

Hands-on perfSONAR

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NSF CC* Workshop - Online
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Lab Series: perfSONAR

- 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 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 TCP congestion control)
- Section 1 is optional (i.e., the reader can skip this section and move to lab directions)

Section 2... n

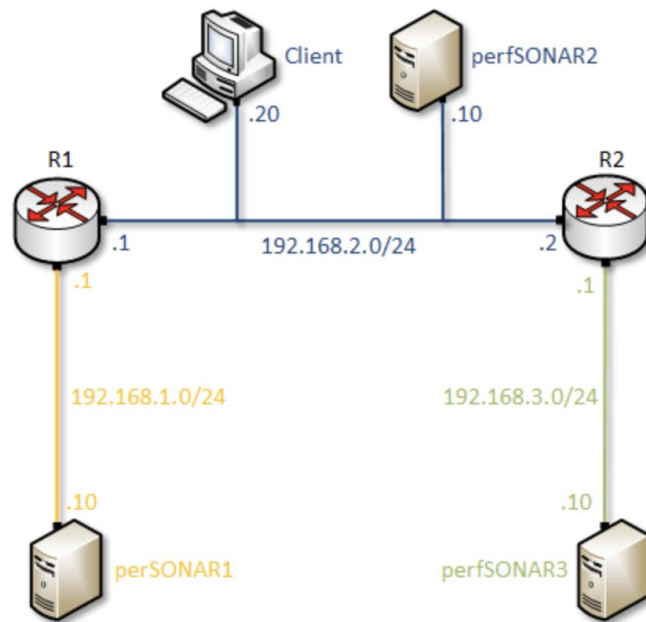
- Step-by-step directions

Exercise 1 Config. Regular Tests using perfSONAR GUI

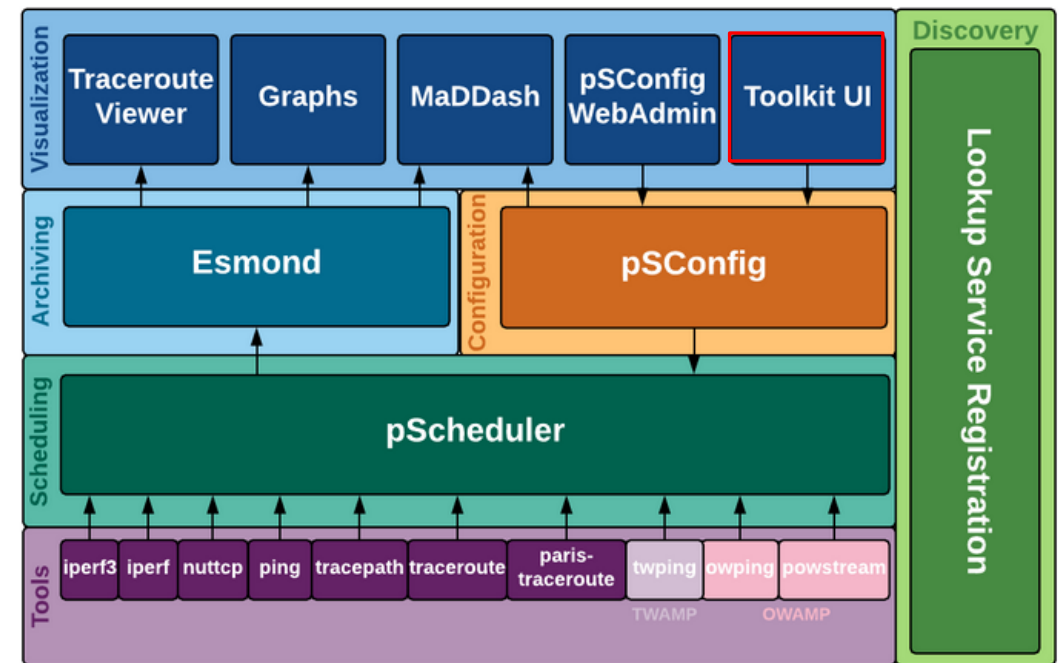
Lab activities are described in Lab 3, perfSONAR Lab Series

perfSONAR Toolkit UI

- perfSONAR Toolkit UI facilitates the configuration of regular test (e.g., throughput, loss, latency)
- Adding administrative information about the node



