# Experimenter Feedback

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# Optimizing Network Environment
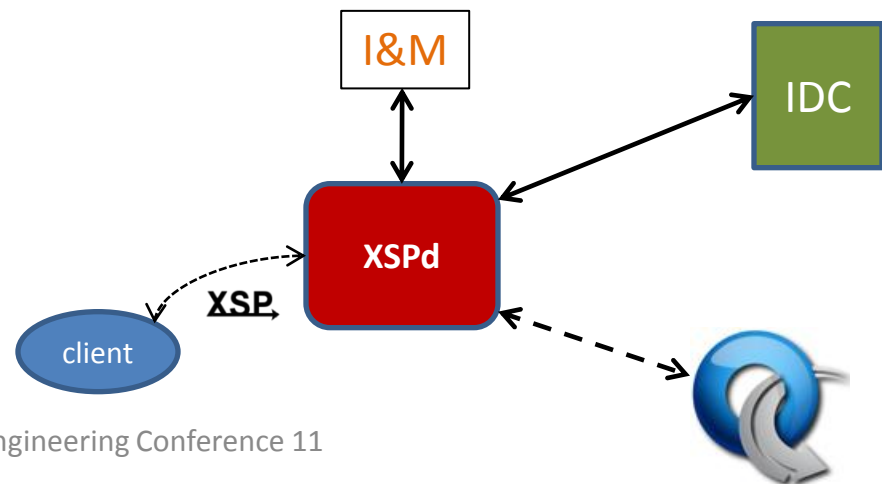


More information:
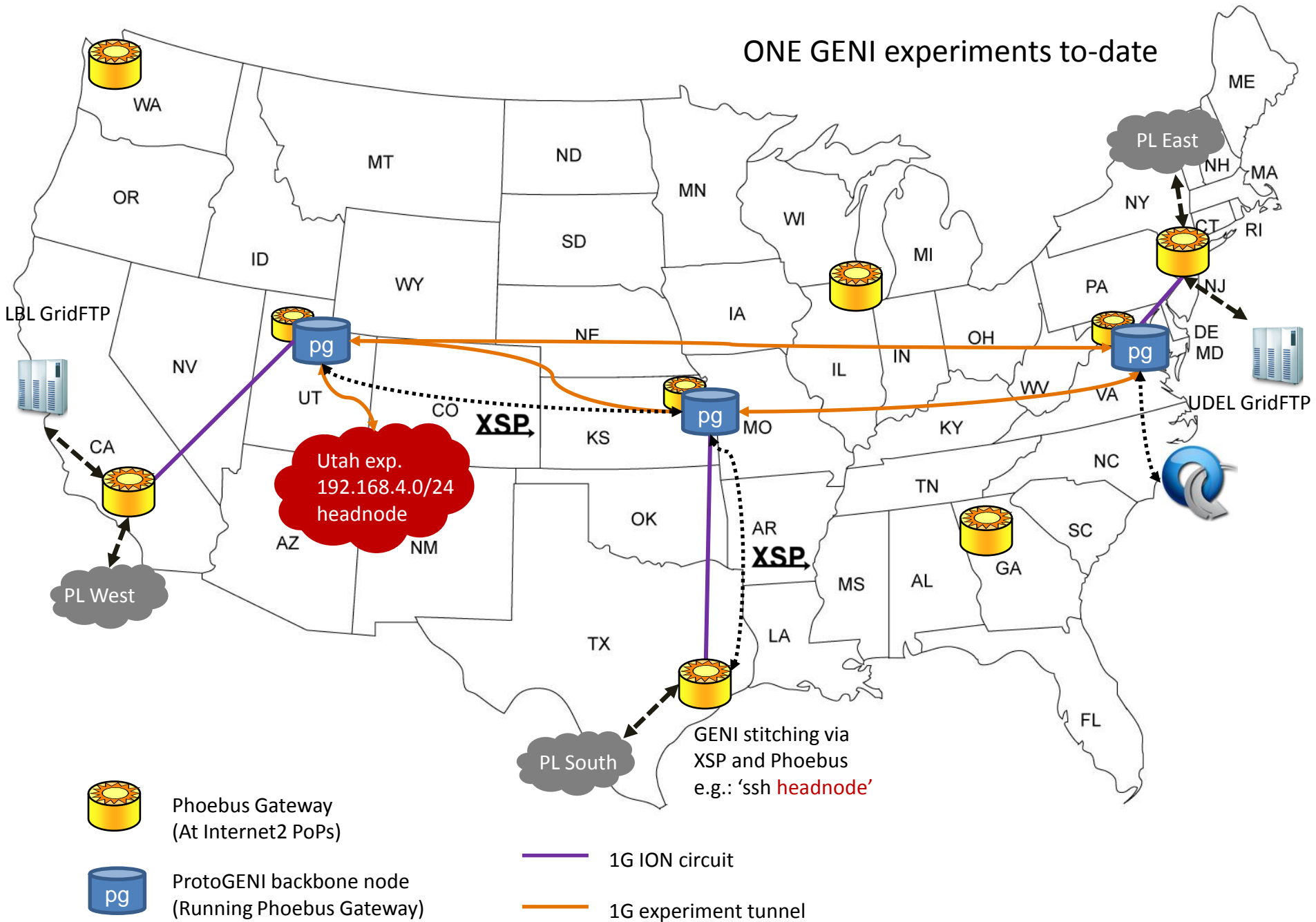http://damsl.cis.udel.edu/projects/phoebus
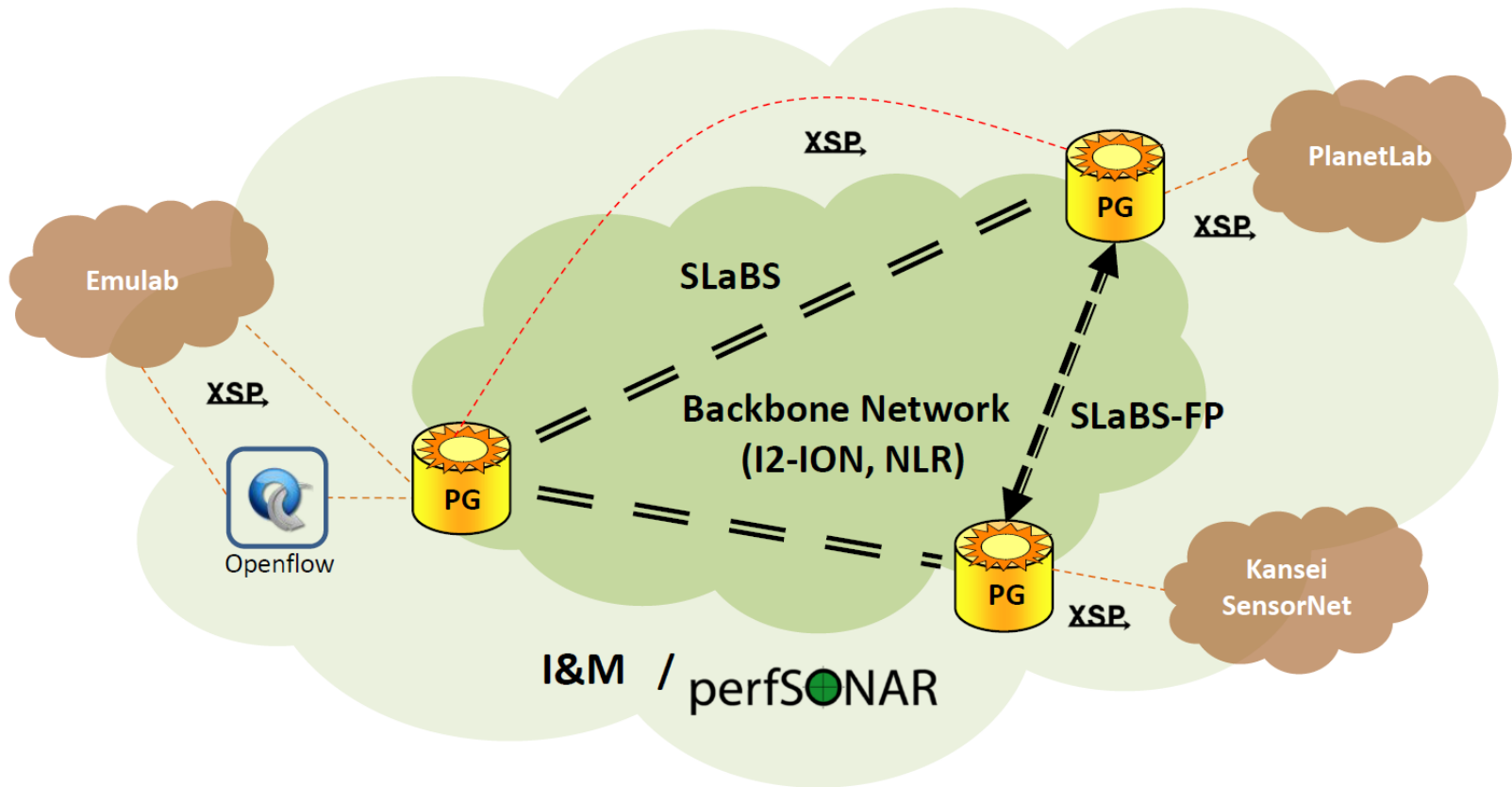
# eXtensible Session Protocol

