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Data Management

What's New Since v9.7 GA

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> Executive's Message



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IBM



> Featured Speakers



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IBM



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Product Manager
Optim Tooling

IBM



Agenda

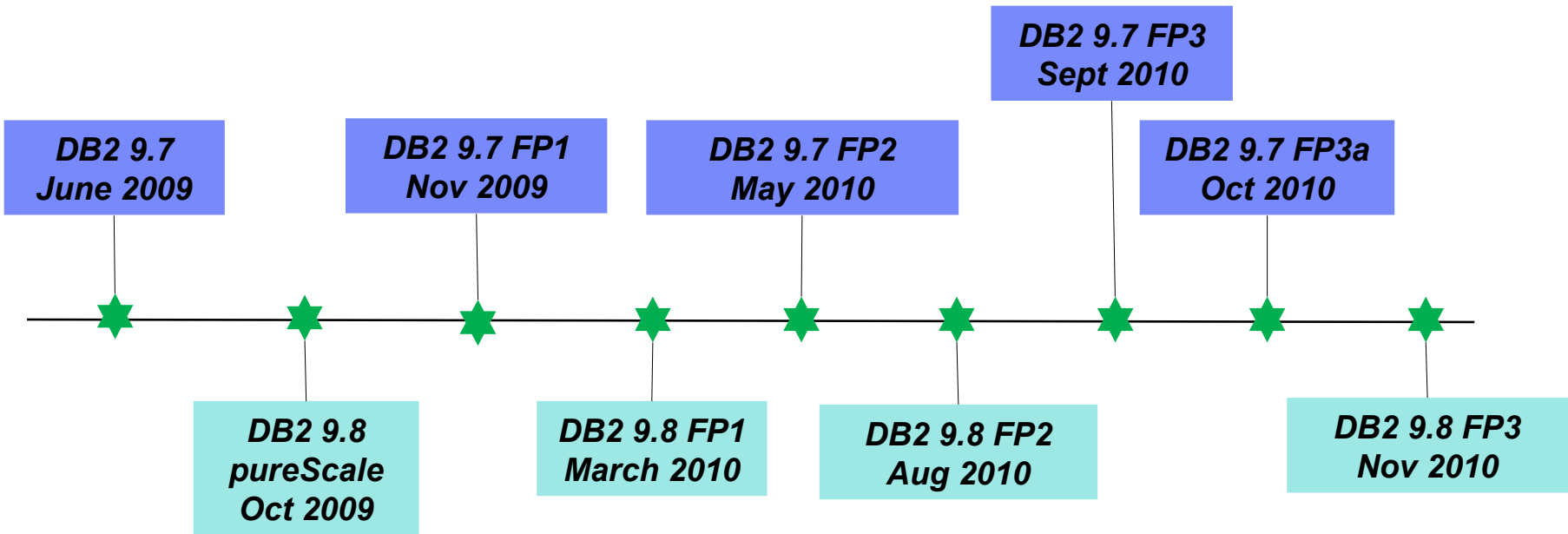
- DB2 Roadmap and 9.7 Recap
- DB2 Fixpack Highlights
- DB2 pureScale
- DB2 Advanced Enterprise Server Edition and Optim Tooling
- DB2 Galileo – Participate in the Beta



DB2 Roadmap and 9.7 Recap



DB2 Since GA of DB2 9.7



DB2 9.7 – Recap

- **Resource Optimization**
 - Best performance with most efficient utilization of available resources
- **Ongoing Flexibility**
 - Allow for continuous and flexible change management
- **Service Level Confidence**
 - Expand your critical workloads confidently and cost effectively
- **XML Insight**
 - Harness the business value of XML
- **Break Free with DB2**
 - Use the database server that gives you the freedom to choose
- **Balanced Warehouse**
 - Create table ready warehouse appliance with proven high performance



DB2 9.7 – Fixpack Overview

- **Too much to review! Please see complete list of FP changes here:**
- <http://publib.boulder.ibm.com/infocenter/db2luw/v9r7/topic/com>



DB2 9.7 FP1

Notable Updates and Enhancements

- **HADR Reads on the Standby**
- **Range Partitioning Improvements**
- **Compatibility Improvements**
- **LDAP Enhancements**
- **Platform Support Updates**



DB2 9.7 FP2

Notable Updates and Enhancements

- **Concurrent Access**
- **Serviceability**
- **HA Improvements**
- **LDAP**
- **Compatibility**
- **Platform Support Updates**



DB2 9.7 FP3

Notable Updates and Enhancements

- **Stability**
- **Concurrency**
- **Install Improvements**
- **Serviceability**
- **Compatibility**
- **Platform Support Updates**



