



# Toska SQL Tuning Expert Pro for Oracle® 4.0.0 - Release Notes

Release Notes

Sep 2020

## About Toska SQL Tuning Expert Pro for Oracle®

Toska SQL Tuning Expert Pro (TSE Pro™) for Oracle® is an automatic SQL tuning product that uses AI technology to tune your SQL statements by proprietary SQL Rewrite, Oracle Hints Injection and exploring indexes technologies to improve your SQL statements' performance WITH or WITHOUT touching your source code. An intelligent cost-aware Indexes Advisor is also provided to recommend cost-effective indexes for a given SQL workload.

## Trial Version limitations

1. The TSE Pro™ trial version provides up to total 30 automatic SQL alternatives to solve most common SQL performance problems for free.
2. The TSE Pro™ trial version comes with 30 single SQL's index recommendations for free.
3. The TSE Pro™ trial version supports workload-based indexes advice with at most 20 SQL statements in one captured SQL workload.

## Supported Oracle® versions

Oracle® 11.2 or higher

## Known Issues

1. Migration of SQL Patches or Plan Baselines from 12C or higher to 11G is not allowed.

## SQL Tuning Expert Pro for Oracle 4.0.0

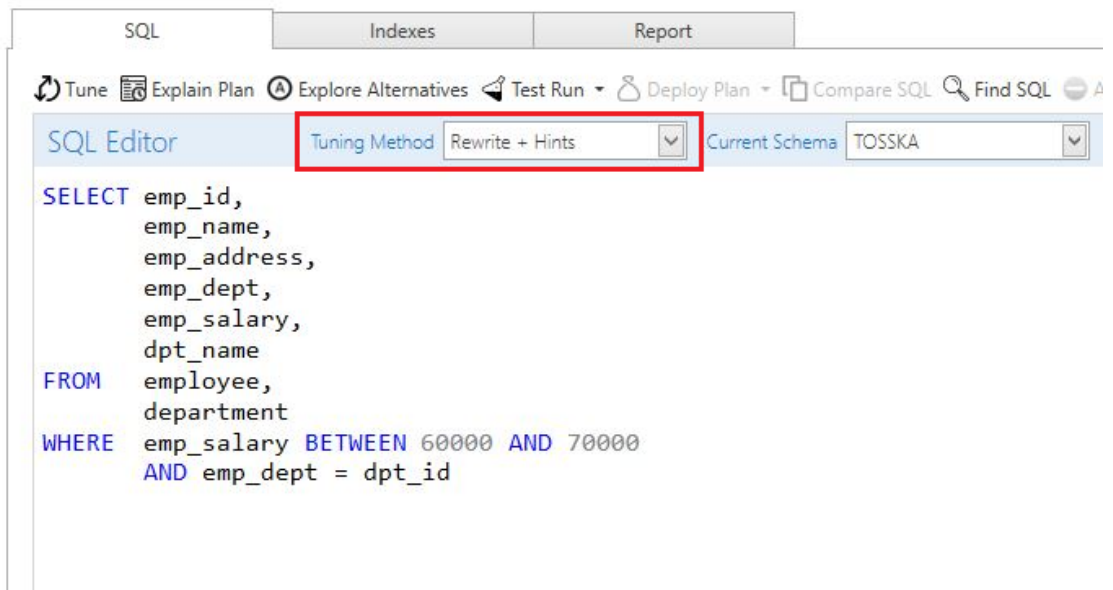
SQL Tuning Expert Pro 4.0.0 is a major release which includes new features, enhancements and bug fixes.



