"A TRAINING PLATFORM FOR HIGH-SPEED NETWORKS AND CYBERSECURITY"

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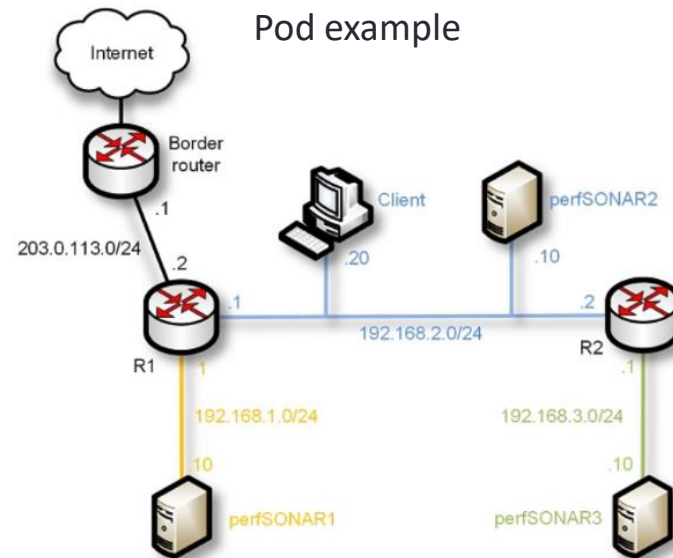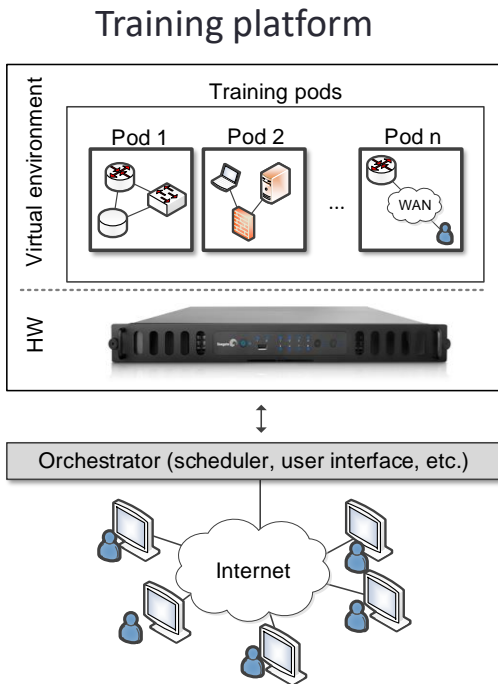
CI Training – Networks and Protocols

Goal: "Enhance hands-on training and education of CI professionals on high-throughput networks…"

Training platform

Pod example

~8-month usage

ID	Name	Reservations Made	Labs Attended	Hours Reserved	Hours Attended
1	default	3880	3637	37419.94	10241.12
	Page Total:	3880	3637	37419.94	10241.12
	Table Total:	3880	3637	37419.94	10241.12

Showing 1 to 1 of 1 items

Libraries

Network Tools and Protocols
1   Introduction to Mininet
2   Introduction to Iperf3
3   Emulating WAN w/ NETEM I: Latency, Jitter
4   Emulating WAN w/ NETEM II: Loss, Duplication, Reord.
5   Setting WAN Bandwidth with Token Bucket Filter (TBF)
6   Traditional TCP Congestion Control (HTCP, Cubic, Reno)
7   Rate-based TCP Congestion Control (BBR)
8   Bandwidth-delay Product and TCP Buffer Size
9   Enhancing TCP Throughput with Parallel Streams
10   Measuring TCP Fairness
11   Router's Buffer Size
12   TCP Rate Control with Pacing
13   Impact of MSS on Throughput
14   Router's Bufferbloat

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More labs being developed

perfSONAR
1   Configuring Admin Info Using perfSONAR Toolkit GUI
2   PerfSONAR Metrics and Tools
3   Configuring Regular Tests Using perfSONAR GUI
4   Configuring Regular Tests Using pScheduler CLI Part I
5   Configuring Regular Tests Using pScheduler CLI Part II
6   Bandwidth-delay Product and TCP Buffer Size
7   Configuring Regular Tests Using a pSConfig Template
8   perfSONAR Monitoring and Debugging Dashboard
9   pSConfig Web Administrator
10   Configuring pScheduler Limits

Zeek / Bro
1   Introduction to the Capabilities of Zeek
2   An Overview of Zeek Logs
3   Parsing, Reading and Organizing Zeek Files
4   Generating, Capturing and Analyzing Scanner Traffic
5   Generation, Capturing and Analyzing DoS and DDoS
6   Introduction to Zeek Scripting
7   Advanced Zeek Scripting for Anomaly Event Detection
8   Preprocessing of Zeek Output Logs for Machine Learning
9   Machine Learning Classifiers for Anomaly Classification
10   Profiling and Performance Metrics of Zeek

To access the platform and additional information:

http://ce.sc.edu/cyberinfra/cybertraining.html