ASWF /* ACADEMY SOFTWARE FOUNDATION

Annual Review for Continuous Integration WG

Continuous Integration Working Group

/* ACADEMY SOFTWARE FOUNDATION
#ASWF

Brief Description:
The CI WG is interested in helping ASWF projects will all aspects of tooling, build environments, dependency management, packaging, testing, security... It provides a forum for projects to collaborate on these topics. A specific deliverable are the build container images from the aswf-docker project.

WG Chairperson:
Jean-Francois Panisset panisset@gmail.com

WG Members and Affiliations:
No formal membership, but frequent meeting attendees:

- *Jean-Francois Panisset, VES Tech Committee*
- *Larry Gritz, Sony Imageworks / OIIO / OSL*
- *Andrew Grimberg, LF Release Engineering*
- *Stephen Mackenzie, NVIDIA / Rez*
- *Eric Salituro*

Contributed by:
Not formally, but aswf-docker initially developed by Aloys Baillet while at Animal Logic

Key Links:

Github:

https://github.com/AcademySoftwareFoundation/wg-ci

https://github.com/AcademySoftwareFoundation/aswf-docker

Wiki:

https://lf-aswf.atlassian.net/wiki/spaces/CIWG/overview

Artwork:

https://github.com/AcademySoftwareFoundation/wg-ci/tree/main/assets

Mailing lists:

n/a

Slack:

https://academysoftwarefdn.slack.com/archives/C0169RX7MMK

OpenSSF Best Practice Badge URL:

aswf-docker really needs to start working on that...

Roadmap

No structured roadmap, mostly just:

- GitHub issues against aswf-docker repo
- Slack discussions
- Monthly WG call discussions
- We should probably try to be a bit more formal

Last year priorities:

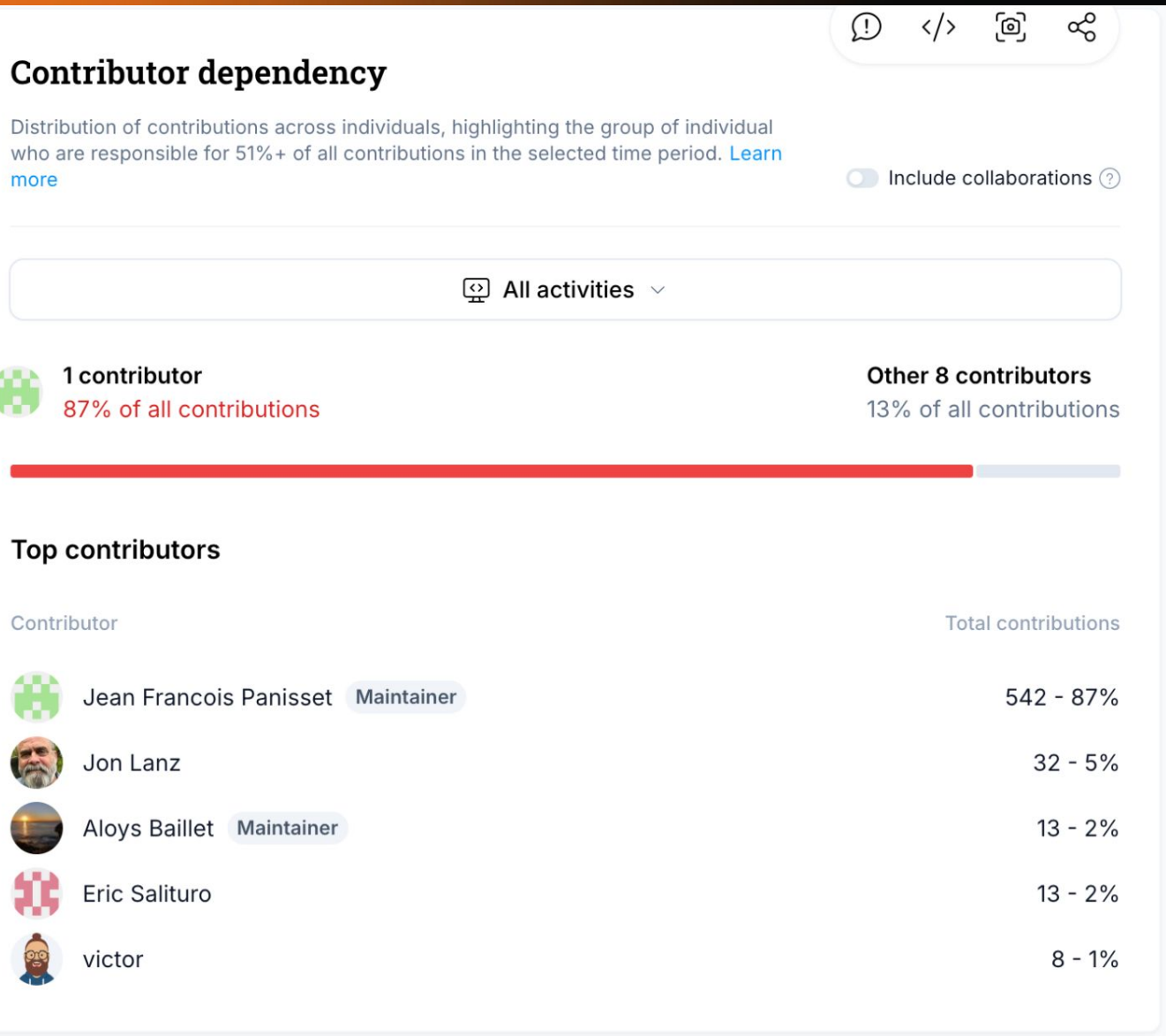
- Some projects still need builds images: xStudio, OpenRV, OpenQMC, OpenPGL, OpenAPV
- Complete transition to Conan: DONE
- Support for using Conan packages outside containers: some documentation
- Windows / macOS support: mostly not DONE, some support for building Linux on Windows / macOS

