

Infrastructure at your Service.

SQL Tuning made easier with SQLTXPLAIN (SQLT)



Infrastructure at your Service.

About me

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Who we are dbi services

Experts At Your Service

- > 45 specialists in IT infrastructure
- > Certified, experienced, passionate

Based In Switzerland

- > 100% self-financed Swiss company
- > Over CHF6 mio. turnover

Leading In Infrastructure Services

- > More than 120 customers in CH, D, & F
- > Over 40 SLAs dbi FlexService contracted



Agenda

1.Introduction

2.Main Methods



3.Main HTML diagnostics report

Introduction




- > What is SQLT?
- > Benefits
- > SQLT mechanics

SQL Tuning made easier with SQLTXPLAIN (SQLT)

Introduction

What is SQLTXPLAIN (SQLT)?

Tool to diagnose SQL statements performing poorly

- > Add-on (MOS 215187.1)
- > 12c/11g/10g
- > Linux, UNIX, Windows
- > Single instance, RAC, Exadata
- > Easy to install and execute
- >
- >  download and use



Introduction

Benefits



What is in it for me?

- > Collect SQL tuning diagnostics for one SQL statement
- > Over a hundred health-checks (HC) around the SQL statement
- > If Oracle Tuning or Diagnostics Pack are properly licensed
 - > Invokes SQL Tuning Advisor (STA)
 - > Includes Active Session History (ASH) and SQL Monitor Report
 - > Includes Automatic Workload Repository (AWR)
- > Automatic SQL tuning test case (TC) extraction
- > SQLT helps to expedite SQL tuning process



Introduction

SQLT mechanics

How does it work?

- > 3 + 4 main methods to analyze one SQL statement
- > Inputs one SQL statement and outputs one zip file
- > Output contains a main html report and other files
- > AWR, ADDM, ASH, 10053, 10046, TKPROF, etc.
- > Exports SQL tuning test cases
 - > SQLT TC and TCX
 - > 11g Test Case Builder (TCB)
- > **SQLT installs its own two schemas and objects on them!**



SQLT Main Methods



- > Main Methods
- > Using SQLT Main Methods
- > SQLTXTRACT Demo

SQL Tuning made easier with SQLTXPLAIN (SQLT)

SQLT Main Methods

All 3 + 2 + 2 act on one SQL statement



- > **SQLT XTRACT**
- > **SQLT XECUTE**
- > **SQLT XTRXEC**
- > SQLT XPLAIN
- > SQLT XTRSBY
- > SQLT XPREXT
- > SQLT XPREXC

All methods have these requirements

- SQL*Plus connecting as application user
- Application user must have SQLT_USER_ROLE granted
- Password for SQLTXPLAIN must be provided
- One SQL per use of SQLT
- SQLT has its own configuration parameters

SQLT Main Methods

Using SQLT Main Methods

Method	Script	Features
SQLT XTRACT	sqlt/run/sqltxtract.sql	<input type="checkbox"/> Most common method <input type="checkbox"/> Inputs SQL_ID <input type="checkbox"/> SQL statement is not executed
SQLT XECUTE	sqlt/run/sqltxecute.sql	<input type="checkbox"/> Inputs a script name which contains <ul style="list-style-type: none"> ✓ ALTER SESSION commands (if applicable) ✓ Binds declaration and assignment (if applicable) ✓ SQL statement <input type="checkbox"/> Executes the SQL statement
SQLT XTRXEC	sqlt/run/sqltxtrxecsql	<input type="checkbox"/> Combines XTRACT and XECUTE <input type="checkbox"/> Inputs SQL_ID
SQLT XPLAIN	sqlt/run/sqltxplain.sql	<input type="checkbox"/> Inputs a file name which contains a SQL statement <input type="checkbox"/> What if SQL contains binds? <input type="checkbox"/> Leave them in place, OR Replace with literals of same data type
SQLT XTRSBY	sqlt/run/sqltxtrsbysql	<input type="checkbox"/> For read-only databases <input type="checkbox"/> Executes in Primary and connects into stand-by <input type="checkbox"/> Works like XTRACT <input type="checkbox"/> Inputs SQL_ID and DBLINK

