

RED HAT FORUMS

# ZABBIX

## OPEN-SOURCE ENTERPRISE MONITORING FOR EVERYONE

Dimitri Bellini



CEO & Founder

December 3, 2019



Red Hat



# ZABBIX

**Zabbix is the ultimate enterprise-level software designed for real-time monitoring of millions of metrics collected from tens of thousands of devices.**

- Project started in 1998. Company established 2005
- Privately owned with 100% shares belonging to EU resident
- Headquartered in Riga, Latvia
- Offices in Tokyo, New York, and Moscow

SIMPLE & EASY

# GPLv2

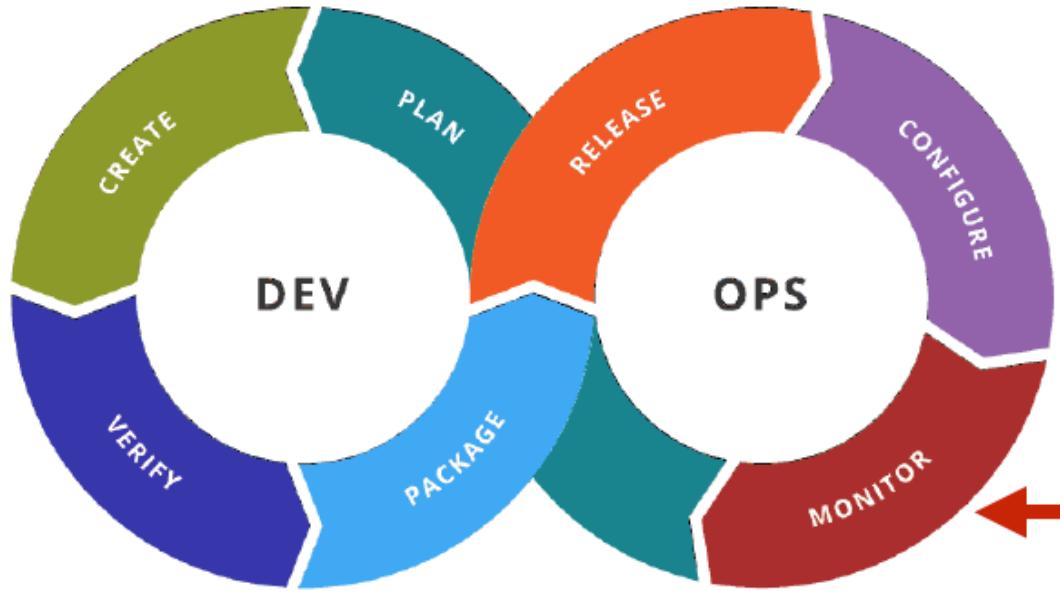
True Open Source

No "Corporate" versions. No limits

No vendor lock-in.

Code is available for security audit

ZABBIX



ZABBIX

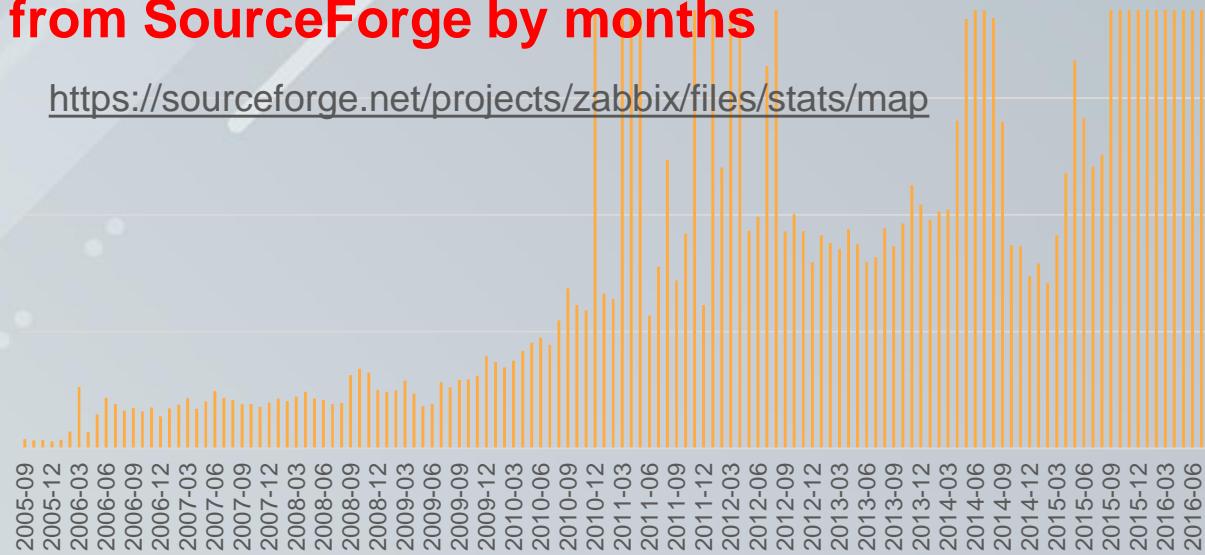
Zabbix is an **Universal** Open Source  
enterprise-level monitoring solution

# ZABBIX

- 150 partners Worldwide
- Translated in 15 languages
- **> 3 Millions downloads monthly**
- Millions monitored devices
- Billions collected metrics
- Customers in 72 countries
- Trusted from 54 companies from Fortune 500

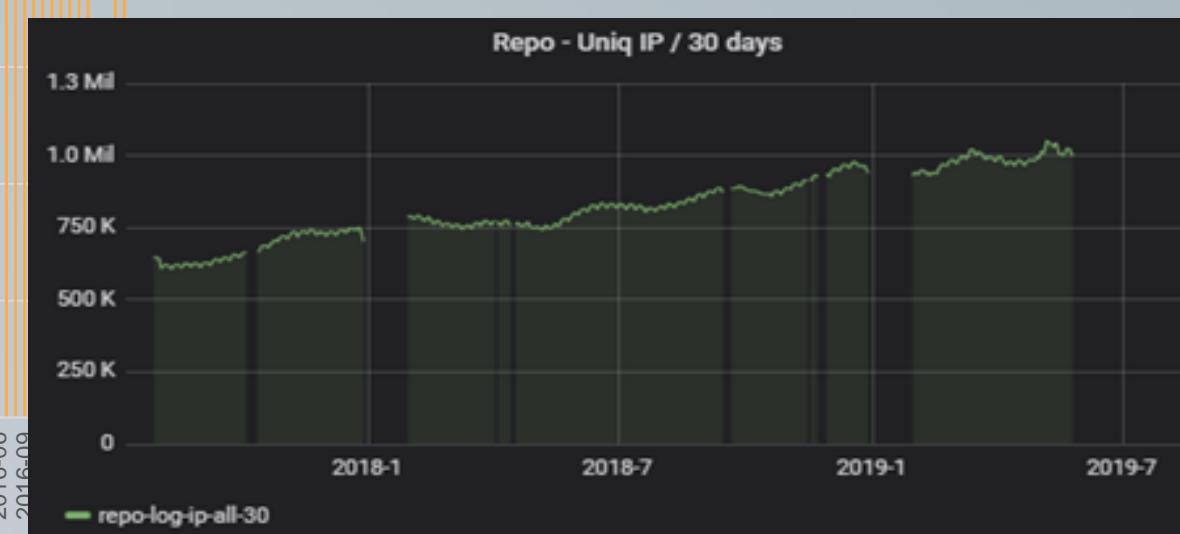
## Downloads of Zabbix source from SourceForge by months

