

# debci and the Debian Continuous Integration project

Antonio Terceiro  
terceiro@debian.org

DebConf 2014, Portland, OR, USA



# It all started with autopkgtest

- by Ian Jackson
- first prototype from Jan 2006!
- currently maintained by  
Martin Pitt



*One day someone will run  
this over the entire  
archive ...*

-- Famous last words



Dec 2013: **debc** is born

Jan 2014: soft open announcement  
at mini-Debconf France

Apr 2014: GSOC 2014 starts

- two debci-related projects

Aug 2014: GSOC 2014 finishes





### News



🔴cantor tests FAILED on unstable/amd64  
2014-08-26 11:43:35 UTC | 14 hour(s) ago

🟢python3.4 tests PASSED on unstable/amd64  
2014-08-24 18:28:43 UTC | 2 day(s) ago

🟢s3ql tests PASSED on unstable/amd64  
2014-08-23 18:15:55 UTC | 3 day(s) ago

🟢php-guzzlehttp tests PASSED on unstable/amd64  
2014-08-23 12:11:17 UTC | 3 day(s) ago

🟢since tests PASSED on unstable/amd64  
2014-08-23 06:06:44 UTC | 3 day(s) ago

🔴python3.4 tests FAILED on unstable/amd64  
2014-08-22 10:48:20 UTC | 4 day(s) ago

🔴debian-edu tests FAILED on unstable/amd64  
2014-08-21 23:03:26 UTC | 5 day(s) ago

🟢matplotlib tests PASSED on unstable/amd64  
2014-08-21 11:29:33 UTC | 5 day(s) ago

🔴mysql-5.5 tests FAILED on unstable/amd64  
2014-08-20 03:07:23 UTC | 6 day(s) ago

🟢python3.4 tests PASSED on unstable/amd64  
2014-08-20 01:38:14 UTC | 7 day(s) ago

ci.debian.net/packages/s/s3ql/unstable/amd64

## Packages

### Browse by prefix

- 3 a b c d e f
- g h i j k l llba
- llbc llbe llbf llbg llbh
- llbk llbl llbn llbp llbq
- llbr llbs llbt llbv llbx
- m n o p q r s
- t u v w y z

### Search

Search packages (regex welcome)



### News



🔴cantor tests FAILED on unstable/amd64  
2014-08-26 11:43:35 UTC | 14 hour(s) ago

🟢python3.4 tests PASSED on unstable/amd64  
2014-08-24 18:28:43 UTC | 2 day(s) ago

🟢s3ql tests PASSED on unstable/amd64  
2014-08-23 18:15:55 UTC | 3 day(s) ago

🟢php-guzzlehttp tests PASSED on  
unstable/amd64  
2014-08-23 12:11:17 UTC | 3 day(s) ago

🟢since tests PASSED on unstable/amd64  
2014-08-23 06:06:44 UTC | 3 day(s) ago

🔴python3.4 tests FAILED on unstable/amd64  
2014-08-22 10:48:20 UTC | 4 day(s) ago

🔴debian-edu tests FAILED on unstable/amd64  
2014-08-21 23:03:26 UTC | 5 day(s) ago

🟢matplotlib tests PASSED on unstable/amd64  
2014-08-21 11:29:33 UTC | 5 day(s) ago

🔴mysql-5.5 tests FAILED on unstable/amd64  
2014-08-20 03:07:23 UTC | 6 day(s) ago

🟢python3.4 tests PASSED on unstable/amd64  
2014-08-20 01:38:14 UTC | 7 day(s) ago

## Packages

### Browse by prefix

- [3](#) [a](#) [b](#) [c](#) [d](#) [e](#) [f](#)
- [g](#) [h](#) [i](#) [j](#) [k](#) [l](#) [llba](#)
- [llbc](#) [llbe](#) [llbf](#) [llbg](#) [llbh](#)
- [llbk](#) [llbl](#) [llbn](#) [llbp](#) [llbq](#)
- [llbr](#) [llbs](#) [llbt](#) [llbv](#) [llbx](#)
- [m](#) [n](#) [o](#) [p](#) [q](#) [r](#) [s](#)
- [t](#) [u](#) [v](#) [w](#) [y](#) [z](#)

### Search

4 result(s) found.

