The Great Migration

Homebrew's move to GitHub Packages with zero downtime

Mike McQuaid

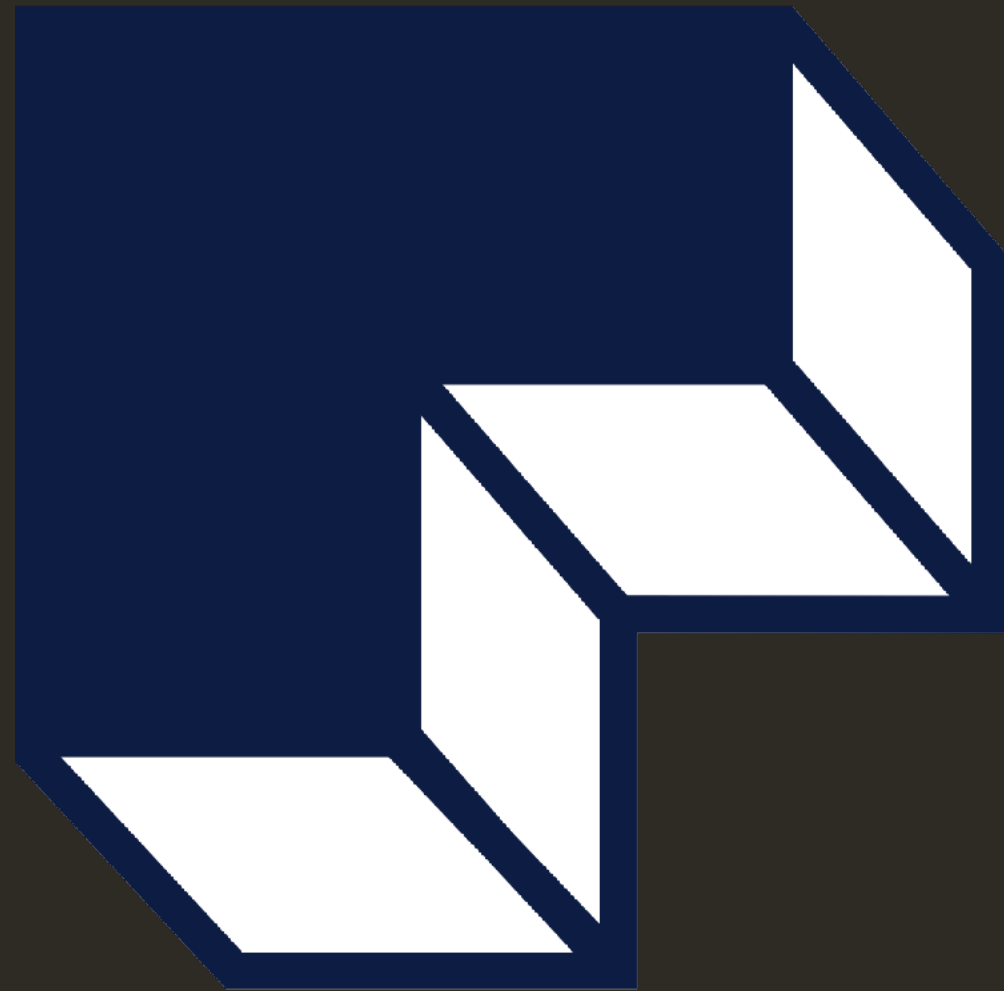# The Background

Mike McQuaid
https://github.com/MikeMcQuaid
https://mastodon.social/@mikemcquaid
https://twitter.com/MikeMcQuaid

Why everything should have a URL

TL;DR: By naturally capturing and exposing process and sharing it as widely as is appropriate for the subject matter, URLs render organizational context time and location agnostic allowing knowledge to move more freely within an organization on an asynchronous, discoverable, and opt-in basis.

At GitHub, there's an ironically unwritten mantra that "everything must have a URL". While that's obviously a bit of a hyperbole, there's something to be said for preferring systems that naturally capture and expose process, and thus preferring systems that can render organizational context time and location agnostic.

You see, humans have a terrible fidelity for retaining historic context, deliberative process, and decision pedigree. As an organization works towards its mission—be it a three-person team or an entire company — discussions are held, decisions are made, and ideally, artifacts are created as a result. The problem is, most often, those decision artifacts focus on what decisions were made, not who made them, or more importantly why.

https://ben.balter.com/2015/11/12/why-urls/

I'll start with a rare Belgian yeast and Sussex hops

Browse files

master

4.0.24 … 0.1

mxcl committed on May 21, 2009 Unverified

0 parents   commit 29d8557

Showing **1 changed file** with **137 additions** and **0 deletions**.

Split | Unified

137 ▪▪▪▪▪ README

```
@@ -0,0 +1,137 @@
1  + Homebrew
2  + ========
3  + A simple package management system for OS X Leopard. Packages are brewed in
4  + individual, versioned kegs. For example:
5  +
6  + /Brewery/Cellar/wget/1.14/bin/wget
7  +
8  + Then symlinks are created to give a normal POSIX tree:
9  +
10 + bin/wget -> Cellar/wget/1.14/bin/wget
11 +
12 + This way the filesystem is the package database. Everything else is now easy.
13 + We are made of win.
14 +
15 + Max Howell -- http://twitter.com/mxcl
```

```
129  + FAQ
130  + ===
131  + Are you excessively interested in beer?
132  + ----------------------------------------
133  + Yes.
134  +
135  + Was Homebrew devised under the influence of alchohol?
136  + -----------------------------------------------------
137  + Yes.
```

Max Howell ✓
@mxcl

Google: 90% of our engineers use the software you wrote (Homebrew), but you can't invert a binary tree on a whiteboard so f k off.
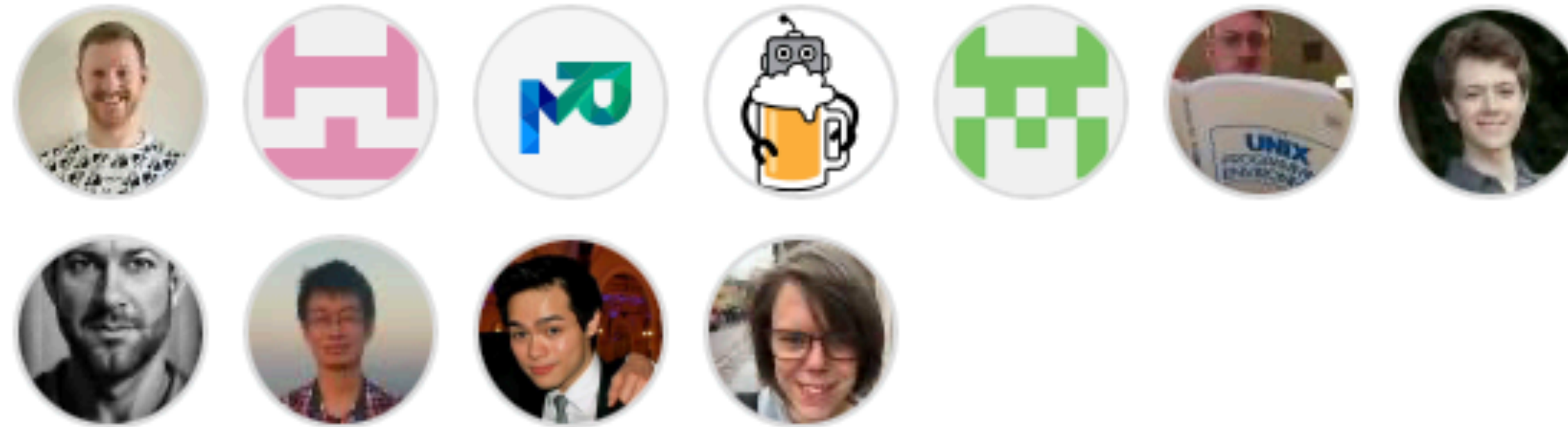
6:07 PM · Jun 10, 2015

