超速CI

Keishin Yokomaku @ Drivemode, Inc.
potatotips #27

@KeithYokoma

- Keishin Yokomaku at Drivemode, Inc.

- Work

  - Android apps

  - Android Training and its publication

- Like

  - Bicycle, Photography, Tumblr and Motorsport

- AIDL は友達

Continuous Integration

- Keep generating artifacts every time the code is updated

  - Generate signed APK

  - Run tests

  - Execute static program analysis

  - Deploy the APK(e.g. through DeployGate)

  - etc…

CI softwares and services

- Various softwares and services

  - Open source software

    - Jenkins

  - Cloud services

    - TravisCI

    - CircleCI

    - Wercker

Anguish on CI

- Jenkins: It's all up to you

  - Jenkins master, shared environment, Java + You

- TravisCI: Good old-fashioned discipline

  - No chance to debug your build script without running a build on TravisCI

- CircleCI: Short time limit and little memory space for Android build system

  - 1,500 mins/month for free. Android is likely to take more than 10mins/build.

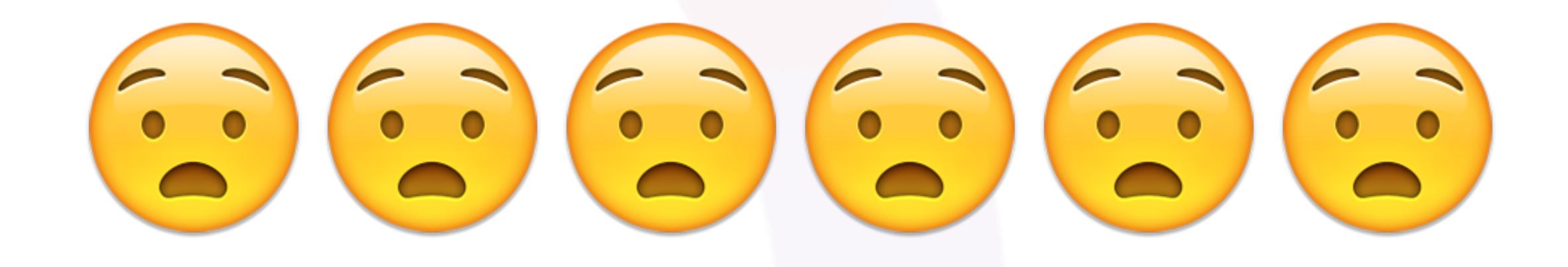 - 4GB for each VMs. Dex process needs more.

Problems on CircleCI

- Total time: **More than 20 minutes**

  - Set up environment and dependencies: 4 to 6 minutes

  - Gradle build: 6 to 8 minutes

  - Tests and verification: 6 to 7 minutes

  - Other tasks: about 2 minutes

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Using build cache

- No effect on improvement

  - Save and restore dependencies using a cache storage.

  - Transfer speed is not fast enough

Ideal CI service

- Environment should be up-to-date ahead of build time.

  - Environment should be updated if needed, that saves a lot of times.

- Need more memory space!

  - Android build system is very memory intensive.
    (CircleCI has a strict limitation on memory usage)

Docker

- Environment should be up-to-date ahead of build time.

  - Docker container fits this requirement.

