Mapping Internet Backbone

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Motivation – there's plenty!

- The Internet is a large network of networks
  - Wide area network behavior is unpredictable
  - Many factors are pushing and pulling the infrastructure
  - Constant change is normal
  - Minimum performance requirements (reliability, predictability, …)
  - Size of the Internet
    - O(1B) IP addresses, O(100M) hosts, O(1M) routers, O(10K) networks
  - Complexity of the Internet
    - Components, protocols, applications, users
- Lack of a common measurement mechanisms,
  - ad-hoc mechanisms(CAIDA, RIPE, iPlane, AntCensus, UCLA IRL, Mlab, …)

Lets merge them all, *a dynamic mechanism*

- Minimalistic requirements (memory space, campaign period, accuracy)

- Active and Passive
  - ➤ Probes, application simulation, application monitors (logs), system monitors, packet monitors
  - ➤ IP addresses along with BGP announcements,
  - ➤ Old traces and new Probes,

- Minimal Redundancy
  - Per AS Ingress and Egress Identification

- On the fly unresponsive router, subnet and IP alias resolutions

Questions?

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