



BeeCon 2016

2ndQuadrant 
Professional PostgreSQL

PostgreSQL: what you should know to improve your **Alfresco**

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Brussels, 27-29 April



+ Outline

Greetings

PostgreSQL

Examples

There's More (?)



+ Me in short

- Principal Consultant (2008-)
 - Training, consulting, ...
 - PostgreSQL 9 Administration Cookbook
- <http://www.2ndQuadrant.com/>



- Board member, Treasurer (2013-)
 - Organising PGDay.IT, ...
- <http://www.itpug.org/>





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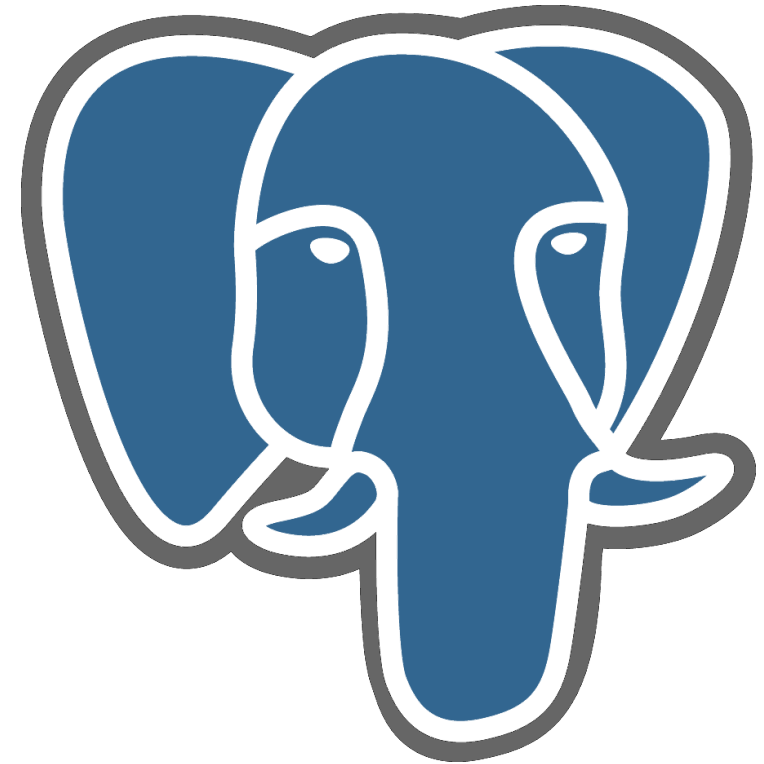
Examples

There's More (?)