DB2 9.8 – DB2 pureScale



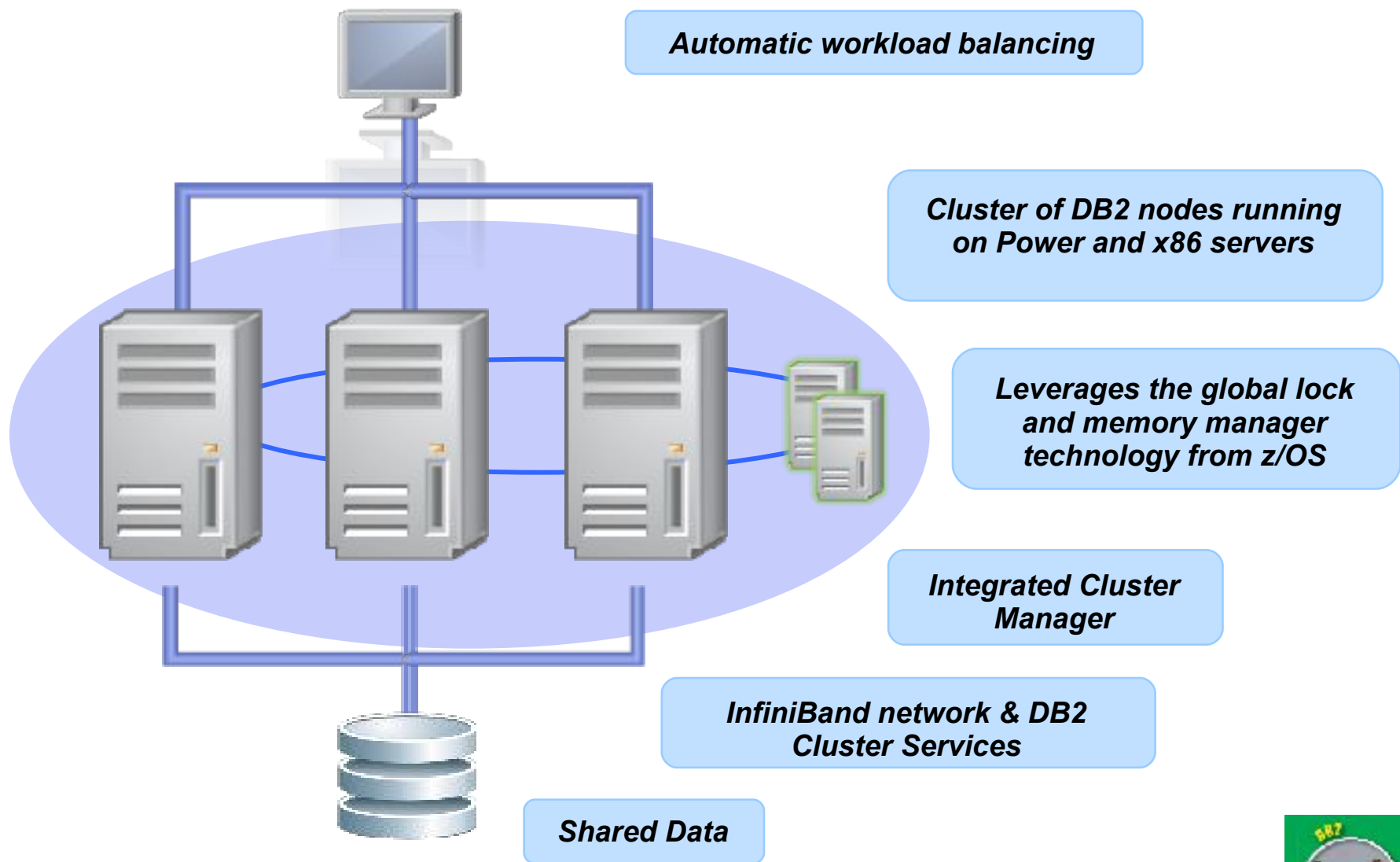
DB2 pureScale

- **Unlimited Capacity**
 - Buy only what you need, add capacity as your needs grow
- **Application Transparency**
 - Avoid the risk and cost of application changes
- **Continuous Availability**
 - Deliver uninterrupted access to your data with consistent performance



Learning from the undisputed Gold Standard... System z

DB2 pureScale Architecture

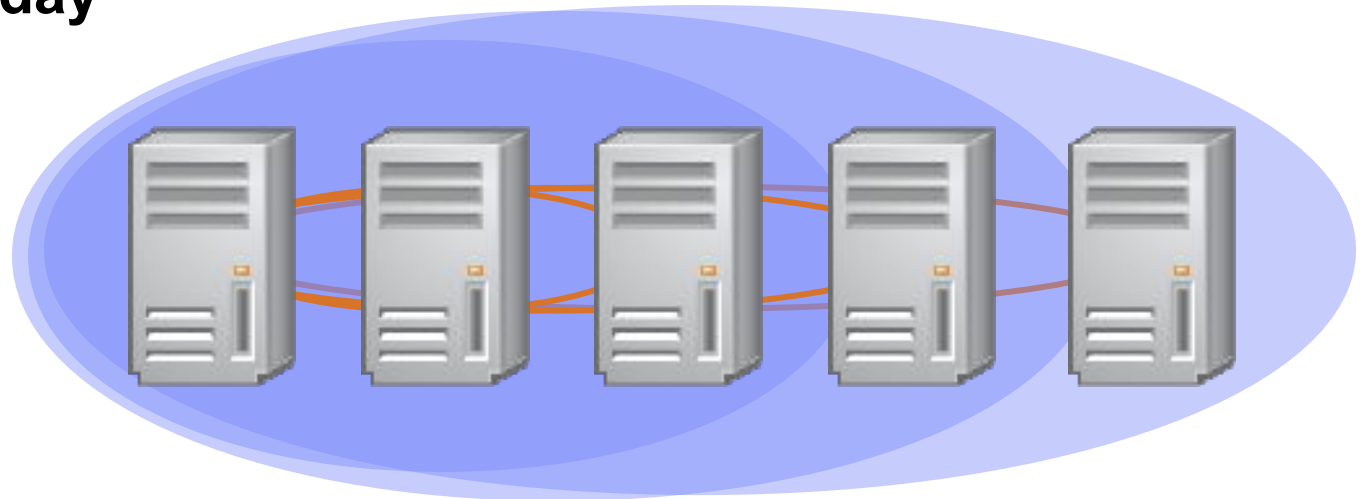


Virtually Unlimited Capacity

- **DB2 pureScale has been designed to grow to whatever capacity your business requires**
- **Flexible licensing designed for minimizing costs of peak times**
- **Only pay for additional capacity when you use it even if for only a single day**

