# Identifying Bad Parameter Sniffing

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# Agenda

**Signatures of bad parameter sniffing**

**General approach**

**Tools**

- Using Dynamic Management Views

- Using Extended Events

- Using the Query Store

**Reading execution plans**

**Testing performance differences**

# Signatures of bad parameter sniffing

**Erratic execution characteristics**

**Rebuilding indexes or updating statistics fixes for a short time**

**Sp_recompile or clearing the plan cache also fixes for a short time**

# General Approach

**Performance Stats**

Look for queries with large deviations in duration, reads, CPU

**Query Plans**

Are there are different plans being used?

**Testing**

Test to confirm if there are performance differences

# Tools for Identifying Bad Parameter Sniffing

**Dynamic Management Views**

- sys.dm_exec_query_stats
- sys.dm_exec_query_plan

**Extended Events**

- sp_statement_completed
- sql_statement_completed
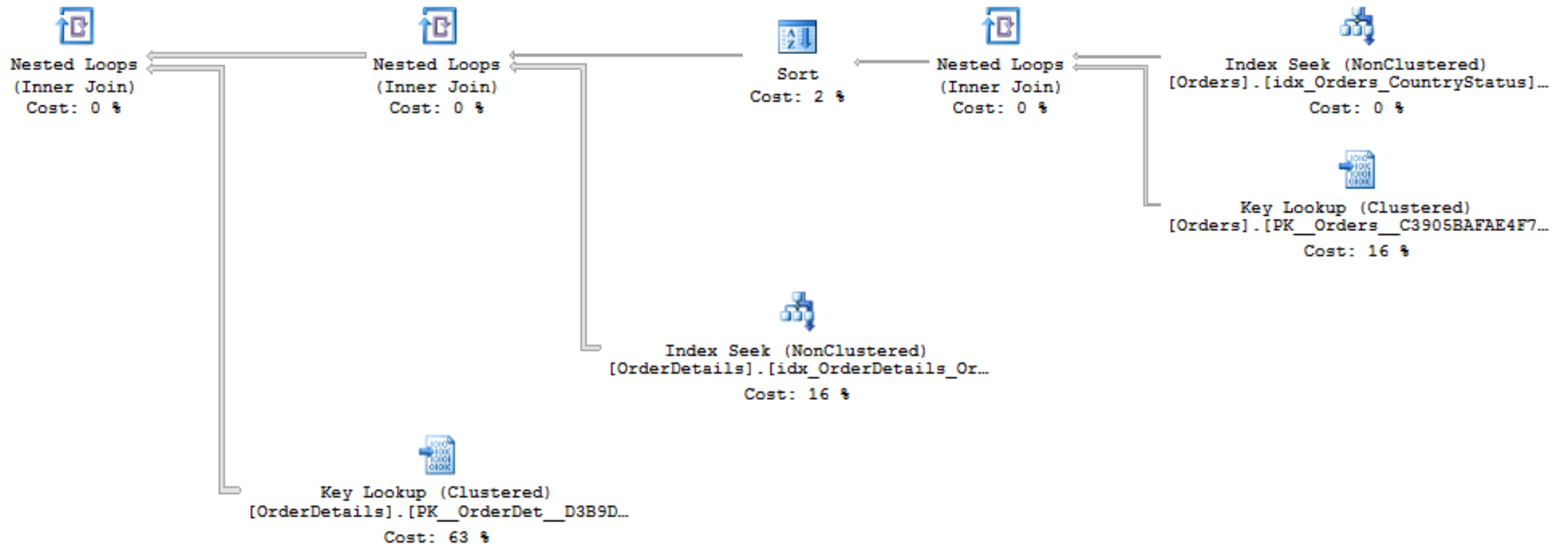- query_post_compilation_showplan

**Query Store**

# Demo

Identifying parameter sniffing problems

# Compare Execution Plans

**Different plan shapes for different parameter values?**

# Demo

**Comparing execution plans and the parameter values they were compiled with**

# Testing the Identified Problems

```sql
SET STATISTICS IO ON

SET STATISTICS TIME ON

BEGIN TRANSACTION


EXEC dbo.SalesTotalsPerMonth @Country = 'MU'

--EXEC dbo.SalesTotalsPerMonth @Country = 'US'


ROLLBACK TRANSACTION
```

# Demo



**Testing and confirming bad parameter sniffing**

# Summary

**Signatures of bad parameter sniffing**

**General approach**

**Tools**

- Using Dynamic Management Views
- Using Extended Events
- Using the Query Store