<https://sourceforge.net/projects/zabbix/files/stats/map>

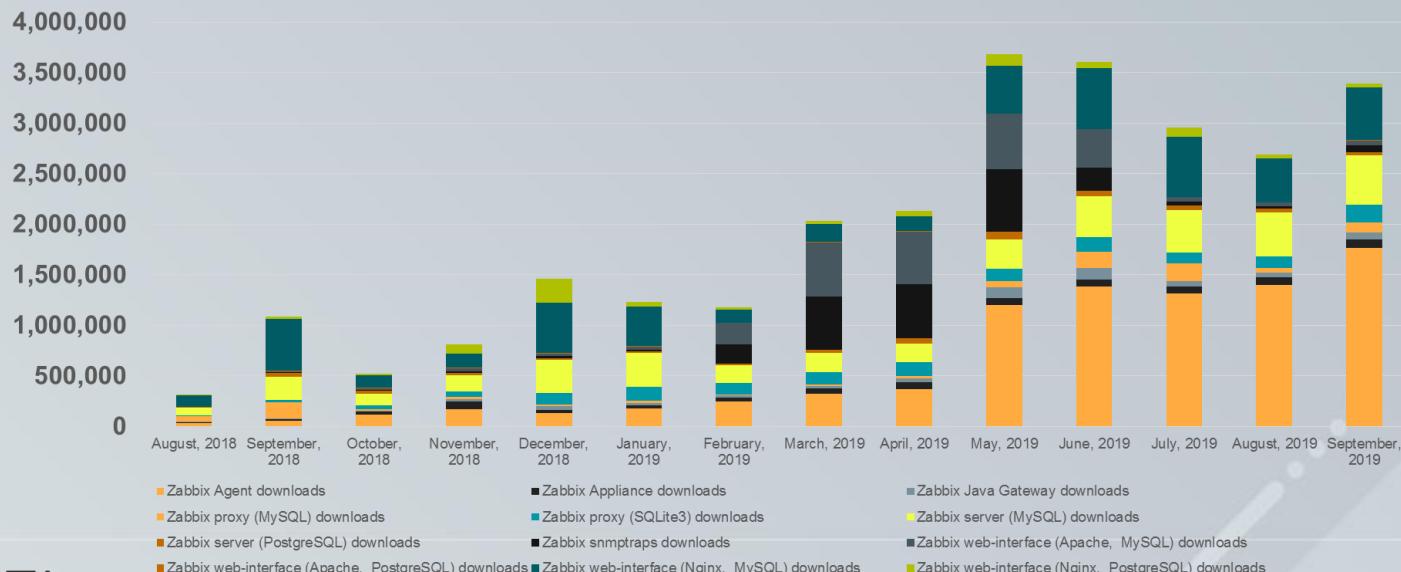


## Downloads of packages

Repo - Uniq IP / 30 days



## Downloads of Zabbix container images per month



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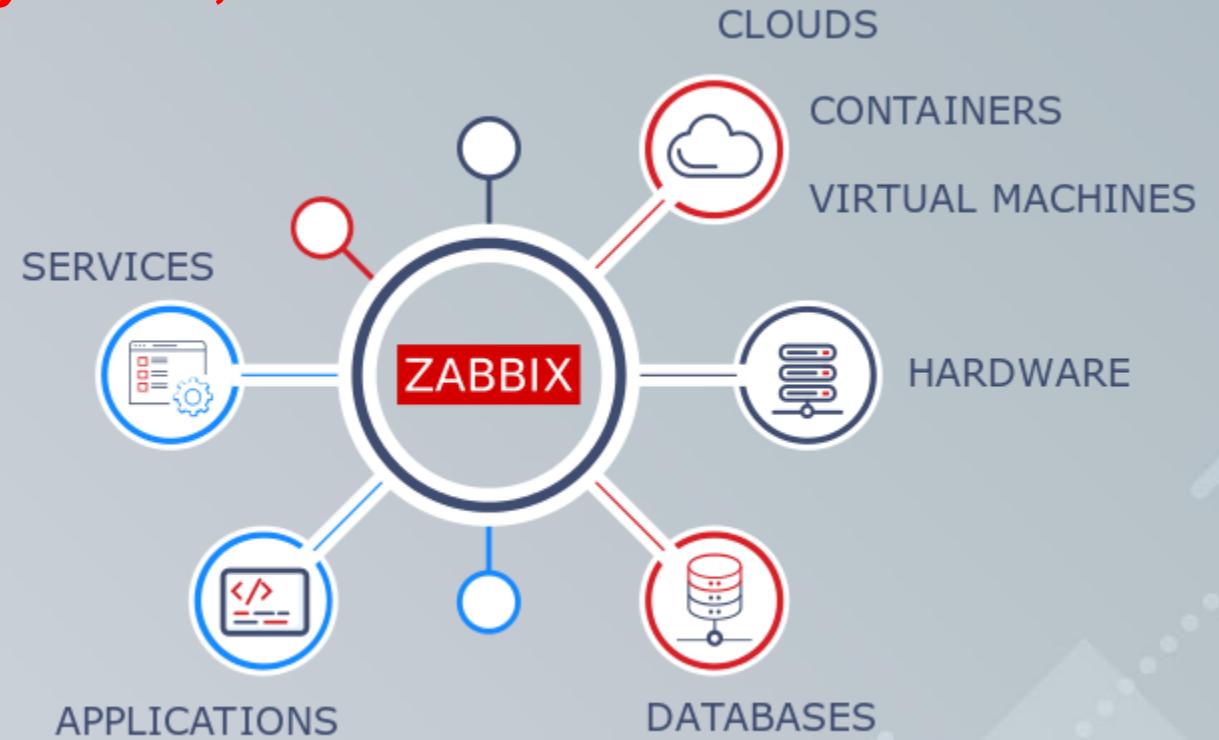


