# Embarcadero DB Optimizer XE2

SQL profiling and tuning IDE

## **embarcadero**®

**Key Features** 



Embarcadero<sup>®</sup> DB Optimizer<sup>™</sup> XE2 is a heterogeneous tool that maximizes database and application performance by quickly discovering, diagnosing, and optimizing poor-performing SQL. DB Optimizer XE2 empowers DBAs and developers to

eliminate performance bottlenecks by visually profiling key metrics inside the database (CPU, I/O, wait times), relating resource utilization to specific queries, and helping to visually tune problematic SQL.

- Optimize SQL performance throughout the development lifecycle
- Eliminate performance bottlenecks in production databases and applications
- Develop, test, profile, and tune SQL in a single, easy-to-use IDE

## OPTIMIZE SQL PERFORMANCE THROUGHOUT THE DEVELOPMENT LIFECYCLE

More responsibility for the quality and performance of SQL code is being pushed to development and quality assurance teams.

DB Optimizer XE2 allows you to profile and tune SQL code throughout the development process, rather than discovering costly performance bottlenecks after they've reached Production. You can either profile a single stored routine or continuously profile an entire database instance. Continuous profiling lets you monitor performance within a configurable span of time so you can see the effects of your tuned statements immediately, and take snapshots that can be saved and shared between developers, QA, and DBAs for more focused diagnosis and increased productivity.

## ELIMINATE PERFORMANCE BOTTLENECKS IN PRODUCTION DATABASES AND APPLICATIONS

Production DBAs are tasked with maximizing database performance and availability. A key concern is meeting Service Level Agreements (SLAs.) DB Optimizer helps production DBAs quickly profile Oracle\*, Microsoft\* SQL, Sybase\*, and DB2\* LUW databases to easily identify and correct the SQL causing performance bottlenecks.

Once you identify the poor performing SQL, DB Optimizer lets you add SQL to a tuning job directly from a profiling session, or add stored routines and SQL files from the data source

explorer or file system.

DB Optimizer XE2 takes SQL tuning beyond standard hint injections and SQL rewrites and offers innovative features for faster and more advanced SQL tuning and analysis. Graphical tools like the Index Analysis feature let DBAs and developers fully examine SQL execution paths to better understand which indexes are used, not used, or missing. If an index is missing, DB Optimizer XE2 will offer indexing recommendations for optimum performance. The Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement. This innovative visual format quickly reveals opportunities to tune the SQL or schema and enhance overall database performance.

# The proper upon part point on part of the part of the

SOE SOE SOE SOE SOE SOE SOE SOE SOE

14.67 8.72 7.78 5.39 3.38 2.05 1.41 0.98 0.56 0.28 0.28

Only DB Optimizer XE2 provides you with a single interface to view detailed.

graphical profiling on SQL statements,

the SQL that most impacts performance

events, and sessions to make it easy to find

DB Optimizer's unique Visual SQL Tuning (VST) diagrams enable the developer to quickly understand the relationships in a SQL query, spot design flaws and determine the best path of execution of the query

## DEVELOP, TEST, PROFILE, AND TUNE SQL IN A SINGLE EASY-TO-USE IDE

DB Optimizer XE2 is comprised of four major components including a SQL profiler, tuner, SQL IDE, and a stress testing tool called the Load Editor. The profiler quickly pinpoints poor-performing SQL, the tuner tunes the top problematic SQL, and the Load Editor stress tests the tuned SQL code to ensure performance gains are realized. DB Optimizer

XE2 offers more advanced tuning features such as Index Analysis, Visual SQL Tuning (VST) diagrams, and a powerful SQL IDE to reveal every opportunity to further tune and optimize SQL code. The SQL IDE is a full-featured SQL editor that includes code assist, real-time error checking, explain plans, and on-the-fly tuning. Quick fixes work as you type your SQL to identify potential performance issues and provides suggested best practices that can be implemented with the click of a button.

