Major Features: Postgres 18

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POSTGRESQL is an open-source, full-featured relational database. This presentation gives an overview of the Postgres 18 release.

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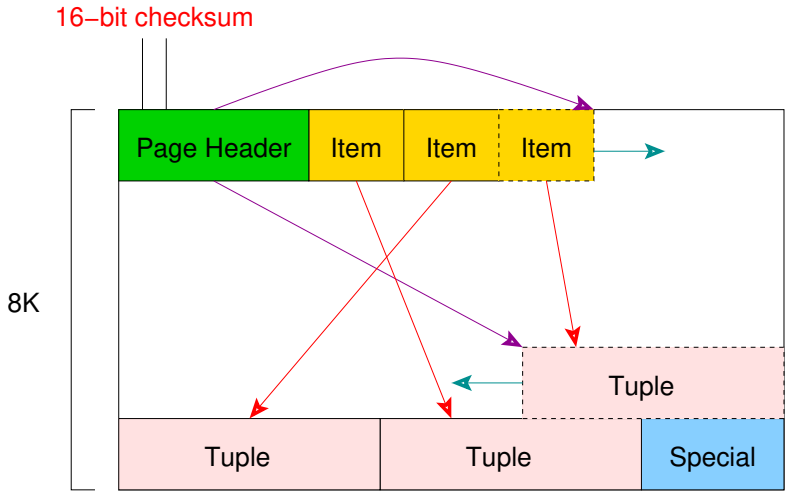
Postgres 18 Feature Outline

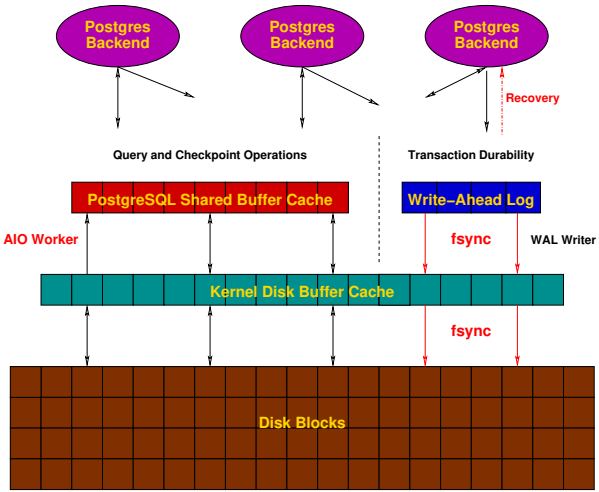
1. Checksums enabled by default
2. Asynchronous I/O workers
3. Optimizer improvements
4. Pg_upgrade optimizer statistics preservation
5. COPY error limits
6. Foreign data wrapper SCRAM authentication

Full item list at https://momjian.us/pgsql_docs/release-18.html.

1. Checksums Enabled by Default



2. Asynchronous I/O Workers

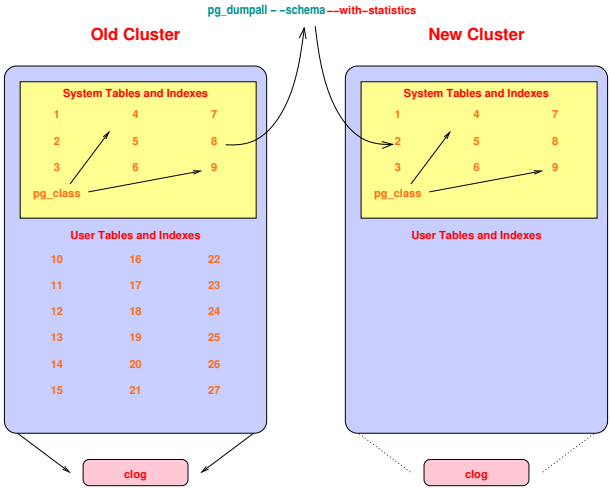


https://pganalyze.com/blog/postgres-18-async-io

3. Optimizer Improvements

- Automatically remove some unnecessary table self-joins
- Convert some IN (VALUES ...) to x = ANY ... for better optimizer statistics
- Allow transforming OR-clauses to arrays for faster index processing
- Allow skip scans of btree indexes
  - This allows multi-column btree indexes to be used by queries that only equality-reference the second or later indexed columns.

4. Pg_upgrade Optimizer Statistics Preservation



Also available with *pg_dump*/*pg_dumpall*.

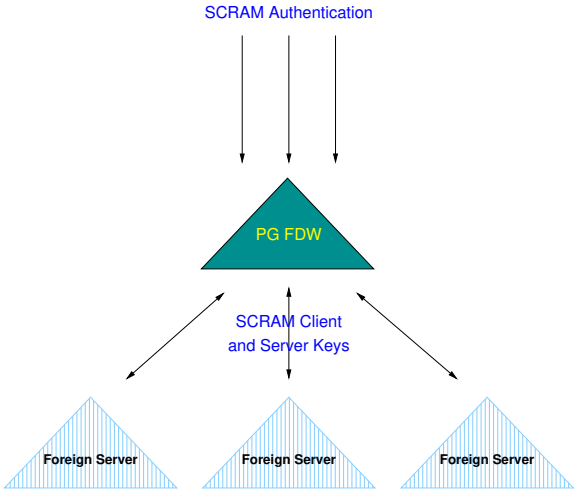
5. COPY Error Limits

```
CREATE TABLE copy_test (int_col INTEGER, date_col DATE, jsonb_col JSONB);

COPY copy_test (int_col) FROM STDIN WITH (ON_ERROR ignore, REJECT_LIMIT 1);
test> 1
test> 2
test> a
test> \.
NOTICE:  1 row was skipped due to data type incompatibility

SELECT * FROM copy_test;
 int_col | date_col | jsonb_col
---------+----------+-----------
       1 | (null)   | (null)
       2 | (null)   | (null)
```

COPY Error Limits

```
COPY copy_test (int_col) FROM STDIN WITH (ON_ERROR ignore, REJECT_LIMIT 1);
test> 3
test> b
test> c
test> \.
ERROR:  skipped more than REJECT_LIMIT (1) rows due to data type incompatibility
CONTEXT:  COPY copy_test, line 3, column int_col: "c"

SELECT * FROM copy_test;
 int_col | date_col | jsonb_col
---------+----------+-----------
       1 | (null)   | (null)
       2 | (null)   | (null)
```

6. Foreign Data Wrapper SCRAM Authentication



Conclusion

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https://www.flickr.com/photos/thomasletholsen/