[ruby-defaults](#) (package page)

🟢unstable/amd64

[ruby-ffi](#) (package page)

🟢unstable/amd64

[ruby-rack](#) (package page)
















🟢unstable/amd64

[rubygems-Integration](#) (package page)

🟢unstable/amd64

[r](#) / [ruby-defaults](#) / unstable/amd64

## ruby-defaults [ unstable/amd64 ]

Version	Date	Duration	Status	Results
1:2.1.0.4	2014-08-25 15:40:29 UTC	0h 0m 21s	 pass	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.4	2014-08-23 05:57:31 UTC	0h 0m 20s	 pass	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.4	2014-08-20 23:54:00 UTC	0h 0m 20s	 pass	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.3	2014-08-18 13:16:49 UTC	0h 0m 29s	 tmpfail	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.3	2014-08-16 23:48:37 UTC	0h 0m 30s	 tmpfail	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.3	2014-08-13 14:28:29 UTC	0h 0m 34s	 tmpfail	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.2	2014-08-09 20:18:45 UTC	0h 0m 43s	 pass	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.1	2014-08-03 20:09:19 UTC	0h 0m 21s	 pass	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.1	2014-07-30 07:48:56 UTC	0h 0m 19s	 pass	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.1	2014-07-28 05:44:54 UTC	0h 0m 19s	 pass	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.1	2014-07-26 06:04:21 UTC	0h 0m 20s	 pass	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.1	2014-07-24 05:36:34 UTC	0h 0m 19s	 pass	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.1	2014-07-22 05:54:29 UTC	0h 0m 19s	 pass	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.1	2014-07-20 11:33:54 UTC	0h 0m 19s	 pass	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>
1:2.1.0.1	2014-07-18 11:44:23 UTC	0h 0m 19s	 pass	<a href="#">debcl log</a> <a href="#">test log</a> <a href="#">artifacts</a>

