System Monitoring Dashboard

Case Study

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Open Systems & Services

www.kmioss.com

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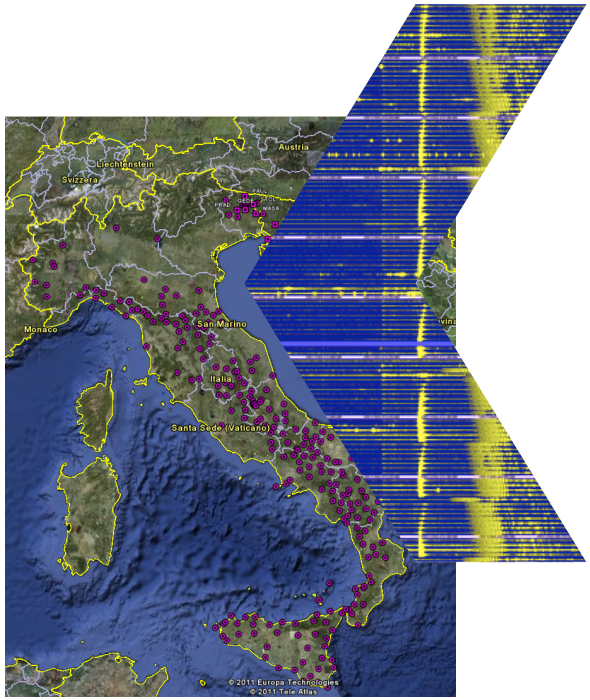
Task: Daily Check of Hardware Condition & Resources

- Check Hardware Resource in order to avoid downtime with proactive response to trending or actual resource limits
- Check Hardware Condition in order to avoid downtime with proactive response to trending or actual fault condition



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Solution: Using Zabbix Monitoring System

- Zabbix is a monitoring solution for networks and applications developed and maintained by Zabbix SIA (http://www.zabbix.com).
- It uses MySQL, PostgreSQL, SQLite, Oracle or IBM DB2 to store data.
- Its backend is written in C and the web frontend is written in PHP.
- Zabbix offers several monitoring options:
  - Simple checks can verify the availability and responsiveness of standard services such as SMTP or HTTP without installing any software on the monitored host.
  - A Zabbix agent can also be installed on UNIX/Linux and Windows hosts to monitor statistics such as CPU load, network utilization, disk space, etc.
  - As an alternative to installing an agent on hosts, Zabbix includes support for monitoring via SNMP, TCP and ICMP checks, as well as over IPMI, JMX, SSH, telnet and using custom parameters. Zabbix supports a variety of real-time notification mechanisms, including XMPP.

What we want to monitor

- CPU utilization
- Memory utilization (physical & virtual)
- File system utilization
- Disk utilization
- Network interface utilization
- Availability of basic system services like sshd, smtpd, ntpd etc.
- DELL iDRAC sensor/health status

Monitoring Dashboard Development - Requirements

- Apache Web server with PHP Support on monitoring server
- Oracle MySQL Server and Client on monitoring server
- Zabbix Server and Front-end installation on monitoring server
- Zabbix Proxy on monitoring server
- Zabbix Agent and Support Tools on monitoring server & client server
- Some system preparations (Optional RPM repository, dedicated file system for MySQL and deployment with Yum repositories, iptables, /etc/hosts)

Monitoring Dashboard Development - Customizations

- Kinemetrics OSS Theme and Support Link
- Colors & Graphic (removal of Zabbix watermark)
- Many small changes that need to be applied to the PHP source code of the front-end
- Kinemetrics-specific zabbix-web RPM package

