IBM Software Group

IBM DB2 and IMS Tools: Proven solutions for a changing world

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Agenda

- Intro and Background
- The IBM Tools Solution – How our Tools for DB2 reduce your TCO and improve your productivity
  - Recovery management
  - Database Administration
  - Performance Management
  - Utilities Management
  - Compliance and Data Governance

IBM System z Data Servers

Introducing…

The IBM System z10

Trusted Platform for SOA

- *IMS 10 XQuery and Web services enhancements ease data service delivery*
- *DB2 9 pureXML for seamless and efficient integration of XML & relational data*

Industry's Highest Level of Availability & Scalability

- *Unmatched availability for enterprise class information access*
- *Rapid and non-disruptive scalability for variable mission critical requirements*

Unmatched Risk and Compliance Management

- *New security capabilities for greater control and business flexibility*
- *Improved auditing and accountability*

Lowest Operating Cost

- *Reduced operating costs through z/OS and zIIP engine exploitation*
- *Superior environmental efficiency – "the green machine" power, cooling, and space*
- *Tools that allow you to manage your ongoing Total Cost of Ownership*

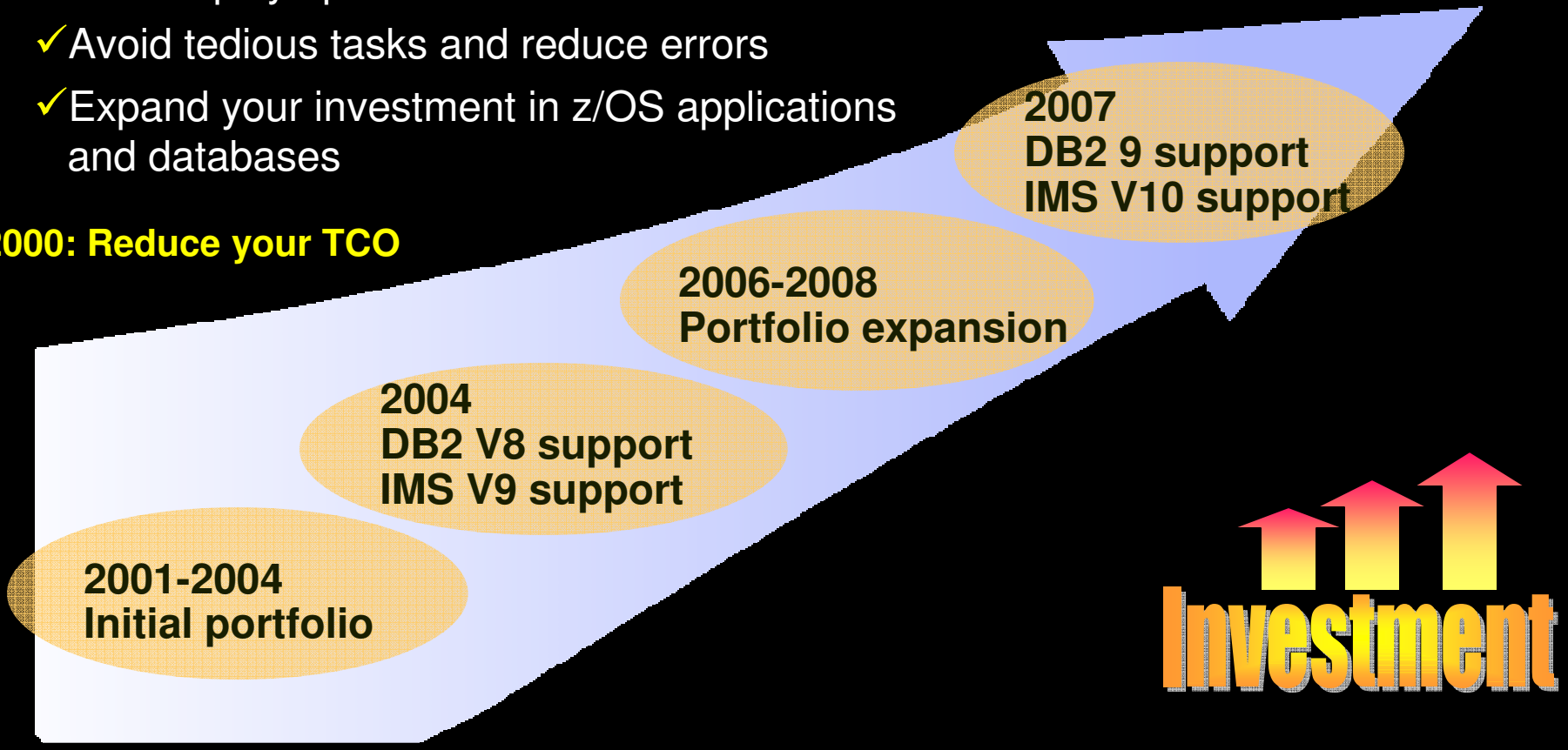
DB2 and IMS Tools

Reducing TCO is our first focus

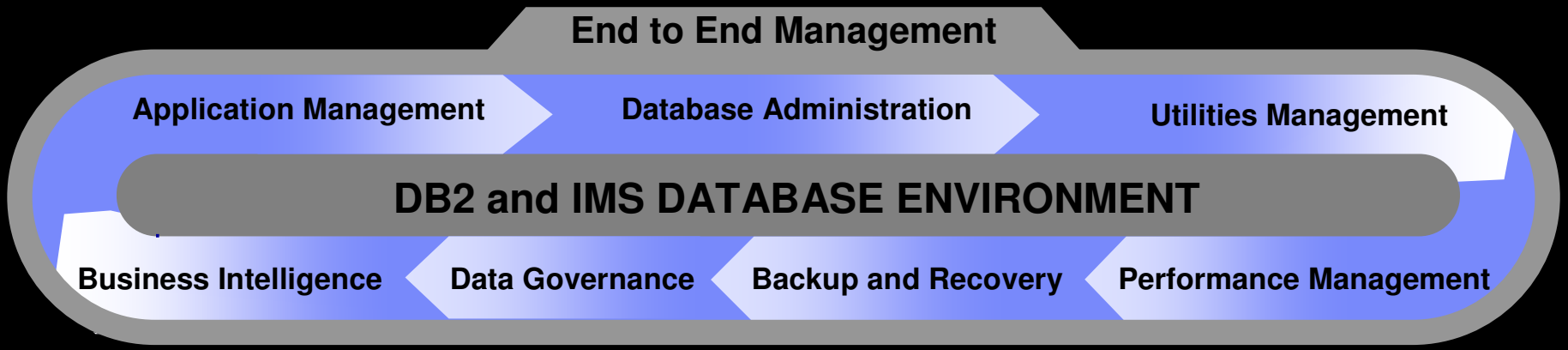
- ✓Provide autonomic features to add capability and simplify operations
- ✓Avoid tedious tasks and reduce errors
- ✓Expand your investment in z/OS applications and databases

2000: Reduce your TCO

2009: Reduce your TCO
Increased Value on z



Managing your business environment



- Optimizing costs associated with maintaining existing applications
- Quickly responding to new business requirements and opportunities
- Ensuring that business and regulatory needs can be properly met
- Maximizing IT staff productivity to streamline business operations

DB2 for z/OS Tools Portfolio

Application Management
- DB2 Path Checker
- DB2 Bind Manager
- DB2 SQL Performance Analyzer
- DB2 Table Editor

Utilities Management
- DB2 Utilities Suite
- DB2 Automation Tool
- DB2 Automation Toolkit SAP Edition
- DB2 Utilities Enhancement Tool
- DB2 High Performance Unload

Business Intelligence
- IBM DataQuant
- IBM QMF
- DB2 Web Query Tool

Database Administration
- DB2 Administration Tool
- DB2 Object Comparison Tool
- DB2 Administration Toolkit SAP Edition
- DB2 Storage Management Utility
- DB2 Cloning Tool

Performance Management
- OMEGAMON XE DB2 Performance Expert
- OMEGAMON XE DB2 Performance Monitor
- DB2 Buffer Pool Analyzer
- DB2 Optimization Expert
- DB2 Query Monitor
- DB2 Performance Toolkit SAP Edition

