

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!)

The screenshot shows a web browser window displaying the Travis CI build page for the repository `gap-infra / gap-docker-pkg-tests-master-devel`. The URL in the address bar is <https://travis-ci.org/github/gap-infra/gap-docker-pkg-tests-master-devel/builds/730848158>.

A prominent yellow banner at the top states: "Since June 15th, 2021, the building on [travis-ci.org](#) is ceased. Please use [travis-ci.com](#) from now on."

The main content area shows build #599 for the `master` branch. The build status is **errored**, indicated by a red exclamation mark icon. The error message is: "Update where bootstrap archives are stored".

Build details:

- Commit: `10469b3`
- Branch: `master`
- Authored and committed by: Alexander Konovalov
- Ran for: 3 hrs 38 min 51 sec
- Total time: 13 hrs 31 min 59 sec
- Time: about a year ago

The "Build jobs" section lists ten jobs, each with a status indicator (red X for failures, green checkmark for successes), the job ID, architecture (AMD64), operating system (Xenial), command (C), and duration.

Job Status	Job ID	Architecture	OS	Command	Duration
X	# 599.1	AMD64	Xenial	</> C	REPO_URL=https://github.com/gap-pack 3 min 32 sec
X	# 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
X	# 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

The bottom of the page shows the URL <https://travis-ci.org/github/gap-infra/gap-docker-pkg-tests-master-devel/jobs/730848177>.

AppVeyor: Windows tests (retired)

The screenshot shows the AppVeyor CI history page for the 'gap' project. The page has a dark header with the AppVeyor logo and a 'Sign in' button. Below the header, the project name 'gap' is displayed, followed by 'Current build' and 'History' tabs, with 'History' being the active tab.

The main content area lists several build histories, each with a title, author, date, commit details, and duration. The builds are color-coded by status: green for successful ones and red for failed ones. The builds listed are:

- Pull request #4389 - Automate creating Windows installers for GAP releases with GitHub Actions (1.0.11000) - successful (green), 10 months ago in 19 min 54 sec
- Pull request #4392 - CI: remove AppVeyor integration (1.0.10999) - failed (red), 10 months ago in 38 sec
- Pull request #4386 - Restore some functionality of the `--strict` option to the `bin/BuildPackages.sh` script (1.0.10998) - successful (green), 10 months ago in 30 min 24 sec
- Update config.guess and config.sub (1.0.10997) - successful (green), 10 months ago in 18 min 9 sec
- Pull request #4389 - Automation creating Windows installers for GAP releases with GitHub Actions (1.0.10996) - successful (green), 10 months ago in 18 min 40 sec
- CI: do not install readline in the macOS job (1.0.10995) - successful (green), 10 months ago in 18 min 30 sec
- write matrices of orth. groups over smallest fields (1.0.10994) - successful (green), 10 months ago in 17 min 23 sec
- Pull request #4381 - Update config.guess and config.sub (1.0.10993) - successful (green), 10 months ago in 17 min 32 sec
- Update config.guess and config.sub (1.0.10993) - successful (green), 10 months ago in 17 min 32 sec

Each build entry includes a detailed view icon (eye) and a copy icon (copy).

Jenkins: Powerful (but private)

The screenshot shows the Jenkins dashboard for the URL <https://gap-ci.cs.st-andrews.ac.uk>. The left sidebar contains links for People, Build History, Project Relationship, Check File Fingerprint, Build Queue (1), GAP-master-windows-test, Build Executor Status, Built-In Node, gapw10-build, gapw10-cygwin64, gapw10-test2 (offline), and kovacs. The main content area displays a table of builds with columns for All, GAP-nightly, GAP-pkg, GAP-release, GAP-weekly, and Pull requests. The table includes headers for S, W, Name, Last Success, Last Failure, and Last Duration. Most builds have a green checkmark icon, while some like GAP-pkg-check-updates and GAP-minor-release-win-test64 have red X icons.

