



# IBM 2010 新锐洞察高峰论坛

## 心·睿 掌控制胜先机





# DB2 Optimized For SAP: SAP Upgrade and Migration Solution

Wang, Weibin

wangweib@cn.ibm.com

IBM SAP Integration and Support





# Agenda

- Experience from a Happy DB2/SAP Reference Customer
- Why should you use DB2 in your SAP infrastructure
- Some key DB2 Technological Differentiators for SAP Solutions
- How to migrate from Oracle to DB2
- Myths regarding migrating from Oracle to DB2
- Learnings from more SAP Customers: Migrating from Oracle to DB2





## Experience from a Happy DB2/SAP Reference Customer

### SAP IT runs its business systems on DB2

- SAP IT is **an Oracle-Free zone** (since Aug 2007)
  - HR@SAP runs on DB2/HP-UX with Unicode (migrated from Oracle)
  - CRM@SAP runs on DB2/HP-UX platform (migrated from Oracle)
  - Upgraded R/3 to mySAP ERP 2005 (a.k.a. SAP ERP 6 / ECC 6) on DB2/HP-UX with Unicode (migrated from Oracle)
  - Upgraded to BI 7.0 / NetWeaver 2007 on DB2 (migrated from Oracle)

**SAP IT selects IBM DB2 as strategic database platform for internal business systems**

**Overview**

■ **The Challenge**  
SAP IT (the IT department of SAP AG) wanted to be able to take advantage of new SAP software functionalities while reducing the complexity and operational costs of its IT landscape. The company also wanted to move to a new database platform to deliver optimal performance.

■ **The Benefits**  
Simultaneous upgrade/conversion/migration helps reduce business disruption without significantly increasing project complexity. Response times in the HCM environment have improved by around 40 per cent. Archiving and database reorganization have reduced the size of the ERP database by 22 per cent – and DB2 9 Deep Compression could provide further reductions. Conversion to Unicode has helped SAP IT introduce multiple-language applications, facilitating international operations. SAP's Business Intelligence system is now positioned for nearly unlimited scalability and massive growth with DB2.

■ **The Solution**  
In three separate projects, SAP IT upgraded its Human Capital Management (HCM), ERP and Business Intelligence applications, simultaneously performing Unicode conversion and migrating databases from Oracle to IBM DB2.

■ **Key Solution Components**  
Industry: Software  
Applications: SAP® ERP 6.0, SAP ERP Human Capital Management 6.0, SAP NetWeaver® Business Intelligence 7.0  
Software: IBM DB2®

SAP AG in Walldorf, Germany, is one of the world's leading business software providers. With more than 45,000 employees serving international enterprises of every conceivable type, SAP AG has people and offices on every continent, operating in multiple languages.

SAP uses its own software products to manage its internal business processes. SAP IT, the company's IT department, wanted to upgrade its existing software environment to take advantage of numerous functional enhancements in the latest versions of the SAP ERP and SAP ERP Human Capital Management (HCM) applications, as well as the SAP NetWeaver Business Intelligence component. The applications would help drive business efficiencies through advanced integration and enhanced information delivery.

"We decided to split this technology refresh into three separate projects," says Peter Boegler, Solution Architect at SAP IT. "We started with the upgrade from SAP ERP HCM 5.0 to version 6.0 in Autumn 2006, followed by the move of the main ERP systems

**IBM | SAP**





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## Value of DB2 Optimized for SAP to YOU - the Customer

The DB2/SAP Partnership:

delivers

DB2 Optimized for SAP Software

gives

Customers

Better Performance

Lower Total Cost of Ownership (TCO)

Better-than-Forecast Returns-on-Investment (ROI)





# Value: Better Performance with DB2

- Proof-points:
  - SAP IT: achieved 40% better performance
  - rku.it: 40% better dialog and batch performance on the same hardware
  - Siemens: 40% better performance on the same hardware
  - SAP 3-Tier SD benchmark: DB2 is 68% better than Oracle; 80% better than SQL Server
- Value for Customer:
  - **Better performance = better throughput = higher workload productivity = better/quicker response**
  - DB2 will deliver **better throughput** (processed more workload) on similar hardware configuration infrastructure compared to other databases
  - Better throughput also means the life-span of hardware infrastructure will last longer = **savings on hardware investments** or higher throughput per unit of hardware investment on DB2
    - As in SAP IT, the ‘..investment in new server and storage hardware will actually last longer’





## Value: Lower Total Cost of Ownership (TCO) with DB2

- Proof-points:
  - Austrian Railways: reduced TCO by 25%
  - rku.it: reduced TCO by 40%
  - Siemens: reduced SAP TCO by 40% within 1<sup>st</sup> year
  - Coca-Coca: reduced storage footprint by >40%
- Value for Customer:
  - **Lower TCO = savings on IT Budget (CAPEX & OPEX)**
    - **Capital Investment savings** = deferred hardware investment or less hardware resource to deliver an unit of throughput
      - DB2 “exploits & extends” the life of the hardware (including storage)
    - **Operating expense savings** = less IT resource to manage SAP on DB2 = 10% to 30% savings on manpower on the same unit of workload
      - Via the SAP DBA Cockpit, DB2 is easier to manage (autonomic & invisible)
  - **Lower expenses on licensing/maintenance on DB2** (which include DB2 Compression, High Availability & Disaster Recovery, Database Partitioning & Workload Mgt at no additional cost)
  - **Lower hardware infrastructure expenses for SAP on DB2** (due to DB2 Compression which reduces storage expense & improved network bandwidth; less hardware infrastructure for HA & DR, etc)
  - **Simplified operations/management for SAP on DB2** (simplified SAP admin/operations & reduced mgt time/resource thru SAP DBA Cockpit, reduced backup/archival expenses with DB2 Compression, lower recovery time/expenses, etc)





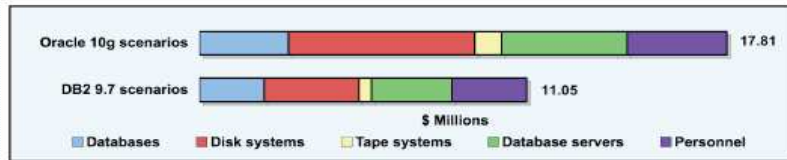


## ITG Reports on TCO for SAP (DB2 vs Oracle & DB2 vs SQL Server): Cost/Benefit Business case for SAP Enterprise Migration

### New Installation:

DB2 is 38% less than Oracle

Baseline Costs Comparison: Averages for All Installations

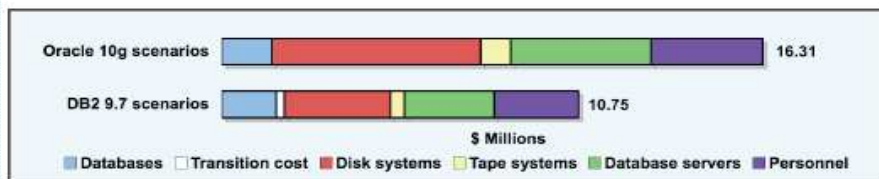


### Migration from Oracle to DB2:

DB2 is 34% less than Oracle

(Include database license, transition costs - data conversion/migration, retraining)

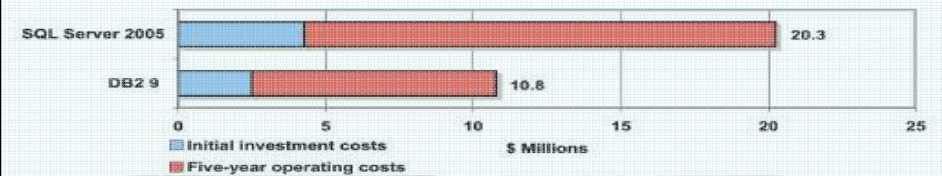
Migration Costs Comparison (1): Averages for All Installations