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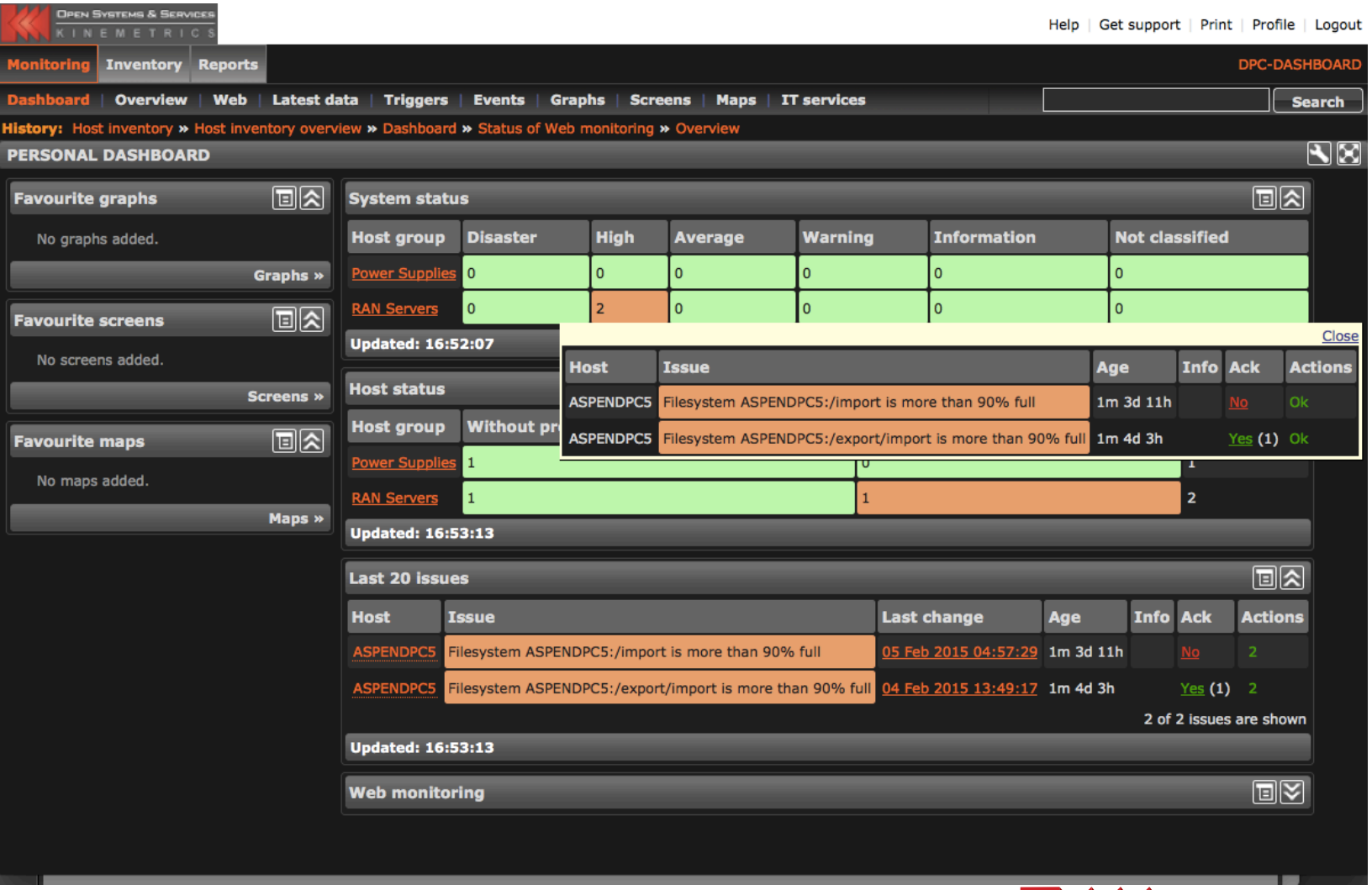
Monitoring Dashboard Development - Customizations

- Low Level Device Discovery
  - One of the main arguments for Zabbix as monitoring system is it's ability to use special probes to dynamically update lists of items that need to be monitored.
  - Templates can be kept simple when low-level device discovery is used.
- Agent Extensions & Templates
  - 12 new or modified templates (xml files)

Monitoring System - Items

- Implemented Zabbix based Monitoring System
  - Dashboard
  - Filesystem
  - Performance (CPU, RAM, LOAD, etc.)
  - Event triggers
  - Status details (e.g., UPS)
  - Network maps
  - Event history

