perfSONAR

2021 Update

Latest developments and news

Antoine Delvaux · PSNC / GÉANT project · antoine.delvaux@man.poznan.pl

2nd European perfSONAR User Workshop

14-15 April 2021
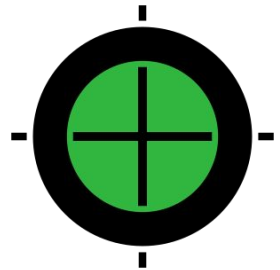
perfSONAR is developed by a partnership of ESnet GÉANT INDIANA UNIVERSITY INTERNET2 RNP ORGANIZAÇÃO SOCIAL DO MCTI UNIVERSITY OF MICHIGAN

A quick look back…

…London, June 2019

1st European perfSONAR Users Workshop

- In London in June 2019, hosted by Jisc
- More than 20 presenters and participants on site
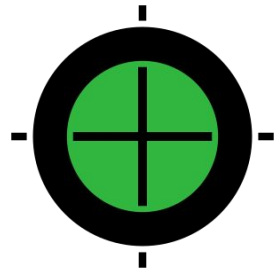 - And probably about 20 remotes

You asked for:

- **Repetition of the workshop**
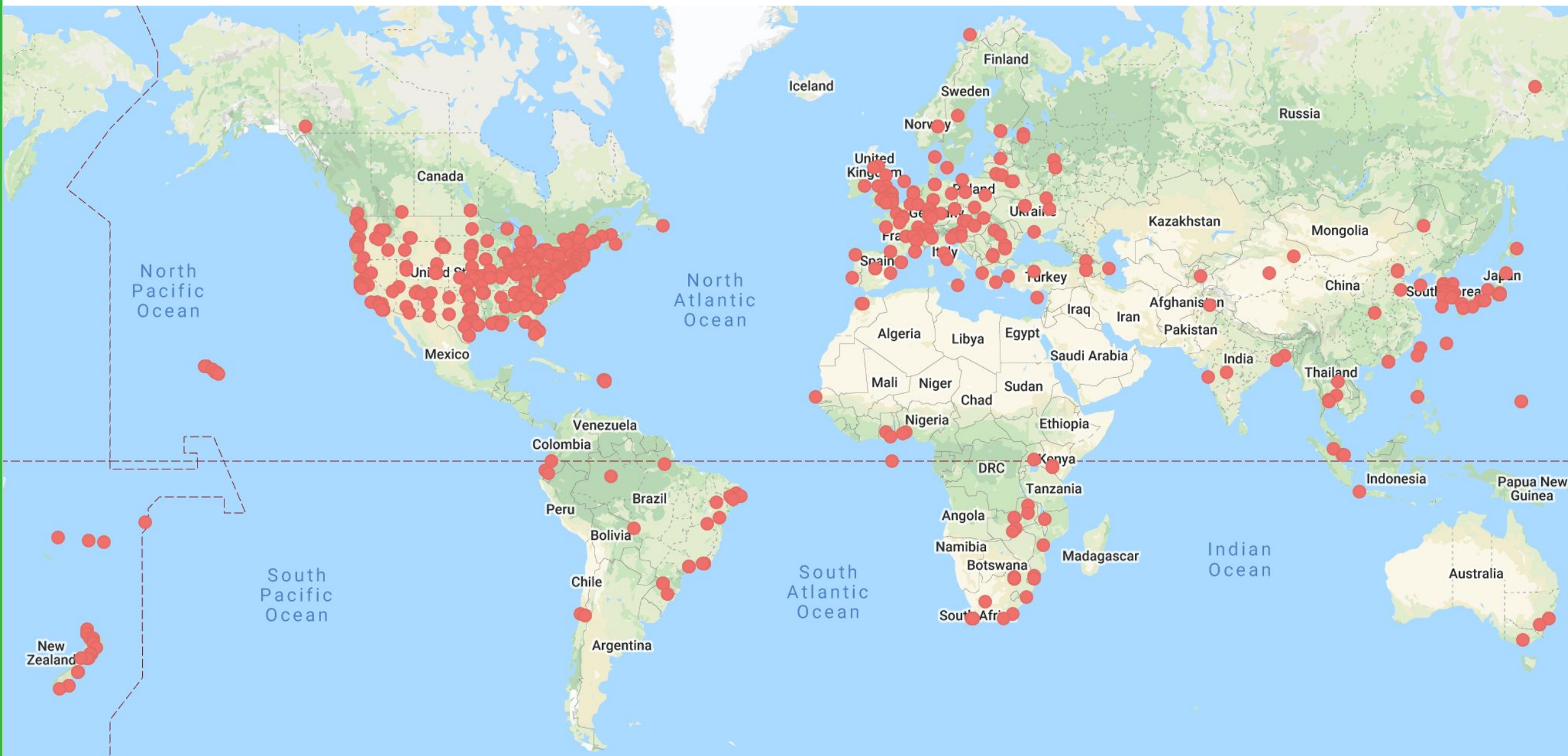
What happened since then?