### New Installation:

DB2 is 47% less than SQL Server

Baseline Comparisons (1): Average Scenario Costs for All Installations

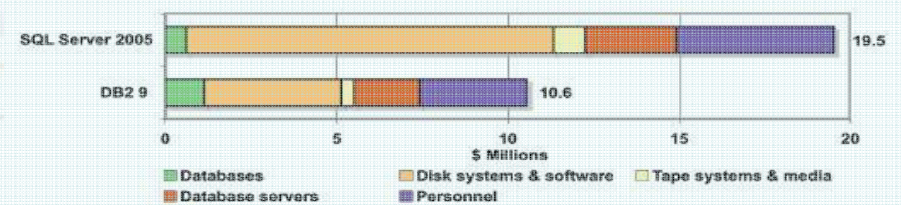


### Migration from SQL Server to DB2:

DB2 is 46% less than SQL Server

(Include database license, transition costs - data conversion/migration, retraining)

Database Migration Comparisons: Average Scenario Costs for All Installations





## Value: Better Returns-on-Investment (ROI) with DB2

- Proof-points:
  - Siemens: achieved its ROI within 1<sup>st</sup> year of migration to DB2
  - SAP IT: ‘...contributing to a better-than-forecast ROI...’
  - Coca Cola: achieved ROI of 205% with a breakeven in 8 months
- Value for Customer:
  - **Better ROI = enhancing the shareholders’ value**
  - Better ROI achieved by:
    - **Better performance throughput at lower TCO**
  - DB2 is **extracting more value per unit of investment** from the hardware infrastructure while **lowering the cost per unit of investment deployed**





# Agenda

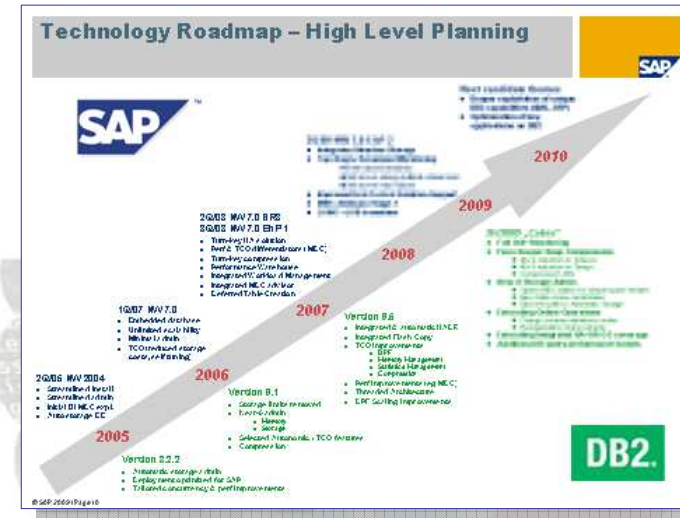
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# SAP on DB2 Key Technology Differentiators

- Selected SAP on DB2 differentiators covered in this talk:

- DB2\_WORKLOAD=SAP
- DB2 Compression
- SAP on DB2 virtual tables
- DB2 Integrated HA
- DB2 Database Partitioning Feature
- DB2 Multidimensional Clustering
- DB2 Automatic Maintenance
- DBACockpit
- ... ..







## DB2\_WORKLOAD=SAP

- One-stop out of the box DB2 configuration
  - Tailored setting for the use of the respective DB2 level with SAP software
  - Covers all DB2 settings required to run optimally with SAP applications
- A safe bet for configuration. No reading of SAP notes or manual update required
- Tested during ISIS certification
- Checked by SAP kernel and SAP tools at connect time

```
>db2set -all | grep DB2_WORKLOAD
•[i] DB2_WORKLOAD=SAP
•[i] DB2_TRUST_MDC_BLOCK_FULL_HINT=YES [DB2_WORKLOAD]
•[i] DB2_ATS_ENABLE=YES [DB2_WORKLOAD]
•[i] DB2_RESTRICT_DDF=YES [DB2_WORKLOAD]
•[i] DB2_SET_MAX_CONTAINER_SIZE=20000000000 [DB2_WORKLOAD]
•[i] DB2_CREATE_DB_ON_PATH=YES [DB2_WORKLOAD]
•[i] DB2_OPT_MAX_TEMP_SIZE=10240 [DB2_WORKLOAD]
•[i] DB2_TRUNCATE_REUSESTORAGE=IMPORT [DB2_WORKLOAD]
•[i] DB2_MDC_ROLLOUT=DEFER [DB2_WORKLOAD]
•[i] DB2_SKIPINSERTED=YES [DB2_WORKLOAD]
•[i] DB2_VIEW_REOPT_VALUES=YES [DB2_WORKLOAD]
•[i] DB2_OBJECT_TABLE_ENTRIES=65532 [DB2_WORKLOAD]
•[i] DB2_OPTPROFILE=YES [DB2_WORKLOAD]
•[i] DB2_IMPLICIT_UNICODE=YES [DB2_WORKLOAD]
```

```
>db2set -all | grep DB2_WORKLOAD (continued)
•[i] DB2_MEM_TUNING_RANGE=10,20 [DB2_WORKLOAD]
•[i] DB2_INLIST_TO_NLJN=YES [DB2_WORKLOAD]
•[i] DB2_MINIMIZE_LISTPREFETCH=YES [DB2_WORKLOAD]
•[i] DB2_REDUCED_OPTIMIZATION=4,INDEX,JOIN,NO_TQ_FACT,
NO_HSJN_BUILD_FACT, STARJN_CARD_SKEW,NO_SORT_MGJOIN,
CART OFF,CAP OFF [DB2_WORKLOAD]
•[i] DB2NOTIFYVERBOSE=YES [DB2_WORKLOAD]
•[i] DB2_INTERESTING_KEYS=YES [DB2_WORKLOAD]
•[i] DB2_EVALUNCOMMITTED=YES [DB2_WORKLOAD]
•[i] DB2_ANTIJOIN=EXTEND [DB2_WORKLOAD]
•[i] DB2COMPOPT=327685,192 [DB2_WORKLOAD]
•[i] DB2_RR_TO_RS=YES [DB2_WORKLOAD]
•[i] DB2_DROP_NO_WAIT=YES [DB2_WORKLOAD]
•[i] DB2_GRP_LOOKUP=,TOKEN [DB2_WORKLOAD]
```