# Single interface for all major DBMS'

- Graphical visualization of wait-time analysis
- · Continuous profiling
- Batch tuning of DML statements, stored routines, entire SQL files
- · Hint injection
- SQL rewrites
- Robust diagnostics with execution statistics, profiling details, predicate analysis and explain plans
- SQL IDE with code assist, error checking, debugging, and real-time quick fixes
- Color-coded Index Analysis indicating index usage
- SQL stress testing

# New! in DB Optimizer XE2

- Ability to stream profiling data into a central repository
- Determine resource usage for stored procedures with visibility into underlying SQL usage for SQL Server and Sybase
- Visual SQL tuning diagram displaying indexes and constraints, now enhanced with table statistics
- AppWave<sup>™</sup> is an enterprisegrade private PC app store that provides a mobile-like app experience for PC software applications, so you can quickly discover and run PC apps including DB Optimizer



Center Services         Full support for DBZ for LUW, Oracle, SQL Server and Sybase ASE.           Unknoced         Offers full Unknode support           Command-Line API         Launch profiling and tuning sessions remotely           Visual Disposition         Visual Disposition           Profile Chart         Shows the CPU, I/O, and other wait activity over the course of the session. Zoom in/out functionality available. (Wait categories vary by platform.)           Execution Statistics         Detailed information on the profiled SQL and wait categories, broken down by SQL statements, events, and sessions.           Profiling Details         Dill down into the execution details for any given statement, including the SQL text, events, sessions, child cursors, and SQL details.           Predictate Analysis         SQL statements are rolled up for a true analysis of the number of executions in real-time           Explain Plans         The Explain Plan for each SQL statement can be computed on demand via a context menu term in the Execution Statistics tables.           Cropping         Highlights a time interval in the profile chart to instantly change the data displayed, making it easier to see the details.           Profiling         Lead Editor         SQL states testing simulates a number of parallel users and executions over a specific period of time or execution cycle.           Continuous Profiling         Continuous by profile a entire data source within a configurable span of time.           Live Data         Show data in real-time while profiling is i	Features	Description
Unicade Offers full Unicade support Command-Line API Launch profiling and tuning sessions remotely Visual Diagnostics Profile Chart Chystal Diagnostics Diagnostics Diagnostics Profile Chart Chystal Diagnostics Diagnostic	General Features	
Command Line API         Launch profiling sessions remotely           Visual Diagnostics           Profisic Chart         Shows the CPU, I/O, and other wait activity over the course of the session. Zoom in/out functionality available.           Execution Statistics         Detailed information on the profiled SOL and wait categories, broken down by SOL statements, events, and sessions.           Profiling Details         Drill down into the execution details for any given statement, including the SOL text, events, sessions, child cursors, and SOL details.           Profiling Details         Child Solar are rolled up for a true analysis of the number of executions in real-time           Explain Plans         The Explain Plan for each SQL statements are rolled up for a true analysis of the number of executions in real-time           Explain Plans         Lightlights a true interval in the profile chart to instantly change the data displayed, making it easier to see the details.           Profiling         Highlights a true interval in the profile chart to instantly change the data displayed, making it easier to see the details.           Profiling         Use Data         SQL stress testing simulates an number of parallel users and executions over a specific period of time or execution cycle.           Continuous Profiling         Continuous profiling an entire data source within a configurable span of time.           Continuous Profiling         Interval of the session can be saved as a single entity into an archive file.           Profiling a Stored Routine         Pr	DBMS Support	Full support for DB2 for LUW, Oracle, SQL Server and Sybase ASE.
Valual Diagnostics	Unicode	Offers full Unicode support
Profile Chart  Shows the CPU, I/O, and other wait activity over the course of the session. Zoom in/out functionality available.  (Wait actegories vary by platform)  Execution Statistics  Detailed information on the profiled SQL and wait categories, broken down by SQL statements, events, and sessions.  Profiling Details  Drill down into the execution details for any given statement, including the SQL text, events, sessions, child cursors, and SQL details.  Predicate Analysis  SQL statements are rolled up for a true analysis of the number of executions in real-time  Explain Plans  The Explain Plan for each SQL statement can be computed on demand via a context menu item in the Execution Statistics table. The Explain Plan appears in a separate view as a tree with columns and collapsible column groups.  Profiling  Profiling  Highlights a time interval in the profile chart to instantly change the data displayed, making it easier to see the details.  Profiling  Sampling  Identify and diagnose performance bottlenecks and problematic SQL without agents or placing a significant load on the target distribase.  Load Editor  SQL strees testing simulates a number of parallel users and executions over a specific period of time or execution cycle.  Continuous Profiling  Continuously profile an entire data source within a configurable span of time.  Profiling a Stored Routine  When fine tuning or testing SQL profile the execution of a single stored routine when profiling an entire data source is not desired.  Live Data  Show data in real-time while profiling is in progress.  Sharing Profile sessions  All Idata and metadata pertaining to a profile session can be saved as a single entity into an archive file.  Profiles and be shared across multiple workspaces and machines for collaboration purposes.  Tuning  Tuning  Tuning Job  Create and run tuning jobs for a single statement or batch of statements.  SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.  S	Command-Line API	Launch profiling and tuning sessions remotely
