



UCF / FLR Workshop on Networking Topics

Session 4: Basics of perfSONAR



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perfSONAR Lab Series

- Lab experiments

Lab 1: Configuring Admin. Information Using perfSONAR Toolkit GUI

Lab 2: PerfSONAR Metrics and Tools

Lab 3: Configuring Regular Tests Using perfSONAR GUI

Lab 4: Configuring Regular Tests Using pScheduler CLI Part I

Lab 5: Configuring Regular Tests Using pScheduler CLI Part II

Lab 6: Bandwidth-delay Product and TCP Buffer Size

Lab 7: Configuring Regular Tests Using a pSConfig Template

Lab 8: perfSONAR Monitoring and Debugging Dashboard

Lab 9: pSConfig Web Administrator

Lab 10: Configuring pScheduler Limits

Organization of the Lab Manuals

Each lab starts with a section *Overview*

- Objectives
- Lab topology
- Lab settings: passwords, device names
- Roadmap: organization of the lab

Section 1

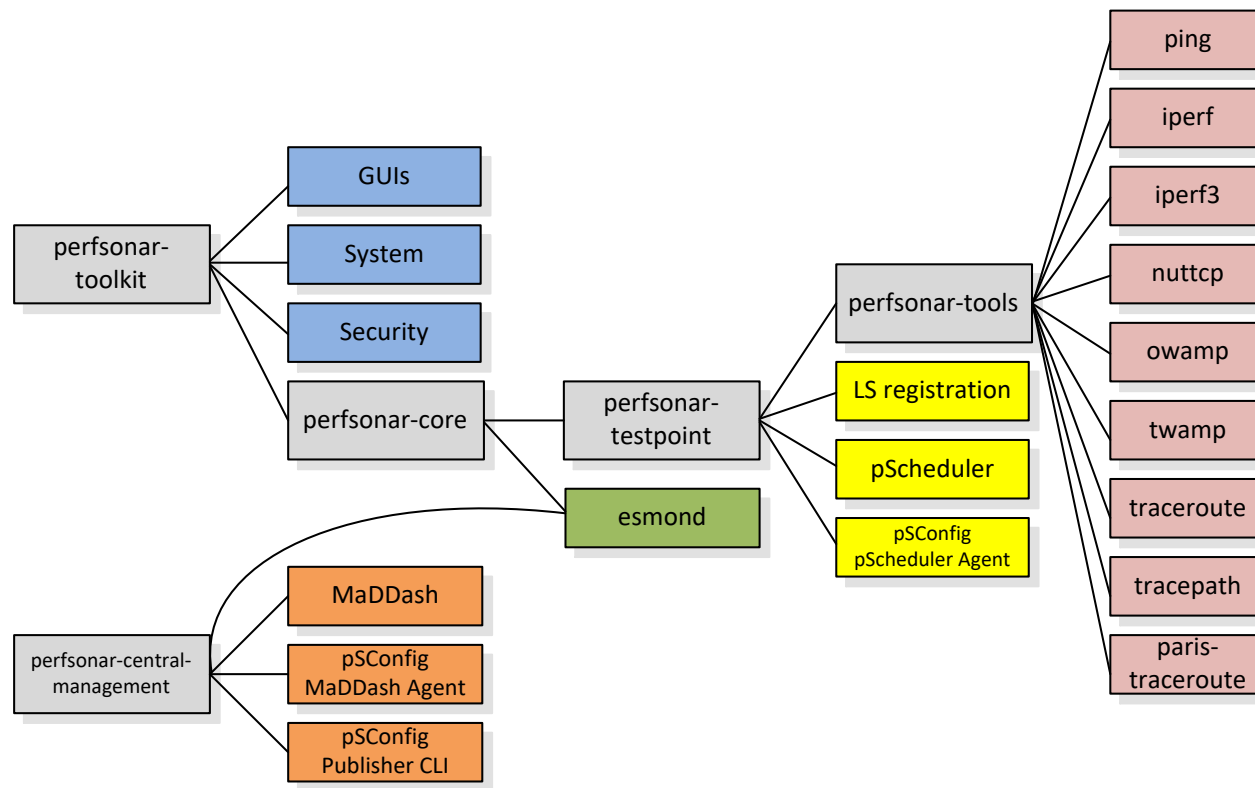
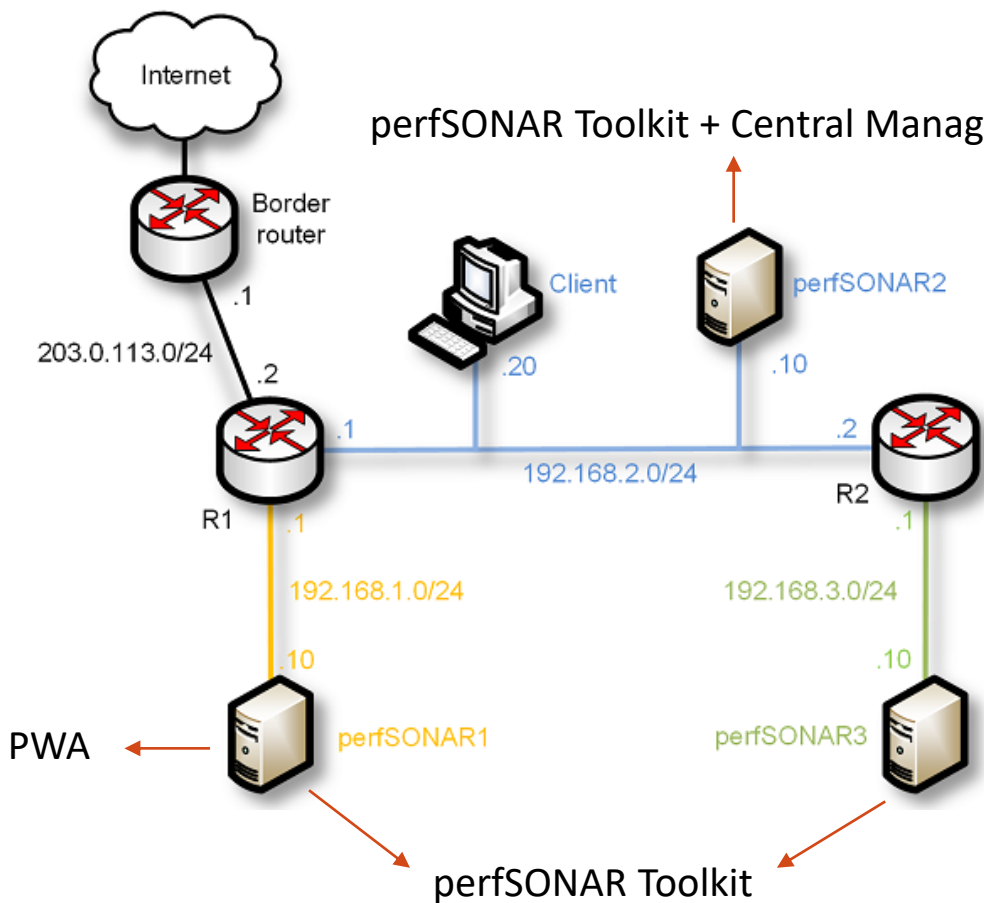
- Background information of the topic being covered (e.g., fundamentals of perfSONAR)
- Section 1 is optional (i.e., the reader can skip this section and move to lab directions)

