Responsive & Productive Database Apps
with MaxParallel™ for SQL Server

www.maxparallel.com

High-velocity transaction processing and real-time analytics factor heavily in the viability of numerous commercial, research and military institutions. For many, the responsiveness of the SQL Server databases behind their critical apps shapes the organization's effectiveness and competitive advantage. That's true in e-Commerce, inventory optimization, forecasting/modeling and fraud/fault/threat detection, to name a few.

The difference between being too late and just in time often boils down to how quickly software can respond to inputs, update status and forecast future behaviors. Delays in any of these facets can be crippling. Clients become irritated, stock levels are mismanaged, fraud, faults and threats go undetected. Uncovering and eliminating the root causes can be quite challenging. DataCore can help.

SLOW DATABASES, DESPITE ABUNDANT RESOURCES?

This question puzzles data scientists, database administrators and line of business owners eager for fast results. Sadly, the most frustrating database delays can be difficult to uncover when neither computing, networking nor storage capacity are at fault.

A mediocre choice of SQL statements or a skewed data mix will definitely contribute. However, a more insidious culprit may be to blame. Resource contention, or more accurately, synchronization locks governing access to resources will considerably slow down even the most fine-tuned SQL code. Not because resources are scarce, but because access to them is poorly coordinated. To visualize the problem, picture a cinema featuring four different movies, all starting around the prime evening hour (Fig. 1). Although the theatre is equipped with 4 separate ticket booths, only one is manned. Minutes before show time, the lines grow long behind the single queue. Some frequent moviegoers angry at missing the opening scenes, leave. Others annoyed with the unpleasant crowding bow not to return. Left uncorrected, the cinema's reputation would quickly deteriorate, hurting sales of tickets, food and beverages. New management arrives and recognizes the problem. They immediately put all of the ticket booths to work and streamline passage for online ticket purchases (Fig. 2). Everyone proceeds through in parallel without waiting on those here for other films, leading to a better overall experience for clients and staff alike.

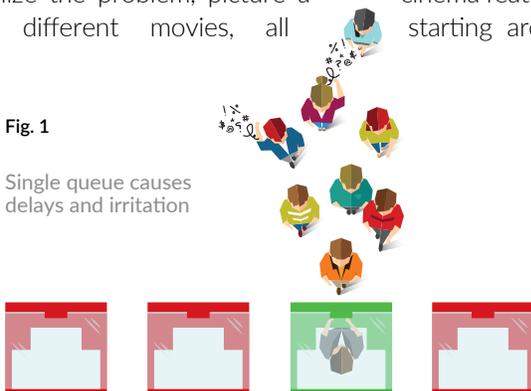**Fig. 1**

Single queue causes delays and irritation

Fig. 2

Parallel access speeds movement

IT'S QUICKER IN PARALLEL

MaxParallel™ software expedites SQL Server in similar fashion. Multiple independent queries and updates running on separate processing cores no longer wait on a single queue- they now access data in parallel without delay. The order of arrival for dependent writes and updates is maintained.

UNMASK HIDDEN DELAYS

Over the course of the past two decades, DataCore's R&D team has been probing the root causes of sluggish behavior in latency-sensitive applications. Originally from the perspective of external storage networks and more recently within the host operating systems and hypervisors. Such investigations reveal that despite the pervasiveness of multi-core servers with numerous logical processors (CPUs), certain resource scheduling techniques in the kernel date back to when machines were only equipped with a single processor.

To put it simply, major choke points exist in how system software schedules data access, serializing unrelated requests as if only one core could handle the job. These choke points force unrelated tasks to wait on each other even though there is no data dependency between them.

In addition, valuable processors on which SQL Server licenses are provisioned remain idle.

REMOVE CHOKE POINTS & PUT CORES TO WORK

MaxParallel™ for SQL Server significantly shortens the time to process transactions, generate reports and analyze trends by removing these choke points, enabling concurrent tasks within a server to access and update the database in parallel. It does so by taking full advantage of the cores you pay so dearly for.

No programming or hardware changes are necessary. The plug-and-play software is elastic and self-tuning, making high velocity OLTP and real-time analytics far more responsive, productive and affordable.

These benefits translate into very different value based on the specific scenario. For web sales, quicker transactions mean buyers are more likely to return. Sellers also gain more inventory turns and better cash positions. In law enforcement and counter-terrorism, timely analysis ensures better situational awareness to combat potential dangers.

SUCCESS STUDY: TYREWORLD BURKHARD FUHRMANN GMBH - ONLINE TIRE SALES

Rapidly changing inventory levels and cost recalculations among 80+ tire distributors were taking far too long for TyreWorld to determine optimal drop ship prices to entice their online customers. This drove them to search for next generation hardware and software solutions that could shave time off each transaction.

Following the addition of MaxParallel software to their SQL Server environment, TyreWorld achieved two remarkable objectives:

- Time to re-evaluate warehouse stock levels and recalculate best prices **shortened by 30%**

- Inventory export transfer times **reduced by 75%**

More than 300,000 product items make up this database. Between 1,000 and 60,000 entries are involved in daily inventory transfers.

> **Real-time stock level updates, inventory transfers and price sheet updates take a fraction of the time with DataCore MaxParallel for SQL Server, enabling us to offer the most competitive products to our customers. The plug-and-play software makes our database run insanely fast. It has the potential to change our business overnight.**
>
> *- Manuel Hanke (IT Manager)*

No more waiting in the queue. Download the free software trial here http://info.datacore.com/software/maxparallel-for-sql-server to see how much more responsive and productive you can be.