

# “打怪升级”

之 数仓困境二三事

## DTCC

### 2015中国数据库技术大会

DATABASE TECHNOLOGY CONFERENCE CHINA 2015

大数据技术探索和价值发现

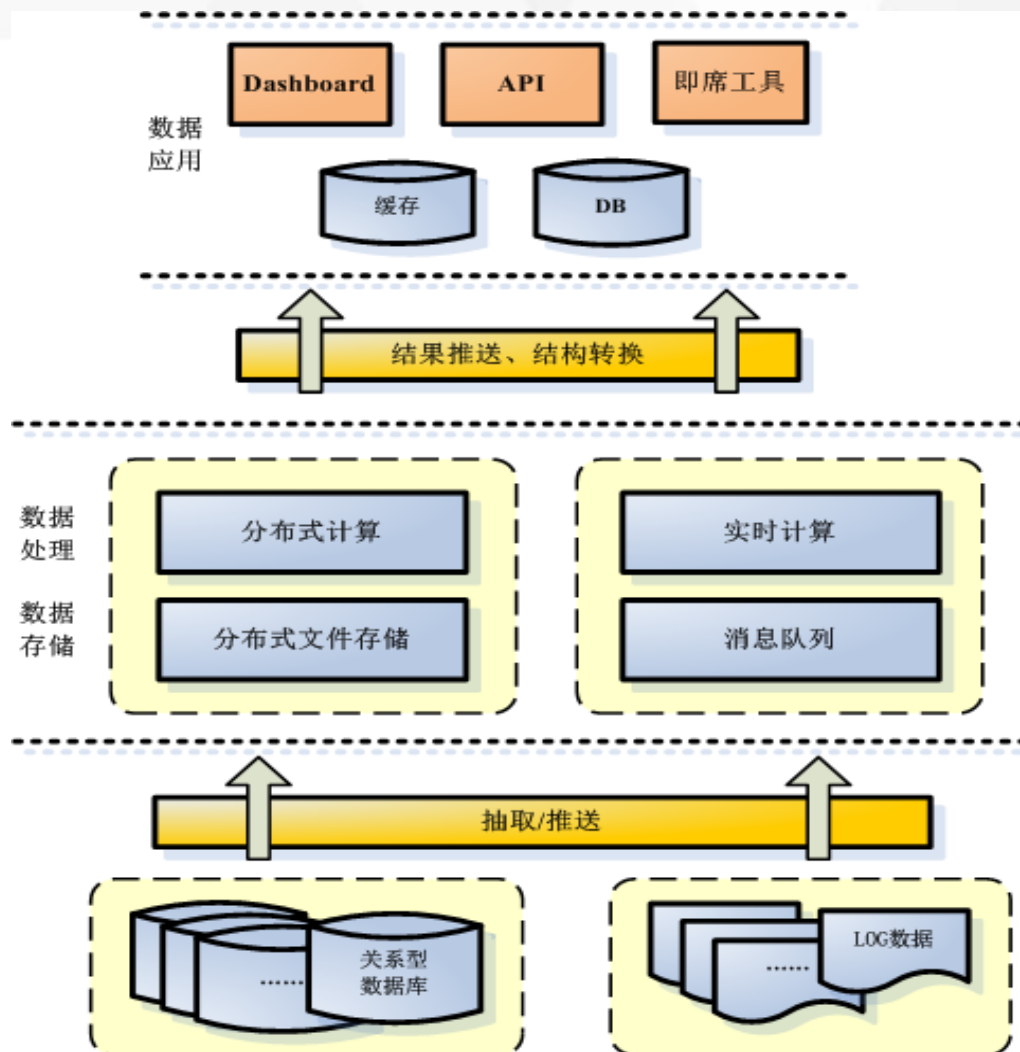


# Overwrite

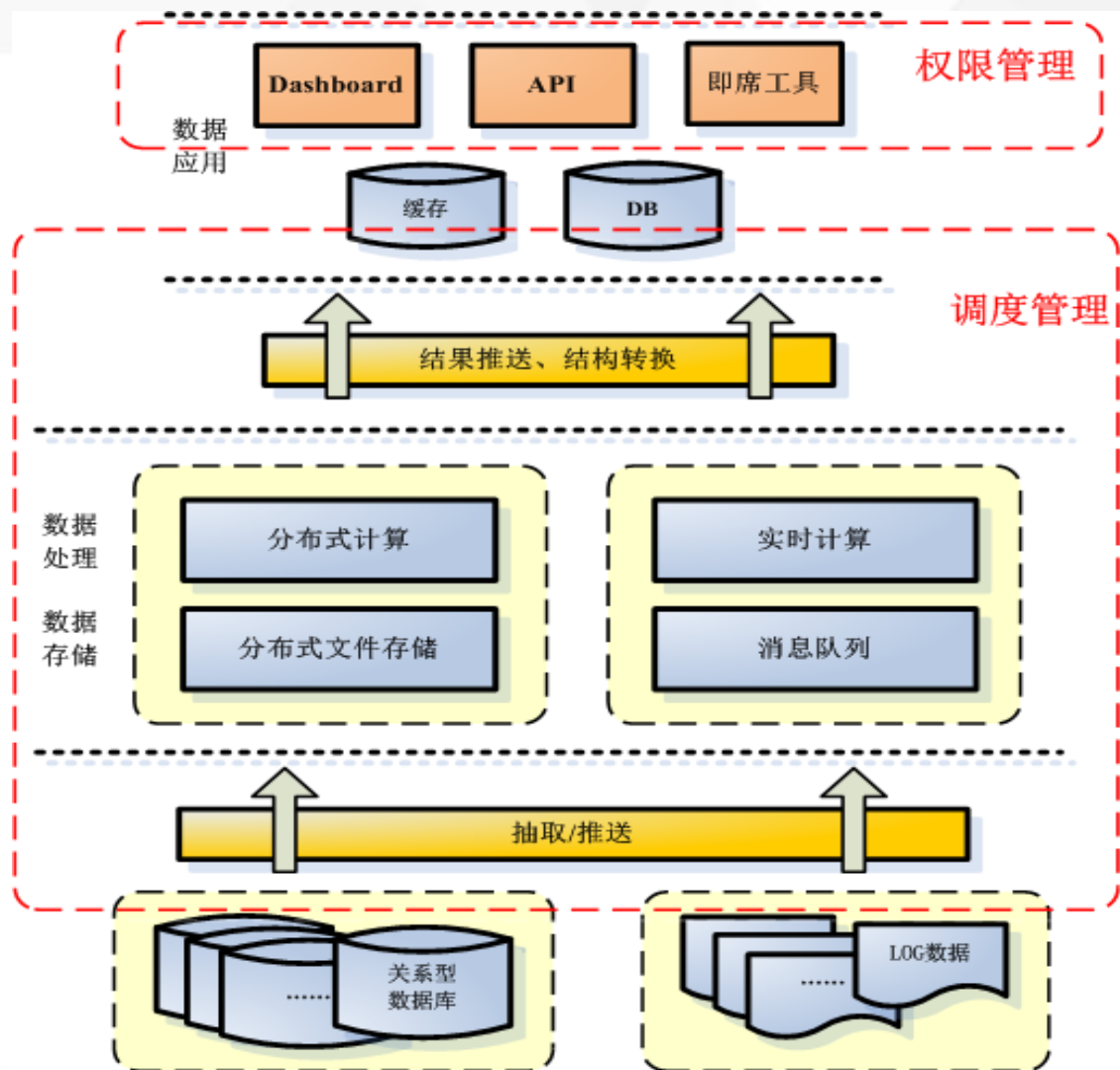
- 统一的架构
- 我们的困境
- 最终的方向



# 大数据平台



# 大数据平台



# 理想





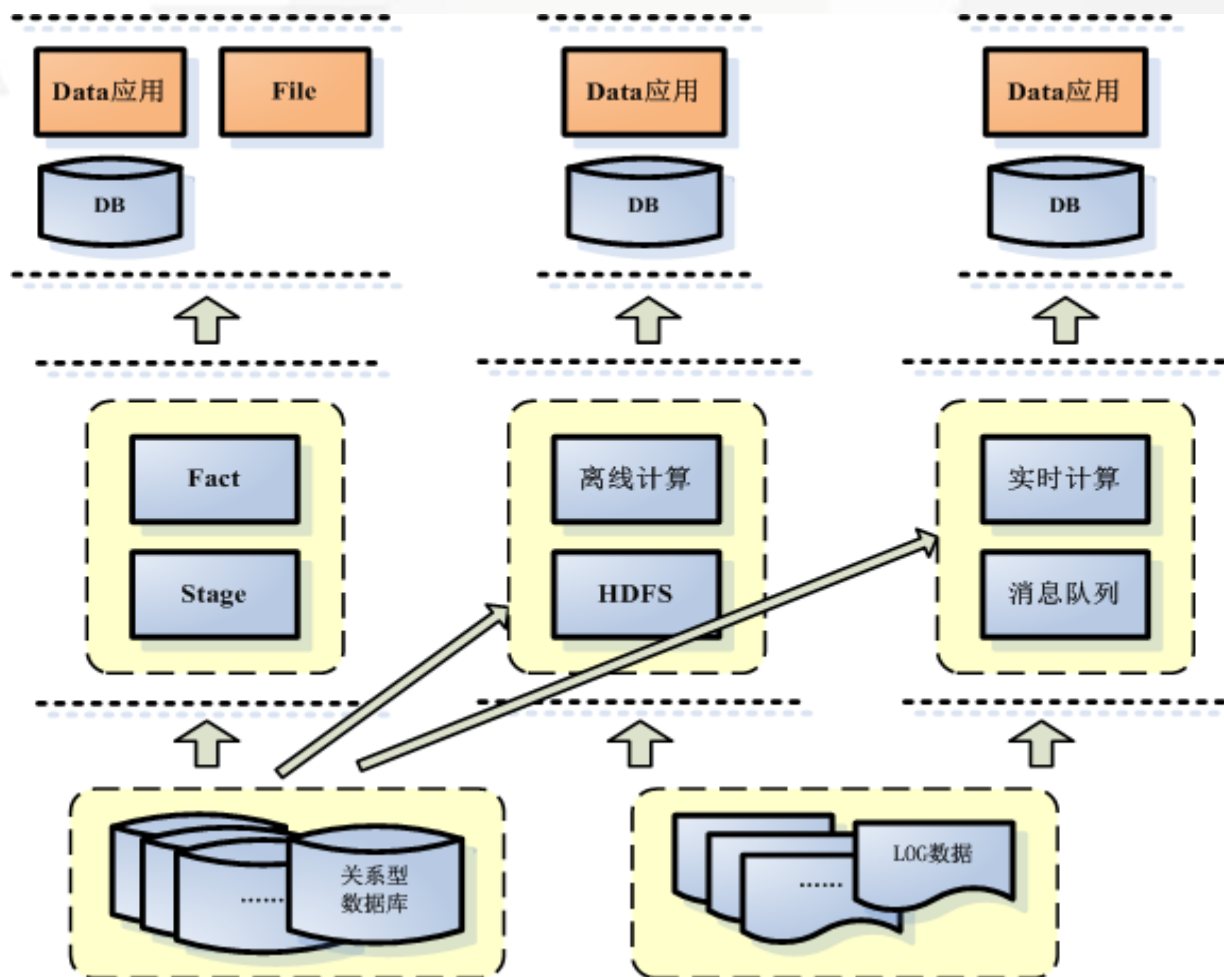
# 现实



# 怪兽之三足鼎立



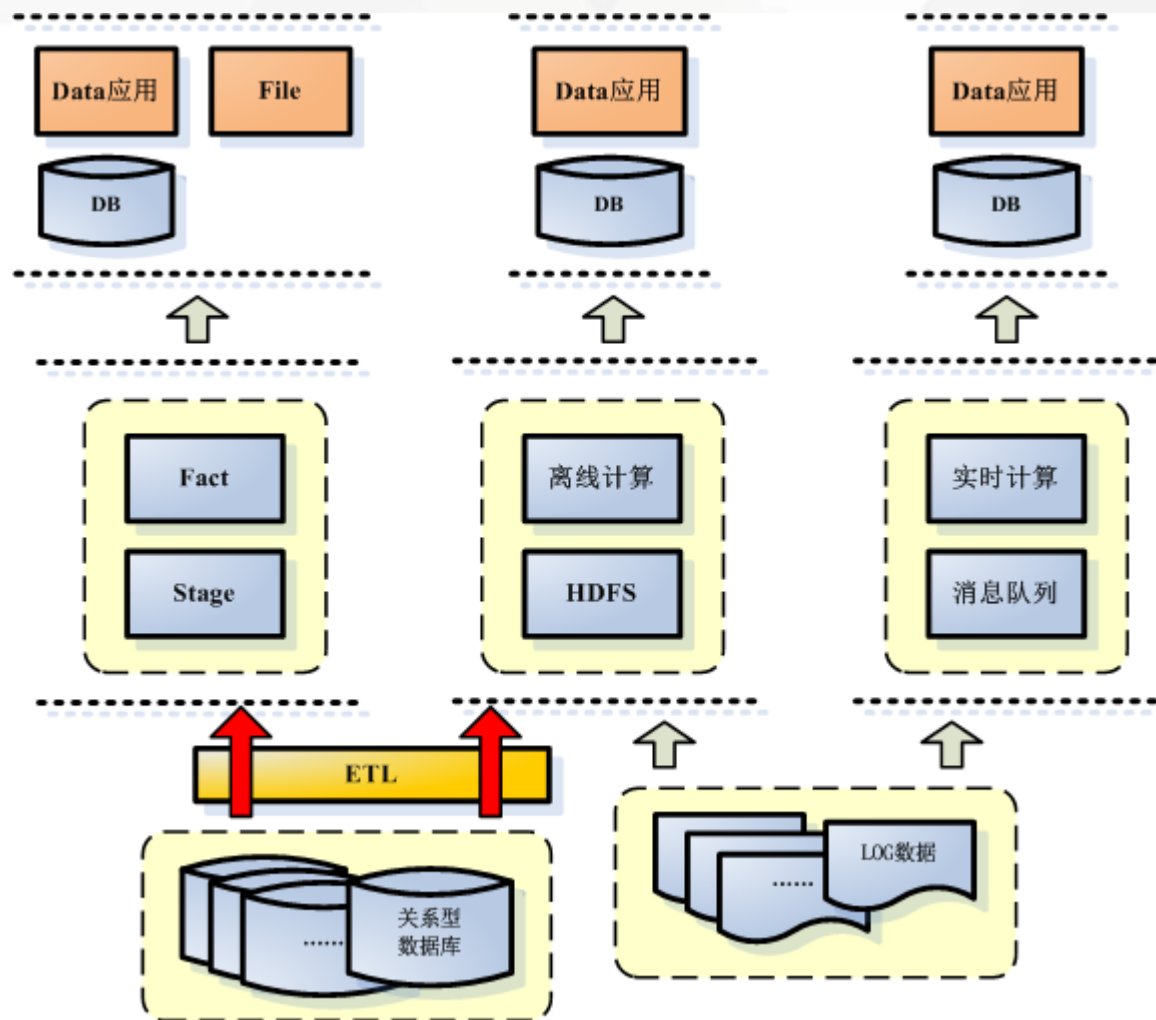
# 当时是这样的







# 整合数据抽取



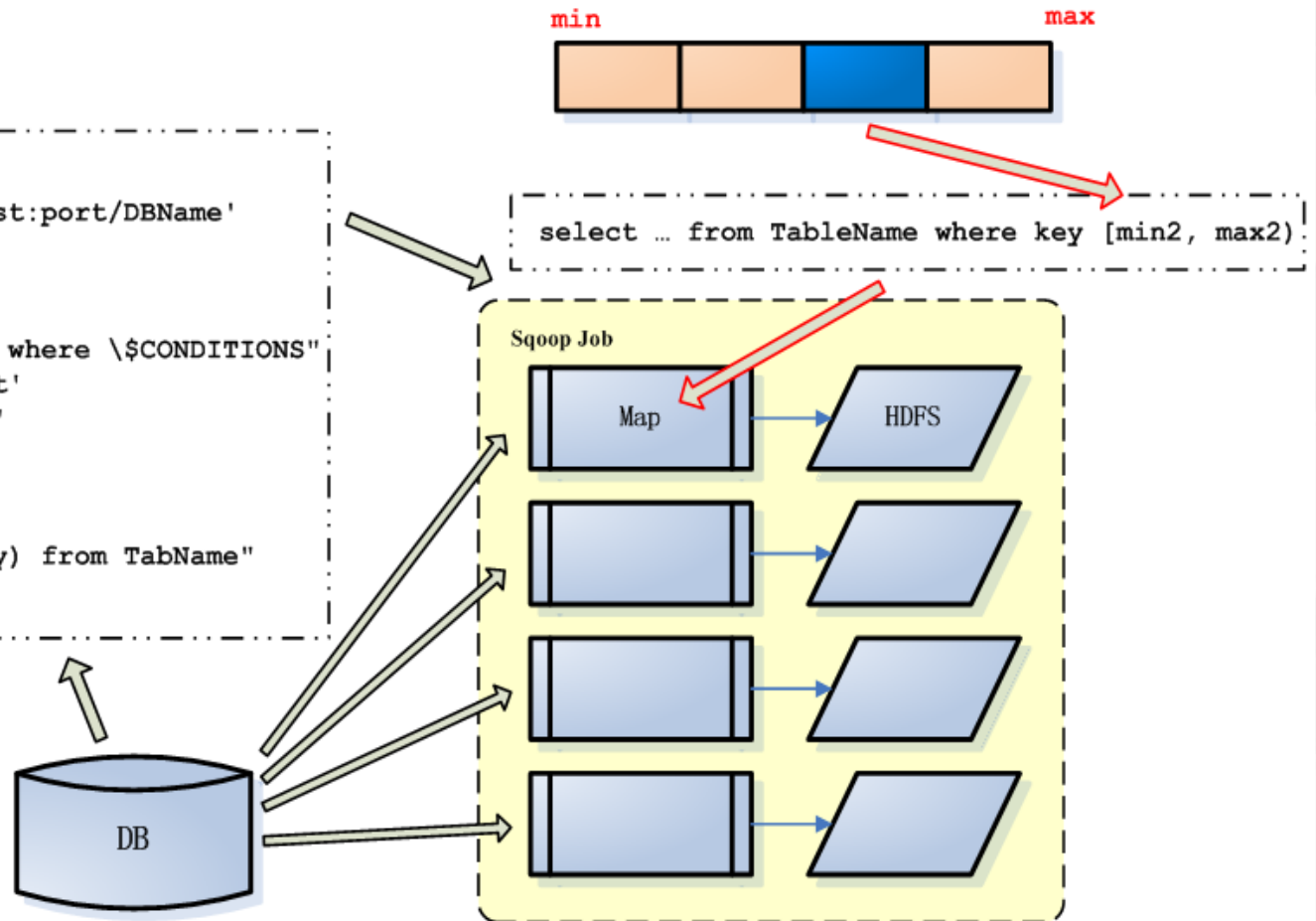
# Sqoop

- 将 Hadoop 和 关系型数据库 中的数据相互转移的工具
