Open Source
Program Office

# Measuring the Health of Your CNCF Project:
## Going Beyond Stars and Forks

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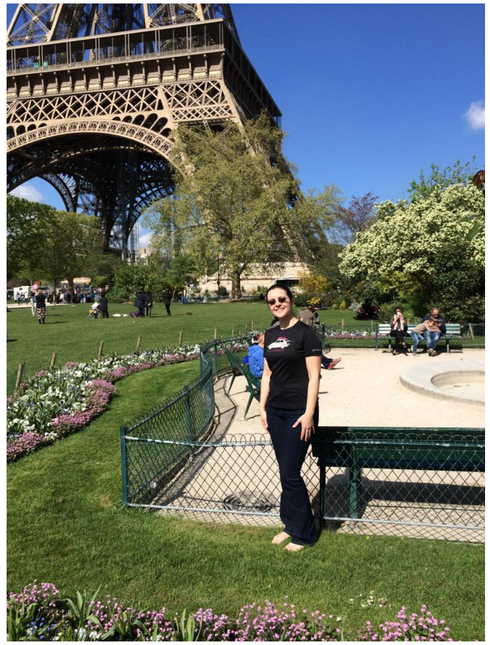
# whoami



Photos by Mom, Josh Bancroft, Don Park

- Geek, traveler, reader
- 20+ yr tech career focused on community & open source (Intel, Puppet, Scale Factory, …)
- OpenUK Board, CHAOSS Board and Maintainer, TODO Group Steering
- CNCF Contributor Strategy TAG
- PhD from the University of Greenwich focus on Linux kernel collaboration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# Agenda

Approaches to Project Health

Project Health Metrics and Interpretation

- Responsiveness
- Contributors
- Velocity and Releases
- Inclusivity

Other Considerations

Resources and Final Thoughts

**https://contribute.cncf.io/maintainers/community/project-health/**

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# Approaches to Project Health

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# Avoid the Popularity Trap

Not stars / forks

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# Project Health

Focus on areas

for improvement

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# Interpretation

Every CNCF project

is different

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# Project Health: Metrics and Interpretation

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# Responsiveness

Keeping up with contributions

helps with retention

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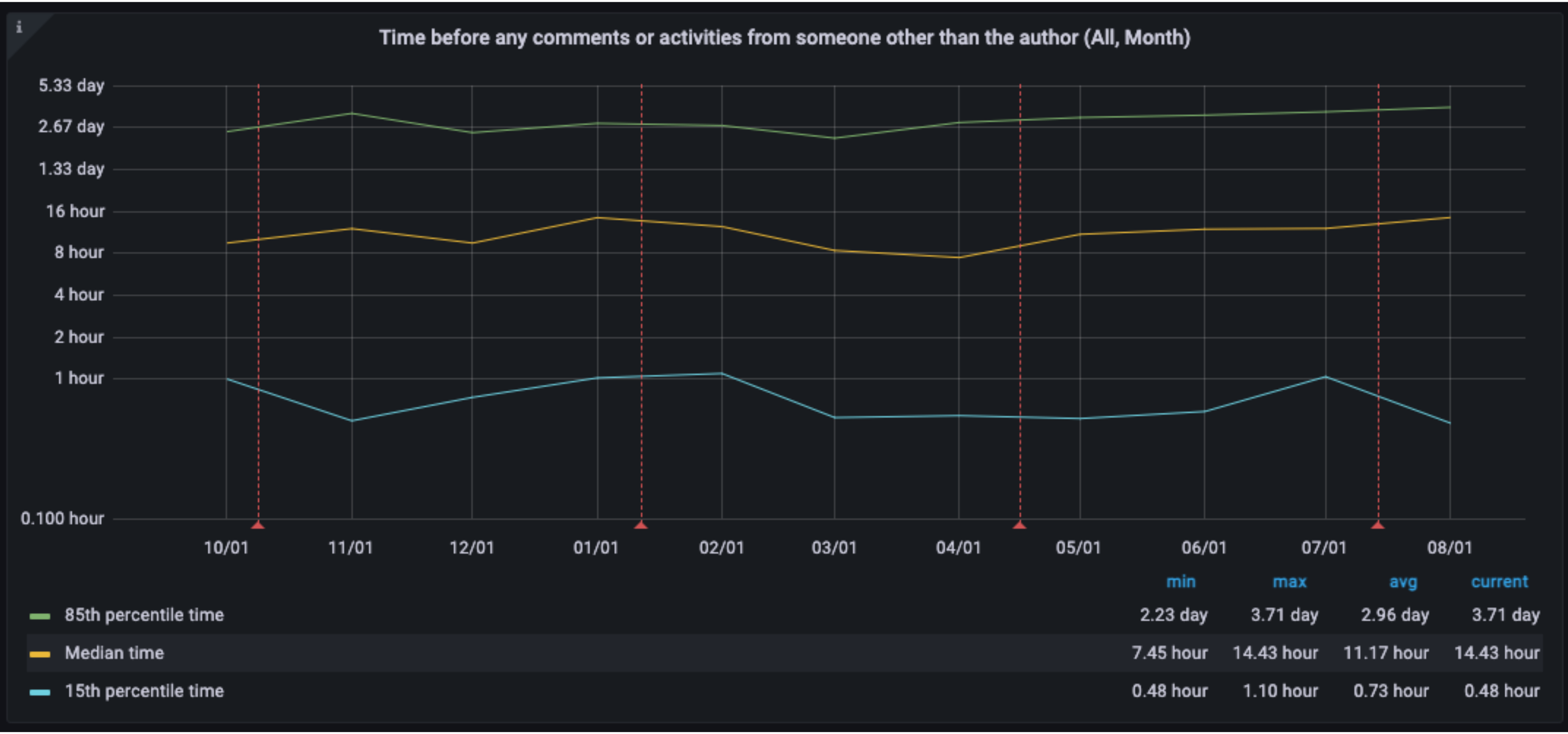
# First Response - PR Time to Engagement