7,287 Retweets   **583** Quotes   **15K** Likes   **378** Bookmarks
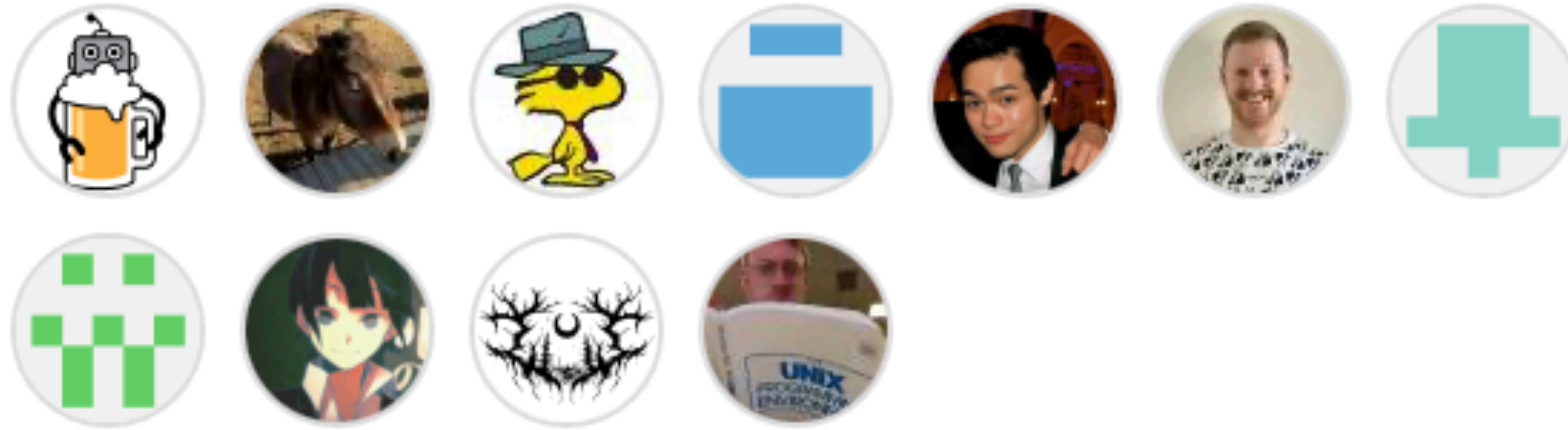
Contributors 898

+ 887 contributors

Languages

- Ruby 90.6%
- Shell 6.2%
- Roff 2.4%
- HTML 0.6%
- Swift 0.1%
- Dockerfile 0.1%

https://github.com/Homebrew/brew

Contributors 5,000+

+ 10,104 contributors

Languages

● Ruby 100.0%

Freedesktop.org intltool formula

`intltool is a set of tools to centralize translation of many different file formats using GNU gettext-compatible PO files.`

 master

 MikeMcQuaid authored and **mxcl** committed on Sep 11, 2009   1 parent 838af37   commit ea309d1

Unverified

Showing **1 changed file** with **12 additions** and **0 deletions**.

Split Unified

 12 ▮▮▮▮▮ Formula/intltool.rb 🗗 ...

```
...    ...      @@ -0,0 +1,12 @@
  1    + require 'brewkit'
  2    +
  3    + class Intltool <Formula
  4    +   @url='http://edge.launchpad.net/intltool/trunk/0.41.0/+download/intltool-
         0.41.0.tar.gz'
  5    +   @homepage='http://www.freedesktop.org/wiki/Software/intltool'
  6    +   @md5='8a6e4afd3fc93637dcd70e36ab899364'
  7    +
  8    +   def install
  9    +     system "./configure", "--prefix=#{prefix}"
 10    +     system "make install"
 11    +   end
 12    + end
```

https://github.com/Homebrew/homebrew-core/commit/ea309d16

Homebrew Documentation

Search   ⌘ K

Bottles (Binary Packages)

Bottles are produced by installing a formula with `brew install --build-bottle <formula>` and then bottling it with `brew bottle <formula>`. This generates a bottle file in the current directory and outputs the bottle DSL for insertion into the formula file.

Usage

When the formula being installed defines a bottle matching your system, it will be downloaded and installed automatically when you run `brew install <formula>`.

https://docs.brew.sh/Bottles

Bottle DSL (Domain Specific Language)

Bottles are specified in formula definitions by a DSL contained within a `bottle do ... end` block.

A simple (and typical) example:

```
bottle do
  sha256 arm64_big_sur: "a9ae578b05c3da46cedc07dd428d94a856aeae7f3ef80a0f4
  sha256 big_sur:       "5dc376aa20241233b76e2ec2c1d4e862443a0250916b2838a
  sha256 catalina:      "924afbbc16549d8c2b80544fd03104ff8c17a4b1460238e3e
  sha256 mojave:        "678d338adc7d6e8c352800fe03fc56660c796bd6da23eda2b
end
```

https://docs.brew.sh/Bottles

The Crisis

💀

Into the Sunset on May 1st: Bintray, GoCenter, and ChartCenter

By Stephen Chin | February 3, 2021

🕐 4 min read

JFrog is making some important changes that will impact users of Bintray, JCenter (part of Bintray), GoCenter, and ChartCenter.

Bintray has provided the open source community a free, universal cloud platform for publishing and distributing binaries. Bintray helped JFrog support the Java community as the host of the JCenter repository for Java OSS libraries, packages and components. We launched GoCenter and ChartCenter to extend similar services to the Go and cloud-native communities.

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Here are some answers to questions you're likely to have:

What happens after the sunset of Bintray?

On May 1, 2021, the sunset will impact all existing Bintray users. Bintray users will be blocked and will no longer be able to use the Bintray service. This includes existing software distribution, account administrative access, UI access, and the REST API.

