

Zabbix 4.0: another step ahead

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ZABBIX 18
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Solid foundation

3.0 LTS

3.2

3.4

Item pre-processing

Dependent items

Event tags

Maps and dashboards

Item pre-processing

Dependent items

Maps and dashboards

Remote commands by Proxies

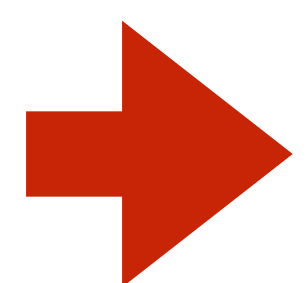
Elastic Search

```
{
  "host":
  {
    "name": "Linux #2356",
    "vms":
    [
      {
        "name": "vm034",
        "network":
        {
          "read": "0xfa673",
          "write": "0x45b30"
        }
      },
      {
        "name": "vm076",
        "network":
        {
          "read": "0x76ab",
          "write": "0xff3a"
        }
      }
    ]
  }
}
```

```
{  
  "name": "vm034",  
  "network":  
  {  
    "read": "0xfa673",  
    "write": "0x45b30"  
  }  
},  
{  
  "name": "vm076",  
  "network":  
  {  
    "read": "0x76ab",  
    "write": "0xff3a"  
  }  
}]  
}
```

→ 0x76ab

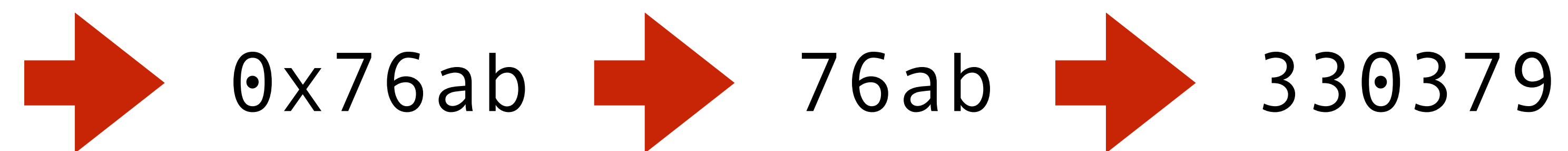
JSON Path: .host.vms[1].network.read

 0x76ab

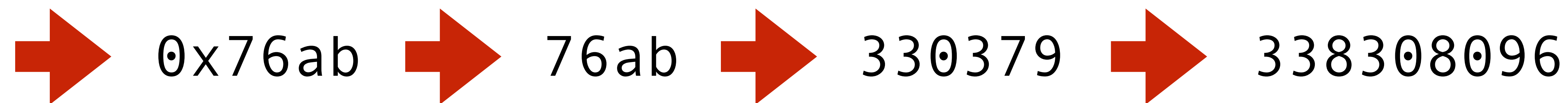
JSON Path: .host.vms[1].network.read

➔ 0x76ab ➔ 76ab

Regexp: 0x(.*)



Hex to Decimal



KB -> bytes

Items

All hosts / KVM_012 Enabled ZBX SNMP JMX IPMI Applications **Items** Triggers Graphs Discovery rules Web scenarios

Item Preprocessing

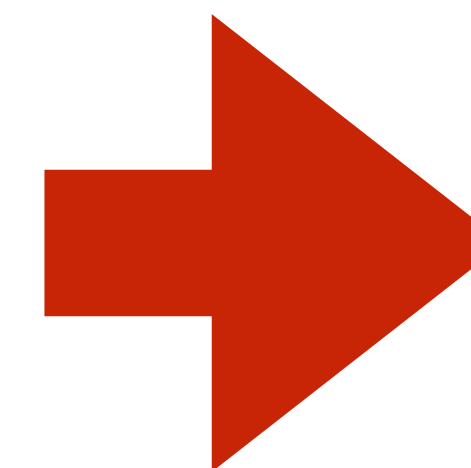
Preprocessing steps	Name	Parameters	Action
	JSON Path	<code>\$.host.vms[1].network.read</code>	Remove
	Regular expression	<code>0x(.*)</code>	<code>\1</code> Remove
	Hexadecimal to decimal		Remove
	Custom multiplier	1024	Remove

[Add](#)

Mass processing of metrics



```
Handler_update 0
Handler_write 414
Innodb_buffer_pool_dump_status Dumping of buffer pool not started
Innodb_buffer_pool_load_status Buffer pool(s) load completed at 170531 10:45:37
Innodb_buffer_pool_resize_status
Innodb_buffer_pool_pages_data 513
Innodb_buffer_pool_bytes_data 8404992
Innodb_buffer_pool_pages_dirty 0
Innodb_buffer_pool_bytes_dirty 0
Innodb_buffer_pool_pages_flushed 37
Innodb_buffer_pool_pages_free 7676
Innodb_buffer_pool_pages_misc 2
Innodb_buffer_pool_pages_total 8191
Innodb_buffer_pool_read_ahead_rnd 0
Innodb_buffer_pool_read_ahead 0
Innodb_buffer_pool_read_ahead_evicted 0
Innodb_buffer_pool_read_requests 2535
Innodb_buffer_pool_reads 479
Innodb_buffer_pool_wait_free 0
Innodb_buffer_pool_write_requests 515
Innodb_data_fsyncs 7
Innodb_data_pending_fsyncs 0
Innodb_data_pending_reads 0
Innodb_data_pending_writes 0
Innodb_data_read 7918080
Innodb_data_reads 505
Innodb_data_writes 54
Innodb_data_written 641024
```



Zabbix server

mysql[status]

Master item

Items

All hosts / MySQL server Enabled ZBX SNMP JMX IPMI Applications **Items 3** Triggers Graphs Discovery rules Web scenarios

<input type="checkbox"/>	Wizard	Name ▼	Triggers	Key	Interval	History	Trends	Type
<input type="checkbox"/>	...	MySQL status		mysql[status]	30s	90d		Zabbix agent
<input type="checkbox"/>	...	MySQL status: MySQL read operations per second		mysql[reads]		90d	365d	Dependent item
<input type="checkbox"/>	...	MySQL status: MySQL queries per second		mysql[questions]		90d	365d	Dependent item

Items

All hosts / MySQL server Enabled ZBX SNMP JMX IPMI Applications Items 3 Triggers Graphs Discovery rules Web scenarios

<input type="checkbox"/>	Wizard	Name ▼	Triggers	Key	Interval	History	Trends	Type
<input type="checkbox"/>	...	MySQL status		mysql[status]	30s	90d		Zabbix agent
<input type="checkbox"/>	...	MySQL status: MySQL read operations per second		mysql[reads]		90d	365d	Dependent item
<input type="checkbox"/>	...	MySQL status: MySQL queries per second		mysql[questions]		90d	365d	Dependent item



Dependent items

Performance, less user parameters, all logic in templates



mysql[status]

Item Preprocessing

* Name MySQL queries per second

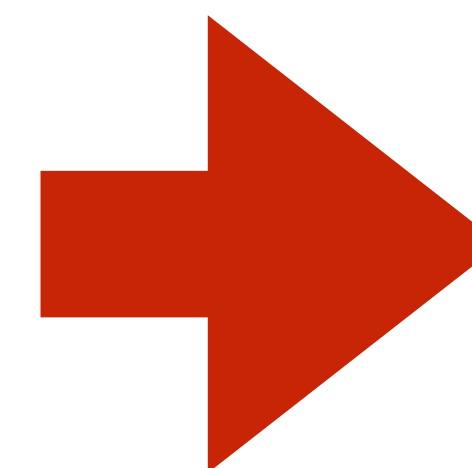
Type Dependent item

* Key mysql[questions]

* Master item MySQL server: MySQL status

Type of information Numeric (unsigned)

Units qps



mysql[questions]

Item Preprocessing

* Name MySQL read operations per second

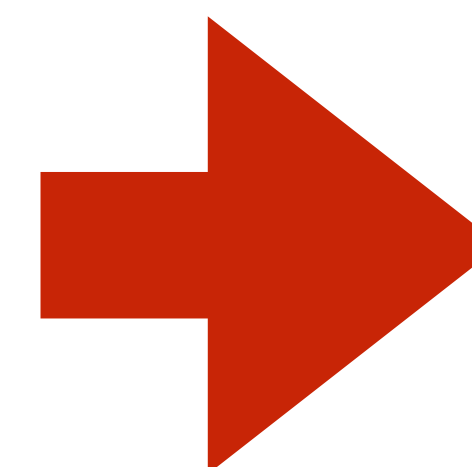
Type Dependent item

* Key mysql[reads]

* Master item MySQL server: MySQL status

Type of information Numeric (unsigned)

Units



mysql[reads]



Zabbix server

Performance, less user parameters, all logic in templates



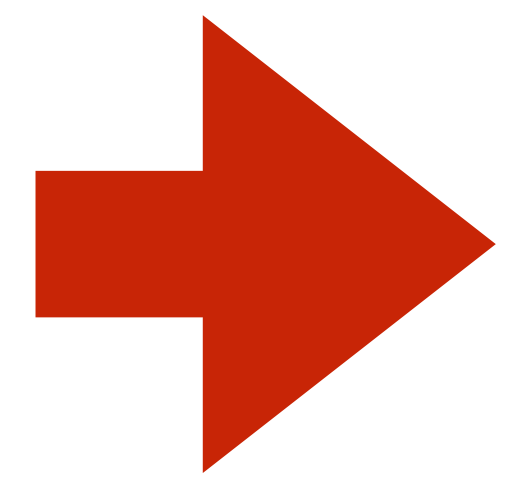
mysql[status]

Item Preprocessing

Preprocessing steps	Name	Parameters
Regular expression		.*Questions.*([0-9]+) \1
Change per second		

Add

Update Clone Check now Clear history and trends Delete Cancel



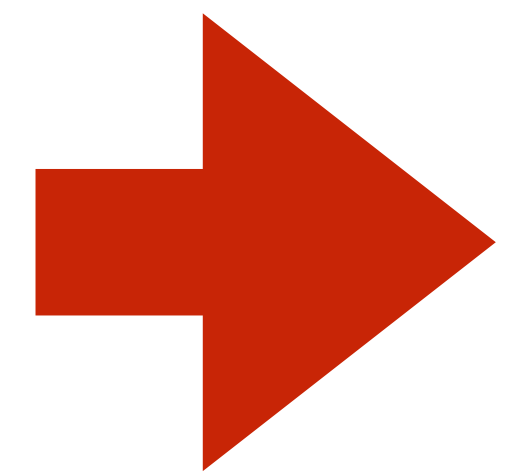
mysql[questions]

Item Preprocessing

Preprocessing steps	Name	Parameters
Regular expression		.*Innodb_data_read.*([0-9]+) \1
Change per second		

Add

Update Clone Check now Clear history and trends Delete Cancel



mysql[reads]





Zabbix 4.0

5 minutes after release



1

Performance improvements

Zabbix Server & Proxy
are 10-20% faster

Due to more efficient locking

Faster processing of problems

3.X



Triggers

Host {HOST.NAME} has just been restarted



Problems

No problem name



Time ▼	Info	Host	Problem • Severity	Duration	Ack	Actions	Tags
2018-10-01 12:25:11		AWS N34	Host AWS N34 has just been restarted	2d 23h 10m	Yes	1 2	Datacenter: FR2 Env: Staging Service: Redis
2018-10-01 12:25:11		AWS N90	Service Redis stopped	2d 23h 10m	Yes	1 1	Datacenter: FR2 Env: Staging Service: Redis

Faster processing of problems

4.0



Triggers

Host {HOST.NAME} has just been restarted



Problems

Host AWS M34 has just been restarted

Time ▼	Info	Host	Problem • Severity	Duration	Ack	Actions	Tags
2018-10-01 12:25:11		AWS N34	Host AWS N34 has just been restarted	2d 23h 10m	Yes	1 2	Datacenter: FR2 Env: Staging Service: Redis
2018-10-01 12:25:11		AWS N90	Service Redis stopped	2d 23h 10m	Yes	1 1	Datacenter: FR2 Env: Staging Service: Redis

Fast and preserves historical event names!

2

Faster and more secure
distributed monitoring

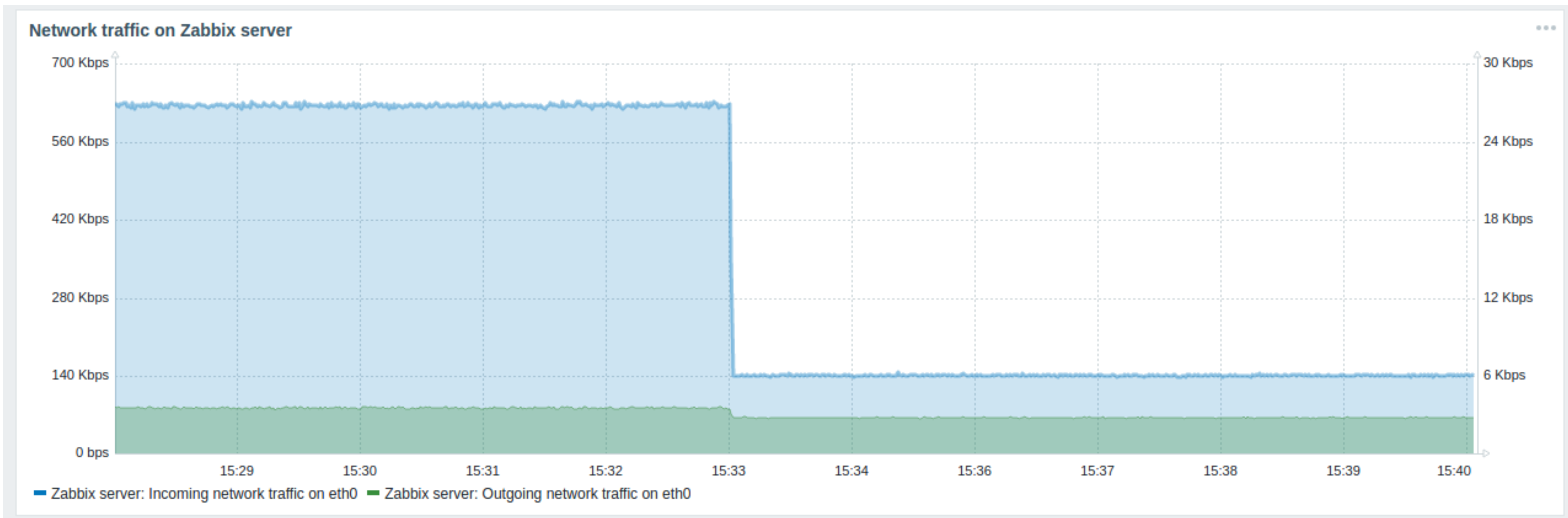
Compression for server-proxy communication

Administration -> Proxies

<input type="checkbox"/>	Name ▲	Mode	Encryption	Compression	Last seen (age)	Host count
<input type="checkbox"/>	Datacenter FR1	Active	PSK	ON	4s	432
<input type="checkbox"/>	Datacenter FR2	Active	PSK	ON	1s	329
<input type="checkbox"/>	Datacenter JP1	Active	PSK	ON	2s	1904
<input type="checkbox"/>	Datacenter MSK1	Active	PSK	ON	1s	1205
<input type="checkbox"/>	Datacenter NY1	Active	PSK	OFF	1s	401
<input type="checkbox"/>	Datacenter NY2	Active	PSK	ON	5s	2004

5x less network bandwidth

Improved data transfer speed
No impact on CPU and memory usage



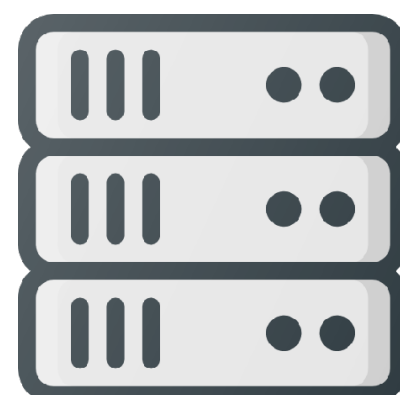
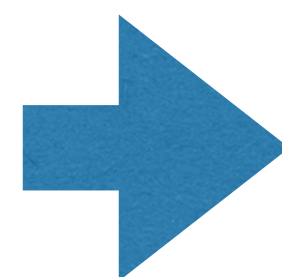
More secure Proxies

Active Proxies

Proxy	Encryption
* Proxy name	Moscow
Proxy mode	<input checked="" type="radio"/> Active <input type="radio"/> Passive
Proxy address	192.168.1.0/24, moscow-proxy.example.com



Proxy



Server

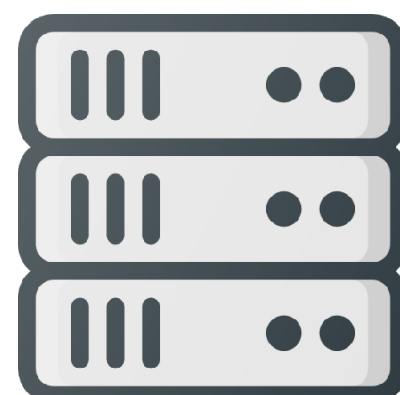
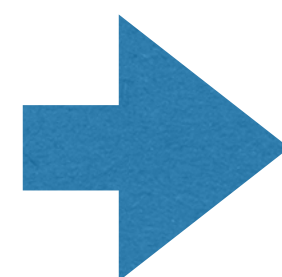
More secure Proxies

Active Proxies

Proxy	Encryption
* Proxy name	Moscow
Proxy mode	<input checked="" type="radio"/> Active <input type="radio"/> Passive
Proxy address	192.168.1.0/24, moscow-proxy.example.com



