

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>



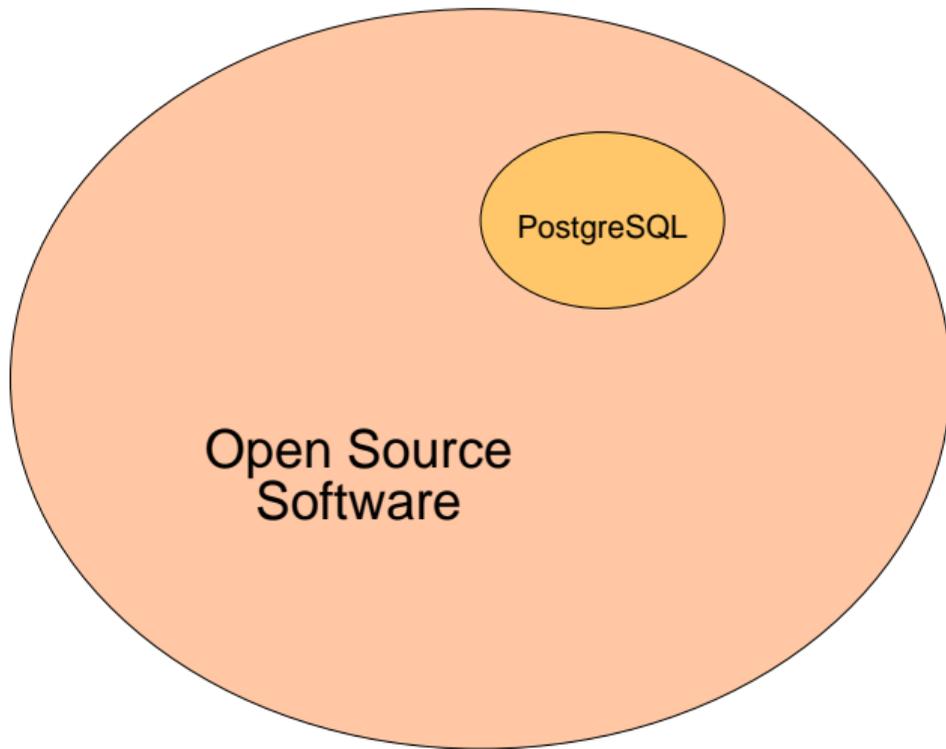
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Introduction