Monitoring System - Dashboard



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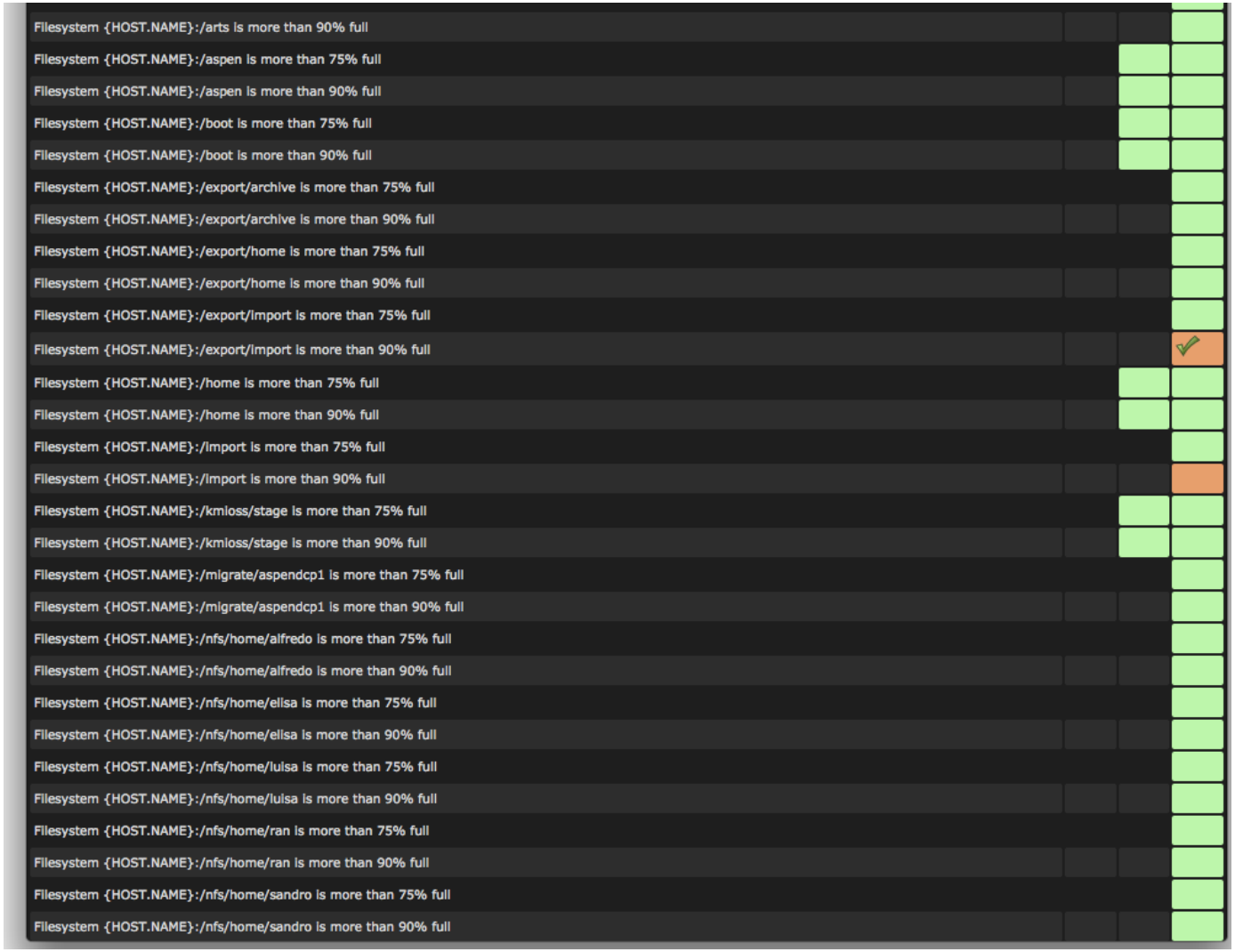
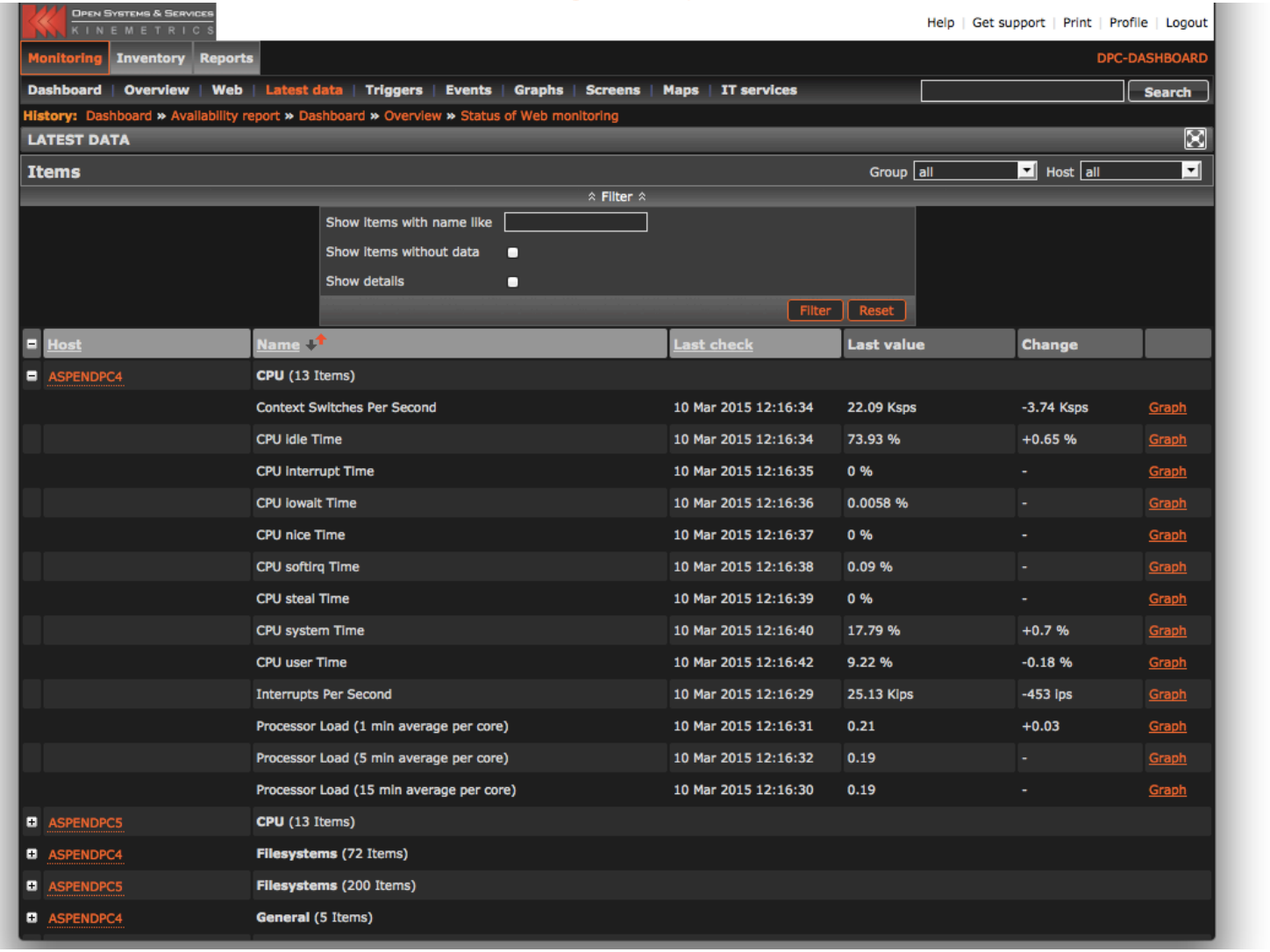
Monitoring System - Overview



