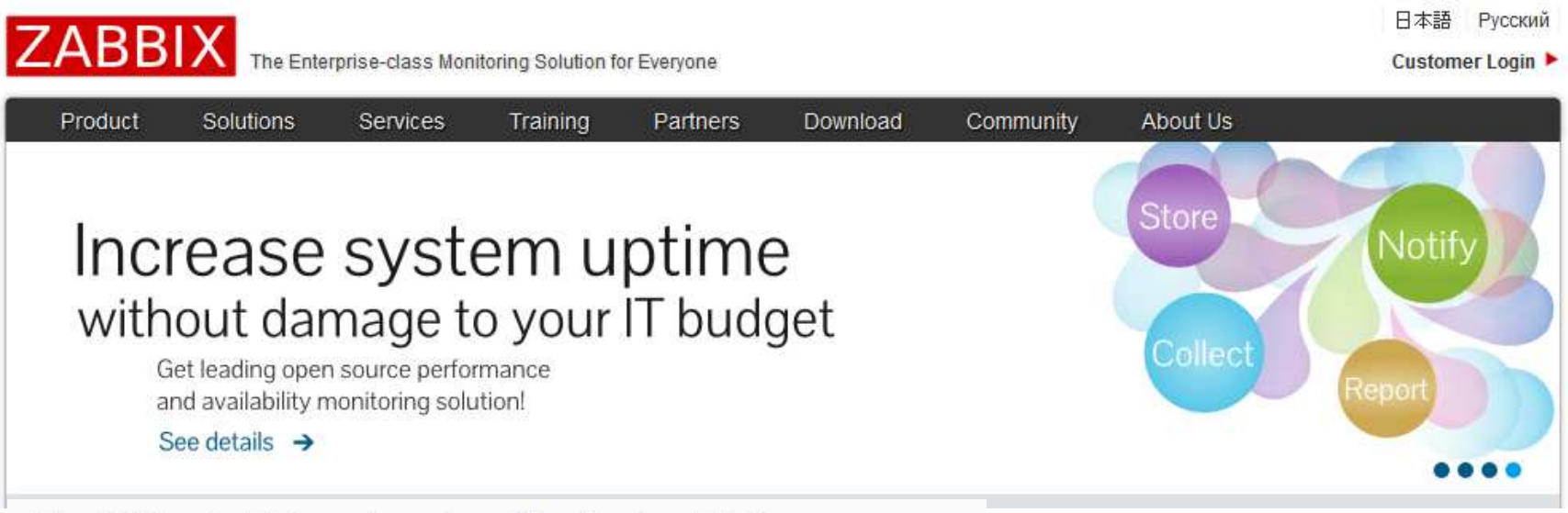


Sommario

1. Chi è Zabbix
2. Caratteristiche prodotto
3. Esempi applicazioni

ABOUT COMPANY

NAME	**ZABBIX SIA**
FOUNDER, OWNER & CEO	Alexei Vladishev
ESTABLISHED	In 2005
STRUCTURE	Zabbix SIA is a limited liability company registered in the Republic of Latvia
SUBSIDARIES	Zabbix Japan LLC – registered in Japan, 100% of belongs to Zabbix SIA
MISSION	To create top-quality open source monitoring platform of choice for solving real needs of users backed by the excellent level of commercial services

www.zabbix.com/about.php

5th annual Zabbix Conference

11 - 12 September 2015 | Riga, Latvia

share your passion and search for new knowledge

ZABBIX 2015 Conference

183 participants

from 28 countries

ZABBIX

Top five countries

1. Estonia **14**
2. Germany, Netherlands **12**
3. France, Norway **9**
4. Italy, Lithuania, Russia **7**
5. Japan, UK **5**

* excluding Latvia

About company | STRATEGY

- ✓ Stay Open Source
- ✓ Concentrate on **enterprise-level** companies, while continue to be the best solution for small and medium companies
- ✓ Deliver improvements regularly
- ✓ Listen to customers' needs, while defining strategy ourselves

GPLv2

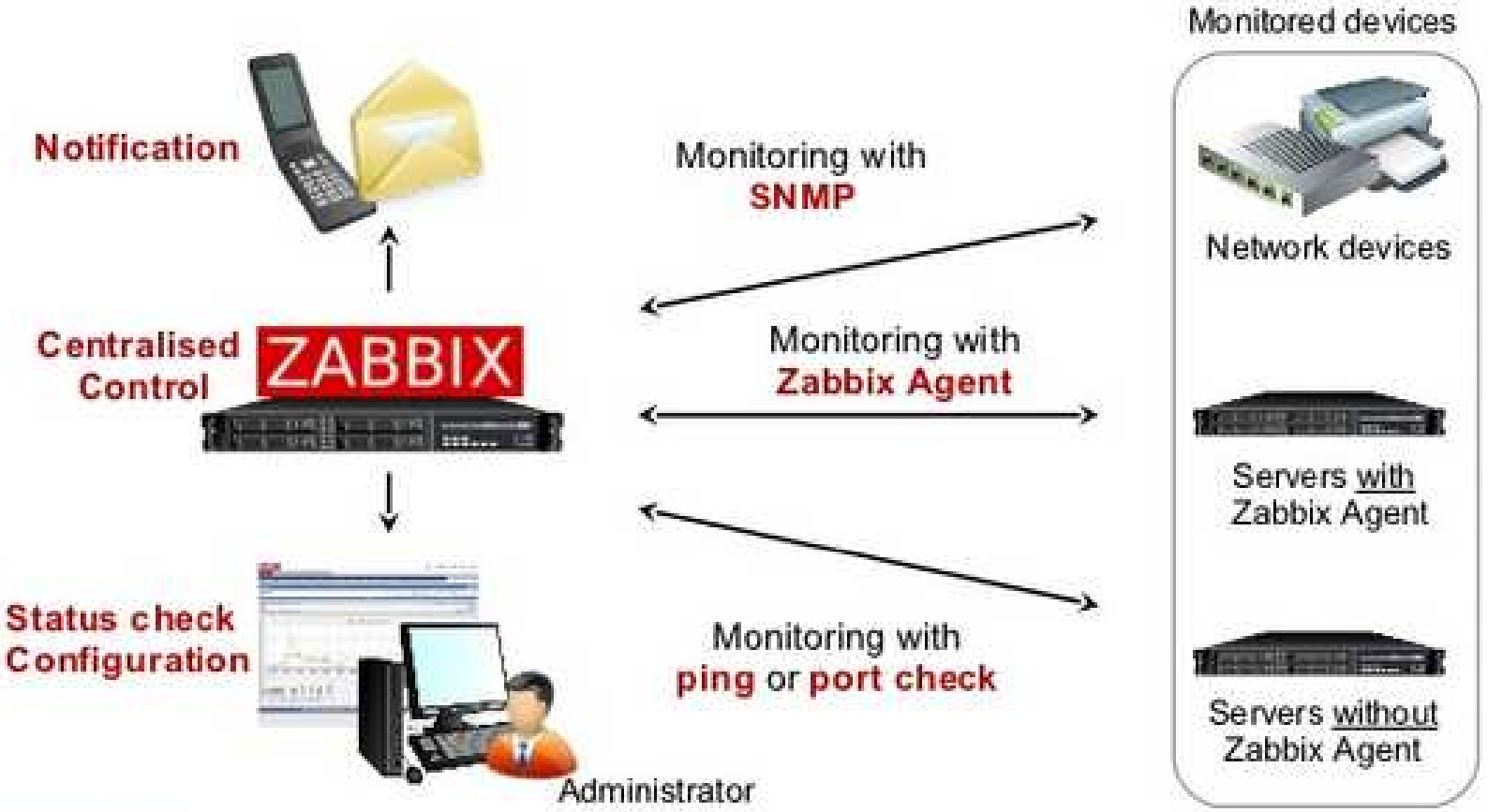
Open Source

No hidden (Corporate, Enterprise) versions

www.zabbix.com/license.php

What is Zabbix?

The Enterprise-class Monitoring Solution



4 Zabbix overview

Architecture

Zabbix consists of several major software components, the responsibilities of which are outlined below.

Server

Zabbix server is the central component to which agents report availability and integrity information and statistics. The server is the central repository in which all configuration, statistical and operational data are stored.

Database storage

All configuration information as well as the data gathered by Zabbix is stored in a database.

Web interface

For an easy access to Zabbix from anywhere and from any platform, the web-based interface is provided. The interface is part of Zabbix server, and usually (but not necessarily) runs on the same physical machine as the one running the server.

Zabbix web interface must run on the same physical machine if SQLite is used.

Proxy

Zabbix proxy can collect performance and availability data on behalf of Zabbix server. A proxy is an optional part of Zabbix deployment; however, it may be very beneficial to distribute the load of a single Zabbix server.

Agent

Zabbix agents are deployed on monitoring targets to actively monitor local resources and applications and report the gathered data to Zabbix server.

