

# Testing the package distribution

*The past and future*



**Wilf Wilson** of the **University of St Andrews** at **GAP Days Winter 2022** on the 21st February 2022

# Outline

- Motivation for automated testing for GAP/packages
- General aims
- Survey of old/existing functionality
- GitHub Actions
- General directions for work this week (and beyond)

# What is automated testing all about?

- **Why test?**
  - Try to ensure GAP/packages work as intended:
    - Correctness is particularly important in computational maths!
- **Why automate?**
  - Increase:
    - Frequency
    - Regularity
    - Reliability
  - Reduce labour (beware pitfalls!)

# What *might* we want to test?

## Have...

- Changes to GAP broken GAP?
- Changes to GAP broken a (released/dev) package?
- Changes to one package broken another package?
- External changes caused trouble?
  - New compilers...
  - New operating systems (and 32/64-bit)...
  - New versions of dependencies...
  - All sorts of annoying stuff...



# Important principles for our testing setup

- Useful
- Robust
- Low-effort
- Maintainable
- Portable
  - Sustainable (money/resources)
- Understandable and visible
  - **DOCUMENTED!**
  - Easy for package authors (+everyone) to see status

## **Quick summary of past/present/future tools**

# Travis: No longer usable (cautionary tale!)

Build #599 - gap-infra/gap-docker-pkg-tests-master-devel

https://travis-ci.org/github/gap-infra/gap-docker-pkg-tests-master-devel/builds/730848158

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Since June 15th, 2021, the building on [travis-ci.org](https://travis-ci.org) is ceased. Please use [travis-ci.com](https://travis-ci.com) from now on.

Help make Open Source a better place and start building better software today!

gap-infra / gap-docker-pkg-tests-master-devel build error

Current Branches Build History Pull Requests > Build #599 More options

**! master CRON Update where bootstrap archives are stored** #599 errored

Commit 10469b3  
Branch master  
Alexander Konovalov authored and committed

Ran for 3 hrs 38 min 51 sec  
Total time 13 hrs 31 min 59 sec  
about a year ago

Build jobs View config

✗ # 599.1	AMD64	Xenial	</> C	REPO_URL=https://github.com/gap-pack 3 min 32 sec
✗ # 599.2	AMD64	Xenial	</> C	REPO_URL=https://github.com/gap-pack 3 min 28 sec
✓ # 599.3	AMD64	Xenial	</> C	REPO_URL=https://github.com/gap-pack 3 min 47 sec
✓ # 599.4	AMD64	Xenial	</> C	REPO_URL=https://github.com/gap-pack 3 min 44 sec
✗ # 599.5	AMD64	Xenial	</> C	REPO_URL=https://github.com/gap-pack 3 min 51 sec
✓ # 599.6	AMD64	Xenial	</> C	REPO_URL=https://github.com/gap-pack 4 min 15 sec
✓ # 599.7	AMD64	Xenial	</> C	REPO_URL=https://github.com/gap-pack 4 min 7 sec
✓ # 599.8	AMD64	Xenial	</> C	REPO_URL=https://github.com/gap-packages/AutoDoc.git 3 min 53 sec
✓ # 599.9	AMD64	Xenial	</> C	REPO_URL=https://github.com/gap-pack 3 min 44 sec
✓ # 599.10	AMD64	Xenial	</> C	REPO_URL=https://github.com/gap-pack 4 min 6 sec

https://travis-ci.org/github/gap-infra/gap-docker-pkg-tests-master-devel/jobs/730848177

