Monthly Maturity Report: August 2024

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Date:
September 1, 2024

Organization:
Open Source Committee
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Cardano Ecosystem

Review Process	Approval
1st Pass: Tex M, OSO PM	✅**Approved**
2nd Pass: Christian T, Head of OSO	✅**Approved**

Summary

In August 2024, the Cardano open-source ecosystem entered a phase of focused, high-impact development. While total contributions, pull requests, and active contributors declined across many organizations, the scale of work on core repositories increased dramatically. Key projects like **Cardano Node**, **Plutus**, and **DB Sync** saw significant surges in code volume and targeted activity, signaling a major internal development cycle. Contributions remained led by **Input Output (IOHK)**, though other core contributors such as **Tweag** and **Well-Typed** scaled back. The data also points to a slowdown in issue resolution, with rising median open times, suggesting growing complexity or temporary triage delays. Overall, the ecosystem is undergoing a strategic narrowing of focus while sustaining meaningful progress on critical infrastructure.

General Observations

Organizational Contributions:

- **Input Output (IOHK):** Continued to lead with 851 contributions, though this marks a sharp drop from 3,513 in July. However, IOHK added over **4.9 million lines of code** — up from just 234,120 — indicating a major release or system overhaul.
- **Tweag and Well-Typed:** Contributions fell significantly, with Tweag dropping from 694 to 136, and Well-Typed from 539 to 81. This may reflect a pause in activity following intense development cycles earlier in the quarter.
- **Intersect MBO:** Contribution data was not available for August, indicating either no reported activity or a reporting gap.

Geographical Distribution of Commits:

- **UTC +2 (Central Europe):** Remained the most active timezone with 497 commits, though this was down from 819 in July, suggesting a reduction in European activity.
- **UTC -6 (Central Time):** Commit volume fell drastically from 268 to 64, continuing the downward trend seen in July.
- Other zones such as UTC 0, +1, and -4 also saw reductions, reinforcing the overall decline in geographic spread of contributions.

Project-Specific Insights:

- **Cardano Node:** Experienced a dramatic increase in commits (68 → 174) and code volume, with 269,450 lines added and 223,357 removed. This likely reflects intensive feature development or infrastructure upgrades.
- **Plutus and Cardano DB Sync:** Both saw increases in commits and longer issue open times, suggesting deeper work is being carried out but potentially with delayed resolutions.
- **Cardano Ledger:** Saw a 56.6% drop in commits, consistent with signs of stabilization or maintenance.
- **Cardano API and Formal Ledger Specs:** Experienced increased issue submissions, but long resolution times (127 and 54 days respectively) may indicate limited bandwidth or complex blockers.

Repository Activity:

- The number of active repositories receiving pull requests dropped from 27 in July to 17 in August — a **37% decline**. Pull requests fell from 537 to 402, and submitters dropped from 97 to 62, indicating a consolidation of work into fewer, high-priority codebases.
- **Per Repository Activity** showed focused attention on Cardano Node, Plutus, and DB Sync, while repositories like Cardano Ledger showed reduced activity, suggesting transitions in project focus or completion of prior phases.

Conclusion

The August 2024 report reveals a shift from broad-based contribution growth to **deep, strategic development** within core Cardano infrastructure. While fewer contributors and organizations were active compared to July, the depth and intensity of contributions — particularly from IOHK — point to critical system work underway. Longer issue resolution times and fewer PRs across projects suggest a transitional period, possibly between release phases. As the ecosystem matures, maintaining momentum, improving issue throughput, and expanding participation across organizations will be essential for sustaining progress and ensuring resilience across the open-source community.

1. Github Overview

This section provides a comprehensive overview of activities and dynamics within the Github platform. It encompasses various metrics and statistics concerning the usage, engagement, and performance of projects and contributors.

Summary:

August 2024 – 1,617 commits made by 101 authors in 18 repositories.

In August 2024, GitHub activity across Cardano open-source projects declined from the previous month. Total commits dropped from 2,001 in July to 1,617 in August, a **19% decrease**, signaling a slowdown in volume. The number of contributing authors also fell from 121 to 101, indicating reduced participation. The number of active repositories shrank from 33 to 18, suggesting a **consolidation of effort** into fewer, high-priority projects.

