

IBM Rational Data Architect

Highlights

- ***Simplify data modeling—discover, visualize and model diverse and distributed data structures***
- ***Facilitate an enterprise-wide understanding of heterogeneous data assets***
- ***Improve accuracy and consistency throughout the enterprise via the foundation of high-quality data models compliant to company standards***

Companies today are facing a wide variety of problems associated with enterprise data modeling and information integration because of the ever-growing complexity of our enterprise databases and environments. One of the biggest challenges is gaining a thorough understanding of the multitude of enterprise data assets and how they are related to each other. If these relationships are not fully understood, even simple changes may have a larger-than-anticipated impact and result in costly redevelopment. Without proper modeling of existing systems, database quality and performance suffers.

IBM® Rational® Data Architect helps data architects design relational and federated databases, understand information assets and their relationships, and streamline database

projects. Rational Data Architect provides advanced features to help data architects discover, model, visualize and relate heterogeneous data assets. Architected for integration, Rational Data Architect combines traditional data modeling capabilities with unique mapping capabilities and model analysis—all organized in a modular project-based manner. It is integrated with requirements management and team products for improved project time to value, consistency and accuracy in the enterprise environment.

Unlock the mystery of your existing data sources

Rational Data Architect discovers the structure of heterogeneous data sources by examining and analyzing the underlying metadata. All that is needed is an established Java™ Database Connectivity (JDBC)

connection to the data sources and then Rational Data Architect explores their structures using native queries. Using the GUI, users can easily browse through the hierarchy of data elements, facilitating an understanding of detailed properties for every element. Users can also visualize tables, views and relationships instantly in a contextual diagram without any intermediate step. Customization allows users to add colors, annotations and geometric shapes to guide viewers' eyes to specific areas of interest. In addition, an interactive topology diagram helps users understand even the most complex database structure—all with the single click of a mouse.

Easily develop data models

Rational Data Architect can create logical, physical and domain models. Elements from logical and physical data models can be visually represented in diagrams using Information Engineering (IE) notation (see Figure 1). Alternatively, physical data model diagrams can use the Unified Modeling Language (UML) notation. Rational Data Architect enables data

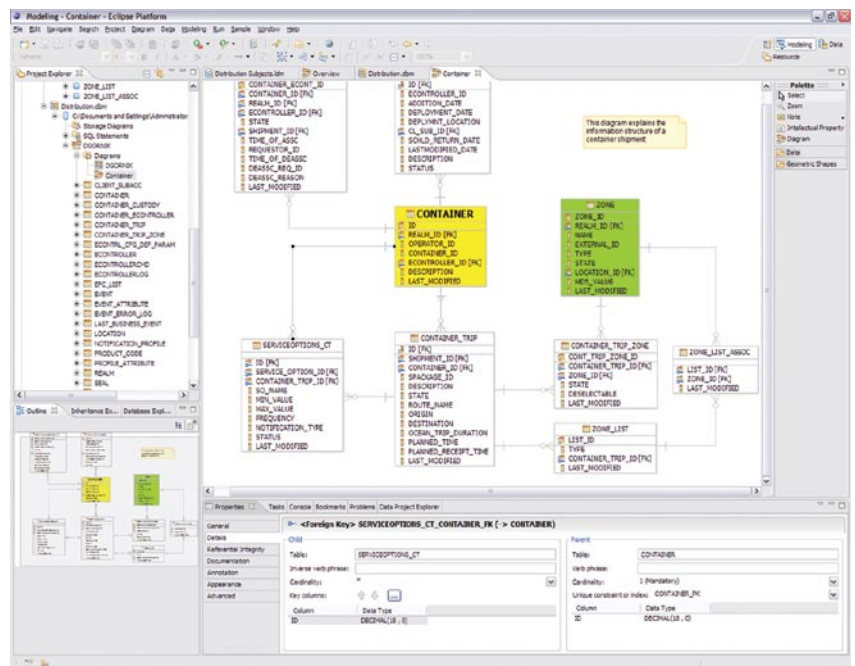


Figure 1. Physical data model

professionals to create physical data models from scratch, from logical models using transformation or from the database using reverse engineering. Rational Data Architect also supports glossary models for naming standard support.

Implement corporate standards

Standards are a way for companies to ensure consistency and accuracy throughout the enterprise. Naming

standards play a very important role when creating data models and databases. Rational Data Architect helps govern and implement corporate naming standards by enabling users to specify valid names and abbreviations in glossaries, finding non-conformant names in models or the database and generating new names for dependent elements like indexes and constraints—all according to company-specified standards.

