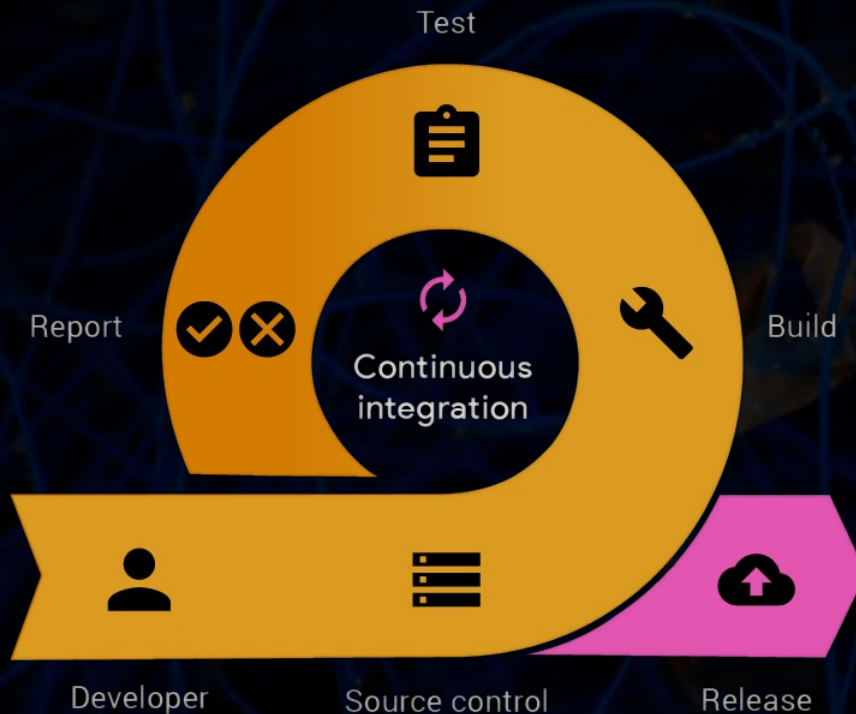


Continuous Integration All The Things



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Developer / Hacker / Demoscener

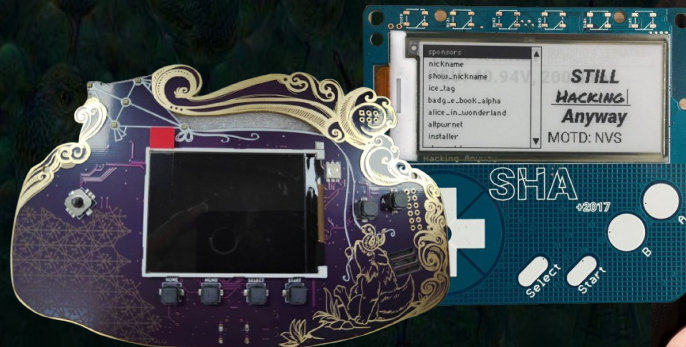
NOPROTOCOL://



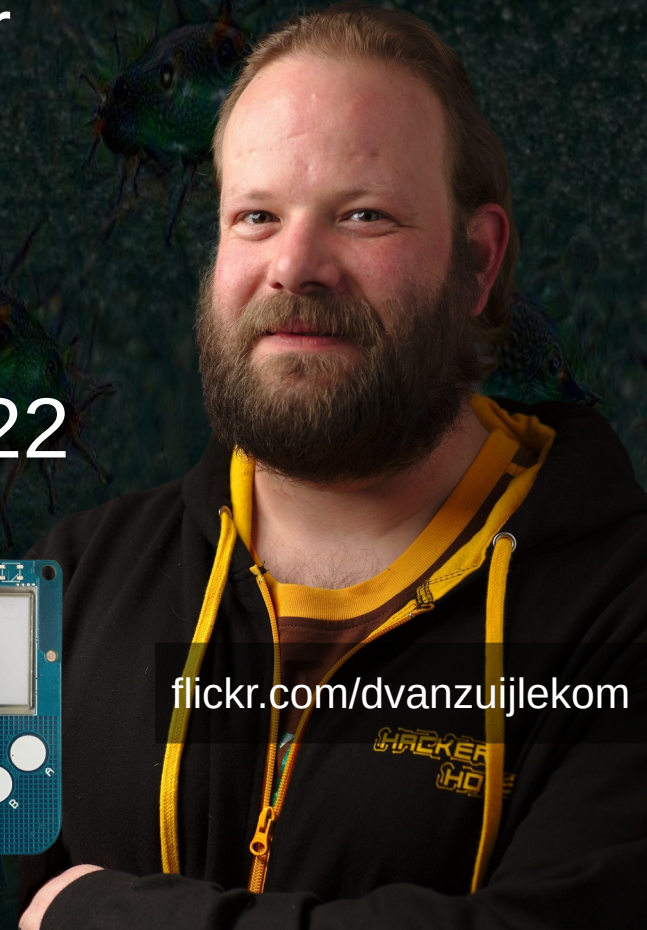
Badge.team @ sha2017 / mch2022

QtPass.org

Scene.rs



flickr.com/dvanzuijlekom



What is CI

Continuous integration is the practice of merging all developers' working copies to a shared mainline several times a day

