

## 8 Internal checks

### Overview

Internal checks allow to monitor the internal processes of Zabbix. In other words, you can monitor what goes on with Zabbix server or Zabbix proxy.

Internal checks are calculated:

- on Zabbix server - if the host is monitored by server
- on Zabbix proxy - if the host is monitored by proxy

Internal checks are processed by server or proxy regardless of host maintenance status.

To use this item, choose the **Zabbix internal** item type.

Internal checks are processed by Zabbix pollers.

### Supported checks

- Parameters without angle brackets are constants - for example, 'host' and 'available' in `zabbix[host,<type>,available]`. Use them in the item key *as is*.
- Values for items and item parameters that are "not supported on proxy" can only be gathered if the host is monitored by server. And vice versa, values "not supported on server" can only be gathered if the host is monitored by proxy.

|                             |   | Key          |  |
|-----------------------------|---|--------------|--|
| ▲                           | Description   | Return value | Comments   |
| <b>zabbix[boottime]</b>     |   |              |  |
|                             | Startup time of Zabbix server or Zabbix proxy process in seconds. | Integer.     |  |
| <b>zabbix[history]</b>      |   |              |  |
|                             | Number of values stored in the HISTORY table.                     | Integer.     | Do not use if MySQL InnoDB, Oracle or PostgreSQL is used!<br><i>(not supported on proxy)</i>   |
| <b>zabbix[history_log]</b>  |   |              |  |
|                             | Number of values stored in the HISTORY_LOG table.                 | Integer.     | Do not use if MySQL InnoDB, Oracle or PostgreSQL is used!<br><i>(not supported on proxy)</i>   |
| <b>zabbix[history_str]</b>  |   |              |  |
|                             | Number of values stored in the HISTORY_STR table.                 | Integer.     | Do not use if MySQL InnoDB, Oracle or PostgreSQL is used!<br><i>(not supported on proxy)</i>   |
| <b>zabbix[history_text]</b> |   |              |  |
|                             | Number of values stored in the HISTORY_TEXT table.                | Integer.     | Do not use if MySQL InnoDB, Oracle or PostgreSQL is used!<br><i>(not supported on proxy)</i>   |
| <b>zabbix[history_uint]</b> |   |              |  |
|                             | Number of values stored in the HISTORY_UINT table.                | Integer.     | Do not use if MySQL InnoDB, Oracle or PostgreSQL is used!<br>This item is supported since Zabbix 1.8.3.<br><i>(not supported on proxy)</i> |
| <b>zabbix[host,,items]</b>  |   |              |  |

|  |   | <b>Key</b>  |   |
|--|---|---|---|
| ▲  | <b>Description</b>  | <b>Return value</b>   | <b>Comments</b>   |
|  | Number of enabled items (supported and not supported) on the host.  | Integer.  | This item is supported since Zabbix 3.0.0.  |
| <b>zabbix[host,,items_unsupported]</b>     |   |   |   |
|  | Number of enabled unsupported items on the host.  | Integer.  | This item is supported since Zabbix 3.0.0.*   |
| <b>zabbix[host,,maintenance]</b>           |   |   |   |
|  | Current maintenance status of a host.   | 0 - host in normal state,<br>1 - host in maintenance with data collection,<br>2 - host in maintenance without data collection.  | This item is always processed by Zabbix server regardless of host location (on server or proxy). The proxy will not receive this item with configuration data. The second parameter must be empty and is reserved for future use.                   |
| <b>zabbix[host,discovery,interfaces]</b>   |   |   |   |
|  | Details of all configured interfaces of the host in Zabbix frontend.  | JSON object.  | This item can be used in <a href="#">low-level discovery</a> . This item is supported since Zabbix 3.4.0. <i>(not supported on proxy)</i>   |
| <b>zabbix[host,&lt;type&gt;,available]</b> |   |   |   |
|  | Availability of a particular type of checks on the host. The value of this item corresponds to availability icons in the host list. | 0 - not available,<br>1 - available, 2 - unknown.   | Valid <b>types</b> are:<br><i>agent, snmp, ipmi, jmx</i><br><br>The item value is calculated according to configuration parameters regarding host <a href="#">unreachability/unavailability</a> .<br><br>This item is supported since Zabbix 2.0.0. |
| <b>zabbix[hosts]</b>                       |   |   |   |
|  | Number of monitored hosts.  | Integer.  |   |
| <b>zabbix[items]</b>                       |   |   |   |
|  | Number of enabled items (supported and not supported).  | Integer.  |   |
| <b>zabbix[items_unsupported]</b>           |   |   |   |
|  | Number of not supported items.  | Integer.  |   |
| <b>zabbix[java,,&lt;param&gt;]</b>         |   |   |   |
|  | Information about Zabbix Java gateway.  | If <param> is <i>ping</i> , "1" is returned. Can be used to check Java gateway availability using nodata() trigger function.<br><br>If <param> is <i>version</i> , version of Java gateway is returned.<br>Example:<br>"2.0.0". | Valid values for <b>param</b> are:<br><i>ping, version</i><br><br>Second parameter must be empty and is reserved for future use.  |
| <b>zabbix[lld_queue]</b>                   |   |   |   |
|  | Count of values enqueued in the low-level discovery processing queue.   | Integer.  | This item can be used to monitor the low-level discovery processing queue length.<br><br>This item is supported since Zabbix 4.2.0.   |

