



trino

State of Trino

Project update for November 2022

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trino

<https://trino.io/blog/2022/08/08/trino-tenth-birthday.html>

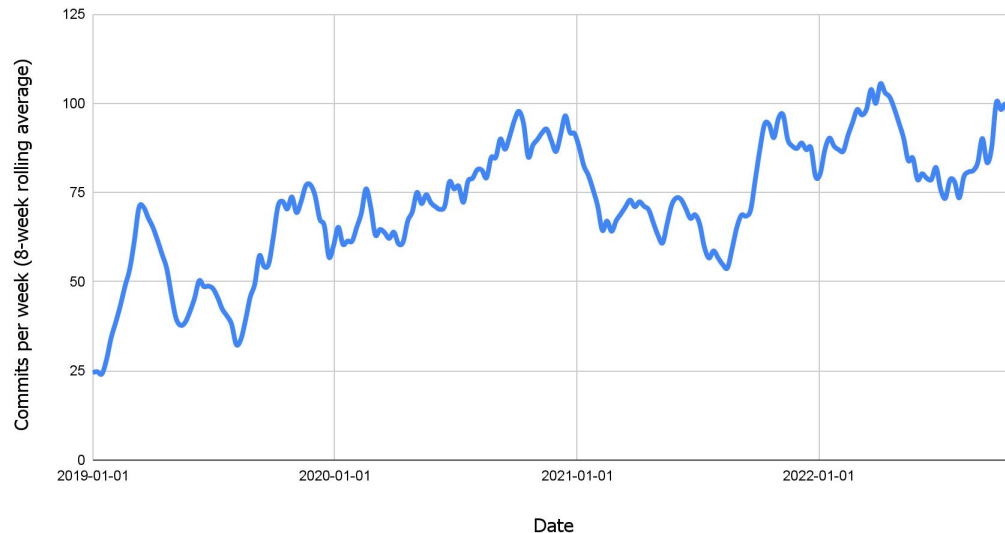
Stats

- 620+ contributors
- 8,206 Slack members
- 35 releases this year
- ~3,900 commits this year (29,710 total)
- ~50% of all commits occurred in the past 4 years

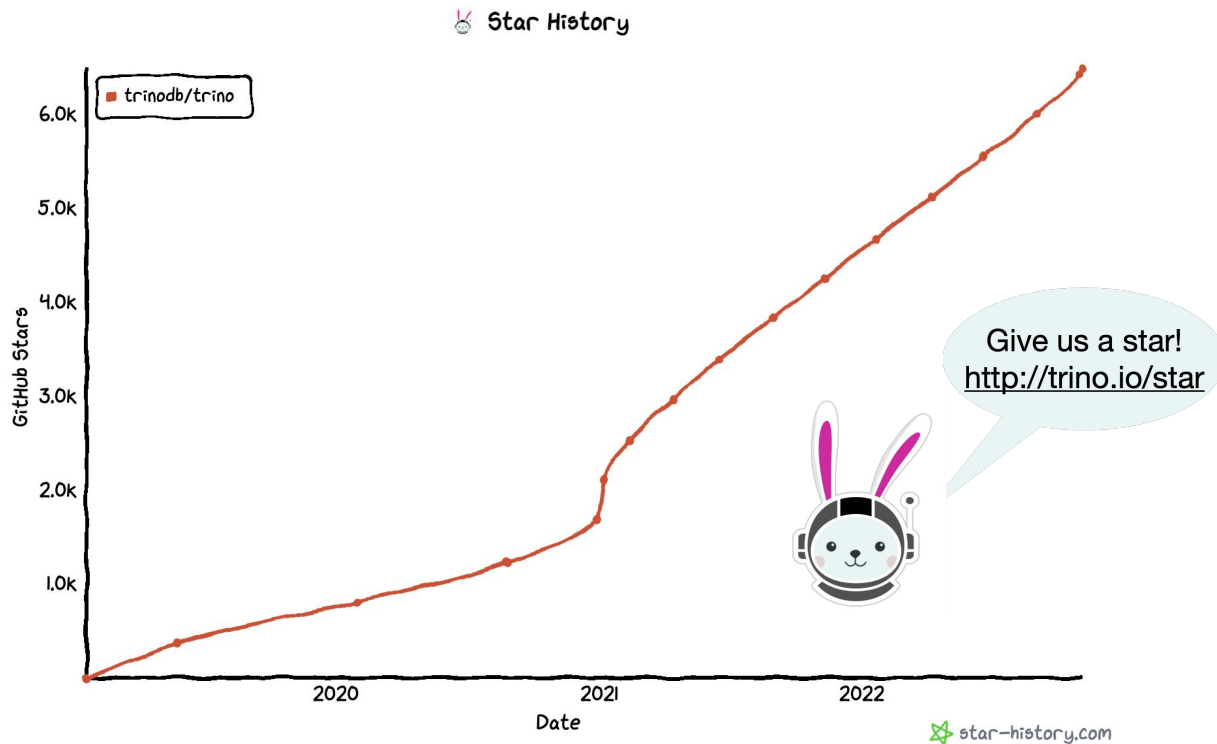
Development activity

- Busiest year in Trino history

Trino commits over time



Consistent growth



A look back on 2022

MERGE

```
MERGE INTO accounts t USING monthly_accounts_update s ON (t.customer = s.customer)
  WHEN MATCHED AND s.address = 'San Francisco'
    THEN DELETE
  WHEN MATCHED
    THEN UPDATE SET
      purchases = s.purchases + t.purchases,
      address = s.address
  WHEN NOT MATCHED
    THEN INSERT (customer, purchases, address)
      VALUES (s.customer, s.purchases, s.address)
```