- 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

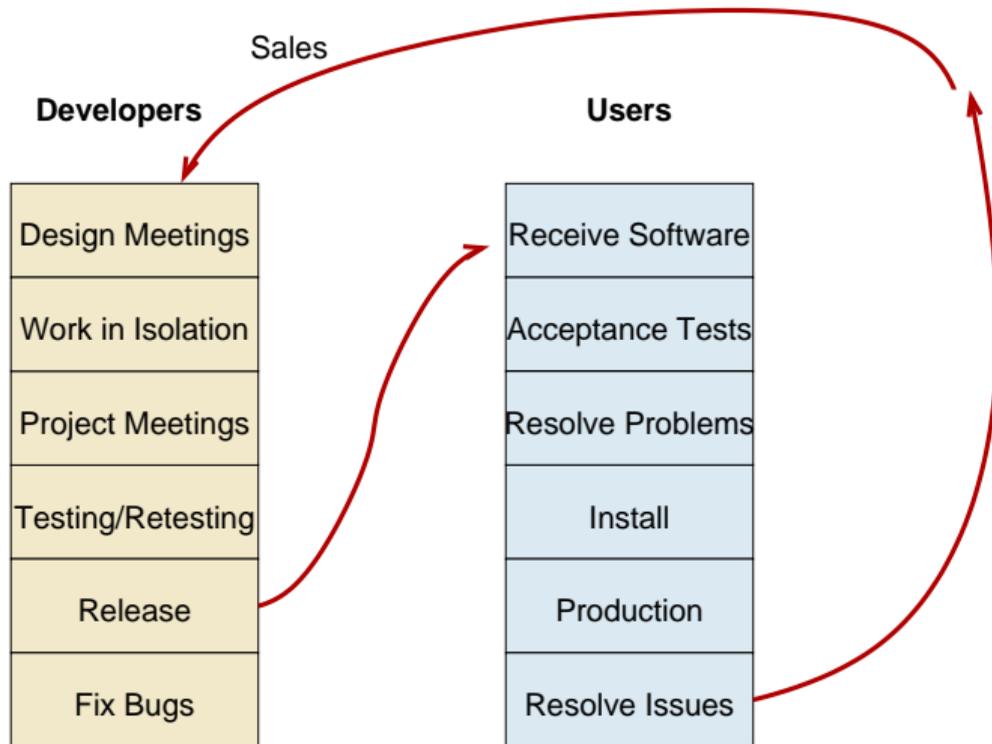
Proprietary Software Development

- 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

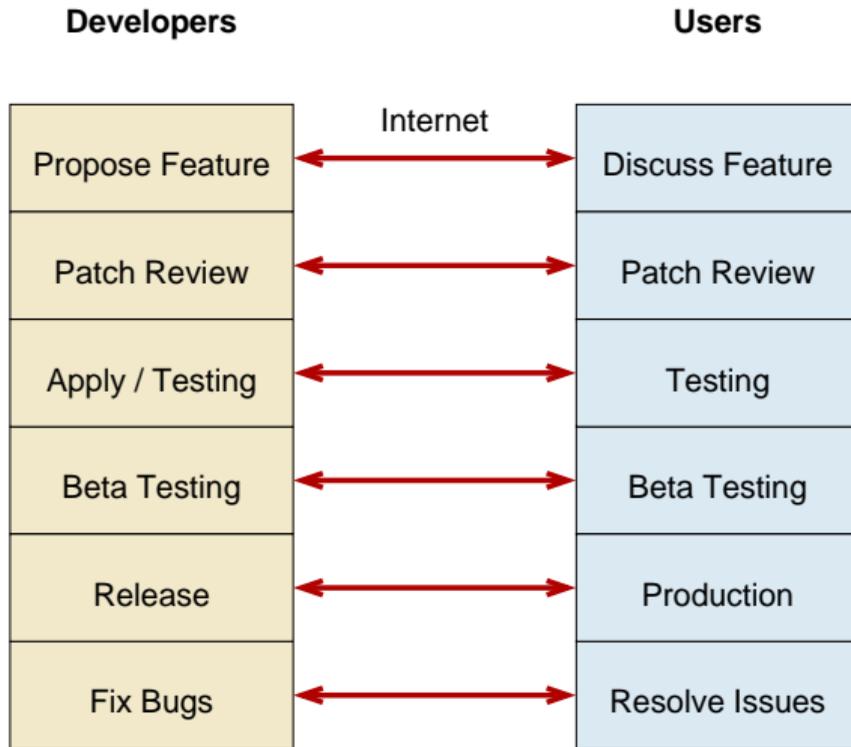
Open Source Development

- 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: Getting wrong datetime in database using insert into table query.

Other Re: Deadlock

Announce pgmoneta 0.10

Developers

Hackers Re: Cutting support for OpenSSL 1.0.1 and 1.0.2 in 17~?

Commit Avoid function call overhead of pg_popcount() in syslogger.c.

Versions **Stable:** 16.2+, 15.6+, 14.11+, 13.14+, 12.18+ | **Development:** 17 devel, in commitfest

External

Blogs Álvaro Hernández: Why Postgres Extensions should be packaged and distributed as OCI images

News Ora2Pg 24.3 have been released

Media Index Creation in PostgreSQL Large Tables: Essential Checklist for Developers - Medium

Events PGDay at FOSSASIA Summit

IRC (also Slack)

buu: but with treeparser it should be possible to pull out the sql bits

buu: *treesitter

pnorman: I try to keep my coding making sense if you looked at any jinja2 part in isolation or took them out. so if I open up a (in a conditional I also close it as well

buu: yeah those old school types are obnoxious

buu: I'm so happy I never have to read < * if 1 { * > ... < * } * >

pnorman: so WHERE (foo {% if bar %}AND baz){% else %}){% endif %} would always generate valid SQL, I avoid it