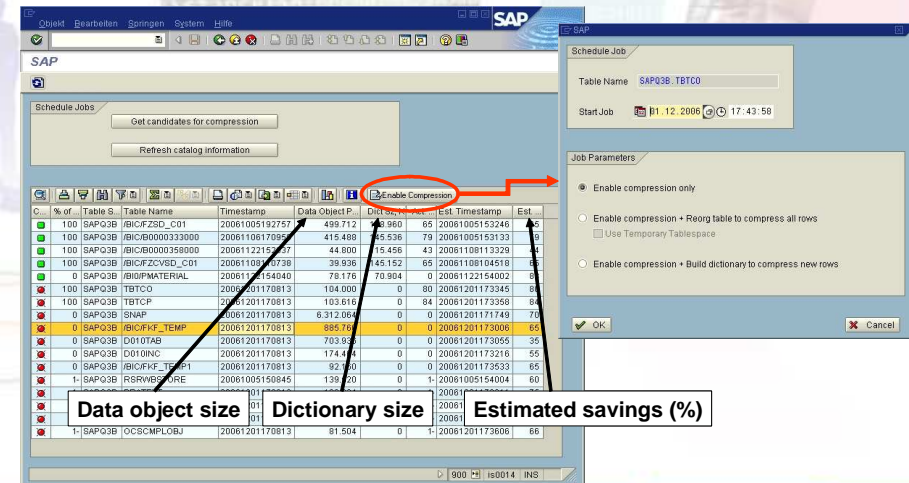
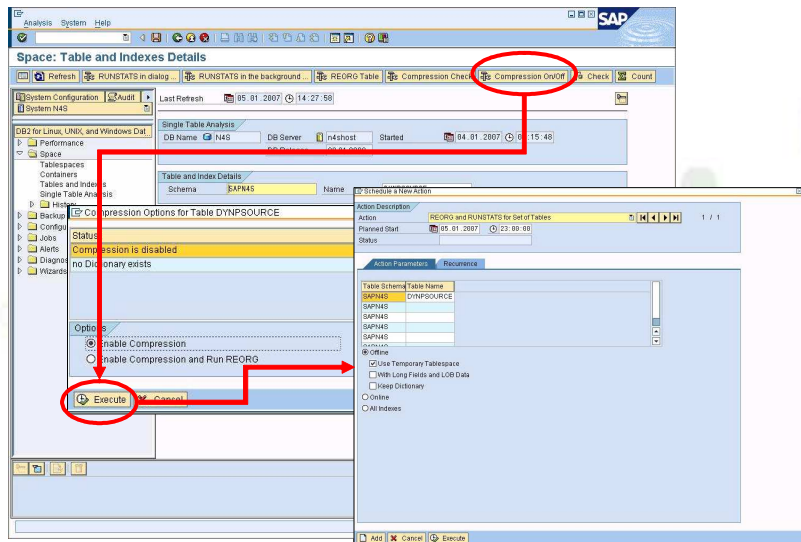
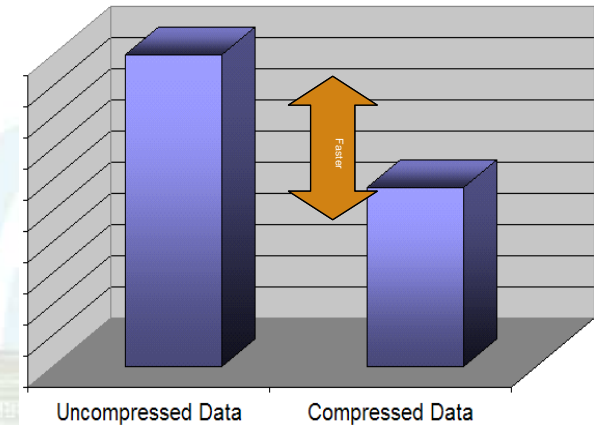




## DB2 Deep Compression

- Fully transparent compression of table data, indexes, inlined LOB data and intermediate results\*
- Typical savings: **40-65%** on entire database size
- Up to More efficient I/O and cache utilization
- Fully supported for all SAP releases and applications
- Integrated into SAP installation and DBACOCKPIT
- Included in SAP DB2 OEM license at no extra cost

Overall Workload Performance:  
Uncompressed Data versus Compressed Data

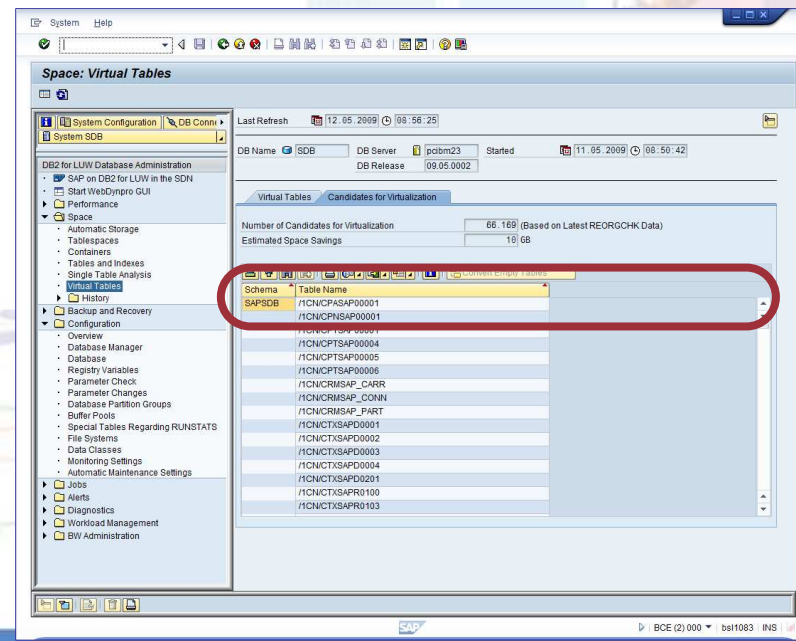
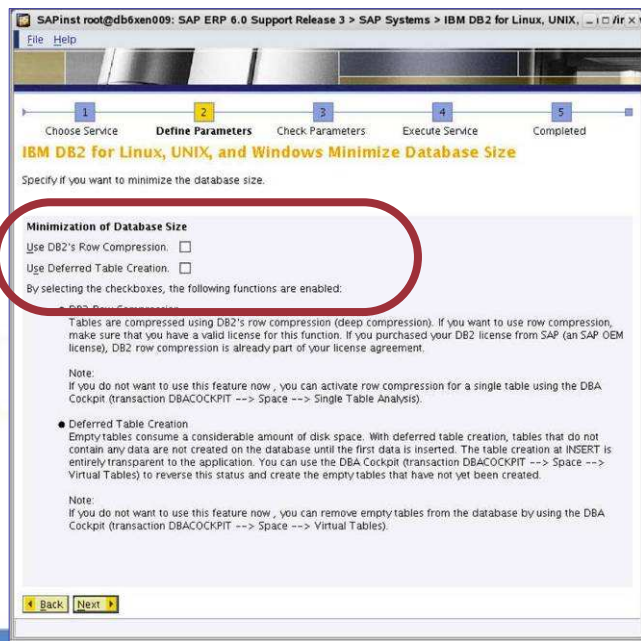