Monitoring System – Latest Data



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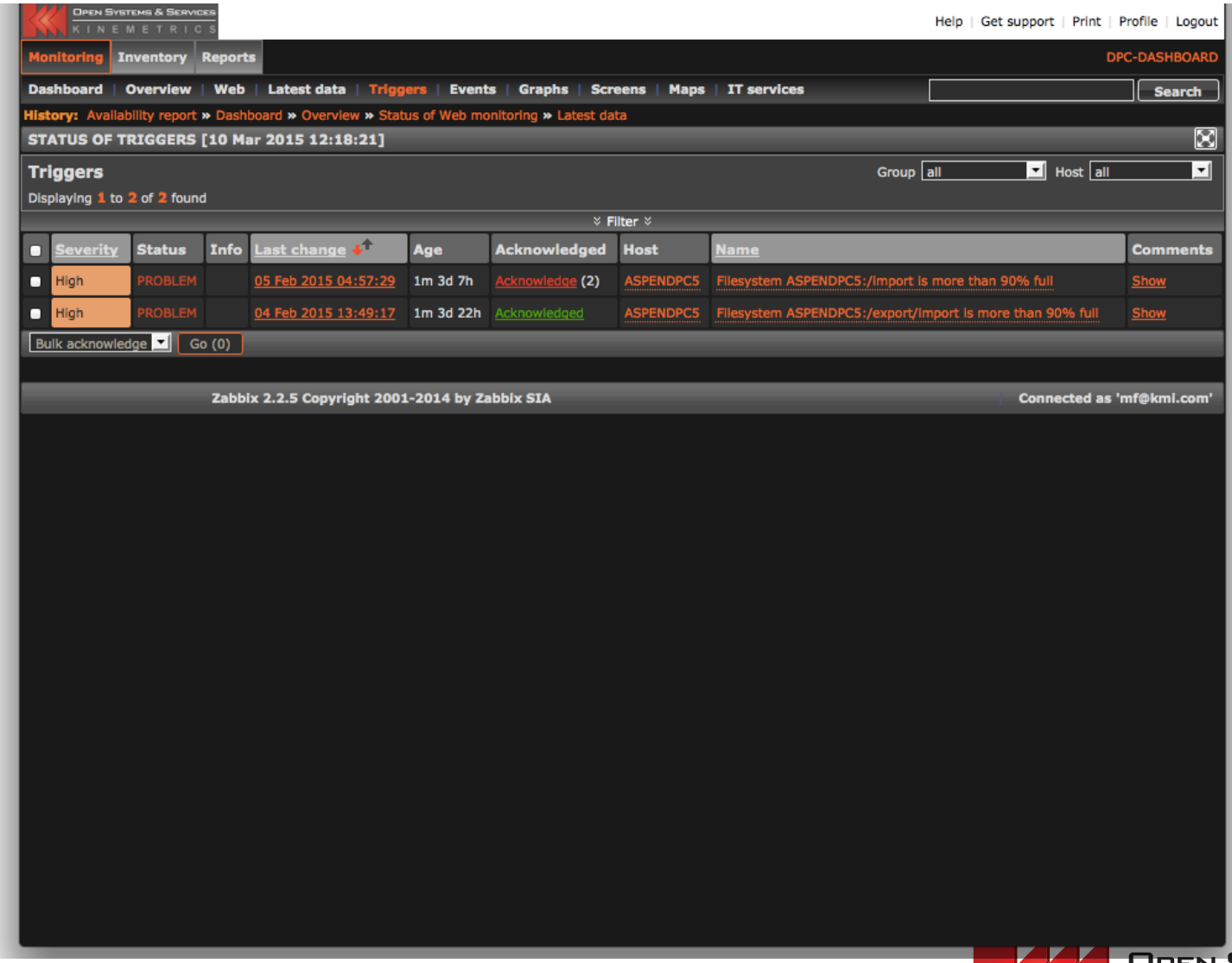
Monitoring System – Triggers



