in Commit-Message
- “Verified”-Label muss in Projektkonfiguration eingetragen werden, damit gerrit-trigger funktioniert
- git review pusht nicht auf den ausgecheckten Branch
 - git review <BRANCH-NAME>

Probleme Xcode / iTunesConnect

- Beta-Versionen von Xcode, iOS und WatchOS
 - Upload aus Xcode-Beta nach iTunesConnect nicht möglich
- Screensharing benötigt
 - Xcode benötigt KeyChain-Access für .ipa-Build
 - Build in Xcode musste anfangs 1x händisch gestartet werden
 - Testdurchführung nur nach händisch gestartetem Simulator möglich
 - Provisioning Profiles importieren

Fazit

Pro

- Qualitätssicherung
- Zusätzliches Feedback und Absicherung für Entwickler
- Nach initialer Konfiguration hat man ein stabiles System
- Automatisierung von Tests oder anderen lang andauernden Aktionen
- Statistiken, Übersichten, Build-History

Contra

- Sehr großer Einarbeitungsaufwand
- Installation + Konfiguration initial aufwändig
- Erhöhte Komplexität im Workflow durch zusätzliche Tools
- Störung einzelner Tools führt zu Verzögerung des gesamten Workflows
- Zusätzliche Server-Hardware



Danke!

Gibts noch Fragen?

Credits

Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by [SlidesCarnival](#)
- Photographs by [Unsplash](#) & [Death to the Stock Photo](#)
[\(license\)](#)