| <b>Key</b>   |                               |  |
|--|-------------------------------|--|
| ▲ <b>Description</b>   | <b>Return value</b>           | <b>Comments</b>  |
| <b>zabbix[preprocessing_queue]</b>   |                               |  |
| Count of values enqueued in the preprocessing queue.   | Integer.                      | This item can be used to monitor the preprocessing queue length.<br><br>This item is supported since Zabbix 3.4.0.   |
| <b>zabbix[process,&lt;type&gt;,&lt;mode&gt;,&lt;state&gt;]</b>   |                               |  |
| <p>Time a particular Zabbix process or a group of processes (identified by &lt;type&gt; and &lt;mode&gt;) spent in &lt;state&gt; in percentage. It is calculated for the last minute only.</p> <p>If &lt;mode&gt; is Zabbix process number that is not running (for example, with 5 pollers running &lt;mode&gt; is specified to be 6), such an item will turn into unsupported state.</p> <p>Minimum and maximum refers to the usage percentage for a single process. So if in a group of 3 pollers usage percentages per process were 2, 18 and 66, min would return 2 and max would return 66.</p> <p>Processes report what they are doing in shared memory and the self-monitoring process summarizes that data each second. State changes (busy/idle) are registered upon change - thus a process that becomes busy registers as such and doesn't change or update the state until it becomes idle. This ensures that even fully hung processes will be correctly registered as 100% busy.</p> <p>Currently, "busy" means "not sleeping", but in the future additional states might be introduced - waiting for locks, performing database queries, etc.</p> <p>On Linux and most other systems, resolution is 1/100 of a second.</p> | Percentage of time.<br>Float. | <p>Supported <b>types</b> of <a href="#">server processes</a>:<br/><i>alert manager, alerter, configuration syncer, discoverer, escalator, history syncer, housekeeper, http poller, icmp pinger, ipmi manager, ipmi poller, java poller, lld manager, lld worker, poller, preprocessing manager, preprocessing worker, proxy poller, self-monitoring, snmp trapper, task manager, timer, trapper, unreachable poller, vmware collector</i></p> <p>Supported <b>types</b> of <a href="#">proxy processes</a>:<br/><i>configuration syncer, data sender, discoverer, heartbeat sender, history syncer, housekeeper, http poller, icmp pinger, ipmi manager, ipmi poller, java poller, poller, self-monitoring, snmp trapper, task manager, trapper, unreachable poller, vmware collector</i></p> <p>Valid <b>modes</b> are:<br/><i>avg</i> - average value for all processes of a given type (default)<br/><i>count</i> - returns number of forks for a given process type, &lt;state&gt; should not be specified<br/><i>max</i> - maximum value<br/><i>min</i> - minimum value<br/><i>&lt;process number&gt;</i> - process number (between 1 and the number of pre-forked instances). For example, if 4 trappers are running, the value is between 1 and 4.</p> <p>Valid <b>states</b> are:<br/><i>busy</i> - process is in busy state, for example, processing request (default).<br/><i>idle</i> - process is in idle state doing nothing.</p> <p>Examples:<br/>⇒ zabbix[process,poller,avg,busy] → average time of poller processes spent doing something during the last minute<br/>⇒ zabbix[process,"icmp pinger",max,busy] → maximum time spent doing something by any ICMP pinger process during the last minute<br/>⇒ zabbix[process,"history syncer",2,busy] → time spent doing something by history syncer number 2 during the last minute<br/>⇒ zabbix[process,trapper,count] → amount of currently running trapper processes</p> |
| <b>zabbix[proxy,&lt;name&gt;,&lt;param&gt;]</b>  |                               |  |

