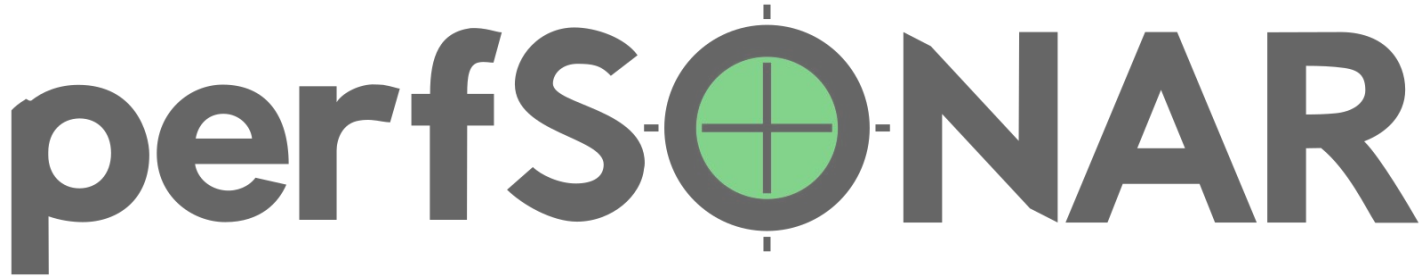


perfSONAR 5.2.3

perfSONAR 5.2 training, Dublin, Ireland

December 2 & 3, 2025

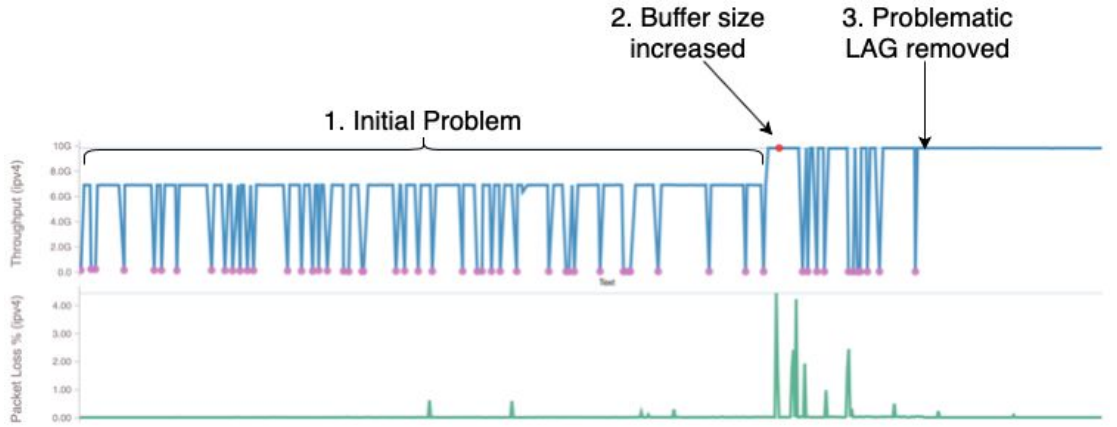
Lætitia Delvaux, PCSS

perfSONAR is developed by a partnership of

perfSONAR

- perfSONAR is an **open source software suite** that runs, stores and displays **active measurements** such as **throughput, packet loss, latency and traceroute**
- Primarily maintained by consortium of **ESnet, GEANT, Indiana University, Internet2, RNP** and the **University of Michigan**
- **Over 2000 registered public deployments** around the world across hundreds of institutions

Map of perfSONAR deployments around the globe

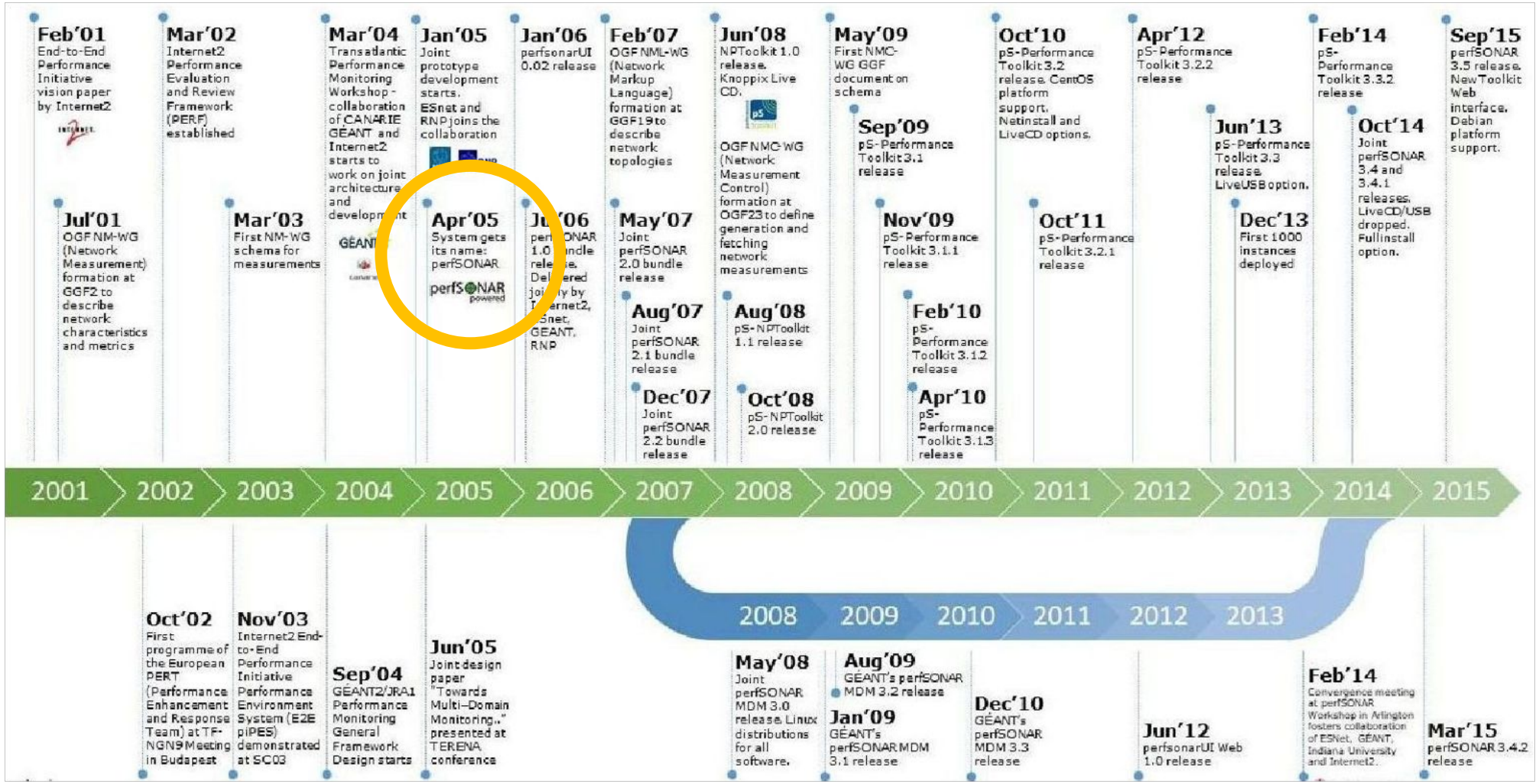


Graph of low throughput from Pan-STARRS Hawaii to Queen's University Belfast

Example perfSONAR use cases:

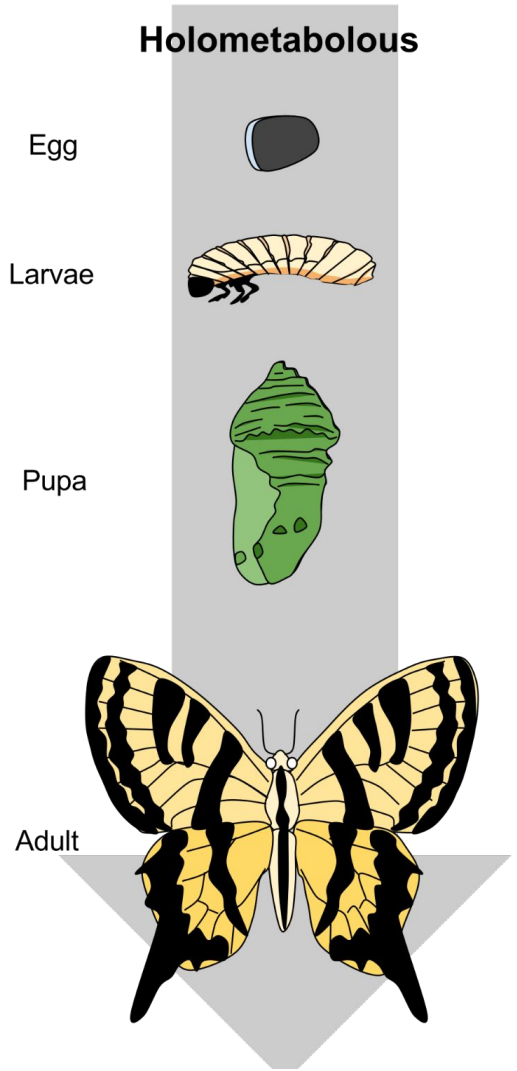
- Solving global network performance issues for for researchers transmitting data from **Pan-STARRS Hawaii** to **Queen's University Belfast** *(see above graph)*
- Identifying packet loss issues at **UT Arlington**
- Identifying performance bottlenecks as **Large Hadron Collider (LHC)** prepares for the "high luminosity" era