Table of Contents

SINGLE ZABBIX NODE

25 000 hosts

100 metrics per host checked every minute

About Product | ZABBIX IN NUMBER

500 000

times software was downloaded during 2013

BEST OF BREED

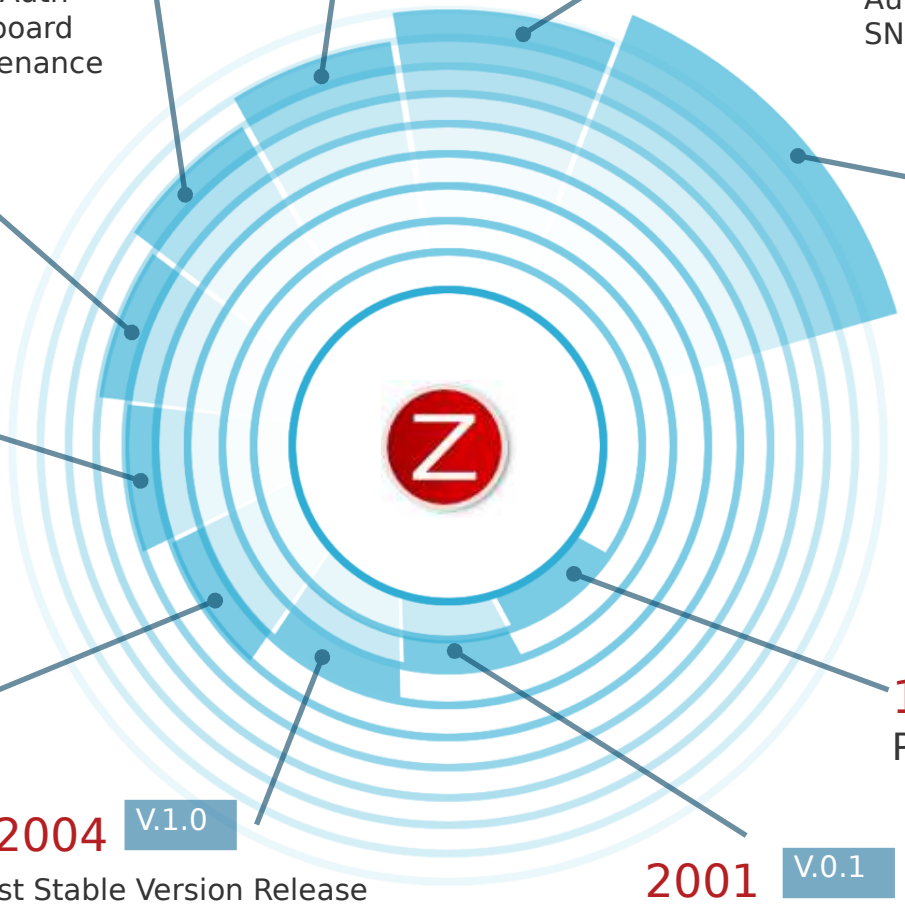
Zabbix was nominated for the 2nd time among world's best monitoring solutions according to Gartner

25

languages Zabbix interface is translated to

ZABBIX

About Product | HISTORY



2009 V.1.8
API
Configuration Cache
Passive Zabbix Proxy
IBM DB2 Support
Calculated Items

2012 V.2.0
Zabbix Japan LLC
LLD
Multinamed Host
Java Gateway
JMX Monitoring
Automatic Inventory
SNMP Trap Monitoring

2008 V.1.6
Escalations
Zabbix Proxy
LDAP Auth
Dashboard
Maintenance

2007 V.1.4
New Interface
SQLite
Network Discovery
Web Monitoring
UTF8, IPv6

2013 V.2.2
Improved Performance
VMware monitoring
Loadable modules
Templates for web monitoring
Plain text monitoring with regex
Self-monitoring

2006 V.1.1
XML Protocol
Active Checks
Logfile Monitoring
Event log Monitoring
GSM Modern
SNMPv3

1998
PRODUCT IDEA

2005
Zabbix SIA Company est.

2004 V.1.0
Fist Stable Version Release

2001 V.0.1
Fist GPL release

ZABBIX

Use cases & Solutions | SOLUTIONS BY INDUSTR

AEROSPACE

- Tower and ATM automation systems
- End-to-end communication system
- Value added Front-Ends

BANKING & FINANCE

- Online Banking
- Number of transactions
- Financial operations
- Cash and Credit Flows
- System Infection
- Security Breaking

EDUCATION

- IT devices
- Data loss
- Identify internal system abusers
- IP protection purposes
- Attendance

ENERGY & CHEMICALS

- Energy and utilities usage
- Energy supply level
- Automation of machines

GOVERNMENT

- Understanding investments
- Project evaluation
- Yearly budget
- Core activities

HEALTHCARE & MEDICINE

- Hospital's machines and equipment
- Logfile capability
- Statistical testing

IT & TELCO

- Datacenter
- WISP network
- WiFi infrastructure
- day-to-day metrics

MARKETING

- Measurement and tracking
- statistics
- Website activities
- Preschedule automated messages

RETAIL

- Equipment
- Security system
- Production statistics
- Cash machines

www.zabbix.com/solutions_by_industry.php

ZABBIX

DOWNLOAD

3 options:

- ✓ Use virtual appliance to test
- ✓ Install from a package | RHEL, CentOS, Debian, Ubuntu
- ✓ Install from a source

www.zabbix.com/download.php

Various Monitoring Functions

- **Zabbix Agent**
- **SNMP Agent**
- **IPMI Agent**
- **Agentless Monitoring**
- **Web Monitoring**
- **Database Monitoring**
- **Internal Check**
- **Calculated Monitoring**
- **Custom Command Monitoring**

CPU	Load Average
	CPU Utilization
Memory	Memory Utilization
	Swap / Pagefile Utilization
Network	Network Transfer
	Network Error / Drop Packet
	Collisions
Disk	Filesystem Utilization
	Disk I/O
Service	Process Monitoring
	Windows Service
	TCP Port connectivity
	TCP Port response time
	DNS Monitoring
	NTP Monitoring
Log	Text Log
	Eventlog
File	File Monitoring
Other	Performance Counter (Windows only)

What can be monitored on the Web?

- Response time
- Download speed
- Response code
- Availability of certain content
- Complex web scenarios with login and logout capability
- Support for HTTP and HTTPs

Database Monitoring

Monitoring any query

Through the ODBC technology and their drivers, a Zabbix server can collect any data in RDBMS databases such as MySQL, PostgreSQL, Oracle and Microsoft SQL Server.

After executing the query, its result is stored and allows you to generate graphs, alarms or notifications in case of failures in performance or unavailability.

This feature makes monitoring more effective because it collects information directly from the database data, avoiding false positives.

Calculated and Aggregate Information

Calculated items

Through an arithmetic expression, calculated items allow to create virtual data sources, where the values are periodically recalculated. The result is stored, allowing to generate graphs, alarms or send notifications.

An example of a calculated item would be to calculate the sum of traffic between two ports on a network switch.

Aggregate items

With hosts being organized into groups you can create items with aggregate functions like maximum, minimum and average of an item that is common to all hosts in the group.

An example of an aggregate item would be to calculate the average of memory usage across all hosts of a specific group.

Custom Monitoring

Add custom scripts

In addition to the built-in checks, it is possible to create custom agent checks using the user parameter feature.

Moreover, a powerful feature of a Zabbix agent is the ability to execute custom scripts. Anyone can extend Zabbix agent functionality by creating scripts in programming languages like shell script, Perl, Python, Ruby or any other that can be executed. The result of the executed script is sent to Zabbix server, which stores and processes it like any other check.

