GÉANT Network Management as a Service in GARRLab

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NMaaS in a nutshell

What?
“Market place” offering Network Management applications ... in the cloud
Software and production service developed and maintained by the GÉANT Project

For whom?
NREN End Institutions, GÉANT Project teams, and NRENs

Why?
To ease network management and monitoring software deployment, configuration and maintenance
To allow users to focus solely on managing their services
How you can use NMaaS?

To set up your own NMS on the central GÉANT NMaaS use NMaaS production instance: [https://nmaas.eu](https://nmaas.eu) *(secure, fully supported)*

To try NMaaS out or test offered applications use NMaaS sandbox instance: [https://nmaas.geant.org](https://nmaas.geant.org) *(no configuration overhead, demo applications already deployed)*

To run your own instance of NMaaS (Kubernetes cluster required) visit NMaaS Installation Guide: [https://docs.nmaas.eu/install-guide](https://docs.nmaas.eu/install-guide)

To run Kubernetes cluster and NMaaS on local machine visit local NMaaS Testing Environment Installation Guide: [https://docs.nmaas.eu/local-vm](https://docs.nmaas.eu/local-vm)
NMaaS service deployment
NMaaS Service offered by the GÉANT Project

• Offered free of charge
• Service operated by a dedicated team within the GÉANT Project
• Current funding assured till end of 2024 (part of GÉANT 5)
• Statistics
  • Registered users: 147
  • Domains: 25
  • Offered applications: 28
  • Deployed applications: 98
NMaaS tools

28 applications available in the portfolio

Oxidized
NAV
Prometheus
Grafana
Booked
Bastion
Debian repo
Routinator
NetBox

SPA & Inventory
perfSONAR
Central Management
WiFiMon
InfluxDB
ELK Stack
Jenkins
Zabbix
Uptime Kuma
Icinga2
Victoria Metrics
Synapse
Statping
LibreNMS
CodiMD
WebDAV Server

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NMaaS tools

Added recently

Addition of new Tools

• Possible based on user request or by users themselves
• Requirements
  • Docker image(s)
  • Helm chart
  • Metadata and information about the application
NMaaS tool deployment workflow
Current activities

• Recent release of NMaaS v1.5.0
  • Advanced application version management and running application upgrades

• Ongoing user support activities
  URAN
  RENATER Regional Networks, ESRF Organization
  UniMe

• Integration of Healthchecks application

• NMaaS tutorial held at JRES (Marseille, France)
  • Recording available at https://replay.jres.org/w/obsGzthAQQpMzVL8bLjDc8

Next steps

• Migrating production service to IPv6-compatible Kubernetes cluster
• Publishing NMaaS software as open source
• Building a community around NMaaS tools
  • Share experience and best practices
  • Keep application version update to date
NMaaS@LAB
• GARRLab asked for an NMaaS domain to be used to monitor GARRLab resources;

• Currently such a domain is running on the GÉANT DC in Poznan (Poland), connected to GARRLab infrastructure via a VPN;

• Price (no cost!), provisioning time (hours!) and underlying technology (cloud) deserve additional notes...
Timeline

- August 2021: discovered the NMaaS project
- Aug 13rd 2021: send a contact request (via slack)
  [~1 month delay, by me, due to other on-going tasks and projects]
- Sep 30th 2021: first “call” with NMaaS team (Lukasz & Frederic)
- Oct 13rd 2021: sent official request to activate the NMaaS domain
- Oct 13rd 2021: “user account” (IDEM) and domain (“GARRLab”) created!
- Oct 14th 2021: VPN setup and routing configuration LAN2LAN NMAAS<=>GarrLab
- Oct 19th 2021: on-line training session (demo setup & admin activities)
- Oct 19th 2021: first Prometheus deployment (configuration)
- Oct 23rd 2021: first Grafana deployment (app + config)
- Oct 23rd 2021: first Icinga commit (config)

DISCUSSION

REAL WORK

10 days, including 5 days “delay” (by me!)
• Something worth-noting:
  − NMaaS is “Cloud”!  → **Good to know, for your CEO/CIO**
  − NMaaS is backed by “GÉANT”!  → **...a “trusted” supplier. Don’t you?**
  − NMaaS is “no joke”!  → **EU pushed *LOT* of money on it!**
  − NMaaS is “open”!  → **based on K8S, git, CI/CD pipelines – zero lockin!**
  − Is NMaaS perfect?  → **of course NOT! How could it be?**

• ...and about “thorny” issues:
  − SLAs?
  − Infrastructure SLAs?
  − Support?
  − Project life-span / roadmap?

**Those are NON-technical arguments.**

My “feeling” is optimal. The commitment to push forward the project, is crystal-clear... But to reach the goal, a community of users is mandatory!
Grafana: Last 7 days
Icinga

<table>
<thead>
<tr>
<th>Host Group</th>
<th>Host States</th>
<th>Service States</th>
</tr>
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<tbody>
<tr>
<td>Container Docker</td>
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<tr>
<td>Firewall</td>
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<tr>
<td>Servizi di test</td>
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</tr>
<tr>
<td>Virtual Machine</td>
<td>3</td>
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</tr>
</tbody>
</table>
NMaaS: some additional (and personal..) thoughts

“...we want to find European solutions in the digital-age...”

Ursula von der Leyen - President of the Commission
“Shaping Europe’s digital future” - February 2020
https://youtu.be/NRUa1AeE9k4

“...Second, the Commission [...] will contribute to investments in European High Impact projects on European data spaces and trustworthy and energy efficient cloud infrastructures...”

I really can’t understand WHY, within the GÉANT and NRENs communities, there are *NO* joint-efforts to put in practice such a clear mandate.
What are you waiting for?

(hint: NMaaS could be your first step....)
Thank you
Any questions?

More information: https://docs.nmaas.eu
Contact us: nmaas@lists.geant.org

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