Zabbix 4.4 and plans for Zabbix 5.0
Zabbix is an **Universal** Open Source enterprise-level monitoring solution
Zabbix is an Universal Open Source enterprise-level monitoring solution
Quick recap of 2019
Growing number of large enterprise customers

- Dell
- Salesforce
- Orange
- ICANN
- T-Systems
- Telecom Italia
- Natixis
- Sberbank
- Citadele
- Globo.com
- GloboNet
- Nokia
High frequency monitoring with throttling

Data collection: HTTP agent, Prometheus

Preprocessing: validation and JavaScript!

Enhanced tag management
Where we are currently

3.0 LTS  4.0 LTS  4.2  4.4  5.0 LTS

ZABBIX

March, 2020
Zabbix 4.2
April, 2019

High frequency monitoring with throttling

Data collection: HTTP agent, Prometheus

Preprocessing: validation and JavaScript!

Preprocessing by Proxies

Enhanced tag management
Zabbix 4.4

More than 30 new features and functional improvements
Enhanced preprocessing
Custom error handling

Check for error in JSON

Check for error in XML

Check for error using regular expression
XML and JSON related enhancements

XML-related preprocessing options added to LLD

XML Xpath and Check for error in XML preprocessing options have been added to low-level discovery rules

Zabbix now supports advanced syntax for JSONPath

Advanced data collection and discovery
Discovery and data collection

**jmx.get[<discovery_mode>,<object_name>]**
Compared to the jmx.discovery[] item from previous versions, that had to ignore encountered that JMX MBean properties contains hyphens, square brackets and non-ASCII characters (that could not be converted into a macro name) the new jmx.get[] item does not generate LLD macro names in the returned JSON.

**db.odbc.get[unique_description,data_source_name]**
The new item is capable of returning values from multiple rows and columns, formatted as JSON.

**wmi.getall[<namespace>,<query>]**
The new item is capable of returning the entire response of the query, formatted as JSON.
Secure auto-registration
Auto-registration with PSK, unencrypted or both
Description for user macros
Discovery and data collection
4 Zabbix Agent
Zabbix Agent

Zabbix Agent (zabbix_agentd)

Challenges

- Long running scripts
- Parallel active checks
- Support of flexible intervals
- Processing of traps
- Support of persistent connections
- Better plugin framework
Next Generation Zabbix Agent

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 service out of the box
Drop-in replacement of the existing agent!
Internal structure of the agent

- Polling
- Regular data collection
- Background routines
- Trapping
Availability of the new Zabbix Agent2

4.4 – experimental, 5.0 – production ready

Older agents will be supported

Currently only Linux-like systems

Zabbix Agent 2 for Windows – already in development!

Check our git repository: https://git.zabbix.com
Alerting and notifications
Webhook
URL for API access
All logic in JavaScript
Process event tags
Add a menu entry for 2-way integration
Redis is not available

Datacenter: NY2  Service: Redis  Ticket: PROD-12345

Time | Severity | Recovery time | Status | Info | Host | Problem | Duration | Ack | Actions | Tags
---|---|---|---|---|---|---|---|---|---|---
2019-10-01 11:13:26 | High | | PROBLEM | AWS N34 | Service Redis stopped | 1m | Yes | | |

TRIGGER
Problems
Description
Configuration

LINKS
Servicedesk issue PROD-12345

HISTORY
Service status

Jira Service Desk
6

Built-in knowledge base
## Item details

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU idle time</td>
<td>2019-10-10 10:05:08</td>
</tr>
<tr>
<td>CPU interrupt time</td>
<td>2019-10-10 10:05:11</td>
</tr>
<tr>
<td>CPU iowait time</td>
<td>2019-10-10 10:05:10</td>
</tr>
<tr>
<td>CPU nice time</td>
<td>2019-10-10 10:05:10</td>
</tr>
<tr>
<td>CPU softirq time</td>
<td>2019-10-10 10:05:10</td>
</tr>
<tr>
<td>CPU steal time</td>
<td>2019-10-10 10:05:09</td>
</tr>
<tr>
<td>CPU system time</td>
<td>2019-10-10 10:05:11</td>
</tr>
<tr>
<td>CPU user time</td>
<td>2019-10-10 10:05:09</td>
</tr>
</tbody>
</table>

**CPU iowait time**

*Amount of time the CPU has been waiting for I/O to complete.*
### Problem details

