



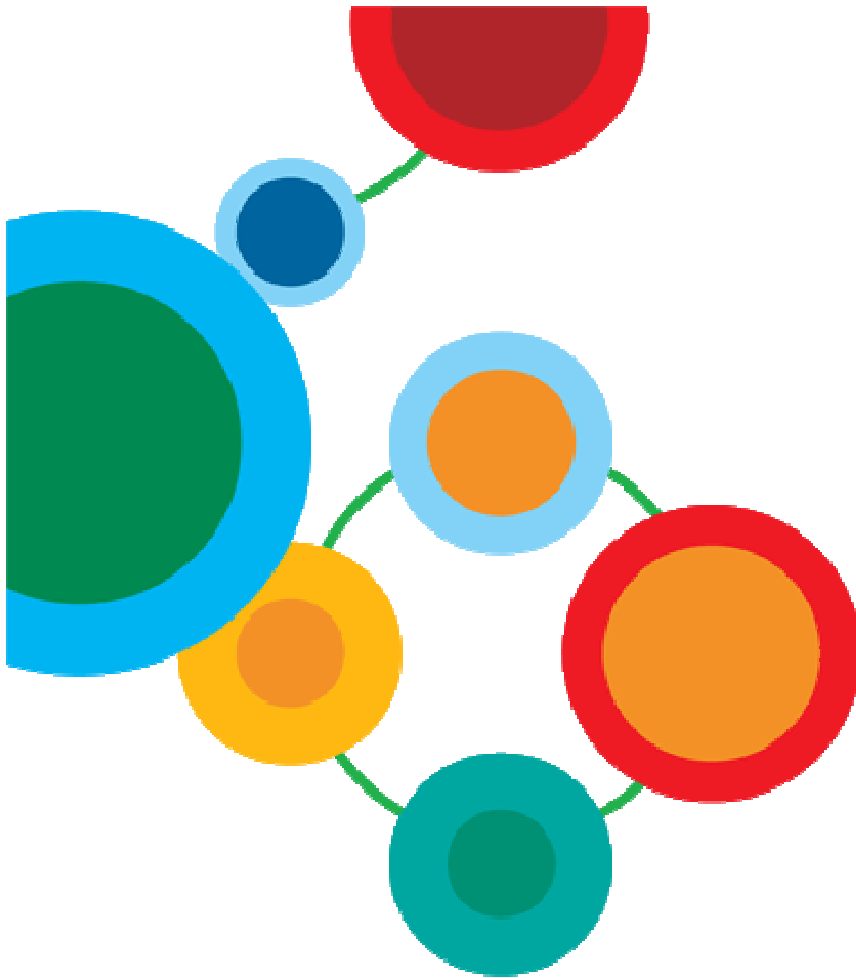
# Managing application performance using pureQuery

Session Number 2222

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IBM Software

**Information On Demand** 2011





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# Why customers have chosen pureQuery

- Better performance
  - Stable/predictable query performance
  - Reduced CPU consumption or improved throughput
- Greater control
  - Improved insights result in more efficient processes
  - Tighter security
- Simplified problem determination and impact analysis
  - Trace SQL to source code
  - Identify dependencies



# Managing data access performance using pureQuery

## Capture

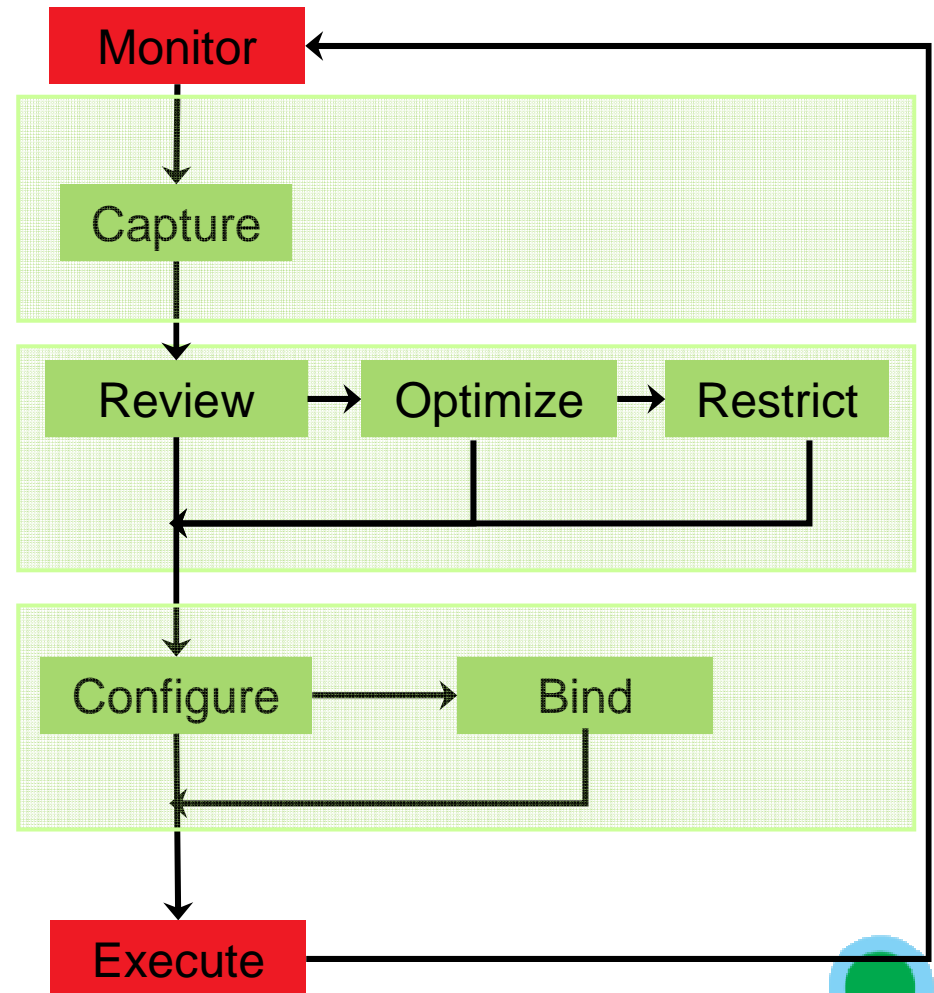
- Capture performance and application metadata