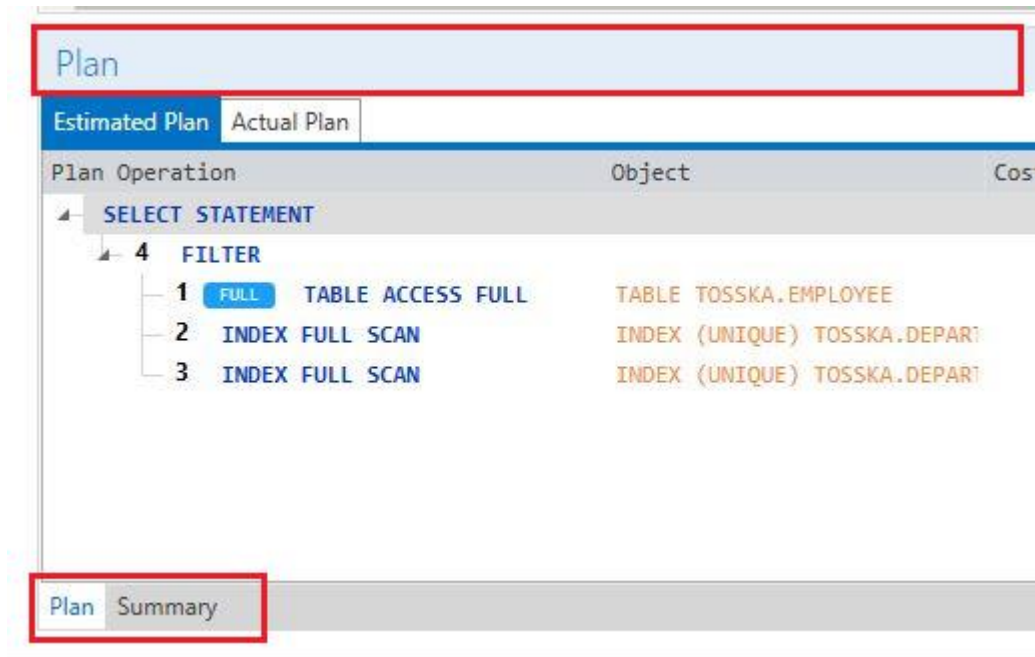
## Tune SQL / Tune Top SQL

- Rewrite SQL

A new powerful A.I. SQL Rewrite Engine to help users to rewrite their problematic SQL statements to potential better semantical equivalent SQL alternatives. User can select “Rewrite + Hints”, “Rewrite Only” or “Hints Only” method in “Tuning Method” dropdown menu to tell our A.I. Rewrite Engine which tuning method will be used to tune a given SQL.



- Recommend Indexes for single SQL  
Speed up test run index sets
- Plan and Summary have separate docking panels. You can drag and drop to reorganize your layout.



## Common

Support more SQL syntax.

Updated default UI layout.

Change Tree Plan to columns layout with access predicates and filter predicates added.

## Resolved Issues in 4.0.0

Feature	Resolved Issue	Issue ID
Tune SQL Tune Top SQL	Fixed issue that DB time statistics is always 0 after test running of SQL alternatives	TSEP-1221
Tune SQL Tune Top SQL	Fixed an error when tune or test run update SQL statement if update table is a subquery	TSEP-1220
Tune SQL Tune Top SQL	Fixed an error when explain, tune or test run SQL with semicolon again after inputting return and new line at the end of SQL.	TSEP-1222
Tune SQL Tune Top SQL	Fixed an error when explore indexes if SQL contains functions with DB link.	TSEP-1180
Advise Indexes	Fixed an error when advise indexes	TSEP-1252