<table>
<thead>
<tr>
<th>Time</th>
<th>Severity</th>
<th>Recovery Time</th>
<th>Status</th>
<th>Info</th>
<th>Host</th>
<th>Problem</th>
<th>Duration</th>
<th>Ack</th>
<th>Actions</th>
<th>Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-05-23</td>
<td>Average</td>
<td>37:00</td>
<td></td>
<td></td>
<td></td>
<td>Zabbix agent on Linux007 is unreachable for 5 minutes</td>
<td>1y 4m 18d</td>
<td>Yes</td>
<td>1</td>
<td>Service: Zabbix agent</td>
</tr>
<tr>
<td>September</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019-09-30</td>
<td>Information</td>
<td>12:45:45</td>
<td></td>
<td></td>
<td>AZ M08</td>
<td>Low CPU utilization on host machines</td>
<td>1y 9d</td>
<td>Yes</td>
<td>1</td>
<td>Service: Kubernetes Datacenter: FR2</td>
</tr>
<tr>
<td>2019-09-30</td>
<td>Information</td>
<td>12:45:45</td>
<td></td>
<td></td>
<td>AZ M18</td>
<td>Slow query execution time</td>
<td>1y 9d</td>
<td>No</td>
<td>1</td>
<td>Service: AWS Dynam... Datacenter: NY1 Env: Production</td>
</tr>
<tr>
<td>2019-09-30</td>
<td>Average</td>
<td>13:45:45</td>
<td></td>
<td></td>
<td>AWS N30</td>
<td>Too many queries per second</td>
<td>1y 9d</td>
<td>Yes</td>
<td>1</td>
<td>Service: HTTP balancer Datacenter: NY1</td>
</tr>
<tr>
<td>October</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019-10-01</td>
<td>High</td>
<td>12:25:11</td>
<td></td>
<td></td>
<td>AWS N34</td>
<td>Service Redis stopped</td>
<td>1y 8d</td>
<td>Yes</td>
<td>1</td>
<td>Service: Redis Datacenter: FR2 Env: Staging</td>
</tr>
<tr>
<td>2019-10-01</td>
<td>High</td>
<td>12:25:11</td>
<td></td>
<td></td>
<td>AWS N34</td>
<td>Service Redis stopped</td>
<td>1y 8d</td>
<td>Yes</td>
<td>1</td>
<td>Service: Redis Datacenter: FR2 Env: Staging</td>
</tr>
<tr>
<td>Today</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:48:11</td>
<td>Information</td>
<td></td>
<td></td>
<td></td>
<td>Zabbix server</td>
<td>Too many processes running on Zabbix server</td>
<td>3m 39s</td>
<td>No</td>
<td></td>
<td>Service: Zabbix OS: Linux Performance</td>
</tr>
</tbody>
</table>
Visualization
Haderless widgets
Compact problem view

New York Datacenter

<table>
<thead>
<tr>
<th>Category</th>
<th>0 Disaster</th>
<th>3 High</th>
<th>20 Average</th>
<th>81 Warning</th>
<th>5 Information</th>
<th>32 Not classified</th>
</tr>
</thead>
</table>

Problems by severity:

- HPC Cluster: 2 High, 27 Average, 1 Warning
- Internal infrastructure: 2 High, 3 Average, 41 Warning, 2 Information
- R&D Lab1
- R&D Lab2: 1 Average
- Region/Australia: 1 Average
- Region/Brazil: 1 Average
- Region/China: 1 High, 1 Average
- Region/Europe
- Region/Japan: 5 High
- Region/USA: 3 High, 1 Average
- SAP HANA Infra: 1 High, 1 Average
- Zabbix infrastructure: 1 High
Aggregation of data and bar graphs
New storage options
Support of Timescale database

Advantages

- Automatic partitioning
- Zabbix manages removal of old data
- Performance oriented DB
- Now officially supported by Zabbix!
Standards for templates
So many templates to choose from!

