What's new in Zabbix 3.4

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## What do we have today?

<table>
<thead>
<tr>
<th>Version</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>Out of support since May 2017</td>
</tr>
<tr>
<td>2.2 LTS</td>
<td>Supported till August 2019</td>
</tr>
<tr>
<td>2.4</td>
<td>Out of support since March 2016</td>
</tr>
<tr>
<td>3.0 LTS</td>
<td>Supported till February 2021</td>
</tr>
<tr>
<td>3.2</td>
<td>Supported till November 2017</td>
</tr>
<tr>
<td>NEW 3.4</td>
<td>Supported till March 2018</td>
</tr>
<tr>
<td>4.0 LTS</td>
<td>Development in progress</td>
</tr>
</tbody>
</table>
1. Visualization
Multiple and customizable Dashboards
Dashboard sharing options
Other new dashboard features

- New widgets
- Granular filtering
- Cloning of dashboards
Improved Maps
Map elements visible to limited users
Full clone for Screens and Maps
2. Data collection and pre-processing
New agent item keys

vfs.dir.size[dir,<regex_incl>,<regex_excl>,<mode>,<max_depth>]
Displays the size of directory (in bytes)

**mode:**  apparent  disk

`du -sb dir`  `du -s -Bl dir`
New agent item keys

`vfs.dir.size[dir,<regex_incl>,<regex_excl>,<mode>,<max_depth>]`
Displays the size of directory (in bytes)

**mode:** apparent disk
- `du -sb dir`
- `du -s -B1 dir`

`proc.num[name>,<user>,<state>,<cmdline>]`
Displays the number of processes

New options for **state:**
- disk - uninterruptible sleep
- trace – stopped
- all (default)
- run - running
- sleep - interruptible sleep
- zomb - zombie
New internal item keys

zabbix[host, discovery, interfaces]
Returns a JSON with all host interfaces. Useful for LLD

```
{
    "data": [ {
        "{#IF.CONN}": "192.168.3.1",
        "{#IF.IP}": "192.168.3.1",
        "{#IF.DNS}": "",
        "{#IF.PORT}": "10050",
        "{#IF.TYPE}": "AGENT",
        "{#IF.DEFAULT}": 1
    } ]
}
```
New internal item keys

zabbix[host, discovery, interfaces]
Returns a JSON with all host interfaces. Useful for LLD

```
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    "data": [
        {
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            "{#IF.IP}": "192.168.3.1",
            "{#IF.DNS}": "",
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            "{#IF.TYPE}": "AGENT",
            "{#IF.DEFAULT}": 1
        }
    ]
}
```

zabbix[preprocessing_queue]
Used to monitor the preprocessing queue length
Item value preprocessing

[Image of Zabbix interface showing preprocessing steps for item values]
New preprocessing options

Regular expression - find match by a regular expression
(Combination of match / replace / magic)

XML XPath - extract value or fragment from XML data using Xpath

JSON Path - extract value or fragment from JSON data using JSONPath
(only a limited set of JSONPath features is supported)

Additionally Delta (simple change) and Delta (speed per second) options have been renamed to Simple change and Change per second
Examples of item preprocessing

| 12°C | Right trim | Temperature: 12 |
### Examples of item preprocessing

<table>
<thead>
<tr>
<th>12° C</th>
<th>Right trim</th>
<th>Temperature: 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>{ &quot;users&quot;: 10004 }</td>
<td>JSON</td>
<td>User count: 10004</td>
</tr>
</tbody>
</table>

*Note: The image contains a table with examples of item preprocessing, including temperature and user count.*
Examples of item preprocessing

<table>
<thead>
<tr>
<th>12 C</th>
<th>Right trim</th>
<th>Temperature: 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>{ &quot;users&quot;: 10004 }</td>
<td>JSON</td>
<td>User count: 10004</td>
</tr>
<tr>
<td>&quot;GET /index.html HTTP/1.0&quot; 200 28083</td>
<td>Regexp</td>
<td>Response code: 200 Size: 28083</td>
</tr>
</tbody>
</table>
## Examples of item preprocessing

<table>
<thead>
<tr>
<th>12 C</th>
<th>Right trim</th>
<th>Temperature: <strong>12</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><code>{ &quot;users&quot;: **10004** }</code></td>
<td>JSON</td>
<td><strong>User count: 10004</strong></td>
</tr>
</tbody>
</table>
| "GET /index.html HTTP/1.0" **200 28083** | Regexp     | **Response code: 200**  
|                       |            | **Size: 28083**      |
| Unstructured text     | Regexp     | **Version: Apache 2.2.15 (Unix)**  
|                       |            | **DNS lookup threads: 10** |
### Mass processing of metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>InnoDB_buffer_pool_dump_status</td>
<td>0</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_load_status</td>
<td>414</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_resize_status</td>
<td>513</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_pages_data</td>
<td>8404992</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_bytes_data</td>
<td>0</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_pages_dirty</td>
<td>37</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_pages_flushed</td>
<td>7676</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_pages_free</td>
<td>2</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_pages_misc</td>
<td>0</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_pages_total</td>
<td>6191</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_readahead_rnd</td>
<td>0</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_readahead</td>
<td>2535</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_readahead_evicted</td>
<td>479</td>
</tr>
<tr>
<td>InnoDB_buffer_pool_readahead_requests</td>
<td>0</td>
</tr>
<tr>
<td>InnoDB_data_fsyncs</td>
<td>515</td>
</tr>
<tr>
<td>InnoDB_data_lsyncs</td>
<td>7</td>
</tr>
<tr>
<td>InnoDB_data_pending_lsync</td>
<td>0</td>
</tr>
<tr>
<td>InnoDB_data_pending_lreads</td>
<td>0</td>
</tr>
<tr>
<td>InnoDB_data_pending_writes</td>
<td>0</td>
</tr>
<tr>
<td>InnoDB_data_read</td>
<td>7918800</td>
</tr>
<tr>
<td>InnoDB_data_reads</td>
<td>586</td>
</tr>
<tr>
<td>InnoDB_data_writes</td>
<td>54</td>
</tr>
<tr>
<td>InnoDB_data_written</td>
<td>641024</td>
</tr>
</tbody>
</table>
Mass processing of metrics
3. Top user requests
TOP 4 Remote command execution by proxies