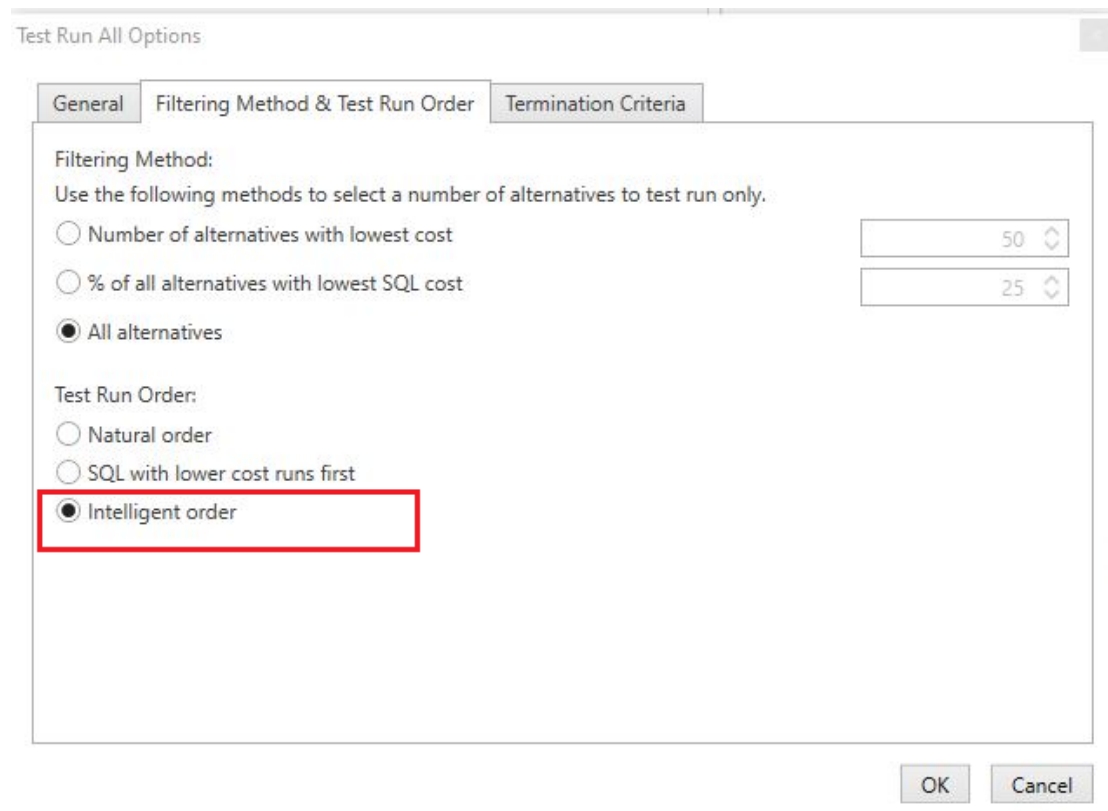


## SQL Tuning Expert Pro for Oracle 3.3.0

SQL Tuning Expert Pro 3.3.0 is a minor release which includes following enhancements and resolved issues.

### Tune SQL

Provide a new Test Run Order "Intelligent order" to speed up the SQL tuning and test run process.



Provide an option "Create index with parallel degree" to create physical indexes in parallel to speed up indexes test running process.



Test Run All Options

General Filtering Method & Test Run Order Termination Criteria

Executing Method :

Select a method to measure the performance of your SQL statements.

Static

Dynamic

Skip test run original SQL

Timing Method:

We recommend test run SQL once for long run time SQL. For short run time SQL, such as less than 10 seconds, you can test run multiple times for precise measurement.

Run all SQL once.

Flush data buffer before executing every SQL alternative. (Alter System privilege is required)

Run original SQL 2 times and use second run time, run all other alternatives once.

Run all SQL 2 times and use the second SQL run time.

If original SQL's run time less than 10 seconds, run all SQL 2 times; otherwise, run all SQL once only.  
When run 2 times, the second run time will be used.  
When run more than 2 times, the average run time will be used.

