

# “HANDS-ON VLABS: CONFIGURING REGULAR TESTS USING PSCHEDULER CLI

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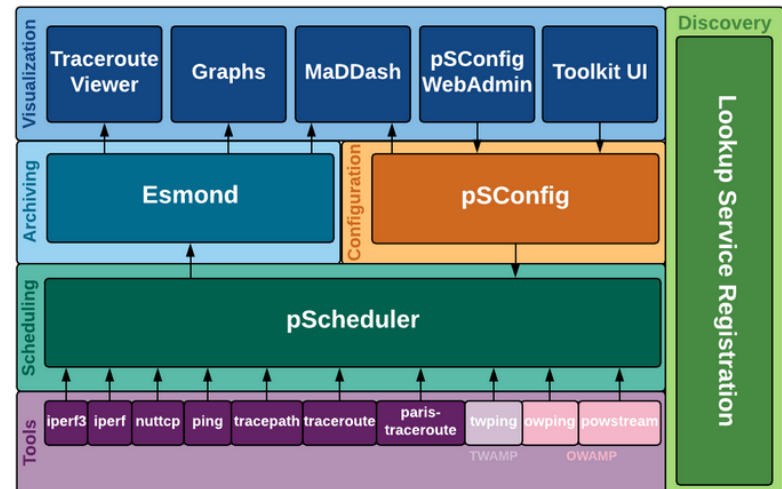
# LAB SERIES: PERFSONAR

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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



perfSONAR layers

# Organization of Lab Manuals

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- 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

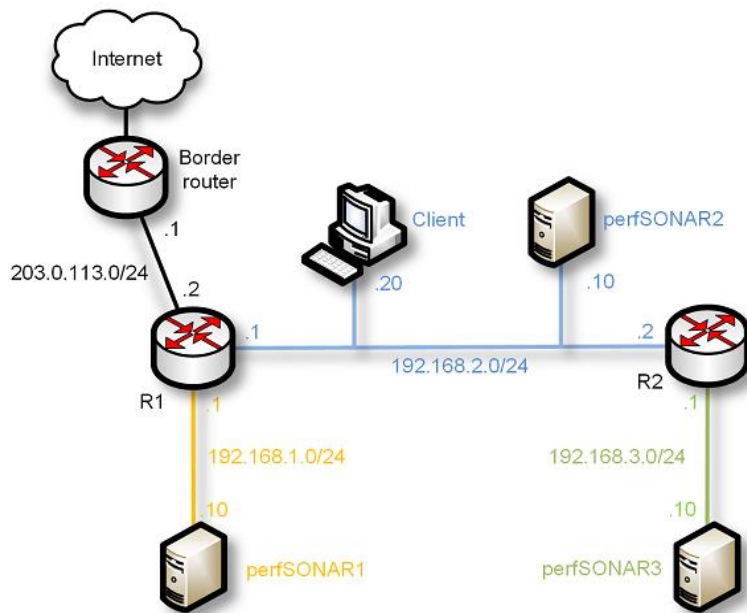
# LAB 1: CONFIGURING ADMINISTRATIVE INFORMATION USING PERFSONAR TOOLKIT GUI

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# perfSONAR Toolkit GUI

- The user can configure regular test via perfSONAR Toolkit GUI as well as the administrative information about a perfSONAR node



Training scenario

The screenshot shows the perfSONAR Toolkit GUI. The page title is "perfSONAR Toolkit on perfSONAR-Toolkit". The main content area displays the following information:

- Organization:** University of South Carolina
- Address:** Columbia, SC 29201 US (map)
- Administrator:** Administrator (admin@admin.com)

Below this information is a table of services:

SERVICE	STATUS	VERSION	PORTS	SERVICE LOGS
esmond	Running	2.1.3-1.e17		<a href="#">View</a>
lsregistration	Running	4.1-1.e17		<a href="#">View</a>
owamp	Running	3.5.8-1.e17	861	<a href="#">View</a>
pscheduler	Running	1.1.5-2.e17		<a href="#">View</a>
psconfig	Running	4.1.5-1.e17		<a href="#">View</a>
twamp	Running	3.5.8-1.e17	862	<a href="#">View</a>

At the bottom of the screenshot, there is a "Test Results" section showing "(No Results)" and a "Configure tests" button. The search bar is empty, and the results are for the last...

