Database On Demand

Database SERVICES

IT Information Technology Department

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CERN

Manifesto: service principle

Follow a DBaaS paradigm
DBoD users are database administrators (DBA) of their instances
No access to underlying hardware
Foreseen as single instance service
No DBA support or application support
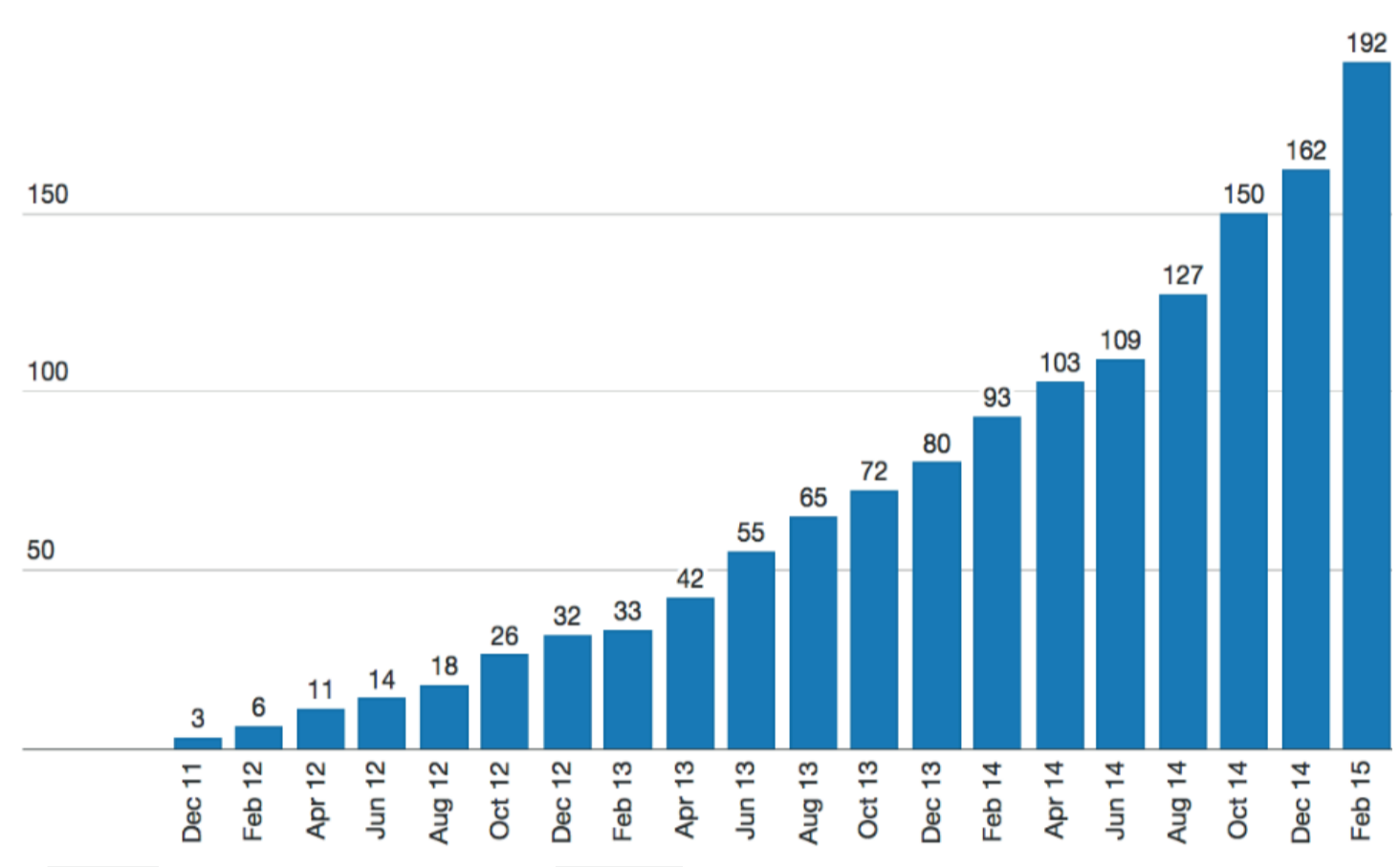No vendor support

What you get?

A private database among:

