NEW FEATURES IN ZABBIX 5.0

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ZABBIX Technical Support Engineer
Zabbix is a **Universal** Open Source enterprise-level monitoring solution
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Where we are currently

3.0 LTS  4.0 LTS  4.2  4.4  5.0 LTS

ZABBIX

now
Quick recap of Zabbix 4.2 and 4.4
High frequency monitoring with throttling

Data collection: HTTP agent, Prometheus

Preprocessing: validation and JavaScript!

Preprocessing by Proxies

Enhanced tag management
Zabbix 4.4

April, 2019

New Zabbix Agent: plugins, scheduler and more

Web hooks for alerting and notifications

Support of TimescaleDB

Built-in knowledge base for metrics and triggers

Standard for Zabbix Templates
5.0 LTS release
ETA: early April
Making a platform for high quality solutions

Monitoring Plugins

Data → Zabbix

Notifications

Incidents

Events

Webhook Based Integrations
Out of the box!

Ticketing
- Zammad
- OTRS
- Jira
- Zendesk
- REDMINE
- servicenow

Alerting
- slack
- Mattermost
- DISCORD
- OpsGenie
- PagerDuty
- VictorOps
- Pushover

Monitoring
- redis
- MySQL
- PostgreSQL
- HAProxy
- NGINX
- Windows
Want to contribute?

3 simple steps

Sign Zabbix Contributor Agreement (ZCA)
https://www.zabbix.com/developers

Make Zabbix Pull Request
https://git.zabbix.com

Zabbix Dev Team will review and accept if everything is fine
Available everywhere

Linux distributions and containers

- RHEL and CentOS 6, 7 and 8
- Debian 8, 9, 10
- SuSE 12, 15
- Ubuntu 14.04 (Trusty), 16.04 (Xenial) and 18.04 (Bionic)
- Raspbian 9 (Stretch), 10 (Buster)
- Docker

Linux appliance images

- ISO
- VMWare, VirtualBox
- Microsoft Hyper-V
- KVM
- XEN
- LiveCD

Public clouds

- AWS
  - Zabbix Server 4.4
    - Mysql + Nginx
- Azure
  - Zabbix Server 4.4
    - Mysql + Nginx
- DigitalOcean
  - Zabbix Server 4.4
    - Mysql + Nginx
- Google Cloud
  - Zabbix Server 4.4
    - Mysql + Nginx

Lowest cost
Official support of Zabbix Agent2 for Linux and Windows

https://support.zabbix.com/browse/ZBXNEXT-5609
Most advanced monitoring agent on the market!

New Zabbix Agent (zabbix_agent2)

- Plugin infrastructure
- Support of long running scripts
- Parallel active checks
- Support of flexible intervals for all checks
- Support of persistent connections (DB connections)
- Accepting incoming traps and events (MQTT subscribe, listening TCP/UDP ports, etc)
- Monitoring of systemd services out of the box
- Drop-in replacement of the existing agent!
Better security
Webhooks over HTTP proxy

Zabbix Server

Internal network

Jira
Webhooks over HTTP proxy

Zabbix Server

HTTP Proxy

Jira

Internal network

No direct connection

https://support.zabbix.com/browse/ZBXNEXT-5554
Restrict available checks on agent side

# Whitelist for MySQL related checks
AllowKey=mysql[*]
DenyKey=*  

# Blacklist to deny all shell scripts
DenyKey=system.run[*]  

# Blacklist to deny access to /etc/passwd
DenyKey=vfs.file.contents[/etc/passwd,*]

https://support.zabbix.com/browse/ZBXNEXT-1085
Encrypted connection to database

https://support.zabbix.com/browse/ZBXNEXT-2753
Strong encryption for password hashes

SHA256 instead of MD5

User password hash is updated on password change

https://support.zabbix.com/browse/ZBXNEXT-1898
Ability to mask user macros

Use cases:

- Hide any secrets: passwords, tokens
- Secret text cannot be retrieved in UI and alerts, masked with ******
- Can only replaced with a new value

https://support.zabbix.com/browse/ZBXNEXT-2957
All communications are safe & encrypted

- Whitelists for metrics
- Encrypted connections to MySQL and PostgreSQL
- SHA256 for password hashes
- Masking secrets in UI and alerts
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Compression for TimescaleDB

https://support.zabbix.com/browse/ZBXNEXT-5676
TimescaleDB = PostgreSQL + Extension
Advantages

