

What's Trino

(formerly known as PrestoSQL)



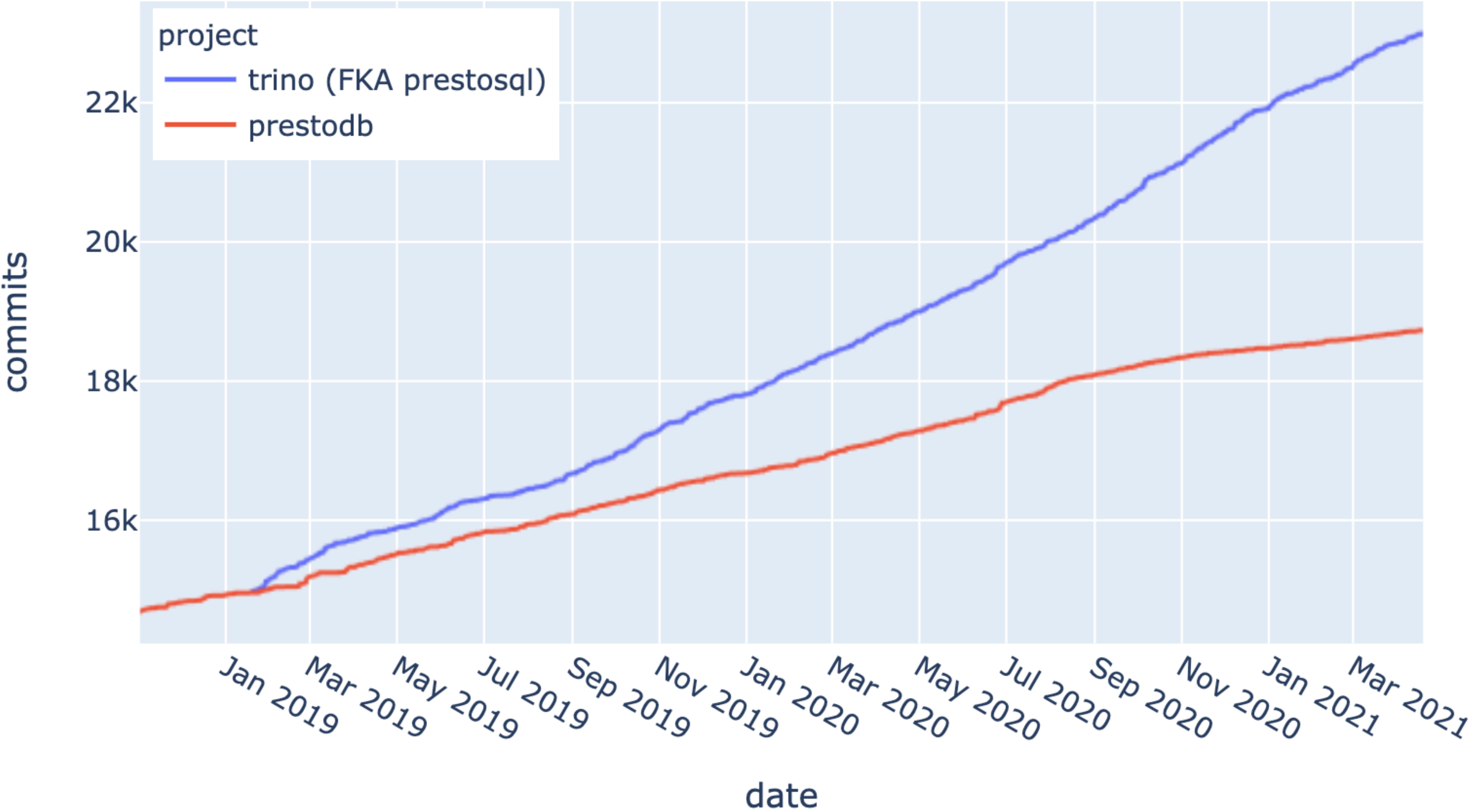
trino

- If you know Presto...
 - If you've been using PrestoSQL...
 - ... same software, same people, same community
 - ... under a shiny new name and a cute bunny
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- More details: <https://trino.io/blog/2020/12/27/announcing-trino.html>
 - Migrating to a recent version: <https://trino.io/blog/2021/01/04/migrating-from-prestosql-to-trino.html>

