

# Upcoming PostgreSQL Performance Features

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ENTERPRISEDB

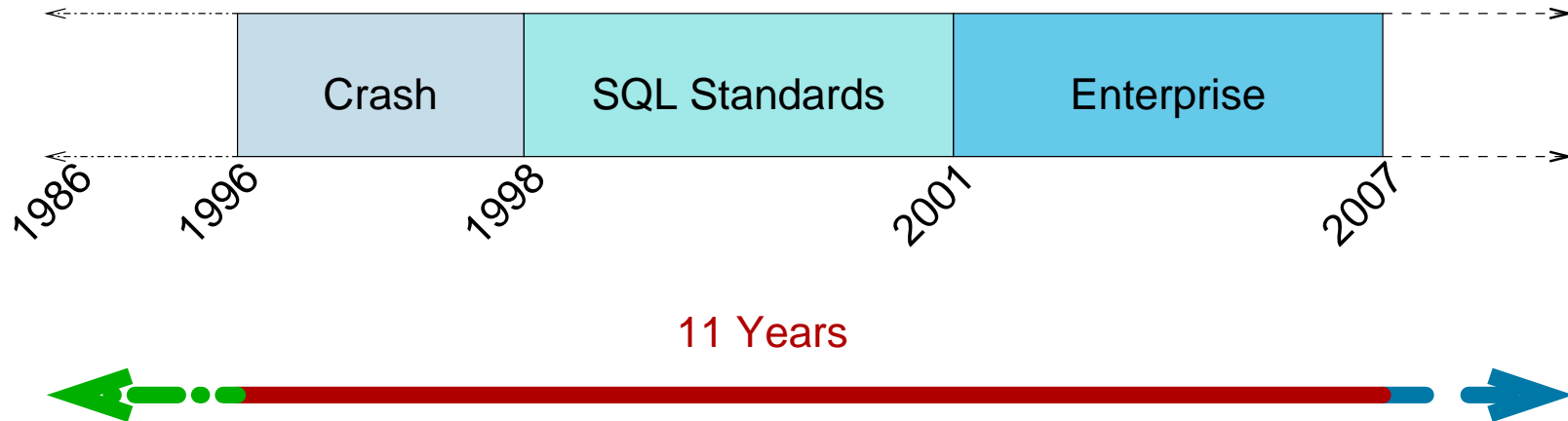
September, 2007



## **Abstract**

This outlines the upcoming performance features of PostgreSQL 8.3.

