去Jenkins的持续集成实践

豌豆荚 于金伦

yujinlun@wandoujia.com

CI服务的几个要素

- 代码版本控制
  - svn/cvs/git
- CI工具
  - Jenkins
- 具体任务
  - 代码检查/编译/测试/发布部署
- 数据展示
  - Sonar

豌豆荚Android客户端的CI

- 代码版本控制
  - git/gerrit
- CI工具
  - 自实现gerrit trigger的构建服务
- 具体任务
  - 代码检查/编译/测试/用户自定义任务
- 数据展示
  - auto comments to gerrit

为什么不用Jenkins

- Jenkins的gerrit trigger插件，无法识别子目录

- Jenkins的gerrit trigger插件隐藏了很多有用的信息

- 直白的脚本编辑，不能调试，易出错

- 用户自定义任务处理起来更加复杂

基于gerrit stream-events构建

- gerrit stream-events

  - 实时获知事件

  - 一个event就是一个JSON, 一个event 一行

- 支持的events类型

  - patchset-created/draft-published/ref-updated/comment-added/...

- 获取events

  - ssh -p 29418 user@review.example.com gerrit stream-events

基于gerrit stream-events构建

- gerrit stream-events示例-commit

  - {"type":"ref-updated","submitter":{"name":"Jinlun Yu","email":"yujinlun@wandoujia.com","username":"yujinlun"},"refUpdate":{"oldRev":"d615dec3ec4e59ff3bffd8e7fde22e3001d5acc2","newRev":"c1c5c572be9d0fa8ca86be2d4aa380990e09113f","refName":"master","project":"scallop"}}

基于gerrit stream-events构建

- gerrit stream-events示例-CR

  - {"type":"patchset-created","change":
    {"project":"scallop","branch":"master","id":"I39eca58d1a3c1cd76764c69f9aaa30effca2
    2641","number":"128532","subject":"FIX: share with xxx","owner":{"name":"Jinlun
    Yu","email":"yujinlun@wandoujia.com","username":"yujinlun"},"url":"http://
    git.repo.com/128532","commitMessage":"FIX: xxxx\n","status":"NEW"},"patchSet":
    {"number":"1","revision":"39eca58d1a3c1cd76764c69f9aaa30effca22641","parents":
    ["1d564b3cc9f800d8ec6033f2b8c651d7577e3441"],"ref":"refs/changes/
    32/128532/1","uploader":{"name":"Jinlun
    Yu","email":"yujinlun@wandoujia.com","username":"yujinlun"},"createdOn":
    1453187993,"author":{"name":"Jinlun
    Yu","email":"yujinlun@wandoujia.com","username":"yujinlun"},"isDraft":false,"sizeInser
    tions":136,"sizeDeletions":-69},"uploader":{"name":"Jinlun
    Yu","email":"yujinlun@wandoujia.com","username":"yujinlun"}}

gerrit stream-events信息加工

- 通过event type/project name/branch/sub dir 等条件筛选出感兴趣的event

CI任务之代码检查

- 获取增量代码：文件和行号

- gradle plugins: checkstyle/findbugs/PMD

- 根据实际需要，确定检查规则

- 解析xml报告，得到增量代码的comments

- 提交comments到gerrit

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Patch Set 1:

(3 comments)

checkstyle-jupiter comments by ci-wandoulabs, pls check!

packages/jupiter/src/com/wandoujia/jupiter/shortcut/AppWhiteListResult.java
    Line 3:   Unused import - android.support.annotation.NonNull.
    Line 20:   Missing a Javadoc comment.
packages/jupiter/src/com/wandoujia/jupiter/shortcut/InstallExternalApkShortcut.java
    Line 8:   Unused import - com.android.volley.RequestQueue.

