




Gdevops

全球敏捷运维峰会

DBA成长沉思录

演讲人：杨建荣

个人介绍- 杨建荣

- Oracle ACE 
- DBAplus联合发起人
- YEP成员
- Oracle 10g OCP,OCM ， MySQL OCP
- 对shell , Java有一定的功底
- 《Oracle DBA 工作笔记》作者
- 曾在中国数据库大会、Oracle嘉年华、APMCon 演讲
- 坚持每天写点东西，微信公众号（jianrong-notes），已连续坚持900多天



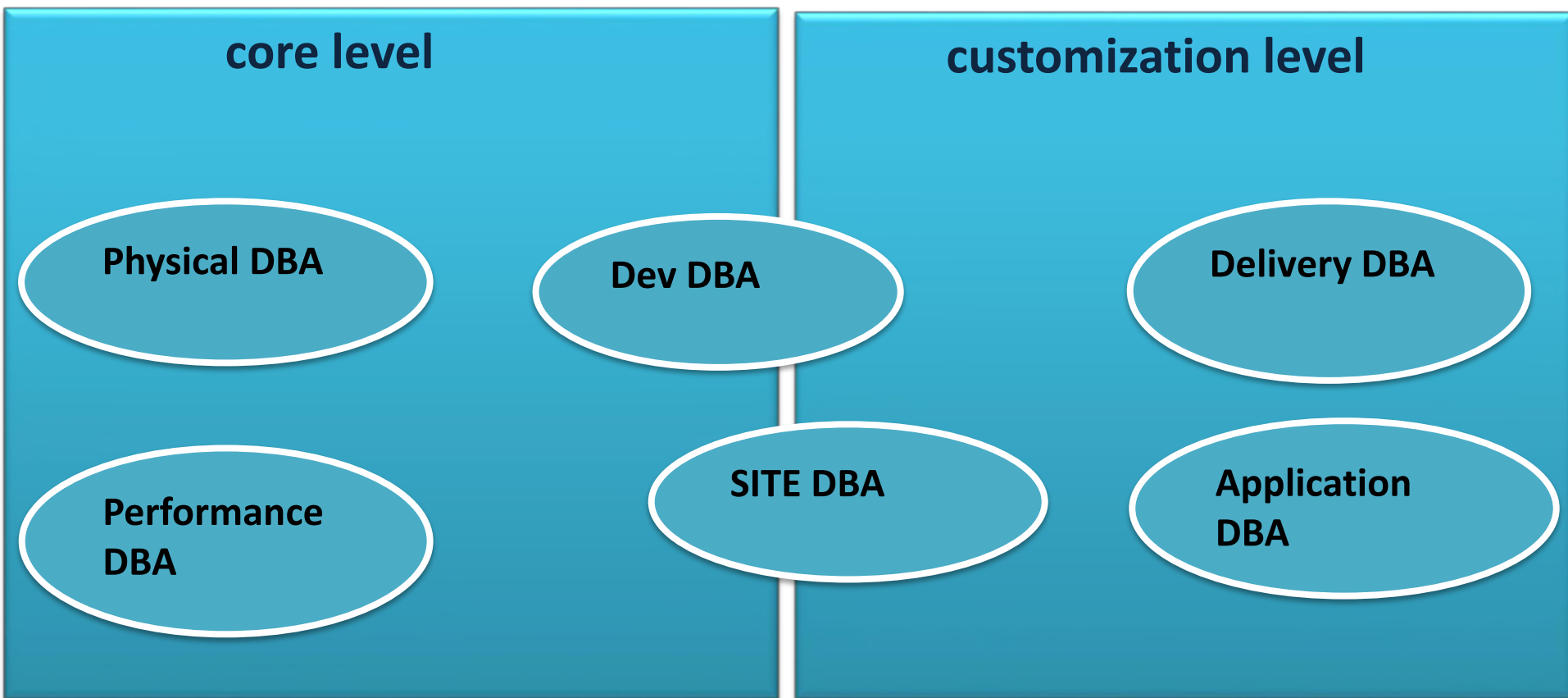
先聊聊人生

- 一些曾经热炒的职位，比如DBA，对于很多人来说，这样的职业已经很难再风光下去
- 单纯靠维护赚钱，这本来就是一件无法长久的生计
- “维护”这件事情，要么因为简单而能被机器和软件替代掉，要么因为复杂而被革命掉
- 工具，永远只是媒介，是可以被绕过的，不是最根本和最核心的问题
- 做有价值的事情。复杂的事情简单做，简单的事情重复做，重复的事情用心做