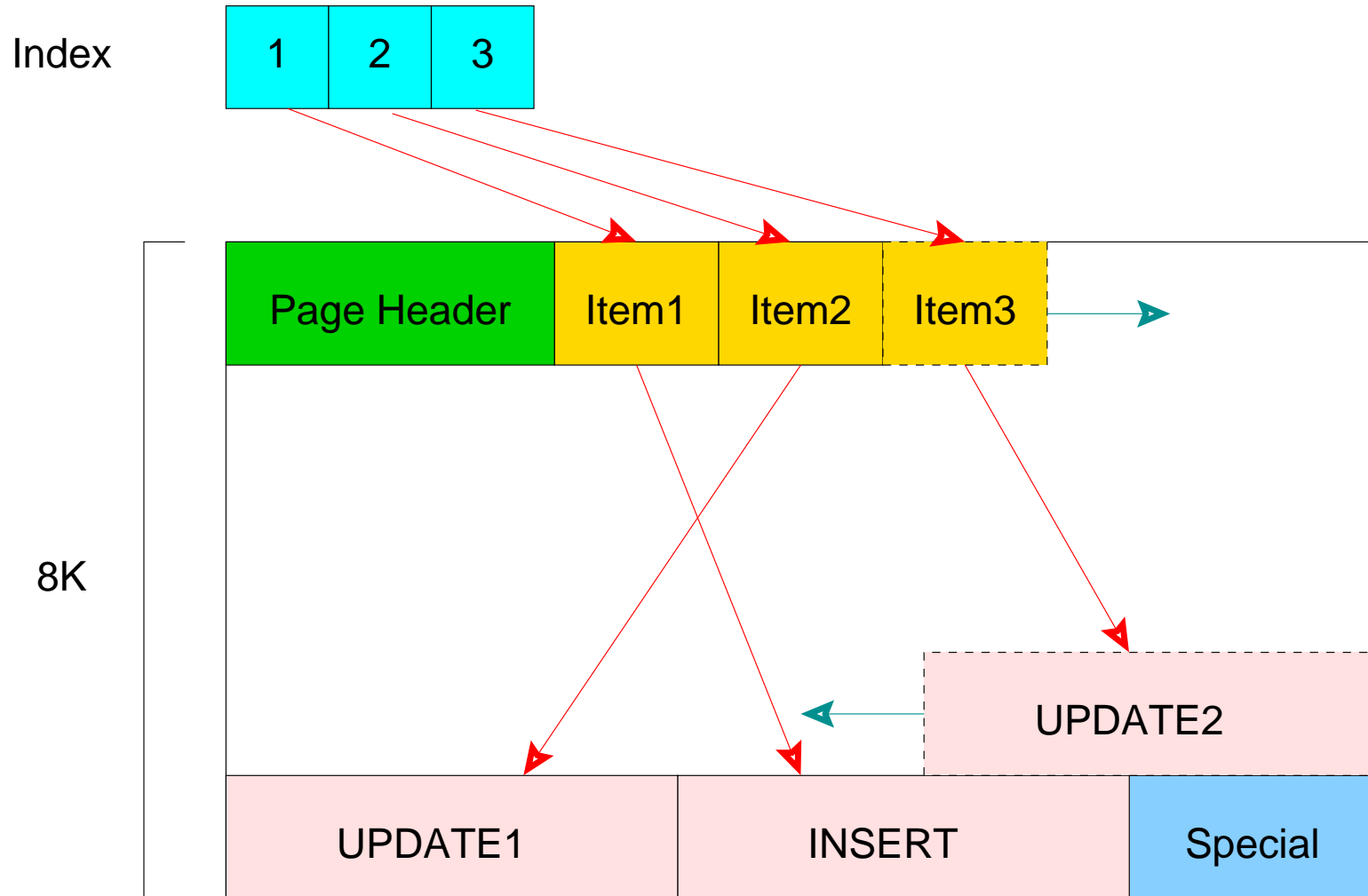
# PostgreSQL Evolution



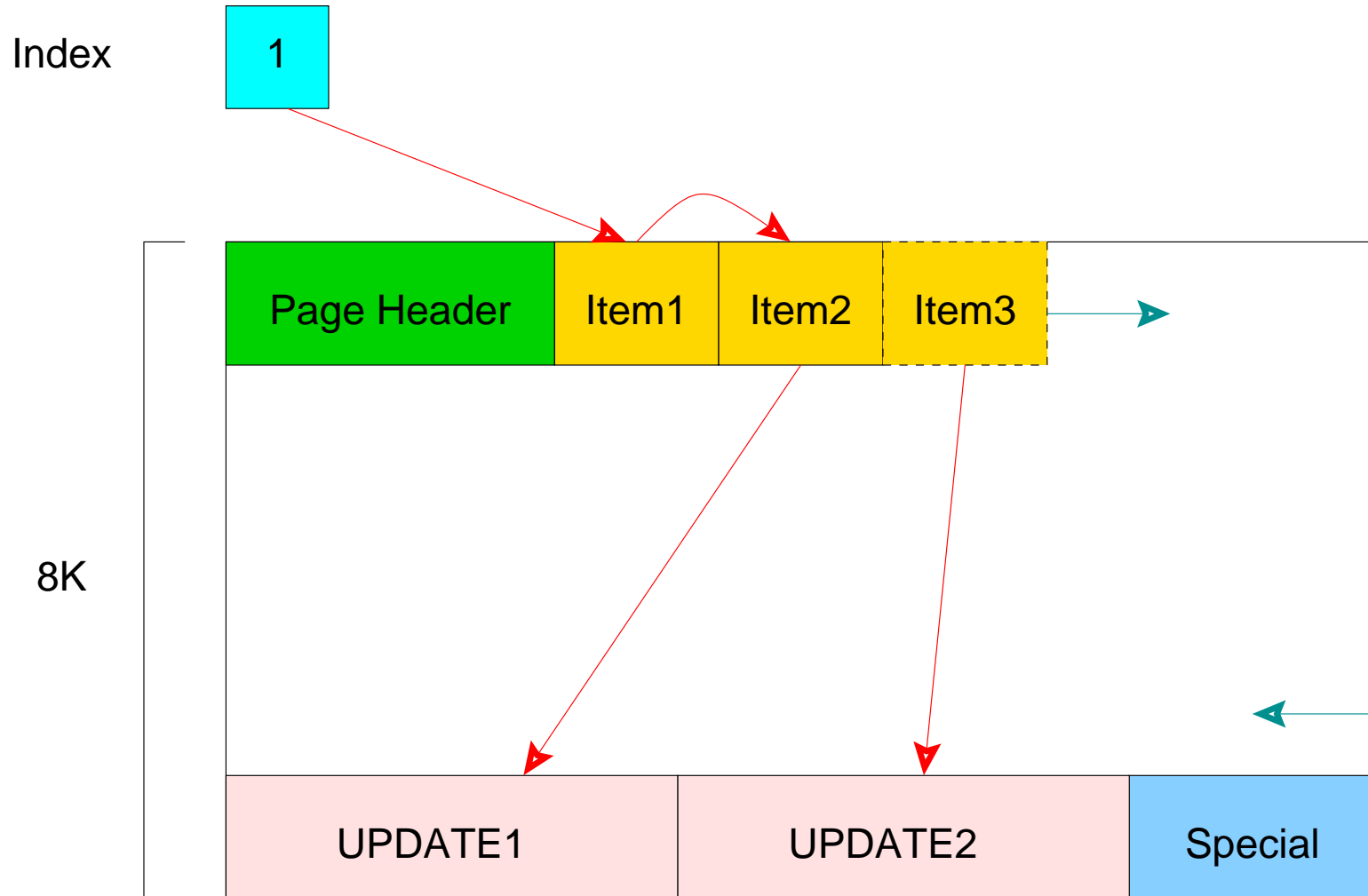
Enterprise features include:

- Improved Performance
- Simplified Maintenance and Administration
- Efficient 24/7 Operation