Wait categories vary by platform.]   Deciding Details   Detailed information on the profiled SQL and wait categories, broken down by SQL statements, events, and sessions.   Profiling Details   Drill down into the execution details for any given statement, including the SQL text, events, sessions, child cursors, and SQL details.   Profiling Details   SQL statements are rolled up for a true analysis of the number of executions in real-time   Profiling Details   Profiling   Profilin	Visual Diagnostics	
Profiling Details Drill down into the execution details for any given statement, including the SQL text, events, sessions, child cursors, and SQL details.  Predicate Analysis SQL statements are rolled up for a true analysis of the number of executions in real-time  Explain Plans The Explain Plan for each SQL statement can be computed on demand via a context menu item in the Execution Statistics table. The Explain Plan for each SQL statement can be computed on demand via a context menu item in the Execution Statistics table. The Explain Plans popears in a separate view as a tree with columns and collapsible column groups.  Cropping Frofiling Frofiling Frofiling Individual disgnose performance bottlenecks and problematic SQL without agents or placing a significant load on the target database.  Load Editor SQL stress testing simulates a number of parallel users and executions over a specific period of time or execution cycle.  Continuous Profiling Continuously profile an entire data source within a configurable span of time.  Profiling a Stored Routine When fine tuning or testing SQL profile the execution of a single stored routine when profiling an entire data source is not desired.  Exp Data SQL and SQL are stress and execution of a single stored routine when profiling an entire data source is not desired.  Exp Data SQL and SQL are stress and interest time while profiling is in progress.  Truing  Tru	Profile Chart	
Predicate Analysis SQL statements are rolled up for a true analysis of the number of executions in real-time Explain Plans Plan for each SQL statement can be computed on demand via a context menu item in the Execution Statistics table. The Explain Plan appears in a separate view as a tree with columns and collapsible column groups.  Cropping Highs a time interval in the profile chart to instantly change the data displayed, making it easier to see the details.  Profiling  Forming  Sampling Identify and diagnose performance bottlenecks and problematic SQL without agents or placing a significant load on the target database.  Cand Editor SQL steess testings simulates a number of parallel users and executions over a specific period of time or execution cycle.  Continuous Profiling Continuously profile an entire data source within a configurable span of time.  Profiling a Stored Routine When fine turning or testing SQL profile the execution of a single stored routine when profiling an entire data source is not desired.  Live Data Show data in real-time while profiling is in progress.  Sharing Profile Sessions All data and metadata pertaining to a profile essession can be saved as a single entity into an archive file.  Profiling A Create and run tuning jobs for a single statement or batch of statements.  Batch Tuning Canada SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.  SQL Rewrites are suggested as part of the case generation in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.  Hint Injection Customize the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation SQL training (YST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartestajan joins, implied cartesian joins and many-to-many relationships, with table statistics  Index Analysis The color-coded Index Analysis feature shows indexes that are u	Execution Statistics	Detailed information on the profiled SQL and wait categories, broken down by SQL statements, events, and sessions.
Explain Plans appears in a separate view as a tree with columns and collapsible column groups.  Cropping Highlights a time interval in the profile chart to instantly change the data displayed, making it easier to see the details.  Profiling  Sampling Identify and diagnose performance bottlenecks and problematic SQL without agents or placing a significant load on the target database.  Load Editor SOL stress testing simulates a number of parallel users and executions over a specific period of time or execution cycle.  Continuous Profiling Continuously profile an entire data source within a configurable span of time.  Profiling a Stored Routine When fine tuning or testing SQL, profile the execution of a single stored routine when profiling an entire data source is not desired.  Live Data Show data in real-time while profiling is in progress.  Sharing Profile Sessions All Idata and metadata pertaining to a profile session can be saved as a single entity into an archive file.  Profiles can be shared across multiple workspaces and machines for collaboration purposes.  Tuning  Tuning Job Ceate and run tuning jobs for a single statement or batch of statements.  Case Generation SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.  SQL Rewrites SQL IDE.  Hint Injection Customize the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation Display the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  Visual SQL Tuning  The Visual SQL Tuning VST1 Jagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  The Color-coded Index Analys	Profiling Details	