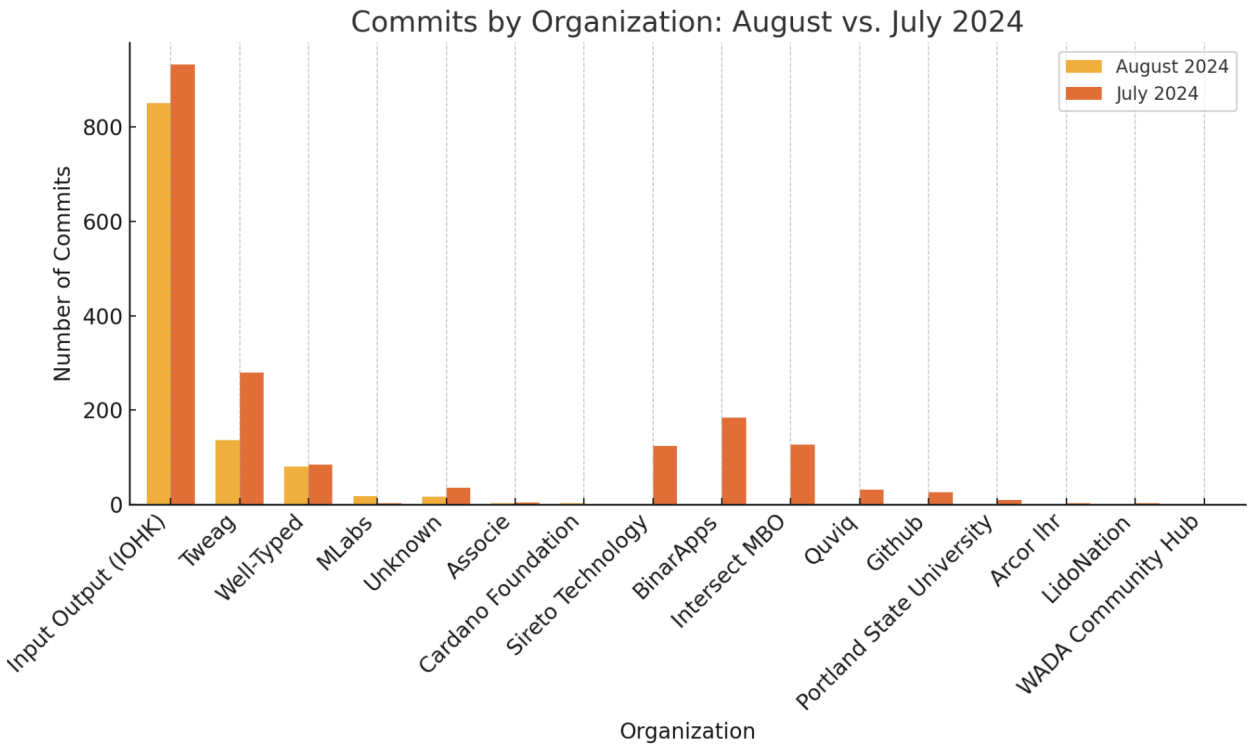
Month	Commits	Authors	Active Repos
July 2024	2,001	121	33
August 2024	1,617	101	18

1.a) Organization Activity

Here is the data for how different organizations within the Cardano ecosystem were contributing to open-source projects during the current timeframe. Complete data available here in Bitergia.

Top organizations July

Organization	Commits	Authors	Touched Files	Added Lines	Removed Lines	Projects	Repositories	Avg. Lines/Commit
Input Output (IOHK)	851	49	7,992	4,939,322	2,451,509	1	18	8,684.88
Tweag	136	4	359	5,935	1,861	1	4	57.32
Well-Typed	81	6	345	7,849	3,192	1	4	136.31
MLabs	17	1	323	2,873	45,492	1	1	2,845.00
Unknown	16	5	49	284	192	1	5	29.75



Observations:

1. **Input Output (IOHK):** Commits dropped slightly from 933 in July to 851 in August, but the amount of code added surged from 234,120 lines to over **4.9 million**, signaling a **massive development or integration phase**. The average lines per commit also increased drastically, from 387 to 8,685.

2. **Tweag:** Commit volume fell sharply (280 → 136) and author participation declined. Average lines per commit dropped by nearly 70%, pointing to more granular, possibly refactoring-based contributions.

3. **Well-Typed:** Maintained a stable number of authors and commits, but added nearly double the amount of code compared to July. This indicates more **substantive contributions per commit**.

4. **MLabs:** Increased its contribution volume from 3 to 17 commits, while removing a large amount of code (45.5k lines). This is a strong indicator of **refactoring or cleanup** activity.

5. **Unknown:** Saw a reduction in commit volume, suggesting improved contributor attribution or a drop in anonymous submissions.