Roadmap (cont)

Goals this year:

- Leverage Conan to simplify and automate releasing images (currently a multi-day process)
- Provide Conan recipes and build images for remaining ASWF projects
- Finally make progress on Windows / macOS,
- Leverage Coding Agents to accelerate development
- Investigate ML / AI based tooling to help across all projects
- Help disseminate security best practices across all projects

Contributions



Contributor dependency

Distribution of contributions across individuals, highlighting the group of individual who are responsible for 51%+ of all contributions in the selected time period. Learn more

Include collaborations

All activities

1 contributor
87% of all contributions

Other 8 contributors
13% of all contributions

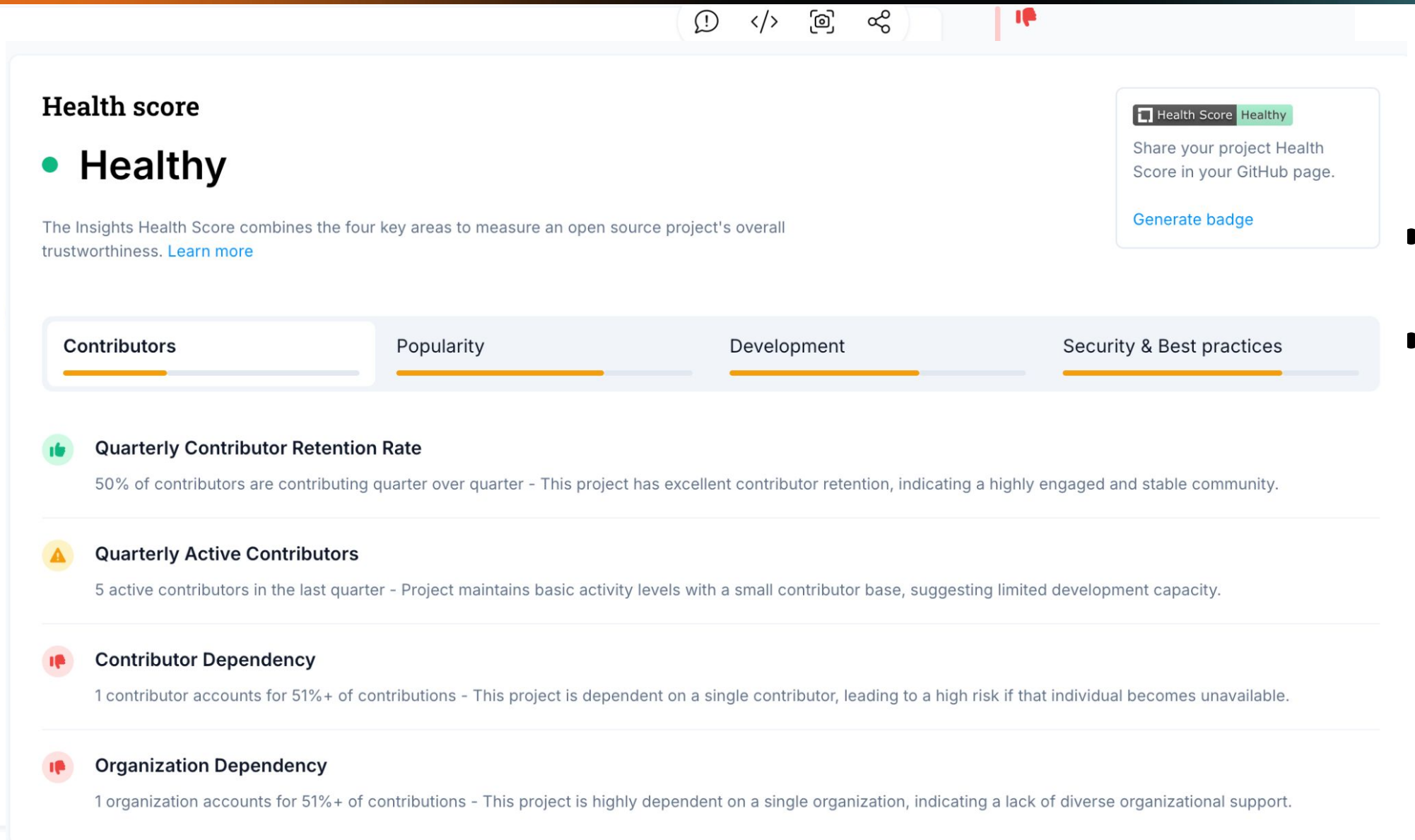
Top contributors

Contributor	Total contributions
Jean Francois Panisset Maintainer	542 - 87%
Jon Lanz	32 - 5%
Aloys Baillet Maintainer	13 - 2%
Eric Salituro	13 - 2%
victor	8 - 1%

This project is dependent on a single contributor, leading to a high risk if that individual becomes unavailable.

- LFX seems mostly correctly when restricted to aswf-docker repo
- PR count feels high, but would need to check against the repo
- Cannot find single dashboard view
- Project Health score only visible across all repos

Contributions (cont)



- Aggregate Health Score is "Healthy"
- Not sure that truly represents the current state

Organizations contributing and/or using in production

/* ACADEMY SOFTWARE FOUNDATION
#ASWF

Organizations leaderboard

Organizations ranked by the number of contribution activities performed by contributors on their behalf during the selected time period. Learn more

Include collaborations

All activities

Organization	Total contributions
NOne	542 - 90%
DreamWorks Animation LLC	32 - 5%
Academy Software Foundation	13 - 2%
Sony Pictures Entertainment Inc	6 - 1%
Rodeo FX	6 - 1%
Zendesk, Inc.	2 - 0%

- Most ASWF projects use the aswf-docker build images for some parts of their CI
- Projects benefit from cooperation in #wg-ci Slack
- No real way to track who might be using the container images in a facility (if at all)