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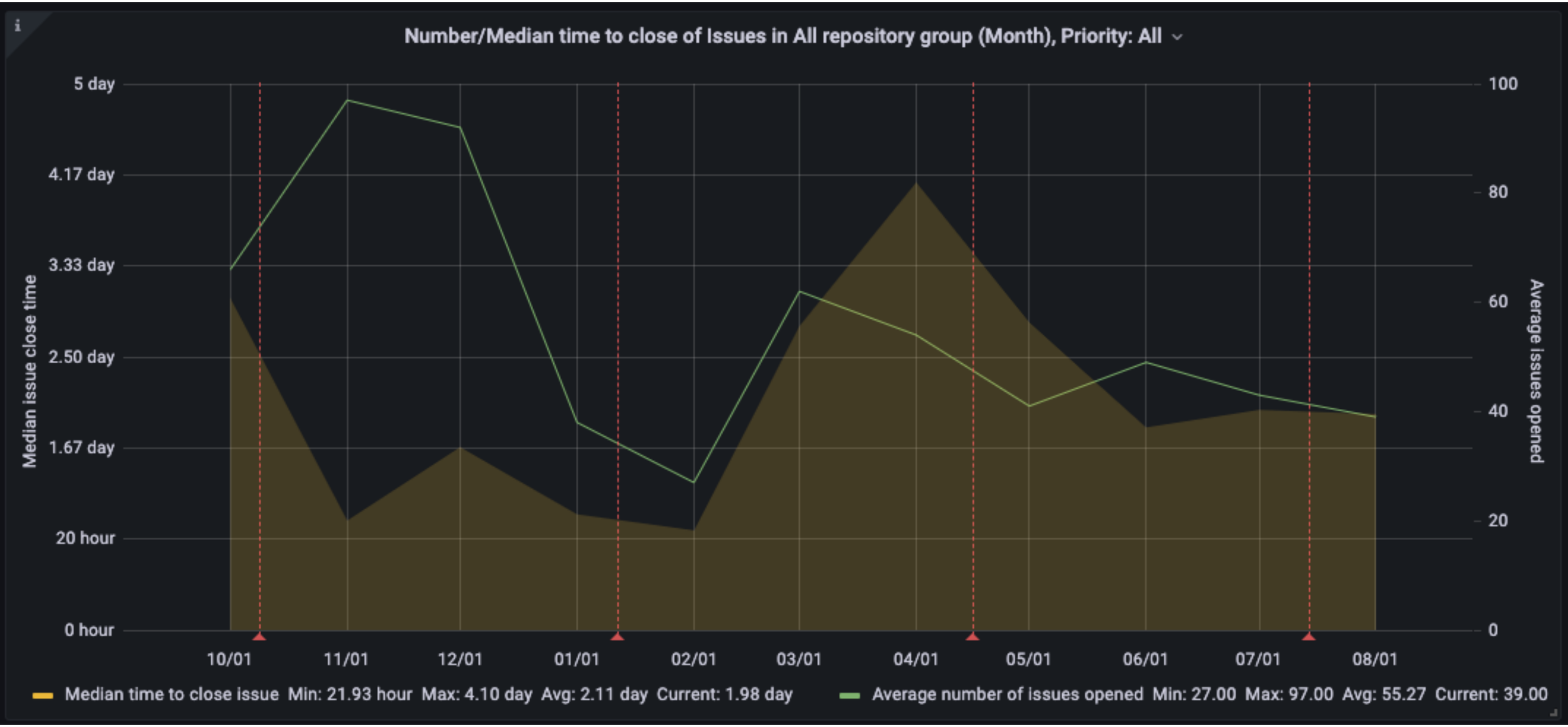
# Resolution - Issues Age (aka Time to Close)





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# Contributor Activity

Do people want to stick around?