- Grady Booch 1991

Did not say “several times a day”

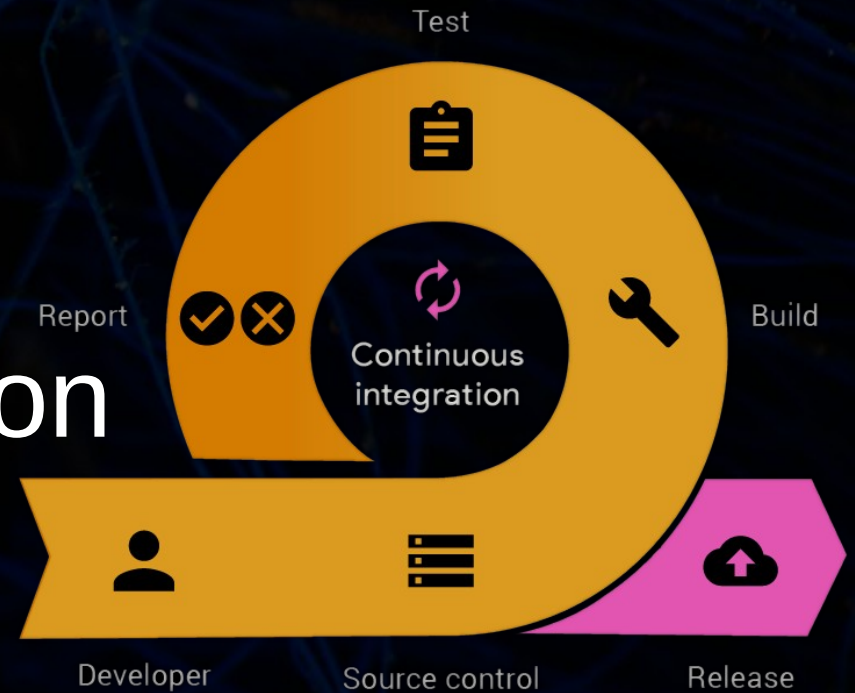


Why CI

Easier co-working

Preventing regression

Proving code works



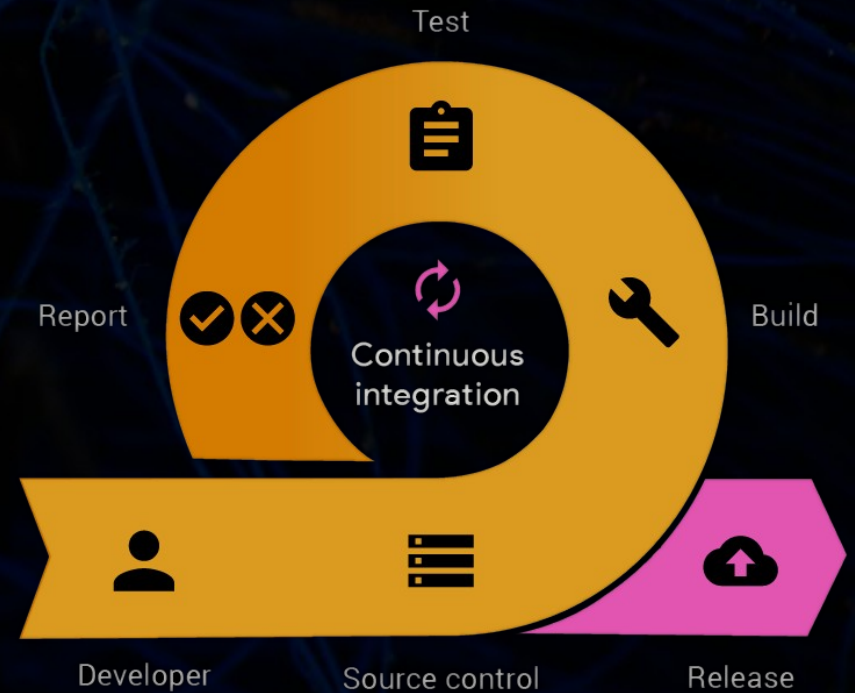
How to CI

Have a repository

Have tests

Automate builds

Automate testing



pagerduty.com

Create tests for bugfixes

What are common CI platforms

- GitLab CI
- Github Actions
- Jenkins
- Travis
- CircleCI
- Appveyor
- Buildkite



Why not Cl



Basic example



```
mkdir my-ci-example && cd my-ci-example
```

```
echo -e "# I like CI\nBecause it helps" > file.md
```

```
git init && git add . && git commit -am "First commit"
```

```
git remote add origin git@github.com:annejan/mce.git
```

```
git push -u origin main
```

