

# Network Performance Workshop

Internet2 Staff

# Agenda

- Welcome and Thanks
  - <http://e2epi.internet2.edu/npw>
- Your Goals
- Problem Perception
- Diagnosis Methodology
- Our Goals
- The Future is now

# Your Goals

- What are your goals for this workshop?
  - I'm experiencing performance problems
  - I'm responsible for the campus network
- This workshop is as much a learning experience for us as it is for you

# Problem Perception

## “The Network is Broken”

- How can users effectively report problems?
- How can users and administrators effectively solve multi-domain problems?

# Diagnosis Methodology

- Find a measurement server “near me”
- Encourage user to participate in diagnosis procedures
- Detect and report common faults in a manner that can be shared with admins/NOC
- Provide a mechanism for admins to review test results
- Provide feedback to user to ensure problems are resolved

# Partial Path Decomposition

- Identify the end-to-end path
- Discovery measurement nodes that are “near” this path
- Provide proper authentication or receive limited authority to run tests (locally defined)
- Initiate tests between various nodes
- Retrieve and store test data for further analysis

# Systematic Troubleshooting Procedures

- Having tools deployed to enable adequate troubleshooting
- Getting end-users involved in the testing
- Combining output from multiple tools to understand problem
- Ensuring that results are adequately documented for later review

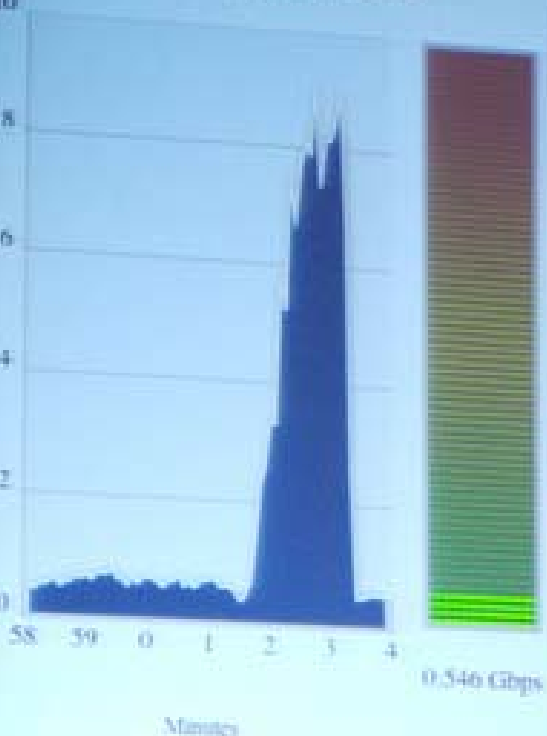
# On-Demand vs Scheduled Testing

- On-Demand testing can help solve existing problems once they occur
- Regular performance monitoring can quickly identify and locate problems before users complain
- Testing and measuring performance increases the value of the network to all participants

# Our Goals

- To spread the word that today's networks really can support demanding science applications
- To increase the number of test points

# UNL to Fermilab IP Utilization



# UNL to Fermilab DCN Utilization