perfSONAR Toolkit GUI

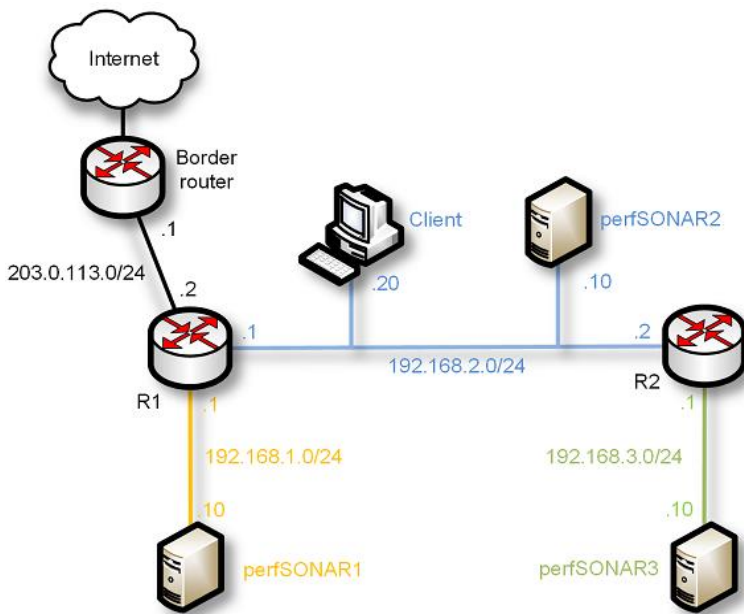
# LAB 4: CONFIGURING REGULAR TESTS USING PSCHEDULER CLI PART I

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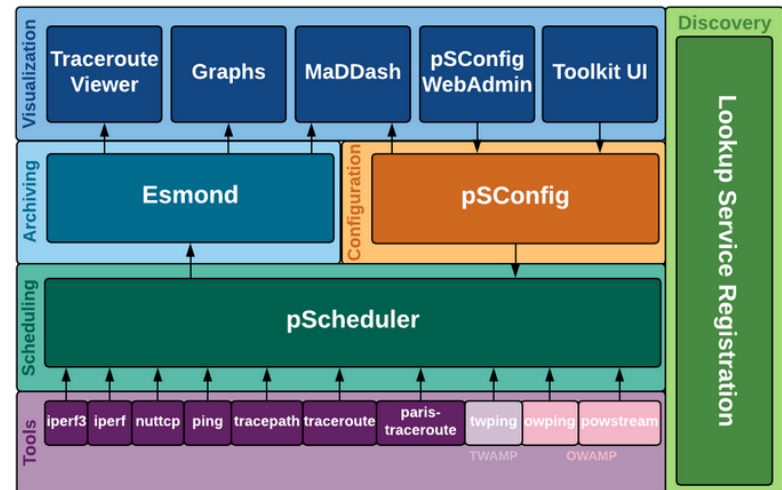
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# pScheduler

- The pScheduler coordinates, executes, and optionally stores network measurements
  - E.g., latency, packet loss rate, throughput
- The pScheduler can be invoked via CLI or GUI



