POSTGRESQL is successful only because of its vibrant open source development community. This presentation chronicles the building of that community.

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Programming Before Relational Databases

- OS Files
- ISAM, indexed on a key
- No joins, WHERE clauses, or complex sorts
The University of California at Berkeley
Postgres

Michael Stonebraker

Postgres95

Jolly Chen and Andrew Yu
• Ingres — research prototype, spawned Relational Technologies, purchased by Computer Associates
• Postgres — research prototype, spawned Illustra, purchased by Informix
• Postgres95 — added SQL, spawned PostgreSQL
PostgreSQL Through the Years

1977–1985 Ingres
1986–1994 Postgres
1994–1995 Postgres95
1996– PostgreSQL
Transition from Single Maintainer To Internet Development

- Getting approval
- Scouring the mailing list
- Todo list
- Faq
- How does this thing work?
PostgreSQL Core Team

Top row: Thomas Lockhart, Jan Wieck, Tom Lane, Marc Fournier
Bottom row: Vadim Mikheev, Bruce Momjian
Assisting Our Developers

- Developer Education
  - Developer’s Faq
  - Source code flowchart
  - Emphasize code clarity and people will respond
- Developer Recruitment
- Cvsup, remote Cvs
- Managing an increasing installed base
Internals Flowchart

Main

Postmaster

Postgres

Libpq

Parse Statement

Traffic Cop

Rewrite Query

Generate Paths

Optimal Path

Generate Plan

Execute Plan

Utility Command

Utility

Command

CREATE, INSERT, UPDATE, DELETE, MERGE

SELECT, INSERT, UPDATE, DELETE, MERGE

CREATE TABLE, COPY

Storage Managers

Catalog

Utilities

Access Methods

Nodes / Lists

SELECT, INSERT, UPDATE, DELETE, MERGE

CREATE, INSERT, UPDATE, DELETE, MERGE

CREATE TABLE, COPY

SELECT, INSERT, UPDATE, DELETE, MERGE

CREATE, INSERT, UPDATE, DELETE, MERGE

CREATE TABLE, COPY
Keeping the Code Clean

- automatic formatting
- remove unused functions
- mark single-file functions as static
- rename variables and functions
- require patches to be of acceptable quality
Daily Chores

- Mailing list
  - Answer simple questions
  - Identify valid bug reports
  - Work with users to test bug fixes
  - Collect feature requests
  - Encourage technical discussions

- Patch application
- Encourage
- Marketing
Packaging a Release

- Collect unapplied patches
- Resolve outstanding issues
- Regression testing
- Enter beta
- Resolve all bug reports
- Final release
- Collect and apply safe patches
- Issue subreleases
## Release Dates and Sizes

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Development Directions

- Features
- Performance
- Reliability
- Code simplicity
- Standards conformance
- Documentation
- Pace of releases
Performance - AS3AP
Performance - TPC-C
Conclusion

Top row: Thomas Lockhart, Jolly Chen, Vadim Mikheev
      Jan Wieck, Andrew Yu, Tom Lane
Bottom row: Bruce Momjian, Marc Fournier