- 封装到开发工具箱中



# Sqoop

```
sqoop import
--connect 'jdbc:mysql://host:port/DBName'
--username username
--password password
--query
  "select ... from TableName where \${CONDITIONS}"
--fields-terminated-by '\t'
--lines-terminated-by '\n'
--split-by key
--target-dir /hdfs_path
--boundary-query
  "select min(key), max(key) from TabName"
-m num-mappers
```



# Sqoop

- 现象：抽取不稳定
  - 每日抽取变化量
  - 正常5分钟以内
  - 异常30min以上





# Sqoop

- 原因：数据不均

Task	Complete	Status	Start Time	Finish Time	E
task_201411060015_1717_m_000000	100.00%		6-Nov-2014 08:33:26	6-Nov-2014 08:35:04 (1mins, 37sec)	
task_201411060015_1717_m_000001	100.00%		6-Nov-2014 08:33:26	6-Nov-2014 08:33:32 (5sec)	
task_201411060015_1717_m_000002	100.00%		6-Nov-2014 08:33:26	6-Nov-2014 08:34:00 (33sec)	
task_201411060015_1717_m_000003	100.00%		6-Nov-2014 08:33:26	6-Nov-2014 08:33:31 (4sec)	
task_201411060015_1717_m_000004	100.00%		6-Nov-2014 08:33:28	6-Nov-2014 08:33:32 (4sec)	
task_201411060015_1717_m_000005	100.00%		6-Nov-2014 08:33:28	6-Nov-2014 08:55:55 (22mins, 26sec)	
task_201411060015_1717_m_000006	100.00%		6-Nov-2014 08:33:28	6-Nov-2014 09:03:39 (30mins, 10sec)	
task_201411060015_1717_m_000007	100.00%		6-Nov-2014 08:33:28	6-Nov-2014 08:35:56 (2mins, 28sec)	
task_201411060015_1717_m_000008	100.00%		6-Nov-2014 08:33:29	6-Nov-2014 08:33:33 (4sec)	
task_201411060015_1717_m_000009	100.00%		6-Nov-2014 08:33:30	6-Nov-2014 08:33:35 (5sec)	

