

Traffic measurements in UNINETT

Olav.Kvittem + uninett.no

17. desember 2002

Delay measurements

mping ping multiple hosts in parallel

- at controlled speed
- statistical delay - median, percentiles, sdv
- aggregation giving tables and graphing over time up to months
- traceroute capability
- pinging all routers and uninett servers, selected international systems and intervening routers
- sending 10-50 packets every 10-15 minutes with a poisson distribution
- single image response time histogram
- relatives RIPE RTT, NLANR skitter

router measurements

zino collect data from most routers

- router and link status
- link availability over time - to link providers
- traffic and error statistics, output discards, input errors
- table driven with sorting - graphs for detailed study
- aggregation over years

genplot

- collect general with SNMP - cpu, memory, multicast groups
- QoS MIBs ?
- colored map showing load, (loss, queues), replay/animate data
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- open integrated maps zooming from europe to MANs

Multicast measurements

doing

- beacon - in nordunet/geant - delay and loss matrix
- sdr session availability - ucsb : <http://imj.ucsb.edu/sdr-monitor/global/>
- multicast group statistics (genplot)

tried

- MRM - multicast Resource Monitoring

thinking about

- group membership count

Passive measurements

Scampi - high speed passive measurements

- optical splitters, GPS-based clocks
- DAG - FPGA packet header traces (10Gbps)
- netflow - sampling
- protocol analysis - libpcap - tcpdump
- attack detection - snort
- delay measurement by hashed traces
- SNMP-agent on the DAG-card dataflow
- down to block update accuracy