1 Creating an item

Overview

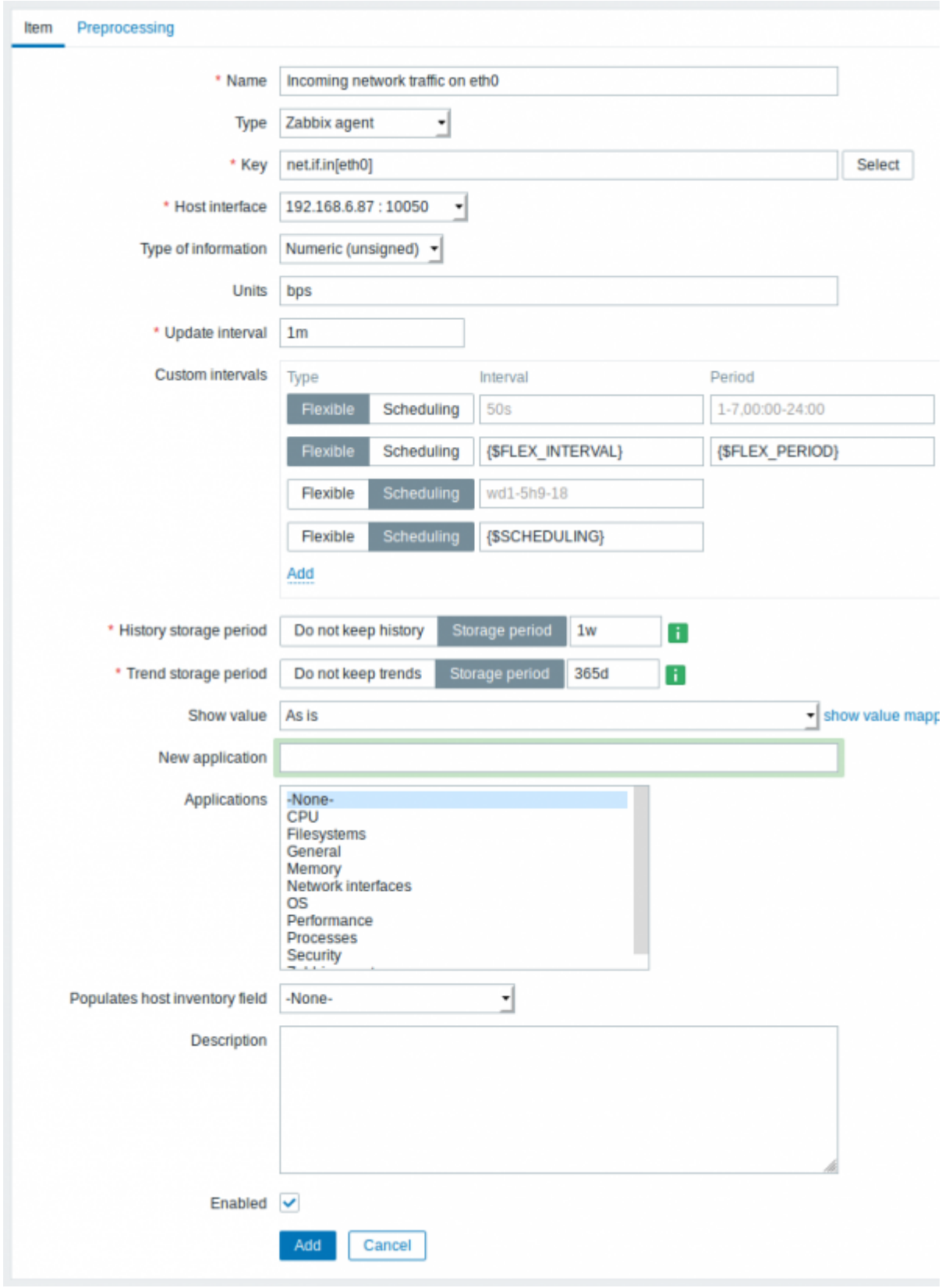
To create an item in Zabbix frontend, do the following:

- Go to: *Configuration* → *Hosts*
- Click on *Items* in the row of the host
- Click on *Create item* in the upper right corner of the screen
- Enter parameters of the item in the form

You can also create an item by opening an existing one, pressing the *Clone* button and then saving under a different name.