# AppVeyor: Windows tests (retired)

gap - AppVeyor

https://ci.appveyor.com/project/gap-system/gap/history

120%

Sign in

gap

Current build History

Pull request #4389 - Automate creating Windows installers for GAP releases with GitHub Actions		
<b>Create Cygwin installers in GitHub Actions</b>		1.0.11000
10 months ago by Wilf Wilson	🔗 master → cdf81e85 ← 🔗 stable-cygwin → a3ea10fc	10 months ago in 19 min 54 sec
Pull request #4392 - CI: remove AppVeyor integration		
<b>CI: remove AppVeyor integration</b>		1.0.10999
10 months ago by Max Horn	🔗 master → e052c477 ← 🔗 mh/remove-appveyor → b9c1c00f	Failed 10 months ago in 38 sec
Pull request #4386 - Restore some functionality of the `--strict` option to the `bin/BuildPackages.sh` script		
<b>Restore some of --strict to BuildPackages script</b>		1.0.10998
10 months ago by Wilf Wilson	🔗 master → 5b72da1b ← 🔗 ww/BuildPackages → 2b11fa45	10 months ago in 30 min 24 sec
<b>Update config.guess and config.sub</b>		1.0.10997
10 months ago by Max Horn	🔗 master → c0037b82	10 months ago in 18 min 9 sec
Pull request #4389 - Automation creating Windows installers for GAP releases with GitHub Actions		
<b>Create Cygwin installers in GitHub Actions</b>		1.0.10996
10 months ago by Wilf Wilson	🔗 master → 32cc682f ← 🔗 stable-cygwin → 368d9da1	10 months ago in 18 min 40 sec
<b>CI: do not install readline in the macOS job</b>		1.0.10995
10 months ago by Wilf Wilson	🔗 master → 78199ffb	10 months ago in 18 min 30 sec
<b>write matrices of orth. groups over smallest fields</b>		1.0.10994
10 months ago by ThomasBreuer (committed by Max Horn)	🔗 master → fa5b91fe	10 months ago in 17 min 23 sec
Pull request #4381 - Update config.guess and config.sub		
<b>Update config.guess and config.sub</b>		1.0.10993
10 months ago by Max Horn	🔗 master → 62e5526c ← 🔗 mh/autoconf-updates → 9b335bc7	10 months ago in 17 min 32 sec

# Jenkins: Powerful (but private)

Dashboard [Jenkins]


← → ↺

https://gap-ci.cs.st-andrews.ac.uk

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 **Jenkins**

[log in](#)

Dashboard

People

Build History

Project Relationship

Check File Fingerprint

Build Queue (1)

GAP-master-windows-test

🕒

Build Executor Status

Built-In Node

1 Idle

gapw10-build

1 Idle

gapw10-cygwin64

1 Idle

gapw10-test2 (offline)

kovacs

1 Idle

2 Idle

3 Idle

4 Idle

AllGAP-nightlyGAP-pkgGAP-releaseGAP-weeklyPull requests

S	W	Name	Last Success ↑	Last Failure	Last Duration
✓	🔗	gap-docker-stable-4.11-trigger	7 hr 48 min - #872	N/A	0.73 sec
✓	🔗	gap-docker-master-trigger	8 hr 3 min - #1639	N/A	0.79 sec
✓	🔗	GAP-master-windows-build	17 hr - #1186	N/A	1 hr 49 min
✓	🔗	GAP-master-snapshot	17 hr - #1346	1 mo 6 days - #1319	4 min 34 sec
✓	🔗	GAP-stable-snapshot	17 hr - #1036	1 mo 6 days - #1009	4 min 15 sec
✓	🔗	GAP-pkg-update-master-snapshot	1 day 1 hr - #203	1 mo 6 days - #186	8 min 40 sec
✓	🔗	GAP-pkg-merge-master	1 day 2 hr - #647	N/A	34 min
✓	🔗	GAP-pkg-update-stable-snapshot	1 day 2 hr - #617	N/A	4 min 20 sec
✓	🔗	GAP-pkg-merge-stable	1 day 3 hr - #623	1 mo 7 days - #606	42 min
✗	🔗	GAP-pkg-check-updates	1 day 3 hr - #1335	3 hr 33 min - #1336	16 min
✓	🔗	GAP-minor-release-win-test64	3 days 19 hr - #286	11 mo - #242	32 min
✓	🔗	GAP-minor-release-win-build64	3 days 20 hr - #309	N/A	1 hr 8 min
✓	🔗	GAP-minor-release	3 days 20 hr - #306	N/A	1 min 17 sec
✓	🔗	GAP-major-release-win-test	4 days 2 hr - #250	2 mo 7 days - #241	20 min
✓	🔗	GAP-major-release-win-build	4 days 4 hr - #291	N/A	1 hr 59 min
✓	🔗	GAP-major-release	4 days 4 hr - #297	N/A	21 min
✓	🔗	GAP-master-benchmarks	5 days 3 hr - #257	N/A	3 hr 1 min
✓	🔗	GAP-stable-benchmarks	5 days 3 hr - #213	N/A	2 hr 48 min
✓	🔗	GAP-master-windows-test	5 days 15 hr - #972	2 mo 3 days - #934	20 min
✓	🔗	GAP-bibliography-check-updates	6 days 12 hr - #124	1 mo 7 days - #122	16 min
✓	🔗	GAP-bibliography-fetch-bibtex	7 mo 5 days - #3	N/A	10 min
🕒	🔗	GAP-minor-release-win-noreadline-test	11 mo - #207	1 yr 10 mo - #164	24 min
🕒	🔗	GAP-minor-release-win-test	11 mo - #231	2 yr 4 mo - #163	24 min
🕒	🔗	GAP-minor-release-win-noreadline-build	11 mo - #240	N/A	1 hr 41 min

# GitHub Actions: Fancy new kid on the block

The screenshot shows the GitHub Actions interface for the `gap-system/gap` repository. The page is titled "All workflows" and displays a list of workflow runs. The repository is public and has 137 forks and 545 stars. The Actions tab is selected, showing 4,023 workflow runs. The list of runs includes details such as the workflow name, the actor, the event, the status, the branch, and the time taken to complete the run.