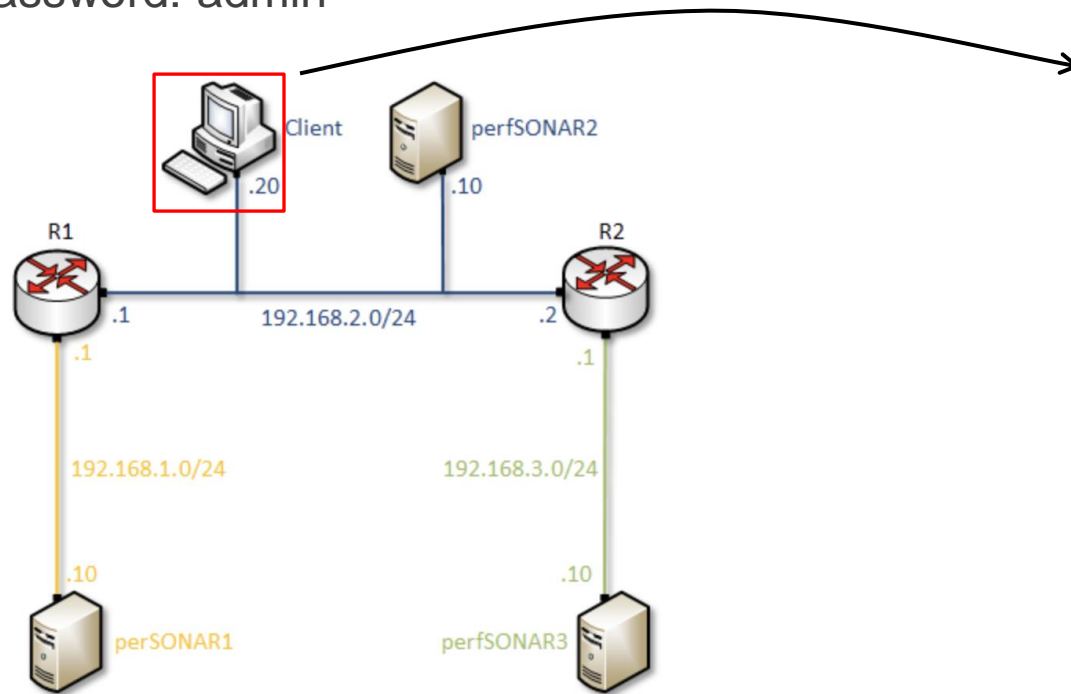
Lab topology



perfSONAR layers

perfSONAR Toolkit UI

- Access to perfSONAR Toolkit UI via the Client host
- Credentials:
 - URL: 192.168.2.10
 - Username: admin
 - Password: admin



Lab topology

perfSONAR Toolkit | perfSONAR x +
← → ↻ 🏠 ⓘ 🔒 http://192.168.2.10/toolkit/auth/

perfSONAR Toolkit on perfSONAR-Toolkit

📍 perfSONAR-Toolkit

Organization:
Address:
Administrator:

Services

SERVICE	STATUS	VERSION	PORTS	SERVICE LOGS
esmond	Running	2.1.3-1.e17		View
Isregistration	Running	4.1-1.e17		View
owamp	Running	3.5.8-1.e17	861	View
pscheduler	Running	1.1.5-2.e17		View
psconfig	Running	4.1.5-1.e17		View
twamp	Running	3.5.8-1.e17	862	View