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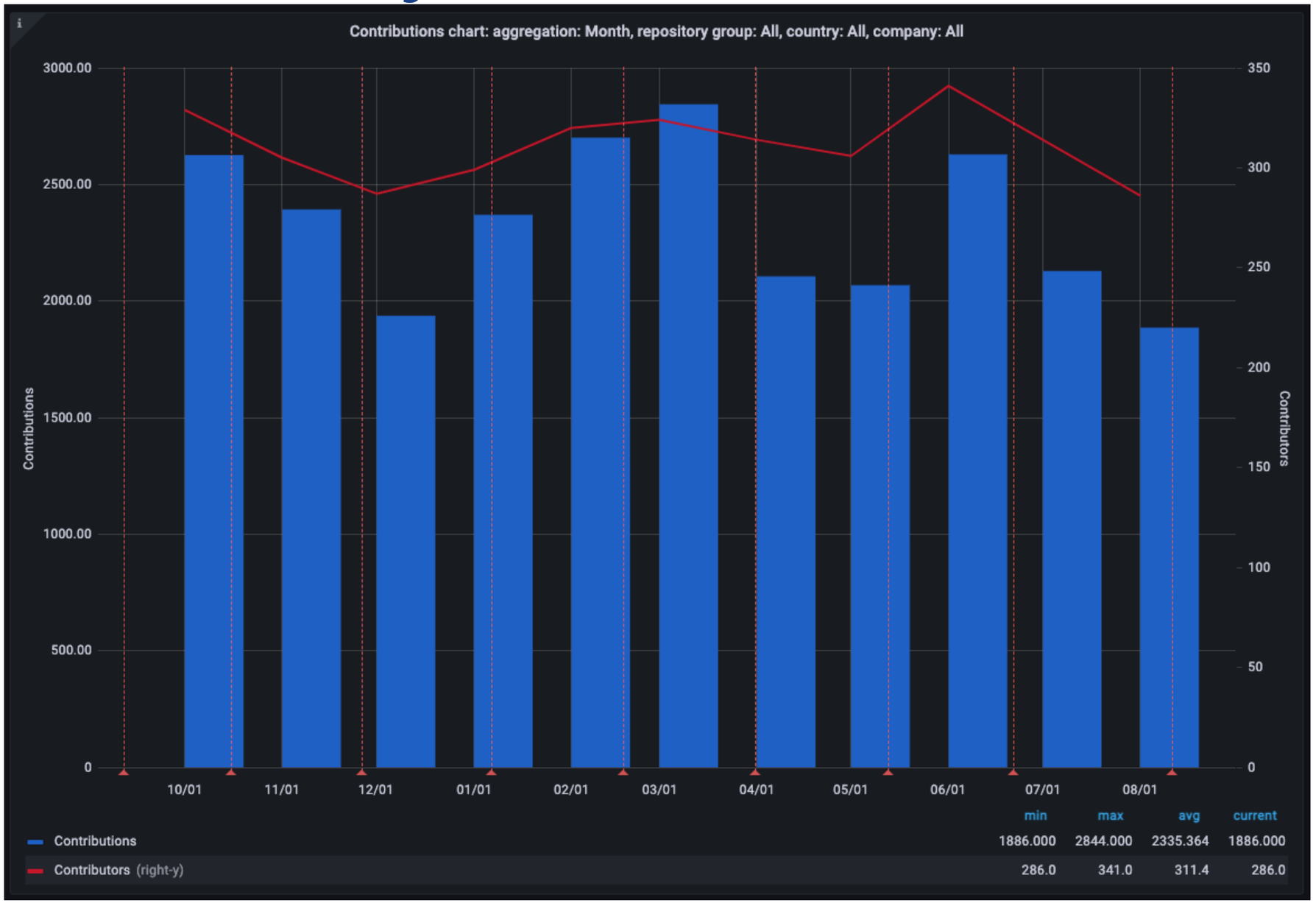
# Contributor Activity - Contributions Chart