Workflows

- All workflows
- CI
- Wrap releases

All workflows

Showing runs from all workflows

Filter workflow runs

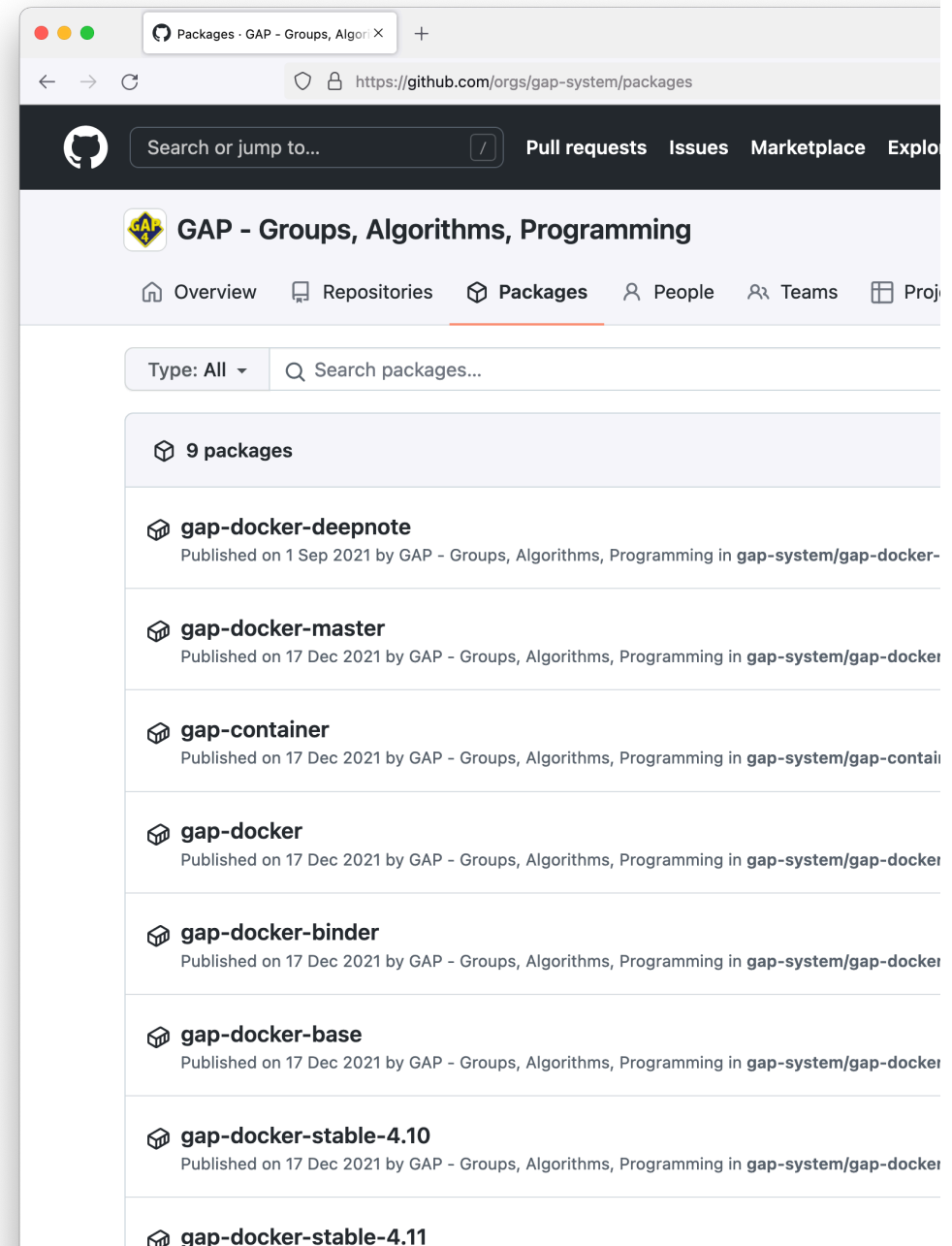
4,023 workflow runs

	Event	Status	Branch	Actor
✓ Matrix Objects for matrices of ZmodnzOb... CI #2078: Pull request #4773 synchronize by hulpke	hulpke:additions	3 hours ago	43m 12s	...
✓ Matrix Objects for matrices of ZmodnzOb... Wrap releases #1650: Pull request #4773 synchronize by hulpke	hulpke:additions	3 hours ago	49m 4s	...
✓ Matrix Objects for matrices of ZmodnzOb... CI #2077: Pull request #4773 synchronize by hulpke	hulpke:additions	5 hours ago	38m 54s	...
✓ Matrix Objects for matrices of ZmodnzOb... Wrap releases #1649: Pull request #4773 synchronize by hulpke	hulpke:additions	5 hours ago	44m 58s	...
✓ CI: tweak expect test to make it a bit mor... CI #2076: Pull request #4777 synchronize by fingolfin	fingolfin:mh/tweak-expect	8 hours ago	41m 59s	...

# Want: GAP Docker containers

Pre-configured systems for quicker & consistent testing

- Zach Newbery will talk about this tomorrow morning
- Tasks:
  - Update or remove  
<https://hub.docker.com/u/gapsystem>
  - Clean up  
<https://github.com/orgs/gap-system/packages>



# Jenkins

<https://jenkins.io>



- Open source automation with lots of integrations
- GAP's installation is <https://gap-ci.cs.st-andrews.ac.uk>
  - Runs on St Andrews hardware: pros and cons
- Only available from within the St Andrews network!
  - Therefore currently of limited usefulness
- Vague goal:
  - Publicly replicate the desirable/feasible bits of Jenkins (i.e. in GitHub Actions). Retire old bits.



Dashboard [Jenkins]

https://gap-ci.cs.st-andrews.ac.uk

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Build History

Project Relationship

Check File Fingerprint

Build Queue (1)

GAP-master-windows-test

Build Executor Status

Built-In Node

1 Idle

gapw10-build

1 Idle

gapw10-cygwin64

1 Idle

gapw10-test2 (offline)

kovacs

1 Idle

2 Idle

3 Idle

4 Idle