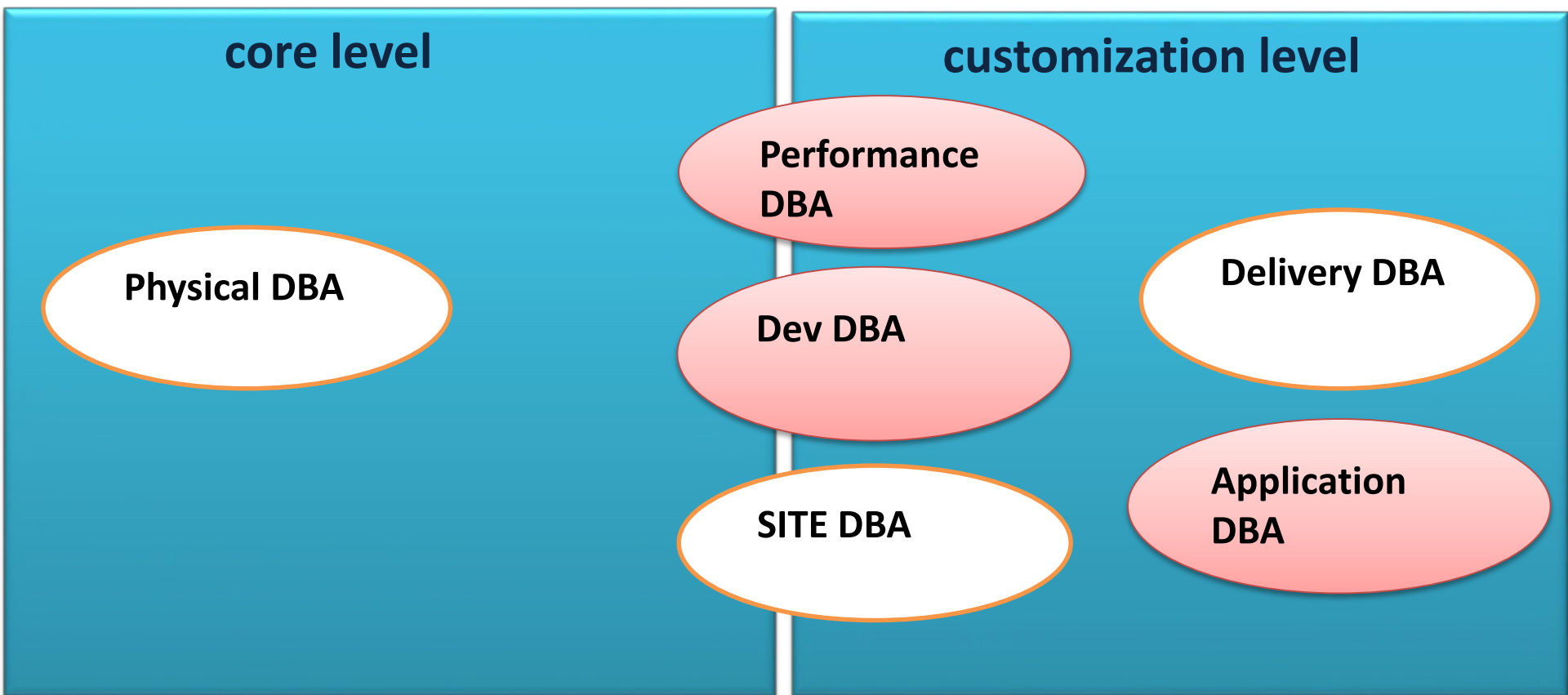
今非昔比

- n年前调整SGA 2G内存 200M SGA 调整后性能提升飞速
- 从开发反馈业务缓慢到性能优化 5分钟,不需要改动代码

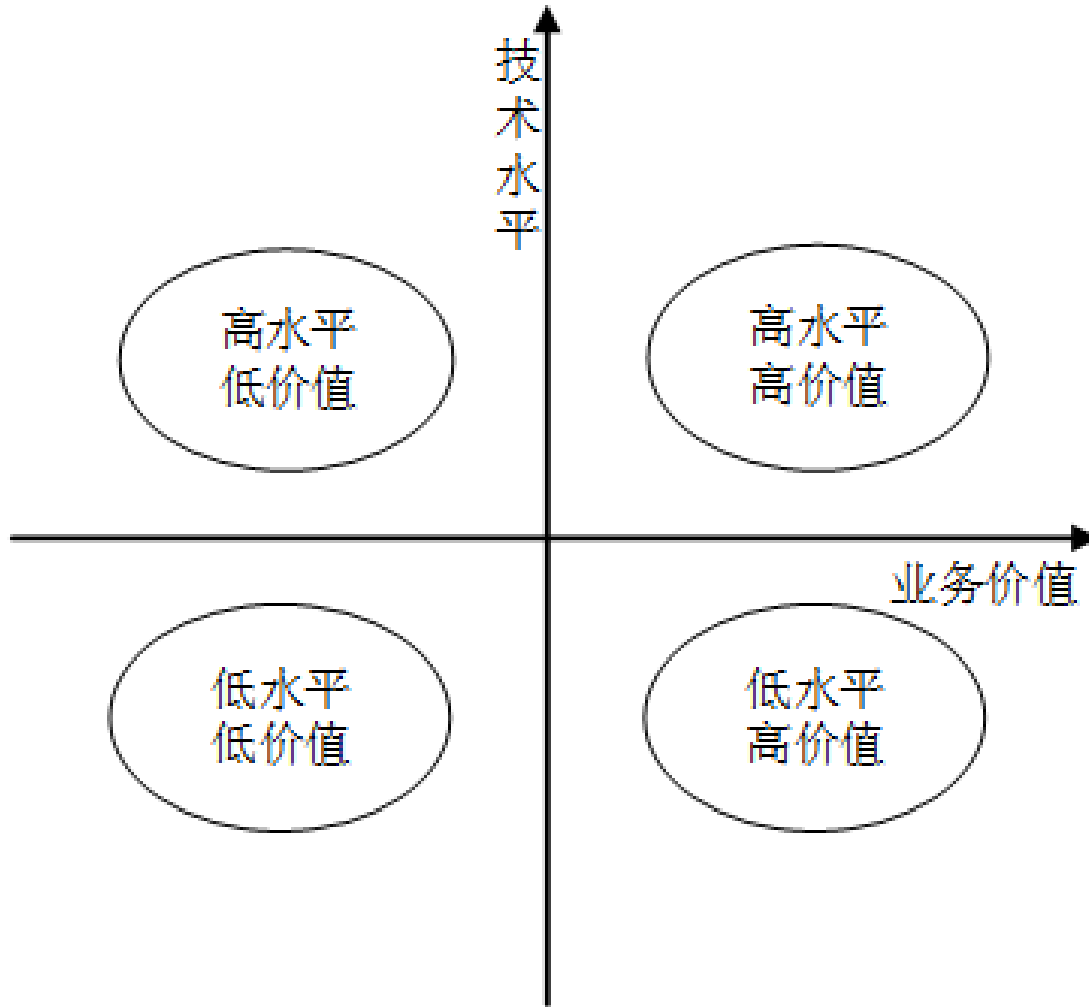
DBA的角色及分工



DBA的角色及分工



系统演进策略



- 1) 淘汰
- 2) 继承
- 3) 改造
- 4) 集成

几个方向

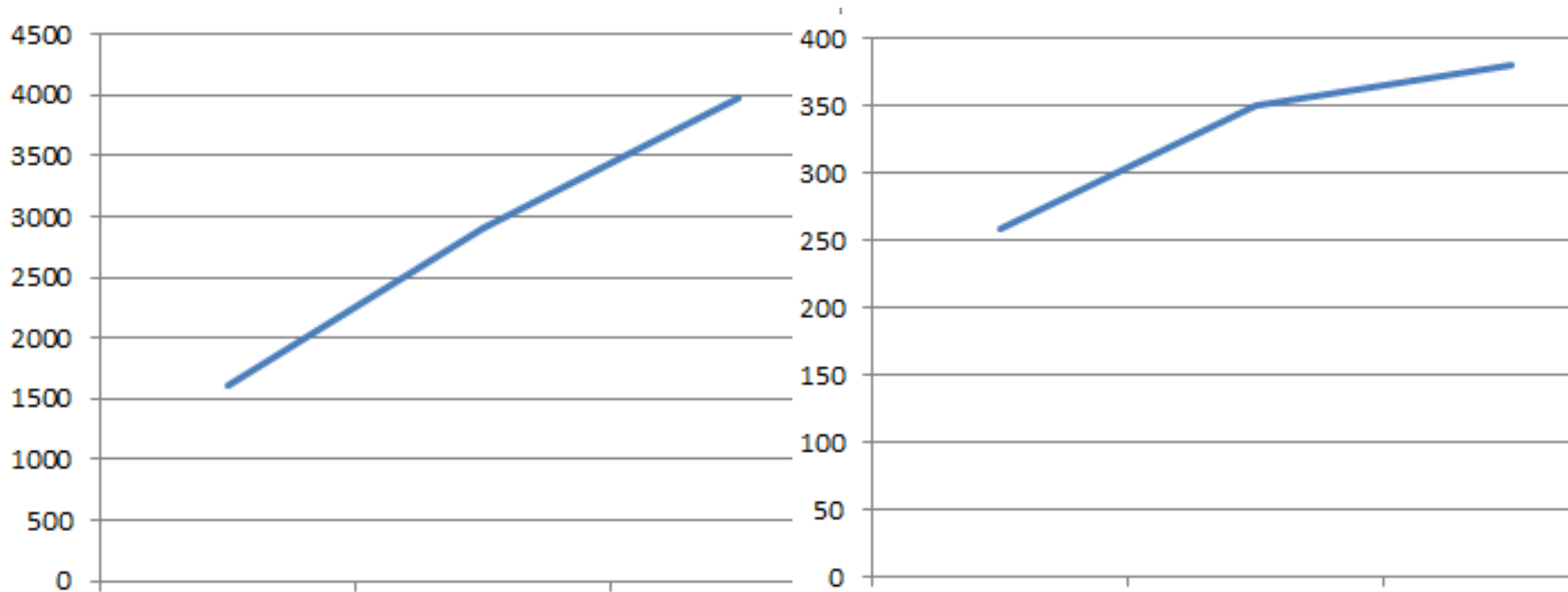
- 了解技术发展的趋势
- 干好当下的活儿
 - 扫雷
 - 规范化，标准化
- 优化
- 架构设计，学点开发技术



数据库参数分析

- 10gR2(10.2.0.5.0)
- 11gR2(11.2.0.4.0)
