

# ZABBIX 5.4 | RELEASE DAY! ENGLISH

## WHAT'S NEW



# AGENDA

- ✓ New functionality of Zabbix 5.4
- ✓ What we are working on now







# Zabbix 5.4

Zabbix 5.4.0 was released in May 17



# Reporting and Visualization

# REPORTING AND VISUALIZATION

- ☑ Zabbix 5.2: pre-defined views for Monitoring->Problems

**Problems**

< All problems 212 Services 9 High severity problems 13

Show **Recent problems** Problems History

Host groups

Hosts

Triggers

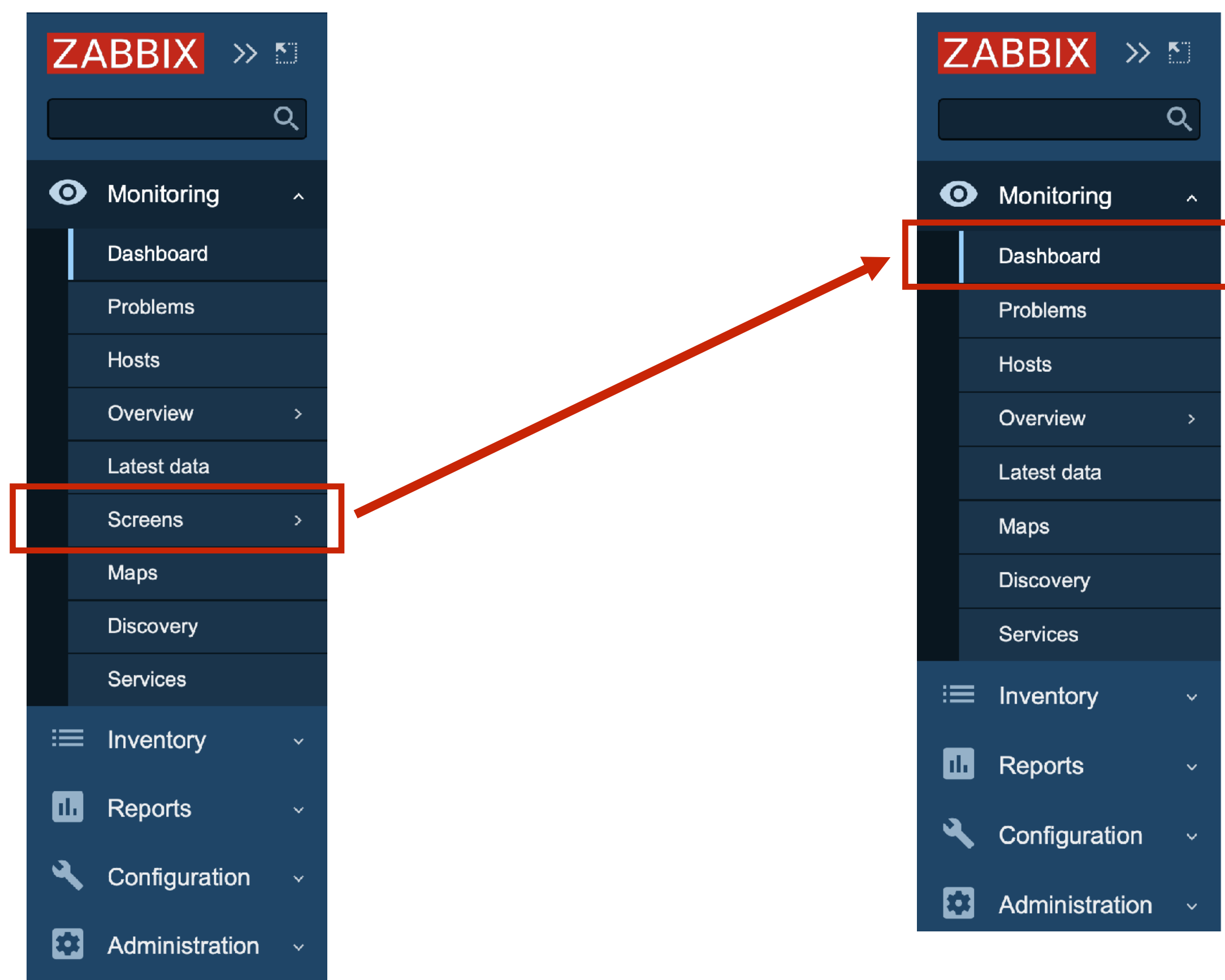
Problem

Severity ☐ Not classified ☐ Warning ☐ High  
☐ Information ☐ Average ☐ Disaster

Age less than ☐ 14 days

# UNIFICATION OF SCREENS AND DASHBOARDS

- ✓ Unification of screens and dashboards, no ~~screens~~ anymore!







[illegible]

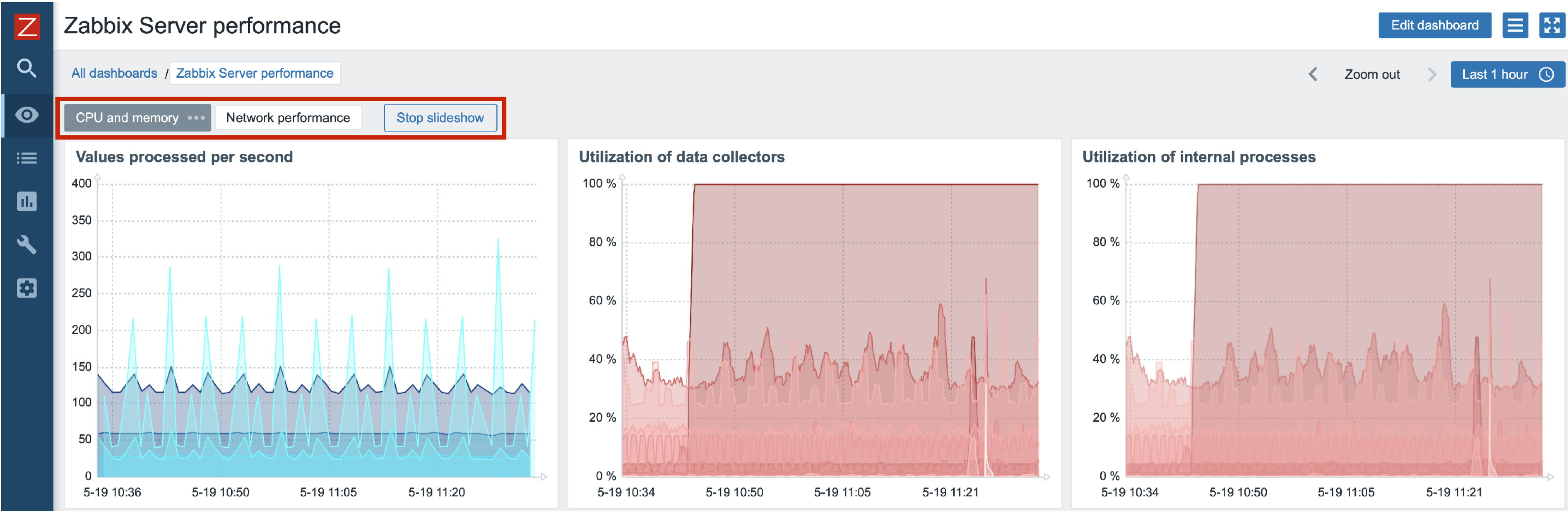


# MULTI-PAGE DASHBOARDS

The screenshot displays the Zabbix web interface for 'Zabbix Server performance'. The top navigation bar includes 'All dashboards' and 'Zabbix Server performance'. Below this, there are tabs for 'CPU and memory' and 'Network performance', with the latter being selected. A dropdown menu is open, showing options: 'Add widget', 'Add page' (highlighted with a red box), 'Paste widget', and 'Paste page'. In the background, three graphs are visible: 'Values processed per second', 'Utilization of data collectors', and 'Utilization'. A modal window titled 'Dashboard page properties' is open, containing a 'Name' field with the value 'Internal stats' and a 'Page display period' dropdown set to 'Default (30 seconds)'. The 'Apply' and 'Cancel' buttons are at the bottom of the modal. The graphs show data over time, with the first graph showing values up to 400 and the others showing percentages up to 20%.



