GÉANT Network Management as a Service in GARRLab

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TNC22

June 15th 2022

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NMaaS in a nutshell

NMaaS

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

ELK Stack	WiFiMon	Zabbix	NetBox	InfluxDB	Jenkins
★★★★★ 0	★★★★★ 0	★★★★★ 0	★★★★★ 0	★★★★★ 0	★★★★★ 0
Elasticsearch, Logstash and Kibana	Wireless Crowdsourced Performance Monitoring and…	Enterprise-class monitoring solution for networks and applications	Infrastructure resource modeling application	Time series database	Leading open-source automation server

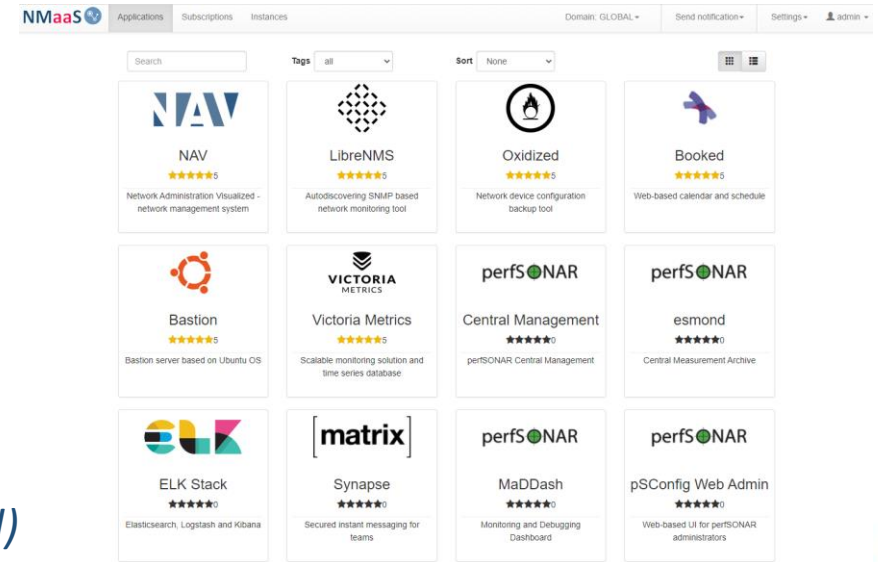**GÉANT**

How you can use NMaaS?

To set up your own NMS on the central GÉANT NMaaS

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

(secure, fully supported)

To try NMaaS out or test offered applications

use NMaaS sandbox instance: 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

To run Kubernetes cluster and NMaaS on local machine

visit local NMaaS Testing Environment Installation Guide: https://docs.nmaas.eu/local-vm

NMaaS Portal

NMaaS service deployment
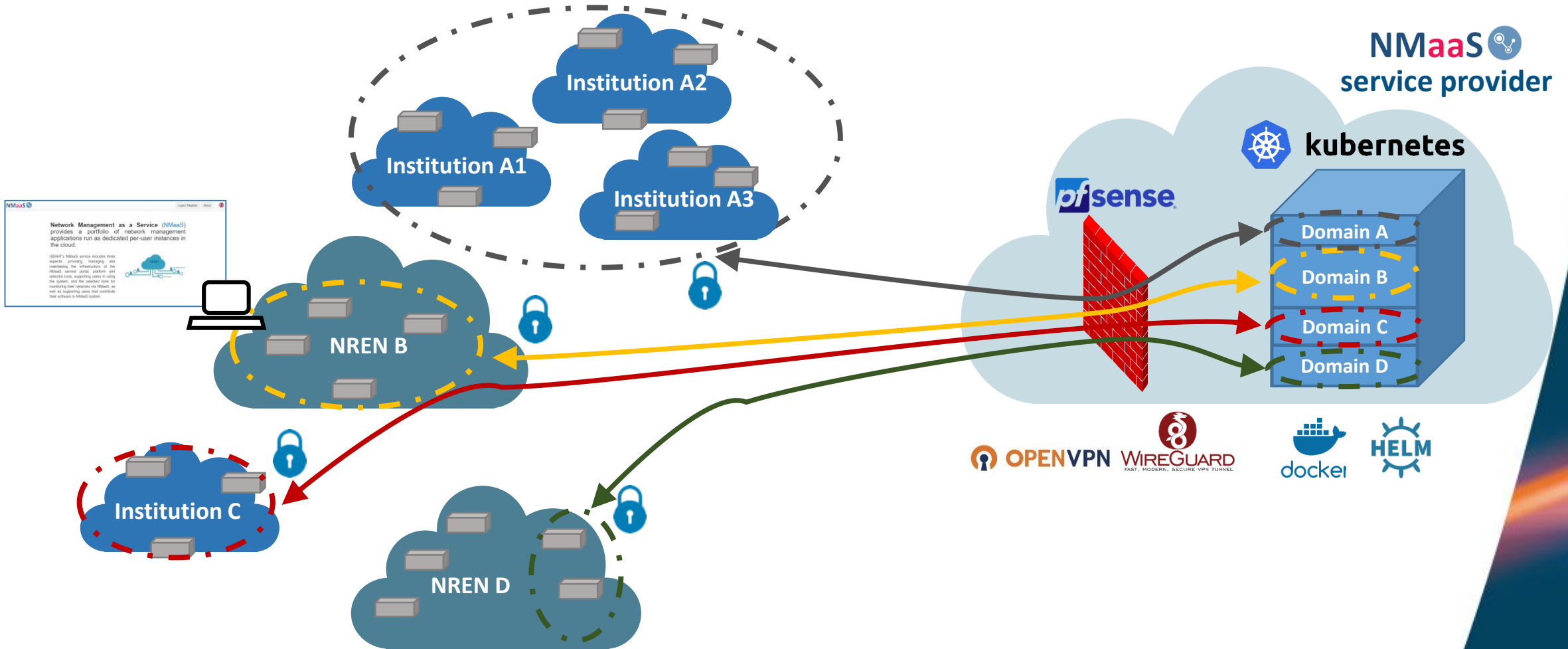
NMaaS Service offered by the GÉANT Project