#RedHatOSD

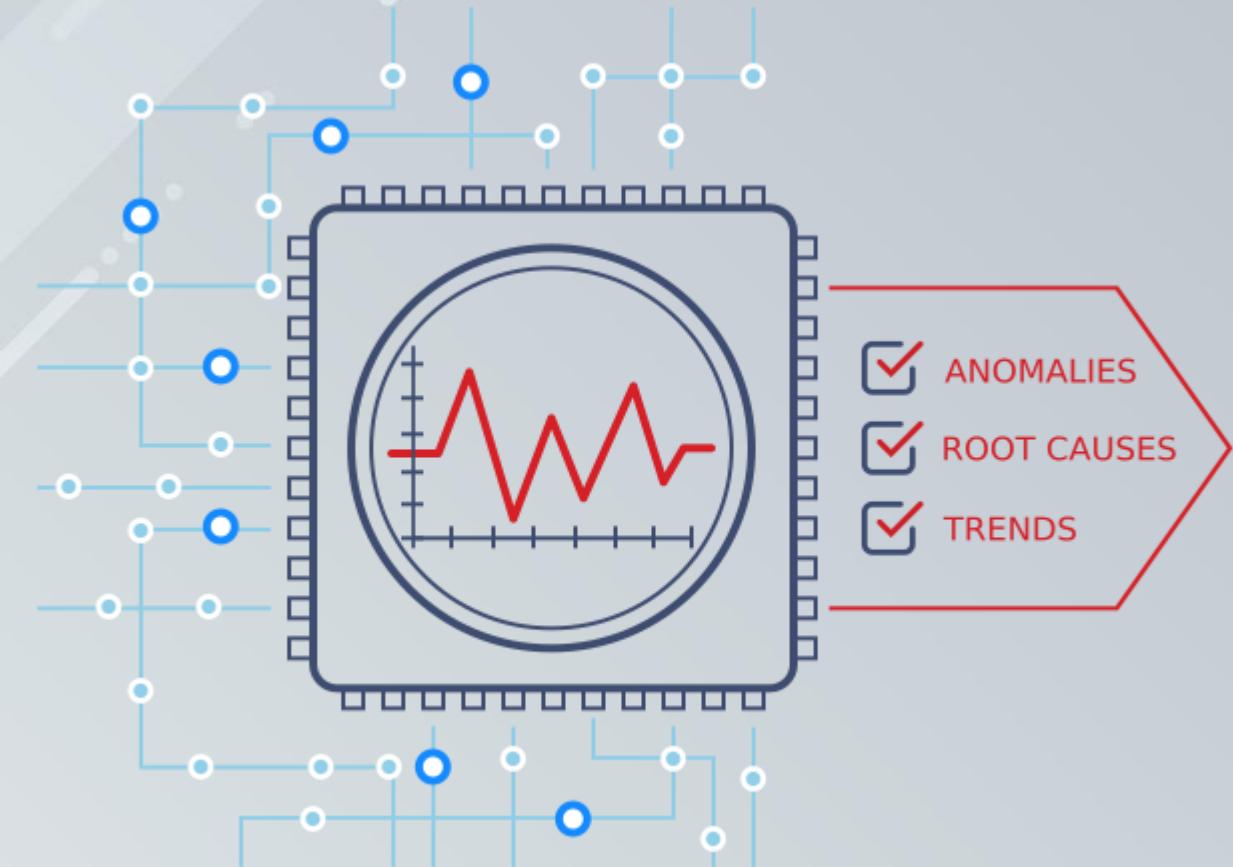
# ZABBIX

Collect metrics from any devices, systems, applications

- Multi-platform Zabbix agent
- SNMP and IPMI agents
- Agentless monitoring of user services
- Custom methods
- Calculation and aggregation
- End user web monitoring



# ZABBIX



## Define smart thresholds

Detect problem states within the incoming metric flow automatically. No need to peer at incoming metrics continuously.

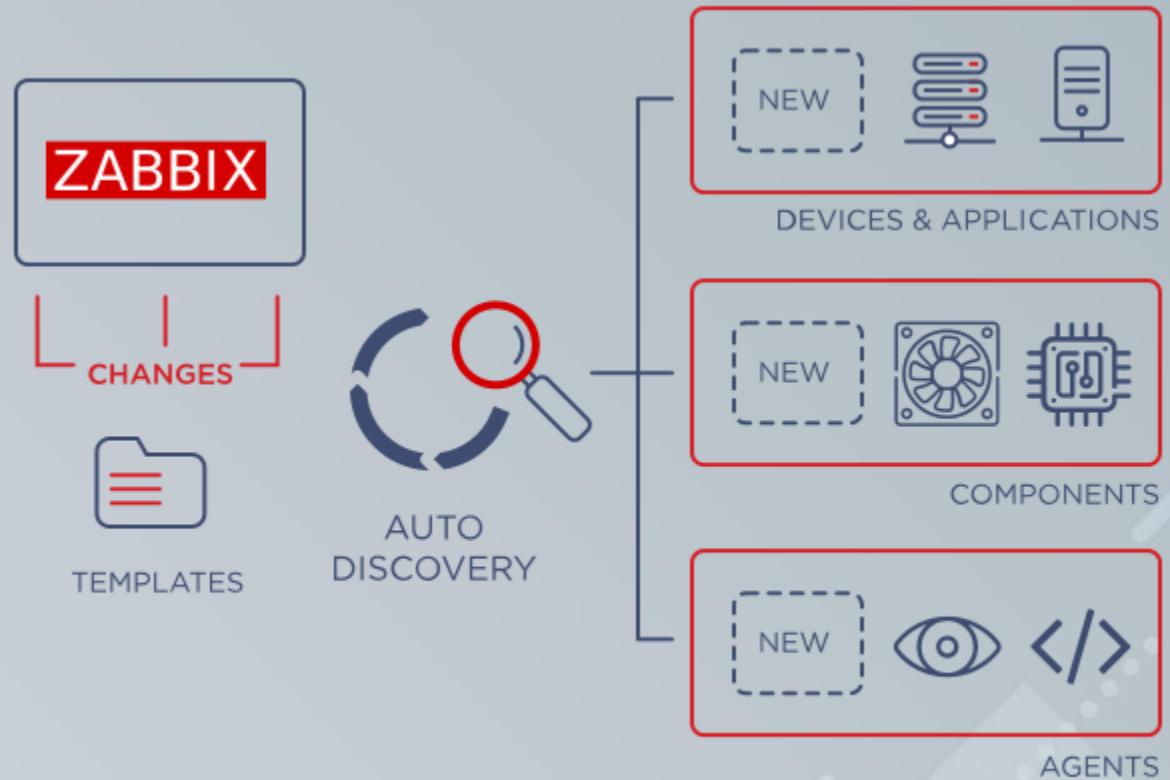
- Highly flexible definition options
- Separate problem conditions and resolution conditions
- Multiple severity levels
- Root cause analysis
- Anomaly detection
- Trend prediction

