

perfSONAR

perfSONAR today

1st European perfSONAR Workshop

Antoine Delvaux — antoine.delvaux@man.poznan.pl

Jisc, London, UK



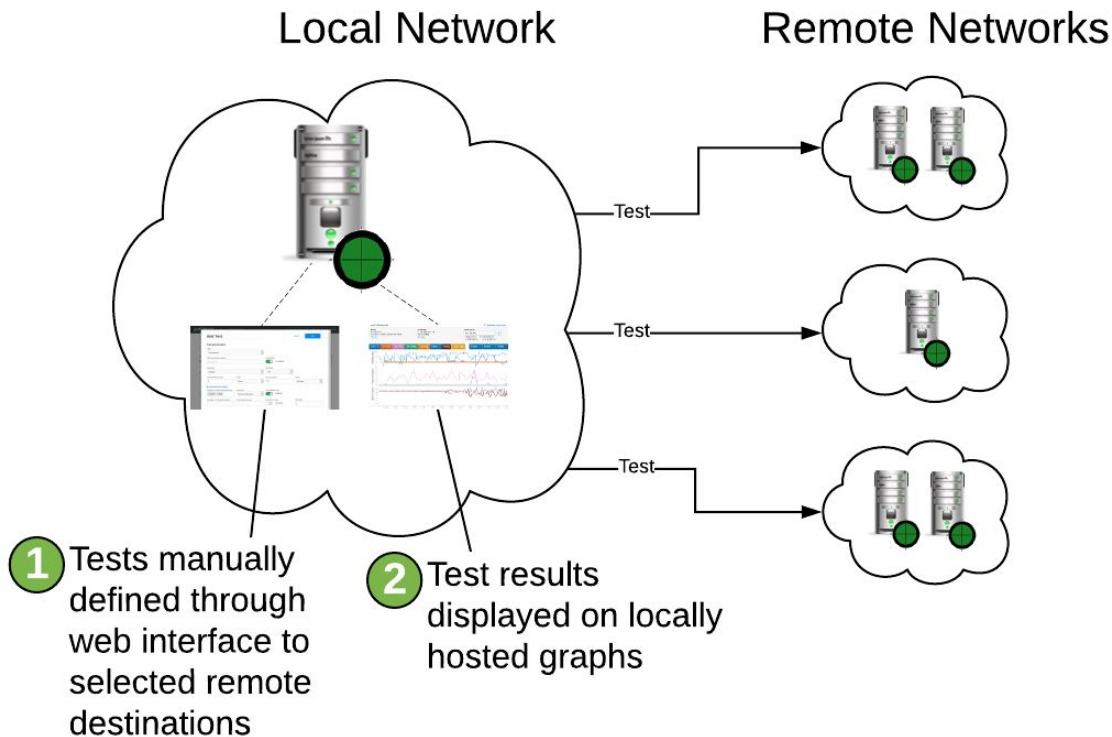
What is perfSONAR?

- perfSONAR is a **collection** of software to:
 - Set (hopefully raise) network performance expectations
 - Find network problems (“soft failures”)
 - Assist in identifying causes of these problems
- All in multi-domain environments
 - These problems are all harder when multiple networks are involved
- perfSONAR provides:
 - A set of measurement tools useful for network performance analysis (e.g. iperf3, OWAMP)
 - A framework for running, collecting and storing measurement results
 - Tools for visualizing and analyzing network results
 - Tools for collaborating with other perfSONAR users