- **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**

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NMaaS tools

28 applications available in the portfolio

Oxidized

NAV

Prometheus

Grafana

SPA & Inventory

perfSONAR

Central Management

WiFiMon

Icinga2

Victoria Metrics

Synapse

Statping

Booked

Bastion

Debian repo

Routinator

NetBox

InfluxDB

ELK Stack

Jenkins

Zabbix

Uptime Kuma

LibreNMS

CodiMD

WebDAV Server

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NMaaS tools

Added recently

Uptime Kuma	NetBox	Zabbix
★★★★★ 0	★★★★★ 0	★★★★★ 0
Self-hosted monitoring tool like "Uptime Robot"	Infrastructure resource modeling application	Enterprise-class monitoring solution for networks and applications

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
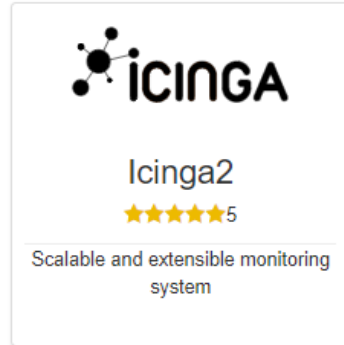
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NMaaS tool deployment workflow

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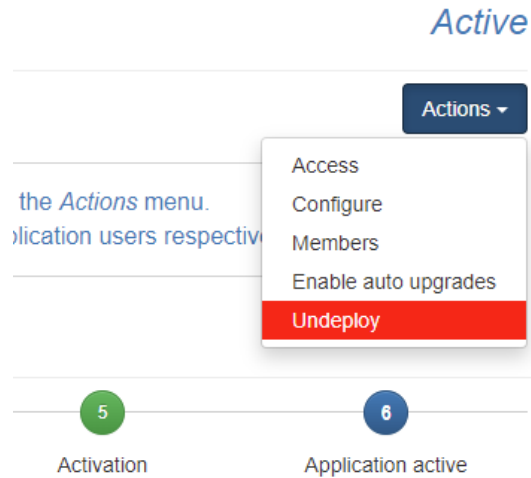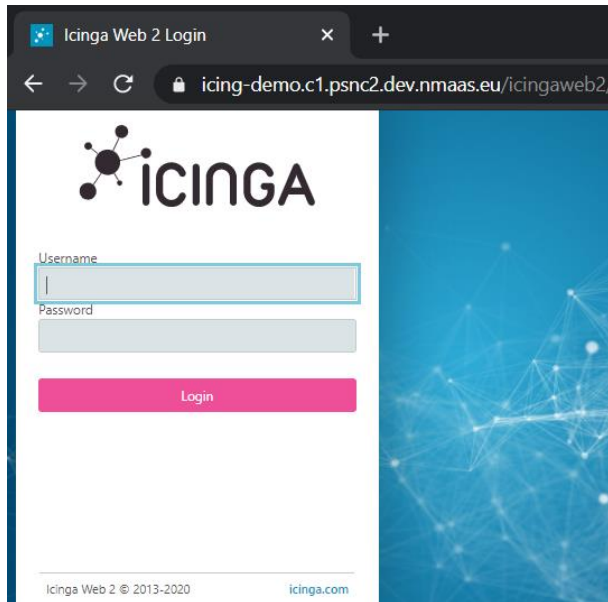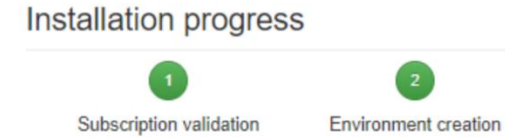
Current activities