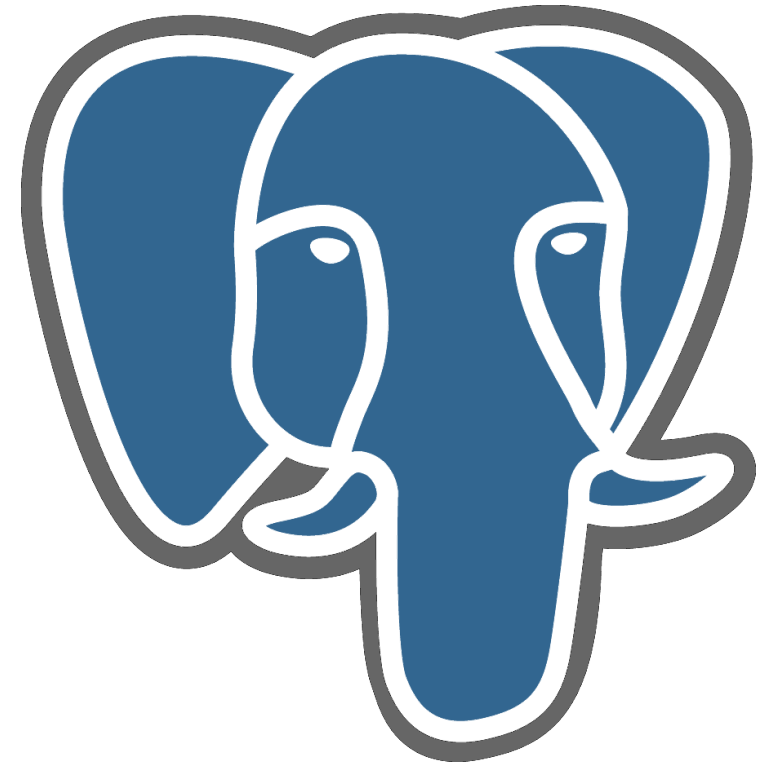




+ PostgreSQL in short



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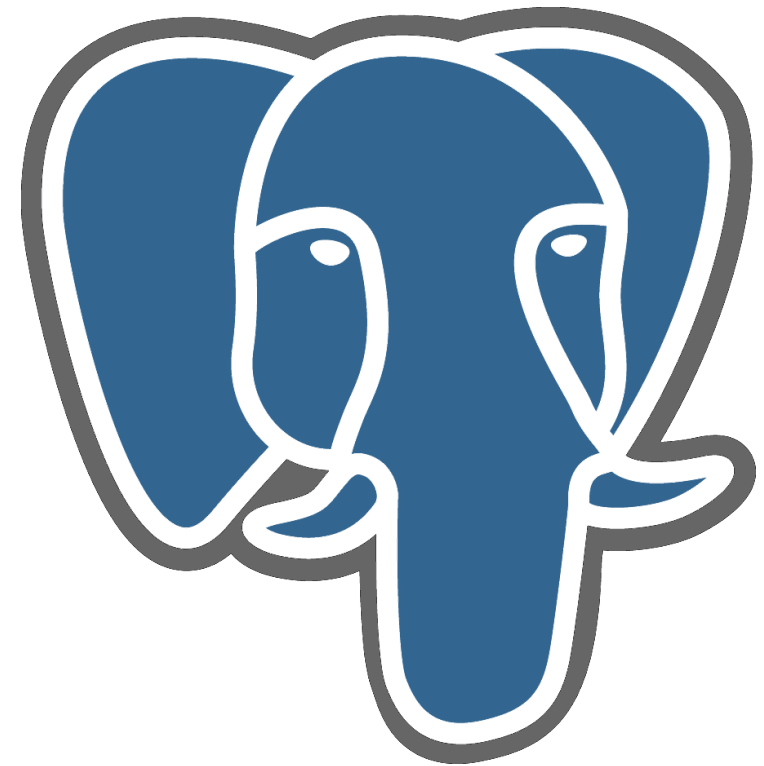


- Relational Database Software
- Open Source (BSD)
- Born in the 1980s, released in 1995
- Stable Release: 9.5 (Jan 2016)
 - 9.6 Beta: next month!
- <http://www.postgresql.org/>



+ PostgreSQL for Alfresco

- MVCC
 - Provides **Fast** ACID
- Hot Backup
 - **Not** blocking
 - Thanks to MVCC
- **Streaming** Replication
 - One read/write Primary
 - **Many** read-only Standbys
- Point-In-Time Recovery (**PITR**)
- And much more... (chat later!)





The PostgreSQL World

- Lots of **expertise**
 - Technical discussion in the open
 - Easy to buy professional support (24x7)
- Very good docs, lively community
 - <http://www.postgresql.eu/>
- Many **conferences** worldwide
 - next EU event: Tallinn, 1-4 November 2016
 - also in 2016: France, Italy, UK, Switzerland, ...





+ The PostgreSQL Ecosystem

- Examples of third-party tools:
 - **Barman**, for disaster recovery
 - **repmgr**, to manage replication
 - **pgAdmin**, a visual UI
 - **pgBadger**, for log analysis
 - **pgBouncer**, a connection pooler
 - **pgLoader**, for fast data loading
 - **PL/Proxy**, for sharding
 - **PostGIS**, for spatial data
 - ...