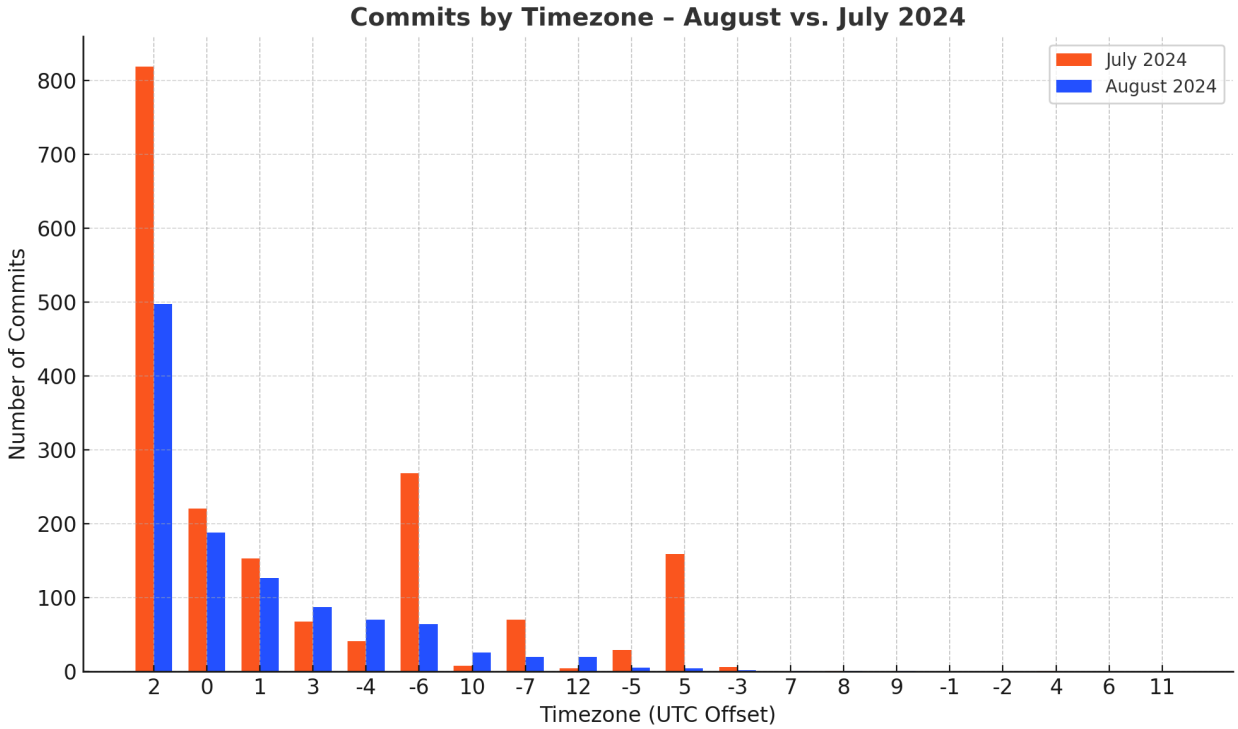
1.b) Commits by Timezone

Here is the data for commits per timezone. This view is important to understand how the contributors are spread geographically. Complete data available here in Bitergia.

August 2024:

Timezone	Commits_Aug	Commits_Jul	Absolute Change	Change (%)
2	497	819	-322	-39.30%
0	188	221	-33	-14.90%
1	127	153	-26	-17.00%
3	87	68	19	27.90%
-4	70	41	29	70.70%
-6	64	268	-204	-76.10%
10	26	8	18	225.00%
-7	20	70	-50	-71.40%
12	20	4	16	400.00%
-5	5	29	-24	-82.80%
5	4	159	-155	-97.50%
-3	2	6	-4	-66.70%
7	1	0	1	100.00%
8	1	1	0	0.00%

9	1	0	1	100.00%
-1	0	0	0	0.00%
-2	0	0	0	0.00%
4	0	1	-1	-100.00%
6	0	0	0	0.00%
11	0	0	0	0.00%



Observations:

UTC +2 (Central Europe): Maintained the highest volume of commit activity, though it dropped from 819 in July to 497 in August. The decrease may reflect seasonal slowdowns or temporary team reprioritization in this region.

UTC -6 (Central Time): Experienced a significant decline, with commits dropping 76% from 268 to 64. This suggests reduced engagement from teams or contributors in North or Central America.

