Three Key Attributes of Postgres

BRUCE MOMJIAN

This presentation explains three key aspects of Postgres.

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Outline

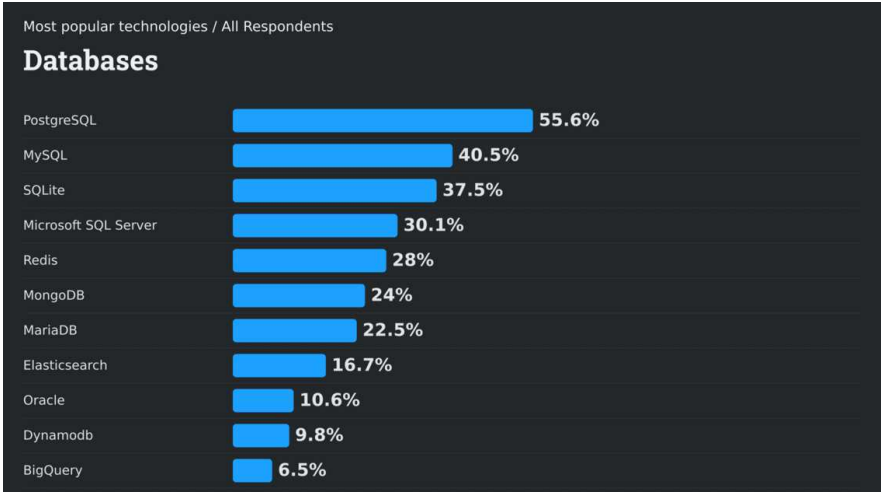
1. Postgres is becoming the dominant relational database
2. Extendibility propels its dominance
3. Postgres is a global project

SQL Outline

```
presentation=> \d postgres
                        Table "public.postgres"
 Key |                        Column                         |    Type
-----|-------------------------------------------------------+--------------
   1 | Postgres is becoming the dominant relational database | numeric(4,1)
   2 | Extendibility propels its dominance                   | jsonb
   3 | Postgres is a global project                          | geometry
```

All the words in the above output are puns.

1. Postgres Is Becoming the Dominant Relational Database



https://survey.stackoverflow.co/2025/technology/#1-databases

Linux

Linux attained feature parity with

- HP-UX
- AIX
- Solaris

and then went on to innovate beyond them.

https://momjian.us/main/presentations/extended.html#central

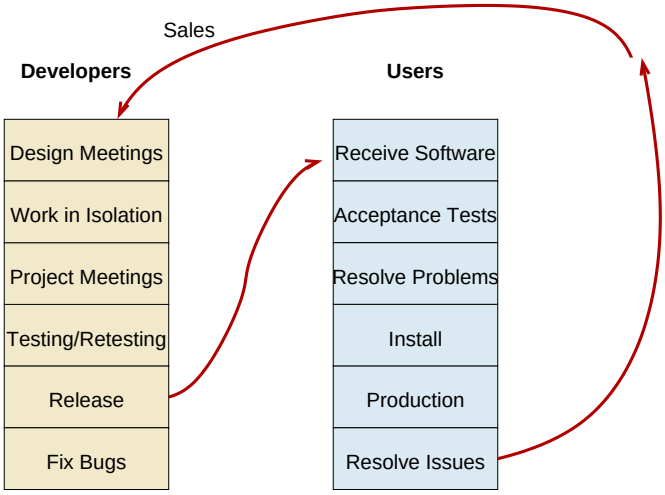
Postgres

Postgres nearing feature parity with

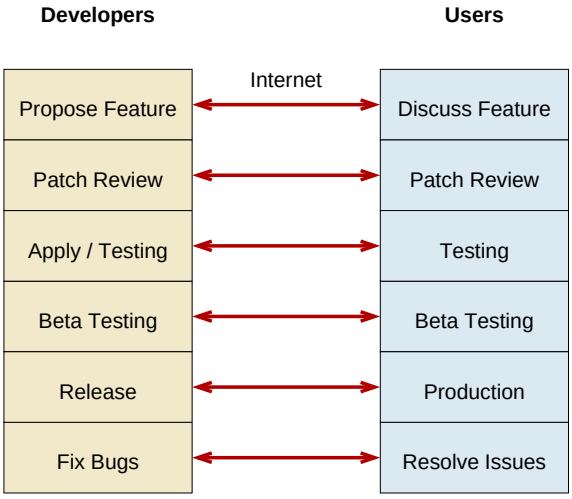
1. Oracle
2. DB2
3. MS-SQL
4. Sybase
5. Informix
6. Ingres Corp.

and then going on to innovate beyond them.