Proxy



Server

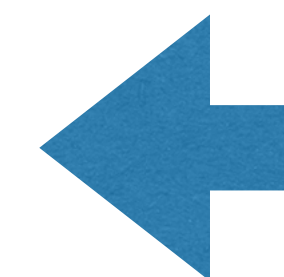
Passive Proxies

Mandatory parameter

Server=192.168.1.55, zabbix.example.com



Proxy



Server

3

Better integration
options

Zabbix storage backends

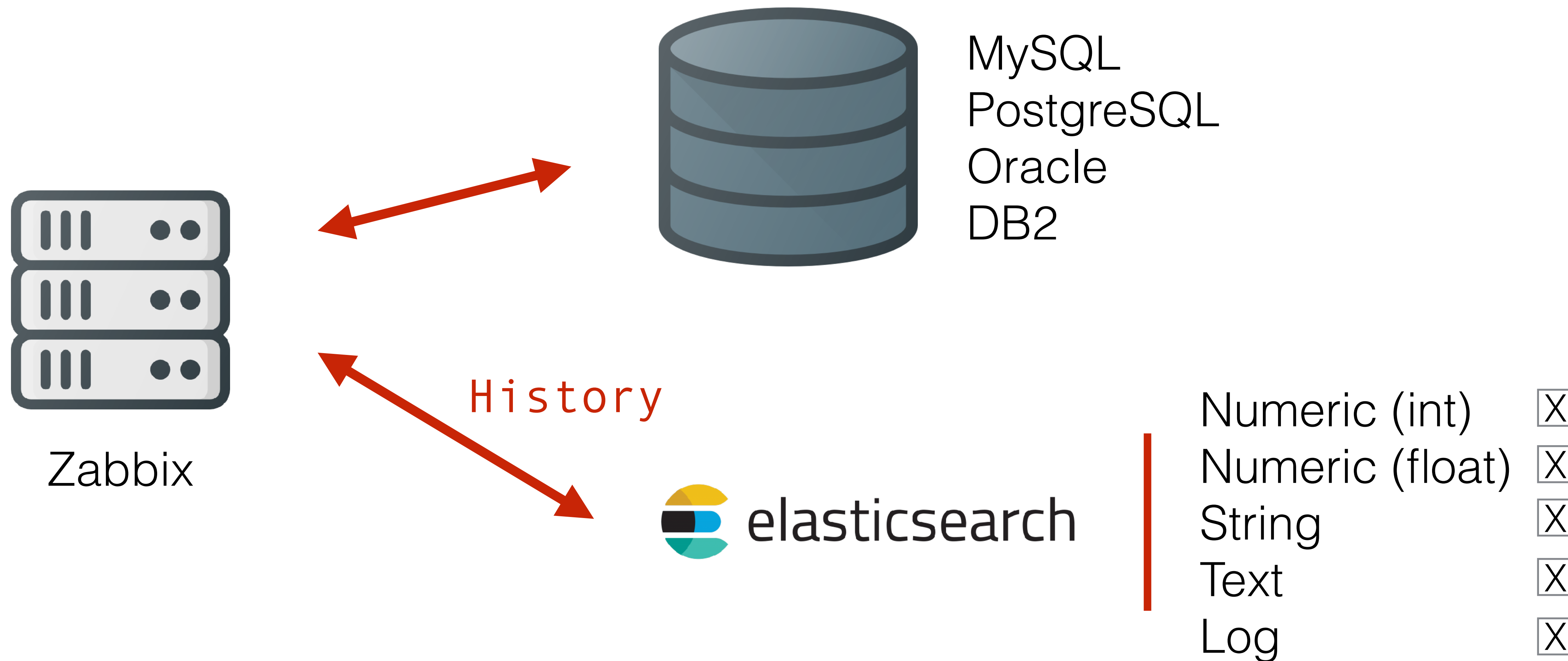


Zabbix

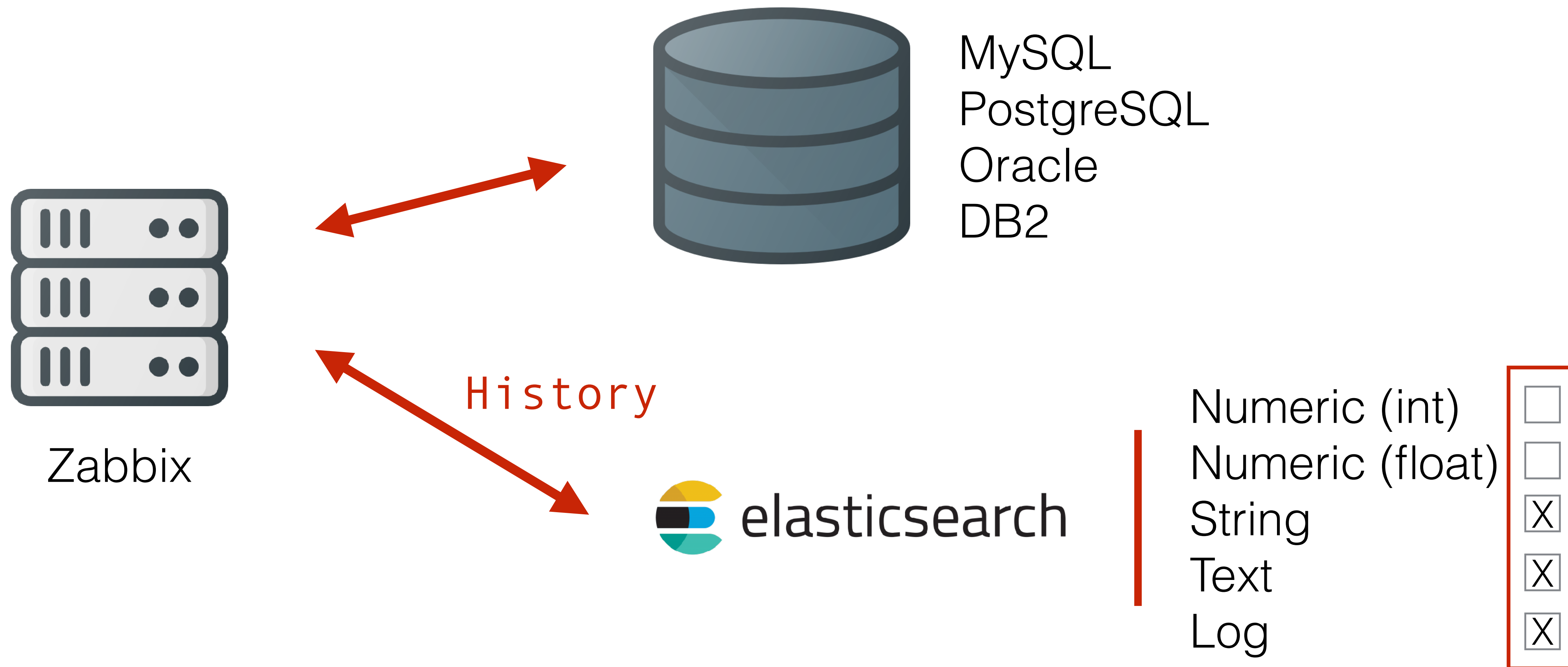


MySQL
PostgreSQL
Oracle
DB2

ElasticSearch



ElasticSearch



ElasticSearch

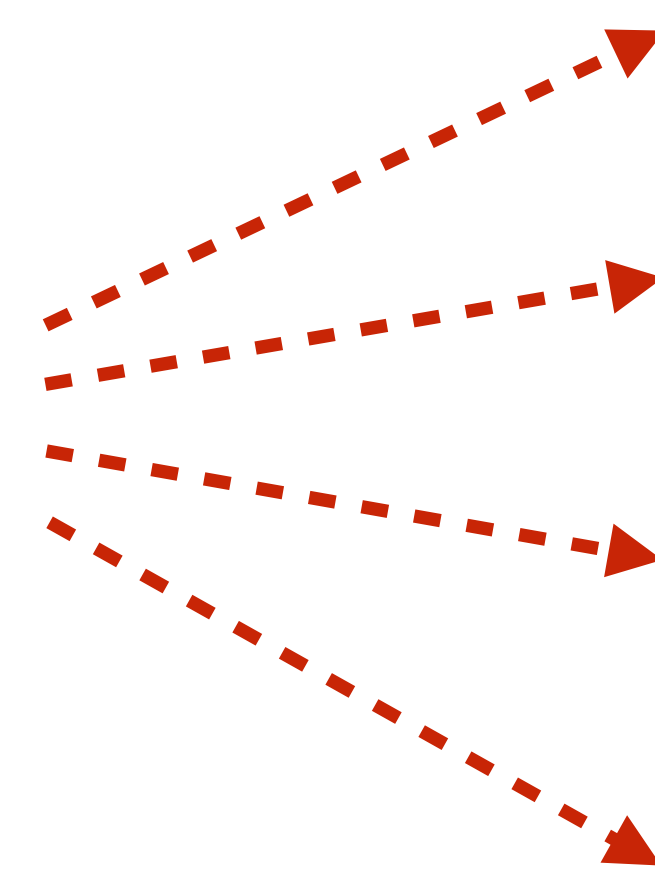


Zabbix



elasticsearch

History



Analytics

Big Data

Integrations

Visualization

Better alternative?

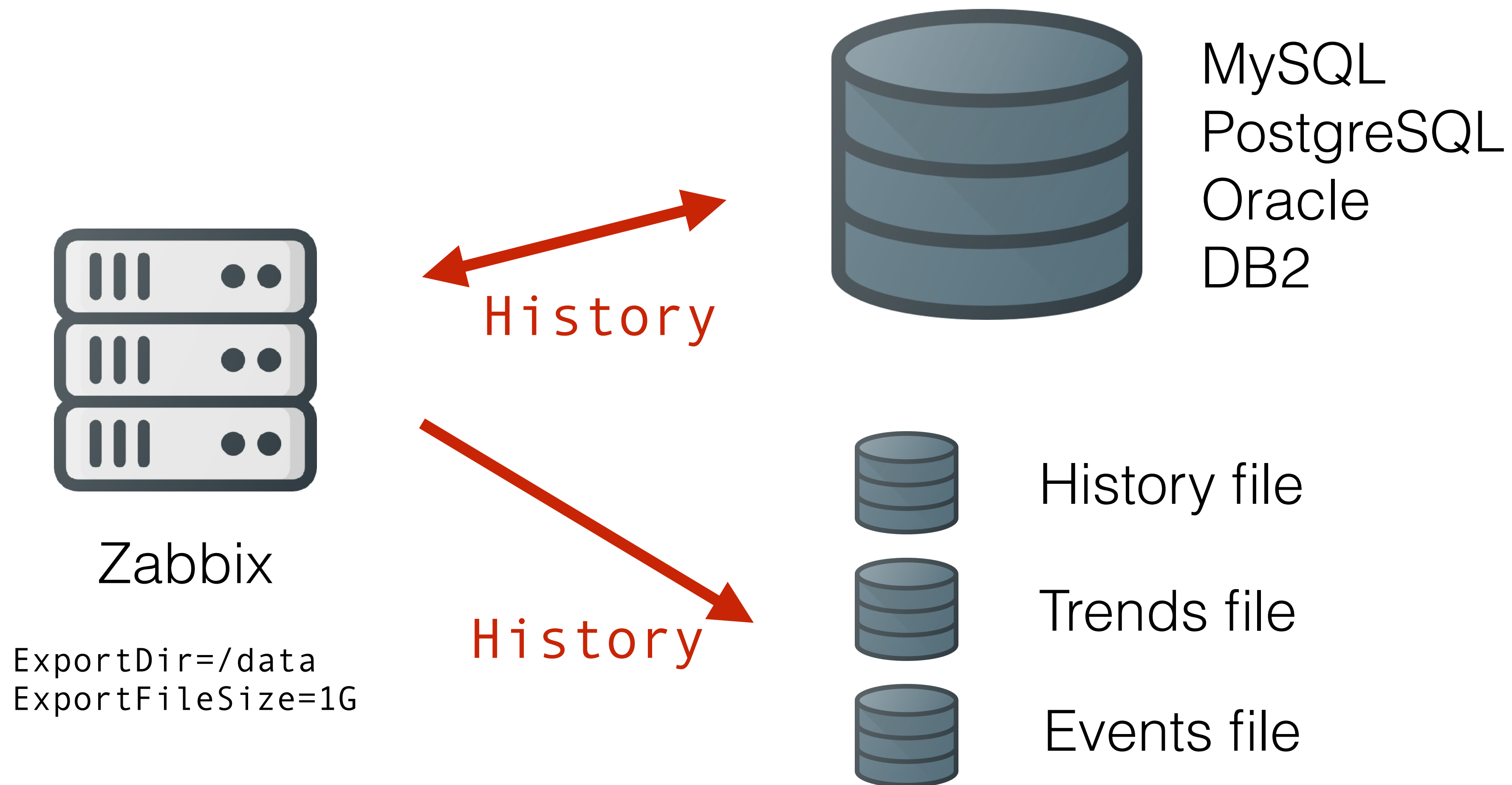


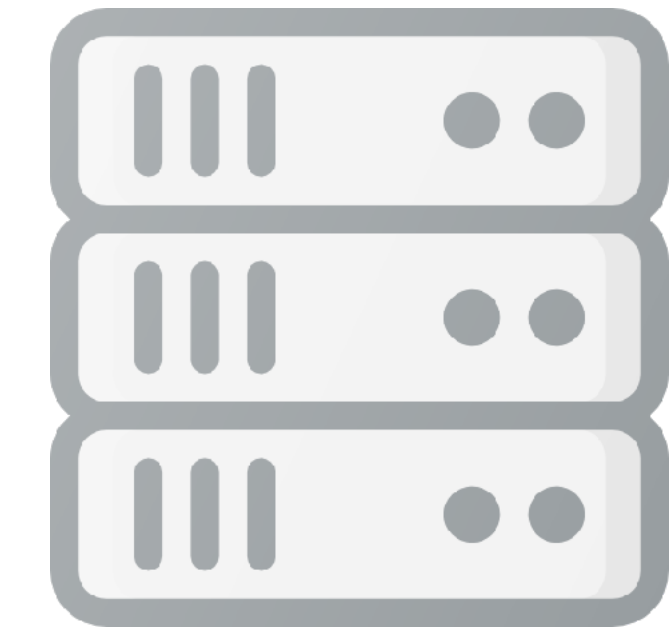
Zabbix



MySQL
PostgreSQL
Oracle
DB2

Real-time export of collected data





Zabbix

ExportDir=/data
ExportFileSize=1G



MySQL
PostgreSQL
Oracle
DB2



History file



Trends file



Events file



History

```
{"host":"Server 10","groups":["Linux servers"],"applications":["Filesystems"],"itemid":  
27363,"name":"Free disk space on /","clock":1529673363,"ns":655832239,"value":  
32372809728}
```

Trends

```
{“host”:“Zabbix Server 01”,“groups”:["Zabbix servers"],"applications":["Zabbix server"],"itemid":23760,"name":“Zabbix value cache, % free”,“clock”:1529672400,“count”:44,“min”:95.953665,“avg”:96.337948,“max”:99.013570}
```

History

```
{“host”:“Server 10”,“groups”:["Linux servers"],"applications":["Filesystems"],"itemid":27363,“name”:“Free disk space on /”,“clock”:1529673363,“ns”:655832239,“value”:32372809728}
```

Problems

```
{“clock”:1529673721,“ns”:690523076,“value”:1,“eventid”:44364,“name”:“Service is not available”,“hosts”:["Linux009"],“groups”:["Zabbix servers"],“tags”:[{"tag":“Service”,“value”:“Jira”}, {"tag":“Env”,“value”:“Production”}, {"tag":“Datacenter”,“value”:“NY2”}]}
```

Trends

```
{“host”:“Zabbix Server 01”,“groups”:["Zabbix servers"],“applications”:["Zabbix server"],“itemid”:23760,“name”:“Zabbix value cache, % free”,“clock”:1529672400,“count”:44,“min”:95.953665,“avg”:96.337948,“max”:99.013570}
```

History

```
{“host”:“Server 10”,“groups”:["Linux servers"],“applications”:["Filesystems"],“itemid”:27363,“name”:“Free disk space on /”,“clock”:1529673363,“ns”:655832239,“value”:32372809728}
```

4

More flexibility,
less restrictions

Control unit conversion

Item	Preprocessing
* Name	Oracle: transactions per second
Type	Zabbix trapper
* Key	oracle.tps
Type of information	Numeric (unsigned)
Units	!tps

2000 tps -> 2 Ktps
 2000 !tps -> 2000 tps

61 !s -> 61 s
 61 s -> 1m 1s

0 !uptime -> 0 uptime
 0 uptime -> 00:00:00

Current unit black list still works but deprecated: !ms, !rpm, !RPM, !%

Multiple emails in one user media

Different recipients

Type

* Send to

[Add](#)

* When active

Same recipient

Type

* Send to

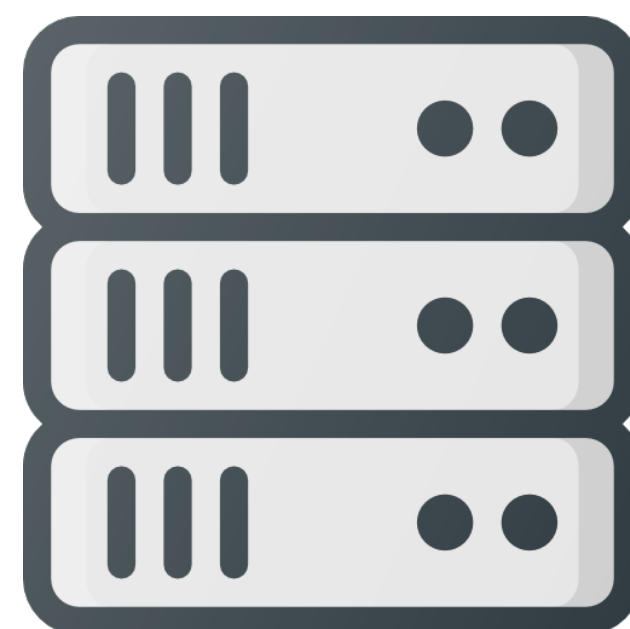
[Add](#)

* When active

If multiple e-mail addresses are specified this way, one e-mail will be sent to all the specified recipients!



