Timemap for latency and jitter monitoring

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On behalf of GN4-3 WP6 T1 Team

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Public

www.geant.org
A map (incomplete) of Institutions using LoLa (January 2021)

- LoLa + 30%

www.geant.org
Involved NRENs: do they all know about this?

Rhnet*  Jisc  RedIris  RENATER  BELnet  SURFnet  GARR  SWITCH  DFN  Uninett*  Sunet*  DeIC*  ACOnet  CESnet
PSNC  ARNES  AMRES  NIIIF  RoEduNet  GRNET  Litnet  EEnet  FUNET*  BASNET  ASNET-AM  AZscienceNet  RENAM

LATNET  IUCCL  EEnet

GARR  ACOnet

3 x 450Mbps
RTT:
• 15ms
• 25ms
• 37ms

* Nordunet
TIMEMAP system architecture – independent modules

• High level architecture design
TIMEMAP system architecture – v0.x prototype

• High level architecture design

- Juniper RPM/TWAMP Measurements
- Micro-service architecture
  - Docker containers
- Input events
  - Data normalisation and filtering
- Time series Data Base
- Weather map graphical visualisation tool
TIMEMAP – v0.x look & feel
TIMEMAP v1 refactoring - Same architecture different blocks

- Telegraf probes
- RPM over SNMP
- TWAMP
- HTML + JS +...
- Central data lake
  Docker-compose IaaC
- Telegraf
  python
  twping
- Grafana
- Influxdb
- AuthZ Token
Timemap v.1 main features

• Latency & Jitter data collection
  • RPM/SNMP from all GÉANT routers
  • TWAMP from perfSONAR VM @ JISC w/ routers subset

• Simplicity: Docker + standard Linux packages, almost zero custom code

• Security and flexibility
  • eduGAIN federated authentication
  • RBAC and multi-tenancy in Grafana and InfluxDB
  • R/W authorization token for APIs
Next steps

• Ready to use, hand over to GÈANT IT and Ops

https://timemap.geant.org/

• Documentation: user, admin, and customisation guides

• Release the source code

• Looking to talk at NRENs interested in implementing something similar in their backbones, beyond WP6T1 members
Thank you

Any questions?

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