AllGAP-nightlyGAP-pkgGAP-releaseGAP-weeklyPull requests

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✓	🔗	gap-docker-master-trigger	8 hr 3 min - #1639	N/A	0.79 sec
✓	🔗	GAP-master-windows-build	17 hr - #1186	N/A	1 hr 49 min
✓	🔗	GAP-master-snapshot	17 hr - #1346	1 mo 6 days - #1319	4 min 34 sec
✓	🔗	GAP-stable-snapshot	17 hr - #1036	1 mo 6 days - #1009	4 min 15 sec
✓	🔗	GAP-pkg-update-master-snapshot	1 day 1 hr - #203	1 mo 6 days - #186	8 min 40 sec
✓	🔗	GAP-pkg-merge-master	1 day 2 hr - #647	N/A	34 min
✓	🔗	GAP-pkg-update-stable-snapshot	1 day 2 hr - #617	N/A	4 min 20 sec
✓	🔗	GAP-pkg-merge-stable	1 day 3 hr - #623	1 mo 7 days - #606	42 min
✗	🔗	GAP-pkg-check-updates	1 day 3 hr - #1335	3 hr 33 min - #1336	16 min
✓	🔗	GAP-minor-release-win-test64	3 days 19 hr - #286	11 mo - #242	32 min
✓	🔗	GAP-minor-release-win-build64	3 days 20 hr - #309	N/A	1 hr 8 min
✓	🔗	GAP-minor-release	3 days 20 hr - #306	N/A	1 min 17 sec
✓	🔗	GAP-major-release-win-test	4 days 2 hr - #250	2 mo 7 days - #241	20 min
✓	🔗	GAP-major-release-win-build	4 days 4 hr - #291	N/A	1 hr 59 min
✓	🔗	GAP-major-release	4 days 4 hr - #297	N/A	21 min
✓	🔗	GAP-master-benchmarks	5 days 3 hr - #257	N/A	3 hr 1 min
✓	🔗	GAP-stable-benchmarks	5 days 3 hr - #213	N/A	2 hr 48 min
✓	🔗	GAP-master-windows-test	5 days 15 hr - #972	2 mo 3 days - #934	20 min
✓	🔗	GAP-bibliography-check-updates	6 days 12 hr - #124	1 mo 7 days - #122	16 min
✓	🔗	GAP-bibliography-fetch-bibtex	7 mo 5 days - #3	N/A	10 min
🕒	🔗	GAP-minor-release-win-noreadline-test	11 mo - #207	1 yr 10 mo - #164	24 min
🕒	🔗	GAP-minor-release-win-test	11 mo - #231	2 yr 4 mo - #163	24 min
🕒	🔗	GAP-minor-release-win-noreadline-build	11 mo - #240	N/A	1 hr 41 min

gap-docker-master-trigger [Jen X]

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← → ↺

https://gap-ci.cs.st-andrews.ac.uk/job/gap-docker-master-trigger/


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📅 Changes

⚙️ Build History


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🔍 Filter builds...

