



# 您的信息 您的智慧

2011 IBM 信息管理与业务分析论坛

Netezza: 加速从业务数据向业务洞察力的转换

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IBM软件部信息管理资深工程师





# 议程

- Netezza简介
- 关于性能
- 简单性
- 技术架构
- Netezza的竞争优势
- Netezza的客户案例





# Gartner报告：一体机(Appliance)是企业数据仓库的未来

Figure 1. Hype Cycle for Data Management, 2010



Gartner把一项新产品走向成熟的生命周期分为“技术触发、期望膨胀、理性回归、增长上升、高原稳定”五个阶段。

Gartner 2010年7月的分析报告认为：“一体机”已经进入“增长上升期”，两年内将被各行业大规模应用。

## Are Data Warehouse Appliances: In Your Future Plan On It!

Donald Feinberg  
With their business value proven, and more choices available in the market, the use of data warehouse (DW) appliances is surging in the market. Because of their potential value, organizations must investigate DW appliances as an alternative or addition to a custom DW environment.

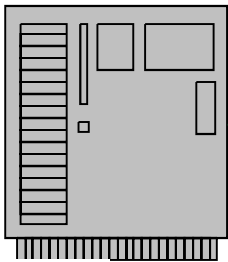
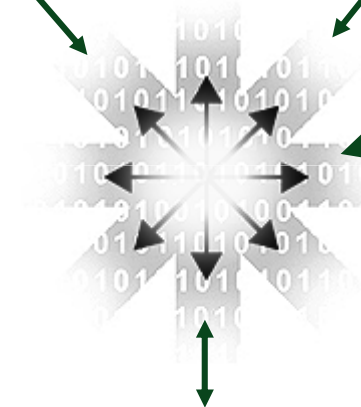
- Key Findings**
- DW appliances deliver easy to install, easy to manage DW platforms with predictable performance and single point-of-contact service.
  - DW appliances are used to support all types of DW, from application-specific data marts to the enterprise DW, with complex mixed workloads.
  - DW appliances are available from all the incumbent database management system (DBMS) vendors, as well as many vendors with appliance-specific offerings.
  - For DW platforms, DW appliances have become a competing deployment standard to traditional self-configured hardware and storage deployments.

**WHAT YOU NEED TO KNOW**  
DW appliances are available today from most of the vendors with a DW DBMS, as well as many vendors with only a specific DW appliance. They are being used for all types of data warehousing, from application-specific data marts to enterprise DW implementations with complex mixed workloads (see Note 1). Over the next five years, interest in and use of DW appliances have been growing fast. As the value proposition of DW appliances grows, more organizations will realize their benefits. By 2015, at least 50% of enterprises with DWs in production will include a DW appliance. This research should be of interest to CIOs, chief technology officers (CTOs), IT architecture teams and database administration teams, as well as anyone involved in the design and acquisition of a DW.

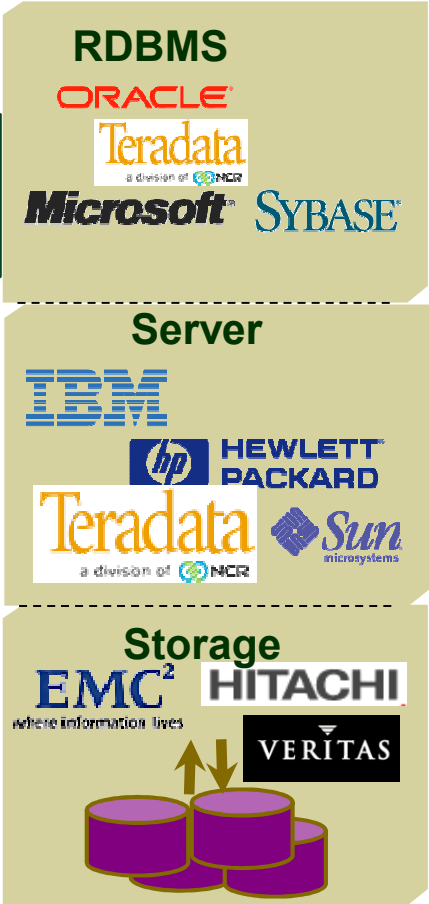
到2015年，全球将有至少50%的企业选择一体机作为自己的数据仓库解决方案



# 过去的技术趋势朝松耦合架构的方向发展



ODBC  
JDBC  
OLE DB  
SQL/92/99



您的信息 您的智慧

Sunopsis M 信息管理与业务分析论坛



# IBM Netezza走在再聚合技术的前沿

SAP BusinessObjects  
MicroStrategy

COGNOS

Hyperion  
The future in sight

twinFin™

NETEZZA TWINFIN™ DATA WAREHOUSE APPLIANCE

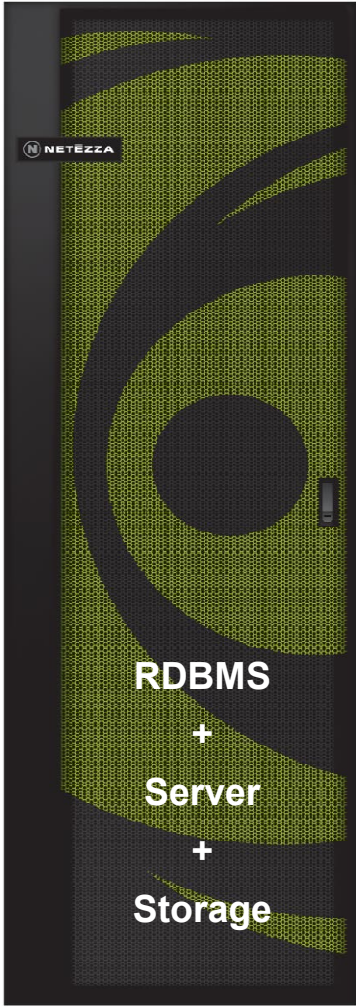
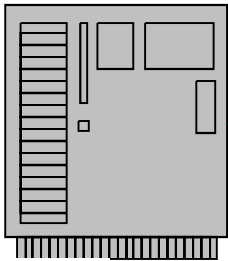
SPSS

SAS

Microsoft



- ODBC
- JDBC
- OLE DB
- SQL/92/99



RDBMS  
+  
Server  
+  
Storage

INFORMATICA

Ab Initio

Unica

Ascential

您的信息 您的智慧

Sunopsis

信息管理与业务分析论坛





## 看看Oracle怎么说...

**“Netezza是Exadata的部分灵感来源.**

.....

**“我们想感谢他们,因为是他们促使我们进入硬件业务.”**

**Larry Ellison  
CEO , Oracle Corporation  
January 27 2010**

[http://oracle.com.edgesuite.net/ivt/4000/8104/9238/12652/lobby\\_external\\_flash\\_clean\\_480x360/default.htm](http://oracle.com.edgesuite.net/ivt/4000/8104/9238/12652/lobby_external_flash_clean_480x360/default.htm)





# 议程

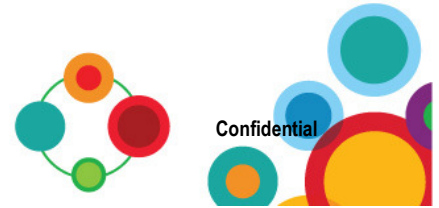
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# 传统的数据仓库架构： 服务器和存储之间的数据流存在重大瓶颈!!



