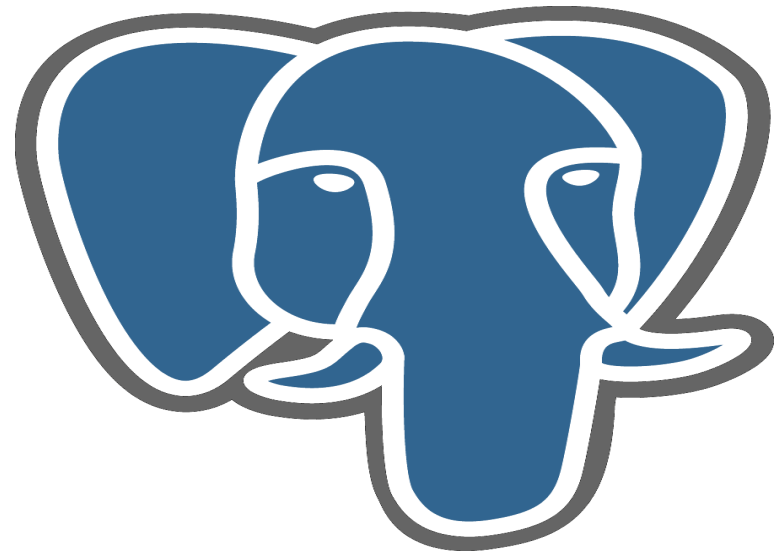
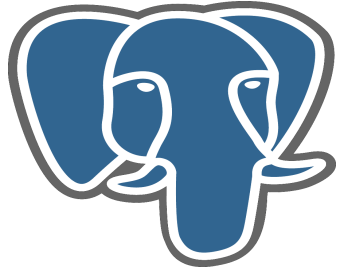


# Open Data, Open Database:

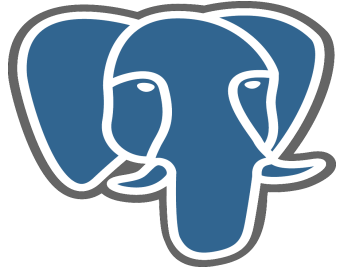
# PostgreSQL Database Server





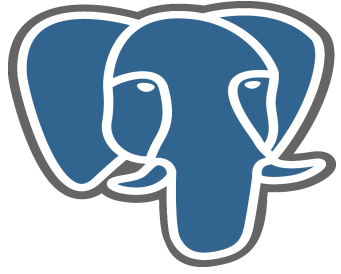
# Open Data/Standards/Source

- Accessible to all for fair use
- Gratis, or very low cost to use
- Not controlled by a single enterprise
- Not second best version (“open core”)
- Open process for improvement
- Open management of the process by community
- Gratis, or very low cost to join community



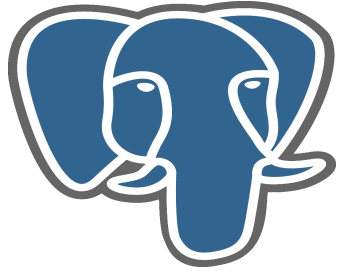
# PostgreSQL

- Open Source Relational Database
  - 24 year design & development history
  - Born in Research, Evolving with Innovation
  - First database to have non-block locking, user defined datatypes, multiple types of index
  - BSD licence
- Database
  - Server based DBMS aimed at larger datasets
  - Fast, Robust, Secure
  - Popular, growing, free



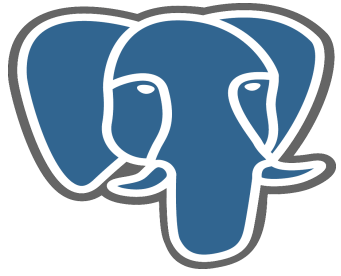
# Relational DBMS

- SQL:2011 compliant DBMS
- Closely tracking SQL standard
- Membership of ISO committee
- Full, detailed and performant
- 9.1 is current stable version
- 9.2 released in 3Q2012 – annual release



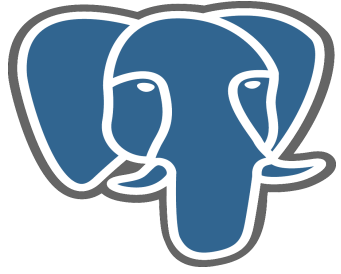
# Object Relational DBMS

- User defined Functions
- User defined Datatypes
- User defined Operators, Statistics, Indexing
- EXTENSIONS
  - PostGIS – the leading Open GIS datastore
  - PL/R – Analytical server side functions
  - BioPostgres