| Key  |  |   |   |
|--|--|---|---|
| ▲  | Description  | Return value                                | Comments  |
|  | Information about Zabbix proxy.  | Integer.                                    | <p><b>name:</b> proxy name</p> <p>Valid values for <b>param</b> are:<br/><i>lastaccess</i> - timestamp of last heart beat message received from proxy</p> <p>Example:<br/>⇒ zabbix[proxy,"Germany",lastaccess]</p> <p>fuzzytime() <a href="#">trigger function</a> can be used to check availability of proxies.<br/>This item is always processed by Zabbix server regardless of host location (on server or proxy).</p>   |
| <b>zabbix[proxy_history]</b>   |  |   |   |
|  | Number of values in the proxy history table waiting to be sent to the server.                                      | Integer.                                    | <i>(not supported on server)</i>  |
| <b>zabbix[queue,&lt;from&gt;,&lt;to&gt;]</b>                               |  |   |   |
|  | Number of monitored items in the queue which are delayed at least by <from> seconds but less than by <to> seconds. | Integer.                                    | <p><b>from</b> - default: 6 seconds<br/><b>to</b> - default: infinity<br/><a href="#">Time-unit symbols</a> (s,m,h,d,w) are supported for these parameters.</p>   |
| <b>zabbix[rcache,&lt;cache&gt;,&lt;mode&gt;]</b>                           |  |   |   |
|  | Availability statistics of Zabbix configuration cache.   | Integer (for size); float (for percentage). | <p><b>cache:</b> <i>buffer</i></p> <p>Valid <b>modes</b> are:<br/><i>total</i> - total size of buffer<br/><i>free</i> - size of free buffer<br/><i>pfree</i> - percentage of free buffer<br/><i>used</i> - size of used buffer<br/><i>puused</i> - percentage of used buffer</p> <p><i>puused</i> mode is supported since Zabbix 4.0.0.</p>   |
| <b>zabbix[requiredperformance]</b>   |  |   |   |
|  | Required performance of Zabbix server or Zabbix proxy, in new values per second expected.                          | Float.                                      | Approximately correlates with "Required server performance, new values per second" in <a href="#">Reports</a> → <a href="#">System information</a> .  |
| <b>zabbix[stats,&lt;ip&gt;,&lt;port&gt;]</b>                               |  |   |   |
|  | Remote Zabbix server or proxy internal metrics.  | JSON object.                                | <p><b>ip</b> - IP/DNS/network mask list of servers/proxies to be remotely queried (default is 127.0.0.1)<br/><b>port</b> - port of server/proxy to be remotely queried (default is 10051)</p> <p>Note that the stats request will only be accepted from the addresses listed in the 'StatsAllowedIP' <a href="#">server/proxy</a> parameter on the target instance.</p> <p>A selected set of internal metrics is returned by this item. For details, see <a href="#">Remote monitoring of Zabbix stats</a>.</p> <p>Supported since 4.2.0.</p> |
| <b>zabbix[stats,&lt;ip&gt;,&lt;port&gt;,queue,&lt;from&gt;,&lt;to&gt;]</b> |  |   |   |

| Key   |   |   |  |
|---|---|---|--|
| ▲   | Description   | Return value  | Comments   |
|   | Remote Zabbix server or proxy internal queue metrics (see <code>zabbix[queue,&lt;from&gt;,&lt;to&gt;]</code> ). | JSON object.  | <p><b>ip</b> - IP/DNS/network mask list of servers/proxies to be remotely queried (default is 127.0.0.1)</p> <p><b>port</b> - port of server/proxy to be remotely queried (default is 10051)</p> <p><b>from</b> - delayed by at least (default is 6 seconds)</p> <p><b>to</b> - delayed by at most (default is infinity)</p> <p>Note that the stats request will only be accepted from the addresses listed in the 'StatsAllowedIP' <a href="#">server/proxy</a> parameter on the target instance.</p> <p>Supported since 4.2.0.</p>   |
| <b>zabbix[trends]</b>                         |   |   |  |
|   | Number of values stored in the TRENDS table.  | Integer.  | Do not use if MySQL InnoDB, Oracle or PostgreSQL is used!<br><i>(not supported on proxy)</i>   |
| <b>zabbix[trends_uint]</b>                    |   |   |  |
|   | Number of values stored in the TRENDS_UINT table.   | Integer.  | Do not use if MySQL InnoDB, Oracle or PostgreSQL is used!<br>This item is supported since Zabbix 1.8.3.<br><i>(not supported on proxy)</i>   |
| <b>zabbix[triggers]</b>                       |   |   |  |
|   | Number of enabled triggers in Zabbix database, with all items enabled on enabled hosts.                         | Integer.  | <i>(not supported on proxy)</i>  |
| <b>zabbix[uptime]</b>                         |   |   |  |
|   | Uptime of Zabbix server or Zabbix proxy process in seconds.   | Integer.  |  |
| <b>zabbix[vcache,buffer,&lt;mode&gt;]</b>     |   |   |  |
|   | Availability statistics of Zabbix value cache.  | Integer (for size); float (for percentage).   | <p>Valid <b>modes</b> are:</p> <p><i>total</i> - total size of buffer</p> <p><i>free</i> - size of free buffer</p> <p><i>pfree</i> - percentage of free buffer</p> <p><i>used</i> - size of used buffer</p> <p><i>pusd</i> - percentage of used buffer</p> <p><i>(not supported on proxy)</i></p>  |
| <b>zabbix[vcache,cache,&lt;parameter&gt;]</b> |   |   |  |
|   | Effectiveness statistics of Zabbix value cache.   | <p>Integer.</p> <p>With the <i>mode</i> parameter:<br/>0 - normal mode,<br/>1 - low memory mode</p> | <p>Valid <b>parameter</b> values are:</p> <p><i>requests</i> - total number of requests</p> <p><i>hits</i> - number of cache hits (history values taken from the cache)</p> <p><i>misses</i> - number of cache misses (history values taken from the database)</p> <p><i>mode</i> - value cache operating mode</p> <p>This item is supported since Zabbix 2.2.0 and the <i>mode</i> parameter since Zabbix 3.0.0.<br/><i>(not supported on proxy)</i></p> <p>You may use this key with the <i>Change per second</i> preprocessing step in order to get values per second statistics.</p> |
| <b>zabbix[vmware,buffer,&lt;mode&gt;]</b>     |   |   |  |
|   | Availability statistics of Zabbix vmware cache.   | Integer (for size); float (for percentage).   | <p>Valid <b>modes</b> are:</p> <p><i>total</i> - total size of buffer</p> <p><i>free</i> - size of free buffer</p> <p><i>pfree</i> - percentage of free buffer</p> <p><i>used</i> - size of used buffer</p> <p><i>pusd</i> - percentage of used buffer</p>   |