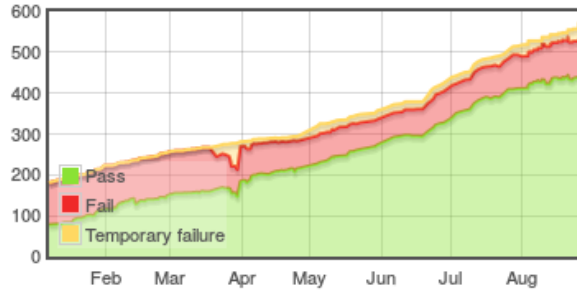


# Package Testing Data

## Pass/Fail

---

unstable/amd64



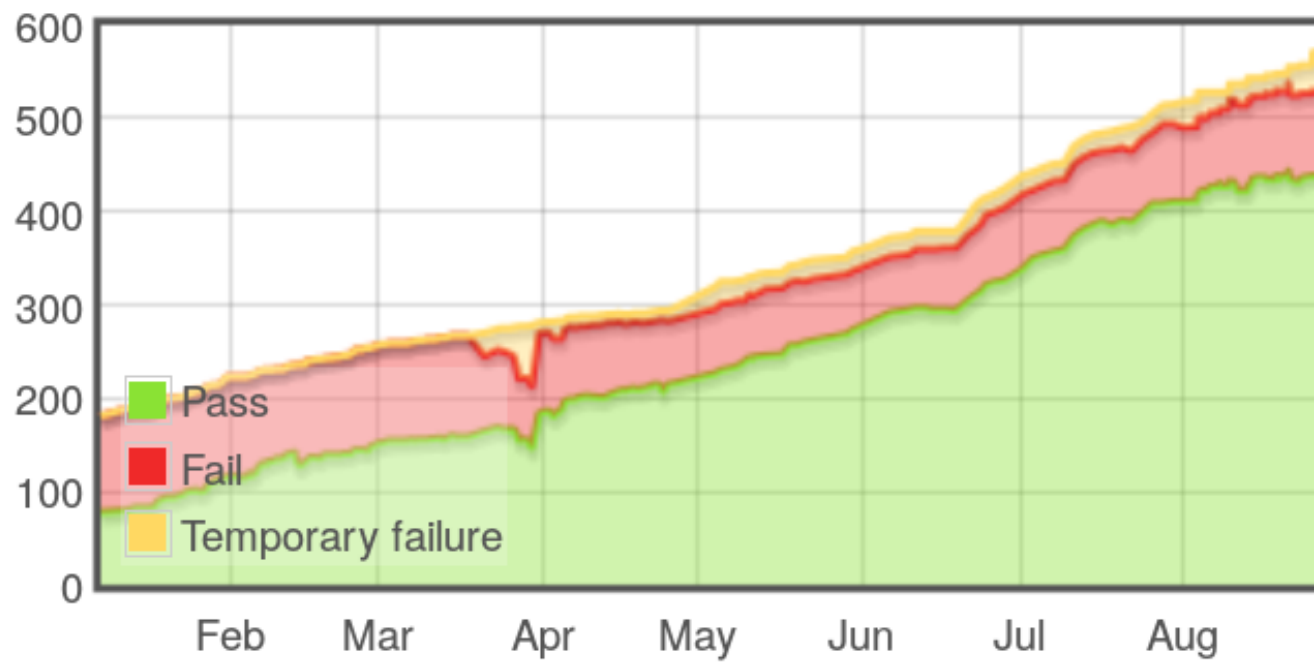
## Pass Percentage

---

unstable/amd64







## Debian Bug report logs: Bugs submitted by kanashiro.duarte@gmail.com in unstable

Note that people may use different email accounts for different bugs, so there may be other reports filed under different addresses.

- [Outstanding bugs -- Normal bugs; Patch Available](#) (7 bugs)
- [Outstanding bugs -- Normal bugs; Unclassified](#) (1 bug)
- [Pending Upload bugs -- Normal bugs](#) (1 bug)
- [Resolved bugs -- Normal bugs](#) (12 bugs)

### Outstanding bugs -- Normal bugs; Patch Available (7 bugs)

- [#756969](#) [n+ ] [crash] [crash: Fail of tests in debci \(autopkgtest\)](#)
- [#757019](#) [n+ ] [nsscache] [nsscache: Fail of tests in debci \(autopkgtest\)](#)
- [#757713](#) [n+ ] [src:libnotify] [libnotify: Fail of tests in debci \(autopkgtest\)](#)
- [#758130](#) [n+ ] [src:camitk] [camitk: Fail of tests in debci \(autopkgtest\)](#)
- [#759413](#) [n+ ] [r-cran-learnbayes] [r-cran-learnbayes: Fail of tests in debci \(autopkgtest\)](#)
- [#759527](#) [n+ ] [src:marisa] [marisa: Fail of tests in debci \(autopkgtest\)](#)
- [#759529](#) [n+ ] [src:gerris] [gerris: Fail of tests in debci \(autopkgtest\)](#)

