

The PostgreSQL Open Source Development Process

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

<https://momjian.us/presentations>



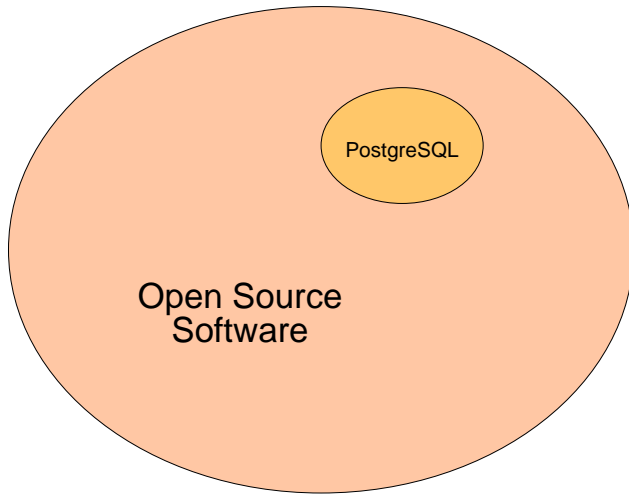
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Introduction

- 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

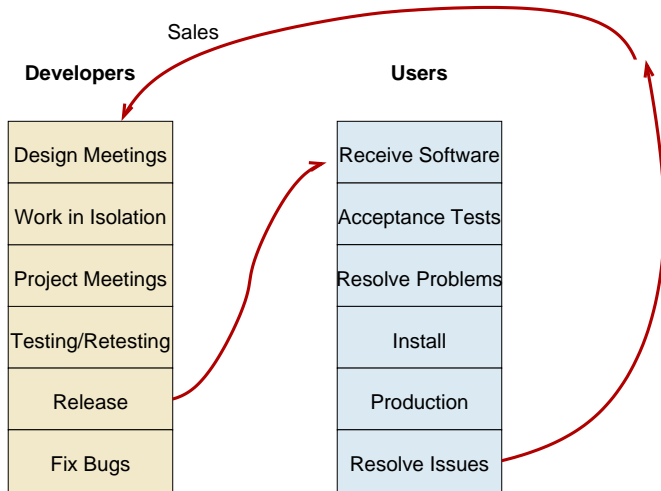
Proprietary Software Development

- 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

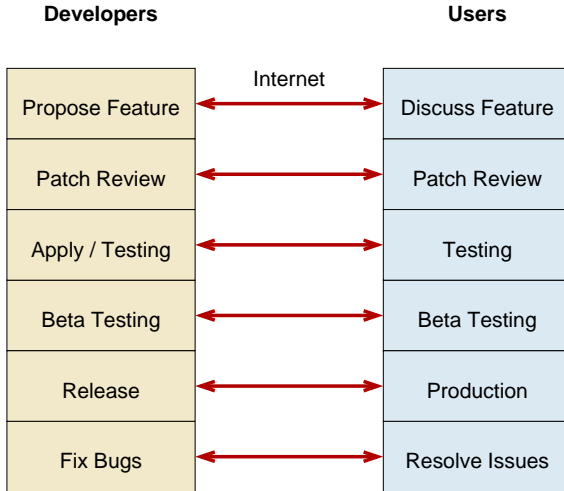
Open Source Development

- 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

Users

- General Re: Is this a reasonable use for advisory locks?
Other Query Tuning related to function
Announce Version 2.0.0 of advanced PostgreSQL driver written in C++

Developers

- Hackers Re: Allow parallel plan for referential integrity checks?
Commit pageinspect: Fix handling of all-zero pages
Versions Stable: 14.2+, 13.6+, 12.10+, 11.15+, 10.20+ | Development: 15 devel

External

- Blogs Luca Ferrari: Formatting SQL code with pgFormatter within Emacs
News Version 2.0.0 of advanced PostgreSQL driver written in C++
Media Two Sizes Fit Most: PostgreSQL and ClickHouse – The New Stack - thenewstack.io
Events German PostgreSQL Conference 2022

IRC (also Slack)

ilmari: no, only coalesce and case have specified evaluation order

velix: ilmari: wow, thanks.

ilmari: SQL is declarative, not procedural

velix: **velix** prints this on a t-shirt

depesz: velix: heh, because of your issue, i enabled logging of "failed plans". so far I see people trying to upload: queries, plans from mariadb, and plans from pg, in text format, with all the indentation removed.