Users may want to implement many other standards and rules. Rational Data Architect can analyze models or the actual database for standards, norms and enterprise rules. This feature enables the user to analyze, advise and enforce standards. Rational Data Architect helps users find and fix problems in models or the database by pinpointing the “problem” resource and providing a detailed description of issues. The rule-driven compliance checking of Rational Data Architect operates on models or directly on the database. For design and normalization, it can analyze for first, second and third normal form. It can check indexes for excessive use and also perform model syntax checks. Rational Data Architect is the only product that can analyze models and deployed databases using the same rules.

Drawing the lines—relating models to one another

In most organizations today, the same information is stored in different places using different structures and different levels of granularity.

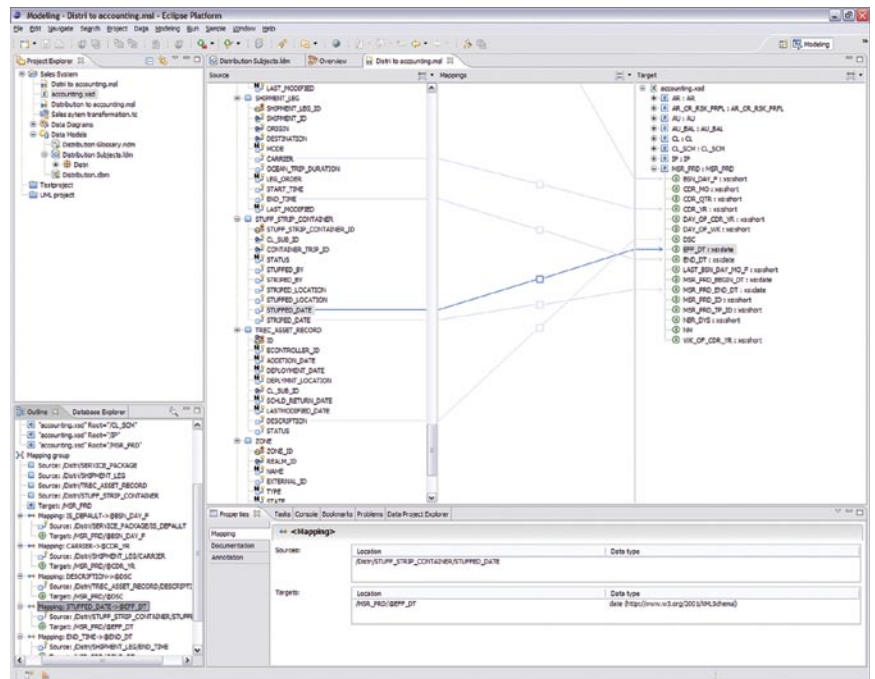


Figure 2. Mapping a logical data model to an XML schema

For a complete understanding of the information in the organization, it is important to understand how disparate databases map to each other, even if there is no physical implementation of these relationships.

The unique mapping editor within Rational Data Architect (see Figure 2) gives users the power to relate any two

data models to each other. Users can also map data models to XML schemas. Mappings define dependencies between models for columns as well as tables. Mappings can execute any transformation function like aggregation, type casting and formatting for each target column. The mapping editor automatically discovers relationships and

suggests joins necessary to implement advanced mappings. Users can generate necessary synchronization code, like select and insert statements, based on the mapping, or even go a step further and let Rational Data Architect generate code for federation with IBM WebSphere® Federation Server.

Change, change, change—the impact

As in any environment, it is always wise to understand the impact of change before it is actually implemented. Rational Data Architect allows users to do just that. Impact analysis lists all of the dependencies on the selected data elements. The results are visually represented and also displayed as a list.

Changes often need to be promoted within and across data models and data sources. The advanced synchronization technology within Rational Data Architect compares two models, model to database or two databases against each other. Changes can then

be promoted between models as well as to and from the database for each element or aggregate. For change management in a team environment, Rational Data Architect provides direct integration with IBM Rational ClearCase® and Concurrent Versions System (CVS) to provide seamless versioning, branching and synchronization of changes. Every team function is fully executable directly from the user interface to provide a superior user experience.

Import/export for easy transition

Rational Data Architect can import and export models from CA AllFusion ERwin, Sybase PowerDesigner and IBM Rational Rose®, and a wide range of additional metadata sources and targets. Logical and physical data models are supported during this interchange. The import handles all of the transformations needed to store the models in Rational Data Architect. Once imported, data modelers and

architects can work with the models using the rich modeling functions and user-friendly graphical interface of Rational Data Architect.

