

ORACLE DATA MINING

KEY FEATURES AND BENEFITS

IN-DATABASE DATA MINING

FEATURES

- Option to Oracle Database Enterprise Edition
- In-Database analytics
- Wide range of algorithms
- Automatic data preparation
- Score models at storage layer on Exadata
- Easy to use GUI
- Text mining
- PL/SQL and Java APIs

BENEFITS

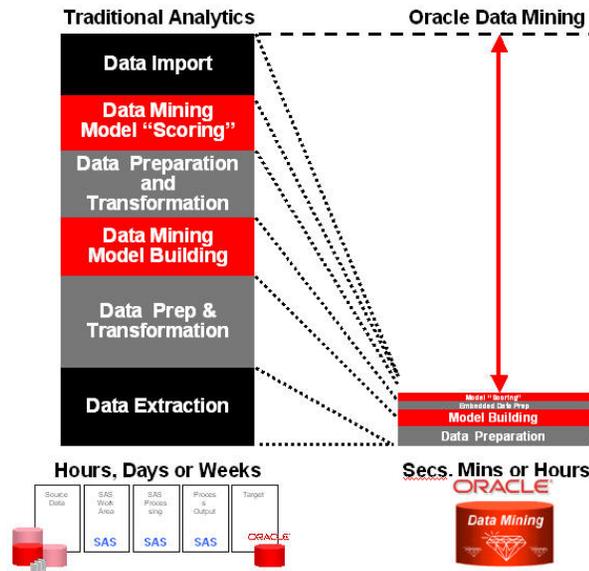
- Eliminate data movement
- Discover patterns and new insights
- Build predictive applications
- Maintain security during analysis

Oracle Data Mining, an Option to the Oracle Database EE, provides powerful data mining functionality that enables you to discover new insights and to leverage your data investment in Oracle technology. Business users can discover patterns and insights hidden in their data for competitive advantage. Oracle Data Mining helps you target your best customers, discover customer profiles, and combat fraud. Developers can integrate predictive analytics into applications that automate the discovery and distribution of new business intelligence—predictions, patterns and discoveries—throughout the organization through dashboards and applications.

In-Database Data Mining

With Oracle Data Mining, everything occurs in the Oracle Database—in a single, secure, scalable platform for advanced business intelligence. Oracle Data Mining represents a breakthrough in business intelligence. In contrast to traditional statistical software that requires data extraction to separate servers, which may be insecure and costly to maintain, Oracle Data Mining embeds a wide-range of mining functions inside the database—where the data is stored. Coupled with the power of SQL, Oracle Data Mining eliminates data movement and duplication, maintains security and minimizes latency time from raw data to valuable information.

In-Database Data Mining



Oracle Data Mining reduces modeling time from days or weeks to minutes or hours.

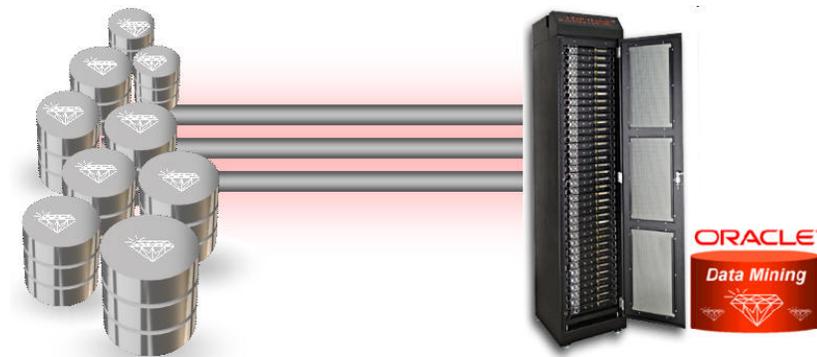
Oracle Data Mining Helps you better “Compete on Analytics”.

Oracle Data Mining enables you to go beyond standard BI and OLAP tools. Data mining automatically sifts through data and reveals patterns and insights that help you run your business better. In today’s competitive marketplace, your company must manage its most valuable asset — its data. Moreover, your company must exploit its data for competitive advantage. If you don’t, your competitors will. With Oracle Data Mining, you can implement strategies to:

- Understand and target select customer groups
- Develop detailed customer profiles for building marketing campaigns
- Anticipate and prevent customer churn and attrition
- Identify promising cross-sell and up-sell opportunities
- Detect noncompliance and potential fraud
- Discover new clusters or customer segments
- Perform market-basket analysis to find frequently co-occurring items

Oracle Data Mining Running on Exadata

In Oracle Database 11g Release 2, SQL predicates and Oracle Data Mining models are pushed to the storage level for execution. This eliminates data movement from the disk to the RDBMS and dramatically speeds model scoring performance.