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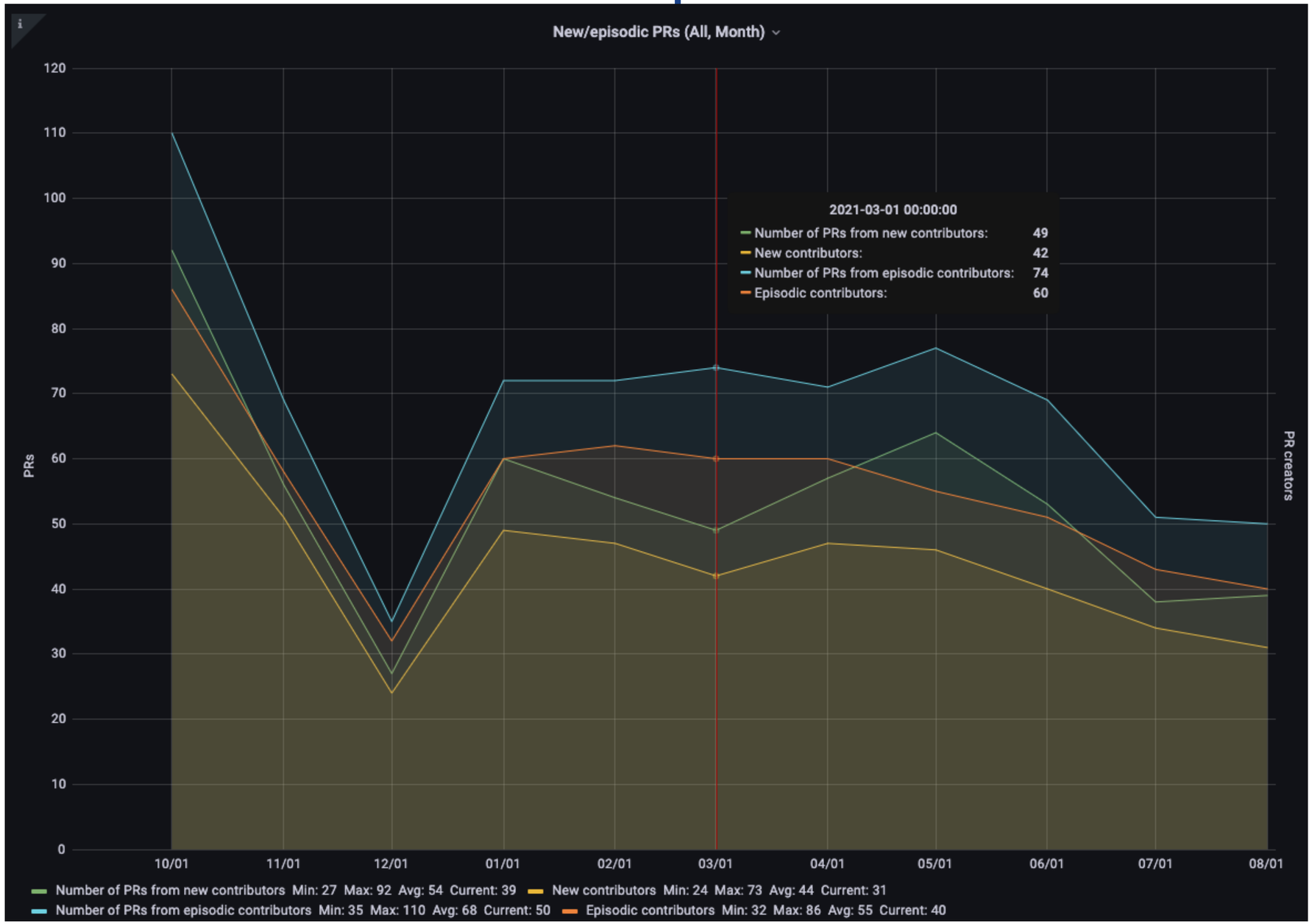
# Contributors - New and Episodic

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# Contributor Risk

Lower risk:

many contributors and

organizational diversity

Image by the CNCF
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# Organizational Diversity - Companies Table

Range: Last year | Metric: Contributions

Prometheus Companies statistics (Contributions, Range: Last year), bots excluded

| Rank | Company | Number |
|---|---|---|
| | All | 28070 |
| 1 | Inuits | 5175 |
| 2 | Grafana Labs | 4987 |
| 3 | Independent | 2768 |
| 4 | Robust Perception | 2558 |
| 5 | Red Hat | 1258 |
| 6 | PromLabs | 889 |
| 7 | SoundCloud Limited | 619 |
| 8 | CNCF | 535 |
| 9 | Instana | 338 |
| 10 | Polar Signals | 177 |


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# Project Velocity

Are contributions increasing, steady, or decreasing?

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# Velocity - Projects Health Table

| Metric | Kubernetes | Prometheus | Envoy | CoreDNS | containerd | Fluentd |
|---|---|---|---|---|---|---|
| Commits: Days since last commit | 0 days | 0 days | 0 days | 2 days | 0 days | 3 days |
| Commits: Last commit date | 09/02/2021 11:34:28 pm | 09/02/2021 10:56:46 pm | 09/02/2021 11:55:24 pm | 08/31/2021 08:34:32 am | 09/02/2021 12:42:39 pm | 08/30/2021 05:15:50 am |
| Commits: Number of commits in the last 12 months | 57749 | 3936 | 11364 | 922 | 3131 | 303 |
| Commits: Number of commits in the last 3 months | 13670 | 1084 | 3160 | 159 | 757 | 56 |
| Commits: Number of commits in the last 3 months (previous 3 months) | 15572 | 1344 | 3205 | 212 | 1065 | 72 |
| Commits: Number of commits in the last 3 months vs. previous 3 months | ⇩ | ⇩ | ⇩ | ⇩ | ⇩ | ⇩ |
| Commits: Number of commits in the last 6 months | 29121 | 2357 | 6344 | 371 | 1822 | 128 |
| Committers: Number of committers in the last 12 months | 3422 | 419 | 403 | 77 | 163 | 25 |
| Committers: Number of committers in the last 3 months | 1262 | 129 | 155 | 23 | 67 | 8 |
| Committers: Number of committers in the last 3 months (previous 3 months) | 1322 | 141 | 187 | 32 | 66 | 5 |
| Committers: Number of committers in the last 3 months vs. previous 3 months | ⇩ | ⇩ | ⇩ | ⇩ | ⇧ | ⇧ |


