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 is a measure obtained by combining several other measurements by a

aggregation function. The 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. For example, it can be a time period or an “administrative” division.

Example of an aggregation space: Average over the month for the “Rhone Alpes” region

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Credits

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