Section 2... n

- Step-by-step directions

Pod Design

perfSONAR Toolkit + Central Management

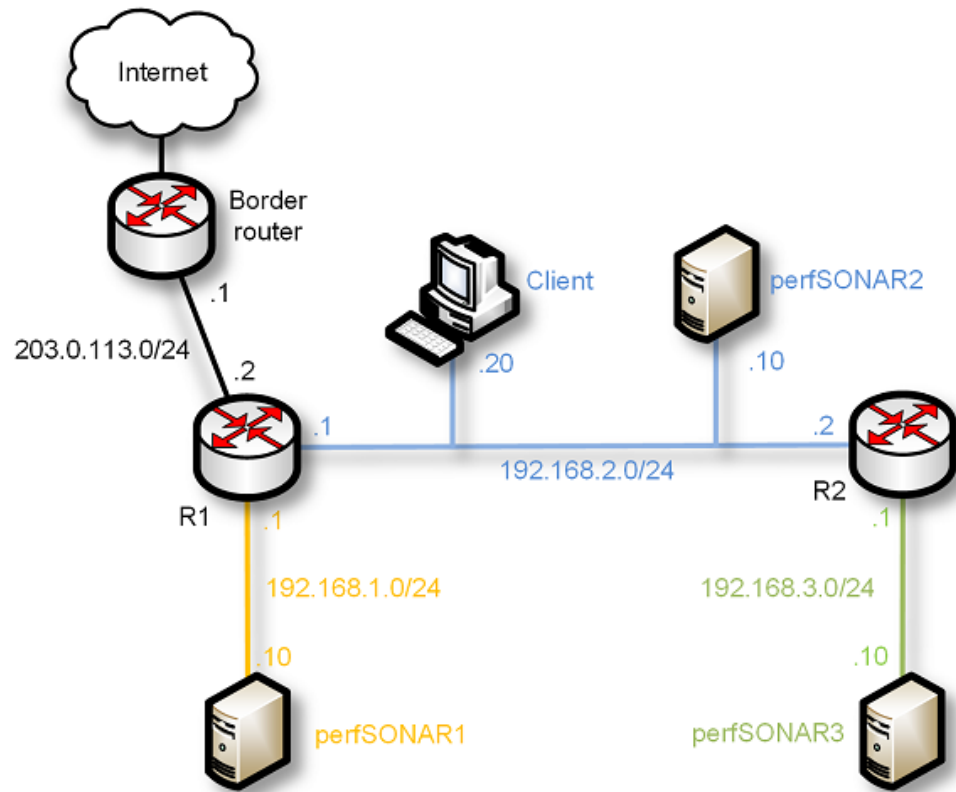


perfSONAR installation options

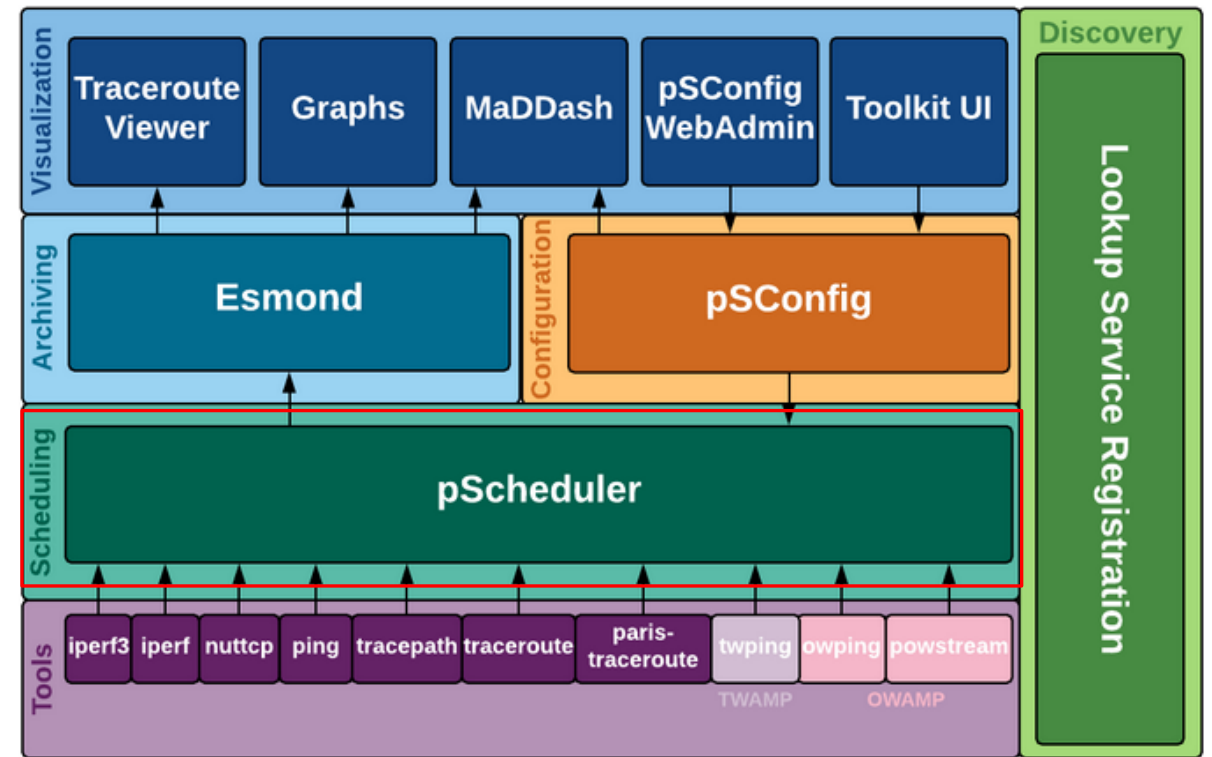
Lab 4: Configuring Regular Tests using pScheduler CLI

The pScheduler Command

- The pScheduler coordinates, executes, and optionally stores network measurements (e.g., latency, packet loss rate, throughput)