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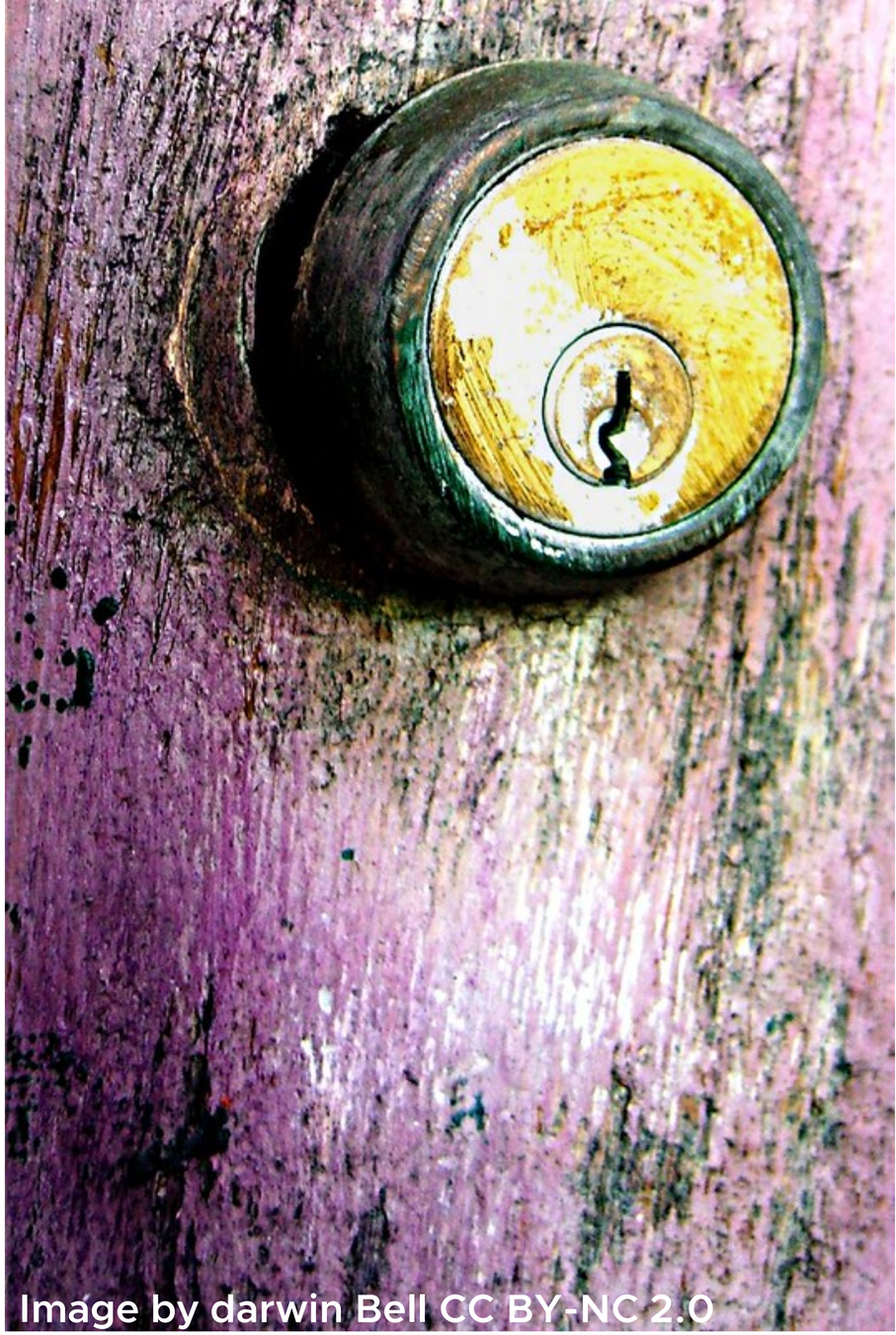
# Release Activity

Regular releases and

security updates





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# Inclusivity

Inclusive and welcoming projects attract and retain more diverse contributors

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# Other Considerations

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# Timeframe

Have a regular cadence for evaluating project health.