table. The Explain Plan appears in a separate view as a tree with columns and collapsible column groups.  Cropping Highlights a time interval in the profile chart to instantly change the data displayed, making it easier to see the details.  Profiling  Sempling Identify and diagnose performance bottlenecks and problematic SQL without agents or placing a significant load on the target database.  Conditious Profiling SQL stress testing simulates a number of parallel users and executions over a specific period of time or execution cycle.  Continuous Profiling Continuously profile an entire data source within a configurable span of time.  Profiling a Stored Routine When fine tuning or testing SQL, profile the execution of a single stored routine when profiling an entire data source is not desired.  Live Data Show data in real-time while profiling is in progress.  Sharing Profile Sessions All Idata and metadata pertaining to a profile session can be saved as a single entity into an archive file.  Profiles can be shared across multiple workspaces and machines for collaboration purposes.  Tuning  Tuning  Tuning Job Create and run tuning jobs for a single statement or batch of statements.  Batch Tuning In une all DML statements, stored routines, and entire SQL files.  Case Generation SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.  SQL Rewrites  SQL Rewrites and SQL rewrites are suggested as part of the case generation in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.  Hint Injection Customize the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation Display the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  In evisual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian	Predicate Analysis	SQL statements are rolled up for a true analysis of the number of executions in real-time
Profiling           Sampling         Identify and diagnose performance bottlenecks and problematic SQL without agents or placing a significant load on the target database.           Load Editor         SQL stress setsing simulates a number of parallel users and executions over a specific period of time or execution cycle.           Continuous Profiling         Continuously profile an entire data source within a configurable span of time.           Profiling a Stored Routine         When fine turning or testing SQL, profile the execution of a single stored routine when profiling an entire data source is not desired.           Live Data         Show data in real-time while profiling is in progress.           Sharing Profile Sessions         All data and metadata pertaining to a profile session can be saved as a single entity into an archive file. Profiles can be shared across multiple workspaces and machines for collaboration purposes.           Tuning         Freate and run tuning jobs for a single statement or batch of statements.           Batch Tuning         Tune all DML statements, stored routines, and entire SQL files.           Case Generation         SQL rewrites are suggested as part of the case generated in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.           Hint Injection         Customize the subset of hints to be considered for hint injection and alternative execution paths.           Cost Generation         Customize the subset of hints to be considered for hint injection and alternative execution paths.           Cysual SQL Tuning	Explain Plans	
Sampling         Identify and diagnose performance bottlenecks and problematic SQL without agents or placing a significant load on the target database.           Continuous Profiling         SQL stress testing simulates a number of parallel users and executions over a specific period of time or execution cycle.           Continuous Profiling         Continuously profile an entire data source within a configurable span of time.           Profiling a Stored Routine         When fine tuning or testing SQL, profile the execution of a single stored routine when profiling an entire data source is not desired.           Live Data         Show data in real-time while profiling is in progress.           Sharing Profile Sessions         All data and metadata pertaining to a profile session can be saved as a single entity into an archive file. Profiles can be shared across multiple workspaces and machines for collaboration purposes.           Tuning         Tuning           Tuning         Tune all DML statements, stored routines, and entire SQL files.           Case Generation         SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.           SQL Rewrites         SQL rewrites are suggested as part of the case generation in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.           Hint Injection         Customize the subset of hints to be considered for hint injection and alternative execution paths.           Cost Generation         Display the explain plan cost for each original statement and each generated	Cropping	Highlights a time interval in the profile chart to instantly change the data displayed, making it easier to see the details.