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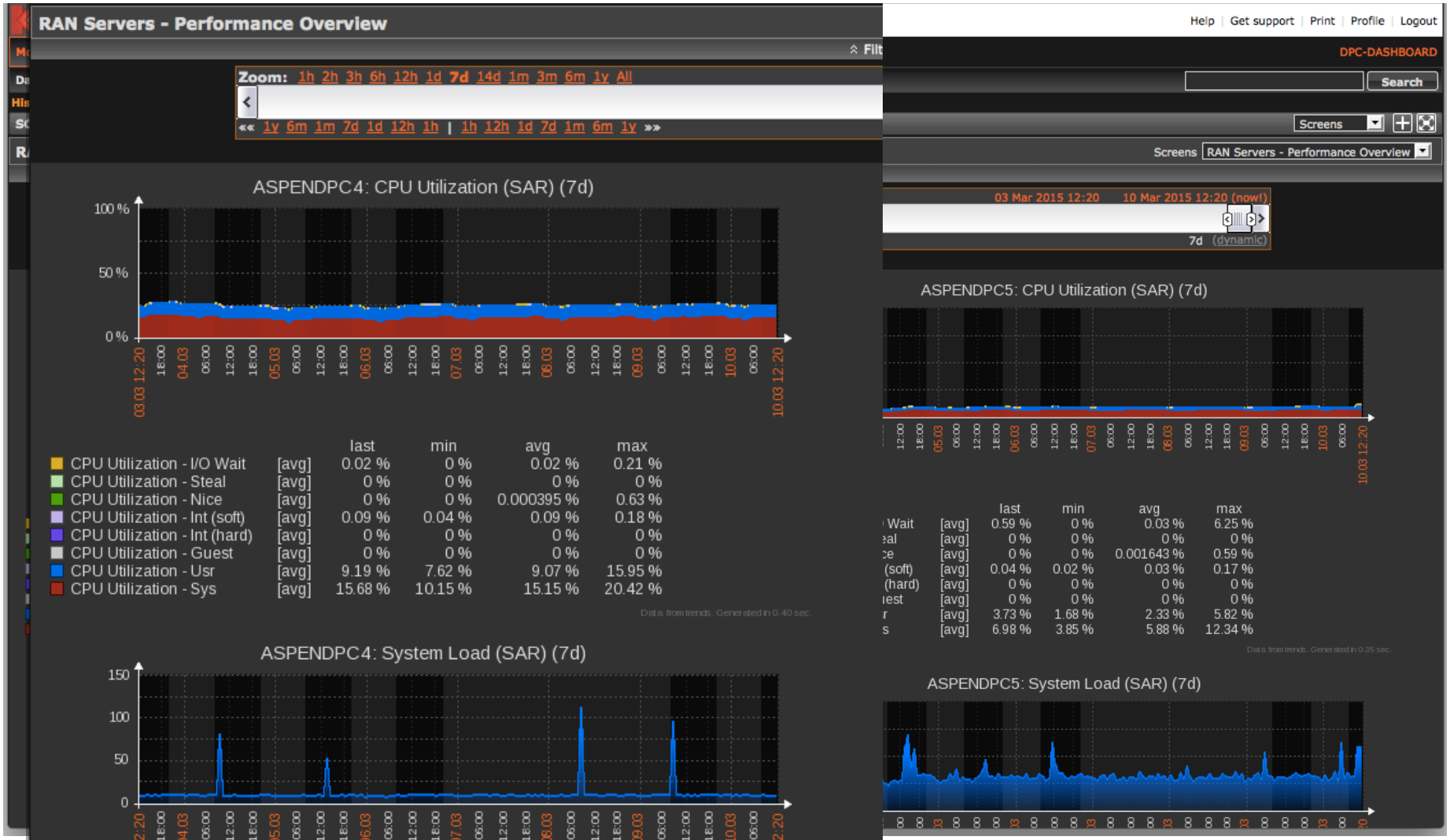
Monitoring System – Screens



