

Sharing Network Telemetry Data between NRENs and R&E organisations

Tim Chown, Jisc — tim.chown@jisc.ac.uk

Mauro Campanella, GARR - mauro.campanella@garr.it

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Scope of this session

- The growing interest in sharing network telemetry data
- Use cases for sharing network telemetry data
- Challenges
- Next steps
- We have a very short deck, and a quick menti, to allow time for your comments and discussion



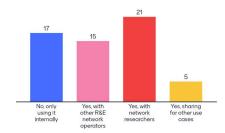
Growing interest in data sharing?

- The topic was included in the First Telemetry and Big Data Workshop in November 2020
 - https://wiki.geant.org/display/PUB/Telem etry+and+Big+Data+Workshop
 - Over 130 attendees
 - Not just the usual SNMP data
 - Consensus in discussion to work further on telemetry and data sharing
 - Hence this presentation to SIG-NOC
- Note: some data sharing is already done for security (see TF-CSIRT), but with a very specific focus and controls
- In some cases, NREN data is shown in plots, but raw source data is typically not available

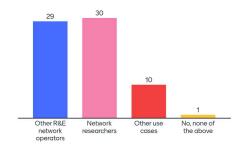
What tools or protocols are you using for network monitoring today?



Are you sharing your network monitoring data already? (Tick all that apply)



Would you consider sharing your network monitoring data with the following groups? (Tick all that apply)





Can we identify a set of use cases beyond security?

- Analysis of large-scale data transfer performance
 - Work by I2 perf WG, extending to a Utah-Imperial case study
 - Sharing specific data from devices on multi-domain e2e path
 - Initial work uses a limited set of MIB data (buffers, errors, discards, CPU, ...)
- Analysis of jitter for real-time applications
 - LoLa subtask work in GN4-3 project PoC view: https://timemap.geant.org
 - Latency/jitter "weather map" for GÉANT/NRENs backbones
 - Sharing TWAMP latency and jitter measurements
- Others...?
 - Perhaps taking shared control plane decisions in response to observed network events or congestion

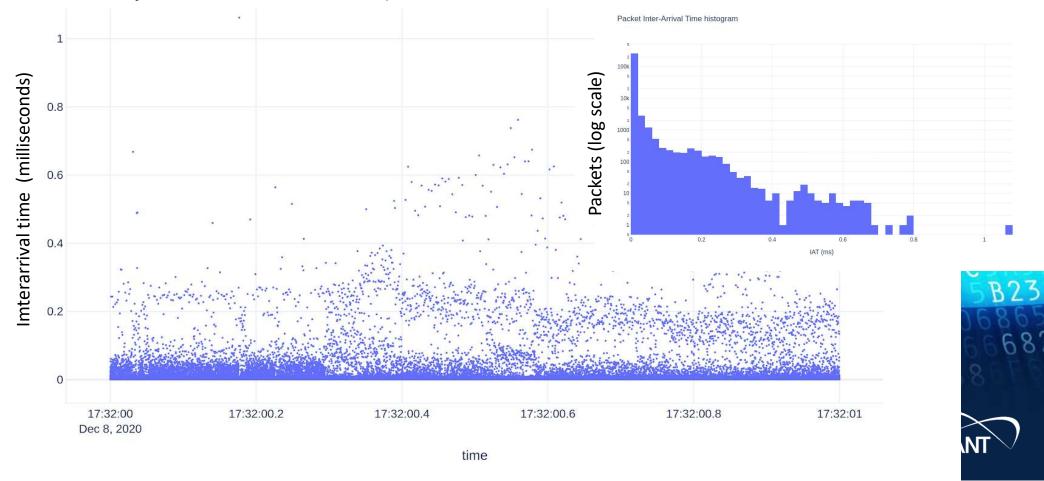


There are challenges

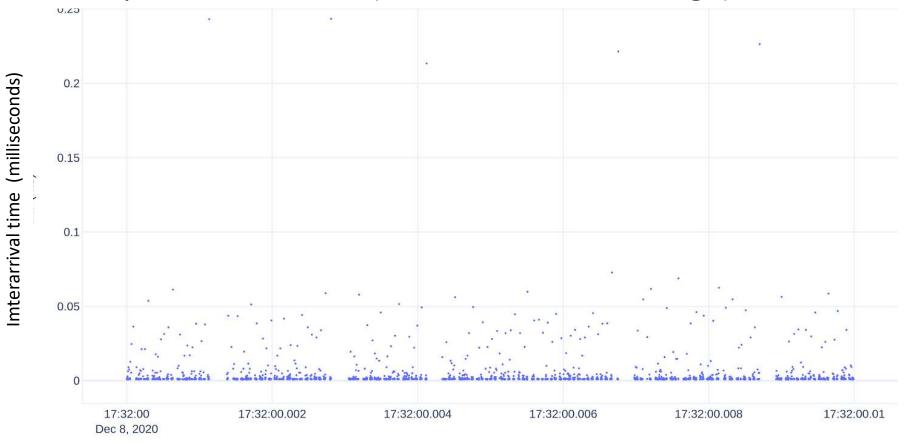
- Goal: build and share community knowledge on data analysis and best use of the vast set of available telemetry information
- What should the technical approach be?
 - Via secure and logged access to NREN back-end measurement databases, and/or via a collated "data lake"?
 - How does this scale?
 - e.g., telemetry "firehose", high data rate per-packet INT collection
- Addressing privacy concerns?
 - What is the necessary identity and security infrastructure?
 - Handling trust and GDPR compliance
 - Appropriate data anonymisation where required
 - Where is the expertise in this in the community?



INT example: 1 second of interarrival packet time for a UDP flow of 260 K packets / second (4 microseconds averge) between two NRENs



10 milliseseconds of interarrival packet time for a UDP flow of 260 K packets / second (4 microseconds average)



time

What are your views?

- Hopefully these few slides have primed some discussion
- Before that, a quick menti poll...
- Please go to: https://www.menti.com/
- And enter code 26 16 411



Open discussion...

- Comments and suggestions?
- Next steps what should we do, as a community?
- How can the GN4-3 project help?



If you are interested to participate (work!) on the topic...

- Please contact
 - gn4-3-wp6-wpls@lists.geant.org





Thank you

Any questions?

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