# ZABBIX

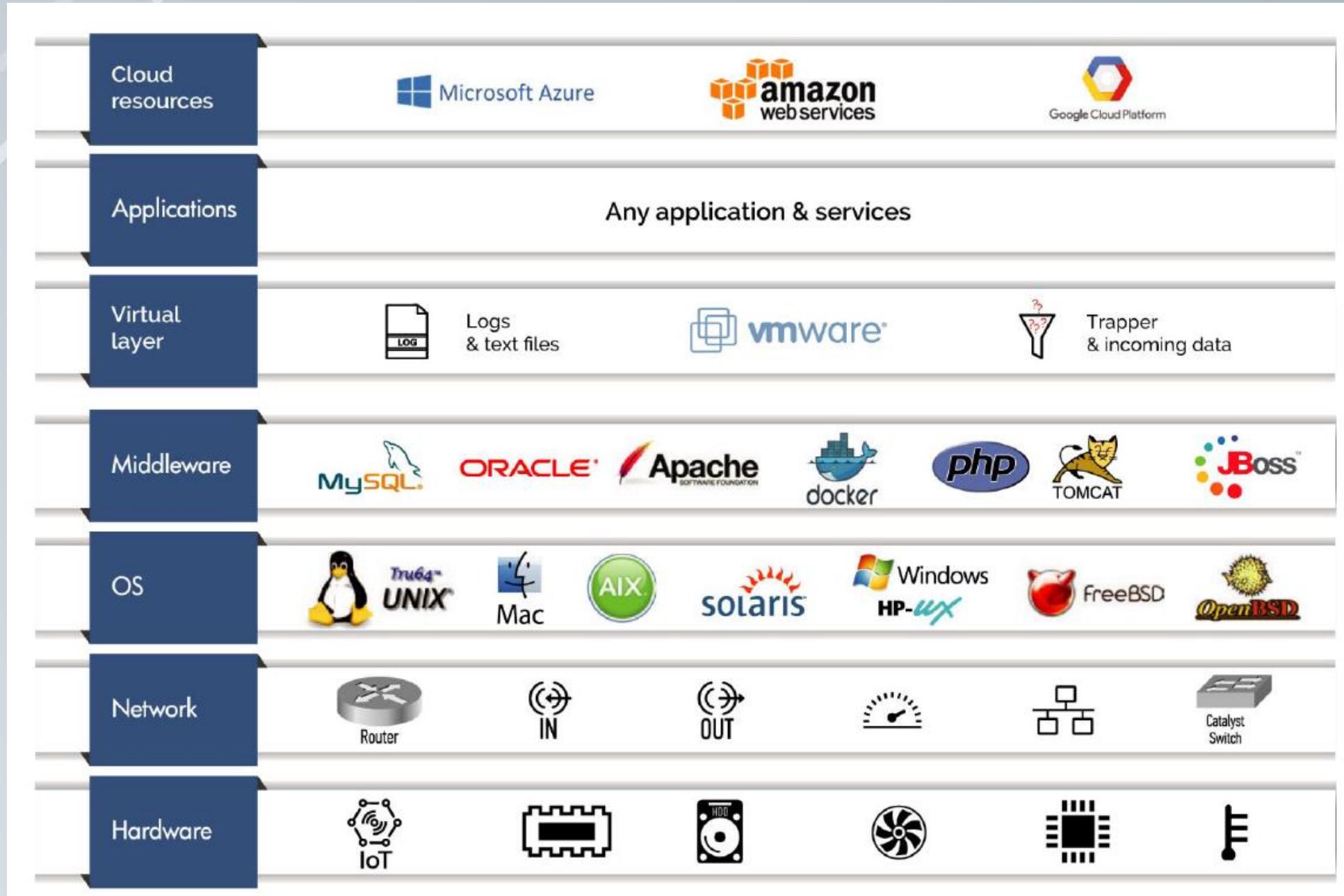
## Automate monitoring of large, dynamic environments

Take automatic actions upon adding/removing/changing elements.

- Network discovery: periodically scans network and discovers device type, IP, status, uptime/downtime, etc, and takes predefined actions.
- Low-level discovery: automatically creates items, triggers, and graphs for different elements on a device.
- Auto-registration of active agent: automatically starts monitoring new equipment with Zabbix agent.



# Monitoring all levels



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# Templates from share.zabbix.com

|            |                |                        |                   |                  |                   |                  |                |                     |              |            |            |               |
|------------|----------------|------------------------|-------------------|------------------|-------------------|------------------|----------------|---------------------|--------------|------------|------------|---------------|
| .NET       | 1C Предприятие | Active Directory       | ActiveMQ          | Alcatel-Lucent   | Cloudstack        | ClusterControl   | Confluence     | Cooling             | CoreOS       | HTTP       | HTTPS      | Huawei        |
| Alerta     | Android        | Ansible                | Antivirus         | Apache           | Couchbase         | cPanel           | D-Link         | Database monitoring | DATACOM      | IBM AIX    | IBM AS/400 | IBM MQ        |
| APC        | Appdynamics    | Application monitoring | Arduino           | ARISTA           | DB2               | Debian           | Dell           | DNS                 | Docker       | Ingress    | Intel      | InterSystems  |
| Aruba      | Asterisk       | AVAYA                  | AWS               | AWS CloudWatch   | Drupal            | Elasticsearch    | eltex          | DELL EMC            | Emerson      | IRC        | Jabber     | JasperReports |
| AWS EC2    | AWS S3         | Backup                 | Bacula            | Barracuda        | Exim              | Extreme Networks | F5 Networks    | Facebook Messenger  | Fedora       | JBoss      | Jenkins    | Jira          |
| Bigpanda   | Blue Coat      | BMC Remedy             | BorgBackup        | Brocade          | firebird          | Firewalls        | Flowdock       | FORTINET            | FreeBSD      | Julia      | Juniper    | Kafka         |
| Buffalo    | Bugzilla       | C#                     | Capacity planning | Cassandra        | FreshDesk         | Fujitsu Siemens  | Galera cluster | GECKOBOARD          | git          | Kubernetes | KVM        | Kyocera       |
| Centos     | ceph           | Check Point            | Chef              | Chrome extension | Glassfish         | GLPI             | Go             | Google Apps         | Google Cloud | Lenovo     | Lexmark    | Lighttpd      |
| Cisco      | Citrix         | Cloud Foundry          | Cloud monitoring  | cloudera         | Google Maps       | Grafana          | Graylog        | Hadoop              | HAProxy      | Logstash   | Lucidworks | LXC           |
| Cloudstack | ClusterControl | Confluence             | Cooling           | CoreOS           | High Availability | Hipchat          | HITACHI        | HP Enterprise       | HP-UX        | Mattermost | Mellanox   | Memcached     |

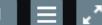
HEAVY-DUTY

# Single Zabbix server

Can easily monitor  
200 000 devices  
reading  
30 metrics from each  
with 60 sec. interval