Stats

- 461 contributors
- 4036 Slack members (~500 active weekly)
- 55 releases since split (one release every ~2 weeks)
- 8043 commits since split (23,020 total)

Commits



Security

- Web UI and endpoint security
 - <https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2020-15087>
- OAuth 2.0 support for Web UI, CLI and JDBC driver

Language Features

WINDOW clause

```
SELECT
    avg(totalprice) OVER w,
    sum(totalprice) OVER w,
    max(totalprice) OVER w
FROM orders
WINDOW w AS (
    PARTITION BY custkey
    ORDER BY orderdate
    RANGE BETWEEN interval '1' month PRECEDING AND CURRENT ROW)
```

See more details: <https://trino.io/blog/2021/03/10/introducing-new-window-features.html>

RANGE/GROUPS window frame

```
SELECT avg(totalprice) OVER (  
    PARTITION BY custkey  
    ORDER BY orderdate  
    RANGE BETWEEN interval '1' month PRECEDING AND CURRENT ROW)  
FROM orders
```

```
SELECT  
    student_id,  
    score,  
    max(score) OVER (  
        ORDER BY score  
        GROUPS BETWEEN CURRENT ROW AND 1 FOLLOWING) - score  
FROM scores
```

See more details: <https://trino.io/blog/2021/03/10/introducing-new-window-features.html>

Timestamp semantics

- Before

```
presto> SELECT CAST( '2021-03-14 02:30:00' AS timestamp);
```

```
Query 20210420_005314_00001_h3id7 failed: Value cannot be cast to timestamp: 2021-03-14 02:30:00
```

- After

```
trino> SELECT CAST( '2021-03-14 02:30:00' AS timestamp);
```

```
      _col0  
-----  
2021-03-14 02:30:00.000  
(1 row)
```


Variable precision temporal types

```
trino> SELECT typeof(TIMESTAMP '2021-04-21 12:34:56.123456789123');
```

```
      _col0  
-----  
timestamp(12)  
(1 row)
```

```
trino> SELECT  
        localtime(6),  
        current_timestamp(1),  
        localtime(5),  
        current_time(3) \G
```

```
-[ RECORD 1 ]-----  
_col0 | 2021-04-19 17:59:55.669946  
_col1 | 2021-04-19 17:59:56.7 America/Los_Angeles  
_col2 | 17:59:55.66995  
_col3 | 17:59:55.670-07:00
```

Correlated subqueries with UNNEST

```
WITH t(a) AS (VALUES
    array[1, 1, 2],
    array[4, 5, 6, 20])
SELECT *
FROM t
WHERE (SELECT max(v) - avg(v) FROM UNNEST(t.a) AS u(v)) > 1
```

```
          a
-----
 [4, 5, 6, 20]
(1 row)
```

UPDATE

```
UPDATE purchases  
SET status = 'OVERDUE'  
WHERE ship_date IS NULL
```

See more: <https://trino.io/docs/current/sql/update.html>

Performance

- Dynamic filtering and partition pruning
 - <https://trino.io/blog/2019/06/30/dynamic-filtering.html>
 - <https://trino.io/blog/2020/06/14/dynamic-partition-pruning.html>
- Optimized Parquet writer (experimental)
- Pushdown of complex operations (aggregation, join, order by + limit, etc)

New Connectors

- Apache Iceberg (<https://trino.io/episodes/14.html>)
- Apache Druid
- Apache Pinot (<https://trino.io/episodes/13.html>)
- MemSQL
- BigQuery
- ClickHouse
- Oracle
- Prometheus

Other improvements

- Complex Hive views
- ORC ACID table support
- Multiple event listeners
- Multiple password authenticators
- And much, much more...
 - <https://trino.io/blog/2020/01/01/2019-summary.html>
 - <https://trino.io/blog/2021/01/08/2020-review.html>

Upcoming Improvements

Upcoming Improvements