Configuration

The **Item** tab contains general item attributes.



All mandatory input fields are marked with a red asterisk.

Parameter	Description
Name	Item name. *Note* that the use of positional macros ($1, $2… $9 - referring to the first, second... ninth parameter of the item key) is now deprecated. For example: Free disk space on $1. If the item key is "vfs.fs.size[/,free]", the description will automatically change to "Free disk space on /"

Parameter	Description
Type	Item type. See individual item type sections.
Key	Item key (up to 2048 characters). The supported item keys can be found in individual item type sections. The key must be unique within a single host. If key type is 'Zabbix agent', 'Zabbix agent (active)', 'Simple check' or 'Zabbix aggregate', the key value must be supported by Zabbix agent or Zabbix server. See also: the correct key format.
Host interface	Select the host interface. This field is available when editing an item on the host level.
Type of information	Type of data as stored in the database after performing conversions, if any. **Numeric (unsigned)** - 64bit unsigned integer **Numeric (float)** - floating point number Negative values can be stored. Allowed range: -999999999999.9999 to 999999999999.9999. Starting with Zabbix 2.2, receiving values in scientific notation is also supported. E.g. 1e+7, 1e-4. **Character** - short text data **Log** - long text data with optional log related properties (timestamp, source, severity, logeventid) **Text** - long text data. See also text data limits.
Units	If a unit symbol is set, Zabbix will add post processing to the received value and display it with the set unit postfix. By default, if the raw value exceeds 1000, it is divided by 1000 and displayed accordingly. For example, if you set *bps* and receive a value of 881764, it will be displayed as 881.76 Kbps. Special processing is used for **B** (byte), **Bps** (bytes per second) units, which are divided by 1024. Thus, if units are set to **B** or **Bps** Zabbix will display: 1 as 1B/1Bps 1024 as 1KB/1KBps 1536 as 1.5KB/1.5KBps Special processing is used if the following time-related units are used: **unixtime** - translated to “yyyy.mm.dd hh:mm:ss”. To translate correctly, the received value must be a *Numeric (unsigned)* type of information. **uptime** - translated to “hh:mm:ss” or “N days, hh:mm:ss” For example, if you receive the value as 881764 (seconds), it will be displayed as “10 days, 04:56:04” **s** - translated to “yyy mmm ddd hhh mmm sss ms”; parameter is treated as number of seconds. For example, if you receive the value as 881764 (seconds), it will be displayed as “10d 4h 56m” Only 3 upper major units are shown, like “1m 15d 5h” or “2h 4m 46s”. If there are no days to display, only two levels are displayed - “1m 5h” (no minutes, seconds or milliseconds are shown). Will be translated to “< 1 ms” if the value is less than 0.001. *Note* that if a unit is prefixed with !, then no unit prefixes/processing is applied to item values. See unit blacklisting.

