Network Management as a Service

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Why do we need Network Management as a Service (NMaaS)?

• Today’s networks are complex
  • Heterogeneous network infrastructures
  • Increasing number 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 the users by providing an effective, efficient network and service management platform
What NMaaS offers?

• 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 NMaaS instance in a highly available cloud-based platform.
Who is NMaaS for?

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

• Campuses
  • Suitable for Campus network management

• Small Organisations
  • NMaaS is ideally suited to support the needs of institutional users
  • Either on an NREN managed NMaaS platform or on a centralised GÉANT platform

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

- NMaaS uses a secure shared cloud platform
- Each user is a part of NMaaS domain (corresponding to NREN or Institution)
- Separate cloud environment is set up for each user and reachable over dedicated VPN
- 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 marketplace

• NMaaS provides a range of containerized tools to support network management needs

• Users can select the tools required for their purposes and create a customised toolset tailored for their network
Current NMaaS Tools Portfolio

- **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.

- **OpenNTI**: Open Network Telemetry Collector (OpenNTI) is an open-source container packaged with all tools needed to collect and visualise time series data from network devices.
NMaaS – Key Benefits

• 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 network instance
How will NMaaS be implemented?

**Option 1  Per NREN implementation**

Each participating NREN offers a platform for their participating institutions

GÉANT Project co-ordinates development and standards

**Option 2  GÉANT implementation**

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

GÉANT Project co-ordinates development and standards
Find out more

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Thank you

Any questions?

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