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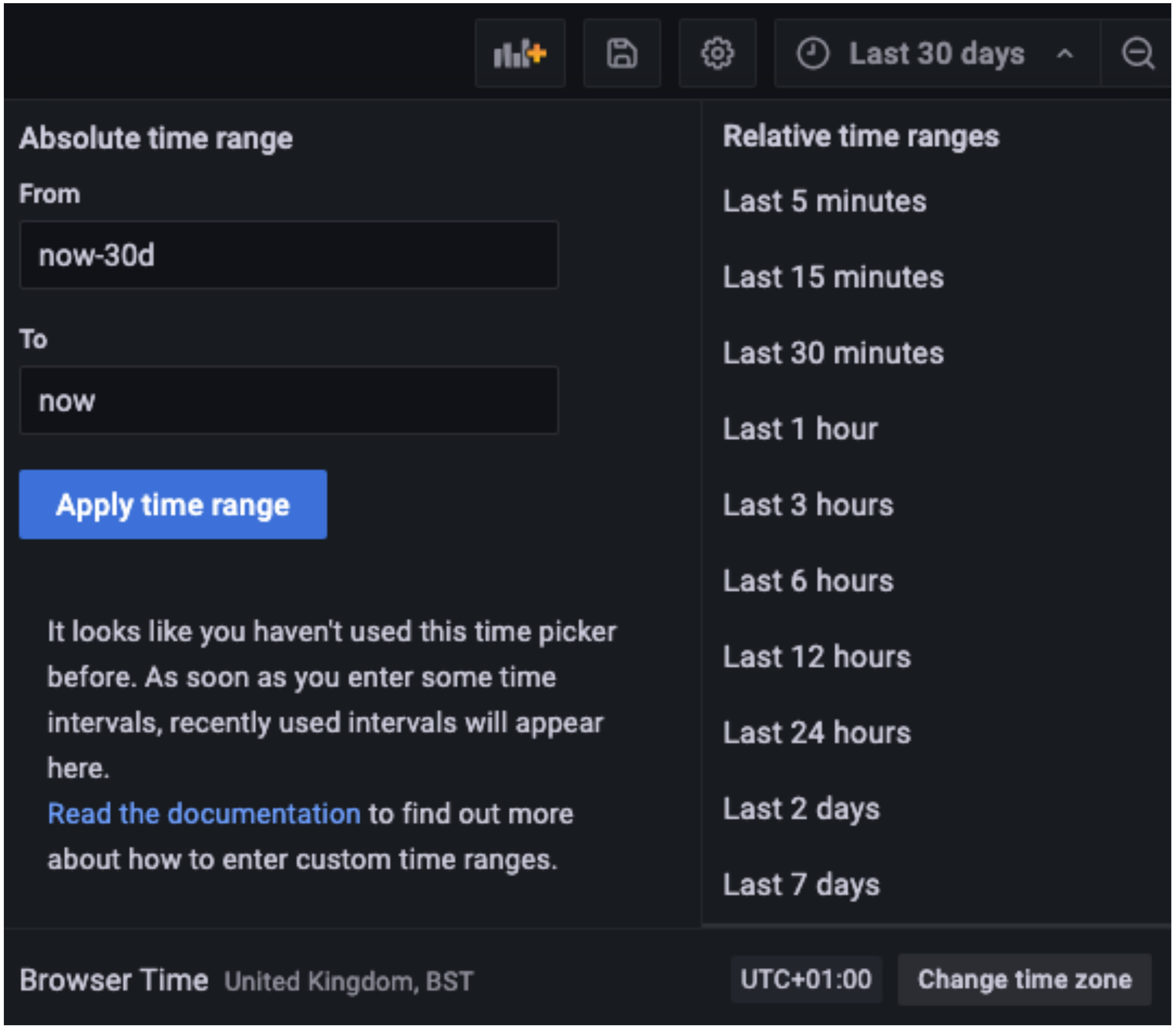
# Time Window