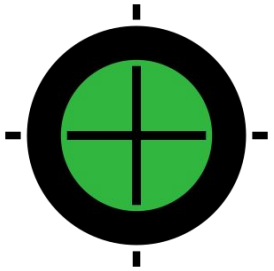
20 years of experience



perfSONAR's Metamorphosis

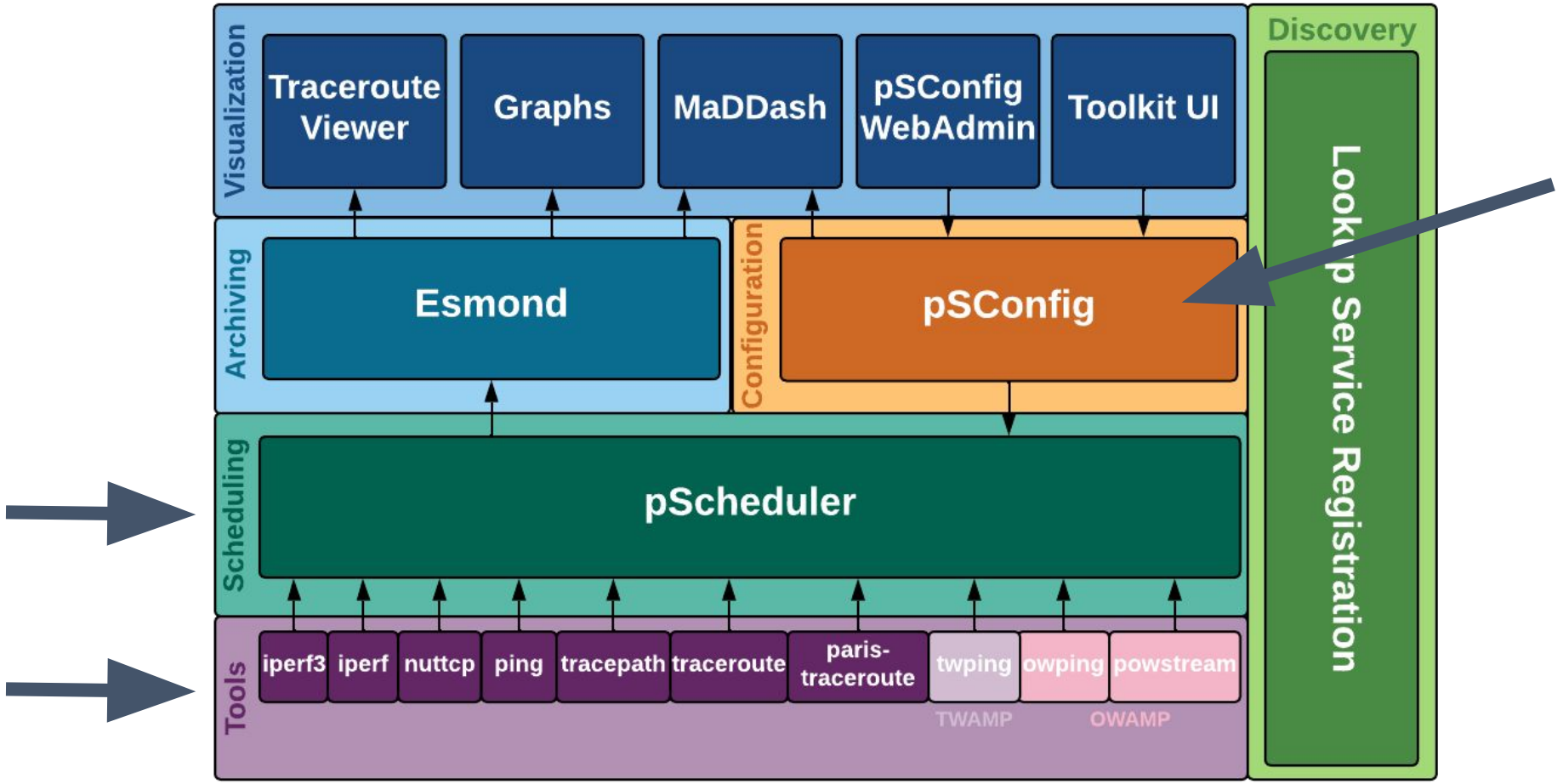
- As perfSONAR reaches 20 years old, it also approaches an important point in its history
- 5.0 kicked off a stage of metamorphosis that will largely wrap-up by the time we hit 5.3.0 later this year
- Let's take a step back and look at these changes…



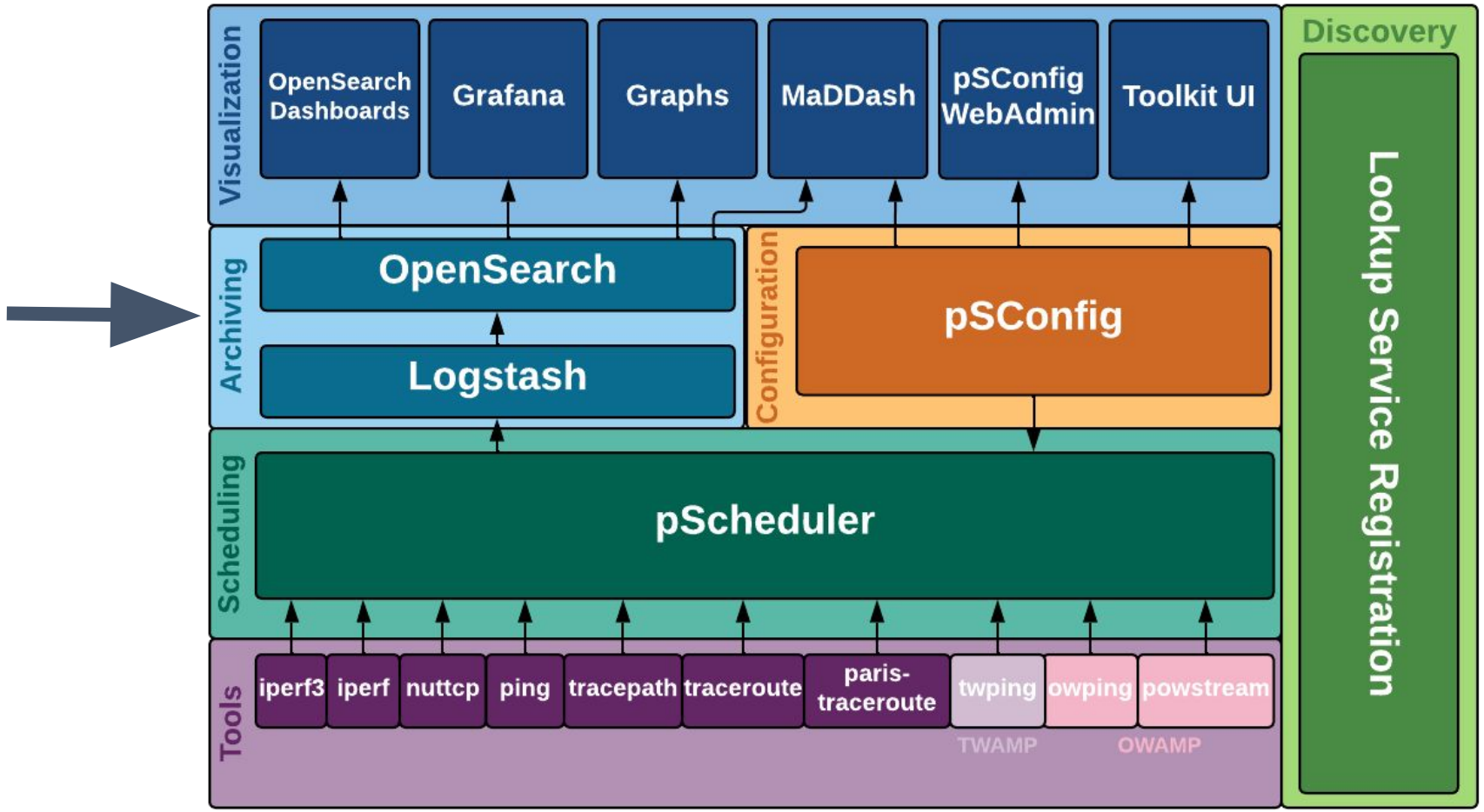


What's been happening the past few years?