# MULTI-PAGE DASHBOARDS



# SCHEDULED PDF REPORTS

Reports->Scheduled reports

**ZABBIX** << Scheduled reports Create report

Filter

Name  Show **All** Created by me Status **Any** Enabled Disabled Expired Apply Reset

<input type="checkbox"/> Name ▲	Owner	Repeats	Period	Last sent	Status	Info
<input type="checkbox"/> CEO KPIs report	alex (Alexei Vladishev)	Daily	Previous day	Never	Enabled	<span>i</span>
<input type="checkbox"/> Weekly management report	james (James Smith)	Weekly	Previous week	Never	Enabled	
<input type="checkbox"/> Zabbix health daily report	james (James Smith)	Daily	Previous day	Never	Enabled	<span>i</span>

Displaying 3 of 3 found

- ✓ Centralised management of reports
- ✓ Zabbix converts a dashboard to PDF and sends by email
- ✓ Works with any dashboard
- ✓ Accessible to all users but can be restricted by a new user role



# SCHEDULED PDF REPORTS

- ✓ Scheduled daily, weekly, monthly, or yearly PDF reports

Z

Search

Eye

Menu

Bar chart

Wrench

Settings

Refresh

Z

?

User

Scheduled reports

\* Owner

james (James Smith) x

Select

\* Name

Weekly management report

\* Dashboard

CEO x

Select

Period

Previous day

Previous week

Previous month

Previous year

Cycle

Daily

Weekly

Monthly

Yearly

Start time

07

:

00

\* Repeat on

☒ Monday

☐ Tuesday

☐ Wednesday

☐ Thursday

☐ Friday

☐ Saturday

☐ Sunday

Start date

2021-05-17

End date

YYYY-MM-DD

Subject

Weekly management report

Message

Good morning!  
Here is a new management report for the last week attached.

\* Subscriptions

Recipient	Generate report by	Status	Action
james (James Smith)	Recipient	Include	Remove
<a href="#">Add user</a> <a href="#">Add user group</a>			

Description

Weekly management report showing KPIs for the last week.

Enabled

☒

Update

Clone

Test

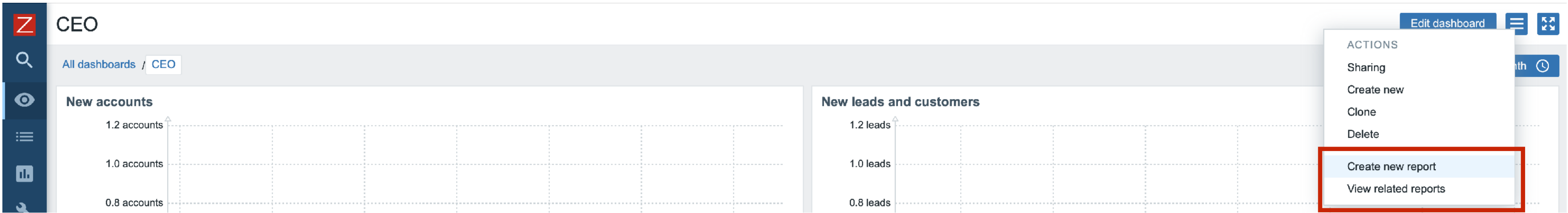
Delete


Cancel

# SCHEDULED PDF REPORTS

☑ Also accessible from dashboards!

Monitoring->Dashboards



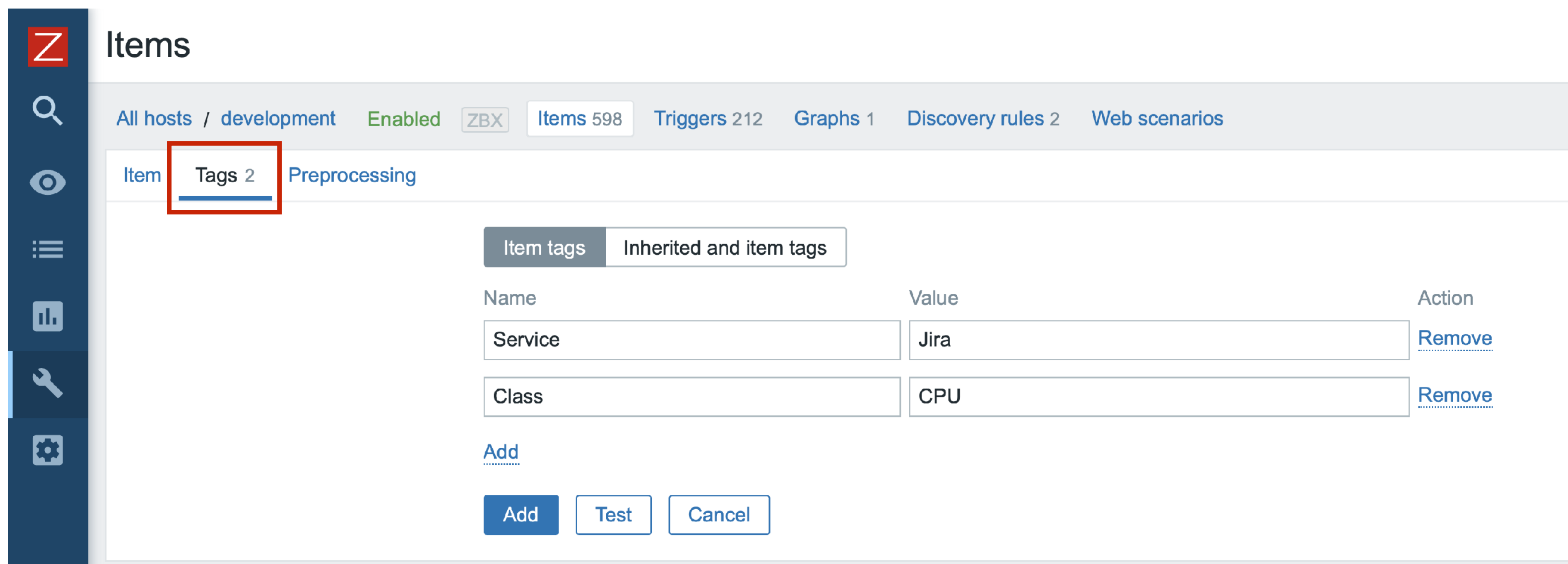


More simple and  
more powerful



# TAGS FOR ITEMS

- ✓ Tags for templates, hosts, host prototypes, triggers
- ✓ Zabbix 5.4: Now introduced for items, **no more applications!**