## Review and tune SQL

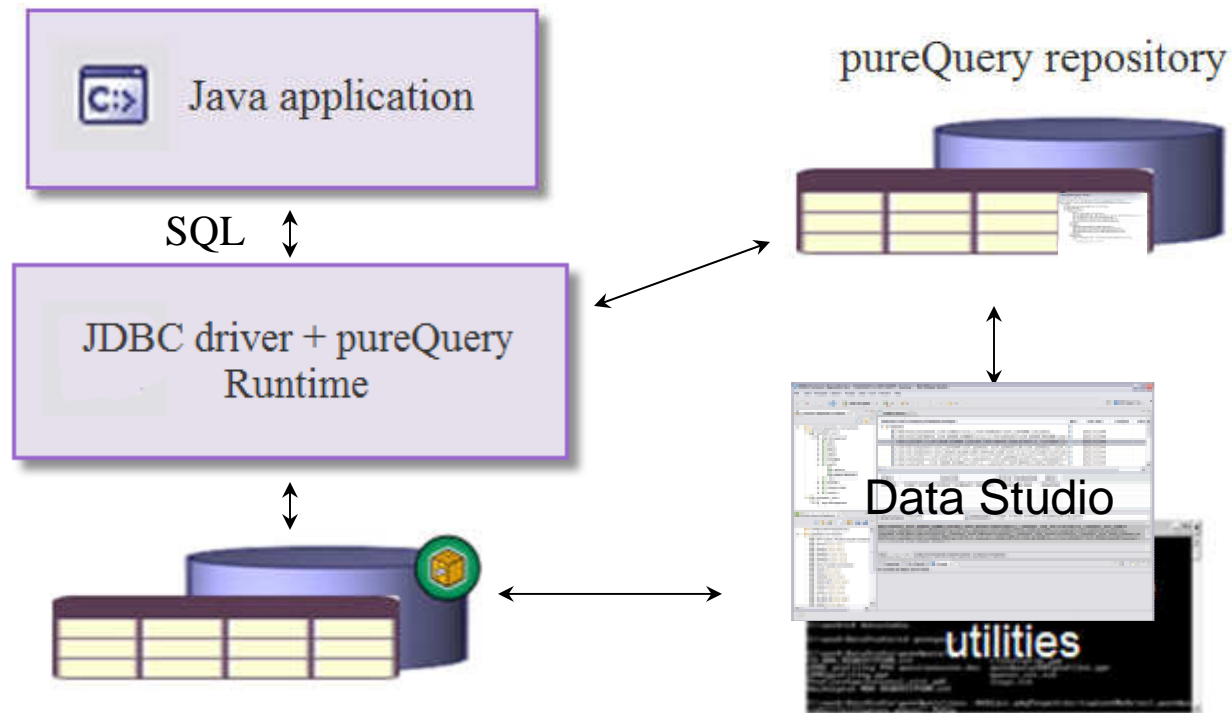
- Analyze coded/generated SQL

## Enable static SQL execution

- Lock-in access plan

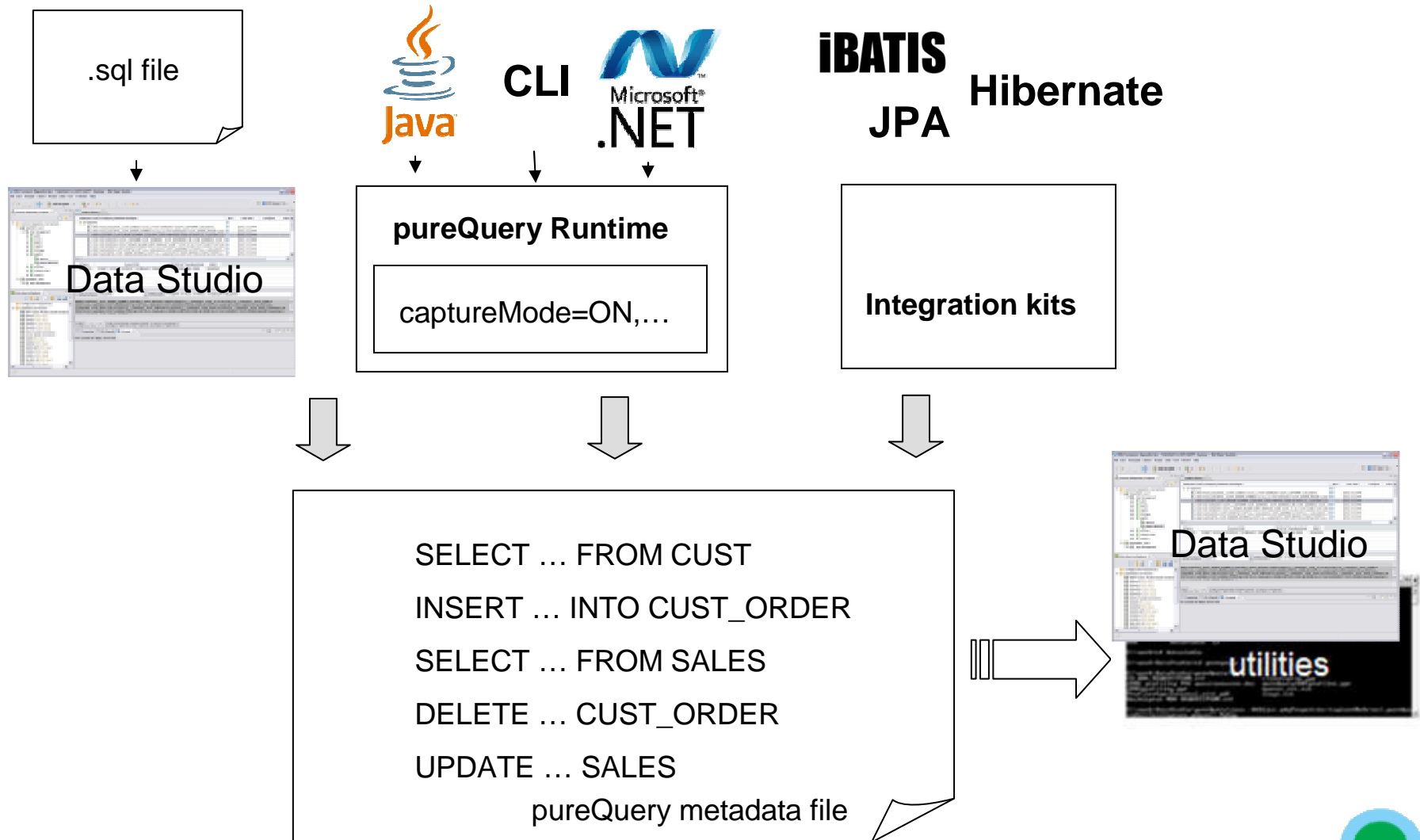


# Recap: How does pureQuery work for existing applications?



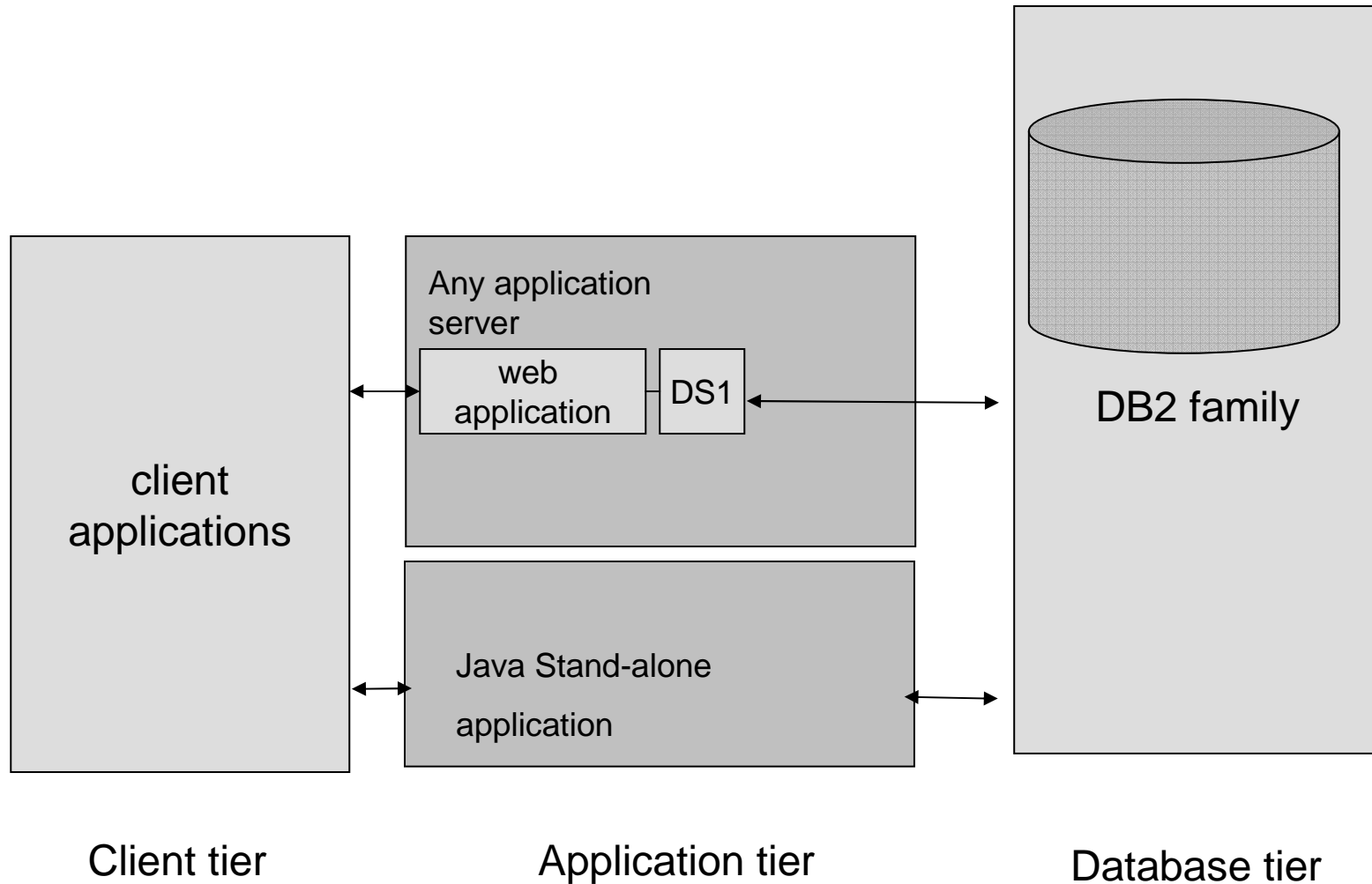


# Approaches to capturing pureQuery metadata





# A typical pureQuery deployment topology - before



Client tier

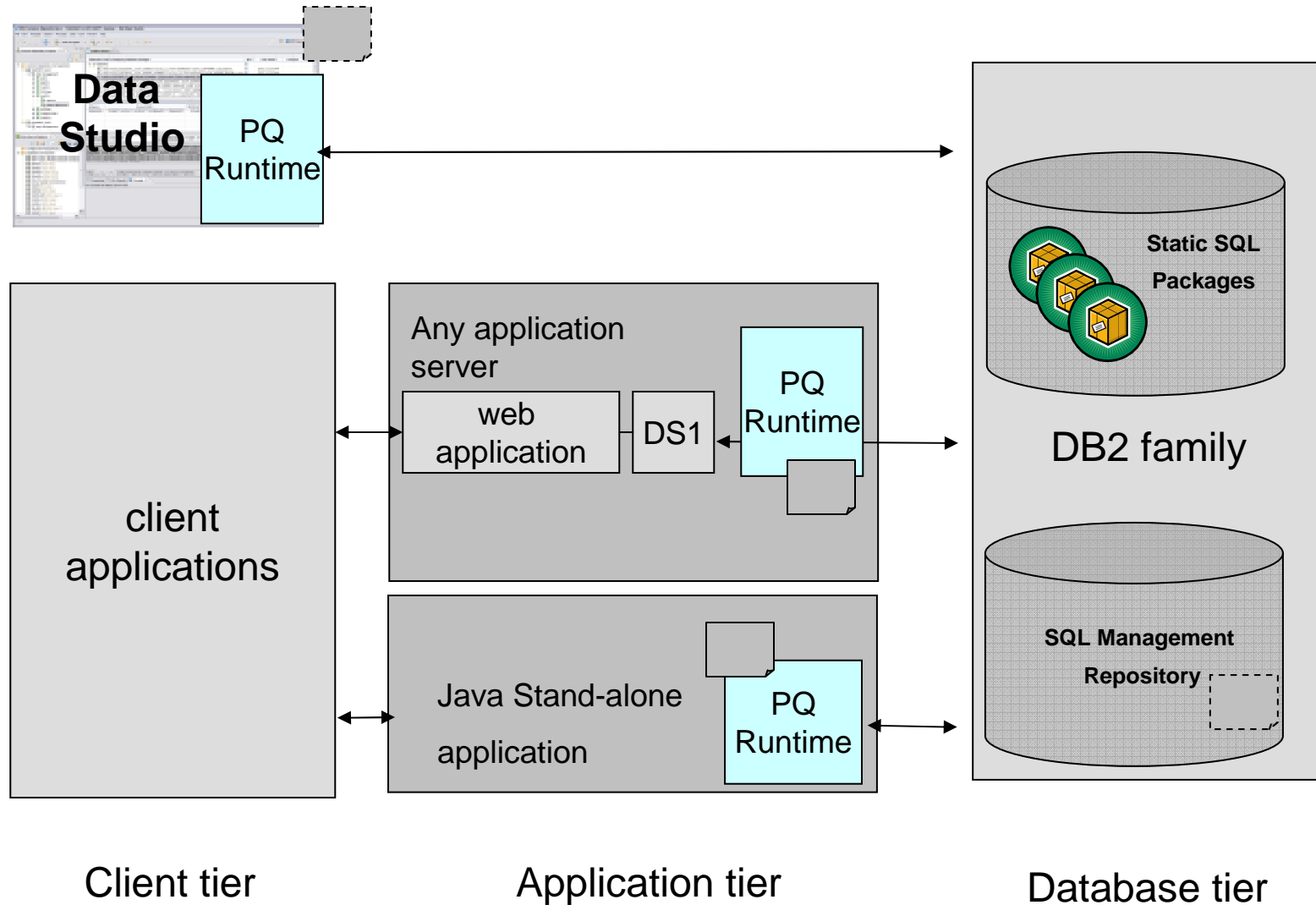
Application tier

Database tier