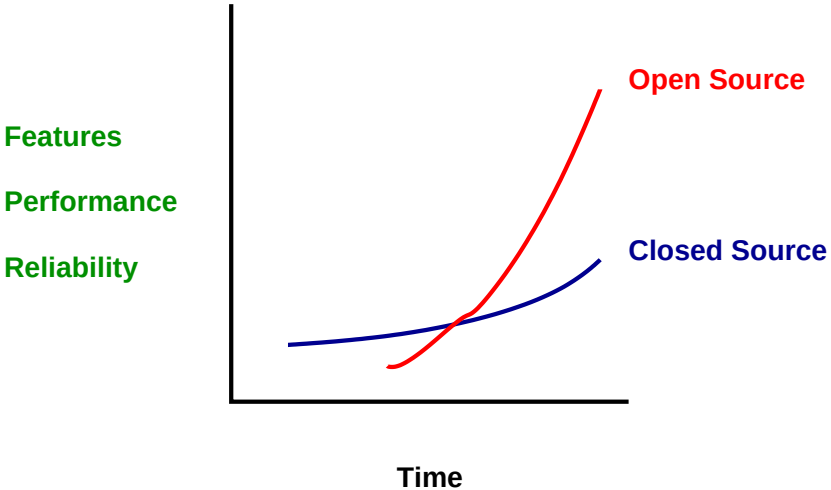
Proprietary Development Flow



Open Source Development Flow



Rise of Open Source



Many Focuses

New WorkloadsPlatforms (Big Data/Cloud)

- Liaisons with other communities
- FDW for common no-SQL DB's
- Continue to evolve new datatypes: JSON, XML, HStore

Easy to use / deploy

High-end Enterprise Requirements

- Diagnosing Problems
- Configuring for success
- Still easier installs
- Tighter integration with frameworks
- Integration with other data stores
- Very simple in the cloud

- Vertical Scale (parallel query)
- Horizontal Scale
- Performance Diagnostics
- Incremental Backup
- Integration with other data stores
- Zero down time upgrades

Keith Alsheimer, EDB, 2013

Advantages of Open Source

1. Innovation, competitive features
2. Freedom from vendor lock-in
3. Quality of solutions
4. Ability to customize and fix
5. **Cost (initially #1)**
6. Speed application development
7. Reduce development costs
8. Interoperability
9. Breadth of solutions

https://www.slideshare.net/blackducksoftware/2016-future-of-open-source-survey-results
https://www.forbes.com/councils/forbestechcouncil/2025/05/09/how-tech-leaders-can-maximize-daily-productivity-20-tested-tips/

2. Extendibility Propels Its Dominance

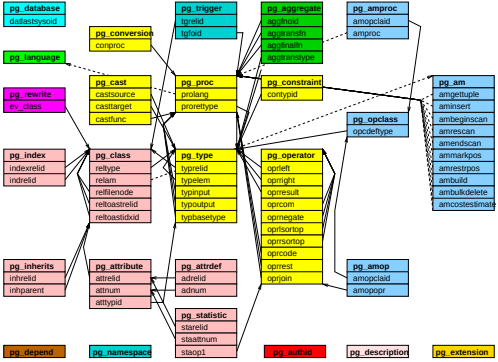
- Designed for Extendibility in 1986
- Ignored in 1996
- Praised for its Extendibility today

Michael Stonebraker

How Is Postgres Relational+?

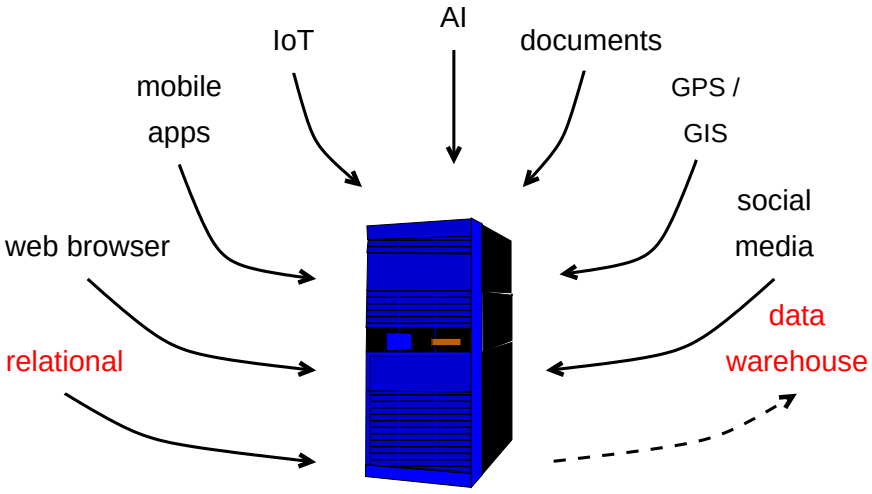
Extendibility is built in:

- Data types
- Indexing methods, not just btree
- Functions
- Operators
- Server-side languages

