EECS-881 High-Performance Networking Lab

Contact coordinates, administrivia, and ONL concepts
Contact Coordinates

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Administrivia

• All class-relate email must contain a subject line beginning with “EECS881 - “

• All lab instructions, assignments, and submissions will take place through the lab website: http://www.rohreroriginal.com/moodle/

• Lab attendance optional except for 1 hands-on lab
  – No formal presentation
  – Provides Linux workstations and live, interactive technical support 😊
  – Reports due 1-week after lab date (Monday 11:59 pm)
ONL Concepts

• ONL = Open Network Laboratory
• Set of *physical* switches, routers, and servers
  – (Not a simulator)
• Located at Washington University in St Louis
  – https://onl.wustl.edu/
• Shared resource using manual scheduling
  – Don’t wait until the last minute
• Reminder: get an account if you haven’t already
ONL Resources Available

- **NSP** – network service processor (router)
- **GigE Switch** – select 1 Gb/s or 10 Gb/s
- **Link** – 1 Gb/s or 10 Gb/s as needed
- **PC1core** – server with 1 Gb/s interface
- **PC8core** – server with 10 Gb/s interfaces
- **NetFPGA** – Beyond the scope of this class
- **NPRCluster** – 2 IXP routers with 5 1 Gb/s ports each
Using ONL

• We will walk through these steps in lab
• Access is through a GUI interface called the RLI
  – RLI = Remote Laboratory Interface
• Experiment is designed, then reservation requested
  – Allocates the correct resources and configuration
• Nodes are SSH accessible for traffic generation
Using ONL cont.

1. Apply for account and wait for manual activation
2. Log into “new” lab computers
   - New machines numbered & silver mouse buttons
   - Username: “kueecs”
   - Password: “Edwards!”
3. Log into http://onl.wustl.edu
4. Download RLI https://onl.wustl.edu/restricted/export/RLI.jar
   - Save or copy to ~/onl
Using ONL cont.

5. Open terminal and establish ssh tunnel
   – ssh -L 7070:onlsrv:7070 user@onl.arl.wustl.edu
   – Enter ONL password

6. Open new terminal; open RLI: java -jar RLI.jar

7. Configure experiment (or open file)
   – Save often

8. Request reservation
   – Availability shown on ONL website
   – Shared resource, need to be flexible
Using ONL cont.

• Generate default routes (can manipulate later)
• Commit experiment
• Right-click hosts to find “external” interface name
  – Can ssh to these from onlusr.arl.wustl.edu
• Set up monitoring display
  – Set default polling rate
  – Add parameters
• Exit RLI and click “yes” to cancel reservation