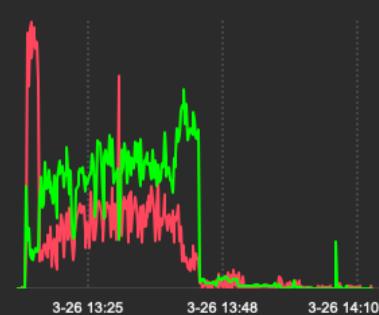
ZABBIX

## Zabbix Global View

[Edit dashboard](#)[Zoom out](#) [Last 1 hour](#)

All dashboards / Zabbix Global View

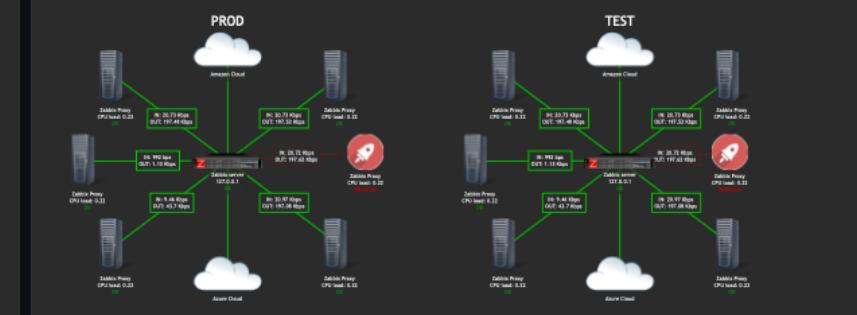
## Storage IOPs



## UTC time



## Zabbix Cluster



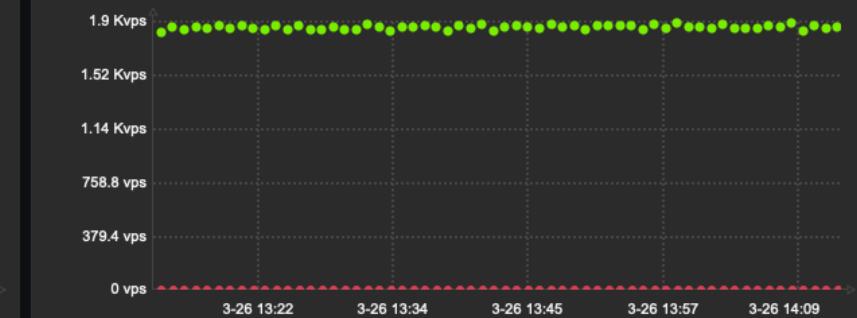
## Detected problems

| Host group               | Disaster | High | Average | Warning | Information | Not classified |
|--------------------------|----------|------|---------|---------|-------------|----------------|
| Cloud/AWS                |          |      | 1       |         |             |                |
| Cloud/Azure              |          | 1    |         |         | 1           |                |
| End user services        |          | 7    |         | 5       |             |                |
| Europe/Latvia/Daugavpils |          |      |         |         |             |                |
| HPC Cluster              |          | 2    |         | 27      |             | 1              |
| Internal infrastructure  | 2        | 3    |         | 41      | 2           |                |
| R&D Lab1                 |          |      |         |         |             |                |
| R&D Lab2                 |          |      | 1       |         |             |                |
| Region/Australia         |          |      | 1       |         |             |                |
| Region/Brazil            |          |      |         |         |             | 32             |
| Region/China             |          | 1    |         | 1       |             |                |
| Region/Europe            |          |      |         |         |             |                |
| Region/Japan             |          | 5    |         |         |             |                |
| Region/USA               | 3        |      | 1       |         |             |                |
| SAP HANA Infra           |          |      | 1       |         | 1           |                |

