Second Generation View and Download Services - A Focus on Quality

Finnish Transport Agency

We enable new traffic services

We develop **services to help travel and transport** and thus promote the **functionality and development of Finnish society**.

We are responsible for Finland's high quality **traffic infrastructure** which enables the utilisation of **traffic services, robotisation and digitalisation**.

We make effective use of data

- Freely accessible traffic data enables an effective transport system.
- Open data creates new services, innovations and business opportunities.

Data facilitates **mobility**, makes **transport** more effective and ensures traffic **safety**

The Finnish Transport Agency provides **comprehensive, high-quality** and **real-time** data

The Finnish Transport Agency 's data is **freely available**, which benefits society as a whole

FTA spatial data services

View and download services

FTA launched its second generation spatial web services for INSPIRE and non-INSPIRE data in June 2014
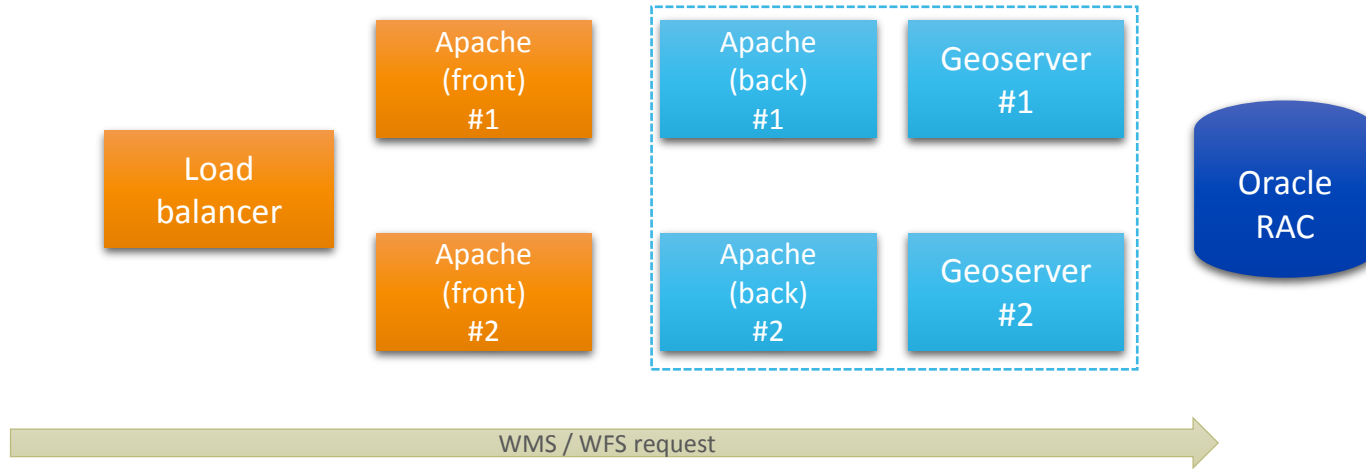
Services include

- View and download services (WMS / WFS)

- Graphical user interface and an easy to use data retrieval service based on Oskari platform
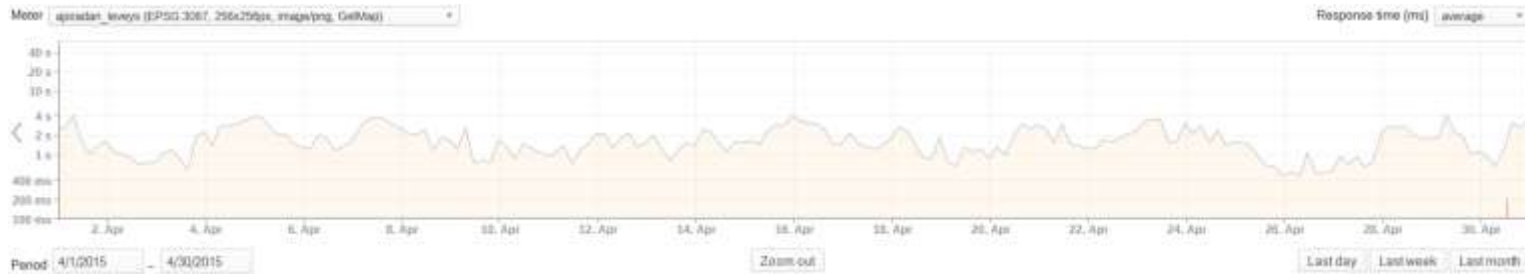
Technology & architecture