More flexible auto registration



HostMetadata=**Apache/MySQL**

Templates: T_Apache, T_MySQL
Host groups: WEB Servers, DB Servers

Web Server

More flexible auto registration



HostMetadata=Apache/MySQL

Templates: T_Apache, T_MySQL
Host groups: WEB Servers, DB Servers

Web Server



Same host (IP, hostname)
Different role



HostMetadata=JBOSS

Templates: T_JBOSS
Host groups: Java apps

Application server

“Check now” for items

Configuration -> Items/Discovery

Enabled



Item or discovery rule

“Check now” for items

Configuration -> Items/Discovery

Enabled

Item or discovery rule

<input type="checkbox"/>	Wizard	Name ▲	Triggers	Key
<input type="checkbox"/>	...	MySQL status: MySQL queries per second		mysql[questions]
<input type="checkbox"/>	...	MySQL status: MySQL read operations per second		mysql[reads]
<input checked="" type="checkbox"/>	...	MySQL status		mysql[status]

1 selected

List of items or discovery rules

Inventory macros support in event tags

Location

Inventory macros support in event tags

Configuration -> Hosts

Location NY2

--

Configuration -> Triggers

Tags

Env	Production
Service	Jira
Datacenter	{INVENTORY.LOCATION}

Configuration -> Hosts

Location

Configuration -> Triggers

Tags

Env	Production
Service	Jira
Datacenter	{INVENTORY.LOCATION}

Monitoring -> Problems

Time	<input type="checkbox"/>	Severity ▼	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
07:12:02 PM	<input type="checkbox"/>	Warning		PROBLEM		Linux004	Processor load is too high on Linux004	13s	No		Datacenter: NY2 Env: Production Service: Jira
07:12:02 PM	<input type="checkbox"/>	Warning		PROBLEM		Linux009	Processor load is too high on Linux009	13s	No		Datacenter: NY2 Env: Production Service: Jira
07:11:58 PM	<input type="checkbox"/>	Warning		PROBLEM		Linux902	Processor load is too high on Linux902	17s	No		Datacenter: NY2 Env: Production Service: Jira

Displaying 3 of 3 found

3.X

Acknowledgements

Monitoring -> Problems -> Ack

Event acknowledgements

* Message

History

Time	User	Message	User action
------	------	---------	-------------

Acknowledge

Only selected problem

Selected and all other unacknowledged problems of related triggers 52 events

Close problem

Message is mandatory
 No way to put message only
 No way just to close problem

Time	<input type="checkbox"/>	Severity	Recovery time	Status	Info	Host	Problem ▲	Duration	Ack	Actions	Tags
05:37:25 AM	<input type="checkbox"/>	Warning	05:39:25 AM	RESOLVED		Linux001	Processor load is too high on Linux001	2m	Yes 1		Datacenter: NY2 Env: Production Service: Jira

4.0 Advanced problem work flow

Monitoring -> Problems -> Update

Update problem

Message is optional

Operations are optional:

- ACK
- Change severity (!)
- Close problem

Message

History

Time	User	User action	Message
06/22/2018 03:20:53 PM	Admin (Zabbix Administrator)		Looks like a critical problem, increasing severity to High.
06/22/2018 03:20:07 PM	Admin (Zabbix Administrator)		I will have another look soon.
09/07/2016 09:03:07 AM	Admin (Zabbix Administrator)		It looks like a random spike of activity.

Scope

- Only selected problem
 Selected and all other problems of related triggers 1 event

Change severity

Acknowledge

Close problem

* At least one update operation or message must exist.

Update

Cancel

Monitoring -> Problems

Time	<input type="checkbox"/>	Severity ▼	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
09/16/2016 05:21:47 AM	<input type="checkbox"/>	High		PROBLEM		Linux002	Service *UNKNOWN* stopped	1y 9m 9d	Yes	1 2	Datacenter: FR2 Env: Staging Service: Redis
09/14/2016 09:11:06 AM	<input type="checkbox"/>	High		PROBLEM		Linux005	Service *UNKNOWN* stopped	1y 9m 11d	Yes	1 1	Datacenter: FR2 Env: Staging Service: Redis
09/16/2016 04:51:55 AM	<input type="checkbox"/>	Average		PROBLEM		Linux902	Too many transactions per second	1y 9m 9d	No	1	Datacenter: FR2 Env: Staging Service: Oracle
09/14/2016 10:59:31 AM	<input type="checkbox"/>	Average		PROBLEM		Linux900	Too many queries per second	1y 9m 11d	Yes	1 2	Datacenter: NY1 Env: Production Service: HTTP balancer
09/13/2016 09:47:04 PM	<input type="checkbox"/>	Average		PROBLEM		Linux009	Too many queries per second	1y 9m 11d	No		Datacenter: NY1 Env: Production Service: HTTP balancer
09/07/2016 08:58:08 AM	<input type="checkbox"/>	High		PROBLEM		Linux001	Too many transactions per second	1y 9m 18d	Yes	3 ↑ 4	Datacenter: FR2 Service: Oracle
09/14/2016 11:26:18 AM	<input type="checkbox"/>	Information		PROBLEM		Linux003	Slow query execution time	1y 9m 11d	No	1	Datacenter: NY1 Env: Production Service: AWS Dynam...
09/07/2016 04:09:38 PM	<input type="checkbox"/>	Information		PROBLEM		Linux008	Low CPU utilization on host machines	1y 9m 17d	Yes	1 1	Datacenter: FR2 Service: Kubernetes

Displaying 8 of 8 found

Monitoring -> Problems

Time	<input type="checkbox"/>	Severity ▾	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
09/16/2016 05:21:47 AM	<input type="checkbox"/>	High		PROBLEM		Linux002	Service *UNKNOWN* stopped	1y 9m 9d	Yes		Datacenter: FR2 Env: Staging Service: Redis
09/14/2016 09:11:06 AM	<input type="checkbox"/>	High		PROBLEM		Linux005	Service *UNKNOWN* stopped	1y 9m 11d	Yes		Datacenter: FR2 Env: Staging Service: Redis
09/16/2016 04:51:55 AM	<input type="checkbox"/>	Average		PROBLEM		Linux902	Too many transactions per second	1y 9m 9d	No		Datacenter: FR2 Env: Staging Service: Oracle
09/14/2016 10:59:31 AM	<input type="checkbox"/>	Average		PROBLEM		Linux900	Too many queries per second	1y 9m 11d	Yes		Datacenter: NY1 Env: Production Service: HTTP balancer
09/13/2016 09:47:04 PM	<input type="checkbox"/>	Average		PROBLEM		Linux009	Too many queries per second	1y 9m 11d	No		Datacenter: NY1 Env: Production Service: HTTP balancer
09/07/2016 08:58:08 AM	<input type="checkbox"/>	High		PROBLEM							
09/14/2016 11:26:18 AM	<input type="checkbox"/>	Information		PROBLEM							
09/07/2016 04:09:38 PM	<input type="checkbox"/>	Information		PROBLEM							

Time	User/Recipient	Action	Message/Command	Status	Info
06/22/2018 03:20:53 PM	Admin (Zabbix Administrator)		Looks like a critical problem, increasing severity to High.		
06/22/2018 03:20:07 PM	Admin (Zabbix Administrator)		I will have another look soon.		
09/07/2016 09:03:07 AM	Admin (Zabbix Administrator)		It looks like a random spike of activity.		
09/07/2016 08:58:09 AM	Admin (Zabbix Administrator)			Failed	
09/07/2016 08:58:08 AM					

- >_ Automatic action - Remote command
- ☑ Problem closed manually
- 💬 Comment added
- 1 Number of comments added. Used in Monitoring -> Problems list
- ↑↓ Problem severity increased
- ↑↓ Problem severity decreased
- ↑↓ Problem severity changed, but returned to the original level. Used in Monitoring -> Problems list only.
- ✉ Automatic action - remote message sending
- ✓ Problem acknowledged
- 📅 Problem generated
- 📅 Problem recovery
- 1➡ Number of actions. Used in Monitoring -> Problems list
- 1➡ Number of actions (with some action in progress state). Used in Monitoring -> Problems list
- 1➡ Number of actions (with some failed action). Used in Monitoring -> Problems list

Tag based permissions

Administration → User groups

User group
Permissions
Tag filter

Permissions

Host group	Tags	Action
End user services	Service: Jira	Remove
Region/USA	Env: Production	Remove

Include subgroups

[Add](#)

Affects displaying of problems and actions

Monitoring → Problems, Dashboard, Overview, Screens, Maps

Problems Export to CSV

Filter ▼

Time	<input type="checkbox"/>	Severity	Recovery time	Status	Info	Host	Problem ▲	Duration	Ack	Actions	Tags
04/22/2018 07:36:58 AM	<input type="checkbox"/>	Warning	04/22/2018 07:37:25 AM	RESOLVED		Linux001	Processor load is too high on Linux001	27s	No		Datacenter: NY2 Env: Production Service: Jira
04/18/2018 01:03:25 AM	<input type="checkbox"/>	Warning	04/18/2018 01:04:25 AM	RESOLVED		Linux001	Processor load is too high on Linux001	1m	No		Datacenter: NY2 Env: Production Service: Jira
04/18/2018 12:56:25 AM	<input type="checkbox"/>	Warning	04/18/2018 12:57:25 AM	RESOLVED		Linux001	Processor load is too high on Linux001	1m	No		Datacenter: NY2 Env: Production Service: Jira
04/18/2018 12:37:25 AM	<input type="checkbox"/>	Warning	04/18/2018 12:38:25 AM	RESOLVED		Linux001	Processor load is too high on Linux001	1m	No		Datacenter: NY2 Env: Production Service: Jira
04/14/2018 12:38:25 AM	<input type="checkbox"/>	Warning	04/14/2018 12:42:25 AM	RESOLVED		Linux001	Processor load is too high on Linux001	4m	No		Datacenter: NY2 Env: Production Service: Jira
04/14/2018 12:30:25 AM	<input type="checkbox"/>	Warning	04/14/2018 12:33:25 AM	RESOLVED		Linux001	Processor load is too high on Linux001	3m	No		Datacenter: NY2 Env: Production Service: Jira
04/13/2018 11:33:25 AM	<input type="checkbox"/>	Warning	04/13/2018 11:35:25 AM	RESOLVED		Linux001	Processor load is too high on Linux001	2m	No		Datacenter: NY2 Env: Production Service: Jira
04/13/2018 10:54:31 AM	<input type="checkbox"/>	Warning	04/13/2018 10:56:25 AM	RESOLVED		Linux001	Processor load is too high on Linux001	1m 54s	No		Datacenter: NY2 Env: Production Service: Jira
04/12/2018 09:50:25 AM	<input type="checkbox"/>	Warning	04/12/2018 09:51:25 AM	RESOLVED		Linux001	Processor load is too high on Linux001	1m	No		Datacenter: NY2 Env: Production Service: Jira

Use cases

Tag filters

- Different problem views for different groups of users
- Alerting based on tag filters

5

HTTP/HTTPS
check

New item type

HTTP agent

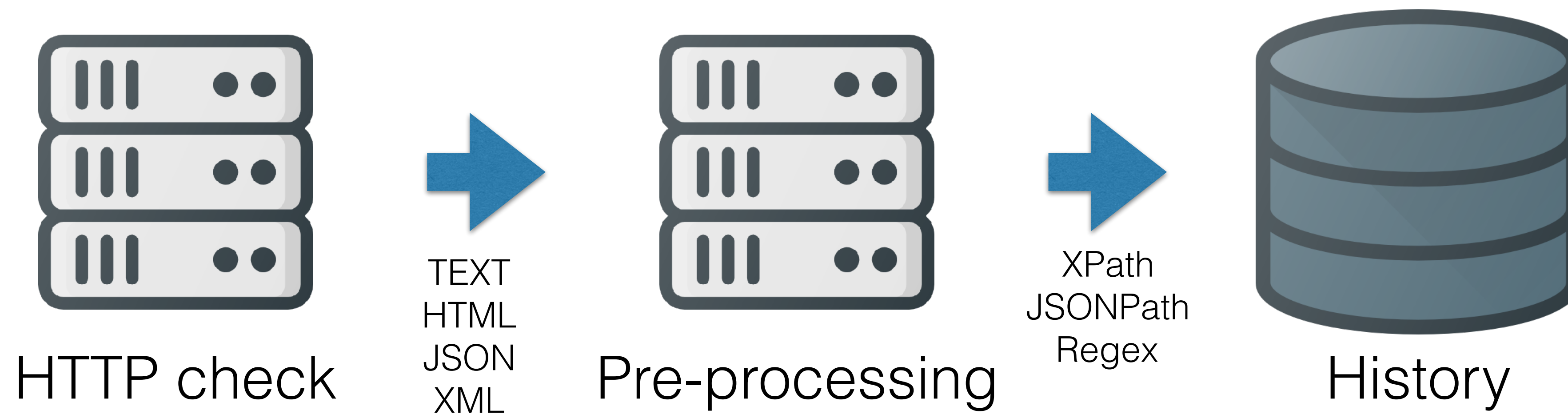
- Monitoring content of WEB application
- Monitoring of APIs, which are based on JSON/XML/Prometheus
- Access to HTTP header fields
- Server: Apache/2.4.1 (Unix)

New item type

HTTP agent

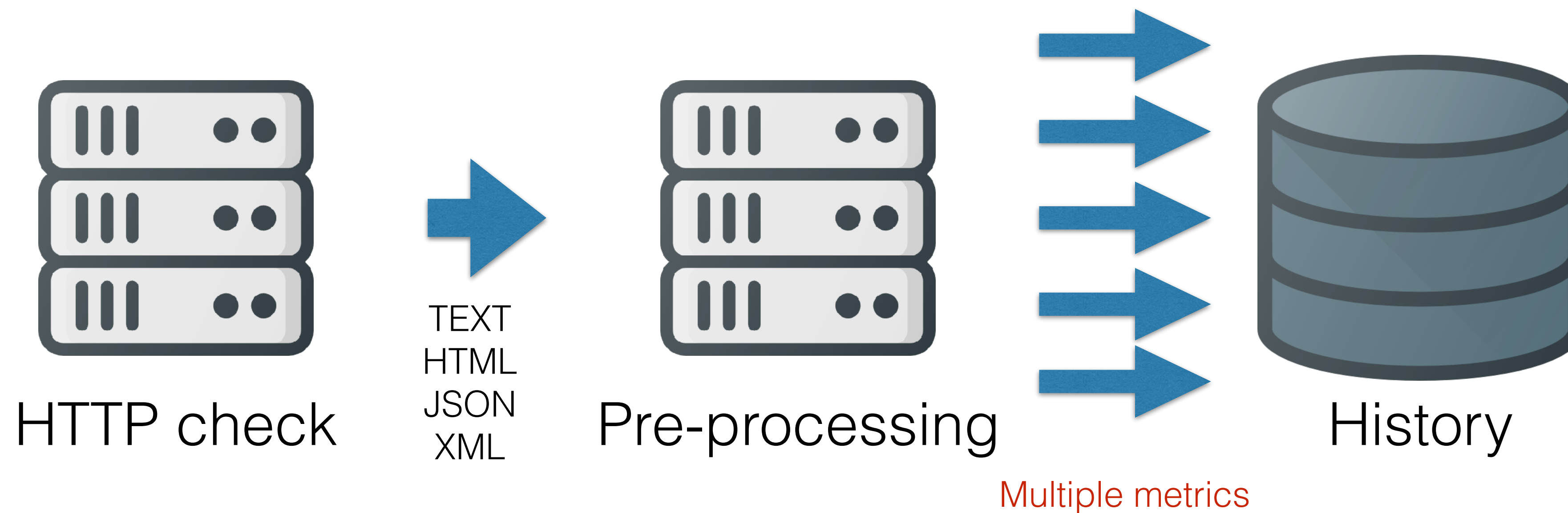
- Monitoring content of WEB application
- Monitoring of APIs, which are based on JSON/XML/Prometheus
- Access to HTTP header fields
- Server: Apache/2.4.1 (Unix)

Typical HTTP processing



HTTP data processing

Typical HTTP processing



HTTP data processing

HTTP item type

Item
Preprocessing

* Name

Type HTTP agent ⬆

* Key Select

* URL Parse

Query fields

	Name	⇒	Value	
⋮	fmt	⇒	json	Remove
Add				

Request type GET ⬆

Timeout

HTTP item type

Request body type **Raw data** JSON data XML data

Request body

Headers

Name	Value	
<input type="text" value="name"/>	⇒ <input type="text" value="value"/>	Remove
Add		

Required status codes

Follow redirects

Retrieve mode **Body** Headers Body and headers

Convert to JSON

HTTP item type

HTTP proxy	<input type="text" value="http://[user[:password]@]proxy.example.com[:port]"/>
HTTP authentication	<input type="text" value="None"/>
SSL verify peer	<input type="checkbox"/>
SSL verify host	<input type="checkbox"/>
SSL certificate file	<input type="text"/>
SSL key file	<input type="text"/>
SSL key password	<input type="text"/>