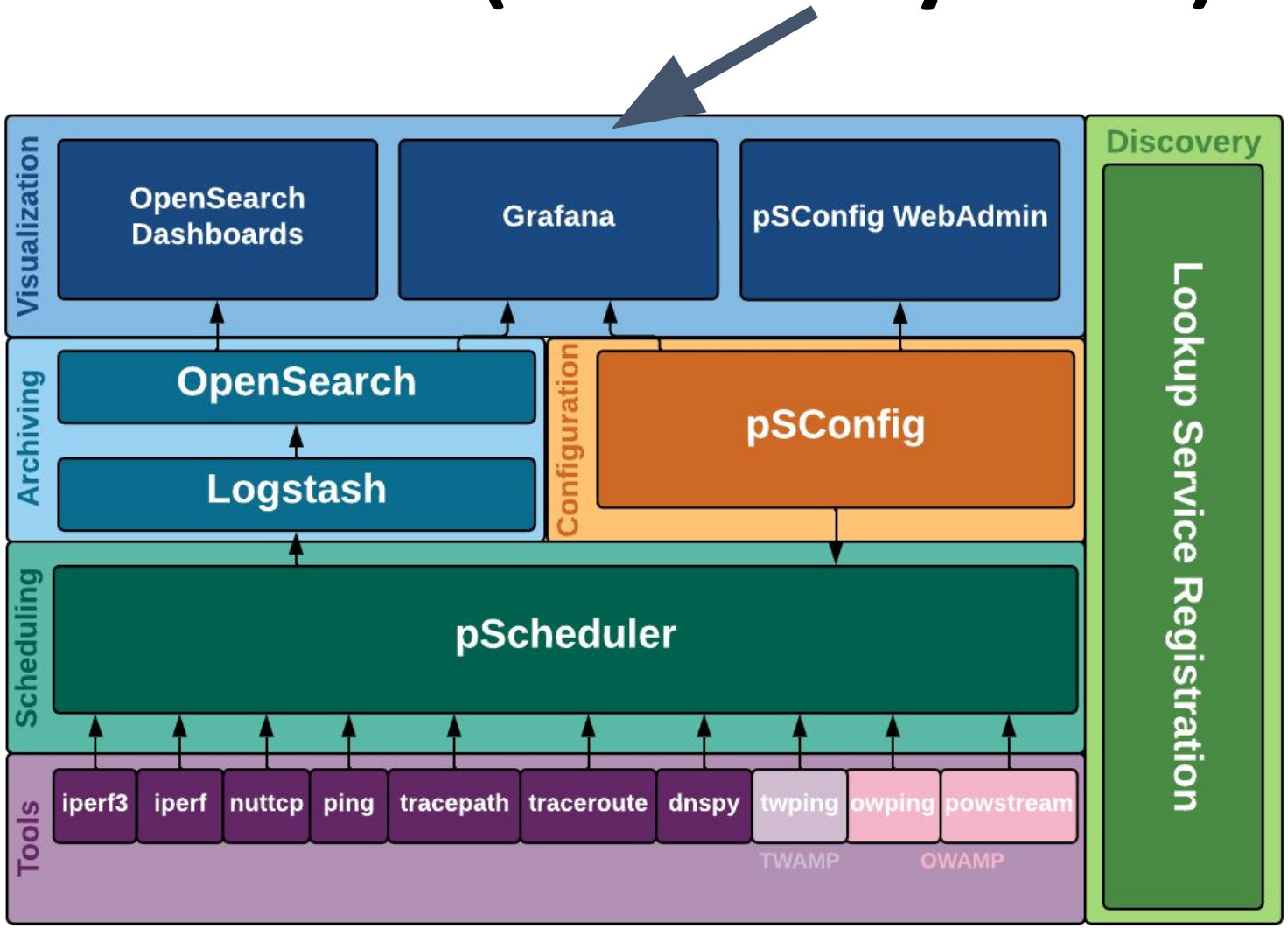
perfSONAR in 2020 (4.X)



perfSONAR 5.0 (2023)

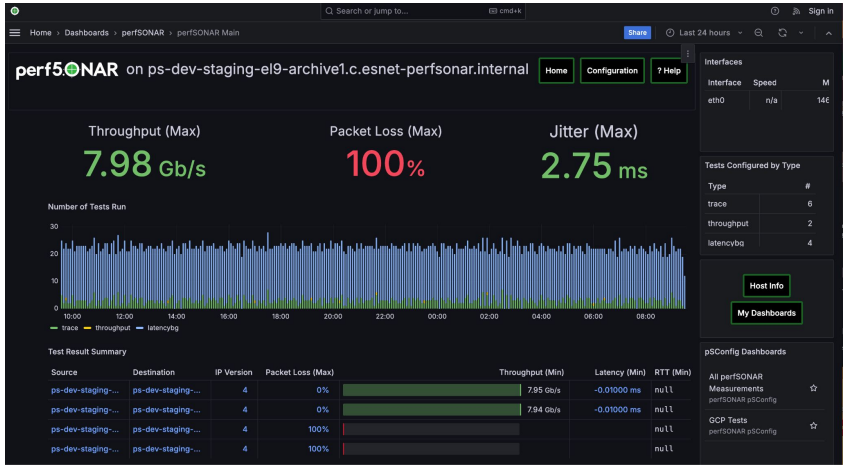


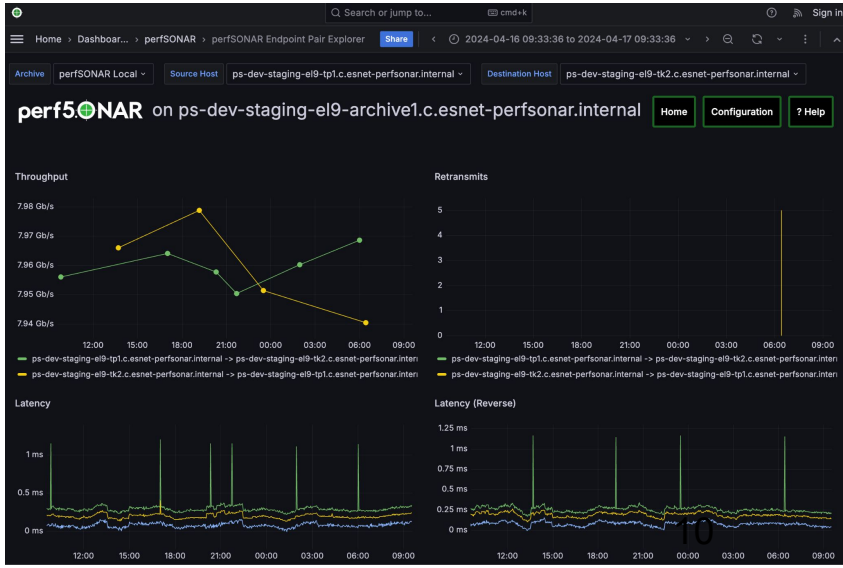
perfSONAR 5.1-5.2 (2024-Early 2025)



perfSONAR 5.1.0-.4

- **New Grafana Interface**
  - Customizable visualization, better integration with other data
- **Threaded iperf3 Support**
  - Ability to test at 100Gbps+
- **Python pSConfig**
  - Better maintainability of more modern codebase
- **Better Instrumentation and Troubleshooting Tools**
  - Makes it easier to identify issues when perfSONAR misbehaves
- **OS Support**
  - Debian 11, Debian 12 and Ubuntu 22 support. <u>No CentOS 7 support.</u>