Load Editor SQL stress testing simulates a number of parallel users and executions over a specific period of time or execution cycle.  Continuous Profiling Continuously profile an entire data source within a configurable span of time.  Profiling a Stored Routine When fine tuning or testing SQL, profile the execution of a single stored routine when profiling an entire data source is not desired.  Live Data Show data in real-time while profiling is in progress.  Sharing Profile Sessions All data and metadata pertaining to a profile session can be saved as a single entity into an archive file. Profiles can be shared across multiple workspaces and machines for collaboration purposes.  Tuning  Tuning  Tuning  Tuning  Tune all DML statements, stored routines, and entire SQL files.  Case Generation SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.  SQL Rewrites  SQL Rewrites SQL IDE.  Hint Injection SQL trush the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation Sisplay the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  Visual SQL Tuning SQL Tuning SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis Associated and Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offers indexing recommendations for optimum performance.  Execution Statistics Avisual diff viewer helps the user spot the textual differences between any two SQL statement, and apply the change at the click of a button.  Textual Comparison of Cases Avisual diff viewer helps the user spot the textual differences between any two SQL statements.	Profiling	
Continuous Profiling Continuously profile an entire data source within a configurable span of time.  Profiling a Stored Routine When fine tuning or testing SQL, profile the execution of a single stored routine when profiling an entire data source is not desired.  Live Data Show data in real-time while profiling is in progress.  Sharing Profile Sessions All data and metadata pertaining to a profile session can be saved as a single entity into an archive file.  Profiles can be shared across multiple workspaces and machines for collaboration purposes.  Tuning  Tuning Job Create and run tuning jobs for a single statement or batch of statements.  Batch Tuning Tune all DML statements, stored routines, and entire SQL files.  Case Generation SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.  SQL Rewrites SQL rewrites are suggested as part of the case generation in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.  Hint Injection Customize the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation Display the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  Visual SQL Tuning The Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis The color-coded Index Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offers indexing recommendations for optimum performance.  Execution Statistics Avisual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture  File Capture Save an entire profiling session to a file for future analysis and reference or to share with others	Sampling	
Profiling a Stored Routine When fine tuning or testing SQL, profile the execution of a single stored routine when profiling an entire data source is not desired.  Live Data Show data in real-time while profiling is in progress.  Sharing Profile Sessions All data and metadata pertaining to a profile session can be saved as a single entity into an archive file. Profiles can be shared across multiple workspaces and machines for collaboration purposes.  Tuning  Tuning Job Create and run tuning jobs for a single statement or batch of statements.  Batch Tuning Tune all DML statements, stored routines, and entire SQL files.  SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.  SQL Rewrites  SQL rewrites are suggested as part of the case generation in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.  Hint Injection  Customize the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation  Sipslay the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  Visual SQL Tuning  The Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis  The color-coded Index Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offers indexing recommendations for optimum performance.  Execution Statistics  Run the SQL with alternative execution paths to discover the fastest running SQL statement, and apply the change at the click of a button.  Textual Comparison of Cases  A visual diff viewer helps the user spot the textual differences between any two SQL statements.	Load Editor	SQL stress testing simulates a number of parallel users and executions over a specific period of time or execution cycle.
Live Data         Show data in real-time while profiling is in progress.           Sharing Profile Sessions         All data and metadata pertaining to a profile session can be saved as a single entity into an archive file. Profiles can be shared across multiple workspaces and machines for collaboration purposes.           Tuning         Tuning           Tuning Job         Create and run tuning jobs for a single statement or batch of statements.           Batch Tuning         Tune all DML statements, stored routines, and entire SQL files.           Case Generation         SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.           SQL Rewrites         SQL rewrites are suggested as part of the case generation in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.           Hint Injection         Customize the subset of hints to be considered for hint injection and alternative execution paths.           Cost Generation         Display the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.           Visual SQL Tuning         The Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics           Index Analysis         The color-coded Index Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offiers indexing recommendations	Continuous Profiling	Continuously profile an entire data source within a configurable span of time.