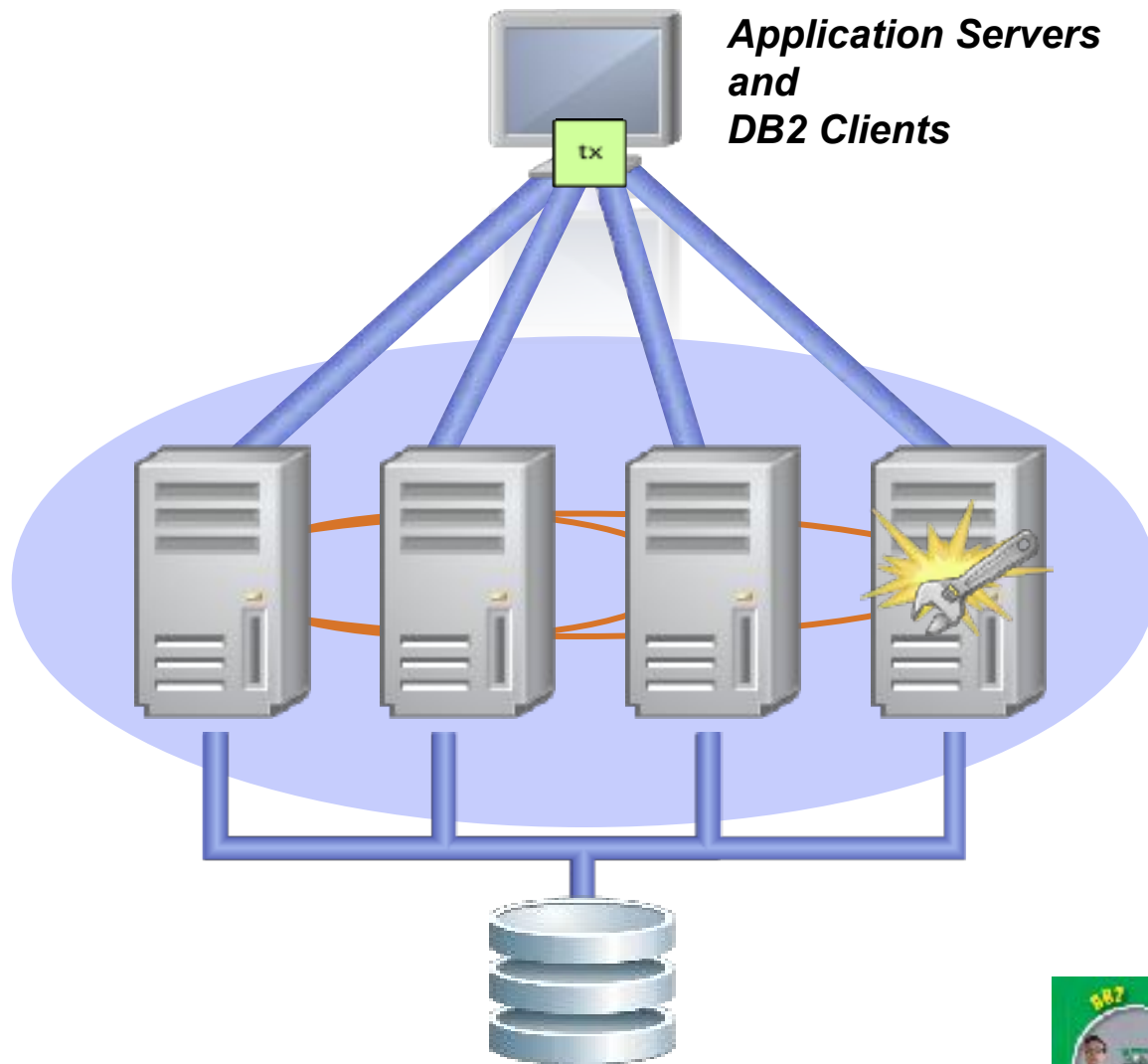
Solution

Use DB2 pureScale and add another server for those two days, and only pay sw license fees for the days you use it.



Recover Instantaneously From Node Failure

- **Protect from infrastructure related outages**
 - **Redistribute workload to surviving nodes immediately**
 - **Completely redundant architecture**
 - **Recover in-flight transactions on failing node in as little as 15 seconds including detection of the problem**



DB2 Advanced Enterprise Edition

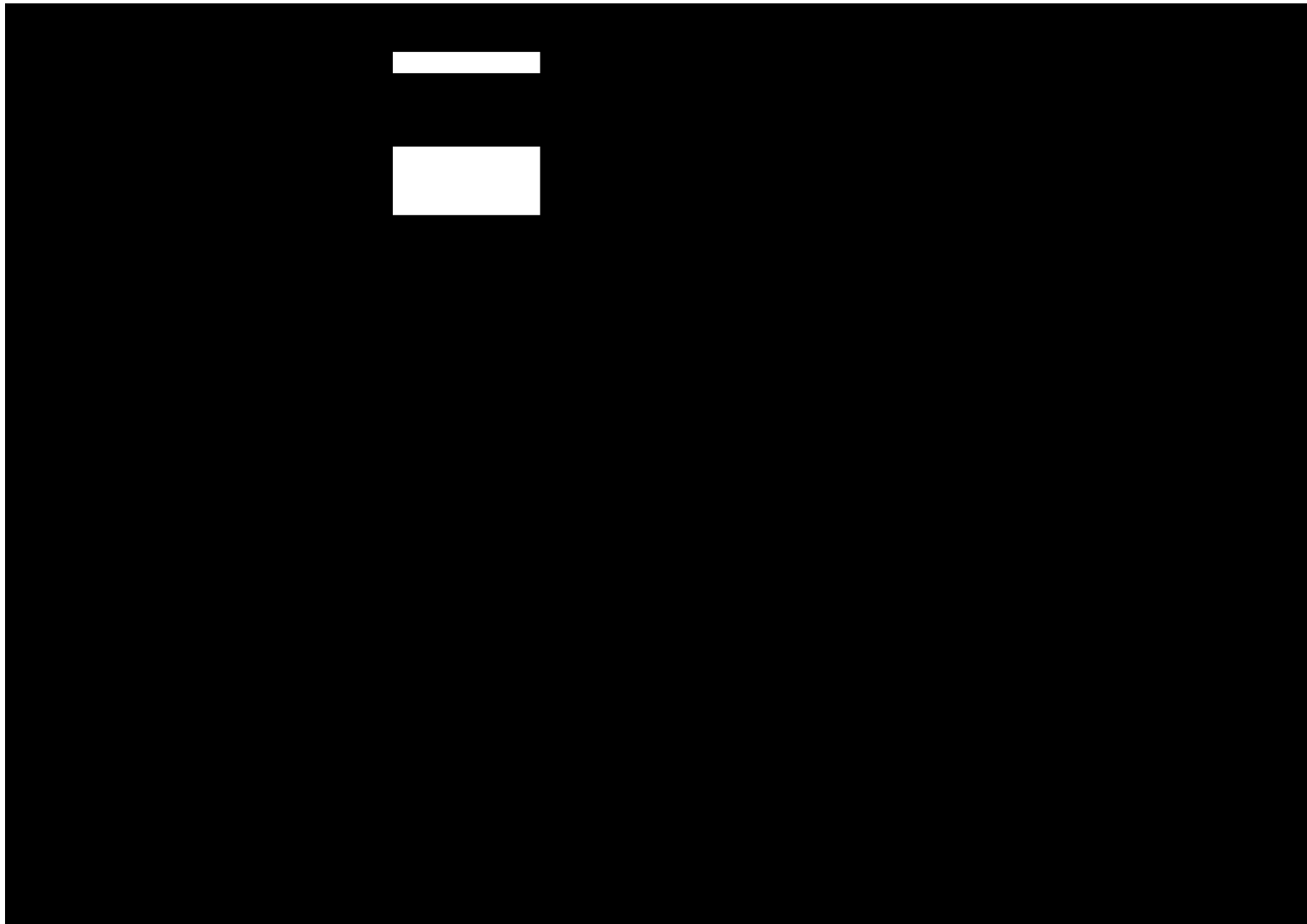


What did Customers ask for with DB2?

- **Be Simpler**
 - More value in the base product
 - One edition with all the features in it
 - Customers very tired of IBM and Oracle “nickel and diming” them on features
- **Great Tooling**
 - High quality tools included in DB2
- **Easy to Champion DB2**
 - Easy to answer ***“Why should we move to DB2?”***
 - Great ROI savings with compression, performance tuning & workload management all included