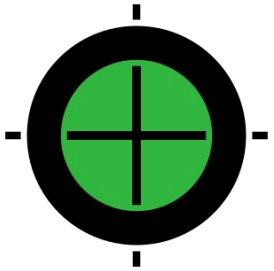




10

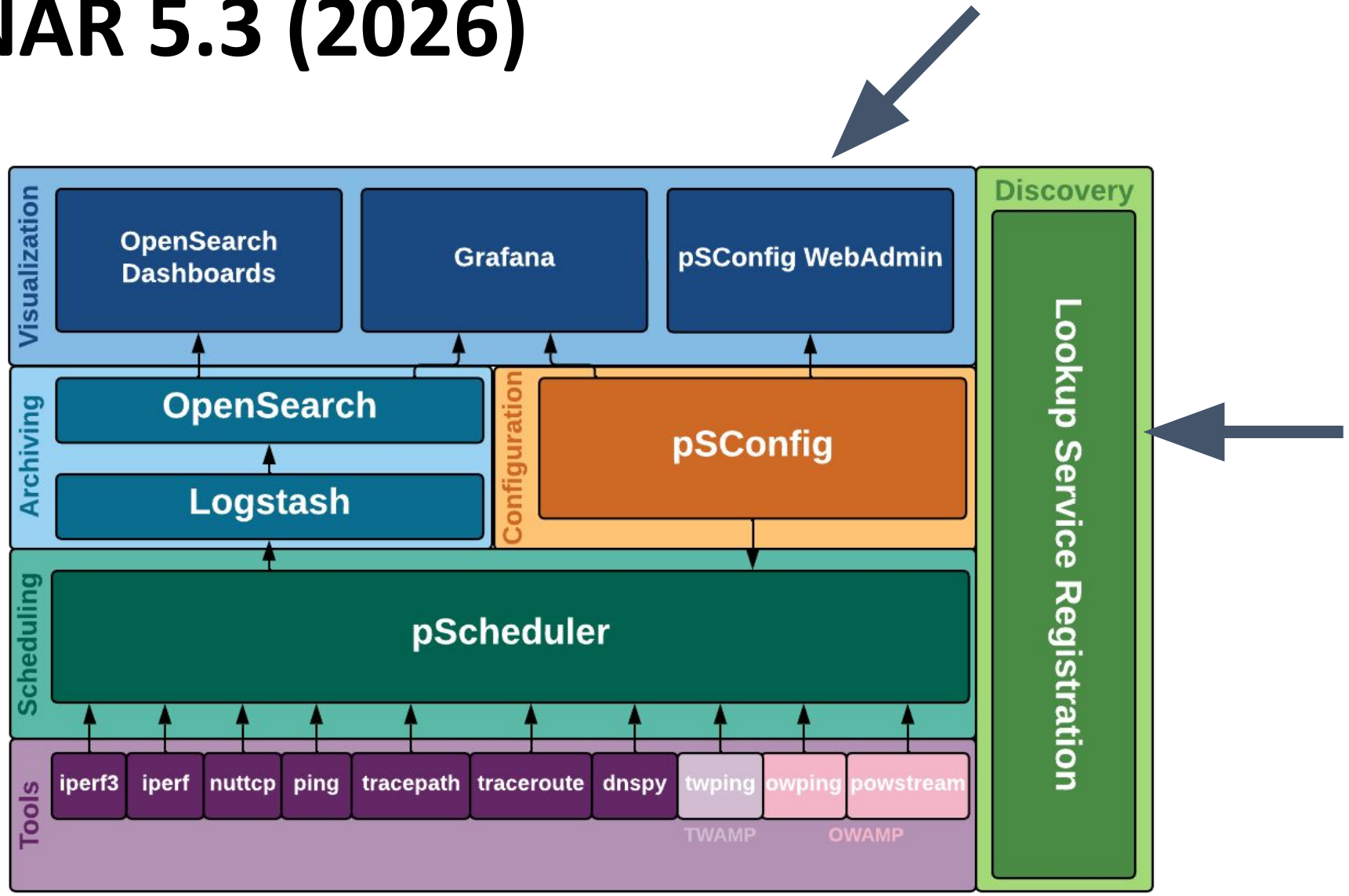
perf20NAR years 5.2.3

- **5.2.0/.3 released a few weeks ago (.0 in June)**
  - 20th anniversary release
- **No major new features**
  - Inside components updates (Grafana, OpenSearch)
- **New OS Support: Ubuntu 24**
  - Debian 11 & 12 and Ubuntu 20, 22 and 24
  - Alma Linux 9 or Rocky Linux 9
- **Docker image for ARM64**
- **Install it with our installer script**

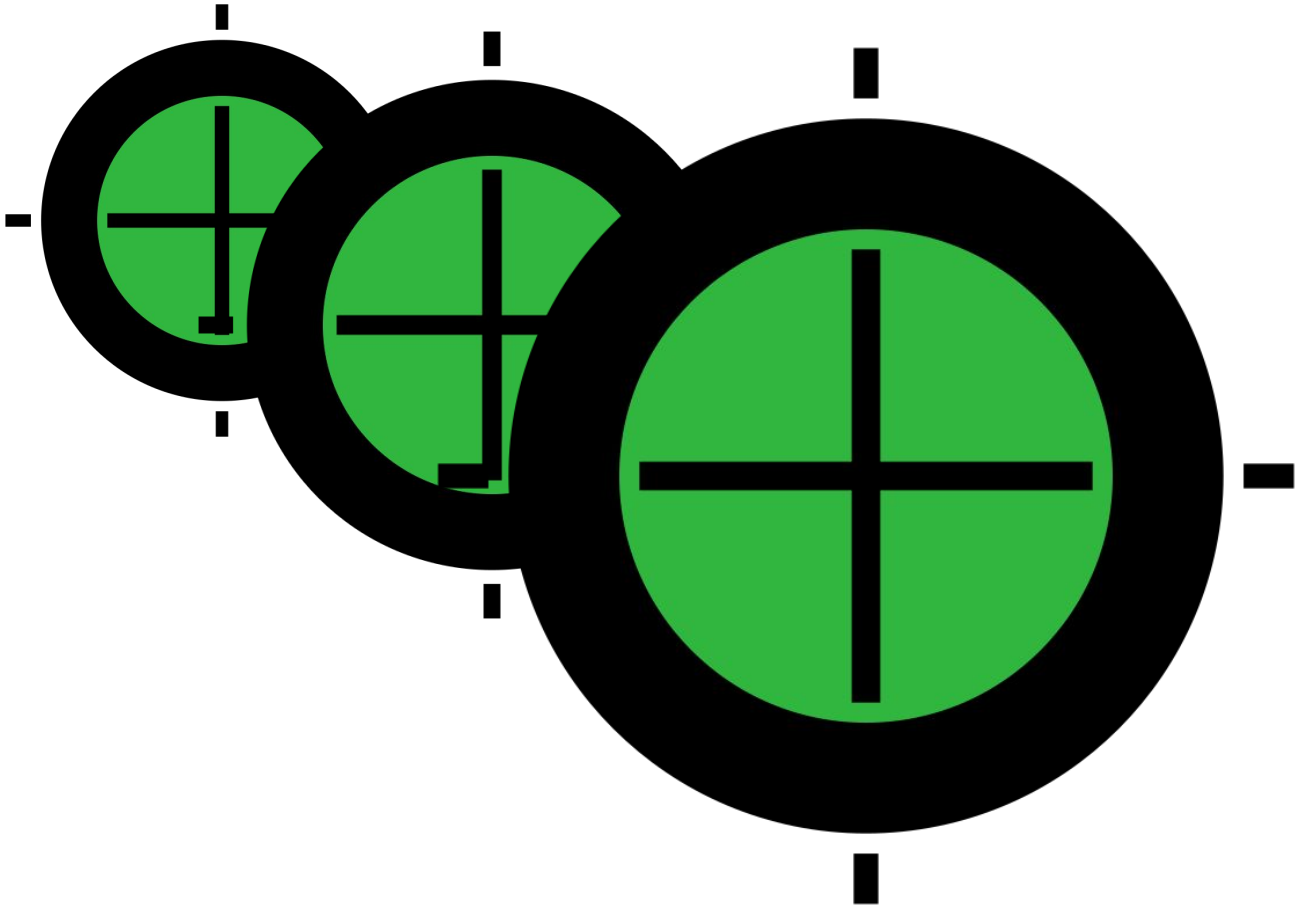


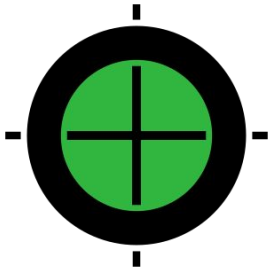
What does 2026 look like?

perfSONAR 5.3 (2026)



Let’s zoom in on a few specific features….