✔ #1639	<a href="#">17-Feb-2022 04:30</a>
✔ #1638	<a href="#">16-Feb-2022 04:30</a>
✔ #1637	<a href="#">15-Feb-2022 04:30</a>
✔ #1636	<a href="#">14-Feb-2022 04:30</a>
✔ #1635	<a href="#">13-Feb-2022 04:30</a>
✔ #1634	<a href="#">12-Feb-2022 04:30</a>
✔ #1633	<a href="#">11-Feb-2022 04:30</a>
✔ #1632	<a href="#">10-Feb-2022 04:30</a>
✔ #1631	<a href="#">09-Feb-2022 04:30</a>
✔ #1630	<a href="#">08-Feb-2022 04:30</a>
✔ #1629	<a href="#">07-Feb-2022 04:30</a>
✔ #1628	<a href="#">06-Feb-2022 04:30</a>
✔ #1627	<a href="#">05-Feb-2022 04:30</a>
✔ #1626	<a href="#">04-Feb-2022 04:30</a>
✔ #1625	<a href="#">03-Feb-2022 04:30</a>
✔ #1624	<a href="#">02-Feb-2022 04:30</a>
✔ #1623	<a href="#">01-Feb-2022 04:30</a>
✔ #1622	<a href="#">31-Jan-2022 04:30</a>
✔ #1621	<a href="#">30-Jan-2022 04:30</a>

## Project gap-docker-master-trigger

Triggering the build of gapsystem/gap-docker-stable on DockerHub

 Recent Changes

## Permalinks

- [Last build \(#1639\), 8 hr 8 min ago](#)
- [Last stable build \(#1639\), 8 hr 8 min ago](#)
- [Last successful build \(#1639\), 8 hr 8 min ago](#)
- [Last completed build \(#1639\), 8 hr 8 min ago](#)

kovacs [Jenkins]

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https://gap-ci.cs.st-andrews.ac.uk/computer/kovacs/


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Build History

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Load Statistics

Build Executor Status


⤴

1 Idle

2 Idle

3 Idle

4 Idle

 **Agent kovacs (ScientificLinux, 4 cores, 64 GB RAM in JH building)**

Labels

gcc-4

gcc-6

gcc-7

gcc-8

gcc-9

linux

Projects tied to kovacs

S	W	Name ↓	Last Success	Last Failure	Last Duration
✔	🔗	<a href="#">GAP-bibliography-check-updates</a>	6 days 13 hr - <a href="#">#124</a>	1 mo 7 days - <a href="#">#122</a>	16 min
✔	🔗	<a href="#">GAP-bibliography-fetch-bibtex</a>	7 mo 5 days - <a href="#">#3</a>	N/A	10 min
✔	🔗	<a href="#">gap-docker-master-trigger</a>	8 hr 9 min - <a href="#">#1639</a>	N/A	0.79 sec
✔	🔗	<a href="#">gap-docker-stable-4.11-trigger</a>	7 hr 54 min - <a href="#">#872</a>	N/A	0.73 sec
✔	🔗	<a href="#">GAP-major-release</a>	4 days 4 hr - <a href="#">#297</a>	N/A	21 min
✔	🔗	<a href="#">GAP-master-snapshot</a>	17 hr - <a href="#">#1346</a>	1 mo 6 days - <a href="#">#1319</a>	4 min 34 sec
✔	🔗	<a href="#">GAP-minor-release</a>	3 days 20 hr - <a href="#">#306</a>	N/A	1 min 17 sec
✖	🔗	<a href="#">GAP-pkg-check-updates</a>	1 day 3 hr - <a href="#">#1335</a>	3 hr 39 min - <a href="#">#1336</a>	16 min
✔	🔗	<a href="#">GAP-pkg-merge-master</a>	1 day 2 hr - <a href="#">#647</a>	N/A	34 min
✔	🔗	<a href="#">GAP-pkg-merge-stable</a>	1 day 3 hr - <a href="#">#623</a>	1 mo 7 days - <a href="#">#606</a>	42 min
✖	🔗	<a href="#">GAP-pkg-tested-master-quicktest</a>	N/A	10 days - <a href="#">#498</a>	3 hr 59 min
✖	☁	<a href="#">GAP-pkg-update-master-quicktest</a>	2 yr 9 mo - <a href="#">#345</a>	6 days 1 hr - <a href="#">#620</a>	11 hr
✔	🔗	<a href="#">GAP-pkg-update-master-snapshot</a>	1 day 1 hr - <a href="#">#203</a>	1 mo 6 days - <a href="#">#186</a>	8 min 40 sec
✖	🔗	<a href="#">GAP-pkg-update-stable-quicktest</a>	2 yr 8 mo - <a href="#">#329</a>	10 days - <a href="#">#620</a>	1 day 0 hr
✔	🔗	<a href="#">GAP-pkg-update-stable-quicktest-drop-in</a>	3 yr 2 mo - <a href="#">Predicata</a>	N/A	6 hr 32 min
✔	🔗	<a href="#">GAP-pkg-update-stable-snapshot</a>	1 day 2 hr - <a href="#">#617</a>	N/A	4 min 20 sec
✔	🔗	<a href="#">GAP-pull-request-quicktest</a>	3 yr 5 mo - <a href="#">PR-2733</a>	N/A	9 hr 4 min
✔	🔗	<a href="#">GAP-pull-request-snapshot</a>	2 yr 0 mo - <a href="#">PR-3702</a>	N/A	4 min 12 sec
✔	🔗	<a href="#">GAP-stable-snapshot</a>	17 hr - <a href="#">#1036</a>	1 mo 6 days - <a href="#">#1009</a>	4 min 15 sec

