

SOFTWARE ENGINEERING

IN THE MARIOKART SYSTEM

Wim Looman

Department of Electrical Engineering
University of Canterbury
New Zealand

26 September, 2011

1 CONTINUOUS INTEGRATION

- What is it?
- Why would you use it?
- CI Joe
- Did it help?
- Examples

2 QUESTIONS

WHAT IS CONTINUOUS INTEGRATION?

DEFINITION¹

“Continuous Integration is a software development practice . . . leading to multiple integrations per day . . . verified by an automated build . . . to detect integration errors as quickly as possible.” — Martin Fowler

¹<http://martinfowler.com/articles/continuousIntegration.html>

WHY WOULD YOU USE CONTINUOUS INTEGRATION?

- Detect errors early.

WHY WOULD YOU USE CONTINUOUS INTEGRATION?

- Detect errors early.
- Force coders to ensure interdependencies are changed at both ends.

WHY WOULD YOU USE CONTINUOUS INTEGRATION?

- Detect errors early.
- Force coders to ensure interdependencies are changed at both ends.
-

REPOSITORY DESCRIPTION

"CI Joe is a fun Continuous Integration server."

²<https://github.com/defunkt/cijoe>

- Simple setup.

²<https://github.com/defunkt/cijoe>

- Simple setup.
- Designed to work with git.

²<https://github.com/defunkt/cijoe>

- Simple setup.
- Designed to work with git.
- Can trigger a build via a post-hook on github.

²<https://github.com/defunkt/cijoe>

- Simple setup.
- Designed to work with git.
- Can trigger a build via a post-hook on github.
- Reports status via build-hook (used to send email).

²<https://github.com/defunkt/cijoe>

DID CONTINUOUS INTEGRATION HELP?

EXAMPLE 1

CI Joe because knowing is half the battle

mariokart

Build

2011-09-18 01:28 » Built master at [b464a16](#) (worked) in 135.826144 seconds.

EXAMPLE 1

CI Joe because knowing is half the battle

mariokart

2011-09-18 03:20 » Build starting...

2011-09-18 01:28 » Built master at [b464a16](#) (worked) in 135.826144 seconds.

EXAMPLE 1

CI Joe because knowing is half the battle

mariokart

Build

2011-09-18 03:20 » Built master at [fc2a97c](#) (failed) in 4.422625 seconds.

```
make: Entering directory `/var/www/cijoe-repos/mariokart/app/Software'
make[1]: Entering directory `/var/www/cijoe-repos/mariokart/app/Software'
src/brake/main.c: In function 'main':
src/brake/main.c:102:27: error: expected expression before ';' token
src/brake/main.c:135:5: error: expected ';' before '}' token
src/brake/main.c:97:15: error: unused variable 'msg' [-Werror=unused-variable]
cc1: all warnings being treated as errors

make[1]: *** [build/objs/src/brake/main.o] Error 1
make[1]: Target `rebuild' not remade because of errors.
make[1]: Leaving directory `/var/www/cijoe-repos/mariokart/app/Software'
make: *** [test] Error 2
make: Leaving directory `/var/www/cijoe-repos/mariokart/app/Software'
```

From: CI Joe <cijoe@nemo157.com>
Subject: Building mariokart Failed
Date: 18 September 2011 3:21:23 PM NZST
To: ag@henryjenkins.name

Hide

1 Duplicate **2**

Building [mariokart](#) failed

Latest commit info:

- fc2a97c: Breaking the build for my presentation - Wim Looman <[ghostunderscore@gmail.com](#)>

Build Output

```
make: Entering directory `/var/www/cijoe-repos/mariokart/app/Software'
make[1]: Entering directory `/var/www/cijoe-repos/mariokart/app/Software'
src/brake/main.c: In function 'main':
src/brake/main.c:102:27: error: expected expression before ';' token
src/brake/main.c:135:5: error: expected ';' before '}' token
src/brake/main.c:97:15: error: unused variable 'msg' [-Werror=unused-variable]
cc1: all warnings being treated as errors

make[1]: *** [build/objs/src/brake/main.o] Error 1
make[1]: Target 'rebuild' not remade because of errors.
make[1]: Leaving directory `/var/www/cijoe-repos/mariokart/app/Software'
make: *** [test] Error 2
make: Leaving directory `/var/www/cijoe-repos/mariokart/app/Software'
```

--

CI Joe
Because knowing is half the battle.