What happens to my data after Bintray is sunset?

All of the data on Bintray is available for download through May 1st and we encourage you to transfer it out. JFrog will begin deleting data several weeks after the official sunset date and will not retain any Bintray data after that.

https://jfrog.com/blog/into-the-sunset-bintray-jcenter-gocenter-and-chartcenter/

https://www.amazon.co.uk/Its-Not-Fair-Anita-Harper/dp/1853408972

Edward Thomson 👶 17:39

Hello! Curious - how does bintray shutdown affect homebrew?

Mike McQuaid 17:40

lol I've emailed them now

anything from "it doesn't" to "we should plan a migration" to "we're f   d" 😭

can talk more tomorrow

Edward Thomson 👶 17:40

haha ok

yeah feel free to grab some time

as someone who has a big cdn and is in the business of sending people packages, i wonder if i can help. 😄

Bintray shuts down #691

✓ **Answered by MikeMcQuaid**   **AlekSi** asked this question in **Everyday usage**

AlekSi on Feb 4, 2021

https://jfrog.com/blog/into-the-sunset-bintray-jcenter-gocenter-and-chartcenter/

Will it affect Homebrew's bottles?

↑ 23   ☺   😕 10   👀 14

The Investigation

🧐

Mike McQuaid 15:16

well I'm currently talking with @ethomson and the NPM folks about building something to host all our binary packages before May so I may push on that first lest we get accused of asking for too much 😉 https://jfrog.com/blog/into-the-sunset-bintray-jcenter-gocenter-and-chartcenter/

> **🐸 JFrog**
>
> **Into the Sunset: Bintray, JCenter, GoCenter, and ChartCenter**
>
> To streamline the productivity of the JFrog Platform we will be sunsetting Bintray (including JCenter), GoCenter, and ChartCenter services on May 1st, 2021.
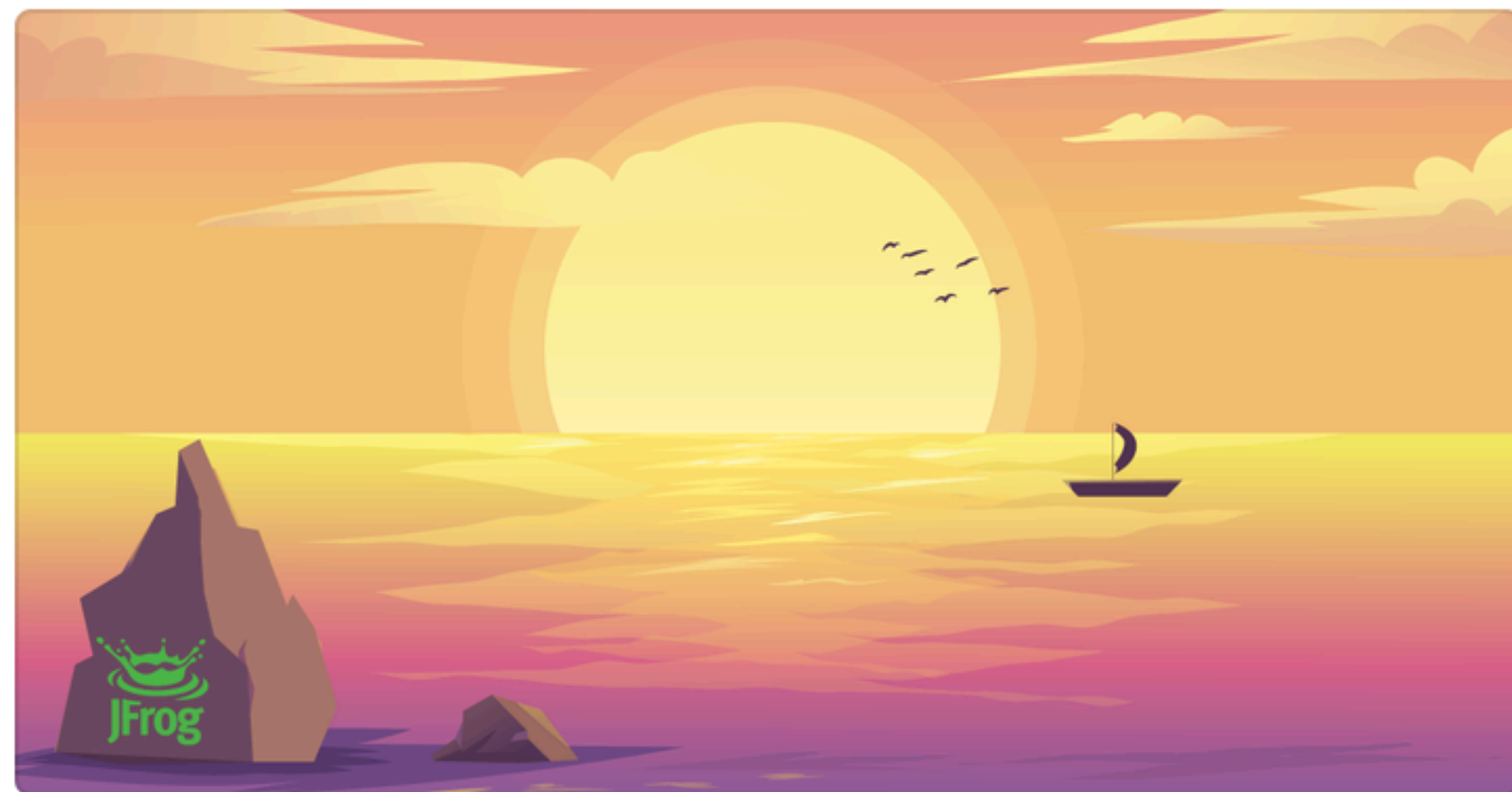>
> **Written by**   **Est. reading time**
>
> giannit   3 minutes
>
> 3 Feb (70 kB) ▼
>
>

2 replies   Last reply 2 months ago

Nat Friedman 15:17

I wish we would do that too

Bintray is going away and we need to figure out how to replace it. Bintray offered two services bundled in one that will need to be replaced: file storage and CDN. They will be discontinuing their services on May 1.

Our current requirements are:

- 2.5 TB storage (30% increase over last year)
- 450 TB monthly bandwidth (80% increase over last year)
- 30 million monthly requests (50% increase over last year)

Internet Archive

The Internet Archive are willing to store bottles for us. They already host bottles for tigerbrew and brewsci. There are some unresolved technical issues that would need to be figured out before we could fully commit to them. They have asked us to avoid putting all bottles in a single Archive Item due to load balancing concerns. This is an issue for us because we need to be able to ensure that we have some kind of namespace available for us to fill with arbitrary formula names. Some kind of mapping could be maintained but this would need to be explored. Misty and Shaun are working on figuring this part out.