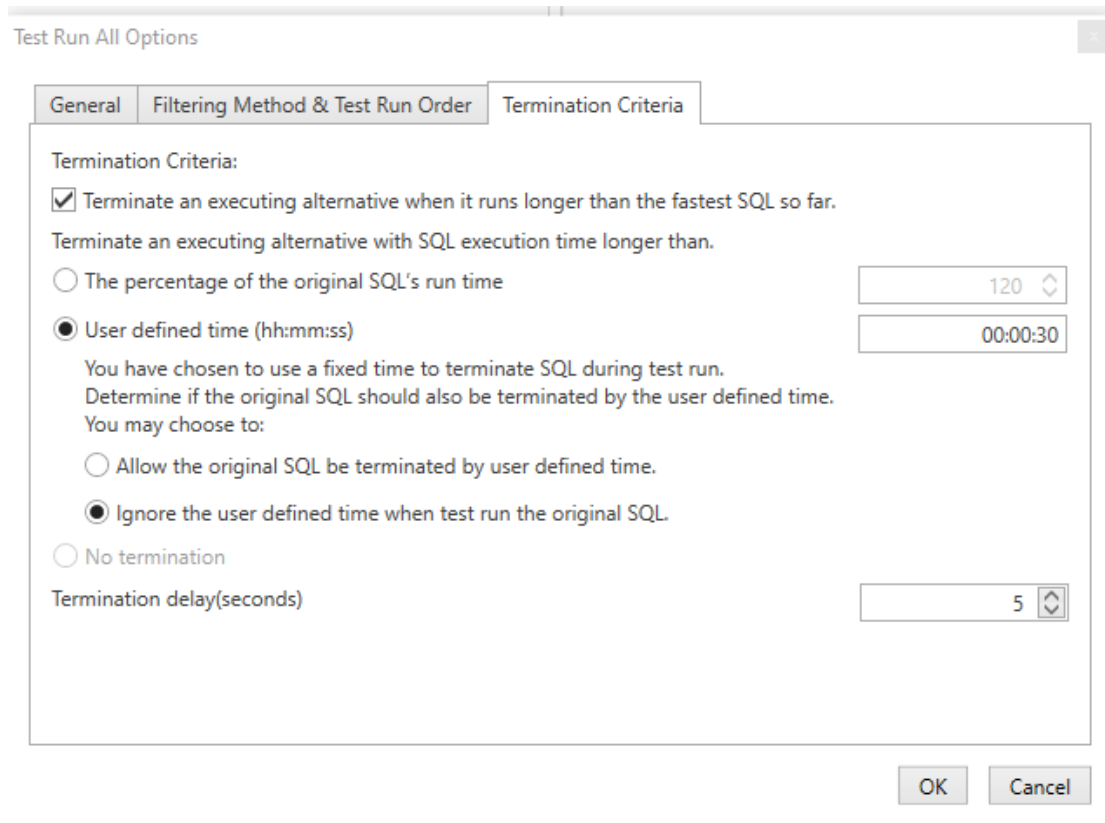
Create index with parallel degree : 2

(Your database CPU Count : 8 & Parallel Threads Per CPU : 2)

Physical indexes will be created and dropped during entire test running process. It may take long time to create indexes for large table. It is recommended to execute this function in development environment or non-peak hours in production database.

OK Cancel

Updated Test Run Termination Criteria to speed up the SQL tuning and index recommendation process.



Removed "Test Run Current" and enhanced "Test Run Selected" to test run one or more selected SQL alternatives.

Improved the intelligence of indexes recommendation for single SQL.

Improved Support Bundle.

## Common

Support docking and user can customize display layout.

Remember column position in all grid windows.

Display datetime with 4 decimals for second in grid columns.

Provide an option "Purge SQL submitted by this tool from SGA" to purge SQL statements fired by this tool.

"Alter System" privilege checking is deferred until it is required for specific function.



## Resolved Issues in 3.3.0

Feature	Resolved Issue	Issue ID
Tune SQL Tune Top SQL	Fixed an error "Sequence contains no elements" when explore indexes	TSEP-1100
Tune Top SQL Advise Indexes	Fixed an error "Character string buffer too small" when Extracting SQL from AWR	TSEP-1124
Tune Top SQL Advise Indexes	Fixed an error "overflow" when changing date to Extract SQL from AWR occasionally	TSEP-1125
Tune Top SQL	Fixed an error when reopen a saved Top SQL session	TSEP-1107
Tune Top SQL Advise Indexes	Fixed an issue that some dropdown lists are empty when Extract SQL from SGA after Extract SQL from AWR.	TSEP-1096
Tune Top SQL	The SQL sent to "Tune / Recommend Indexes" may not be the same SQL you selected in Top SQL list after sorting	TSEP-1163
Common	Fixed the issue that missing privileges are not updated when click Refresh button in "Check Database Privileges" window after part of privileges are granted.	TSEP-1162

## SQL Tuning Expert Pro for Oracle 3.2.1

SQL Tuning Expert Pro 3.2.1 is a hotfix release which includes following resolved issues.

### Resolved Issues in 3.2.1

Feature	Resolved Issue	Issue ID
Tune Top SQL Advise Indexes	Corrected an error "Character string buffer too small" when extract SQL statement with SQL text longer than 4000 characters from SGA or AWR in Oracle 11G.	TSEP-1111



## SQL Tuning Expert Pro for Oracle 3.2.0

SQL Tuning Expert Pro 3.2.0 is a minor release which includes following enhancements and resolved issues.