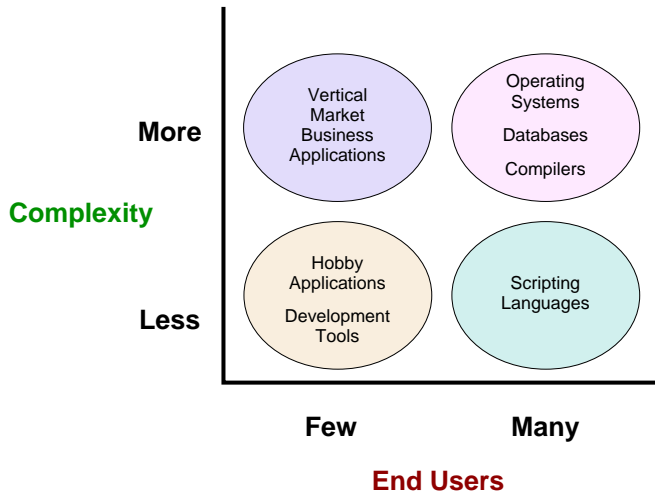
velix: :p

velix: depesz: seems like you need to extend your target group to maria

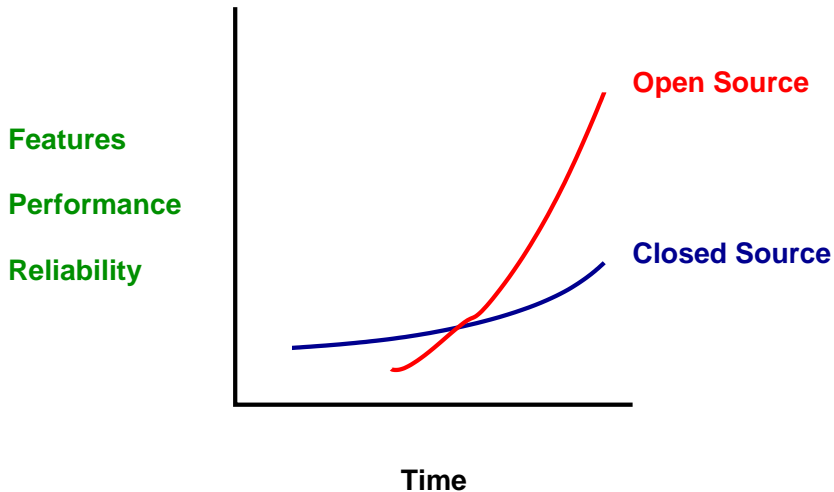
depesz: that's not going to happen.

London 13:55 Berlin 14:55 Moscow 15:55 Mumbai 18:25 Beijing 20:55 Tokyo 21:55 Los Angeles 05:55 New York 08:55 São Paulo 09:55
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Open Source Software Availability



Is It As Good As Proprietary Software?



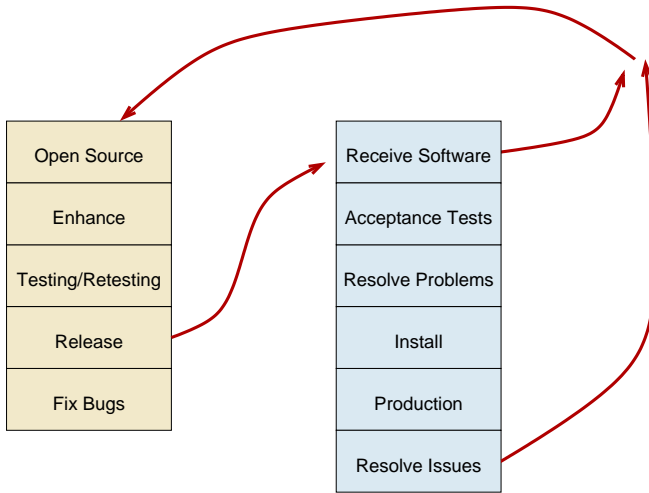
Problems With Open Source (and Democracy)

- 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

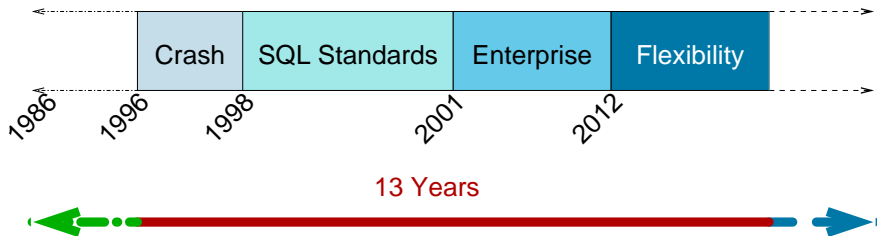
Hybrid Development



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/> and <https://opensource.com/article/21/4/motivates-open-source-contributors>.

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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