- New releases
  - 4.2.0-b1 to 4.3.4
- New website in March 2020
  - With new logo!

- 1st perfSONAR day hosted by Internet2 in November 2020
- New Development partner: RNP
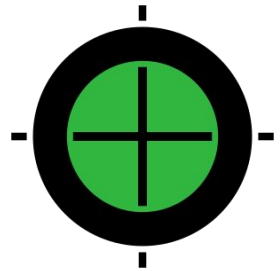- Lots of discussion, meetings, calls …
- … and some dev work!

Deployments update
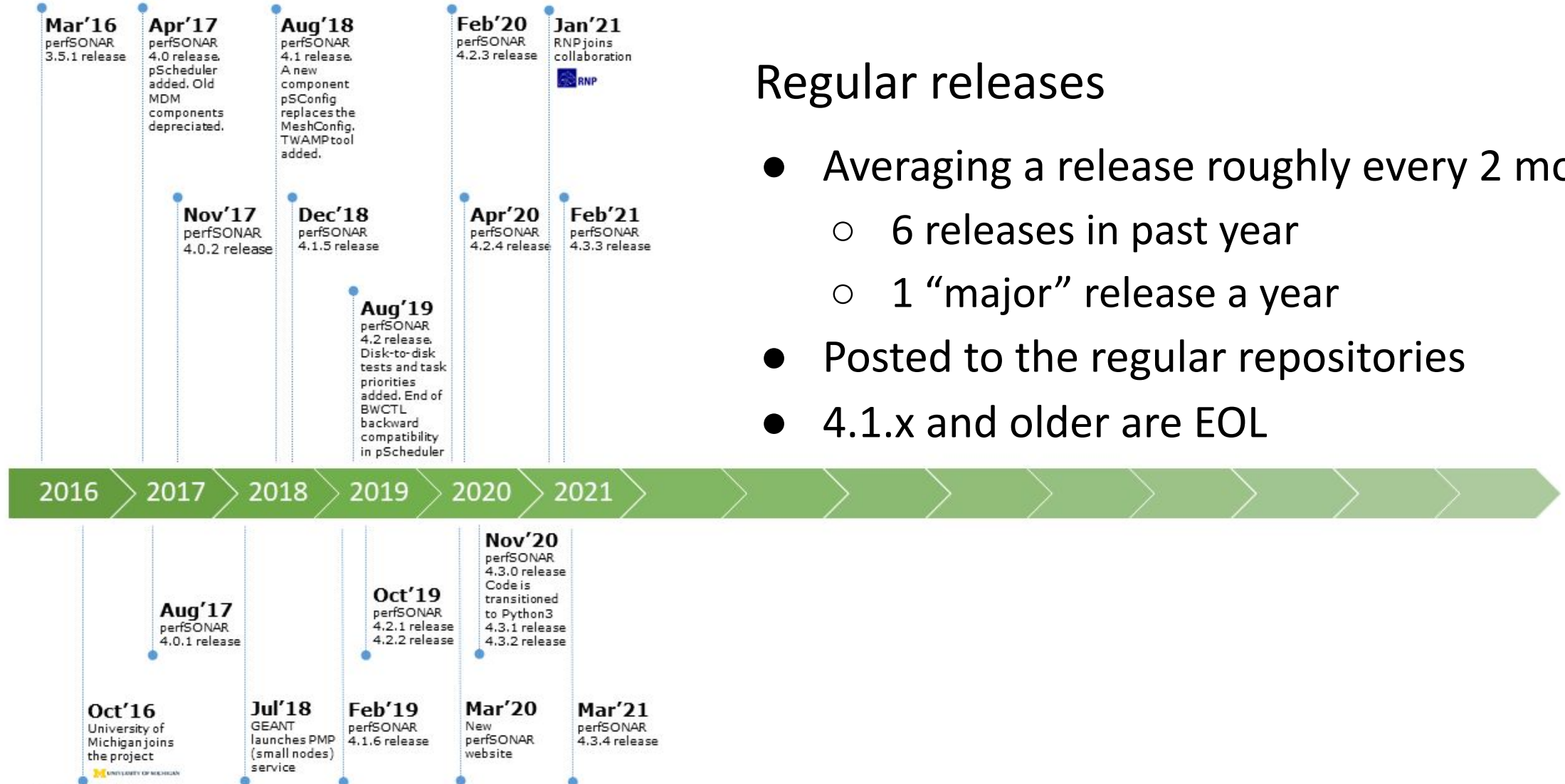
2000+ public nodes around the world …
… and yours!