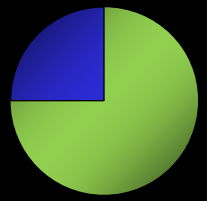
Information Integration
- InfoSphere Classic Data Event Publisher
- InfoSphere Classic Federation Server
- InfoSphere Classic Replication Server
- InfoSphere DataStage
- InfoSphere Replication Server
- InfoSphere CDC DataMirror

Backup and Recovery
- Application Recovery Tool for IMS and DB2 Databases
- DB2 Archive Log Accelerator
- DB2 Change Accumulation Tool
- DB2 Log Analysis Tool
- DB2 Object Restore Tool
- DB2 Recovery Expert

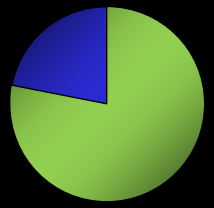
Data Governance
- IBM Optim Data Growth
- IBM Optim Data Privacy
- IBM Optim Test Data Management
- DB2 Audit Management Expert
- Data Encryption for DB2 and IMS

Data Management Must Drive Competitive Advantage

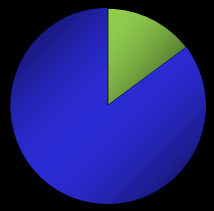
Survey: CIO's want to strengthen competitive advantage by better managing enterprise data…and saving costs



75% of CIO's believe they can strengthen their competitive advantage by better using and managing enterprise data.



78% of CIO's want to improve the way they use and manage their data.



…but **only 15%** believe that their data is currently comprehensively well managed.

- Lowering costs associated with IT management
  - Resources
  - Availability
  - Productivity
- Proactive problem management
- Free up staff to drive business growth and optimization

Backup and Recovery Costs

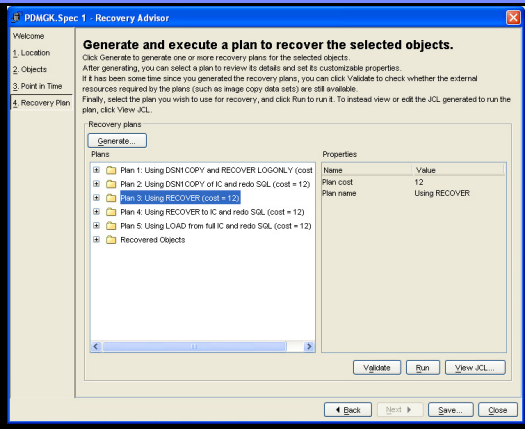
- Safeguarding DB2 applications and data is critical
- Many backup strategies incur a significant ongoing cost to guarantee a certain level of recoverability
- Actual recovery is rare
- So we are dedicating a lot of CPU, I/O, DASD, tape, and personnel resources to regular backup activities that create recovery resources that are seldom used
- Consider a new model
  - **DB2 Recovery Expert significantly reduces the CPU, I/O, and management costs associated with creating recovery assets, yet you retain the same level of recoverability you have today**
  - **Recovery time can be improved while reducing the ongoing backup cost**

An Expensive Insurance Policy

Backing up with image copies (aka. Traditional backups)

- Reliable but time consuming
- Either tables/DBs are read-only or the backup is fuzzy
- Infrequent backups make for lengthy restores
- CPU cost can be an issue
- Thousands of files must be managed

DB2 Recovery Expert



- Automated backup processing
- HW backups result in less overhead (CPU, I/O, elapsed time) compared to traditional Image Copies
- Less data unavailability during backup
- GUI interface to make users more productive

- Less people time involved in any recovery situation with expert capabilities
  - Usually a stressful situation
- Expert functions to recommend best recovery plan
  - Less error prone recovery plan creation
  - Less skilled people can be productive faster
  - Reduce errors through validation of recovery

A DB2 Recovery Expert ROI Example

- A small DB2 customer
  - Compared CPU, I/O and storage cost calculations based on their old model versus using the DB2 Recovery Expert for backup and recovery

The following is the annualized savings

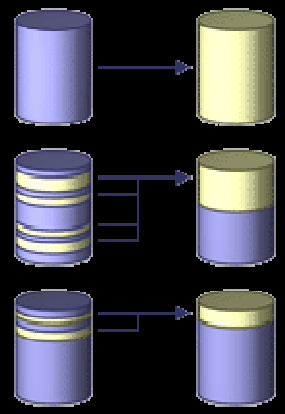
- DB2 size = Approximately 0.5 TB

By performing daily image copy backup and volume based on fast replication

- Total CPU and I/O cost savings = $1,416,915
- Storage cost savings = $192,355
- **Total generated CPU, I/O and storage savings= $1,609,270**

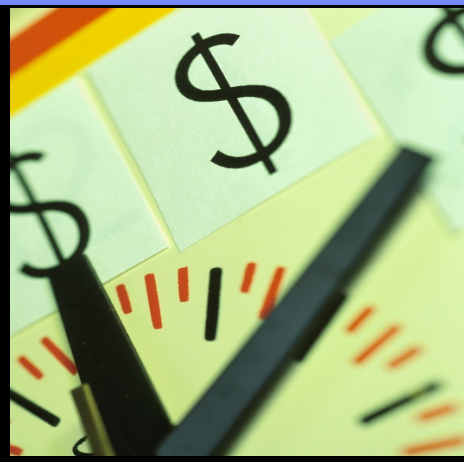
- The result was very significant savings for a rather small DB2 system
  - Larger DB2 systems could expect to see more savings

DB2 Cloning Tool



- Clones a DB2 subsystem AND at an object (Dataset level)
  - Renames and catalogs the data sets, fixes the volume internals, optionally updates all DB2 internal control information
  - No requirement for a clone in a separate LPAR
  - Supports DB2, PeopleSoft, and SAP
- Is extremely fast and cheap!
  - Disk vendor independent
    - Uses any snap, mirror or PIT copy, only volumes are eligible for cloning
  - Reduces production online downtime when cloning – takes just minutes
  - Dramatically reduces costs of traditional methods
    - Uses less personnel time
    - DB2 no longer needs to be shut down or conditioned the long traditional way
  - Provides virtually 24x7 access to the customer's data

Other Reasons to Clone Data



Why Clone?

- Testing
  - DB2 version upgrades
  - Test new functions and features of packaged apps (like SAP)
  - Test new DW solutions
- Performance – move users to cloned system
- Availability – create read only copies of DB2
- Quickly clone data for warehousing purposes
- Replication – load initial replicate

The bottom line:

- **Cloning costs you excessive amounts of people time and system resources**

Cloning Challenges

- Extended downtime is the norm, as most data is shut down during cloning
- The requirement for a separate image
- How to clone different types of data?
  - DB2 – PeopleSoft, SAP
  - CICS, IMS
  - Non-database
- How to simplify cloning when using multiple replication products
- How to quickly access replicas

A Customer Example - DB2 Cloning Tool

A large Insurance Company -- gaining usable DB2 clones instantly, thereby reducing errors and costs significantly