GAP-pkg-check-updates [JenkinX]

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https://gap-ci.cs.st-andrews.ac.uk/job/GAP-pkg-check-updates/

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Jenkins

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Dashboard ▸ GAP-pkg-check-updates ▸

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📝 Changes

🏗 Build History

trend ^

🔍 Filter builds...

❌ #1336

17-Feb-2022 09:00

✅ #1335

16-Feb-2022 09:00

✅ #1334

15-Feb-2022 09:00

✅ #1333

14-Feb-2022 09:00

✅ #1332

11-Feb-2022 09:00

✅ #1331

10-Feb-2022 09:00

✅ #1330

09-Feb-2022 09:00

❌ #1329

08-Feb-2022 09:00

✅ #1328

07-Feb-2022 09:00

❌ #1327

04-Feb-2022 09:00

❌ #1326

03-Feb-2022 09:00

❌ #1325

02-Feb-2022 09:00

✅ #1324

01-Feb-2022 09:00

✅ #1323

31-Jan-2022 09:00

✅ #1322

28-Jan-2022 09:00

✅ #1321

27-Jan-2022 09:00

✅ #1320

26-Jan-2022 09:00

Project GAP-pkg-check-updates

📦

Last Successful Artifacts

📄 UPDATEALLLOG

190.89 KB 📄 view

📝

Recent Changes

Downstream Projects

✅ GAP-pkg-merge-stable

❌ updates-found-notifier

Permalinks

- Last build (#1336), 4 hr 19 min ago
- Last stable build (#1335), 1 day 4 hr ago
- Last successful build (#1335), 1 day 4 hr ago
- Last failed build (#1336), 4 hr 19 min ago
- Last unsuccessful build (#1336), 4 hr 19 min ago
- Last completed build (#1336), 4 hr 19 min ago

✕ pull

^ ▾

☐ Highlight All

☐ Match Case

☐ Match Diacritics

☐ Whole Words

4 of 5 matches

GAP-pull-request-windows-test X

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https://gap-ci.cs.st-andrews.ac.uk/view/Pull requests/job/GAP-pull-request-windows-test/

Search

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Pull requests

GAP-pull-request-windows-test

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Filter builds...