- 12cR1(12.1.0.2.0)

数据库参数的版本变化

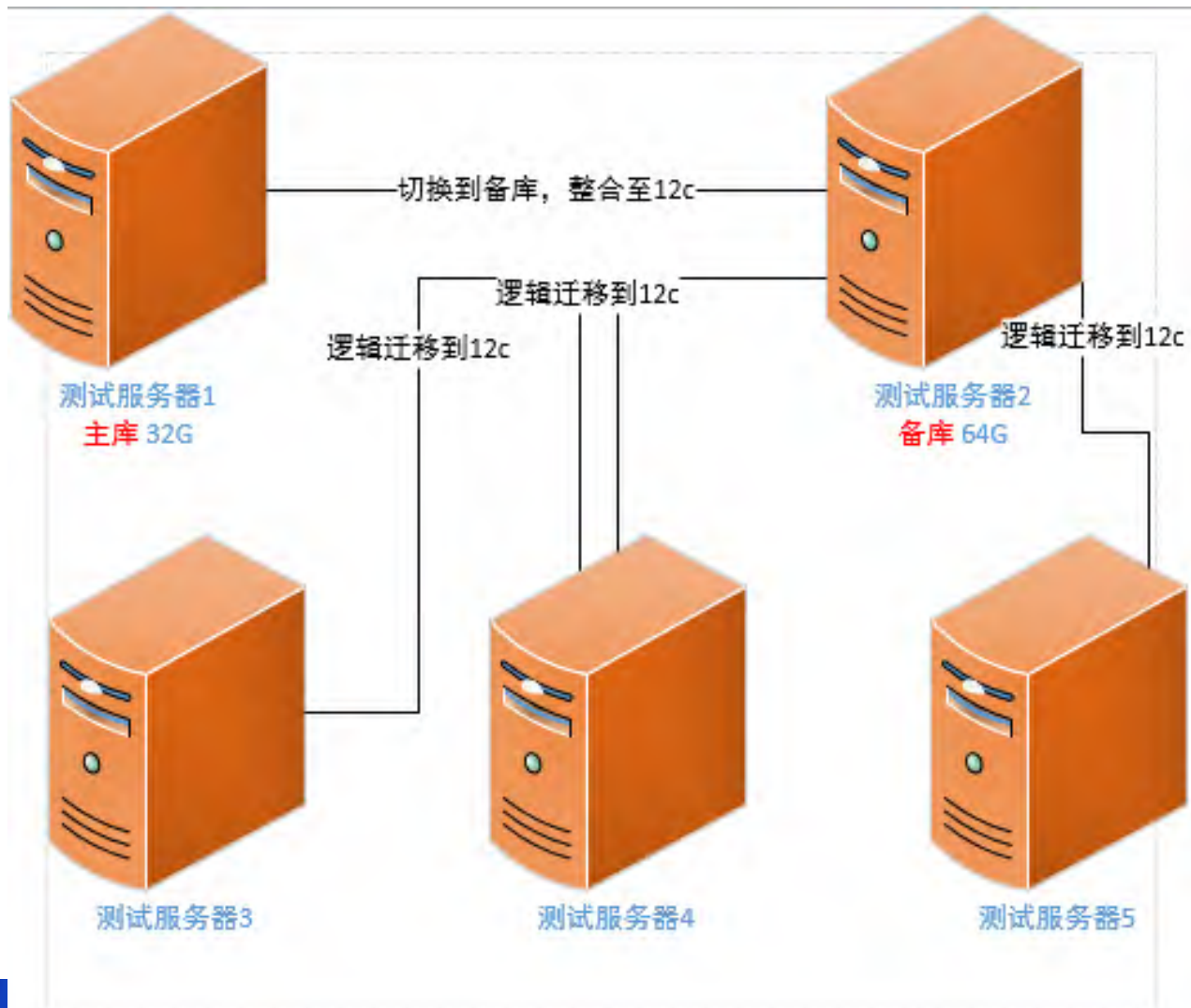


参数的分析和思考

- 1) 哪些参数是**11g**新增的?
- 104个
- ddl_lock_timeout
deferred_segment_creation
sec_max_failed_login_attempts
diagnostic_dest
- 2) 那些是**12c**新增的?
- 31个 PDB,IMO

- 3) 哪些是10g默认的参数, 在11g有所变化?
 - undo_management TRUE FALSE
- 4) 哪些是11g默认的参数, 在12c中有所变化?
 - sec_case_sensitive_logon FALSE TRUE