### Tune SQL

Parallel hints are enabled only when intelligence level is set to 4 or 5.

Rename button "Abort" to "Abort All" for aborting "Explore alternatives" or "Test run" process, rename button "Abort" to "Abort Current" for aborting currently running SQL alternative.

Show warning message when recommend indexes or test run SQL alternatives.

### Recommend Indexes

Export all properties of "all affected SQL" to Excel file in Advice Report.

### Resolved Issues in 3.2.0

Feature	Resolved Issue	Issue ID
Tune SQL Tune Top SQL Advise Indexes	Corrected an error "Value cannot be null. Parameter name: Value" when explain plan, explore alternatives, tune SQL or Advise Indexes.	TSEP-1074
Tune Top SQL Advise Indexes	Corrected an error when extract SQL from AWR in database 11.2.0.1.	TSEP-1077
Advise Indexes	Corrected an error if database objects are modified by user during the initialization process of Advise Indexes.	TSEP-1080
Common	Corrected the wrong Buy License link	TSEP-1090





## SQL Tuning Expert Pro for Oracle 3.1.0

SQL Tuning Expert Pro 3.1.0 is a minor release which includes following enhancements and resolved issues.

### Recommend Indexes

Drop indexes created in test run process as early as possible to save space if those indexes are no longer needed in later test run stages.

Generate less index alternatives to speed up test run when indexing level is 1, 2 or 3.

### Resolved Issues in 3.1.0

Feature	Resolved Issue	Issue ID
Tune SQL	The performance bar is not visible when the SQL performance improvement near 100%	TSEP-995
Tune SQL	Corrected an error if unselect all SQL alternatives when exploring SQL alternatives	TSEP-1054
Connection Manager	Corrected an error when launch application if TNS file with invalid entries.	TSEP-1048
Connection Manager	Corrected an error when launch application without TNS file.	TSEP-1059

## SQL Tuning Expert Pro for Oracle 3.0.1

SQL Tuning Expert Pro 3.0.1 is a major release which includes new features, enhancements and fixes.

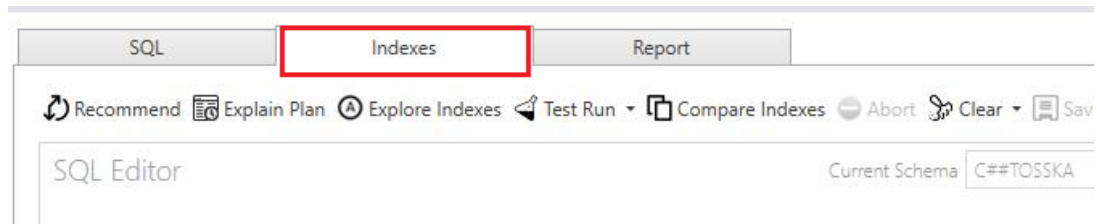
### Tune SQL

- New recommend indexes for single SQL

New index recommendation function for single SQL statement empower by our unique AI engine. The feature can explore potential indexes to improve a given SQL to the

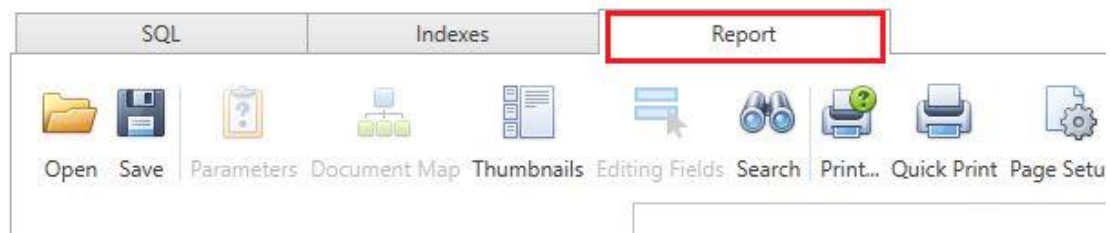


uncompromising performance speed.



