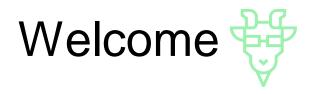**CrateDB**

CrateDB Office Hour

Welcome

- Opportunity to talk to CrateDB engineers ☺
- No recording!
- As a starting point, we will discuss CrateDB features
- Ask questions, share your use case

Agenda

1   **CrateDB 5.4 Release**

2   **New features**

3   **Your questions**

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CrateDB 5.4 Release

SQL standard and PostgreSQL compatibility

- Changed `INTERVAL` data type to comply with PostgreSQL

- Support for `ORDER BY, MAX, MIN` and comparison for `INTERVAL` type

- Support for updating arrays by elements

- Changed version of PostgreSQL protocol to 14

Scalar and aggregation functions

- Support for `AVG()` on `INTERVAL` data type

- Added `array_unnest, btrim` and `array_set` scalar functions

Administration and operations

- Added `statement_timeout` session setting

- Optimizer rules for reordering of joins for hash and nested-loop joins

- Ability to set a `storage_class` for S3 repositories

https://crate.io/docs/crate/reference/en/5.4/appendices/release-notes/5.4.0.html

Control long running queries: `set_timeout`

- Define the **maximum** duration for any database statement
- Once the timeout is reached, the query gets cancelled
- Useful to prevent queries from blocking resources on CrateDB cluster

```
SET SESSION statement_timeout = '5m';
```
➡️ session level setting

```
SET GLOBAL PERSISTENT statement_timeout = '30m';
```
➡️ cluster-wide setting

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Session settings with PostgreSQL clients

```java
Properties properties = new Properties();
properties.setProperty("user", "crate");
properties.setProperty("options", "statement_timeout='5m'");
try (Connection conn =
    DriverManager.getConnection("jdbc:crate://localhost:5432/", properties)) {
    // Your logic here
}
```

- Setting applies to all queries run within this session

Array updates by elements

```sql
CREATE TABLE books (
    id INTEGER PRIMARY KEY,
    title STRING,
    author STRING,
    publication_year INTEGER,
    genres ARRAY(STRING)
);

UPDATE books SET genres[1] = 'Drama' WHERE id = 5;
```

Scalar function: `btrim`

- `btrim(text, trimmingText)` removes the longest string matching trimming text from both the start and the end of `text`.

```
SELECT user_id,
       username,
       btrim(email) AS cleaned_email
FROM doc.users;
```

➡️ remove leading and trailing whitespace characters

Scalar function: `array_set`

- `array_set(array, index, value)` returns the array with the element at index set to value

```sql
SELECT title,
       author,
       array_set(genres, 1, 'Drama') AS genre
FROM doc.books
WHERE id = 5;
```

Literal interval data type

- INTERVAL data type does the normalization up to day units and complies with PostgreSQL behavior

```
SELECT INTERVAL '1 month 42 days 126 hours 512 mins 7123 secs';
```

CrateDB < 5.4 : 1 mon 6 weeks 5 days 16:30:43

CrateDB 5.4 : 1 mon 47 days 16:30:43

Relevant blog posts

- https://crate.io/blog/cratedb-v5.4-sql-enhancements-performance-and-operational-improvements
- https://crate.io/blog/cratedb-5.4-feature-focus-session-timeouts
- https://crate.io/blog/join-performance-to-the-rescue

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Your questions

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Thank you 🐐