PEERING: An AS for Us (and You)

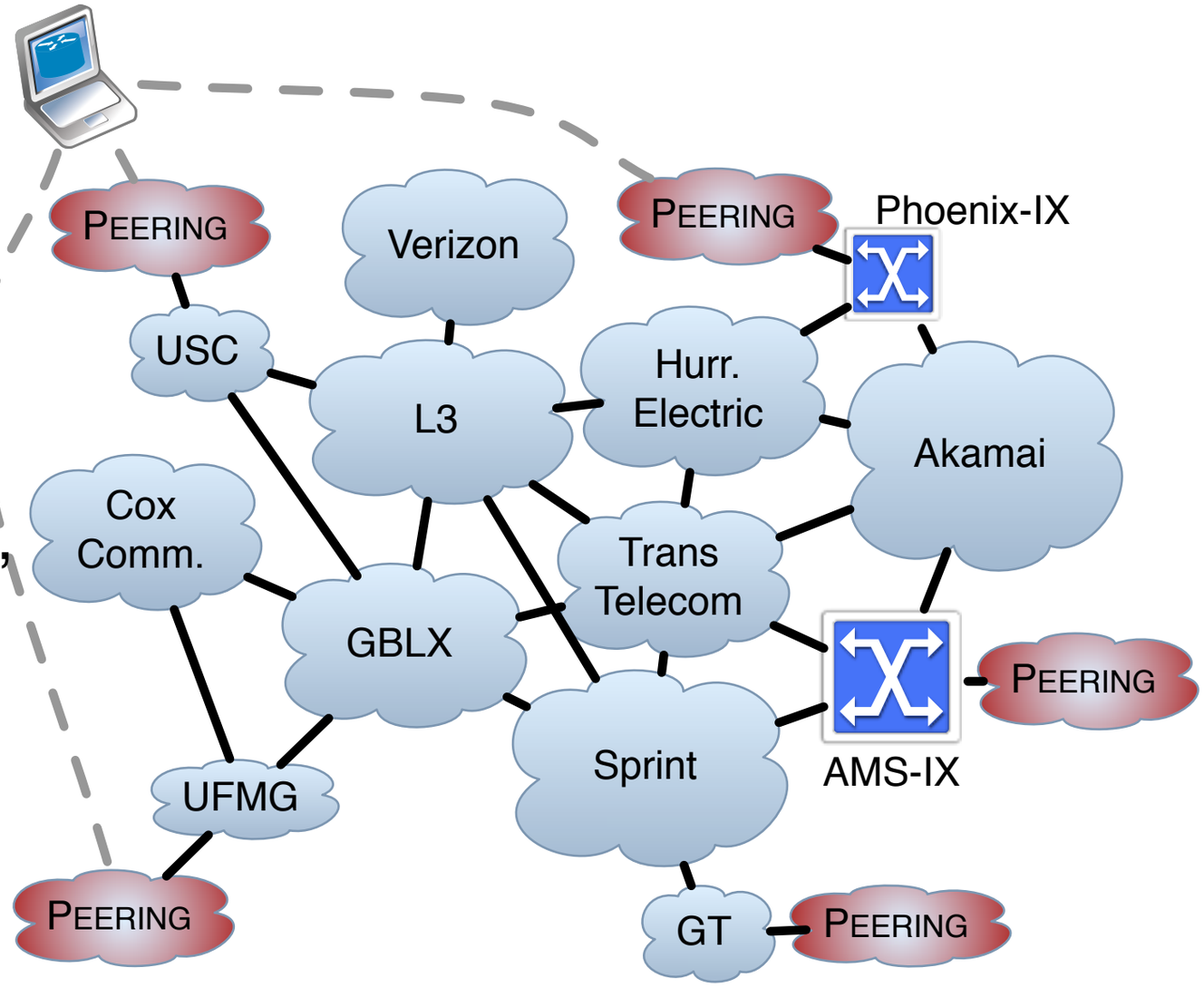
- We are building a BGP testbed called PEERING
  - Exchange routes and traffic with real ISPs
  - Expanding and adding functionality
- We've found it useful (**bold**=required PEERING)
  - **LIFEGUARD**: route around failures **[SIGCOMM 2012]**
  - **PECAN**: joint content & network routing **[SIGMETRICS 2013]**
  - **PoiRoot**: locate root cause of path changes **[SIGCOMM 2013]**
  - ARROW: deployable fix to routing problems [SIGCOMM 2014]
  - SDX: software-defined Internet exchange [SIGCOMM 2014]
  - Ongoing experiments: hijack detection/prevention RPKI deployment, routing policy,…

We want ***you*** to use it

Pairing Emulated Experiments with Real Interdomain Network Gateways

PEERING is AS47065

- Owns 184.164.224.0/19
- 9 universities as providers
- Peers at AMS-IX
  - 500+ peers: Akamai, Google, Hurricane Electric, Terremark, TransTeleCom,…
  - 13 of the 50 largest ISPs[1]
- And now Phoenix-IX
- Intradomain emulation via Minine*X*t



1. CAIDA AS Rank

PEERING Expansion Plans

- Adding another prefix from Cornell (and IPv6?)
- Add dozens of IXPs, including remote peering
  - Help?
- Glue to CloudLab
  - Cloud + WAN + interdomain
- Easier support for outside users and experiments
  - Control announcements via RPC without BGP
  - Software control of packet processing at routers
  - Automated deployment of experiments
  - ….
- Operational staff

Reverse Traceroute

- Measure the path back to you from any destination
- Originally appeared NSDI 2010
  - Proof-of-concept prototype I wrote in a few days
- Now we want to build a real version
  - Co-PI Dave Choffnes, with help from Matthew Luckie, a new full-time staff member, etc
- Plans
  - Scalable, open
    - Anyone can query, anyone can add a source
  - Full MLab integration
  - Using scamper, Ark alias data