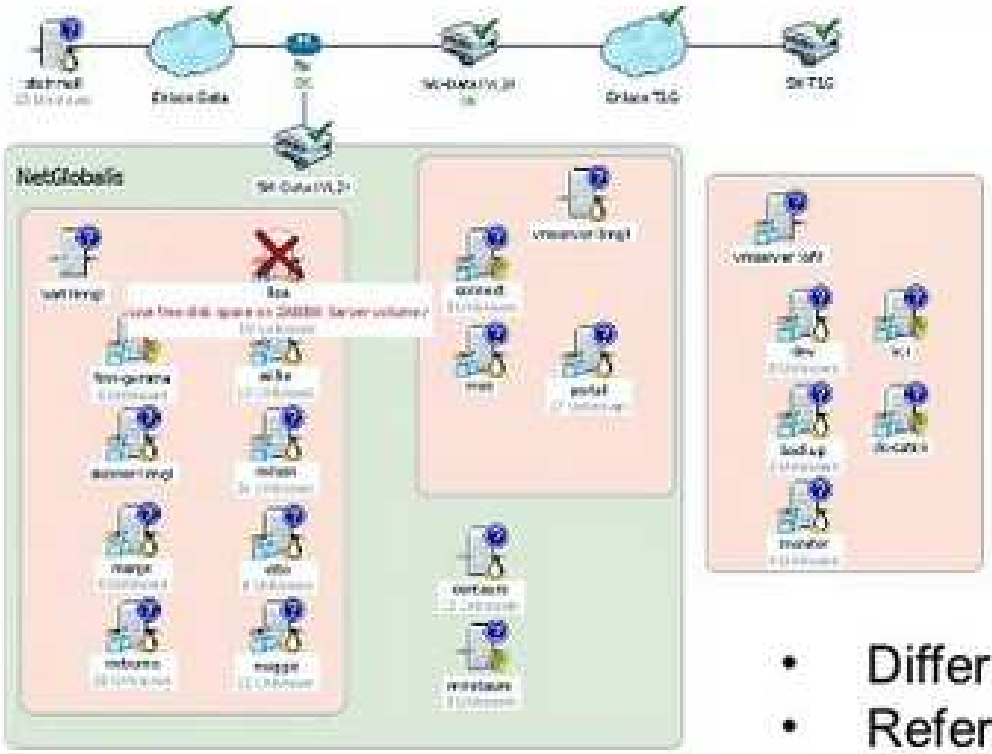
External checks

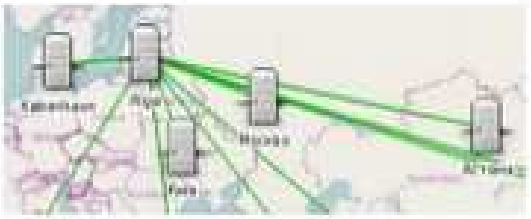
In external checks a Zabbix server can run custom scripts from their own server.

Loadable modules

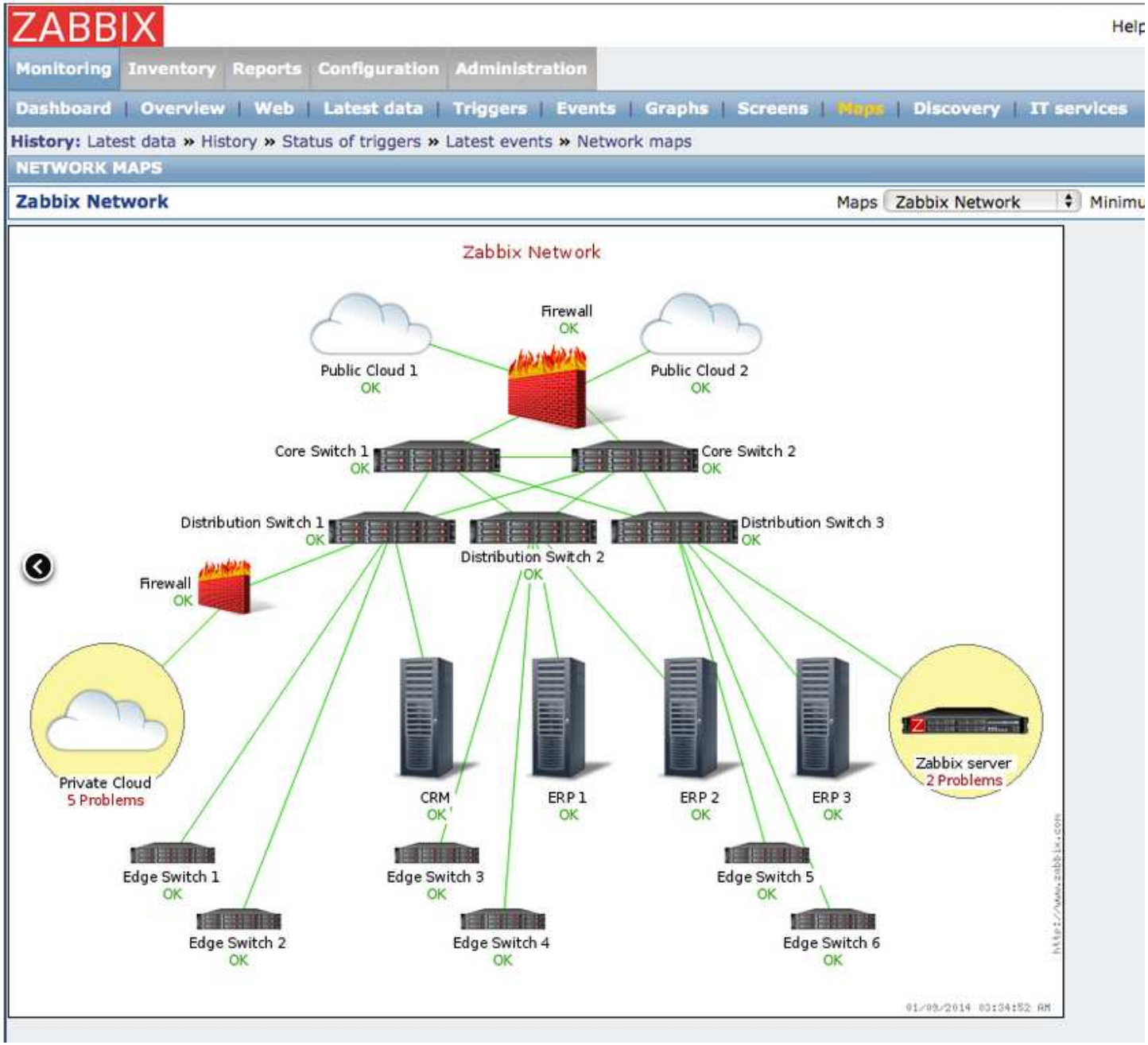
Loadable modules offer a way of extending Zabbix functionality that is more performance-minded than the user parameter option or external checks. In addition to greater performance and the ability to implement any logic, modules have the potential to be developed and shared within the Zabbix community. Supported for Unix-like systems, a loadable module is basically a shared library used by Zabbix server or agent and loaded on startup.

Maps





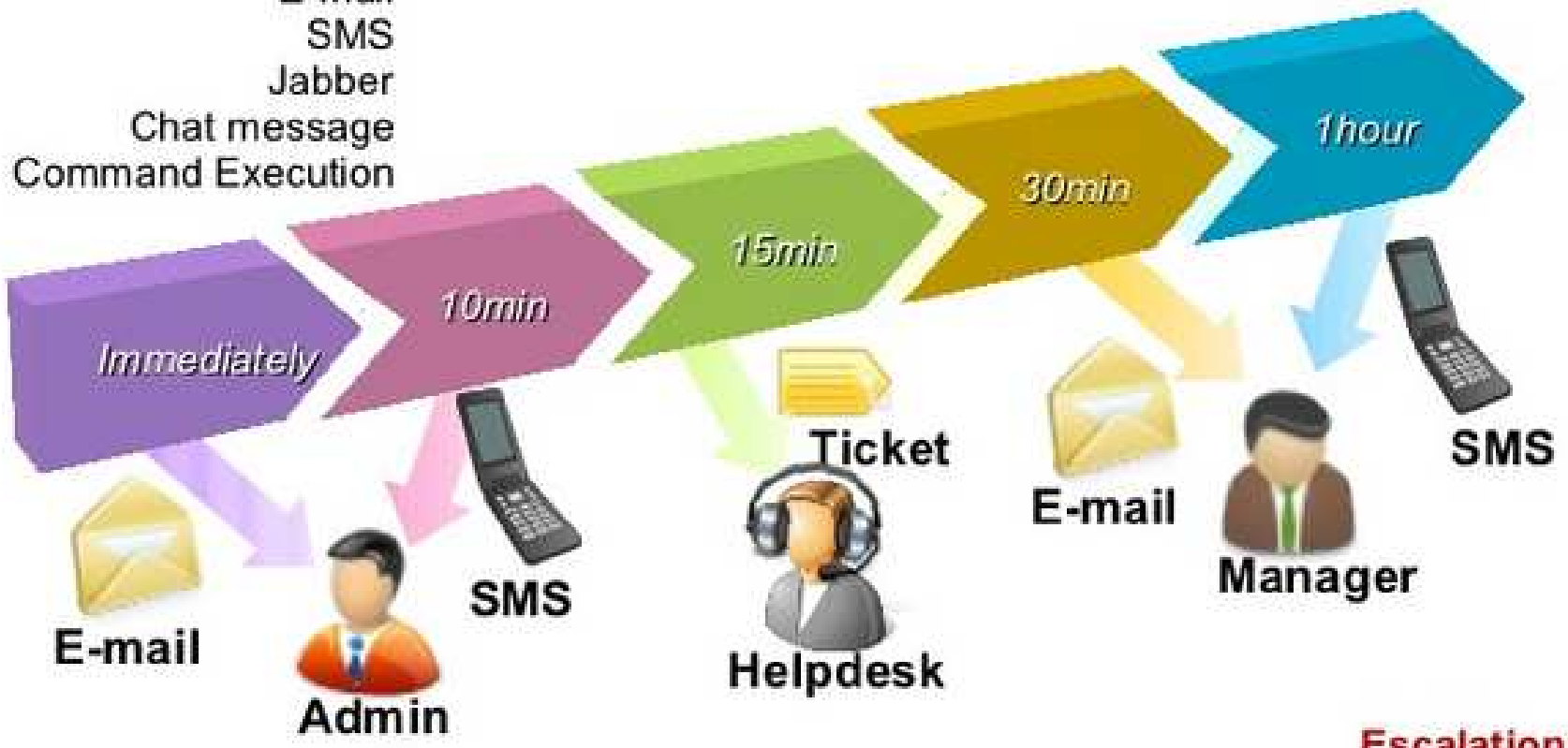
- Different available elements
- Reference data
- Easy editing – Drag&Drop
- Background image
- Dynamic icons