**Items**

All hosts / development Enabled ZBX Items 598 Triggers 212 Graphs 1 Discovery rules 2 Web scenarios

Item **Tags 2** Preprocessing

Item tags Inherited and item tags

Name	Value	Action
Service	Jira	<a href="#">Remove</a>
Class	CPU	<a href="#">Remove</a>

[Add](#)

[Add](#) [Test](#) [Cancel](#)

- ✓ Automatically transformed into tag "Application: <app name>" during upgrade

# OLD SYNTAX

- ✓ TRIGGERS: {host:key.func(params)}>0
- ✓ CALCULATED: 100\*last("vfs.fs.size[/,free]/last("vfs.fs.size[/,total]"))
- ✓ AGGREGATE: grpsum["MySQL Servers","vfs.fs.size[/,total]",last]

# NEW UNIFIED SYNTAX

- ✓ TRIGGERS: func(/host/key, params)>0
- ✓ CALCULATED: sum(/host/vfs.fs.size[\*],free], 10m)
- ✓ AGGREGATE: min(avg\_foreach(/\*/qps?[group="PostgreSQL" and tag="Env:Production"], 5m))



# ADVANTAGES

- ✓ Much more simple unified syntax for everything: triggers, calculated items
- ✓ Support of **absolute time periods** like last day, previous hour, etc
- ✓ Free of any limitations of the old syntax
- ✓ Powerful aggregations with selection of items **by tags, wildcards**, etc
- ✓ Function can be applied to result of other function: `func1(func2(item))`
- ✓ It is possible to have multiple items as function arguments: `min(item1, item2)`
- ✓ No more aggregated metrics: calculated metrics for everything!





# NEW SET OF FUNCTIONS

Function group	Functions
Aggregate functions	avg, count, countunique, kurtosis, mad, max, min, skewness, stddevpop, stddevsamp, sum, sumofsquares, varpop, varsamp
Bitwise functions	bitand, bitlshift, bitnot, bitor, bitrshift, bitxor
Date and time functions	date, dayofmonth, dayofweek, now, time
History functions	change, first, fuzzytime, last, logeventid, logseverity, logsource, percentile, trendavg, trendcount, trendmax, trendmin, trendsum
Mathematical functions	abs, acos, asin, atan, atan2, avg, cbrt, ceil, cos, cosh, cot, degrees, e, exp, expm1, floor, log, log10, max, min, mod, pi, power, radians, rand, round, signum, sin, sinh, sqrt, sum, tan, truncate
Operator functions	between, in
Prediction functions	forecast, timeleft
String functions	ascii, bitlength, bytelength, char, concat, find, insert, left, length, ltrim, mid, repeat, replace, right, rtrim, trim

<https://www.zabbix.com/documentation/current/manual/appendix/functions>



# API TOKENS

- ✓ Per-user named API tokens with expiry date
- ✓ New user role: **access to API tokens**
- ✓ Can be managed globally by super-admins

Support

Share

Help

User settings

Profile

API tokens

Sign out

API tokens

Create API token

Filter

Name  Status Any Enabled Disabled  
Expires in less than  days Apply Reset

Name	Expires at	Created at	Last accessed at	Status
Customer portal token	2021-03-16 00:00:00	2021-03-15 11:12:27	Never	Enabled
History export token	2021-03-25 18:47:08	2021-03-25 18:47:09	Never	Enabled

Displaying 2 of 2 found

# API TOKENS

- Any user having permissions can create it

ZABBIX

Monitoring

Inventory

Reports

Configuration

Administration

General

Proxies

Authentication

User groups

API tokens

Name

Token for export of events

User

james (James Smith)

Select

Description

The token will be used for export of events to Elastic

Set expiration date and time

☒

Expires at

2022-01-01 00:00:00

Enabled

☒

Add

Cancel

- Can be managed globally by super-admins

Z

API tokens

Create API token

Filter

<input type="checkbox"/>	Name	User	Expires at	Created at	Created by user	Last accessed at	Status
<input type="checkbox"/>	Customer portal token	alex (Alexei Vladishev)	2021-03-16 00:00:00	2021-03-15 11:12:27	alex (Alexei Vladishev)	Never	Enabled
<input type="checkbox"/>	History export token	alex (Alexei Vladishev)	2021-03-25 18:47:08	2021-03-25 18:47:09	alex (Alexei Vladishev)	Never	Disabled
<input type="checkbox"/>	Token for export of events	james (James Smith)	2022-01-01 00:00:00	2021-05-19 12:22:54	alex (Alexei Vladishev)	Never	Enabled

Displaying 3 of 3 found





# EASY TO MANAGE TEMPLATES

- ✓ Each template element got a unique ID that helps to perform template updates in a safe way

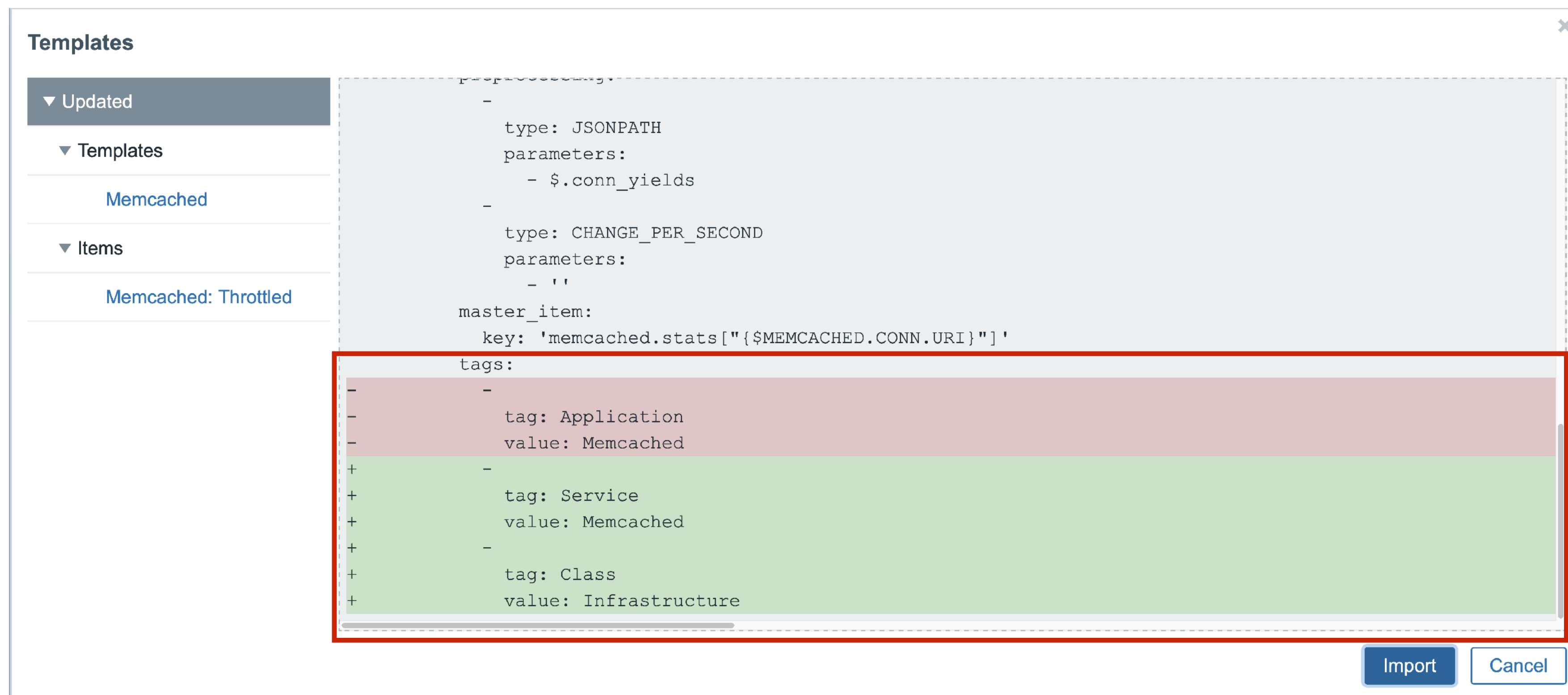
```
1  zabbix_export:
2    version: '5.4'
3    date: '2021-05-19T09:48:23Z'
4    groups:
5      -
6        uuid: a571c0d144b14fd4a87a9d9b2aa9fcd6
7        name: Templates/Applications
8    templates:
9      -
10       uuid: 05894ba2c9184d33992bf1bd21c347f6
11       template: Memcached
12       name: Memcached
13       description: |
14         Get Memcached metrics from plugin for the New Zabbix Agent (zabbix-agent2).
15
16         You can discuss this template or leave feedback on our forum https://www.zabbix.com
17
18         Template tooling version used: 0.38
```

