Product	Version	Theme	Environment	Date	Department	Person	Language
SEE Electrical PLM	All	SQL Performance	SQL Server		After Sales	Technical Support	EN

Subject:

How to solve SQL Server problems with performance

Description:

You may encounter, during the use of IGE+XAO applications using SQL server, serious performance problems due to SQL Server administrative problems.

It happens typically under the SEE Electrical PLM applications connected to PLM Hub and the EDB database, managed under SQL server, for those operations using especially complex SQL queries.
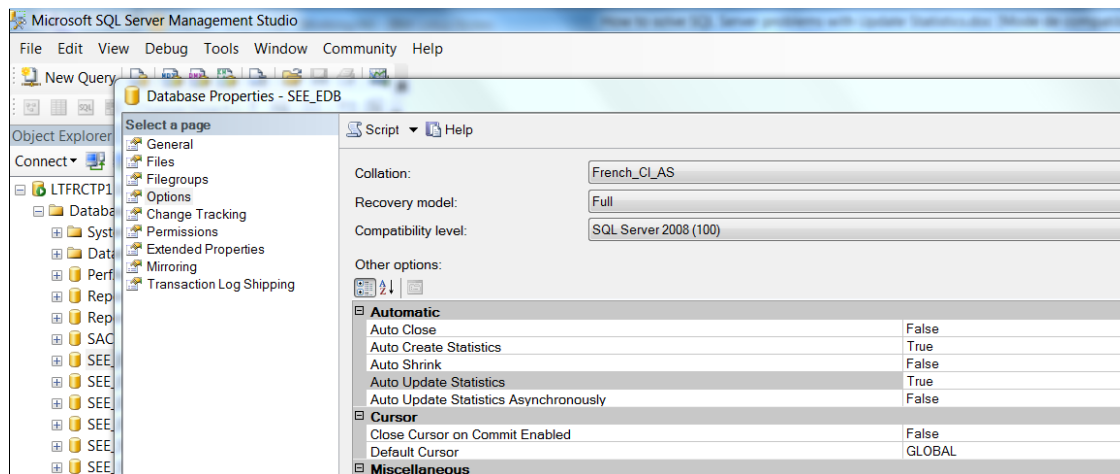
Typically, some processes may last for instance tens of minutes instead of seconds in some special cases:

- Collect

- Opening of an explorer under the Topology module

- …

Our proposed solution:

This situation can be due to:
- the incorrect update of SQL Server database statistics, even if the "Auto Update Statistics" option of the SQL server database is set to "True".

It may happen especially after a set of operations making many insertions inside tables.

- The incorrect update of SQL Server database indexes

Solutions

A – Update the statistics on the database.

We recommend to start the following script:

```
DECLARE @tablec VARCHAR(100), @schem VARCHAR(100), @query VARCHAR(4000), @message VARCHAR(100)
DECLARE tables_cursor CURSOR FAST_FORWARD FOR select DISTINCT OBJECT_NAME(OBJECT_ID) as name,
schema_name(uid) as schem from sys.stats inner join sys.sysobjects on sys.sysobjects.id = sys.stats.object_id where
schema_name(uid) != 'sys'
OPEN tables_cursor
FETCH NEXT FROM tables_cursor INTO @tablec, @schem
WHILE @@FETCH_STATUS = 0
BEGIN
PRINT ' '
SELECT @message = 'Update Statisctics on Table: ' + @tablec
PRINT @message
```

```
SET @query = 'UPDATE STATISTICS [' + @schem + '].[' + @tablec + '] WITH FULLSCAN, ALL'
PRINT @query
EXEC (@query)
FETCH NEXT FROM tables_cursor INTO @tablec, @schem
END
CLOSE tables_cursor
DEALLOCATE tables_cursor
GO
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS ON
GO
```

However, this command may solve the current problem, but does not guarantee it will not happen again and regularly.
So it is recommended to create a maintenance task for a regular (daily) full update of statistics on the databases.
Refer to SQL Server Management Studio documentation for details about how to define such a maintenance task.

B – Update the indexes on the database

Indexes need to be updated on a regular basis. Refer to SQL Server Management Studio documentation for details about how to define such a regular maintenance task.

C - Change some settings at server level

C.1 - Statistic trace flags

The trace flags 2389 and 2390 in SQL server allow changing the Auto Update Stats strategy that helps in the situations described above for SEE Electrical PLM. When those flags are set, the serious performance problems usually disappear.

C.2 – Temporary tables trace flag from SQL Server 2012 SP2

The trace flag 2453 optimizes the usage of temporary tables, that are regularly used by SEE Electrical PLM – Hub on the EDB databases. See:
https://support.microsoft.com/en-us/help/2952444/fix-poor-performance-when-you-use-table-variables-in-sql-server-2012-o

