



# Network Management as a Service (NMaaS)

*NMaaS application portfolio*

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GÉANT Network Management as a Service (NMaaS)  
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[www.geant.org](http://www.geant.org)

# NMaaS Tools portfolio

## 18 applications available in the marketplace

Oxidized	Bastion	 <b>perfSONAR</b>
LibreNMS	Statping	Central Management
NAV	 <b>SPA Inventory</b>	 <b>WiFiMon</b>
Prometheus	Debian repository	InfluxDB
Grafana		Jenkins
Booked	ELK Stack	

## On the roadmap





# NMaaS Tools Portfolio: Oxidized

**Oxidized** is a simple open-source device **configuration backup tool** exposing a web-based GUI

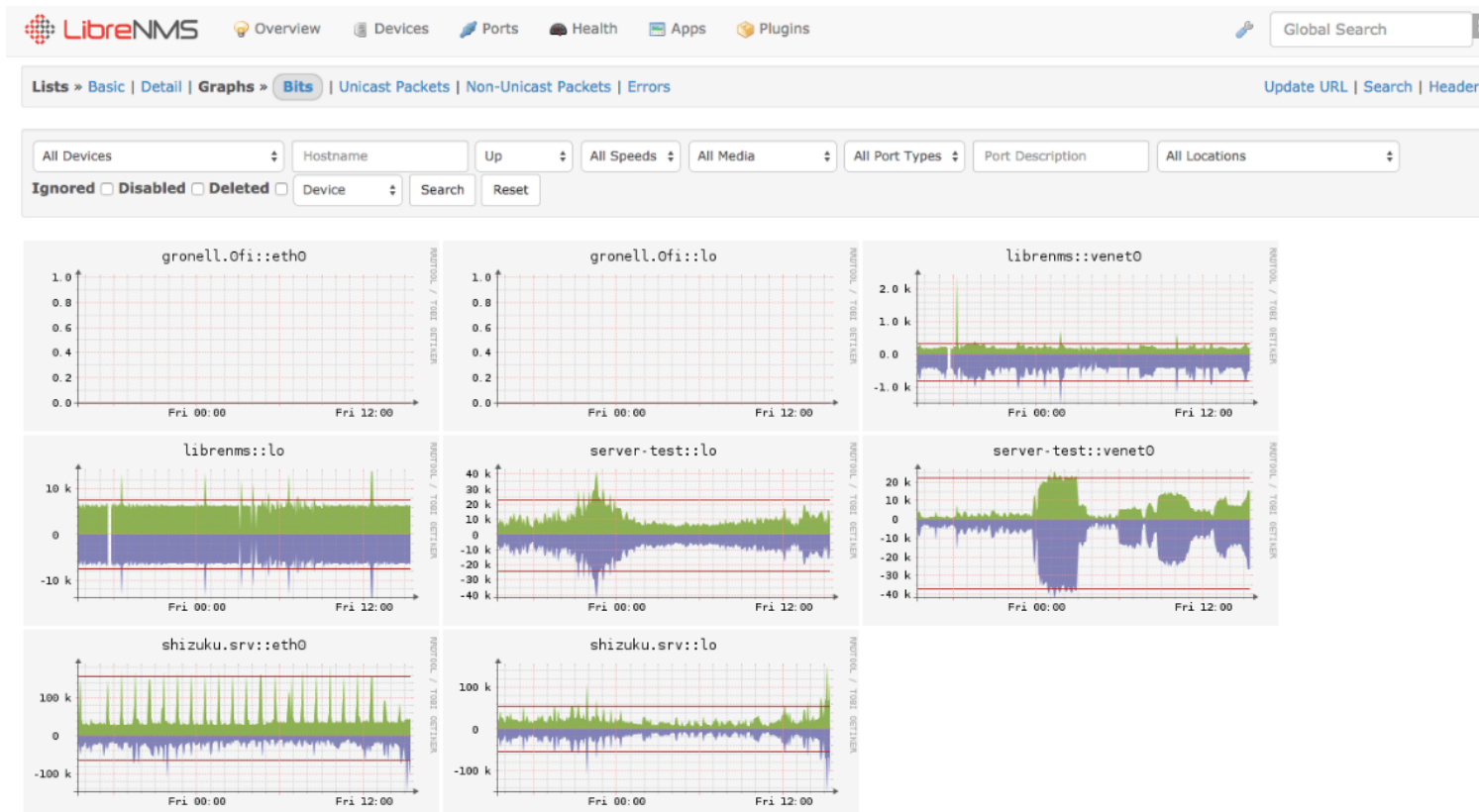
The screenshot shows the Oxidized web interface. At the top, there are tabs for 'Oxidized', 'Stats', and 'Migration'. A search bar labeled 'Search in Configs' is on the right. Below the tabs, the breadcrumb 'nodes / stats' is visible. On the right side, there are buttons for 'Show / hide columns' and 'Refresh', along with a search input field. On the left, there is a 'Show 50 entries' dropdown. The main content is a table titled 'Node Statistics' with the following columns: Name, Total Failures, Failure Rate, Average Run Time, Last Status, Last Update, and Last Failure. The table contains three rows of data for IP addresses 11.11.11.11, 22.22.22.22, and 33.33.33.33. Below the table, it says 'Showing 1 to 3 of 3 entries'. At the bottom right, there are 'Previous', '1', and 'Next' navigation buttons.