PostgreSQL   MySQL   ORACLE

A DBA account + connection string to your instance

Ability to manage your instance on DBoD website:
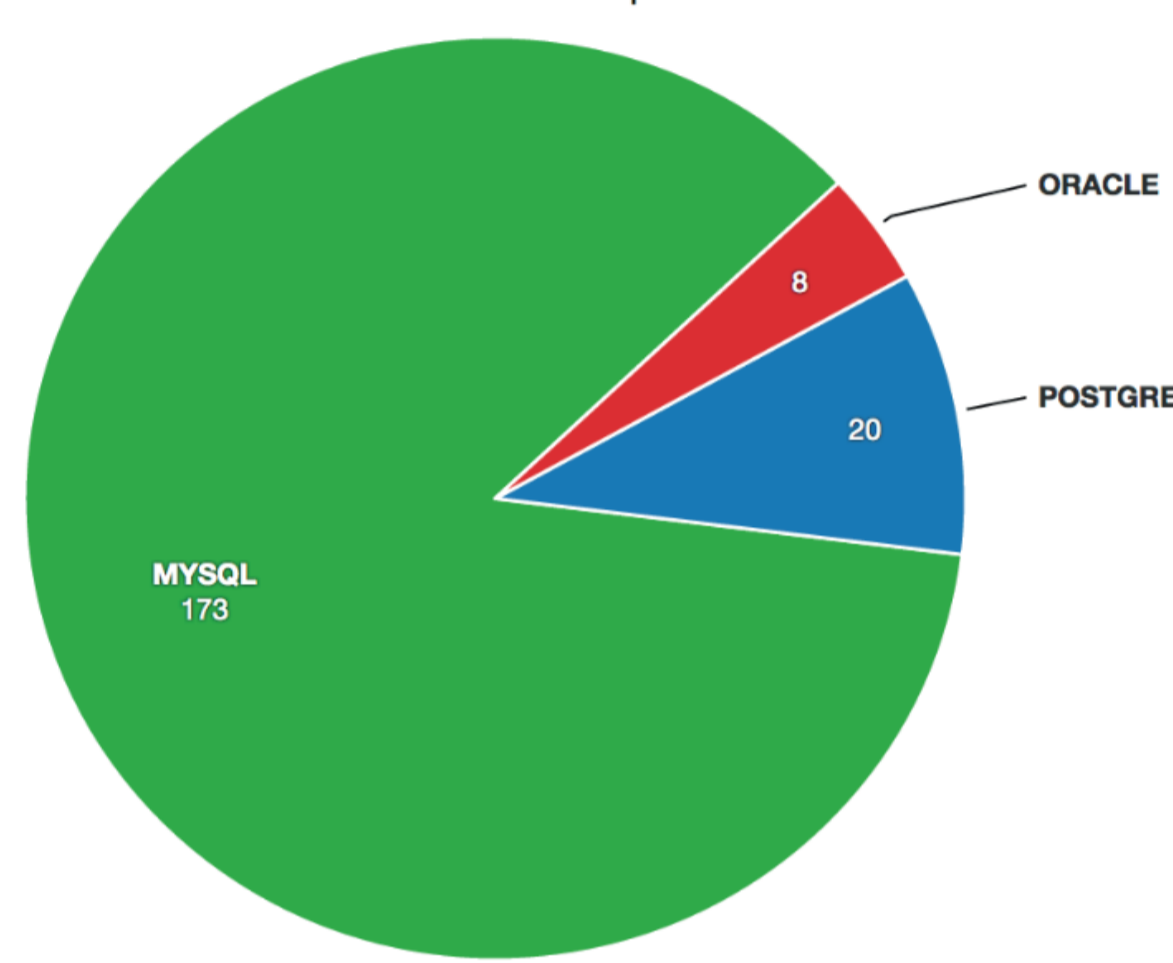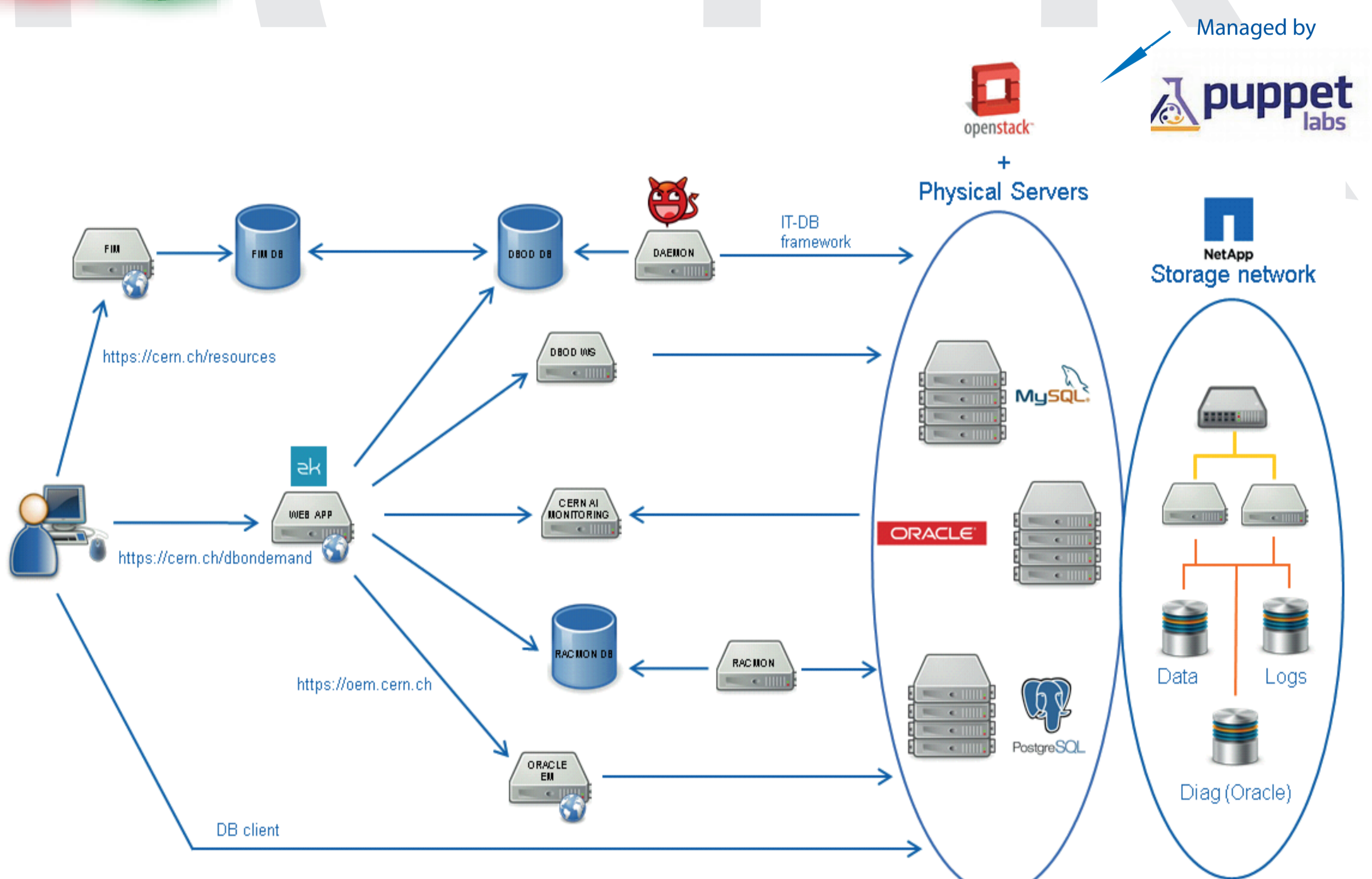**https://cern.ch/dbondemand**