### Outstanding bugs -- Normal bugs; Unclassified (1 bug)

- [#759569](#) [n | ] [debci] [debci: Unable to see the data of nut package](#)

### Pending Upload bugs -- Normal bugs (1 bug)

- [#751602](#) [n+P | ] [src:mod-gearman] [mod-gearman: Failing test of status of mod-gearman-worker service: \\$PATH error](#)

### Resolved bugs -- Normal bugs (12 bugs)

- [#756156](#) [n+ | ] [src:gnuplot] [gnuplot: Fail of tests in debci \(autopkgtest\)](#)
- [#756971](#) [n+ | ] [src:pygts] [pygts: Fail of tests in debci \(autopkgtest\)](#)
- [#757593](#) [n+ | ] [r-cran-batchjobs] [r-cran-batchjobs: Fail of tests in debci \(autopkgtest\)](#)
- [#757596](#) [n+ | ] [r-cran-plot] [r-cran-plot: Fail of tests in debci \(autopkgtest\)](#)

debci:


<http://packages.debian.org/debci>

Debian CI:

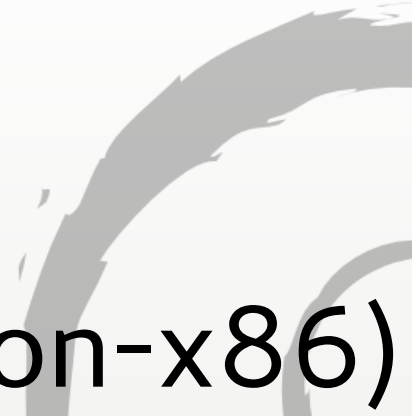
<http://ci.debian.net/>



# The debci team

- Antonio Terceiro
  - Martin Pitt
  - Brandon Fairchild
  - Lucas Kanashiro
- 

# How to help

- Report bugs
  - Send patches
  - Fix broken test suites
  - Add test suites
  - Donate hardware (esp. non-x86)
- 

debc architecture



# Technology stack

- autopkgtest + backends
  - e.g. schroot, lxc
- languages: Ruby and shell
- has a test suite