6

Accessibility & usability

Kiosk mode for Dashboard

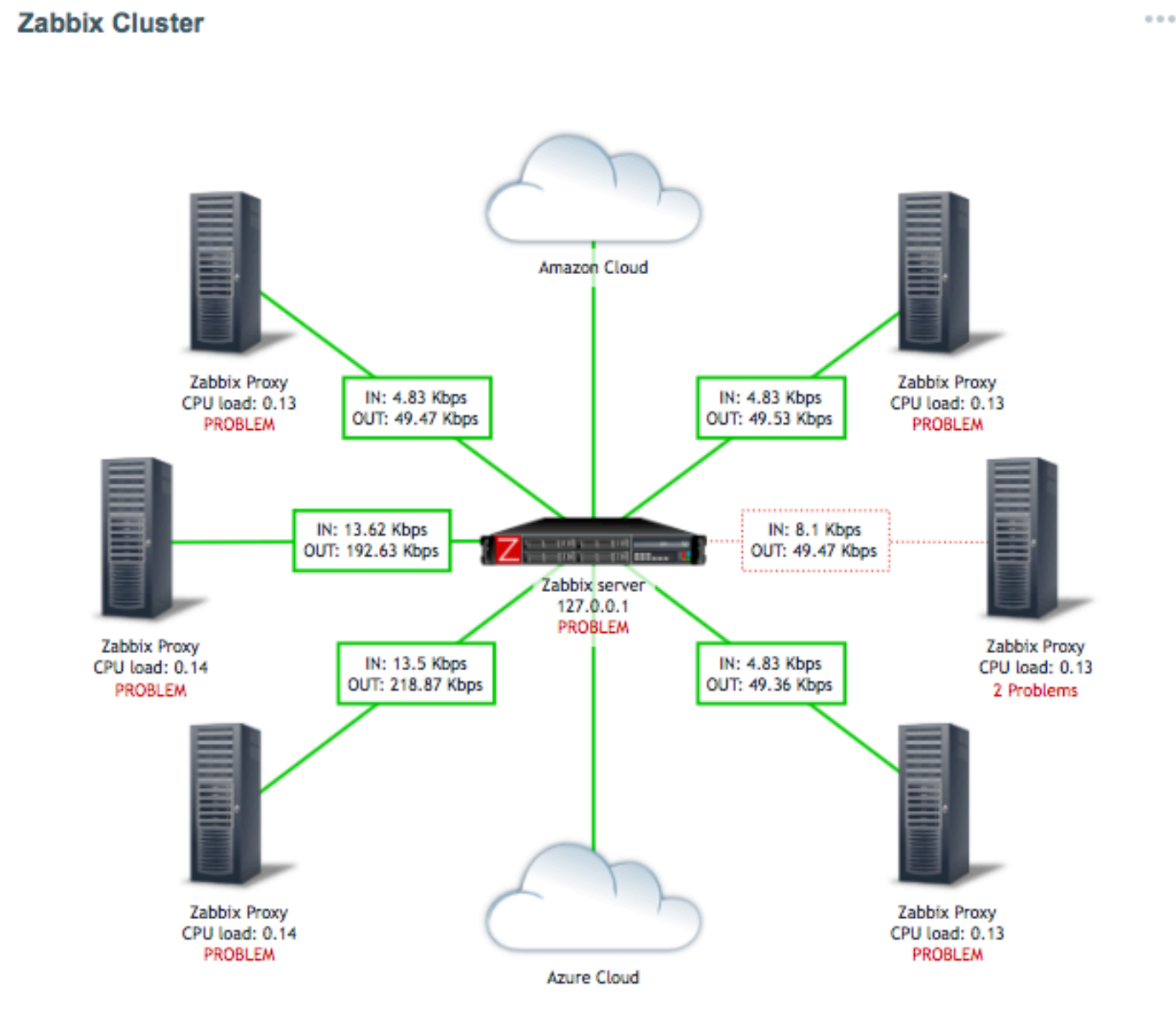
Normal view

Zabbix Global View

Edit dashboard

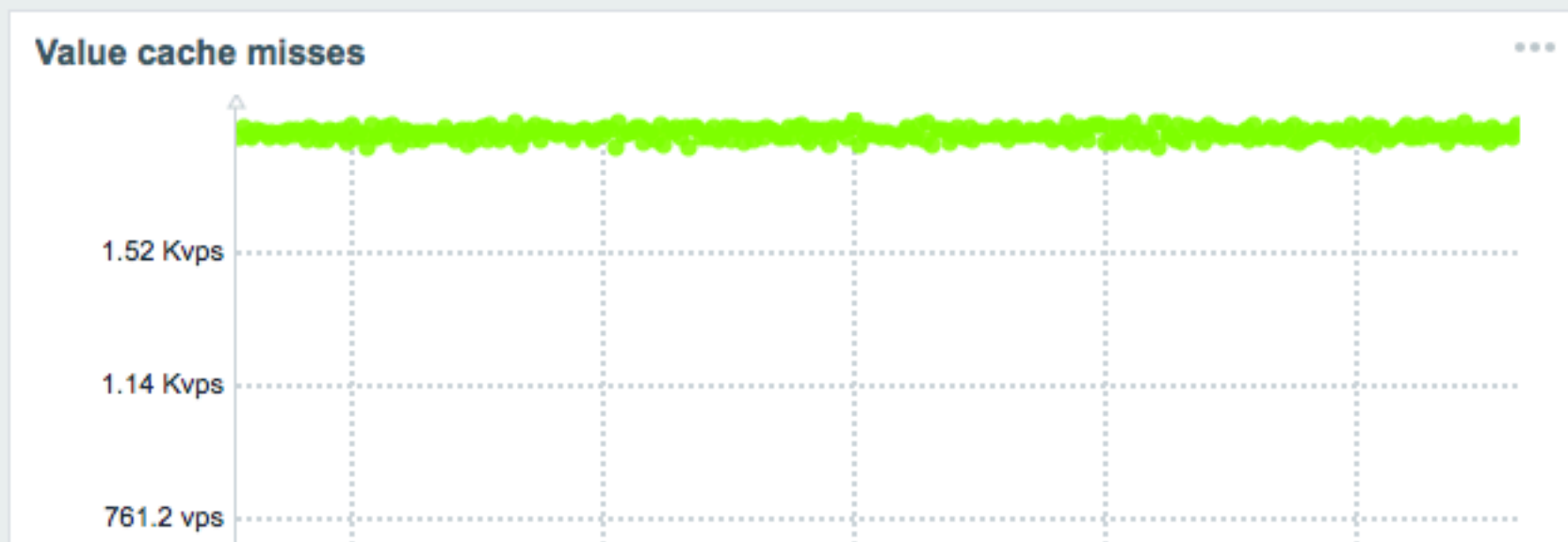
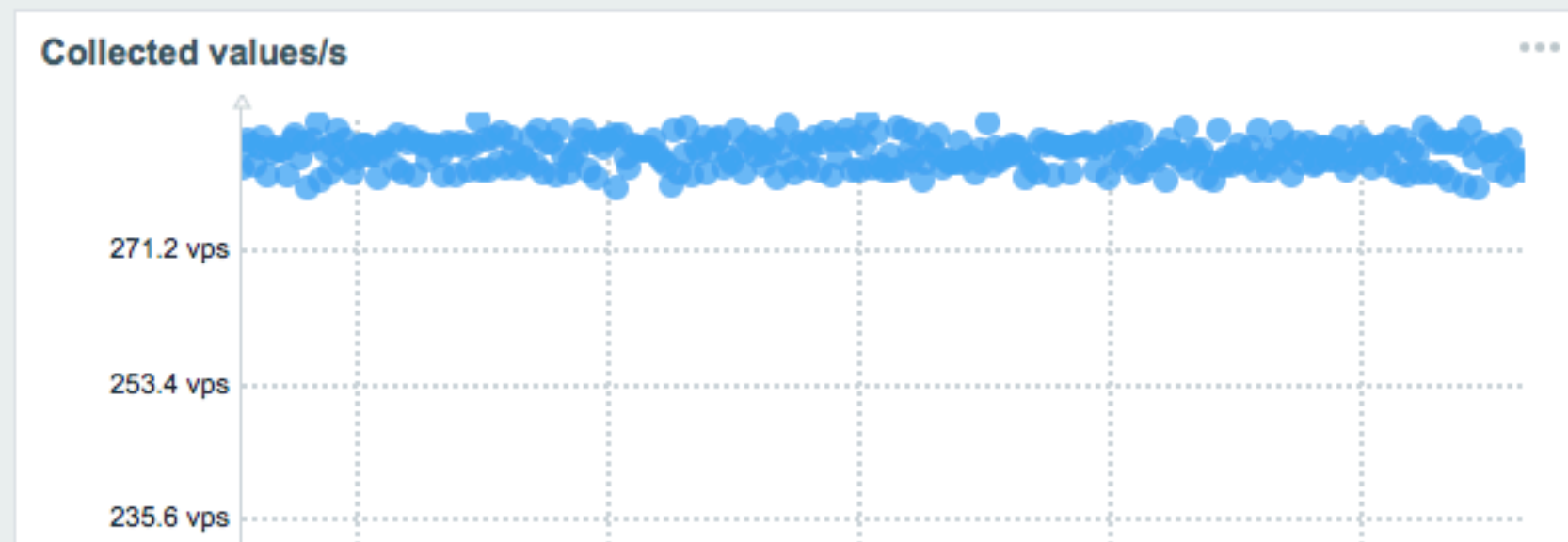
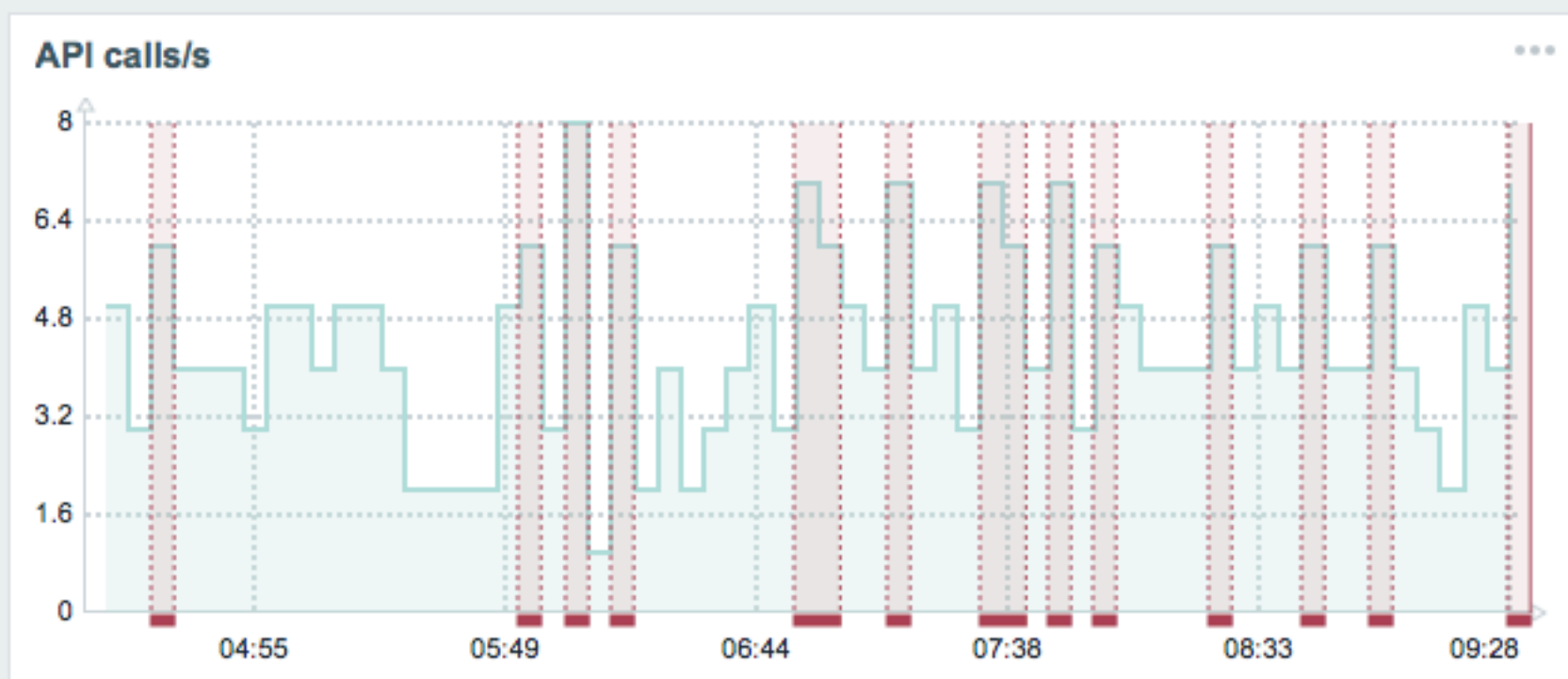
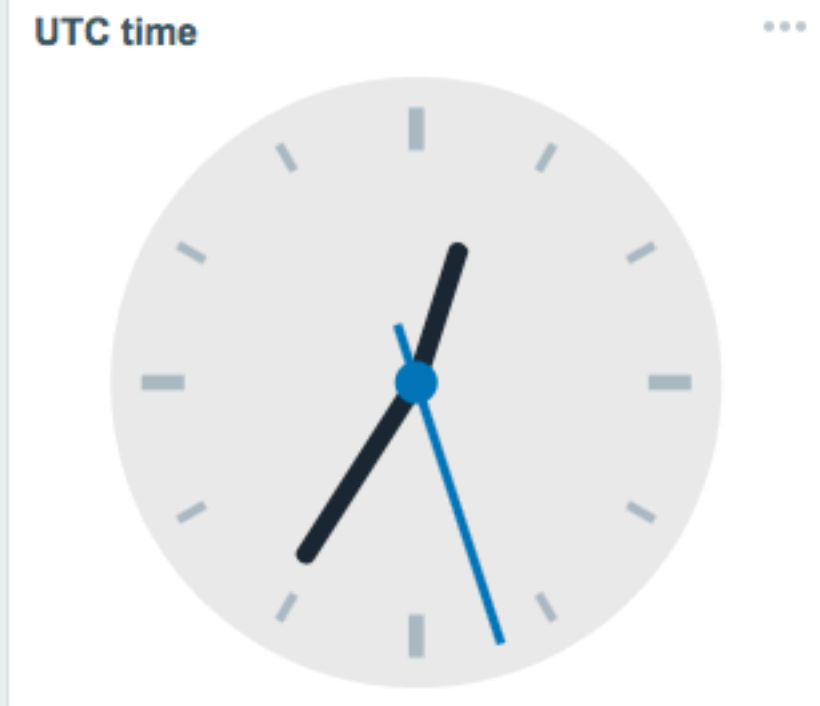
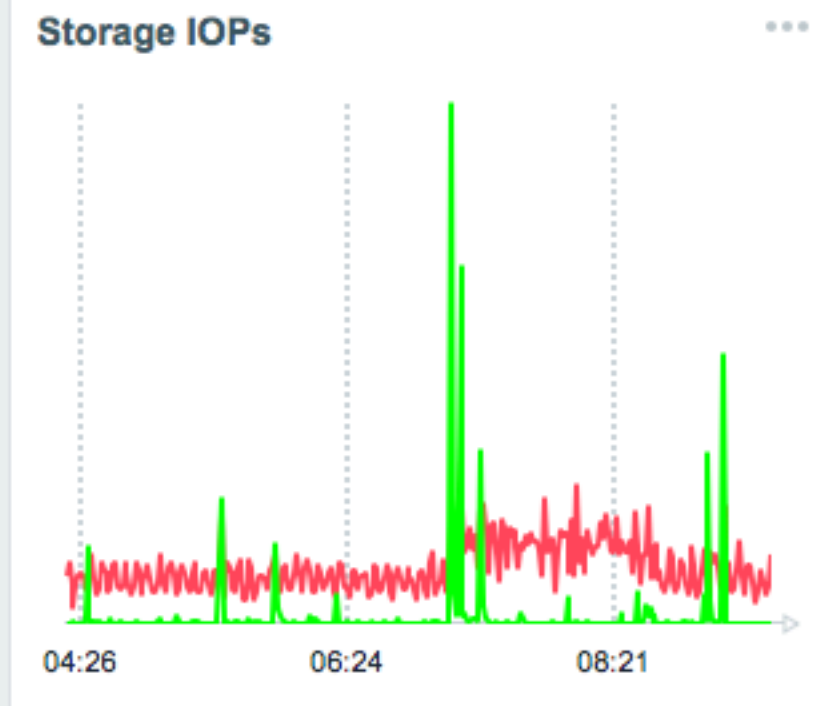
All dashboards / Zabbix Global View

Zoom out 2018-10-02 04:18:55 – 2018-10-02 09:30:22





Detected problems

Host group	Disaster	High	Average	Warning	Information	Not classified
Cloud/AWS			1	1		
Cloud/Azure			1	1	1	
End user services			8	5		
HPC Cluster			29	27	1	
Internal infrastructure		2	43	41	2	
R&D Lab1						
R&D Lab2			1	1		
Region/Australia			1	1		
Region/Brazil						32
Region/China		1	1	1		
Region/Europe						
Region/Japan			5			
Region/USA			3	1		
SAP HANA Infra			1	1	1	
Zabbix infrastructure				1		