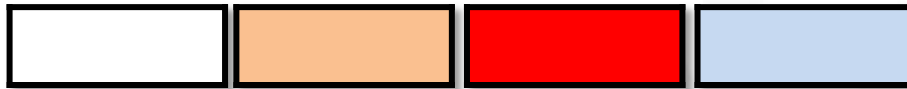
```

Found 12 items
-rw-rw-r-- 3 dwstage supergroup 0 2014-11-06 09:03 /tmp/prods_core_changed2/_SUCCESS
drwxrwxrwx - dwstage supergroup 0 2014-11-06 08:33 /tmp/prods_core_changed2/_logs
-rw-rw-r-- 3 dwstage supergroup 367575659 2014-11-06 08:33 /tmp/prods_core_changed2/part-m-00000
-rw-rw-r-- 3 dwstage supergroup 0 2014-11-06 08:33 /tmp/prods_core_changed2/part-m-00001
-rw-rw-r-- 3 dwstage supergroup 674437 2014-11-06 08:33 /tmp/prods_core_changed2/part-m-00002
-rw-rw-r-- 3 dwstage supergroup 0 2014-11-06 08:33 /tmp/prods_core_changed2/part-m-00003
-rw-rw-r-- 3 dwstage supergroup 0 2014-11-06 08:33 /tmp/prods_core_changed2/part-m-00004
-rw-rw-r-- 3 dwstage supergroup 612021180 2014-11-06 08:33 /tmp/prods_core_changed2/part-m-00005
-rw-rw-r-- 3 dwstage supergroup 461984920 2014-11-06 08:33 /tmp/prods_core_changed2/part-m-00006
-rw-rw-r-- 3 dwstage supergroup 145390672 2014-11-06 08:33 /tmp/prods_core_changed2/part-m-00007
-rw-rw-r-- 3 dwstage supergroup 0 2014-11-06 08:33 /tmp/prods_core_changed2/part-m-00008
-rw-rw-r-- 3 dwstage supergroup 619282 2014-11-06 08:33 /tmp/prods_core_changed2/part-m-00009
    
```



# Sqoop

- 原因：数据不均



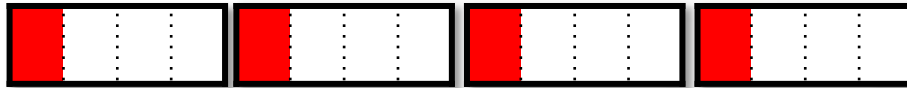
**[min, max)** 数据不均匀

```
select ... from tabName where key >= min and key < max
```



# Sqoop

- 方案：重新打散，实现Splitter

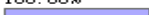




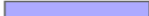






```
select ... from tableName
where (key >= min0 and key < max0)
      or (key >= min1 and key < max1)
      or (key >= min2 and key < max2)
      or (key >= ... and key < ...)
```



# Sqoop

- 方案：重新打散，实现Splitter

Task	Complete	Status	Start Time	Finish Time	Er
task_201504140015_0047_m_000000	100.00% 		14-Apr-2015 01:31:07	14-Apr-2015 01:33:25 (2mins, 18sec)	
task_201504140015_0047_m_000001	100.00% 		14-Apr-2015 01:31:07	14-Apr-2015 01:33:20 (2mins, 12sec)	
task_201504140015_0047_m_000002	100.00% 		14-Apr-2015 01:31:07	14-Apr-2015 01:34:25 (3mins, 18sec)	
task_201504140015_0047_m_000003	100.00% 		14-Apr-2015 01:31:07	14-Apr-2015 01:33:20 (2mins, 12sec)	
task_201504140015_0047_m_000004	100.00% 		14-Apr-2015 01:31:07	14-Apr-2015 01:33:05 (1mins, 57sec)	
task_201504140015_0047_m_000005	100.00% 		14-Apr-2015 01:31:07	14-Apr-2015 01:33:29 (2mins, 21sec)	
task_201504140015_0047_m_000006	100.00% 		14-Apr-2015 01:31:07	14-Apr-2015 01:34:14 (3mins, 7sec)	
task_201504140015_0047_m_000007	100.00% 		14-Apr-2015 01:31:07	14-Apr-2015 01:34:11 (3mins, 3sec)	
task_201504140015_0047_m_000008	100.00% 		14-Apr-2015 01:31:07	14-Apr-2015 01:33:40 (2mins, 33sec)	
task_201504140015_0047_m_000009	100.00% 		14-Apr-2015 01:31:07	14-Apr-2015 01:33:47 (2mins, 40sec)	

-rw-rw-r--	3	dwstage	supergroup	413140700	2015-04-14 01:31	/tmp/products_core/part-m-00000
-rw-rw-r--	3	dwstage	supergroup	476433337	2015-04-14 01:31	/tmp/products_core/part-m-00001
-rw-rw-r--	3	dwstage	supergroup	730689345	2015-04-14 01:31	/tmp/products_core/part-m-00002
-rw-rw-r--	3	dwstage	supergroup	416053242	2015-04-14 01:31	/tmp/products_core/part-m-00003
-rw-rw-r--	3	dwstage	supergroup	382295633	2015-04-14 01:31	/tmp/products_core/part-m-00004
-rw-rw-r--	3	dwstage	supergroup	433357680	2015-04-14 01:31	/tmp/products_core/part-m-00005
-rw-rw-r--	3	dwstage	supergroup	422126408	2015-04-14 01:31	/tmp/products_core/part-m-00006
-rw-rw-r--	3	dwstage	supergroup	434720260	2015-04-14 01:31	/tmp/products_core/part-m-00007
-rw-rw-r--	3	dwstage	supergroup	422051349	2015-04-14 01:31	/tmp/products_core/part-m-00008
-rw-rw-r--	3	dwstage	supergroup	444819816	2015-04-14 01:31	/tmp/products_core/part-m-00009



