

The PostgreSQL Open Source Development Process

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This explores the Postgres open source development process and developer motivations.

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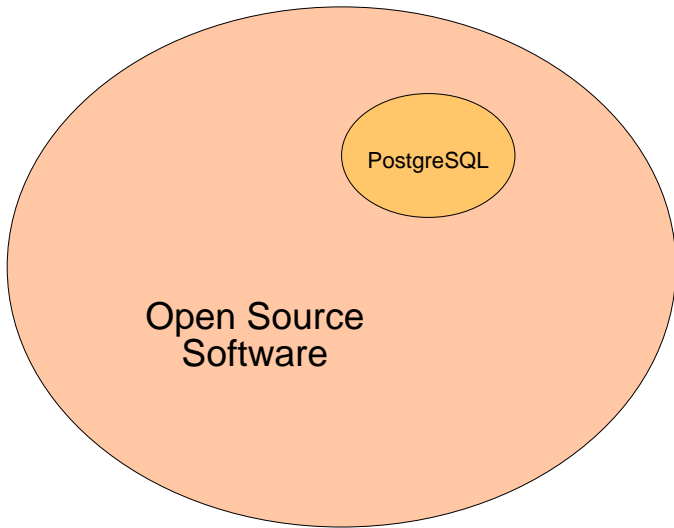


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Introduction

- ▶ How is open source development different from closed source?
- ▶ What is the pattern of PostgreSQL adoption?
- ▶ What does the future hold for PostgreSQL?

Open Source World



Revolutionary Change in Software Development: Challenging Totalitarianism

- ▶ Central Control
- ▶ Few Choices
- ▶ Limited feedback from population

Bringing Democracy to Software Development

- ▶ Distributed Control
- ▶ Many Choices
- ▶ Driven by feedback from population

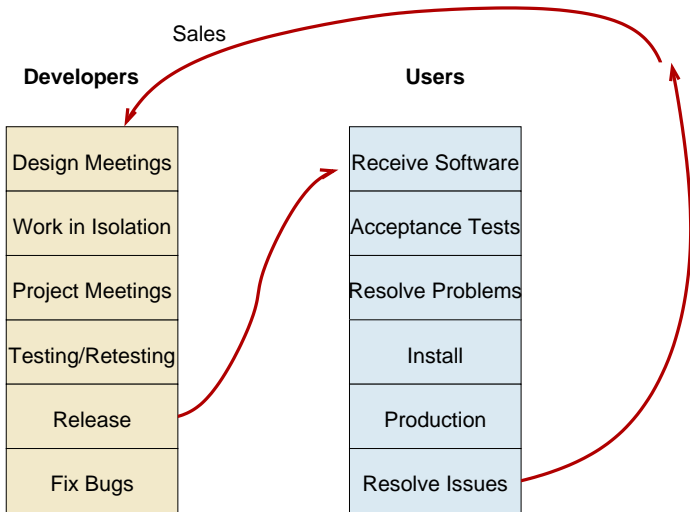
Proprietary Software Development

- ▶ Put everyone in a room
- ▶ Discuss new features and how to implement them
- ▶ Everyone goes back to their office
- ▶ More meetings
- ▶ Testing
- ▶ Release
- ▶ Gather user bug reports
- ▶ Repeat

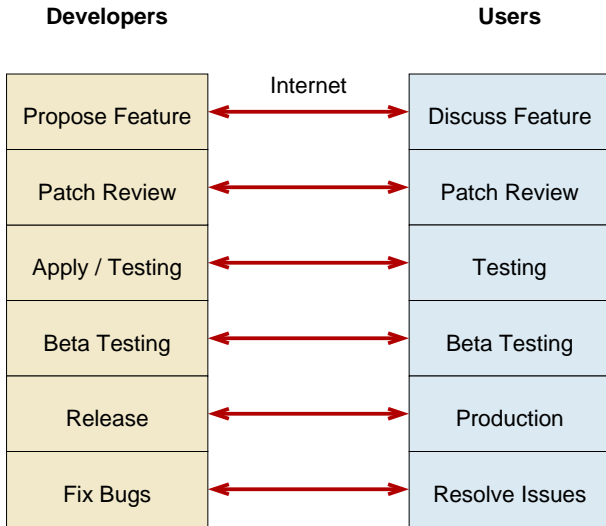
Open Source Development

- ▶ Discuss via email, with access to a world-wide pool of talent
- ▶ New features discussed over several days by developers and users
- ▶ Coding
- ▶ Patch review
- ▶ Patch application and testing
- ▶ User testing
- ▶ Release

Proprietary Software Development



Open Source Development



Typical Proprietary Database Product Life Cycle

- ▶ Create product
- ▶ Grow customer base
- ▶ Reduce development budget
- ▶ Decrease technical support costs
- ▶ Increase license fees
- ▶ Maximize revenue
- ▶ Customers leave
- ▶ End-of-life product

All possible because of high switching costs.