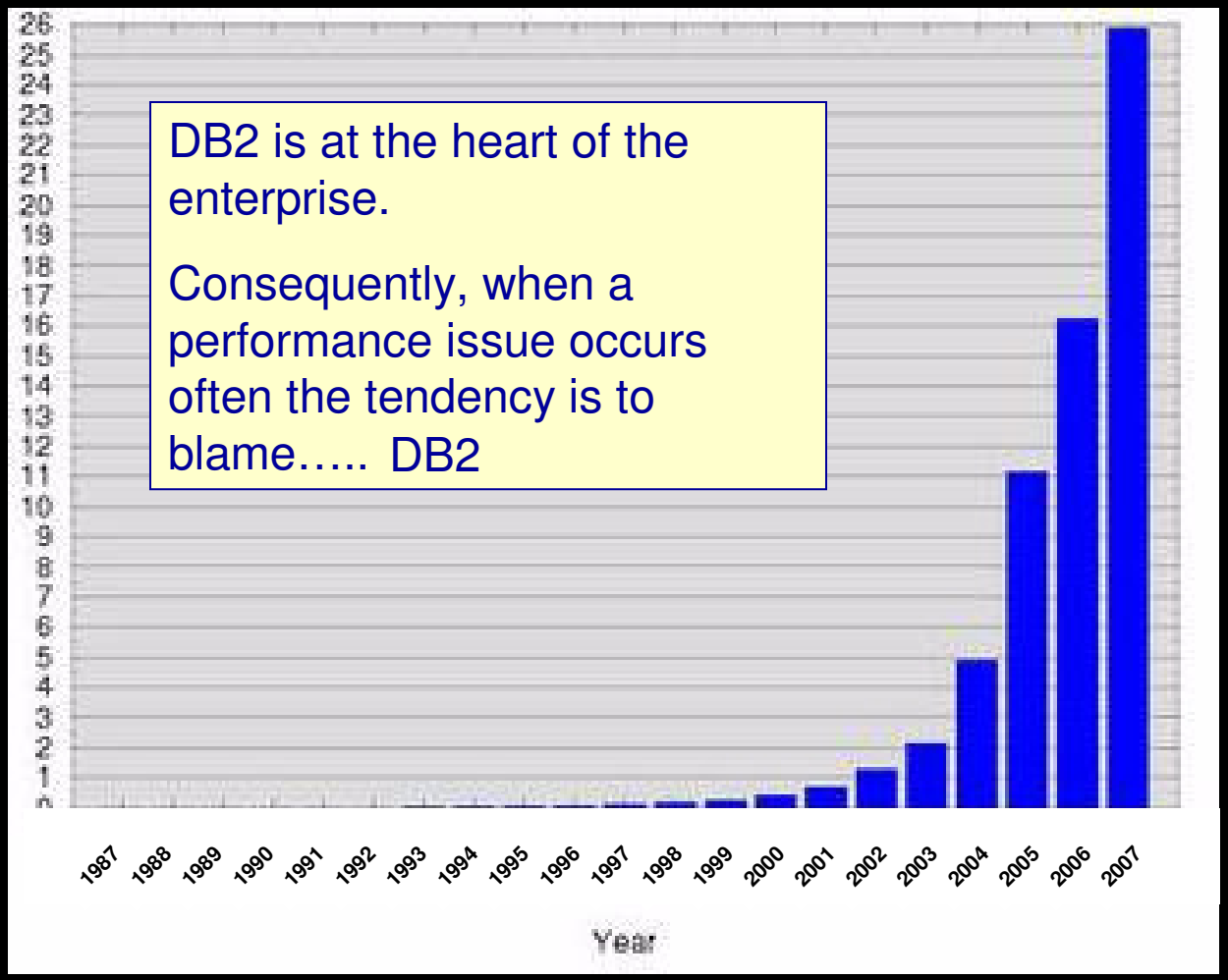
- They needed to provide multiple DB2 environments to different departments for various testing purposes
- Previously, DB2 administrators had performed this task manually, with a lot of effort, resulting in errors and problems

- The DB2 Cloning Tool helped the company develop an effective testing environment for new applications, while reducing the errors and problems which were occurring when the DB2 cloning was done manually
- The company now has the software it needs to easily and quickly perform the complete DB2 subsystem cloning without interfering with its production environment
- The IBM DB2 Cloning Tool for z/OS automates the cloning process to provide usable DB2 clones within minutes, improving business performance and reducing total cost

DB2 Cloning Tool ROI Example

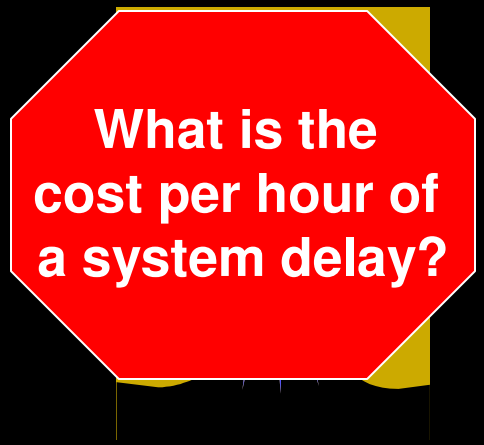
- Replace labor-intensive home-grown tasks and techniques with cloning automation
  - Reduces DBA and Storage Admin time it takes to clone DB2 subsystem or datasets
- Productivity – what used to take days now takes just minutes
  - The elapsed time, I/O, and CPU of cloning process is dramatically less than load/unload utility execution
- Allows customers to manage larger environments without staff changes
- Keep DB2 online while cloning a subsystem or make data unavailable for only short period of time when cloning individual objects
- Creating clones or test systems from packaged apps can be particularly taxing, DB2 Cloning Tool can add significant value for
  - SAP
  - Peoplesoft
- What customers are saying:
  - "It used to take 48 hours to clone a DB2 subsystem, now it takes 30 minutes"
  - "It took 2 days, using 2 people to clone 6 DB2 systems for a total of 96 days per year. Now it takes 1 person 30 minutes for a savings of 84 person days per year"

The amount of data being stored in databases has grown exponentially



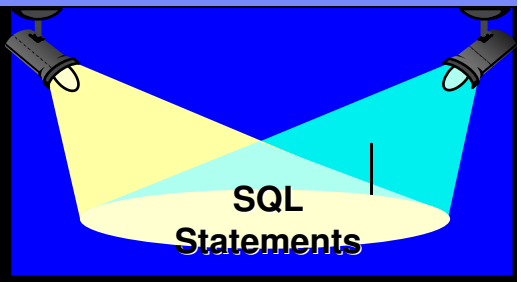
For DB2 … Someone has just reported a performance problem. Where do you start?

- **Could the problem be in DB2 itself?**
  - Did you run out of system resources?
- **Is the problem related to poorly coded SQL?**
  - Is the SQL static or dynamic?
  - What is the access path?
- **How about the network?**
- **When did this occur?**
- **Is this a one time occurrence, or has it happened before?**
- **Is the information stored in a history file somewhere?**



- **Do you have the knowledge, time, and expertise to do the analysis and determine the problem?**

DB2 Query Monitor



- Low overhead SQL statement monitor
- Identifies SQL requests which are consuming excessive resources and may be preventing critical requests from completing on schedule
- Proactively manage DB2 resources
  - React quickly and effectively to DB2 problems like inefficient SQL or inadequate object structures
  - Determine which tables and indexes are actually being used
- **Collects information about** exceptional SQL-related events
  - Performs analysis of exceptional events
  - Undertakes notification and curative actions when exceptional events occur

DATA collected and available to view
- SQL metrics
- DB2 object access
- SQL text and host variables
- DB2 commands
- Negative SQLCODES
- Expanded and grouped Information about exceptions
- Buffer Pool Statistics
- Delays

Historical Information
- Interval-based VSAM Datasets for data storage
- Intervals of data viewable online
- User controlled number of intervals retained Interval length

Some real world DB2 Query Monitor ROI Savings

- Scenario 1 – Customer Account System: CPU Savings
  - CPU Costs $500.00 per hour
  - 10 million transactions per day. Each transaction averages .011361 of Class 2 CPU time.
  - Transaction accrues $15,720.00 per day in CPU charge back.
  - The transaction has 5 SQL statements and one is found to use a LIKE rather than a WHERE.
  - Modifying the statement to use a WHERE reduces CPU by 35%.
  - **$2,008,230 in yearly savings on CPU charge back**

- Scenario 2 – Customer Account System: Application Availability, CPU Savings, DBA Time
  - A change is made to the monthly billing system and promoted to production.
  - During month end processing it is discovered the changed caused the program to loop in DB2 and the program ran for over 20 hours before it was canceled. SLAs were missed.
  - A workload is setup in DB2 Query Monitor for the billing system to capture exceptions and issue alerts when the billing program uses more than 60 minutes of CPU time.
  - The next month another issue occurred, but Query Monitor emailed alerts to operations and the DBA team and the problem was corrected and the SLAs were met.

Success Story – A Large Worldwide Financial Services Company Experiences Significant Cost Savings by Monitoring SQL

Challenges

- A financial services company serving 68 million customers. Required to evaluate and find the premier dynamic SQL monitoring product from the myriad of monitoring products in the marketplace

Solutions

- IBM DB2 Query Monitor for z/OS, the only product among those evaluated that did not require standard DSN traces to be started
- The company selected IBM DB2 Query Monitor for z/OS as the strategic tool to identify the most expensive SQL statements that were running in the System z environment.