Parameter	Description
Update interval	Retrieve a new value for this item every N seconds. Maximum allowed update interval is 86400 seconds (1 day). Time suffixes are supported, e.g. 30s, 1m, 2h, 1d. User macros are supported. A single macro has to fill the whole field. Multiple macros in a field or macros mixed with text are not supported. *Note*: If set to "0", the item will not be polled. However, if a custom interval (flexible/scheduling) also exists with a non-zero value, the item will be polled during the custom interval duration. *Note* that the first item poll after the item became active or after update interval change might occur earlier than the configured value. An existing passive item can be polled for value immediately by pushing the *Check now* button.
Custom intervals	You can create custom rules for checking the item: **Flexible** - create an exception to the *Update interval* (interval with different frequency) **Scheduling** - create a custom polling schedule. For detailed information see Custom intervals. Time suffixes are supported in the *Interval* field, e.g. 30s, 1m, 2h, 1d. User macros are supported. A single macro has to fill the whole field. Multiple macros in a field or macros mixed with text are not supported. Scheduling is supported since Zabix 3.0.0. *Note*: Not available for Zabbix agent active items.
History storage period	Select either: **Do not keep history** - item history is not stored. Useful for master items if only dependent items need to keep history. This setting cannot be overridden by global housekeeper settings. **Storage period** - specify the duration of keeping detailed history in the database (1 hour to 25 years). Older data will be removed by the housekeeper. Stored in seconds. Time suffixes are supported, e.g. 2h, 1d. User macros are supported. The *Storage period* value can be overridden globally in *Administration* → *General* → *Housekeeper*. If a global overriding setting exists, a green  info icon is displayed. If you position your mouse on it, a warning message is displayed, e. g. *Overridden by global housekeeper settings (1d)*. It is recommended to keep the recorded values for the smallest possible time to reduce the size of value history in the database. Instead of keeping a long history of values, you can keep longer data of trends. See also History and trends.

Parameter	Description
Trend storage period	Select either: **Do not keep trends** - trends are not stored. This setting cannot be overridden by global housekeeper settings. **Storage period** - specify the duration of keeping aggregated (hourly min, max, avg, count) history in the database (1 day to 25 years). Older data will be removed by the housekeeper. Stored in seconds. Time suffixes are supported, e.g. 24h, 1d. User macros are supported. The *Storage period* value can be overridden globally in *Administration* → *General* → *Housekeeper*. If a global overriding setting exists, a green info icon is displayed. If you position your mouse on it, a warning message is displayed, e. g. *Overridden by global housekeeper settings (7d)*. *Note:* Keeping trends is not available for non-numeric data - character, log and text. See also History and trends.
Show value	Apply value mapping to this item. Value mapping does not change received values, it is for displaying data only. It works with *Numeric(unsigned)*, *Numeric(float)* and *Character* items. For example, “Windows service states”.
Log time format	Available for items of type **Log** only. Supported placeholders: * **y**: *Year (1970-2038)* * **M**: *Month (01-12)* * **d**: *Day (01-31)* * **h**: *Hour (00-23)* * **m**: *Minute (00-59)* * **s**: *Second (00-59)* If left blank the timestamp will not be parsed. For example, consider the following line from the Zabbix agent log file: “ 23480:20100328:154718.045 Zabbix agent started. Zabbix 1.8.2 (revision 11211).” It begins with six character positions for PID, followed by date, time, and the rest of the line. Log time format for this line would be “ppppp:yyyyMMdd:hhmmss”. Note that “p” and “:” chars are just placeholders and can be anything but “yMdhms”.
New application	Enter the name of a new application for the item.
Applications	Link item to one or more existing applications.
Populates host inventory field	You can select a host inventory field that the value of item will populate. This will work if automatic inventory population is enabled for the host. This field is not available if *Type of information* is set to 'Log'.
Description	Enter an item description.
Enabled	Mark the checkbox to enable the item so it will be processed.

Item type specific fields are described on corresponding pages.

When editing an existing template level item on a host level, a number of fields are read-only. You can use the link in the form header and go to the template level and edit them there, keeping in mind that the changes on a template level will change the item for all hosts that the template is linked to.

Item value preprocessing

The **Preprocessing** tab allows to define transformation rules for the received values.