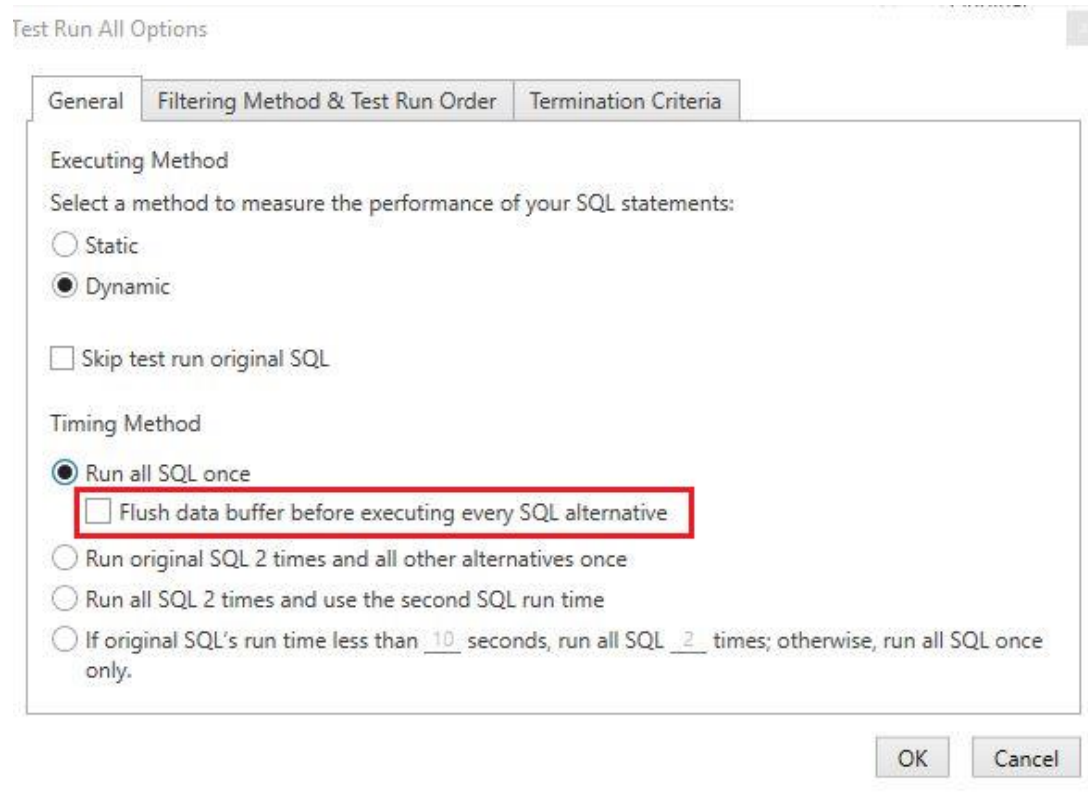
- SQL Tuning Solution Report

A SQL tuning report will be generated after the SQL tuning and Indexes tuning processes are completed, users can use it to compare the performance gains between SQL tuning and indexes tuning.