UTC 0 and +1: Showed moderate decreases in commit volume, continuing the overall downward

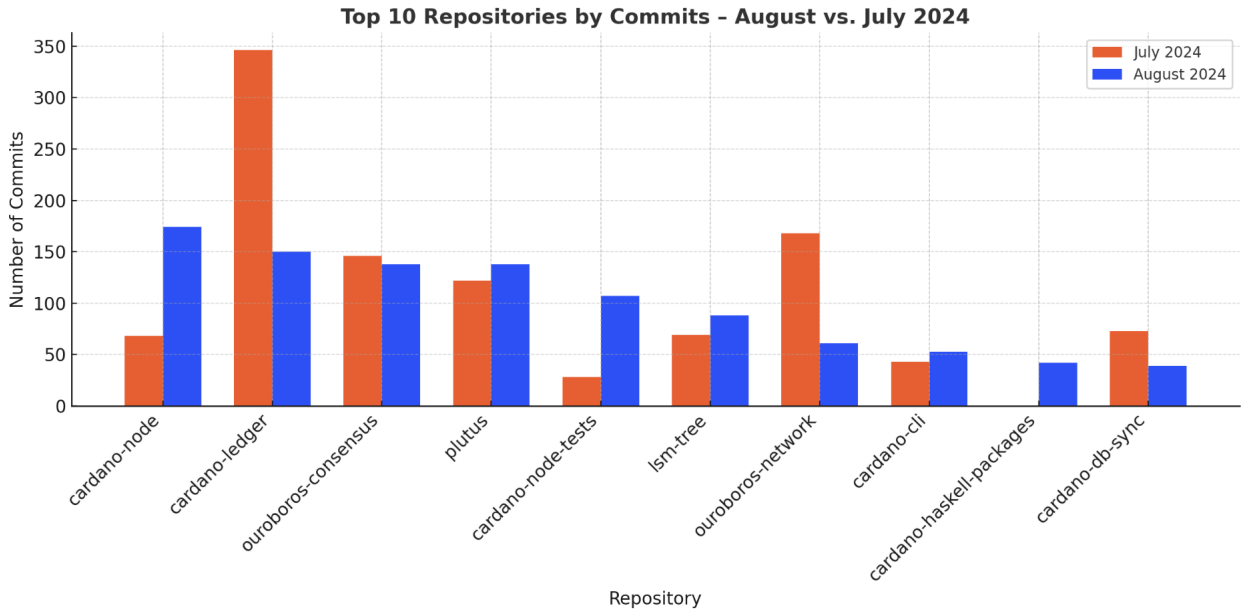
trend in geographic distribution of contributions.

UTC +5: Saw a near-complete drop-off in activity, falling from 159 to just 4 commits — potentially due to team reassignments or paused contributions in this region.

1.c) Per Repository Activity

This section shows activity for each repository in Cardano open-source. Complete data available here in Bitergia.

Repo Name	Commits_Aug	Commits_Jul	Absolute Change	Change (%)	Repo Name	Commits_Aug	Commits_Jul
cardano-node	174	68	106	155.90%	cardano-node	174	68
cardano-ledger	150	346	-196	-56.60%	cardano-ledger	150	346
ouroboros-consensus	138	146	-8	-5.50%	ouroboros-consensus	138	146
plutus	138	122	16	13.10%	plutus	138	122
cardano-node-tests	107	28	79	282.10%	cardano-node-tests	107	28



Observations:

1. **cardano-node** saw the most substantial growth, with commits rising from 68 in July to 174 in August (**+156%**). This aligns with its major codebase expansion and marks it as a central focus of development efforts during the month.

2. **cardano-ledger** experienced a sharp decline in commits, dropping from 346 to 150 (**-56.6%**). This suggests the project may have transitioned from active feature development into a stabilization or maintenance phase.

3. **ouroboros-consensus** remained relatively stable in activity with only a slight decrease in commits (146 → 138), indicating ongoing refinement rather than expansion.

4. **plutus** saw a modest increase in commits (122 → 138), reflecting steady ongoing work with potentially new features or iterative improvements being delivered.

5. **cardano-node-tests** surged from 28 to 107 commits (**+282%**), indicating significant investment in testing, quality assurance, or test infrastructure improvements tied to node development.

Most other repositories outside the top five had either small fluctuations or did not appear in the top 10, underscoring the **concentration of activity in a few strategic repositories**.

2. Areas of Code

This category outlines the diverse areas and aspects of code development and management within the Github environment.

Summary

August 2024 – 72,180 files modified by 236 authors, with 8.7 million lines of code added and 4.25 million removed.