VFX Industry Build Matrix Updates

/* ACADEMY SOFTWARE FOUNDATION

#ASWF

Houdini Open Source Components

File Edit View Insert Format Data Tools Extensions Help

Menus 100% $ % 123 Defaul... 10 B I A

I9

	A	B	C	D	E	F	G
1	package	18.5	19	20	20.5	21	
2	3DxWare	3.3.1	3.3.1	3.3.1	3.3.1	3.3.1	
3	Alembic	1.7.12	1.7.16	1.8.3	1.8.3	1.8.3	
4	Apache Thrift	0.13.0	0.13.0	0.13.0	0.13.0	0.13.0	
5	Audiere	1.9.4	1.9.4	1.9.4	1.9.4		
6	Autodesk FBX(closed source)	2016	2020.0.1	2020.0.1	2020.0.1	2020.0.1	
7	Berkeley DB	4.5.20	4.5.20	4.5.20	4.5.20	4.5.20	
8	Blosc	1.5.0	1.5.0	1.20.1	1.20.1	1.20.1	
9	Boost	1.72.0	1.72.0	1.72.0	1.82.0	1.85.0	
10	Bullet	2.86	2.86	2.86	3.25	3.25	
11	COLLADA DOM	1.4.1	1.4.1	1.4.1	1.4.1	1.4.1	
12	CUDA		11.1	12.2	12.2	12.8	
13	ColorAide				3.1.2	3.1.2	
14	Dem Bones			1.2.1	1.2.1	1.2.1	
15	DirectXTex	2020.09.30	2020.09.30	2020.09.30	2020.09.30	2020.09.30	
16	Eigen	3.3.7	3.3.7	3.4.0	3.4.0	3.4.0	
17	Embree	3.11.0	3.13.1	3.13.1	3.13.1	3.13.1	
18	Expat	2	2	2	2	2	
19	FFmpeg			6.0.0	6.0.0	7.1.0	
20	Field3D	1.3.2	1.3.2				
21	Flicks	1	1	1	1	1	
22	Fontconfig	2.8	2.8	2.8	2.8	2.8	
23	FreeType	2.9	2.9	2.9	2.9	2.9	
24	Genshi	0.5.0	0.7.3	0.7.7	0.7.7	0.7.7	
25	Geogram (MultiPrecision component only)	1.3.7	1.3.7	1.3.7	1.3.7	1.3.7	
26	HDF5	1.8.11	1.8.11	1.8.11	1.8.11	1.8.11	
27	ICU	5.1	5.1	5.1	5.1	5.1	
28	Imath			3.1.5	3.1.5	3.1.5	
29	Intel OpenCL CPU Driver			intel	intel	intel	
30	Intel(R) Math Kernel Library	2018.1	2018.1	2020.4	2020.4	2025.1	

- aswf-docker project not in build matrix, maybe it should be?
- Working on screen scraping scripts to extract published component lists for major DCCs (Blender / Houdini / Maya / Nuke
- Could be used to auto populate sections of the build matrix
- Hopefully spark some kind of standard SBOM for industry applications

