

Hands-on Workshop on Networking Topics

Organized by

New York State Education and Research Network (NYSERNET)
ESnet and The Engagement and Performance Operations Center (EPOC)
University of South Carolina (UofSC)

April 5, 12, 2022
Online

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Agenda

DAY 1: Tuesday, April 5

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Time (ET)	Topic	Presenter
10:00 - 10:15	Welcome and Introduction	Jeff Harrington (NYSERNET) [Bio] , Jason Zurawski (EPOC) [Bio] , Jorge Crichigno (UofSC) [Bio]
10:15 - 10:45	Introduction to perfSONAR [PDF, PPT]	Doug Southworth (International Networks at Indiana University) [Bio]
10:45 - 11:45	Hands-on Session 1: perfSONAR Toolkit GUI and pScheduler [PDF, PPT] [Enroll]	Jose Gomez (UofSC) [Bio] , Doug Southworth (International Networks - IU)
11:45 - 12:15	Break and Chat (breakout rooms)	See breakout rooms
12:15 - 12:45	An overview of Science DMZs and Data Transfer Nodes (DTNs)	Ken Miller (EPOC) [Bio]
12:45 - 01:45	Hands-on Session 2: iPerf3, NETEM, Bandwidth-Delay Product (BDP), TCP buffer size [PDF, PPT] [Enroll]	Elie Kfoury (UofSC) [Bio] , Ken Miller (EPOC)
01:45 - 02:00	Summary, QA, and Discussion	EPOC, NYSERNET, UofSC

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Day 2: Tuesday April 12

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Time (ET)	Topic	Presenter
10:00 - 10:30	BGP Talk	Brenna Meade (EPOC) [Bio]
10:30 - 11:30	Hands-on Session 3: Essentials of BGP, EBGp, IBGP [PDF, PPT] [Enroll]	Ali AlSabeH (UofSC) [Bio] , Brenna Meade (EPOC)
11:30 - 12:00	Break and Chat (breakout rooms)	See breakout rooms
12:00 - 01:00	Hands-on Session 4: Local Preference and MED attributes [PDF, PPT] [Enroll]	Ali AlSabeH (UofSC), Brenna Meade (EPOC)
01:00 - 01:30	Network Security	Hans Addleman (EPOC) [Bio]
01:30 - 02:00	Summary, QA, and Discussion	EPOC, NYSERNET, UofSC

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Breakout Rooms

Breakout Room	Topic	Facilitator
1	Monitoring: perfSONAR and other tools	Doug Southworth (EPOC), Jose Gomez (UofSC)
2	Data Mobility	Ken Miller (EPOC)
3	Science DMZ: Data transfer nodes (DTNs), switches, TCP	Jason Zurawski (EPOC)
4	Routing Policy: BGP	Ali AlSabeih (UofSC), Breena Meade (EPOC), Jeff Harrington (NYSERNET)
5	Network Security	Hans Addleman (EPOC), Elias Bou Harb (UTSA) [Bio] , Nathaniel Mendoza (Texas Advanced Computing Center) [Bio]
6	Programmable Switches: P4, custom codes, ASICs	Jorge Crichigno (UofSC), Elie Kfoury (UofSC)

Lab Libraries

- perfSONAR
- Network Tools and Protocols (NTP) (TCP and other Science DMZ-relevant topics)
- Introduction to BGP
- Introduction to P4 Programmable Switches - BMv2
- Advanced Topics on P4 Programmable Switches - BMv2
- P4 Programmable Switches - Tofino
- Network Operating Systems: ONL, SONIC, Stratum
- Software Defined Networking (SDN)
- Open vSwitch (OvS)
- Introduction to OSPF
- MPLS and Advanced BGP Topics
- Zeek/Bro

See <http://ce.sc.edu/cyberinfra/cybertraining.html> for details.

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