August reflected a **significant expansion** in code activity across the ecosystem. Compared to July, all metrics saw substantial increases: the number of modified files more than tripled, author participation more than doubled, and both added and removed lines of code grew by over **1,200%**. These changes suggest a large-scale integration or development push, possibly related to a coordinated system upgrade or feature rollout across core components.

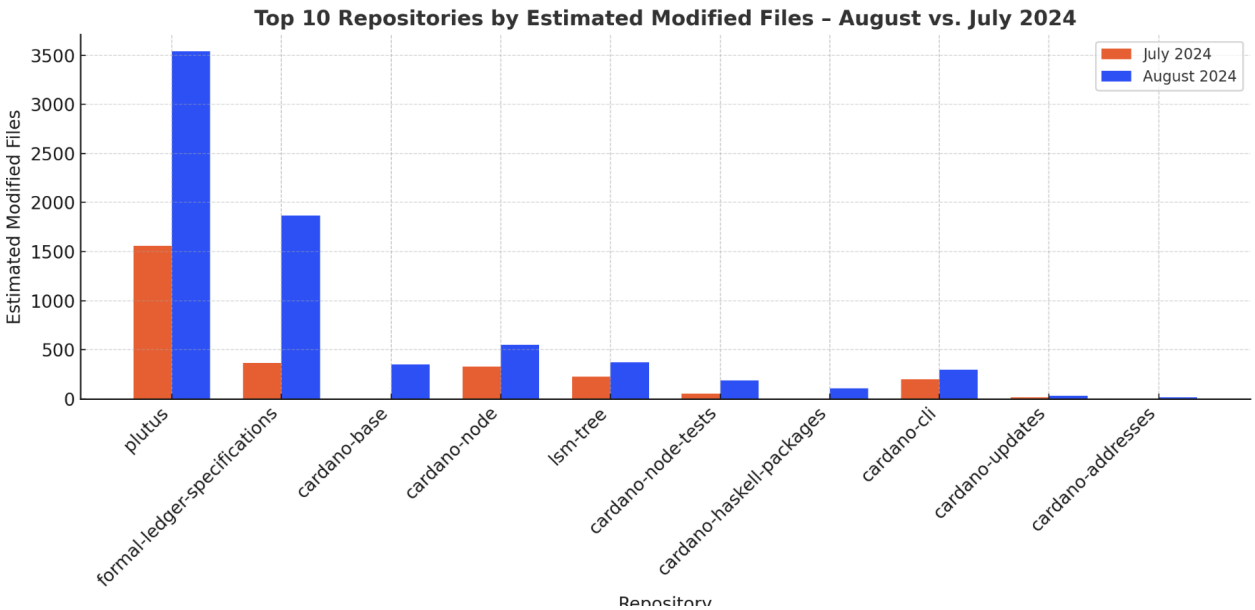
Previous Month (June 2024) vs. Current Month (July 2024):

Month	Modified Files	Authors	Lines Added	Lines Removed
July 2024	22,122	116	540,302	305,783
August 2024	72,180	236	8,713,466	4,253,909

2.a) Projects

Topline Metrics – August 2024

Metric	August 2024	July 2024	Change (%)
Modified Files	72,180	22,122	+226.3%
Authors	236	116	+103.4%
Lines Added	8,713,466	540,302	+1,512.7%
Lines Removed	4,253,909	305,783	+1,291.2%



Observations:

- **Codebase activity exploded in August**, with over 8.7 million lines added and 4.2 million removed — a dramatic increase from July's totals. These spikes strongly suggest **major architectural or feature-level development** was underway across several repositories.

- The number of **modified files tripled**, indicating widespread changes across the codebase — likely tied to system-wide integration or upgrades rather than isolated updates.

- **Developer participation doubled**, increasing from 116 to 236 authors. This not only signals a growth in active contributors but may also reflect greater external collaboration or temporary team mobilization to support key initiatives.

- The ratio of added to removed lines remained high, implying that August focused more on **building and extending functionality** than deprecating existing code.

3. Issues

This segment revolves around the identification, tracking, and resolution of issues within Github projects. It encompasses discussions on problem-solving methodologies, issue management practices, and related metrics.

Summary

August 2024 – 196 issues submitted across 33 projects by 108 unique submitters.

