LSN Workshop
Breakout Group 3
Discussion session #1

- applications
- technology

Applications (1)

from agency (NASA DoD, NIST) participants:

- NASA: high end computing
  - latency an issue (similar to DOE talk yesterday)
  - synthesis of networking, applications: solution not either/or - lower delay/caching or application-level adaptation
- NASA (and NOAA): remote sensing at global scale
- interplanetary internet

Applications (2)

- DoD: “every problem you can possibly imagine is something that DoD must deal with”
  - 20% IP based
  - challenges mostly from wireless/mobile environments
  - “heterogeneity is a must”
- DoD: take your network with you: mobility, speed, more information; who gets what?
- NIST: security
  - DNS/BGP sec: return on investment for deployment?
  - vulnerabilities managed at edge, or in core?
  - usability: important technical, sociological issue (e.g., key management)

Applications (3)

- Other interesting applications
  - vehicular networks
  - power grid control (stressing real-time, closed loop, safety/security critical)

Technology

- consensus: technology well covered in earlier talks
- “everything can be done with existing IP (possibly with small delta)”
  - with enough thrust pigs can fly.
  - question: IP+delta or pigs with booster rockets: will new network more manageable, deployable, economically viable.
  - need to understand what drives success in architecture research. Maybe answer changes over time (end-end valuable at one point in time but not others/now)

Technology (1)

- satellites/LEOS?
- optical: will it fundamentally change network architecture (is it a lower layer concern?)
  - mixed packets/circuits to the edge
- sensors: large number of sensor a potentially disruptive technology
  - need for nxn communicaiton among sensors?