How many weeks / months to view

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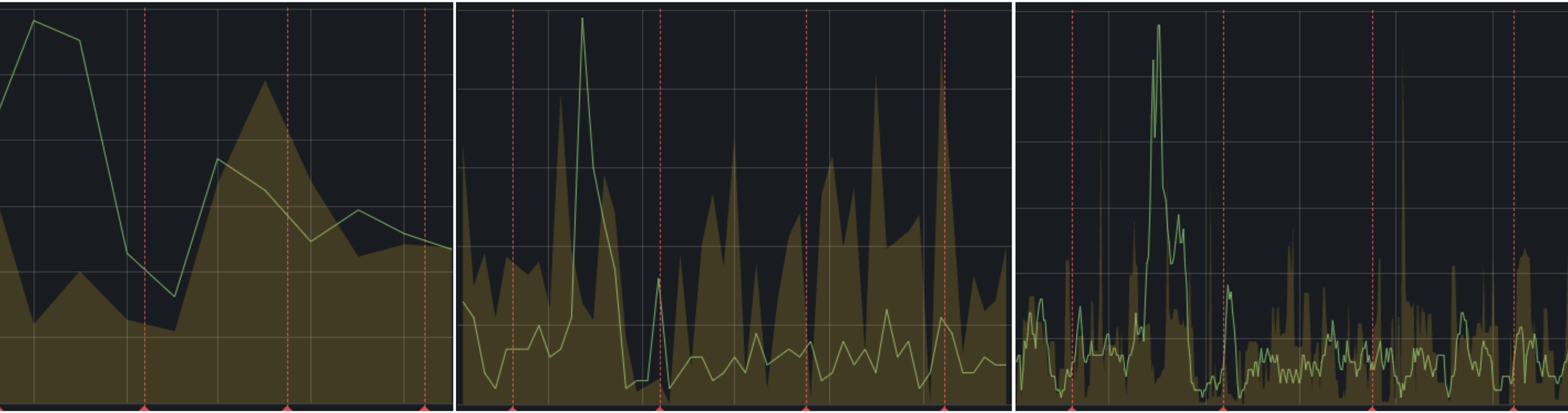
# Period

Month

Week

7 Days MA



Look for trends first and then dig into the details to interpret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# Scope

Whole project or repository group

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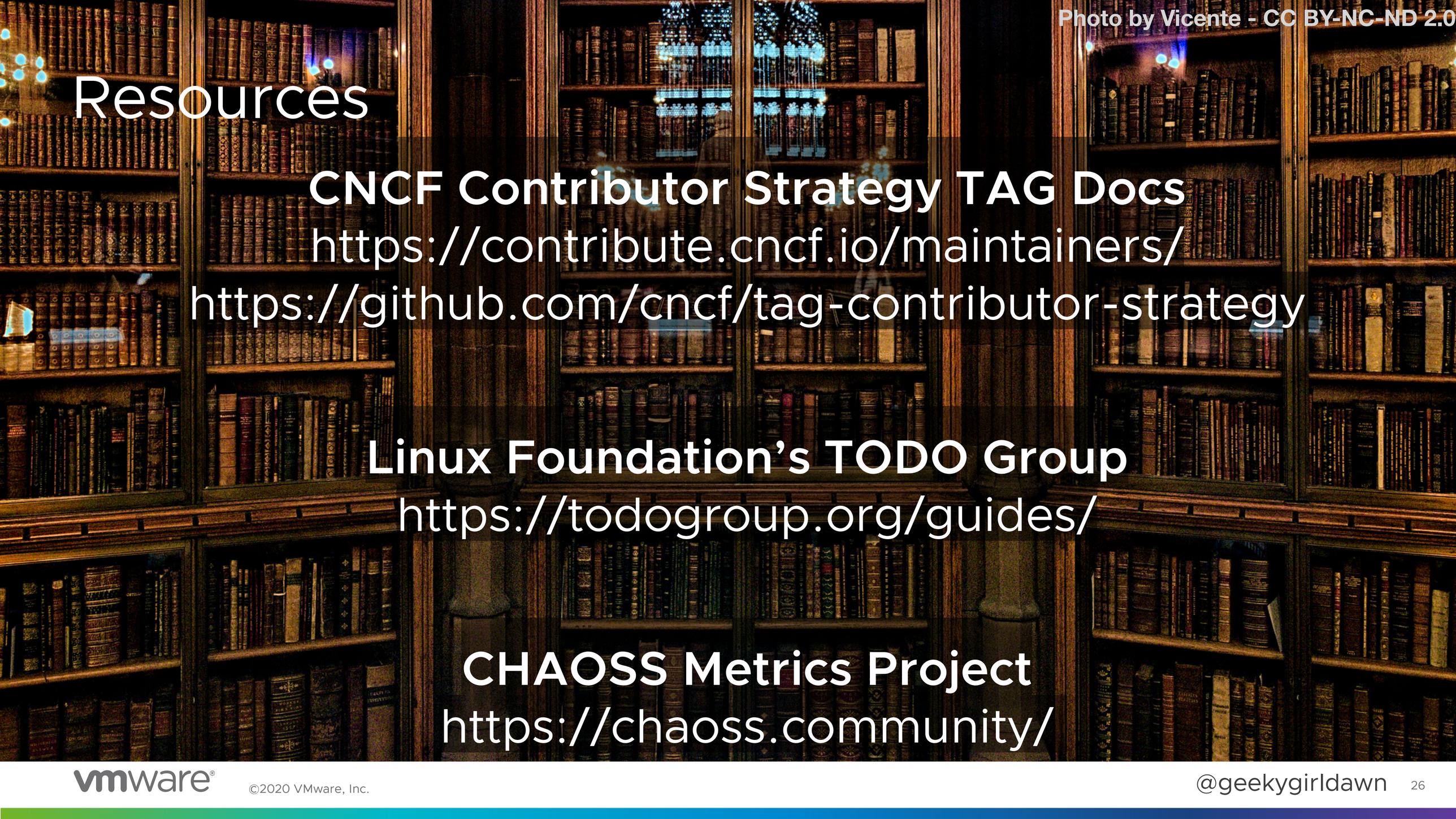