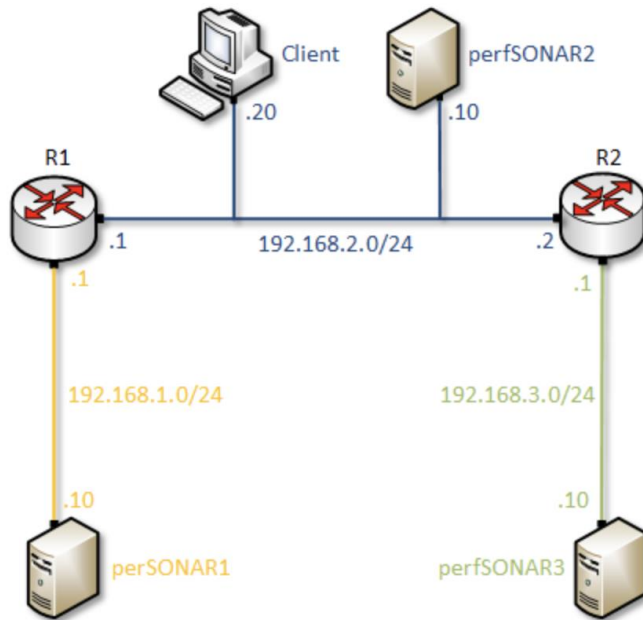
perfSONAR toolkit UI

Exercise 2 Config. Regular Tests using perfSONAR CLI

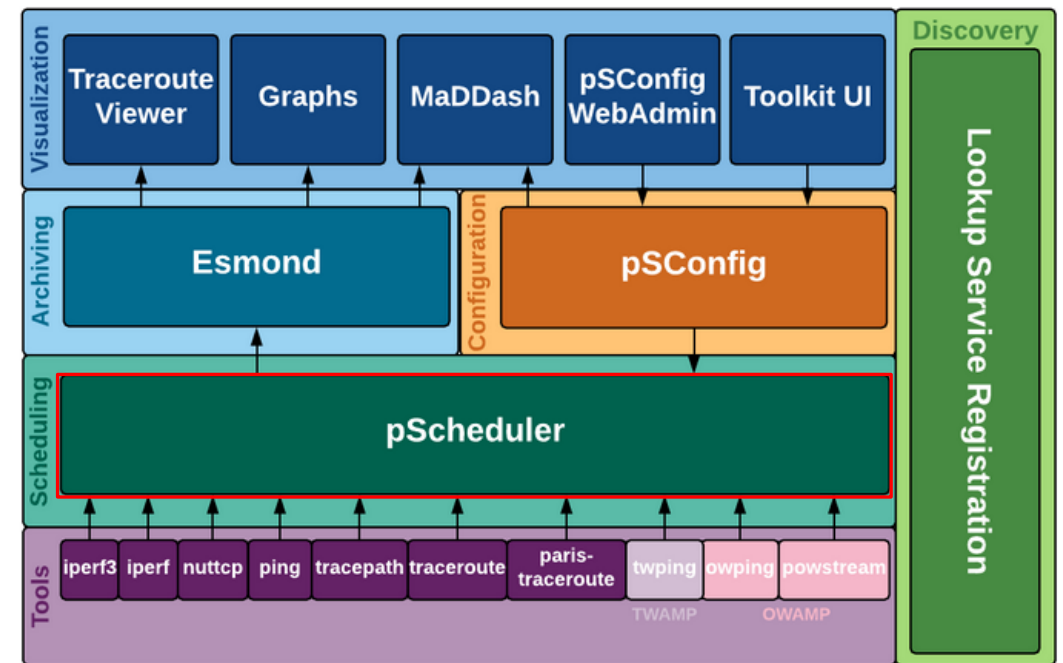
Lab activities are described in Lab 4, 5, perfSONAR Lab Series

pScheduler CLI

- pScheduler manages the execution of network measurements (e.g., tasks) such as throughput, latency and loss
- The user invokes pScheduler tasks using the CLI
- pScheduler allows submitting remote task executions



Lab topology

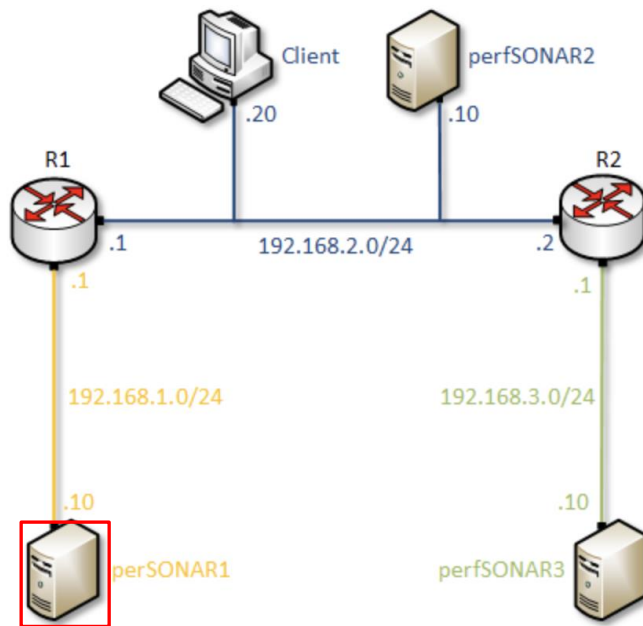


perfSONAR layers

pScheduler CLI

- Run a latency task between perfSONAR1 (192.168.1.10) and perfSONAR2 (192.168.2.10)