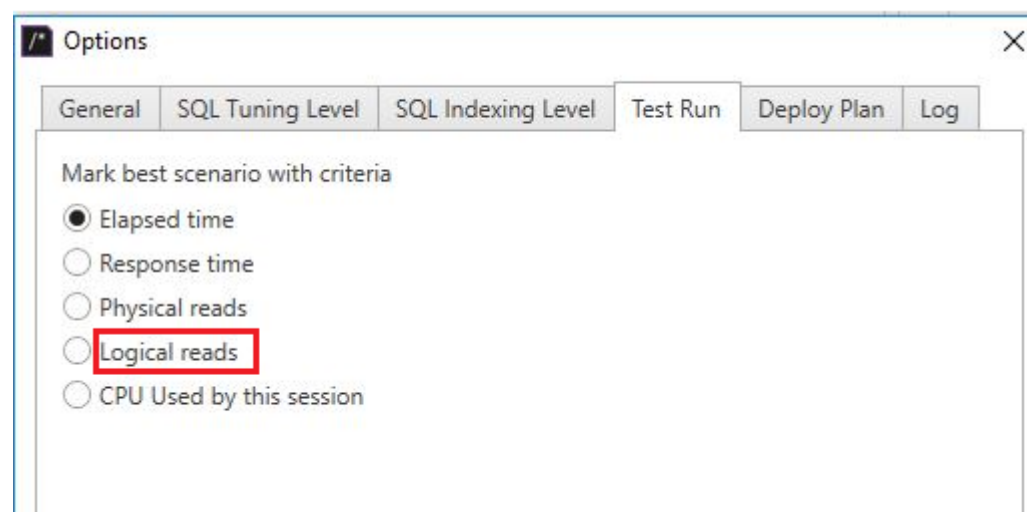


- Test Run

A new option to flush data buffer before each execution of SQL alternative when **“Run all SQL once”** is selected. It is useful to benchmark those SQL that are not executed frequently.

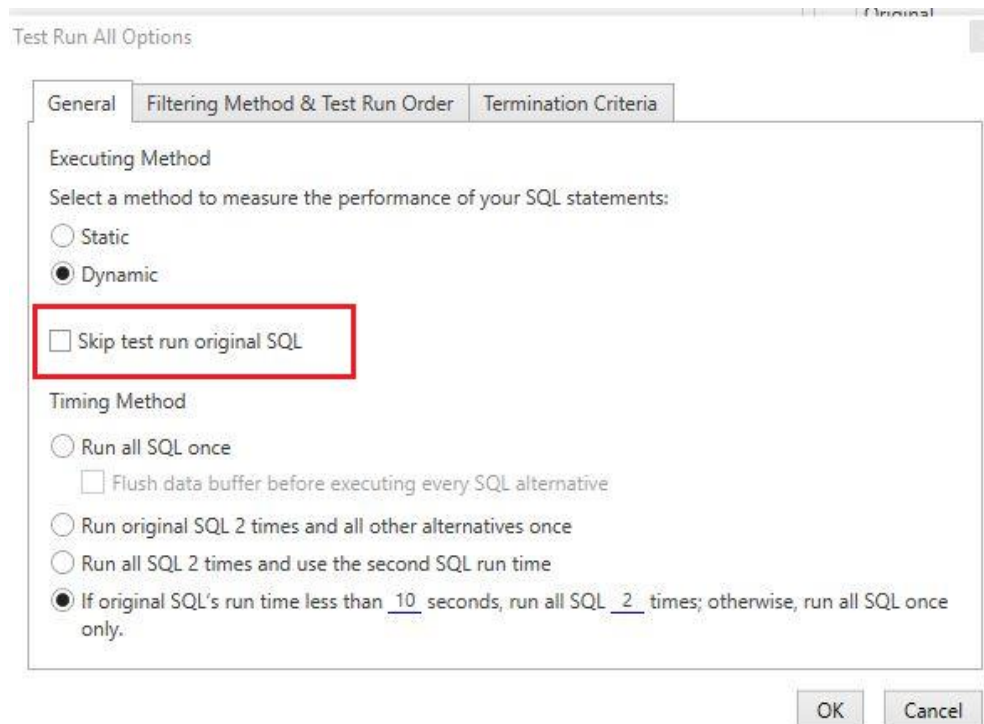


New option in "Mark best scenario with criteria" – "Logical Reads".





New option “Skip test run original SQL”. This option is useful to save your test run time when you already know your original SQL’s elapsed time is long; you can use it to skip the test running of original SQL.



## Tune Top SQL

Show SQL alternative improvement and Index improvement in graphical style.

## Advise Indexes

Supports function-based index.

Provides popup window to export all SQL List to Excel file in Index Advice report

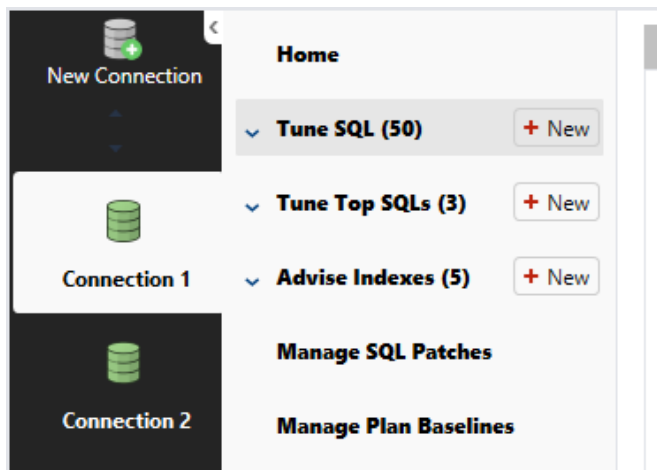
Reduces disk space to save an Advise Indexes Session



## User Interface

New layout of home page for users' easy access of major functions in the product.