A collaboration

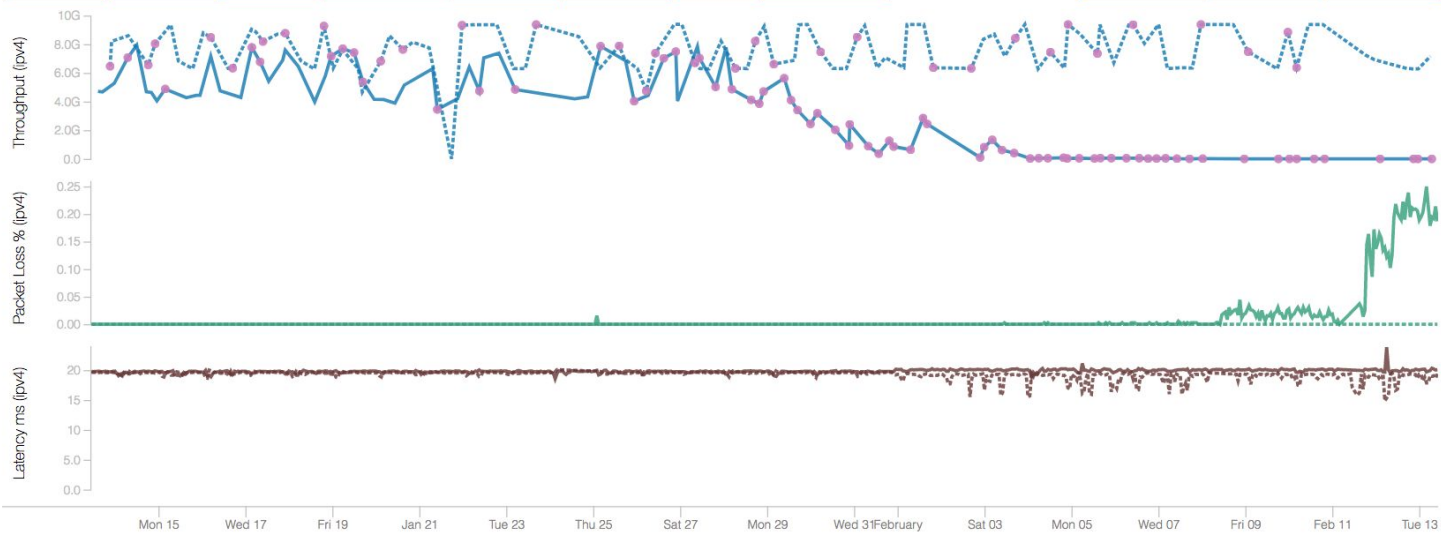
- Nearly 20 years old
- Currently 5 partners organisation, each contributing at least 1 FTE
- Development, but also support and documentation writing
- GÉANT project about 10 people in 2 different tasks
 - CARnet, DFN (Uni Erlangen), GÉANT Association, GRENA, Jisc, PSNC
- How do we collaborate
 - 3 weekly developers call
 - yearly developers face to face meetings
- Building the roadmap...

Single Host Deployments

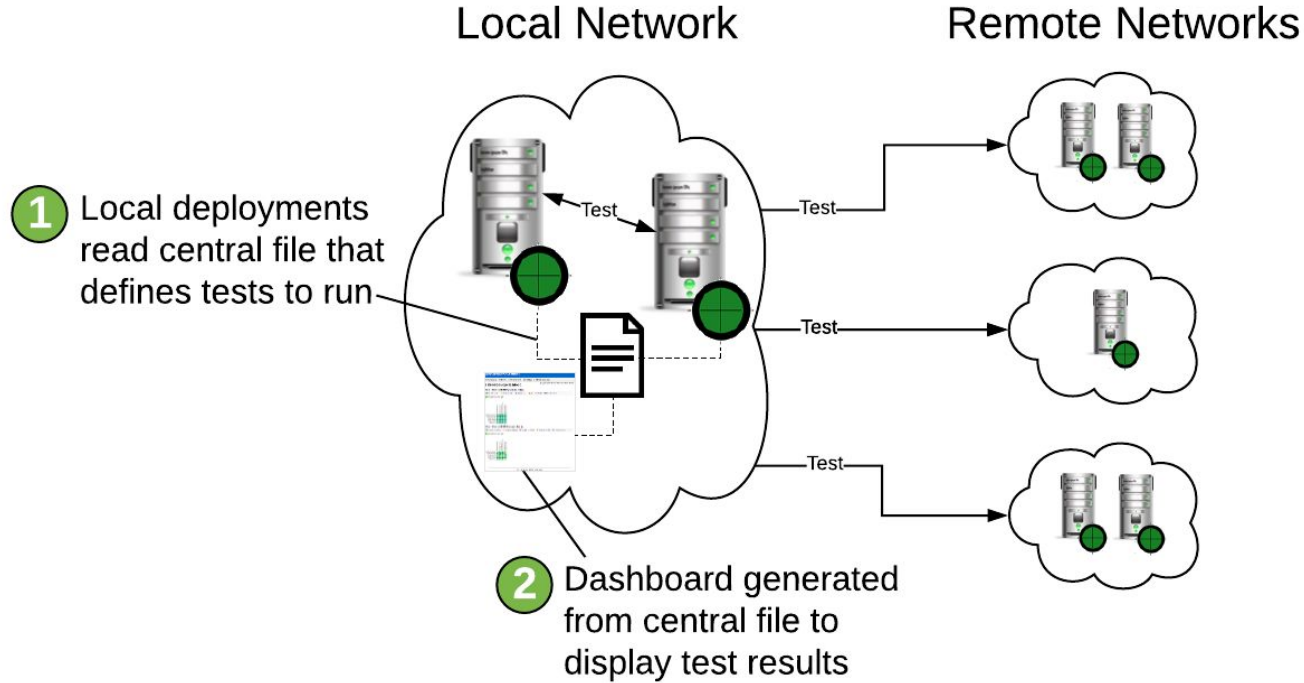


Sources beep.ucllnl.org 192.12.137.251 Host info	Destinations hous-pt1.es.net 198.129.254.50 Host info	Report range <input type="button" value="←"/> 1 month <input type="button" value="→"/> Sat 01/13/2018 to Tue 02/13/2018 10:24:14 (GMT-8) to 10:24:14 (GMT-8)
--	---	--