Testing

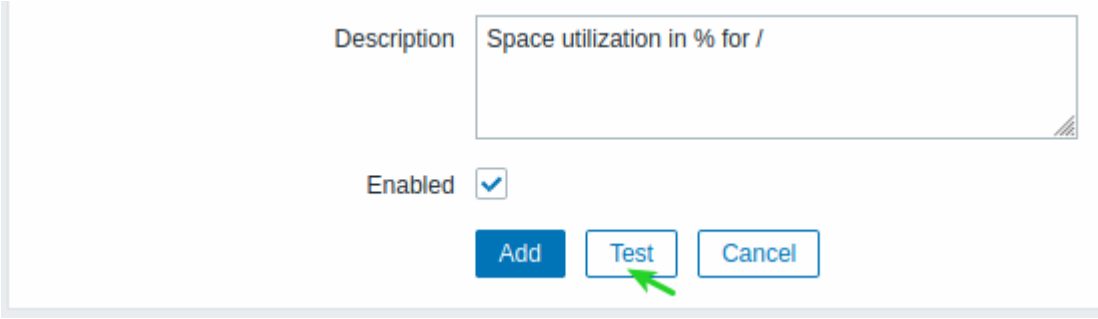
It is possible to test an item and, if configured correctly, get a real value in return. Testing can occur even before an item is saved.

Testing is available for host and template items. Testing is not available for active items.

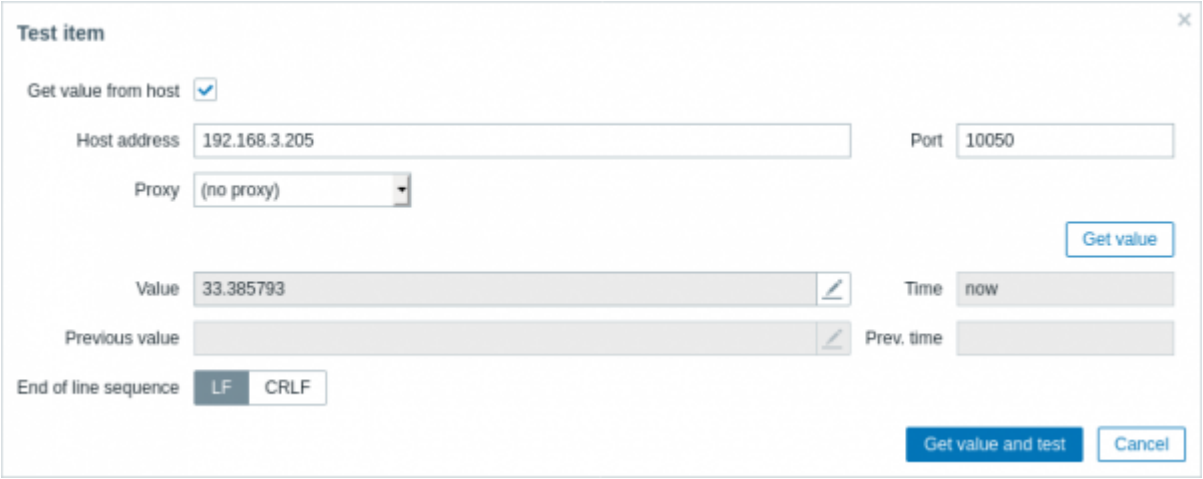
Item testing is available for the following passive item types:

- Zabbix agent
- SNMP agent (v1, v2, v3)
- IPMI agent
- SSH checks
- Telnet checks
- JMX agent
- Simple checks (except `vmware.*` items)
- Zabbix internal
- Zabbix aggregate
- Calculated items
- External checks
- Database monitor
- HTTP agent