- 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

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GÉANT

NMaaS@ GARR 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...

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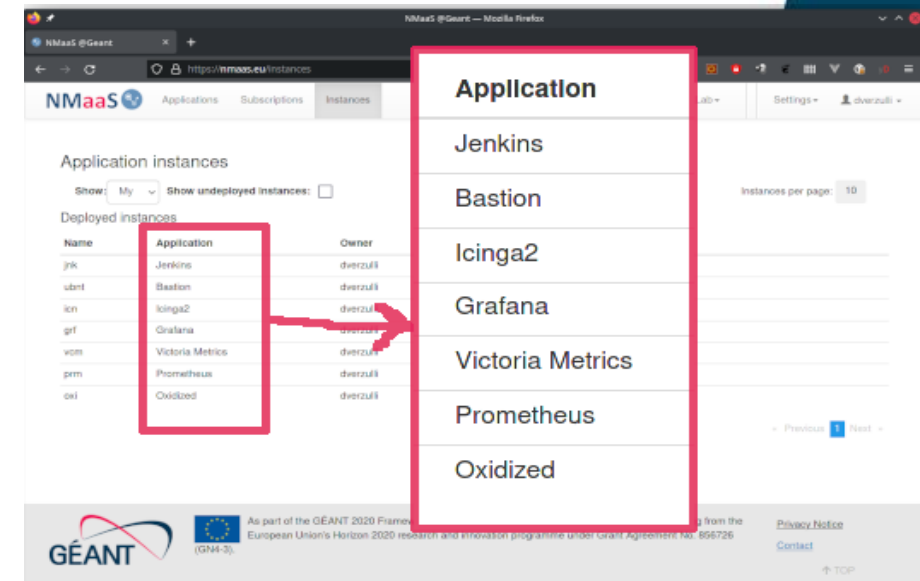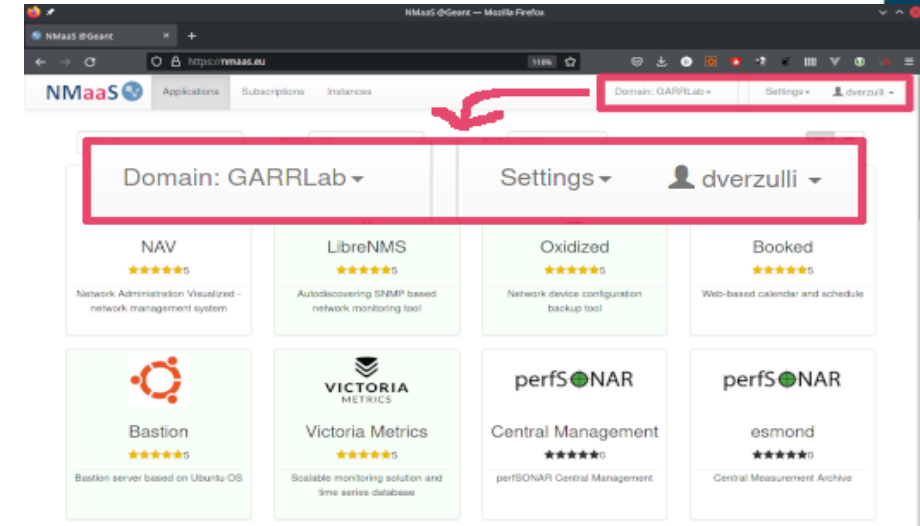
Timeline

DISCUSSION

- 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)

- -

REAL WORK

- Oct 13rd 2021: sent official request to activate the NMaaS domain
- Oct 13rd 2021: "user account" (IDEM) and domain ("GARRLab") craeted!
- 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)

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10 days, including 5 days "delay" (by me!)

