Internet2 Measurement Working Group Meeting

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Today’s Agenda

Discuss group (re)charter
  • Explain process, goals
  • Look for comments & suggestions

Recruit
  • Especially with respect to specific goals

Explain my view of the relationship of the End-to-End Performance Initiative to the Measurement Working Group
Joining the working group is easy:

Send

• “subscribe wg-measurement firstname lastname”

To listproc@internet2.edu

… and contribute!

Archives:

http://archives.internet2.edu/reguser/listutil/WG-MEASUREMENT/

• Also listproc commands, once subscribed.
WG Web page

“http://www.internet2.edu/measurement/” - will remain fixed

www.internet2.edu/engineering/wg_measurement.shtml — page under development; URL may change

Top engineering page (will remain): www.internet2.edu/engineering/
The Measurement WG is focused on identifying, documenting, and supporting the measurement technology and infrastructure needed for the Internet2 project. We strive to make the Internet2 infrastructure well-instrumented for network engineers and for researchers.
Synopsis of Charter

Develop Internet2 Measurement Architecture as a series of technical recommendations

Best Common Practice documents

Coordinate deployment & use of tools
The Measurement working group is charged with developing a uniform Measurement Architecture for the entire Internet2 infrastructure. The architecture should support:

- Network operations and forward engineering of new infrastructure
- Analyzing end-to-end performance
- Verifying QoS performance characteristics
- Supporting network researcher’s efforts to use the Internet2 infrastructure as a laboratory
The architecture will be developed as a series of technical recommendations, each based on the best thinking and, wherever possible, actual experience of members of the working group.

The working group is also a forum to make technical recommendations to strengthen the use of measurements throughout Internet2. These recommendations will often result in "best common practice" documents.
The working group will also function as a means to coordinate the deployment and use of the distributed Internet2 Measurement Infrastructure as it emerges from the implementation and deployment of measurements supporting the Internet2 Measurement Architecture.
The use of measurements within the End-to-End Performance Initiative (E2EPI) will be a particularly challenging source of measurement issues. While the working group is not an operational body, it will support the E2EPI by working on architecture for analysis of end-to-end performance and dissemination of measurement data.
Themes

Guaranteed Measurement Points

Uniform Measurement & Reporting
  • Allowing for heterogeneous equipment

Series of recommendations

Measurements open as possible

Survey of area leading to
  • Architecture document
  • Design team
  • Best Practices document
Restrictions

We’re volunteers on the IETF model
We don’t operate gear as Internet2
However, we could spinoff a project, or recommend some central capability
Utilization statistics

• Measurements performed already
• Recommendation to publish
• At least interconnect points
• Web-based directory
  – I can host directory
• Potential for finishing by end Spring
Low Hanging Fruit (?)

Traceroute observatories

• Catalog tools
• Make recommendation
• Web-based directory
  – As with SNMP
  – Same as SNMP!
• Potential for finish by end Spring
Longer Term

Active measurements
Passive measurements
Uniform access to measurements
Platform for experiments (NIMI or NIMI-like; NetIQ?; Spirent has one platform under development)
Active

(One-way) delay
(One-way) loss
Throughput tests
Multicast beacons
Standard points, and on-demand where sensible
Characterization

- Flows
- Utilization
- Top-talkers
- Usage monitoring
- Netflow versus OCxMON versus …

Traces

- For research
- On-demand for debugging (?!)

Passive
Proposed Tasks

*Define based on interest!*

Utilization export -05/01/2001
Traceroute observatories -05/01/2001
Measurement point recommendations
Netflow-based characterization
Active measurement (survey/rec., maybe interim rec.)
Uniform measurement collection/access
MWG
- General Architecture
- Tool info
- Disseminate BCPs
- Guide implementation

E2EPI
- Performance debug
- Specific infra
- BCPs for perf debug
- Implement & expose coordinated infra.
- Operational components