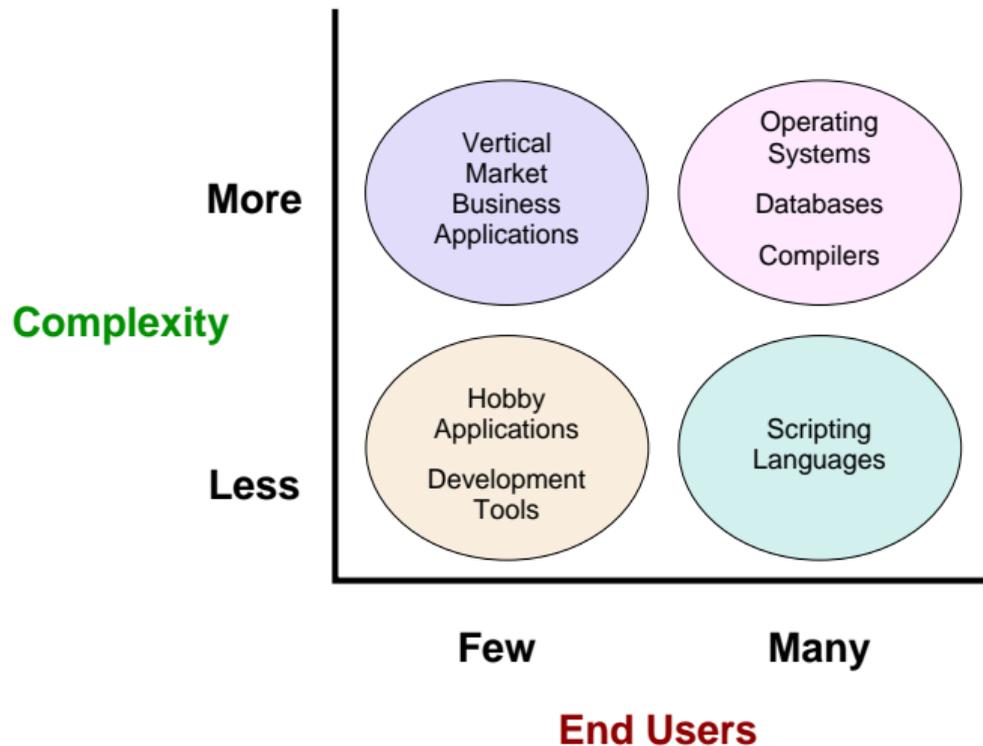
buu: augh

pnorman: actually, the worst things are commas. if you have a condition like foo IN (1,2,3,4) where depending on some other variable you keep on adding on to the list of 1,2,3,4 and 1 is always present you need to really tie the comma with the item *after* it, not before

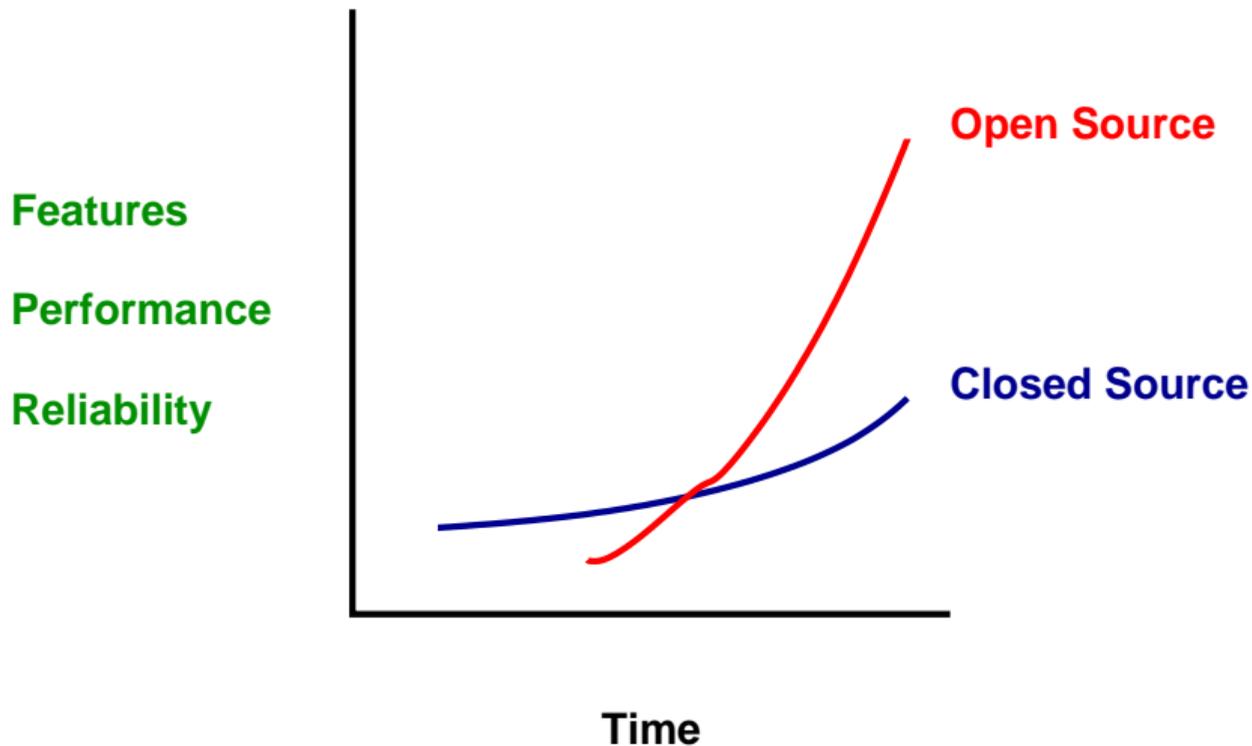
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Open Source Software Availability



Is It As Good As Proprietary Software?