Benefits

- DB2 Query Monitor active 24X7 in all 36 North American DB2 subsystems
- Used the product to track down SQL statements that were increasing chargeback costs to the users
- The company experienced tremendous cost savings by using DB2 Query Monitor, and was able to show a true return on investment.

10 Surprising Things You Can Do with DB2 Query Monitor

Displaying performance-related information about specific queries is the traditional use for DB2 Query Monitor. Tom Glaser points out that its full capabilities go way beyond the expected:

These 10 DB2 Query Monitor tasks will help out any application programmer, DBA, or DB2 systems programmer:

1. *Research DB2 commands*
2. *Display host variables*
3. *Exploit DB2 Resource Limit Facility*
4. *Display SQL Communications Area*
5. *Determine SQL error patterns*
6. *Explore dynamic SQL overhead*
7. *Identify resource unavailable - 904 errors*
8. *Determine access path changes*
9. *Identify logging increases*
10. *Display DB2 subsystem statistics*

Tom Glaser, Technical Director, Mainframe Strategic Planning at AT&T

DATABASE Magazine (Issue 4, Nov 2008)

IBM Tivoli OMEGAMON® XE for DB2 PE / PM

Product at a Glance

- Tremendous reporting infrastructure
- Sysplex and Data Sharing wide monitoring and bottleneck analysis of specific workload elements and objects
- Early detection of out-of-line situation with the automated capability to take actions
- Easy to use monitoring and tracing functions for application and system environment
- Full V9 exploitation; VNEXT underway

News

- Improved SAP Monitoring 6.40
- Monitoring of DB2 Connect
- Improved Accounting (DB2 V8 ACCUMAC)
- Granular IFCID 225 Information (Virtual Storage Monitoring)
- Improved distributed application support
- Seamless navigation between DB2, IMS, zOS, and CICS

Benefits

- Highly flexible reporting and Performance Warehouse
- Rule-of-Thumb and expert analysis with dedicated recommendations
- Fully integrated Real-time monitoring
- DB2 Connect monitoring correlated with host DBAT thread information
- Expert buffer pool analysis with What-if simulation capability

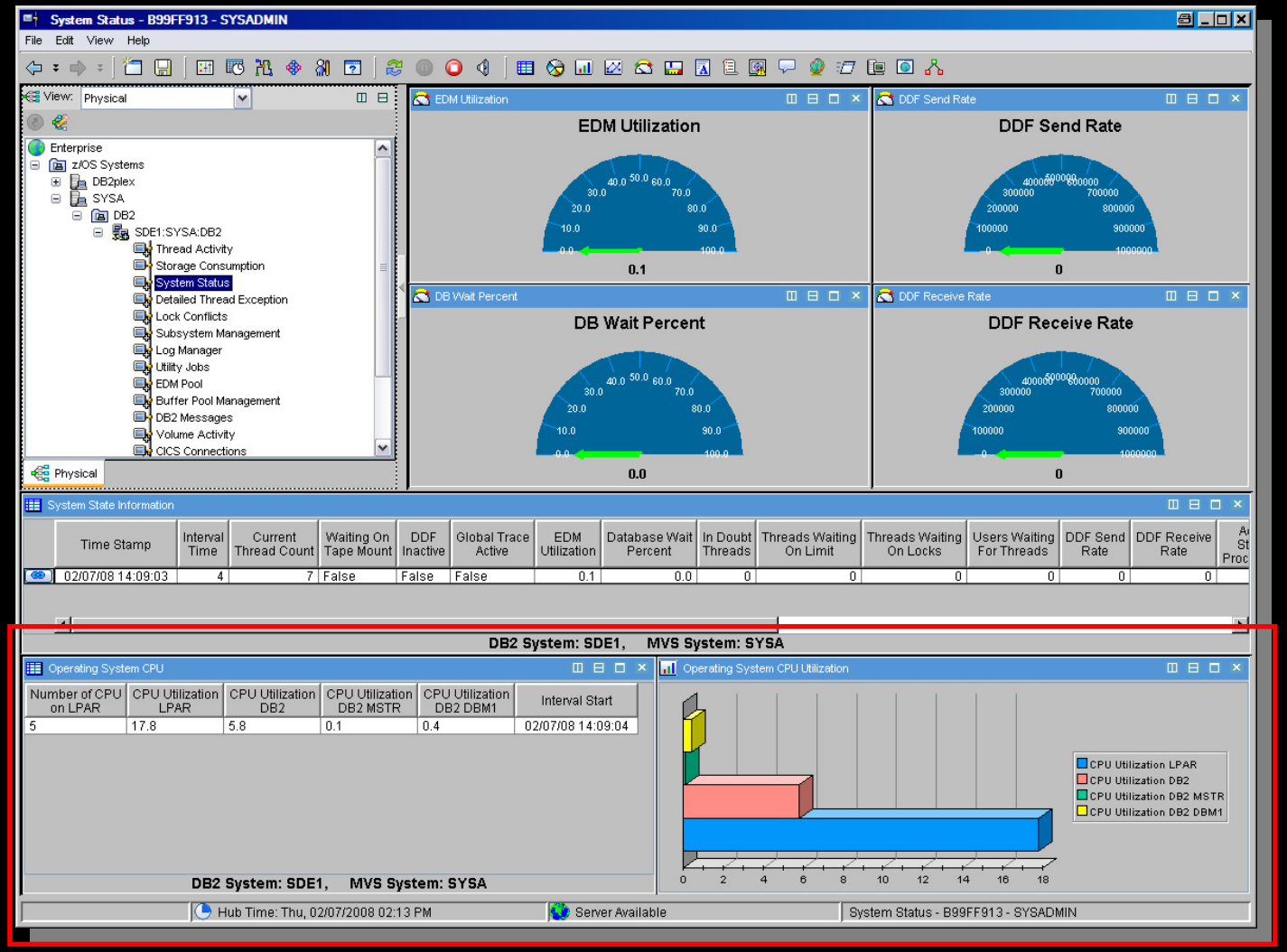
Includes Buffer Pool Analyzer

- BPAs goal is, to save you memory and CPU resources by optimizing DB2s Buffer Pools
- Two major functions to achieve this:
  - Change size of BPs to make most out of available real memory
  - Group objects in BPs according to characteristic (called Object Placement) and define BP thresholds accordingly
- Allows you to test changes before you apply them to system (simulation)