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+ Installation example (Debian)

```
# apt-get install postgresql-9.5
```

- **Q:** Did it work? How can I see?
- **A:** Connect and run a query.
 - As the postgres user, issue:

```
$ psql
```

```
postgres=# SELECT 9*9;
```

```
==> 81
```





+ Configuration example (Debian)

- From the SQL prompt:

```
postgres=# ALTER SYSTEM SET hot_standby=on;
```

- Then, as root:

```
# service postgresql restart
```

- Some parameters only need a **reload**
 - Replace with:

```
# service postgresql reload
```





+ Disclaimer!

- This was just a **simple example**
- For **production** deploys more tuning is appropriate





+ Hot Backup

```
$ pg_dump mydb -f backup-mydb.sql
```

- Seamless
- "Hot" means you can **read & write** in the meantime
- Called **logical** backup





+ Hot Parallel Backup & Restore

- Make a backup using 16 **parallel** jobs:

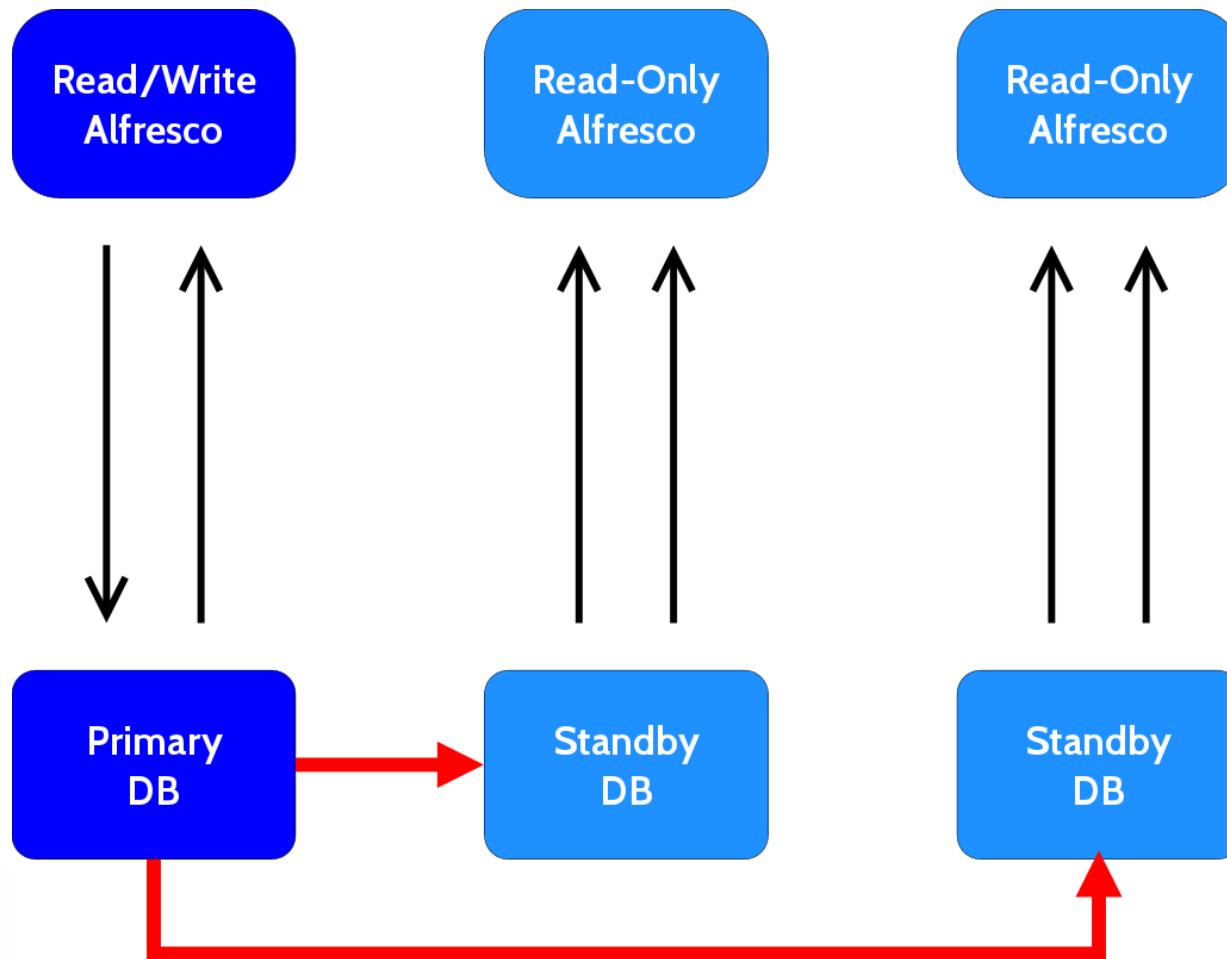
```
$ pg_dump -j16 -Fd -f mydumpdir mydb
```

