Zabbix Report

Conceptual documentation for measurements

General definition

A measurement is a digital quantity (to be opposed to an “information” or a “state”) captured at a given moment, once or regularly and recorded in a measurement recording system for further operations and visualization.

Measurements can represent several things depending on how they are obtained:

- A quantity directly observable at the time of the measurement (e.g., the temperature of a liquid read on a thermometer at a time **t**)
- Counting a number of events from the beginning (absolute value)
- Counting a number of events in a given period (The measurement only makes sense in relation to the “examination range”)
- The sum (or calculation) of a certain number of quantities at an instant **t** (calculated measurement)
- The sum (or calculation) of a certain number of quantities in a given period (aggregated measurement)

Examination range

When observing a source for a certain amount of time, a measurement can be produced.

- Sample: The examination range is zero, the measurement is instantaneous (in the source, even if it can internally represent an aggregation over time)
- Common durations: examination ranges of 1 hour, 1 day, 1 week, 1 month are commonly defined. The measurement is a calculation of a quantity that requires the observation of the source during this time (e.g. number of connections to a data service **in the day**).

Sampling frequency

A measurement may be taken only once, but in general it is taken at regular intervals. The sampling frequency defines the frequency of the sampling.

Aggregated measures

An aggregate measurement combines several other measurements using an **aggregation function**.

Most common functions are **counting**, **sum**, **medium**. The measurements are aggregated on a **aggregation space**, i.e. a number of contexts that define which basic measures are included in the calculation. It might be a time period or an “administrative” division.

Example: Average over the month for the “Europe” region

Credits

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