PR-3702

12-Feb-2020 16:24

PR-3702

11-Feb-2020 12:03

PR-3702

11-Feb-2020 06:28

#21

05-Jun-2019 21:10

#20

05-Mar-2019 12:28

#19

13-Sep-2018 20:29

#18

06-Sep-2018 22:22

#17

05-Sep-2018 01:12

PR-2589

03-Sep-2018 18:12

PR-2733

01-Sep-2018 09:33

PR-2667

31-Aug-2018 09:27

PR-2667

30-Aug-2018 20:24

Project GAP-pull-request-windows-test

Recent Changes

Upstream Projects

GAP-pull-request-windows-build

Permalinks

Last build (PR-3702), 2 yr 0 mo ago

Last stable build (PR-3702), 2 yr 0 mo ago

Last successful build (PR-3702), 2 yr 0 mo ago

Last failed build (PR-3702), 2 yr 0 mo ago

Last unsuccessful build (PR-3702), 2 yr 0 mo ago

Last completed build (PR-3702), 2 yr 0 mo ago

pull

Highlight All

Match Case

Match Diacritics

Whole Words

4 of 5 matches

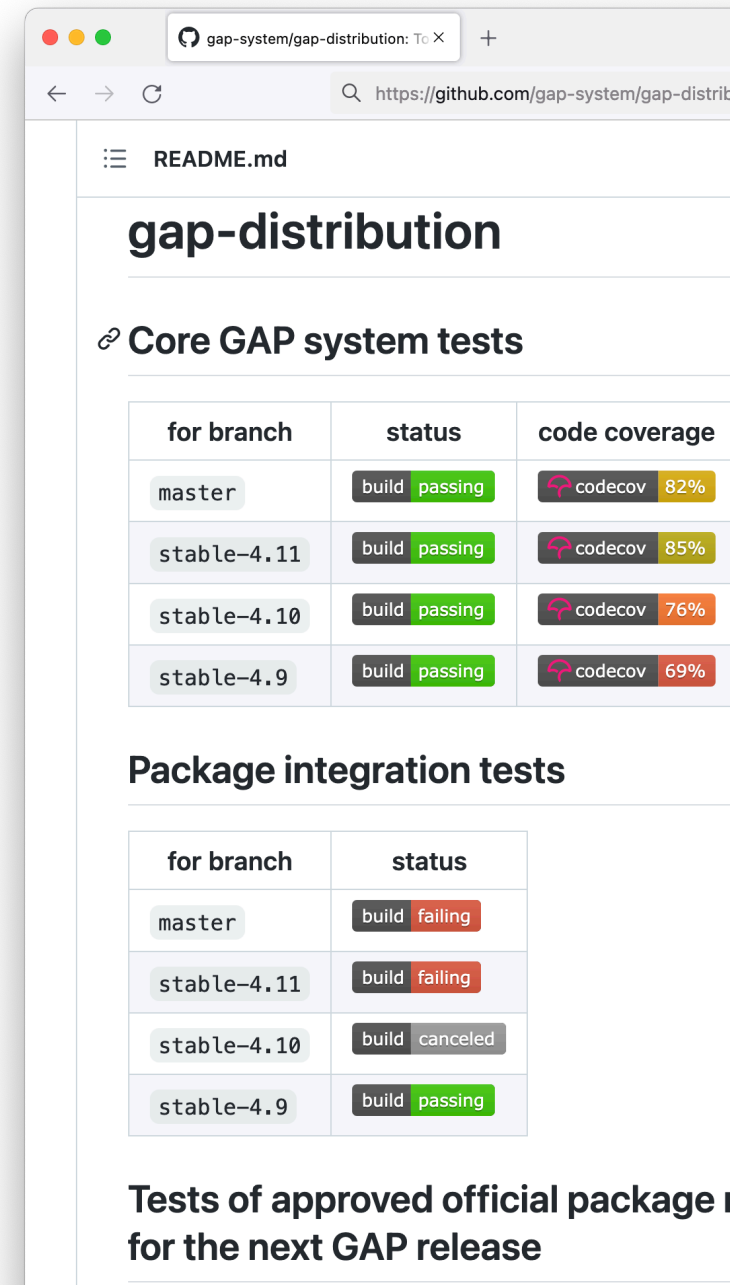
# GitHub Actions: as powerful as Jenkins?

- GitHub's new-ish automation solution
  - Free for us (for now...). Open source.
  - Define tasks dynamically ('build matrix', up to 256 jobs)
- My slides from last GAP Days:  
<https://www.gapdays.de/gapdays2021-spring/program>
- We already use it for:
  - Tests on gap-system/gap (load each package; load all and test GAP)
  - Tests on GAP package developments repositories
  - Wrapping GAP releases
  - Building GAP docker images
  - Updating the GAP website

# The gap-distribution 'dashboard' (dead)

<https://github.com/gap-system/gap-distribution>

- Status of some GAP/package tests.
- Each status corresponds to a repository, mostly at `github.com/gap-infra`
  - Not ideal? (Lots of code duplication.)
- Vague goal:
  - Resurrect the best of the displayed functionality with GitHub Actions
    - Scavenge from the repositories!
    - (How to) combine with `pkg-dist`?





gap-system/gap-distribution: To X

https://github.com/gap-system/gap-distribution#gap-distribution.

