

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>



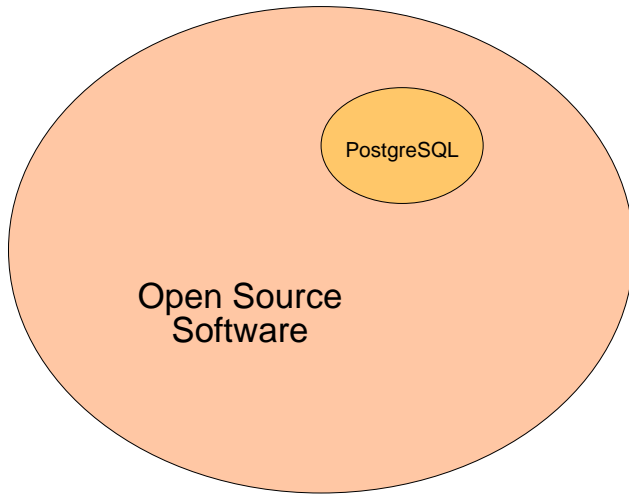
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Introduction

- 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

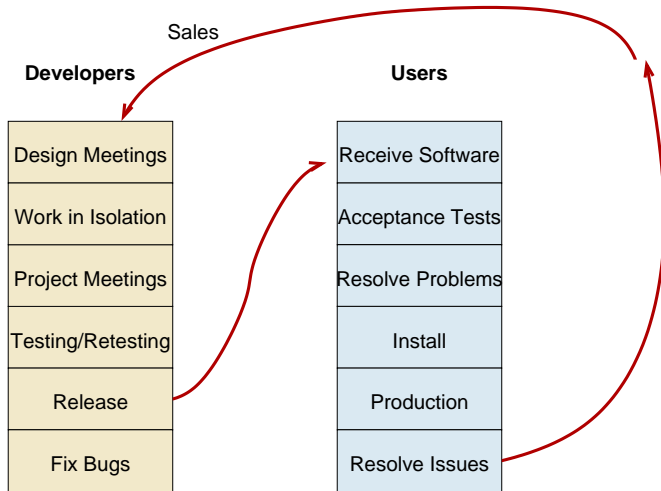
Proprietary Software Development

- 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

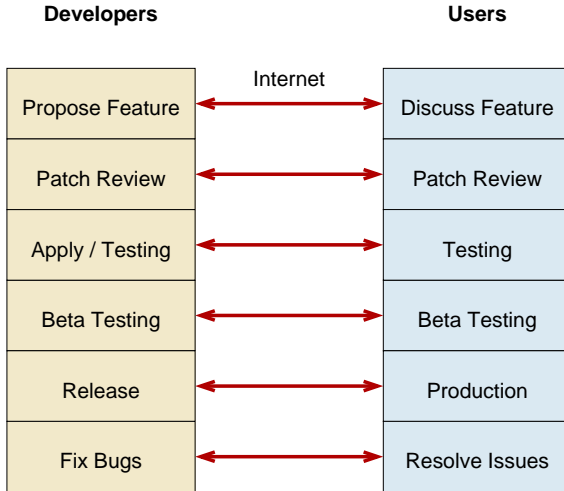
Open Source Development

- 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: Content for talk on Postgres Type System at PostgresConf
Other Logical replication from standby
Announce PGConf.dev 2024 Schedule Now Available!

Developers

Hackers Re: Improve readability by using designated initializers when possible
Commit Simplify `pg_enc2gettext_tbl[]` with C99-designated initializer `sy`
Versions **Stable:** 16.2+, 15.6+, 14.11+, 13.14+, 12.18+ | **Development:** 17 devel

External

Blogs Gilles Darold: Partitioning by reference – Oracle vs PostgreSQL
News PGConf.dev 2024 Schedule Now Available!
Media Knowledge Bases for Amazon Bedrock now supports Amazon Aurora PostgreSQL and Cohere embedding models ... - AWS Blog
Events Nordic PGDay 2024

IRC (also Slack)

wechatdesk: but now this happened

wechatdesk: In teh mintoring tool i see close to 700 Connection normal

wechatdesk: but some peak at 850

Berge: wechatdesk: Do you have a question, or is anything unclear?

depesz: Berge: i generally am ok with 2-3, let's say 4, connections per core.