Name	Total Failures	Failure Rate	Average Run Time	Last Status	Last Update	Last Failure
11.11.11.11	0	0.00%	4.83s	■	2017-08-18 07:37:31 UTC	never
22.22.22.22	0	0.00%	3.85s	■	2017-08-18 07:37:35 UTC	never
33.33.33.33	0	0.00%	4.34s	■	2017-08-18 07:37:40 UTC	never



# NMaaS Tools Portfolio: LibreNMS

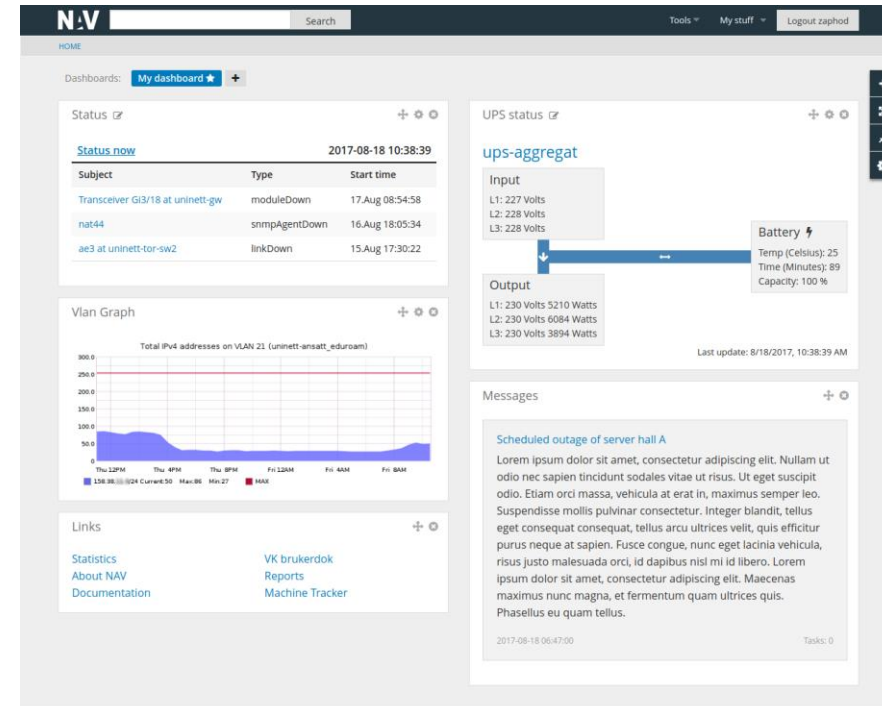
**LibreNMS** is an auto-discovering **SNMP** based **network monitoring** system which includes support for a wide range of network hardware and operating systems



# NMaaS Tools Portfolio: 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.



NAV (Network Administration Visualized) is a free network management utility from UNINETT, suitable for monitoring large computer networks.