ZABBIX
Help
Monitoring
Inventory
Reports
Configuration
Administration
Dashboard | Overview | Web | Latest data | Triggers | Events | Graphs | Screens | Maps | Discovery | IT services
History: Latest data » History » Status of triggers » Latest events » Network maps
NETWORK MAPS
Zabbix Network
Maps Zabbix Network
Zabbix Network
Firewall
OK
Public Cloud 1
OK
Public Cloud 2
OK
Core Switch 1
OK
Core Switch 2
OK
Distribution Switch 1
OK
Distribution Switch 2
OK
Distribution Switch 3
OK
Firewall
OK
Private Cloud
5 Problems
CRM
OK
ERP 1
OK
ERP 2
OK
ERP 3
OK
Zabbix server
2 Problems
Edge Switch 1
OK
Edge Switch 3
OK
Edge Switch 5
OK
Edge Switch 2
OK
Edge Switch 4
OK
Edge Switch 6
OK
01/09/2014 03:34:52 AM

How you get notified?

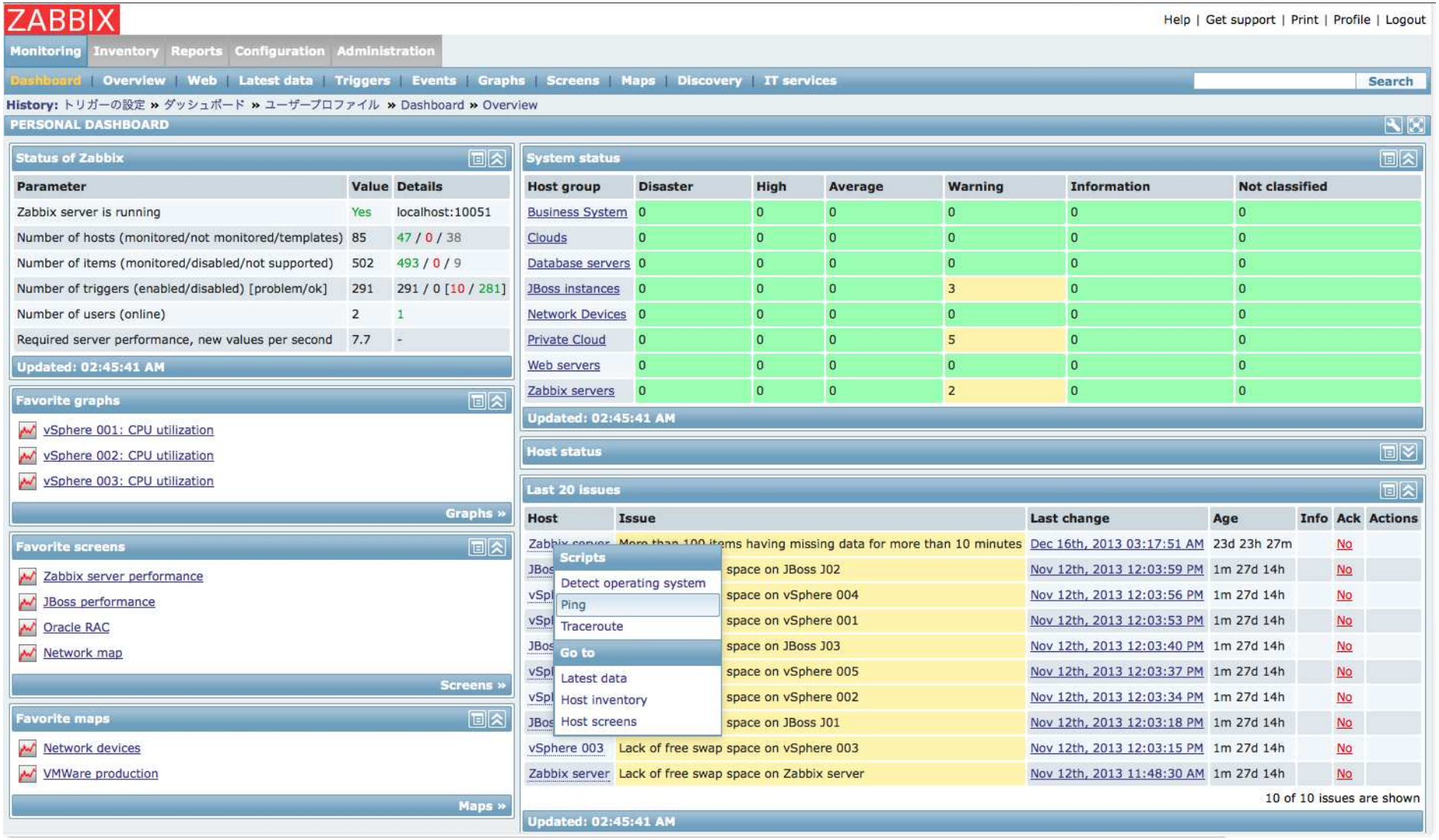
Notification method:

E-mail
SMS
Jabber
Chat message
Command Execution



Escalation:

Escalation allert to other person / other notification method
Repeat notification


ZABBIX
Help | Get support | Print | Profile | Logout
Monitoring
Inventory
Reports
Configuration
Administration
Dashboard | Overview | Web | Latest data | Triggers | Events | Graphs | Screens | Maps | Discovery | IT services
Search
History: トリガーの設定 » ダッシュボード » ユーザープロファイル » Dashboard » Overview
PERSONAL DASHBOARD
Status of Zabbix
Parameter
Value
Details
Zabbix server is running
Yes
localhost:10051
Number of hosts (monitored/not monitored/templates)
85
47 / 0 / 38
Number of items (monitored/disabled/not supported)
502
493 / 0 / 9
Number of triggers (enabled/disabled) [problem/ok]
291
291 / 0 [10 / 281]
Number of users (online)
2
1
Required server performance, new values per second
7.7
-
Updated: 02:45:41 AM
Favorite graphs
vSphere 001: CPU utilization
vSphere 002: CPU utilization
vSphere 003: CPU utilization
Graphs »
Favorite screens
Zabbix server performance
JBoss performance
Oracle RAC
Network map
Screens »
Favorite maps
Network devices
VMWare production
Maps »
System status
Host group
Disaster
High
Average
Warning
Information
Not classified
Business System 0 0 0 0 0 0
Clouds 0 0 0 0 0 0
Database servers 0 0 0 0 0 0
JBoss instances 0 0 0 3 0 0
Network Devices 0 0 0 0 0 0
Private Cloud 0 0 0 5 0 0
Web servers 0 0 0 0 0 0
Zabbix servers 0 0 0 2 0 0
Updated: 02:45:41 AM
Host status
Last 20 issues
Host
Issue
Last change
Age
Info
Ack
Actions
Zabbix server More than 100 items having missing data for more than 10 minutes Dec 16th, 2013 03:17:51 AM 23d 23h 27m No
JBos space on JBoss J02 Nov 12th, 2013 12:03:59 PM 1m 27d 14h No
vSpl space on vSphere 004 Nov 12th, 2013 12:03:56 PM 1m 27d 14h No
vSpl space on vSphere 001 Nov 12th, 2013 12:03:53 PM 1m 27d 14h No
JBos space on JBoss J03 Nov 12th, 2013 12:03:40 PM 1m 27d 14h No
vSpl space on vSphere 005 Nov 12th, 2013 12:03:37 PM 1m 27d 14h No
vSpl space on vSphere 002 Nov 12th, 2013 12:03:34 PM 1m 27d 14h No
JBos space on JBoss J01 Nov 12th, 2013 12:03:18 PM 1m 27d 14h No
vSphere 003 Lack of free swap space on vSphere 003 Nov 12th, 2013 12:03:15 PM 1m 27d 14h No
Zabbix server Lack of free swap space on Zabbix server Nov 12th, 2013 11:48:30 AM 1m 27d 14h No
Scripts
Detect operating system
Ping
Traceroute
Go to
Latest data
Host inventory
Host screens
10 of 10 issues are shown
Updated: 02:45:41 AM

ZABBIX

Help | Get support | Print | Profile | Logout

Monitoring | Inventory | Reports | Configuration | Administration

Dashboard | Overview | Web | Latest data | Triggers | Events | Graphs | Screens | Maps | Discovery | IT services