DB2 9.7 Packaging as of October 5 2010

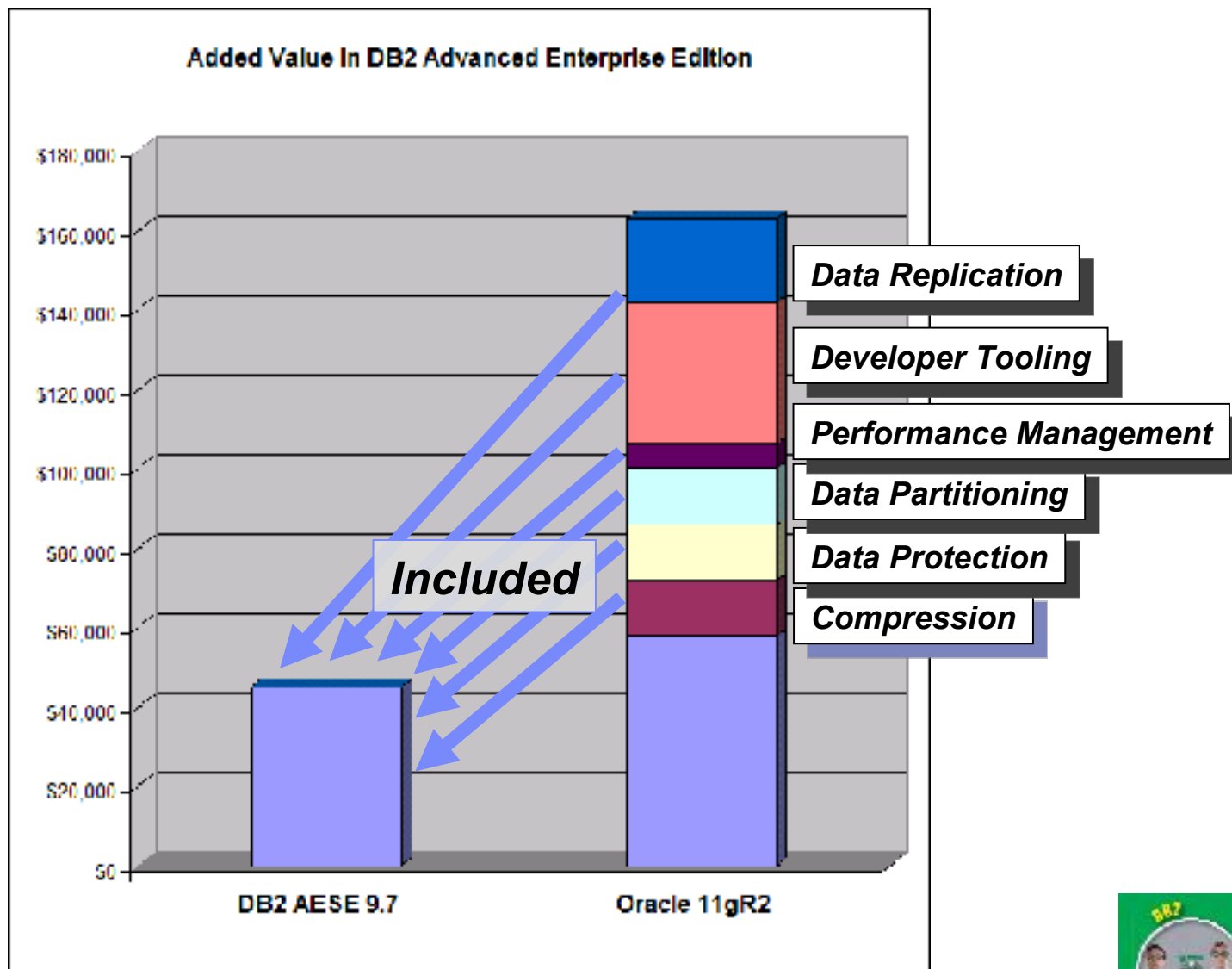


New Features/Capabilities in DB2 AESE

- **DB2 Storage Optimization**
 - Provides compression for table rows, values, XML, indexes, temporary tables, and backups
- **DB2 Performance Optimization**
 - Provides Workload Management and Optim Performance Manager 4.1
- **Optim Database Administrator 2.2.3**
- **Optim Development Studio 2.2.1**
- **Homogeneous Replication**
 - Limited to one active-active pair
- **InfoSphere Federation Server**
 - Limited to homogeneous federation (DB2 LUW and Informix) plus Oracle
- **Label Based Access Control (LBAC)**
 - Security allowing administrators to control user read/write access at the table column and row level



Added Value in DB2 AESE



Optim Tools

- **Optim Performance Manager**
 - Monitor KPIs and alert threshold violations
 - Drill-down into topical dashboards
 - Integrate with query analysis tools
 - Prevent problems with workload management and proactive planning
- **Optim Database Administrator**
 - Manage database objects and privileges
 - Automate and script structural database changes
 - Forward and reverse schema engineering
 - Analyze impacts and dependencies
 - Migrate database objects, data, and privileges
- **Optim Development Studio**
 - Integrated development environment for SQL and XQuery queries, stored procedures, UDFs, web services and Java data access layers
 - Deploy database objects across servers
 - Integration with Rational Software Development Platform
- **Data Studio**
 - Query formatting and statistics advice
 - Stand-alone option for smaller footprint (reduced function)
- **Data Studio Health Monitor**
 - Health monitoring

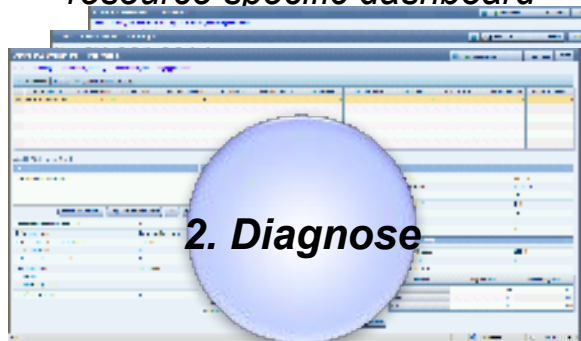


Optim Tools

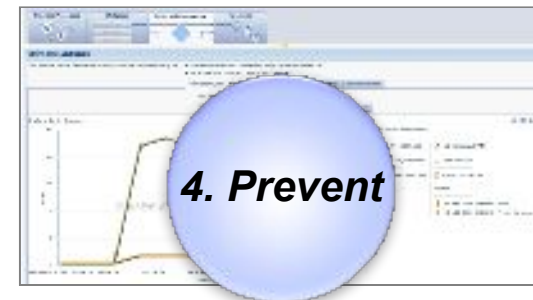
Get early warning of potential problems



Diagnose database problems with resource specific dashboard



Prevent problems with workload management



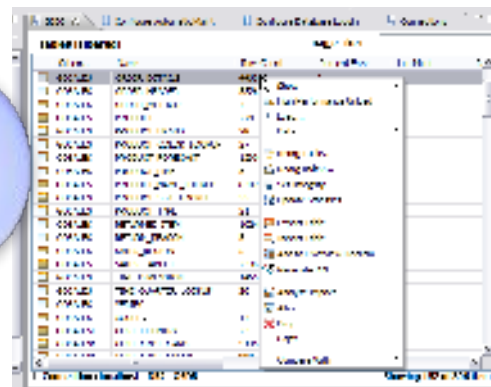
Optim Performance Manager + Workload Manager

