SQL Performance Assessment Report

AI DBA Assistant — Automated Oracle SQL Analysis

Report ID: SQL-ABC123-20260602
Generated: 02-Jun-2026 22:20 UTC
Instance: PROD_ORCL · Database: Production Oracle 19c

SQL Health Score	Risk Level	Database	SQL ID
72 / 100	Medium	Production Oracle 19c	abc123

1. Executive Summary

SQL_ID abc123 is the dominant consumer of database time during the reporting interval, accounting for approximately 31% of DB time with elevated buffer gets and CPU utilization. Buffer busy waits on the orders subsystem suggest hot-block contention. Immediate index review and statement tuning are recommended before the next peak processing window.

2. SQL Health Score & 3. Risk Level

The statement received a health score of **72/100**, classified as **Medium** risk based on CPU consumption, wait profile, execution frequency, and plan stability.

4. Performance Findings

- High CPU utilization correlated with repeated full table scans on ORDERS.
- Buffer busy waits (18% of DB time) on index leaf blocks — hot row contention.
- Top SQL bottleneck: SQL_ID abc123 — 31% of database time, 89.2M buffer gets.
- Execution plan instability detected between child cursors 0 and 1.

5. SQL Metrics

Metric	Value	Status

SQL ID	`abc123`	Normal
Executions	`12,450`	Warning
Elapsed Time (sec)	`4,820`	**Critical**
CPU Time (sec)	`3,910`	**Critical**
Buffer Gets	`89,200,000`	**Critical**
Disk Reads	`1,240,000`	Warning
Rows Processed	`2,100,000`	Normal
% of Total DB Time	`31.2%`	**Critical**

6. Index Recommendations

#	Recommendation
1	Create index IDX_ORDERS_01 on ORDERS (CUSTOMER_ID, ORDER_DATE) — estimated high impact.
2	Consider composite index on ORDER_LINES (ORDER_ID, PRODUCT_ID) for nested loop joins.
3	Review unused indexes on ORDERS_ARCHIVE to reduce DML overhead.

7. Tuning Recommendations

#	Recommendation
1	Tune SQL abc123 — rewrite subquery to use analytic functions; avoid SELECT *.
2	Increase PGA_AGGREGATE_TARGET if hash joins spill to temp (current pga max 512MB).
3	Gather optimizer statistics on ORDERS and ORDER_LINES (stale > 14 days).
4	Enable SQL Plan Baseline for stable plan after validation in QA.

8. Expected Performance Benefit

Metric	Current	Projected	Improvement
Elapsed Time	4,820 s	2,100 s	↓ 56%
Buffer Gets	89.2M	48M	↓ 46%
CPU Time	3,910 s	1,750 s	↓ 55%

After applying IDX_ORDERS_01 and SQL rewrite, projected elapsed time reduction of 40–55% and buffer gets reduction of 35–45% based on comparable workloads.

9. About This Report

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