- XSP, a session-layer protocol for IP networks, provides generalized messaging between gateways, intermediate devices, and services/applications

- Network path signaling, in-band and out-of-band

- Authentication and authorization support
  - SSH and X.509

- Client libraries and core protocol daemon (*XSPd*)
  - Shim library for enabling legacy applications

ONE GENI experiments to-date

LBL GridFTP

PL East

UDEL GridFTP

Utah exp. 192.168.4.0/24 headnode

XSP

XSP

PL West

PL South

GENI stitching via XSP and Phoebus e.g.: 'ssh headnode'

Phoebus Gateway (At Internet2 PoPs)

pg  ProtoGENI backbone node (Running Phoebus Gateway)

── 1G ION circuit

── 1G experiment tunnel

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# What has worked well

- ProtoGENI and GCF lists are very helpful
  - Quick response!

- Tool and resource support is improving (FLACK, Omni)

- Omni helpful in working with different aggregates

- Early ION testing working with some external support
  - Manually adding reservations, VLAN interfaces on WAPG nodes

- Experimenters can be driving force behind new features
  - Ask and you will most likely receive

# Quibbles

- Documentation
  - Difference between RSpec versions, examples inconsistent

- Still a lot of trial-and-error
  - Not many useful error messages

- Frequent "resource is busy, try again later"
  - Possible to minimize down-time?

- Tunnels, stitching is still laborious process using the command line tools
  - Contacting each AM in turn, asking each for status
  - New stitching extensions to solve these issues?

- Openflow opt-in process is cumbersome
  - Can it be made more flexible?

# Suggestions

- GENI experimenter issue page/wiki
    - Bulletin board with aggregate-specific forums?
    - Search for similar issues, resolution
    - Companion to the experimenter lists

- It would be nice to know if a resource is held and OK or just stuck and in a bad state
    - Can this distinction be made?

- Keep command line tools up-to-date
    - Useful for many?
    - Should experimenters start thinking about using the APIs directly?