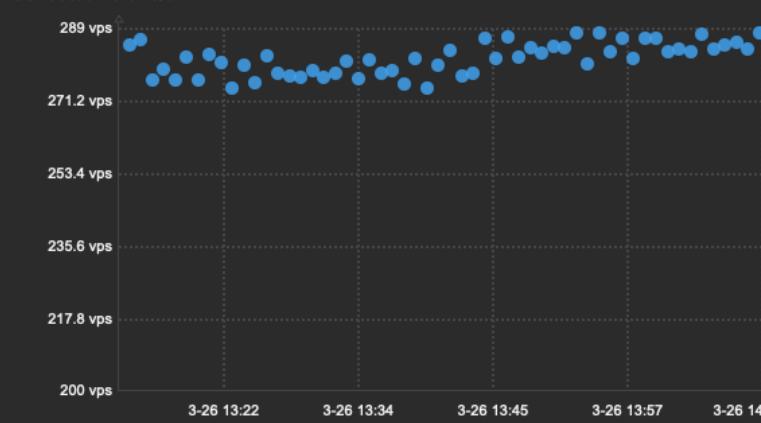
## API calls/s



## Value cache misses



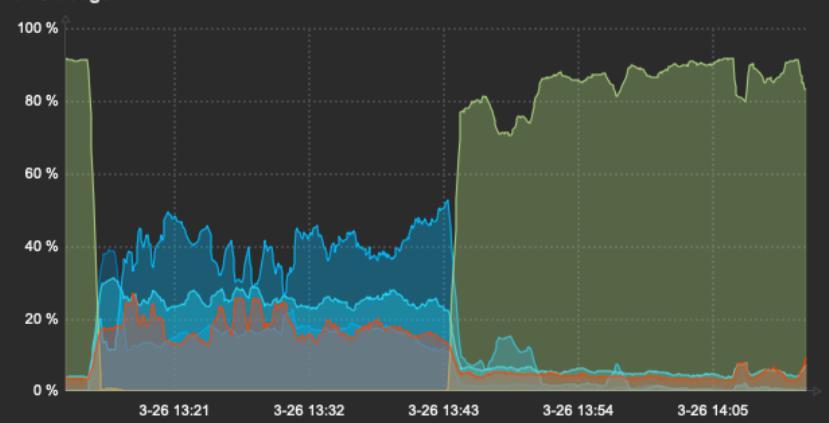
## Collected values/s



## TPS



## CPU usage



# Some Customers



NOKIA



# Zabbix Support Levels

| Silver  | Gold  | Platinum  | Enterprise  | Global I  |
|---|---|---|---|---|
| <a href="#">Request a quote</a>                                       | <a href="#">Request a quote</a>                                       | <a href="#">Request a quote</a>                                       | <a href="#">Request a quote</a>                               | <a href="#">Request a quote</a>                               |
| Monitored devices and metrics<br><b>Unlimited</b>                     | Monitored devices and metrics<br><b>Unlimited</b>                     | Monitored devices and metrics<br><b>Unlimited</b>                     | Monitored devices and metrics<br><b>Unlimited</b>             | Monitored devices and metrics<br><b>Unlimited</b>             |
| Phone call support<br><b>Included</b>                                 | Phone call support<br><b>Included</b>                                 | Phone call support<br><b>Included</b>                                 | Phone call support<br><b>Included</b>                         | Phone call support<br><b>Included</b>                         |
| Number of incidents<br><b>8</b>                                       | Number of incidents<br><b>Unlimited</b>                               | Number of incidents<br><b>Unlimited</b>                               | Number of incidents<br><b>Unlimited</b>                       | Number of incidents<br><b>Unlimited</b>                       |
| Support availability<br><b>8 x 5</b>                                  | Support availability<br><b>8 x 5</b>                                  | Support availability<br><b>24 x 7</b>                                 | Support availability<br><b>24 x 7</b>                         | Support availability<br><b>24 x 7</b>                         |
| Initial response time <small>?</small><br><b>1 days</b>               | Initial response time <small>?</small><br><b>4 hours</b>              | Initial response time <small>?</small><br><b>4 hours</b>              | Initial response time <small>?</small><br><b>4 hours</b>      | Initial response time <small>?</small><br><b>2 hours</b>      |
| Emergency response time<br><b>Not available</b>                       | Emergency response time<br><b>Not available</b>                       | Emergency response time<br><b>90 minutes</b>                          | Emergency response time<br><b>90 minutes</b>                  | Emergency response time<br><b>60 minutes</b>                  |
| Support contacts <small>?</small><br><b>1</b>                         | Support contacts <small>?</small><br><b>2</b>                         | Support contacts <small>?</small><br><b>3</b>                         | Support contacts <small>?</small><br><b>7</b>                 | Support contacts <small>?</small><br><b>20</b>                |
| Supported Zabbix servers <small>?</small><br><b>Priced per server</b> | Supported Zabbix servers <small>?</small><br><b>Priced per server</b> | Supported Zabbix servers <small>?</small><br><b>Priced per server</b> | Supported Zabbix servers <small>?</small><br><b>Unlimited</b> | Supported Zabbix servers <small>?</small><br><b>Unlimited</b> |
| Support for Zabbix Proxy <small>?</small><br><b>Not available</b>     | Support for Zabbix Proxy <small>?</small><br><b>Priced per proxy</b>  | Support for Zabbix Proxy <small>?</small><br><b>Priced per proxy</b>  | Support for Zabbix Proxy <small>?</small><br><b>Unlimited</b> | Support for Zabbix Proxy <small>?</small><br><b>Unlimited</b> |
| Legal entities covered <small>?</small><br><b>1</b>                   | Legal entities covered <small>?</small><br><b>1</b>                   | Legal entities covered <small>?</small><br><b>1</b>                   | Legal entities covered <small>?</small><br><b>1</b>           | Legal entities covered <small>?</small><br><b>5</b>           |

Best value



A nonprofit organization  
that coordinates the  
maintenance and  
procedures related to the  
Internet



**ICANN**

**Problema:**

- inserimento di 1800 nuovi Top Level Domain (TLD)
- necessità di assicurare la qualità dei servizi
  - DNS (Domain Name Server)
  - WHOIS,
  - EPP (domain authorization codes o Extensible Provisioning Protocol),
  - DNSSEC
- Necessità di misurare SLA
- I nuovi TLD devono essere controllati da 45 siti diversi
- Necessario il controllo real-time e la reazione immediata agli eventi
- Fornire un servizio affidabile a miliardi di utenti

**Soluzione:**

- Architettura Zabbix in alta affidabilità
- 2 milioni di metriche
- 45 siti WW
- Ogni sito produce 1.7TB di dati ogni giorno
- Dashboard personalizzate



# 12 089

Stores

# МАГНИТ

 9 594 Convenience Stores

 374 Hypermarkets

 2 121 Drogerie Stores



- Quarta catena di supermercati nel mondo
  - 280.000 dipendenti
  - 12.089 negozi:
  - 5.882 camion che collegano 33 centri di distribuzione
  - 200.000 devices (moltissimi non IT)
- 
- **5 Zabbix Server in HA setup**
  - **3 Milioni metriche**

# Direct communication channels

ONLINE



7,228



7,740



6,351



1,000 online  
100,0000 reg



6,710

#irc

>300



ZABBIX



PARIS  
OPEN  
SOURCE  
SUMMIT

ZABBIX  
RUSSIA

ZABBIX  
Bogota Meetup

CHINA  
HI-TECH FAIR



ZABBIX Meeting  
Georgia



ZABBIX 2019  
Conference  
RUSSIA



ZABBIX 2018  
Conference  
JAPAN



{IT.IS}

ZABBIX '19  
SUMMIT

HighLoad++

ZABBIX 2019  
Conference  
LATIN AMERICA



2 & 3 February 2019 - Brussels  
800+ hackers 800+ lectures lightning talks devrooms beer