数据整合，与时俱进



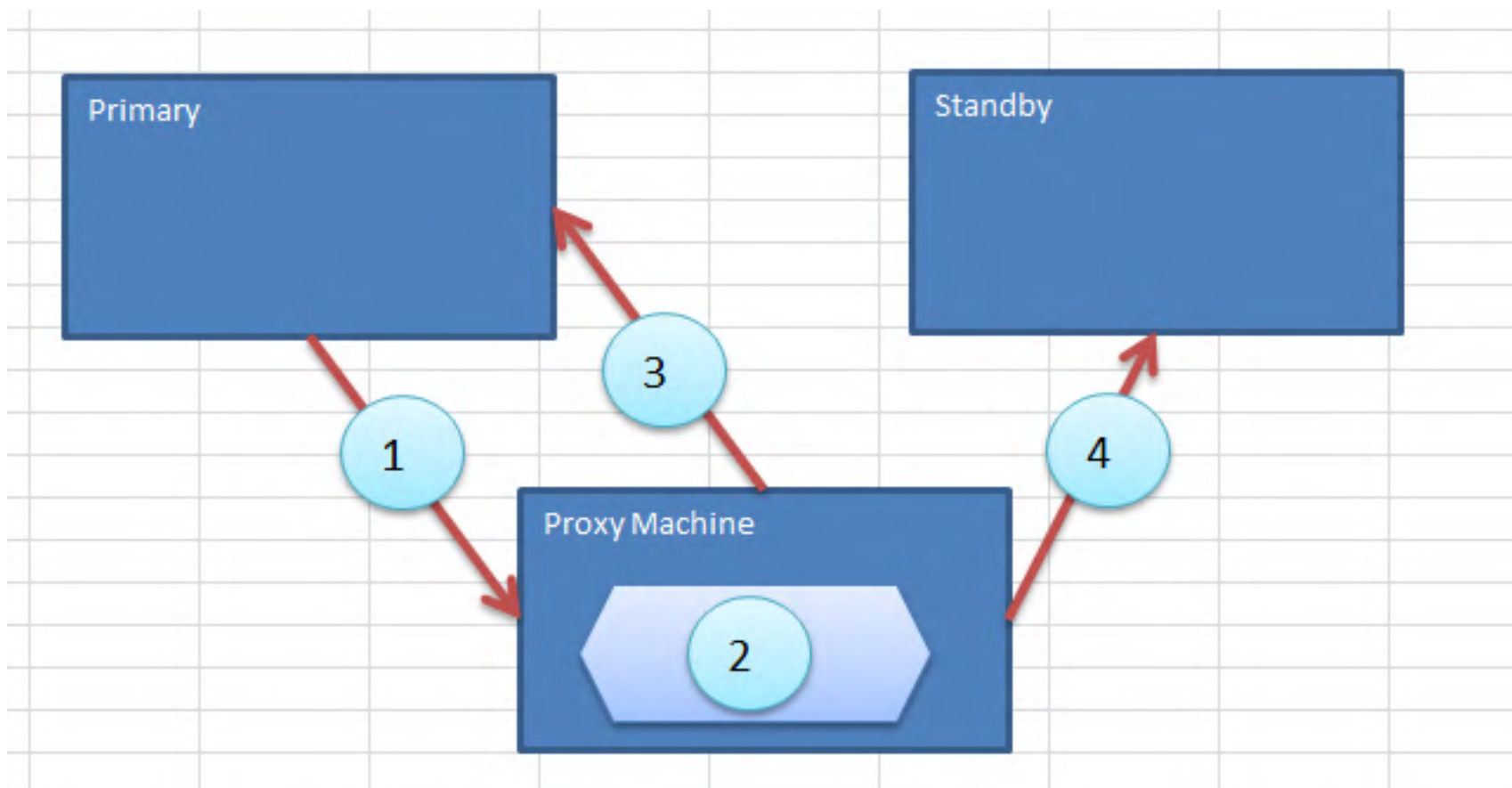
MySQL重启历险记

- 系统交接，遗留系统
- 备库硬件故障
- 重新搭建主库，发现binlog没有开启，一身冷汗
- 重启数据库，开启日志应用
- 重启后，看错误日志，部分应用无法连接
- 之前就无法连接
- InnoDB的部分表存在问题

聪明反被聪明误，化解

- `select cn 账号, present_point 剩余积分点, last_date 积分最后更新时间 from test.user_present_point_sp where present_point > 0 and last_date < to_date('2016-10-07', 'yyyy-MM-dd') and rownum < 10;`