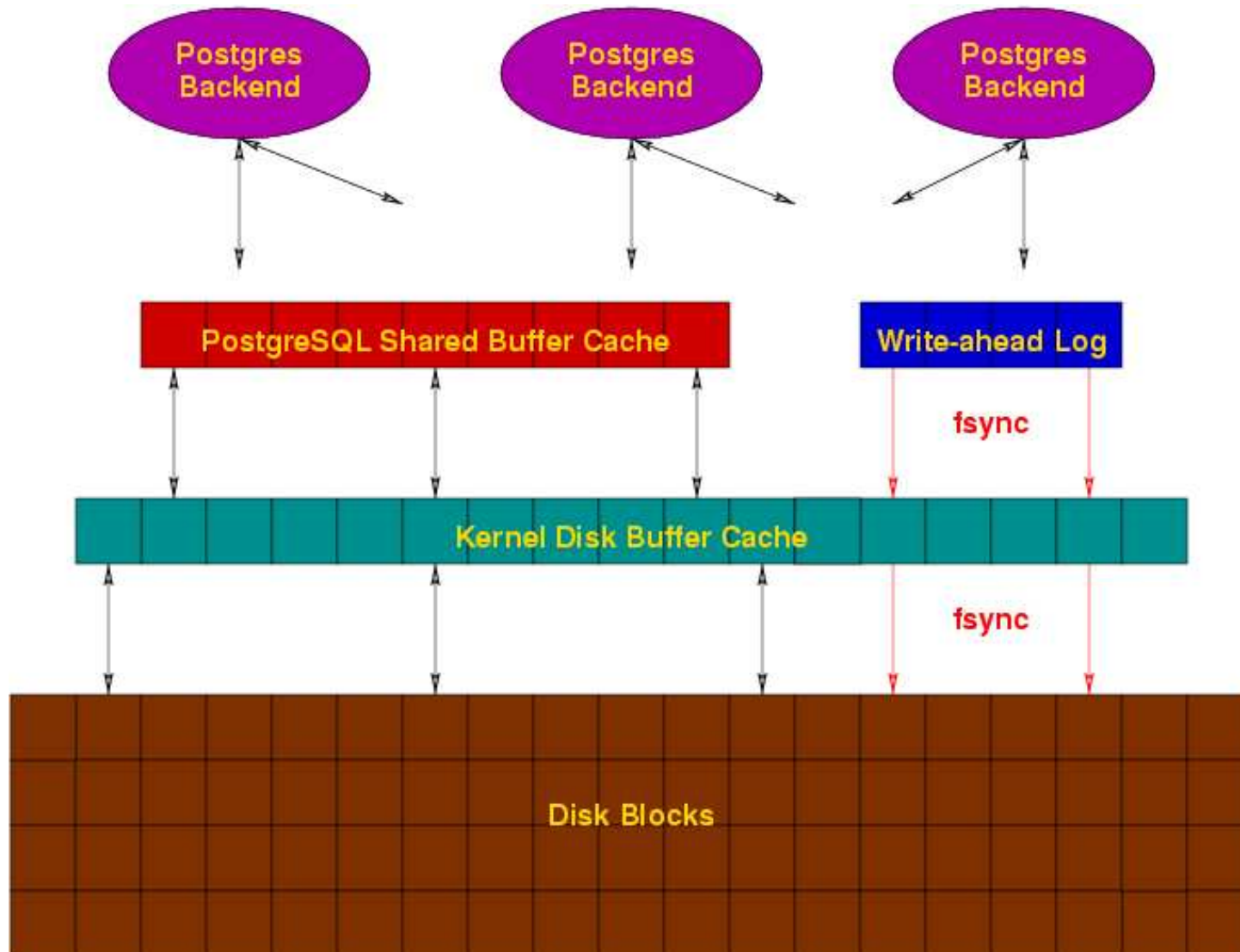
# Update Without Heap Only Tuples (HOT)



