Grafana + ClickHouse

A Story of Open-source GitHub Activity

May 25th, 2023

ClickHouse

Open source column-oriented distributed OLAP database

Developed since
2009, OSS 2016
28.4k GitHub stars
1k+ contributors
300+ releases

Best for aggregations
Files per column
Sorting and indexing
Background merges

Replication
Sharding
Multi-master
Cross-region

Analytics use cases
Aggregations
Visualization
Mostly immutable data

Speaks SQL

Most SQL-compatible UIs, editors, applications, frameworks will just work!

Lots of writes

Millions of writes per second!

Distributed

Replicated and sharded, largest known cluster is 4000 servers

Highly efficient storage

Lots of encoding and compression options

Very fast queries

Scan and process even billions of rows per second and uses vectorized query execution

Serverless Cloud offering

Let us deal with the infrastructure and scaling !

https://clickhouse.cloud/signUp

Parallel open-source Stories

Grafana || ClickHouse

ClickHouse

GRAFANA

CLICKHOUSE

- Born in **2013**
- **55.5k** GitHub stars
- **2000+** Contributors
- Millions of users
- Grafana OSS + Cloud

- Born in **2009**
- Open-sourced in **2016**
- **28.9k** GitHub stars
- **1000+** Contributors
- Millions of users
- ClickHouse OSS + Cloud

Version 3.0.3-beta

Dependencies
Grafana 8.x || 9.x

Developer
Grafana Labs

Resources
Website
License

Data Source ⊘ Grafana

ClickHouse

Overview   Installation   Change log   Related content

ClickHouse data source for Grafana

The ClickHouse data source plugin allows you to query and visualize ClickHouse data from within Grafana.

As of 2.0 this plugin will only support ad hoc filters when using ClickHouse 22.7+

Installation

For detailed instructions on how to install the plugin on Grafana Cloud or locally, please checkout the Plugin installation docs.

Configuration

ClickHouse user for the data source

Set up an ClickHouse user account with `readonly` permission and access to databases and tables you want to query. Please note that Grafana does not validate that queries are safe. Queries can contain any SQL statement. For example, statements like `ALTER TABLE system.users DELETE WHERE name='sadUser'` and `DROP TABLE sadTable;` would be executed.

The dataset

- **Github Events** - All PRs, Issues, Stars, Forks, Watch & Comments for **every** repository on Github since the beginning 2011 - over 5.5 billion events. Available in play.clickhouse.com. Load into ClickHouse yourself - details here.

- **Github Commits** - For just the grafana repository. Also available in play.clickhouse.com. < 10m events, consisting of:
  - commits.tsv - every Commit ~ 35k rows
  - file_changes.tsv - File change ~ 190k
  - line_changes.tsv - Line change ~ 8m rows

  This can be generated for any repository using the ClickHouse tool git-import tool.

Demonstration

ClickHouse

Q/A

Thanks for joining!

clickhousedb.slack.com

grafana.slack.com

@ClickHouseDB

@grafana

ClickHouse