# A typical pureQuery deployment topology - after



Client tier

Application tier

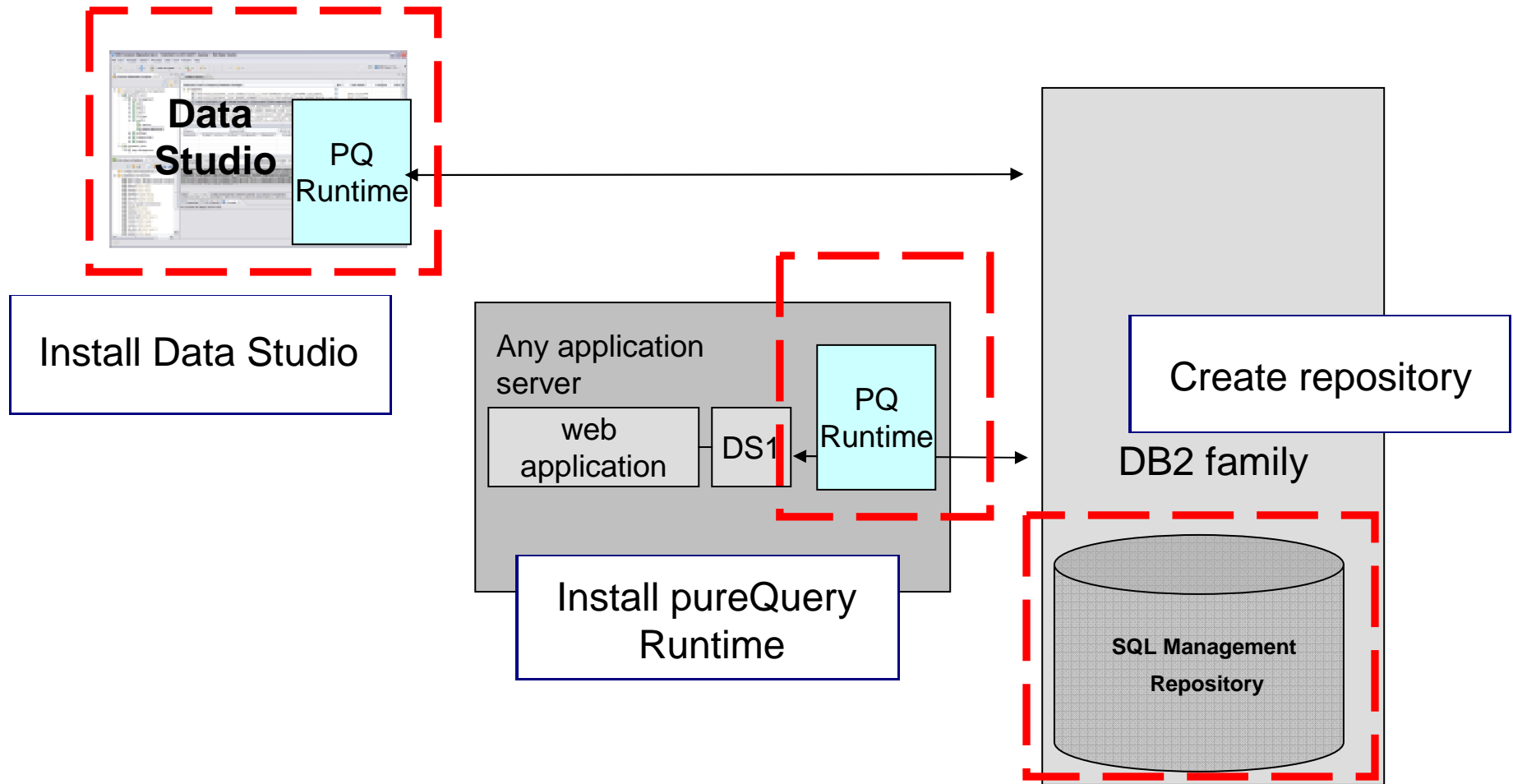
Database tier







# pureQuery deployment – installation and setup



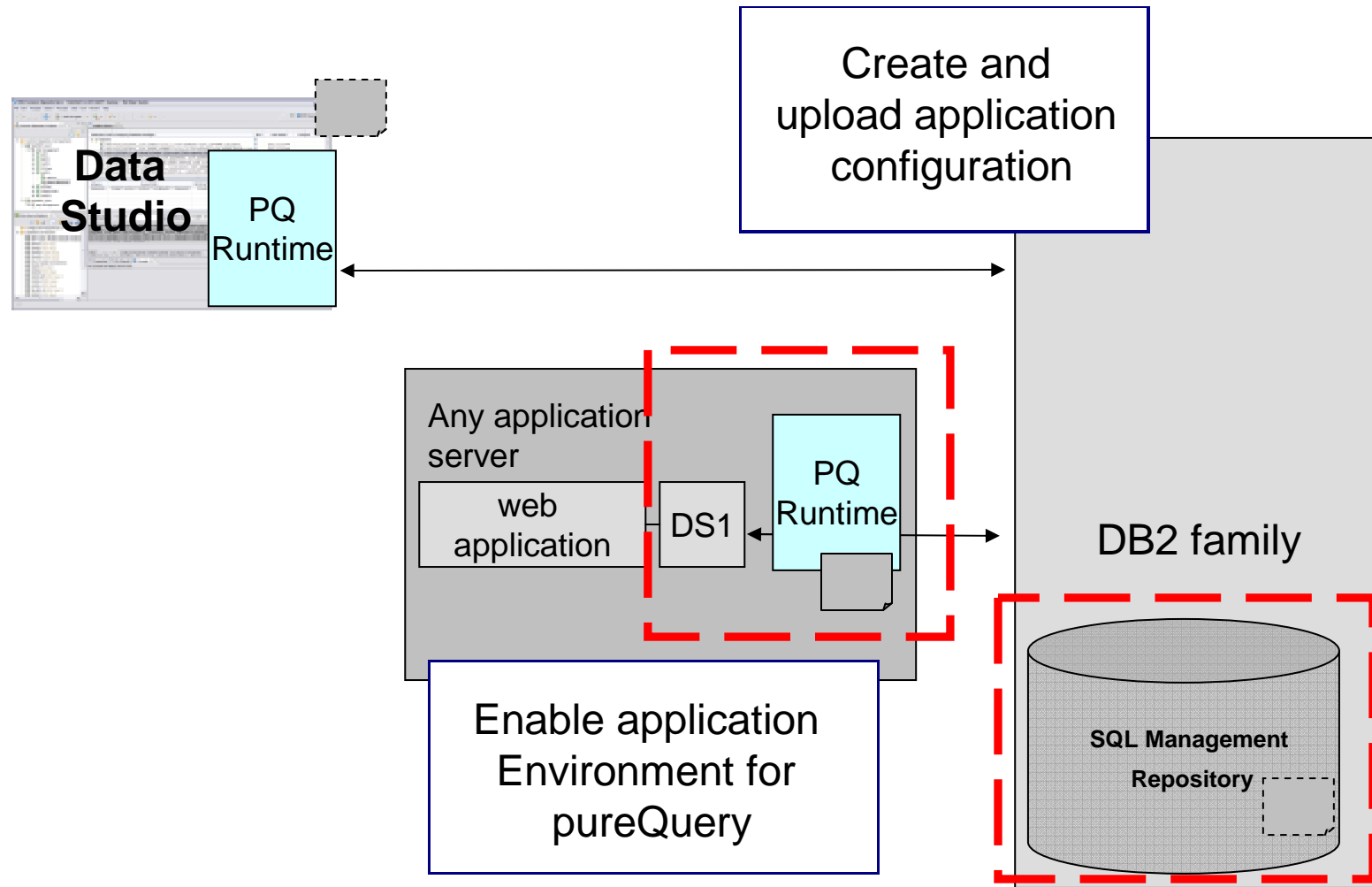
Client tier

Application tier

Database tier



# pureQuery deployment – application setup



Client tier

Application tier

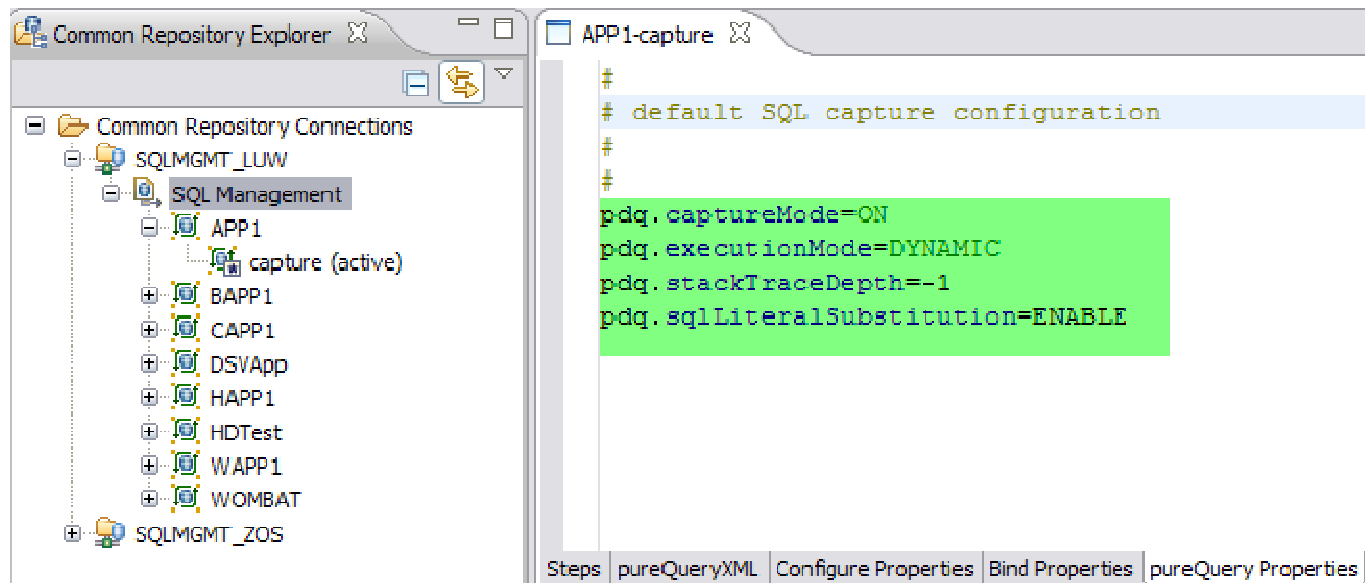
Database tier





# pureQuery deployment – defining the application configuration

- An application configuration (“runtime group”) consists of