# 怪兽之报表快跑



bbs.duowan.com





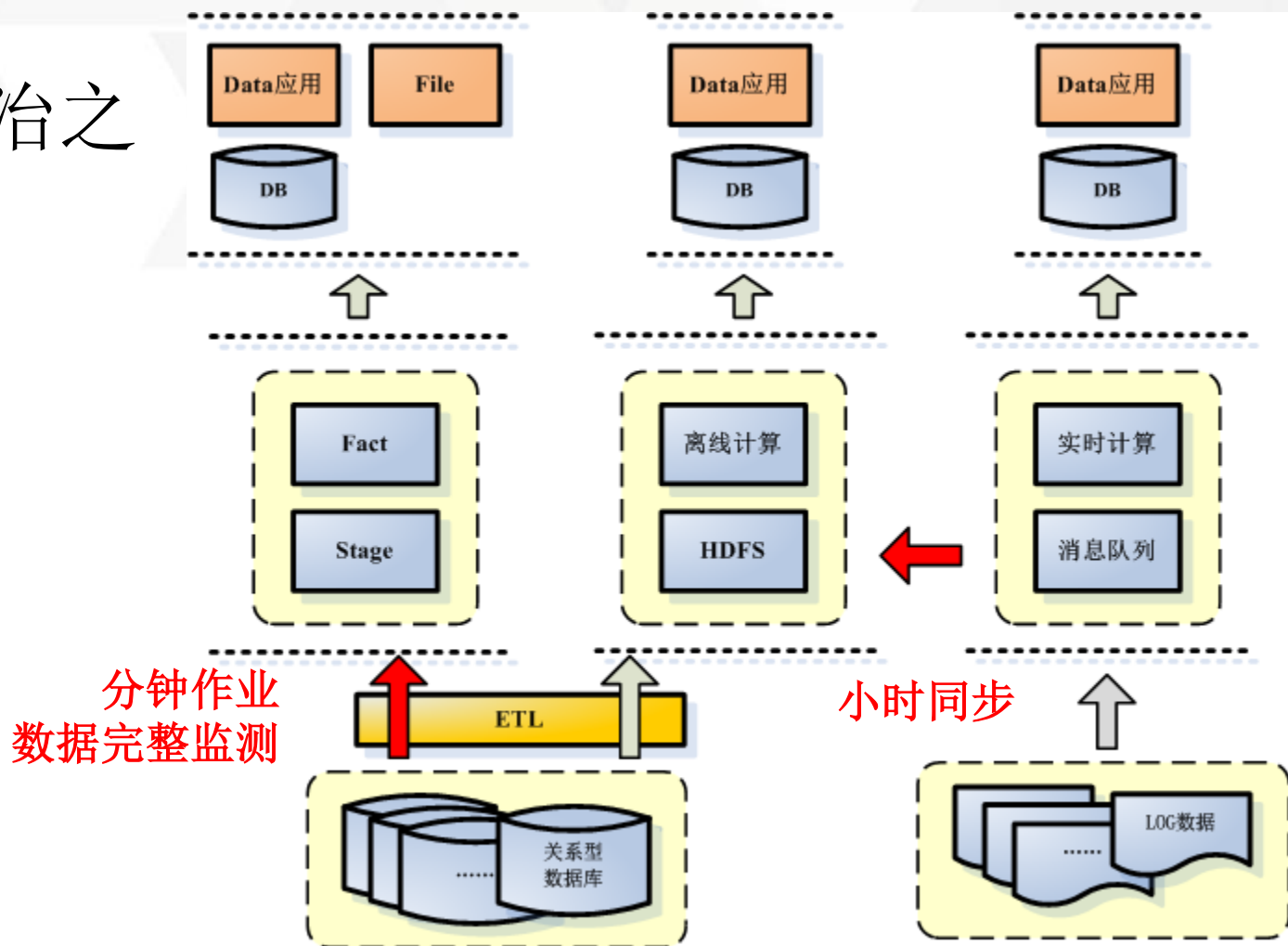
# 数据及时性

- 数据量增长/大促
  - 重要报表延迟
- 原因
  - 凌晨数据同步占据计算时间



# 数据及时性

分而治之



# 数据及时性

- 调度资源管理
  - 作业组
  - 并行数
  - 队列
  - 优先级

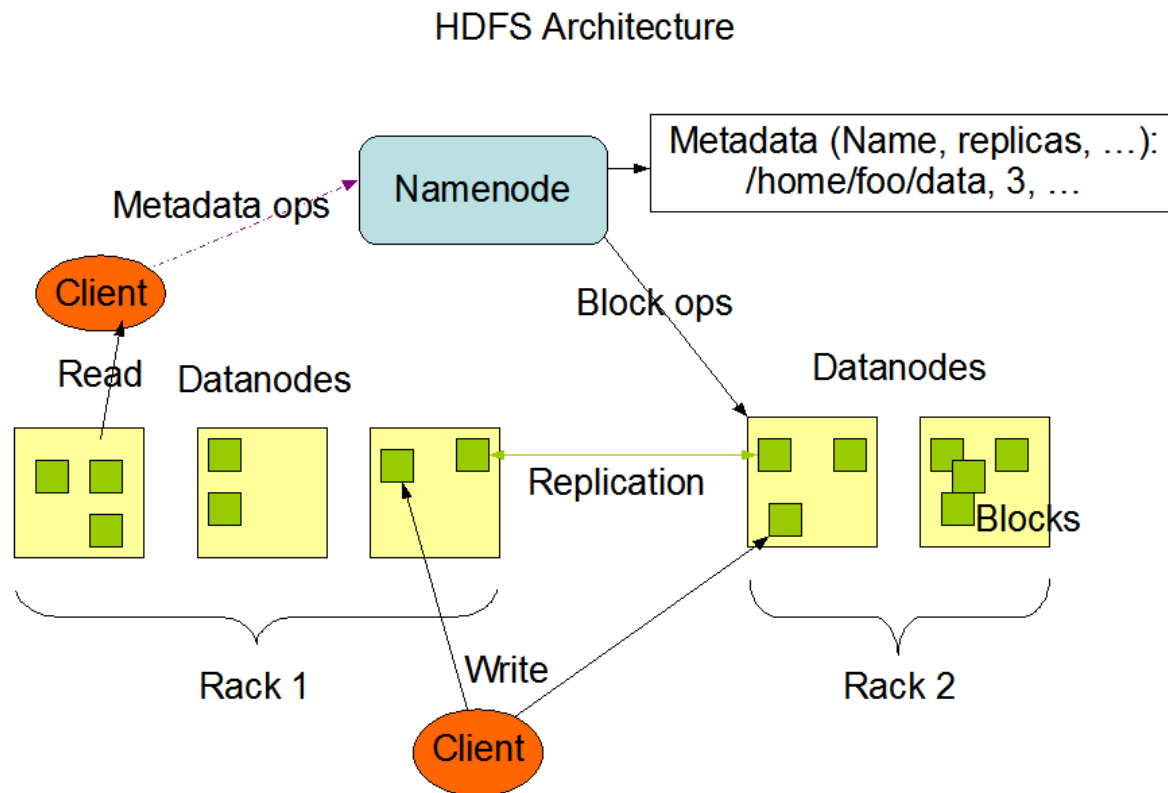


