Trends in Network and Service Monitoring

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PSNC

Trondheim, Norway
13 June 2018
Trends in Network and Service Monitoring Session

• Trends in Network and Service Monitoring - Ivana Golub (PSNC)
• Performance Verification Monitoring – Pavle Vuletić (UoB/AMRES)
• Network Management as a Service – Frédéric LOUI (Renater) / Ivana Golub (PSNC)
• Performance Measuring & Monitoring - Antoine Delvaux (PSNC)
• eduPERT and SIG-PMV community - Kurt Baumann (SWITCH)
• Discussion - all
Before we start

• We would like to know more about YOU

• Please use your e-devices and go to:

  https://www.menti.com/

• And enter the code:

  708228

• And share about yourself:
  • Where do you come from?
  • What is your professional role?
  • (If) Why are you monitoring network and service performance
Question #1: Where do you come from?

- eInfrastructure
- Research Infrastructure
- NREN
- Educational Institution
- Public sector
- Business
- Self-Employed/Consultant
- Other

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Question #2: What is your professional role?

What is your professional role (multiple apply)?

Tell us what is your professional role that drives your interest for this session.

You may choose multiple options.

- Network operations (provider, NREN)
- Simple network user (internet services, web, mail)
- Network service user (network circuits)
- Network equipment vendor
- Network researcher
- Other

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What are the reasons for monitoring network and service performance (multiple apply)?

You may choose multiple options.

- to be alerted of performance degradation
- to analyse trends and keep history
- to compare and correlate measurements
- to verify SLA

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We are witnessing the transition

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<th>From</th>
<th>Towards</th>
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<td>Network element monitoring</td>
<td>Integrated monitoring</td>
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<td>Physical Infrastructure</td>
<td>Virtualised Infrastructure</td>
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<td>Active/Passive</td>
<td>Hybrid measurements</td>
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<td>Core network monitoring</td>
<td>End-to-end client view and IoT</td>
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<td>Isolated measuring</td>
<td>Data analytics</td>
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The monitoring of individual elements is important but not sufficient

Additional views are needed:

- **Service**
  - Overall status and health of the service
  - Visibility and the status of all elements that build the service

- **Business view**
  - Usage
  - Users/customers – profile, satisfaction
  - Costs

- **Integrated monitoring view on the service portfolio**
• Monitoring of the sub-elements of the physical infrastructure
• In network, server, cloud infrastructure
• Status, Health, Usage, Dependencies,...
• End-to-end
• End-user experience
• Can existing tools support it?
Hybrid Measurement Techniques

• Passive and active monitoring
• Combining measurements from different sources
• Combining measurement data from different sources
• Orchestrated measurements
Client view

- Focus on end-user
- Requires end-to-end monitoring
- IoT
- BYOD
- Control, monitor, manage, assist
Data Analytics

- Using relevant / available data from one system
- Correlating relevant / available data from multiple systems
- With or without Artificial Intelligence tools
- Requires automation and orchestration
- Root cause analysis
- Prediction and trends about the system and users' behaviour
• Comprehensive transformations in network and service monitoring
• Current status
  • Following presentation address current efforts in GÉANT project
• Next steps
  • Where do we want to be and how do we get there
  • Priorities, directions, dynamics can differ individually

• We would like to hear from you!

"The Only Thing That Is Constant Is Change"
Heraclitus
Question #4: Most useful metrics?

Which are the most useful network metrics (multiple apply)?

- Packet loss
- One-way delay (latency)
- Jitter (latency variation)
- Two-way delay (round trip time)
- Throughput
- Route changes/asymmetry

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Question #5: Virtualised infrastructure performance monitoring level?

For the virtualized infrastructure, pick the best descriptor of the existing level of performance monitoring:

- Advanced: all required tools are available
- Medium: some required tools are available
- Low: underdeveloped, tools are required
- Don’t have an opinion

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Thank you
Any Questions?

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