One non-technical advantage of the Internet Archive over other providers is that it is another nonprofit like the Software Freedom Conservancy, our host organization.

GitHub

GitHub have privately suggested to us that they could help us out. It's not clear what kind of timeline they have for this given the hard deadline of May 1.

OCI Image Format Specification

`build` `unknown`

The OCI Image Format project creates and maintains the software shipping container image format spec (OCI Image Format).

The specification can be found here.

This repository also provides Go types, intra-blob validation tooling, and JSON Schema. The Go types and validation should be compatible with the current Go release; earlier Go releases are not supported.

Additional documentation about how this group operates:

- Code of Conduct
- Roadmap
- Releases
- Project Documentation

https://github.com/opencontainers/image-spec

OCI Artifacts

So we now know what OCI images are, what are OCI Artifacts? The <u>Artifacts</u> initiative set out to make the registry format a bit more generic, to allow for users to store and distribute arbitrary files. We've already had blob storage and binary distribution systems for years, so why would we want to reuse a container format? Well, it turns out the container format has some really nice features that make it suitable for other environments (mostly the content addressable API).

It's also widely supported by platform vendors, and finally happens to be the only real dependency to bring up a production Kubernetes environment. You need to host the k8s images themselves somewhere. While it is possible to run a registry in a Kubernetes cluster, that starts to bring in some chicken-and-egg problems.

<u>https://dlorenc.medium.com/oci-artifacts-explained-8f4a77945c13</u>

MikeMcQuaid commented on Mar 3, 2021   ⋯

> It's not clear what kind of timeline they have for this given the hard deadline of May 1.

I'm meeting with GitHub again today to discuss this. They are aware of the hard deadline. The CEO has said "we should be doing this".

That said, I understand that others will not have the degree of confidence I have in GitHub to deliver here (and, additionally, even I don't want to put all my eggs in the GitHub basket).

> This is possible but unpleasant and we'd probably have to pay a maintainer to do this.
> Running an anycast CDN is probably out of scope for Homebrew and is likely not possible in the timeline we have.

Agreed. I think it's worth discounting self-hosting out of hand entirely. We do not have the expertise to maintain this securely and effectively on our team.

Given **@mistydemeo** and **@sjackman** have built relationships and tooling already with the Internet Archive I'm tempted to suggest that this be our backup. They/we want to archive all old bottles anyway, we can put a CDN in front of them with little work/changes on our side so it's a nice fallback.

I'd suggest we push back on changing the URL scheme for our bottles for them, if they can. It's going to make our life a lot harder to do.

Assuming that GitHub comes through in time: we use that. That's my €£$0.02

🙂

MikeMcQuaid commented on Mar 4, 2021 ···

> New items are in a single global namespace, so someone non-Homebrew could squat on an item name like say `homebrew-core-gcc@11` .
> Although the Archive.org flat file structure currently being used by Linuxbrew-core and Brewsci/bio provide an URL that is compatible with HOMEBREW_BOTTLE_DOMAIN, they have asked us not to put all of the bottles in a single item.

This makes me really, really nervous. Personally, this mains the only selling point for the Internet Archive be "it is free". It's going to be way too simple for someone to upload something and make it look official.

We have enough money that I don't think we should be taking this risk. I'd suggest for an intermediate step we use e.g. an Amazon S3 bucket where we don't have any of these same requirements and we have enough money to pay for it until May without any problems.

> I'd like to take this opportunity of migrating the bottles to a new provider to use two hyphens for remote bottle filenames as well.

This makes sense to me 👍

😊 👍 4

> To me: these point towards GitHub Packages. That I'm employed by GitHub is irrelevant here; no-one internally has told me to work on any of this (and the fact that the project leader/maintainer is spending my work time on this and having management up to the CEO defending me from being reassigned to other work should be seen as a positive rather than negative). I am not going to propose to move Homebrew to a solution I think is technically inferior or going to cause us problems in the longer-term.

I have not criticized your capacity as a GitHub employee at all. I'd appreciate it if we could focus on the technical aspects of this rather than assuming that any of my arguments here are related to your employment relationship.

The Implementation

🧑‍💻

pr-upload: Upload bottles to the Internet Archive #10677

Edit	<> Code ▾

⚙ **Merged**   **sjackman** merged 8 commits into `Homebrew:master` from `sjackman:sj/pr-upload` 🗍 on Feb 24, 2021

💬 Conversation 25	⟡ Commits 8	☑ Checks 0	± Files changed 10		+278 −14 ■■■■■□

sjackman commented on Feb 23, 2021 · edited ▾   [Member]   •••

`--archive-item=…` specifies the item identifier.
`HOMEBREW_INTERNET_ARCHIVE_KEY=access:secret` specifies the S3-like key. See
https://archive.org/account/s3.php

☑ Have you followed the guidelines in our Contributing document?
☑ Have you checked to ensure there aren't other open Pull Requests for the same change?
☑ Have you added an explanation of what your changes do and why you'd like us to include them?
☑ Have you written new tests for your changes? Here's an example.
☑ Have you successfully run `brew style` with your changes locally?
☑ Have you successfully run `brew typecheck` with your changes locally?
☑ Have you successfully run `brew tests` with your changes locally?
☑ Have you successfully run `brew man` locally and committed any changes?

🎉 2

Reviewers ⚙

🍺 BrewTestBot ✓
😊 mistydemeo ●
👤 MikeMcQuaid ●

Assignees ⚙
👤 sjackman

Labels ⚙
None yet

Projects ⚙
None yet

MikeMcQuaid commented on Mar 12, 2021 ...

> Given that we already have code to upload bottles with an S3-compatible API like Internet Archive or Backblaze, and that downloading files from a URL is something that Homebrew already does, it would be a mistake to not explore simpler options for file storage.
>
> GitHub's service is built and working for us to use

When Homebrew/brew#10835 lands (today, most likely) we'll have bottle upload and download working for GitHub Packages and could migrate immediately (with a few rough edges).

It's worth noting that for The Internet Archive: our uploader as-is does not upload into the locations that they want/need us to use.

🙂 👍 3 🎉 3 🚀 3

My engineering experience on Homebrew, GitHub and elsewhere makes me tend towards systems with a few attributes:

- Reliant on as few external providers as possible (i.e. in this case just GitHub rather than GitHub and Bintray rather than GitHub and Internet Archive and CloudFlare). The more layers of providers, the greater chance that your downtime in either of them will result in downtime for the whole system.
- Prefer providers you and those building the systems already have experience with
- Prefer the solutions that end up with the most people gravitating towards them
- When there's existing solutions, prefer those where your load is not going to be the majority of that system

To me: these point towards GitHub Packages. That I'm employed by GitHub is irrelevant here; no-one internally has told me to work on any of this (and the fact that the project leader/maintainer is spending my work time on this and having management up to the CEO defending me from being reassigned to other work should be seen as a positive rather than negative). I am not going to propose to move Homebrew to a solution I think is technically inferior or going to cause us problems in the longer-term.