# 怪兽之 Hadoop 危机



# Hadoop危机

- NameNode宕机





# Hadoop危机

- 影响
  - 所有内部、外部数据产品流量数据
  - 搜索、广告、推荐



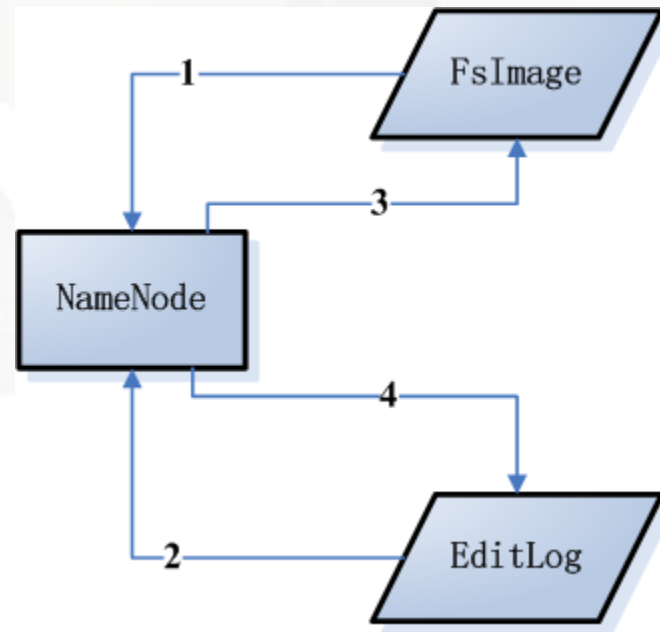
# Hadoop危机

- 方案
  - 尝试重启系统
  - 3个月前的镜像
  - 尝试恢复



# Hadoop危机

- 解决
  - 尝试修复EditLog



那都不是事儿



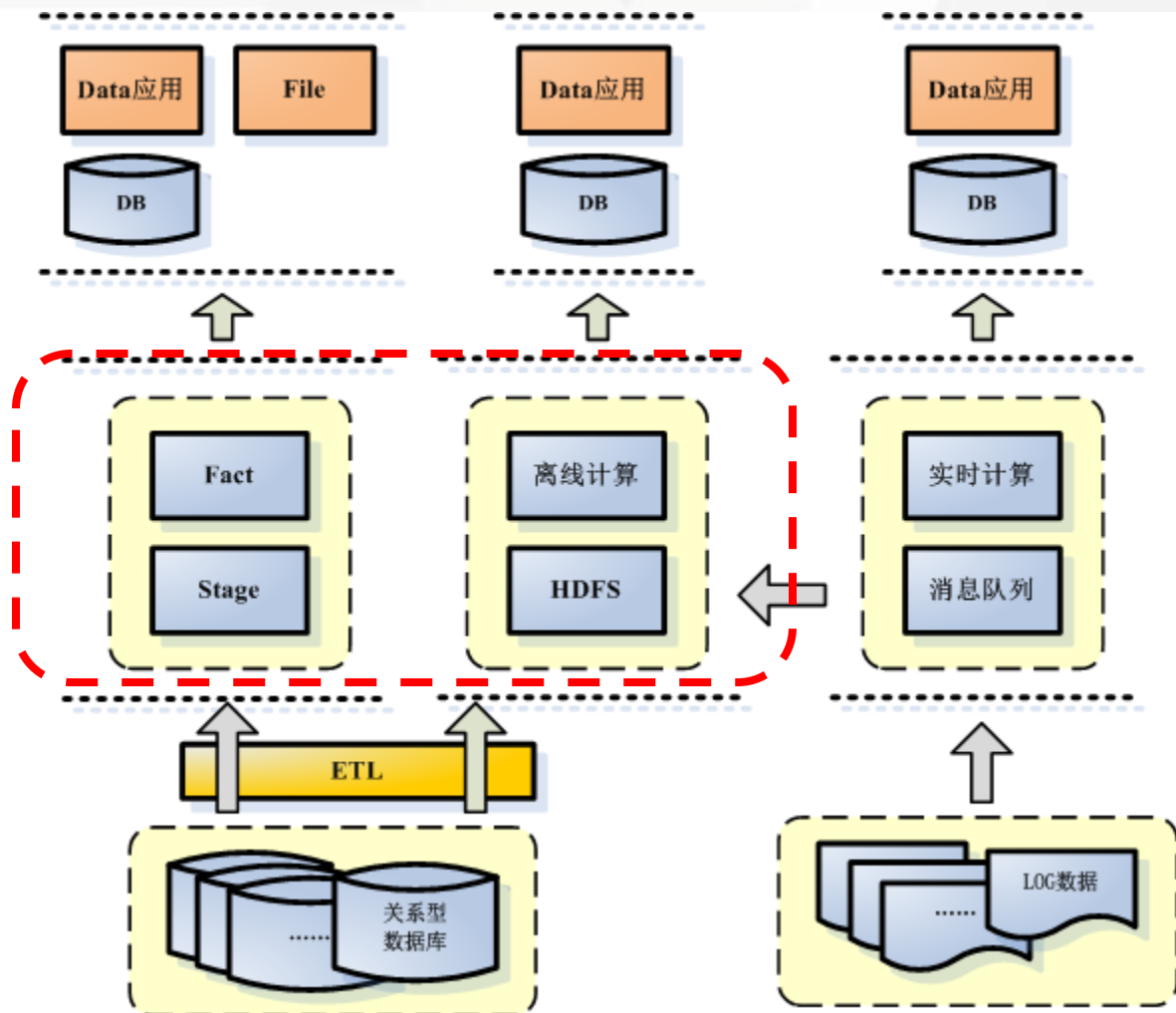