New Subsystem / LPAR related data

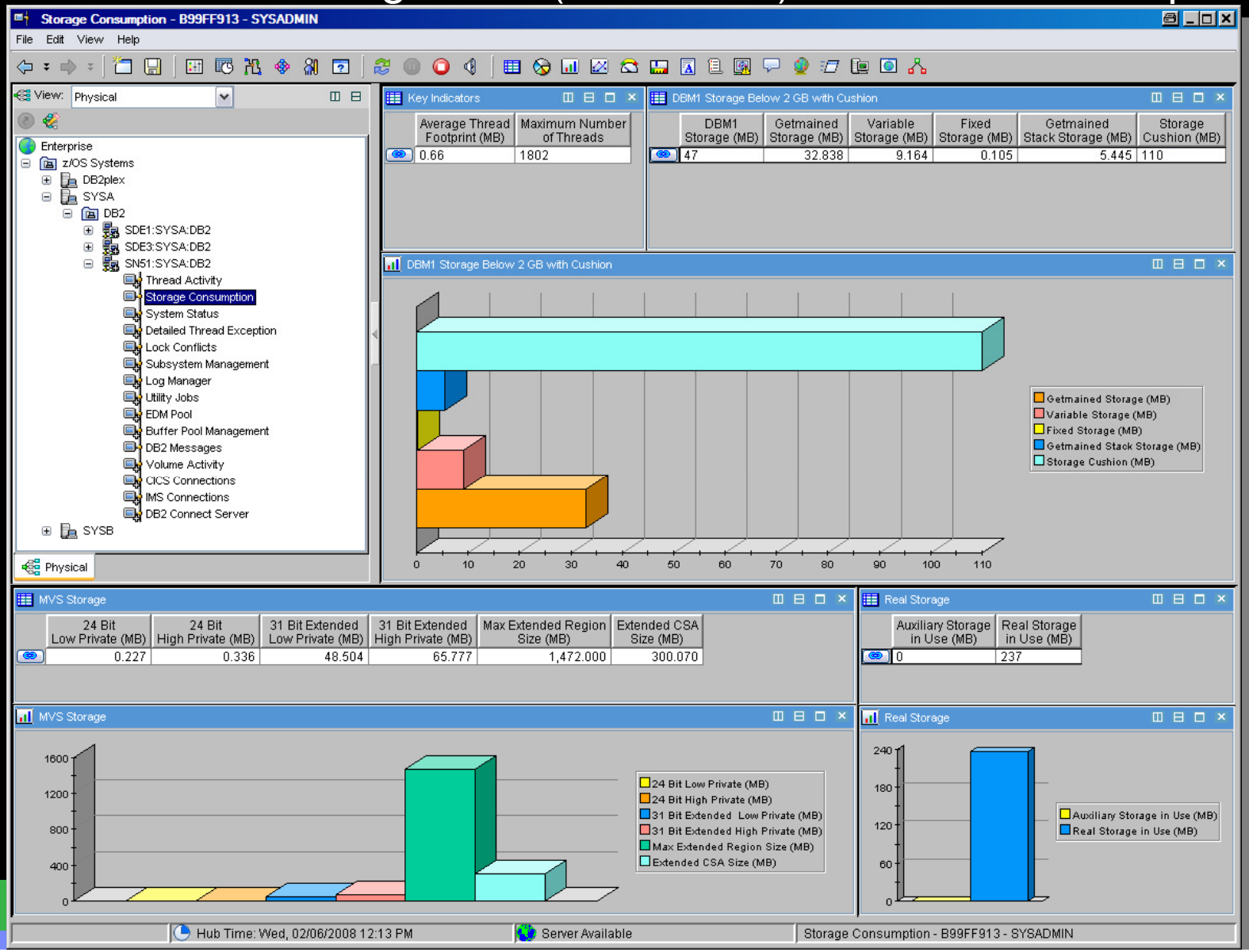
New data shown on “System Status” TEP workspace

Provides z/OS metrics for CPU (in %) and memory for
•LPAR,
•DB2 subsystem,
•DB2 address spaces - MSTR, DBM1)