# Update With Heap Only Tuples (HOT)



# Asynchronous Commit And Checkpoint Smoothing



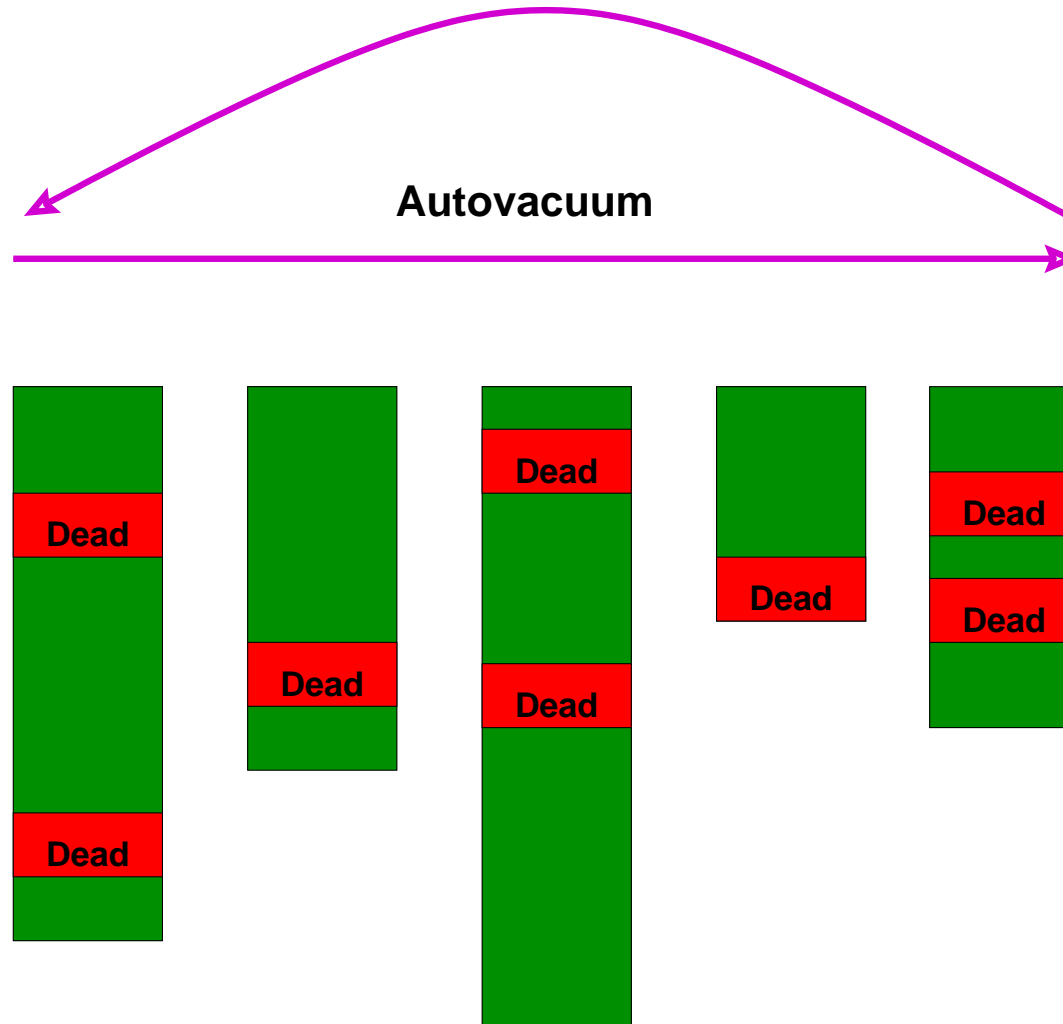
# Synchronized Scans



D	D	D	D	D	D	D	D	D	D	D	D
A	A	A	A	A	A	A	A	A	A	A	A
T	T	T	T	T	T	T	T	T	T	T	T
A	A	A	A	A	A	A	A	A	A	A	A

**Heap**

# Autovacuum On By Default

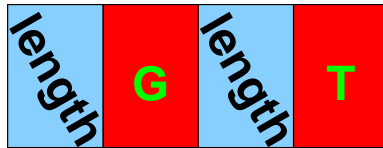


# Short Varlena Headers

Two CHAR(1) fields, 16 bytes



Two CHAR(1) fields, 4 bytes



Short headers used for lengths less than 128 bytes. Also, the tuple header is now 23 bytes, 4 bytes shorter.

## Other Performance Improvements

- Now possible for LIMIT with ORDER BY to return matching rows without sorting
- New ring buffer for vacuums and large sequential scans avoids cache wiping
- Transaction ids no longer used for read-only transactions; reduces the need for vacuum to prevent xid wrap-around
- Auto-adjusted background writer

# Other Improvements

- Full Text Search (tsearch2) installed by default
- Updatable cursors (WHERE CURRENT OF)
- Data types
  - SQL/XML with syntax support
  - UUID (universal unique identifier)
  - ENUM

# Questions?