- ✓ It also enables the ability to keep templates in the Git repository and push it to Zabbix by CI/CD pipeline using Zabbix API



# BETTER IMPORT

- ✓ When importing a new template, Zabbix will clearly show you a difference with the existing template



# SCALABILITY IMPROVEMENTS

- ✓ Zabbix Server and Proxy poller processes **do not require database connection** anymore
- ✓ In-memory **cache for trend data**, significant speedup for trend-related functions
- ✓ **Graceful startup** of Zabbix Server
- ✓ Better parallel data processing on Zabbix Server side for heavy loads





# UNIVERSAL GLOBAL SCRIPTS

- ✓ Support of **JavaScript Webhooks** for easy integrations with 3rd party alerting and ticketing systems
- ✓ Global scripts can be used for: auto-remediation, alerting, integrations and manual actions for hosts and events

**Scripts**

\* Name: Open a ticket in ServiceNow

Scope: **Action operation** Manual host action Manual event action

Type: **Webhook** Script SSH Telnet IPMI

Parameters	Name	Value	Action
	eventid	{EVENT.ID}	Remove
	severity	{EVENT.SEVERITY}	Remove
	tags	{EVENT.TAGSJSON}	Remove
	<a href="#">Add</a>		

\* Script: return 0

\* Timeout: 30s

Description: Open new ticket in ServiceNow

Host group: All

[Update](#) [Clone](#) [Delete](#) [Cancel](#)

**Actions**

Action Operations

\* Default operation step duration: 1h

Pause operations for suppressed problems: ☒

Operations: [Add](#)

Recovery operations: [Add](#)

Update operations: [Add](#)

\* At least one o

[Add](#) [Ca](#)

**Operation details**

Operation: Send message

Steps: Send message Open a ticket in ServiceNow (0 - use action default)

Step duration: 0 (0 - use action default)

\* At least one user or user group must be selected.

Send to user groups: User group Action [Add](#)

Send to users: User Action [Add](#)

Send only to: - All -

Custom message: ☐

Conditions: Label Name Action [Add](#)

[Add](#) [Cancel](#)



# POWERFUL VALUE MAPS

- ✓ Exact match
- ✓ By **range**
- ✓ By **regular expression**

Z

Hosts

🔍

👁

☰

📊

🔧

⚙

All hosts / Zabbix server Enabled ZBX Items 126 Triggers 65 Graphs 24 Discovery rules 3 Web scenarios

Host Templates 2 IPMI Tags Macros Inventory Encryption Value mapping

Name

Value

Action

Add

Update Clone Full clone Delete Cancel

Value mapping

\* Name Service state

\* Mappings

Type	Value	Mapped to	Action
in range	0-31,64-127	Up	Remove
default		Down	Remove

Add

Add Cancel



# VALUES MAPS FOR TEMPLATES AND HOSTS

- ✓ No more global value maps! Now only for templates and hosts
- ✓ Advantages:
  - ✓ Flat self-contained templates without any references to global objects
  - ✓ Better multi-tenancy
- ✓ Mass-update operations for easier management

**Mass update**

Host Templates IPMI Tags Macros Inventory Encryption Value mapping

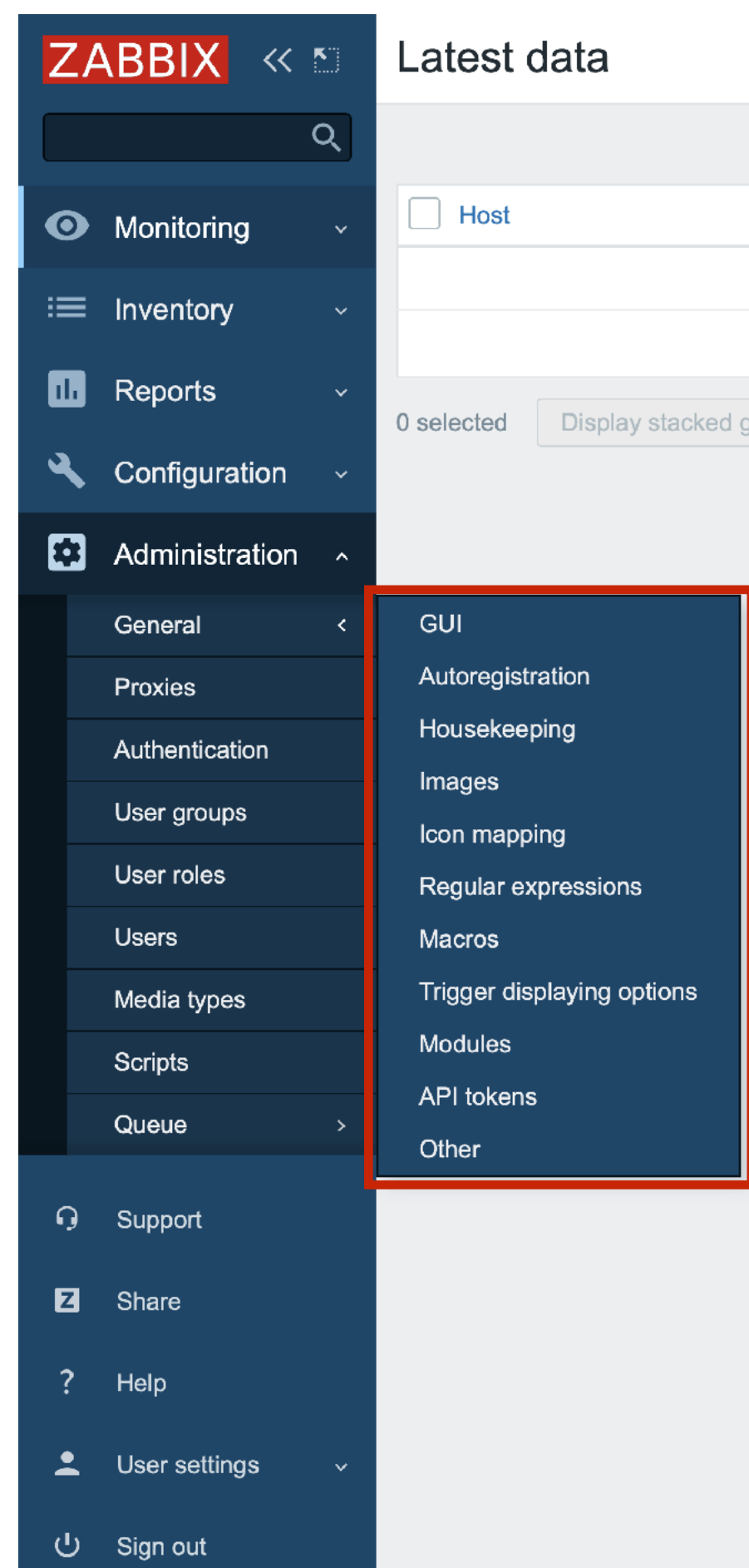
Value mapping ☒ Add Update Rename Remove Remove all