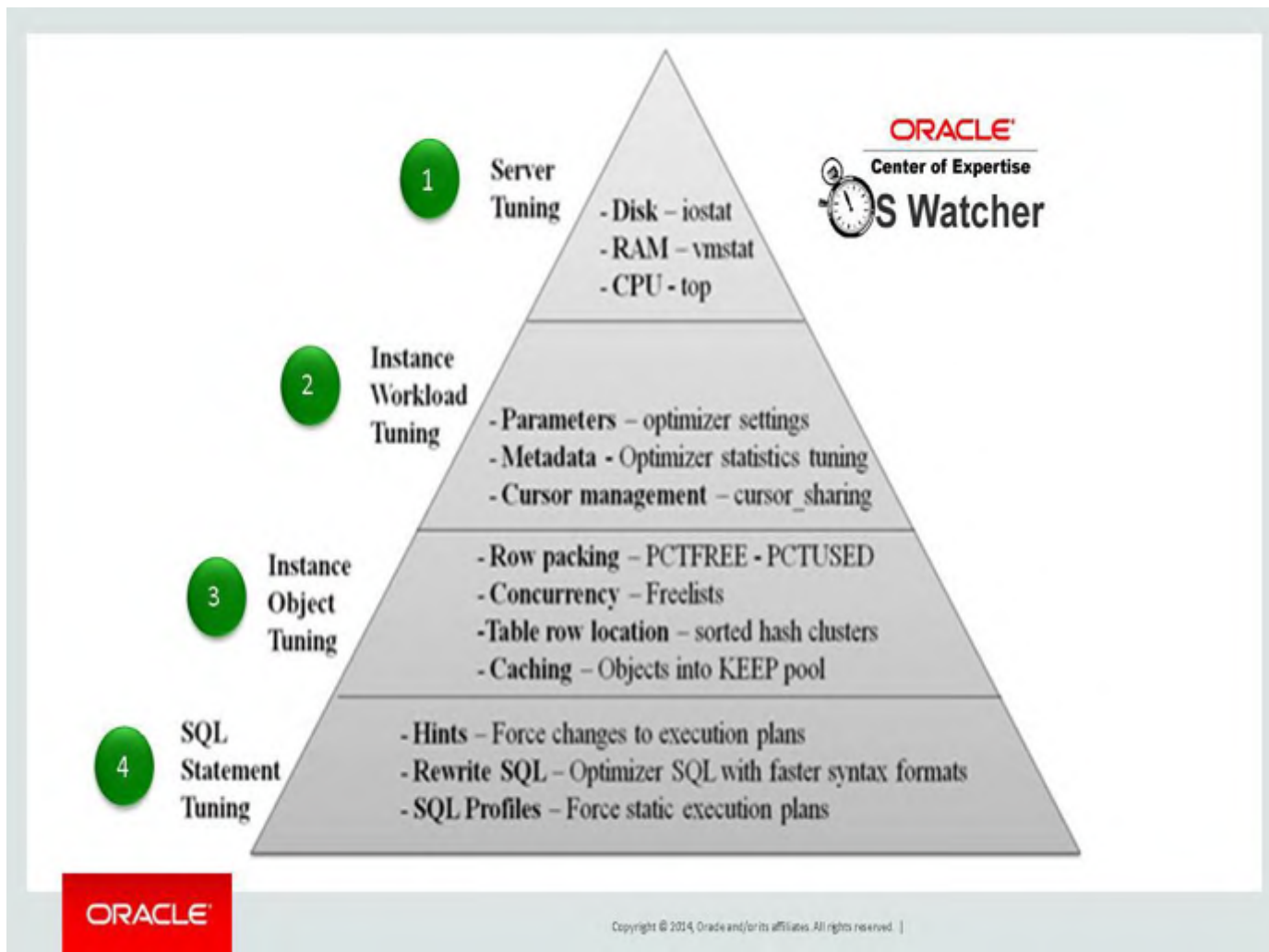
半自动化搭建Data Guard



半自动化DG主要目标和套路

- 安装前的配置占用70~80%的时间，所以半自动化的目标主要是配置
- 能简化配置，简化安装
- 搭建备库的两种常用方式
 - 基于备库搭建备库
 - rman备份 -> restore -> recover (10g)
 - 基于duplicate的方式
 - 在线搭建(11g)

数据库优化和系统优化



极限优化

CPU Time (s)	Elapsed Time (s)	Executions	CPU per Exec (s)	% Total	% Total DB Time	SQL Id	SQL Module	SQL Text
1,486	1,545	23,891,493	0.00	12.76	13.28	7gwxpwru0czqw	JDBC Thin Client	select companyname from licens...
681	696	22,179,904	0.00	5.85	5.98	7nkxbfnwgx93v	JDBC Thin Client	select supdepid from hrmdepart...

- select companyname from license

SQL优化尝试

- **尝试1:**
- create unique index index_lic_companyname on license(companyname);
- exec dbms_stats.gather_table_stats(ownname=>null,tabname=>'LICENSE');
- **尝试2:**
- select /*+index(license index_lic_companyname)*/ companyname from license
- select /*+cardinality(license,1)*/ companyname from license
- **尝试3:**
- select companyname from license sample(1);

SQL优化尝试

- 尝试4:
- SQL> select companyname from license where rownum<=1;
- 尝试5:
- SQL> alter table license cache;
- 尝试6:
- select companyname from license where companyname='xxxx'
- 尝试7:
- CREATE TABLE LICENSE_IOT"
 ("COMPANYNAME" VARCHAR2(30) primary key,
 "DOCUMENT" CHAR(1),memo varchar2(30)
) organization index ;

SQL优化尝试

- 问题总结：主键和唯一性索引
- alter table license modify(companyname primary key);

Plan 1 (PHV: 2492423498)

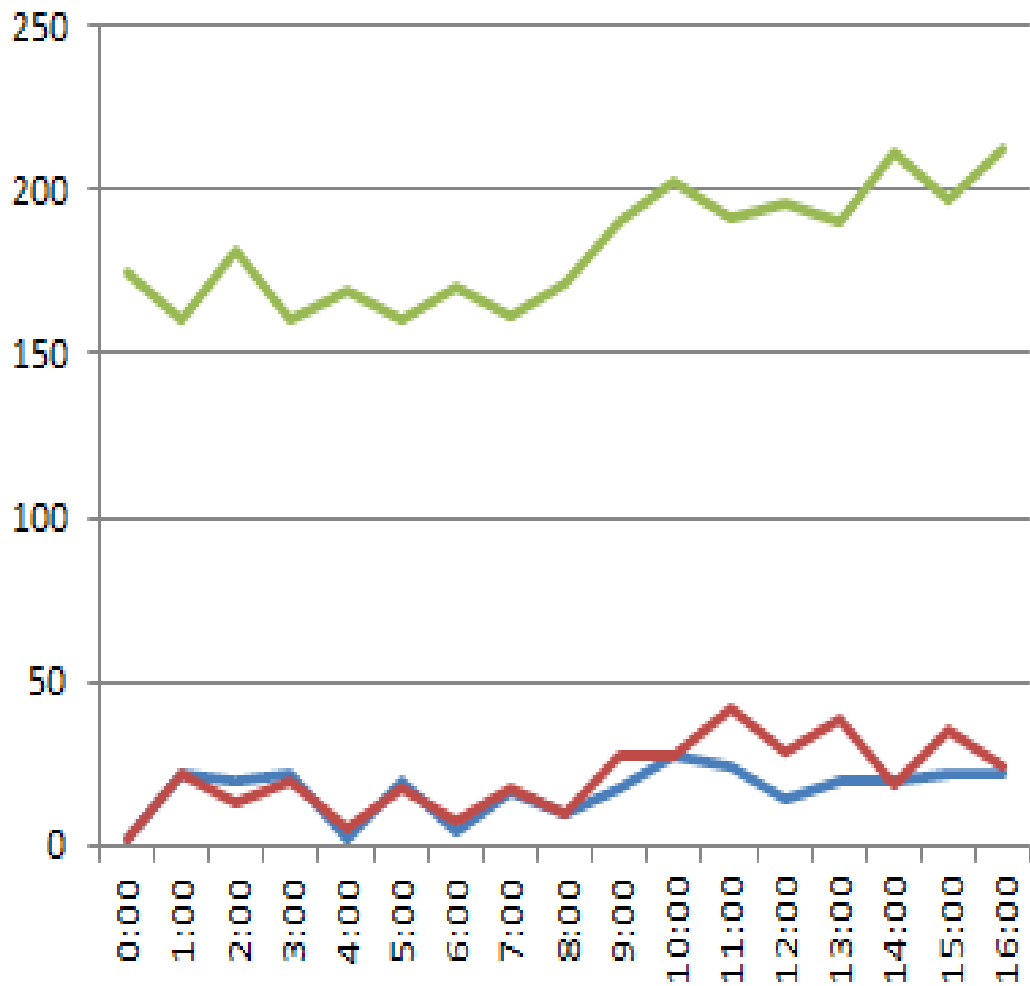
Plan Statistics DB/Inst: [REDACTED] Snaps: 50968-50969
-> % Total DB Time is the Elapsed Time of the SQL statement divided
into the Total Database Time multiplied by 100