\* Compression of indexes, temps and inlined LOBs require DB2 Version 9.7



## SAP on DB2 Deferred Table Creation

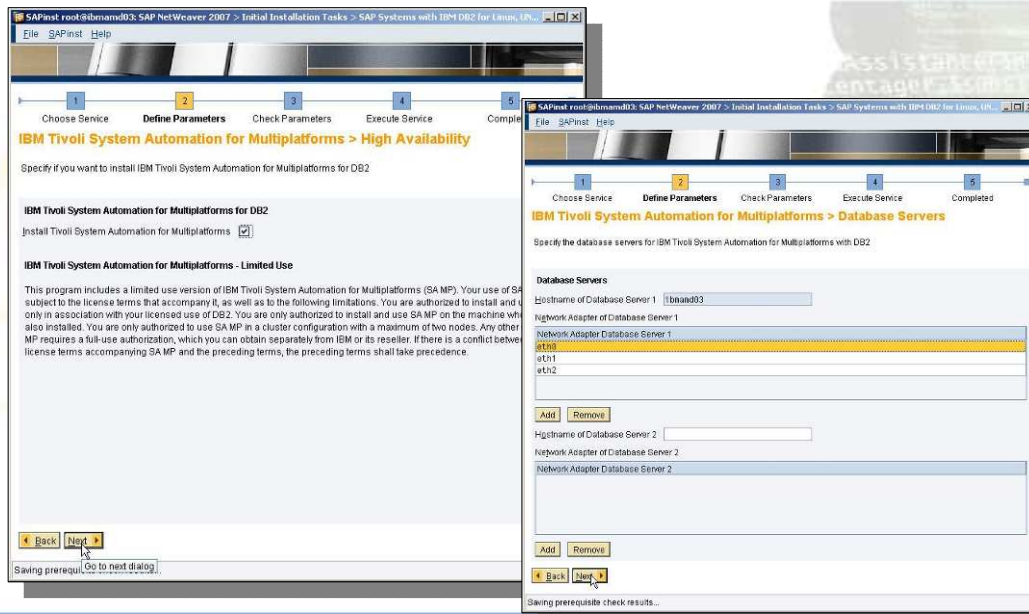
- Up to 60% of all tables remain empty in every SAP system, based on usage pattern
- Deferred table creation defers creation of tables until the first insert
- Substantial space savings (ECC 6.0: > 10GB) and smaller system catalogs
- Fully integrated into SAP installation and DBACOCKPIT
- Included in SAP DB2 OEM license at no extra cost



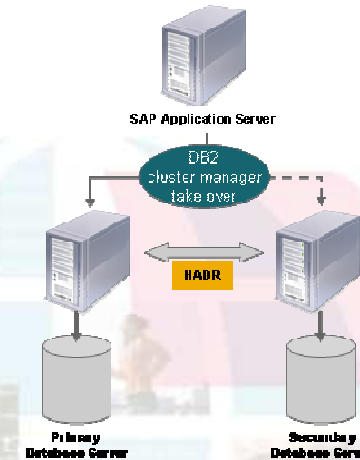


## DB2 High Availability and Disaster Recovery

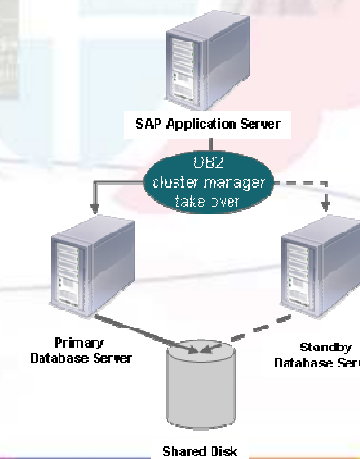
- Built-in near-sync standby database with rolling update capability (DB2 HADR)
- Integrated cluster manager for fail over automation \*
- Integrated into SAP installation
- Fully supported for all SAP releases in service
- Included in SAP DB2 OEM license at no extra cost



DB2 HADR Setup



Shared Disk HA Setup



\* Currently limited to Linux, AIX and Solaris

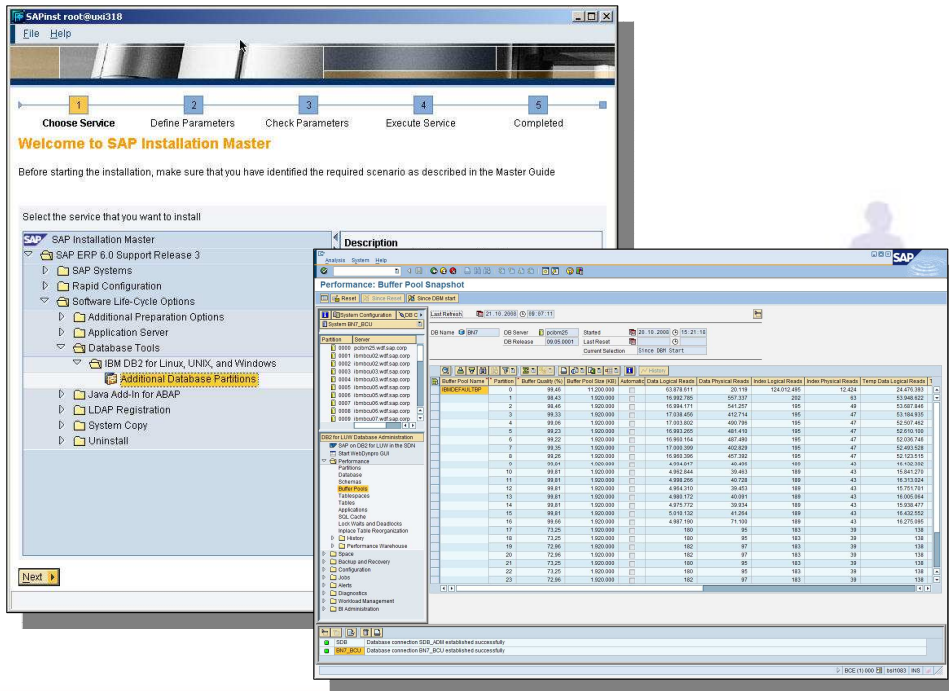




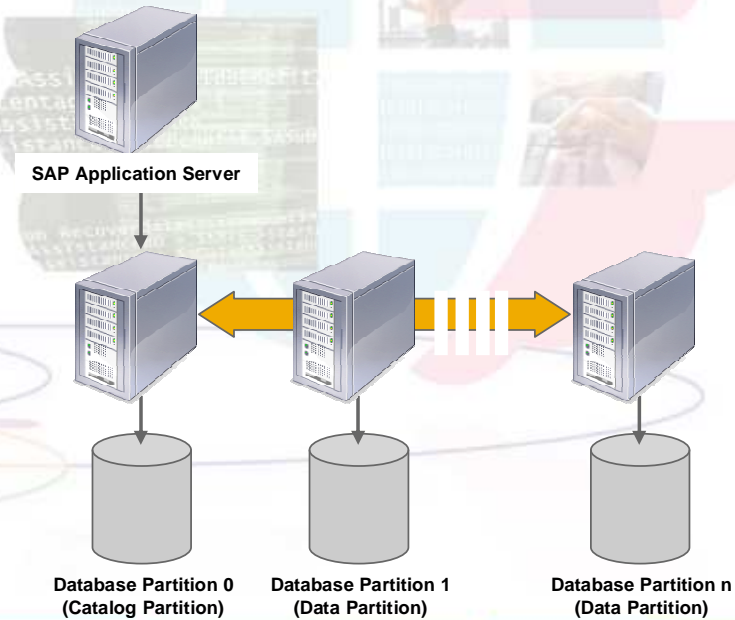


## DB2 Database Partitioning Feature (DPF)

- Shared-nothing scale out architecture with proven linear scale-out capability
- Mature technology – almost all DB2 customers run their Warehouse with DPF
- Fully supported since SAP BW 2.0
- Integrated into SAP installation and DBACOCKPIT
- Included in SAP DB2 OEM license at no extra cost