# Resources

**CNCF Contributor Strategy TAG Docs**
https://contribute.cncf.io/maintainers/
https://github.com/cncf/tag-contributor-strategy

**Linux Foundation's TODO Group**
https://todogroup.org/guides/

**CHAOSS Metrics Project**
https://chaoss.community/


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# Final Thoughts

Project health metrics require interpretation and verification

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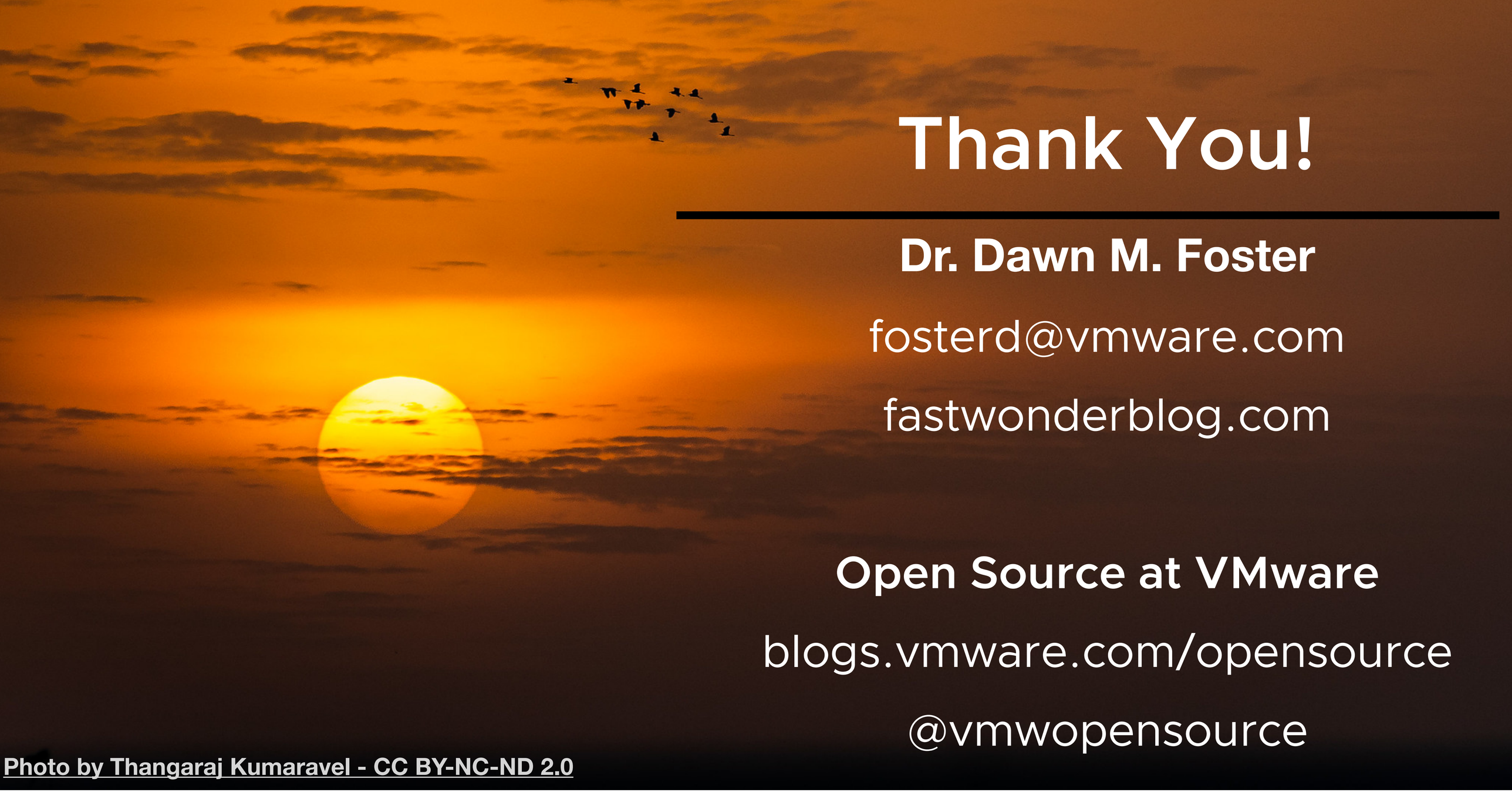

# Thank You!


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**Open Source at VMware**

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