Stat Name	Statement	Per Execution	% Snap
Elapsed Time (ms)	107,974	0.1	8.4
CPU Time (ms)	111,063	0.1	8.6
Executions	2,011,086	N/A	N/A
Buffer Gets	1.41E+07	7.0	24.1
Disk Reads	0	0.0	0.0
Parse Calls	2,011,080	1.0	49.9
Rows	2,011,085	1.0	N/A
User I/O Wait Time (ms)	0	N/A	N/A
Cluster Wait Time (ms)	0	N/A	N/A
Application Wait Time (ms)	0	N/A	N/A
Concurrency Wait Time (ms)	3	N/A	N/A
Invalidations	0	N/A	N/A
Version Count	3	N/A	N/A
Sharable Mem(KB)	29	N/A	N/A

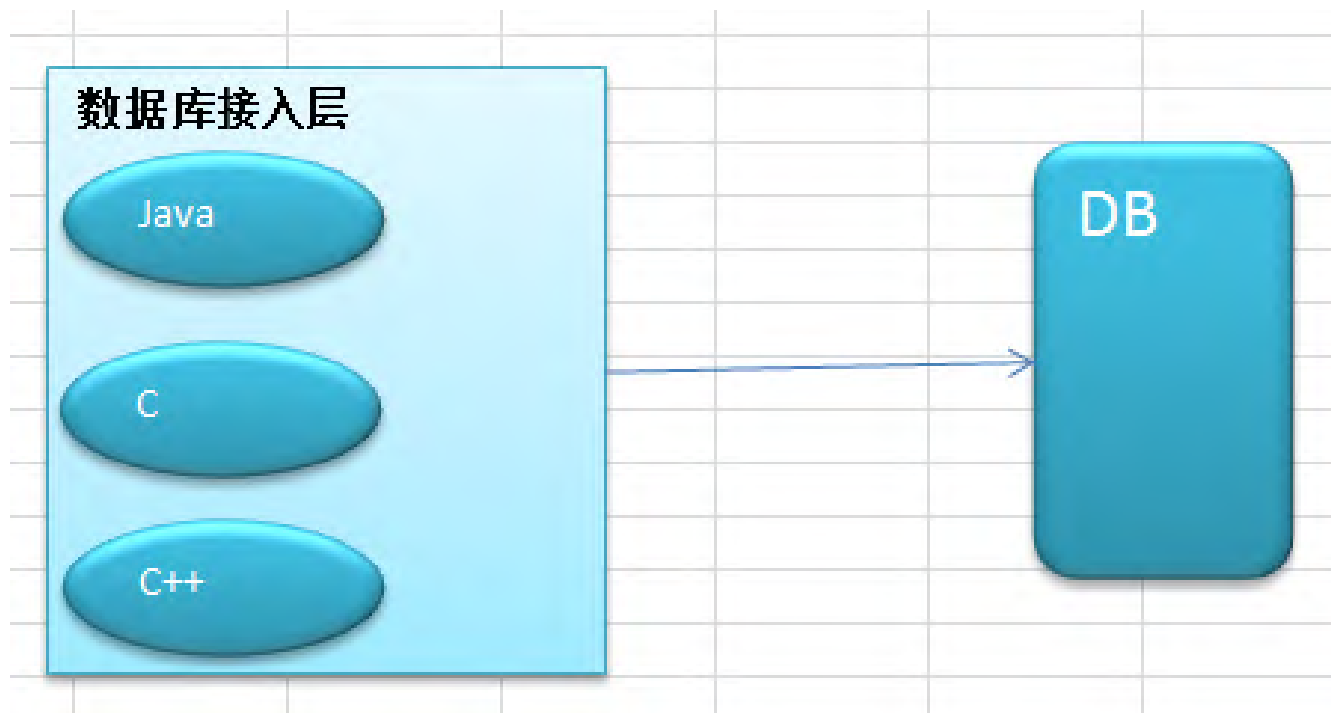
Plan 1 (PHV: 2137683229)

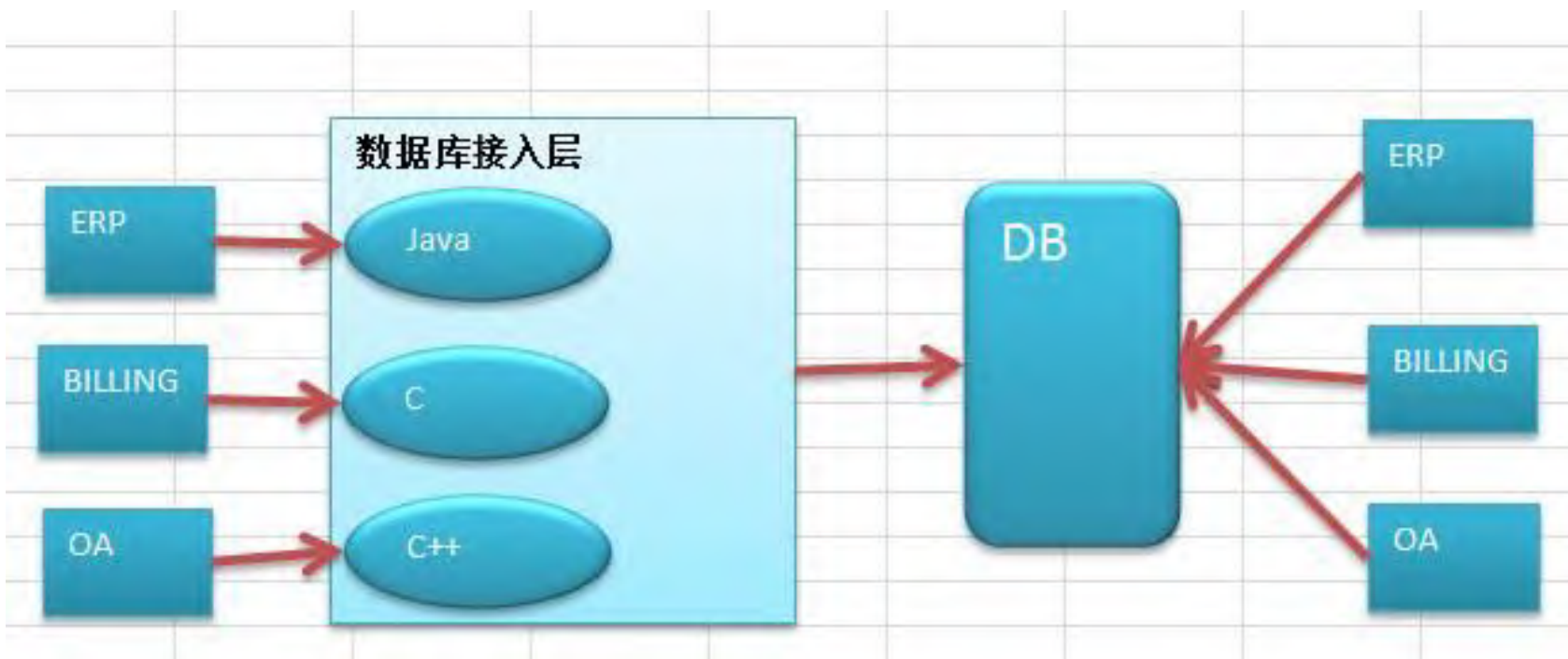
Plan Statistics DB/Inst: OADB/oadb Snaps: 50997-50998
-> % Total DB Time is the Elapsed Time of the SQL statement divided
into the Total Database Time multiplied by 100