Name	Value	Action
<a href="#">Add</a>	<a href="#">Add from</a>	
<input type="checkbox"/> Update existing		

Update Cancel

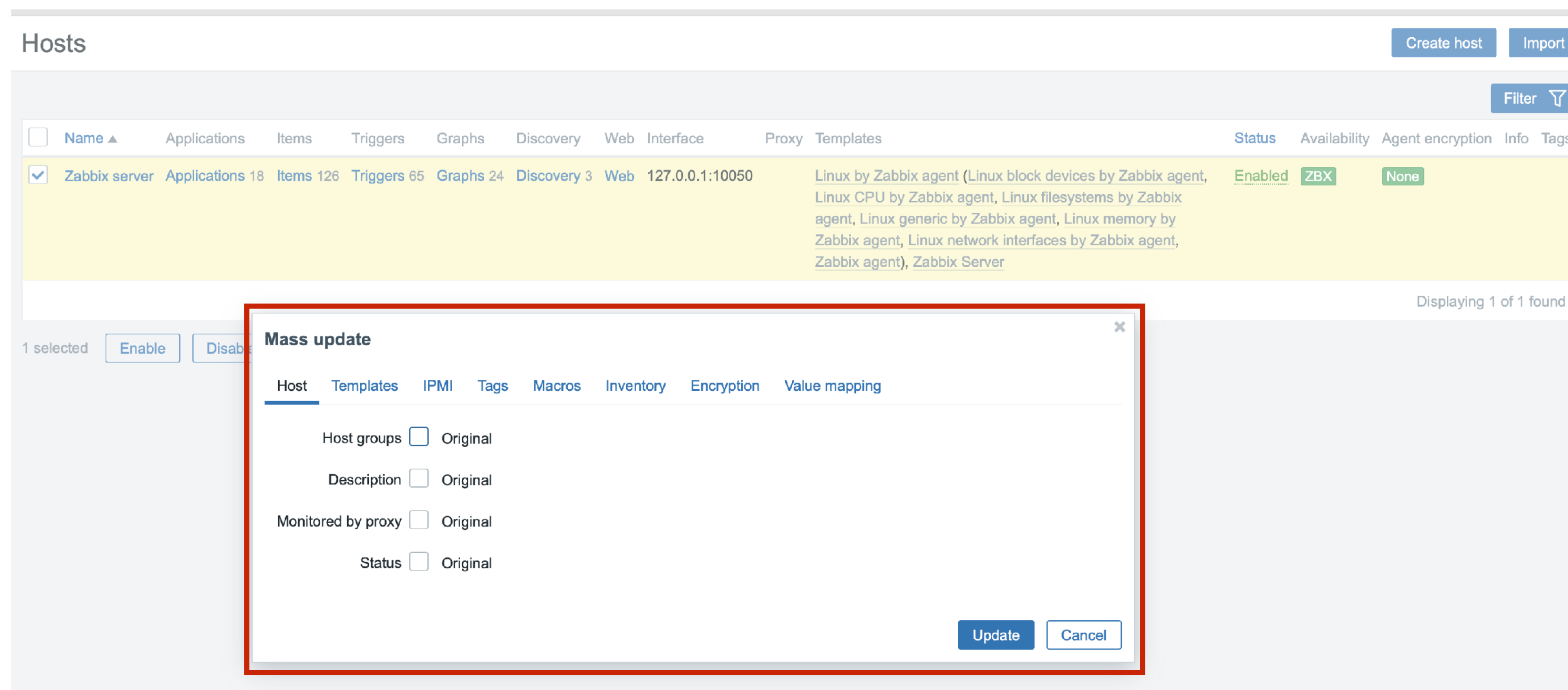
# USABILITY IMPROVEMENTS

- ✓ Third level menu for better navigation



# USABILITY IMPROVEMENTS

- ✓ Stay focused: modal windows for mass-update and import forms





# USABILITY IMPROVEMENTS

- ✓ Negated filtering by tags

**Z Problems**

< [Home](#) **Excluding staging** [All issues](#) ▼ > [This year so far](#)

Show [Recent problems](#) [Problems](#) [History](#)

Host groups  [Select](#)

Hosts  [Select](#)

Triggers  [Select](#)

Problem

Severity ☐ Not classified ☐ Warning ☐ High  
☐ Information ☐ Average ☐ Disaster

Age less than ☐ 14 days

Host inventory  [Add](#) [Remove](#)

Tags [And/Or](#) [Or](#)

[Re](#)

[Add](#)