Prague Meetup



Meetup Moscow

ZABBIX 2018  
Conference  
CHINA



Saint  
HighLoad++

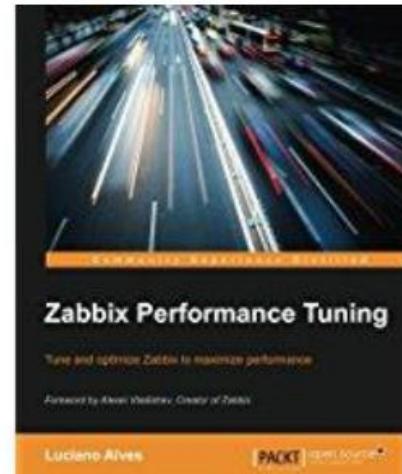
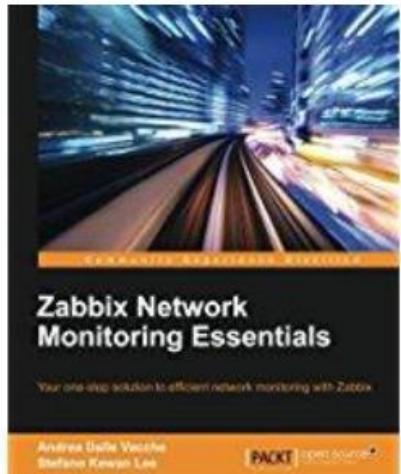
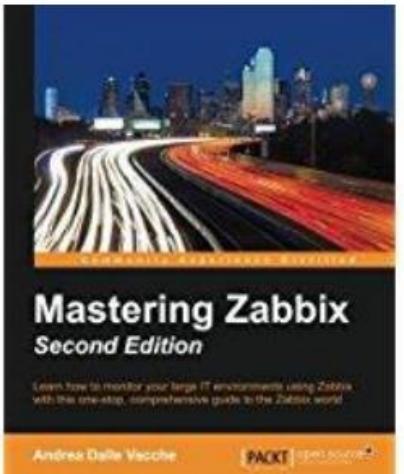
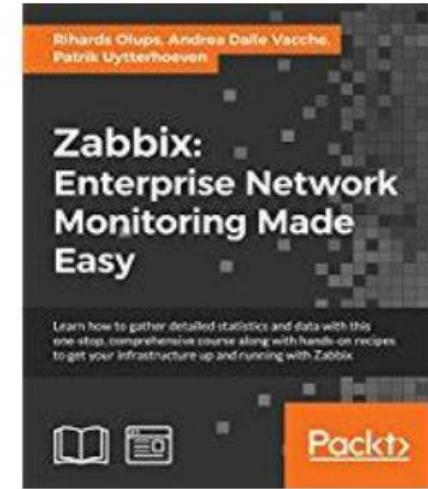
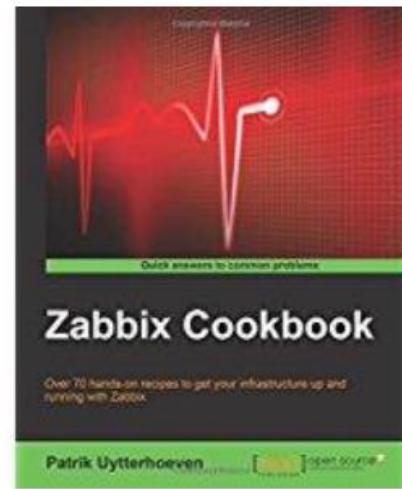
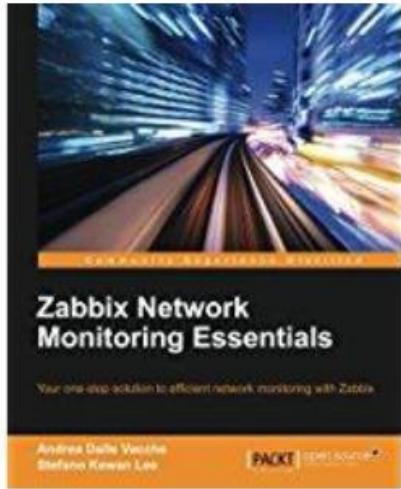
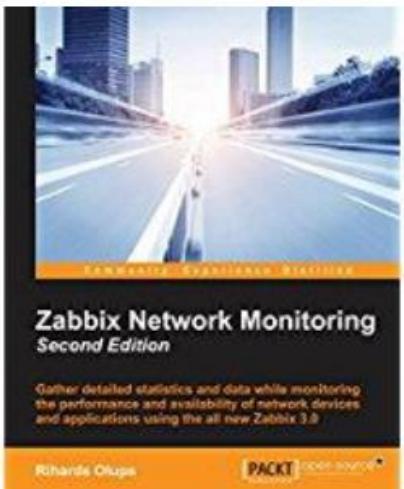
RED HAT  
SUMMIT

ZABBIX 2019  
Conference  
BENELUX



Latvijas Datortīku Skola

# Buy Right Now at Amazon

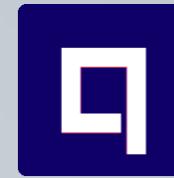


ZABBIX



in Italy:  QUADRATA  
SERVICE GROUP S.R.L.

- *Quadrata is a group of passionate IT professionals* specialized in providing consulting services for medium and big enterprises.
- Our solutions are designed for company process-flow, improving productivity and reducing costs for our customers
- Thanks to a decade of experience and with a team members passion, Quadrata represent the best partner for the IT management of your company.
- We believe technology should not be the limit in a constantly evolving world, but the center piece of new and great opportunities.



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## Referenze in Italia:

- **Alcune tra le più importanti banche**
- **Alcune tra le più importanti compagnie telefoniche**
- **Alcune tra le più importanti squadre di calcio**
- **Alcuni tra i più importanti gruppi industriali**
- **Alcune tra.....**

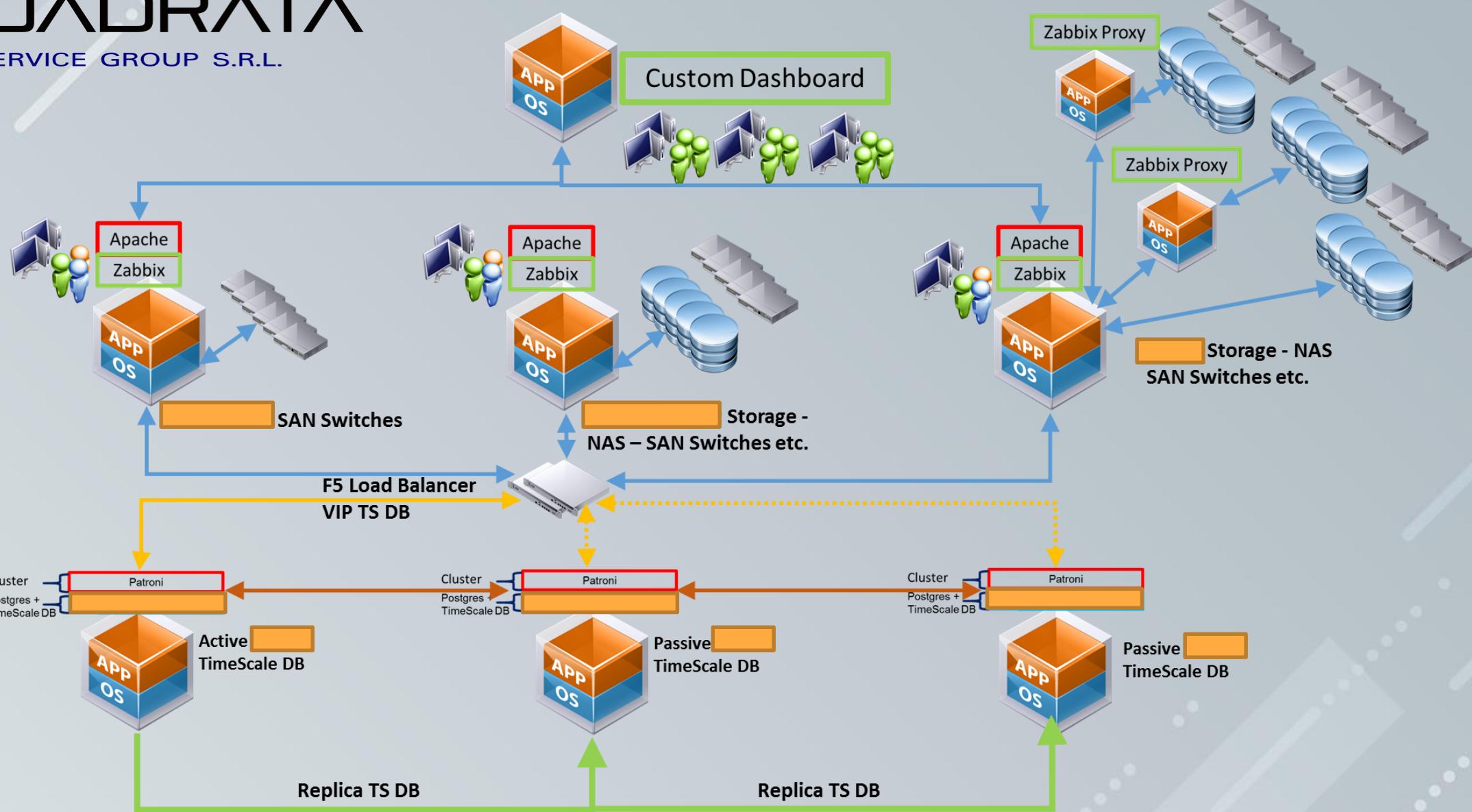


***With a strong relationships with Zabbix SIA,  
we are able to deliver services spanning the full Zabbix monitor lifecycle:***