Service status

Database on Demand instances
Evolution of the amount of MySQL, Oracle, and PostgreSQL instances in the DBOD service

Database on Demand instances per DBMS

ORACLE 8
POSTGRESQL 20
MYSQL 173

Architecture

Managed by: Puppet labs

+ Physical Servers

NetApp Storage network

Data   Logs   Diag (Oracle)

https://cern.ch/resources
https://cern.ch/dbondemand
https://oem.cern.ch
DB client

(Instance management panel)

Actions — Information for instance itdbp1 — Refresh instance

Start
Stop
Up/download
Backup
Restore
Upgrade
Monitoring

State: Running
DB Type: PostgreSQL
Creation Date: 09/02/2015
Category: Official
NO Connections: 100
Version: 9.3.5
Description: PostgreSQL database for IT-DB projects

Username: User Principal (owner of the instance)
e-Group: E-group (authorise to operate with this instance)
Expiry Date:
Project: DB Infra
DB Size: 50 GB
Host:

Job logs   Attributes log

Information for job: Create a backup 31/03/2015 3:17:36

State: OK
Creation Date: 31/03/2015 3:17:36
Requester: gtenagii
Completion Date: 31/03/2015 3:19:27

Other Instances:
cc_test
ccbmboo
cctlsdb
ct
fsconso
ici
irund
is12dev
istooid
istools
liblog
ltest1
tvmysql
manda
mswpdb

Database upgrades with one click!

Backup policy configured with one click. Backups are based on storage snapshots and can be sent to tape.

Backup management for instance itdbm1

Single backup
Create a single backup now

Backup configuration
Backup database every 24 hours, starting on 03/03/2015 00:17:14
Backup database to tape once a week, starting on 11/03/2015 09:58:59
In order to enable tape backups, please contact us
Apply changes   Close

Upload/download configuration files or logging files.

File management for instance itdbm1

Configuration files
Select a configuration file and press upload or download to copy it to or from your instance
my.cnf

Logs
Select a file and press download to save the log file
slow_queries.log
Cancel

Dispatch a restore on instance itdbm1

Available snapshots:
Mar 2015
Snapshots for selected day: 0:17:52
Select a day and time to restore to:
Cancel   Accept

Point In Time recovery is available using snapshots where archivelogs/WAL segments or binary logs exists.
The engine calculates those points on the spot.

New Monitoring tool: Appdynamics

- Retrieve historical performance data
- Run reports
- Find out where your database waits
- Track changes on configuration parameters
- Group statements per type
- Trace SQL statements, explain plans with one click
- Spot which session is taking most resources
- etc

Correlate activity on your database with underlying storage.

Service evolution

PROJECT ATOMIC

Containers benefits: light-weight virtualisation + resource isolation

MasterDB
Replication benefits: Availabity, possibly off-loading reads from Master

FlexClone® — Cloned volume: a transparent writable layer in front of Snapshot
Snapshot — Snapshot of the volume
Active volume — Active volume to be cloned

Clones benefits: test your deployments, schema upgrades, etc on a copy of your production database, really cool!

NoSQL (NOT ONLY)
Non-Relational-Database Technologies

What noSQL would you like? Tell us about! We are prototyping!