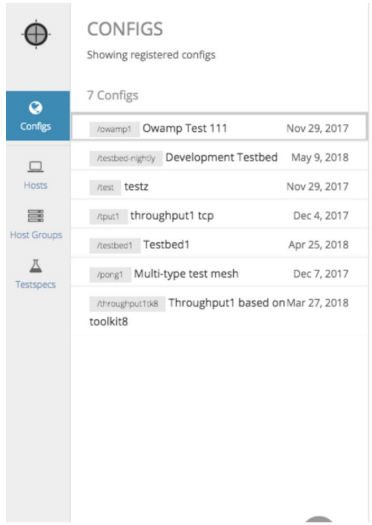


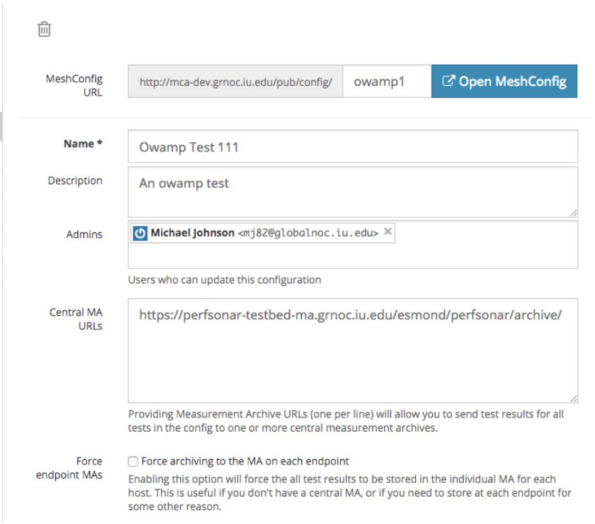


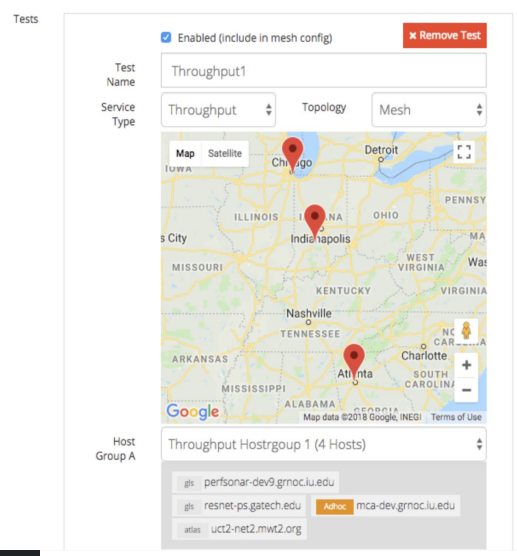
pSCompose

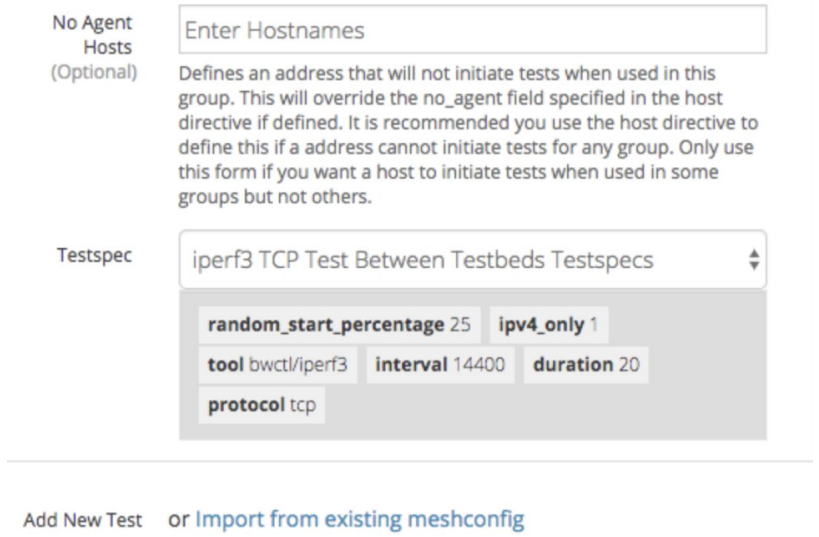
Next generation UI for test configuration

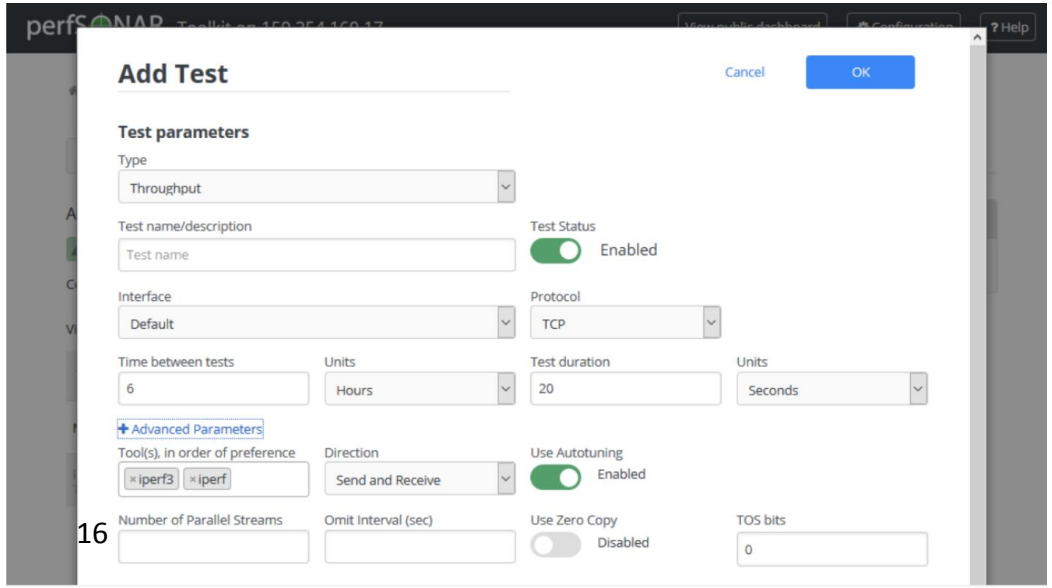
Test Configuration Today

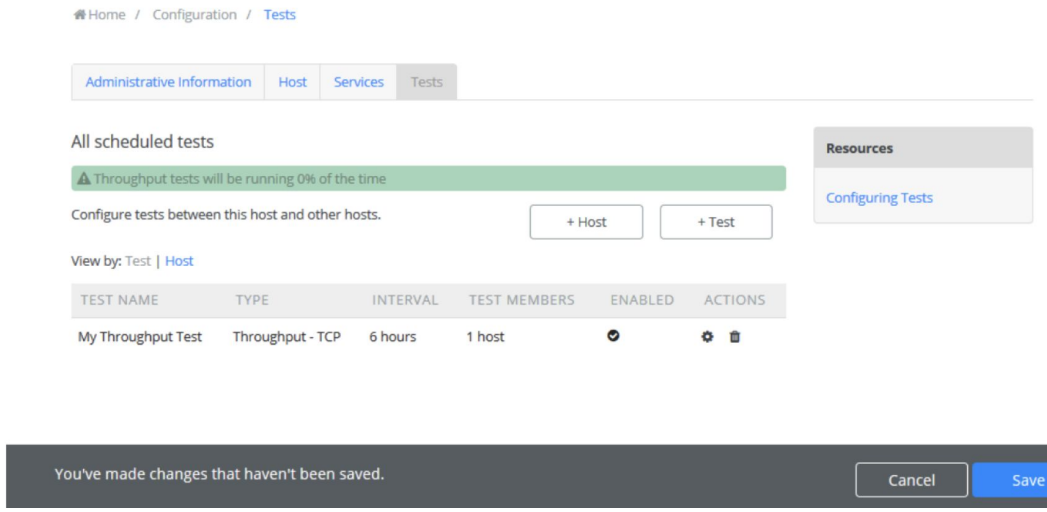












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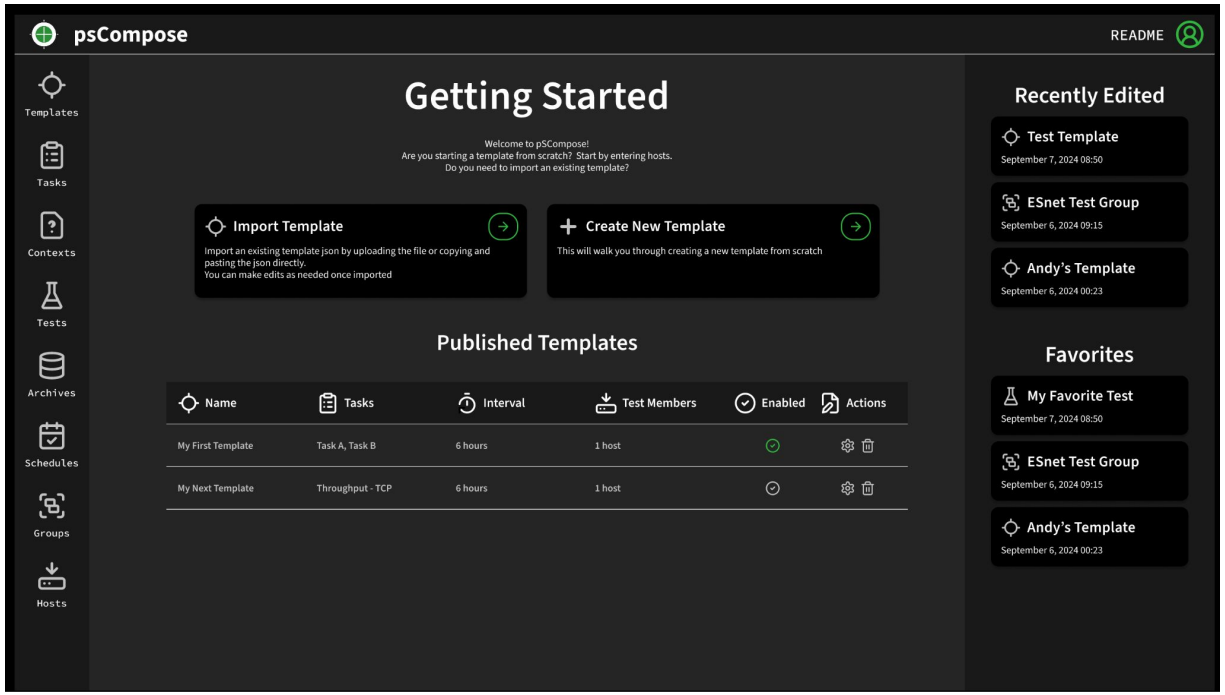
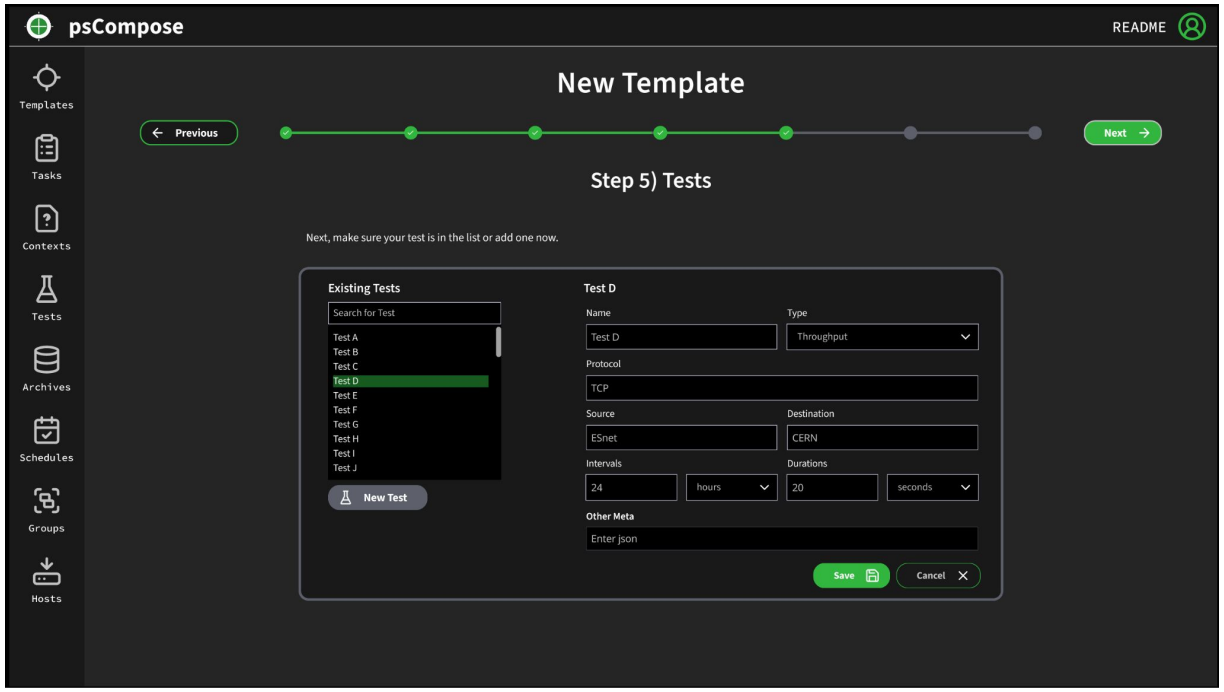
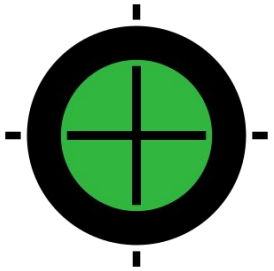
pSConfig Test Configuration