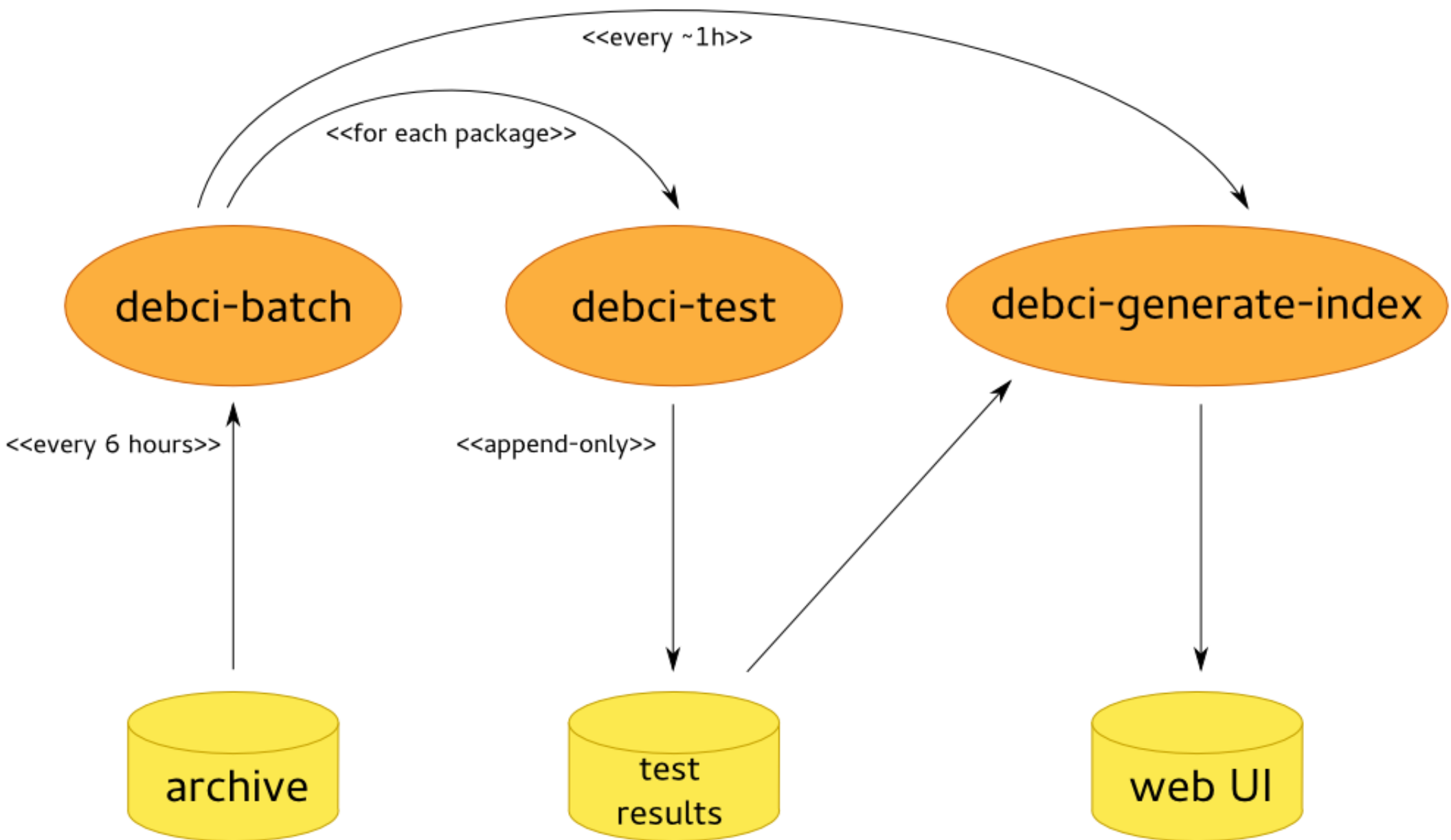
[d](#) / [debci](#) / unstable/amd64

## debci [ unstable/amd64 ]

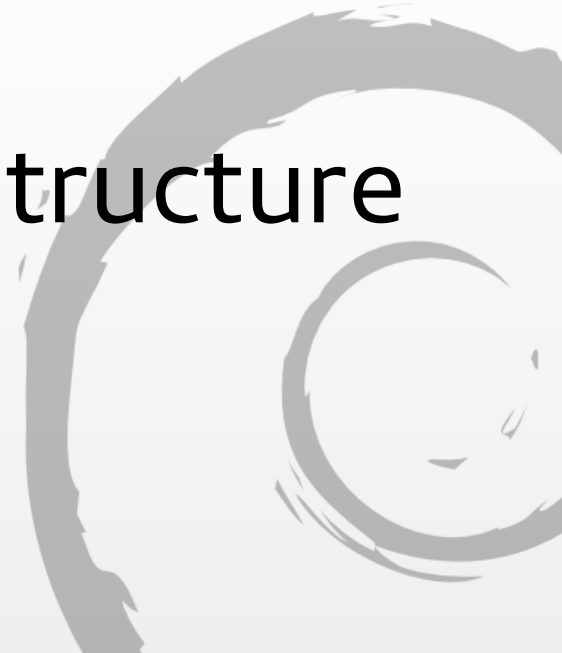
Version	Date	Duration	Status	Results
0.9	2014-08-25 22:20:37 UTC	0h 2m 52s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.8.1	2014-08-23 13:08:11 UTC	0h 2m 42s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.8.1	2014-08-21 05:42:38 UTC	0h 2m 34s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.8	2014-08-18 19:01:53 UTC	0h 2m 41s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.8	2014-08-14 08:42:58 UTC	0h 2m 31s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.8	2014-08-10 18:29:34 UTC	0h 2m 34s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.8	2014-08-04 20:57:31 UTC	0h 2m 32s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.7.3	2014-07-30 13:09:01 UTC	0h 2m 26s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.7.3	2014-07-28 11:38:31 UTC	0h 2m 31s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.7.3	2014-07-26 11:44:45 UTC	0h 2m 23s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.7.3	2014-07-24 10:43:54 UTC	0h 2m 28s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.7.3	2014-07-22 10:51:58 UTC	0h 2m 27s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.7.3	2014-07-20 16:37:09 UTC	0h 2m 21s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.7.3	2014-07-18 16:59:35 UTC	0h 2m 23s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>
0.7.3	2014-07-16 22:57:01 UTC	0h 2m 25s	pass	<a href="#">debci log</a> <a href="#">test log</a> <a href="#">artifacts</a>