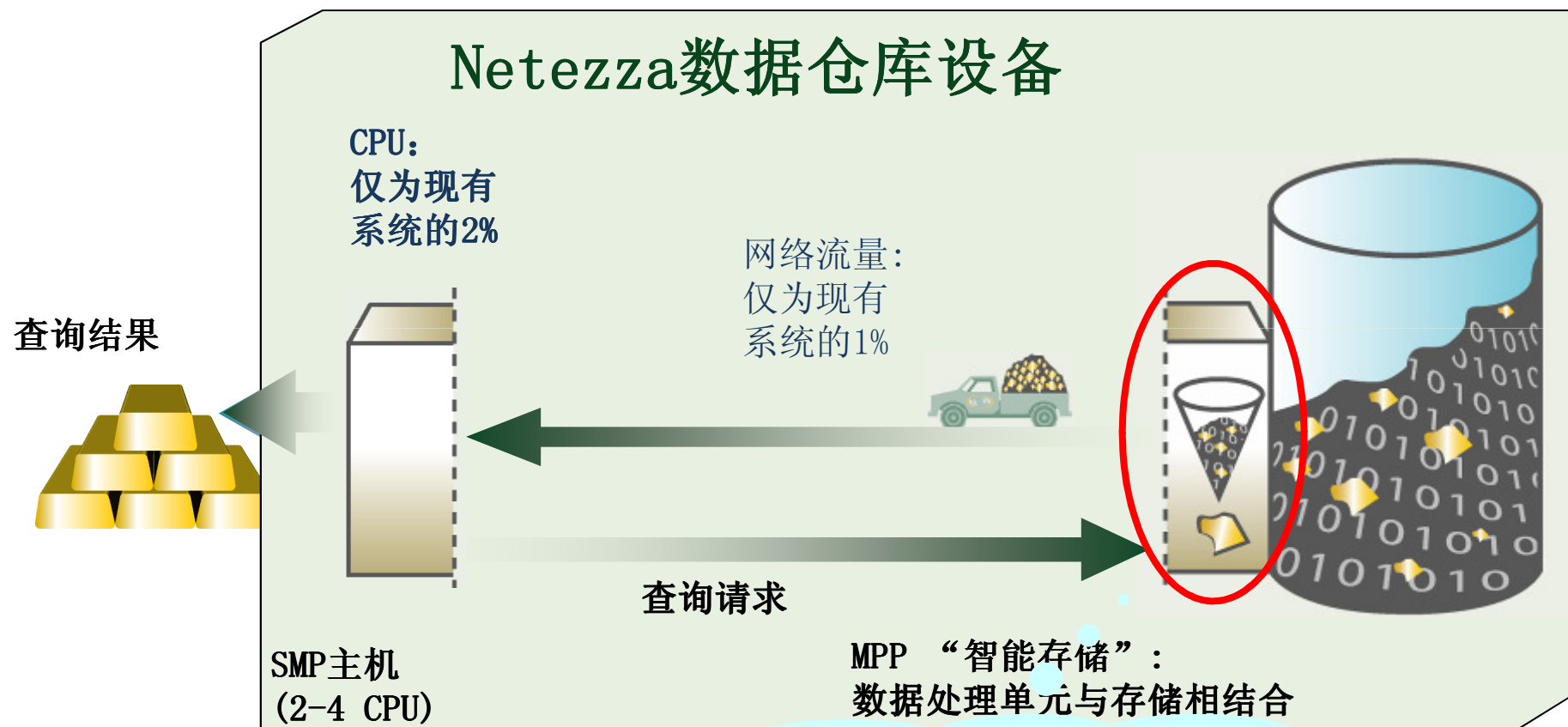
数据首先被搬运到内存，然后由 SQL 进行处理







# Netezza数据仓库专用设备： 性能的革命性突破

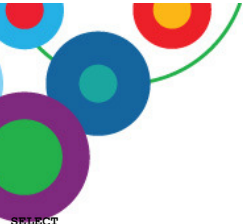


数据在进入到内存之前，已经  
经过流式的数据处理





# 复杂查询...



```

SELECT
sum(ADMIN.MBR_GIFT_HIST.GIFT_AMT),
count(ADMIN.MBR_GIFT_HIST.GIFT_DT),
count(distinct ADMIN.MBR_GIFT_HIST.MBR_ID),
ADMIN.MBR_NM_ADDR.ADDR_TYP,
ADMIN.MBR_NM_ADDR.ADDR_LINE_1,
ADMIN.MBR_NM_ADDR.ADDR_LINE_2,
ADMIN.MBR_NM_ADDR.CITY,
ADMIN.MBR_NM_ADDR.STATE_CD,
ADMIN.MBR_NM_ADDR.ZIP_CD_BASE,
ADMIN.MBR_NM_ADDR.ZIP_CD_SUFFIX,
ADMIN.MBR_PREFL.RCNCY_CD,
ADMIN.MBR_PREFL.FREQ_CD,
Member_Recency_CD.RCNCY_CD_DESC,
ADMIN.MBR_PREFL.AMT_CD,
ADMIN.MBR_PREFL.RCNCY_CD || ADMIN.MBR_PREFL.FREQ_CD,
ADMIN.MBR_PREFL.RCNCY_CD || ADMIN.MBR_PREFL.FREQ_CD ||
ADMIN.MBR_PREFL.AMT_CD,
Member_Frequency_CD.FREQ_CD_DESC,
Member_Amount_CD.AMT_CD_DESC,
Member_Recency_CD.RCNCY_CD_DESC || ' ' ||
Member_Frequency_CD.FREQ_CD_DESC,
Member_Recency_CD.RCNCY_CD_DESC || ' ' ||
Member_Frequency_CD.FREQ_CD_DESC || ' ' ||
Member_Amount_CD.AMT_CD_DESC,
ADMIN.MBR_BY_GIFT.FRST_GIFT_AMT,
ADMIN.MBR_BY_GIFT.FRST_GIFT_DT,
ADMIN.MBR_BY_GIFT.LAST_GIFT_AMT,
ADMIN.MBR_BY_GIFT.LAST_GIFT_DT,
ADMIN.MBR_BY_GIFT.HGST_GIFT_AMT,
ADMIN.MBR_BY_GIFT.HGST_GIFT_DT,
ADMIN.MBR_BY_GIFT.HGST_GIFT_LAST_24_MTH,
ADMIN.MBR_BY_GIFT.FSCL_YTD_AVG,
ADMIN.MBR_BY_GIFT.PREV_FSCL_YR_AVG,
ADMIN.MBR_BY_GIFT.LFTM_AVG,
ADMIN.MBR_GIFT_HIST.MAIL_KEY_CD,
ADMIN.MBR_GIFT_HIST.CPGN_TYP,
Gift_Campaign_Type.CPGN_TYP_DESC,
ADMIN.MBR_GIFT_HIST.DONOR_CLASS_CD,
Gift_Donor_Class.DONOR_CLASS_CD_DESC,
ADMIN.MBR_GIFT_HIST.CPGN_AUDNC_CD,
Gift_Cpgn_Audience.CPGN_AUDNC_CD_DESC,
ADMIN.MBR_GIFT_HIST.CPGN_YR,
ADMIN.MBR_GIFT_HIST.PREFL_CD,
ADMIN.MBR_GIFT_HIST.CPGN_NUM,
ADMIN.MBR_GIFT_HIST.PKG_CD,
Gift_Profile_CD.PREFL_CD_DESC,
ADMIN.MBR_GIFT_HIST.RCNCY_CD,
ADMIN.MBR_GIFT_HIST.FREQ_CD,
Gift_Recency_CD.RCNCY_CD_DESC,
ADMIN.MBR_GIFT_HIST.AMT_CD,
Gift_Frequency_CD.FREQ_CD_DESC,
ADMIN.MBR_GIFT_HIST.RCNCY_CD || ADMIN.MBR_GIFT_HIST.FREQ_CD,
Gift_Amount_CD.AMT_CD_DESC,
ADMIN.MBR_GIFT_HIST.RCNCY_CD || ADMIN.MBR_GIFT_HIST.FREQ_CD ||

```

```

ADMIN.MBR_GIFT_HIST.AMT_CD,
ADMIN.MBR_GIFT_HIST.LOT_CD,
ADMIN.MBR_GIFT_HIST.CARE_GVNG_CD,
ADMIN.MBR_GIFT_HIST.SRC_CD,
Gift_Caregiver.CARE_GVNG_CD_DESC,
ADMIN.MBR_GIFT_HIST.RSP_CD,
Gift_Source_CD.SRC_CD,
ADMIN.MBR_GIFT_HIST.PREM_TYP,
Gift_Response_Code.RSP_CD_DESC,
Gift_Premium_Type.PREM_TYP_DESC,
ADMIN.MBR_GIFT_HIST.MBR_ID,
ADMIN.MBR_GIFT_HIST.GIFT_DT,
ADMIN.MBR_GIFT_HIST.GIFT_AMT,
ADMIN.MBR_GIFT_HIST.AFFL_CD,
ADMIN.MBR_GIFT_HIST.UPDT_NUM,
ADMIN.MBR_GIFT_HIST.LAST_UPDT_DT,
ADMIN.MBR_NM_ADDR.SALU_LINE_1,
ADMIN.MBR_NM_ADDR.SALU_LINE_2,
ADMIN.MBR_NM_ADDR.SALU_LINE_3,
ADMIN.MBR_PREFL.UPDT_NUM,
ADMIN.MBR_PREFL.LAST_UPDT_DT,
ADMIN.MBR_NM_ADDR.INSIDE_SALU_NM,
ADMIN.MBR_PREFL.MBR_ID,
ADMIN.MBR_PREFL.ACCT_TYP,
ADMIN.MBR_PREFL.ACCT_CAT_CD,
ADMIN.MBR_PREFL.AFFL_CD,
ADMIN.MBR_PREFL.CHAP_IND,
ADMIN.MBR_PREFL.RSP_CD,
ADMIN.MBR_PREFL.NEW_MBR_FLG,
ADMIN.MBR_PREFL.SEED_FLG,
ADMIN.MBR_PREFL.SLICITN_CD