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- 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?*

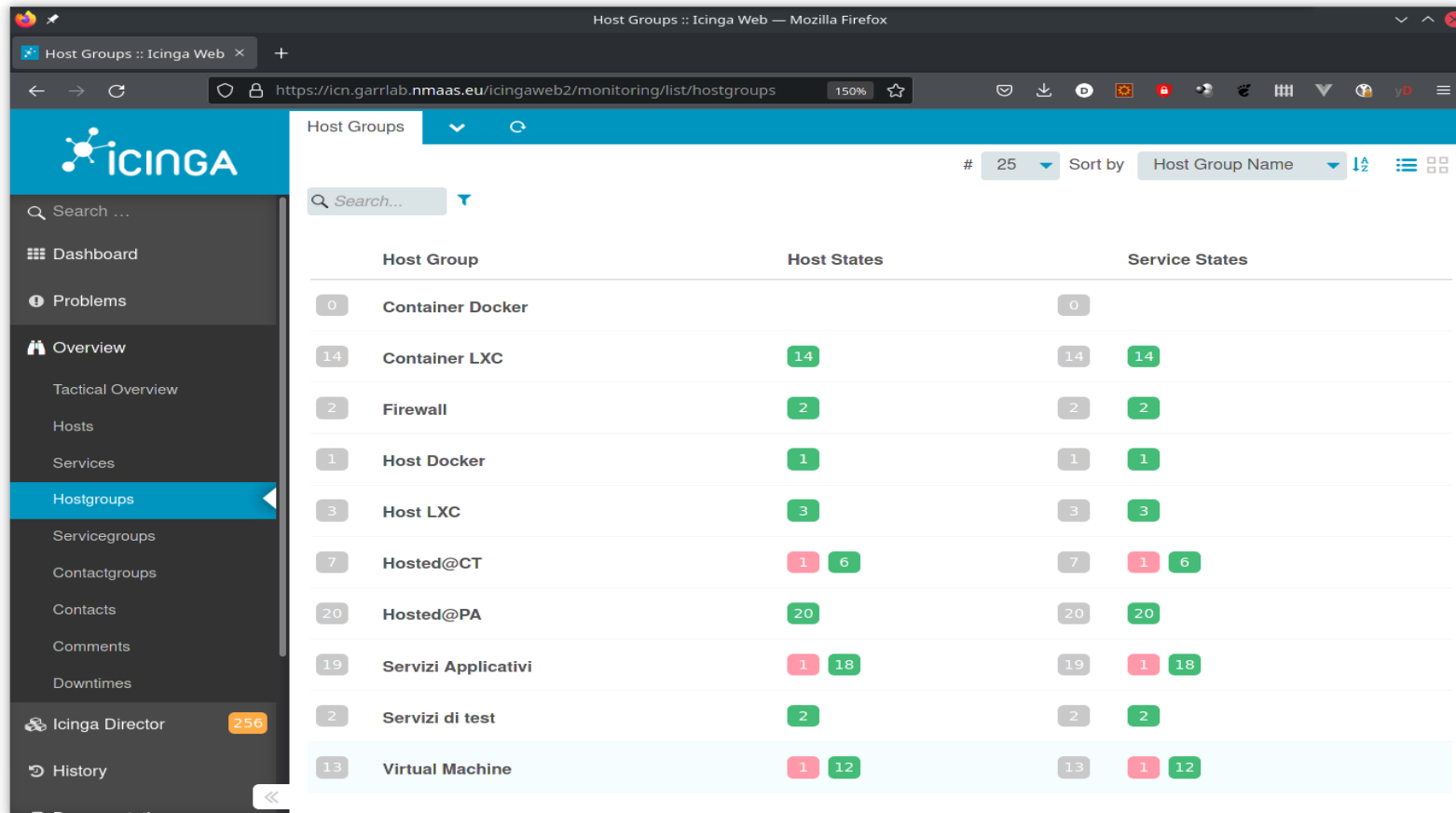- ...and about "thorny" issues:
  - SLAs?
  - Infrastructure SLAs?
  - Support?
  - Project life-span / roadmap?

Those are NON-technical arguments.
My "feeling" is optimal.
The commitment to push forward the project, is crystal-clear…
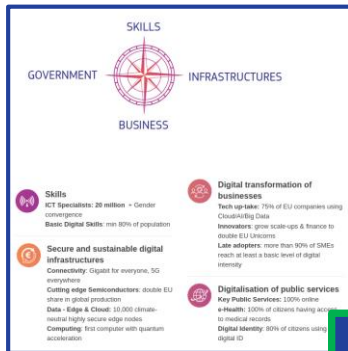But to reach the goal, a community of users is mandatory!

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Grafana: Last 7 days

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Icinga

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..."

https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age_en

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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