- Restore it using 16 **parallel** jobs:

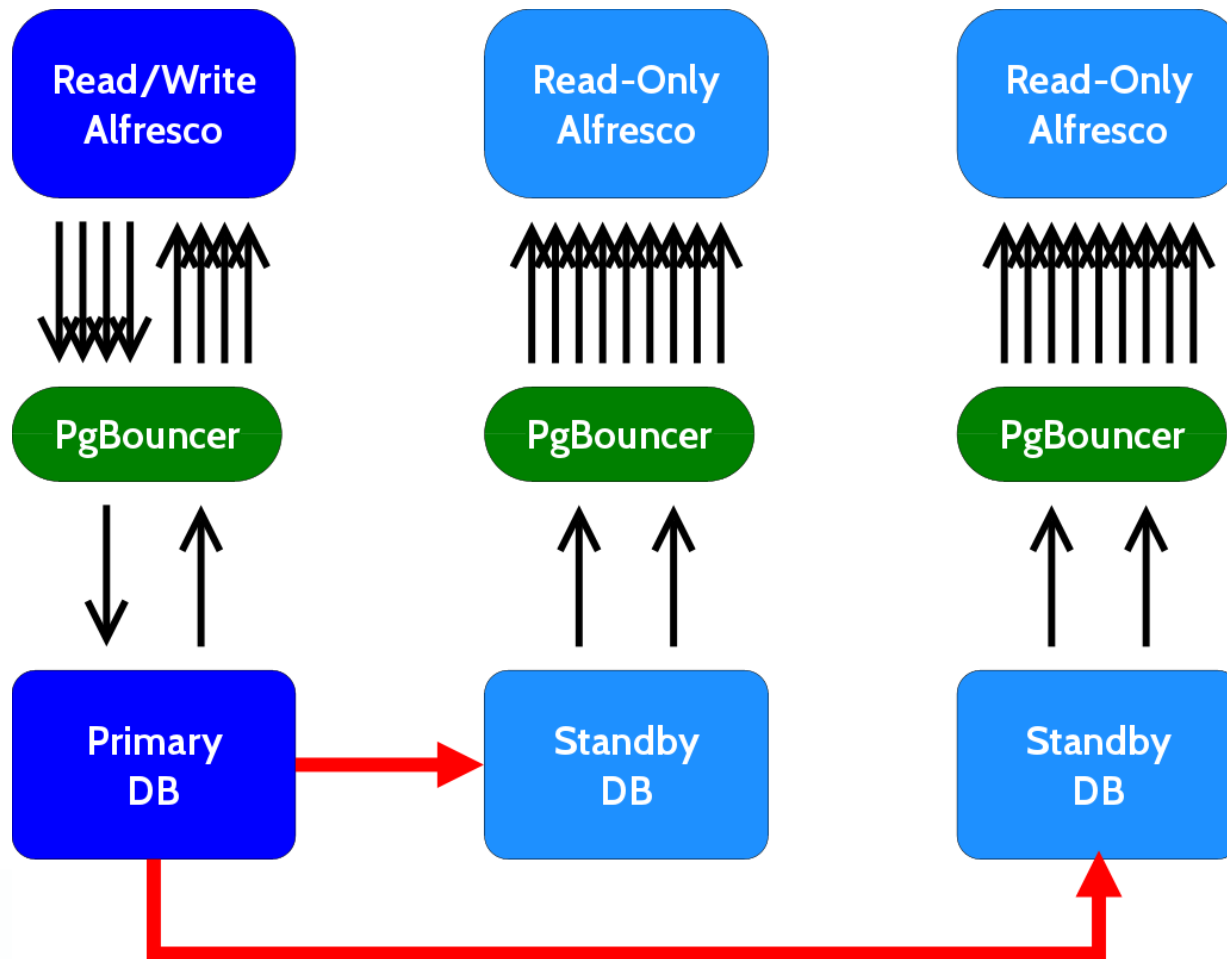
```
$ pg_restore -j16 -d mydb2 mydumpdir
```



