GÉANT Network Management as a Service

Vojdan Kjorveziroski (UKIM)

Fréderic Loui (Renater)

Łukasz Łopatowski (PSNC)

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Agenda

Introduction to NMaaS

    NMaaS in a Nutshell

    Reasons for using NMaaS

    Deployment Options

Hands-on with NMaaS

    Setting up a Local Virtual Environment

    Installing a Kubernetes Cluster

    Installing NMaaS

    Setting up a Demo Network Environment

    Deploying Applications on NMaaS

    Adding a new Application to NMaaS

Q&A

NMaaS in a Nutshell

What?

"Market place" offering Network Management Applications

A free application developed and maintained by the GÉANT Project

Allows on-demand deployment of applications on the infrastructure where NMaaS is installed

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

Reasons for Using NMaaS

Eases the process of **trying a new network** management and monitoring application

Multiple customers can have their infrastructure managed by a single entity

Customers **do not require** extensive **on-premise infrastructure**

Focus on **managing** the service

Deployment Options

- Demo instance available on https://nmaas.geant.org

- Production instance managed by the GÉANT Project available on https://nmaas.eu

- **Running your own instance on-premise**
    - **Free software**
    - Self-contained all-in-one NMaaS virtual machine available on:
        - https://drive1.demo.renater.fr/index.php/s/rp2awZ6sMnNFQwK
        - https://bit.ly/3M5QpUg
    - Can be run using VirtualBox

Demo 01: Setting up a Local Virtual Environment – Chapters

00:00 - 00:45 – Configuring a new NAT network within VirtualBox

00:45 - 01:08 – Configuring an optional Host-only network within Virtualbox

01:08 - 01:31 – Adjusting virtual machine settings

01:31 - 02:30 – Initial startup of the virtual machine and network interface configuration

Demo 02: Installing a Kubernetes cluster – Chapters

00:00 - 01:05 – Deploying a Kubernetes cluster with K3s

01:05 - 01:57 – Deploying Calico as a container network interface (CNI) plugin

01:57 - 03:01 – Deploying MetalLB as a load-balancing plugin

03:01 - 03:31 – Installing the Helm 3 Kubernetes package manager

03:31 - 04:54 – Deploying the Ingress-Nginx ingress controller

Demo 03: Installing NMaaS – Chapters

00:00 - 03:02 – Deploying GitLab

03:02 - 05:11 – Additional GitLab configuration

05:11 - 07:53 – Deploying NMaaS

07:53 - 08:26 – First login into NMaaS

Demo 04: Setting up a demo networking environment – Chapters

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00:00 - 00:14 – Installing FreeRTR dependencies

00:14 - 03:15 – Installing and configuring FreeRTR

03:15 - 04:02 – Running FreeRTR instances

Demo 05: Deploying Applications on NMaaS – Chapters

00:00 - 00:23 - Registering a new user in NMaaS

00:23 - 01:44 - Creating a new domain and activating a new NMaaS account as an administrator

01:44 - 02:07 - Adding an SSH public key as a regular user

02:07 - 04:00 - Deploying a Prometheus instance

04:00 - 05:05 - Additional Prometheus configuration via Git

05:05 - 06:18 - Deploying a Grafana instance

06:18 - 07:38 - Importing sample dashboards into Grafana

07:38 - 08:44 - Deploying an Oxidized instance

08:44 - 11:07 - Additional Oxidized configuration via Git

11:07 - 11:57 - Verifying the Oxidized changes

Deploying Applications on NMaaS

Demo 06: Adding a new Application to NMaaS – Chapters

00:00 - 04:33 - Adding a new application to the catalog using a wizard

04:33 - 05:15 - Doing a test deployment of the new application

05:15 - 06:43 - Additional configuration from within the application itself

Adding a new Application to NMaaS

Thank you

Any questions?