Develop, test, and tune queries and routines



Optim Development Studio
 *Optim Query Tuner and
 *Optim pureQuery Runtime

Administer databases



Optim Database Administrator

3. Solve



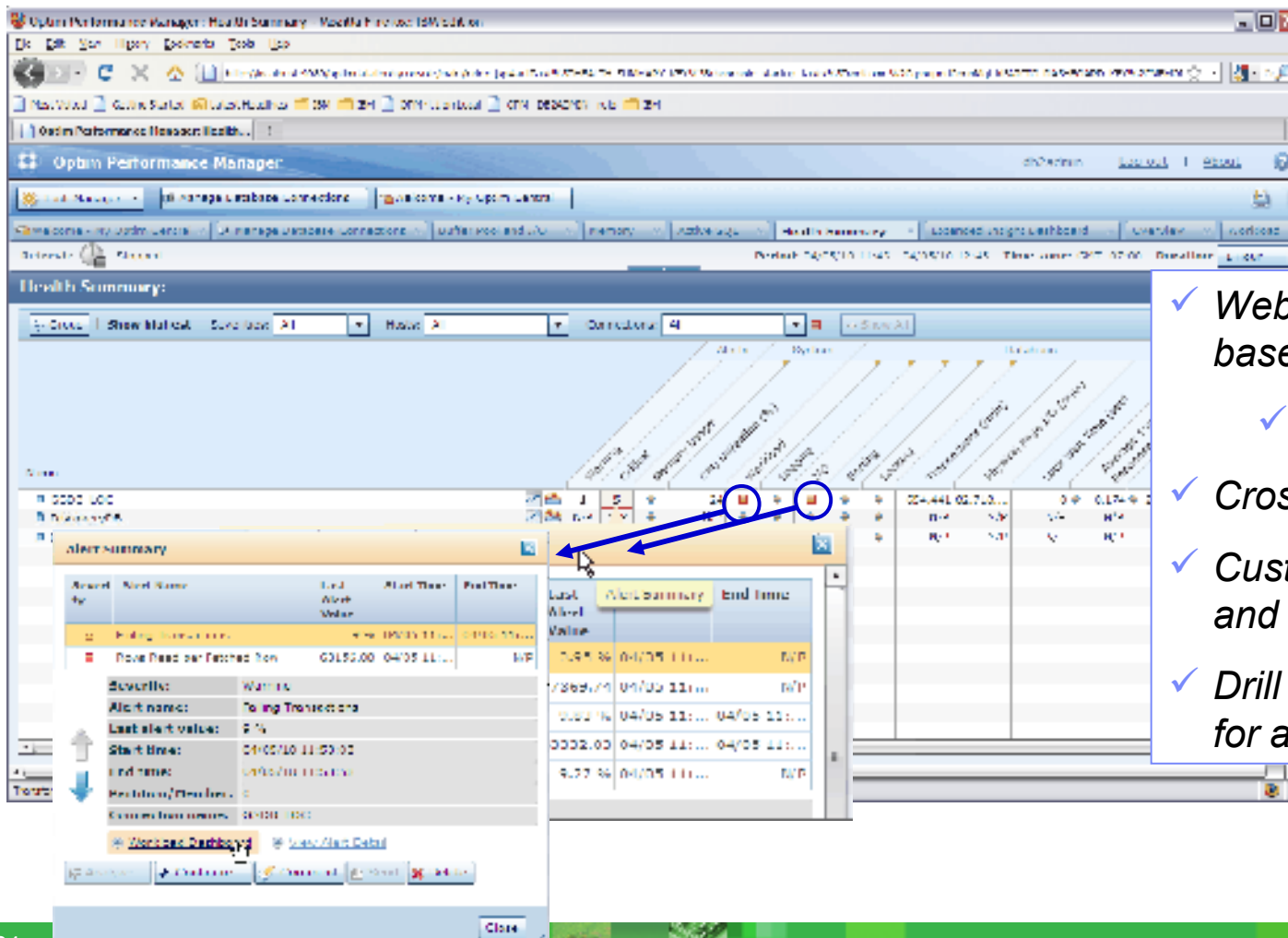
* Add-on products

Optim Performance Manager

Quickly identify problems before they impact the business

Identify

- Alert of potential problems
- Visual quick scan of complex environment



- ✓ Web based dashboards based on KPIs
 - ✓ KPI templates included
- ✓ Cross-database summary
- ✓ Customized email, SMTP, and SNMP notifications
- ✓ Drill through to detailed data for alerted condition