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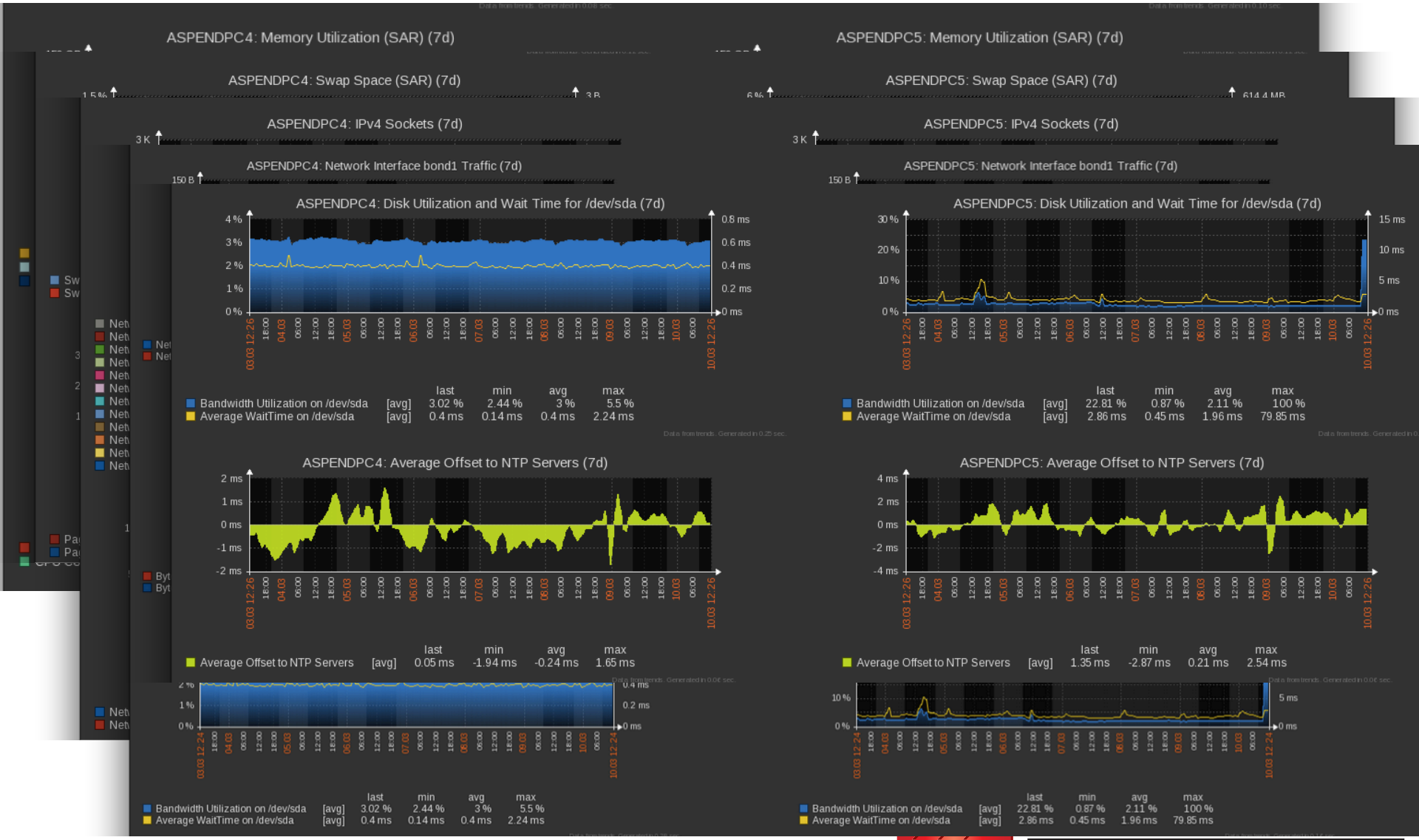