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



Lab topology

```
ladmin@perfsonar1 ~1$ pscheduler task latency --source 192.168.1.10 --dest 192.168.2.10
Submitting task...
Task URL:
https://192.168.1.10/pscheduler/tasks/6e3598ae-ae9-4624-96b1-535a87946560
Running with tool 'owping'
Fetching first run...

Next scheduled run:
https://192.168.1.10/pscheduler/tasks/6e3598ae-ae9-4624-96b1-535a87946560/runs/364a861d-f7e4-45b2-b
395-e903c1ec09f9
Starts 2019-07-19T11:43:09Z (~8 seconds)
Ends 2019-07-19T11:43:30Z (~20 seconds)
Waiting for result...

Packet Statistics
-----
Packets Sent ..... 100 packets
Packets Received .... 100 packets
Packets Lost ..... 0 packets
Packets Duplicated ... 0 packets
Packets Reordered ... 0 packets

One-way Latency Statistics
-----
Delay Median ..... -3.38 ms
Delay Minimum ..... -3.46 ms
Delay Maximum ..... 6.59 ms
Delay Mean ..... -3.28 ms
Delay Mode ..... -3.38 ms
Delay 25th Percentile ... -3.41 ms
Delay 75th Percentile ... -3.37 ms
Delay 95th Percentile ... -3.32 ms
Max Clock Error ..... 0.0 ms
```

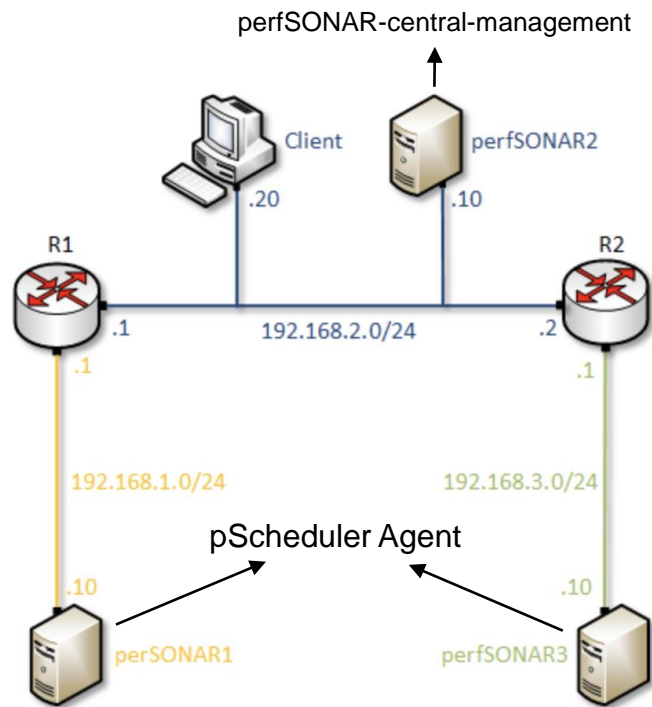
Latency task

Exercise 3 Visualizing Performance Metrics on MaDDash

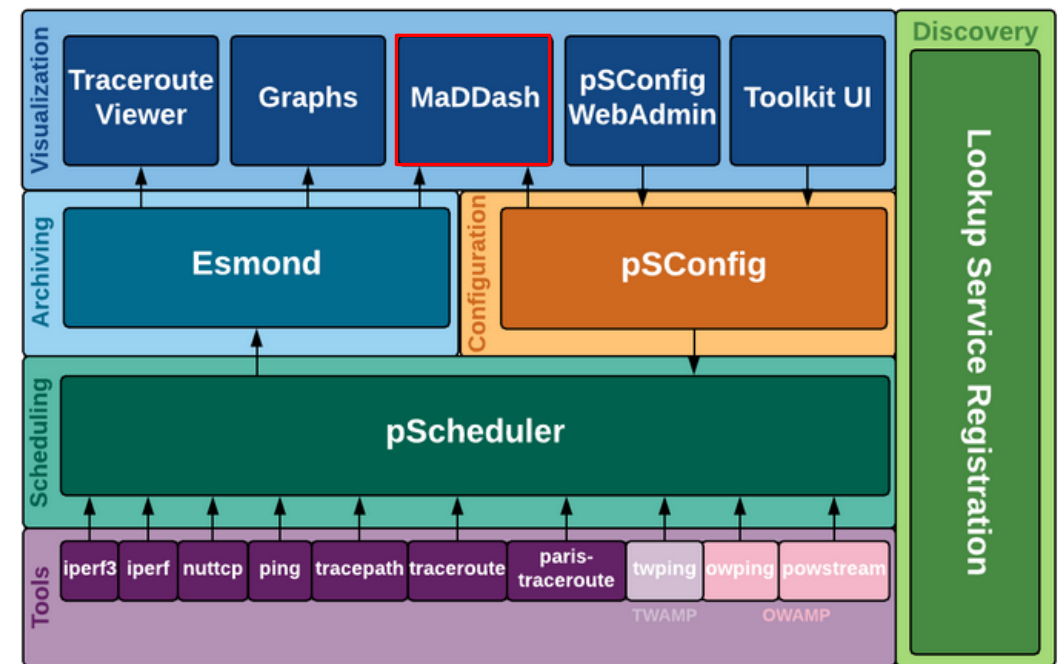
Lab activity is described in Lab 8, perfSONAR Lab Series