UNINETT supplies a range of services connected to research, network management, mobility, security, purchasing, and identity management.

#### NAV version

You are running 4.6.2, released under a GNU GPLv2 license.

#### Documentation

The technical documentation includes how-to guides, troubleshooting and other reference material.

#### Postcards please

If NAV makes you happy, send us a postcard by snail mail, preferably with a picture from your city or locale.

#### Your info

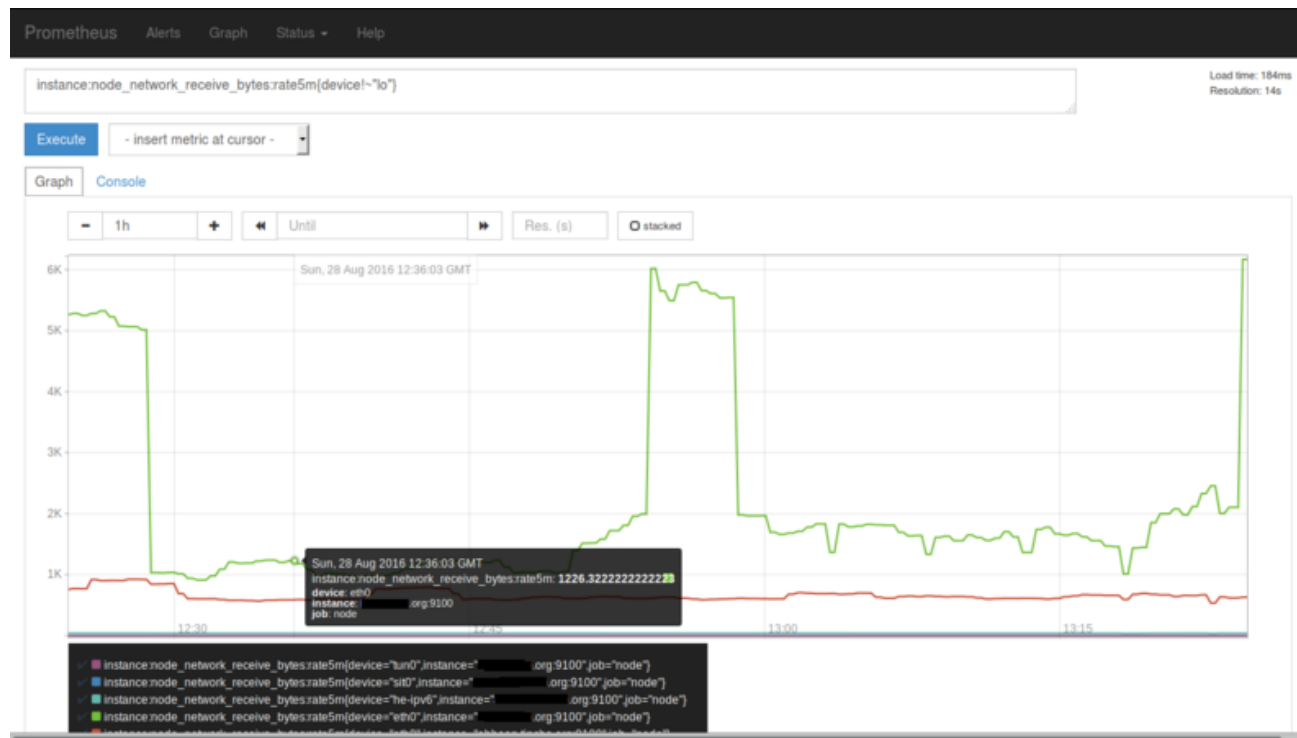
Add your organization's contact information.

