2nd SIG-PMV Meeting @ Amsterdam 2017

Date

17 May 2017, 09:00 - 17:00 CET.

A dinner will be held on the evening of the 16th May 2017 which is open to all attendees; this will be at Pianeta Terria from 7pm - see here for the location details - it's near to the GEANT offices.

The meeting will be held at the GÉANT Amsterdam Offices.

Registration and Remote Participation

Registration is open for remote participation. Remote participants should use the following information to dial in to the meeting:

Call AMS-VMR Large Meeting Room on Lifesize.

- **Connect over video**
  https://call.lifesizecloud.com/extension/1973578
- Connecting from a Lifesize conference room system? Just dial 1973578 with the keypad.
- **Call in by phone**
  United Kingdom: +44 1223 750388 extension 1973578
  Netherlands: +31 85 888 4440 extension 1973578
  United States: +1 (844) 572-5683 extension 1973578
- **Additional numbers:**
  https://call.lifesizecloud.com/numbers

Overview

The aim of the SIG-PMV Meeting is to discuss/share knowledge, expertise in form of scenarios from research, academic ICTs and industry. The motto of the workshop is "Performance Monitoring and Verification - RESEARCH meets OPERATIONS".

The scope of the SIG-PMV meeting addresses the following scenarios:

Current:

- Data intensive Science: SciDMZ, DTN's and pS

- Multi domain monitoring - toolkits (e.g. perfSONAR etc.)

- Wireless Network Monitoring (e.g. WiFiMon etc.)

- L2 Monitoring (e.g. SFP optics)

- Measurements on virtual network environments - how do you design them?

- IPv6 - is your monitoring equivalent to IPv4? (also service differentiation, what's about IPv6-only control plane?)

- Overlay Network Monitoring solutions (e.g. Frameworks...)

Emerging:

- 100G and beyond (how to monitor/sniff/measure)

- What's about SDN controlled Monitoring (e.g. dynamic links,...)?

- Automatic networking (e.g. self-organizing,self-healing,...)

- Monitoring as a Service / NMS as a Service / OSS, BSS with monitoring a d performance verification.

The meeting will begin with a range of presentations on the above topics. We will also include ample discussion time to allow attendees to review the various scenarios requiring deployment of PMV tools, and to discuss the most appropriate solutions for those scenarios. This discussion will help the SIG in determining the recommendations it wishes to make to the community. We will also discuss what gaps or features may be missing from such tools, with a view to engaging with toolkit developers to improve the state of the art where necessary.

Who should attend?

Researchers, academic ICTs, PERTs of the NRENs and members from industry, vendors who are working on the above scenarios, who are interested in PM&V or would be willing to contribute to the scope above.

Hotels

Many people visiting GÉANT choose to stay at the NH City Centre or the Albus Grand Hotel, as these are both close to the office.

Some alternative suggestions with a variety of prices and hotel types can be found here.

Please note - hotels in Amsterdam seem to be very full on these dates so booking as soon as possible is recommended.

Agenda

Each presentation is approx 30 mins with 10 mins for discussion/questions.

09:00 Refreshments available

09:30 Welcome and introductions around the table; agenda bashing - [PDF] [PPTX]

Morning Presentation Session

09:50 SIG-PMV Update - Tim Chown, SIG PMV SC - [PDF] [PPTX] (Slides updated with discussion notes post-session)

Including a review of identified measurement scenarios.

10:20 "Network monitoring and measurements with P4" , Ronald van der Pol - SURFnet - [PDF]

P4 is a domain specific language for network protocols. It describes in a C-like syntax the headers of a packet. It also describes a parser and lookup tables. These are compiled and downloaded to a software or hardware switch. SURFnet has a P4 hardware switch and a P4 smart NIC. P4 is very flexible and powerful. In this presentation I will give a brief introduction to the P4 language. Next I'll give a demo that shows how P4 provides per packet information about the trajectory of a packet through the network and the per hop latency.

11:00 Coffee Break

11:20 "Monitoring network services", Pavlé Vuletic - University of Belgrade - [PDF]

Modern network services are typically multiplexed over the same physical infrastructure (e.g. various kinds of VPNs) or are composed of multiple network service segments (service chaining). There is currently a gap between the capabilities of the majority of existing network monitoring tools and the need to look inside the service instance and the performance parameters that each user gets. JRA2T4 in GN4-2 project aims to provide the solution for modern network service monitoring and the evaluation of key service performance parameters (SLA). This presentation will describe the architecture of the performance monitoring and verification system task is developing and the first results.

12:00 "Multi-Layer performance measurements using the Juniper RPM framework", Tim Chown and Victor Olifer - Jisc - [PDF] [PPTX]

We have been testing the Juniper RPM probes/agents on our Juniper testbed, for L2, L3 or application (HTTP) layer performance measurements. We have some initial (python) code to extract MIB data towards visualising the measurements. We're interested to see who else in the community is using a similar approach. A Phase 1 deployment may involve configuring measurements from edge routers to specific core routers (which would be presented to site admins as part of our general portal), and Phase 2 may involve dynamic/on-demand configuration of measurements along a specific path to investigate a specific performance issue (initially at least under NOC control). The talk will include an introduction to the RPM framework.

12:30 Lunch (1 hour)

Afternoon Presentation Session

13:30 "Flexible network monitoring at 100Gbps and beyond", Lukas Kekely - CESNET [PDF]

As network anomalies, attacks and other incidents are no longer exceptions, monitoring of high-speed links is of utmost importance. CESNET meters are built on NFB-100G2Q card and a commodity server. Each meter is capable of monitoring 100 Gbps Ethernet traffic without packet loss. The functionality of the meter ranges from full packet capture, selective packet capture based on rules, to NetFlow v5, NetFlow v9 and IPFIX flow information export. Moreover, the meter can host any application and deliver packets to the hosted application in a Receive Side Scaling manner.

14:10 "Connectivity Fault Management (CFM)", Robert Stoy - DFN [PDF]

Connectivity Fault Management (CFM) is a standardised framework that addresses performance monitoring and troubleshooting challenges on Layer-2 end-to-end services, which consist of Layer-2 segments provided by different Layer-2 service providers. The main challenge is the detection of performance degradation and circuit interrupts together with cause localisation using functions directly on Layer-2. Additionally there is the need for alarming, triggering of consequent actions and support for L2 path analysis from end systems. This talk presents first steps, basics on deployment scenarios, use case examples, concrete use cases, config examples and first results from from a small physical test, internal trial at DFN.

14:50 Coffee Break

15:10 "Report on WiFiMon activities", Kurt Baumann, SWITCH [PDF] [PPTX]

Kurt will report on outcomes from the WiFiMon meeting held on 10th/11th May, and give an update on WiFiMon activities.

15:35 "Wireless Monitoring", Alan Buxey, Loughborough University [PDF] [PPTX]

Alan will present on wireless performance monitoring, following up his presentation at the previous SIG-PMV meeting.

16:00 Open discussion

Addressing the SIG-PMV deliverables (scenarios and identified solutions); plus additional topics to be identified as the day progresses

17:00 Close