MaDDash

- MaDDash collects and presents two-dimensional monitoring data as a set of grids referred to as a dashboard



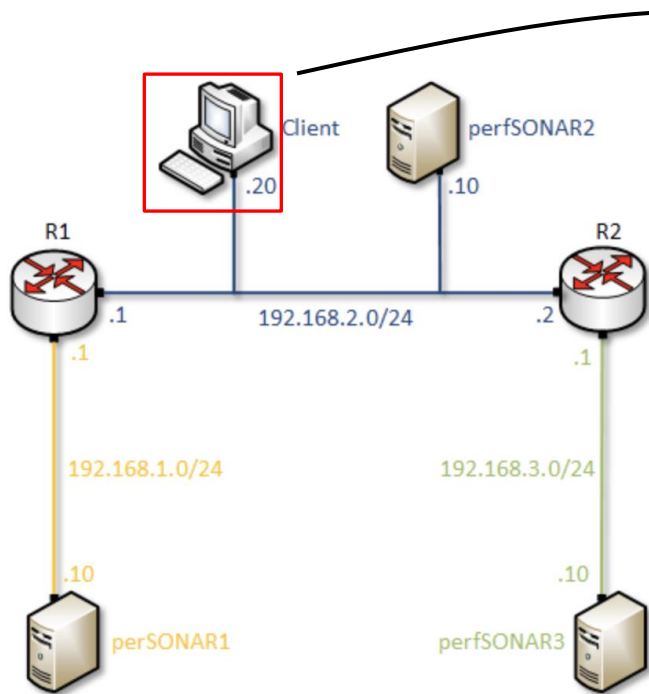
Lab topology



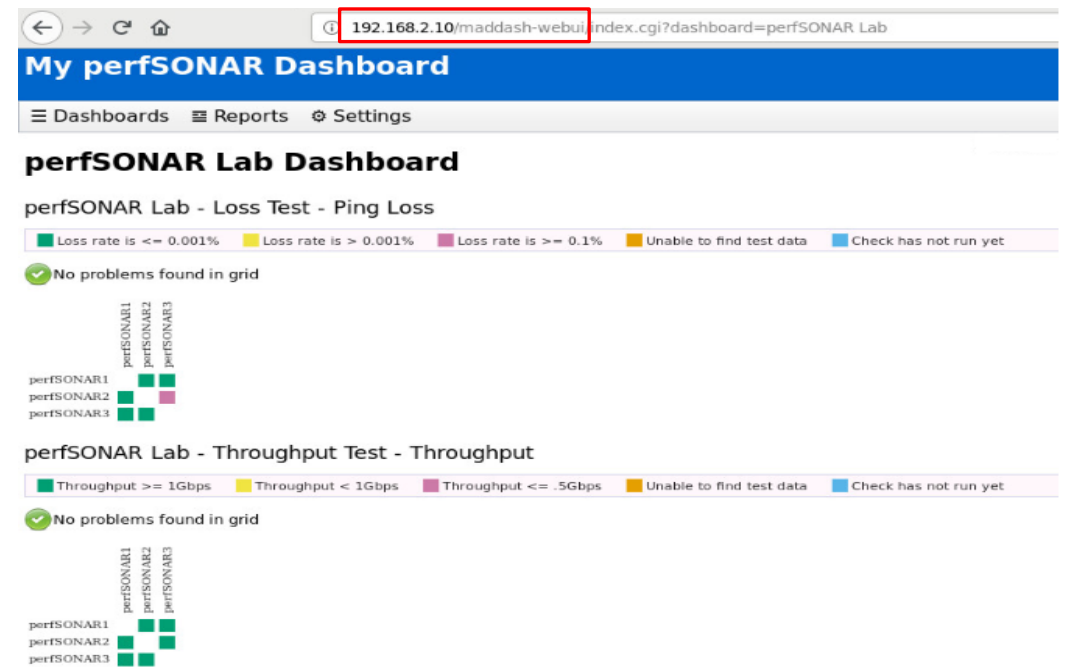
perfSONAR layers

MaDDash

- Access to MaDDash web interface via the Client host
- Credentials:
 - URL: 192.168.2.10/maddash-webui
 - Username: admin
 - Password: admin