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Patch Set 1:

(7 comments)

PMD-jupiter comments by ci-wandoulabs, pls check!

packages/jupiter/src/com/wandoujia/jupiter/shortcut/AppWhiteListResult.java
    Line 3:   Avoid unused imports such as 'android.support.annotation.NonNull'
    Line 12:   Classes implementing Serializable should set a serialVersionUID
    Line 13:   Found non-transient, non-static member. Please mark as transient or provide accessors.
    Line 20:   Classes implementing Serializable should set a serialVersionUID
    Line 21:   Found non-transient, non-static member. Please mark as transient or provide accessors.
    Line 22:   Found non-transient, non-static member. Please mark as transient or provide accessors.
packages/jupiter/src/com/wandoujia/jupiter/shortcut/InstallExternalApkShortcut.java
    Line 8:   Avoid unused imports such as 'com.android.volley.RequestQueue'

cop wdj   Patch Set 1: compile and build success! more info:http://10.0.41.112:8080/log/api/v1/query/02bc8a10-be92-11e5-bdee-52540084f258   5:53 PM

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Patch Set 1:

(2 comments)

findbugs-jupiter comments by ci-wandoulabs, pls check!

packages/jupiter/src/com/wandoujia/jupiter/shortcut/AppWhiteListResult.java
    Line 17:   Unwritten field
    Line 25:   Unwritten field

Left side (top):

```
 2
 3  import com.wandoujia.base.utils.CollectionUtils;
 4  import com.wandoujia.base.utils.NetworkUtil;
 5  import com.wandoujia.jupiter.JupiterApplication;
 6  import com.wandoujia.jupiter.app.activity.DownloadInjectorDialogActivity;
 7  import com.wandoujia.jupiter.event.app.DownloadInjectorEvent;
```

Right side (top):

```
 2
 3  import com.wandoujia.appmanager.AppManager;
 4  import com.wandoujia.base.config.GlobalConfig;
 5  import com.wandoujia.base.utils.CollectionUtils;
 6  import com.wandoujia.base.utils.NetworkUtil;
 7  import com.wandoujia.jupiter.JupiterApplication;
 8  import com.wandoujia.jupiter.app.activity.DownloadInjectorDialogActivity;
 9  import com.wandoujia.jupiter.event.app.DownloadInjectorEvent;
10  import com.wandoujia.jupiter.util.LauncherUtil;
```

cop wdj — Unused import - com.wandoujia.jupiter.util.LauncherUtil.   Dec 30 4:39 PM

... skipped 8 common lines ...

Left side (bottom):

```
399      } else {
400        RecyclerView.RecycledViewPool recycledViewPool = new RecyclerView.RecycledViewPool();
401        recycledViewPool.setMaxRecycledViews(TemplateTypeEnum.TemplateType.CARD_ICON_TINY.ordina
402          10);
403        recycledViewPool
404          .setMaxRecycledViews(TemplateTypeEnum.TemplateType.SINGLE_IMAGE.ordinal(), 10);
405        recycler.setRecycledViewPool(recycledViewPool);
406      }
407    }
408
409    protected Model queryModel(List<Model> models, TemplateTypeEnum.TemplateType type) {
410      if (models == null) {
411        return null;
```

... skipped 8 common lines ...

Right side (bottom):

```
378      } else {
379        RecyclerView.RecycledViewPool recycledViewPool = new RecyclerView.RecycledViewPool();
380        recycledViewPool.setMaxRecycledViews(TemplateTypeEnum.TemplateType.CARD_ICON_TINY.ordina
381          10);
382        recycledViewPool
383          .setMaxRecycledViews(TemplateTypeEnum.TemplateType.SINGLE_IMAGE.ordinal(), 10);
384        recycler.setRecycledViewPool(recycledViewPool);
385      }
386    }
387
388    @Override
389    public CardPresenter createPresenterByModel(ViewGroup parent, Model model) {
390      switch (model.getTemplate()) {
```

cop wdj — Nullcheck of value previously dereferenced   Jan 15 4:35 PM

CI任务之编译

- gradle -b build.gradle clean compileDebugSources —no-daemon

- 若编译通过，则对CR打分Code Review +1; 若编译失败，则对CR打分Code Review -2

CI任务之测试

- 每天定时检查，若有commit入库，则编译打包

- 将包发往测试中心进行兼容性测试

- 发送邮件通知相关人员，方便查看

CJ任务之自定义

- 统一接口及返回值
- 提供支持环境变量的函数接口
- 实现自定义任务的模块并入库
- 添加自定义的任务到任务表
- 动态加载

```
- pmd: {
    status: true,
    operation: "gradle -b packages/jupiter/build.gradle clean pmd",
    report_path: "packages/jupiter/build/reports/pmd/pmd.xml"
  },
  _id: "567e49275576be56ae76ce16",
- findbugs: {
    status: true,
    operation: "gradle -b packages/jupiter/build.gradle clean findbugs",
    report_path: "packages/jupiter/build/reports/findbugs/findbugs.xml"
  },
  name: "jupiter",
- checkstyle: {
    status: true,
    operation: "gradle -b packages/jupiter/build.gradle clean checkstyle",
    report_path: "packages/jupiter/build/reports/checkstyle/checkstyle.xml"
  }
```