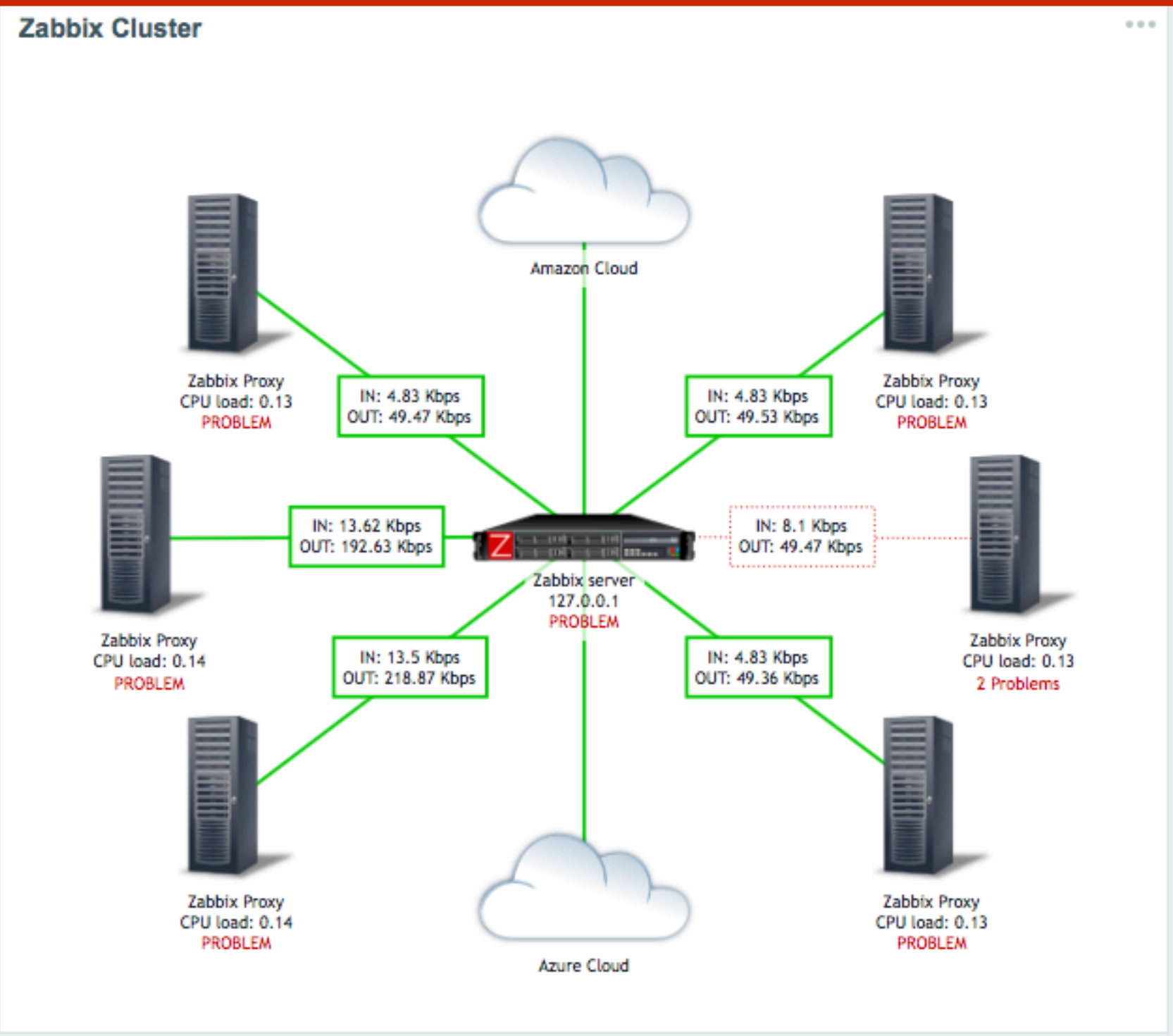
Full screen

Zabbix Global View

Edit dashboard  

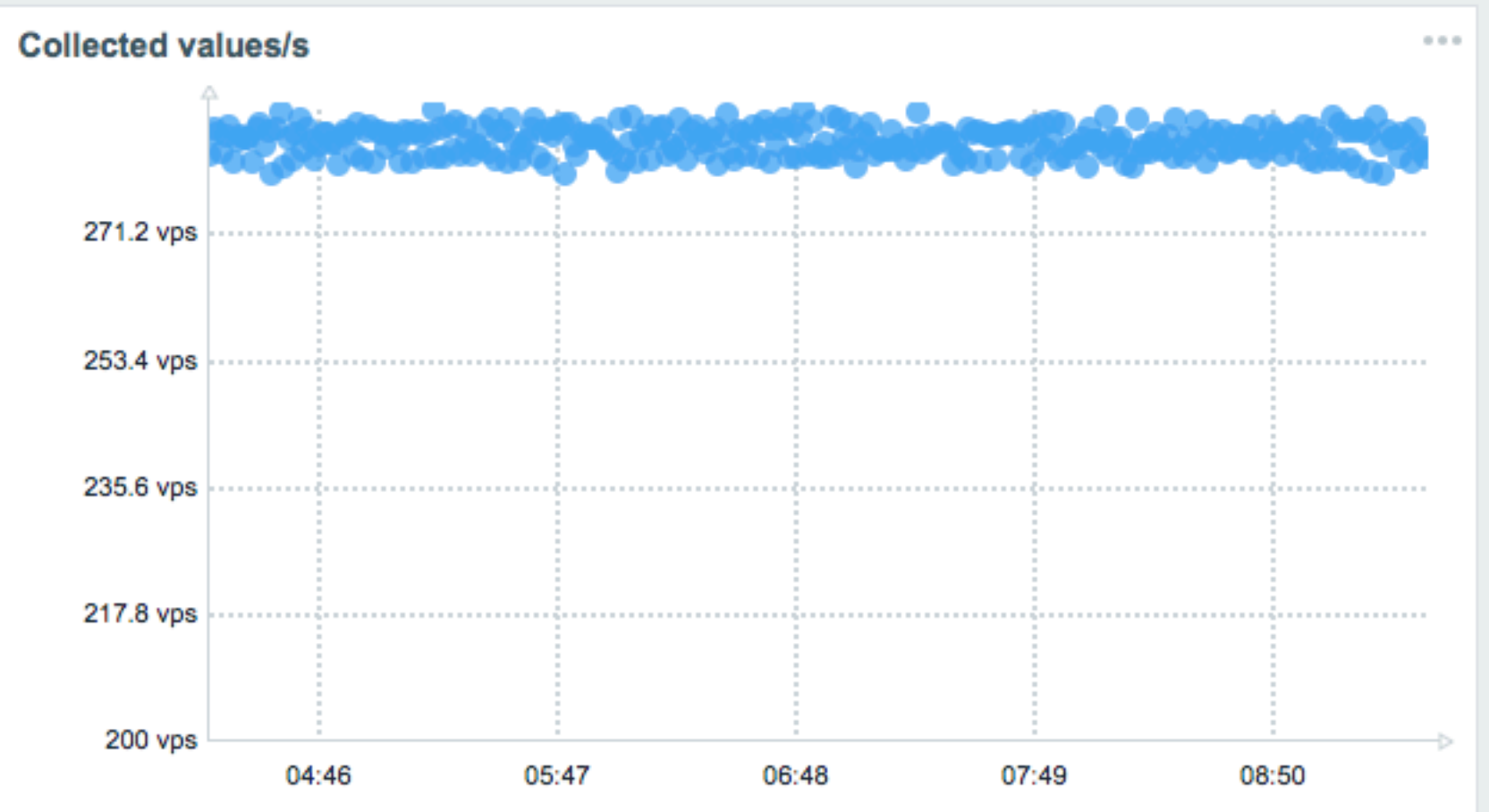
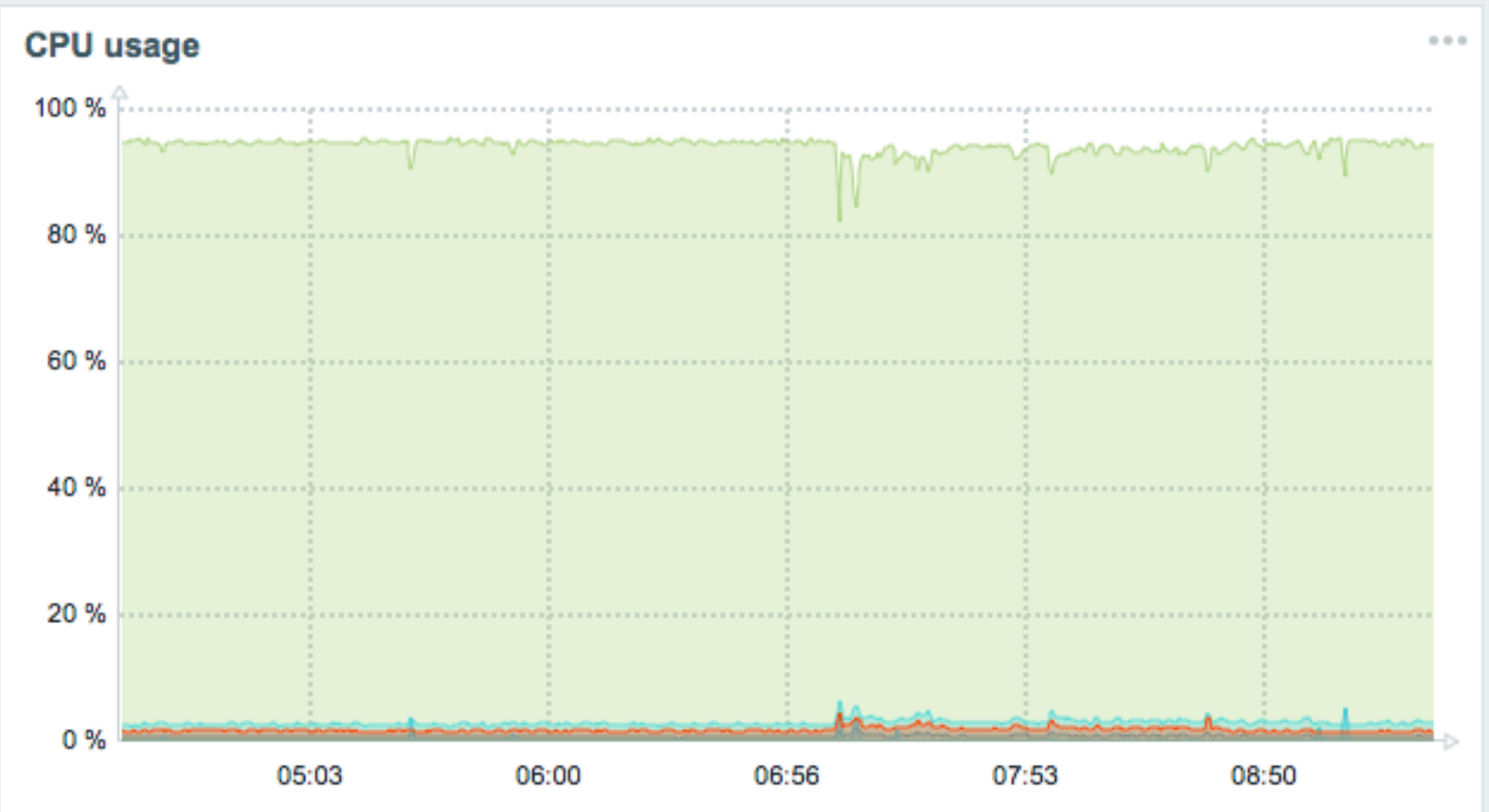
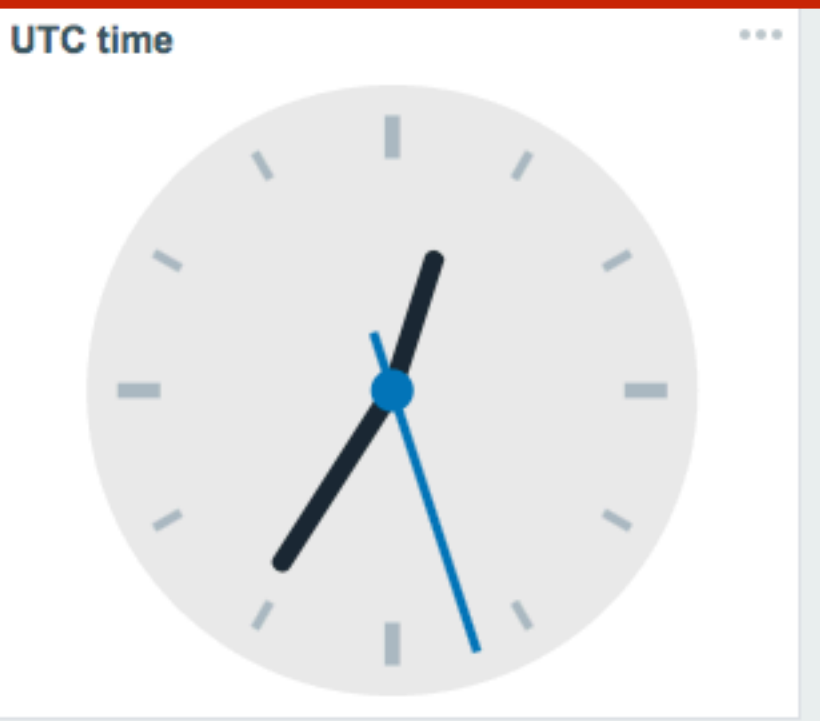
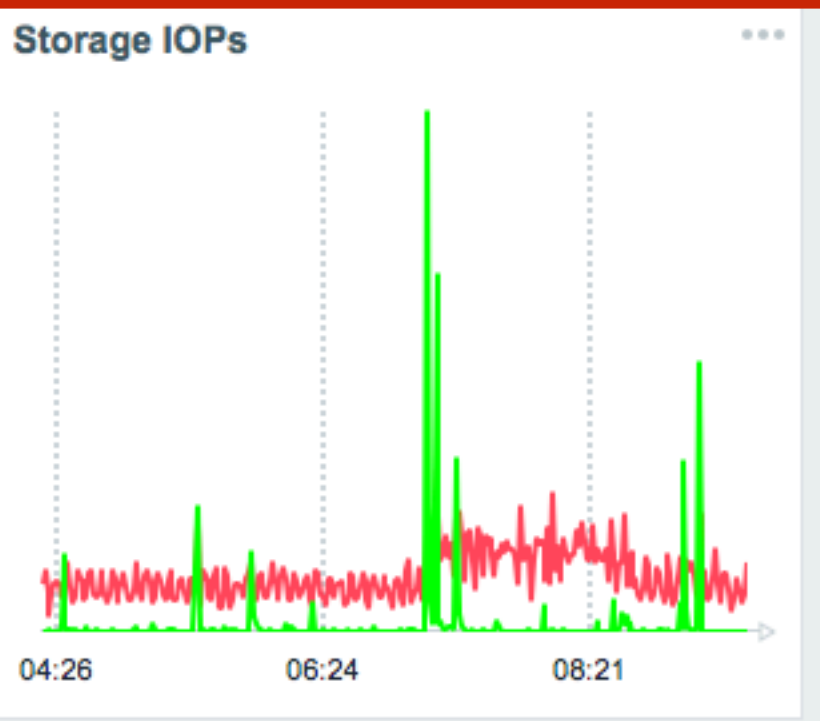
All dashboards / Zabbix Global View

Zoom out  2018-10-02 04:18:55 – 2018-10-02 09:30:22 



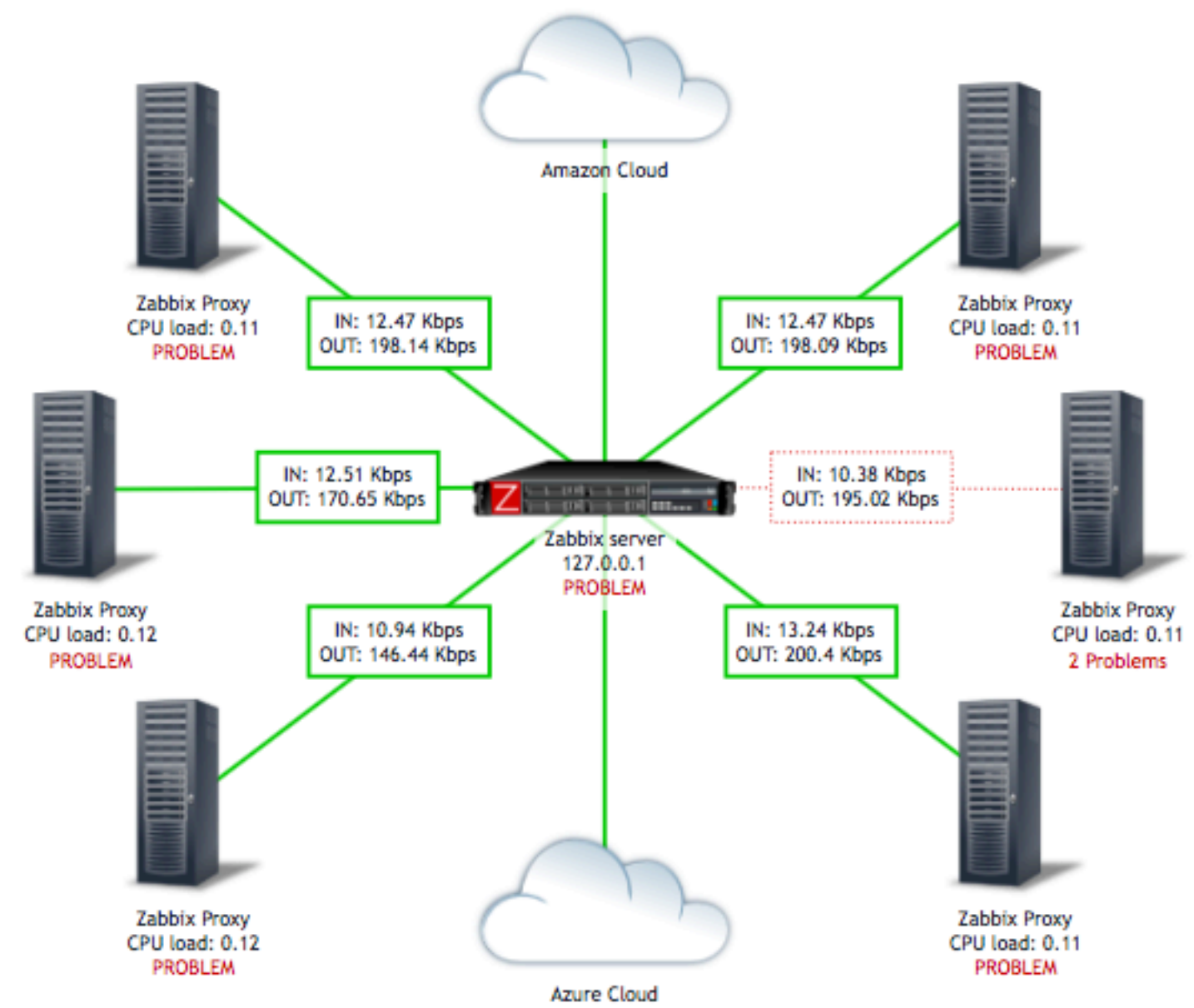
Detected problems

Host group	Disaster	High	Average	Warning	Information	Not classified
Cloud/AWS			1	1		
Cloud/Azure			1	1	1	
End user services			8	5		
HPC Cluster			29	27	1	
Internal infrastructure	2	43	41		2	
R&D Lab1						
R&D Lab2			1	1		
Region/Australia			1	1		
Region/Brazil						32
Region/China	1	1	1			
Region/Europe						
Region/Japan			5			
Region/USA			3	1		
SAP HANA Infra			1	1	1	
Zabbix infrastructure				1		