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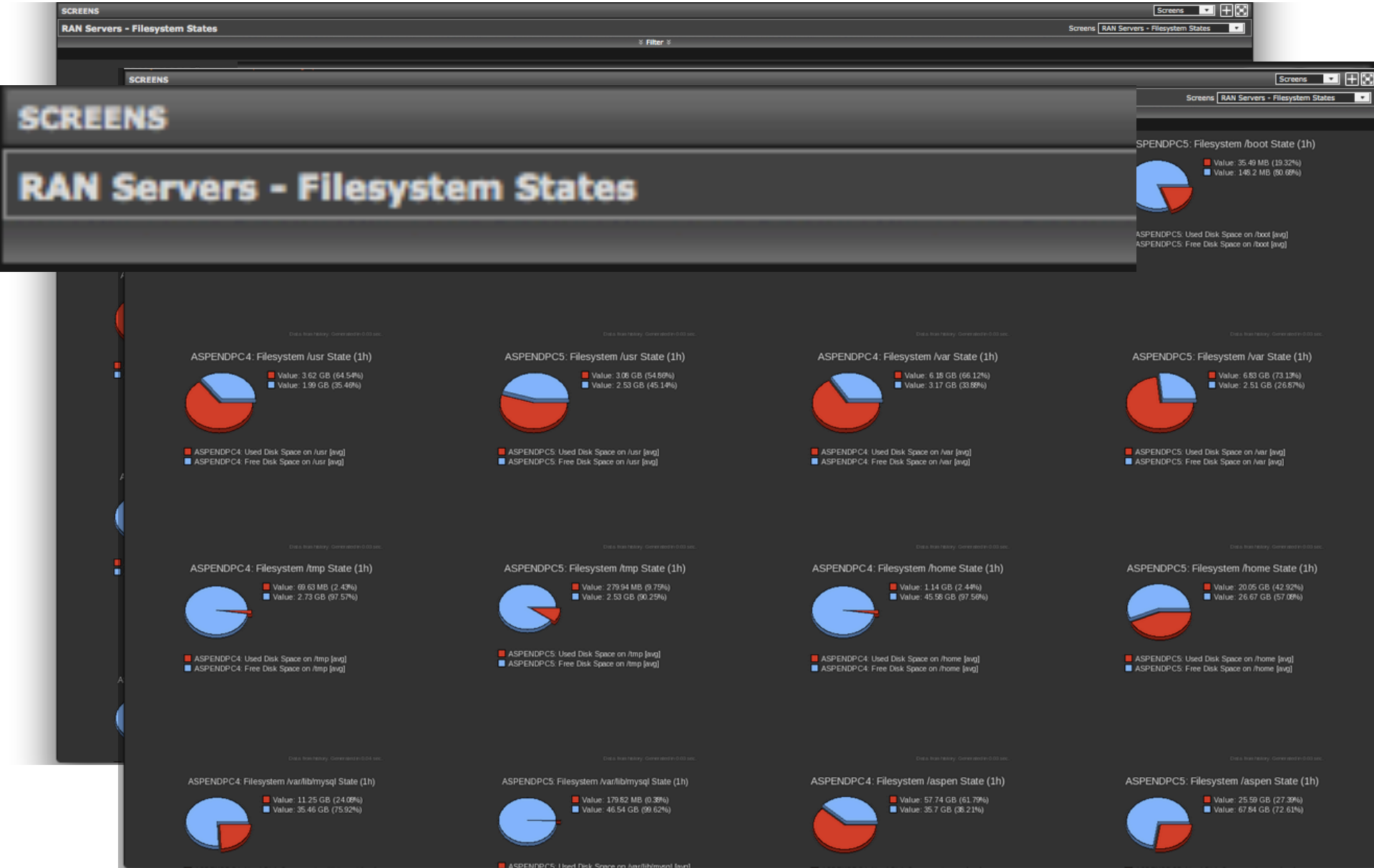
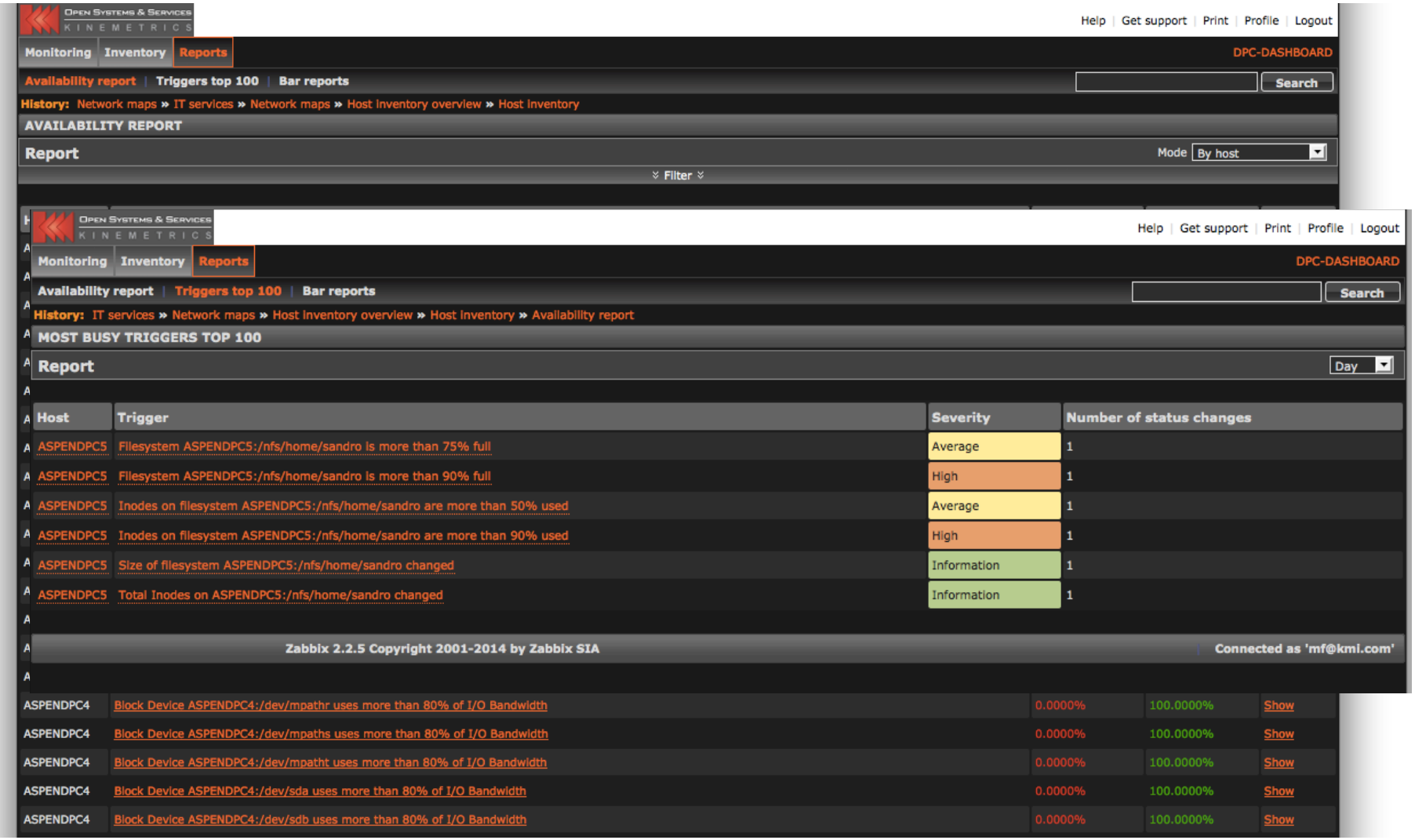


