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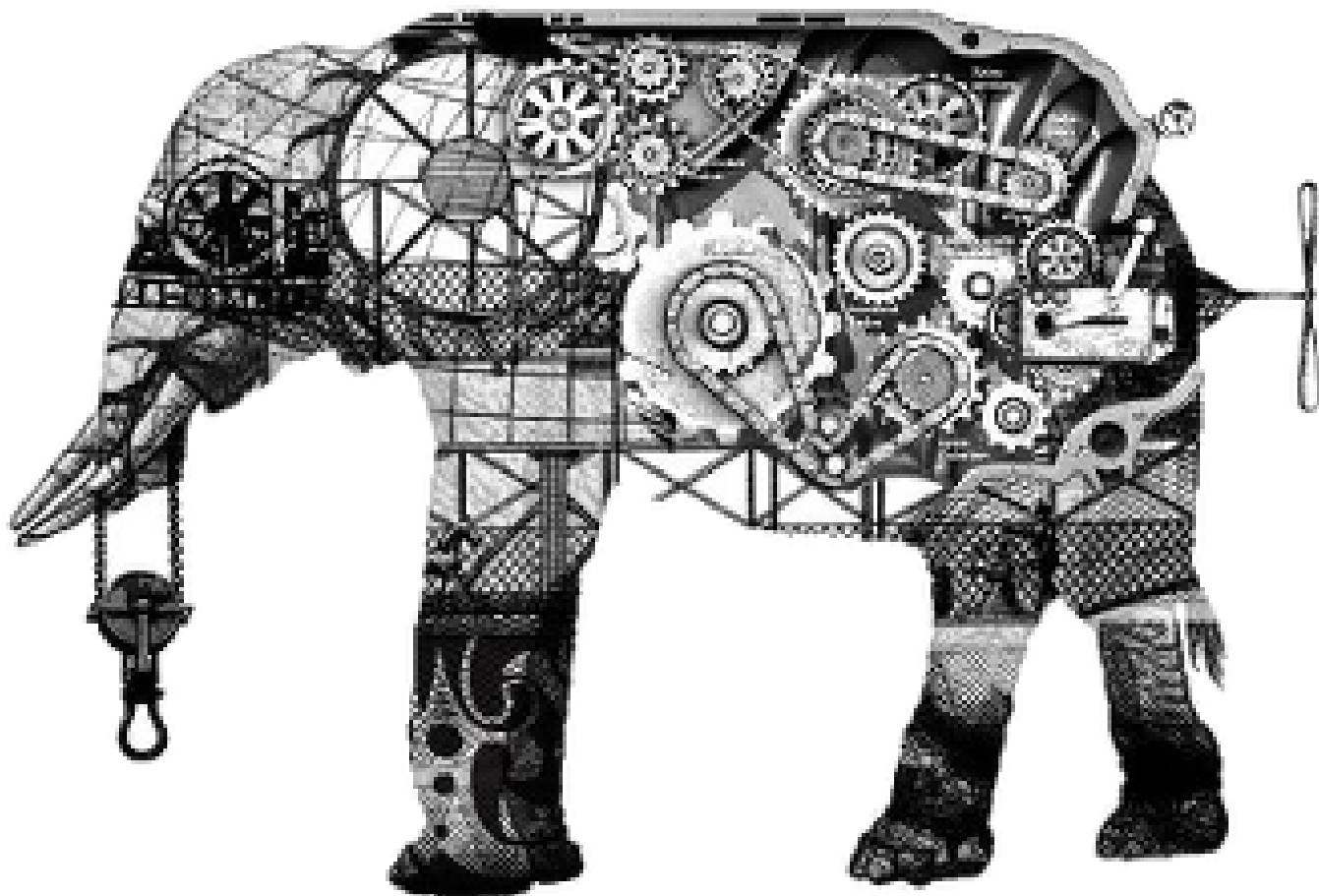
The Internals of PostgreSQL

for database administrators and system developers

Introduction

I n this document, the internals of PostgreSQL for database administrators and system developers are described.
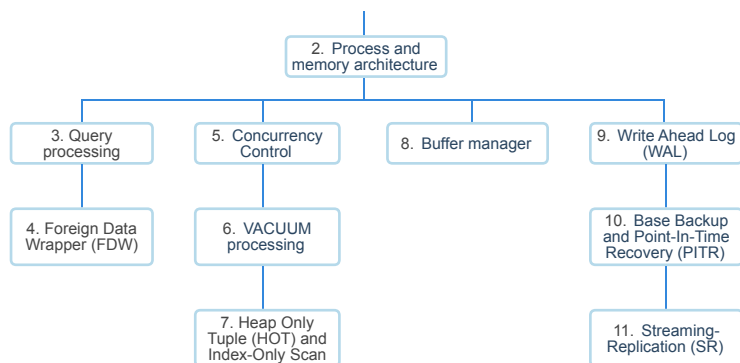
PostgreSQL is an open source multi-purpose relational database system which is widely used throughout the world. It is one huge system with the integrated subsystems, each of which has a particular complex feature and works with each other cooperatively. Although understanding of the internal mechanism is crucial for both administration and integration using PostgreSQL, its hugeness and complexity prevent it. The main purposes of this document are to explain how each subsystem works, and to provide the whole picture of PostgreSQL.

This document is based on a part of the book I wrote in Japanese in 2012 (ISBN-13: 978-4774153926), and covers version 10, which will be released in late 2017, and earlier. Planning to be completed eleven chapters as a whole, for now, you can read eight translated chapters in below:

- Chapter 1: Database cluster, databases and tables
- Chapter 2: Process and memory architecture
- Chapter 5: Concurrency Control
- Chapter 6: VACUUM processing
- Chapter 8: Buffer Manager
- Chapter 9: Write Ahead Log (WAL)
- Chapter 10: Base Backup and Point-In-Time Recovery (PITR)
- Chapter 11: Streaming-Replication (SR)

I have suspended translating the remaining chapters for a while, because the features related to the remaining chapters are still being developed and are changing every day.

- Chapter 3 :Query processing
- Chapter 4: Foreign Data Wrapper (FDW)
- Chapter 7: HOT (Heap Only Tuple) and Index-Only Scan

Author

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I graduated from graduate school of information engineering (M.S. in Information Engineering), have worked for several companies as a software developer and technical manager/director. I published seven books in the fields of database and system integration (3 PostgreSQL books and 3 MySQL books).

As a director of the Japan PostgreSQL Users Group (2010-2016), I organized the largest (non-commercial) technical seminar/lecture of PostgreSQL in Japan for more than six years, and also served as the program committee chair of the Japan PostgreSQL Conference in 2013 and as a member in 2008, and 2009.

Cuando era joven, vivió en Sudamérica por unos años. Recientemente, a veces vuelve a allí.

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