Project Engineering Contributions

/* ACADEMY SOFTWARE FOUNDATION
#ASWF

ASWF Project Engineering Contribution Matrix

File Edit View Insert Format Data Tools Extensions Help

Menus 100% $ % .0 .00 123 Arial 10 B I A

F29

	A	B	C	D	E	F
1	Project	Which organizations do you believe have at least one person spending at least 20% of their work time contributing directly to the project? (See attached note for a full explanation.)	What % of the project's **tactical** needs/goals are currently being met? (See attached note for a full explanation.)	What % of the project's **strategic** needs/goals are currently being met? (See attached note for a full explanation.)		Last updated: date + person
2	ACES	Academy	0%	0%		Scott Dyer 2025-09-30
3	Dailies Notes Assistant (DNA)	ILM, Sony Imageworks	75%	75%		Tommy Burnette 2025-09-08
4	DPEL	DreamWorks Animation, Netflix Animation	50%	40%		Matthew Low 2025-09-02
5	MaterialX	Lucasfilm, Apple, Autodesk, NVIDIA	80%	70%		Jonathan Stone 2025-09-01
6	MoonRay	DreamWorks Animation	50%	60%		Jon Lanz 2026-06-16
7	Open Shading Language (OSL)	Sony Pictures Imageworks, Intel, Netflix Animation, NVIDIA	60%	40%		Larry Gritz 2025-09-01
8	OpenAPV					
9	OpenAssetIO					
10	OpenColorIO	Autodesk, DNEG, Skydance Animation	50%	50%		Carol Payne - 2026-05-27
11	OpenCue	Sony Pictures Imageworks	90%	60%		Diego Tavares - 2025-09-02
12	OpenEXR (+ Imath)	ILM, Weta	75%	75%		Cary Phillips 2025-09-03
13	OpenFX		50%	50%		Gary Oberbrunner 2024-06-13
14	OpenImageIO	Sony Pictures Imageworks	70%	50%		Larry Gritz 2025-09-01
15	OpenQMC					Lorna Dumba 2025-04-15
16	OpenTimelineIO	Pixar, Netflix	50%	30%		Joshua Minor 2025-09-02
17	OpenVDB	NVidia	70%	80%		Ken Museth 2025-09-04
18	ORI / Encoding Guidelines		95%	95%		Sam Richards 2024-06-24
19	ORI / OpenRV	Autodesk	80%	50%		Guillaume Brossard 2025-09-30
20	ORI / xSTUDIO	Dneg				
21	OSL / shared platform					
22	RawToACES	Academy, Weta	5%	5%		Alex Forsythe, 2024-06-24
23	Rez		30%	10%		Jean-Christophe Morin 2026-06-14
24	Rongotai Model Train Club (RMTC)					
25	WG - CI/tooling	None	30%	20%		Jean-Francois Panisset 2026-06-23
26	WG - USD	Pixar	100%	100%		Nick Porcino 2024-06-24

- Unchanged since last year
- Mostly "hobby" contributions / personal interest
- Recent, major contribution from Moonray / Dreamworks to aswf-docker project

CI / Security / Marketing Updates

- Wiki could use work: we need to get better at extracting useful information from meeting minutes and Slack discussions into Wiki articles. AI Agents likely a part of this. Perhaps LF has existing infrastructure in other foundations?
- Ironically CI for aswf-docker needs improvement
  - Dependency management via Conan will help
  - Still takes multiple hours to build everything, including LLVM / Qt
  - How many years do we need to support? (currently 2023-2027)
  - Additional platforms and architectures (ARM) multiples number of builds
- Ideas on how to better share available resources with all projects
- Ideas on how projects can make requests from us
  - But need resources to avoid being a bottleneck

AI / ML Code Generation Use / Reporting

- No explicit policy yet for aswf-docker, our code project
- Some informal use of `Assisted-By:` in recent PRs
- LLMs useful for generating boilerplate Conan recipes / vendoring and adapting from Conan Center Index
- LLMs can be very helpful in figuring out complex interactions between:
  - Docker, Conan, CMake, project bespoke build environment, interactions with other projects...
- But can't really point LLM to entire source base pulled in by aswf-docker
  - We build 127 packages and counting, including LLVM, Qt...
  - Could use a more expensive Claude subscription
- Anecdotally, LLMs I've tried seem to struggle with patches

Key Achievements in the past year

- Deliver 2026 images at SIGGRAPH 2026, about to deliver 2027 pre-release images (not easy to avoid breaking some of dozens of CI workflows)
- Coordinate response to security issues:
  - SonarCloud scanner compromise
  - GitHub Actions security issues
- Major contribution from Moonray (Conan recipes for Moonray dependencies)

Key Achievements in the past year (cont)

- All packages built as Conan packages, will be able to fully leverage Conan
  - Automatic build order determination
  - SBOM generation
  - Groundwork for multi platform support, can already build Linux images on Windows / macOS (external contribution)
- LLMs / coding agents have been major accelerant

Areas the project could use help on

Developers Developers Developers Developers...

- Sustained development resources could help across all projects, avoid duplication of effort
- Projects could use help with growing security threats
- AI / ML based tooling is a new area which requires a lot more investigation
- Have to be careful with resources (paid runners, LLM accounts): more budget for paid runners to help all projects?

Feedback on working with ASWF

CI Working Group only makes sense in the context of ASWF

- opportunity to collaborate across projects is hugely valuable
- varying levels of implication from different projects, would like to see more sustained collaboration (for instance agreement on common components / libraries)
- unique position to see how projects fit together

TAC Open Discussion