Kiosk mode

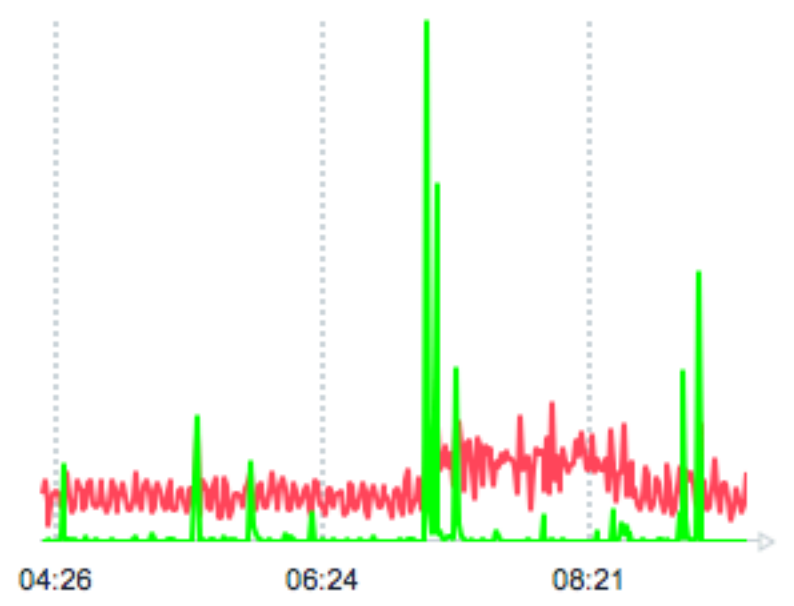
Zabbix Cluster



Detected problems

Host group	Disaster	High	Average	Warning	Information	Not classified
Cloud/AWS			1	1		
Cloud/Azure			1	1	1	
End user services			8	5		
HPC Cluster			29	27	1	
Internal infrastructure	2	43	41		2	
R&D Lab1						
R&D Lab2			1	1		
Region/Australia			1	1		
Region/Brazil						32
Region/China	1	1	1			
Region/Europe						
Region/Japan		5				
Region/USA		3	1			
SAP HANA Infra		1	1		1	
Zabbix infrastructure				1		

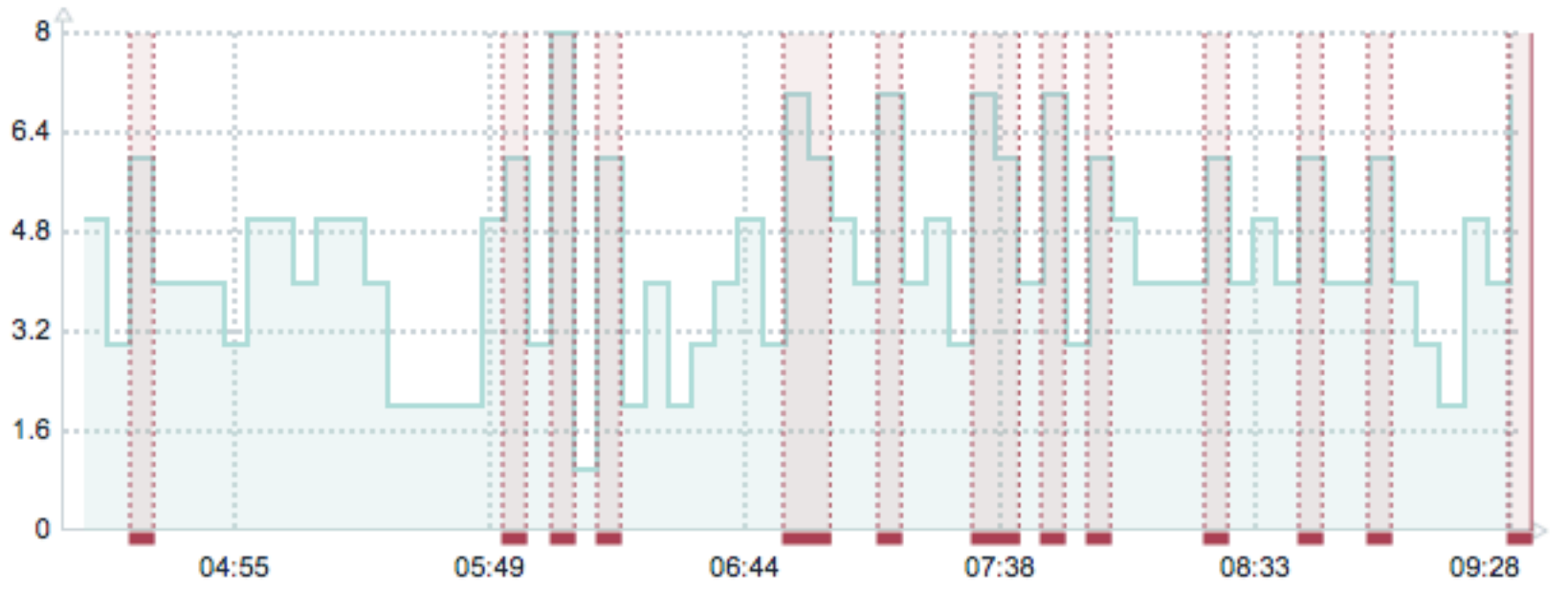
Storage IOPs



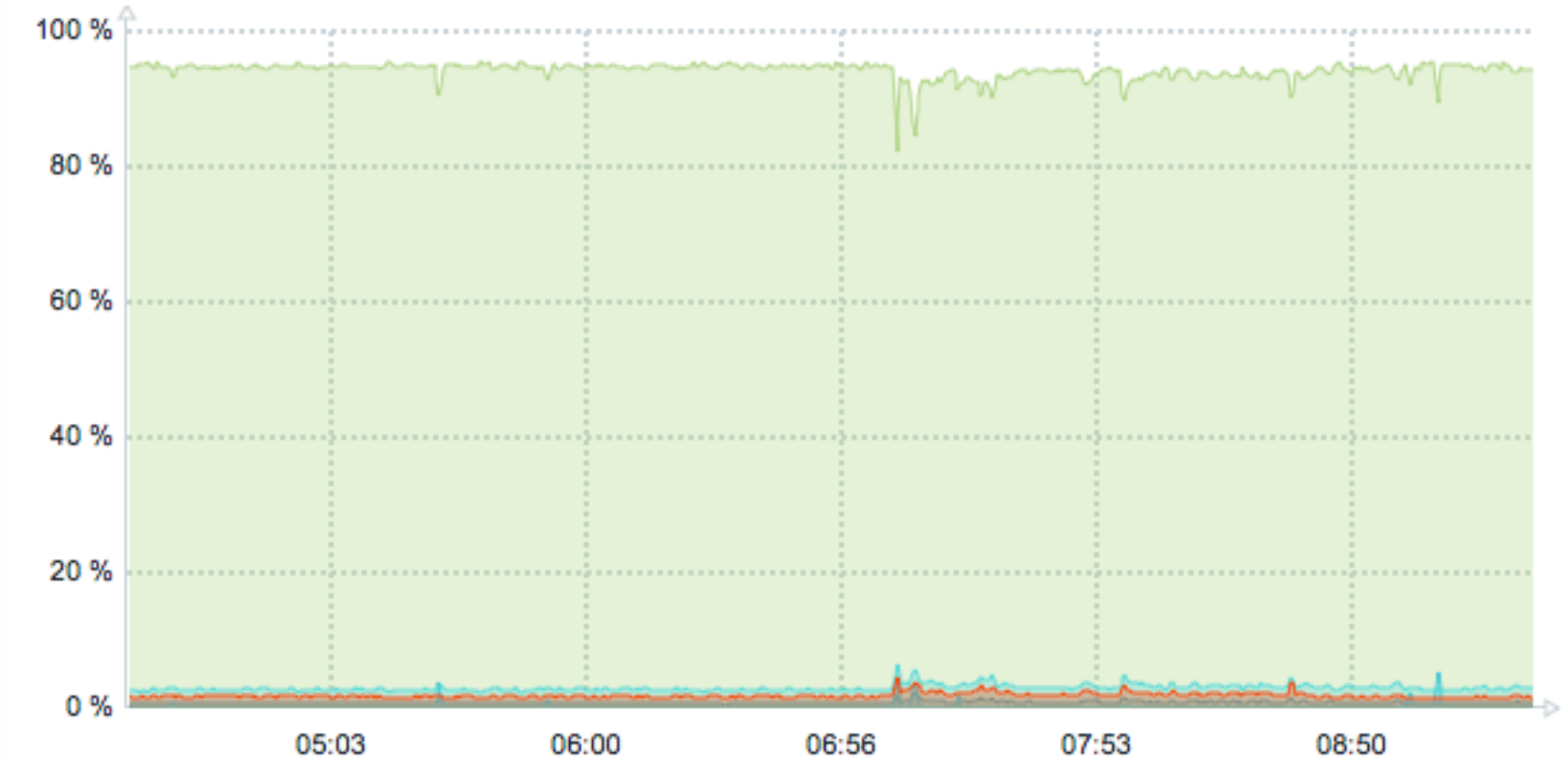
UTC time



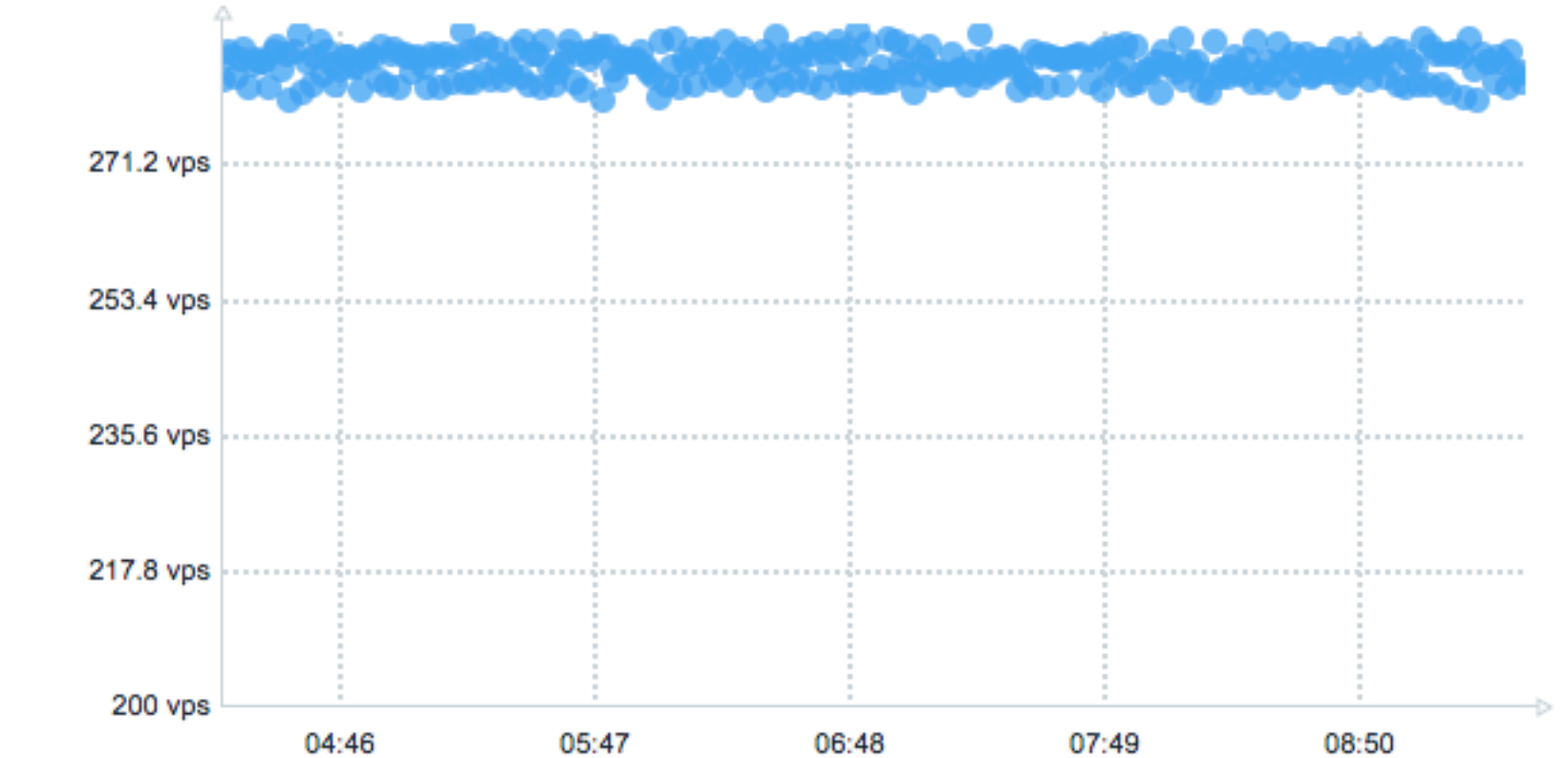
API calls/s



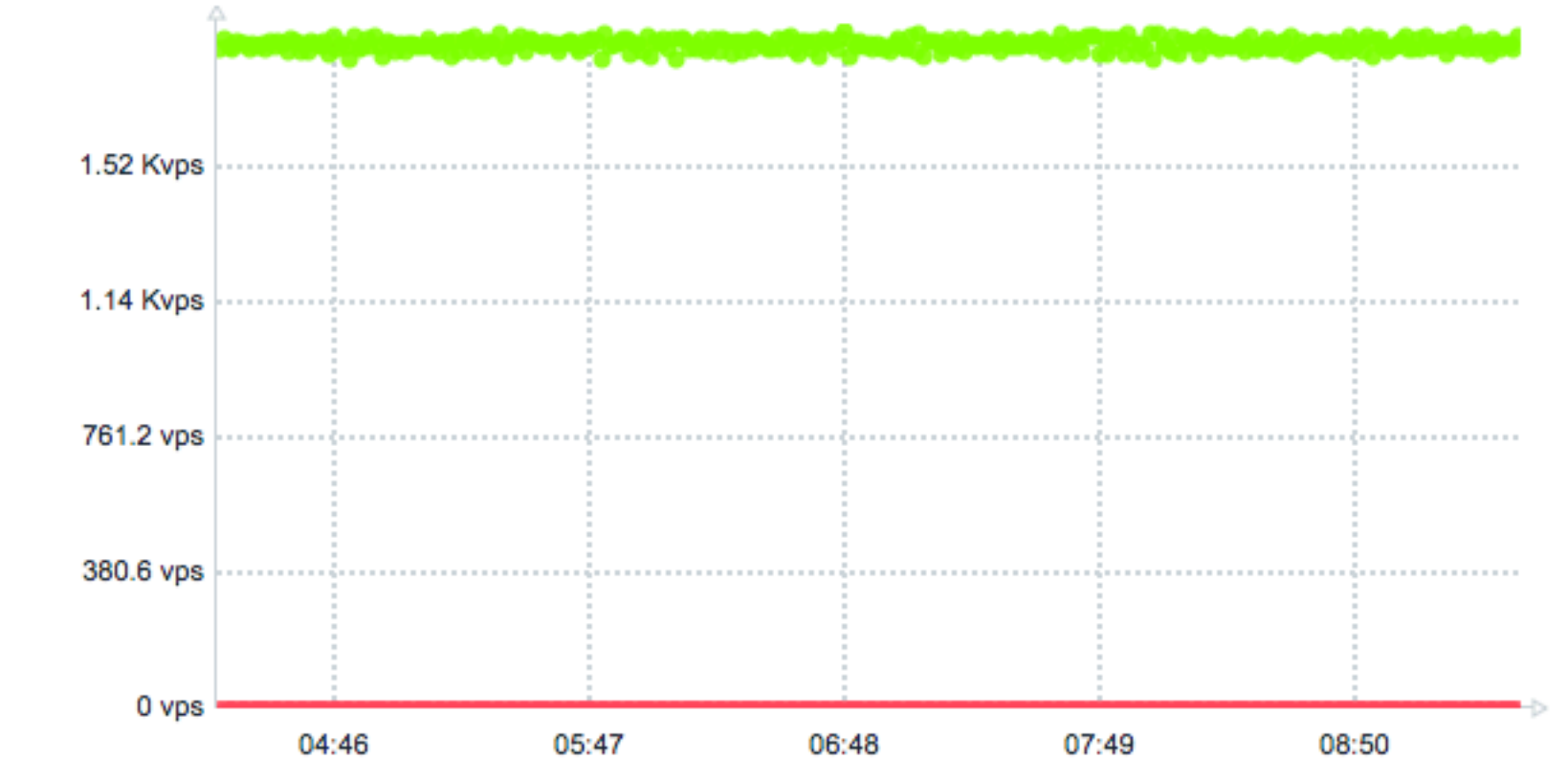
CPU usage



Collected values/s



Value cache misses



Compact view for problems

Monitoring->Problems

Show Recent problems **Problems** History

Host groups Select

Hosts Select

Application Select

Triggers Select

Problem

Minimum severity Not classified

Age less than days

Host inventory Type Remove

[Add](#)