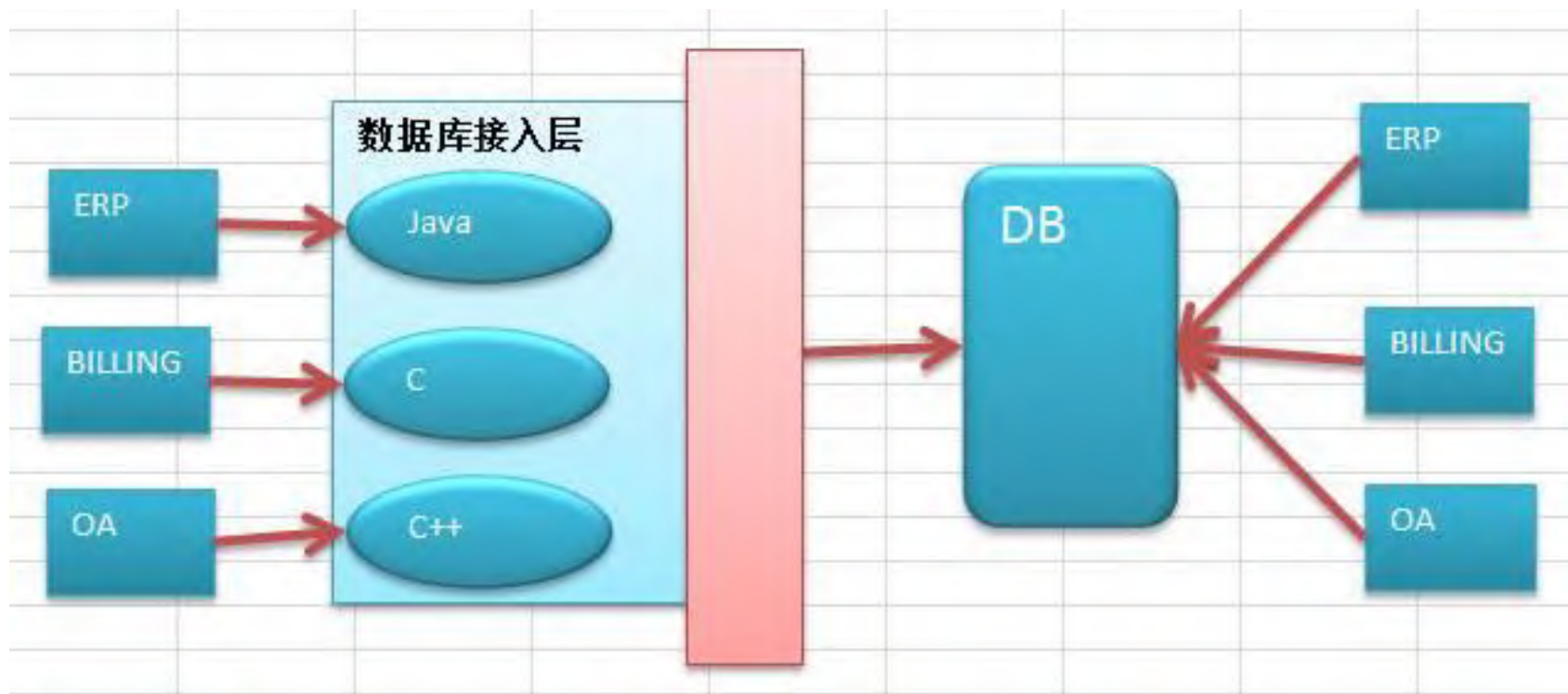
Stat Name	Statement	Per Execution	% Snap
Elapsed Time (ms)	44,410	0.0	6.5
CPU Time (ms)	45,962	0.0	6.7
Executions	1,218,562	N/A	N/A
Buffer Gets	1,218,560	1.0	5.7
Disk Reads	0	0.0	0.0
Parse Calls	1,218,560	1.0	49.7
Rows	1,218,559	1.0	N/A
User I/O Wait Time (ms)	0	N/A	N/A
Cluster Wait Time (ms)	0	N/A	N/A
Application Wait Time (ms)	0	N/A	N/A
Concurrency Wait Time (ms)	1	N/A	N/A
Invalidations	0	N/A	N/A
Version Count	3	N/A	N/A
Sharable Mem(KB)	25	N/A	N/A