Sharing Profile Sessions All data and metadata pertaining to a profile session can be saved as a single entity into an archive file. Profiles can be shared across multiple workspaces and machines for collaboration purposes.  Tuning  Tuning Job Create and run tuning jobs for a single statement or batch of statements.  Batch Tuning Tune all DML statements, stored routines, and entire SQL files.  Case Generation SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.  SQL Rewrites SQL rewrites are suggested as part of the case generation in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.  Hint Injection Customize the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation Display the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  Visual SQL Tuning The Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis The color-coded Index Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offers indexing recommendations for optimum performance.  Execution Statistics Run the SQL with alternative execution paths to discover the fastest running SQL statement, and apply the change at the click of a button.  Textual Comparison of Case A visual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture  File Capture Save an entire profiling session to a file for future analysis and reference or to share with others	Profiling a Stored Routine	When fine tuning or testing SQL, profile the execution of a single stored routine when profiling an entire data source is not desired.
Tuning Job Create and run tuning jobs for a single statement or batch of statements.  Batch Tuning Tune all DML statements, stored routines, and entire SQL files.  Case Generation SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.  SQL Rewrites are suggested as part of the case generation in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.  Hint Injection Customize the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation Display the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis and offers indexing recommendations for optimum performance.  Execution Statistics Run the SQL with alternative execution paths to discover the fastest running SQL statement, and apply the change at the click of a button.  Textual Comparison of Cases A visual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture  File Capture Save an entire profiling session to a file for future analysis and reference or to share with others	Live Data	Show data in real-time while profiling is in progress.
Tuning Job Create and run tuning jobs for a single statement or batch of statements.  Batch Tuning Tune all DML statements, stored routines, and entire SQL files.  Case Generation SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.  SQL rewrites are suggested as part of the case generation in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.  Hint Injection Customize the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation Display the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  Visual SQL Tuning The Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis The color-coded Index Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offers indexing recommendations for optimum performance.  Execution Statistics Run the SQL with alternative execution paths to discover the fastest running SQL statement, and apply the change at the click of a button.  Textual Comparison of Cases A visual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture  File Capture Save an entire profiling session to a file for future analysis and reference or to share with others	Sharing Profile Sessions	
Batch Tuning Tune all DML statements, stored routines, and entire SQL files.  Case Generation SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.  SQL Rewrites SQL rewrites are suggested as part of the case generation in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.  Hint Injection Customize the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation Display the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  Visual SQL Tuning The Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis The color-coded Index Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offers indexing recommendations for optimum performance.  Execution Statistics Run the SQL with alternative execution paths to discover the fastest running SQL statement, and apply the change at the click of a button.  Textual Comparison of Cases A visual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture  File Capture Save an entire profiling session to a file for future analysis and reference or to share with others	Tuning	
Case Generation  SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.  SQL Rewrites  SQL rewrites are suggested as part of the case generation in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.  Hint Injection  Customize the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation  Display the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  Visual SQL Tuning  The Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis  The color-coded Index Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offers indexing recommendations for optimum performance.  Execution Statistics  Run the SQL with alternative execution paths to discover the fastest running SQL statement, and apply the change at the click of a button.  Textual Comparison of Cases  A visual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture  File Capture  Save an entire profiling session to a file for future analysis and reference or to share with others	Tuning Job	Create and run tuning jobs for a single statement or batch of statements.
