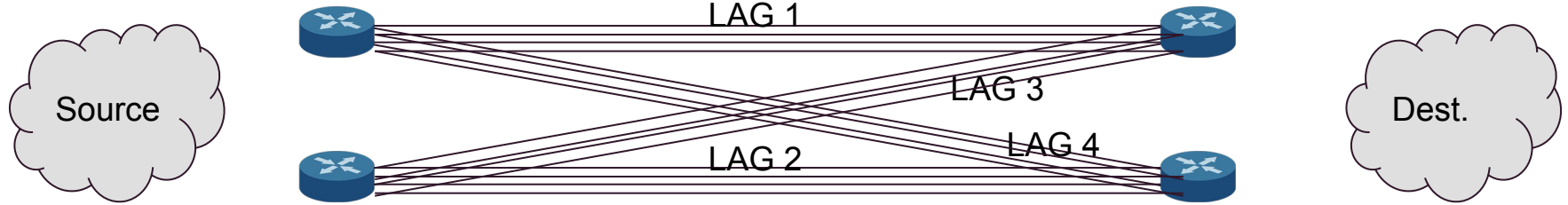


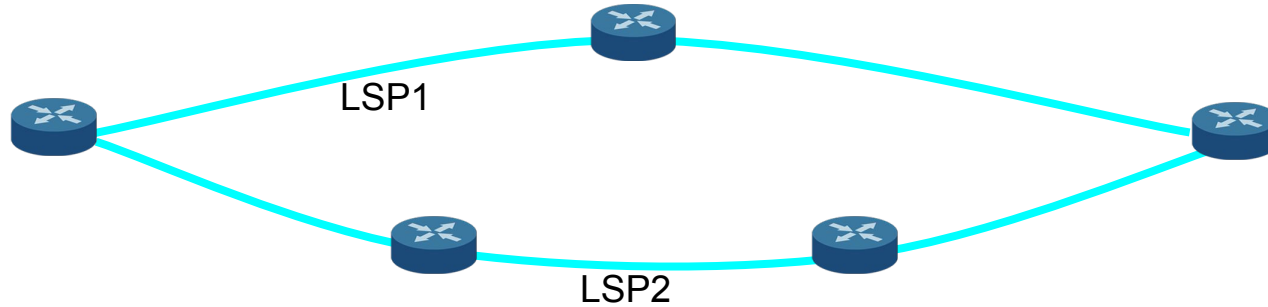
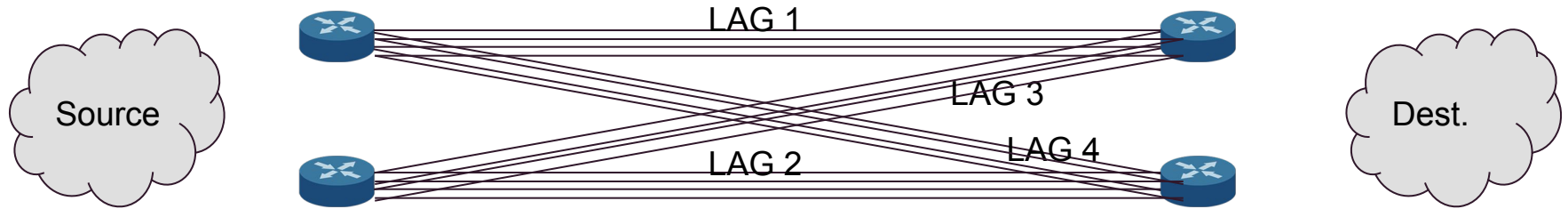
UDPing

Ian Flint, Igor Gashinsky
Yahoo

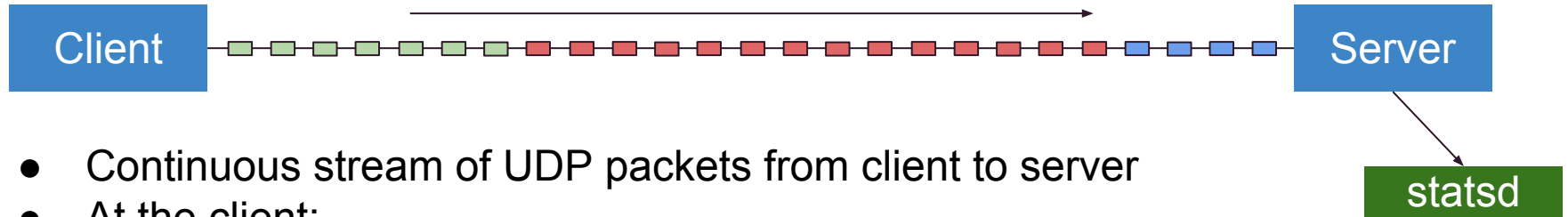
How do you monitor/troubleshoot this?



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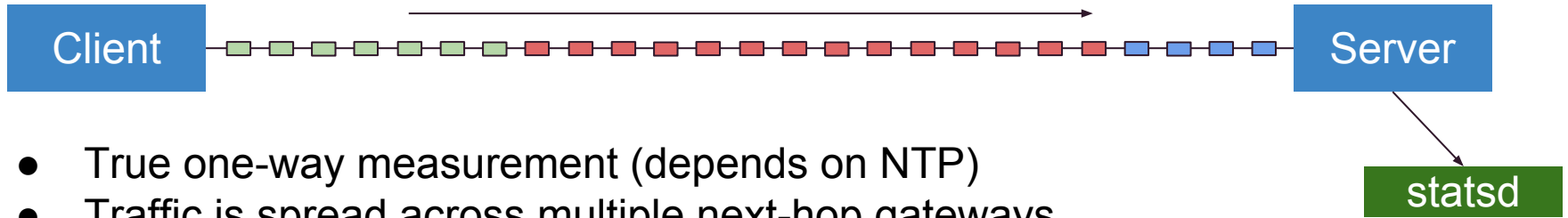


Introducing UDPing



- Continuous stream of UDP packets from client to server
- At the client:
 - Packets are emitted in groups
 - Each packet is timestamped at the client
 - Serial number per packet (monotonically increasing)
- At the server:
 - Packets are timestamped at reception
 - Loss detection per group
 - Statistics emitted to statsd and/or stdout

UDPing Features



- True one-way measurement (depends on NTP)
- Traffic is spread across multiple next-hop gateways
- Source port manipulated to exercise multiple ECMP pathways
- Random payload size
- Poisson sampling avoids resonance and blind spots
- Multiple statistics per packet set
 - Count, expected count, latency sum, latency sum of squares, max latency

How Yahoo is deploying UDPPing

- Phase 1: Point to point across single-hop backbone paths
- Phase 2: Full mesh across global backbone
- Phase 3 (future): Full mesh between availability zones

Thank You

github.com/yahoo/UDPing