GÉANT Network Services

GÉANT Network Management as a Service

Presentation

NMaaS team

October 2019
Today’s network services are complex:
- Heterogeneous network infrastructures
- Increasing numbers of value-added services and features
- Services are becoming mission critical

The **cost and complexity** of developing and integrating in-house network management **may be too high** for many NRENs and Institutions

Out-of-the-box solutions might not be suitable and might be costly

NMaaS aims to support these users to provide an **effective, efficient** network and service **management platform**
NMaaS simplifies intra-domain network management by providing the infrastructure and tools via a cloud-based, network management system.

It enables management and monitoring of client networks through on-demand deployment of network management tools in the cloud infrastructure.

Using a multi-tenant approach, each NREN or Institution has private access to their network and services from a highly available cloud based platform.
Who is NMaaS for?

Small and Emerging NRENs
- Smaller NRENs may have limited resources to develop their own NMS
- By using a shared and supported platform, NRENs can focus on the monitoring and management of their service components

Campuses
- NMaaS platform is ideally suited for Campus Network Management

Small Organisations
- NMaaS supports the needs of institutional users,
- Either on an NREN managed NMaaS platform or a centralised GÉANT platform

Distributed research projects
- By using a managed platform, projects can focus on their core research and development activities.
NMaaS – How it works

- NMaaS uses a secure shared cloud platform managed by GÉANT Project
- Each user has a separate instance connected over a VPN to their network
- Users have a web portal view of their own service instance
NMaaS Architecture

• Consists of
  • NMaaS Platform
  • NMaaS Web-based user front-end
  • NMaaS application market place

• Leverages third-party software

• Goals:
  • Easy to install and use
  • Easy extendable with more tools
NMaaS Tools

Tools portfolio available via NMaaS application market place

NMaaS provides a range of modular tools to support network management needs

A web-based portal provides the user front end

Users can select the tools required for their purposes and create a customised toolset tailored for their network
Oxidized - Oxidized is a simple open-source device configuration backup tool exposing a web-based GUI

LibreNMS - LibreNMS is an auto-discovering PHP/MySQL/SNMP based network monitoring system which includes support for a wide range of network hardware and operating systems

NAV - Network Administration Visualized (NAV) is an advanced software suite to monitor large computer networks. It automatically discovers network topology, monitors network load and outages, and can send alerts on network events by e-mail and SMS.
Prometheus - Prometheus is an open-source systems monitoring and alerting toolkit.

Grafana - Grafana is an open source, feature rich metrics dashboard and graph editor for Graphite, Elasticsearch, OpenTSDB, Prometheus and InfluxDB.
Cloud based platform reduces start-up costs and management overhead

Each management instance is separated within the platform by design to maintain isolation

Allows institutions and projects to manage separate infrastructure

Uses VPN technology to incorporate management platform instance into the network instance
How can NMaaS be used?

Option 1  Organisation implementation

Each participating organisation offers a platform for their participating institutions

GÉANT Project co-ordinates development and standards and provides 2nd level support for the software usage

Option 2  GÉANT Project implementation

GÉANT Project offers a centralised platform for participating NRENs and/or their institutions (“white labelled”)

GÉANT Project co-ordinates development and standards and provides the 1st and the 2nd level support for NMaaS use
Main GÉANT web page:
• geant.org/NMaaS

Contact e-mail address of NMaaS team:
• nmaas@lists.geant.org

NMaaS production instance:
• https://nmaas.eu