SQL Rewrites SQL rewrites are suggested as part of the case generation in the SQL tuner. SQL rewrites are also suggested as you type in the SQL IDE.  Hint Injection Customize the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation Display the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  Visual SQL Tuning The Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis The color-coded Index Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offers indexing recommendations for optimum performance.  Execution Statistics Run the SQL with alternative execution paths to discover the fastest running SQL statement, and apply the change at the click of a button.  Textual Comparison of Cases A visual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture Save an entire profiling session to a file for future analysis and reference or to share with others	Batch Tuning	Tune all DML statements, stored routines, and entire SQL files.
the SQL IDE.  Hint Injection Customize the subset of hints to be considered for hint injection and alternative execution paths.  Cost Generation Display the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  Visual SQL Tuning The Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis The color-coded Index Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offers indexing recommendations for optimum performance.  Execution Statistics Run the SQL with alternative execution paths to discover the fastest running SQL statement, and apply the change at the click of a button.  Textual Comparison of Cases A visual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture Save an entire profiling session to a file for future analysis and reference or to share with others	Case Generation	SQL rewrites and hint injection are used to generate all possible cases and find the best alternative to a given SQL statement.
Display the explain plan cost for each original statement and each generated case to give the user the expected cost given the execution path utilized by the database.  Visual SQL Tuning The Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis The color-coded Index Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offers indexing recommendations for optimum performance.  Execution Statistics Run the SQL with alternative execution paths to discover the fastest running SQL statement, and apply the change at the click of a button.  Textual Comparison of Cases A visual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture  Save an entire profiling session to a file for future analysis and reference or to share with others	SQL Rewrites	
given the execution path utilized by the database.  Visual SQL Tuning  The Visual SQL Tuning (VST) diagram displays indexes and constraints on tables and views, as well as the joins used in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis  The color-coded Index Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offers indexing recommendations for optimum performance.  Execution Statistics  Run the SQL with alternative execution paths to discover the fastest running SQL statement, and apply the change at the click of a button.  Textual Comparison of Cases  A visual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture  File Capture  Save an entire profiling session to a file for future analysis and reference or to share with others	Hint Injection	Customize the subset of hints to be considered for hint injection and alternative execution paths.
in a SQL statement such as Cartesian joins, implied Cartesian joins and many-to-many relationships, with table statistics  Index Analysis  The color-coded Index Analysis feature shows indexes that are used (green), not used (blue), or missing (orange) and offers indexing recommendations for optimum performance.  Execution Statistics  Run the SQL with alternative execution paths to discover the fastest running SQL statement, and apply the change at the click of a button.  Textual Comparison of Cases  A visual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture  File Capture  Save an entire profiling session to a file for future analysis and reference or to share with others	Cost Generation	
and offers indexing recommendations for optimum performance.  Execution Statistics Run the SQL with alternative execution paths to discover the fastest running SQL statement, and apply the change at the click of a button.  Textual Comparison of Cases A visual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture  File Capture Save an entire profiling session to a file for future analysis and reference or to share with others	Visual SQL Tuning	
the click of a button.  Textual Comparison of Cases A visual diff viewer helps the user spot the textual differences between any two SQL statements.  Data Capture  File Capture Save an entire profiling session to a file for future analysis and reference or to share with others	Index Analysis	
Data Capture  File Capture  Save an entire profiling session to a file for future analysis and reference or to share with others	Execution Statistics	
File Capture Save an entire profiling session to a file for future analysis and reference or to share with others	Textual Comparison of Cases	A visual diff viewer helps the user spot the textual differences between any two SQL statements.
	Data Capture	
Repository Capture Stream profiling data into a central repository for your open session	File Capture	Save an entire profiling session to a file for future analysis and reference or to share with others
	Repository Capture	Stream profiling data into a central repository for your open session

### **DBMS Support**

- Oracle<sup>®</sup> 8i-11g
- Sybase\* 12.5 15.0
- ${}^{\circ}\,$  IBM  ${}^{\circ}\,$  DB2  ${}^{\circ}\,$  for LUW 8.0 9.0
- Microsoft<sup>®</sup> SQL Server 2000, 2005 and 2008

### System Requirement

- Microsoft Windows 2003, XP, Vista (32 bit), Red Hat Enterprise Linux 5.0 (32 bit), or SUSE Linux Enterprise Server 10 (32 bit)
- Sun Java 2 Standard Edition 5.0 Update 11 for Microsoft Windows or Linux: Sun Java 2 Standard Edition 5.0 Update 11 for Linux x86
- 1024 MB memory
- 500 MB disk space

## Download a Free Trial at www.embarcadero.com