JSON functions

- `json_query`, `json_value`, `json_exists`
- `json_array`, `json_object`
- <https://trino.io/docs/current/functions/json.html>

```
SELECT json_query(  
    description,  
    'strict $.ages[*]?(@ > 12)'  
    WITH ARRAY WRAPPER  
    EMPTY ARRAY ON EMPTY  
) AS ages  
FROM users
```


Table functions

```
SELECT *  
FROM TABLE( oracle.system.query(  
    query => 'SELECT *  
    FROM sales_view  
    MODEL RETURN UPDATED ROWS  
    PARTITION BY country  
    MEASURES sales  
    RULES (  
        sales['Bounce', 2001] = 1000,  
        sales['Bounce', 2002] = sales['Bounce', 2001] + sales['Bounce', 2000],  
        sales['Y Box', 2002] = sales['Y Box', 2001]))  
))
```

Fault tolerant execution

- Task level retries
- Memory barrier
- Better resource utilization

Other improvements

- Java 17
- Connector-defined functions
- Much-improved Python client
- Delta Lake, MariaDB, and Hudi connectors
- Faster joins, aggregations, unnest, LIKE, INSERT, etc.
- Correlated subqueries in DELETE
- EXPLAIN with JSON output
- Refresh token support in OAuth 2.0
- More stats in EXPLAIN ANALYZE
- Table and column comment support
- New functions: `trim_array`, `trim`, `to_base32`, `from_base32`
- Tons of connector-specific updates



Other happenings

- We celebrated 10 years of Trino!
- Second edition of Trino: The Definitive Guide released
- Routine maintainer meetings

Roadmap

For the rest of 2022 and beyond

Project Hummingbird

- Next generation columnar engine
 - Independent evaluation of subexpressions
 - Adaptive
 - SIMD/GPU
 - Trait-specific processing (encoding, ASCII, nulls, etc)
- Hash tables for joins and aggregations
- <https://github.com/trinodb/trino/issues/14237>

Table functions

- Table functions with table inputs

```
SELECT *  
FROM TABLE( some_function(  
    input => TABLE (SELECT ... FROM ... )  
))
```

Others...

- CREATE/DROP CATALOG
- Query tracing
- New connectors: Snowflake, Ignite
- Many more performance improvements
- Connector enhancements

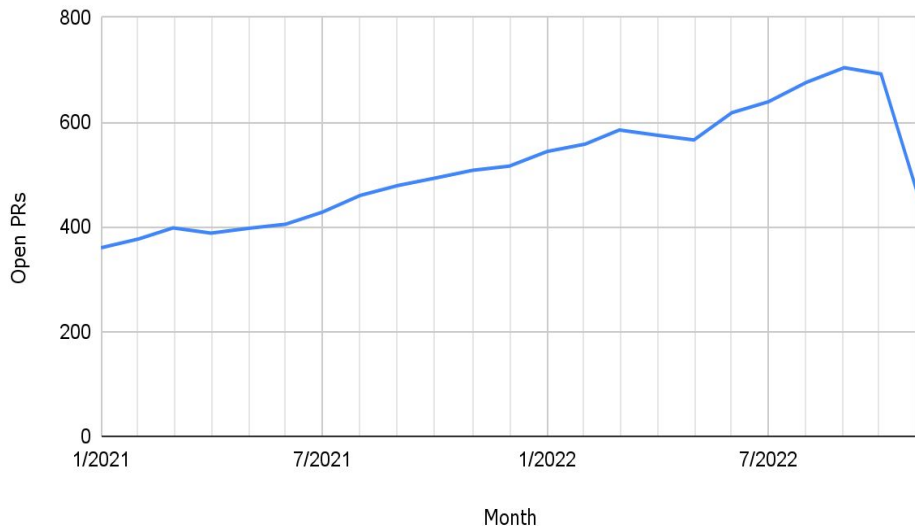
Extra community support

- More emphasis on enabling community contributors
- Contributing to Trino should be painless
- Clearer communication, quicker turnaround on reviews
- Automation to stop contributions from slipping through the cracks

Improvements for contributors

- Project cleanup via manual review of old pull requests
- Additional developer relations to ensure new contributors get any help and attention they may need

Open pull requests over time



Getting involved

- Slack: <https://trino.io/slack.html>
- Contribute code:
 - <https://trino.io/development>
 - **"good first issue"** tag on github
- File issues/bugs: <https://github.com/trinodb/trino>
- Write blog posts: <https://trino.io/blog>



Community

Join thousands of users and developers from all around the world.

Join the discussion

The Trino community is very active and helpful on Slack, with users and developers from all around the world. If you need help using or running Trino, this is the place to ask. Check out the following channels, and find [many more for specific topics](#).

8126	618	586
SLACK MEMBERS	WEEKLY ACTIVE MEMBERS	CONTRIBUTORS
Join Trino Slack	#announcements	#troubleshooting
#dev	#releases	#beginner

Events that don't suck

Trino Community Broadcast

meetup +

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Watch the latest videos and
past events from the Trino
community

Questions?

Thank you!





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