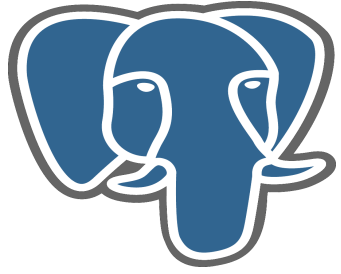
# Post Relational DBMS

- Native support for all of these features, including multiple types of index
- Range Types
  - {Timestamp, Timestamp}
- Arrays
  - {1.0, 2.1, 3.4, 5.8, 6.7, 12.5}
- Record Types
  - {'a', 1, true, 7.569}



# Key Value DBMS

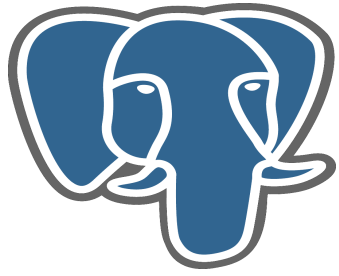
- Available via standard extension
- Hstore
  - `x=2 y=ABC citation=URL key1=value1 key2=val`
  - Fully indexable
  - No requirement for DDL
  - No limit on number of keys, size of values
- 1 GB data chunks, auto compression
- Scalability layer



# Document Centric DBMS

- XML datatype - SQL standard support, Xpath
- JSON datatype in 9.2
- Case sensitive/case insensitive datatypes
- Column level collation
- Full UTF8 support
- Recursive query support for link traversal
- Integrated full text indexing
  - User defined Dictionaries, Stemmer etc



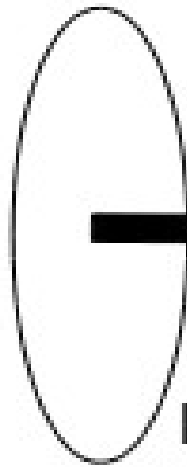
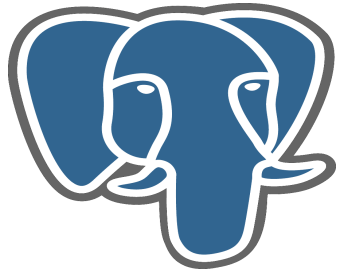


# PostgreSQL

- Flexible Data Platform
- Mature, Robust, Free
- Popular and Growing
  - NASA, NOAA, Uoxford, UCambridge
  - McAfee, Cisco, Nokia, Skype, Genentech
  - OpenStack, Heroku
  - OSX, Win, RedHat, Ubuntu

**2ndQuadrant**   
Professional PostgreSQL

- Platinum Sponsors
- Leading Contributors
- Open Source Business
- HQ in EU,  
Worldwide business



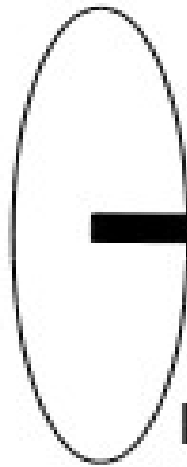
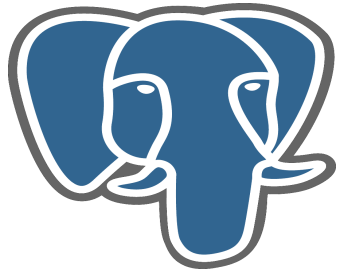
# AXLE

Advanced Analytics  
for EXTremely Large  
European Databases

2ndQuadrant +  
Professional PostgreSQL



- Core DBMS research into handling Big Data
  - Innovative Performance Research
  - Advanced Hardware Architectures
  - Visual Analytics for Big Data
  - Security, Privacy and Audit
- Looking for EU partners with Big, Open Data
  - Big Data, Clear Use Cases, High Benefits
  - November 2012+



# AXLE

Advanced Analytics  
for **EX**tremely **L**arge  
**E**uropean Databases

**2ndQuadrant**   
**Professional PostgreSQL**

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  - Technical Lead, AXLE Project
- **Adrian Cristal, Barcelona Supercomputer Centre**
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