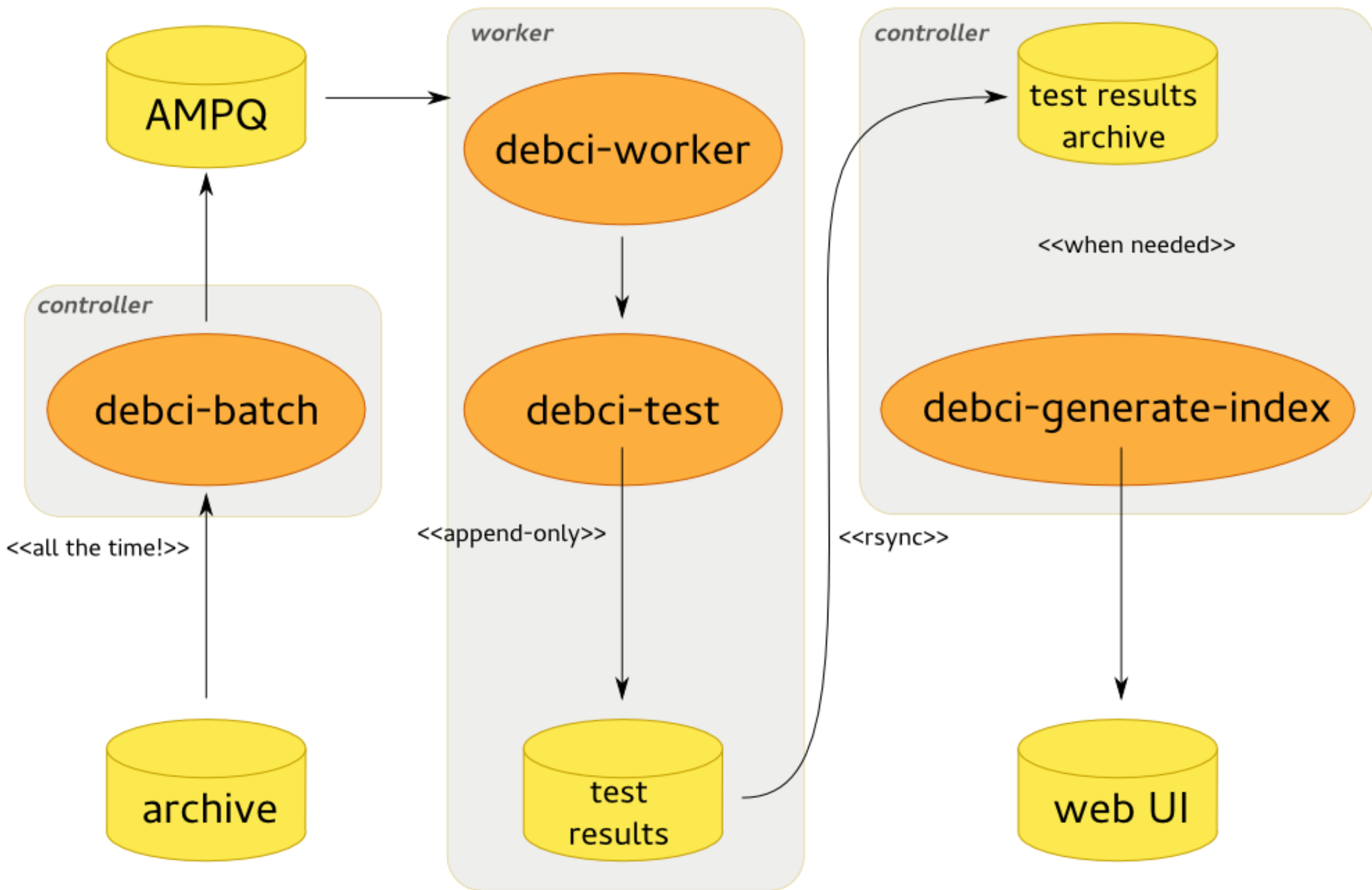
dogfooding FTW






# Future


- incoming.d.o now public \o/
  - Distributed worker nodes
  - migration to Debian infrastructure
- 



# Future (2)

- more suites
    - experimental
    - testing
    - stable
    - stable + backports
    - oldstable + lts
  - functional upgrade tests
- 

# whishlist

- email notifications
  - per-maintainer news feed
  - «*your request here*»
- 

# Writing tests for your package


*a mini tutorial*



# Reading list

- /usr/share/doc/autopkgtest/  
README.\*
- <http://ci.debian.net/doc/>

# Important points

- test the package as installed
    - don't use code from the source tree
  - Please avoid full builds if possible
- 



## Basic structure

```
» debian/tests/control  
Tests: foo bar
```

```
» debian/tests/foo  
#!/bin/sh -e
```

```
true
```

```
» debian/tests/bar  
#!/bin/sh -e
```

```
false
```



# Running tests

```
# from devscripts  
$ sadt
```

```
# equivalent  
$ adt-run ./ --- null
```

```
# against clean system  
$ adt-run ./ --- schroot «chroot»
```



You want an APT proxy  
(e.g. apt - cacher - ng)



# Testbed setup

```
# easiest way
```

```
$ sudo apt install debci
```

```
$ sudo debci setup
```

```
$ sudo addgroup «you» debci
```

```
# running tests
```

```
$ adt-run --user debci ./ --- \  
    schroot debci-unstable-amd64
```

