ClickHouse

Meetup

GoWork Plaza Indonesia

Jakarta, Indonesia

December 9 at 6:30 PM WIB

Cuckoo

AI interpreter for global teams

REAL-TIME TRANSLATIONS TO BAHASA!

ClickHouse

WIFI:
ID: event@go-work.com
Wifi: ActWithNobility!

YEAR-END MEETUP
LUCKY DRAW
AFTER Q&A

Tech Talks

Inside ClickStack: Engineering Observability for Scale

Maruthi Lokanathan, Solution Architect
@ ClickHouse

Supercharging Verihubs Data Warehousing with ClickHouse

Ray Antonius, Software Engineering Lead
@ Verihubs

ClickHouse Meets Iceberg: A Practical Look Beyond the Hype

Andi Pangeran, Head of Software Engineering
@ Electrum

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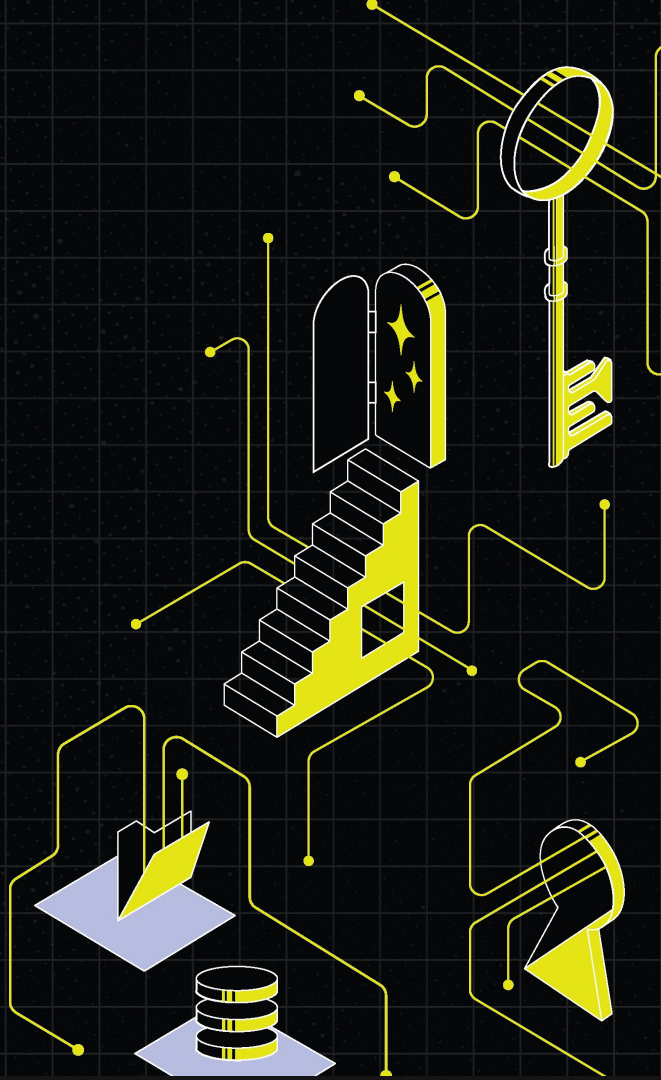
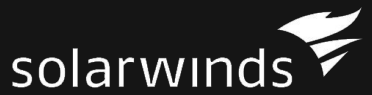
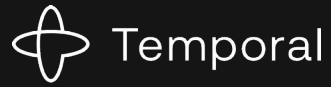
ClickHouse for Observability