Lab topology

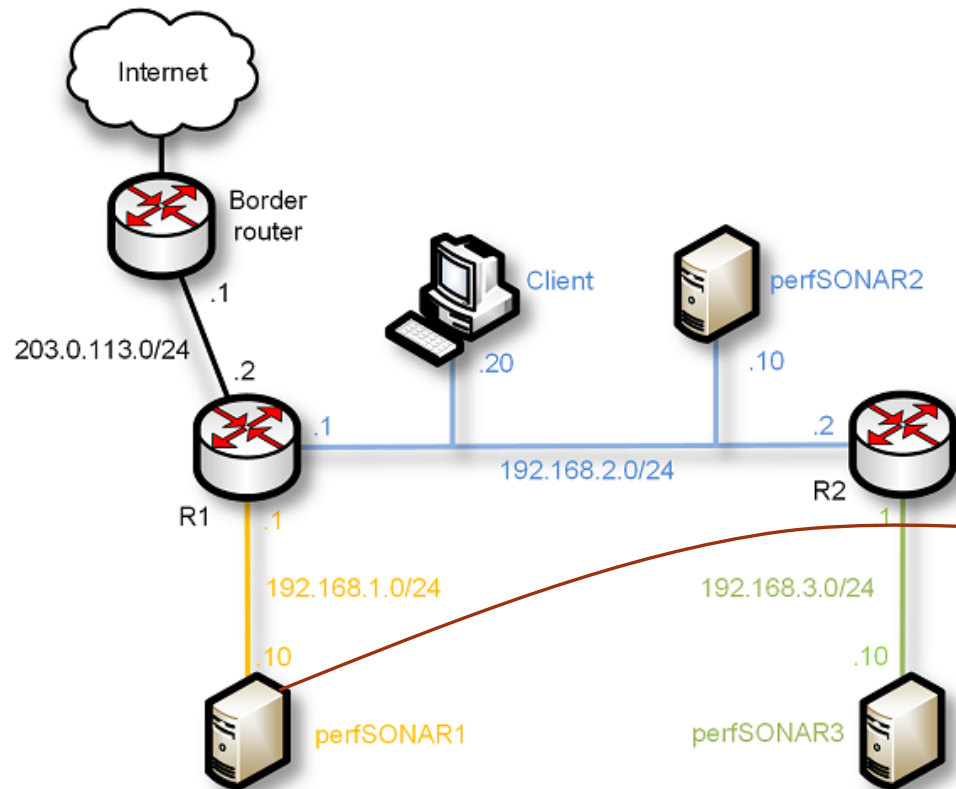


perfSONAR layers

The pScheduler Command

The pScheduler command creates new tasks.

```
pscheduler task throughput --source 192.168.1.10 --dest 192.168.2.10
```



Lab topology

```
admin@perfsonar1 ~1$ pscheduler task throughput --source 192.168.1.10 --dest 192.168.2.10
Submitting task...
Task URL:
https://192.168.1.10/pscheduler/tasks/396795a3-abad-4fc8-ba64-66c304bc2247
Running with tool 'iperf3'
Fetching first run...

Next scheduled run:
https://192.168.1.10/pscheduler/tasks/396795a3-abad-4fc8-ba64-66c304bc2247/runs/1f09ecf0-3875fa4-f9adc8cc4a17
Starts 2019-07-27T21:22:37Z (~7 seconds)
Ends 2019-07-27T21:22:56Z (~18 seconds)
Waiting for result...

* Stream ID 5
Interval      Throughput      Retransmits      Current Window
0.0 - 1.0     6.01 Gbps       156               800.74 KBytes
1.0 - 2.0     5.51 Gbps       283               773.23 KBytes
2.0 - 3.0     5.75 Gbps       211               495.22 KBytes
3.0 - 4.0     5.77 Gbps       0                 773.23 KBytes
4.0 - 5.0     5.69 Gbps       22               722.55 KBytes
5.0 - 6.0     5.67 Gbps       0                 896.31 KBytes
6.0 - 7.0     5.20 Gbps       69               600.92 KBytes
7.0 - 8.0     5.23 Gbps       136              868.80 KBytes
8.0 - 9.0     5.18 Gbps       178              786.26 KBytes
9.0 - 10.0    5.59 Gbps       27               991.88 KBytes

Summary
Interval      Throughput      Retransmits
0.0 - 10.0    5.56 Gbps       1082

No further runs scheduled.
admin@perfsonar1 ~1$
```

Throughput task