Search

History: Dashboard » Overview » Custom graphs » Custom screens » Custom graphs

SCREENS

Screens

Zabbix server performance

Screens Zabbix server performance

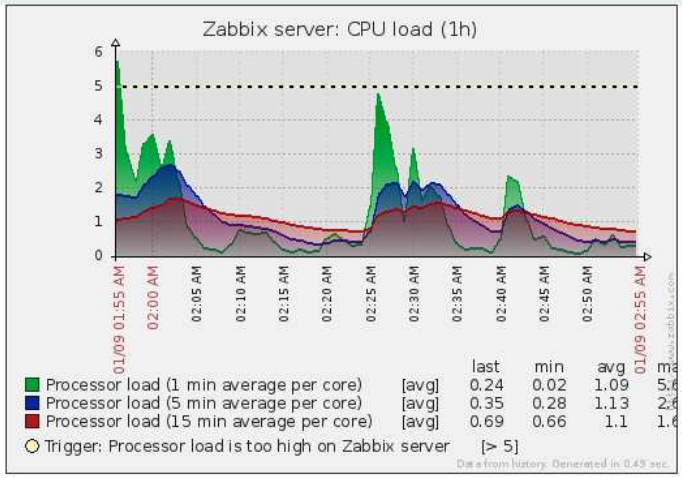
Filter

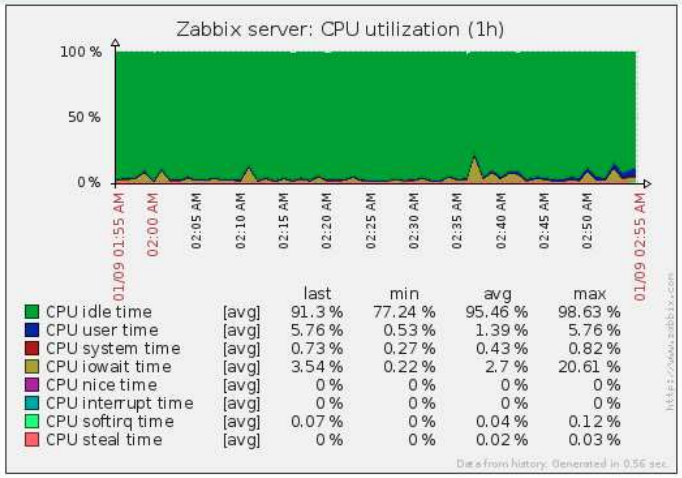
Zoom: 1h 2h 3h 6h 12h 1d 7d 14d 1m 3m 6m 1y All

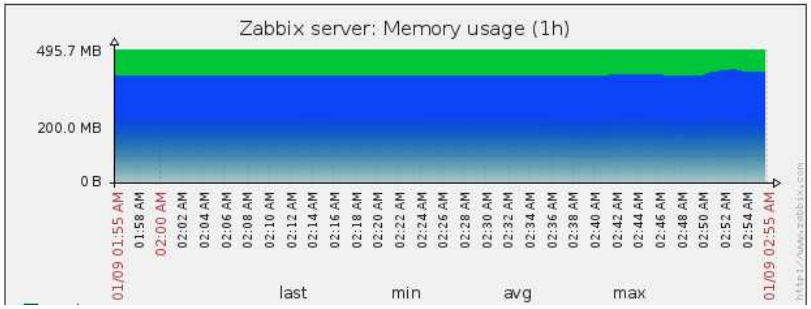
Jan 9th, 2014 01:55 AM - Jan 9th, 2014 02:55 AM (now!)

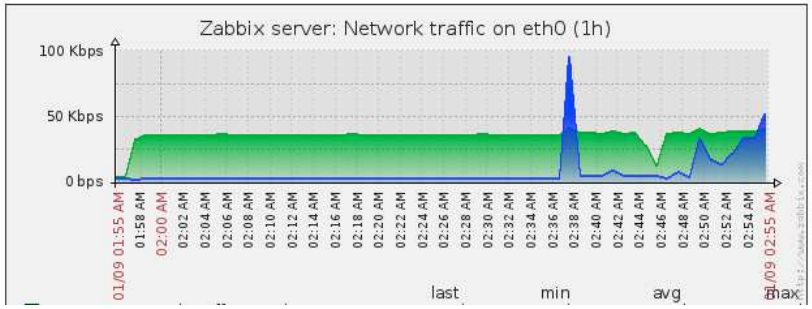
«« 1y 6m 1m 7d 1d 12h 1h | 1h 12h 1d 7d 1m 6m 1y »»

1h (fixed)









Monitoring | Inventory | Reports | Configuration | Administration

Dashboard | Overview | Web | Latest data | Triggers | Events | Graphs | Screens | Maps | Discovery | IT services

History: Custom screens » Custom graphs » Latest data » Dashboard » Custom screens

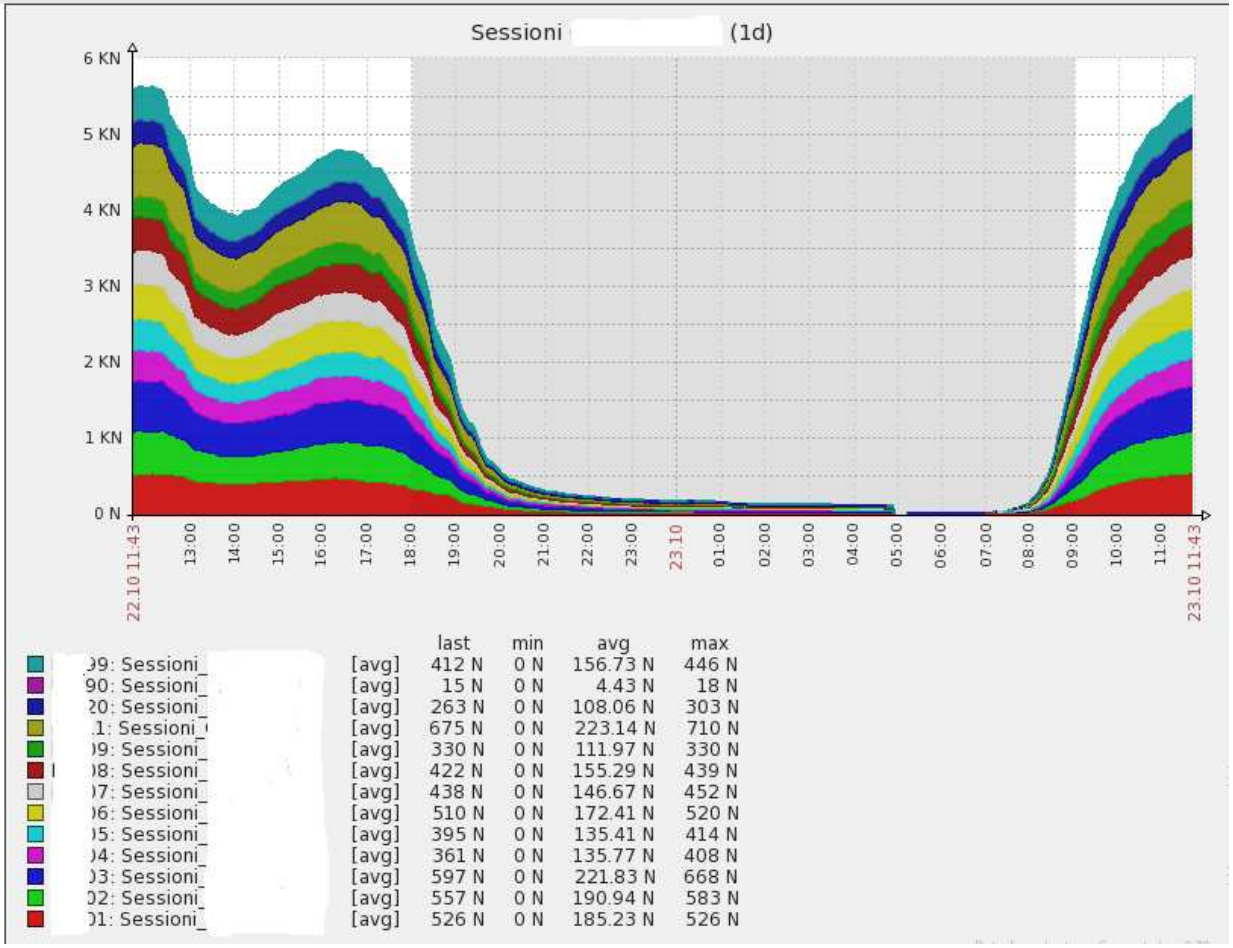
SCREENS

Screen

Hide filter

Zoom: 1h 2h 3h 6h 12h **1d** 7d 14d 1m 3m 6m 1y All 2015-10

«« 1y 6m 1m 7d 1d 12h 1h | 1h 12h 1d 7d 1m 6m 1y »»



	last	min	avg	max
09: Sessioni_	[avg] 412 N	0 N	156.73 N	446 N
90: Sessioni_	[avg] 15 N	0 N	4.43 N	18 N
20: Sessioni_	[avg] 263 N	0 N	108.06 N	303 N
1: Sessioni_	[avg] 675 N	0 N	223.14 N	710 N
09: Sessioni_	[avg] 330 N	0 N	111.97 N	330 N
08: Sessioni_	[avg] 422 N	0 N	155.29 N	439 N
07: Sessioni_	[avg] 438 N	0 N	146.67 N	452 N
06: Sessioni_	[avg] 510 N	0 N	172.41 N	520 N
05: Sessioni_	[avg] 395 N	0 N	135.41 N	414 N
04: Sessioni_	[avg] 361 N	0 N	135.77 N	408 N
03: Sessioni_	[avg] 597 N	0 N	221.83 N	668 N
02: Sessioni_	[avg] 557 N	0 N	190.94 N	583 N
01: Sessioni_	[avg] 526 N	0 N	185.23 N	526 N