<table>
<thead>
<tr>
<th>Link</th>
<th>Source</th>
<th>Compatibility</th>
<th>Type, Technology</th>
<th>Created</th>
<th>Updated</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Template MySQL (800+ items)</td>
<td>share.zabbix.com</td>
<td>2.0</td>
<td>Template, External script part</td>
<td>2015-08-19</td>
<td>4 y</td>
<td>Popular</td>
</tr>
<tr>
<td>A huge template for monitoring MySQL without any triggers</td>
<td><img src="https://share.zabbix.com" alt="Zabbix Agent" /> <img src="https://share.zabbix.com" alt="Zabbix Trapper" /></td>
<td><img src="https://share.zabbix.com" alt="Zabbix Agent" /> <img src="https://share.zabbix.com" alt="Zabbix Trapper" /></td>
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<td><img src="https://share.zabbix.com" alt="Zabbix Agent" /> <img src="https://share.zabbix.com" alt="Zabbix Trapper" /></td>
</tr>
<tr>
<td>Zabbix template for monitoring Galera cluster</td>
<td>share.zabbix.com</td>
<td>3.2</td>
<td>Template</td>
<td>2011-08-04</td>
<td>2 y</td>
<td>Popular</td>
</tr>
<tr>
<td>Template for monitoring a Galera Cluster running on Linux, Tested on RHEL and CentOS 7. Created using 3.2 but may work with lower versions. Add Value Mapping, import Template and copy userparameter file to client, and restart zabbix agent service.</td>
<td><img src="https://share.zabbix.com" alt="Zabbix Agent" /> <img src="https://share.zabbix.com" alt="Zabbix Trapper" /></td>
<td><img src="https://share.zabbix.com" alt="Zabbix Agent" /> <img src="https://share.zabbix.com" alt="Zabbix Trapper" /></td>
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<td><img src="https://share.zabbix.com" alt="Zabbix Agent" /> <img src="https://share.zabbix.com" alt="Zabbix Trapper" /></td>
</tr>
<tr>
<td>MySQL-Monitoring-Proxy</td>
<td>share.zabbix.com</td>
<td>3.4</td>
<td>External script</td>
<td>2018-09-27</td>
<td>1 y</td>
<td>Not maintained</td>
</tr>
<tr>
<td>This tool can be utilized to gather behavioral measurement data or configuration data of MySQL servers in an efficient way. It can be used as an external check for the zabbix monitoring system. The benefit for using this tool is a very low overhead for gathering the measurements because this tool is written ...</td>
<td><img src="https://share.zabbix.com" alt="Custom Script" /> <img src="https://share.zabbix.com" alt="Custom Script" /></td>
<td><img src="https://share.zabbix.com" alt="Custom Script" /> <img src="https://share.zabbix.com" alt="Custom Script" /></td>
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</tbody>
</table>
Template defines how to monitor a resource

OS
Application
Hardware device

Any IT infrastructure (services) consists of a set of standard resources
Templates is a knowledge base!

How to monitor a resource?
What resource metrics needs to be monitored?
What availability, performance and security related problems must be detected?
Description of all metrics and problems
Guidelines

Best practices on

Data collection: items

Problem detection: triggers

Problem classification: severity and tags

Knowledge

Visualization: host level screens (dashboards)

https://www.zabbix.com/documentation/guidelines
Various resources
Making a platform for high quality solutions
Zabbix 5.0 LTS
Main directions

- Out of the box monitoring and alerting
- Ready for Cloud and Kubernetes monitoring
- Baseline monitoring
- Security monitoring
- Visualization and reporting
- Performance and high availability
Modules for Zabbix UI

Support of user modules to extend Zabbix UI:

- extend functionality
- add new menu entries
- modify or improve existing functionality
- add new dashboard widgets (in 5.2?)
Support of Microsoft Windows

Two ways of deploying a plugin:
- compiled-in (supported currently)
- as a standalone module
Security monitoring

Detection of security related problems for a monitored resource:

- unsafe configuration options
- use of non secure connections
- other resource specific issues

All problems classified (tagged) as availability, performance or security related

Policy for problem tags: list of mandatory tags for templates and hosts
Enabling code contributions

Process

1. Sign Zabbix Contributor Agreement
2. Develop plugin or a new media type
3. Zabbix Team will review it and provide feedback
4. Fix reported issues
5. The new code will be included into Zabbix software and officially supported
Possible look of Zabbix 5.0
UI modules

Extend functionality of Zabbix UI
3rd party modules and reporting
New dashboard widgets (5.2?)
Detailed roadmap will be published next week!

https://www.zabbix.com/roadmap
加入组织

扫码入群  关注公众号  关注微博
联系我们

021-6978-6188

china@zabbix.com

www.zabbix.com/cn
www.grandage.cn

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Thank you!

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