  - application metadata (SQL, source code correlation information, ...)
  - configuration files
- Application configurations are stored in the SQL Management repository
- Data Studio provides the repository administration interface





# pureQuery deployment - configuring the application environment

- Most common approach:
  - Create pureQuery-enabled JDBC provider
  - Define SQL Management repository connection properties

The screenshot displays the configuration interface for a JDBC provider in IBM WebSphere. The breadcrumb navigation shows the path: **JDBC providers** > **PQ enabled DB2** > **Data sources** > **GSDB with pq** > **Custom properties**.

**JDBC providers**

**JDBC providers** > **PQ enabled DB2**

Configuration

**General Properties**

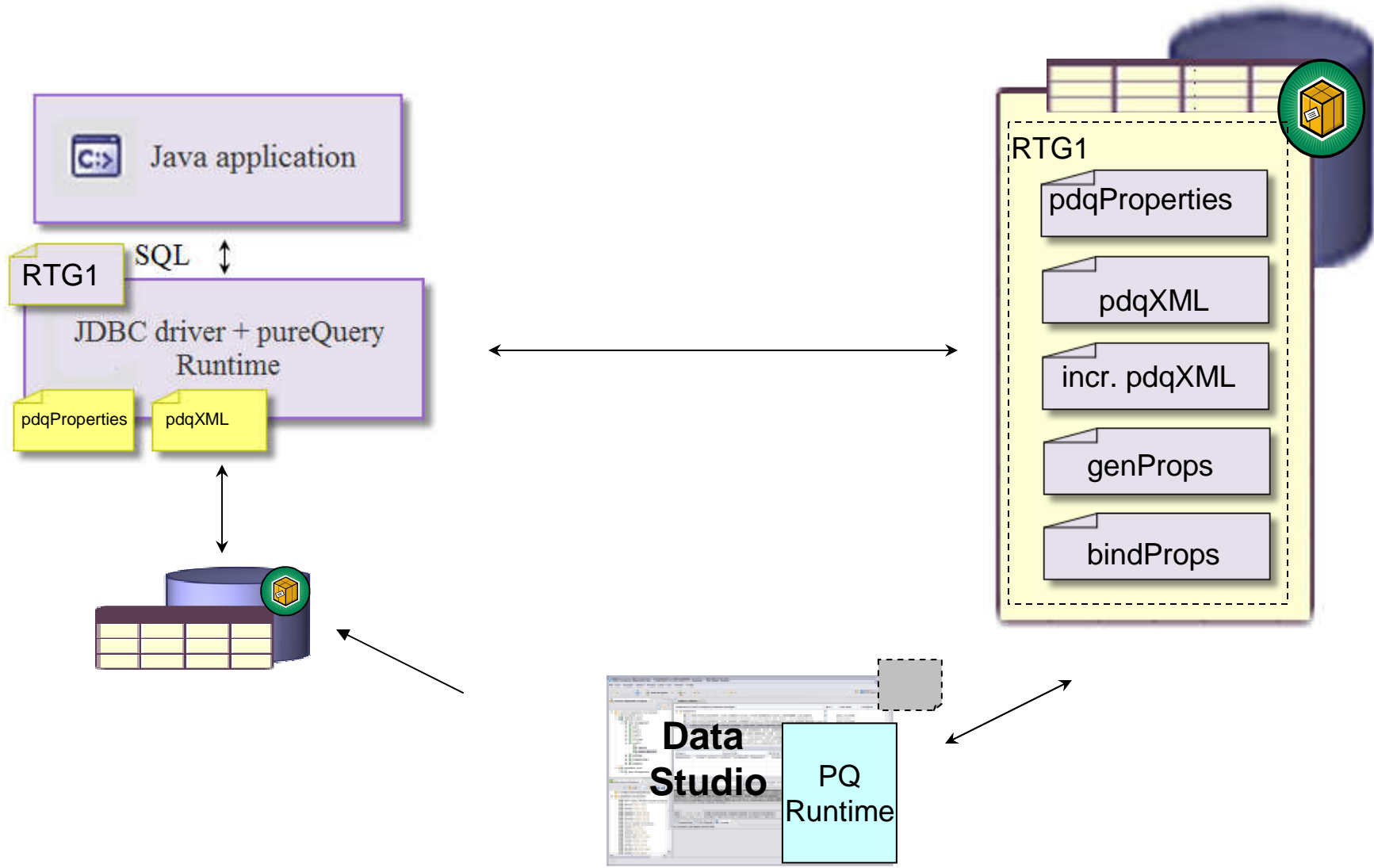
- \* **Scope**  
cells:IBM-FF9025E7AF0Node01Cell:nodes:IBM-FF9025E7AF0Node01:servers:server1
- \* **Name**  
PQ enabled DB2
- Class path**  
\${PO\_POC\_DRIVERS}/db2jcc.jar  
\${PO\_POC\_DRIVERS}/db2jcc\_license\_cu.jar  
\${PO\_POC\_DRIVERS}/db2jcc\_license\_cisuz.jar  
\${PO\_POC\_DRIVERS}/pdq.jar  
\${PO\_POC\_DRIVERS}/pdqagent.jar

You can administer the following resources:

<input type="checkbox"/>	<b>pdqProperties</b>	propertiesGroupId(APP1),propertiesRefreshInterval(1),repositoryReq.../pqrep)
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# Completing the pureQuery client-optimization process