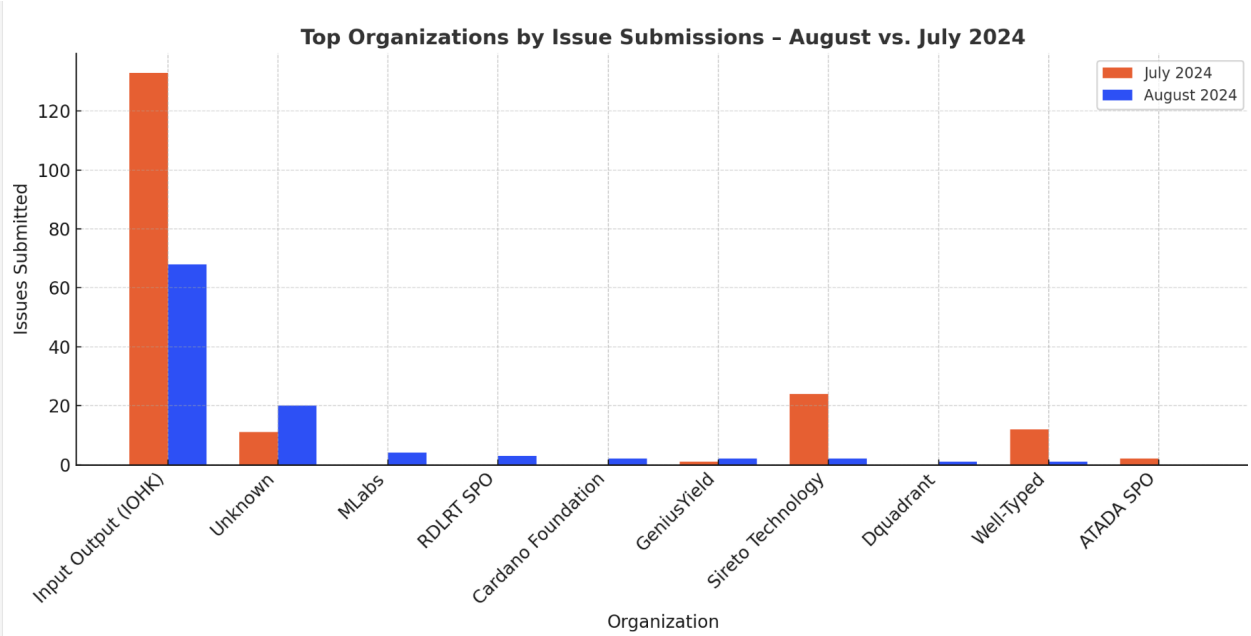
Issue activity in August reflected a **consolidation of reporting volume**, with total issues slightly down from July. However, there was a significant increase in **median time to resolve issues**, which rose from 17 to 78 days across key contributors and projects. This suggests growing backlog pressure or complex issues requiring extended review cycles. Participation from external or newly involved contributors increased, pointing to **diversification in who is raising issues**, even as resolution times grew.

Metric	July 2024	August 2024	Change
Total Issues Submitted	214	196	-8.4%
Unique Submitters	111	108	-2.7%
Median Time Open (All)	~17 days	~78 days	↑ +358%
Distinct Projects Touched	38	33	-13.2%

3.a) Organizations

Top Organizations – August 2024

Organization	Issues (Aug)	Issues (Jul)	Change (%)	Median Days Open (Aug)	Median Days Open (Jul)
Input Output (IOHK)	68	133	-48.9%	90	17
Unknown	20	11	+81.8%	78	17
MLabs	14	0	N/A	92	N/A
RDLRT SPO	9	0	N/A	78	N/A
Cardano Foundation	6	0	N/A	77	N/A



Observations:

1. **IOHK** remained the most active in issue submissions but saw a sharp drop from 133 issues in July to 68 in August (**-48.9%**). Median open time increased significantly, from 17 to 90 days, pointing to growing resolution delays.