SQLT Main Methods

Demo

SQLTXTRACT Demo



SQLT Main HTML Diagnostics Report



215187.1 SQLT XTRACT 11.4.4.7 Report: sqlt_s92947_main.html

Global

- [Observations](#)
- [SQL Text](#)
- [SQL Identification](#)
- [Environment](#)
- [CBO Environment](#)
- [Fix Control](#)
- [CBO System Statistics](#)
- [DBMS_STATS Setup](#)
- [Initialization Parameters](#)
- [NLS Parameters](#)
- [I/O Calibration](#)
- [Tool Configuration Parameters](#)

Cursor Sharing and Binds

- [Cursor Sharing](#)
- [Adaptive Cursor Sharing](#)
- [Peeked Binds](#)
- [Captured Binds](#)

SQL Tuning Advisor

- [STA Report](#)
- [STA Script](#)

Plans

- [Summary](#)
- [Performance Statistics](#)
- [Performance History \(delta\)](#)
- [Performance History \(total\)](#)
- [Execution Plans](#)

Plan Control

- [Stored Outlines](#)
- [SQL Profiles](#)
- [SQL Plan Baselines](#)

SQL Execution

- [Active Session History](#)
- [AWR Active Session History](#)
- [SQL Statistics](#)
- [SQL Detail ACTIVE Report](#)
- [Monitor Statistics](#)
- [Monitor ACTIVE Report](#)
- [Monitor HTML Report](#)
- [Monitor TEXT Report](#)
- [Segment Statistics](#)
- [Session Statistics](#)
- [Session Events](#)
- [Parallel Processing](#)

Tables

- [Tables](#)
- [Statistics](#)
- [Statistics Versions](#)
- [Modifications](#)
- [Properties](#)
- [Physical Properties](#)
- [Constraints](#)
- [Columns](#)
- [Indexed Columns](#)
- [Histograms](#)
- [Partitions](#)
- [Indexes](#)

Objects

- [Objects](#)
- [Dependencies](#)
- [Fixed Objects](#)
- [Fixed Object Columns](#)
- [Nested Tables](#)
- [Policies](#)
- [Audit Policies](#)
- [Tablespaces](#)
- [Metadata](#)

- > What is included?
- > Navigating the Main Report
- > SQLTXTRACT Demo

SQLT Main HTML Diagnostics Report

What is included in Main Report?

Partial list of contents (1/3)

- > Health-checks
- > SQL text
- > Parameters
- > Cursor sharing
- > SQL Tuning Advisor (STA) report
- > Execution plans



SQLT Main HTML Diagnostics Report

What is included in Main Report?

Partial list of contents (2/3)

- > Plan stability
- > Active Session History (ASH)
- > SQL performance metrics
- > SQL Monitor
- > Segment and session statistics
- > Tables

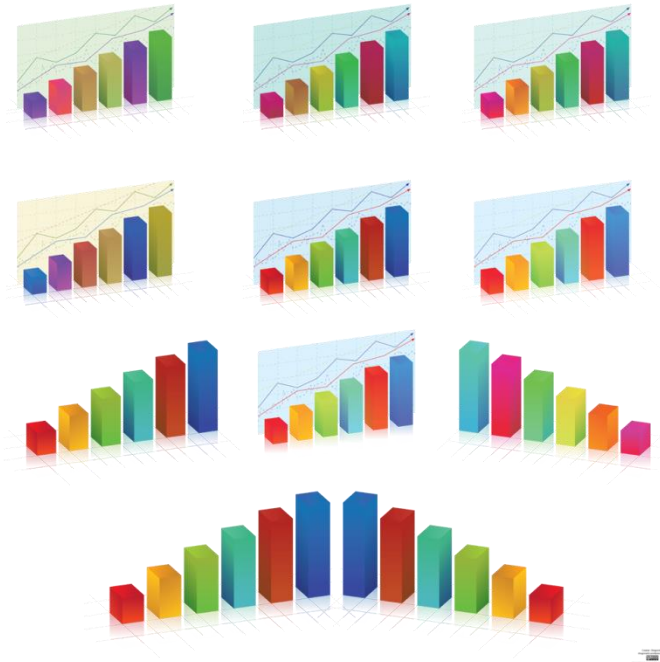


SQLT Main HTML Diagnostics Report

What is included in Main Report?