```

```

FROM
ADMIN.MBR_NM_ADDR,
ADMIN.MBR_PREFL LEFT OUTER JOIN ADMIN.REF_RCNCY_CD Member_Recency_CD ON
Member_Recency_CD.RCNCY_CD=ADMIN.MBR_PREFL.RCNCY_CD LEFT OUTER JOIN
ADMIN.REF_FREQ_CD Member_Frequency_CD ON
Member_Frequency_CD.FREQ_CD=ADMIN.MBR_PREFL.FREQ_CD LEFT OUTER JOIN
ADMIN.REF_AMT_CD Member_Amount_CD ON Member_Amount_CD.AMT_CD=ADMIN.MBR_PREFL.AMT_CD
ADMIN.MBR_BY_GIFT,
ADMIN.MBR_GIFT_HIST LEFT OUTER JOIN ADMIN.REF_CPGN_TYP Gift_Campaign_Type ON
ADMIN.MBR_GIFT_HIST.CPGN_TYP=Gift_Campaign_Type.CPGN_TYP LEFT OUTER JOIN
ADMIN.REF_DONOR_CLASS_CD Gift_Donor_Class ON
ADMIN.MBR_GIFT_HIST.DONOR_CLASS_CD=Gift_Donor_Class.DONOR_CLASS_CD LEFT OUTER JOIN
ADMIN.REF_CPGN_AUDNC_CD Gift_Cpgn_Audience ON
ADMIN.MBR_GIFT_HIST.CPGN_AUDNC_CD=Gift_Cpgn_Audience.CPGN_AUDNC_CD LEFT OUTER JOIN
ADMIN.REF_PREFL_CD Gift_Profile_CD ON
Gift_Profile_CD.PREFL_CD=ADMIN.MBR_GIFT_HIST.PREFL_CD LEFT OUTER JOIN
ADMIN.REF_RCNCY_CD Gift_Recency_CD ON
Gift_Recency_CD.RCNCY_CD=ADMIN.MBR_GIFT_HIST.RCNCY_CD LEFT OUTER JOIN
ADMIN.REF_FREQ_CD Gift_Frequency_CD ON
ADMIN.MBR_GIFT_HIST.FREQ_CD=Gift_Frequency_CD.FREQ_CD LEFT OUTER JOIN
ADMIN.REF_AMT_CD Gift_Amount_CD ON
ADMIN.MBR_GIFT_HIST.AMT_CD=Gift_Amount_CD.AMT_CD LEFT OUTER JOIN
ADMIN.REF_RSP_CD Gift_Response_Code ON
ADMIN.REF_RSP_CD.RSP_CD=ADMIN.MBR_GIFT_HIST.RSP_CD LEFT OUTER JOIN
ADMIN.REF_SRC_CD Gift_Source_CD ON
Gift_Source_CD.SRC_CD=ADMIN.MBR_GIFT_HIST.SRC_CD LEFT OUTER JOIN
ADMIN.REF_UPDT_NUM Gift_Updt_Num ON
ADMIN.MBR_GIFT_HIST.LAST_UPDT_DT=Gift_Updt_Num.LAST_UPDT_DT LEFT OUTER JOIN
ADMIN.REF_INSIDE_SALU_NM Gift_Inside_Salu_Nm ON
ADMIN.MBR_GIFT_HIST.INSIDE_SALU_NM=Gift_Inside_Salu_Nm.INSIDE_SALU_NM LEFT OUTER JOIN
ADMIN.REF_CARE_GVNG_CD Gift_Caregiver ON
ADMIN.MBR_GIFT_HIST.CARE_GVNG_CD=Gift_Caregiver.CARE_GVNG_CD
WHERE
( ADMIN.MBR_NM_ADDR.MBR_ID=ADMIN.MBR_PREFL.MBR_ID )
AND ( ADMIN.MBR_BY_GIFT.MBR_ID=ADMIN.MBR_PREFL.MBR_ID )
AND ( ADMIN.MBR_PREFL.MBR_ID=ADMIN.MBR_GIFT_HIST.MBR_ID )
AND ( ADMIN.MBR_PREFL.MBR_ID='0033' )
GROUP BY
ADMIN.MBR_NM_ADDR.ADDR_TYP,
ADMIN.MBR_NM_ADDR.ADDR_LINE_1,
ADMIN.MBR_NM_ADDR.ADDR_LINE_2,
ADMIN.MBR_NM_ADDR.CITY,
ADMIN.MBR_NM_ADDR.STATE_CD,
ADMIN.MBR_NM_ADDR.ZIP_CD_BASE,
ADMIN.MBR_NM_ADDR.ZIP_CD_SUFFIX,
ADMIN.MBR_PREFL.RCNCY_CD,
ADMIN.MBR_PREFL.FREQ_CD,
Member_Recency_CD.RCNCY_CD_DESC,
ADMIN.MBR_PREFL.AMT_CD,
ADMIN.MBR_PREFL.RCNCY_CD || ADMIN.MBR_PREFL.FREQ_CD,
ADMIN.MBR_PREFL.RCNCY_CD || ADMIN.MBR_PREFL.FREQ_CD || ADMIN.MBR_PREFL.AMT_CD,
Member_Frequency_CD.FREQ_CD_DESC,
Member_Amount_CD.AMT_CD_DESC,
Member_Recency_CD.RCNCY_CD_DESC || ' ' || Member_Frequency_CD.FREQ_CD_DESC,
Member_Recency_CD.RCNCY_CD_DESC || ' ' || Member_Frequency_CD.FREQ_CD_DESC ||
' ' || Member_Amount_CD.AMT_CD_DESC,
ADMIN.MBR_BY_GIFT.FRST_GIFT_AMT,
ADMIN.MBR_BY_GIFT.FRST_GIFT_DT,
ADMIN.MBR_BY_GIFT.LAST_GIFT_AMT,
ADMIN.MBR_BY_GIFT.LAST_GIFT_DT,
ADMIN.MBR_BY_GIFT.HGST_GIFT_AMT,
ADMIN.MBR_BY_GIFT.HGST_GIFT_DT,
ADMIN.MBR_BY_GIFT.HGST_GIFT_LAST_24_MTH,
ADMIN.MBR_BY_GIFT.FSCL_YTD_AVG,
ADMIN.MBR_BY_GIFT.PREV_FSCL_YR_AVG,
ADMIN.MBR_BY_GIFT.LFTM_AVG,
ADMIN.MBR_GIFT_HIST.MAIL_KEY_CD,
ADMIN.MBR_GIFT_HIST.CPGN_TYP,
Gift_Campaign_Type.CPGN_TYP_DESC,
ADMIN.MBR_GIFT_HIST.DONOR_CLASS_CD,
Gift_Donor_Class.DONOR_CLASS_CD_DESC,
ADMIN.MBR_GIFT_HIST.CPGN_AUDNC_CD,
Gift_Cpgn_Audience.CPGN_AUDNC_CD_DESC,
ADMIN.MBR_GIFT_HIST.CPGN_YR,
ADMIN.MBR_GIFT_HIST.PREFL_CD,
ADMIN.MBR_GIFT_HIST.CPGN_NUM,
ADMIN.MBR_GIFT_HIST.PKG_CD,
Gift_Profile_CD.PREFL_CD_DESC,
ADMIN.MBR_GIFT_HIST.RCNCY_CD,
ADMIN.MBR_GIFT_HIST.FREQ_CD,
Gift_Recency_CD.RCNCY_CD_DESC,
ADMIN.MBR_GIFT_HIST.AMT_CD,
Gift_Frequency_CD.FREQ_CD_DESC,
ADMIN.MBR_GIFT_HIST.RCNCY_CD || ADMIN.MBR_GIFT_HIST.FREQ_CD,
Gift_Amount_CD.AMT_CD_DESC,
ADMIN.MBR_GIFT_HIST.RCNCY_CD || ADMIN.MBR_GIFT_HIST.FREQ_CD ||

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ADMIN.MBR_BY_GIFT.FSCL_YTD_AVG,
ADMIN.MBR_BY_GIFT.PREV_FSCL_YR_AVG,
ADMIN.MBR_BY_GIFT.LFTM_AVG,
ADMIN.MBR_GIFT_HIST.MAIL_KEY_CD,
ADMIN.MBR_GIFT_HIST.CPGN_TYP,
Gift_Campaign_Type.CPGN_TYP_DESC,
ADMIN.MBR_GIFT_HIST.DONOR_CLASS_CD,
Gift_Donor_Class.DONOR_CLASS_CD_DESC,
ADMIN.MBR_GIFT_HIST.CPGN_AUDNC_CD,
Gift_Cpgn_Audience.CPGN_AUDNC_CD_DESC,
ADMIN.MBR_GIFT_HIST.CPGN_YR,
ADMIN.MBR_GIFT_HIST.PREFL_CD,
ADMIN.MBR_GIFT_HIST.CPGN_NUM,
ADMIN.MBR_GIFT_HIST.PKG_CD,
Gift_Profile_CD.PREFL_CD_DESC,
ADMIN.MBR_GIFT_HIST.RCNCY_CD,
Gift_Recency_CD.RCNCY_CD_DESC,
ADMIN.MBR_GIFT_HIST.AMT_CD,
Gift_Frequency_CD.FREQ_CD_DESC,
ADMIN.MBR_GIFT_HIST.RCNCY_CD ||
ADMIN.MBR_GIFT_HIST.FREQ_CD,
Gift_Amount_CD.AMT_CD_DESC,
ADMIN.MBR_GIFT_HIST.RCNCY_CD ||
ADMIN.MBR_GIFT_HIST.FREQ_CD ||
ADMIN.MBR_GIFT_HIST.AMT_CD,
ADMIN.MBR_GIFT_HIST.LOT_CD,
ADMIN.MBR_GIFT_HIST.CARE_GVNG_CD,
ADMIN.MBR_GIFT_HIST.SRC_CD,
Gift_Caregiver.CARE_GVNG_CD_DESC,
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Gift_Source_CD.SRC_CD,
ADMIN.MBR_GIFT_HIST.PREM_TYP,
Gift_Response_Code.RSP_CD_DESC,
Gift_Premium_Type.PREM_TYP_DESC,
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ADMIN.MBR_GIFT_HIST.GIFT_DT,
ADMIN.MBR_GIFT_HIST.GIFT_AMT,
ADMIN.MBR_GIFT_HIST.AFFL_CD,
ADMIN.MBR_GIFT_HIST.UPDT_NUM,
ADMIN.MBR_GIFT_HIST.LAST_UPDT_DT,
ADMIN.MBR_NM_ADDR.SALU_LINE_1,
ADMIN.MBR_NM_ADDR.SALU_LINE_2,
ADMIN.MBR_NM_ADDR.SALU_LINE_3,
ADMIN.MBR_PREFL.UPDT_NUM,
ADMIN.MBR_PREFL.LAST_UPDT_DT,
ADMIN.MBR_NM_ADDR.INSIDE_SALU_NM,
ADMIN.MBR_PREFL.MBR_ID,
ADMIN.MBR_PREFL.ACCT_TYP,
ADMIN.MBR_PREFL.ACCT_CAT_CD,
ADMIN.MBR_PREFL.AFFL_CD,
ADMIN.MBR_PREFL.CHAP_IND,
ADMIN.MBR_PREFL.RSP_CD,
ADMIN.MBR_PREFL.NEW_MBR_FLG,
ADMIN.MBR_PREFL.SEED_FLG,
ADMIN.MBR_PREFL.SLICITN_CD;