Your NAV administrator: root@localhost



# NMaaS Tools Portfolio: Prometheus

Prometheus is an open-source systems monitoring and alerting toolkit with time series database





# NMaaS Tools Portfolio: Grafana

Grafana is an open source, feature rich **metrics dashboard** and graph editor for Graphite, Elasticsearch, OpenTSDB, Prometheus and InfluxDB



## NMaaS Tools Portfolio: Bastion and Debian repository

**Bastion** is an Ubuntu-based server deployed in a customer domain has VPN access to all the monitored devices



**Debian repository** is a Reprepro-based tool for managing APT repositories



*<https://wiki.debian.org/DebianRepository>*



# NMaaS Tools Portfolio: perfSONAR Central Management

## pSConfig Web Admin

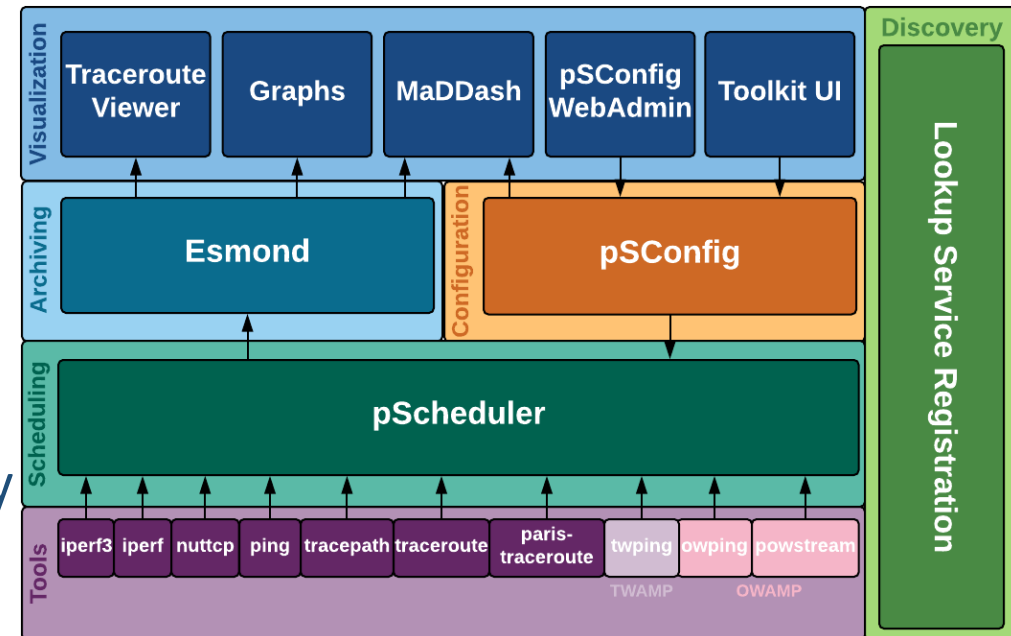
Web-based UI for perfSONAR administrators to define and publish MeshConfig/pSConfig meshes

## MaDDash

Tool for collecting large amounts of inherently **two-dimensional data** and presenting it in visually useful ways

## Esmond

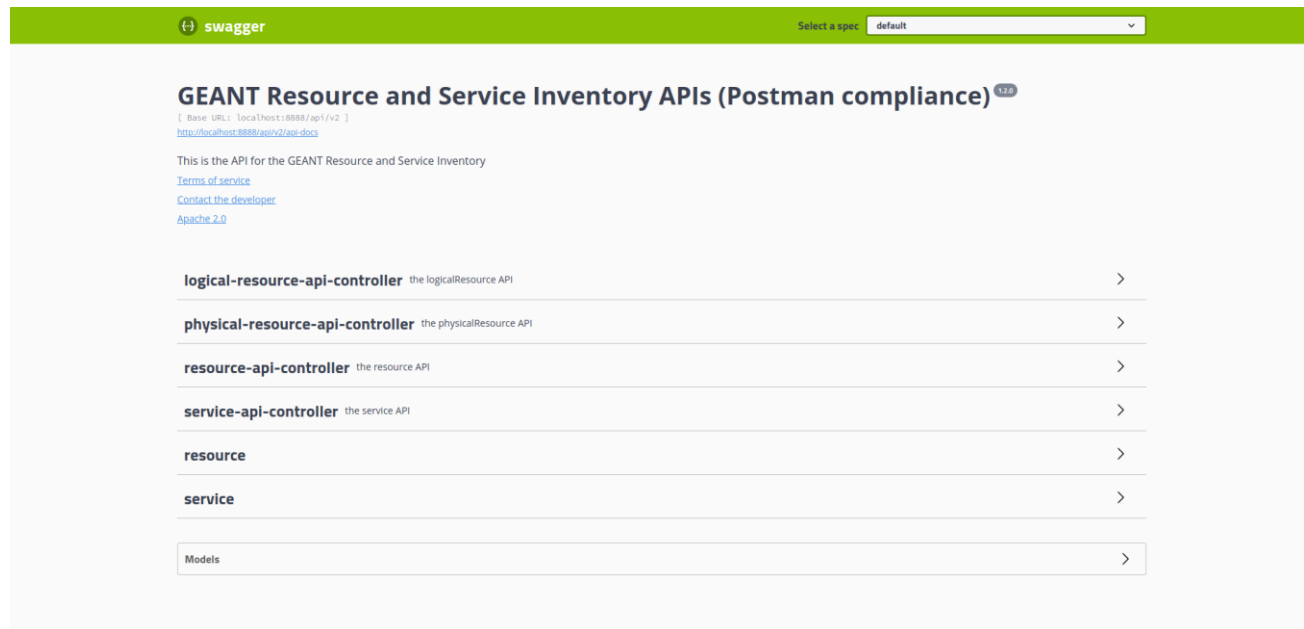
System for collecting, storing, visualizing and analysing large sets of time series data