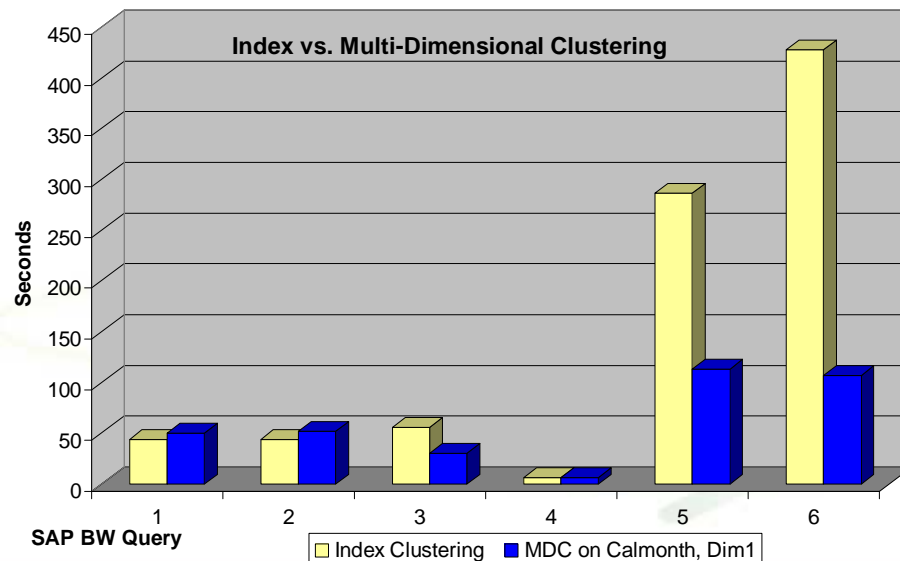
## DB2 Database Partitioning Feature



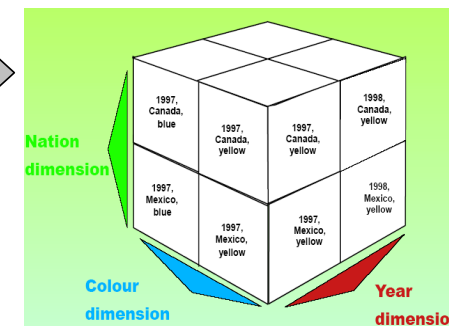


## DB2 Multidimensional Clustering

- Guaranteed clustering along multiple dimensions
- SAP NetWeaver BW query boost (performance improvement up to factor 8)
- Fast roll-in and roll-out capability
- Zero administration
- Fully supported for SAP BW 3.x and higher
- Fully integrated as of SAP NetWeaver BW 7.0 and higher
- Included in SAP DB2 OEM license at no extra cost



```
CREATE TABLE MDCTABLE (  
  Year INT,  
  Nation CHAR(25),  
  Colour VARCHAR(10),  
  ... )  
ORGANIZE BY( Year, Nation, Colour )
```



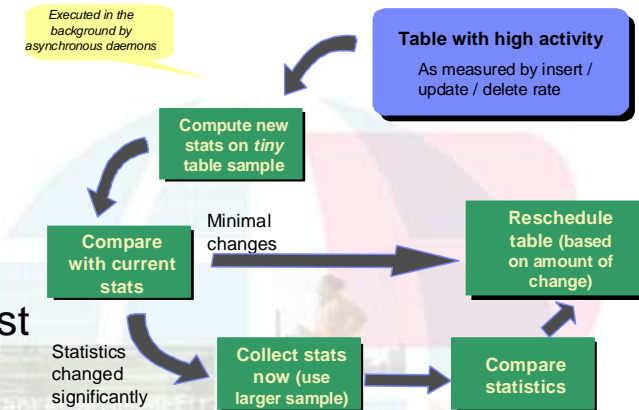




## DB2 Automatic Maintenance

- Most DBA activities are automated with DB2
  - Memory tuning and configuration
  - Storage and logfile management
  - Collection of table and index statistics
  - And many more ...
- Fully integrated into SAP DBACOCKPIT
- Included in SAP DB2 OEM license at no extra cost

Automated Table Statistics : 1,000 ft View



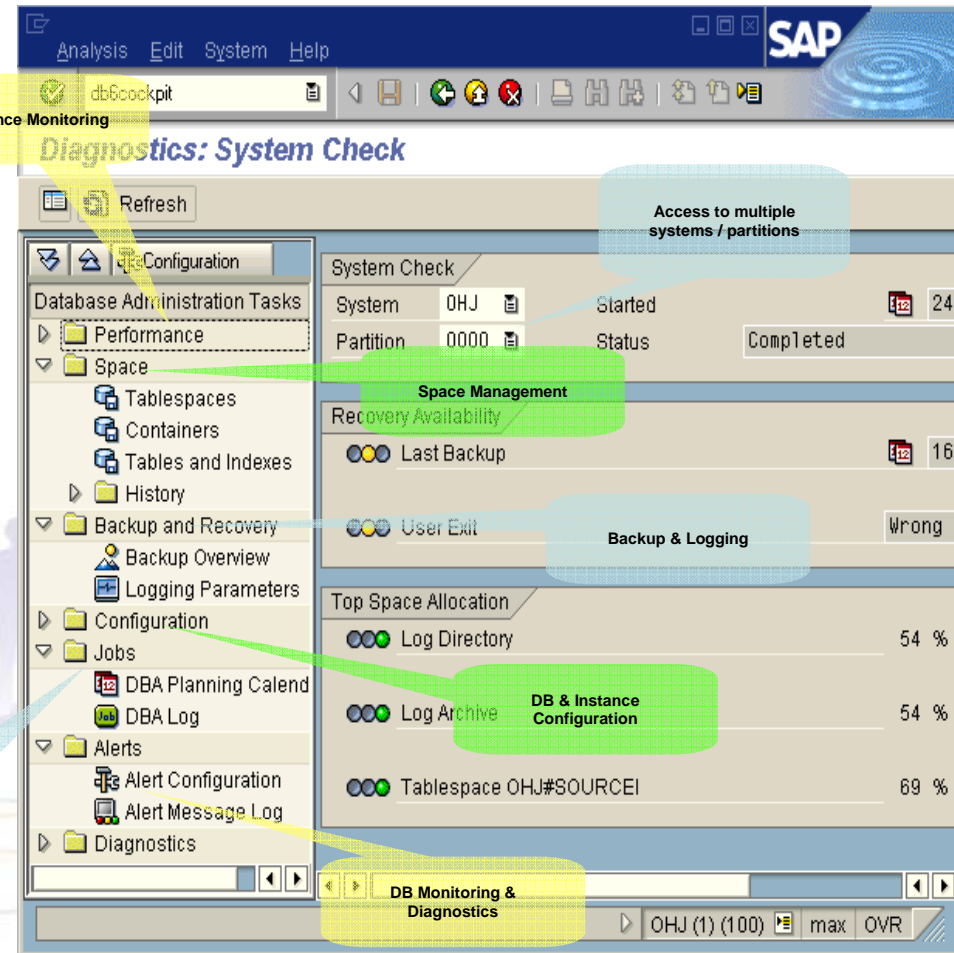
The image shows several overlapping screenshots from the SAP DBACOCKPIT interface, specifically the 'Configuration - Automatic Maintenance Settings' and related tabs. The 'Automatic RUNSTATS' window shows a table of excluded tables:

Table excluded from RUNSTATS	Schema	Volume	Active	Profile	RUNSTATS date	RUNSTATS time	Cardinality
APQD	SAPFM7	X	N				-1
APQI	SAPFM7	X	N				-1
ARFCRSTATE	SAPFM7	X	N				-1
ARFCSDATA	SAPFM7	X	N				-1
ARFCSTATE	SAPFM7	X	N				-1
DBICSTRNCE	SAPFM7	X	N				-1
DETABLOG	SAPFM7	X	N				-1
DYNLOAD	SAPFM7	X	N				-1
REPOLDND	SAPFM7	X	N				-1
TRFCODDATA	SAPFM7	X	N				-1
TRFCODIN	SAPFM7	X	N				-1
TRFCODINS	SAPFM7	X	N				-1
TRFCODOUT	SAPFM7	X	N				-1
TRFCODSTATE	SAPFM7	X	N				-1
VBDATA	SAPFM7	X	N				-1
VBHDR	SAPFM7	X	N				-1
VBLOG	SAPFM7	X	N				-1
VBMOD	SAPFM7	X	N				-1