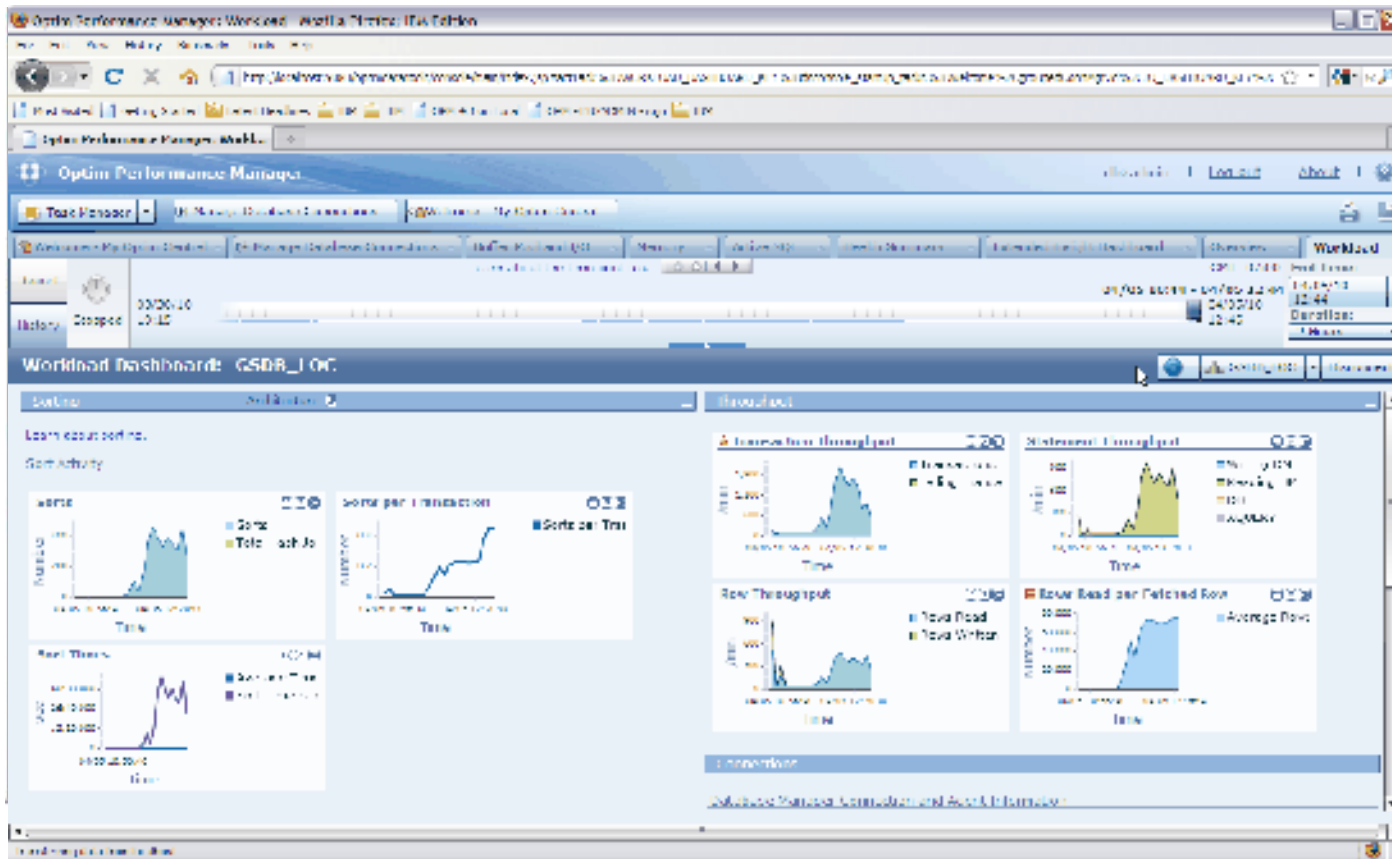


Optim Performance Manager

Drilldown to diagnose alerts to find the problem

Diagnose

- Drill down into problem detail and related content
 - Analyze captured data
- ✓ Resource specific dashboard feature relevant metrics
 - ✓ Memory
 - ✓ Buffer pool & I/O
 - ✓ SQL
 - ✓ Logging
 - ✓ Locking
 - ✓ Utilities
 - ✓ System
 - ✓ Workload
 - ✓ Historical comparison
 - ✓ Browser-based collaboration



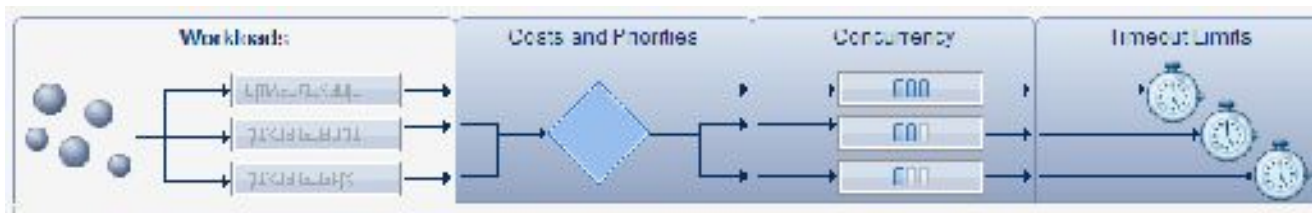
Optim Performance Manager and WLM

Prevent problems by proactive management

- **Manage workloads**
 - Meet business objectives according to their priority
 - Allocate resources to highest priority work
 - Protect data server from overload
 - Set limits on how long a query can run
 - Restrict CPU resources for a specific line of business, group of users, or application
 - Monitor and tune iteratively
 - Understand what is running
 - Diagnose and correct performance problems

Prevent

- Auto manage workloads
- Monitor and analyze historical trends for planning



- **Tune proactively**
 - Identify and tune high cost SQL
- **Analyze trends**
 - Support capacity planning and growth

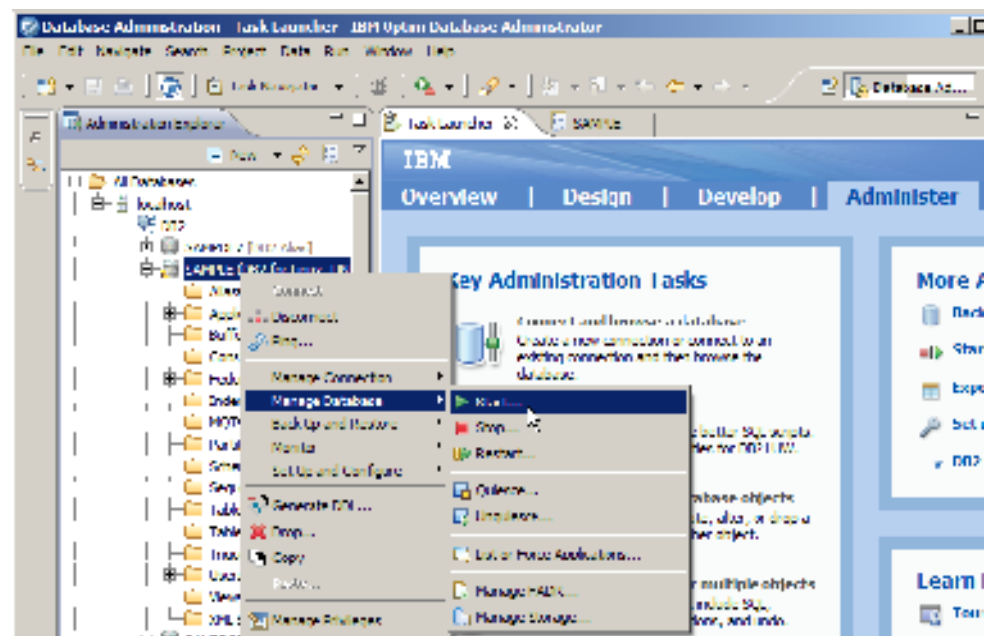


Facilitate Database Administration

Save time, reduce errors, and foster teamwork



- **Save time**
 - Build database maintenance scripts
 - Perform database maintenance
 - Clone databases
 - Migrate data and privileges
 - Compare and synch
 - Build and debug database routines
- **Reduce errors and outages**
 - Visualize dependencies and impacts
 - Automatically manage dependent objects and factor in required maintenance
 - Save and restore data for extended alters
 - Easily undo changes
 - Facilitate iterative development
- **Foster team productivity**
 - Document changes for audit
 - Integrates Rational, Optim, and InfoSphere offerings