Tags And/Or Or

Like Equal Remove

Like Equal Remove

[Add](#)

Show tags None 1 2 **3**

Show hosts in maintenance

Show unacknowledged only

Compact view

Show details

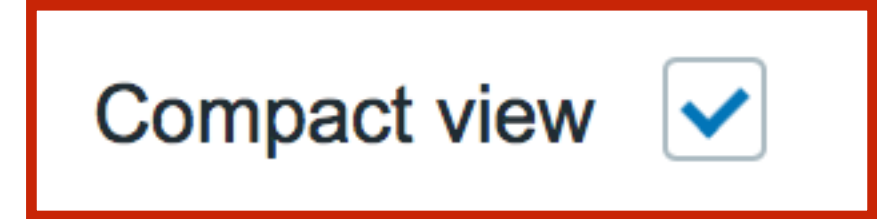
Show timeline

Highlight whole row

Apply Reset

Compact view for problems

Monitoring -> Problems



At least 50 problems displayed

One problem per line

Optimized for NOC

Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
01/28/2018 02:57:...	Disaster		PROBLEM		Linux001	Linux kernel is exposed to Spectre and ...	4m 25d 3h	No		
01/05/2018 09:10:...	Disaster		PROBLEM		Linux010	Linux kernel is exposed to Spectre and ...	5m 18d 9h	No		
01/05/2018 09:10:...	Disaster		PROBLEM		Linux007	Linux kernel is exposed to Spectre and ...	5m 18d 9h	No		
01/05/2018 09:10:...	Disaster		PROBLEM		Linux005	Linux kernel is exposed to Spectre and ...	5m 18d 9h	No		
01/05/2018 09:10:...	Disaster		PROBLEM		Linux009	Linux kernel is exposed to Spectre and ...	5m 18d 9h	No		
01/05/2018 09:10:...	Disaster		PROBLEM		Linux003	Linux kernel is exposed to Spectre and ...	5m 18d 9h	No		
01/05/2018 09:10:...	Disaster		PROBLEM		Linux008	Linux kernel is exposed to Spectre and ...	5m 18d 9h	No		
01/05/2018 09:10:...	Disaster		PROBLEM		Linux006	Linux kernel is exposed to Spectre and ...	5m 18d 9h	No		
01/05/2018 09:10:...	Disaster		PROBLEM		Linux004	Linux kernel is exposed to Spectre and ...	5m 18d 9h	No		
09/16/2016 05:21:...	High		PROBLEM		Linux002	Service *UNKNOWN* stopped	1y 9m 9d	Yes	1 2	Datacenter: FR2 Env: Staging Service: Redis
09/14/2016 09:11:0...	High		PROBLEM		Linux005	Service *UNKNOWN* stopped	1y 9m 11d	Yes	1 1	Datacenter: FR2 Env: Staging Service: Redis
05/23/2018 03:37:...	Average		PROBLEM		Linux907	Zabbix agent on Linux907 is unreachabl...	1m 3h	No		Service: Zabbix ...
02/14/2018 04:34:...	Average		PROBLEM		Server 8	Zabbix agent on Server 8 is unreachabl...	4m 8d 1h	No		
02/14/2018 04:34:...	Average		PROBLEM		Server 7	Zabbix agent on Server 7 is unreachabl...	4m 8d 1h	No		
02/14/2018 04:34:...	Average		PROBLEM		Server 6	Zabbix agent on Server 6 is unreachabl...	4m 8d 1h	No		
02/14/2018 04:34:...	Average		PROBLEM		Server 5	Zabbix agent on Server 5 is unreachabl...	4m 8d 1h	No		
02/14/2018 04:34:...	Average		PROBLEM		Server 4	Zabbix agent on Server 4 is unreachabl...	4m 8d 1h	No		
02/14/2018 04:34:...	Average		PROBLEM		Server 3	Zabbix agent on Server 3 is unreachabl...	4m 8d 1h	No		
02/14/2018 04:34:...	Average		PROBLEM		Server 2	Zabbix agent on Server 2 is unreachabl...	4m 8d 1h	No		
09/16/2016 04:51:...	Average		PROBLEM		Linux902	Too many transactions per second	1y 9m 9d	No	1	Datacenter: FR2 Env: Staging Service: Oracle
09/14/2016 10:59:...	Average		PROBLEM		Linux900	Too many queries per second	1y 9m 11d	Yes	1 2	Datacenter: NY1 Env: Production Service: HTTP b...
09/13/2016 09:47:...	Average		PROBLEM		Linux009	Too many queries per second	1y 9m 11d	No		Datacenter: NY1 Env: Production Service: HTTP b...
06/20/2018 10:11:1...	Warning		PROBLEM		Server 10	Free disk space is less than 20% on vol...	2d 9h 17m	No		
06/20/2018 10:11:0...	Warning		PROBLEM		Linux003	Free disk space is less than 20% on vol...	2d 9h 17m	No		
06/20/2018 10:11:0...	Warning		PROBLEM		Linux900	Free disk space is less than 20% on vol...	2d 9h 17m	No		
06/20/2018 10:11:0...	Warning		PROBLEM		Linux904	Free disk space is less than 20% on vol...	2d 9h 17m	No		
06/20/2018 10:10:...	Warning		PROBLEM		Linux010	Free disk space is less than 20% on vol...	2d 9h 17m	No		
06/20/2018 10:10:...	Warning		PROBLEM		Linux006	Free disk space is less than 20% on vol...	2d 9h 17m	No		
06/20/2018 10:10:...	Warning		PROBLEM		Server 9	Free disk space is less than 20% on vol...	2d 9h 17m	No		
06/20/2018 10:10:...	Warning		PROBLEM		Linux903	Free disk space is less than 20% on vol...	2d 9h 17m	No		
06/20/2018 10:10:...	Warning		PROBLEM		Linux009	Free disk space is less than 20% on vol...	2d 9h 18m	No		
06/20/2018 10:10:...	Warning		PROBLEM		Server 1	Free disk space is less than 20% on vol...	2d 9h 18m	No		
06/20/2018 10:10:...	Warning		PROBLEM		Linux005	Free disk space is less than 20% on vol...	2d 9h 18m	No		
06/20/2018 10:10:...	Warning		PROBLEM		Linux002	Free disk space is less than 20% on vol...	2d 9h 18m	No		
06/20/2018 10:10:...	Warning		PROBLEM		Linux902	Free disk space is less than 20% on vol...	2d 9h 18m	No		

New time selector

Old

The screenshot shows the old Zabbix time selector interface. At the top, there is a 'Filter' button with an upward-pointing triangle. Below it, the 'Zoom' section contains a list of time intervals: 5m, 15m, 30m, 1h, 2h, 3h, 6h, 12h, 1d, 3d, 7d, 14d, 1m, 3m, and All. To the right of this list, the current time range is displayed as '2018-04-23 04:37:26 - 2018-04-23 05:37:26 (now!)'. Below the zoom list is a horizontal timeline with a left-pointing arrow on the left and a right-pointing arrow on the right. At the bottom left of the timeline, there are navigation links: «« 1m 7d 1d 12h 1h 5m | 5m 1h 12h 1d 7d 1m »» and at the bottom right, there is a '1h fixed' link.

New

Navigation: < Zoom out > This week ⌚

From:

To:

[Apply](#)

Last 2 days	Yesterday	Today	Last 5 minutes
Last 7 days	Day before yesterday	Today so far	Last 15 minutes
Last 30 days	This day last week	This week	Last 30 minutes
Last 3 months	Previous week	This week so far	Last 1 hour
Last 6 months	Previous month	This month	Last 3 hours
Last 1 year	Previous year	This month so far	Last 6 hours
Last 2 years		This year	Last 12 hours
		This year so far	Last 1 day

Old

Filter ▲

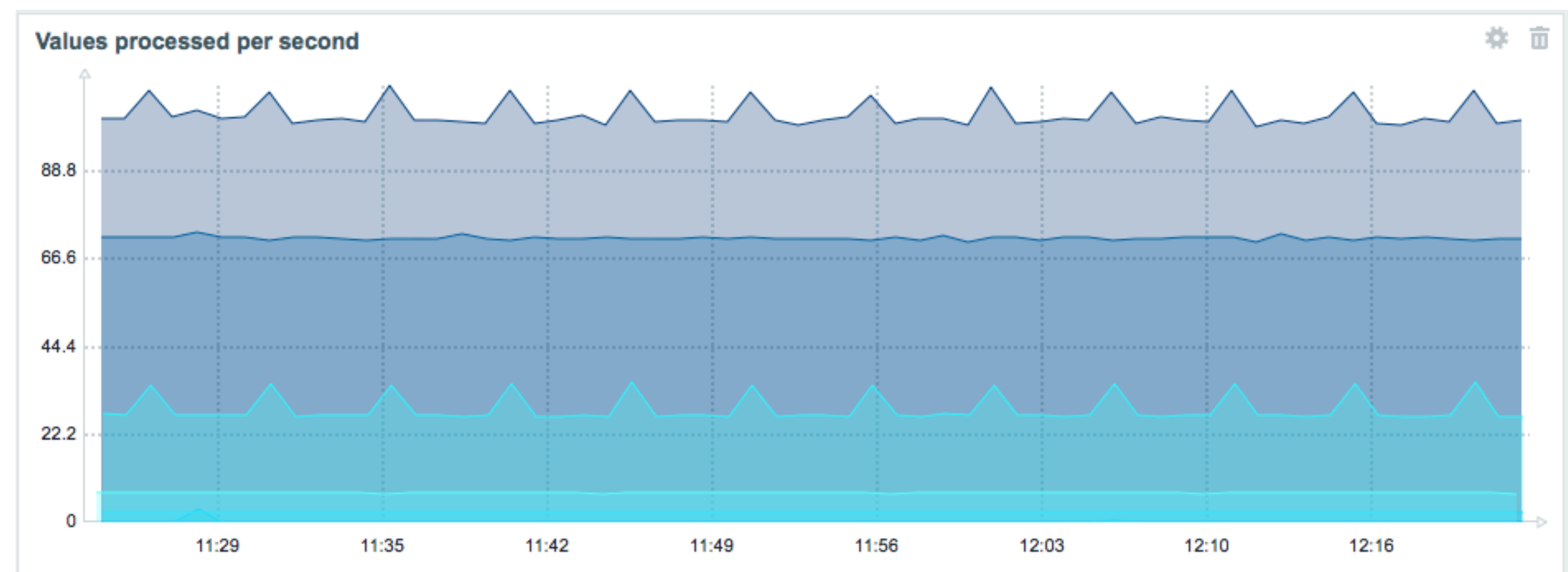
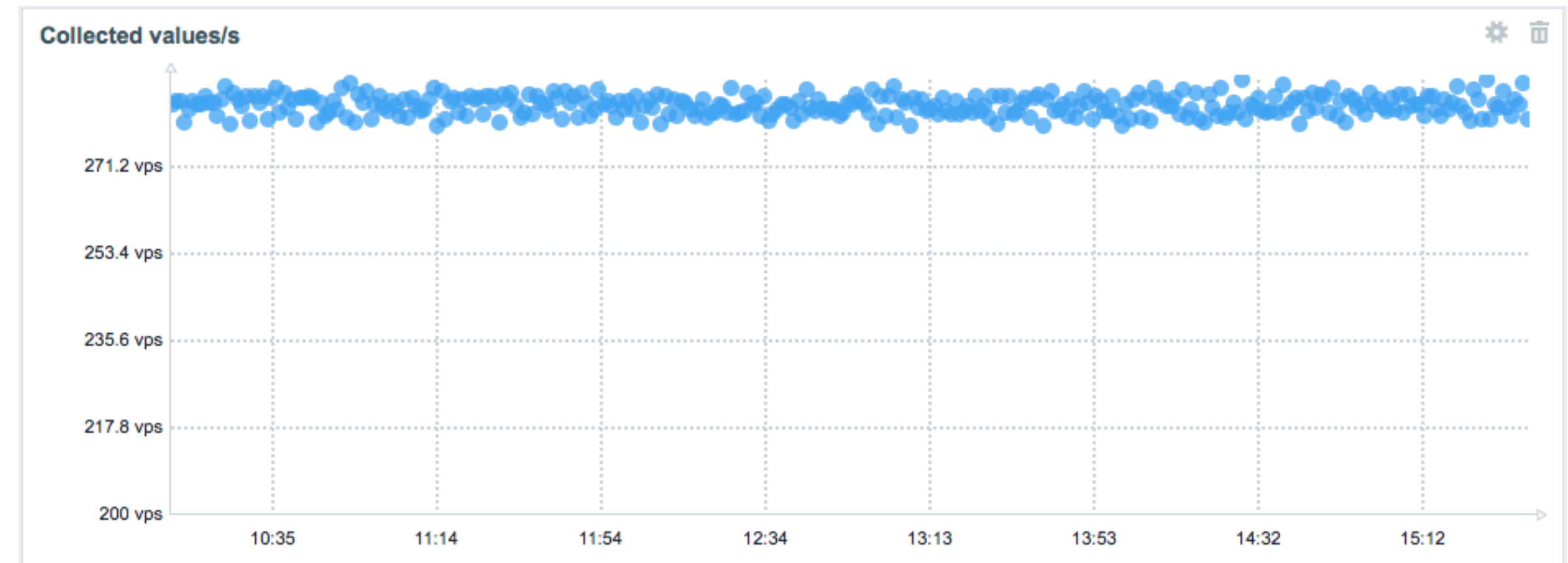
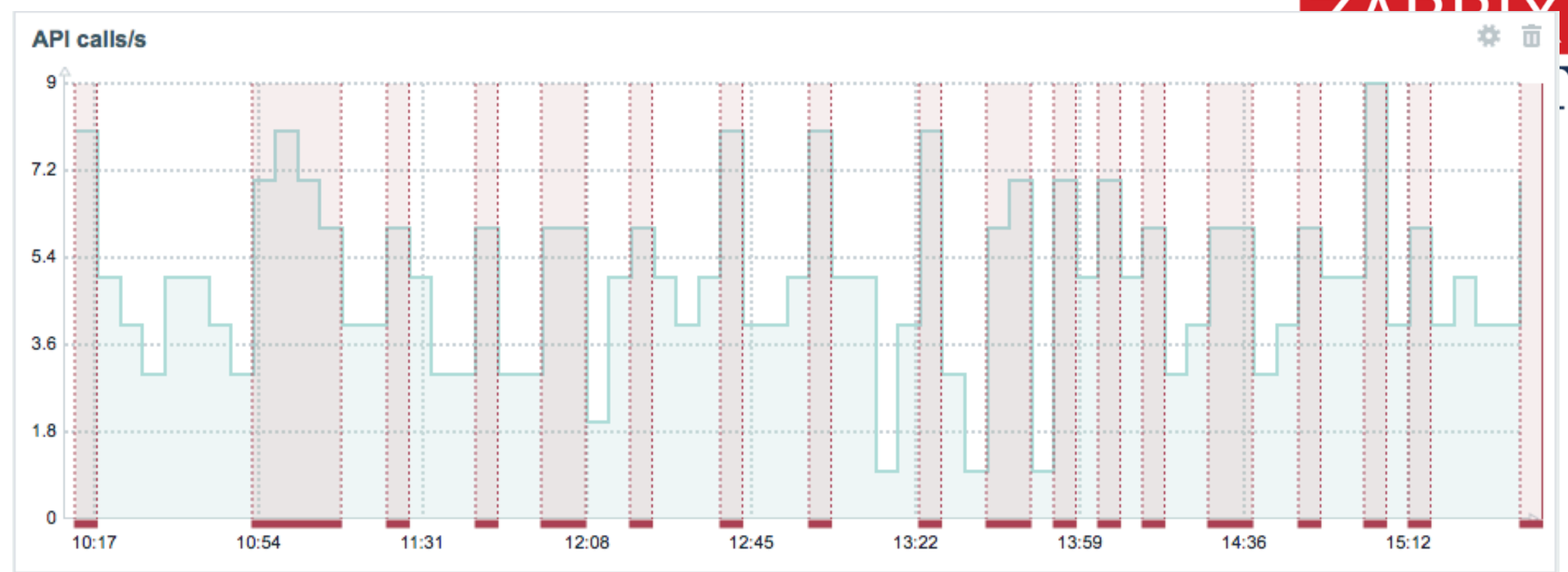
Zoom: [5m](#) [15m](#) [30m](#) [1h](#) [2h](#) [3h](#) [6h](#) [12h](#) [1d](#) [3d](#) [7d](#) [14d](#) [1m](#) [3m](#) [All](#)

2018-04-23 04:37:26 - 2018-04-23 05:37:26 (now!)

«« [1m](#) [7d](#) [1d](#) [12h](#) [1h](#) [5m](#) | [5m](#) [1h](#) [12h](#) [1d](#) [7d](#) [1m](#) »»

1h [fixed](#)

Super flexible graph widget



7

Accessibility & usability

Accessibility improvements

Several improvements have been made to Zabbix frontend in order to make it usable with **assistive technologies** and generally more friendly for **visually-impaired** people.