😊　👍 3

MikeMcQuaid commented on Mar 10, 2021   ...

> In the case where our storage provider already has a CDN, we wouldn't be using Cloudflare CDN, just their URL rewriting services and possibly DNS. I think Greg and Sam are working on the URL rewriting stuff.

I don't think we should be using their URL rewriting or DNS services if we are not using them as a CDN. They will become another point of complexity and failure. We do not have any issues with our existing DNS services (quite the contrary).

> I don't think it's overkill if we are considering migrating our bottles to something where we are going to be the first users for github.

We're not going to be the first users. We're already using the same infrastructure for our Docker images.

> I think it's fine to opt into beta features for less critical things like discussions or issue templates, but I am not confident in going all in on it for bottle storage.

This is not a beta feature. It's was in beta when released two years ago.

> Given that we already have code to upload bottles with an S3-compatible API like Internet Archive or Backblaze, and that downloading files from a URL is something that Homebrew already does, it would be a mistake to not explore simpler options for file storage.

I have no objections with any exploration with the caveat that we're duplicating work to some extent and this is going to result in some code/explorations being thrown away.

I don't think a simpler option for file storage is an argument in favour of adopting another platform. For better or worse, Homebrew is incredibly tied in and reliant on GitHub. Having our packages hosted by the same provider as our source code seems like a logical move to me.

Pragmatically, GitHub has a few other things going for it:

- we have multiple GitHub employees who are Homebrew maintainers
- we have an existing relationship with GitHub outside of these Homebrew maintainers
- the GitHub CEO reached out to the Project Leader as soon as this incident occurred suggesting that it's something GitHub should do to help
- we have staff at GitHub working on helping us with this
- we have a $1000/month sponsorship from GitHub

None of these apply to any other providers.

None of this is to say "don't investigate anything else" but: we're still several months away from the deadline and GitHub's service is built and working for us to use. We can investigate other options but I think it would be a mistake to plan on a move to Not GitHub Packages.

😊 👍 1

Support uploading and downloading bottles from GitHub packages #10835

Edit   <> Code ▾

🔀 **Merged**   **MikeMcQuaid** merged 2 commits into `Homebrew:master` from `MikeMcQuaid:pr_upload_github_packages` 📋 on Mar 12, 2021

💬 Conversation 30 | ⊙ Commits 2 | ☑ Checks 0 | ± Files changed 10 | **+147 −0** ■■■■■

MikeMcQuaid commented on Mar 11, 2021   Member   •••

- Add support to `pr-upload` for GitHub Packages
- Support downloading bottles from GitHub Packages (with the correct `root_url`)

👁 **MikeMcQuaid** requested a review from **sjackman** 2 years ago

Reviewers

👤 sjackman

📦 dawidd6

🍺 BrewTestBot   ✓

Assignees

MikeMcQuaid merged commit **8726636** into `Homebrew:master` on Mar 12, 2021

Revert

MikeMcQuaid deleted the `pr_upload_github_packages` branch 2 years ago

Restore branch

MikeMcQuaid commented on Mar 12, 2021

Member · Author · ···

Thanks for feedback **@sjackman** and **@dawidd6**! All but one comment addressed. Feel free to make more PRs to improve this code. Onwards and upwards! 🚀

sjackman commented on Mar 13, 2021

Member · ···

> Cool to see the GitHub Packages UI supporting that multi arch stuff already 🎉

https://github.com/orgs/brewsci/packages/container/package/bio/ssm
I hadn't even noticed the `OS / Arch` tab. Cool!

https://github.com/Homebrew/brew/pull/10835

Watch 23 ▾ | Fork 126 ▾ | Star 970 ▾

⑂ main ▾ | ⑂ 8 branches | ⬡ 28 tags | Go to file | Add file ▾ | <> Code ▾

About

OCI registry client - managing content like artifacts, images, packages

🐎 TerryHowe Add help to make file (#975) ⋯ | ✓ 22a7316 yesterday | 🕐 475 commits

🔗 oras.land/

📁 .github	chore: simplify e2e scripts and github action (#967)	2 weeks ago
📁 cmd/oras	fix: correct spec flag description (#964)	3 weeks ago
📁 docs/proposals	doc: add ORAS CLI proposal doc for compatibility mo...	5 months ago
📁 internal	feat: use oras-credential-go to do auth (#932)	2 months ago
📁 test/e2e	chore: simplify e2e scripts and github action (#967)	2 weeks ago
📄 .gitignore	test: generate coverage profile during e2e tests (#903)	2 months ago
📄 .goreleaser.yml	feat: add s390x release and image to support s390x a...	5 months ago
📄 CODEOWNERS	chore: update owners (#866)	3 months ago
📄 CODE_OF_CONDUCT.md	Add code of conduct (#278)	2 years ago

docker registry storage oci

📖 Readme
⚖ Apache-2.0 license
💗 Code of conduct
〰 Activity
☆ 970 stars
👁 23 watching
⑂ 126 forks

Report repository

https://github.com/oras-project/oras

skopeo Public

Watch 100 ▾ | Fork 679 ▾ | Star 6.3k ▾

⌥ main ▾ | ⌥ 12 branches | ⬭ 83 tags | Go to file | Add file ▾ | <> Code ▾

mtrmac Merge pull request #2016 from containers/r... ··· ✓ caf8c55 last week ⟳ 2,560 commits

Work with remote images registries - retrieving information, images, signing content

📁 .github	[skip-ci] Update actions/stale action to v8	3 months ago
📁 cmd/skopeo	Fix error handling of signature.NewEphemeralGPGSig...	2 months ago
📁 contrib	Run codespell on codebase	4 months ago
📁 docs	Emphasize the semantics of --preserve-digests a tiny...	2 months ago
📁 hack	Use golangci-lint instead of golint	2 months ago
📁 integration	Verify signatures from a trust store	3 months ago
📁 rpm	[CI:BUILD] Packit: add jobs for downstream Fedora pa...	last week
📁 systemtest	Verify signatures from a trust store	3 months ago

📖 Readme
⚖ Apache-2.0 license
♡ Code of conduct
⚖ Security policy
∿ Activity
☆ 6.3k stars
👁 100 watching
⌥ 679 forks

Report repository

https://github.com/containers/skopeo

https://github.com/oras-project/oras/pull/241

Default download to GitHub Packages #11070

🔀 **Merged**   **MikeMcQuaid** merged 1 commit into `Homebrew:master` from `MikeMcQuaid:github_packages_default_domain` 📋 on Apr 8, 2021

💬 Conversation 36   ◦– Commits 1   ☑ Checks 0   ± Files changed 5

+19 −13 ■■■■□

MikeMcQuaid commented on Apr 8, 2021   Member   •••

Now that all bottles (without existing `sha256` mismatches) have been uploaded to GitHub Packages make it the default download location.