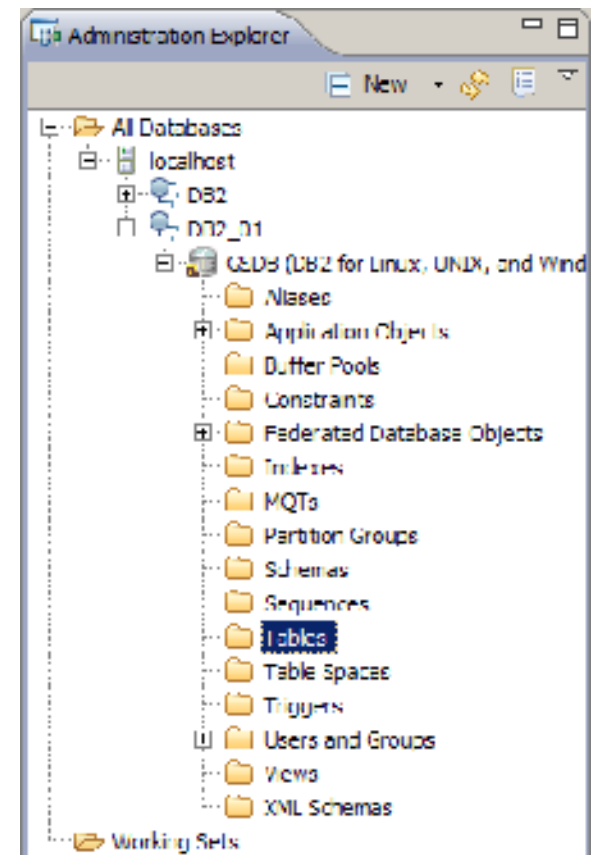


Optim Database Administrator



Administration Tasks

- **Catalog navigation:** Share connections, filter, create working sets, show related or dependent objects
- **Object management:** Create, alter, drop, rename, start, stop, quiesce, grant, revoke
- **Privilege management:** User, group, role,
- **Maintenance management:** Automatic maintenance, utility execution
- **Availability management:** Backup, recover, HADR configuration
- **Script and routine development:** Generate DDL, SQL development, visual explain stored procedure development, UDF development
- **Change management:** Make a copy, change in place, forward and reverse engineer, compare and synch, database migration



Managing Database Synchronization

Invoke compare and migrate objects

Migrate from a Database Catalog, Model, or Script

Mask Objects Names or Exclude Objects

Identify differences and select them for the target database

View impacted objects, preview and customize commands, and run

The screenshot displays the 'Change Management Script Editor' window. The interface includes a title bar with tabs for 'US DBDEV changexml', 'Connections', 'US DBDEV', and 'US DBDEV target.cbm'. Below the title bar, there is a description: 'The Change Management Script Editor allows you to access objects, make database changes, manage the impact...'. There are two expandable sections: 'Working with Objects' and 'Commands'. The 'Commands' section is expanded, showing a list of SQL commands. At the bottom of the 'Commands' section, there are three buttons: 'Edit...', 'Data Options...', and 'Run...'. The SQL commands are as follows:

```
--<ScriptOptions statementTerminator=";" />
CONNECT TO QSD3;
EXPORT TO ':\default_GOSALES_ORDER_METHOD.dat' OF DEL SELECT * FROM
GOSALES.ORDER_METHOD;
EXPORT TO ':\default_GOSALES_PRODUCT_COLOR_LOOKUP.dat' OF DEL SELECT * FROM
GOSALES.PRODUCT_COLOR_LOOKUP;
EXPORT TO ':\default_GOSALES_PRODUCT_BRAND.dat' OF DEL SELECT * FROM
GOSALES.PRODUCT_BRAND;
EXPORT TO ':\default_GOSALES_PRODUCT.dat' OF DEL SELECT * FROM GOSALES.PRODUCT;
CONNECT TO QSD3DEV;
CREATE TABLE GOSALES.PRODUCT_BRAND (PRODUCT_BRAND_CODE INTEGER NOT NULL ,
PRODUCT_BRAND_NAME VARCHAR (50) ) IN QSD3DEV;
COMMENT ON TABLE "GOSALES"."PRODUCT_BRAND" IS 'These are all the product brands
associated with product table.';
ALTER TABLE GOSALES.PRODUCT_BRAND ADD CONSTRAINT PRODUCT_BRAND_CODE_PK PRIMARY
KEY (PRODUCT_BRAND_CODE);
IMPORT FROM ':\default_GOSALES_PRODUCT_BRAND.dat' OF DEL METHOD P (1,2)
```


Monitor Health and View Status

The screenshot displays the IBM Data Studio 'Monitor' tab. On the left, 'Key Monitoring Tasks' includes viewing health summaries, alerts, and application connections. The main area shows 'More Monitoring Tasks' and a 'Health Summary' window. The 'Health Summary' window features a table with columns for Data Source, Alerts, Cycles, Data, Connections, Storage, and Recovery. A context menu is open over the table, with 'Health Summary' selected.

Monitoring Integration

Health Monitor

Launch from a context menu

Data Source	Alerts	Cycles	Data	Connections	Storage	Recovery
HIGHMEM1	1	1	1	1	--	--
CSD8	1	1	1	0	--	--
SAMPLE	1	0	1	0	--	--



IBM Optim Development Studio



Speed application design, development, and deployment while increasing data access performance and manageability

- **Enhance developer productivity**

- Develop, test, and run queries, procedures, and functions.
- Deploy routines across servers
- Generate Java data access layers
- Analyze impact of changes
- Enhance problem isolation
- Copy data

- **Improve performance**

- Use JDBC and SQL data access best practices
- Identify application hot spots
- View access plans

DB2.

Informix.

ORACLE

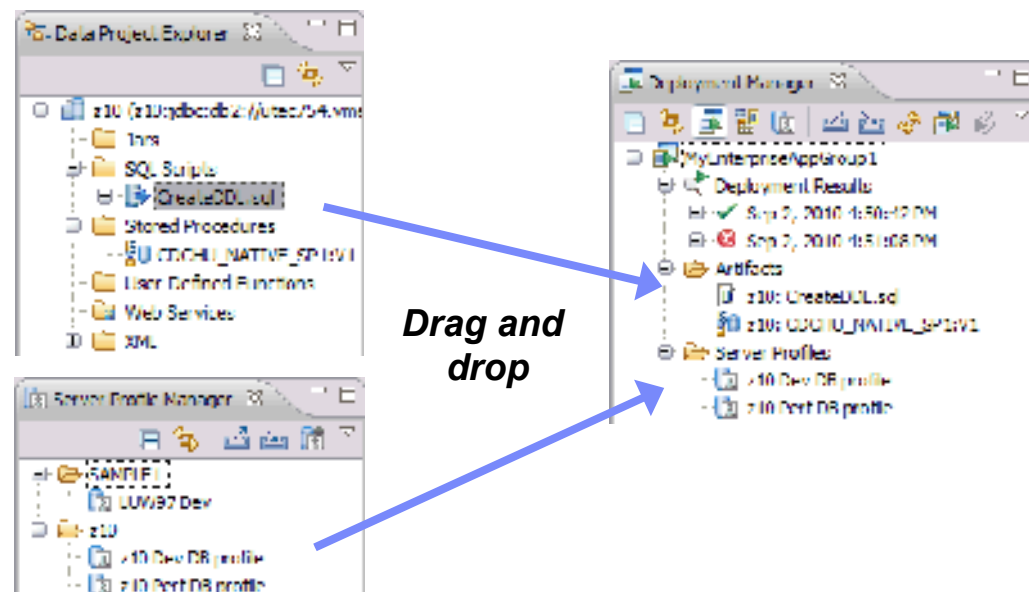


UNIVAR

“IBM Optim Development Studio enables us to bridge the gap between object-oriented design and relational database technology. As a result, we can speed the development of high quality applications and improve developer productivity by between 25 and 50 percent”

Stored Procedure and UDF Development

- **Template-driven creation**
 - Standardize for the organization or the project
- **Rich debugging**
 - DB2 SQL, Java, and PL/SQL procedures and function
 - Oracle PL/SQL procedures
- **Deployment management**
 - Deploy a set of artifacts to a set of target databases



Gaining More Insight with SQL Outline View

The screenshot shows the SQL Outline View in IBM DB2 Performance Center. It displays a list of SQL statements with their execution metrics. A callout points to the SQL text, another to the metrics table, and others to the context menu and project tree.