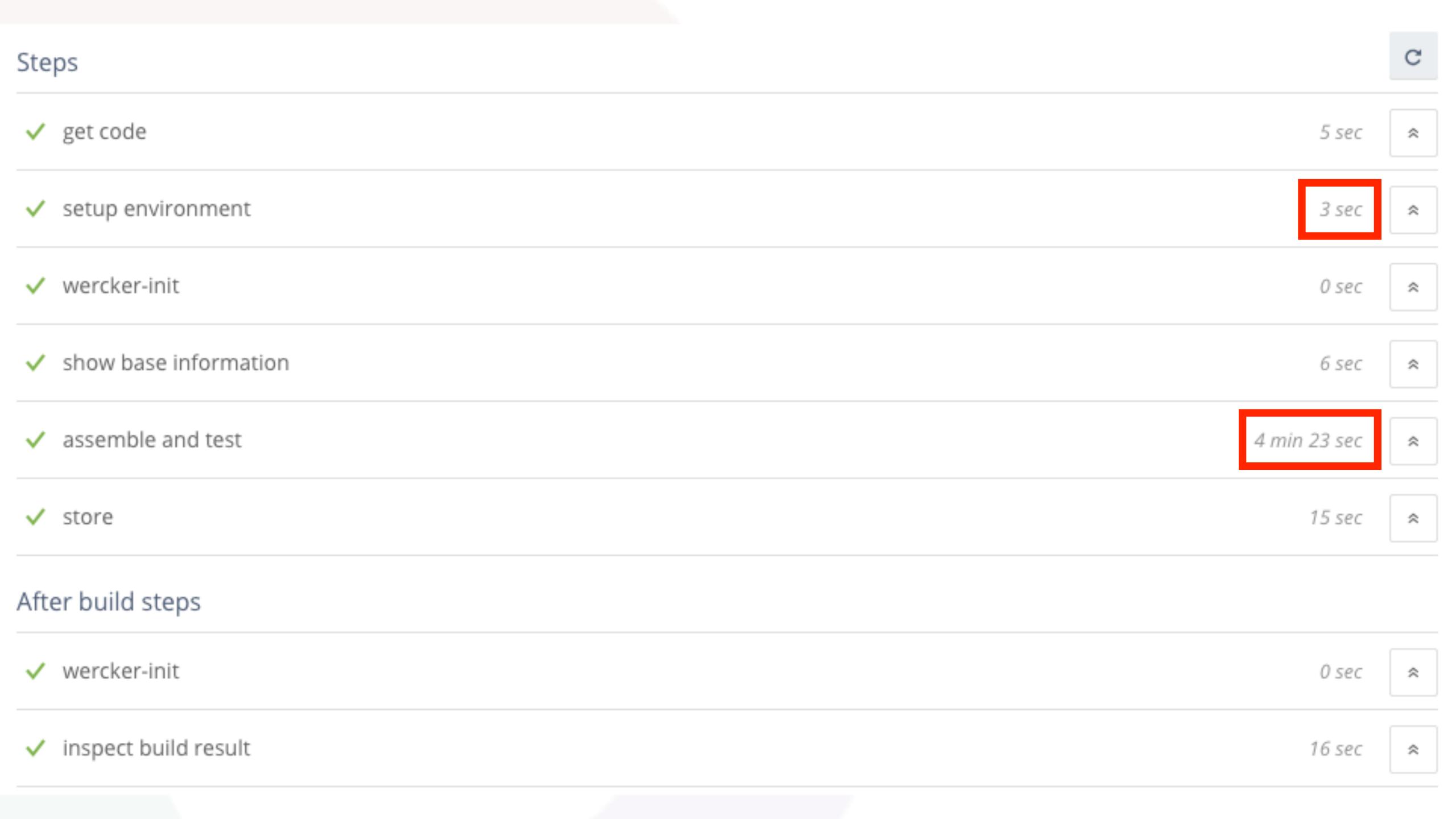 - CI server just pulls a container and runs tasks on the container.

Docker container for CI(Wercker)

Wercker

- Cloud CI service using Docker

  - Configure private GitHub/BitBucket repository for free

  - 2 parallel builds for free

  - 😆

How fast could it be?

Steps

✓ get code   5 sec

✓ setup environment   3 sec

✓ wercker-init   0 sec

✓ show base information   6 sec

✓ assemble and test   4 min 23 sec

✓ store   15 sec

After build steps

✓ wercker-init   0 sec

✓ inspect build result   16 sec

Steps

✓ get code — *5 sec* ⌃

✓ setup environment — *3 sec* ⌃

✓ wercker-init — *0 sec* ⌃

✓ show base information — *6 sec* ⌃

✓ assemble and test — *4 min 23 sec* ⌃

✓ store — *15 sec* ⌃

After build steps

✓ wercker-init — *0 sec* ⌃

✓ inspect build result — *16 sec* ⌃

Docker: The Good Parts

- Pre-built docker container has everything you need.

- Container is cached on wercker cloud service.

- Once the container is cached, setting up environment is just in a moment.

Wercker: Attention

- It takes large amount of time to build, push and download docker container.

  - Huge container.

  - Building a container using boot2docker is too slow.

  - First time running build on Wercker, pulling your container takes time.

  - The same happens if you update a container.

Docker container

- Dockerfile: http://bit.ly/221IOsV

- DockerHub: http://bit.ly/24Q2zpT

  - Ubuntu, Marshmallow support, extras, NDK, retrolambda support.

  - You can configure your container based on this container.

- More details: http://bit.ly/1WpSKJu

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