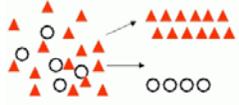
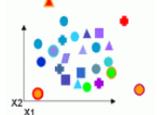
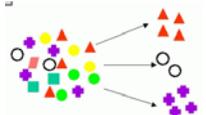
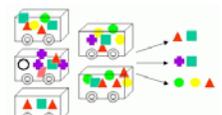
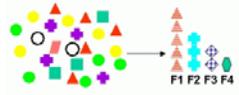


```
select cust_id
from customers
where region = 'US'
and prediction_probability(churnmod, 'Y' using *) > 0.8;
```

For example, in this SQL to find the US customers likely to churn, the “churnmod” model functions are executed at the Exedata storage level for optimal performance.

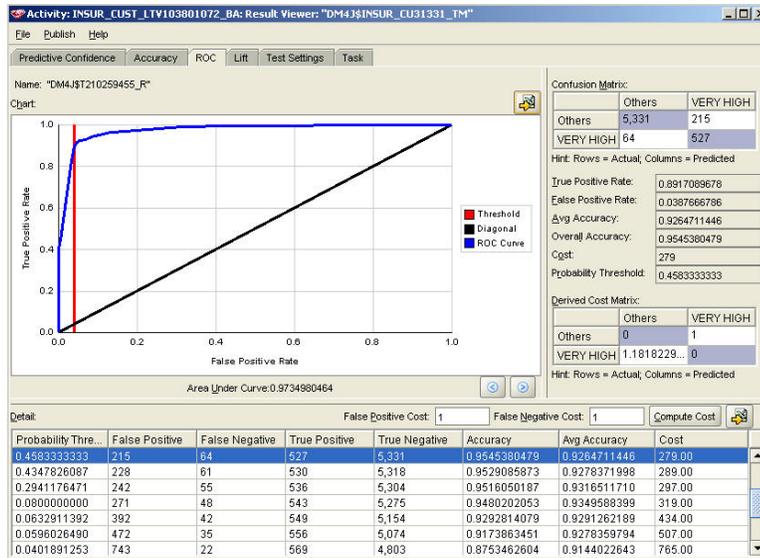
Full Set of Mining Algorithms

Oracle Data Mining provides support for a wide range of data mining model building and evaluating functionality.

Oracle Data Mining 11g Release 2 Algorithms	
Technique	Algorithm
<p>Classification</p> 	<ul style="list-style-type: none"> • Logistic Regression (GLM)—classic statistical technique. • Naive Bayes—Fast, simple, commonly applicable • Support Vector Machine—Cutting edge. Supports many input attributes, transactional and text data. • Decision Tree—Popular algorithm. Provides human-readable “If... Then...” rules.
<p>Regression</p> 	<ul style="list-style-type: none"> • Multiple Regression (GLM)—classic statistical technique. • Support Vector Machine — Cutting edge algorithm.
<p>Attribute Importance</p> 	<ul style="list-style-type: none"> • Minimum Description Length—Attribute Importance algorithm finds the attributes that have the most influence on a target attribute.
<p>Anomaly Detection</p> 	<ul style="list-style-type: none"> • One-Class Support Vector Machine —Unsupervised learning technique trains on “normal cases” and builds model. Scores unusual cases with the probability.
<p>Clustering</p> 	<ul style="list-style-type: none"> • Enhanced K-Means—Supports text mining, hierarchical clustering, distance based. • Orthogonal Partitioning Clustering—Hierarchical clustering, density based.
<p>Association Rules</p> 	<ul style="list-style-type: none"> • Apriori—Industry standard for market basket analysis and discovery of frequently co-occurring items in a shopping cart.
<p>Feature Extraction</p> 	<ul style="list-style-type: none"> • Non-negative Matrix Factorization (NMF)—Creates new attributes that represent the same information using fewer attributes

Easy to Use GUI

The Oracle Data Miner GUI employs Mining Activities that not only prescribe the correct order of operations and perform all algorithm required data transformations, but also provide intelligent settings and optimizations for all parameters; however, the expert can expose all parameters in order to override default values.



Oracle Data Miner provides an easy to use GUI for Oracle Data Mining.

Text Mining

The Support Vector Machine, Association Rules, K-Means Clustering, and Nonnegative Matrix Factorization algorithms can all accept text (unstructured data) as an input attribute, so that a column containing, for example, a physician’s notes, technical paper, or a police report can be included to enhance the predictive model.

Application Development

Application developers can use the PL/SQL and/or Java Application Programming Interfaces (APIs) to build automated data mining applications. Sample code examples are provided with Oracle Data Mining to accelerate the learning process. Oracle Data Miner GUI produces code that can be leveraged to build applications.

The Oracle Database Platform

With Oracle Data Mining, enterprises benefit from a completely integrated Oracle Data Warehouse and Business Intelligence environment. Data, models and results all remain in the industry’s leading secure, scalable data management platform making Oracle the ideal analytical platform for your organization.

Contact Us

For more information about Oracle Data Mining, please visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

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