C.3 – How to set trace flags in MS SQL Srver

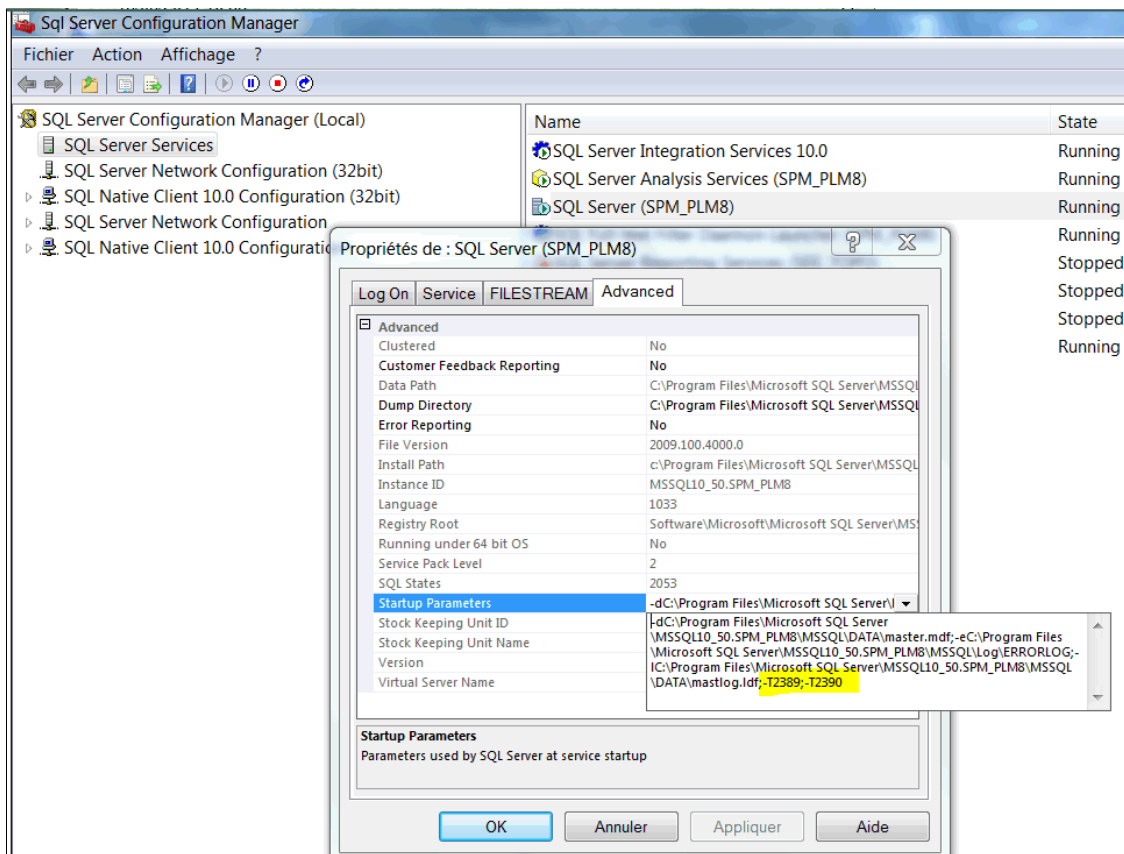Those flags can be specified at server startup. See SQL server documentation about how to set such an option in:
- http://technet.microsoft.com/fr-fr/library/ms190737.aspx
or
- http://technet.microsoft.com/en-us/library/ms190737.aspx

For instance:

Sql Server Configuration Manager

Fichier   Action   Affichage   ?

Name	State
SQL Server Integration Services 10.0	Running
SQL Server Analysis Services (SPM_PLM8)	Running
SQL Server (SPM_PLM8)	Running
	Running
	Stopped
	Stopped
	Stopped
	Running

SQL Server Configuration Manager (Local)
  SQL Server Services
  SQL Server Network Configuration (32bit)
  SQL Native Client 10.0 Configuration (32bit)
  SQL Server Network Configuration
  SQL Native Client 10.0 Configuration

Propriétés de : SQL Server (SPM_PLM8)

Log On | Service | FILESTREAM | Advanced

Advanced

Clustered	No
Customer Feedback Reporting	No
Data Path	C:\Program Files\Microsoft SQL Server\MSSQL
Dump Directory	C:\Program Files\Microsoft SQL Server\MSSQL
Error Reporting	No
File Version	2009.100.4000.0
Install Path	c:\Program Files\Microsoft SQL Server\MSSQL
Instance ID	MSSQL10_50.SPM_PLM8
Language	1033
Registry Root	Software\Microsoft\Microsoft SQL Server\MS
Running under 64 bit OS	No
Service Pack Level	2
SQL States	2053
Startup Parameters	-dC:\Program Files\Microsoft SQL Server\\
Stock Keeping Unit ID	
Stock Keeping Unit Name	
Version	
Virtual Server Name	

-dC:\Program Files\Microsoft SQL Server
\MSSQL10_50.SPM_PLM8\MSSQL\DATA\master.mdf;-eC:\Program Files
\Microsoft SQL Server\MSSQL10_50.SPM_PLM8\MSSQL\Log\ERRORLOG;-
lC:\Program Files\Microsoft SQL Server\MSSQL10_50.SPM_PLM8\MSSQL
\DATA\mastlog.ldf;-T2389;-T2390

Startup Parameters
Parameters used by SQL Server at service startup

OK   Annuler   Appliquer   Aide

Notes
- For those trace flags to be taken into account, you need to restart your SQL Server
- Usage of those flags does not exclude the need to update full statistics and indexes regularly.
Because their action has not the same scope.