Berge: depesz: Depends on usage patterns, of course

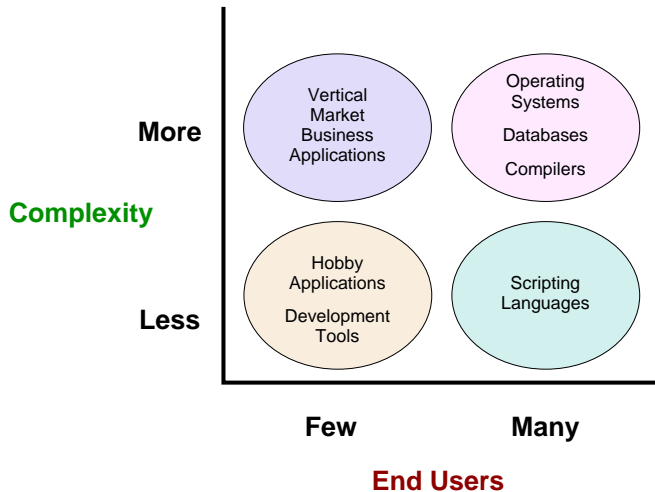
depesz: sure.

depesz: is wechatdesk the same person as nvrohanraj ?

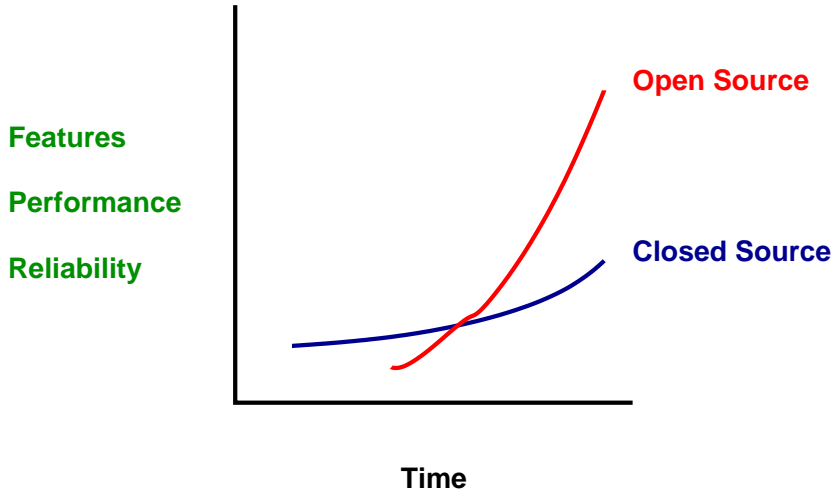
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Open Source Software Availability



Is It As Good As Proprietary Software?



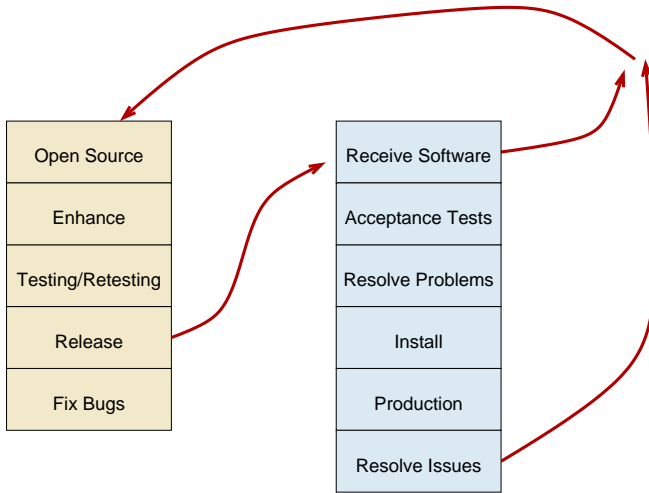
Problems With Open Source (and Democracy)

- 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

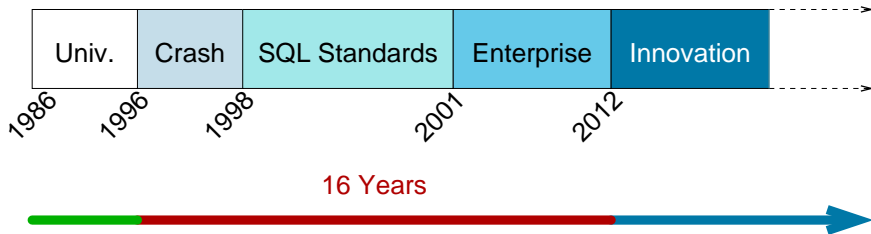
Hybrid Development



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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