# DBA Cockpit

- Access SAP + DB2 specific information from one GUI
- Single SAP admin interface
- Access multiple systems from one GUI (remote administration)
- Shipped as part of the SAP system
- Easy administration - all under one hood
- Enhanced usability
- More DB2 data for remote SAP support
- Multi partition support
- No external tools required





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Foreword

# SAP DBA COCKPIT

## Flight Plans for DB2 LUW Database Administrators

Eduardo Akisue, Jeremy Broughton,  
Liwen Yeow, Patrick Zeng

This is a remarkable book, written by IBM experts who have in-depth knowledge about SAP on DB2. The authors have their profound experience not only from their work with many customers who adopted DB2 for their SAP applications, but also from their very close cooperation with SAP development. Based on the analogy of a pilot's need to know about the controls of his aircraft, this book takes you through the entire world of DB2 monitoring and administration. You will find it a useful introduction if you are new to SAP on DB2, and you will also be able to use it as a reference if you are an experienced DBA.

The SAP DBA Cockpit is one of many visible proof points of the excellent integration of SAP solutions with IBM DB2. This book will familiarize you with everything you need to know to operate IBM DB2 optimally with your SAP solution. In a tutorial-like, easy to read style it takes you from the basic controls to advanced monitoring and tuning, and at the same time provides you with useful background information about DB2. And even more, it is just fun to read.

I hope you will find it as useful and enjoyable as I did.

—Torsten Ziegler  
SAP Manager  
DB2 LUW Platform Development

**EDUARDO AKISUE**

Certified DB2 9 Administrator  
Certified Informix Administrator  
Certified SAP Technology Consultant  
SAP Certified OS/DB Migration Consultant

**LIWEN YEOW**

Certified Technology Associate—System Administration (DB2) for SAP NetWeaver 7.0  
SAP Certified Technology Consultant for DB/OS Migration

**JEREMY BROUGHTON**

SAP Certified Basis Consultant for DB2 on NetWeaver 2004  
SAP Certified OS/DB Migration Consultant  
IBM Certified DB2 9 Administrator

**PATRICK ZENG**

Certified DB2 Solutions Expert  
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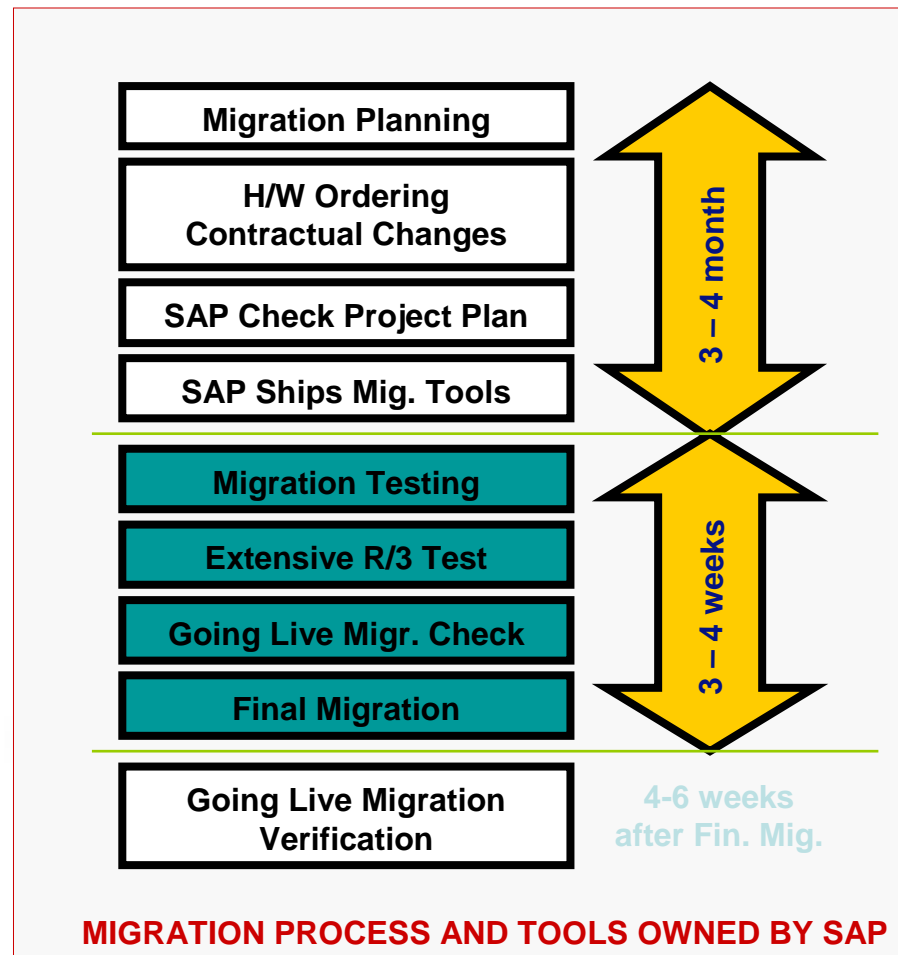
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## SAP OS/DB Migration Overview



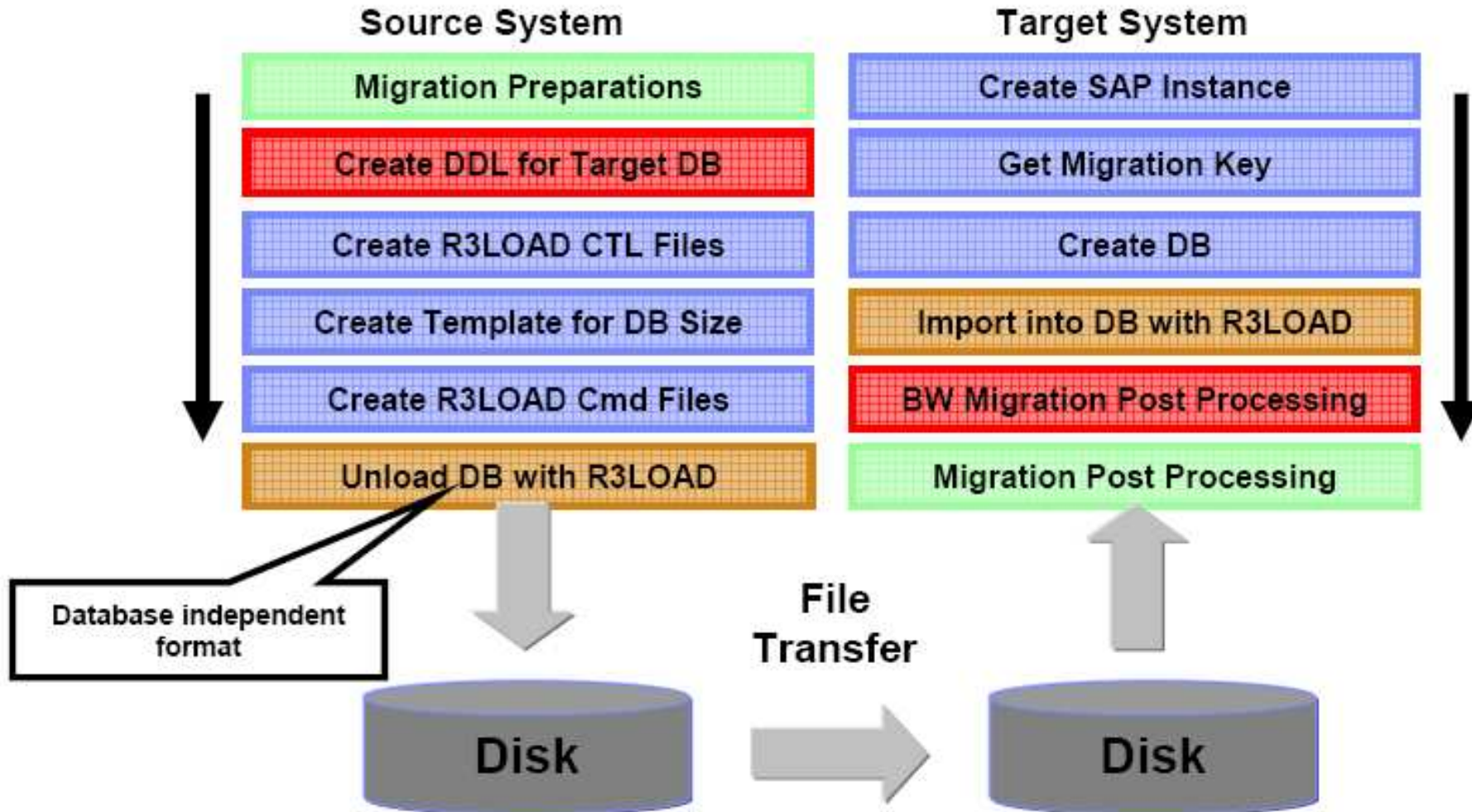
- Use of SAP migration tools and migration service mandatory
- Done customer with assistance from consultant (migration partner)
  - Customers must submit Migration Plan
  - Customers requires SAP approval
- Test migration is required
- Second system needed as a target for test migration
- Effort depends on: Amount of Data, Customizations (Data Dictionary), SAP Release, Hardware
- Open an OSS message in application area XX-SER-OSDBMIG
- SAP migration note: OSS 82478