- Automatic partitioning
- Zabbix manages removal of old data
- Performance oriented DB
- Compression!
Compression HOWTO

Administration->General->Housekeeping

History and trends compression

Enable compression

* Compress records older than: 7d

Update  Reset defaults
Lower storage cost

Zabbix Server

Older than 7 days, Compressed, read-only
UI and usability improvements
UI modules

- Extend functionality of Zabbix UI
- New menu entries
- 3rd party modules
- New dashboard widgets (5.2?)
List of monitored devices

Monitoring->Hosts

No more Monitoring->WEB and Monitoring->Graphs

https://support.zabbix.com/browse/ZBXNEXT-5694
Test item before creation

Test item even on template level

https://support.zabbix.com/browse/ZBXNEXT-5287
Mass update for macros

https://support.zabbix.com/browse/ZBXNEXT-617
## SNMP settings on host level

<table>
<thead>
<tr>
<th>Interfaces</th>
<th>Type</th>
<th>IP address</th>
<th>DNS name</th>
<th>Connect to</th>
<th>Port</th>
<th>Interface name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agent</td>
<td>127.0.0.1</td>
<td></td>
<td>IP</td>
<td>DNS</td>
<td>10050</td>
</tr>
<tr>
<td></td>
<td>Agent</td>
<td>127.0.0.1</td>
<td></td>
<td>IP</td>
<td>DNS</td>
<td>10050</td>
</tr>
<tr>
<td>SNMP</td>
<td></td>
<td>127.0.0.1</td>
<td></td>
<td>IP</td>
<td>DNS</td>
<td>10050</td>
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<tr>
<td></td>
<td>SNMP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>My unique SNMP n</td>
</tr>
</tbody>
</table>

- **SNMP version**: SNMPv2 agent
- **SNMP community**: public
- **Use bulk requests**: unchecked

### Add new interface

- **Description**: 
- **Monitored by proxy**: (no proxy)
- **Enabled**: checked

[https://support.zabbix.com/browse/ZBXNEXT-2613](https://support.zabbix.com/browse/ZBXNEXT-2613)
ODBC connection parameters in items key

No more odbc.ini

Flexibility

Works on all proxies without additionall configuration.

db.odbc.select[MySQL db check, "DRIVER=mysqla;SERVER=127.0.0.1;PORT=3306;UID=zabbix;PWD=zabbix;DATABASE=master;OPTION=3;"]

https://support.zabbix.com/browse/ZBXNEXT-1961
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Machine learning
Problem detection

Simple threshold
Baseline based on historical data

Anomaly #1

Anomaly #2
Baseline is an **automatically adjusted threshold**

Hourly baseline
Why baseline monitoring?

- Easy to configure and maintain
- Automatic anomaly detection
- More universal than time-shift functions
Priority on usability and flexibility:

- global configuration

- automatic management of triggers for baseline monitoring (creation, removal)

- multiple baselines per metric, multiple algorithms

- machine learning algorithms are defined in JavaScripts and fully configurable
Problem reporting

Traditional threshold-based

“Number of transactions per hour is lower than 1000”
“Daily network utilisation exceeded 90%”
“Rate of new user registrations is less than 10 per hour”

Machine learning

“Number of transactions per hour is 2x lower than expected”
“Daily network utilisation is 20% higher than expected”
“Rate of new user registrations per hour dropped 50%”

Use tags to differentiate ML generated problems

Source: ML  Severity: Info
And more than 30 other improvements! Stay tuned!
**Roadmap**

**Zabbix 5.0 LTS**

**ETA: March, 2020**

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**Out of the box monitoring and alerting**

- Set of templates and integrations with alerting and ITSM systems
  
  Zabbix will include enhanced set of templates for monitoring of various operating systems, applications and network devices, as well as ready-to-use media types for integration with popular alerting, notification and ITSM systems.

- Monitoring of Kubernetes
  
  Out of the box solution for monitoring of Kubernetes clusters.

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**Smart problem and anomaly detection**

- Baseline monitoring
  
  New algorithms for data processing will allow automatic problem and anomaly detection based on analysis of historical data. No manual setting of thresholds is needed anymore!

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**Security and compliance monitoring**

- Standard templates will be enhanced to contain security- and compliance-related monitoring

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**Usability and user experience**

- Redesign of navigation and other front-end improvements to make Zabbix more user friendly

- Ability to test metrics from Zabbix UI
QUESTIONS?
THANK YOU!

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zabbix