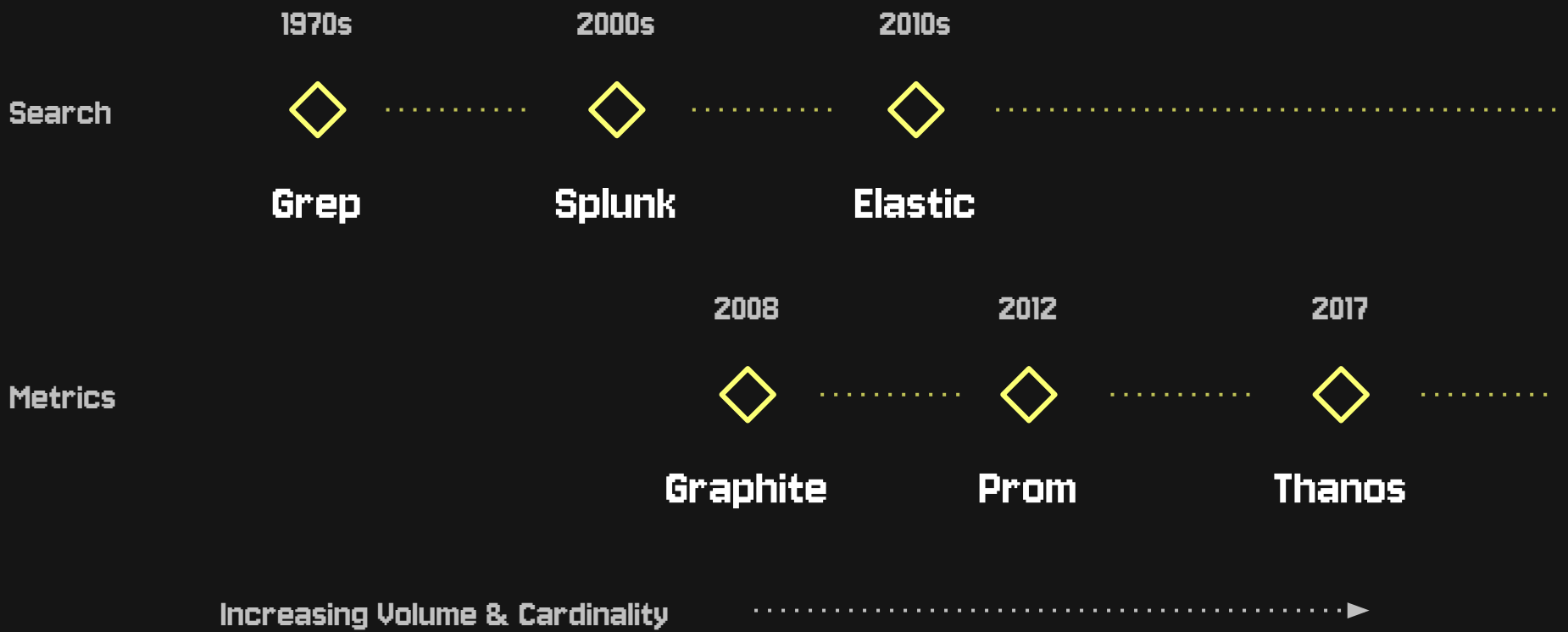
ClickHouse powering Observability at scale





& many more

A brief history of observability



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It’s all about tradeoffs

Search engines

You know, for search, not aggregations

- Fast for “needle in a haystack” searches
- Poor performance when “zooming out” for trends with aggregations

✓ Cost efficient

✓ Fast search

× Fast aggregations

Metric stores

Built for metrics first

- Limited search
- Stronger aggregation performance
- But requires pre-aggregation - no root cause

✓ Cost efficient

× Fast search

✓ Fast aggregations

Can we avoid tradeoffs?

Mystery data store

Built for observability

- Lightweight indexes for search
- High performance aggregations on high cardinality data
- Use object storage for cheap and infinite storage

✓ Cost efficient

✓ Fast search

✓ Fast aggregations

Can we avoid tradeoffs? Yes!

ClickHouse

Built for observability

- Lightweight indexes for search
- High performance aggregations on high cardinality data
- Use object storage for cheap and infinite storage