## Migration – Process Overview





## R3load Import Methods

- R3load provides the following methods for importing data into DB2:
  - `-loadprocedure dbsl`: row by row insert
  - `-loadprocedure fast`: uses array insert to insert blocks of rows instead of single rows. This is faster than `-loadprocedure dbsl`.
  - `-loadprocedure fast LOAD`: uses DB2 LOAD instead of SQL INSERT. For large tables this is faster than `-loadprocedure fast`.
- The following options are available for import into DB2 9 databases and support DB2 9 row compression
  - `-loadprocedure fast COMPRESS`
  - `-loadprocedure fast LOADCOMPRESS`

These options cause that for tables created with compression enabled (i.e. COMPRESS YES), a compression dictionary is created after a certain number of rows has been inserted or loaded. You can define the number of rows by setting the environment variable `DB6LOAD_COMPRESSION_THRESHOLD`. The default value is 10,000 rows.





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## Myths regarding migrating from Oracle to DB2

- Need deep DBA skills: No DB2 DBA skills; Only Oracle DBA skills
  - With SAP DBA Cockpit, there is no need for deep DB2 database skills
  - SAP DBA Cockpit provides total control over your database and provide transparent control of your SAP repository: no need for deep database skills
  - We provide **Free** SAP/DB2 enablement to your SAP DBA
- Very Risky and Complex Process
  - The SAP Migration Process is a easy, proven, tried-and-tested procedure using SAP certified process, tools and migration consultants = technically risk-free and simple process
- Why is Oracle still preaching the ‘doomsday’ migration message?
  - **Want more money from you:** you to pay for more costly licenses and support fees for the database
    - Oracle will lose future license revenue and maintenance revenue
    - Oracle can’t charge you for ‘new’ functionalities that are already standard features in DB2
  - **Want you to spend more on hardware resources:** Oracle is not optimized for SAP
    - You will be able to ‘exploit and extend’ the life of your hardware infrastructure with DB2
    - You can conserve your capital budget
  - **Want you to spend more on service resources:** It’s more complex to manage the Oracle database environment
    - DB2 reduces the DBA workload and makes managing of SAP much simpler and easier using the SAP DBA Cockpit







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## Client Success with SAP/DB2

- **Coca Cola**, US reduced SAP storage footprint by > 40% when migrated from Oracle to DB2
- **Siemens RD**, Germany reduced SAP BI TCO by > 25% and improved performance by > 40 % despite Oracle enterprise agreement being in place
- **Austrian Railroad** reduced SAP TCO > 25% and improved performance and availability significantly
- **Tellabs**, US reduced storage footprint by > 40% and improved performance and stability
- **INA/Schaeffler**, Germany reduced footprint > 43% and improved SAP online performance > 15%, batch performance improved up to factor of 10!
- **Dupont**, US reduced total SAP DBA effort by 25%
- **RKU-IT**, Germany improved performance by > 40% and reduced TCO by 40%
- **Samsung**, Korea improved SAP BI performance by > 3X with DB2
- **Ericsson**, Sweden is saving 5 M€ due to DB2 Deep Compression





# SAP IT is a very satisfied DB2 customer



"This project was a great example of the benefits of combining Unicode conversion and database migration, because the data cleansing and archiving processes helped us reduce the size of the database by more than 22 percent."

"From our own experience, and from listening to the experiences of our customers, we would definitely recommend the combination of Unicode conversion and database migration as part of an SAP software upgrade project. A reduction in database size may initially seem counter-intuitive, but many companies have experienced the same thing. Moreover, performing a database migration during the Unicode upgrade adds very little to the overheads of the project, so it is more efficient to do both at once."

- Peter Bögler,  
Solution Architect, SAP IT

## SAP IT selects IBM DB2 as strategic database platform for internal business systems.

SAP AG in Walldorf, Germany, is one of the world's leading business software providers. With more than 45,000 employees serving international enterprises of every conceivable type, SAP AG has people and offices on every continent, operating in multiple languages.

### The Challenge

SAP IT (the IT department of SAP AG) wanted to be able to take advantage of new SAP software functionalities while reducing the complexity and operational costs of its IT landscape. The company also wanted to move to a new database platform to deliver optimal performance.

### The Solution

In three separate projects, SAP IT upgraded its Human Capital Management (HCM), ERP and Business Intelligence applications, simultaneously performing Unicode conversion and migrating databases from Oracle to IBM DB2.

### The Benefit

Simultaneous upgrade/conversion/migration helps reduce business disruption without significantly increasing project complexity. Response times in the HCM environment have improved by around 40 percent. Archiving and database reorganization have reduced the size of the ERP database by 22 percent – and DB2 9 Deep Compression could provide further reductions. Conversion to Unicode has helped SAP IT introduce multiple-language applications, facilitating international operations. SAP's Business Intelligence system is now positioned for nearly unlimited scalability and massive growth with DB2.





## INTER Versicherungen



“Our database is now **43 per cent smaller** than before, and some of the largest tables have been reduced by up to 70 per cent. Despite the compression, there has been no impact on batch performance, and our most important online transactions are actually **20 per cent faster** with the new version of DB2.”

