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UNLIMITED®

Lab 1: Solving PAGEIOLATCH

1.3 p1

Setting up the workload

1. If you've been playing around changing tables or indexes, restore your StackOverflow database.
2. Restart your SQL Server instance. (For sp_BlitzIndex)
3. Copy & run the setup script for Lab 1.
4. Start SQLQueryStress:
 1. File Explorer, \Labs, double-click SQLQueryStress.exe
 2. Click File, Open, \Labs\ServerLab1.json
 3. Set "Number of Threads" based on your CPUs
 4. Click Go

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Bigger servers need bigger loads

Set “Number of Threads” to be 150% of your cores.

SQLQueryStress

File Help

1 EXEC usp_ServerLab1

Clean Buffers Free Cache GO Cancel

Database

Parameter Substitution

Number of Iterations 100

Number of Threads 6

Delay between queries (ms) 100

CPU Seconds/Iteration (Avg)

Actual Seconds/Iteration (Avg)

Progress

Elapsed Time

Iterations Completed

Iterations/Iteration (Avg)

Total Exceptions

Logical Reads/Iteration (Avg)

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Don't know how many cores you have? Right-click on the taskbar, click Task Manager, Performance tab:

Utilization Speed Base speed: 2.30 GHz
21% 2.30 GHz Sockets: 1
Processes Threads Handles Virtual processors: 4
Virtual processors: 4



# of cores you have	SQLQueryStress Number of Threads
4	6
6	9
8	12
10	15



What the setup script does

Creates some stored procedures

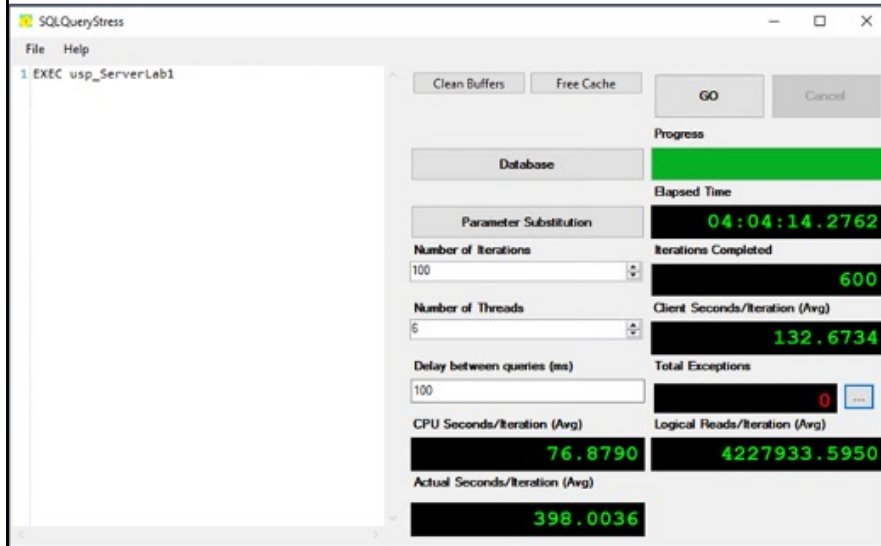
Drops all nonclustered indexes

Sets MAXDOP = 1

(because we're not ready to cover parallelism yet)



SQLQueryStress takes hours.



Find the problems, fix 'em.

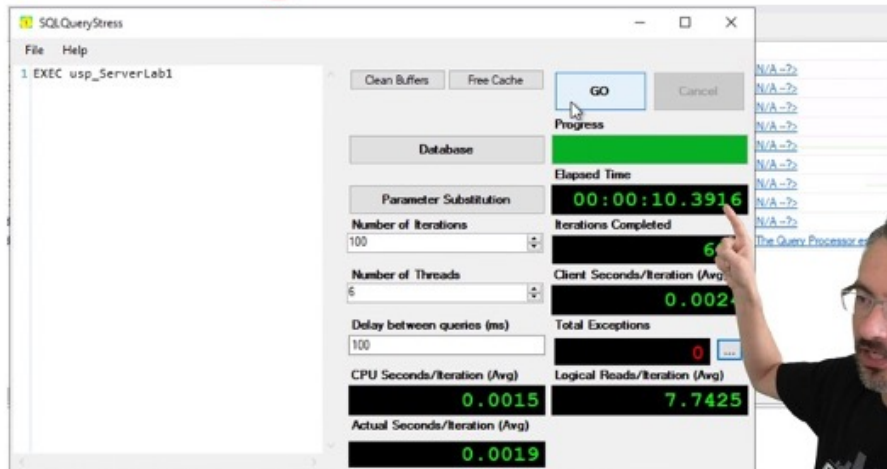
While the test runs, take a long sample of waits:
`sp_BlitzFirst @Seconds = 60, @ExpertMode = 1`

Cancel & close SQLQueryStress, then:

- Investigate to see if indexes will help:
`sp_BlitzIndex @GetAllDatabases = 1`
- See what queries are causing those waits:
`sp_BlitzCache @SortOrder = 'reads'`



Your goal: a sub-60-second run.



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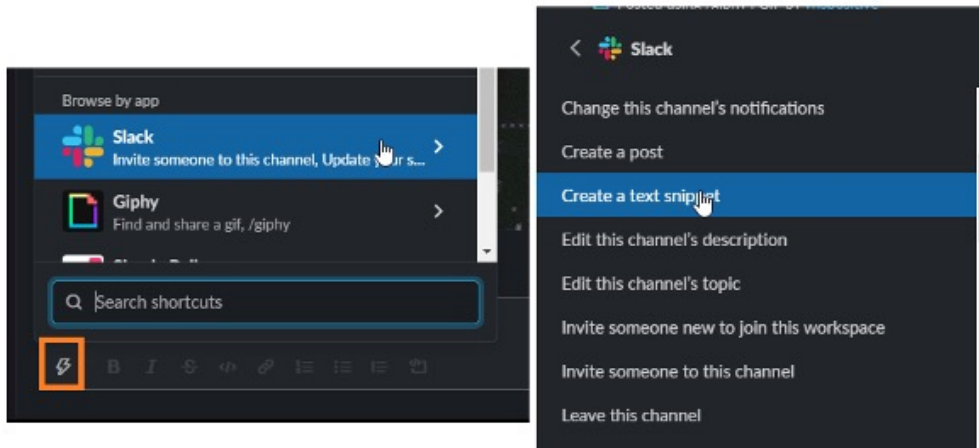
How I'd spend this 2 hours

1. Lunch (1 hour)
2. Check the server's top wait types, the queries causing those wait types, and write down your metrics (10 min)

```
sp_BlitzFirst @Seconds = 60, @ExpertMode = 1;  
sp_BlitzIndex @GetAllDatabases = 1  
sp_BlitzCache @SortOrder = 'reads'
```
3. Change a couple/few things on your server (5-10 min)
4. Go back to #2



To turn in your homework in Slack



1.3 p10



Stumped? Take a peek at Slack.

The Slack room lets you see:

- Other peoples' answers
- How quick (or slow) you are compared to them
- How thorough you are compared to them
- Who you should cheat off of during the final exam