```

通过SQL拖拽生成的...

6亿条记录的事实表

13个Join

75个Group by

Oracle用了数小时完成

Netezza: 只用了3分钟





# 我们的客户这样说

使用Netezza的结果:

- > 5千亿条市场指数记录
  - > 17,500零售网点(全美)
- > 利用同样的 BI 应用

“通过提供更好的服务, 性能.”

- > 70多倍的查询量 基于 5倍于以往的数据量
- > 每天在Netezza系统上100,000次查询.

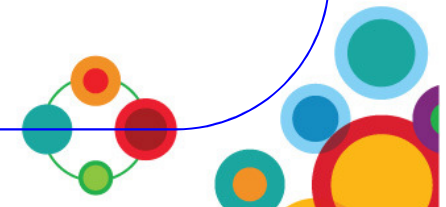
Catalina

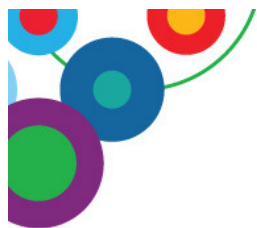
- > 减少存储将近100TB

“从一小时降到”  
“规模并更加健壮”  
数据移入到 Netezza 平台. “基于Netezza我们做到每周推出一个新零售商.”

- > 运用Netezza不再需要提前聚合运算

- Eric Williams, CIO, Catalina





# 我们大胆的提出了主张, ...我们同样用事实证明了它!

- 我们证明我们更简单
- 我们证明我们交付了高性能
- 我们证明我们可以在各种客户环境中运转
- 我们证明了与各种第三方工具的集成
- 我们证明了与我们 “做生意很容易”
- 我们证明我们具有最低的TCO
- 我们证明了业务价值

twinfin™





# 议程

- Netezza简介
- 关于性能
- 简单性
- 技术架构
- Netezza的竞争优势
- Netezza的客户案例





## Netezza 一体机 ( *Appliance* )



- 专门设计的设备
- 针对用途集中优化
- 完整的解决方案
- 快速安装
- 非常简单的操作
- 标准的接口
- 低成本



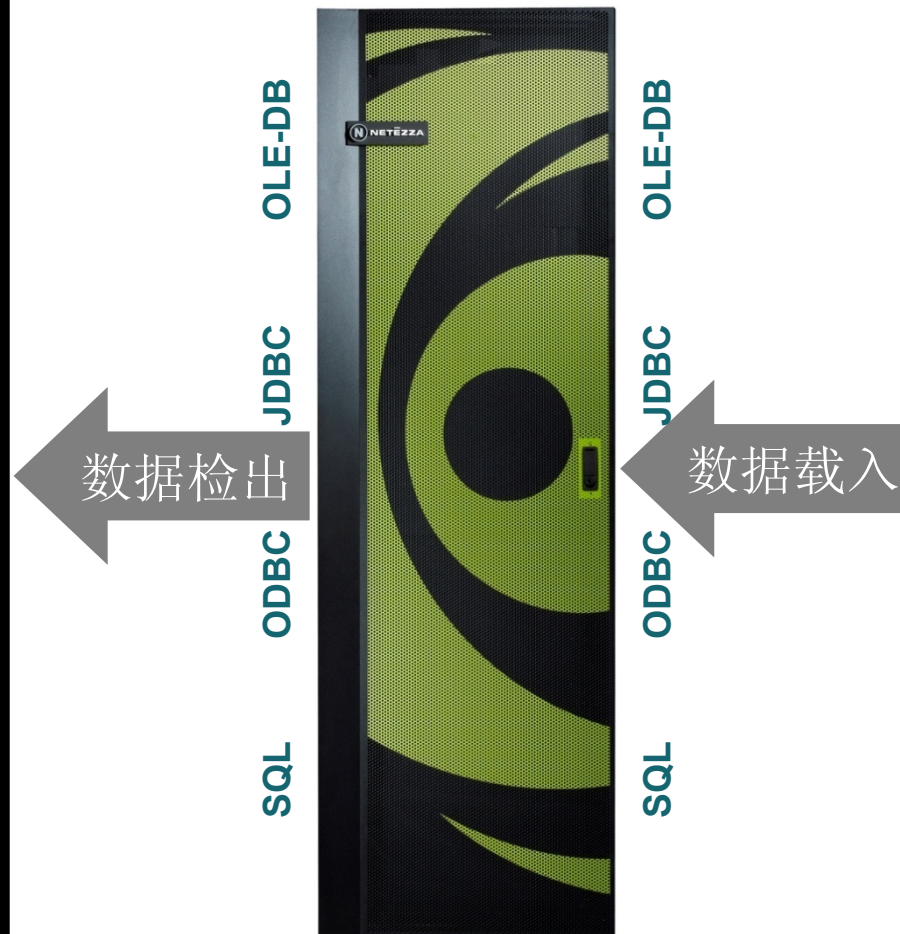




# Netezza一体机数据查询与装载

## 报表&分析

Actuate  
Business Objects/SAP  
Cognos (IBM)  
Information Builders  
Kalido  
KXEN  
MicroStrategy  
Oracle OBIEE  
QlikTech  
Quest Software  
SAS  
SPSS (IBM)  
Unica (IBM)



## 数据集成

Ab Initio  
Business Objects/SAP  
Composite Software  
Expressor Software  
GoldenGate Software (Oracle)  
Informatica  
IBM Information Server  
Sunopsis (Oracle)  
WisdomForce





# 管理 Netezza

不需要索引 *indexes* 和调优 *tuning*

不需要存储管理

- 没有dbspace/tablespace容量规划和配置
- 无需redo/physical/Logical log的规划和配置
- 无需表的page/block 规划和配置
- 无需 表的extent规划和配置
- 无需临时空间Temp space分配和监控
- 无需dbspaces 级RAID级别选择
- 无需文件的逻辑卷logical volume创建
- 无需推荐OS kernel 的集成
- 无需操作系统OS建议补丁级别的维护
- 无需 JAD sessions 的 host/network/storage配置