Monitoring & availability

- Services are monitored 24/7 by Spatineo Monitor

- Automatic test requests every 5 minutes
- Graphical overview of service availability & performance
- Alerts for problems in services
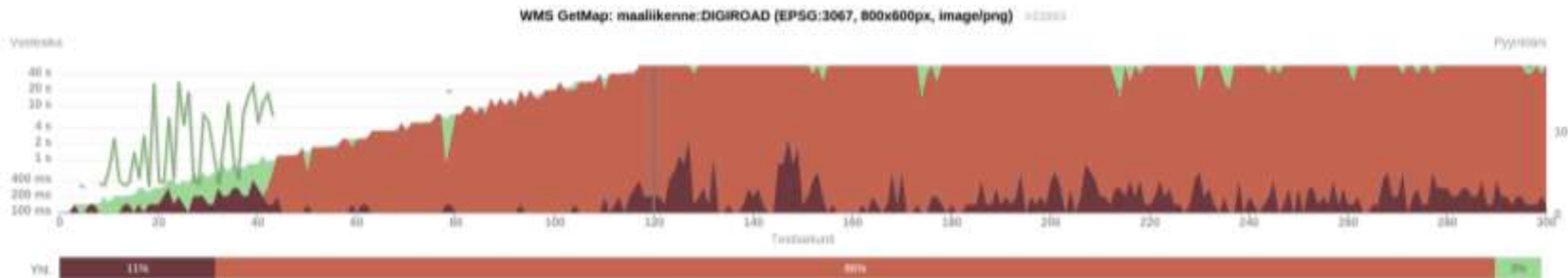- Automatic reports
- Service validation

Performance testing

- Performance tests were carried out with Spatineo Performance in order to
  - find out whether the services meet the Inspire capacity requirements
  - find out service capacity limits and
  - identify possible bottlenecks
- Test routines utilize variable bounding boxes in GetMap and GetFeature requests
  - simulates actual users
- Each test lasted 5 minutes
  - for the first 2 minutes the number of requests was increased until a predefined target was reached
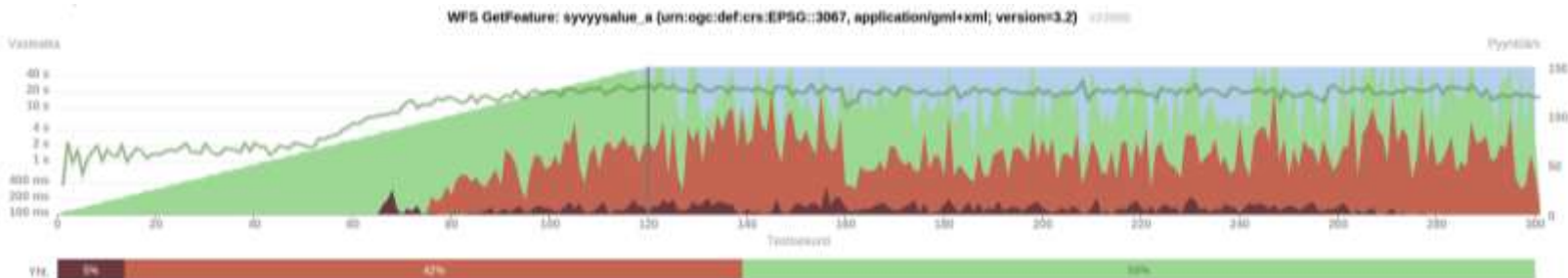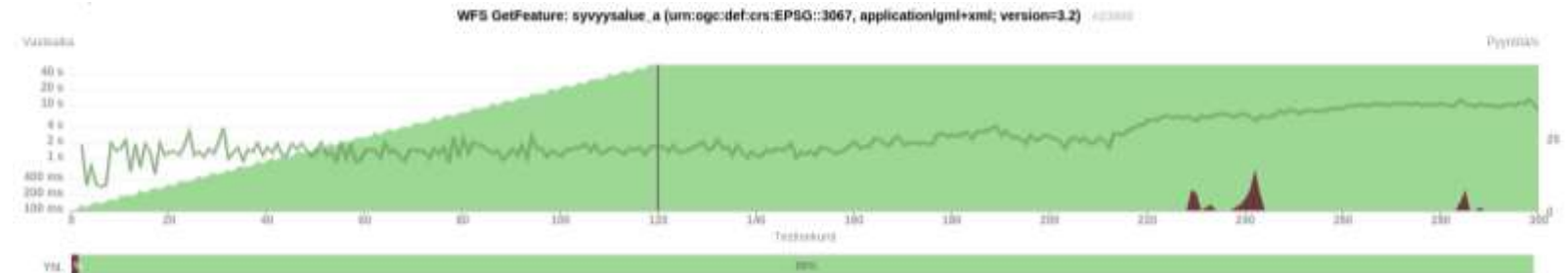
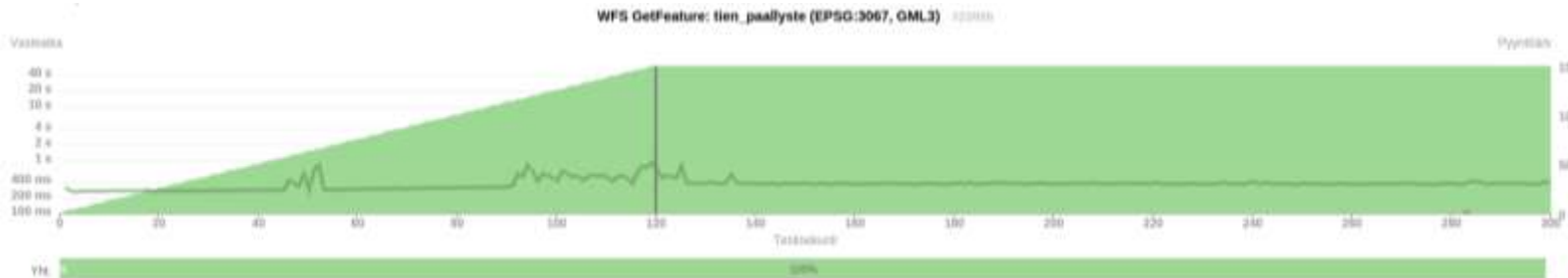# Test against Inspire capacity requirements