Typical Open Source Life Cycle

- ▶ Create project
- ▶ Developers create initial software
- ▶ Users and developers improve the software
- ▶ No development budget
- ▶ No technical support costs
- ▶ No license fees
- ▶ No maximizing of revenue
- ▶ No customers leaving!
- ▶ No end-of-life

PostgreSQL Is Completely Open Development

- ▶ No controlling company or individual
- ▶ Active multi-company and volunteer community
- ▶ Open development process
- ▶ Leadership encourages new members

PgLife

PgLife Postgres Community Life

Users

General Re: Errors after cloning OS to new disk under Hyper-V
Other Buffers from parallel workers not accumulated to upper nodes with gather merge
Announce PostgresDAC 3.8 meets RAD Studio 10.4 Sydney!

Developers

Hackers Re: Wrong results from `in_range()` tests with infinite offset
Commit doc: Refresh more URLs in the docs
Versions Stable: 12.3+, 11.8+, 10.13+, 9.6.18+, 9.5.22+ | Development: 13 beta2+, 14 devel, in committfest

External

Blogs Bruce Momjian: Credential Rotation Using Certificates
News pg_chameleon 2.0.13
Tweets Check out the changes we made to make it easier to download the version of ...
Media Bitnine Looks to Scale PostgreSQL - Datanami
Events PGDay Ukraine 2020 - POSTPONED!

IRC (also Slack)

Rembane: velix: What do you want to do and what does it do instead?

velix: Rembane: Long story. Let me summarize it.

velix: Rembane: <https://rentry.co/atcy> I'm trying to normalize my databank scheme coming from SPSS & Excel. mlt- suggest me to do EAV. peerce suggest to me add jsonb for the different topics.

velix: mlt- also suggest me to use rCTEs instead of joins, but they're pretty hard to handle (in my opinion)

Rembane: velix: They are indeed.

velix: I really think of using my frist query (with joins), even if rCTEs seem more advanced: https://dbfiddle.uk/?rdbms=postgres_12&fiddle=5b7e635436cc22cd062e14473daf8776

velix: I understand it and it's indexable.

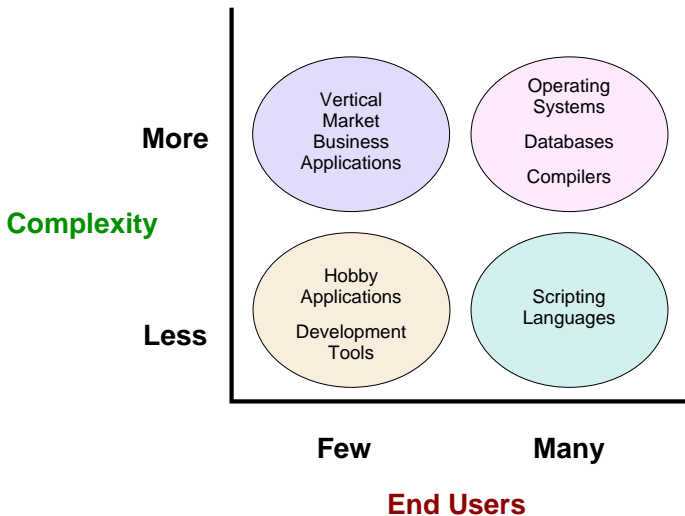
velix: Should I go for jsonb here?