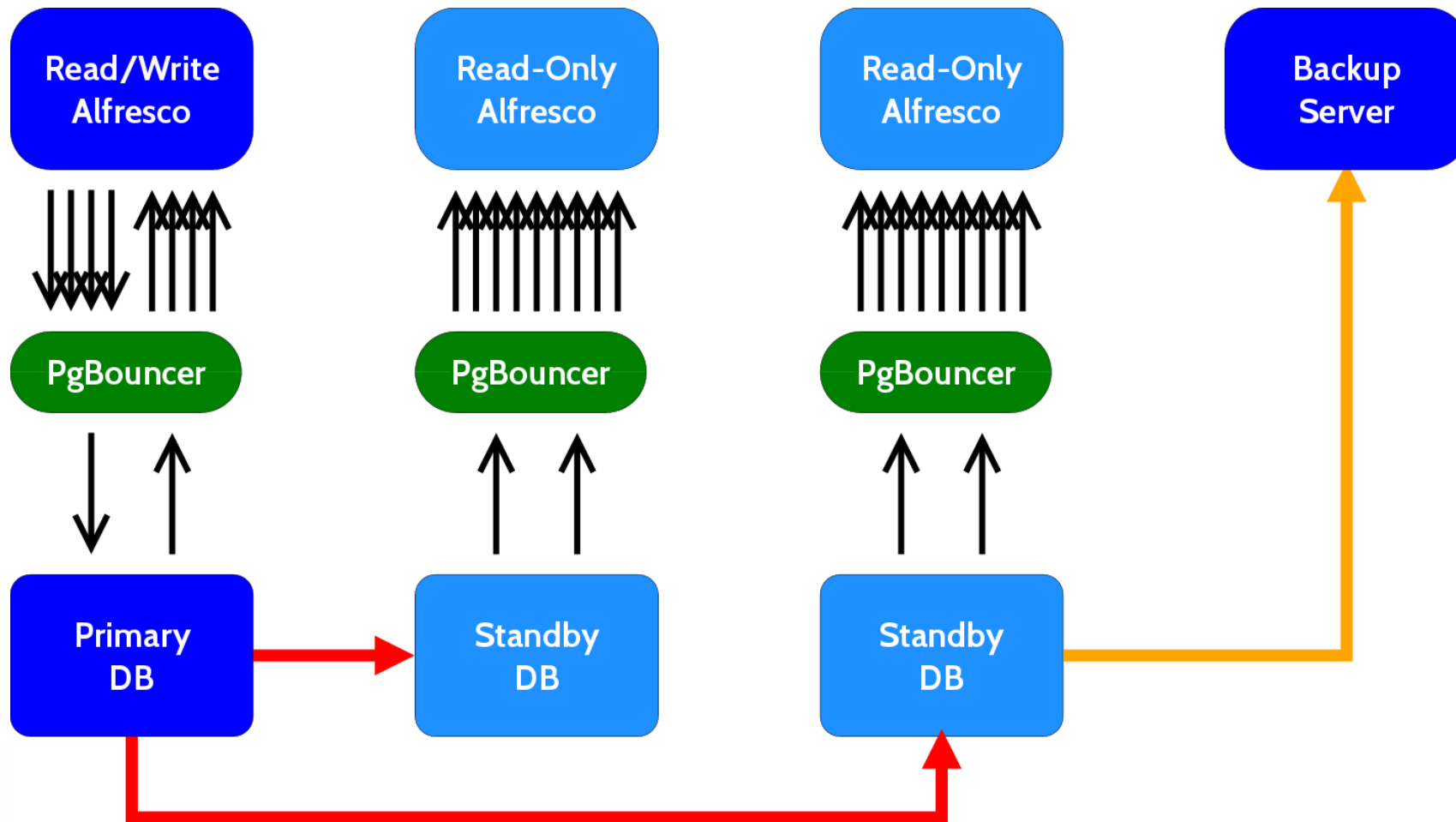
+ Replication



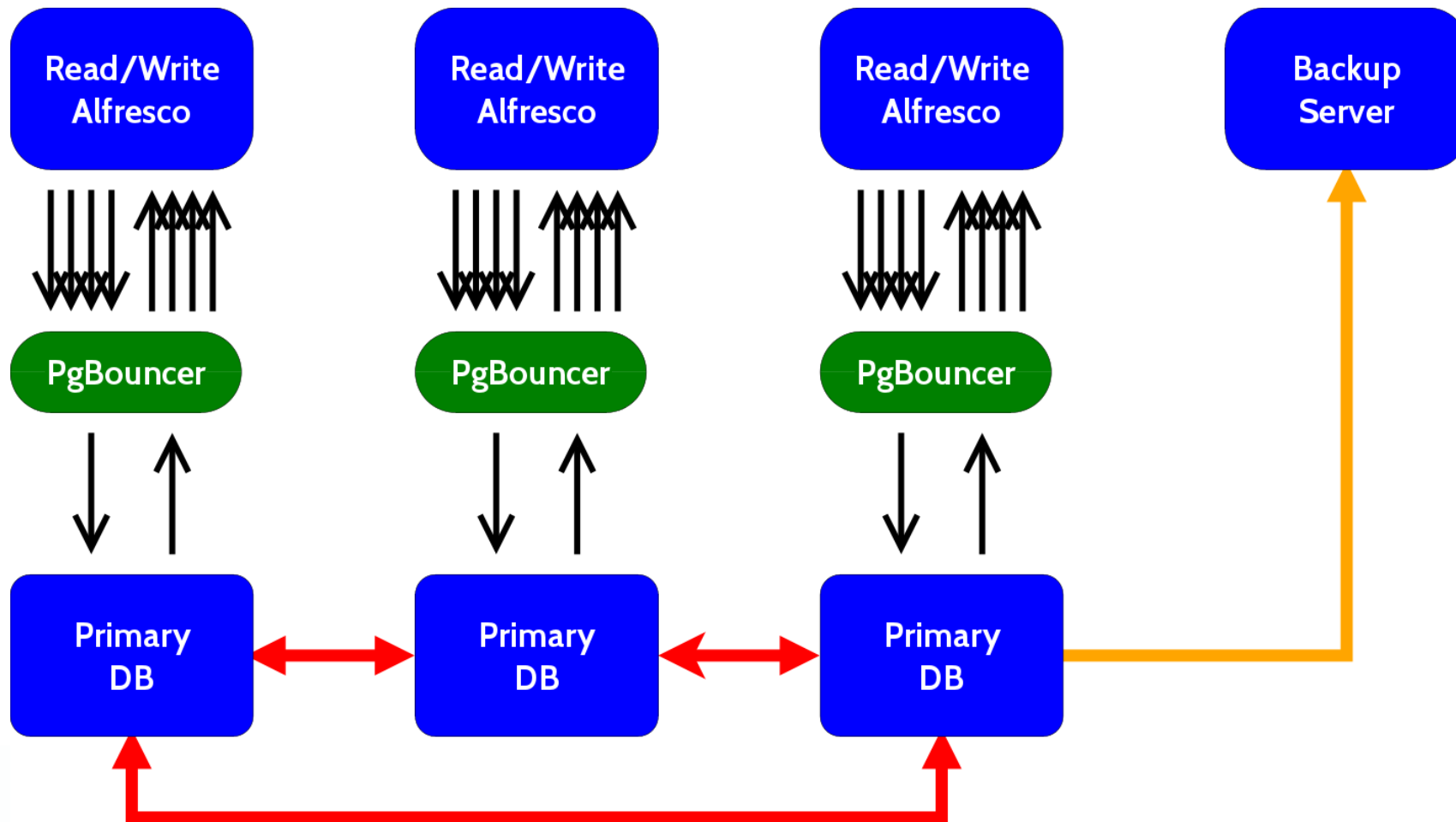
+ Connection Pooling



+ Backup From Standby (as well)



+ Bi-Directional Replication (*)