## Without trivial wrapper scripts

» `debian/tests/control`

`Test-Command: foo --with-bar`

`Test-Command: foo --without-bar`



## Explicit dependencies

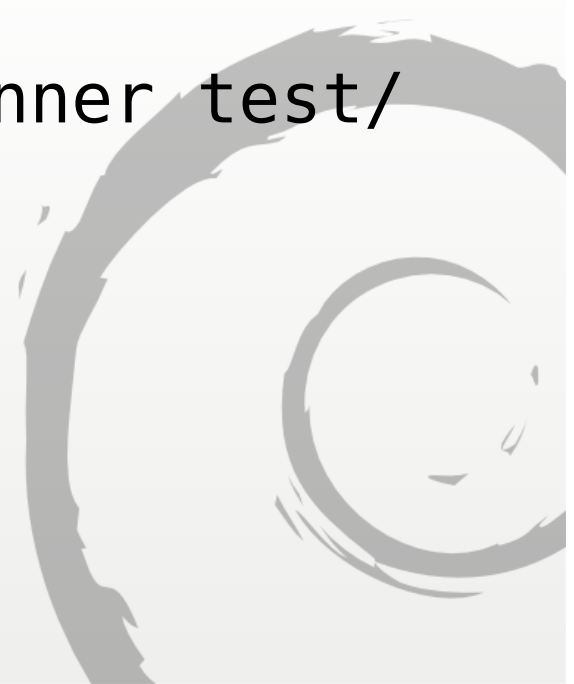
» debian/tests/control

Tests: foo bar

**Depends: @ # the default**

Test-Command: /usr/bin/my-test-runner test/

**Depends: @, my-test-runner**



## Restrictions

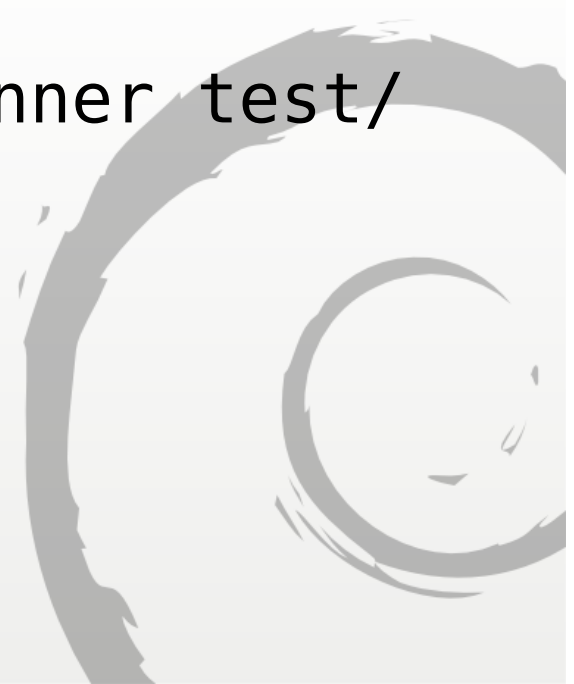
» debian/tests/control

Tests: foo bar

Restrictions: **needs-root, needs-recommends**

Test-Command: /usr/bin/my-test-runner test/

Restrictions: **allow-stderr**



# Common problems

- Missing dependencies
- Missing restrictions
  - assuming root
- simple programming errors
- locale assumptions





## Real example: ruby-ffi

```
» debian/tests/control
```

```
Tests: smoke
```

```
Test-Command: gem2deb-test-runner --autopkgtest
```

```
Depends: @, gem2deb-test-runner,  
        build-essential, ruby-rspec
```



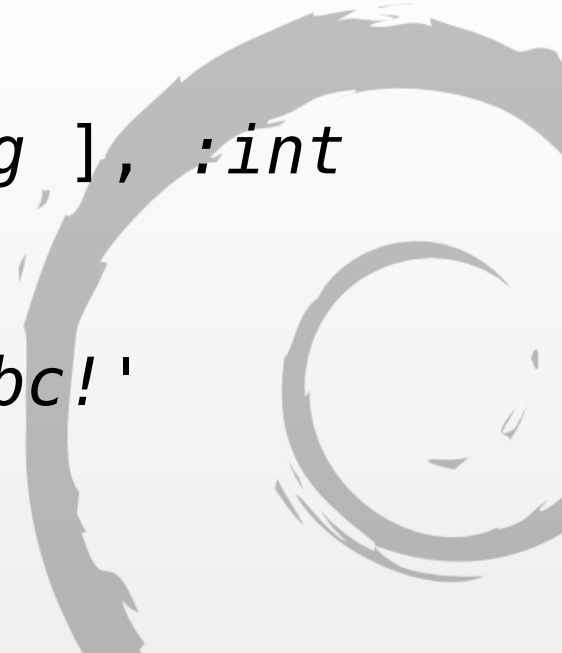
## Real example: ruby-ffi (2)

```
» debian/tests/smoke  
#!/usr/bin/ruby
```

```
require 'ffi'
```

```
module MyLib  
  extend FFI::Library  
  ffi_lib 'c'  
  attach_function :puts, [ :string ], :int  
end
```

```
MyLib.puts 'Hello, World using libc!'
```



That's all, folks

*a hands-on adhoc session anyone?*



# Contact

*General discussion*

#debian-qa (OFTC)

debian-qa@lists.debian.org

*debci development*

#debci (OFTC)

autopkgtest-devel@lists.alioth.d.o