ESEMPI di Applicazioni

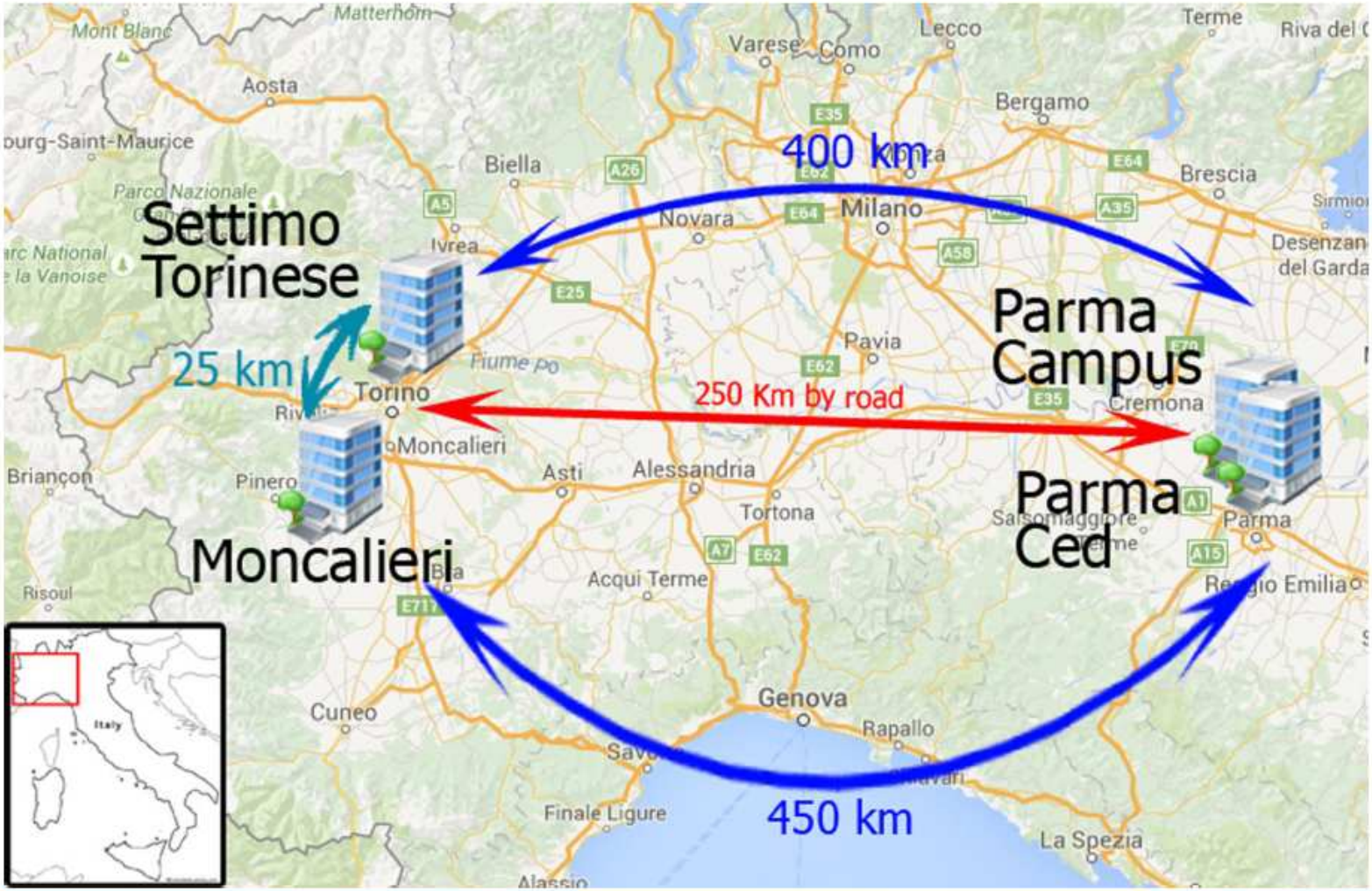
INTESA SANPAOLO
GROUP SERVICES

SAN Monitoring using Zabbix

A perfect dress for a powerful engine

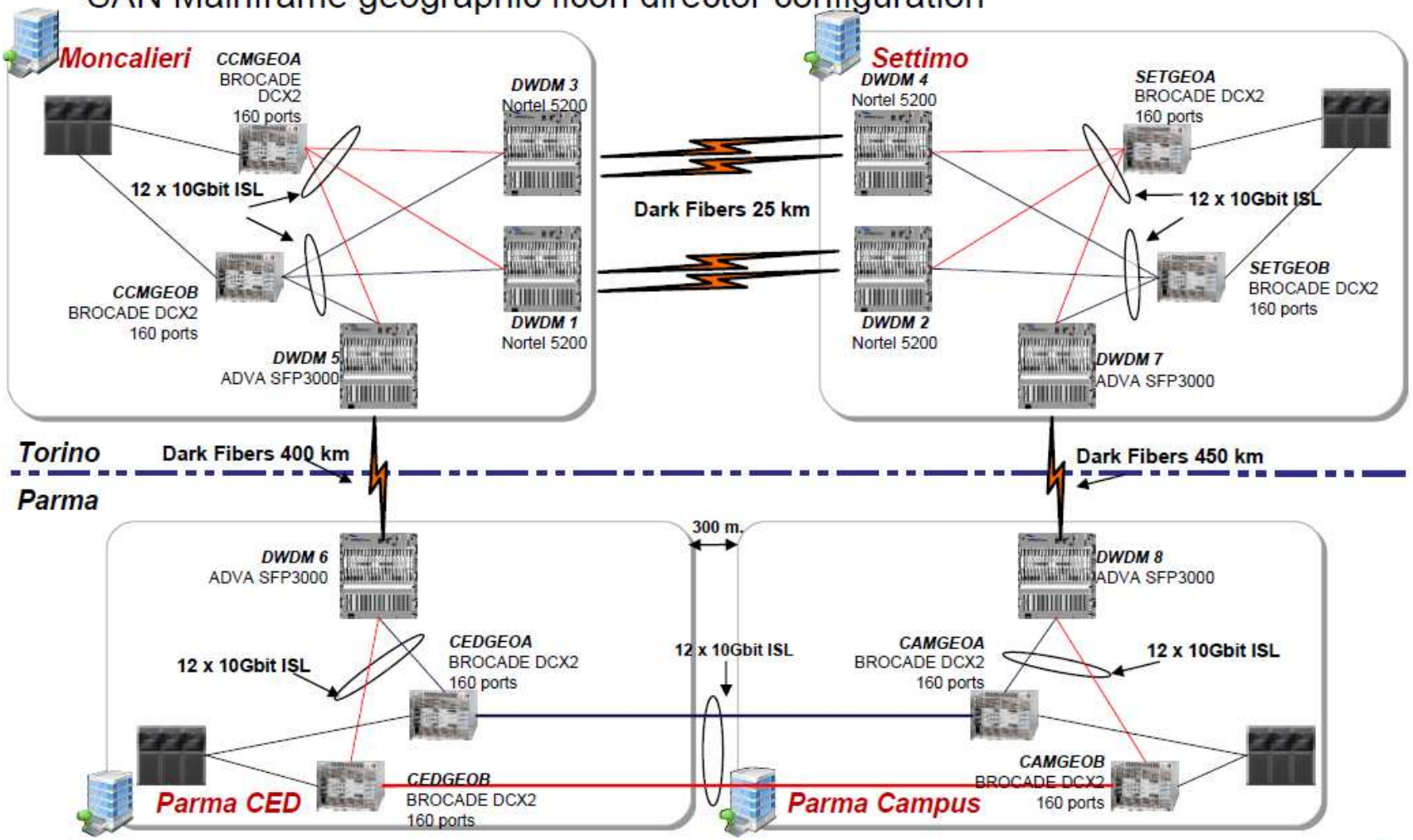
IntesaSanpaolo Datacenters

Datacenters distribution and replication paths

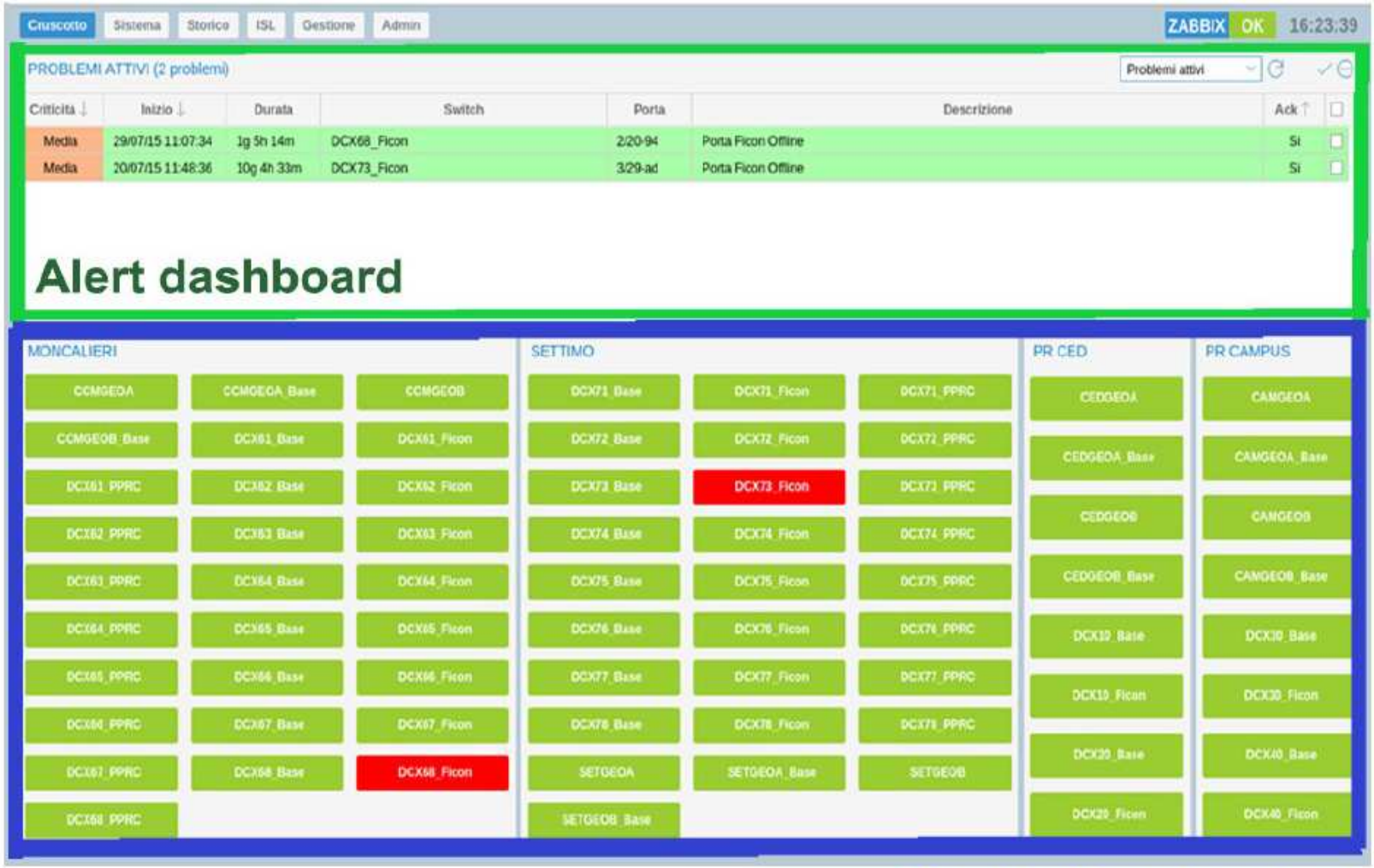


SAN Mainframe: Geographic data replication

SAN Mainframe geographic ficon director configuration

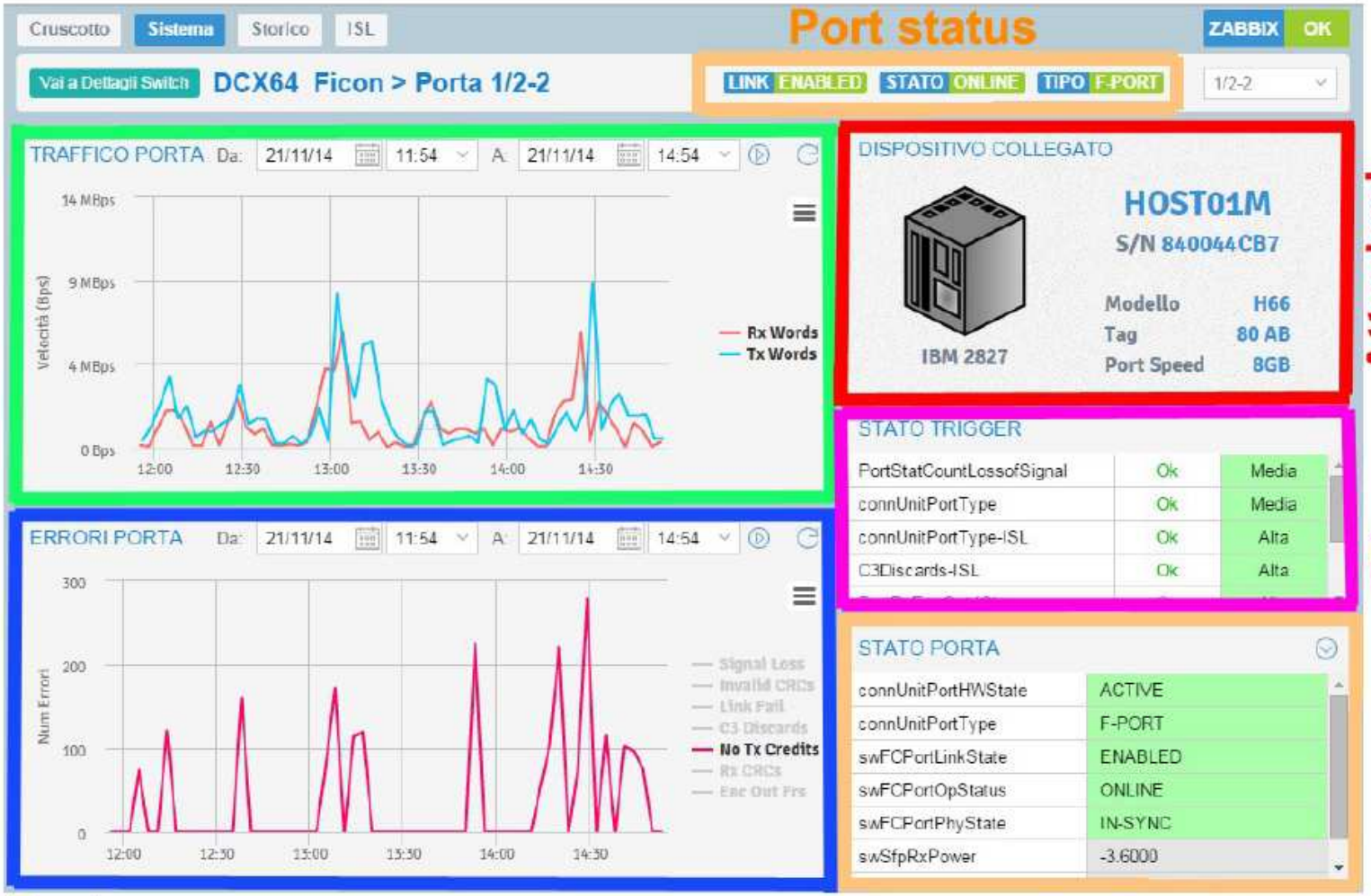


SAN Mainframe monitor: the alert dashboard panel



Context host groups

SAN Mainframe Monitor : the port details panel



Port traffic

Attached device

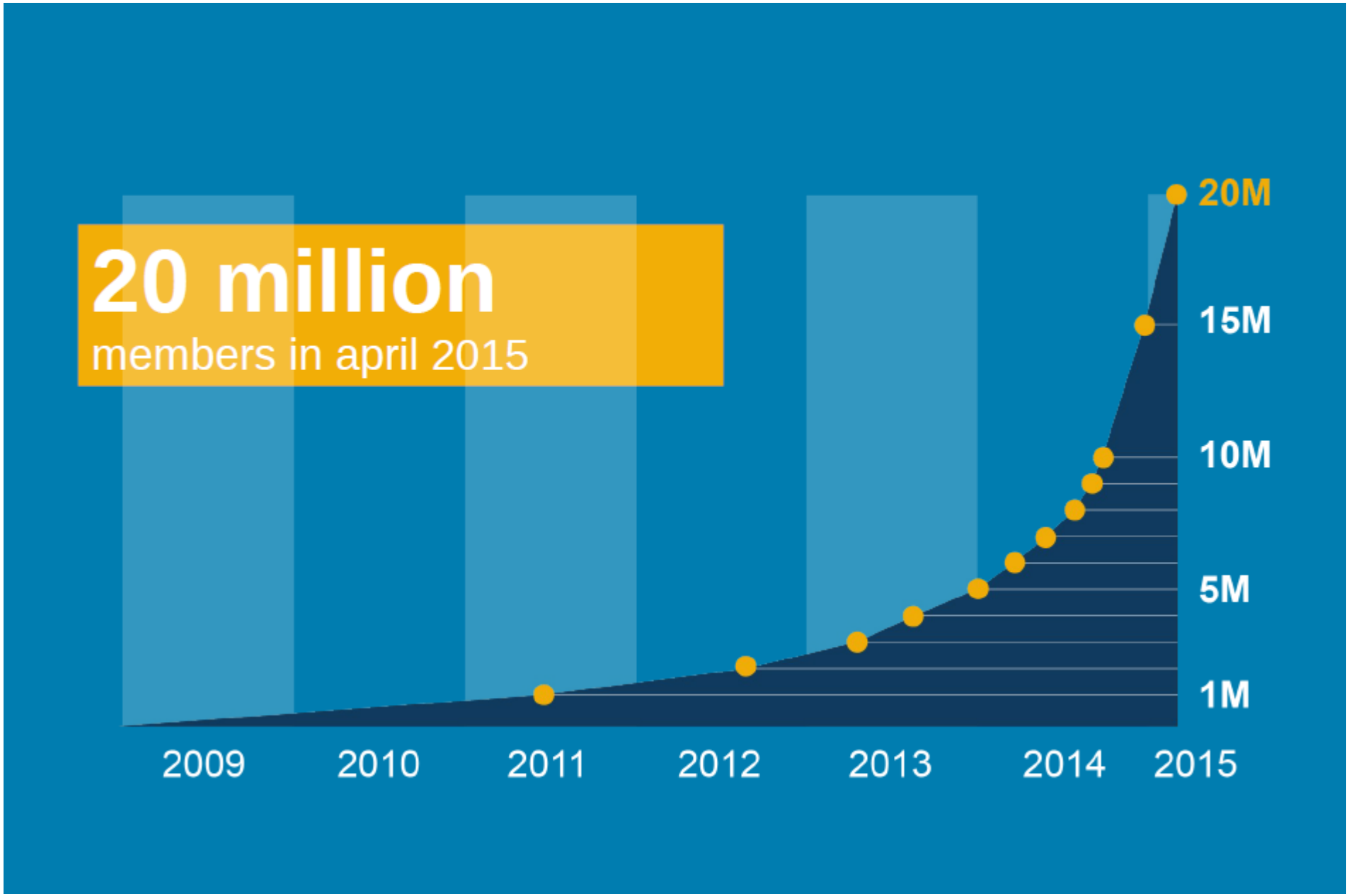
Trigger status

Port errors

Status details


Bla Bla Car
How we monitor 1 billion km of monthly ride sharing
Jean Baptiste Favre
Ops Lead
@jbfavre


2015


20 million
members in april 2015
20M
15M
10M
5M
1M
2009
2010
2011
2012
2013
2014
2015

Grafana

Grafana

+

Zabbix datasource

=

10 dashboards