+ Point-In-Time Recovery

- In short **PITR**
- Uses **physical** backup
 - As opposed to **logical**
- Example, using **Barman**:
 - <http://www.pgbarman.org/>
- Make a backup (before!) with:

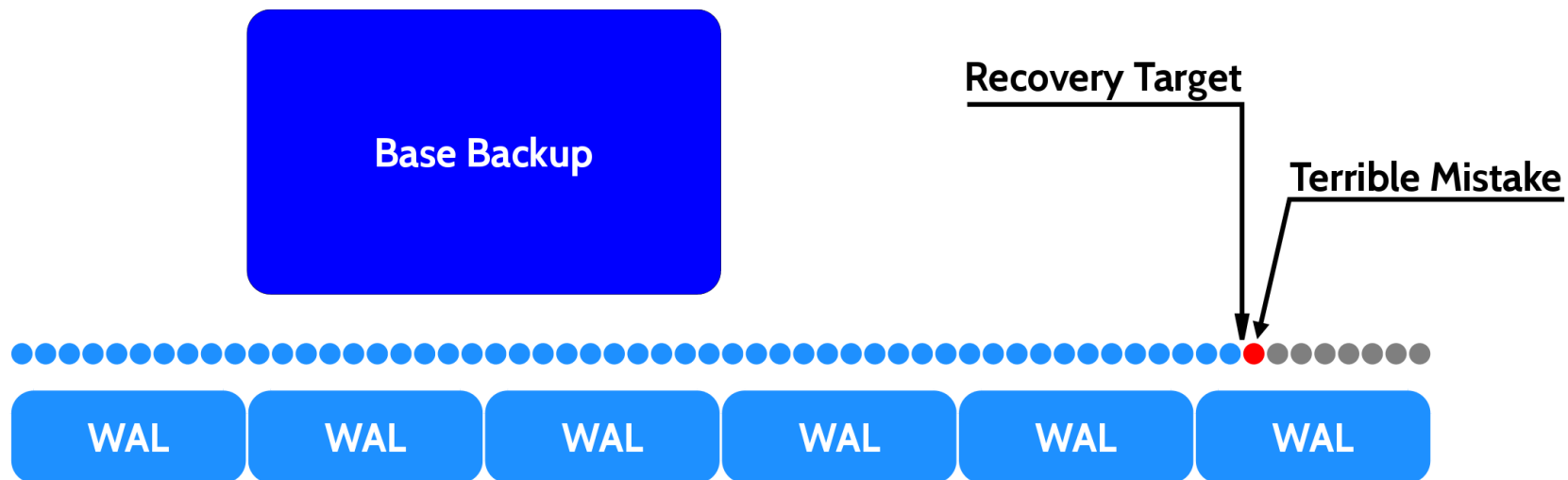
```
$ barman backup mysrv
```



+ PITR Example with Barman

- Recover to any point in time with:

```
$ barman recover mysrv latest /tmp/mypitr  
  --target-time "2016-04-28 12:15 CEST"
```