120%

archives Latest

README.md

gap-distribution

Core GAP system tests

for branch	status	coverage
master	build passing	82%
stable-4.11	build passing	85%
stable-4.10	build passing	76%
stable-4.9	build passing	69%

Package integration tests

for branch	status
master	build failing
stable-4.11	build failing
stable-4.10	build canceled
stable-4.9	build passing

Tests of approved official package releases for their readiness for the next GAP release

Status of standard tests for packages updates that were picked up, passed internal testing, and were included into the corresponding archive.

ready for the next GAP

require

Does GAP break itself?

Does a package break GAP?

Contributors 17

Contributors

NSIS 30.9%

Python 1.6%

Makefile 0.3%



gap-system/gap-distribution: To X

https://github.com/gap-system/gap-distribution

120%

README.md

### Tests of approved official package releases for their readiness for the next GAP release

Status of standard tests for packages updates that were picked up, passed internal testing, and were included into the corresponding archive.

for branch	packages archive	ready for the next GAP release	inspection
master	<a href="#">packages-master.tar.gz</a>	build error	build error
stable-4.11	<a href="#">packages-stable-4.11.tar.gz</a>	build error	build error
stable-4.10	<a href="#">packages-stable-4.10.tar.gz</a>	build passing	build canceled
stable-4.9	<a href="#">packages-stable-4.9.tar.gz</a>	build passing	build failing

### Tests of package development versions for their compatibility with the GAP development version

Status of standard tests for [development versions of GAP packages having a public repository on GitHub](#).

for branch	Click on the badge to see the status for each package
master	build error
stable-4.11	build error
stable-4.10	build canceled
stable-4.9	build failing

Does GAP break a package?

Development versions of packages



gap-infra

Overview Repositories Packages People Projects

Find a repository...

Type

Language

Sort

### gap-docker-pkg-tests-stable-4.10-devel Public

Running standard tests for development versions of GAP packages using Docker container for the GAP stable-4.10 branch

Python 1 0 0 0 Updated on 28 Sep 2020

### gap-docker-pkg-tests-stable-4.10-staging Public

Failing standard tests for GAP packages using Docker container for the stable-4.10 branch

Shell 0 0 0 0 Updated on 28 Sep 2020

### gap-docker-pkg-tests-stable-4.10 Public

Passing standard tests for GAP packages using Docker container for the stable-4.10 branch

Shell 0 0 0 0 Updated on 28 Sep 2020

### gap-docker-pkg-tests-stable-4.11-devel Public

Running standard tests for development versions of GAP packages using Docker container for the GAP stable-4.11 branch

Python 5 0 0 0 Updated on 28 Sep 2020

### gap-docker-pkg-tests-stable-4.11-staging Public

Failing standard tests for GAP packages using Docker container for the stable-4.11 branch

Shell 0 0 0 0 Updated on 28 Sep 2020

### gap-docker-pkg-tests-stable-4.11 Public

Passing standard tests for GAP packages using Docker container for the stable-4.11 branch

Shell 1 0 0 0 Updated on 28 Sep 2020

### gap-docker-stable-4.11-testsuite Public

Running GAP test suite using Docker container for the stable-4.11 branch

Shell 0 0 0 0 Updated on 28 Sep 2020

# “Package integration tests”: example

gap-infra/gap-docker-master-testsuite

GAP branch		GAP tests		Packages
• master		• testinstall		• all
• stable-4.11	✗	• testbugfix	✗	• default
• stable-4.10		• teststandard		• required

---

## Also:

• master				• all
• stable-4.11	✗	• loadpackage	✗	• all (reversed)
• stable-4.10				• one
				• one (only needed)

# General directions for work in this area

- Assess what exists at Jenkins & gap-infra
- **Decide policy:** what do we want (and is feasible)
- **Implement stuff in GitHub Actions**
  - Which tests go on which repos? pkg-dist?
  - Take inspiration from existing GitHub Actions setups
  - Retire old things we don't want!
- **Document** everything transparently:
  - Collect the information somewhere obvious (website?!)
  - Correct out-of-date information in READMEs etc

# Test parameters to decide

- Frequency?
- Which versions of GAP?
- Which versions of packages?
- Which tests?
- Which other settings?

# Systems to implement

- Assemble tests to be run
- Code for running tests
  - Using Docker containers
- Notify (who? how?) about problems with tests

# More specific ideas/desires/questions

- Given a GAP pull request, does this break a package test?
- Do we *really* want/need `LoadAllPackages`?
- Have a way of “forgiving” broken package test results?
- Which tests should run on a PR to the `pkg-dist` repo?
- Include Windows tests as appropriate!
- Encourage “better” tests: avoid fragility w.r.t. `ViewString`

**Thank you!**

**Further discussion and questions?**