- **Simplified and Consolidate UIs**
  - We want one UI to serve Toolkit UI and PWA role
  - Leverage Lookup Service for host completion
  - Make it easy and clear to set common fields needed for Grafana, etc
- **Align Tech Stack**
  - An update call not strictly required, need to determine what is easiest for clients (delete+add vs update)
- **Leverage Flexibility of pScheduler and pSConfig**
  - We don’t want to issue a code update everytime a new test type implemented or new options added

Development Underway…

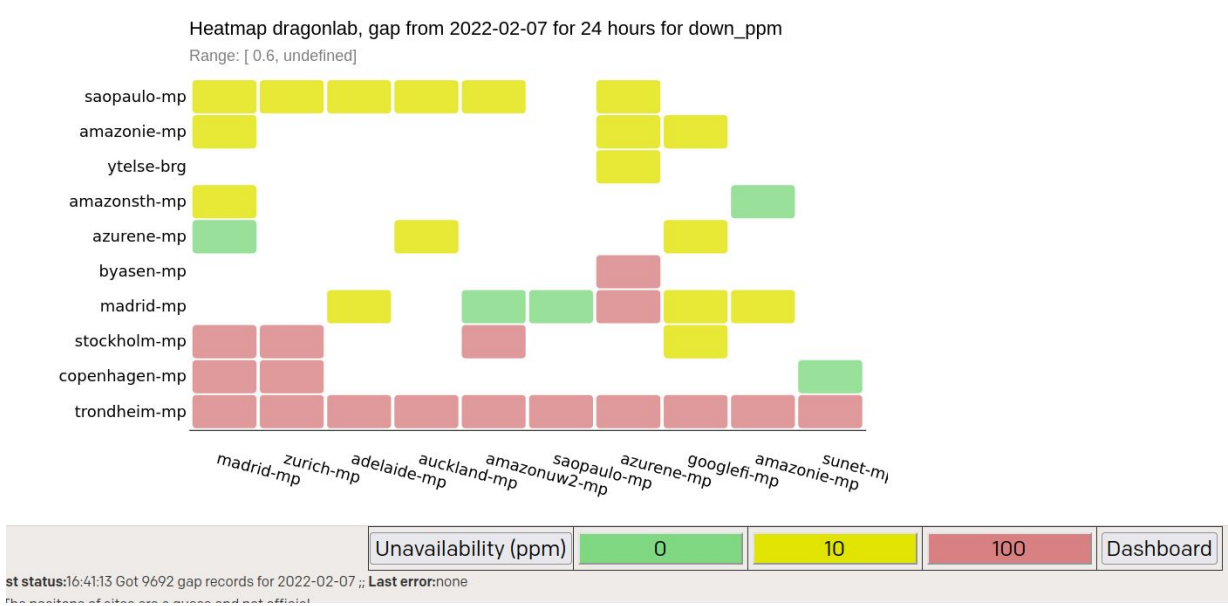


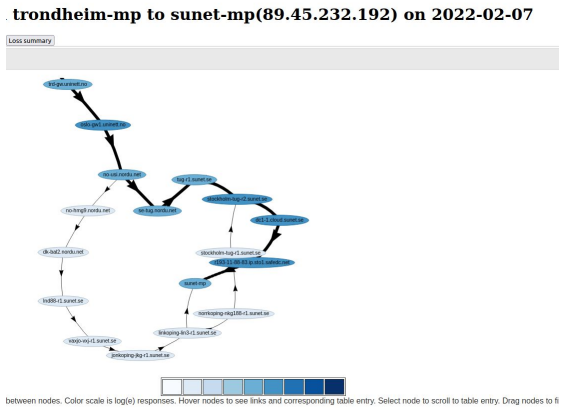


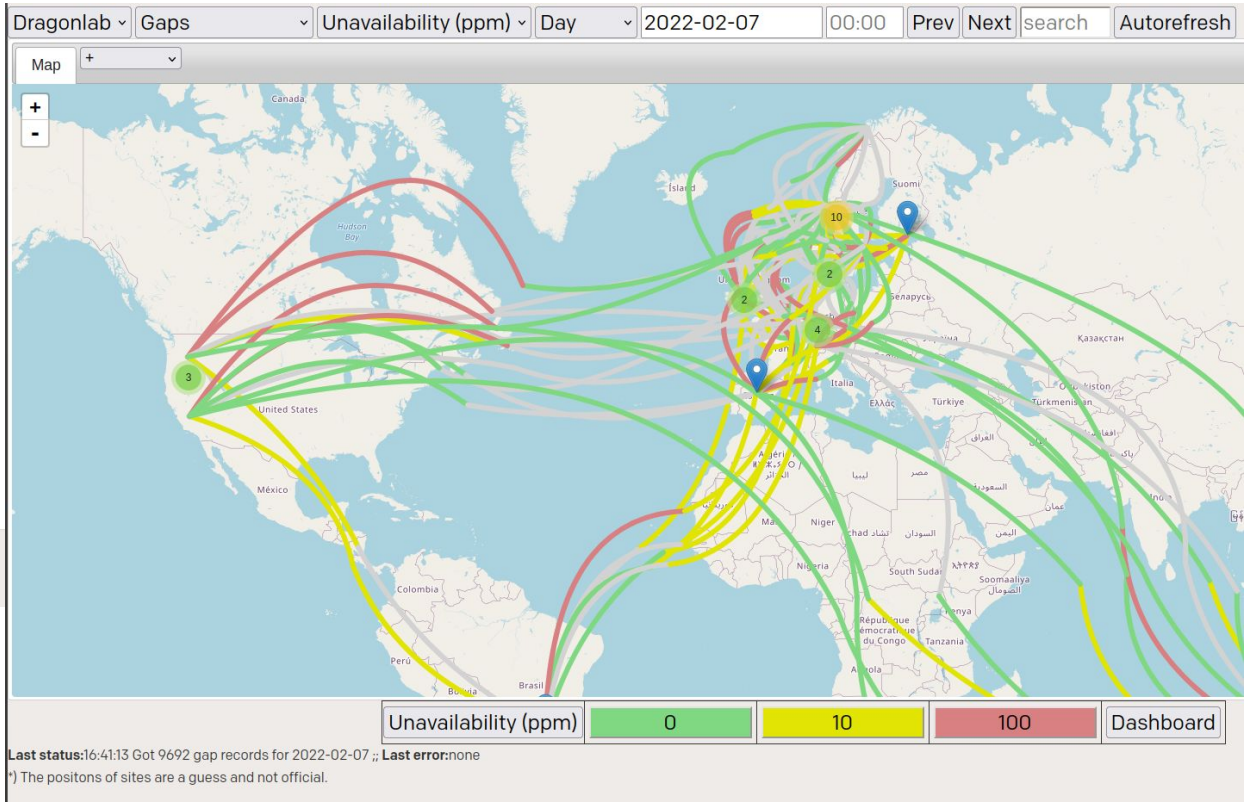


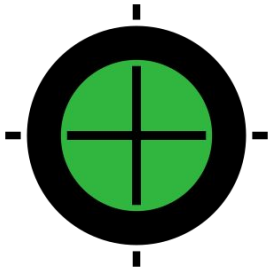
Micro-dependency

Microdep: spot micro outages



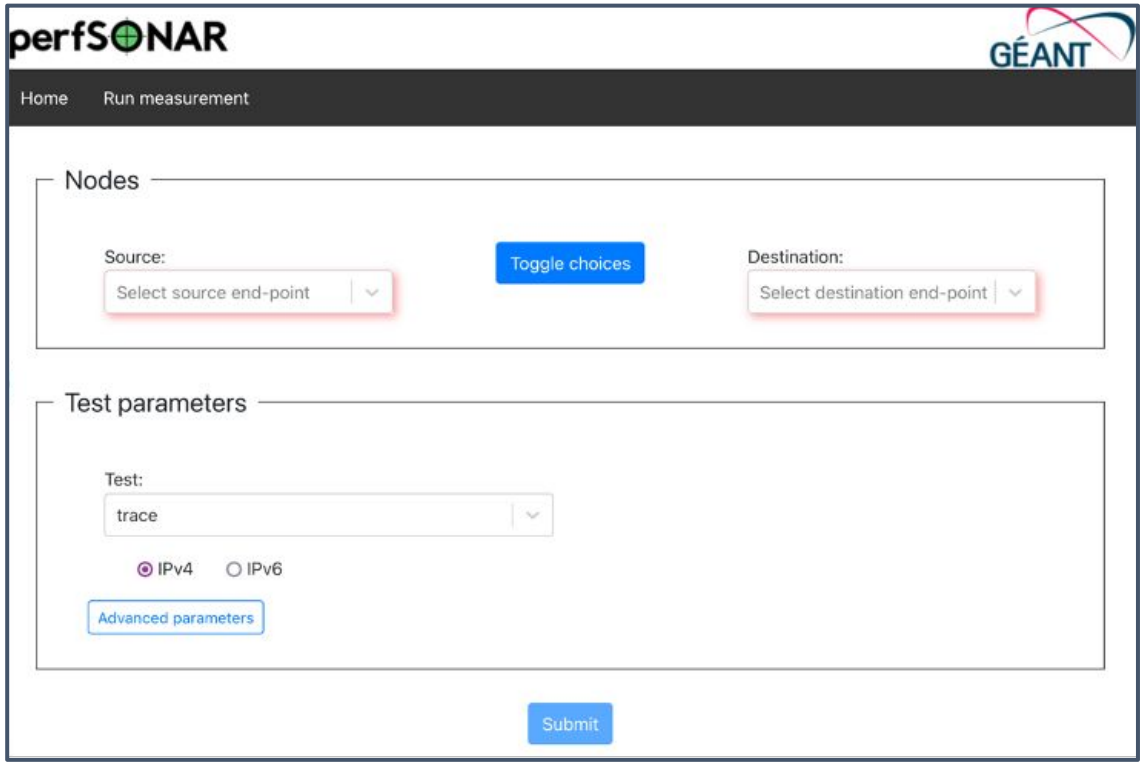


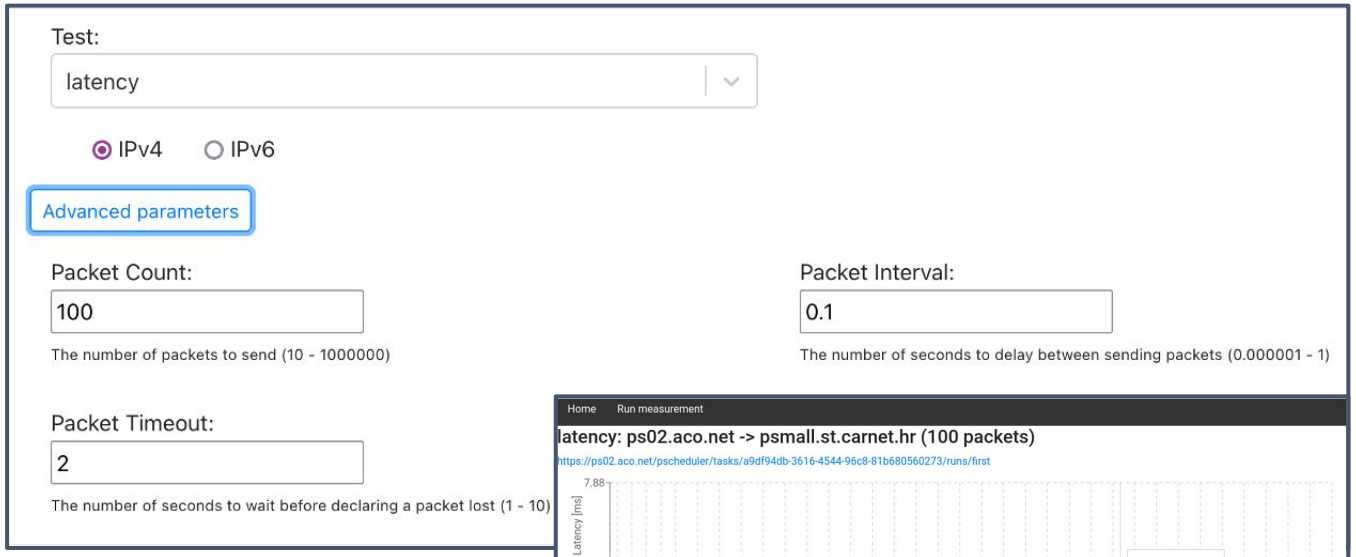


