Netdiff

Uncovering Differences in Backbone Networks

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Challenge

- Uncover differences in backbone ISP performance

  - Help customers to make peering decisions

  - Create incentives for ISP performance improvement

- In reality, hard to quantify performance

  - What are the right metrics?

  - How do we obtain information?

State of the Art

- Service Level Agreements (SLAs)

  - Typically within an ISP's network

  - Not related to end-user application performance

  - Comparison among ISPs is difficult

- Third-party systems

  - Broadband

    - CompareISPs.com, ISP-connections.com

  - Backbone

    - Keynote

Netdiff Goals

- Relevant to customers and applications

  - Measure end-to-end path

  - Target destinations of interest

  - Allow query customization

- Fair comparison across ISPs

  - Account for size and geographic presence

- Helpful to ISPs

  - Internal vs. external metrics

  - Expose bad points of presence (PoP)
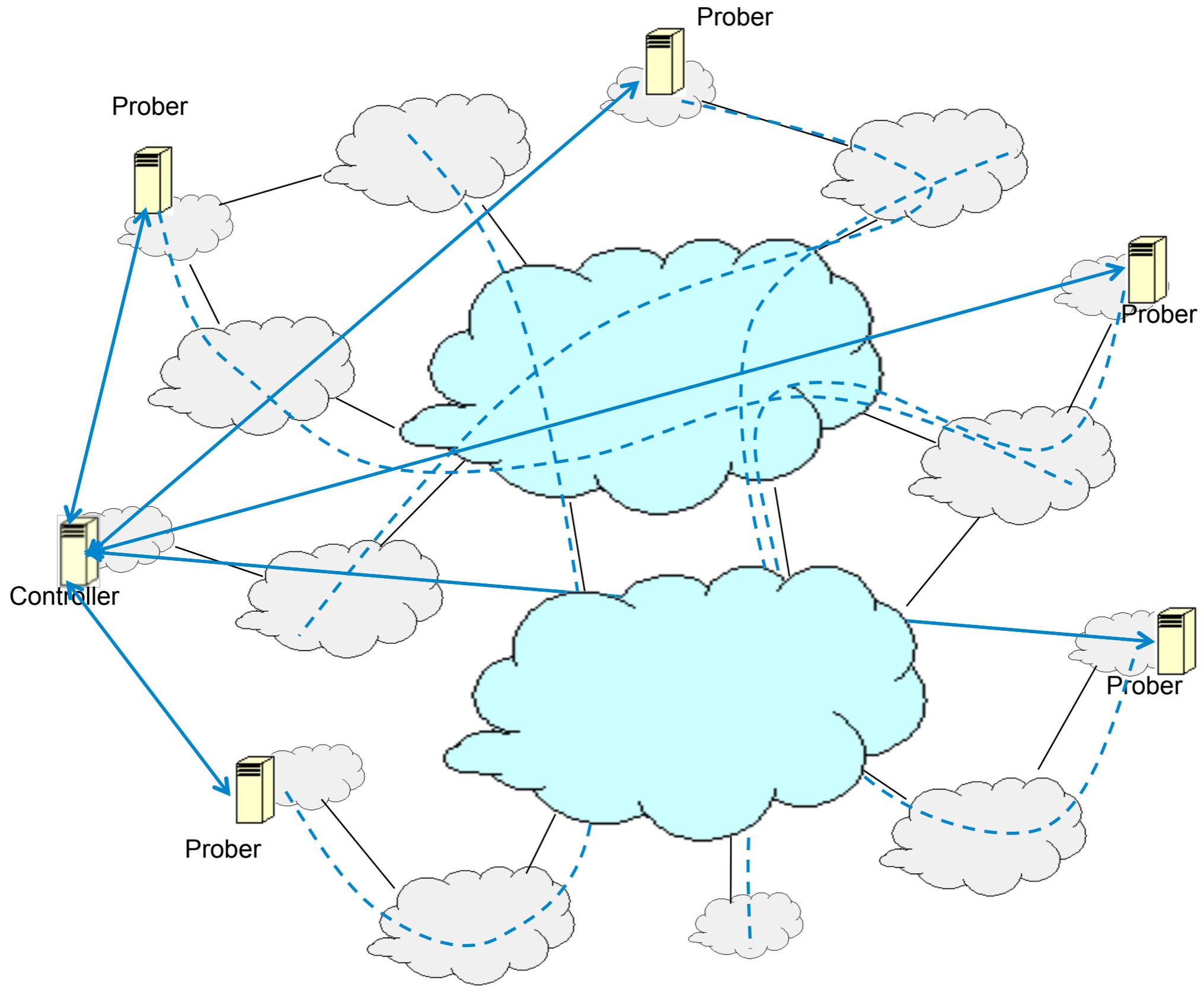
Netdiff Methodology

Netdiff Deployment

- Measurement harness deployed on PlanetLab

  - 300+ sites

  - 700+ nodes

- Measuring 18 backbone ISPs

  - AT&T, Sprint, Level3, BT...

- Active since Feb 2007

  - 15 minute measurement cycle

- Web query interface

  - `http://www.netdiff.org/`