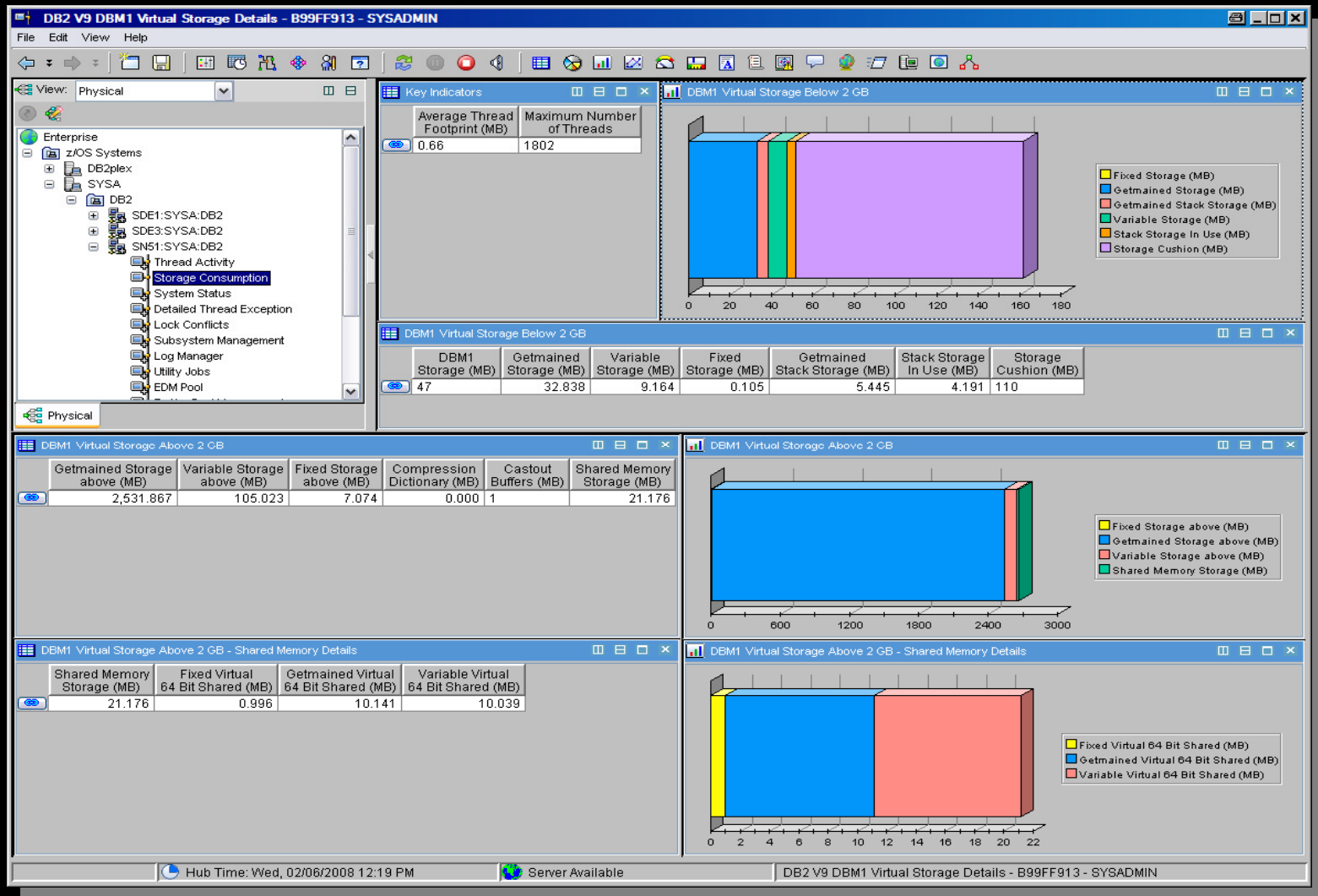
New Subsystem / LPAR related data

DBM1 Virtual storage data (IFCID 225) a new TEP workspace



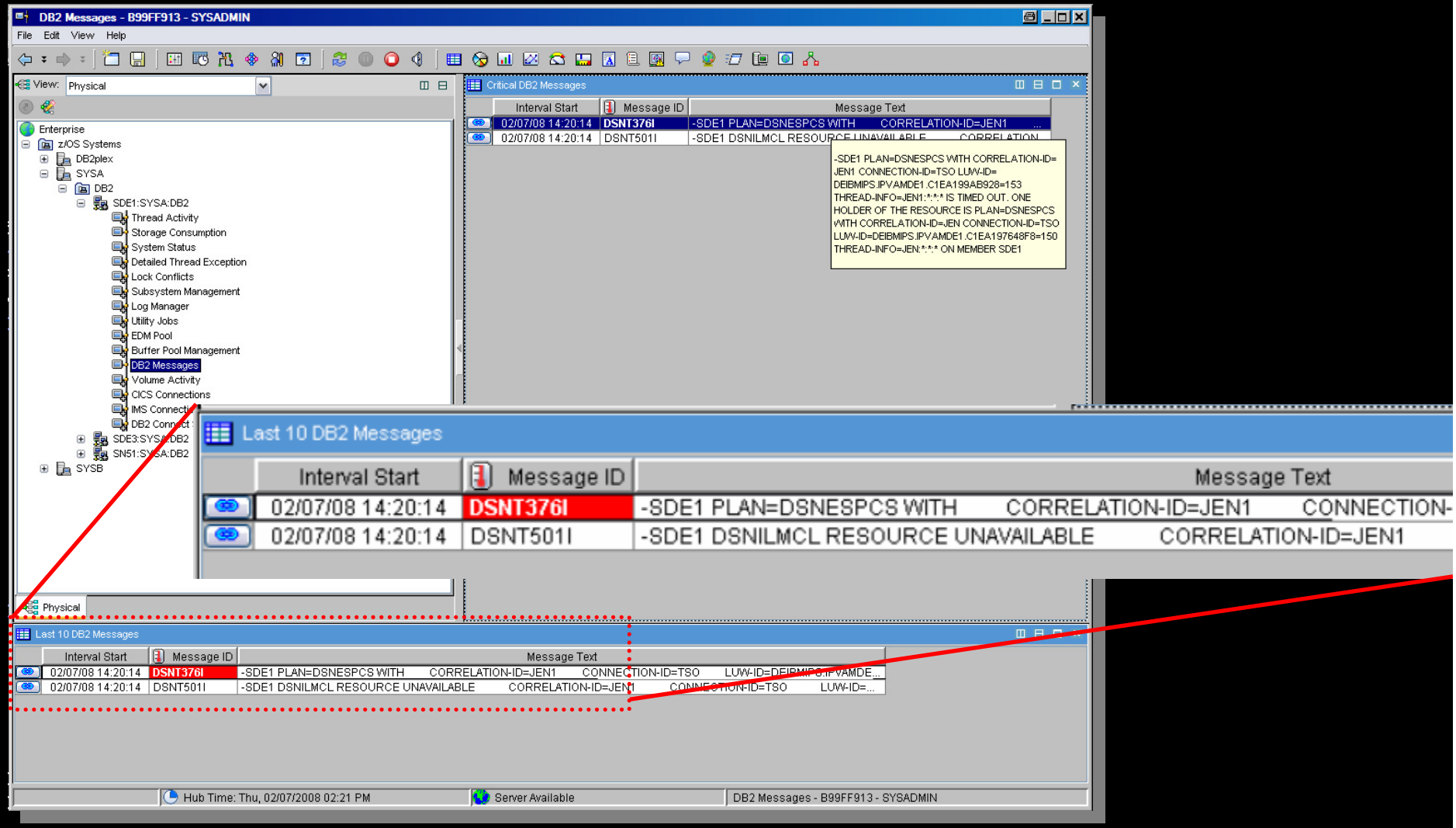
New Subsystem / LPAR related data

DBM1 Virtual Storage **Details** (IFCID 225) a new TEP workspace



New IFCID to report on DB2 Messages

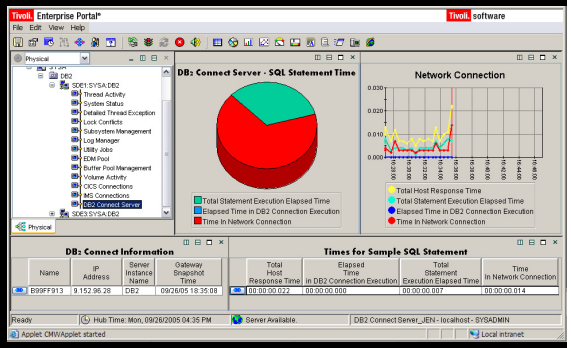
New IFCID 197 - DB2 messages are shown in a new workspace



Display Data Sharing group wide threads

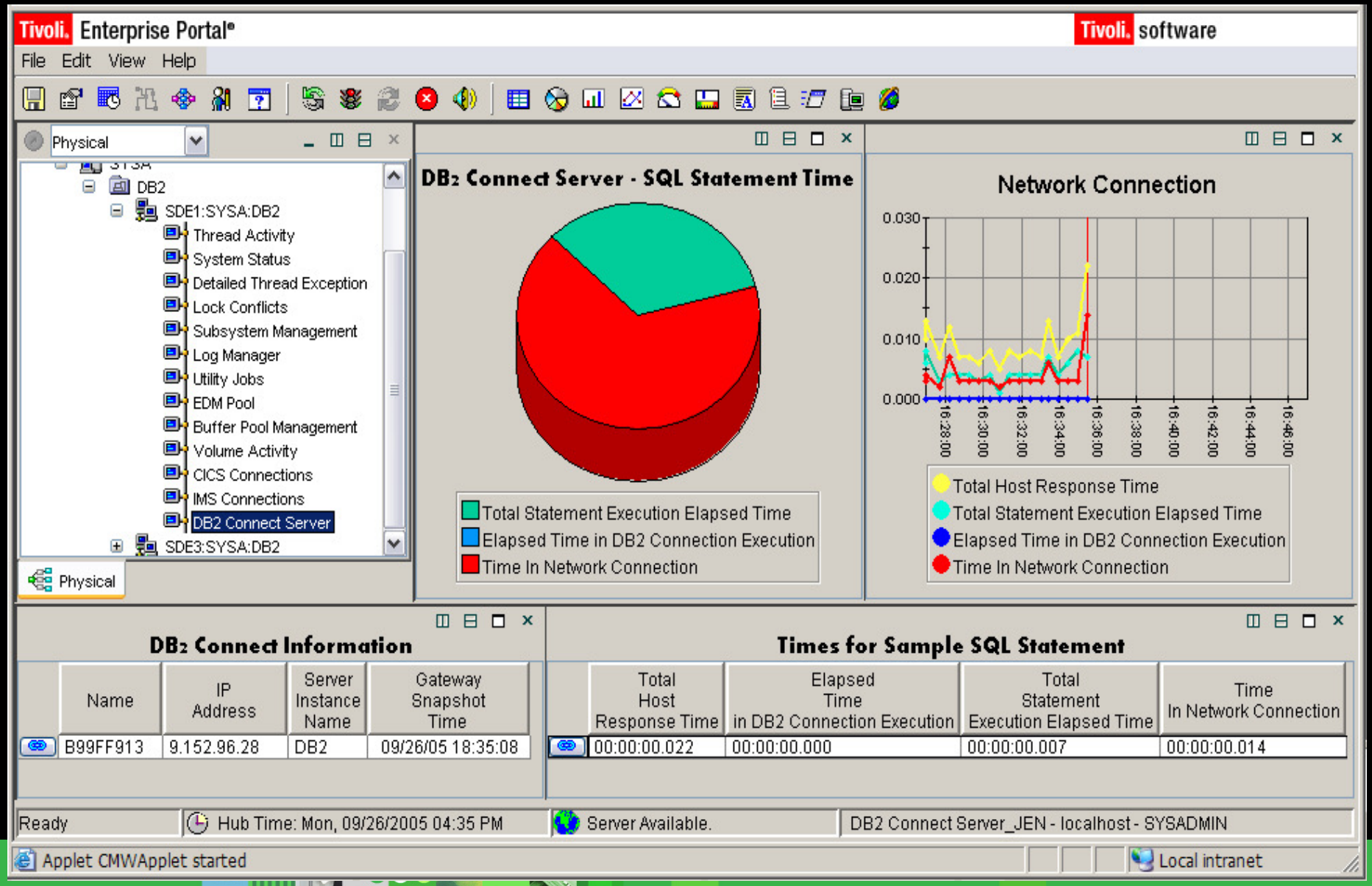
```
 _________________ ZALLT    VTM     O2       V410./C SDE1 G 03/06/08 15:43:34
> Help PF1      Back PF3       Up PF7      Down PF8      Sort PF10    Zoom PF11
> T.A
>         THREAD ACTIVITY:  Enter a selection letter on the top line.

> *-ALL         B-TSO      C-CICS      D-IMS     E-BACKGROUND   F-DIST ALLIED
> G-DIST DBAC   H-UTIL     I-INACT     J-FILTER  K-FUNCTIONS    L-STORED PROC
> M-TRIGGERS    N-SYSPLEX  O-ENCLAVES  P-WORKSTA
================================================================================
>                       ALL THREADS CONNECTED TO DB2
 THDA
+ *
+ Elapsed      Planname  DB2    Status       GetPg  Update Commit CORRID
+ ----------   --------  -----  -----------  ------ ------ ------ ------------
+ 00:59:49.0   KO2PLAN   SDE2   NOT-IN-DB2     8028   1811    918 SDE2OMO4
+ 00:59:48.6             SDE2   NOT-IN-DB2        0      0      0 SDE2OMO4
+ 00:59:48.6   KO2PLAN   SDE2   NOT-IN-DB2     7598     33      7 SDE2OMO4
+ 00:59:47.3             SDE2   NOT-IN-DB2        0      0      0 SDE2OMO4
+ 00:59:34.1   KO2PLAN   SDE2   NOT-IN-DB2        0      0      0 SDE2OMO4
+ 00:59:17.9   KO2PLAN   SDE2   NOT-IN-DB2        0      0      0 SDE2OMO4
+ 00:21:14.1   KO2PLAN   SDE1   NOT-IN-DB2       63      4     10 SDE1OMO4
+ 00:21:14.1   KO2PLAN   SDE3   NOT-IN-DB2       63      4     10 SDE1OMO4
+ 00:21:13.6             SDE1   NOT-IN-DB2        0      0      0 SDE1OMO4
+ 00:21:13.6             SDE3   NOT-IN-DB2        0      0      0 SDE1OMO4
+ 00:21:13.1   KO2PLAN   SDE1   NOT-IN-DB2     7618     33      7 SDE1OMO4
+ 00:21:12.6   KO2PLAN   SDE3   NOT-IN-DB2     7618     33      7 SDE1OMO4
+ 00:21:12.4             SDE1   NOT-IN-DB2        0      0      0 SDE1OMO4
+ 00:21:11.9             SDE3   NOT-IN-DB2        0      0      0 SDE1OMO4
+ 00:20:58.3   KO2PLAN   SDE3   NOT-IN-DB2        0      0      0 SDE1OMO4
+ 00:20:58.3   KO2PLAN   SDE1   NOT-IN-DB2        0      0      0 SDE1OMO4
+ 00:17:14.9   DB2PM     SDE1   NOT-IN-DB2    79943      0   1186 SDE1OMO4
================================================================================
```