环境问题及任务调度

- 浅CI，轻环境

- 每个host上预先建立多个workspace,标签化

- workspace自动维护

- 标签匹配及优先级

逻辑结构图
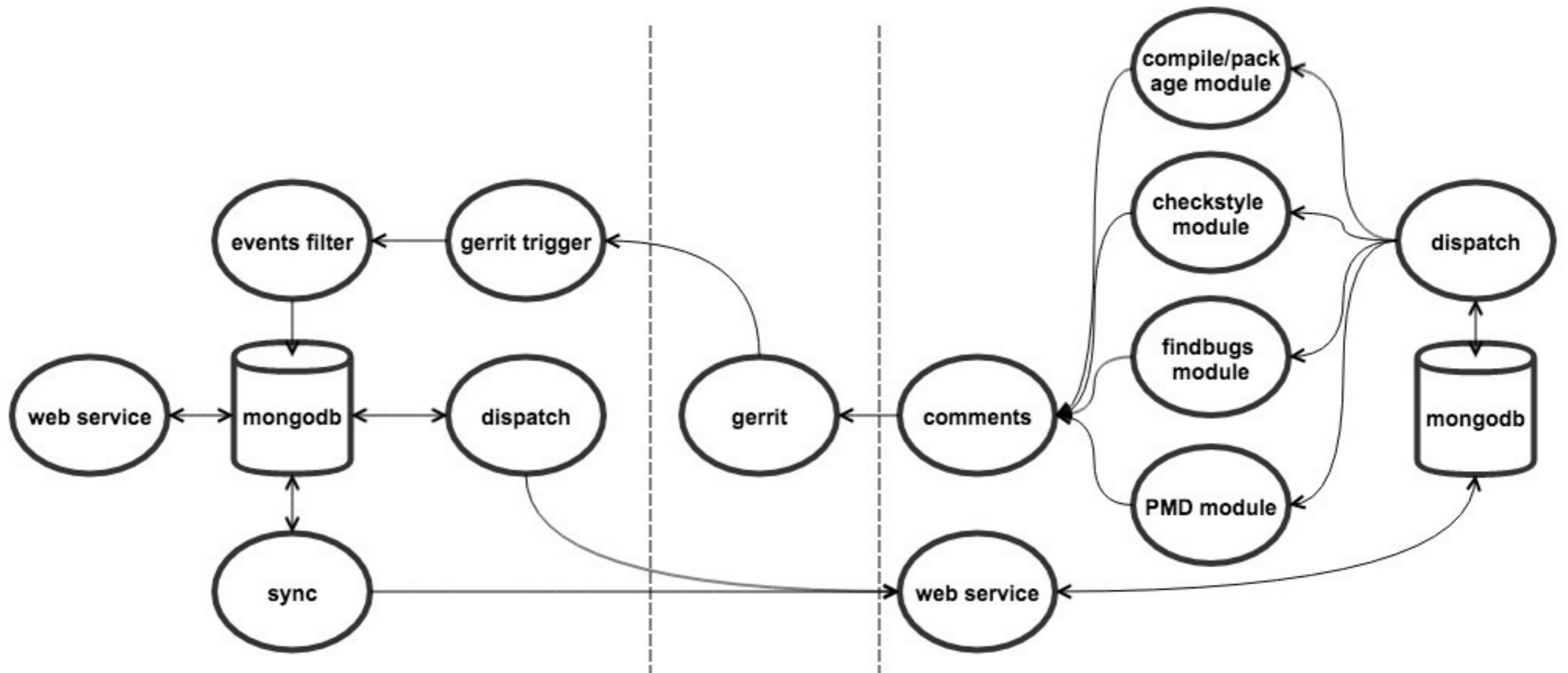
向后端服务及多语言扩展

◆ 目前投入使用的是android+gradle

◆ 后端java+maven

◆ 支持python

◆ iOS的支持

gitlab-ci/travis-ci

- gitlab(8.0以上)集成了CI

- 添加.gitlab-ci.yml/.travis.yml

- Runners

Q&A