Tput (TCP)
Tput (UDP)
Loss (UDP)
Loss (owamp)
Loss (ping)
Retrans
Latency
Latency (ping)
Forward
Reverse
Failures



Multi-Host Deployments



ps-dashboard.es.net

ESnet perfSONAR Dashboard

Dashboard Reports Add Your Node Settings External Resources

Last page refresh time: September 17, 2018 14:14:47 PM PDT

1: ESnet to ESnet Packet Loss Dashboard

ESnet - ESnet to ESnet Packet Loss Testing

Loss rate is <= 0.001
 Loss rate is >= 0.001
 Loss rate is >= 0.1
 Unable to retrieve data
 Check has not yet run

No problems found in grid

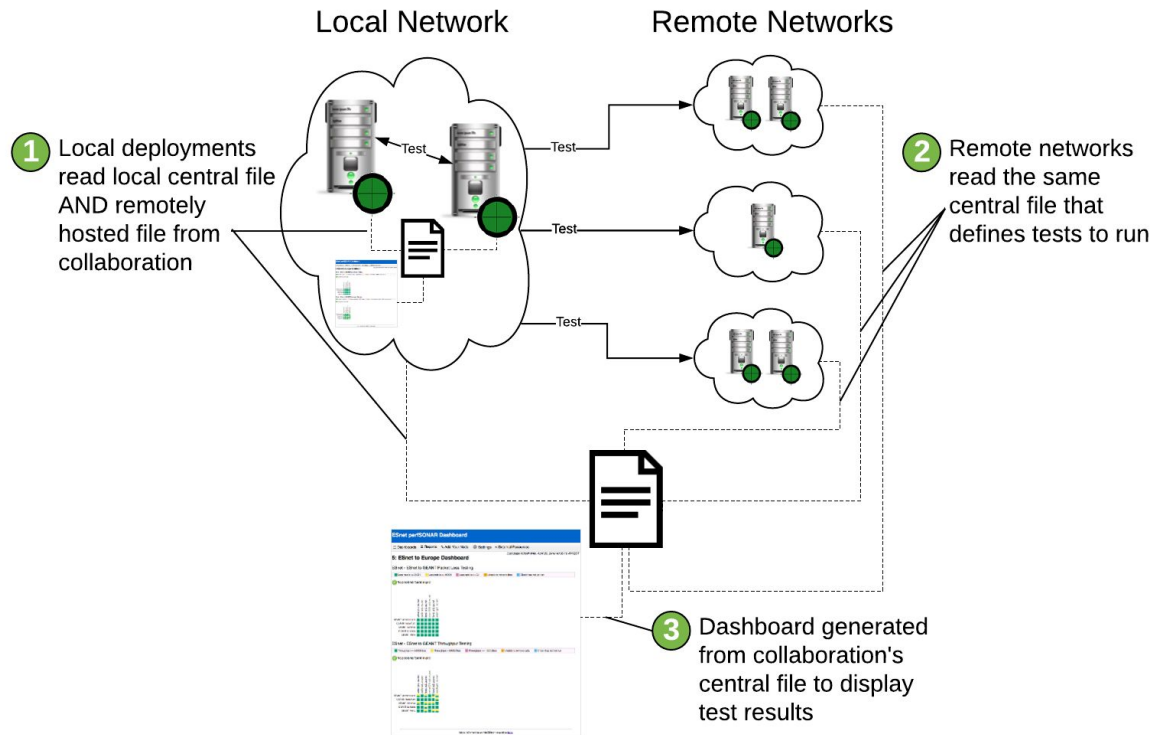


ESnet - ESnet Hub to Small DOE Site Border Packet Loss Testing

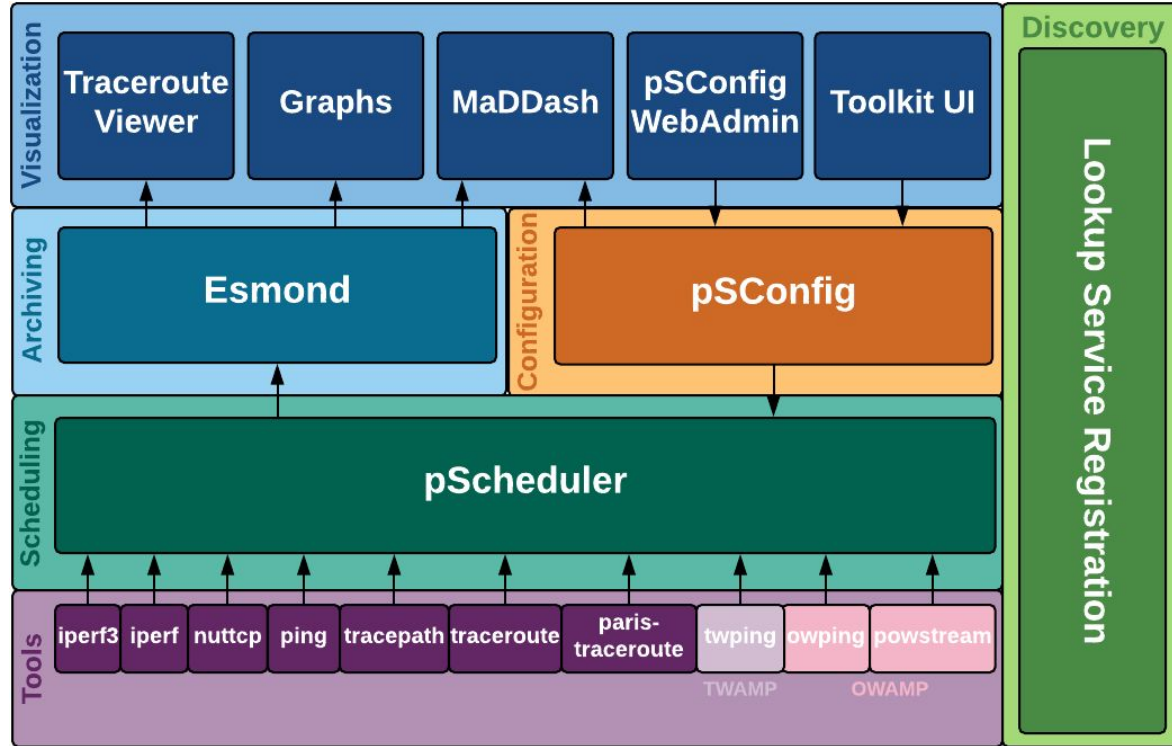
Loss rate is <= 0.001
 Loss rate is >= 0.001
 Loss rate is >= 0.1