London 15:28 Berlin 16:28 Moscow 17:28 Mumbai 19:58 Beijing 22:28 Tokyo 23:28 Los Angeles 07:28 New York 10:28 São Paulo 11:28

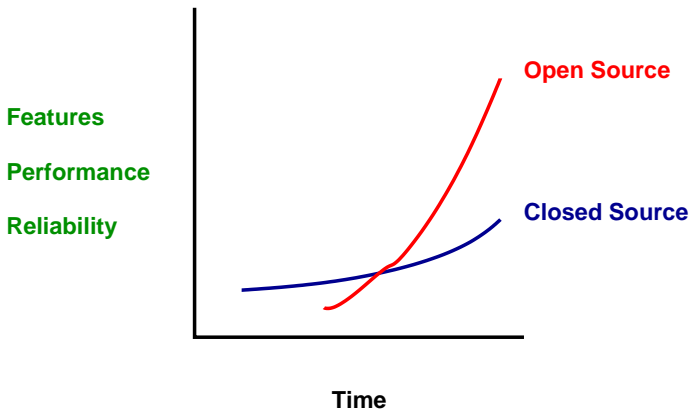
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Open Source Software Availability



Is It As Good As Proprietary Software?



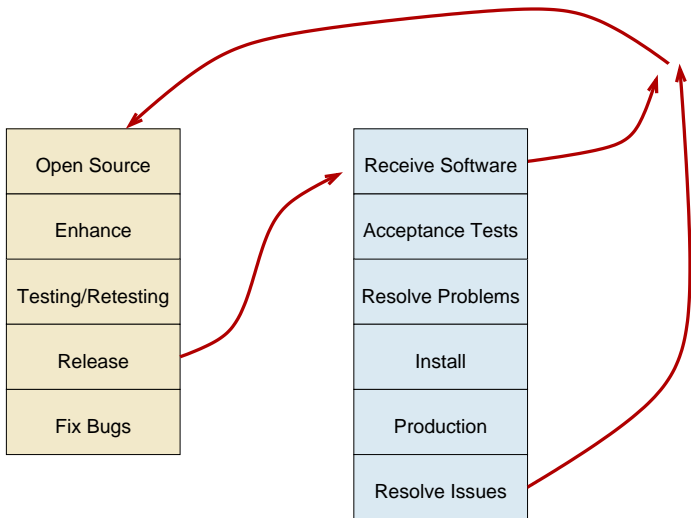
Problems With Open Source (and Democracy)

- ▶ Requires effort to stay informed
- ▶ Requires effort to receive assistance
- ▶ Database changes more rapidly
- ▶ More self-help

Businesses Supporting Open Source Users

- ▶ Customization
- ▶ Technical support
- ▶ Packaged releases
- ▶ Add-on software
- ▶ Training
- ▶ Localized

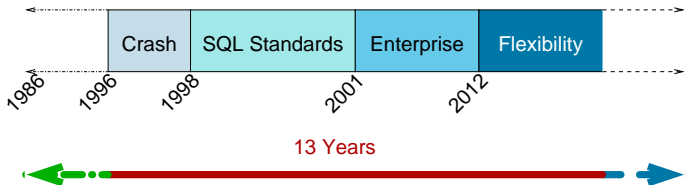
Hybrid Development



Licensing

- ▶ BSD license, limitation of liability
- ▶ Not GPL, which requires unrestricted source distribution

PostgreSQL Evolution



Flexibility includes:

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

Our Developers

Why is programming fun?

- ▶ Joy of making things
- ▶ Joy of making useful things
- ▶ Fun of a complex puzzle
- ▶ Joy of learning
- ▶ Tractable medium

Concepts derived from *The Mythical Man-Month* by Frederick P. Brooks, Jr.

Open Source Motivations

- ▶ Professional advancement, learn new skills
- ▶ Practical need for the software
- ▶ Mental stimulation
- ▶ Belief in open source

Concepts derived from a survey conducted by OSDN and reported in “Open source a needed outlet for programming pros”, *The Register*, May 2, 2002, <http://www.theregister.co.uk/content/4/23935.html>. For a developer survey, see <https://www.techrepublic.com/article/what-makes-developers-happy-contributing-to-open-source/>.

PostgreSQL Motivations

- ▶ Professional advancement, learn new skills
- ▶ Practical need for the software
 - ▶ *Business needs the enhancement*
 - ▶ *Business wants PostgreSQL to thrive*
- ▶ Mental Stimulation
- ▶ Belief in open source

Extreme Case

*It was cheaper
to pay to add missing features
to PostgreSQL
than to buy Oracle.*

Questions



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