Training scenario



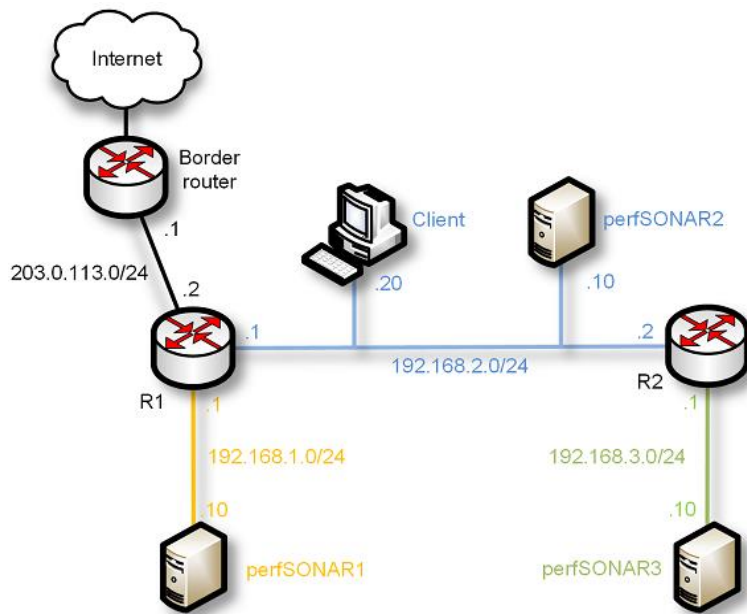
perfSONAR layers



# The pScheduler Command

- The pScheduler command is used to create new tasks
- E.g.,

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



Training scenario

```
[admin@perfsonar1 ~]$ 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-aef9-4624-96b1-535a87946560
Running with tool 'owping'
Fetching first run...

Next scheduled run:
https://192.168.1.10/pscheduler/tasks/6e3598ae-aef9-4624-96b1-535a87946560/runs/364a861d-f7e4-45b2-b395-e983c1ec89f9
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 statistics

# LAB 5: CONFIGURING REGULAR TESTS USING PSCHEDULER CLI PART II

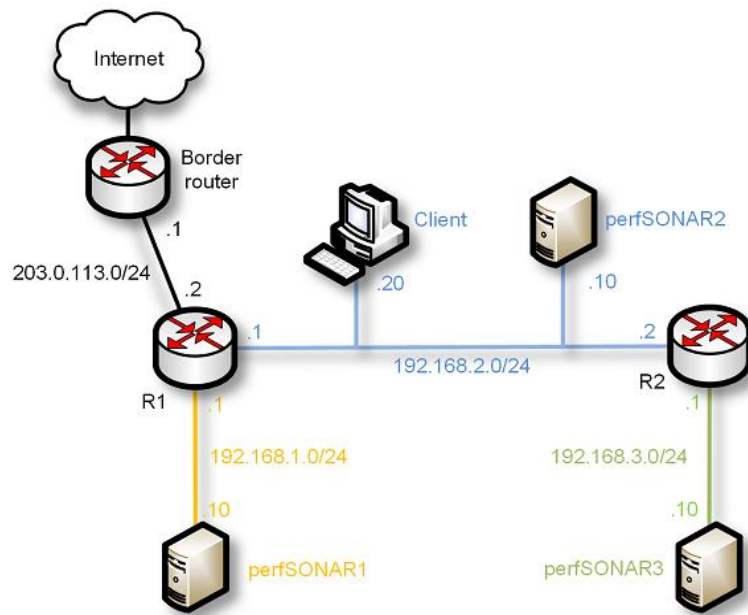
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# The pScheduler Command

- The pScheduler command provides the options to repeat and visualize regular tests
- E.g.,

```
pscheduler task --repeat PT2M throughput --source 192.168.1.10 --dest 192.168.2.10
```



Training scenario

Time	Status	Command
2019-05-09T10:23:50Z	Finished	trace --dest 192.168.3.10 --source 192.168.1.10
2019-05-09T10:33:30Z	Finished	trace --dest 192.168.3.10 --source 192.168.1.10
2019-05-09T11:04:18Z	Finished	throughput --dest 192.168.3.10
2019-05-09T17:09:04Z	Finished	rtt --dest 192.168.2.10
2019-05-09T17:11:04Z	Finished	rtt --dest 192.168.2.10
2019-05-09T17:13:04Z	Finished	rtt --dest 192.168.2.10
2019-05-09T17:15:04Z	Finished	rtt --dest 192.168.2.10
2019-05-09T17:17:04Z	Finished	rtt --dest 192.168.2.10
2019-05-09T17:19:04Z	Finished	rtt --dest 192.168.2.10
2019-05-09T17:21:04Z	Finished	rtt --dest 192.168.2.10
2019-05-09T17:23:04Z	Finished	rtt --dest 192.168.2.10
2019-05-09T17:25:04Z	Finished	rtt --dest 192.168.2.10
2019-05-09T17:27:04Z	Finished	rtt --dest 192.168.2.10
2019-05-09T18:05:39Z	Finished	throughput --source 192.168.1.10 --dest 192.168.2.10
2019-05-09T18:22:32Z	Finished	rtt --dest 192.168.2.10
2019-05-09T18:23:41Z	Finished	throughput --source 192.168.1.10 --dest 192.168.2.10
2019-05-09T18:24:32Z	Finished	rtt --dest 192.168.2.10
2019-05-09T18:26:22Z	Running	throughput --source 192.168.1.10 --dest 192.168.2.10
2019-05-09T18:26:28Z	On Deck	rtt --dest 192.168.2.10
2019-05-09T18:28:28Z	Pending	rtt --dest 192.168.2.10
2019-05-09T18:29:22Z	Pending	throughput --source 192.168.1.10 --dest 192.168.2.10

pScheduler monitor