

# What is SQL Performance Tuning?

- What is the performance tuning?

Performance tuning is the improvement of system performance. Typically in computer systems, the motivation for such activity is called a performance problem, which can be either real or anticipated. Most systems will respond to increased load with some degree of decreasing performance.

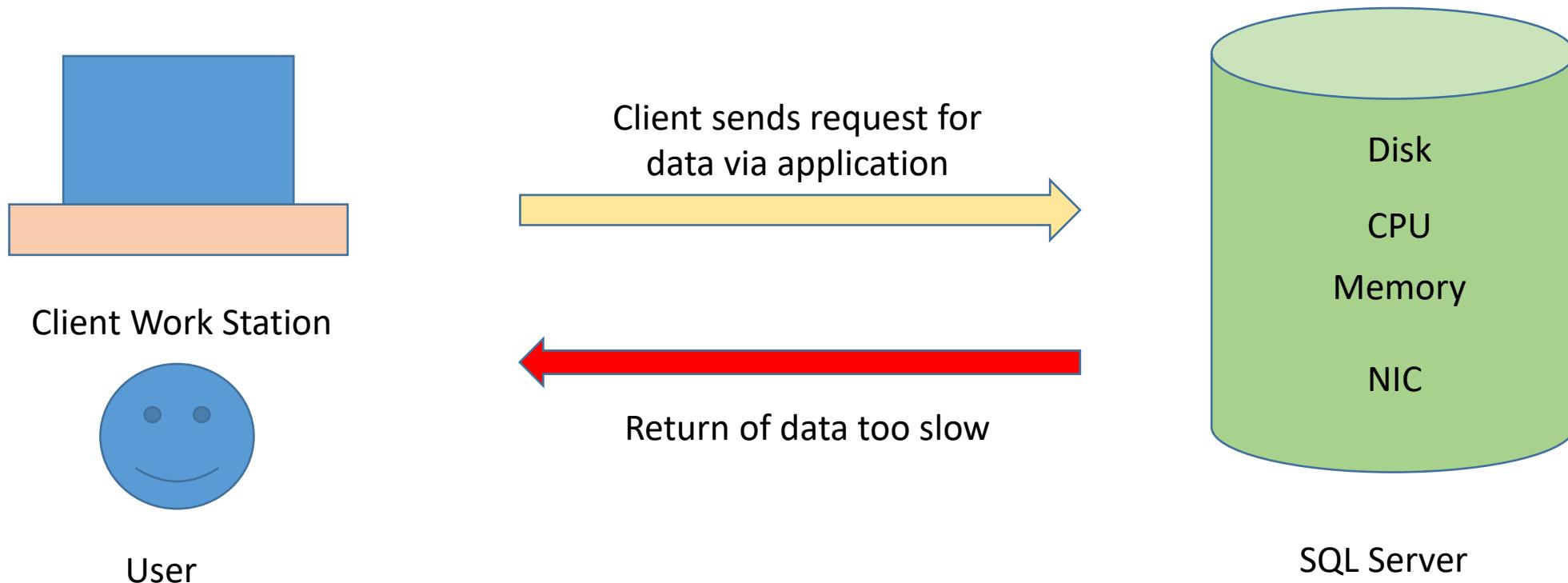
- What is tuning in database?

Database Tuning is the activity of making a database application run more quickly. "More quickly" usually means higher throughput, though it may mean lower response time for time-critical applications

- What is meant by SQL tuning?

SQL tuning is the process of ensuring that the SQL statements that an application will issue will run in the fastest possible time

# What is SQL Performance Tuning?



When the user sends a request for data to be returned and it takes too long for the server to process – you have a performance issue!

# Why is the data being returned too slow?

**Could be many reasons!**

- Is it the application misconfigured

Improper set up, application not updated

- Do you have sufficient physical hardware resources

Memory, disk, CPU, network

- Is the query optimizer not choosing the best plan

Maybe need hints to force the optimizer

- Are the queries improperly written

Is the query using cursors, can it be written more efficiently

- Do you have proper indexing

Improper indexing on tables, unused indexing, too many indexes

# What the tools and application for the SQL DBA to use for performance tuning and monitoring?

- Performance monitor
- Activity monitor
- SQL Profiler
- Extended Events
- DMV (Database management views)
- DBCCs (Database console commands)
- Stored procedures (sp\_who, sp\_monitor)
- SQL Standard Report
- Database tuning advisor
- Execution plans
- Data collection
- Query store
- Other monitoring tools