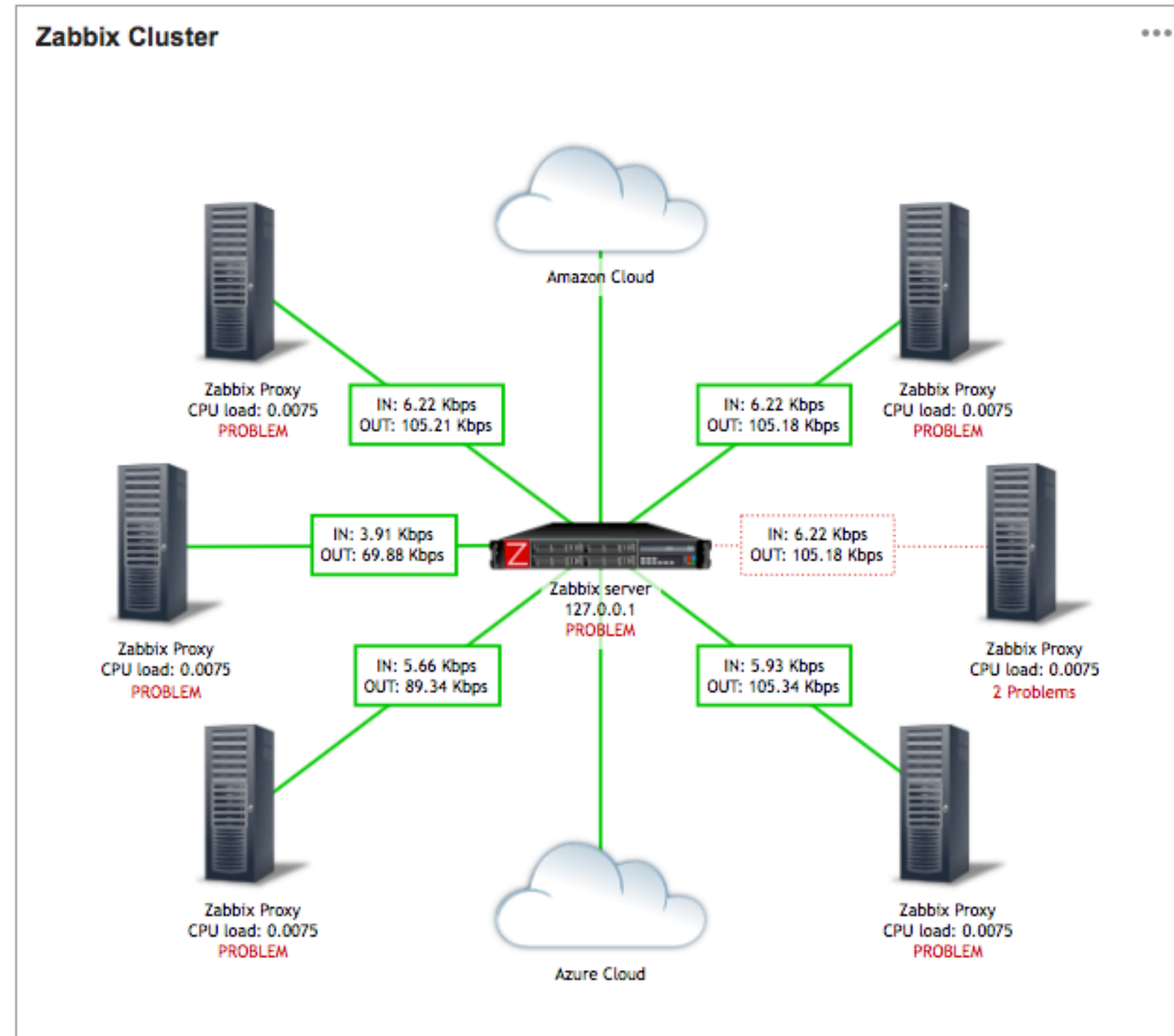
Screen reader friendly!

New themes

High-contrast light

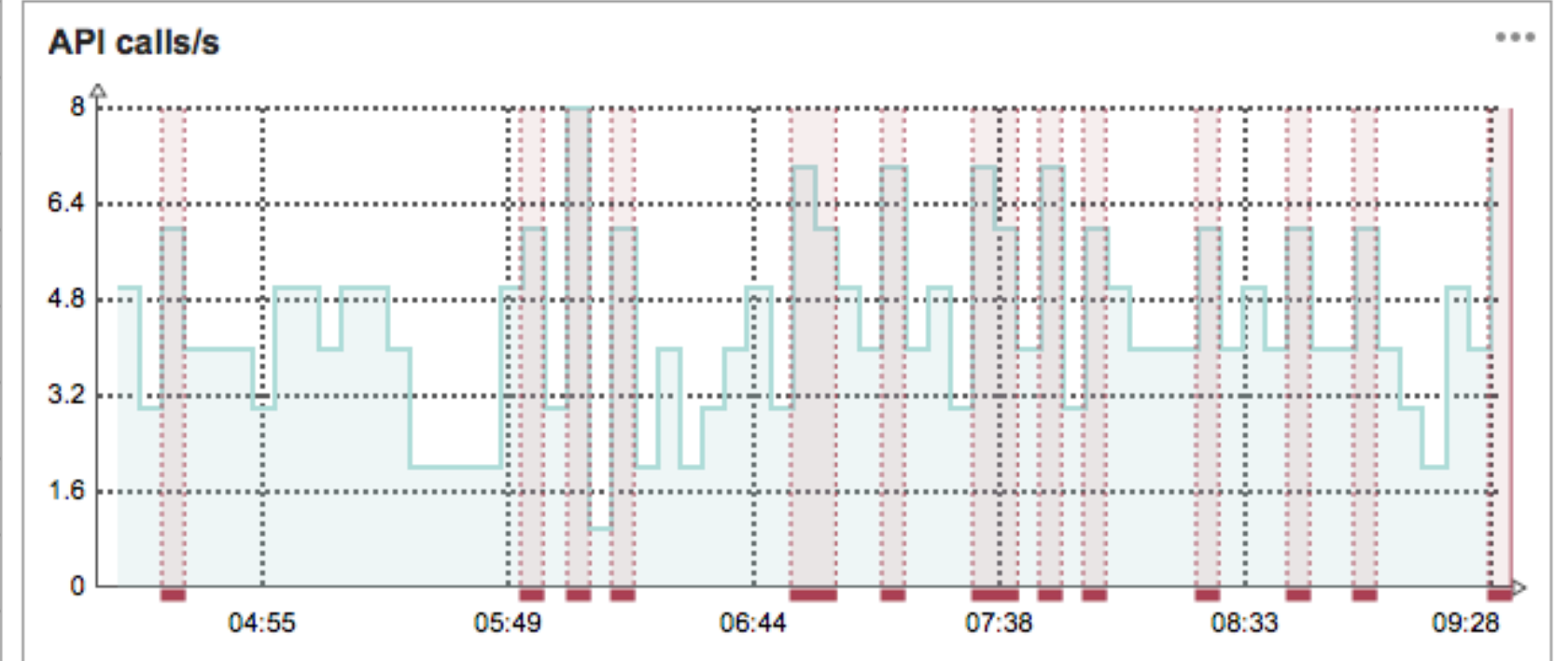
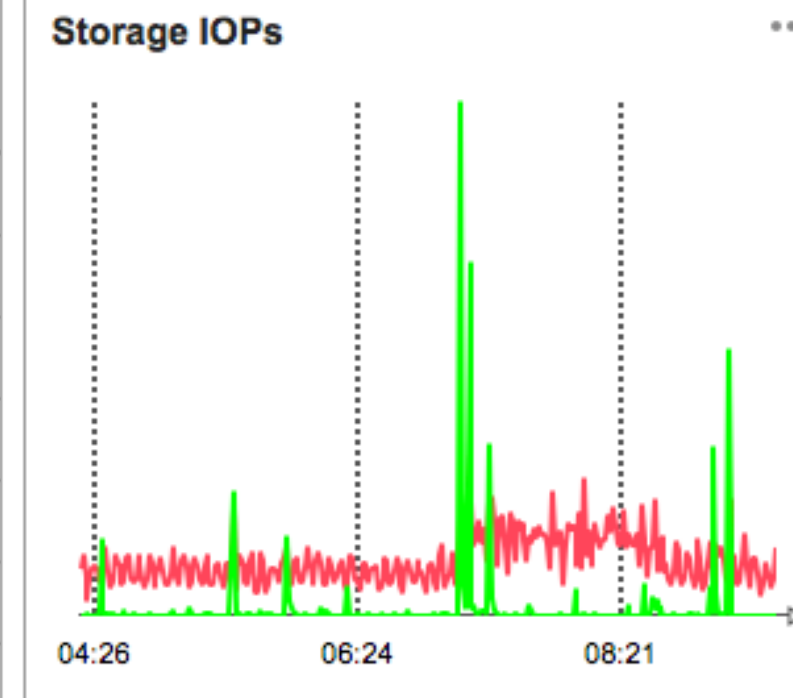
Zabbix Global View

All dashboards / Zabbix Global View



Detected problems

Host group ▲	Disaster	High	Average	Warning	Information	Not classified
Cloud/AWS			▲ 1	! 1		
Cloud/Azure			▲ 1	! 1	i 1	
End user services			▲ 8	! 5		
HPC Cluster			▲ 29	! 27	i 1	
Internal infrastructure	▼ 2		▲ 43	! 41	i 2	
R&D Lab1						
R&D Lab2			▲ 1	! 1		
Region/Australia			▲ 1	! 1		
Region/Brazil					? 32	
Region/China	▼ 1		▲ 1	! 1		
Region/Europe						
Region/Japan			▲ 5			
Region/USA			▲ 3	! 1		
SAP HANA Infra			▲ 1	! 1	i 1	
Zabbix infrastructure				! 1		



New themes

High-contrast dark

The screenshot displays the Zabbix High-contrast dark theme dashboard. At the top, the navigation bar includes 'ZABBIX', 'Monitoring', 'Inventory', 'Reports', 'Configuration', and 'Administration'. Below this is a secondary navigation bar with 'Dashboard', 'Problems', 'Overview', 'Web', 'Latest data', 'Graphs', 'Screens', 'Maps', 'Discovery', and 'Services'. The main content area is titled 'Zabbix Global View' and contains several panels:

- Zabbix Cluster:** A network diagram showing a central 'Zabbix server 127.0.0.1' connected to six 'Zabbix Proxy' nodes. The proxies are distributed across 'Amazon Cloud' and 'Azure Cloud'. Each proxy shows its CPU load and network traffic (IN/OUT). Several proxies are marked as 'PROBLEM'.
- Detected problems:** A table summarizing issues across various host groups.

Host group	Disaster	High	Average	Warning	Information	Not classified
Cloud/AWS			1	1		
Cloud/Azure			1	1	1	
End user services			8	5		
HPC Cluster			29	27	1	
Internal infrastructure	2		43	41	2	
R&D Lab1						
R&D Lab2			1	1		
Region/Australia			1	1		
Region/Brazil					32	
Region/China	1	1	1			
Region/Europe						
Region/Japan			5			
Region/USA			3	1		
SAP HANA Infra			1	1	1	
Zabbix infrastructure				1		
- Storage IOPs:** A line graph showing storage input/output operations per second over time, with a notable spike around 06:24.
- UTC time:** A digital clock showing the current time in UTC.
- API calls/s:** A line graph showing the number of API calls per second over time, with a peak around 05:49.

TAB and keyboard navigation works everywhere

UI getting simpler



No **Monitoring->Triggers** anymore, use **Monitoring->Problems**

Mandatory fields marked

Item Preprocessing

* Name

Type

* Key

* Host interface

Type of information

Units

* Update interval

Filtering by tags

Monitoring -> Problems, Dashboard

Tags **And/Or** Or

Datacenter	Contains	Equals	NY2	Remove
Env	Contains	Equals	Production	Remove
Service	Contains	Equals	PostgreSQL	Remove

[Add](#)

Show tags **None** 1 2 **3** Tag name **Full** Shortened None

Tag display priority

Show suppressed problems Show unacknowledged only

Compact view Show timeline

Show details Highlight whole row

AND/OR selection
 Equal: case sensitive
 Contains: case insensitive

Number of tags

Discovered item filtering

Configuration -> Hosts -> Items

Host group	<input type="text" value="type here to search"/>	Select	Type	<input type="text" value="all"/>	Type of information	<input type="text" value="all"/>	State	<input type="text" value="all"/>
Host	<input type="text" value="Linux001"/>	Select	Update interval	<input type="text"/>	History	<input type="text"/>	Status	<input type="text" value="all"/>
Application	<input type="text"/>	Select			Trends	<input type="text"/>	Triggers	<input type="text" value="all"/>
Name	<input type="text"/>						Template	<input type="text" value="all"/>
Key	<input type="text"/>						Discovery	<input type="text" value="all"/> <input checked="" type="checkbox"/> Discovered items <input type="checkbox"/> Regular items

[Apply](#) [Reset](#)

TEMPLATE
[Not Templated items 14](#) [Templated items 71](#)

WITH TRIGGERS
[Without triggers 33](#) [With triggers 52](#)

DISCOVERY
[Discovered 14](#) [Regular 71](#)

HISTORY
[7d 77](#) [3m 8](#)

INTERVAL
[20s 2](#) [30s 2](#) [1m 60](#) [10m 4](#) [1h 12](#)

Host filtering

Configuration->Hosts

Hosts Group [Create host](#) [Import](#)

Filter ▲

Name	<input type="text"/>	DNS	<input type="text"/>
Monitored by	<input type="button" value="Any"/> <input type="button" value="Server"/> <input checked="" type="button" value="Proxy"/>	IP	<input type="text"/>
Proxy	<input type="text" value="type here to search"/> <input type="button" value="Select"/>	Port	<input type="text"/>

[Apply](#) [Reset](#)

No twin box controls!

Hosts

Host Templates IPMI Macros Host inventory Encryption

Host name

Visible name

Groups In groups

Discovered hosts

Other groups

- AllServers
- Hypervisors
- Linux servers
- Templates
- Templates/Applications
- Templates/Databases
- Templates/Modules
- Templates/Network Devices
- Templates/Operating Systems
- Templates/Servers Hardware

Hosts

Host Templates IPMI Macros Host inventory Encryption

* Host name

Visible name

* Groups

Agent interfaces

- Discovered hosts
- Templates/Modules
- Templates/Network Devices
- Templates/Servers Hardware
- Templates/Databases
- A/C/D

Connect to

Faster and less confusing!

8

More flexible
maintenance

Tag level maintenance

Maintenance Periods Hosts and groups

* At least one host group or host must be selected.

Host groups

Region/Europe ✕
type here to search

Select

Hosts

type here to search

Select

Tags

And/Or Or

Env	Contains	Equals	Production	Remove
Service	Contains	Equals	ERP	Remove

[Add](#)

Update Clone Delete Cancel

Tag level maintenance

ZABBIX Monitoring Inventory Reports Configuration Administration

Host groups Templates Hosts Maintenance Actions Event correlation Discovery Services trunk

Actions

Action Operations Recovery operations Acknowledgement operations

* Name

Conditions

Label	Name	Action

New condition

Problem is suppressed

Application
Host
Host group
Problem is suppressed
tag
Tag value
* Template
Time period
Trigger
Trigger name
Trigger severity

Enabled

every operation or acknowledge operation must exist.

Zabbix 4.0.0alpha8. © 2001–2018, Zabbix SIA

Tag level maintenance

Problems								
Time ▼	Recovery time	Status	Info	Host	Problem • Severity	Duration	Ack	Actions
10:18:34		PROBLEM		Host 202	Problem	6m 10s	No	
09:15:25	09:44:38	RESOLVED		Host 201	Problem	29m 13s	No	
08:39:18		PROBLEM				1h 45m 26s	No	
07:28:09	08:31:14	RESOLVED				1h 3m 5s	No	
2018-06-04 17:48:57		PROBLEM		Host 301	Problem	1d 17h 52m	No	Failures 4
<div style="border: 1px solid red; padding: 5px; width: fit-content; margin: 5px auto;"> Suppressed till: 2018-06-04 20:00:00 Maintenance: Database migration </div>								
June								
2018-05-28 19:52:00		PROBLEM		Host 303	Problem	8d 15h 49m	Yes 3	Failures 3
2018-05-28 19:50:33		PROBLEM		Host 505	Problem	8d 15h 50m	No	Failures 3
May								
2018-03-21 17:39:13		PROBLEM		Host 404	Problem	2m 16d 17h	No	Failures 3
2018-03-08 14:35:31		PROBLEM		Host 293	Problem	2m 29d 20h	Yes 1	Failures 3

10 of 10 problems are shown Updated: 10:24:44

9

Single sign-on

Additional auth options

Administration -> Authentication

Authentication HTTP settings LDAP settings

Enable HTTP authentication

Default login form Zabbix login form

Remove domain name

Case sensitive login

[Update](#)

ZABBIX

Username

Password

Remember me for 30 days

[Sign in](#)

or sign in as guest

[Sign in with HTTP](#)

10

A few minor
enhancements

Database down message



Zabbix Server

Database

~~Database is down.~~

```
[MySQL|PostgreSQL|Oracle|IBM DB2] database <DB Name> [on <DB Host>:<DB Port>]  
is not available: <error message depending on the type of DBMS (database)>
```

Item improvements

`vfs.dir.count`: recursively count entities in a given directory

`vm.memory.size`: support of parameter 'slab'

`net.if.in/out/total`: overruns, frame, compressed, multicast, carrier, collisions

`logrt`, `logrt.count`: support of new mode 'copytruncate'

Search by a full name for IPMI items



And more!

Read “Release Notes” for complete list of improvements

Upgrade!

Just install new server binaries and front-end files

Upgrade!

Important notes

Zabbix agents older than 1.4 are no longer supported
Deprecated macros \$1-\$9 in item names

Read Upgrade Notes for more details!

https://www.zabbix.com/documentation/4.0/manual/installation/upgrade_notes_400

More to come!

Today

12:45 Kaspars Mednis **Zabbix Tips and Tricks**

13:55 Aleksey Petrov **Visualize IT. Getting the most out of Zabbix UI**

15:30 Sergey Sorokin **New ways to become Zabbix Expert!**

Tomorrow

10:20 Alexei Vladishev **Zabbix, what's next?**

14:00 Vjacheslav Bogdanov **Zabbix Cloud**

15:40 Oleg Ivanivskiy **Zabbix Internals**

Thank you!

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