Zabbix as an IOT data processing and notification powerhouse

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Welcome to the place where your digital journey begins.
Best Worldwide IOT solution for cold chain monitoring
2017

Best Worldwide IOT solution for human trafficking control
2018
WHAT MAKES ZABBIX STAND-OUT?

- Throttling (with Discard unchanged with heartbeat)
  Up to 96% less records for volatility sensors

- Embedded data normalization with pre-processing steps
  Ideal for Analog measure sensors

- Calculated items for adaptive alert thresholds
  Adapt on-the-fly, critical when managing millions of devices

Integrations with visualization tools
Grafana helps us to reach industries with no IT-background

Distributed architecture with capacity to adapt its topology to
Offloading Servers with Proxies for specific locations can enable granular growth … a lifesaver for unexpected behavior
THROTTLING

Standard 5 seconds collection period equals to 518,400 values per month per sensor.

Throttling (with Discard unchanged with heartbeat) at 30 second rate with no changes on sensor state 86,400 values per month per sensor.

UP TO 83% LESS RECORDS FOR VOLATILITY SENSORS

UP TO 96% DATA REDUCTION WITH 1-HOUR HEARTBEAT PERIOD
### More Pre-processing

<table>
<thead>
<tr>
<th>Preprocessing steps</th>
<th>Name</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>JavaScript</td>
<td>return 250*(value/5) - 25</td>
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</tbody>
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Analog sensors reading to be mapped to adjusted values with all sort of formulas.

Pre-processing steps enable ingestion-level data normalization which prevents and alleviates Zabbix servers and overall event engine processing.

Example with pressure sensors that maps Voltage (V) to Pressure levels (PSI):

\[ p = 250 \left( \frac{V_{\text{low}}}{V_{\text{high}}} \right) - 25 \]

Enabling Zabbix to shine in particular applications like:

- Geological monitoring with piezometers, inclinometers and so on.
CALCULATED ITEMS

Using expressions on triggers opens the possibility to create “rolling windows” thresholds which adjust based on cumulative values of past performance.

Mapping this on a per trigger basis, allows for automation of key processes for

AVOID TOO LOOSE OR TOO STRICT ALERT THRESHOLDS FROM THE BEGINNING

AN AUTOMATION KEY ASSET THAT MAKES THE DIFFERENCE ON ENVIRONMENTS WITH A HIGH VOLUME OF SENSORS
DISTRIBUTED ARCHITECTURE

IOT Gateways and RTOS-ready sensors rely on light-weight data collection and ingestion agents.

Even without the features in Zabbix 5.2, data collection can be achieved easily and integrate with IOT Core components from vendors like AWS, Microsoft, Google.

Flexibility allow us to address any challenge in customer’s environments.

A LIGHTWEIGHT SOLUTION THAT CAN RUN ON REALLY SMALL IOT EDGE COMPONENTS WITH 1GB OF RAM OR LESS

Either using Zabbix agent or Cloud-providers MQTT clients.
Integrations with visualization tools

Grafana helps us to reach industries with no IT-background, which are most of the target opportunities in this domain.

Users expect highly intuitive dashboards.

Zabbix open integration with Grafana makes it simple to deliver fresh, modern and attractive visualizations into telemetry data.
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- **Distributed architecture with capacity to adapt its topology to**
  All types of data ingestion challenges

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Zabbix just keeps getting better … now go out and build!