# 怪兽之密集恐惧症





# 历史问题



# 剪不断理还乱

- 需求&报表
- 指标混乱
- 数据孤岛
- 僵尸报表



# 如何解决

- 我们需要什么
  - 指标口径统一
  - 知识管理
  - 生命周期

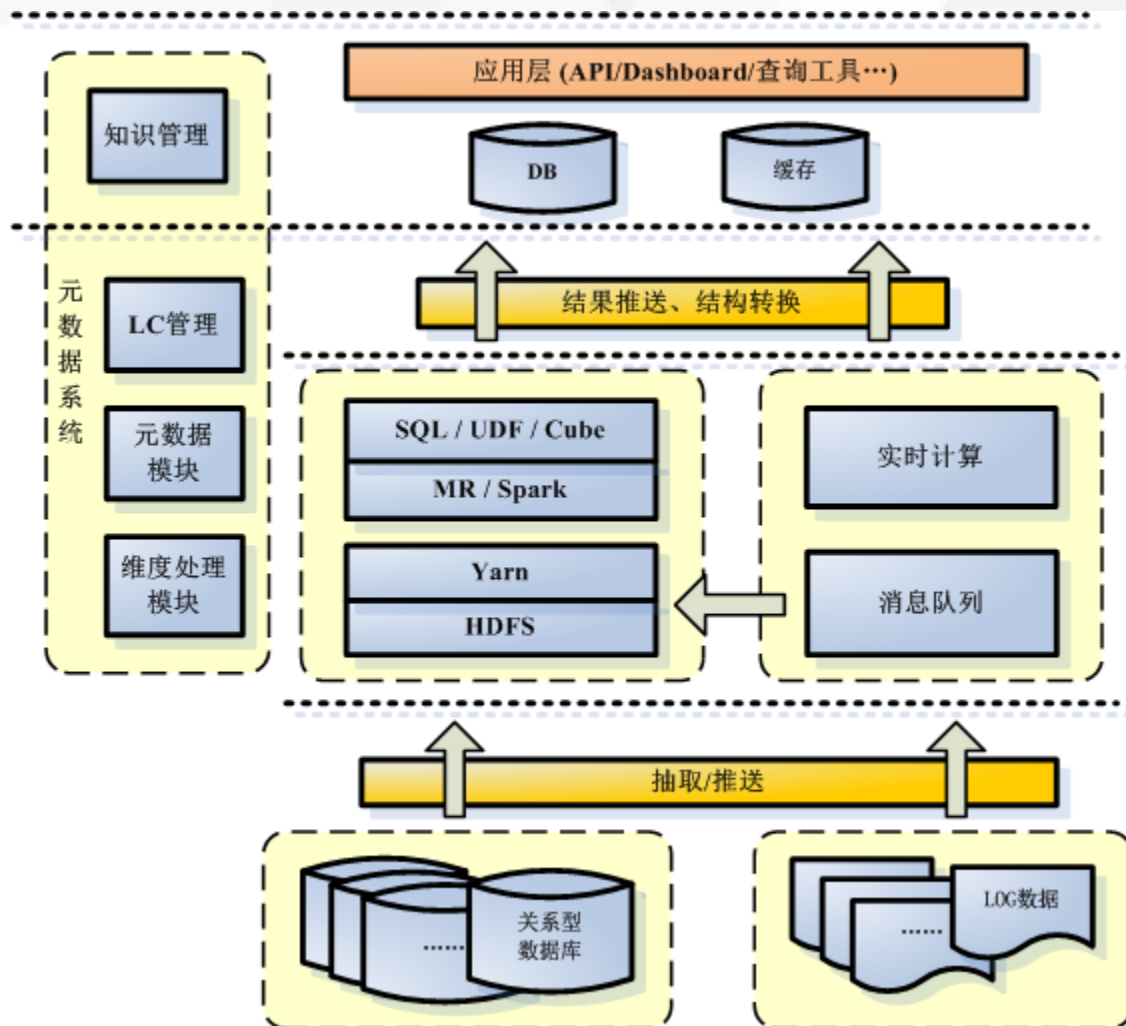


# 如何解决

- 我们需要什么
  - 元数据管理
  - 整合BI应用



# 最终的方向



IT168

ChinaUnix

ITPUB

IT168

THANKS