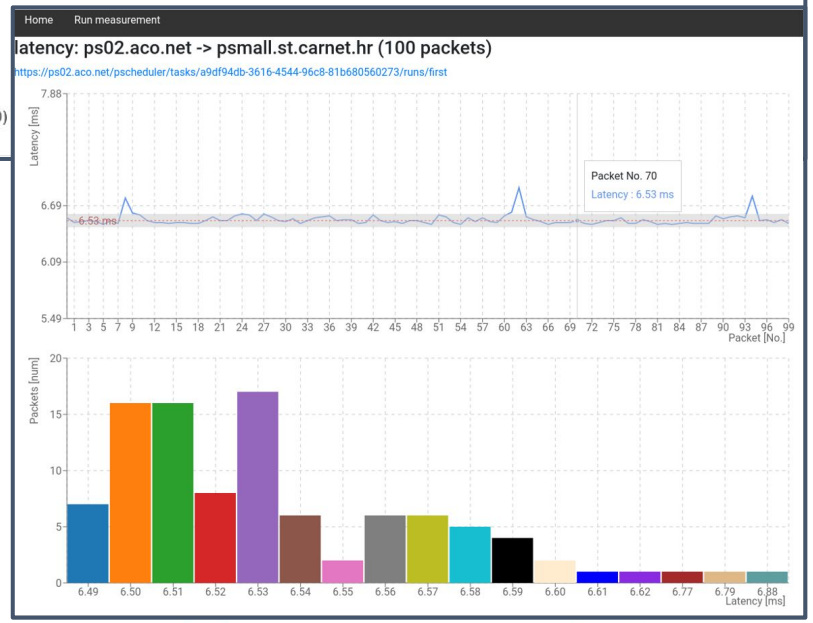


psGUI

A pScheduler on-demand UI

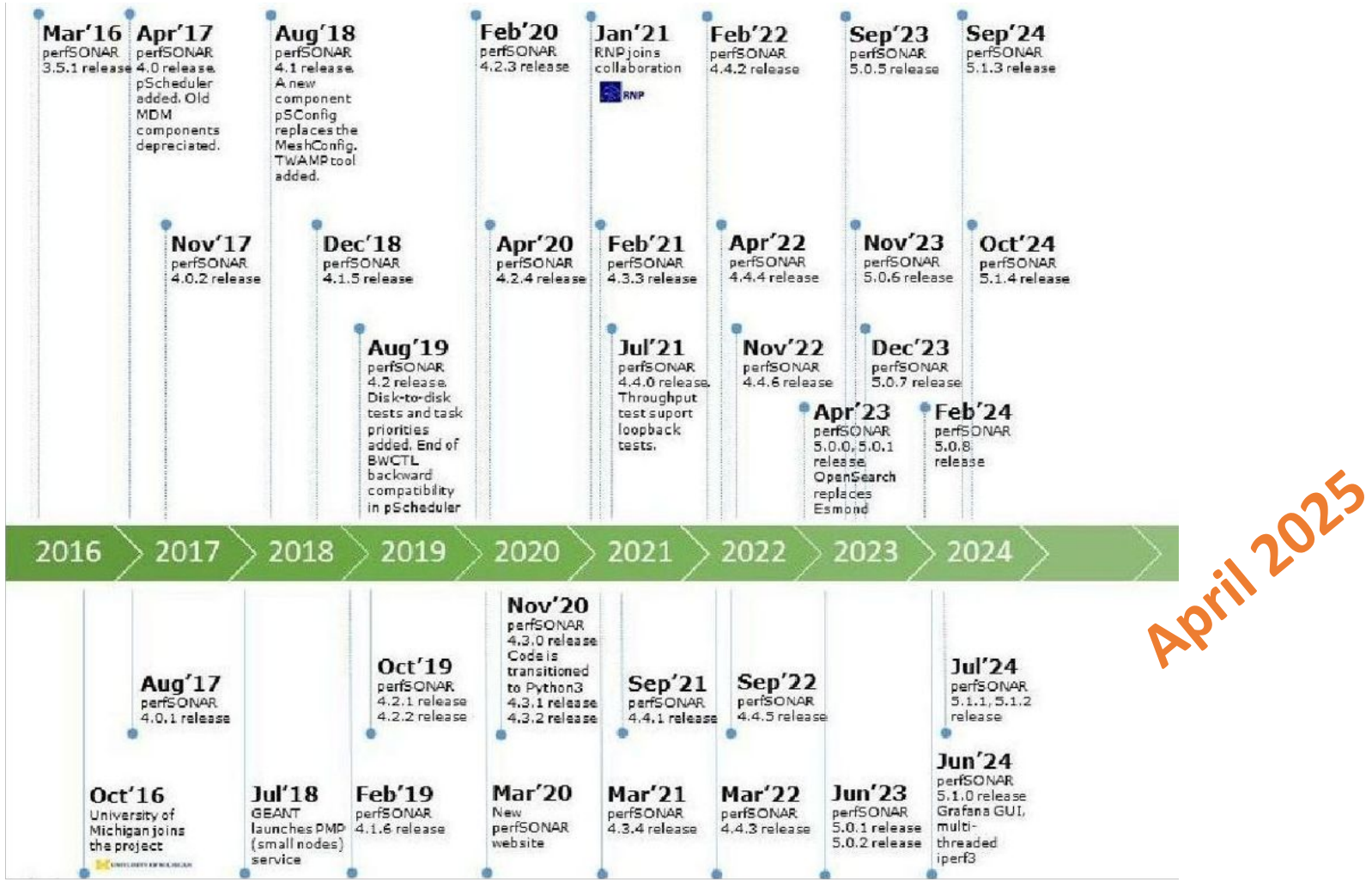






Latency, throughput, trace

20 years of experience …



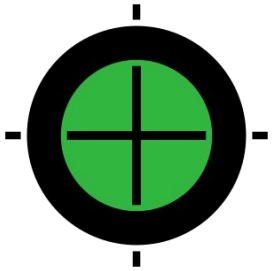
April 2025

… means 20 years of collaboration

perf2ONAR years

Put yourself (or your organization) on the map! https://forms.gle/vsYmetjvyQRWwKUJ8

Will then show up at
https://stats.perfsonar.net



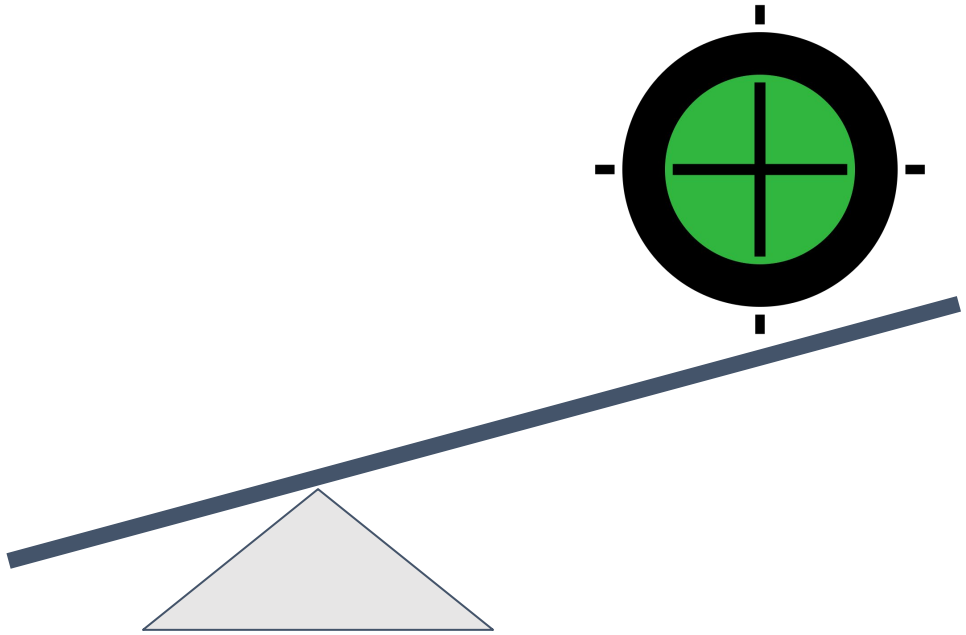
What happens after 5.3.0?

Make it easier

- We've introduced a lot of change, we want to focus on refining pain points
- Updated trainings that focus on the new pieces
- Continue to update documentation and add better guides
- Explore new ways to interact with documentation like training LLM on docs or similar

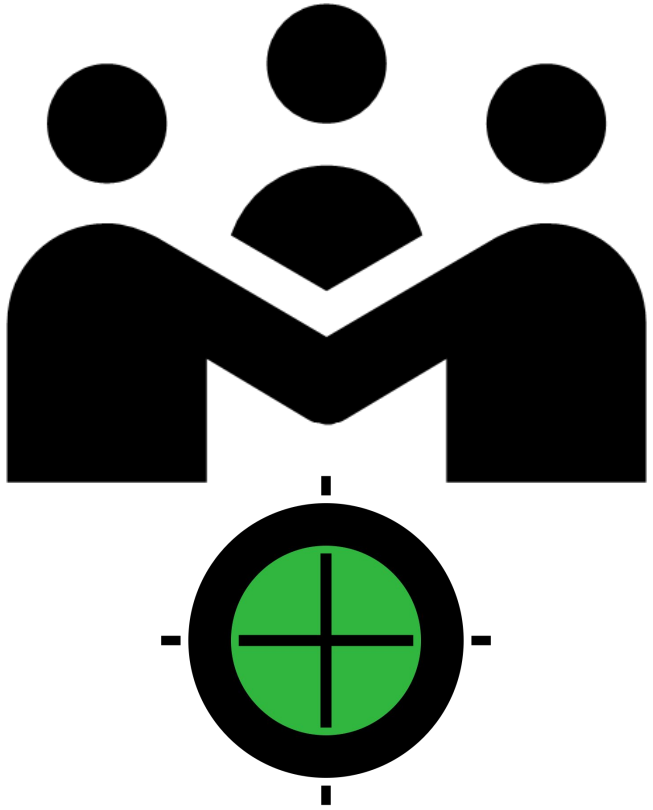
Leverage the changes of the last few years