Partial list of contents (3/3)

- > Indexes
- > CBO statistics
- > Objects and dependencies
- > Policies
- > Metadata



SQLT Main HTML Diagnostics Report

Navigating the SQLT Main Report

Typical Navigation

- > SQL Text
- > Plans Summary
- > Observations
- > Branch as per findings

215187.1 SQLT XTRACT 11.4.4.7 Report: sqlt_s92947_main.html

Global <ul style="list-style-type: none">• <u>Observations</u>• <u>SQL Text</u>• <u>SQL Identification</u>• <u>Environment</u>• <u>CBO Environment</u>• <u>Fix Control</u>• <u>CBO System Statistics</u>• <u>DBMS_STATS Setup</u>• <u>Initialization Parameters</u>• <u>NLS Parameters</u>• <u>I/O Calibration</u>• <u>Tool Configuration Parameters</u>	Plans <ul style="list-style-type: none">• <u>Summary</u>• <u>Performance Statistics</u>• <u>Performance History (delta)</u>• <u>Performance History (total)</u>• <u>Execution Plans</u> Plan Control <ul style="list-style-type: none">• <u>Stored Outlines</u>• <u>SQL Profiles</u>• <u>SQL Plan Baselines</u> SQL Execution <ul style="list-style-type: none">• <u>Active Session History</u>• <u>AWR Active Session History</u>• <u>SQL Statistics</u>• <u>SQL Detail ACTIVE Report</u>• <u>Monitor Statistics</u>• <u>Monitor ACTIVE Report</u>• <u>Monitor HTML Report</u>• <u>Monitor TEXT Report</u>• <u>Segment Statistics</u>• <u>Session Statistics</u>• <u>Session Events</u>• <u>Parallel Processing</u>	Tables <ul style="list-style-type: none">• <u>Tables</u>• <u>Statistics</u>• <u>Statistics Versions</u>• <u>Modifications</u>• <u>Properties</u>• <u>Physical Properties</u>• <u>Constraints</u>• <u>Columns</u>• <u>Indexed Columns</u>• <u>Histograms</u>• <u>Partitions</u>• <u>Indexes</u> Objects <ul style="list-style-type: none">• <u>Objects</u>• <u>Dependencies</u>• <u>Fixed Objects</u>• <u>Fixed Object Columns</u>• <u>Nested Tables</u>• <u>Policies</u>• <u>Audit Policies</u>• <u>Tablespaces</u>• <u>Metadata</u>
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SQLT Main HTML Diagnostics Report Demonstration

Main Report Navigation

> SQLT XTRACT



215187.1 SQLT XTRACT 11.4.4.7 Report: sqlt_s92947_main.html

Global <ul style="list-style-type: none">ObservationsSQL TextSQL IdentificationEnvironmentCBO EnvironmentFix ControlCBO System StatisticsDBMS_STATS SetupInitialization ParametersNLS ParametersI/O CalibrationTool Configuration Parameters	Plans <ul style="list-style-type: none">SummaryPerformance StatisticsPerformance History (delta)Performance History (total)Execution Plans Plan Control <ul style="list-style-type: none">Stored OutlinesSQL ProfilesSQL Plan Baselines SQL Execution <ul style="list-style-type: none">Active Session HistoryAWR Active Session HistorySQL StatisticsSQL Detail ACTIVE ReportMonitor StatisticsMonitor ACTIVE ReportMonitor HTML ReportMonitor TEXT ReportSegment StatisticsSession StatisticsSession EventsParallel Processing	Tables <ul style="list-style-type: none">TablesStatisticsStatistics VersionsModificationsPropertiesPhysical PropertiesConstraintsColumnsIndexed ColumnsHistogramsPartitionsIndexes Objects <ul style="list-style-type: none">ObjectsDependenciesFixed ObjectsFixed Object ColumnsNested TablesPoliciesAudit PoliciesTablespacesMetadata
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Any questions? Please do ask

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We look forward to working with you!