# NMaaS Tools Portfolio: SPA Inventory

**SPA Inventory** is a database for storing information about topology resources and service instances that offers TMF Open APIs for standardised access



# NMaaS Tools Portfolio: Statping

Statping is an easy to use Status Page for websites and applications

The screenshot shows the Statping settings dashboard. At the top, there are navigation links: Statping, Dashboard, Services, Users, Messages, Settings, Logs, Help, and Logout. The 'Settings' menu item is highlighted in green. The main settings area is divided into two columns. The left column contains a sidebar with various settings categories: Main Settings (Settings, Notifications, Theme Editor, Cache), Notifiers (Command, Discord, Email, Line Notify, Mobile, Slack, Telegram, Twilio, Webhook), and Integrations (beta) (CSV File, Docker, Traefik). The right column contains the main configuration fields: Project Name (Great Uptime), Project Description (Great Uptime), Domain (with an Enable CDN toggle), Custom Footer (with a note that HTML is allowed), Timezone (set to GMT +1:00 hour), API Key (6ad7fec928472a027d5c779921ff9fb4f11e2aea), and API Secret (b7441c760726a819d84dcfda7e6fa9eca2b6a2ee). A 'Save Settings' button is located at the bottom of the main settings area.

The screenshot shows the Statping status page for a sample project named 'Great Uptime'. The page title is 'Statping Sample Data' with a subtitle 'This data is only used to testing'. Under the 'Main Services' section, there are two service cards: 'Google' and 'Google DNS'. Both are marked as 'ONLINE' in green. Each card shows a 30-day uptime history bar with the last 7 days highlighted in red. Below the 'Google' card, there are three key performance indicators: '33ms Average Response', '97.25% Uptime last 24 Hours', and '97.25% Uptime last 7 Days'. At the bottom, there is a green area with a line graph showing response times over time, with the text 'Online, last checked less than a minute' and a 'View Service' button.



# NMaaS Tools Portfolio: Booked

**Booked** is a web-based **calendar and resource scheduling system** that allows administered management of reservations on any number of resources

The screenshot displays the Booked Scheduler web interface. At the top, there is a navigation bar with 'booked' logo, 'Dashboard', 'My Account', 'Schedule', 'Application Management', and 'Reports'. A date range '10/23/2016 - 10/29/2016' is shown. Below the navigation bar, there are tabs for reservation status: 'Open', 'Blocked', 'Reserved', 'My Reservation', 'Participant', 'Pending', 'Past', and 'Restricted'. The main area is a calendar grid with columns for time slots (8:00 AM to 5:00 PM) and rows for dates (Sunday, 10/23/2016 to Saturday, 10/29/2016). Reservations are shown as colored blocks: purple for 'User User', blue for 'Admin Admin', and green for 'Demo Demo'. A 'Resource Filter' sidebar is on the left, and a footer at the bottom reads '© 2016 Twinkl's Toys Software Booked Scheduler v2.0'.