in 2 days

https://github.com/grafana/grafana
https://github.com/alexanderzobnin/grafana-zabbix

Reporting
Large Environment
Zabbix Database

CORE IT PROJECT

2015 Sept

Summary

Part 1
Components

-> SQLs & Zabbix Database Model

-> APIs

-> Jasper Suite

Part 2
Reporting Architecture

-> Warehouse Database

-> Reporting Architecture

Part 3
Reports

-> Zabbix Configuration Checker

-> Manager Dashboard

-> Yearly Trends

What are we talking about ?

Reporting

→ Extract essential Zabbix information to make better decisions by viewing consolidated data
→ Presentation layer must be sexy

Data WareHouse

→ Consolidate Zabbix data with some enrichment (teams, cmdb infos, ...)
→ Read Only Database <> Zabbix Database

BI

→ retrieve, analyze, transform and report data
→ Jasper Suite (iReport & Jasper Server)

What is a Large Environment ?

- More than 14 000 servers , 1 million items
- Some servers with over 10 000 items
- Some servers with over 10 000 triggers
- More than 100 Zabbix administrators developping Application Templates

OpenWrt (Beesip) And Zabbix

Lukas Macura

September 12, 2015

Contents

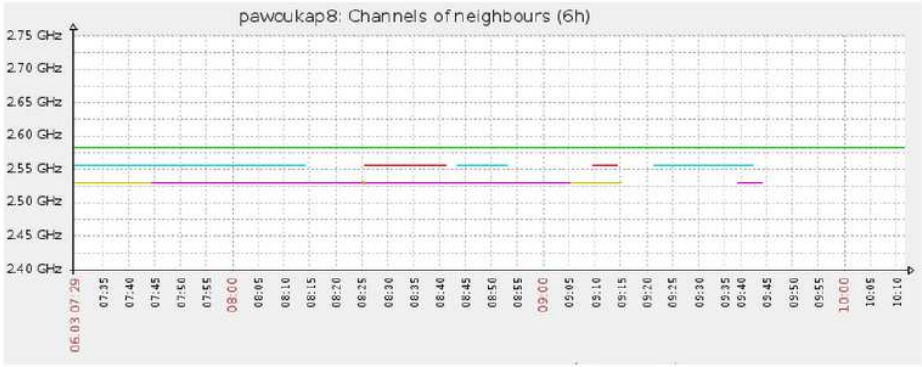
Automatically deployed devices

Device which boots and is provisioned is automatically added to Zabbix server.

Name	Interface	Status	Availability
pawoukap8	192.168.2.27: 10050	Enabled	ZSNMP JMX IPMI
pawoukap7	192.168.2.26: 10050	Enabled	ZSNMP JMX IPMI
pawoukap6	192.168.2.25: 10050	Enabled	ZSNMP JMX IPMI

Channels auto-discovery

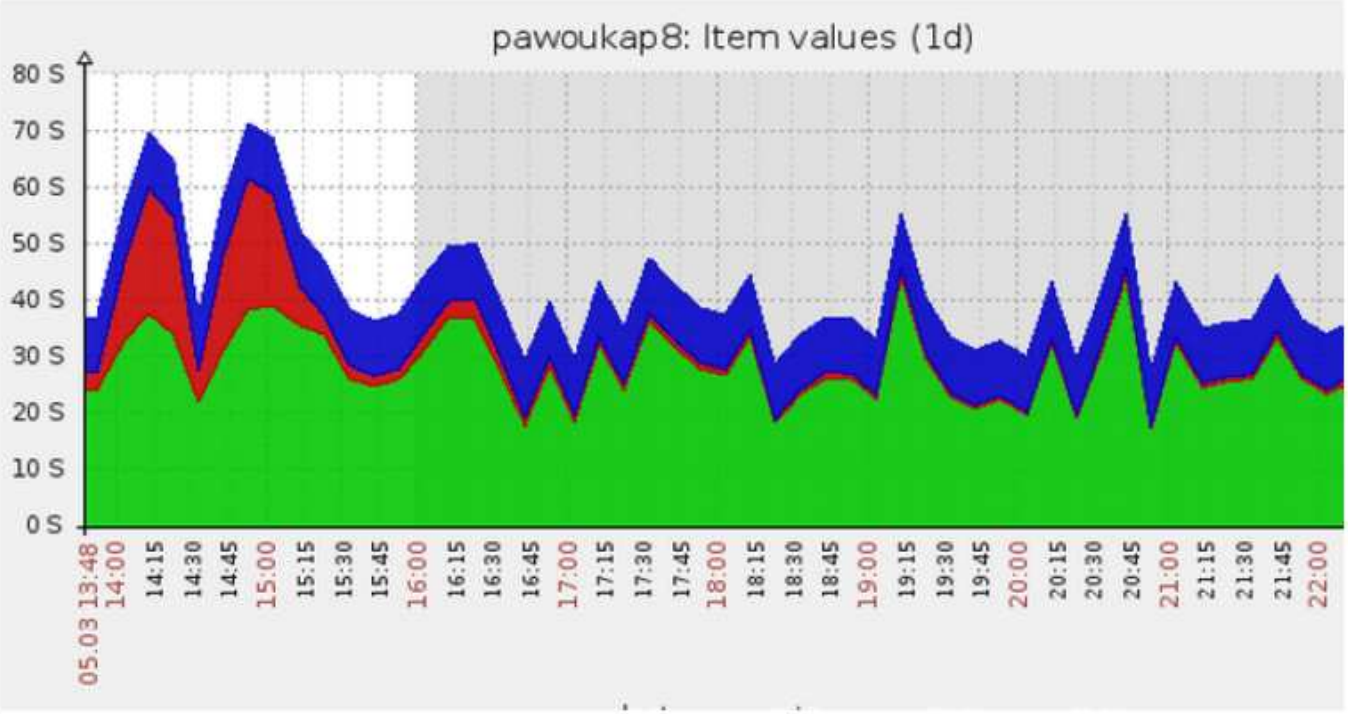
Wifi channels are auto-discovered and monitored. Zabbix monitors all neighbours and can use trigger to alert new device or device with high noise



CESNET

Channel times

If supported by HW, it is possible to report times on each channel (busy, active, transmit and receive). If values are bad, Zabbix can start trigger or action



CESNET

Grazie per l'attenzione !

Massimo Gassino