PROMETHEUS CHEAT SHEET

DATA MODEL

Time-series - streams of numeric values sampled at ongoing timestamps.

Metric - a characteristic of a system being measured.

Label - key-value pairs that help categorize and differentiate subdimensions.

METRIC TYPES

Gauges track values that can increase or decrease.

Counters track values that can only increase.

Histograms track cumulative bucketed counts of observations.

Summaries calculate client-side-calculated quantiles from a set of observations.

FUNCTIONS

rate() - "rate of increase" - calculates a "per-second" increase of a counter as averaged over a specified window.

irate() - "instantaneous rate of increase" - calculates a "per-second" increase over the time window, only considering the last 2 points.

increase() - "absolute increase" calculates the absolute increase over a given time value, including extrapolation.

COMPONENTS & INTEGRATIONS

Pushgateway - allows short-lived jobs to expose their metrics to Prometheus.

Alertmanager - responsible for handling alerts sent by Prometheus and then managing those alerts by grouping, deduplicating, routing, and sending them to various receiver integrations like email, webhook, PagerTree, etc.

Grafana - used for visualization and can produce charts, graphs, and alerts from Prometheus time series.