I like CI

Because it helps

Basic example



```
mkdir -p .github/workflows
```

```
cat << EOF > .github/workflows/md.yml
```

- name: lint Markdown file
- on: [push, pull_request]
- jobs:
- lint:
- runs-on: ubuntu-latest
- steps:
- - uses: actions/checkout@v2
- - uses: actionshub/markdownlint@main
- EOF

```
git add . && git commit -am "2nd commit" && git push
```

Realistic example

```
mkdir -p .github/workflows
```

```
cp ~/templates/md.yml .github/workflows/
```

```
git add . && git commit -am "2nd commit" && git push
```





Linting failed

 main ▾

 1 branch

 0 tags

Go to file

Add file ▾



 Code ▾

 **annejan** No blank line ✖ b178866 3 minutes ago ⌚ 5 commits

 .github/workflows

 file.md

All checks have failed
1 failing check

✖  **lint Markdown file / lint (push)** Failing after 33s [Details](#)

4 minutes ago

3 minutes ago

Help people interested in this repository understand your project by adding a README.

 Add a README

Linting failed

lint

failed 2 minutes ago in 16s

- >  Set up job
- >  Build actionshub/markdownlint@main
- >  Run actions/checkout@v2
- ▼  Run actionshub/markdownlint@main

```
1 ▶ Run actionshub/markdownlint@main
4 /usr/bin/docker run --name f70fbc7cf90c479440d93f0964ca45a4722_4dd1df --label 817f70 --workdir /github/workspace --rm -e "IN
  "GITHUB_REF" -e "GITHUB_SHA" -e "GITHUB_REPOSITORY" -e "GITHUB_REPOSITORY_OWNER" -e "GITHUB_RUN_ID" -e "GITHUB_RUN_NUMBER" -e
  "GITHUB_TRIGGERING_ACTOR" -e "GITHUB_WORKFLOW" -e "GITHUB_HEAD_REF" -e "GITHUB_BASE_REF" -e "GITHUB_EVENT_NAME" -e "GITHUB_SI
  -e "GITHUB_REF_PROTECTED" -e "GITHUB_REF_TYPE" -e "GITHUB_WORKSPACE" -e "GITHUB_ACTION" -e "GITHUB_EVENT_PATH" -e "GITHUB_AC
  "GITHUB_STEP_SUMMARY" -e "RUNNER_OS" -e "RUNNER_ARCH" -e "RUNNER_NAME" -e "RUNNER_TOOL_CACHE" -e "RUNNER_TEMP" -e "RUNNER_WO
  "ACTIONS_CACHE_URL" -e GITHUB_ACTIONS=true -e CI=true -v "/var/run/docker.sock":"/var/run/docker.sock" -v "/home/runner/work
  "/home/runner/work/_temp/_github_workflow":"/github/workflow" -v "/home/runner/work/_temp/_runner_file_commands":"/github/fi
  example":"/github/workspace" 817f70:fbc7cf90c479440d93f0964ca45a4722
5 Error: ../file.md:1: MD022 Headers should be surrounded by blank lines
6
7 A detailed description of the rules is available at https://github.com/markdownlint/markdownlint/blob/master/docs/RULES.md
```

- >  Post Run actions/checkout@v2
- >  Complete job

Fixing the Markdown

```
sed -i '1 a \n' file.md
```

```
md1 file.md
```

```
git status
```

```
git commit -am "Fixed Markdown header whitespace"
```

```
git push
```

```
diff --git a/file.md b/file.md
```

```
index 0b0ad1d..e74dcd4 100644
```

```
--- a/file.md
```

```
+++ b/file.md
```

```
@@ -1,2 +1,3 @@
```

```
# I like CI
```

```
+
```

```
Because it helps
```



```
# I like CI
```

```
Because it helps
```



Linting succeeded

main ▾

1 branch

0 tags

Go to file

Add file ▾



Code ▾

 **annejan** Fixed markdown whitespace

✓ f6fd637 3 minutes ago ⌚ 7 commits

 .github/workflows

No name works?

11 minutes ago

 file.md

Fixed markdown whitespace

3 minutes ago

✓ **Fixed markdown whitespace** lint Markdown file #4

Re-run all jobs

...

Summary

Jobs

lint

lint

succeeded 2 minutes ago in 28s

Search logs





> ✓ Set up job

1s

> ✓ Build actionshub/markdownlint@main

25s

> ✓ Run actions/checkout@v2

1s

> ✓ Run actionshub/markdownlint@main

1s

> ✓ Post Run actions/checkout@v2

0s

> ✓ Complete job

0s

What to CI

- If you can lint it
- If you can build it
- If you can run it
- If you can test it
- etc.



Questions?

Example questions:

- Which CI should I use?
- Then what about CD?
- What about cost?
- Should I CI ... ?

