Contribution ID: **64**   Type: **Presentations**

Monitoring and exploring virtual digital infrastructures with perfSONAR

Thursday, 30 November 2017 14:15 (15 minutes)

A perfSONAR monitoring infrastructure described in this presentation can be used in virtual networks environment, in order to add performance monitoring and troubleshooting capabilities across a multi-domain infrastructure. Such a feature can be used for testing any connectivity realised via a Virtual Private Network (VPN), either within a domain, or in a multi-domain environment.

The GÉANT Multi-domain Virtual Private Network (MD-VPN) is providing an international network service, enabling scientists all over Europe to collaborate via a common private network infrastructure. This service is delivered jointly with NRENs up to the end user. MD-VPN offers an end-to-end service suited for international projects facing the challenge of interconnecting distributed resources. In such a multi-domain environment, provisioning and infrastructure monitoring requires a performance measurement tool that helps to identify network issues and troubleshoot them effectively. In addition, such a tool can enable an end-user to validate the connectivity experience he or she is facing, with the measured results of connectivity parameters such as bandwidth, jitter or latency seamlessly over IPv4 or IPv6 network.

perfSONAR Toolkit supports network monitoring in a federated, as well as a single-domain environment to carry out tests to determine performance metrics between various networks and to support problems troubleshooting. The latest extensions to perfSONAR bring support for Linux namespaces enabling researchers to allow separate measurement specification per individual service instance. Linux namespaces provide separation awareness and address overlapping capabilities. This presentation shows how perfSONAR latest functions can be used to add monitoring capabilities to support VPN-based research infrastructures.

Our presentation addresses the challenge of monitoring VPN-based infrastructures as building blocks of the European Open Science Cloud and the European Data Infrastructure.

MD-VPN service can be used for connectivity between geographically distributed resources including HPC centers and research communities. With this in mind, exploring how perfSONAR monitoring is applied to such network service addresses the theme of solutions to support secure and efficient researchers collaboration amongst EOSC building blocks.

Open Science requires highly available and resilient infrastructure that is usually federated and distributed in several countries and organisations. The bigger is the complexity of the infrastructure, the stronger is the need for proper, comprehensive, transparent and reliable network monitoring solution. By leveraging the multi-domain, single-domain and federated environment, providing vendor-agnostic performance measurements end-to-end, perfSONAR also enables and supports the interoperability of individual elements of the complex infrastructure, federated services or policies for research in Europe and beyond.

Intended audience is researchers who would like to learn how to efficiently monitor research infrastructures, researchers who would like to learn how they could integrate their own network monitoring tools and research developments with perfSONAR, as well as service operators who seek for practical implementation of the tools for verification and monitoring multi-domain services.

Topic Area

The EOSC & EDI building blocks

Type of abstract

Presentation (15 minutes)

Primary authors: Mr DELVAUX, Antoine (Poznan Supercomputing and Networking Center); Mrs GOLUB, Ivana (Poznan Supercomputing and Networking Center); Mr TROCHA, Szymon (Poznan Supercomputing and Networking Center); Mr SZEWCZYK, Tomasz (Poznan Supercomputing and Networking Center)

Presenter: Mr TROCHA, Szymon (Poznan Supercomputing and Networking Center)

Session Classification: EOSC building block presentations