不需要软件安装

有限的技术人力资源成为  
真正的数据管理员而不是  
数据库管理员





# 传统的复杂度 ... Netezza的简单性

```
0. CREATE DATABASE TEST LOGFILE 'E:\OraData\TEST\LOG1TEST.ORA' SIZE 2M, 'E:\OraData\TEST\LOG2TEST.ORA' SIZE 2M, 'E:\OraData\TEST\LOG3TEST.ORA' SIZE 2M, 'E:\OraData\TEST\LOG4TEST.ORA' SIZE 2M, 'E:\OraData\TEST\LOG5TEST.ORA' SIZE 2M EXTENT MANAGEMENT LOCAL MAXDATAFILES 100 DATAFILE 'E:\OraData\TEST\SYS1TEST.ORA' SIZE 50 M DEFAULT TEMPORARY TABLESPACE temp TEMPFILE 'E:\OraData\TEST\TEMP.ORA' SIZE 50 M UNDO TABLESPACE undo DATAFILE 'E:\OraData\TEST\UNDO.ORA' SIZE 50 M NOARCHIVELOG CHARACTER SET WE8ISO8859P1;
```

1. Oracle\* table and indexes

2. Oracle tablespace

3. Oracle datafile

4. Veritas file

5. Veritas file system

6. Veritas striped logical volume

7. Veritas mirror/plex

8. Veritas sub-disk

9. SunOS raw device

10. Brocade SAN switch

11. EMC Symmetrix volume

12. EMC Symmetrix striped meta-volume

13. EMC Symmetrix hyper-volume

14. EMC Symmetrix remote volume (replication)

15. Days/weeks of planning meetings

Netezza: 极少 (或无需) 涉及

```
CREATE DATABASE my_db;
```









# Netezza 的管理简单

## NzAdmin System View

The screenshot displays the NzAdmin System View interface for a Netezza Performance Server. It is divided into three main sections:

- System Overview:** Shows the overall system status, including SPA Units, SPU Units, and Data Slices. It includes a color key for SPA status (OK, Needs Attention, Critical, Spare, Overloaded, Regen In Progress, Assigned) and a pie chart for System Disk Status.
- SPA Detail:** Provides a detailed view of a specific SPA (SPA ID 1), showing its SPU Slots and their status.
- SPU Detail:** Provides a detailed view of a specific SPU Unit, showing its ID, Role, State, Rack, SPA, Slot, IP Address, and Disk Used.

| ID   | Role   | State  | Rack | SPA | Slot | IP Address  | Disk Used |
|------|--------|--------|------|-----|------|-------------|-----------|
| 1003 | Active | Online | 1    | 1   | 8    | 10.0.13.252 | 18.70     |
| 1080 | Active | Online | 1    | 1   | 6    | 10.0.7.175  | 18.82     |
| 1081 | Active | Online | 1    | 1   | 11   | 10.0.10.34  | 18.74     |
| 1082 | Active | Online | 1    | 1   | 3    | 10.0.11.136 | 18.81     |
| 1083 | Active | Online | 1    | 1   | 1    | 10.0.16.97  | 18.65     |
| 1084 | Active | Online | 1    | 1   | 7    | 10.0.3.214  | 18.71     |

System Overview

SPU Detail





# 议程

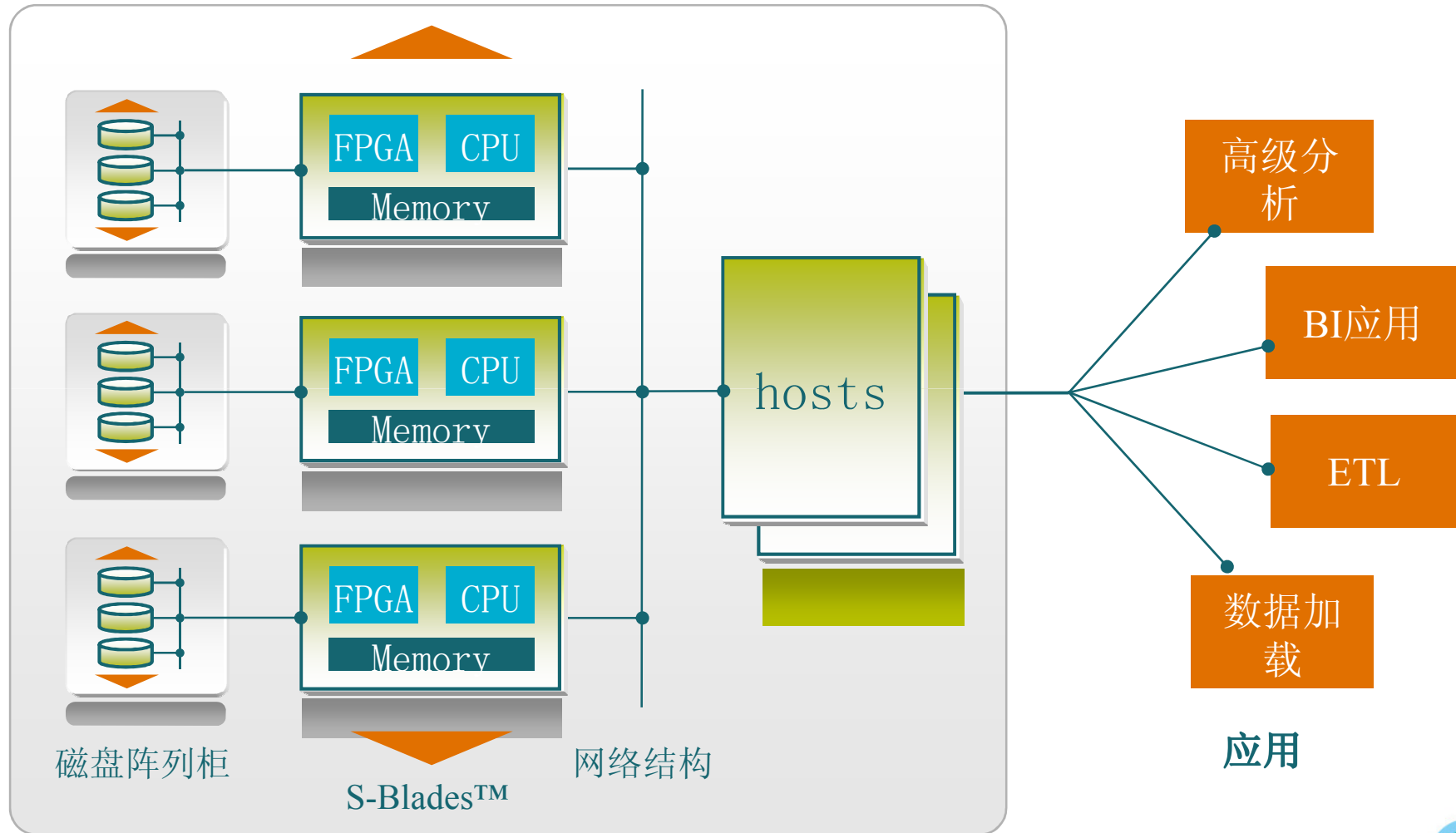
- Netezza简介
- 关于性能
- 简单性
- 技术架构
- Netezza的竞争优势
- Netezza的客户案例