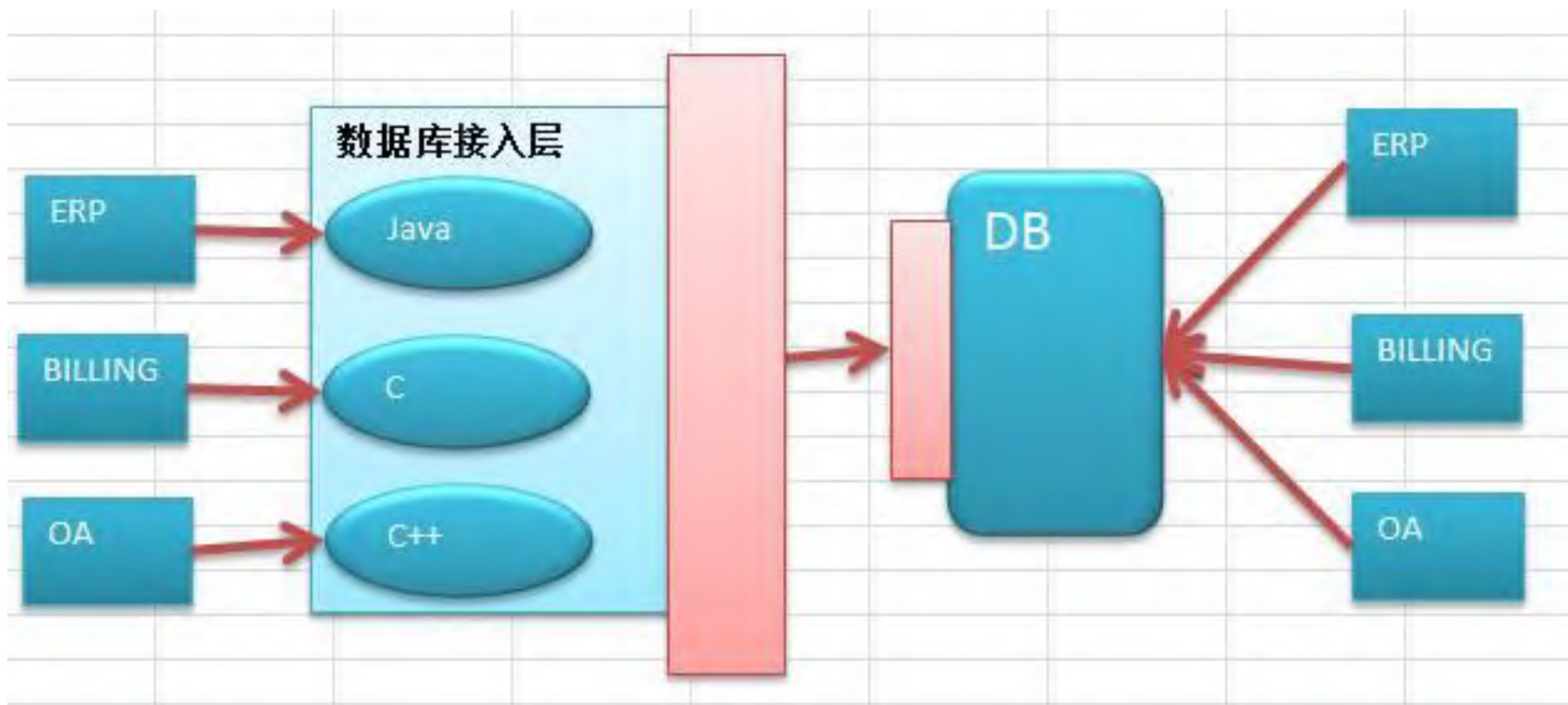


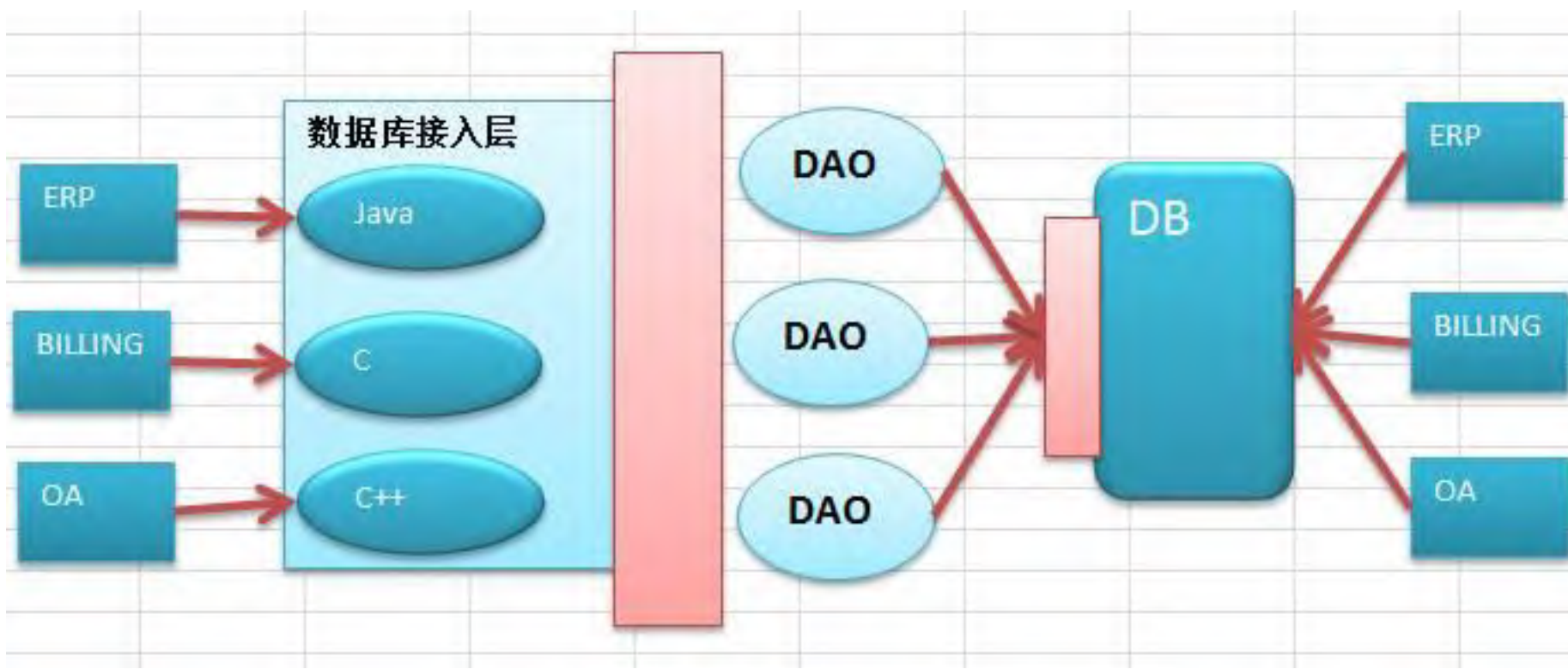
数据访问层的优化设计











精细化运维





G*devops*

全球敏捷运维峰会



THANK YOU !