Callouts:

- Correlate with issuing code**: Points to the Java code in the background window.
- Visualize application SQL**: Points to the SQL text in the outline view.
- Visualize execution metrics**: Points to the table of execution statistics.
- Execute, tune, share, trace, explore SQL**: Points to the context menu for a SQL statement.
- Replace SQL without changing the application**: Points to the SQL text in the outline view.
- Compare performance data of various versions of your application**: Points to the project tree on the left.
- Correlate with data source attributes**: Points to the project tree on the left.

SQL Statement	Executions	Time (ms)	Time (s)	Time (min)	Time (hr)
SELECT CUST_CODE, CUST_FIRST_NAME, CUST_LAST_NAME, C...	4	2.11	2.17	0.70	1.28
SELECT CUST_CODE, CUST_FIRST_NAME, CUST_LAST_NAME, C...	4657	46.97	1.37	0.23	0.27
SELECT CUST_CODE, CUST_FIRST_NAME, CUST_LAST_NAME, C...	7	1.70	2.27	0.30	1.67
SELECT CUST_CODE, CUST_FIRST_NAME, CUST_LAST_NAME, C...	4	0.17	1.47	0.29	1.14
SELECT CUST_CODE, COMPAN...	1	0.45	1.11	0.11	1.11

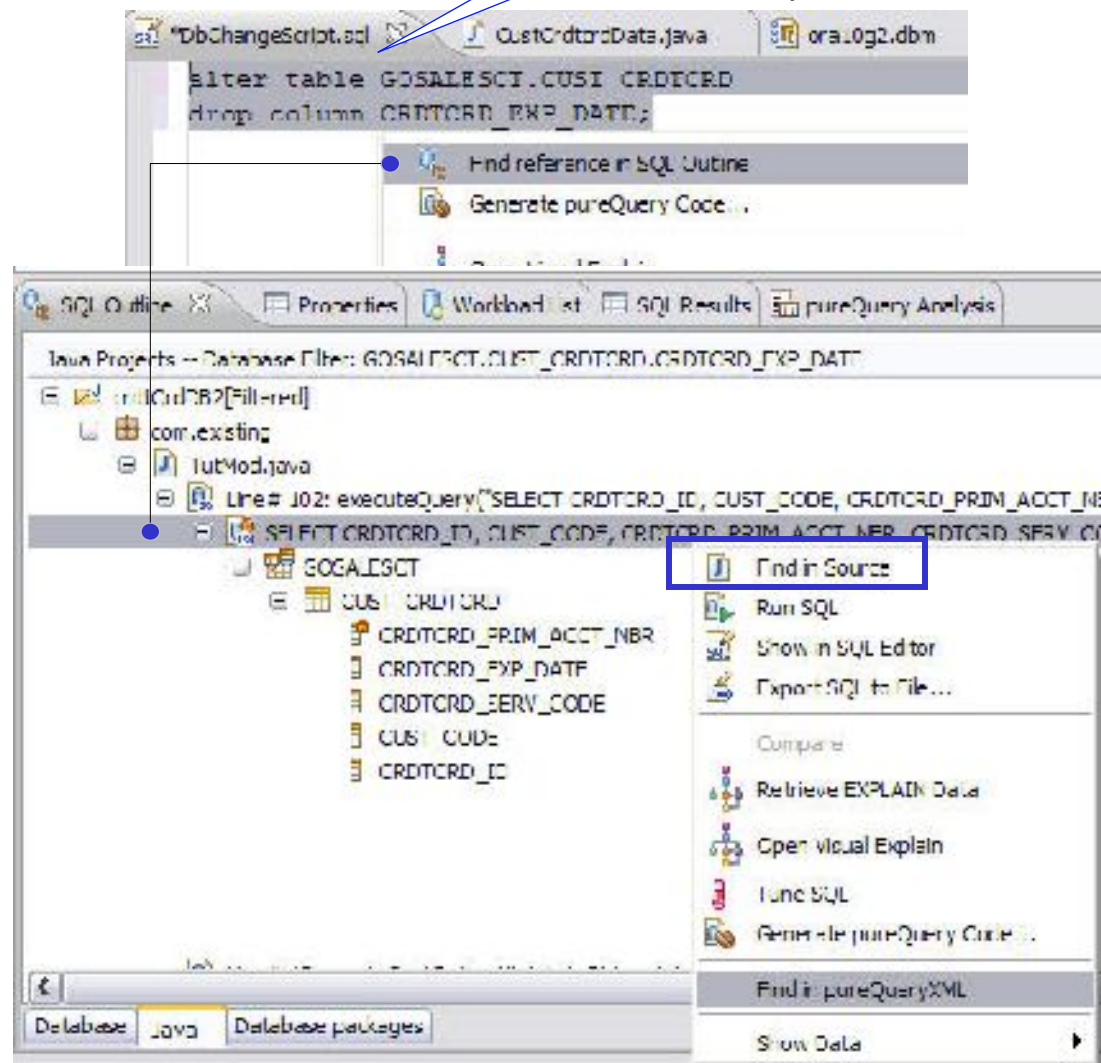


Extending Impact Analysis with Optim Development Studio

• Identify table references in Java packages

- Start from Data Source Explorer or from DDL
- Visualize in SQL Outline
- Find in source code or in pureQuery XML file
- Edit in source or in XML file without changing source

Start with ALTER DDL to visualize impact



Participate in the DB2 Galileo Beta



Participate in the Early Program

- The DB2 Galileo Early Program offers you the chance to preview and work with an early version of DB2, helping us deliver a better product for you
- You will be able to see how the new code will work in your specific environment, and be able to leverage the new functionality earlier than would be otherwise possible
- IBM will provide you with resources such as:
 - A focal point to direct questions to and help drive solutions to issues you may encounter
 - A collaboration area where participants can post questions, receive notification on code updates, demonstration materials, white papers, and more



DB2 Galileo Early Access Program

- Access DB2 Galileo without procuring any hardware or downloading any code ... get your DB2 Galileo server running on the Cloud within minutes... simply apply here: <http://freedb2.com/db2-early-experience-program-on-the-cloud/>
- Once accepted you will receive further instructions, as well as getting an Early Programs focal point to work with you
- If you have any questions about the program, please send e-mail to db2beta@ca.ibm.com, and we'll be happy to answer them



> Questions



Thank You!

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Thank you for attending!