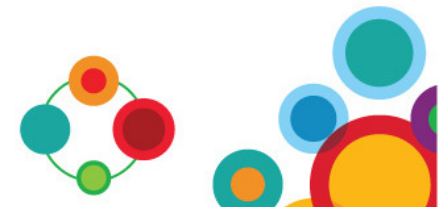
# Netezza AMPP™架构



Netezza 一体机

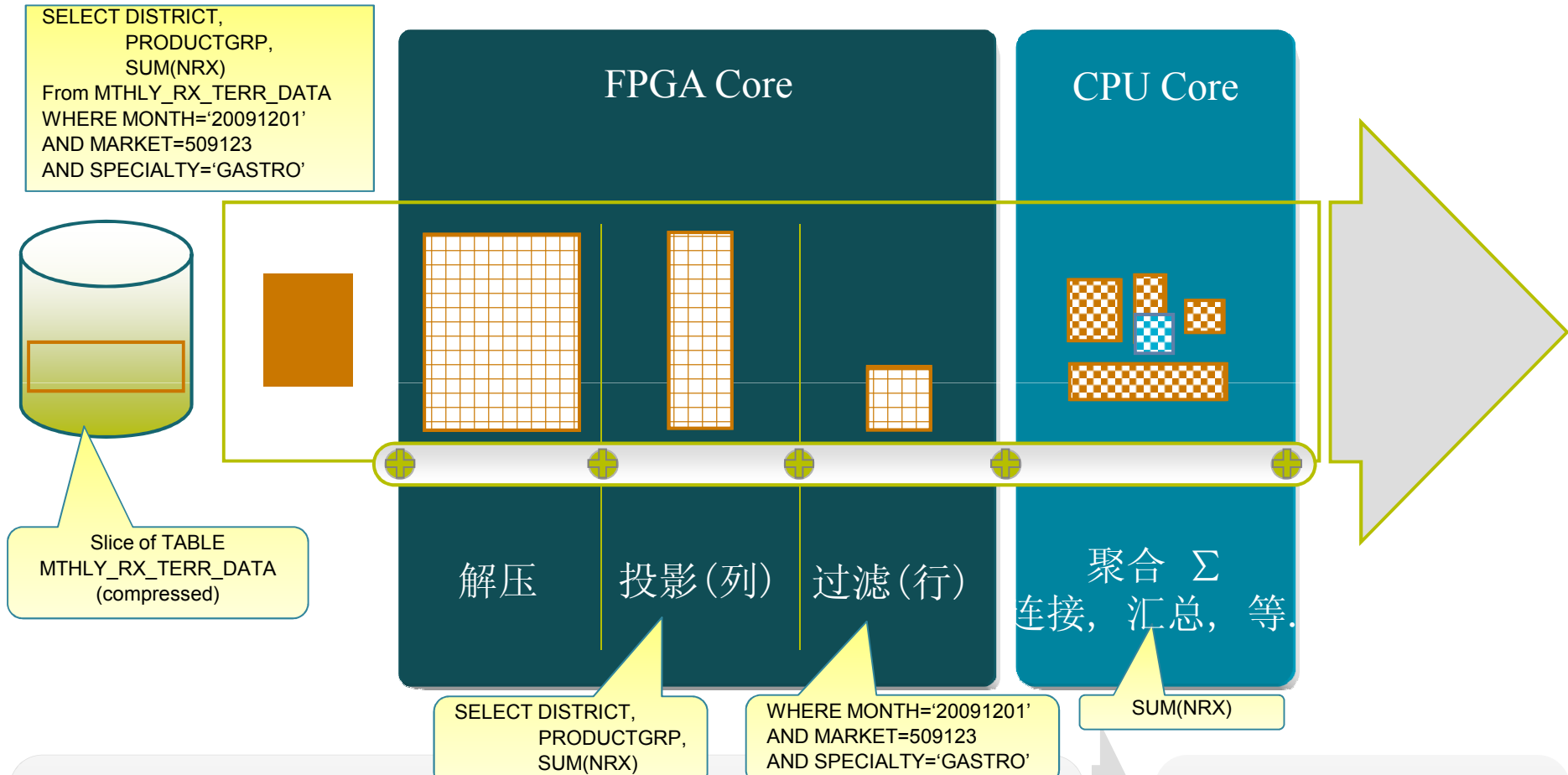
您的信息 您的智慧

2011 IBM 信息管理与业务分析论坛





# Netezza数据流处理程序



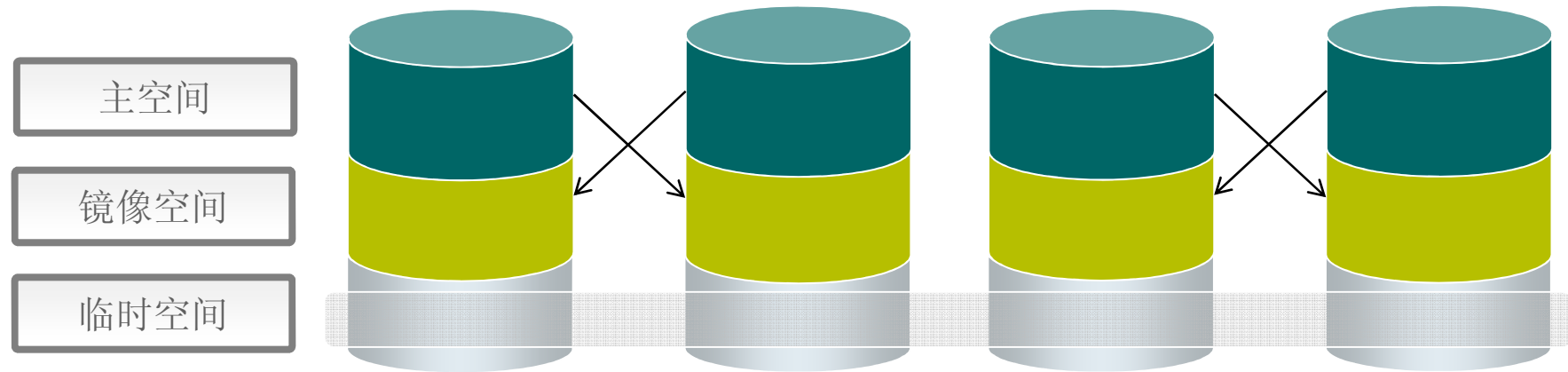
每个“Snippet处理器”(FPGA+CPU)以高于115MB/秒的速度处理数据库的数据; 高压缩率 = 性能的提高

