

Creating Natively Compiled Stored Procedures



Pinal Dave

SQL SERVER PERFORMANCE TUNING EXPERT

<https://blog.sqlauthority.com>



Agenda



Natively Compiled Stored Procedures

Use Cases

Limitations

Comparison

Demo



Natively Compiled Stored Procedures

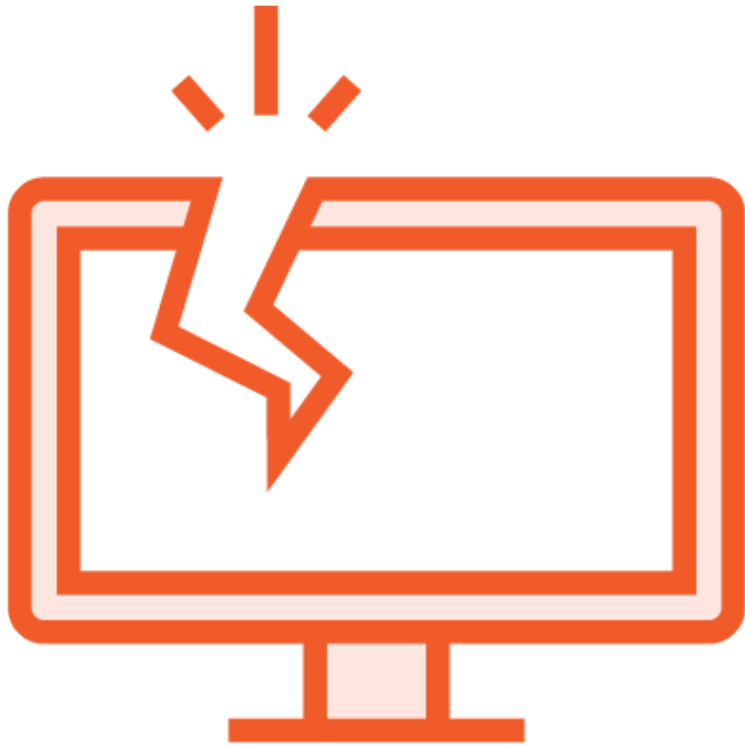
Natively compiled stored procedures are Transact-SQL stored procedures compiled to machine code, rather than interpreted by the query execution engine.





When to use Natively Compiled Stored Procedures?

- Performance critical application
- Frequently executed procedures
- Business Critical Logic using
 - Aggregation
 - Nested loops
 - Multi-statement
 - Complex expressions
 - Procedural logics



Limitations

- Cross-database queries and transactions
- Truncate table
- Merge operations
- TempDB Access
- Can't use
 - Distinct operator
 - Case statement
 - View
 - CTE

Comparison of Stored Procedure (SP)

Natively Compiled SP

Compiled to machine code

Can't access disk based tables

Compiled at creation

Parameter Sniffing - compiles with optimized for UNKNOWN

No Hash Match/Hash Join operator

Auto recompiled at server restart

Interpreted T-SQL SP

Interpreted by execution engine

Can access memory optimized tables

Compiled at first execution

Parameter Sniffing - compiles with first parameters on execution

Hash Match/Hash Join operator

Auto recompiled at server restart and upon plan eviction



Demo



Natively Compiled Stored Procedures



Demo



**Errors related to
Natively Compiled Stored Procedures**



Demo



Natively Compiled Stored Procedures and Joins



Summary



Natively compiled stored procedures get best performance from memory optimized tables