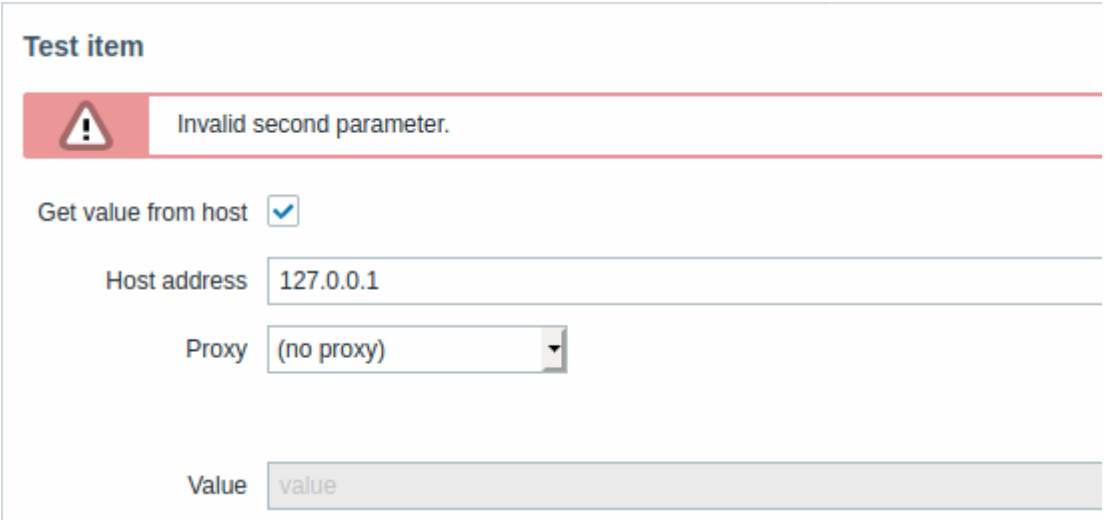
To test an item, click on the *Test* button at the bottom of the item configuration form.



When the item testing form opens it will have the required host parameters (interface, port, proxy name/no proxy) filled automatically. To test the item, click on *Get value*. If the value is retrieved successfully, it will fill the *Value* field.



If the configuration is incorrect, an error message is displayed describing the possible cause.



A successfully retrieved value from host can also be used to test preprocessing steps.

Form buttons

Buttons at the bottom of the form allow to perform several operations.

Add	Add an item. This button is only available for new items.
Update	Update the properties of an item.
Clone	Create another item based on the properties of the current item.
Execute now	Execute a check for a new item value immediately. Supported for **passive** checks only (see more details). *Note* that when checking for a value immediately, configuration cache is not updated, thus the value will not reflect very recent changes to item configuration.
Test	Test if item configuration is correct by getting a value.
Clear history and trends	Delete the item history and trends.
Delete	Delete the item.
Clone	Cancel the editing of item properties.

Text data limits

Text data limits depend on the database backend. Before storing text values in the database they get truncated to match the database value type limit:

Database	Type of information		
	Character	**Log**	**Text**
MySQL	255 characters	65536 bytes	65536 bytes
PostgreSQL	255 characters	65536 characters	65536 characters
Oracle	255 characters	65536 characters	65536 characters

Unit blacklisting

By default, specifying a unit for an item results in a multiplier prefix being added - for example, an incoming value '2048' with unit 'B' would be displayed as '2KB'.

Any unit, however, can be prevented from being converted by using a `!` prefix, for example `!B`. To better illustrate how the conversion works with and without the blacklisting, see the following examples of values and units:

```
1024 !B -> 1024 B
1024 B -> 1 KB
61 !s -> 61 s
61 s -> 1m 1s
0 !uptime -> 0 uptime
0 uptime -> 00:00:00
0 !! -> 0 !
0 ! -> 0
```

Before Zabbix 4.0, there was a hardcoded unit blacklist consisting of `ms`, `rpm`, RPM, `%`. This blacklist has been deprecated, thus the correct way of blacklisting such units is `!ms`, `!rpm`, `!RPM`, `!%`.

Custom script limit

Available custom script length depends on the database used:

Database	*Limit in characters*	*Limit in bytes*
MySQL	65535	65535
Oracle Database	2048	4000
PostgreSQL	65535	not limited
SQLite (only Zabbix proxy)	65535	not limited

Unsupported items

An item can become unsupported if its value cannot be retrieved for some reason. Such items are still rechecked at a fixed interval, configurable in Administration section.

Unsupported items are reported as having a NOT SUPPORTED state.