# It's the insights! 🤔

- Application insights streamline common development tasks

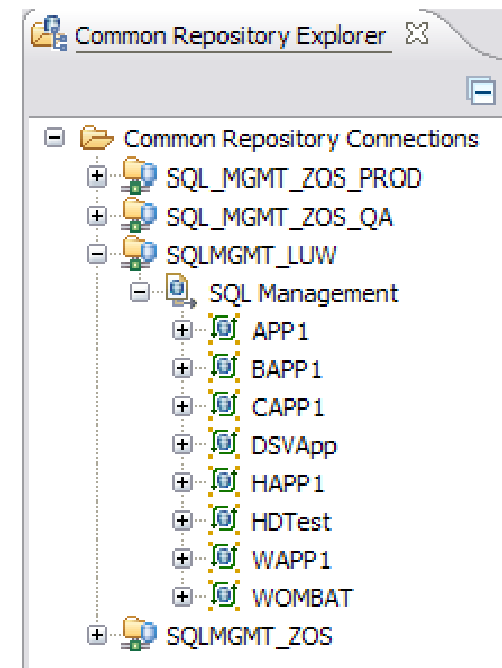
The screenshot shows an IDE with three main panels:

- Code Editor:** Displays the `findById` method in `CustCustomerDAO.java`. The line `CustCustomer instance = (CustCustomer) getSession().get("com.gosales.dataobjects.CustCustomer", id);` is highlighted in green. A callout box asks "Where did THAT SQL come from?" with an arrow pointing to this line.
- SQL Outline:** Shows the SQL query generated for the highlighted line: `select custcustom0_CUST_CODE as CUST1_2_0, custcustom0_CUST_ADDRESS1 as CUST2_2_0, custcustom0_CUST_EMAIL as CUST3_2_0 from GOSALESC.T.CUST_CUSTOMERS where CUST_CUSTOMERS.CUST_CODE = ?`. A callout box asks "Does the application manipulate the customer table?" with an arrow pointing to the `CUST_CUSTOMERS` table name.
- Database Explorer:** Shows the `GOSALESC.T.CUST_CUSTOMERS` table. A callout box shows a filter configuration for SQL statement types: `GOSALESC.T.CUST_CUSTOMERS` with checkboxes for `SELECT` (unchecked), `INSERT` (checked), `UPDATE` (checked), `DELETE` (checked), `MERGE` (checked), and `CALL` (unchecked).



# Managing the pureQuery application life-cycle

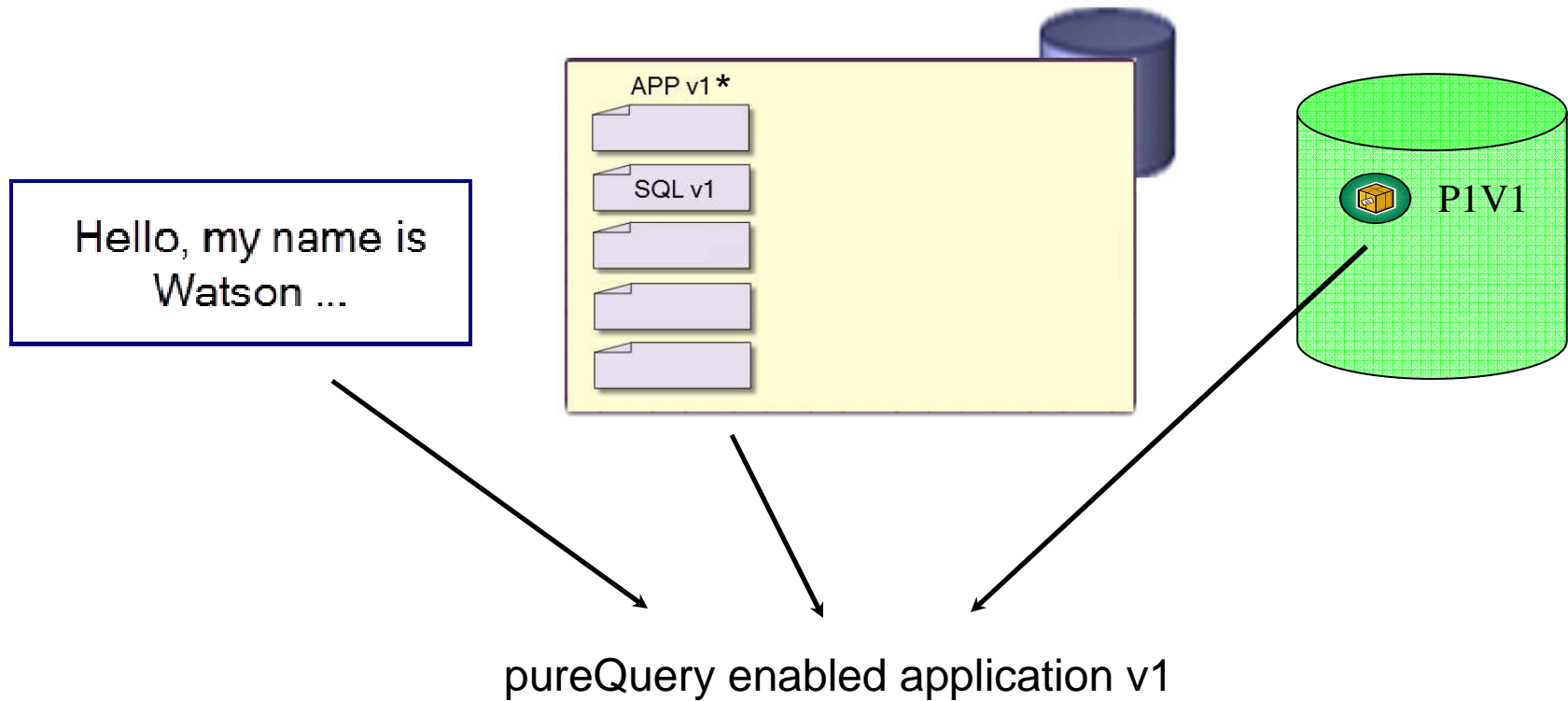
- Applications are typically deployed in multiple environments:  
development → QA → pre-production → production
- Use multiple SQL Management repositories
- Most common approach: one repository per environment
- Migrate between repositories using export/import