# NMaas Tools Portfolio: InfluxDB and Jenkins

**InfluxDB** is an open-source time series database (TSDB) developed by InfluxData



<https://www.influxdata.com/products>

**Jenkins** is a self-contained, open source **automation server** which can be used to automate all sorts of tasks related to building, testing, and delivering or deploying software

A screenshot of the Jenkins web interface. The top navigation bar is black with the Jenkins logo, a search bar, and links for "monitor", "nmaas", and "log out". Below the navigation bar, there's a sidebar with menu items like "New Item", "People", "Build History", etc. The main content area shows a table of build jobs. The table has columns for "S", "W", "Name", "Last Success", "Last Failure", and "Last Duration". A single row is visible for a job named "test".

S	W	Name	Last Success	Last Failure	Last Duration
		test	9 days 18 hr - #2	9 days 18 hr - #1	18 sec

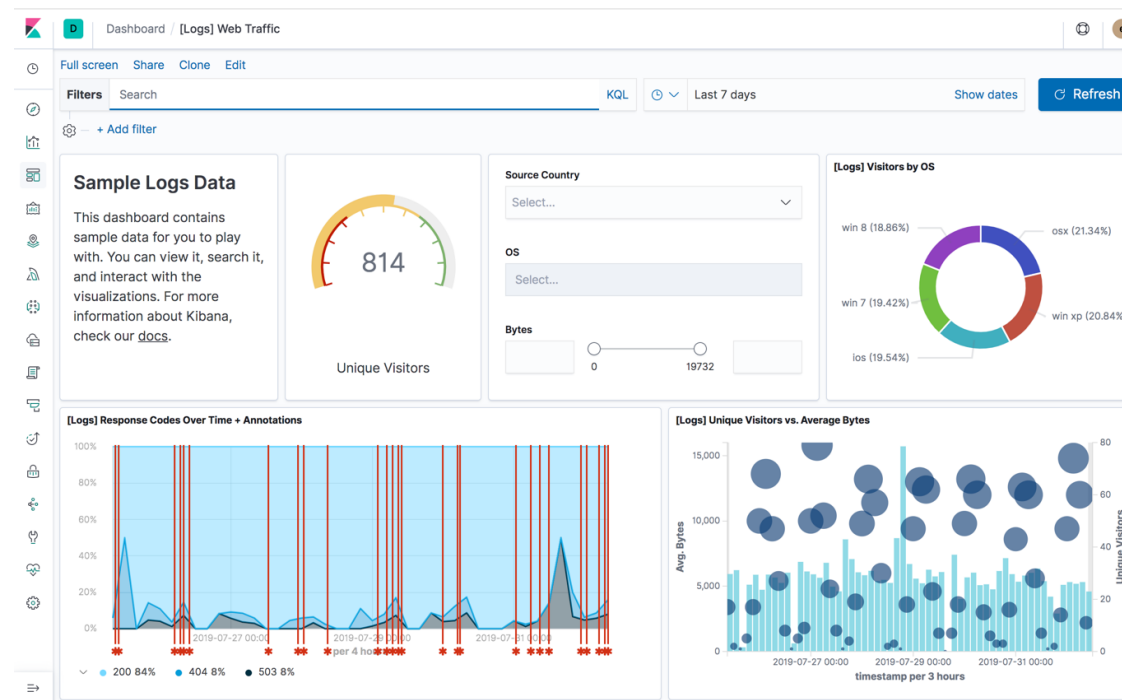
<https://www.jenkins.io>



# NMaaS Tools Portfolio: ELK Stack

ELK is the acronym for three open source projects

- **Elasticsearch** – database with search and analytics engine
- **Logstash** – data processing and transformation pipeline
- **Kibana** – user interface for data visualisation



## Addition of new tools

- **Possible** based on user request
- Requirements
  - Docker image(s)
  - Helm chart
  - Metadata and information about the application





# Thank you

Any questions?

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