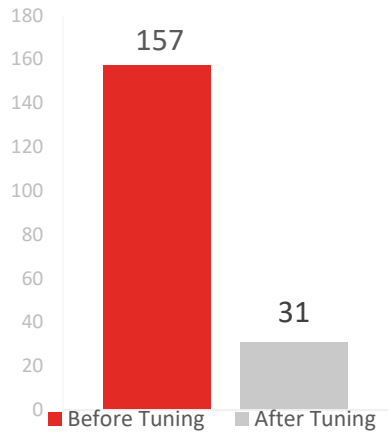
Performance Tuning Report



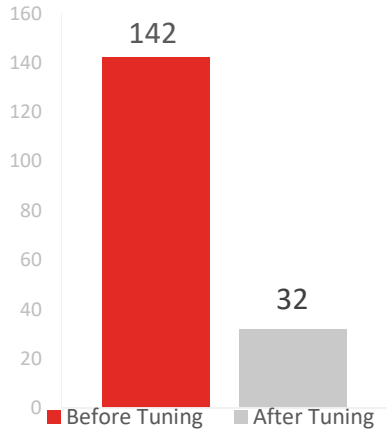
CPU

CPU is **5X** times faster

OR

506%

CPU improvement



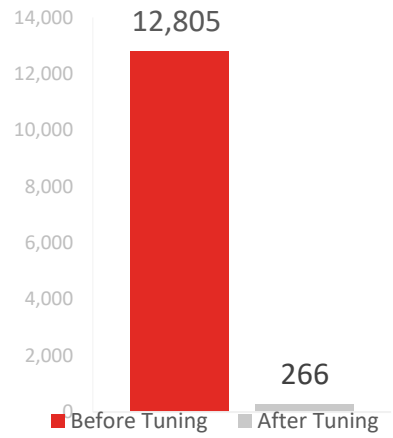
Speed

Speed is **4X** times faster

OR

444%

Speed improvement



Disk

Disk is **48X** times faster

OR

4,814%

Disk improvement

Description:

Why: This stored procedure showed up in the top most resource consuming report. It was putting too much stress on CPU.

What changed: Added two new indexes.

Original

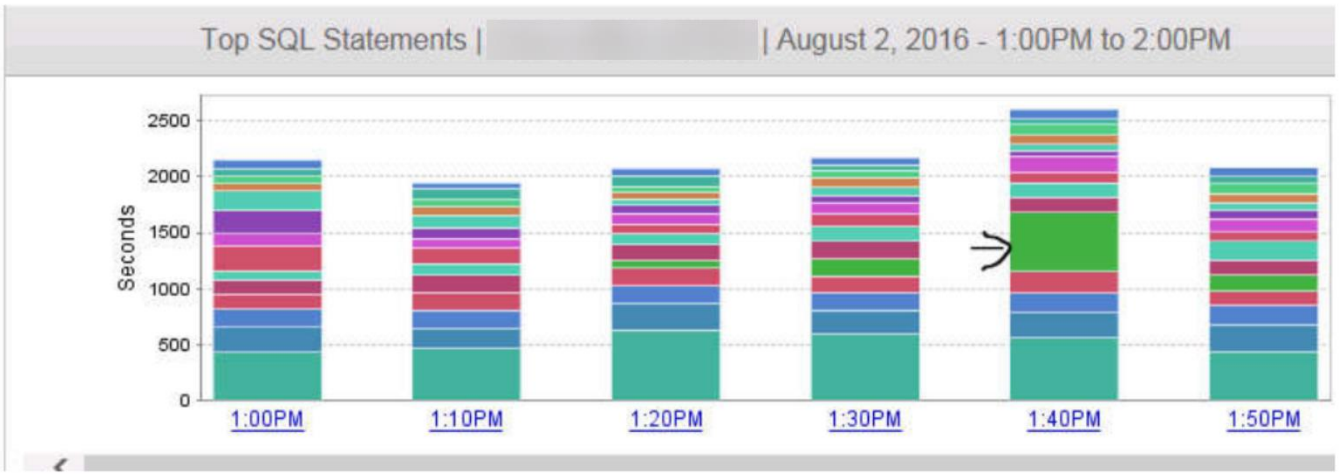
EventClass	TextData	CPU	Reads	Writes	Duration
SQL:BatchCompleted	select_U[redacted]480	157	12805	0	142

First index created

EventClass	TextData	CPU	Reads	Writes	Duration
SQL:BatchCompleted	select_U[redacted]480	62	5641	0	60

Second index created

EventClass	TextData	CPU	Reads	Writes	Duration
SQL:BatchCompleted	select_U[redacted]480	31	266	0	32




```
CREATE NONCLUSTERED INDEX [                    ] ON [dbo].[                    ])
INCLUDE ([                                                                                                    ])
WITH (STATISTICS_NORECOMPUTE = OFF, DROP_EXISTING = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON
, PAD_INDEX=OFF, ONLINE = ON, FILLFACTOR = 100, SORT_IN_TEMPDB = ON, DATA_COMPRESSION=PAGE, MAXDOP=16)
ON INDEXES;
GO

CREATE NONCLUSTERED INDEX [                                  ] ON [dbo].[                ] (                                  )
WITH (STATISTICS_NORECOMPUTE = OFF, DROP_EXISTING = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON
, PAD_INDEX=OFF, ONLINE = ON, FILLFACTOR = 100, SORT_IN_TEMPDB = ON, DATA_COMPRESSION=PAGE, MAXDOP=16)
ON INDEXES;
```

Technical Background:

Most SQL Servers bottleneck on Disk access (or disk “reads”).

It’s not CPU or RAM – which most customers often suspect first.

And that makes a lot of sense. Here is why.

Inefficient queries scan (or read) lot of data. Data read in is stored in RAM. As more data is read in, “older” data is pushed out from RAM. If there isn’t enough RAM to keep ALL data in memory (which is often not possible), SQL Server has to read from disk – and that is the slowest operation SQL Server can do.

When query can be tuned to read 10 rows vs 10M – less CPU and RAM automatically are necessary. Therefore, tuning for less disk “reads” is often the primary goal.

To the end user nothing is more important than Speed (or Duration of the query) though.

Tuning to reduce CPU/RAM resources are helpful too.

When queries are tuned to need less CPU & RAM, it means that same server now has more capacity. Which means that same server can process double or triple the load. Which means it extends lifespan of the same server. Which means hardware upgrades can be pushed out further into the future.