“HANDS-ON PERFSONAR”

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LAB SERIES: PERFSONAR
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
Pod Design

- **perfsonar-tools**
  - command-line clients for on-demand measurements
- **perfsonar-testpoint**
  - tools + scheduler for regular tests + registration to be centrally managed
- **perfsonar-core**
  - perfsonar-testpoint + esmond measurement archive used to store results locally
- **perfsonar-toolkit**
  - perfsonar-core + web interface to manage tests + scripts for tuning and security settings
- **perfsonar-central-management**
  - tools to centrally manage hosts and display their results
Pod Design

Topology

perfSONAR layers

 perfsonar-toolkit + central-management

 perfsonar-toolkit + central-management

 perfsonar-toolkit + central-management

 perfSONAR installation options
Demo activities are described in Lab 4, 5, perfSONAR Lab Series
The pScheduler Command

• 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
The pScheduler Command

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

```bash
pscheduler task latency --source 192.168.1.10 --dest 192.168.2.10
```
The `pScheduler` command is used to create new tasks.

E.g.,

```
pscheduler task latency --source 192.168.1.10 --dest 192.168.2.10
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The pScheduler Command

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

```
pscheduler task throughput --source 192.168.1.10 --dest 192.168.2.10
```
The pScheduler Command

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- E.g.,

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pscheduler task throughput --source 192.168.1.10 --dest 192.168.2.10
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```
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```
DEMO 5
VISUALIZING PERFORMANCE METRICS ON MADDASH

Demo activities are described in Lab 8, perfSONAR Lab Series
perfSONAR Toolkit UI

- perfSONAR Toolkit UI allows the user to add administrative information about a perfSONAR node.
perfSONAR Toolkit UI

- perfSONAR Toolkit UI allows the user to add administrative information about a perfSONAR node
  ➢ E.g., organization name, node location, administrator information, services and host information

![Lab topology with perfSONAR nodes and services]

perfSONAR toolkit UI
MaDDash

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

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MaDDash

- perfSONAR nodes run measurement tests
- Tests are specified in the pSConfig template in the central management
MaDDash

- The measurement results are collected by perfSONAR2 and displayed on a dashboard and a timing graph.
- The user can see the results of a pair of nodes clicking on a square in the dashboard.