FPGA 的实际处理吞吐量: 460MB/s\*





# 数据镜像 ( Disk Mirroring ) 和故障保护 ( Failover )

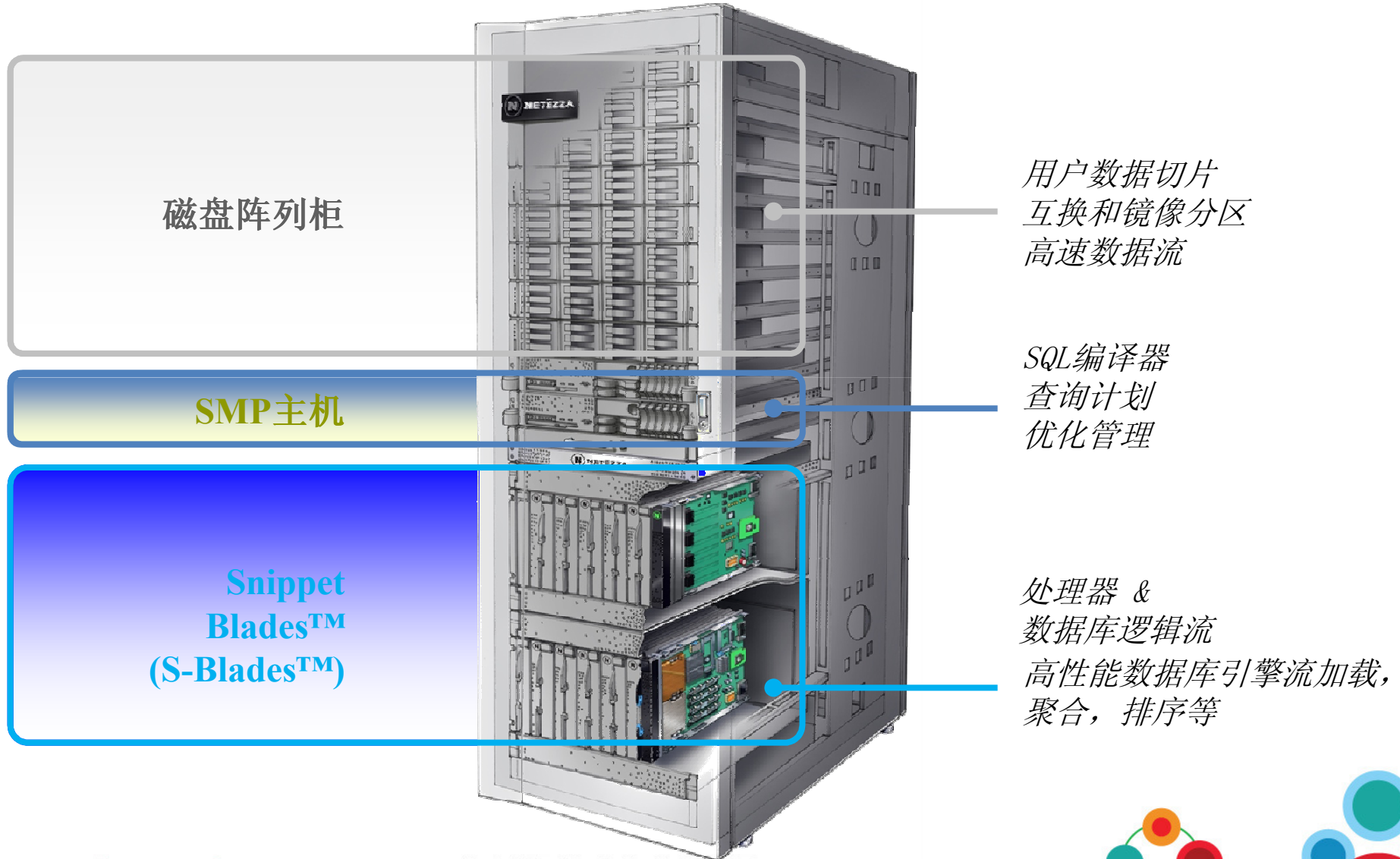


- 所有用户数据和临时空间镜像保护
- 磁盘故障对查询和交易透明
- 故障磁盘驱动的数据自动重生成
- 坏数据区自动重写以及自动迁移至新安全区





# Netezza TwinFin™ 设备





# Netezza S-Blade™



您的信息 您的智慧 2011 IBM 信息管理与业务分析论坛







# FPGA 技术 – Bit流处理

- FPGAs跟踪业界领先的优势半导体技术
- 这种技术的可定制化让我们得以不断增加新特性
- 它的灵活性促使其在消费类电子产品中得以快速应用

- DVD播放器
- 等离子显示器
- HDTV



- 军事领域利用其实现低能耗下的高性能



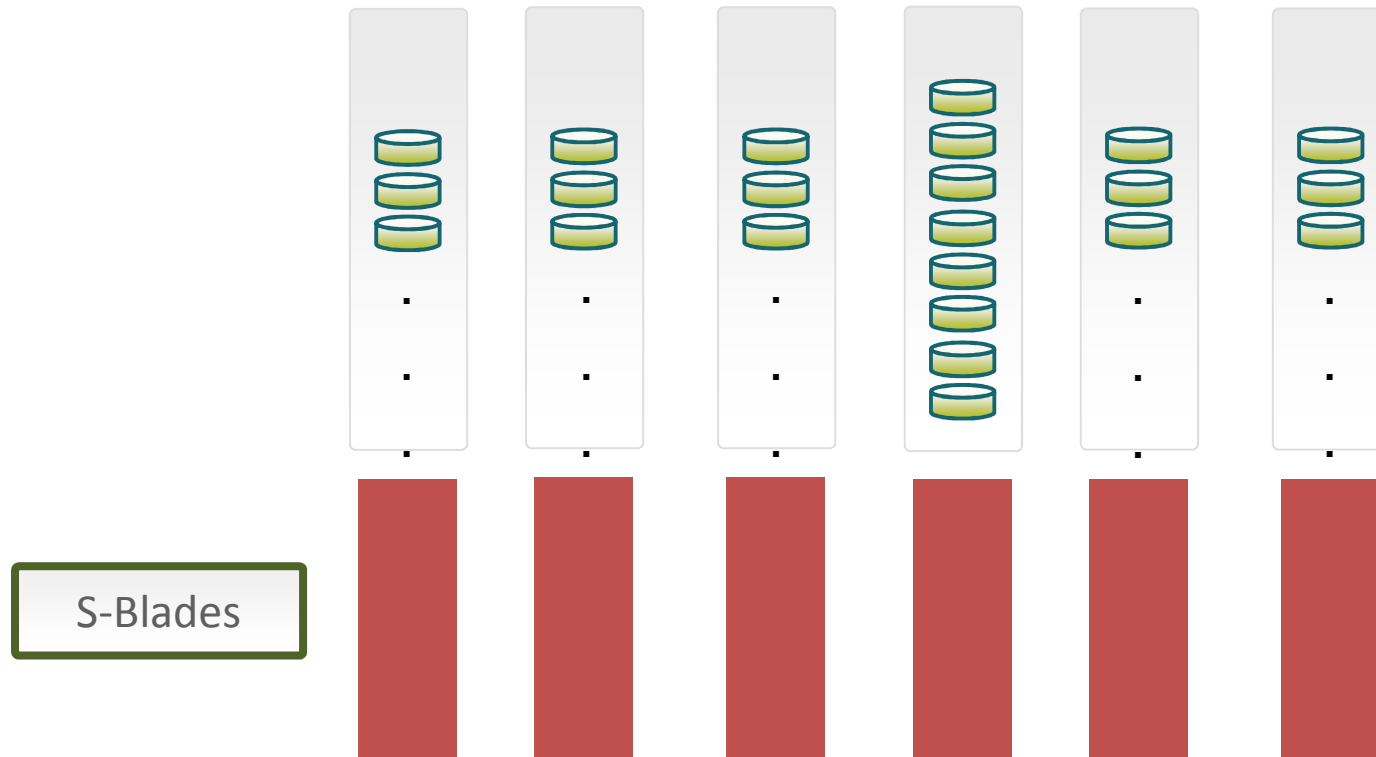
- 实时video 和 audio 处理







# S-Blade™ 故障保护与查询连续性



- 磁盘驱动器自动重分配给相同底架上的活动的S-Blades
- 只读查询 (还没有返回数据的) 自动重新开始
- 交易事物和装载中断
- 装载自动从上一个成功的 checkpoint处重新开始





# 简单部署、快速运行



- 运行
  - 作为一体化设备，进行简单的装载后即可运行
  - 从安装到商用仅需约两天时间
  - 实践证明的容易规划及运维
- BI开发人员 & DBA – 快速提交
  - 无需进行任何配置及物理建模
  - 无需索引或者对系统进行任何调整 – 安装后直接运行
  - 无需钻研数据模型
  - 数据架构师 / 数据库管理员将主要工作放在数据的商业价值上，而不是物理设计
- ETL 开发者
  - 不需要花心思设计汇总表 – 更简单的 ETL 逻辑
  - 更快的加载速度和更少的转换时间
- 商务分析
  - 连串的思维分析 – 10倍乃至100倍于同类设备速度
  - 真正意义的ad hoc查询 – 无需调整，无需索引
  - 对大型数据包进行复杂的查询操作
  - 低延迟 – 加载和查询同时进行
  - 同时流处理上百组数据流





# 议程

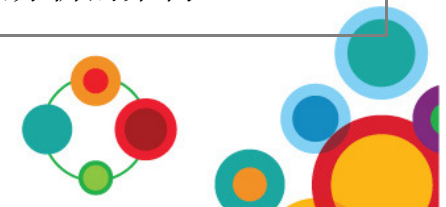
- Netezza简介
- 关于性能
- 简单性
- 技术架构
- Netezza的竞争优势
- Netezza的客户案例





# IBM Netezza的优势

|    | IBM Netezza  | 客户价值   |
|----|--|--|
| 成本 | <ul style="list-style-type: none"><li>-低, 透明的初始成本</li><li>-简单安装不需要额外专业服务</li><li>-标准维护, 包括硬件/软件支持和软件升级</li><li>-Netezza Migrator轻松移植Oracle应用</li></ul> | <ul style="list-style-type: none"><li>-快速部署, 快速实现业务</li><li>-容易理解, 可预测的成本</li><li>-最小化”额外”服务, 更容易基于Netezza制定预算</li></ul> |
| 智慧 | <ul style="list-style-type: none"><li>-各种各样的分析下压到Netezza</li></ul>   | <ul style="list-style-type: none"><li>-快速实现信息洞察</li><li>-大数据量的简单访问和高级分析</li></ul>  |
| 简单 | <ul style="list-style-type: none"><li>-软硬件一体方案, 适于数据仓库类高性能运算</li><li>-无需调优</li></ul>   | <ul style="list-style-type: none"><li>-把更多的资源、时间用于业务价值实现, 而不是耗费精力于调优来获得可接受的性能</li></ul>                                  |
| 扩展 | <ul style="list-style-type: none"><li>-PB级的经过验证的可扩展性</li><li>-没有扩展性瓶颈</li></ul>  | <ul style="list-style-type: none"><li>-对业务和数据增长没有限制</li></ul>  |
| 速度 | <ul style="list-style-type: none"><li>-专门针对数据仓库运算和高级分析优化的一体机</li></ul>   | <ul style="list-style-type: none"><li>-最快的数据仓库性能</li><li>-操作简单</li></ul>   |
| 架构 | <ul style="list-style-type: none"><li>-真正的AMPP架构, 每个MPP节点内部的FPGA技术, 实现硬件级加速运算</li></ul>  | <ul style="list-style-type: none"><li>-通过最小化资源竞争和瓶颈, 使成为最好的适用于数据仓库和高级分析的架构</li></ul>                                     |





## Netezza的技术方向选择正确吗? 历史证明:

- October 2006 – NPS 3.1 系统软件 在 3代硬件上
  - 比大多数竞争性数据库快100x倍
- August 2007 – NPS 4.0 系统软件 在3代硬件上
  - 比NPS 3.1 SW获得100%的性能提升. 没有HW变化.
- May 2008 NPS 4.5 系统软件 在 3代硬件上
  - 比NPS 4.0 SW获得100%的性能提升. 没有HW变化.
- August 2009 Netezza TwinFin 4代一体机 NPS 5.0 SW
  - 比NPS 4.5 SW和3代HW 获得2x到10x倍的性能提升.
- October 2010 NPS 6.0 系统软件
  - 比NPS 5.0 SW获得100%的性能提升. 没有HW变化.
- 对于我们发布的每一代一体机, 在同等硬件条件下仅通过软件更新, 我们就证明了2x 到10x倍的性能提升!
- 没有其他RDBMS厂商显示出这种让同样的一组硬件在速度上不断提升的先例, 我们独一无二的做到了.
- 我们期望我们的性能提升按这种步伐持续下去...





