



*NOT a time series example: tweets by population*

Since time is a constituent of everything that is observable, time series data is everywhere. As our world gets increasingly instrumented, sensors and systems are constantly emitting a relentless stream of time series data. Such data has applications across various industries, such as tracking weather data; changes in application performance; medical device data; network logs; and many others. Time series data is used in time series analysis and time series forecasting to detect and predict patterns – essentially looking at change over time.

**Time series data is immutable; i.e., since time series data comes in time order, it is almost always recorded in a new entry, and as such, should be append-only (appended to the existing data).**

Time series data comes in two forms: regular and irregular. Regular time series consist of measurements gathered from software or hardware sensors at regular intervals of time (every 10 seconds, for example) and are often referred to as metrics. Irregular time series are events driven either by users or other external events.

Summarizations of irregular time series become regular themselves. For example, summarizing the average response time for requests in an application over one minute intervals or showing the average trade price of Apple stock every 10 minutes over the course of a day.

The InfluxData stack is optimized for both use cases, which is a significant differentiator from other solutions like Graphite, RRD, OpenTSDB, or Prometheus. Many services and time series databases support only the regular time series metrics use case. InfluxDB lets users collect from multiple and diverse sources, store, query, process and visualize raw high-precision data in addition to the aggregated and downsampled data. This makes InfluxDB a viable choice for applications in science and sensors that require storing raw data.