preliminary measurement specification for Internet routers

15 january 1999

ISMA panel

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outline

- purpose of specification
- outline of initial strawman document
- open issues
- discuss discuss
- conclusions, next steps

purpose: tell vendors what to measure and how

needs

- capacity planning
- peering engineering
- SLA verification
- tracking topology and routing changes
- ATM/cell level errors

initial strawman document

- collecting application-specific data
  - e.g. reconstruct full HTTP headers from packet level data
- flow aggregation parameters
  - granularity
  - timeout
  - how much configurability
- queue lengths
- focus on IP level

what really needed?

operationally

- basic traffic characterization (how much)
- AS matrices
- traffic import/export
- routing/address space coverage
- security/vulnerability protection
  - (DOS attack traces, filtering)

more researchy

- interarrival time behavior
- protocol–relevant (dups, packet sizes)

open issues

- how important is ATM/cell level stuff?
- how to report missing flows/stats?
- impact on router performance (any?)
- sampling
- SLAs – passive indicators? delay measurements?
  - timestamp deltas in sniffed packets
  - correlate w data from active tools, snmp
  - metrics of jitter
- how will MPLS change all this?
- how will IPSEC change all this?

microscopic ("tcpdump i/f card") sniffing would allow

- interarrival times
  - packet run lengths
  - interarrival time distributions
- protocol-relevant
  - TCP: retransmissions/dup acks
  - packet size distributions
- security related
  - DOS attack traces
  - on-card kernel packet filtering, a la bpf

discuss discuss

(k/elves take notes)

conclusions

will write into revised spec
and part of ISMA final report

comments to
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