Will give this a few days testing before we make a tag and make this default for everyone.

No migration has been done for Linuxbrew packages yet; those will be done after we have fully migrated over Homebrew.

🎉 6   🚀 2

Reviewers   ⚙   💬

🟢 **Bo98**

🍺 **BrewTestBot**   ✓

Assignees   ⚙

No one—assign yourself

Labels   ⚙

critical

https://github.com/Homebrew/brew/pull/11070

Bintray shuts down #691

AlekSi on Feb 4, 2021   •••

https://jfrog.com/blog/into-the-sunset-bintray-jcenter-gocenter-and-chartcenter/

Will it affect Homebrew's bottles?

↑ 23   😊   😕 10   👀 14

✅ Answered by **MikeMcQuaid** on Apr 8, 2021

I can confirm that we've migrated Homebrew's binary packages to GitHub Packages: https://github.com/orgs/Homebrew/packages

This will be the default download location as-of the next Homebrew stable release: Homebrew/brew#11070

View full answer ↓

https://github.com/orgs/Homebrew/discussions/691

Now that we've officially moved to GitHub Packages (as of 3.1.0), separated the GitHub tokens, and configured commit signing, is there more to do here?

🙂

MikeMcQuaid commented on Apr 13, 2021   •••

> Now that we've officially moved to GitHub Packages (as of 3.1.0), separated the GitHub tokens, and configured commit signing, is there more to do here?

No, I don't think so 🎉. Great work everyone and a particularly shout-out to **@sjackman** and **@Bo98** for GitHub Packages work and **@nandahkrishna** for the GPG signing work.

🙂   ❤️ 5

MikeMcQuaid closed this as completed on Apr 13, 2021

The Result

🏁

Type / to search

<> Code | ⊙ Issues 21 | ⁸⁹ Pull requests 109 | 💬 Discussions | ▶ Actions | ⚠ Security | 📈 Insights | ⚙ Settings

Type: All ▾ | Search packages... | Visibility: All ▾ | Sort by: Most downloads ▾

📦 **30 packages**

📦 **core/openssl/1.1**
Published on Apr 7, 2021 by Homebrew in **Homebrew/homebrew-core**
⬇ 81.7M

📦 **core/sqlite**
Published on Apr 7, 2021 by Homebrew in **Homebrew/homebrew-core**
⬇ 72.1M

📦 **core/ca-certificates**
Published on Oct 4, 2021 by Homebrew in **Homebrew/homebrew-core**
⬇ 67.5M

https://github.com/homebrew/homebrew-core/packages

core/openssl/1.1

Cryptography and SSL/TLS Toolkit

Installation   OS / Arch 7

Learn more about Homebrew

>_ Install from the command line

```
$ brew install openssl@1.1
```

Recent tagged image versions

1.1.1u   ⬇ 3,939,438

Published 20 days ago · Digest ...

Details

🍺 Homebrew

🖥 homebrew-core

⚖ BSD 2-Clause "Simplified" License

Last published   Issues

20 days ago   **130**

Total downloads

81.7M

Collaborators 5

⬡ core/openssl/1.1

Cryptography and SSL/TLS Toolkit

Installation **OS / Arch** 7   Learn more about Homebrew

darwin/macos 11.7/amd64

```
$ docker pull
ghcr.io/homebrew/core/openssl/1.1:1.1.1u@sha256:be88e83eef091328662d941b3755e9ed556c37
bafaf97e8133360f3d8e2fbd08
```

darwin/macos 11.7/arm64

```
$ docker pull
ghcr.io/homebrew/core/openssl/1.1:1.1.1u@sha256:0ac579641d625e58416bb53384eab0da738862
e785f435e17f171955e2ccf242
```

Details

🍺 Homebrew

🖥 homebrew-core

⚖ BSD 2-Clause "Simplified" License

Last published   Issues

20 days ago   **130**

Total downloads

81.7M

Collaborators 5

```
[mikebook # cat /opt/homebrew/opt/wget/INSTALL_RECEIPT.json | jq .                    (master) [~/OSS/Homebrew] ]
{
  "homebrew_version": "4.0.17-61-g5f2ccd2",
  "used_options": [],
  "unused_options": [],
  "built_as_bottle": true,
  "poured_from_bottle": true,
  "loaded_from_api": true,
  "installed_as_dependency": false,
  "installed_on_request": true,
  "changed_files": [],
  "time": 1683810757,
  "source_modified_time": 1683766951,
  "compiler": "clang",
  "aliases": [],
  "runtime_dependencies": [
    {
      "full_name": "libunistring",
      "version": "1.1",
      "declared_directly": false
    },
    {
      "full_name": "gettext",
      "version": "0.21.1",
      "declared_directly": false
    },
    {
      "full_name": "libidn2",
      "version": "2.3.4",
```

sha256:20ccee02b8dc7c1a92c52939ee7a6954f0c5e30a580bb46623a9e8dc393f82f8

Install from the command line

Learn more about Homebrew

```
$ brew install openssl@1.1
```

Details

- core/openssl/1.1
- Homebrew
- Homebrew/homebrew-core
- 20 days ago

About this version

Cryptography and SSL/TLS Toolkit

Download activity

Total downloads	0
Last 30 days	0
Last week	0
Today	0

Manifest

```
{
  "digest": "sha256:20ccee02b8dc7c1a92c52939ee7a6954f0c5e30a580bb46623a9e8dc393f82f8",
  "mediaType": "application/vnd.oci.image.manifest.v1+json",
  "size": 2130,
  "config": {
    "digest": "sha256:78991f52f8f915e058dc82144436987033b323191cbdae09ccc881ccdfdbb203"
    "mediaType": "application/vnd.oci.image.config.v1+json",
    "size": 222
  },
  "layers": [
    {
      "digest": "sha256:c1ad47b050b0e9459a70d567867435473a2a5cdb6810081a01afb9db6c82f7b
      "mediaType": "application/vnd.oci.image.layer.v1.tar+gzip",
      "size": 5325557
    },
    {
      "digest": "sha256:78991f52f8f915e058dc82144436987033b323191cbdae09ccc881ccdfdbb20
      "mediaType": "application/octet-stream",
      "size": 222
    }
  ],
  "labels": {
    "org.opencontainers.image.source": "https://github.com/homebrew/homebrew-core/blob
    "sh.brew.bottle.digest": "c1ad47b050b0e9459a70d567867435473a2a5cdb6810081a01afb9db6
    "org.opencontainers.image.revision": "eb02de1c01aeaa87a1e7a15ad4c8e192df4121ec",
    "org.opencontainers.image.created": "2023-05-30",
    "org.opencontainers.image.description": "Cryptography and SSL/TLS Toolkit",
    "org.opencontainers.image.license": "OpenSSL",
    "org.opencontainers.image.ref.name": "1.1.1u.arm64_monterey",
    "org.opencontainers.image.url": "https://openssl.org/",
    "org.opencontainers.image.version": "1.1.1u",
    "com.github.package.type": "homebrew_bottle",
    "org.opencontainers.image.documentation": "https://formulae.brew.sh/formula/openssl
    "sh.brew.tab": "{\"homebrew_version\":\"4.0.20-2-ga380aed\",\"changed_files\":[\"bi
    "sh.brew.bottle.size": "5325557",
    "org.opencontainers.image.title": "openssl@1.1 1.1.1u.arm64_monterey",
    "org.opencontainers.image.vendor": "homebrew"
  }
}
```