All	GAP-nightly	GAP-pkg	GAP-release	GAP-weekly	Pull 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 repository `gap-system/gap`. The main navigation bar includes links for Why GitHub?, Team, Enterprise, Explore, Marketplace, Pricing, and a search bar. The repository name `gap-system/gap` is displayed with a public status. Notifications, Fork (137), and Star (545) buttons are also present.

The **Actions** tab is selected, showing the **All workflows** section. A sidebar on the left lists categories: All workflows (selected), CI, and Wrap releases. A search bar allows filtering of workflow runs.

The main area displays a table of 4,023 workflow runs, ordered by most recent. Each row shows the workflow name, event, status, branch, actor, and run duration. The first five rows are shown:

Workflow	Event	Status	Branch	Actor	Duration
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

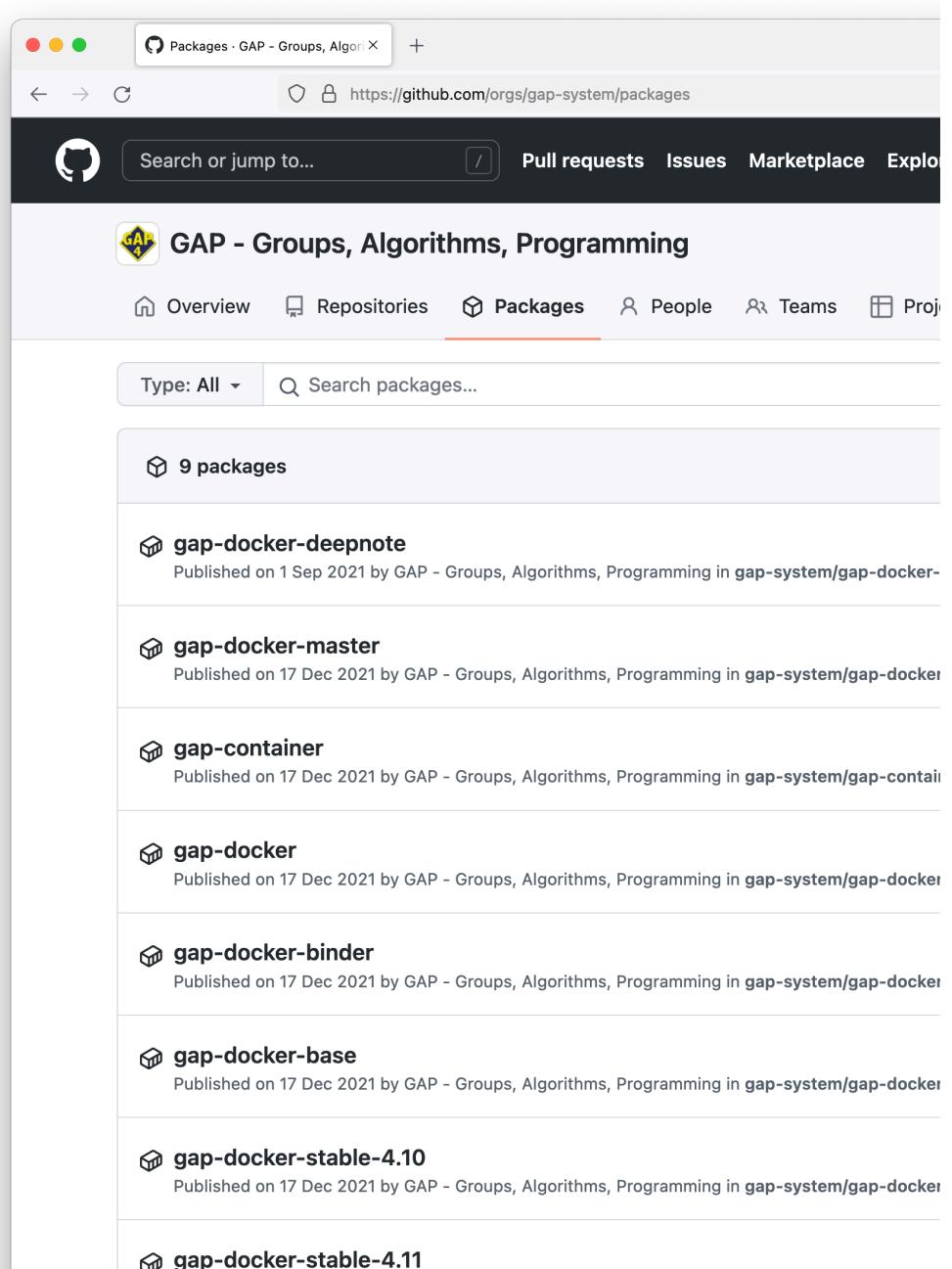
Pre-configured systems for quicker & consistent testing