What can DB2 Connect monitoring do for you ?



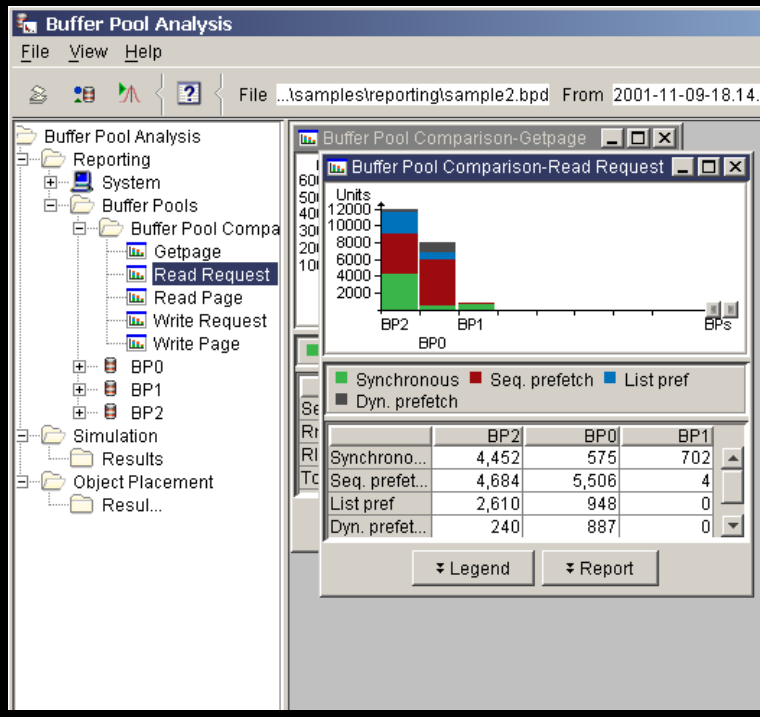
- **Allows you to monitor DB2 Connect gateways connected to a DB2 on z/OS or LUW (end-to-end monitoring)**
  - Performance between gateway and host is regularly measured to inform immediately about problems
  - **Assists in the** identification of network problems
  - **Assist with the** setting of DB2 Connect thresholds
  - Provides details about the number of agents and pooled agents
- **Regularly measures the performance between gateway and host to inform immediately about problems**
  - See the number of bytes moved in each network request
  - View the number of connections waiting for the host to reply
  - View the number of connections waiting for the client to send a request
  - View statistical details about the packages received at the DB2 Connect gateway
- **Shows DB2 Connect activity either from the perspective of the gateway or from the DB2 host**
- **Fully integrated into Classic Interface, TEP and PE Client**
  - Information about DB2 threads on the host are fully correlated with information about the thread on the DB2 Connect gateway
  - **When using the** TEP **interface you can be** notified **when a gateway is slow or inoperative**
- **Maintains historical information**

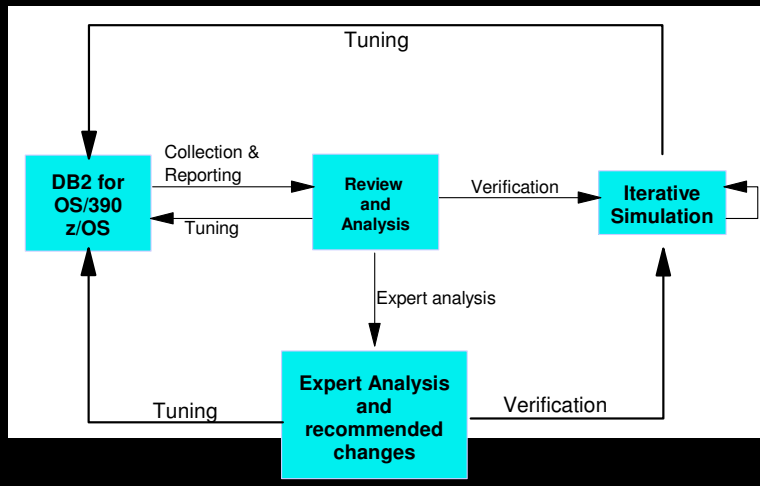
DB2 Connect Monitoring – The different views



DB2 Buffer Pool Analyzer

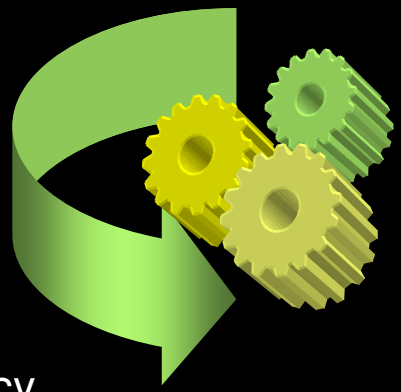
- **Collects** buffer pool data
  - as summary or detailed data
  - continuously or in sampling mode
  - in Online and Batch
- Generates various **reports and displays** results in multiple formats for BP and GBP (including graphical end-user interface)
- Provides expert knowledge and recommendations
- Recommends **object placements, BP size & thresholds**
- **Generates ALTER statements** for the recommendation
- Provides **simulation** for planned changes
- Makes it easy to tune your buffer pools





Determining the need to REORG… with DB2 Automation Tool

- **DBA initiates a dialog with the tool**
  - Define an object profile with ALL the table spaces
  - Define a utility profile for REORG with the proper options
  - Define an exception profile with checks for the proper statistics
  - Tie the three profiles together in a job profile
  - Job profile is placed in job scheduler to run at a desired frequency



- **That's it !**
  - When the job profile is run, statistics for each table space in the utility profile are retrieved and compared to the criteria in the exception profile
  - Jobs are generated using the REORG utility profile for table spaces that meet the exception profile criteria

Set it…. And forget it !

DB2 Automation Tool for z/OS

Reduce CPU Consumption + **Reduce DBA Labor Costs** + **Eliminate Application Downtime** =

Faster return on your investment

Reduce CPU Consumption

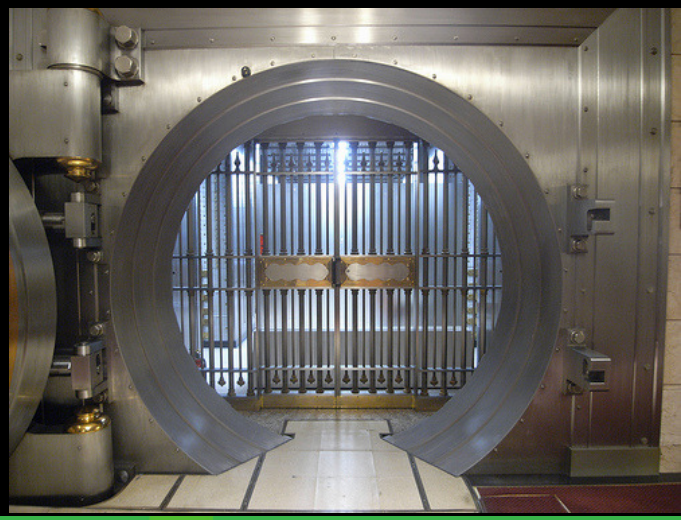
- DB2 Automation Tool provides an automated method to determine which objects need routine maintenance, eliminating CPU consumption from running maintenance on objects that don't need it.
- DB2 Automation Tool allows DBAs to focus their attention on more critical business needs by automatically generating utility jobs, keeping your DB2 objects available to other application jobs.