https://github.com/Homebrew/homebrew-core/pkgs/container/core%2Fopenssl%2F1.1/97480112

https://reproducible-builds.org

Support `all: SHA256` bottles. #11077

Edit 〈〉 Code ▾

⑂ **Merged**   **MikeMcQuaid** merged 2 commits into `Homebrew:master` from `MikeMcQuaid:any_bottles` ⧉ on Apr 9, 2021

💬 Conversation 2 | ⦿ Commits 2 | ☑ Checks 0 | ± Files changed 6 | +69 −49 ▪▪▪▪▪

MikeMcQuaid commented on Apr 8, 2021   Member ⋯

Now that Bintray is going away we have:

- migrated to GitHub Packages (which is content-addressable storage)
- plan to migrate to `brew bottle --only-json-tab` which means we will sometimes generate bottles with identical checksums
- plan to migrate `bottle :unneeded` to be shared bottles (which reduces the need for `mirror`s, too)

This doesn't actually ever generate these bottles but does allow them to be manually created and poured.

Reviewers   ⚙

🍺 **BrewTestBot**   ✓

Assignees   ⚙

No one—assign yourself

Labels   ⚙

`critical`

Delete Bintray code #11366

Edit `<> Code ▾`

🔀 **Merged** **MikeMcQuaid** merged 1 commit into `Homebrew:master` from `MikeMcQuaid:delete-bintray` 📋 on May 12, 2021

💬 Conversation 4 | ⦾ Commits 1 | ☑ Checks 15 | ± Files changed 20

+22 −508 ■■■■■□

MikeMcQuaid commented on May 11, 2021   `Member` `···`

Remove all code related to Bintray. It no longer works so there's no point keeping it around.

Some of this could arguably be deprecated/disabled first/instead but: I'm not sure I see the sense in keeping stuff around that's known to be broken.

🎉 2

Reviewers

🟢 **Bo98**   💬

🍺 **BrewTestBot**   ✓

🧊 **dawidd6**   ✓

🧑 **carlocab**   💬

Assignees

tap-new: add `--github-packages` switch #12459

Edit   <> Code ▾

⑂ **Merged**   **MikeMcQuaid** merged 2 commits into `Homebrew:master` from `FnControlOption:tap-new` ⧉ on Nov 23, 2021

💬 Conversation 4   ⊶ Commits 2   ☑ Checks 14   ⊡ Files changed 1   +6 −1 ■■■■□

FnControlOption commented on Nov 19, 2021   Contributor   •••

☑ Have you followed the guidelines in our Contributing document?

☑ Have you checked to ensure there aren't other open Pull Requests for the same change?

☐ Have you added an explanation of what your changes do and why you'd like us to include them?

☐ Have you written new tests for your changes? Here's an example.

☑ Have you successfully run `brew style` with your changes locally?

☑ Have you successfully run `brew typecheck` with your changes locally?

☐ Have you successfully run `brew tests` with your changes locally?

⊶ tap-new: add `--github-packages` switch   ✓ 56724da

Reviewers   ⚙

MikeMcQuaid   ✓

carlocab   ✓

Assignees   ⚙

No one—assign yourself

Labels   ⚙

None yet

Projects   ⚙

None yet

https://github.com/Homebrew/brew/pull/12459

tap-new: add `--github-packages` switch #12459

Edit　`<>Code ▾`

⑂ Merged　**MikeMcQuaid** merged 2 commits into `Homebrew:master` from `FnControlOption:tap-new` ⧉ on Nov 23, 2021

💬 Conversation 4　　◦ Commits 2　　☑ Checks 15　　± Files changed 1　　　**+6 −1** ■■■■■

Changes from **all commits** ▾　　File filter ▾　　Conversations ▾　　Jump to ▾　　⚙ ▾

0 / 1 files viewed　　Review in codespace　　**Review changes** ▾

⌄ ⊹ 7 ■■■■□ Library/Homebrew/dev-cmd/tap-new.rb ⧉　　　☐ Viewed 💬 ⋯

```
@@ -24,6 +24,8 @@ def tap_new_args
24  24          flag   "--branch=",
25  25                 description: "Initialize Git repository and setup GitHub Actions workflows with the " \
26  26                             "specified branch name (default: `main`)."
    27  +     switch "--github-packages",
    28  +            description: "Upload bottles to GitHub Packages."
27  29
```

https://github.com/Homebrew/brew/pull/12459/files

shared-github ⌄   Homebrew and GitHub communication channel

47

+ Add a bookmark

Unread messages

Threads

Later   2

Direct messages

Mentions & reactions

Drafts & sent

Slack Connect

More

Used by 1

@akirataguchi115 / akirataguchi115

Tuesday, 25 April ⌄

3 replies   Last reply 2 months ago

Connections ⌄

shared-github

shared-macstadium

shared-opencollective

Add external people

Channels

Direct messages

Apps

Tuesday, 30 May ⌄

Patrick Linnane 20:36

Hello. We are seeing a large number of required jobs stuck in "Expected" status even though other jobs have run. We can't sort out a meaningful reason why or any sort of logic as to which PR's are affected. We are largely stuck from merging PR's at this time due to this. Can someone help us take a look?

Screenshot 2023-05-30 at 12.37.23.png ⌄

Some checks haven't completed yet
2 successful and 2 expected checks   Hide all checks

✓ Triage tasks / upload-metadata (pull_request_target) Successful in 2s   Details

✓ Triage tasks / triage (pull_request_target) Successful in 3s   Details

● formulae_detect Expected — Waiting for status to be reported   Required

● tap_syntax Expected — Waiting for status to be reported   Required

Required statuses must pass before merging
All required statuses and check runs on this pull request must run successfully to enable automatic merging.