Show tags ☐ None ☐ 1 ☐ 2 ☒ 3 ☐ Shortened ☐ None

Tag display priority

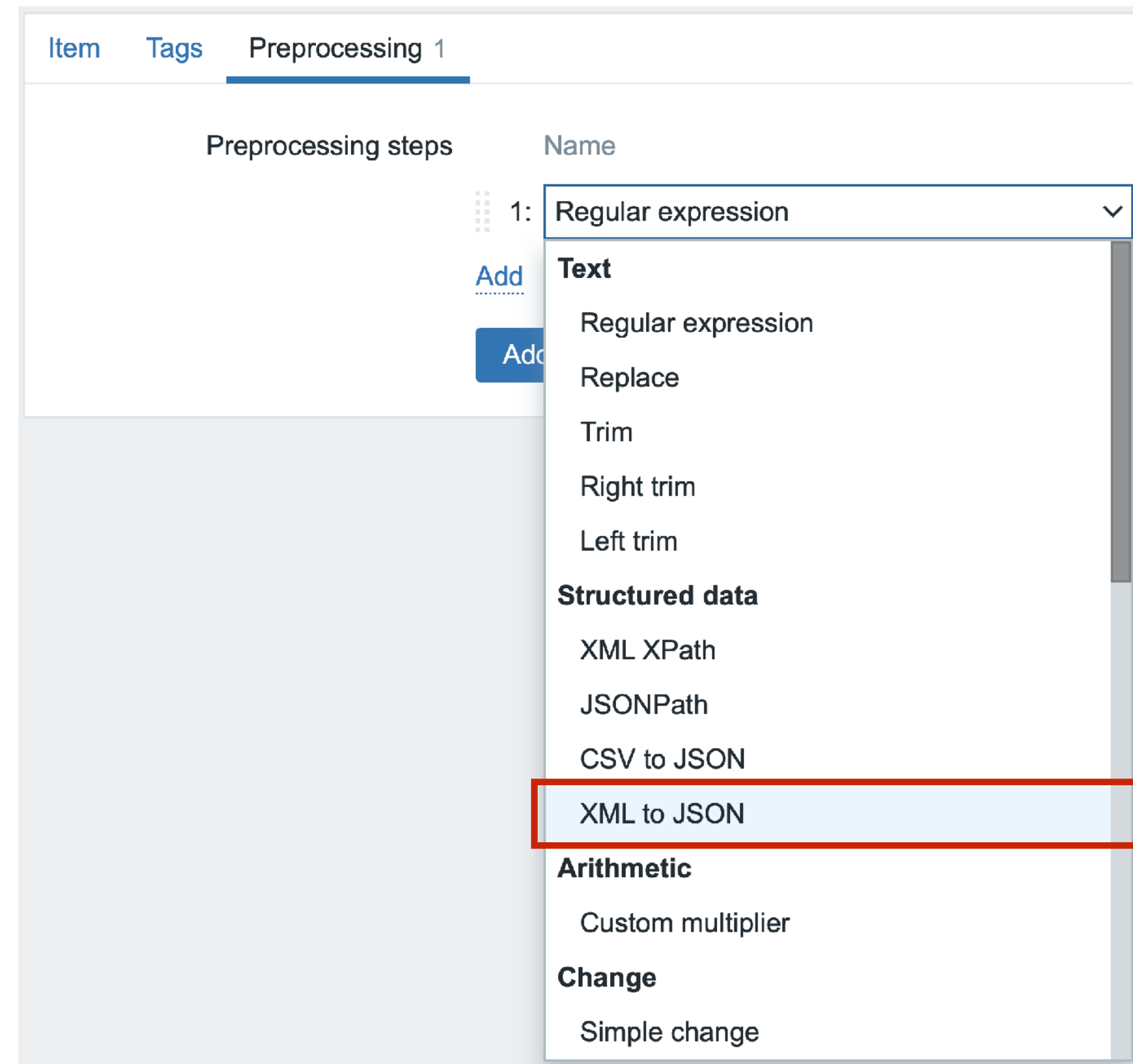
Show operational data ☒ None ☐ Separately ☐ W

Show suppressed problems ☐ Show unacknowledged only ☐

Does not equal  
Exists  
Equals  
Contains  
Does not exist  
Does not equal  
Does not contain

# BETTER SUPPORT OF XML PREPROCESSING

- ✓ XML XPath
- ✓ Now also XML to JSON conversion



# AND MORE!

## ✔ Security related

- ✔ Support of all SNMPv3 encryption protocols
- ✔ Unified error messages in case of unsuccessful login
- ✔ Disabled autocomplete for password fields in Zabbix UI

## ✔ Real-time export

- ✔ Information about event severity is included in real-time export files
- ✔ More granular configuration of real time export