# Managing the pureQuery application life-cycle

- Applications change over time: pureQuery metadata and packages map to application versions

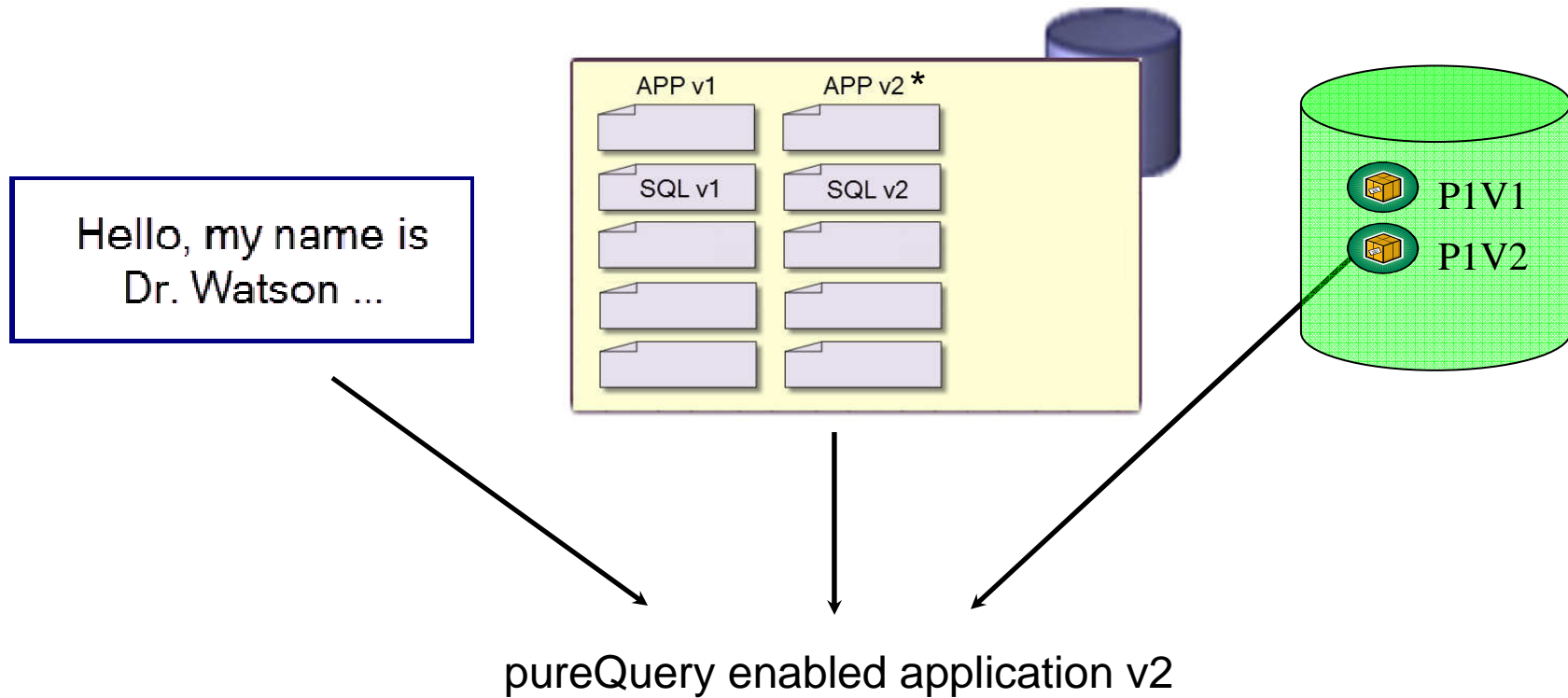






# Managing the pureQuery application life-cycle

- Switch to another version by activating it





## What's new in version 3.1?

- New efficient capture mode: NEW\_STMTS
- Enhanced SQL literal replacement support
- Easier portability if SQL contains hard-coded schema qualifiers are used
- Remove invalid SQL statements from capture file (e.g. referenced table was dropped)
- Metadata generation:
  - Perform Literal Substitution during generation
  - Use Optim Query Workload Tuner's exported XML as input
- Native pureQuery implementation: nested bean support
- ... and much, much more



# Thank You!

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    - **Enterprise Content Management** [ibm.com/software/data/content-management/usernet.html](http://ibm.com/software/data/content-management/usernet.html)
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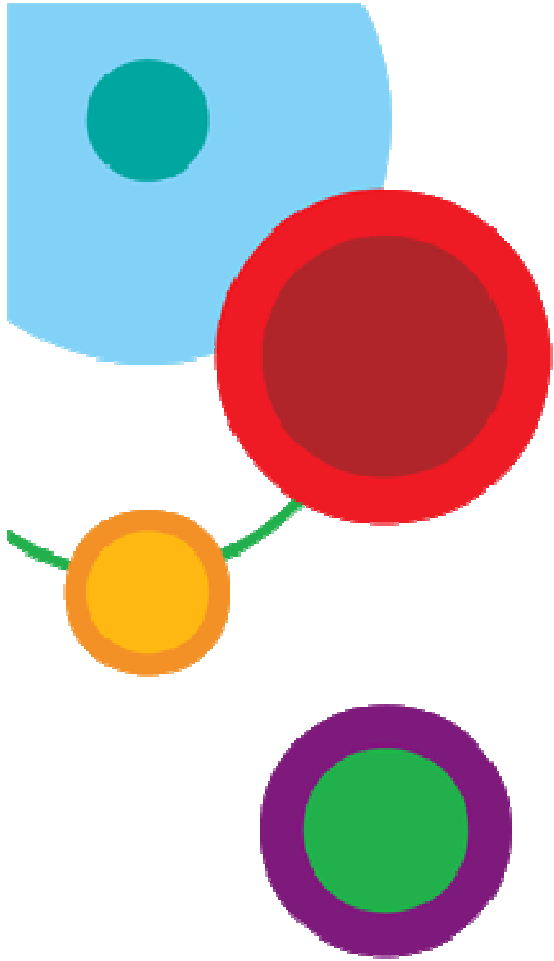
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## Backup



## What information is stored in the database repository?