- Our new platform opens up many new possibilities in
    - Alerting
    - Analysis
    - Visualization
    - Correlation with other data (e.g. Flow, SNMP/Streaming telemetry)
- Explore way to enable researchers to use the data

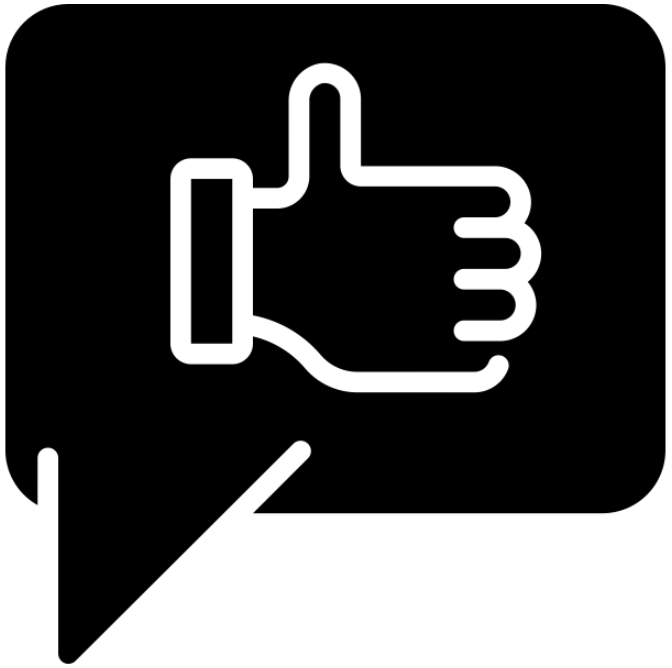


Guided by our Community

- Most important is your continued feedback to help shape the future
- Checkout quarterly office hours as part of https://www.es.net/science-engagement/ci-engineering-lunch-and-learn-series
- Join our mailing list perfsonar-user@perfsonar.net
- Watch for community surveys



perfSONAR



Thanks!

For more information,
please visit our web site:
https://www.perfsonar.net

Thanks icon by priyanka from The Noun Project

perfSONAR is developed by a partnership of

ESnet GÉANT INDIANA UNIVERSITY INTERNET2 RNP UNIVERSITY OF MICHIGAN