- ✓ Cost efficient
- ✓ Fast search
- ✓ Fast aggregations

Powered By ClickHouse

SQL

Real-Time Fast

< 500ms on 50PB+

OpenTelemetry

Open Source

4x

More Telemetry with Same Hardware

ClickHouse

for Observability

Compute Storage Separation

JSON

Schema-less Storage

10x to 100x

Compression Ratios

Compute-Compute Isolation

Open Formats

arquet Iceberg Delta Avr

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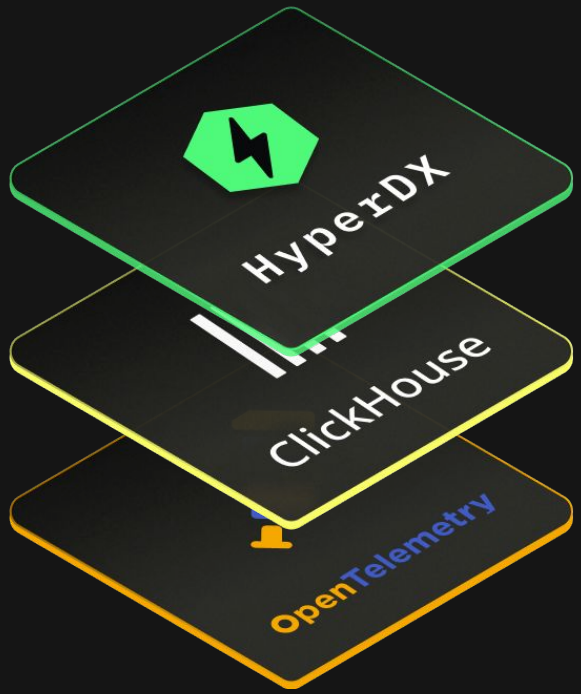


ClickStack

The high performance open-source observability stack

- Deploy in seconds on ClickHouse with any schema
- Built for observability: frontend to infra
- Optimized to unlock full ClickHouse performance
- OpenTelemetry native and fully open source

Demo Logs

```
SELECT Timestamp, ServiceName, SeverityText, Body
ORDER BY TimestampTime DESC
```

Search your events w/ Lucene ex. column:foo

SQL | Lucene

Live Tail

Analysis Mode

- Results Table
- Event Patterns

Filters

Denoise Results

ServiceName

- accounting
- ad
- artillery-loadgen
- cart
- checkout
- currency
- email
- fraud-detection
- frontend
- frontend-proxy