## ✔ Also

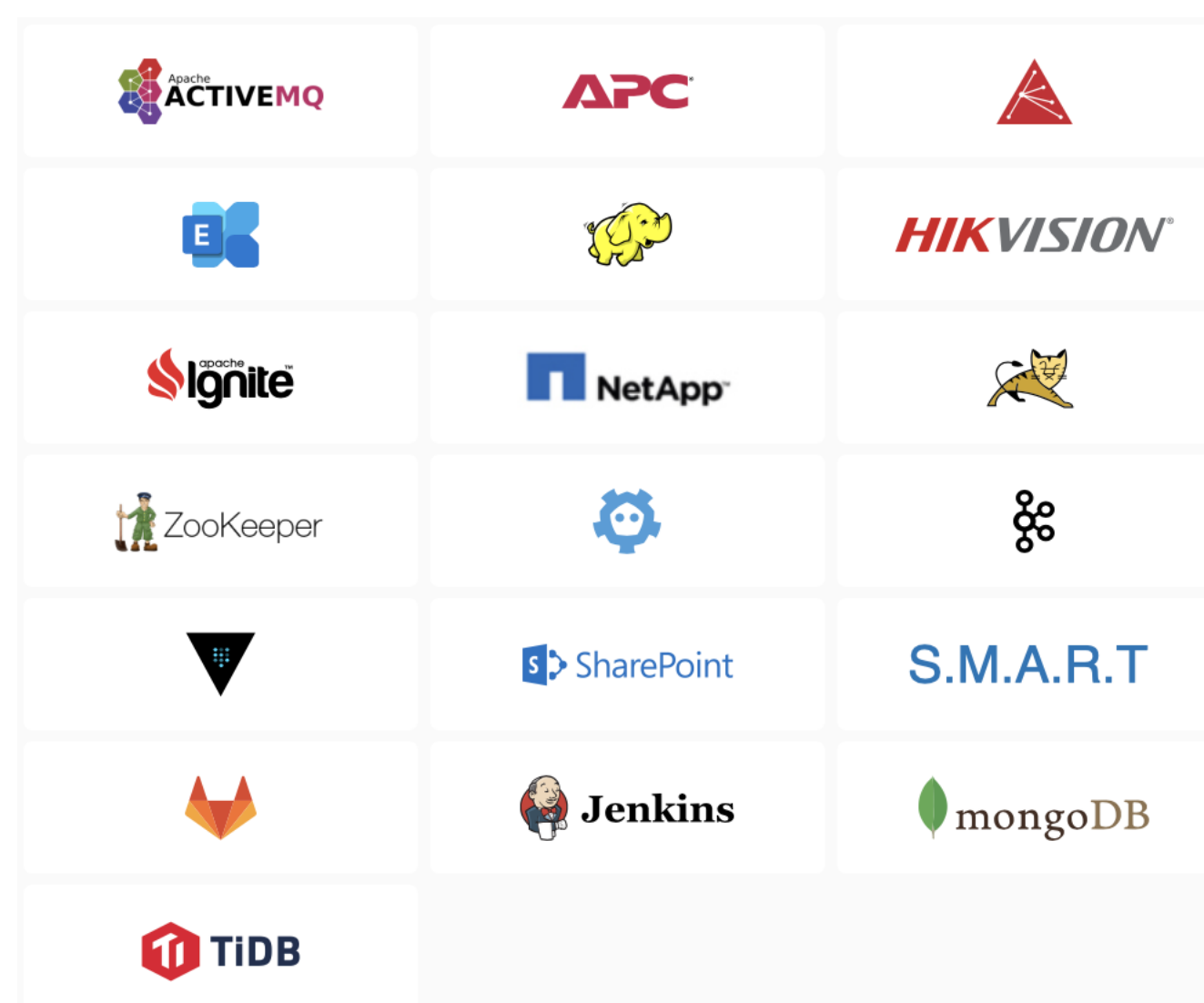
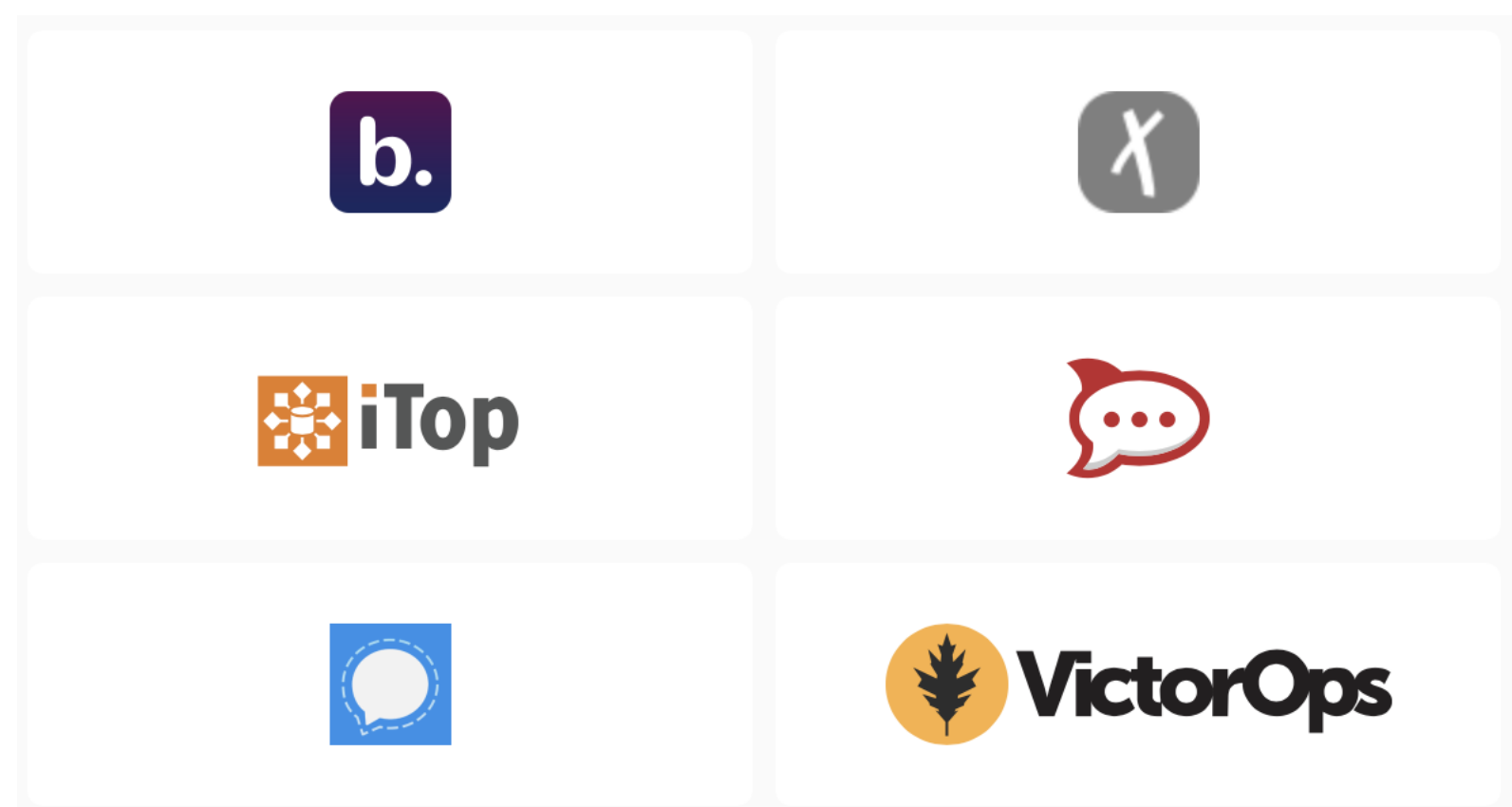
- ✔ Support of VMWare cluster monitoring
- ✔ Support of filtering by the presence of LLD macro for low-level discovery
- ✔ Support of macro {ITEM.VALUE\_TYPE} for notifications
- ✔ Support of service name lookup for Oracle for HA setups
- ✔ Support of NTLM authentication for JavaScript Webhooks
- ✔ Support of multiple JMX metrics having same key on one host
- ✔ Increased size of memory available to JavaScript Webhooks and preprocessing
- ✔ CurlHttpRequest renamed to HttpRequest in Webhooks
- ✔ "Alias" renamed to "Username" in user configuration
- ✔ American English is a default language of Zabbix UI and also Zabbix documentation







































































































































# NEW INTEGRATIONS AND TEMPLATES

- ✓ Integrations with iTOP, VictorOps, Rocket.Chat, Signal, Express.ms, and other solutions
- ✓ New templates for monitoring of APC UPS hardware, Hikvision cameras, etcd, Hadoop, Zookeeper, Kafka, AMQ, HashiCorp Vault, MS Sharepoint, MS Exchange, smartctl, Gitlab, Jenkins, Apache Ignite, and more applications and services



# OFFICIAL SOLUTIONS FOR MONITORING AND ALERTING

 .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	 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 HDS, HNAS	 HP Enterprise	 HP-UX	 Mattermost	 Mellanox	 Memcached

<https://www.zabbix.com/integrations>



# TEMPLATES FOR HARDWARE VENDOR DEVICES



APC

Manufacturer of power supply products designed to use with various electrical appliances. The company's power supply products are used in personal computers, engineering work stations, file servers, communications and inter networking equipment, enabling customers to get reliable power and physical IT infrastructure.



## Available solutions

Official Templates	3rd Party Solutions
APC UPS GALAXY:	<a href="#">APC UPS Galaxy 3500 SNMP</a>
APC SMART-UPS:	<a href="#">APC Smart-UPS 2200 RM SNMP</a> <a href="#">APC Smart-UPS 3000 XLM SNMP</a> <a href="#">APC Smart-UPS RT 1000 RM XL SNMP</a> <a href="#">APC Smart-UPS RT 1000 XL SNMP</a> <a href="#">APC Smart-UPS SRT 5000 SNMP</a> <a href="#">APC Smart-UPS SRT 8000 SNMP</a>
APC UPS SYMMETRA:	<a href="#">APC UPS Symmetra LX SNMP</a> <a href="#">APC UPS Symmetra RM SNMP</a> <a href="#">APC UPS Symmetra RX SNMP</a>
GENERAL TEMPLATE:	<a href="#">APC UPS SNMP</a>





