Optimizing Performance for SQL Based Applications

Lab 3 – Optimizing Indexes and Concurrency

Overview

You have reviewed wait statistics for the **AdventureWorksLT** database and noticed high wait stats for CPU, memory, IO, blocking, and latching. In this lab, you will address blocking wait stats. You will explore workloads that can benefit from snapshot isolation and then implement snapshot isolation to reduce overall blocking.

Before starting this lab, you should view **Module 3 – Optimizing Indexes and Concurrency** in the course *Optimizing Performance for SQL Based Applications*. Then, if you have not already done so, follow the instructions in the **Getting Started** document for this course to set up the lab environment.

What You'll Need

To complete the labs, you will need the following:

- A SQL Server instance with the AdventureWorksLT sample database. Review the Getting Started document for information about how to provision this.
- The lab files for this course

Challenge 1: Implement Snapshot Isolation

In this exercise, you will implement snapshot isolation.

View Original Values

1. Download and open **Lab 03 – Connection 1.sql** from the **Setup** folder.
2. Select the query under the comment which begins **Task 1**.
3. Click **Execute**.
4. Note down the **OrderQty** value for the first row.

Begin a Transaction

1. Select the query under the comment which begins **Task 2** and click **Execute**.
2. Notice that this transaction does not commit.

Investigate Concurrency

1. Click **New** Query to open a new query tab and download and open **Lab 03 – Connection 2.sql** from the **Setup** folder.
2. Select the query under the comment which begins **Task 3**.
3. Click **Execute**.
4. Notice that the query is being blocked.
5. On the toolbar, click **Cancel Executing Query**.

Change Transaction Isolation Level

1. Select the query under the comment which begins **Task 4**.
2. Click **Execute**.

Investigate Concurrency

1. Select the query under the comment which begins **Task 5**.
2. Click **Execute**.
3. Notice that the query is not blocked
4. Note down the **OrderQty** value for the first row.
5. Switch to the first query tab.
6. Select the query under the comment which begins **Task 6** to increase the values further.
7. Click **Execute**.
8. Select the query under the comment which begins **Task 7**.
9. Click **Execute**.
10. Note down the **OrderQty** value for the first row.
11. Switch to the second query tab.
12. Select the query under the comment which begins **Task 8**.
13. Click **Execute**.
14. Note down the **OrderQty** value for the first row.

Rollback Changes

1. Switch to the first query tab.
2. Select the query under the comment which begins **Task 9**.
3. Click **Execute**.

Note that the snapshot isolation query was not blocked which would improve performance, but there is a risk that it is using increasingly out-of-date data.