*Roland Heim, SAP Basis Administrator, INTER Versicherungen*

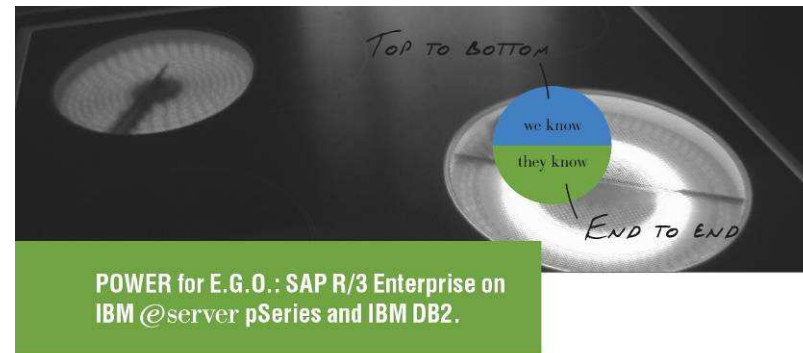
- R/3 4.7 + IS-Insurance
- Migration to DB2 9 - Nov. 2006
- Enabling Deep Compression - 1 week later
- Overall DB size: 266 GB → 151 GB (43 % savings)
- Average dialog response time: 247 ms → 183 ms
- CPU user time: average 18.3 % → 19.6 %







## E.G.O. Group



**We were surprised at how quickly we got a grasp of DB2. This was thanks to both the simple DB2 user interface and the excellent support we received from the DB2/SAP Support Team at IBM. When venturing into unknown technological territory, it's important for us to receive the right support quickly at any time. We are very happy with IBM."**

Manfred Leistner, Data Center Manager, E.G.O. Group  
(Migration from Oracle to DB2)





## Austrian Railways (OEBB)

**- ensures high availability for mission critical SAP solutions with DB2 HADR**



**“And failover time with Oracle had been one hour. With DB2, it’s now one to two minutes, or as much as 97 percent less.** This frees up all the productivity that was trapped by slow performance and drives further gains in the data center by enabling us to reassign employee hours to more valuable work.”

“In addition to price, we chose DB2 over Oracle because the high availability and disaster recovery capability of DB2 is supported for SAP solutions whereas the Oracle RAC high availability functionality is not. **One of the major advantages of DB2 is that we get a disaster recovery solution for our SAP system with HADR at no extra cost.**”

– Gustav Elias, Database Administrator and System Programmer for DB2, Austrian Railways



# Nestle: World's largest BI BusinessWarehouse 60TB

<i>Major Key Performance Indexes</i>	<i>Requirement</i>	<i>Achieved</i>
<u>Recovery of an entire days work</u> Restore Database and roll forward 500GB of logs	<8hrs	2hr 40min Using FlashCopy
<u>Disaster Recovery</u> Complete Database restore from tape + roll forward of 2TBs of logs	<24hr	10hrs Using LTO3
<u>Daily Backup to Tape</u> Full Database backup to Tape	<12hr	6hr 10min Using LTO3
<u>Daily Backup to Disk</u> Completed processing of incremental FlashCopy of production day	<8hr	30min Using Flash Copy

## Infrastructure

- SAP NetWeaver 7.0
- IBM DB2 V9
- Tivoli Storage Manager
- p595 & AIX 5.3
- DS8300 Turbo
- Tape Library 3584

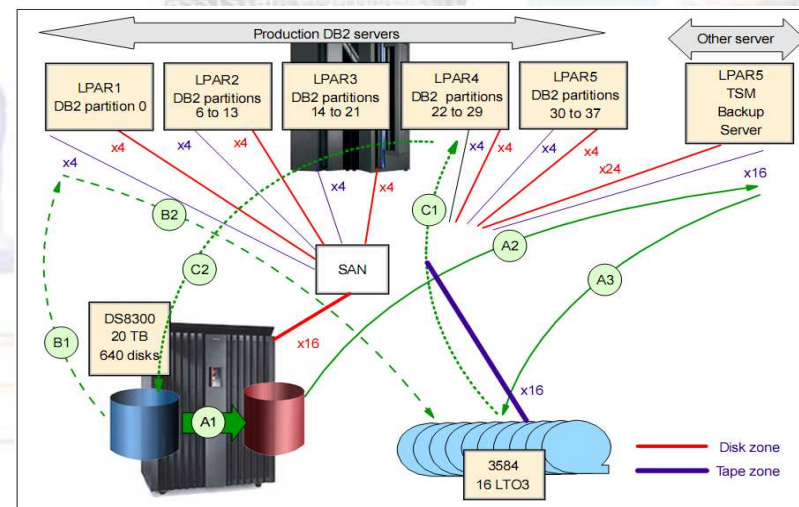


Figure 1-4 The storage infrastructure for backup and restore





# IBM 2010 新锐洞察高峰论坛



## DB2/SAP customers (an extract..)







# IBM 2010 新锐洞察高峰论坛



## DB2/SAP Customers (an extract..)

parazelsus



Johnson & Johnson



teckcominco

MAHLE



Computer Associates®

Teleflex® MARINE



Votorantim



Medtronic  
When Life Depends on Medical Technology

Newell Rubbermaid



Entegris

SK corporation kotra

SK C&C SK 네트워크



삼성전자



삼성SDS

현대해상화재보험



LIG 손해보험



메리츠화재 금호생명

HYUNDAI ELEVATOR CO., LTD. maeil



中国广东核电集团  
CHINA GUANGDONG NUCLEAR POWER GROUP

ENN 新奥



lenovo

Panasonic

充矿集团

广东省石油企业集团  
SINOPEC 南方石油化工有限公司



CHANGHONG 长虹



SINOCHEM CORPORATION  
DONG GUAN HSU CHI FOOD CO



中国五矿集团公司  
CHINA MINMETALS CORPORATION



COSCO GROUP

SINOCHEM INTERNATIONAL CORPORATION

南通醋酸纤维有限公司  
NANTONG CELLULOSE FIBERS CO., LTD.



鞍钢股份有限公司  
ANGANG STEEL COMPANY LIMITED

MAHAPHANT



PRECISION PLASTIC

杭州钢铁集团公司  
HANGZHOU IRON & STEEL GROUP COMPANY

Haier

TPCORP  
Textile Prestige Public Company Limited

Cheval

SIS





## Coca Cola Bottling

### Summary

Combining the Unicode upgrade with a database migration paid off for CCBCC – enabling the company to leverage synergies throughout the whole migration process, and eliminate the duplication of processes such as backup and testing. The whole ERP migration project took about eight weeks from start to finish, including the Unicode conversion.

Another essential aspect was the easy transfer of database management skills from Oracle to DB2, and the user-friendliness of DB2. CCBCC had strong in-house Oracle skills, and yet in a matter of weeks the database administrators became fully competent on DB2 – a tribute to the ease of transition to DB2 for experienced DBAs, regardless of their technical legacy.

CCBCC was able to benefit right away from the value DB2 offers:

- Lower TCO
- 40 per cent reduction in database size
- Better performance – manufacturing runs are over 65 per cent faster
- Better integration of the database in SAP tools (SAP DBA cockpit for DB2)
- Reduced DBA workload to manage and administrate DB2

### Financial and Strategic Benefits

- Lower costs for data maintenance
- Improved ability to compress data, precluding need for additional storage space, lowering costs
- Immediate increase in performance of programs and applications, including increased dialog response times

### Operational Benefits

Key Performance Indicator	Impact
1st-year cost-avoidance savings in Oracle fees	+US\$250,000
Database size reduction	Approximately 30%
1st-year (additional) storage and maintenance cost savings	+\$100,000
Annual license, storage, and maintenance cost savings	+\$175,000
Database response time	5% to 10% faster
ROI	+205%
ROI breakeven	Approximately 8 months
5-year internal rate of return	+133%





# Questions?

**Wang, Weibin (王伟斌)**  
**wangweib@cn.ibm.com**