Zabbix Proxy does not proxy remote commands

Type: Custom script
Execute on: Zabbix agent, Zabbix server (proxy), Zabbix server

Service Restarted!
TOP 10 Configurable end-point for JMX requests
JMX LLD

```
jmx.discovery # Retrieve all JMX MBean attributes

jmx.discovery[beans] # Retrieve all JMX Mbeans

jmx.discovery[attributes,"*:type=GarbageCollector,name=*"]
 # Retrieve all attributes of all garbage collectors

jmx.discovery[beans,"*:type=GarbageCollector,name=*"]
 # Retrieve all garbage collectors
```
TOP 8 Notifications on problem acknowledgement
4. Performance and scalability
Server side performance

Less time spent on locking

More efficient configuration Sync

Optimized server-proxy protocol
Parallel processing of alerts

Concurrency

Alert manager process

Number of attempts

Time between attempts

StartAlerters = 1-100
5. Out of the box templates
Standardized templates for network devices
6. Major improvements
PCRE regular expressions

No more inconsistency between Zabbix Frontend and Zabbix Server!

Get advantage of all capabilities of PCRE
URL-encoding support in web monitoring

Name: Zabbix.com admin page
URL: https://www.zabbix.com/

Query fields:
- Name: act, Value: admin
- Name: token, Value: $0p3r_s33c;R3T_9&/

Post type: Form data
Post fields:
- Name: submit, Value: Login

Variables:
- Name: name, Value: value

Headers:
- Name: Content-Type, Value: application/x-www-form-urlencoded; charset=utf-8
- Name: Is-Admin, Value: yes,please
Management of time periods using macros

Macros

<table>
<thead>
<tr>
<th>Macro</th>
<th>Value</th>
<th>Remove</th>
</tr>
</thead>
<tbody>
<tr>
<td>{SEVERE_MORNING}</td>
<td>h10</td>
<td></td>
</tr>
<tr>
<td>{SNMP_COMMUNITY}</td>
<td>public</td>
<td></td>
</tr>
<tr>
<td>{WORKING_TIME}</td>
<td>1-5 9:00-18:00</td>
<td></td>
</tr>
</tbody>
</table>
Management of time periods using macros
Management of time periods using macros
7.

Minor improvements
Minor improvements

Host macro support in event tags

{HOST.HOST<1-9>}, {HOST.NAME<1-9>},
{HOST_CONN<1-9>}, {HOST.DNS<1-9>},
{HOST.IP<1-9>}, {HOST.PORT<1-9>},
{HOST.ID<1-9>}

Minor improvements

Host macro support in event tags

{HOST.HOST<1-9>}, {HOST.NAME<1-9>},
{HOST.CONN<1-9>}, {HOST.DNS<1-9>},
{HOST.IP<1-9>}, HOST.PORT<1-9>},
{HOST.ID<1-9>}

No support for IE9 and IE10 anymore
Minor improvements

Host macro support in event tags
{HOST_HOST<1-9>}, {HOST_NAME<1-9>}, {HOSTCONN<1-9>}, {HOST_DNS<1-9>}, {HOST_IP<1-9>}, HOST_PORT<1-9>, {HOST_ID<1-9>}

No support for IE9 and IE10 anymore

Increased field size
SNMP OID: 255 -> 512
Flexible interval period: 255 -> 1024
Media type, when active: 100
Minor improvements

Added support for AtomicBoolean, AtomicInteger, and AtomicLong types to Java gateway
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AtomicBoolean, AtomicInteger, and AtomicLong
types to Java gateway

IPMI polling: only one connection to BMC controllers
New IPMI manager process
Low level discovery

Added support of LLD macros in function parameters of
✔ Trigger prototype expression

✔ When using function with ITEM.VALUE, ITEM.LASTVALUE in trigger prototype name, description and tags

✔ Graph prototype name simple macros like `{host:key[].func()}`
Return code check for scripts and commands

User params

Remote commands

system.run[]
Reduced default retention period for internal items
Upgrading
Just follow standard procedure

Download from www.zabbix.com/download

Upgrade Zabbix Server and Proxies

Update Zabbix frontend files

Database is upgraded automatically: should take a few minutes
Thank you