PCI – A closer look at one compliance example

- PCI – Payment Card Industry
  - The Payment Card Industry (PCI) Data Security Standard was created by major credit card companies to safeguard customer information
  - Credit card issuers (Visa, MasterCard, American Express, and others) mandate that merchants and service providers meet certain minimum standards of security when they store, process and transmit cardholder data
  - Severe penalties for non-compliance
  - Synchronicity with other compliance initiatives
  - Compliance viewed by many as competitive advantage

Are we in Compliance? Are we Protected ?

- RACF is the premier security product for z/OS and does an excellent job of protecting access to secured assets
- We all make extensive use of RACF in the environments that DB2 and IMS run in
- So, if I have RACF controls in place for DB2 and IMS, I must be ok, right ?



We Are Protected

- “We don’t need to audit, we have RACF controls surrounding who can access data”
- “We control who is connected to the DB2 SYSADM group and we know what those people are authorized to do”
- “We trust our DBAs”

That is probably what these guys said…

Heartland Payment Systems Inc. - Computerworld 1/20/2009

- Provider of credit card and debit card processing services
- Data breach may displace TJX companies in the record books as the largest ever involving payment data with potentially over 100M cards being compromised
- **Company said they were accelerating their efforts to deploy end-to-end encryption to protect its transaction base**
- **Better late than never**

Societe Generale SA

- Biggest ever trading scandal in history
- January, 2008 announcement that the company **Lost $7.68B** due to risky and unauthorized trading by one employee
- Described as a "devious information technology wiz"
- Circumvented internal control systems and set up an elaborate trading system to hide fictitious trades
- At one point in time, the total exposure to the bank was **$50B!!!**

A large insurance company

- An employee needed to pay off gambling debts
- Decided to sell identity information pilfered from their databases on 110,000 customers
- Sold 36,000 Names/Addresses/ID#s/birth dates for $25,000
- The United States Secret Service (Ooops) intercepted sale
- Employee sentenced to 5 Years in Jail, ordered to pay the company $520,000

TJX Companies

- Over 45 million credit and debit card numbers stolen in a computer system breach
- Began in July, 2005 and was not detected until 12 2006!
- 2007: $197M in breach related pretax charge against earnings
- Includes $40.9M settlement with Visa
- 2008: $24M settlement with MasterCard

Counter Arguments To "We Are Protected"

- RACF does two things:
  - Prevents people from accessing a resource that is not essential or appropriate for their jobs
  - Allows people access to the necessary data to do their jobs
- But RACF does NOT:
  - Prevent a malicious update if the user has authority to the data
  - Prevent an authorized user from accessing sensitive data that is ***NOT*** within the scope of their job
  - Provide meaningful information about access to protected DB2 resources (authorized or not)
    - Did someone grant their other userid or someone else DB2 SYSADM (system administration) authority?
    - Is someone reading data during off hours? Why?
    - Authorized access to data does not ensure the data is accessed in accordance with "proper use" criteria.

When there is a will, there is a way. Calculate your risk!

Yes protect sensitive data – but a comprehensive auditing of access not only makes sense… it is mandated by every governance/compliance regulation

Auditing Overview

- Privileged users must be trusted with sensitive data in order to do their jobs. For example, DBAs
  - Their responsibilities include maintaining, copying, loading, reorganizing, and recovering sensitive data.
- In the absence of auditing, it is impossible to trace when or if these special privileges have been abused
- Auditing must implemented in a way to prevent privileged users from interfering with its collection or reporting (called Separation of Roles)
  - Centralized and independent of the users you are auditing!
- DBAs should do their job duties, and auditors should be able to run audit reports independently of them.
  - Separation of Roles
  - More accurate audits
  - Reduced cost of gathering audit data

DB2 Audit Management Expert Overview

- Collects and correlates information from DB2 resources
  - Audit Trace Data, Log Analysis data
    - Turns on appropriate audit trace types based on collection profiles
- Provides a central resource for auditors to produce a coherent view of DB2 access information
- Auditors will be able to Access:
  - SELECT, INSERT, UPDATE, and DELETE activity by user or by object
  - **SQL Text and Host Variable value for each statement**
    - **Row count that SQL statement affects**
  - CREATE, ALTER, and DROP operations against an audited object
  - Utility access to an audited object
  - DB2 commands entered
  - Assignment or modification of an authorization ID
- **Provides auditors with flexible options for examining the data in the audit repository**

DB2 for z/OS Tools Portfolio

Application Management
- DB2 Path Checker
- DB2 Bind Manager
- DB2 SQL Performance Analyzer
- DB2 Table Editor

Utilities Management
- DB2 Utilities Suite
- DB2 Automation Tool
- DB2 Automation Toolkit SAP Edition
- DB2 Utilities Enhancement Tool
- DB2 High Performance Unload

Business Intelligence
- IBM DataQuant
- IBM QMF
- DB2 Web Query Tool

Database Administration
- DB2 Administration Tool
- DB2 Object Comparison Tool
- DB2 Administration Toolkit SAP Edition
- DB2 Storage Management Utility
- DB2 Cloning Tool

Performance Management
- OMEGAMON XE DB2 Performance Expert
- OMEGAMON XE DB2 Performance Monitor
- DB2 Buffer Pool Analyzer
- DB2 Optimization Expert
- DB2 Query Monitor
- DB2 Performance Toolkit SAP Edition

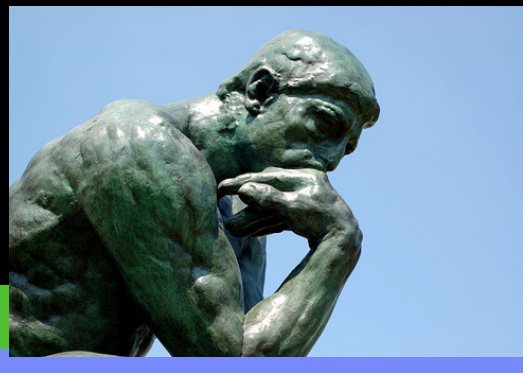
Information Integration
- InfoSphere Classic Data Event Publisher
- InfoSphere Classic Federation Server
- InfoSphere Classic Replication Server
- InfoSphere DataStage
- InfoSphere Replication Server
- InfoSphere CDC DataMirror

Backup and Recovery
- Application Recovery Tool for IMS and DB2 Databases
- DB2 Archive Log Accelerator
- DB2 Change Accumulation Tool
- DB2 Log Analysis Tool
- DB2 Object Restore Tool
- DB2 Recovery Expert

Data Governance
- IBM Optim Data Growth
- IBM Optim Data Privacy
- IBM Optim Test Data Management
- DB2 Audit Management Expert
- IBM Database Encryption Expert
- Data Encryption for DB2 and IMS

Summary

- *Think strategically about your investment surrounding your most critical assets – DB2 for z/OS data and applications*
  - ***Focus on a resilient environment that you manage with low costs***
  - ***You cannot afford downtime, no matter the state of the economy***
    - ***Backup and recovery, DR, cloning DB2 data, proactive performance management***
  - ***Lowering costs associated with IT management***
    - ***Resources***
    - ***Availability***
    - ***Productivity***
- Free up staff and resources to drive business growth and optimization!



http://www.ibm.com/software/data/db2imstools/products/db2-zos-tools.html

DB2 Tools for z/OS – News, events, and highlights

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