- Analisys and design of monitoring infrastructure
- Onsite consultancy and training
- Installation and configuration
- Dashboard customization and tailoring
- New dashboards and/or checks implementation
- Integration with any Customer Ecosystem
- First and second level support
- Interface between Customer and Zabbix SIA
- Remote monitoring of monitor infrastructure



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# Port status

ZABBIX OK

Vai a Dettagli Switch Ficon > Porta 1/2-2

LINK ENABLED STATO ONLINE TIPO F-PORT 1/2-2

**Port traffic**

TRAFFICO PORTA Da: 21/11/14 11:54 A: 21/11/14 14:54

Velocità (Bps)

Rx Words  
Tx Words

**ERRORI PORTA** Da: 21/11/14 11:54 A: 21/11/14 14:54

Num Errori

Signal Loss  
Invalid CRCs  
Link Fail  
C3 Discards  
No Tx Credits  
Rx CRCs  
Enc Out Frs

**DISPOSITIVO COLLEGATO**

**HOST01M**  
S/N 840044CB7

Modello H66  
Tag 80 AB  
Port Speed 8GB

**IBM 2827**

**STATO TRIGGER**

|                           |    |       |
|---------------------------|----|-------|
| PortStatCountLossOfSignal | Ok | Media |
| connUnitPortType          | Ok | Media |
| connUnitPortType-ISL      | Ok | Alta  |
| C3Discards-ISL            | Ok | Alta  |

**STATO PORTA**

|                     |         |
|---------------------|---------|
| connUnitPortHWState | ACTIVE  |
| connUnitPortType    | F-PORT  |
| swFCPortLinkState   | ENABLED |
| swFCPortOpStatus    | ONLINE  |
| swFCPortPhyState    | IN-SYNC |
| swSfpRxPower        | -3.6000 |

**Attached device**

**Trigger status**

**Port errors**

**Status details**



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# SAN Mainframe monitor: the alert dashboard panel

The screenshot displays a Zabbix alert dashboard panel. At the top, there's a navigation bar with tabs: Cruscotto, Sistema, Storico, ISL, Gestione, Admin, followed by the status ZABBIX OK and the timestamp 16:23:39. Below the navigation is a table titled "PROBLEMI ATTIVI (2 problemi)". The columns are Criticità (Priority), Inizio (Start), Durata (Duration), Switch, Porta (Port), and Descrizione (Description). Two entries are listed:

| Criticità | Inizio            | Durata     | Switch      | Porta   | Descrizione         | Ack ↑                    |
|-----------|-------------------|------------|-------------|---------|---------------------|--------------------------|
| Media     | 29/07/15 11:07:34 | 1g 5h 14m  | DCX68_Ficon | 2/20-94 | Porta Ficon Offline | <input type="checkbox"/> |
| Media     | 20/07/15 11:48:36 | 10g 4h 33m | DCX73_Ficon | 3/29-ad | Porta Ficon Offline | <input type="checkbox"/> |

Below this is a section titled "Alert dashboard" containing a grid of host group names. The grid is organized into four columns and seven rows. The first three columns have orange header bars, while the fourth column has blue header bars. The host groups are:

| CCMGEAOA     | CCMGEAOA_Base | CCMGEOB     | DCX71_Base   | DCX71_Ficon  | DCX71_PPRC | CEDGEAOA      | CAMGEOA      |
|--------------|---------------|-------------|--------------|--------------|------------|---------------|--------------|
| CCMGEOB_Base | DCX61_Base    | DCX61_Ficon | DCX72_Base   | DCX72_Ficon  | DCX72_PPRC | CEDGEAOA_Base | CAMGEOA_Base |
| DCX61_PPRC   | DCX62_Base    | DCX62_Ficon | DCX73_Base   | DCX73_Ficon  | DCX73_PPRC | CEDGEOB       | CAMGEOB      |
| DCX62_PPRC   | DCX63_Base    | DCX63_Ficon | DCX74_Base   | DCX74_Ficon  | DCX74_PPRC | CEDGEOB_Base  | CAMGEOB_Base |
| DCX63_PPRC   | DCX64_Base    | DCX64_Ficon | DCX75_Base   | DCX75_Ficon  | DCX75_PPRC | DCX10_Base    | DCX30_Base   |
| DCX64_PPRC   | DCX65_Base    | DCX65_Ficon | DCX76_Base   | DCX76_Ficon  | DCX76_PPRC | DCX10_Ficon   | DCX30_Ficon  |
| DCX65_PPRC   | DCX66_Base    | DCX66_Ficon | DCX77_Base   | DCX77_Ficon  | DCX77_PPRC | DCX20_Base    | DCX40_Base   |
| DCX66_PPRC   | DCX67_Base    | DCX67_Ficon | DCX78_Base   | DCX78_Ficon  | DCX78_PPRC | DCX20_Ficon   | DCX40_Ficon  |
| DCX67_PPRC   | DCX68_Base    | DCX68_Ficon | SETGEOA      | SETGEOA_Base | SETGEOB    |               |              |
| DCX68_PPRC   |               |             | SETGEOB_Base |              |            |               |              |

At the bottom right of the dashboard is the text "Context host groups".



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12.39  
Martedì 17 settembre 2019

Administrator

### Problemi attivi 35

| Criticità | Inizio           | Durata    | Switch       | Porta   | Descrizione         | Device      | Note        | ACK |
|-----------|------------------|-----------|--------------|---------|---------------------|-------------|-------------|-----|
| Alta      | 17/09/2019 08:25 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Alta      | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Alta      | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Alta      | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Media     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Media     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Media     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Bassa     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Bassa     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Bassa     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Bassa     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Bassa     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Bassa     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Bassa     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Bassa     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Bassa     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |
| Bassa     | 17/09/2019 08:35 | 0d 13h 3m | DDI_6C_Ficon | 7/25-79 | Porta Ficon offline | 78009349458 | 78009349458 | -   |

### Problemi attivi

35 Totali

12 30% | 10 22% | 23 48%

5 65% | 1 95%



# Questions?

ZABBIX



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# THANK YOU



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