Wednesday, 7 June ⌄

Thomas Byrd 18:30

Heads up we noticed two of the replicas for `formulae.brew.sh` were in a bad state on pages and repaired them. This has been causing the scheduled builds to fail

https://github.com/Homebrew/formulae.brew.sh/actions

Get Manifest Successes
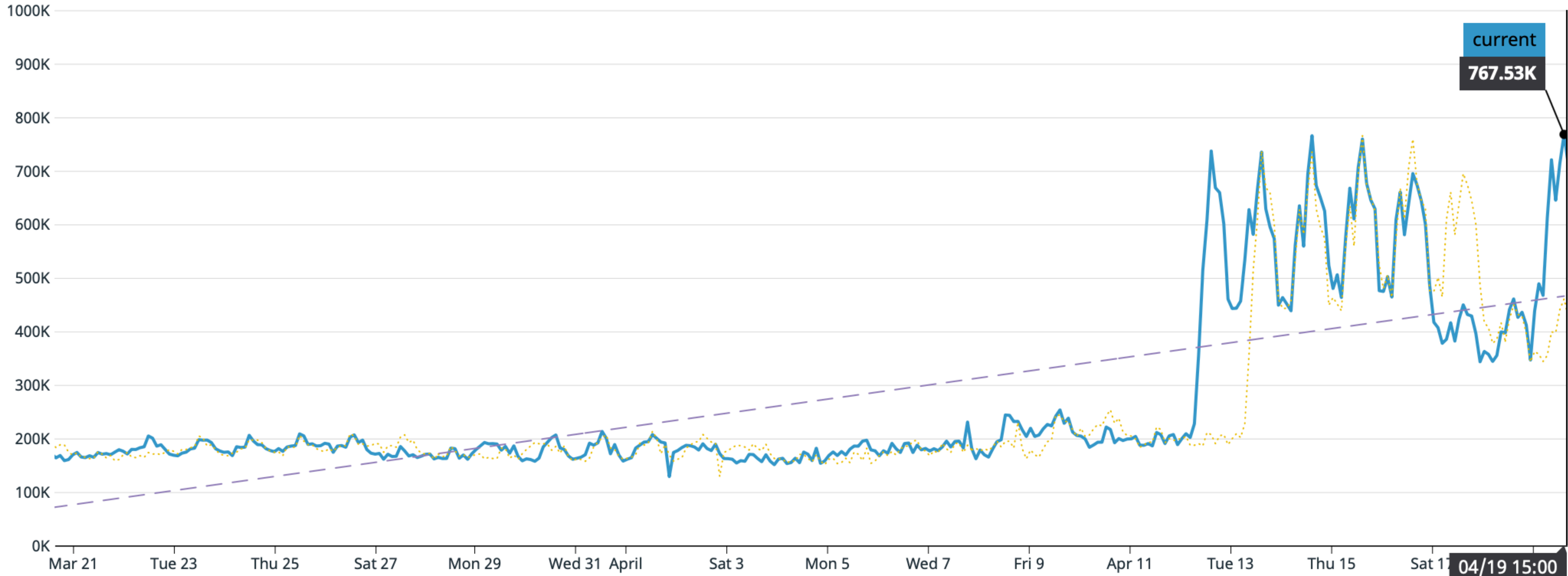
Don't just take our word for it

Many developers and organizations have started using the Container registry as a part of key workloads. We're excited to highlight a few stories of how developers are turning to the Container registry to solve their needs.

Homebrew now hosts all of their bottles on the Container registry. This was made possible because the Container registry supports OCI images. Homebrew can now distribute over a half a petabyte of binary packages to their users every month while surfacing them in GitHub search for improved discoverability. Shaun Jackman, a Homebrew maintainer, found the OCI support particularly useful and said, "GHCR's implementation of ORAS/OCI provides a standard API to query, upload, and download binary artifacts, so that Homebrew could use off-the-shelf compatible tools, easing our migration of bottle storage to GHCR."

https://github.blog/2021-06-21-github-packages-container-registry-generally-available

The Aftermath

📈

Questions on Homebrew's third-party mirroring policy #1906

Edit

taoky asked this question in **Tap maintenance and brew development**

🐙 **taoky** on Jul 29, 2021 ⋯

Hi Homebrew staff,

Since the PR Homebrew/brew#11781 got merged into brew master, it is now impossible for third-party mirrors to properly mirror homebrew/linuxbrew bottles while providing files to users as-is. I'm now curious that how should we mirror homebrew-core, homebrew-cask, etc. , and homebrew/linuxbrew bottles, to speed up brew in certain region or intranet? Or are they not intended to be mirrored?

Thank you.

↑ 5   ☺   👀 2

Category

🛠 **Tap maintenance and brew development**

Labels

None yet

6 participants

https://github.com/orgs/Homebrew/discussions/1906

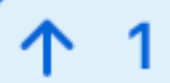**MikeMcQuaid** on Jul 29, 2021 — Maintainer · · ·

@**taoky** It was not my intention to remove all support for mirroring homebrew-core binaries. Was `HOMEBREW_BOTTLE_DOMAIN` working with you before I removed it? If so, with what mirror/value (so I can test/verify it).

I removed it because we've had a bunch of reports of it being set and being broken.

✓ Mark as answer   ↑ 1   ☺   6 replies

taoky on Jul 29, 2021 — Author · · ·

Hi,

> 1. have a stable interface to users for configuring mirrors (e.g. not to change how config items like `HOMEBREW_BOTTLE_DOMAIN` work too frequently).

Agreed. Unfortunately we have the issue that many of the users of e.g. `HOMEBREW_BOTTLE_DOMAIN` in e.g. China do not seem to understand when it's a configuration issue, when it's a mirror issue and when it's a Homebrew issue. It's very hard for us to figure out and debug these problems when they occur hence, in this case, my assumption that this behaviour was entirely broken.

I agree that we want to and should maintain a stable interface here. I think what would help with that is:

- the creators of the mirror scripts to submit more regular bug reports to report regressions so we can fix/revert them
- the creators of the mirror scripts and/or Homebrew users in China to create more unit/integration tests so we can catch these regressions before they are merged
- the investigation of different technology solutions for mirroring e.g. Artifactory, Docker registries, etc.

How does that sound?

https://github.com/orgs/Homebrew/discussions/1906

ops@brew.sh APP 10:00
Email address ⌄

> **GitHub Incident - Incident with Packages - 27 April 2023**   27 Apr
>
> From GitHub Status   Incident with Packages New incident: Investigating We are inve...

Thursday, 27 April ⌄

Mike McQuaid 10:07
can reproduce. bottle downloads hanging

ops@brew.sh APP 10:24
Email address ⌄

> **GitHub Incident - Incident with Packages - 27 April 2023**   27 Apr
>
> From GitHub Status   Incident with Packages An update has been posted Packages is ...

ops@brew.sh APP 10:31
Email address ⌄

> **GitHub Incident - Incident with Packages - 27 April 2023**   27 Apr
>
> From GitHub Status   Incident with Packages An update has been posted We have ide...

ops@brew.sh APP 10:56
Email address ⌄

> **GitHub Incident - Incident with Packages - 27 April 2023**   27 Apr
>
> From GitHub Status   Incident with Packages Incident resolved This incident has been...

Thanks!

💜

mike@brew.sh