Show more

SeverityText

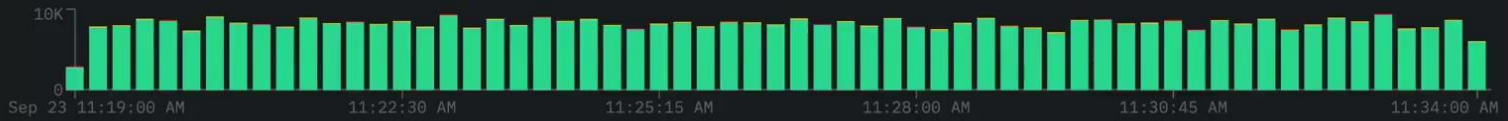
ResourceSchemaUrl

ScopeVersion

More filters

498784 Results

Scanned Rows: 1285226

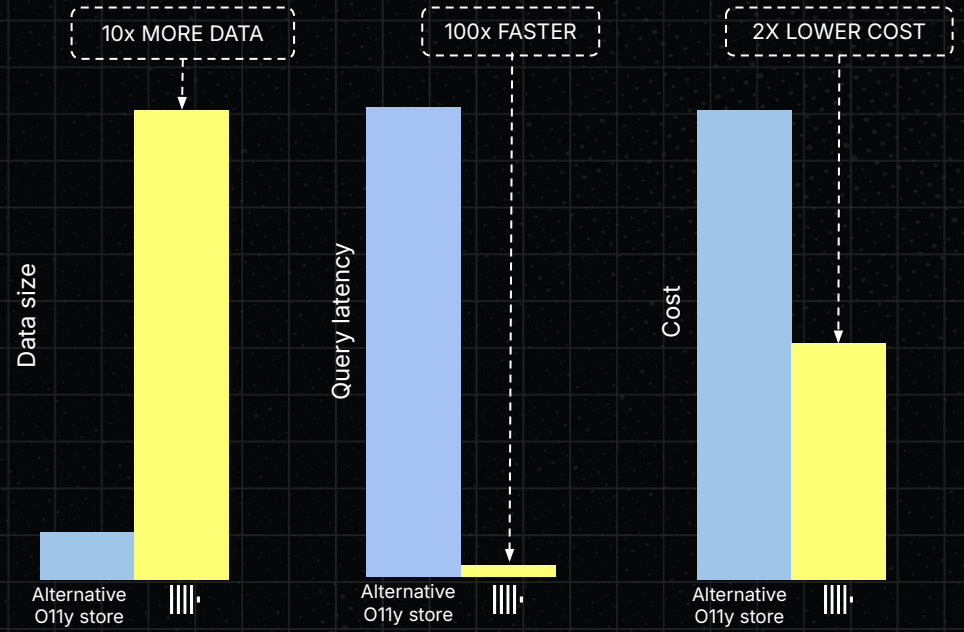


Timestamp (Local)	ServiceName	SeverityText	Body
Sep 23 11:34:09.510 AM	accounting	info	Order details: { "orderId": "7fd0b662-39ea-11f0-9974-aa33efe56d7d", "shipp…
Sep 23 11:34:09.510 AM	accounting	info	info: Accounting.Consumer[174880625]
Sep 23 11:34:09.509 AM	accounting	Information	Order details: {@OrderResult}.
Sep 23 11:34:09.509 AM	accounting	info	Order details: { "orderId": "7ffa992b-39ea-11f0-9974-aa33efe56d7d", "shipp…
Sep 23 11:34:09.509 AM	accounting	info	info: Accounting.Consumer[174880625]
Sep 23 11:34:09.508 AM	accounting	Information	Order details: {@OrderResult}.
Sep 23 11:34:09.503 AM	accounting	info	Order details: { "orderId": "7fc2fdff-39ea-11f0-9974-aa33efe56d7d", "shipp…
Sep 23 11:34:09.503 AM	accounting	info	info: Accounting.Consumer[174880625]
Sep 23 11:34:09.500 AM	accounting	Information	Order details: {@OrderResult}.
Sep 23 11:34:09.410 AM	accounting	info	Order details: { "orderId": "7ffaa946-39ea-11f0-9974-aa33efe56d7d", "shipp…
Sep 23 11:34:09.410 AM	accounting	info	info: Accounting.Consumer[174880625]
Sep 23 11:34:09.409 AM	accounting	Information	Order details: {@OrderResult}.
Sep 23 11:34:09.402 AM	accounting	info	Order details: { "orderId": "7fc2f457-39ea-11f0-9974-aa33efe56d7d", "shipp…
Sep 23 11:34:09.402 AM	accounting	info	info: Accounting.Consumer[174880625]
Sep 23 11:34:09.401 AM	accounting	Information	Order details: {@OrderResult}.
Sep 23 11:34:09.400 AM	accounting	info	Order details: { "orderId": "7ffaa2a2-39ea-11f0-9974-aa33efe56d7d", "shipp…
Sep 23 11:34:09.400 AM	accounting	info	info: Accounting.Consumer[174880625]
Sep 23 11:34:09.399 AM	accounting	Information	Order details: {@OrderResult}.
Sep 23 11:34:09.350 AM	accounting	info	Order details: { "orderId": "7fc2f188-39ea-11f0-9974-aa33efe56d7d", "shipp…
Sep 23 11:34:09.350 AM	accounting	info	info: Accounting.Consumer[174880625]

10x more data

100x faster

50% of the cost



"

With ClickHouse Cloud, we ingest 10x more data - over 450 TB every month - while spending 50% less than before.Its 15x compression lets us keep 3–4 months of logs in just 150 TB of storage.

Previously, querying the last 10 minutes could take 1–2 minutes, but with ClickStack the results come back faster than a blink - crucial when every second matters during an incident.

character.ai

What's New

We made ClickStack *faster*

JSON

- Up to 10x faster queries with native JSON type
- Each property stored in its own sub-column for efficient targeted reads
- Supports wide events, handling the long tail of sparse properties