 Unable to retrieve data
 Check has not yet run



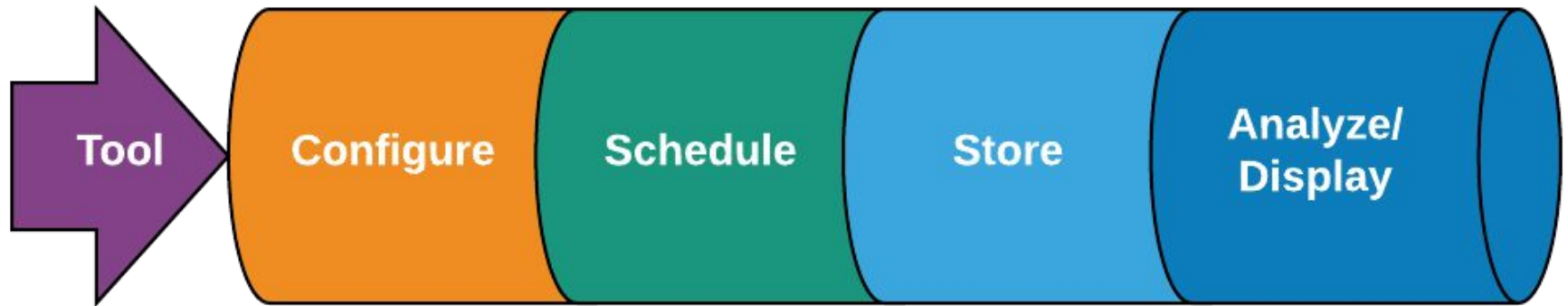
Cross-Institution Collaboration



perfSONAR Components



Building the perfSONAR Pipeline



Why do we care about adding new capabilities?

- **Evolving network environments**
 - Cloud, containerization and virtualization
 - Embedded network devices
- **New Types of Measurements**
 - Research platforms really interested in things like disk-to-disk transfer
- **Data Analytics**
 - We want perfSONAR data to be used in new and interesting ways
 - This includes integration of data in projects looking at more than just perfSONAR results
- **Meshes Continue to Grow**
 - Can we build smarter meshes than we do today to avoid over-testing as collaboration get larger