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
UNIFICATION OF SCREENS AND DASHBOARDS

- Unification of screens and dashboards, no screens anymore!
TEMPLATES FOR DASHBOARDS

Configuration->Templates:

Monitoring->Hosts:
DASHBOARDS FOR HOSTS

Nginx performance

Nginx: Connections by state

Nginx: Requests per second

Nginx: Connections per second

Nginx: Connections accepted per second

Nginx: Connections handled per second

Nginx: Connections dropped per second
MULTI-PAGE DASHBOARDS
MULTI-PAGE DASHBOARDS
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
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**!

```
<table>
<thead>
<tr>
<th>Item</th>
<th>Tags 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item tags</td>
<td>Inherited and item tags</td>
</tr>
<tr>
<td>Name</td>
<td>Value</td>
</tr>
<tr>
<td>Service</td>
<td>Jira</td>
</tr>
<tr>
<td>Class</td>
<td>CPU</td>
</tr>
</tbody>
</table>
```

- 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

<table>
<thead>
<tr>
<th>Function group</th>
<th>Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aggregate functions</strong></td>
<td>avg, count, countunique, kurtosis, mad, max, min, skewness, stddevpop, stddevsamp, sum, sumofsquares, varpop, varsamp</td>
</tr>
<tr>
<td><strong>Bitwise functions</strong></td>
<td>bitand, bitlshift, bitnot, bitor, bitrshift, bitxor</td>
</tr>
<tr>
<td><strong>Date and time functions</strong></td>
<td>date, dayofmonth, dayofweek, now, time</td>
</tr>
<tr>
<td><strong>History functions</strong></td>
<td>change, first, fuzzytime, last, logeventid, logseverity, logsource, percentile, trendavg, trendcount, trendmax, trendmin, trendsum</td>
</tr>
<tr>
<td><strong>Mathematical functions</strong></td>
<td>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</td>
</tr>
<tr>
<td><strong>Operator functions</strong></td>
<td>between, in</td>
</tr>
<tr>
<td><strong>Prediction functions</strong></td>
<td>forecast, timeleft</td>
</tr>
<tr>
<td><strong>String functions</strong></td>
<td>ascii, bitlength, bytelen, char, concat, find, insert, left, length, ltrim, mid, repeat, replace, right, rtrim, trim</td>
</tr>
</tbody>
</table>

API TOKENS

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

- Any user having permissions can create it

- Can be managed globally by super-admins
EASY TO MANAGE TEMPLATES

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

It also enables the ability to keep templates in the Git repository and push it to Zabbix by CI/CD pipeline using Zabbix API.
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
POWERSFUL VALUE MAPS

- Exact match
- By range
- By regular expression
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
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
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.VALUETYPE} 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

https://www.zabbix.com/integrations
Zabbix 5.4

TEMPLATES FOR HARDWARE VENDOR DEVICES

Monitoring and Integration Solutions

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

<table>
<thead>
<tr>
<th>Official Templates</th>
<th>3rd Party Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>APC UPS GALAXY:</td>
<td>APC UPS Galaxy 3500 SNMP</td>
</tr>
<tr>
<td>APC SMART-UPS:</td>
<td>APC Smart-UPS 2000 RM SNMP</td>
</tr>
<tr>
<td></td>
<td>APC Smart-UPS 3000 XLM SNMP</td>
</tr>
<tr>
<td></td>
<td>APC Smart-UPS RT 1000 RM XL SNMP</td>
</tr>
<tr>
<td>APC UPS SYMMETRA:</td>
<td>APC UPS Symmtra LX SNMP</td>
</tr>
<tr>
<td></td>
<td>APC UPS Symmtra RM SNMP</td>
</tr>
<tr>
<td>GENERAL TEMPLATE:</td>
<td>APC UPS SNMP</td>
</tr>
</tbody>
</table>
DEPLOY ON-PREMISE

Red Hat  
ubuntu  
CentOS  
SUSE  
debian  
Raspberry Pi  
docker

DEPLOY IN THE CLOUD

aws  
Azure  
kubernetes  
openstack  
Google Cloud  
DigitalOcean  
RED HAT OPENShift  
Yandex Cloud  
linode
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

https://www.zabbix.com/roadmap
Thank you!