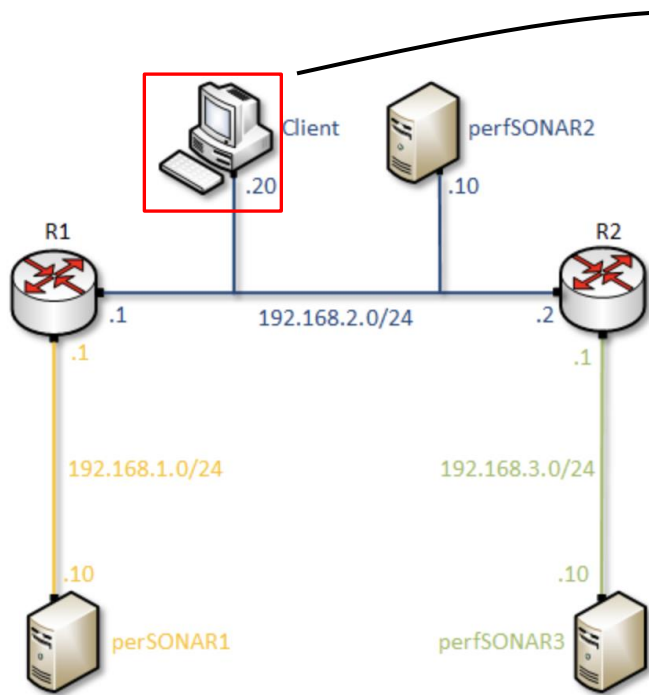
Lab topology



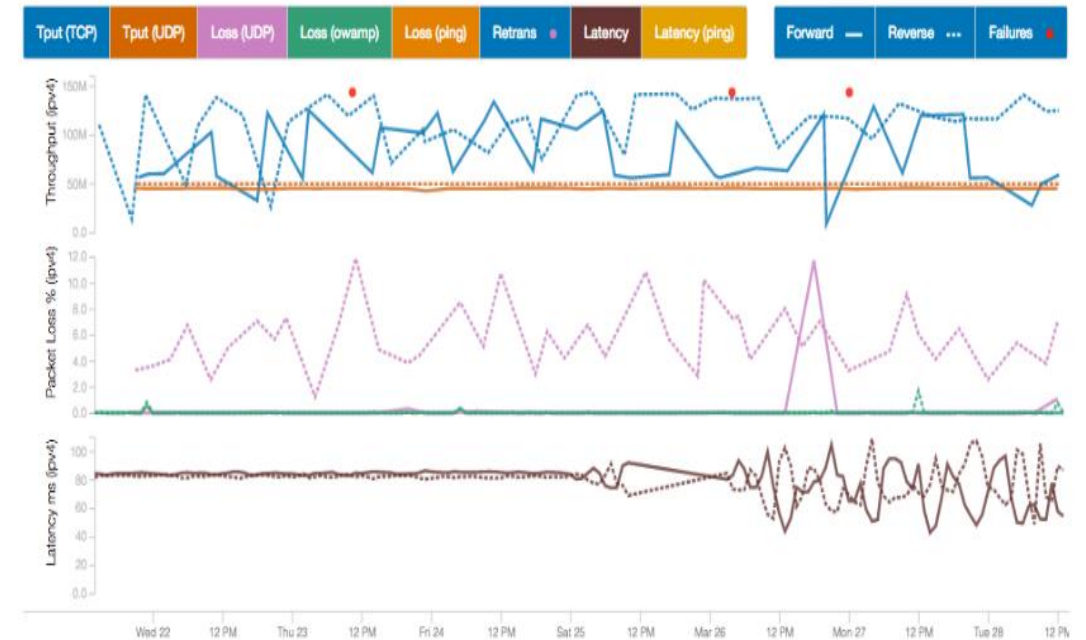
perfSONAR layers

MaDDash

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Lab topology



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