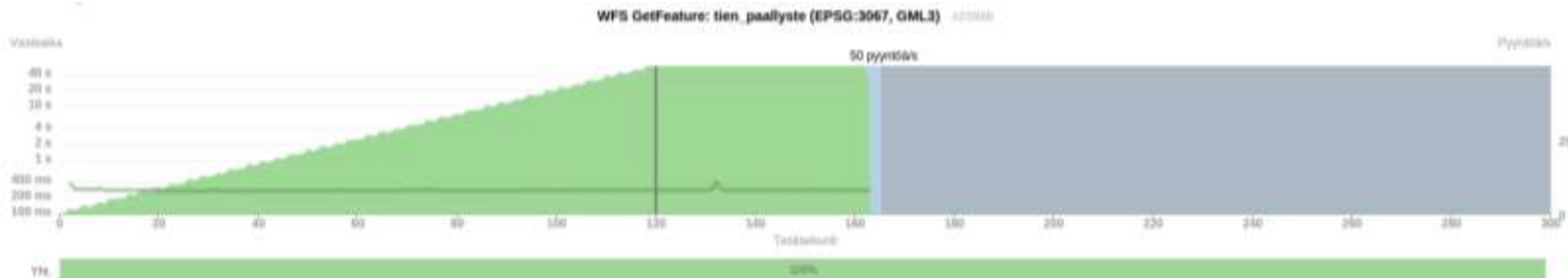WMS GetMap: maaliikenne:DIGIROAD (EPSG:3067, 800x600px, image/png)

WMS GetCapabilities

Service capacity limits #1

WFS GetFeature: syvyysalue_a (urn:ogc:def:crs:EPSG::3067, application/gml+xml; version=3.2)

WFS GetFeature: syvyysalue_a (urn:ogc:def:crs:EPSG::3067, application/gml+xml; version=3.2)
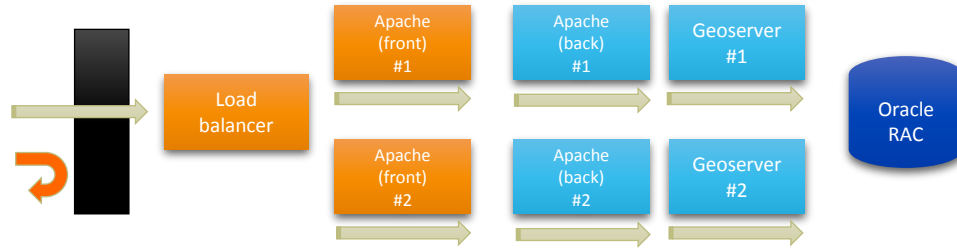
Service capacity limits #2

Bottlenecks & other findings

- Processing capacity on the servers running Geoserver

- Architecture – multiple request queues

- Configuration errors
  - only one instance on the Oracle cluster was used in the beginning
  - Java parameters for Tomcat were not optimized
  - clocks on virtual servers were not synchronized

- The testing process itself was valuable, not only the results

Summary

- Monitoring gives us visibility to the availability and performance of our services

- With performance testing we were able to
  - fix misconfigurations
  - simulate the behaviour of our services under heavy load
  - separate data-spesific performance issues from technology issues

- This information is used to support decision making for further development and investments

Thank you!

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