Inverted index

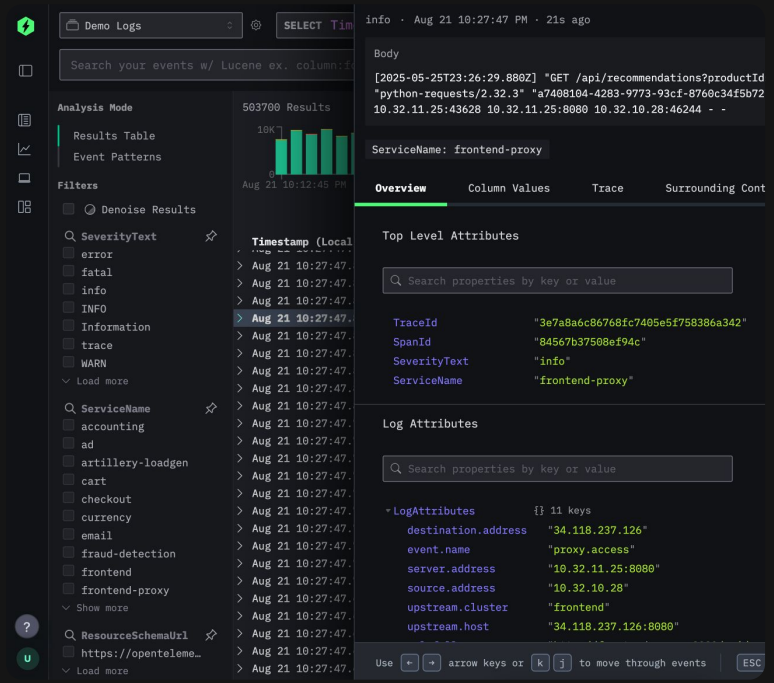
- Support for the latest experimental inverted index
- Enables faster text and property searches without scanning entire columns
- Uses compressed posting lists and token dictionaries for efficiency

In-app optimizations

- Automatically chunks long time-range searches into smaller windows, with early stopping once enough results are found
- Introspects the primary key to align query ordering with table order, improving use of optimize_read_in_order
- Reduces scanned data and speeds up “latest results” queries

And a whole lot more…

- Extensible collector configuration
- CSV export
- Auto-correlated sources
- Inverted index support (experimental)
- Import/export dashboards
- Pinned filter fields
- More flexible chart aggregations & aliases



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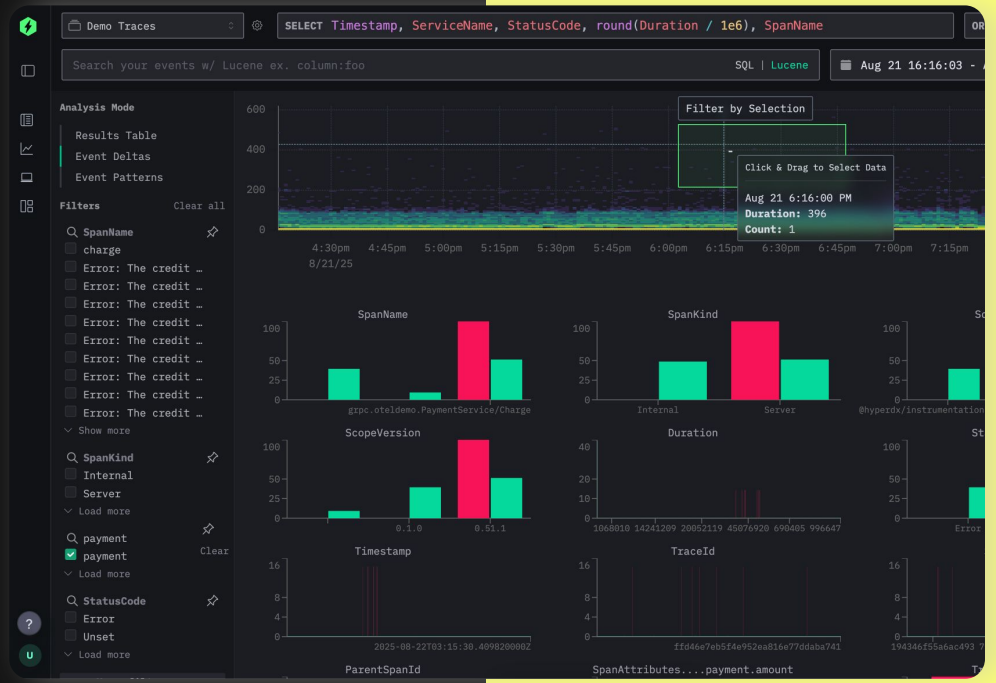
What's ahead?

- PromQL
- ClickStack Cloud
- Inverted Index
- Observability Notebooks
- Service Maps
- Terraform Provider
- and more...



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Get started today

clickhouse.com/o11y