

SQL Server Tutorial

Part 143 - Sql server query plan cache

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In this session we will learn

- What happens when a query is issued to SQL Server
- How to check what is in SQL Server plan cache
- Things to consider to promote query plan reusability

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series

<http://www.youtube.com/user/kudvenkat/playlists>

Suggested Videos

Part 140 - Implement search web page using ASP.NET and Dynamic SQL

Part 141 - Prevent sql injection with dynamic sql

Part 142 - Dynamic SQL in Stored Procedure

Sql server query plan cache

If you are in need of the DVD with all the videos and PPT's, please visit

<http://pragimtech.com/order.aspx>

What happens when a query is issued to SQL Server

In SQL Server, every query requires a query plan before it is executed. When you run a query the first time, the query gets compiled and a query plan is generated. This query plan is then saved in sql server query plan cache.

How to check what is in SQL Server plan cache

- sys.dm_exec_cached_plans
- sys.dm_exec_sql_text
- sys.dm_exec_query_plan

CROSS APPLY discussed in
Part 91 of SQL Server Tutorial

```
SELECT cp.usecounts, cp.cacheobjtype, cp.objtype, st.text, qp.query_plan
FROM sys.dm_exec_cached_plans AS cp
CROSS APPLY sys.dm_exec_sql_text(plan_handle) AS st
CROSS APPLY sys.dm_exec_query_plan(plan_handle) AS qp
ORDER BY cp.usecounts DESC
```

To remove all elements from the plan cache

```
DBCC FREEPROCCACHE
```

Sql server query plan cache

- In older versions of SQL Server up to 6.5 only stored procedure plans are cached
- With SQL Server 7, and later versions the query plans for Ad hoc sql statements and dynamic sql statements are also cached
- The query plan cache lookup is by a hash value computed from the query text. If the query text changes even slightly, sql server will not be able to reuse the existing plan
- With parameterised queries, sql server will not treat parameter values as part of the query text. So when you change the parameters values, sql server can still reuse the cached query plan

```
Declare @FirstName nvarchar(50)
Set @FirstName = 'Steve'
Execute sp_executesql N'Select * from Employees where FirstName=@FN',
                    N'@FN nvarchar(50)', @FirstName
```

- **Summary:** You should never ever concatenate user input values with strings to build dynamic sql statements. You should always use parameterised queries which not only promotes cached query plans reuse but also prevent sql injection attacks.

Additional Resources

PRAGIM Home Page:

www.PragimTech.com

Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

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