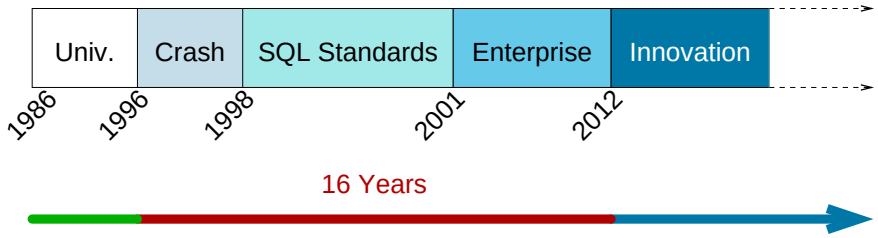


https://momjian.us/main/presentations/extended.html#central

Today's Data Sources



PostgreSQL Evolution



Innovation includes

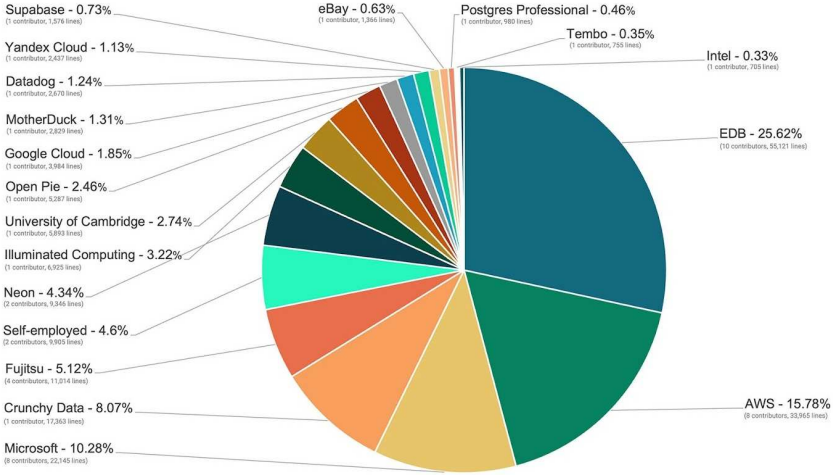
- Application-specific data types, e.g., JSON, PostGIS, range types
- Advanced index types, e.g., GIN, SP-GiST
- Single and multi-node scalability

3. Postgres Is a Global Project: My Postgres Activities

2006 Conference

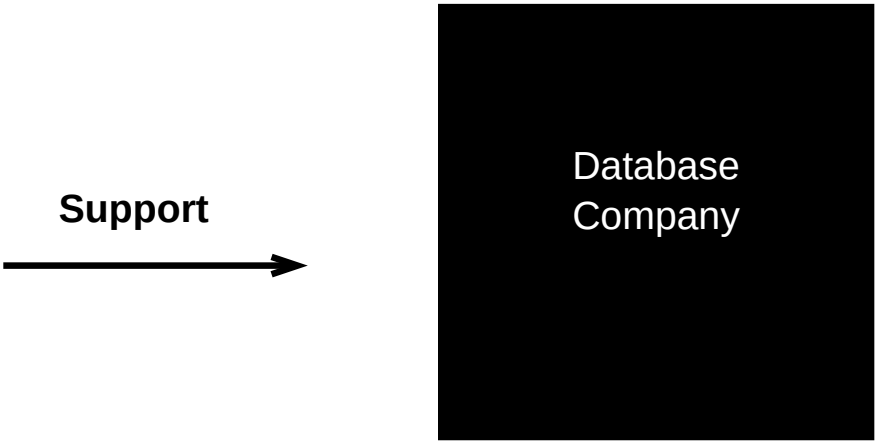
https://www.postgresql.org/files/community/conference06/conference_group.html

Strong Global Assistance

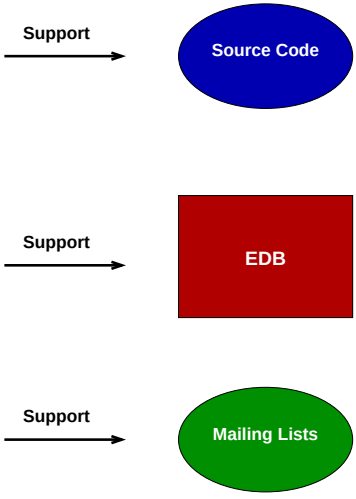


https://www.enterprisedb.com/blog/who-contributed-postgresql-development-2024

Support of Closed-Source Software



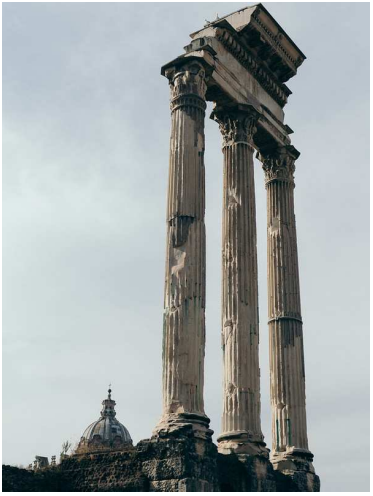
Support of Open-Source Software



SQL Outline Hints

- What is the database name?
- What is the table name?
- Which word from the title appears here?
- What synonym for “column” appears in the title?
- What data type specification would you use to represent adoption percentages?
- Which data type highlights Postgres’s extendibility?
- Which extension uses the `geometry` data type?

Conclusion



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https://www.flickr.com/photos/kg-23/