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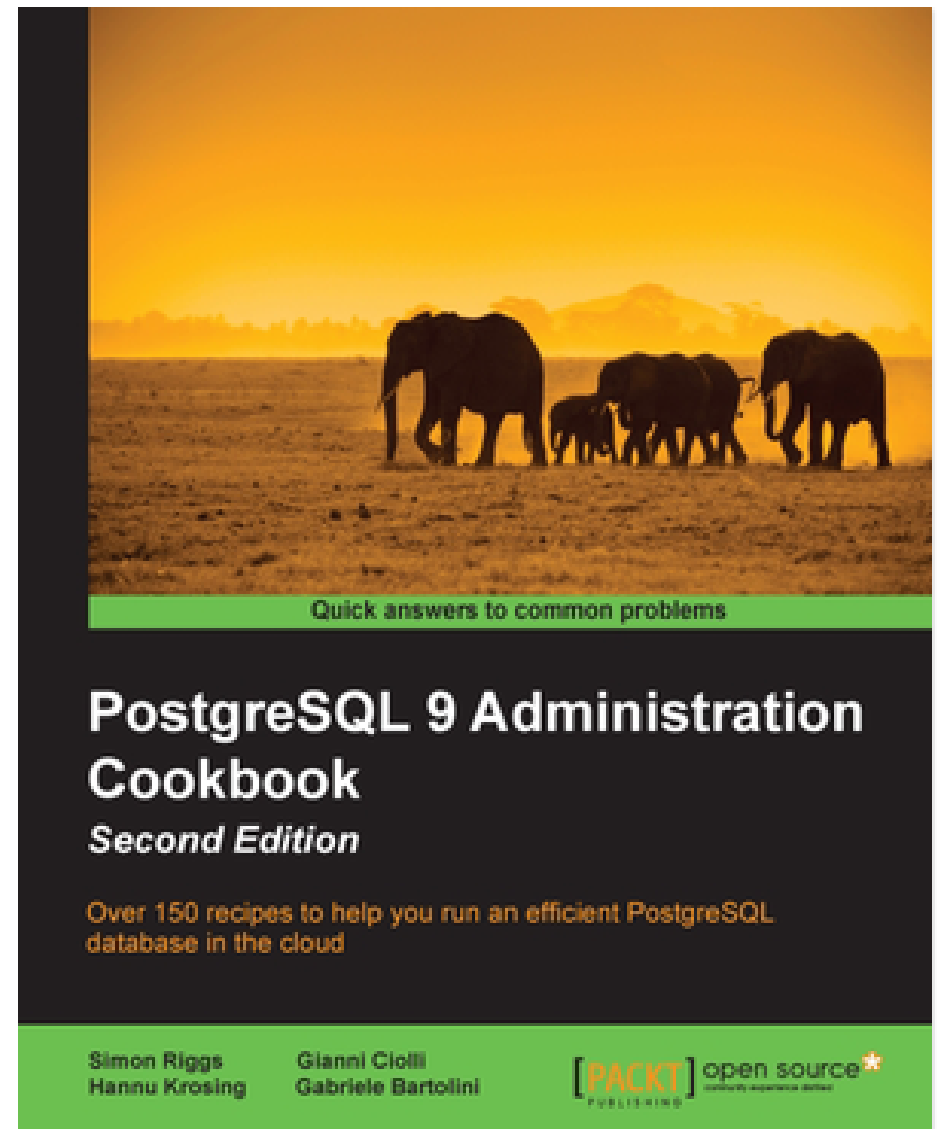
+ All good, but...

- Not all DBAs have their own A
- «I have problem (...) and don't know what to do»
- The **Accidental DBA**
- "Accidental", but not "Reluctant" :-)



+ DBA Recipes

- PostgreSQL 9 Administration Cookbook
- 2nd Edition
April 2015
- **150+** Recipes
- PostgreSQL 9.0 to 9.4
- <http://www.2ndQuadrant.com/books>





+ **And now...**

Questions?





+ **And then...**

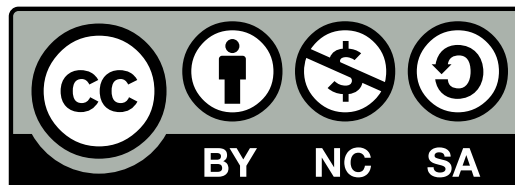
Thank you!





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