Federation design

Rational Data Architect is architected for federation design allowing users to consolidate multiple data sources into a single federated database. Integrated with WebSphere Federation Server, Rational Data Architect can help simplify the creation, management and deployment of federated databases. This integration allows users to:

- *Access and discover WebSphere Federation Server federated data sources*
- *Visualize WebSphere Federation Server federated database topology*
- *Reverse engineer existing models using WebSphere Federation Server*
- *Generate and deploy the target model to the WebSphere Federation Server system*

Database development capabilities for IBM DB2® databases

DB2 database users can streamline activities by executing DB2 development activities directly in Rational Data Architect. Dedicated wizards and editors understand the DB2 syntax and semantics enabling users to create, execute, deploy and debug SQL statements, Java and SQL stored procedures and user-defined functions directly from the Rational Data Architect interface. Rational Data Architect allows users to execute the code against the DB2 database and evaluate results and returning messages from the same tool used to model the database. Model, test and deploy—all from the Rational Data Architect interface.

Exploiting standards to improve productivity and flexibility

Built on the Eclipse award-winning platform, Rational Data Architect defines a new age in information design. The meta models based on

Rational Data Architect enables you to:

- *Create logical and physical data models*
- *Discover data sources*
- *Explore and visualize the structure of data sources*
- *Relate disparate data sources*
- *Compare the structure of two data sources/targets*
- *Discover similarities between data sources*
- *Analyze models and data sources for conformance to enterprise standards*
- *Design and deploy federated databases*

the Eclipse Model Framework (EMF) and the Eclipse extensibility interface open new possibilities for users and business partners to extend the Rational Data Architect solution. For example, if users decide they need statistics about their models, they can develop an Eclipse plug-in to do just that. The Eclipse user experience has been proven by millions of users and is further extended with Rational Data Architect—making your daily work faster and more effective.

Life cycle integration

Rational Data Architect is fully integrated with the IBM Rational Software Development Platform. Rational Data Architect and Rational Software Architect (or Rational Software Modeler) have achieved a new level of integration. Although they are two separate and distinct products installed in the same environment, they look as if they are one cohesive product. Both will use the same view to display model content and properties. With this level of integration, architects

can work together with transformations between the software architecture model and the data architecture model.

Other key integrations include requirements management and configuration management products to govern the process of data management and application development across the enterprise in an open, modern and extensible architecture. Requirements stored and managed in IBM Rational RequisitePro® can be accessed, associated to corresponding modeling elements and synchronized with user-selectable rules. Modeling files can be managed by Rational ClearCase providing seamless versioning, branching and synchronization of changes.

Alternatively, Rational Data Architect integrates with CVS for customers who have implemented that tool in their environment. These integrations reduce the risk associated with data modeling and make projects more predictable.

Integration with IBM WebSphere Business Glossary allows users to synchronize glossaries defined by subject matter experts with glossary models. In addition, users can create logical data models while importing a glossary. The model is created from defined business terms, their hierarchy and relationships to each other.

Export of physical data models to IBM WebSphere Metadata Server provides users with models to use in

IBM Information Server. This powerful feature increases the reuse of models in IBM Information Server modules including IBM WebSphere DataStage® and IBM WebSphere Information Analyzer.

Hardware requirements

- *Processor—minimum: Intel® Pentium® 3 (500 MHz); recommended: Pentium 4 (1.4 GHz or higher)*
- *Minimum memory: 1 GB RAM; more memory generally improves responsiveness*
- *Video: XGA 1024 x 768 x 256 color video resolution; 1280 x 1024 recommended*
- *Mouse or other pointing device*
- *Required disk space: minimum 600 MB; up to 1 GB during installation*

Software requirements

- *Microsoft® Windows® XP Professional, Service Pack 1, 2*
- *Microsoft Windows XP Professional x64 Edition*
- *Microsoft Windows 2000 Professional, Service Pack 3,4*
- *Microsoft Windows 2000 Server, Service Pack 3, 4*
- *Microsoft Windows 2000 Advanced Server, Service Pack 3, 4*
- *Microsoft Windows 2003 Standard Edition*
- *Microsoft Windows 2003 Enterprise Edition*
- *Linux®: SuSE Linux Enterprise Server 9.0*

Software integrations

- *IBM Rational ClearCase*
- *IBM Rational ClearCase LT*
- *IBM Rational RequisitePro*
- *Concurrent Versions System (CVS)*
- *IBM Rational Software Architect*
- *IBM Rational Software Modeler*
- *IBM Information Server*
 - *IBM WebSphere Business Glossary*
 - *IBM WebSphere Metadata Server*
 - *IBM WebSphere DataStage*
 - *IBM WebSphere Information Analyzer*
- *IBM WebSphere Federation Server*

For more information

To learn more about IBM Rational Data Architect or information integration solutions from IBM, contact your IBM marketing representative or IBM Business Partner, or visit ibm.com/software/data/integration



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