# DEPLOY ON-PREMISE



# DEPLOY IN THE CLOUD



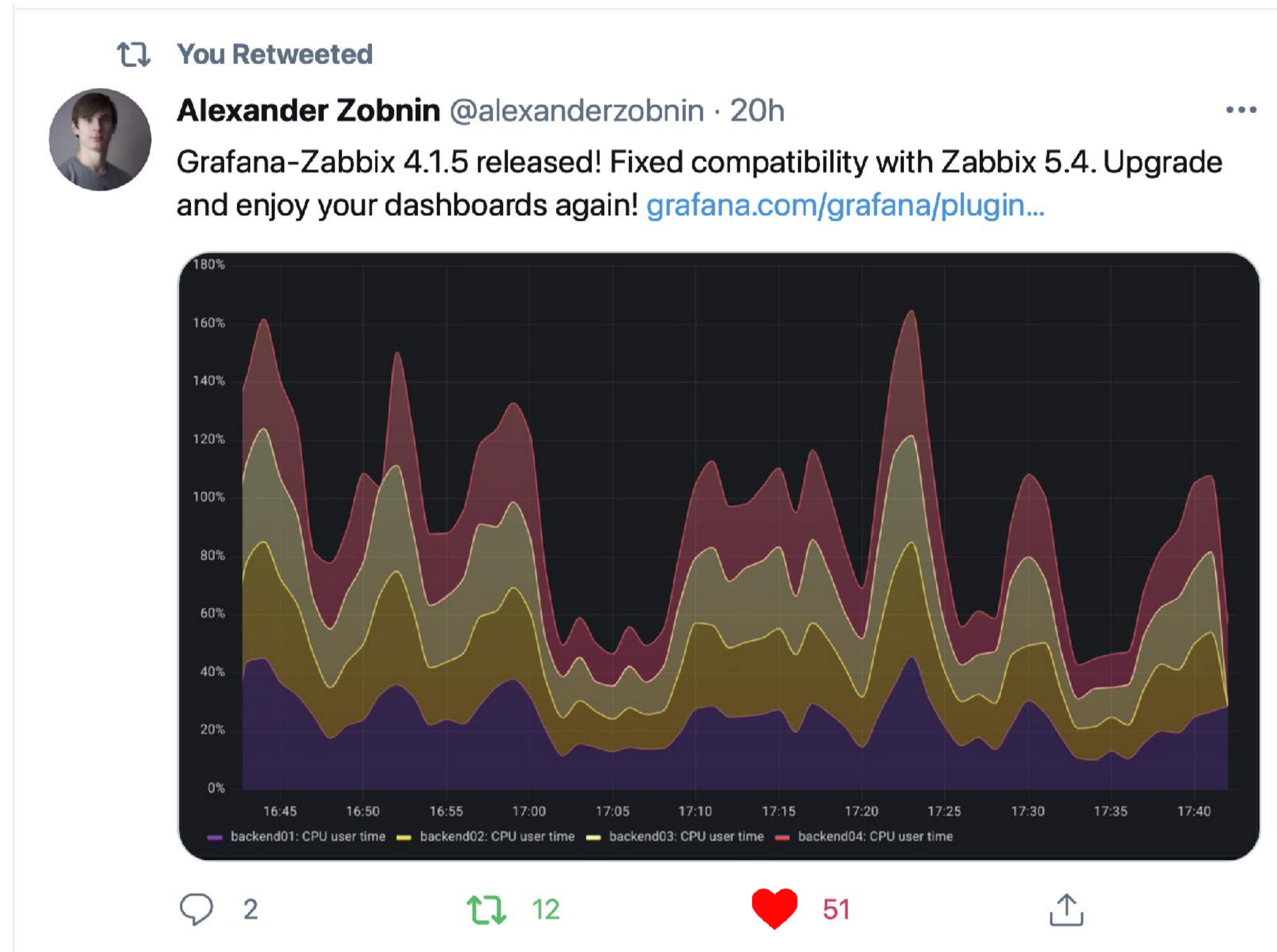
# BREAKING CHANGES

- ✓ No support of applications and screens
  - ✓ Many API methods are affected
- ✓ No support of global value maps
- ✓ New syntax for trigger expressions and calculated metrics
  - ✓ Aggregate metrics are merged into calculated metrics



# INTEGRATION WITH GRAFANA

- ✓ Broken at release day due to API changes
- ✓ Quickly fixed by Alexander, thank you!





# UPGRADE NOTES

- ✓ Install new binaries for Zabbix Server and Proxies, upgrade Zabbix UI
  - ✓ Zabbix Server **will upgrade your database automatically**
- ✓ All trigger expressions, calculated and aggregate metrics **will be automatically converted**
- ✓ Applications will **be automatically converted** to tags
  - ✓ For example: “CPU” will be converted to tag “Application:CPU”
- ✓ Global values maps will be moved to templates and host level
- ✓ Screens **will be automatically converted** to Dashboards





# 6.0 LTS

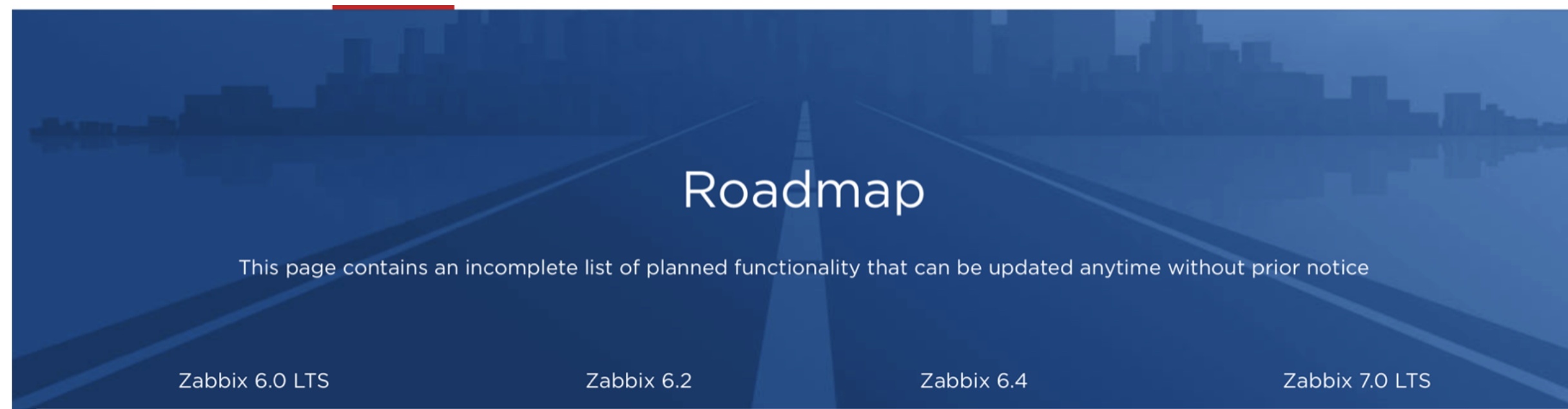
ETA: 2021, Q4

Work in progress:

HA for Zabbix Server

Business Service Monitoring (BSM)

# ZABBIX ROADMAP: LONG TERM & UP-TO-DATE



### Zabbix 6.0 LTS

Planned release date: Q4 2021

#### Event correlation and enterprise alarm console

- Ability to perform event filtering, de-duplication and aggregation using event preprocessing rules
- Ability to manually hide and suspend problems for a period of time
- Problem view optimised for faster problem resolution and collaborative work

#### Business service monitoring (BSM)

- Make Zabbix scale to 100K of business services In dev New
- Support of alerting on service status changes In design New
- Tag based mapping between problem events and services In dev New
- Support of complex service status calculation and propagation rules In design
- Support of multi-tenancy for Services In dev New  
ZBXNEXT-59 ★ Top voted!
- New widgets for service tree and SLA reporting In design
- Root cause analysis New
- Impact analysis New
- Import/export for service tree In design New
- New graphical visualization of service tree New

<https://www.zabbix.com/roadmap>





# ZABBIX 5.4

Thank you!