Software update

Latest releases

perfSONAR HISTORY TIMELINE 2016 - present

Mar'16 perfSONAR 3.5.1 release

Apr'17 perfSONAR 4.0 release. pScheduler added. Old MDM components depreciated.

Aug'18 perfSONAR 4.1 release. A new component pSConfig replaces the MeshConfig. TWAMP tool added.

Feb'20 perfSONAR 4.2.3 release

Jan'21 RNP joins collaboration

Nov'17 perfSONAR 4.0.2 release

Dec'18 perfSONAR 4.1.5 release

Apr'20 perfSONAR 4.2.4 release

Feb'21 perfSONAR 4.3.3 release

Aug'19 perfSONAR 4.2 release. Disk-to-disk tests and task priorities added. End of BWCTL backward compatibility in pScheduler

2016 2017 2018 2019 2020 2021

Nov'20 perfSONAR 4.3.0 release Code is transitioned to Python3 4.3.1 release 4.3.2 release

Aug'17 perfSONAR 4.0.1 release

Oct'19 perfSONAR 4.2.1 release 4.2.2 release

Oct'16 University of Michigan joins the project

Jul'18 GEANT launches PMP (small nodes) service

Feb'19 perfSONAR 4.1.6 release

Mar'20 New perfSONAR website

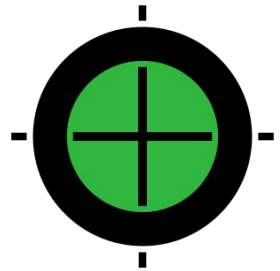**Mar'21** perfSONAR 4.3.4 release

Regular releases

- Averaging a release roughly every 2 months
  - 6 releases in past year
  - 1 "major" release a year
- Posted to the regular repositories
- 4.1.x and older are EOL

perfSONAR 4.2.0 - 4.2.4

- Release dates: 2019-2020
- Main new feature: pSConfig Web Administration (PWA)
  - Graphical User Interface
  - List hosts, tests and parameters
  - No need to deal with JSON file anymore
- pScheduler
  - New pScheduler plugins:
    - Disk to Disk measurements (FTP, Globus)
    - DNS and HTTP response time
  - Task priorities
- End of BWTCL support (pS 3)

perfSONAR 4.3.0 - 4.3.4

- Initial release date: November 2020
  - 4.3.4 in March 2021
- Stabilisations, performance improvements, technical debt
  - Python 3 port
- Debian 10 support (testpoint)
- New pScheduler plugins:
  - S3 benchmark
  - ethr (Microsoft) for throughput tests

1st European pS Users Workshop

In London, June 2019

1st European perfSONAR Users Workshop

You asked for:

- Repetition of the workshop
- **Feature requests and improvements**
- **Better documentation and training**

Lots of work in progress…

Improvement themes

- Better documentation and help   **Docs**

- Easier setup and less maintenance   **Auto**(mation)

- Improved MaDDash and visualisation   **Vis**(ualisation)

- Engagement   **Engage**(ment)

- And more specifics…   **Others**

✓ **Addressed**
– **In progress**
✗ **Pending**

Recommendations - Day 1

✓ **Auto** · **Mesh activation process** should be improved

– **Docs** · Better **documentation on the installation** - more quicksheets

– **Docs** · Better **interpretation of error messages**

– **Docs** · More information on how any of the **reported events in logs** impacts the installation

✗ **Docs** · Documentation on how to configure parameters for individual tests

– **Vis** · Have MaDDash react more quickly to changes in past measurements

– **Vis** · **Different threshold per host** in MaDDash

✗ **Vis** · New **alerting** mechanism for MaDDash: open OTRS ticket

www.geant.org GÉANT

ESnet GÉANT INDIANA UNIVERSITY INTERNET2 RNP UNIVERSITY OF MICHIGAN

perfSONAR

✓ **Addressed**
– **In progress**
✗ **Pending**

Recommendations - Day 1 (2)

– **Vis**   • **Throughput visualisation** option: don't draw lines, but only plot dots

✗ **Vis**   • Make **TWAMP** a 1st class citizen in the perfSONAR ecosystem (dashboard, graphs, toolkit)

– **Engage**   • Seek the input from **NOC engineers**

✓ **Auto / Vis**   • **Minimize the** efforts for **monitoring of perfSONAR** itself