New navigation panel.



## General

A new session will be created automatically for Tune SQL, Tune Top SQL and Advise Indexes if there are old sessions.

### Resolved Issues in 3.0.1

Feature	Resolved Issue	Issue ID
Tune SQL	Fixed an exception when tuning a SQL	TSEP-1003
Tune Top SQL	Fixed the issue that duplicated plans are shown in plan panel in Tune Top SQL	TSEP-918
Tune SQL & Tune Top SQL	Fixed the issue that the default data type for bind variable is not correct for some SQL.	TSEP-726
Advise Indexes	Fixed a bug that Advise Indexes is not stopped immediately when stop conditions are satisfied.	TSEP-729
Advise Indexes	Fixed an exception when compare plans in Advice Indexes Report	TSEP-733
Advise Indexes	Fixed an issue that error "Failed to explain plan" occurred when initialize specified SQL in Advise Indexes	TSEP-894



General	Fixed an exception when launch application	TSEP-874
Connection Manager	List the TNS names in connection manager with instant Oracle client	TSEP-821
Connection Manager	Show message when connect a database which is not supported	TSEP-855

## SQL Tuning Expert Pro for Oracle 2.0.8

SQL Tuning Expert Pro 2.0.8 is a major release which includes following new features, enhancements and resolved issues.

### Tune SQL

Improve problem-solving ability with more Hints supported

### Tune Top SQL

A new module Tune Top SQL is provided to extract resource expensive SQLs from SGA or AWR for SQL tuning.

### Advise Indexes

Display more SQL statistics in Extract SQL window.

New Compare Plan window for Advice Report.

More information is provided if explain plan failed or it has no index privilege on specific tables during advise indexes process.

### Common

Export execution plan to PDF or image.

Print execution plan.

UI Languages Supported: English, Chinese (simplified)



## Resolved Issues in 2.0.8

Feature	Resolved Issue	Issue ID
Common	SQL Text wrongly warped in SQL Editor	TSEP-580
Tune SQL	Improved progress bar style during test run	TSEP-336

## SQL Tuning Expert Pro for Oracle 1.2.0

SQL Tuning Expert Pro 1.2.0 is a minor release which includes following enhancements and resolved issues.

### Common

No create table privilege is needed when Tune SQL or Advise Indexes.

### Advise Indexes

Display more SQL statistics in Extract SQL window.

New Compare Plan window for Advice Report.

## Resolved Issues in 1.2.0

Feature	Resolved Issue	Issue ID
Tune SQL	Corrected an error when attempting to Tune or test run SQL.	TSEP-440



## SQL Tuning Expert Pro for Oracle 1.1.0

SQL Tuning Expert Pro 1.1.0 is a major release which includes following new features.

### Tune SQL

It is a very powerful tool to tune your SQL statements in a fully automatic manner without the need of user's expertise involvement. Our AI engine will try most effective hints combinations to your SQL statement to explore potential better execution plans of your SQL statements. You can select the best performance SQL alternative for your application after benchmarking of all or selected scenarios generated by the engine. It is also a powerful SQL tuning tool to tune your SQL statements without touching your source code by applying SQL Patches/Plan Baselines to production database anytime and anywhere.

### Manage SQL Baselines

You can manage one or multiple deployed SQL Plan Baselines. You can use this function to enable, disable, drop or migrate selected SQL Plan Baselines.

### Manage SQL Patches

You can manage one or multiple deployed SQL Patches. You can use this function to enable, disable, drop or migrate selected SQL Patches.

### Advise Indexes

It is an Intelligent and cost-aware Indexes Advisor for a given SQL workload captured from AWR or SGA. The Advise Indexes is able to find the best recommendation of indexes within a certain quota or time. The recommended indexes will have the best impact to the given SQL workload.