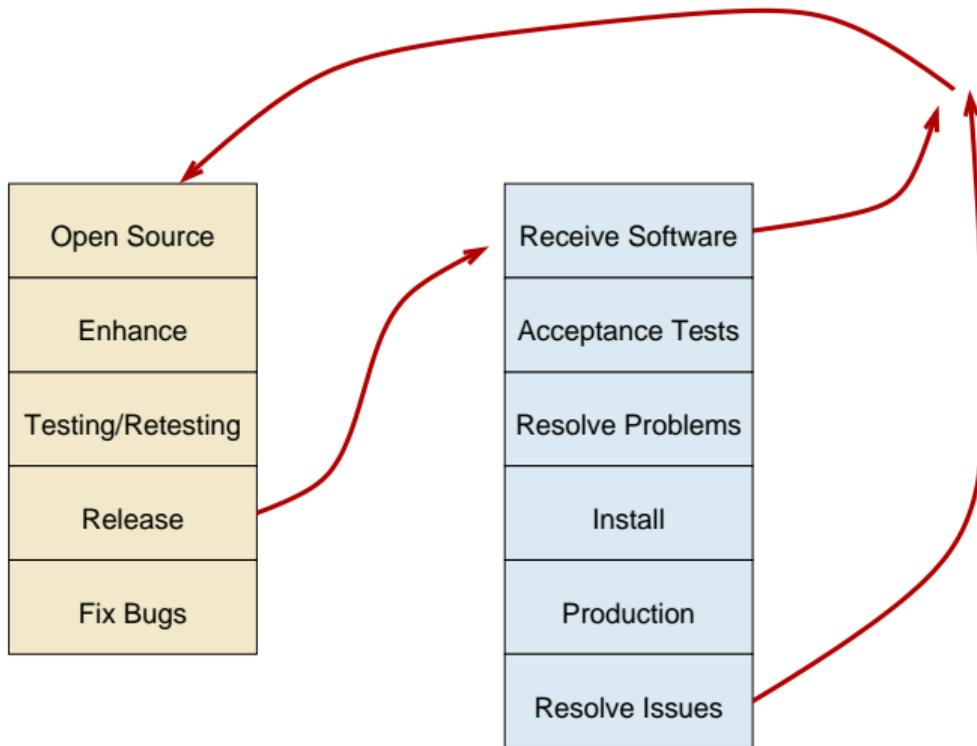
Problems With Open Source (and Democracy)

- 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

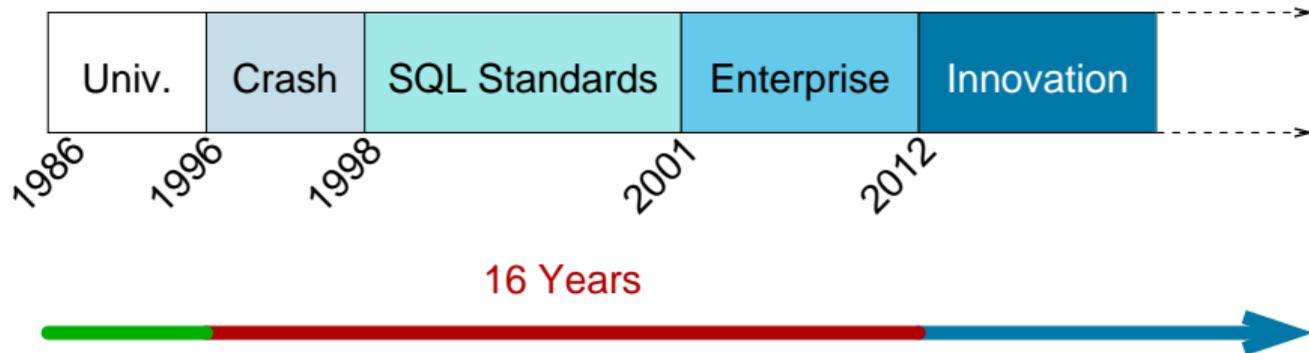
Hybrid Development



Licensing

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

PostgreSQL Evolution



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

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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