– **Vis**   • For better understanding, measurement tuning and thus better and more relevant results, **combine perfSONAR lab and field testing**

www.geant.org

GÉANT

ESnet GÉANT INDIANA UNIVERSITY INTERNET2 RNP UNIVERSITY OF MICHIGAN

✓ **Addressed**

– **In progress**

✗ **Pending**

Recommendations - Day 2

✗ **Vis**	• perfSONAR for **SLA verification and reporting**
✗ **Others**	• perfSONAR support for **L2 measurement** protocols (i.e. CFM)
– **Vis**	• Measurements results **visualisation** can be improved
– **Vis**	• Provide **jitter measurement visualisation**
✓ **Others / Vis**	• Integration with **other time series databases**, not only Elasticsearch
✓ **Others / Vis**	• Make it **flexible/open** enough **for different tools**

www.geant.org

GÉANT

ESnet   GÉANT   INDIANA UNIVERSITY   INTERNET2   RNP   UNIVERSITY OF MICHIGAN

✓ **Addressed**
– **In progress**
✗ **Pending**

– **Vis / Engage**

Recommendations – Day 2
Visualisation, On-demand measurements, Vendor integration

- **Gather use-cases** in order to be able to examine and feedback the visualisation for on-demand measurements and measurement data results visualisation

– **Engage**
- Organise **infoshares** to present it and ask for the feedback

✗ **Engage**
- Offer the tool for **beta testing** and ask for feedback

– **Vis**
- Offer the **PoC tool for alpha/beta testing** and ask for feedback

✗ **Others**
- Support perfSONAR on **BSD**

www.geant.org   GÉANT

18

ESnet   GÉANT   INDIANA UNIVERSITY   INTERNET2   RNP   MICHIGAN

Better documentation and help

- Regular updates to the documentation

- More and improved log messages

- Some new quicksheets
  - pSConfig Web Administration
  - And presentations today

- Videos of webinars and infoshares collected on Youtube:
  - https://www.youtube.com/perfSONARProject/

Easier setup and less maintenance

- Ansible roles and example playbooks
    - Deploy and configure any pS bundle
    - Centrally maintain your pS hosts
- Automatic restart of services (pScheduler)

Improved MaDDash and visualisation

- Opening new possibilities (perfSONAR 5)
- Working on it for perfSONAR 5
  - Changing backend
  - Changing frontend
  - More details tomorrow
- psGUI for on-demand measurements
  - Throughput, latency, RTT, …
  - WIP, demo at TNC21

Specifics about measurements

- Developing your own plugins
  - pScheduler Plugin Development Kit (PDK)
- Looking at some jitter measurements with LoLa project
  - TWAMP and other tools

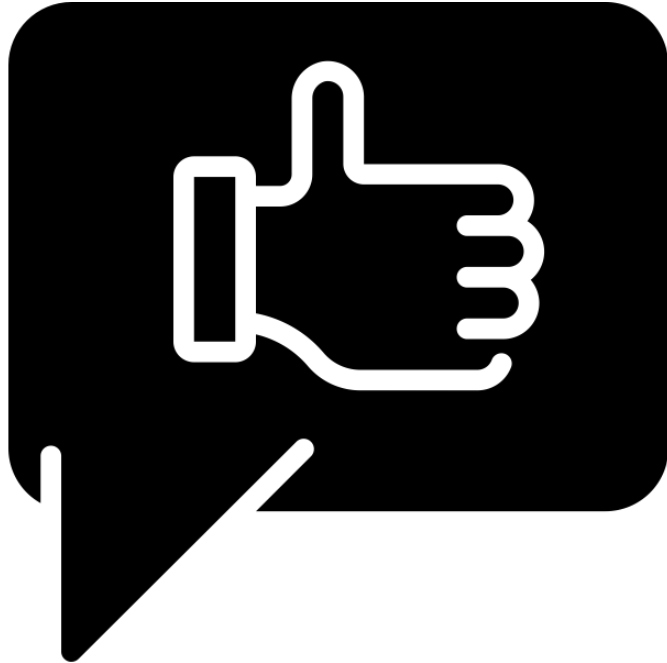And…

- perfSONAR on BSD…
  - We'll talk OS support tomorrow

Tracking progress and engagement

- Issue tracker
  - https://github.com/perfsonar/
  - Add your own bug report or feature request
- User lists reports and discussions
- Dev meetings and standups
  - Bi-weekly standups, weekly QA call, weekly automation and containers call
  - Fortnightly 1 hour open Dev call alternating with Docs & Training call
  - Yearly Developers meeting
- perfSONAR day, Workshops, Infoshares, Conferences

2nd European perfSONAR Users Workshop

- 1st day: Users experience, use cases

- 2nd day: Developers corner, new features, work in progress

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