

Summary

Currently, Zabbix doesn't provide good ways to debug trigger expression nor to put parts of trigger expression in alert messages in a convenient and unified way. There are some half-measures, such as {ITEM.VALUE}, default operational data or expression macros but these require additional efforts to deal with.

Zabbix must provide a convenient way to access an evaluated trigger expression or its parts.

Use cases

1. I want to know why my trigger has fired.
2. I want to include results of specific function into my alert messages.

Zabbix acceptance

1. New macros:
 - a. {FUNCTION.VALUE<N>}
 - i. N is between 1 (default) and 9
 - ii. Refers to Nth item-based function (i.e. function with /host/key as first parameter) of trigger expression
 1. Expanded to Nth item-based function calculated for the time of the event
 - iii. Available in:
 1. Trigger-based notifications and commands
 2. Problem update notifications and commands
 3. Trigger event names
 4. Manual event action scripts
 - iv. Returns *UNKNOWN* on error
 - v. Examples:
 1. $\text{last}(/host1/key1) > 50$ or $\text{avg}(/host2/key2,5m) > 50$
 - a. {FUNCTION.VALUE2} is result of $\text{avg}(/host2/key2,5m)$
 2. $\text{max}(\text{last}(/host1/key1), \text{avg}(/host2/key2,5m)) > 10$ or $\text{length}(\text{last}(/host1/key3)) > 5$
 - a. {FUNCTION.VALUE1} is result of $\text{last}(/host1/key1)$
 - b. {FUNCTION.VALUE2} is result of $\text{avg}(/host2/key2,5m)$
 - c. {FUNCTION.VALUE3} is result of $\text{last}(/host1/key3)$
 - d. Functions $\text{max}()$ and $\text{length}()$ are not item-based and thus not included
 - b. {TRIGGER.EXPRESSION.EXPLAIN}
 - i. Expanded to partially evaluated trigger expression
 1. Item-based functions must be calculated for the time of the event and replaced by results
 2. Other functions must remain as is
 - ii. Available in the same places as {FUNCTION.VALUE<N>}
 - iii. Returns or includes *UNKNOWN* on error(s)
 - iv. Examples:
 1. $\text{last}(/host1/key1) > 50$ or $\text{avg}(/host2/key2,5m) > 50$
 - a. {TRIGGER.EXPRESSION.EXPLAIN} is "10 > 50 or 20.5 > 50"
 2. $\text{max}(\text{last}(/host1/key1), \text{avg}(/host2/key2,5m)) > 10$ or $\text{length}(\text{last}(/host1/key3)) > \{\$THRESHOLD\}$
 - a. {TRIGGER.EXPRESSION.EXPLAIN} is "max(10, 20) > 50 or length("string") > 5"

Zabbix UI changes

1. N/A

Decisions made

1. N/A

Open questions

1. "Available in" list must be reconsidered if any of the listed items requires macro expansion by the front-end.

Changes log

- N/A