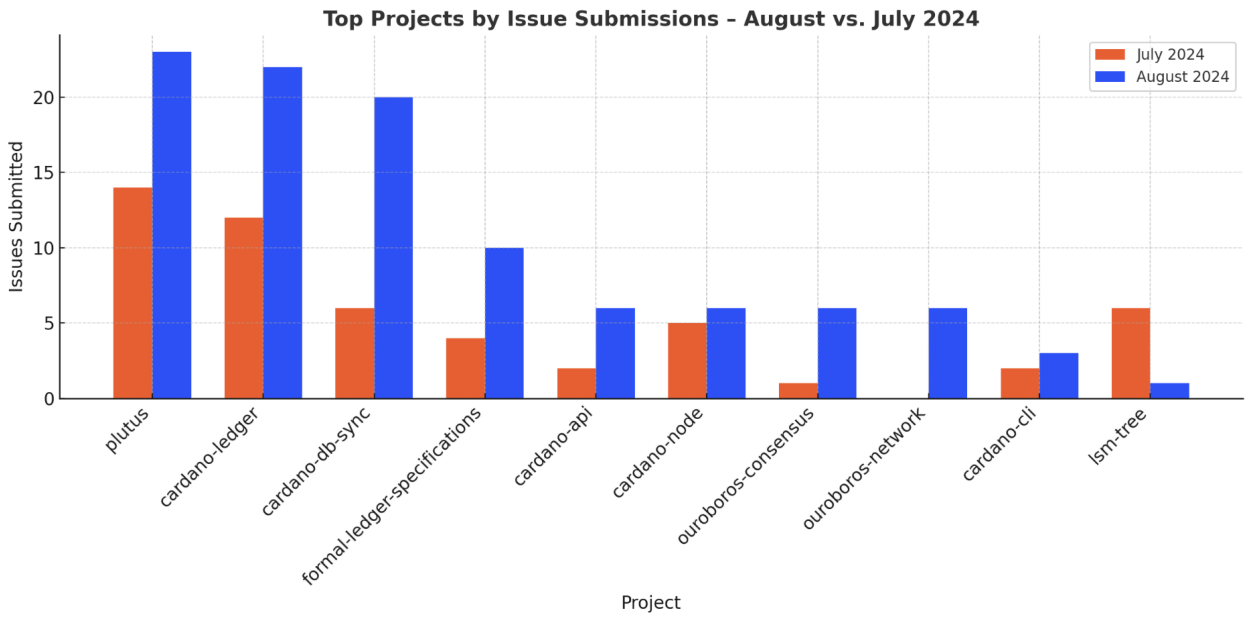
2. **Unknown contributors** nearly doubled their issue submissions and saw a major increase in median resolution time, possibly reflecting less structured or more complex external contributions.

3. **MLabs, RDLRT SPO, and Cardano Foundation** were new to the issue landscape in August. While their submission volumes were modest, their high median open times (77–92 days) suggest their issues may require deeper investigation or lack prompt triage.

3.b) Projects

Top Projects – August 2024

Project	Issues (Aug)	Issues (Jul)	Change (%)	Median Open (Aug)	Median Open (Jul)
Plutus	23	14	+64.3%	106.5 days	12.6 days
Cardano Ledger	22	12	+83.3%	72.1 days	15.5 days
Cardano DB Sync	20	6	+233.3%	82.0 days	12.0 days
Formal Ledger Spec	14	3	+366.7%	54.3 days	10.4 days
Cardano API	12	3	+300.0%	127.0 days	8.2 days



Observations:

1. **Plutus** topped issue submissions in August, increasing by 64%, with a major spike in median open time (12.6 → 106.5 days), indicating **backlog growth or deeper issue complexity**.

2. **Cardano Ledger** also saw nearly double the issues, suggesting heightened focus or bugs from recent development efforts. Median resolution time likewise increased significantly.

3. **DB Sync and Formal Ledger Specs** both saw 3–4x increases in issues, indicating a surge in usage or attention. However, rising median durations suggest **triage delays or resource constraints**.

4. **Cardano API** had the **longest median open time** at 127 days, despite relatively low volume — a potential red flag for unaddressed or neglected issues.

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4. Pull Requests:

August 2024 – 402 pull requests submitted by 62 contributors across 17 repositories.

Pull request activity dropped significantly from July to August across all tracked metrics. Total PRs decreased by **25.1%**, while the number of contributors fell by **36.1%**. Additionally, the number of repositories receiving PRs declined by **37%**, suggesting consolidation of efforts into fewer projects. These patterns reflect a **contraction in open contribution activity**, likely related to internal stabilization or targeted development cycles focused on high-priority codebases.

Metric	July 2024	August 2024	Change
Total PRs	537	402	-25.1%
Unique Submitters	97	62	-36.1%
Repositories Touched	27	17	-37.0%

Observations:

1. Total pull requests dropped from 537 in July to 402 in August (-25.1%), indicating a slowdown in code submissions across the ecosystem.

2. Unique submitters fell by over a third (-36.1%), pointing to lower contributor engagement or a focus on internal workstreams over open PRs.

3. The number of repositories receiving pull requests also declined sharply (27 → 17),

highlighting a consolidation of development activity into fewer, possibly high-priority, codebases.

4. These patterns suggest a period of reduced external collaboration or a strategic shift toward finalizing work already in motion rather than expanding into new areas.