- 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] x +

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

Jenkins

Search ? log in

Dashboard ▶

- People
- Build History
- Project Relationship
- Check File Fingerprint
- Build Queue (1)** ^
 - GAP-master-windows-test ⌚
- Build Executor Status** ^

Node	Status	Idle
<u>gapw10-build</u>	Idle	1
<u>gapw10-cygwin64</u>	Idle	1
<u>gapw10-test2</u> (offline)	Offline	1
<u>kovacs</u>	Idle	2
	Idle	3
	Idle	4

All	GAP-nightly	GAP-pkg	GAP-release	GAP-weekly	Pull 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

gap-docker-master-trigger [Jen X] +

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

Jenkins

Dashboard > gap-docker-master-trigger >

Back to Dashboard

Status

Changes

Build History

Filter builds...

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

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

Search

log in

kovacs [Jenkins] X +

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

Jenkins

Dashboard > Nodes > kovacs

Back to List

Status

Build History

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

GAP-pkg-check-updates [Jenki X] +

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

Jenkins

Dashboard > GAP-pkg-check-updates >

[Back to Dashboard](#)

[Status](#)

[Changes](#)

[Build History](#) trend ^

Filter builds...

#1336 17-Feb-2022 09:00 (X)

#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 (X)

#1328 07-Feb-2022 09:00 (✓)

#1327 04-Feb-2022 09:00 (X)

#1326 03-Feb-2022 09:00 (X)

#1325 02-Feb-2022 09:00 (X)

#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](#)

X pull ^ ⌄ Highlight All Match Case Match Diacritics Whole Words 4 of 5 matches

GAP-pull-request-windows-test

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

Jenkins

Dashboard > Pull requests > GAP-pull-request-windows-test >

Back to Dashboard

Status

Changes

Build History

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

Search: pull

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

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`?

The screenshot shows a web browser window with the URL `https://github.com/gap-system/gap-distribution`. The page content includes:

Core GAP system tests

for branch	status	code 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 i
for the next GAP release

gap-system/gap-distribution: Tc X +

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

archives **Latest**

120%

README.md

gap-distribution

Core GAP system tests

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

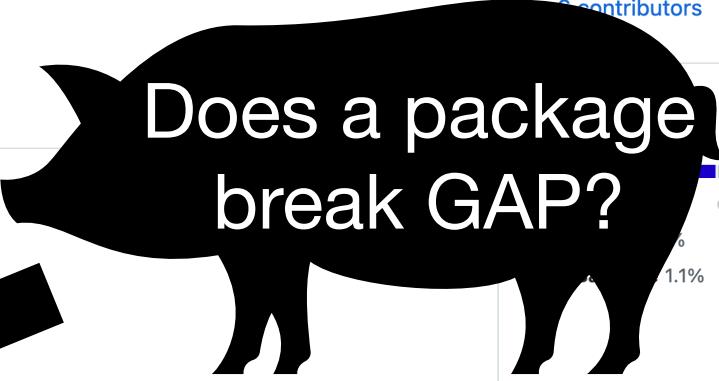
Package integration tests

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

Does GAP break itself?



Does a package break GAP?



Contributors 17



2 contributors

NSIS 30.9%
Python 1.6%
Makefile 0.3%

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

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

gap-system/gap-distribution: Tc 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	packages-master.tar.gz	build error	build error
stable-4.11	packages-stable-4.11.tar.gz	build error	build error
stable-4.10	packages-stable-4.10.tar.gz	build passing	build canceled
stable-4.9	packages-stable-4.9.tar.gz	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

 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?