| <b>Key</b>                                       |  |                     |                                  |
|--|--|---------------------|----------------------------------|
| <b>▲</b>   | <b>Description</b>                                 | <b>Return value</b> | <b>Comments</b>                  |
| <b>zabbix[wcache,&lt;cache&gt;,&lt;mode&gt;]</b> |  |                     |                                  |
|  | Statistics and availability of Zabbix write cache. |                     | Specifying <cache> is mandatory. |

|               |  | Key   |                         |   |          |   |
|---------------|--|---|-------------------------|---|----------|---|
| ▲             | Description  |   | Return value            | Comments  |          |   |
| Cache         | Mode   |   |                         |   |          |   |
|               |  | values                                      | all<br><i>(default)</i> | Total number of values processed by Zabbix server or Zabbix proxy, except unsupported items.                                | Integer. | Counter.<br>You may use this key with the <i>Change per second</i> preprocessing step in order to get values per second statistics. |
|               |  |   | float                   | Number of processed float values.   | Integer. | Counter.  |
|               |  |   | uint                    | Number of processed unsigned integer values.  | Integer. | Counter.  |
|               |  |   | str                     | Number of processed character/string values.  | Integer. | Counter.  |
|               |  |   | log                     | Number of processed log values.   | Integer. | Counter.  |
|               |  |   | text                    | Number of processed text values.  | Integer. | Counter.  |
| not supported | Number of times item processing resulted in item becoming unsupported or keeping that state. |   | Integer.                | Counter.  |          |   |
| history       | pfree<br><i>(default)</i>  | Percentage of free history buffer.          | Float.                  | History cache is used to store item values. A low number indicates performance problems on the database side.               |          |   |
|               | free   | Size of free history buffer.                | Integer.                |   |          |   |
|               | total  | Total size of history buffer.               | Integer.                |   |          |   |
|               | used   | Size of used history buffer.                | Integer.                |   |          |   |
|               | pused  | Percentage of used history buffer.          | Float.                  | <i>pused</i> mode is supported since Zabbix 4.0.0.  |          |   |
| index         | pfree<br><i>(default)</i>  | Percentage of free history index buffer.    | Float.                  | History index cache is used to index values stored in history cache.<br><i>Index</i> cache is supported since Zabbix 3.0.0. |          |   |
|               | free   | Size of free history index history buffer.  | Integer.                |   |          |   |
|               | total  | Total size of history index history buffer. | Integer.                |   |          |   |
|               | used   | Size of used history index history buffer.  | Integer.                |   |          |   |
|               | pused  | Percentage of used history index buffer.    | Float.                  | <i>pused</i> mode is supported since Zabbix 4.0.0.  |          |   |
| trend         | pfree<br><i>(default)</i>  | Percentage of free trend cache.             | Float.                  | Trend cache stores aggregate for the current hour for all items that receive data.<br><i>(not supported on proxy)</i>       |          |   |
|               | free   | Size of free trend buffer.                  | Integer.                | <i>(not supported on proxy)</i>   |          |   |
|               | total  | Total size of trend buffer.                 | Integer.                | <i>(not supported on proxy)</i>   |          |   |
|               | used   | Size of used trend buffer.                  | Integer.                | <i>(not supported on proxy)</i>   |          |   |
|               | pused  | Percentage of used trend buffer.            | Float.                  | <i>(not supported on proxy)</i><br><i>pused</i> mode is supported since Zabbix 4.0.0.                                       |          |   |

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