



Knowledge Tune-Up: Database Engine Essentials

Need-to-know concepts for better database performance



1

Database engines appear to consume a lot of RAM and I/O resources. **Why is that?**

- Databases engines manage their own memory—so consider the big picture beyond the OS.
- To understand database memory usage, look at memory buffers inside the database engine.
- Large volumes of storage and large amounts of IOPs come with busy databases.



2

Running a query takes 5 minutes to return 3 records. **What's the fix?**

- To tune a query, look at the execution plan or the steps the engine took to retrieve your data.
- Learn what suboptimal query patterns look like and how to avoid them.
- If transactions are not brief and explicitly defined, user activities might be blocked or deadlocked.



3

Indexes, indexes, indexes. **Why do databases need them?**

- Without indexes, the database engine will scan every row of each table requested in the query.
- Without indexes, transactions that delete, update, or insert data will cause blocking issues.
- Indexes vastly reduce the amount of logical I/O for read operations, offsetting the overhead for write activity.

Understanding how a database engine works and knowing what to monitor is the key to overall performance.