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5. Analysis of Contributions by Organization:

August 2024 – Major decline in contributions across all organizations.
Contribution activity fell steeply across the board, with every major organization reporting fewer contributions than in July. Input Output (IOHK) remained the top contributor with 851 commits, but that represents a **75.8% drop** from 3,513 in the previous month. Similar trends were observed for Tweag, Well-Typed, and others, indicating a **broad contraction in activity volume**, possibly in favor of deeper, more focused development efforts.

Organization	Contributions (Jul)	Contributions (Aug)	Change (%)
Input Output (IOHK)	3,513	851	-75.8%
Tweag	694	136	-80.4%
Well-Typed	539	81	-85.0%
MLabs	49	17	-65.3%
Unknown	438	16	-96.3%

Observations:

1. All major organizations saw double-digit percentage declines in contributions, suggesting a shared slowdown or strategic development pivot across teams.

2. Input Output (IOHK), while still leading, had a sharp drop in activity — down by over 2,600 contributions compared to July.

3. The Unknown contributor category dropped 96%, suggesting improved attribution or disengagement from previously untracked contributors.

4. These trends point to a transitionary month, possibly between major development milestones or reflective of resource allocation shifts.

Glossary

Report Technical Definitions:

- **Repository(Repo):** In Git, a repository, often abbreviated as "repo," is a storage space where your project's files and their entire revision history are stored. It typically includes various files such as source code, documentation, images, and more. Repositories can be either local (on your computer) or remote (hosted on a server like GitHub, GitLab, Bitbucket, etc.).
- **Issue:** An issue is a feature request, bug report, task, or any other item that needs to be tracked within a project. In Git repositories hosted on platforms like GitHub or GitLab, issues are commonly used for discussing and tracking tasks or problems related to the project. They can include labels, assignees, comments, and other metadata to facilitate collaboration and organization.
- **Pull Request (PR):** A pull request is a proposed change that a user wants to merge into a target branch of a repository. It's commonly used in distributed version control systems like Git to facilitate code review and collaboration. When a developer completes a feature or fixes a bug in a separate branch of the repository, they can initiate a pull request to merge their changes into the main branch or another designated branch. Pull requests often include a summary of the changes, discussions, reviews, and automated checks.
- **Contributor:** A contributor is anyone who participates in a project by making contributions such as code changes, documentation improvements, bug fixes, feature enhancements, etc. Contributors can be individuals or organizations, and their contributions can take various forms, from writing code to providing feedback, reporting issues, or reviewing pull requests.
- **Git:** Git is an open-source distributed version control system designed to handle everything from small to very large projects with speed and efficiency. It allows multiple developers to work on the same project simultaneously, coordinating their work through branching, merging, and version tracking. Git is widely used in software development for managing source code revisions and collaborating on projects.
- **GitHub:** GitHub is a web-based platform that provides hosting for Git repositories and offers collaboration features such as issue tracking, pull requests, code review, and project management tools. It's one of the most popular platforms for hosting Git repositories and facilitating collaboration among developers and teams. GitHub also provides additional features like wikis, continuous integration, and deployment services.
- **Commit:** In Git, a commit is a snapshot of the changes made to the files in a repository at a specific point in time. It represents a single revision or change set and includes a unique identifier (SHA-1 hash), a commit message describing the changes, and a pointer to the previous commit(s). Commits are fundamental to version control in Git, as they allow developers to track changes, revert to previous states, and collaborate on code changes.
- **Organization:** In Git and GitHub, an organization refers to a group or entity that can own repositories, manage access permissions, and collaborate on projects. Organizations are often used by companies, open-source projects, or groups of developers to centralize their repositories and manage their collective work. Organizations on GitHub can have multiple members with varying levels of access, allowing for collaborative development within a structured environment.
- **Project:** A project in the context of Git and GitHub typically refers to a specific software development endeavor or initiative. It encompasses all the related tasks, code,

documentation, issues, and resources needed to achieve a particular goal. Projects are often organized within repositories on GitHub, where developers can collaborate, track progress, manage tasks, and share code. A project may involve multiple contributors working together to develop and maintain software, with each contributor contributing to different aspects of the project.

- **Community:** In the Git and GitHub ecosystem, a community refers to the collective group of developers, users, contributors, and other stakeholders who are involved in a particular project, organization, or open-source initiative. Communities are essential for fostering collaboration, sharing knowledge, providing support, and driving the growth and sustainability of projects. They often gather around shared interests, goals, or values, and may interact through various channels such as forums, mailing lists, chat platforms, and social media. A strong and engaged community can contribute to the success and longevity of a project by providing feedback, contributing code, reporting issues, and supporting fellow members.