Monitoring System – Reports



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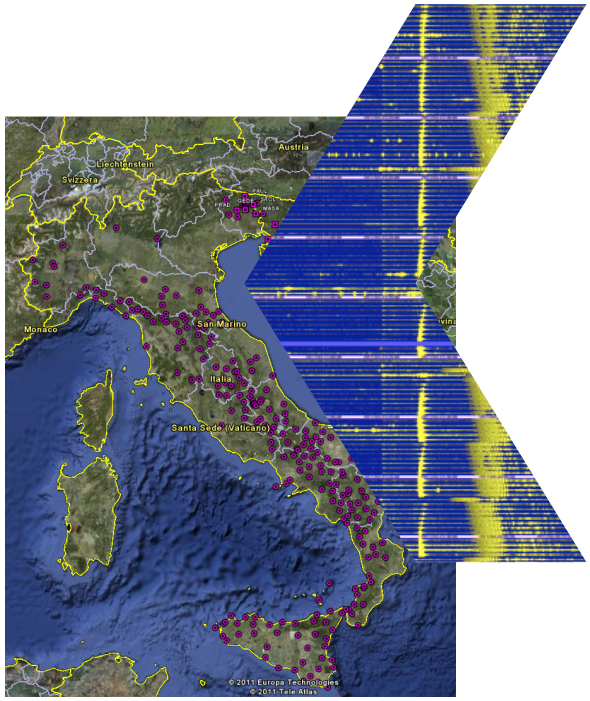
Thank You



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