# 议程

- Netezza简介
- 关于性能
- 简单性
- 技术架构
- Netezza的竞争优势
- Netezza的客户案例







## The TwinFin™ 一体机 – 加速分析运算的技术革新



- 有目的性构造的分析引擎
- 集成了数据库、服务器、存储
- 标准接口
- 总体拥有成本低
- **速度**: 快于传统系统10-100x倍
- **简单**: 最小化管理和调优
- **扩展**: PB级的用户数据容量
- **智慧**: 高性能实现高级分析功能





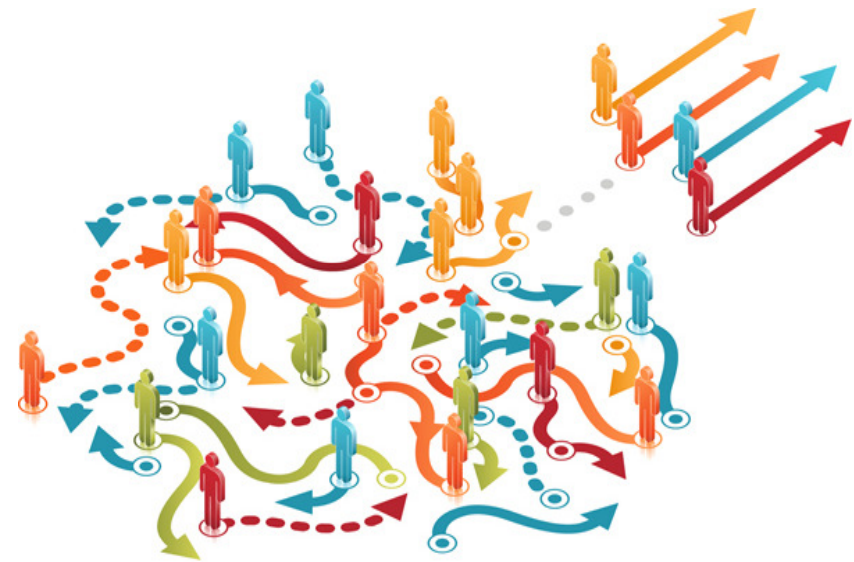
# 速度

- 15,000 用户
- 每天运行 800,000+ 次查询
- 比以前快 50X 倍

**“...当运行花掉 24 小时，我只能做有限的工作，但是当运行只用 10 分钟时我完全可能重新思考我的业务流程...”**

**nielsen**  
.....

- SVP Application Development, Nielsen



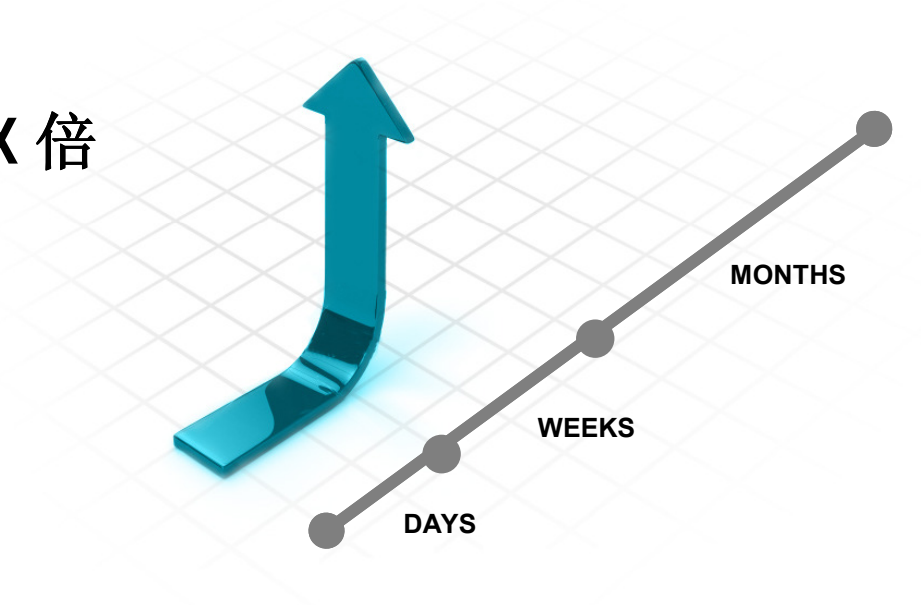
Source: [http://www.youtube.com/watch?v=yOwnX14nLrE&feature=player\\_embedded](http://www.youtube.com/watch?v=yOwnX14nLrE&feature=player_embedded)





# 简单

- 在进行相关培训前已上线运行6个月
  - 比以前的Oracle系统快200X 倍
  - 少于3个月实现ROI



“允许业务用户直接访问 *Netezza* 盒子是采纳它的重要原因”

 XO Communications  
Services

Steve Taff,  
Executive Dir. of IT





# 扩展

- 1 PB的Netezza系统
- 7年历史数据
- 100-200% 年数据增长

“NYSE ... 用Netezza数据仓库一体机替换了一个Oracle IO关系数据库, 使得650TB数据的快速检索得以实现。”



ComputerWeekly.com

Source: <http://www.computerweekly.com/Articles/2008/04/14/230265/NYSE-improves-data-management-with-datawarehousing.htm>





# 智慧

- 预测购物者在将来到访时可能采购的货品
- **Coupon redemption rates as high as 25%**



“由于采用(Netezza’s)的仓库内部技术, 我们相信我们的同样一批分析人员每年能做600个预测模型(10X倍于以往).”

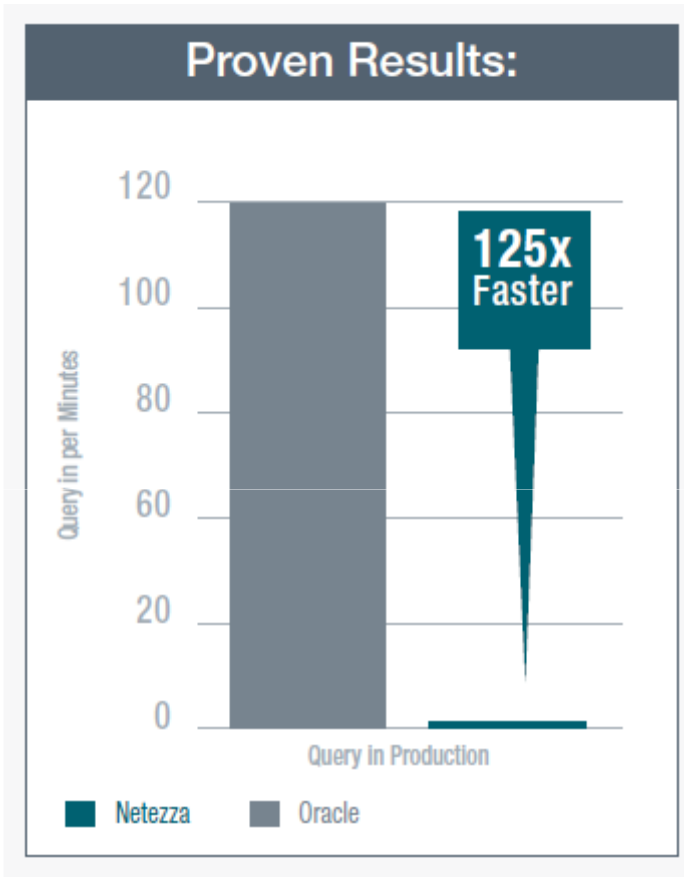


*Eric Williams,  
CIO and executive VP*





# iBasis



## 客户需要的系统:

- ✓ 可以提供实时的话单分析查询（分析1.5亿条记录）
- ✓ 对于定价以及网络管理能够更好，更快的作出判断决策
- ✓ 极大的缩短分析查询的时间，能从“小时/天”级别降到“秒”级
- ✓ 基于现有的环境能够快速的部署新的应用
- ✓ 很好的线性可扩展性，支持每年数据量增加30%~40%
- ✓ 节省维护成本。部署两位专职的管理员

“Netezza 系统将会成为加速公司未来发展，提供盈利能力的主要工具”

Paul Floyd

Senior Vice President

R&D, Engineering and Operations

iBasis

“如果我能够随时看到我们的利润，这会完全改变我对网络以及供应商的看法。”

Mark Saponar

Vice President Information Systems

iBasis



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数字媒体



金融服务



政府



健康/  
医疗卫生



零售/  
消费者产品



电信



其它





# 谢谢

