SQL Server 2014
DMV Diagnostic Queries – Part 2

Introduction

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Introduction

- **Database performance issues are immediately noticeable**
  - Can quickly affect multiple applications or your entire organization
  - You can't just reboot the database server and hope that fixes the problem
- **DBA = "Default Blame Acceptor"**
  - "What's wrong with the database?"
- **The database/database server is guilty until proven innocent!**
  - You need tools and knowledge to help quickly determine the actual problem
  - Maybe there is nothing wrong with the database or database server…

How Can You Find Performance Problems?

- Windows Task Manager
- Windows Resource Monitor
- Windows Performance Monitor
- SSMS – Activity Monitor
- SQL Server error log
- SQL Server Profiler
- Extended Events
- DMV/DMO queries

DMV Queries to the Rescue!

- **New feature in SQL Server 2005**
  - Improvements and additions in each new version of SQL Server
- **DMV/DMO queries expose a wealth of useful information**
  - Hardware details, missing indexes, top waits, most expensive queries…
- **Most DMV/DMO queries are very lightweight and easy to use**
  - Most require VIEW SERVER STATE permission
- **Information is not persisted between restarts**
  - You can write useful metrics to a user database is desired for history and trending information
- **Use something like my ServerMonitor database as a starting point for collecting instance-level metrics**
  - http://bit.ly/1dpMmAq

DMV Diagnostic Query History

- **First public version available in April 2009**
- **Separate versions for each major SQL Server version**
  - SQL Server 2005
  - SQL Server 2008
  - SQL Server 2008 R2
  - SQL Server 2012
  - SQL Server 2014
- **Make sure to use the appropriate version of the queries**
  - It should match your version of SQL Server
- **Monthly updates and improvements for each version**
  - http://bit.ly/Q5GAJU
  - http://bit.ly/1cVqGKU

Why Use DMV Diagnostic Queries?

- **Relatively quick and easy to use**
  - Does not require any special configuration or knowledge to run
  - Does take some knowledge to properly interpret the results
  - That is what you will learn in this course
- **Most DMV queries are very lightweight**
  - I will point out some known exceptions
- **Provides a lot of very valuable information**
  - Instance and database configuration information
  - Instance-level performance information
  - Database-level performance information
- **Helps you get closer to the root cause of many problems**
  - Much better than guessing about performance issues!

Diagnostic and Corrective Process

- Assess the health of the database server
- Assess the health of the SQL Server instance
- Assess the health of the most important database(s)
- Determine the biggest performance issues
- Find the root cause of the issue if possible
- Apply some corrective action
- Repeat the process as needed until performance is acceptable

Instance-Level Performance Queries

- **A group of queries to collect instance-level performance metrics**
  - These can be run in the context of any database on the instance
  - These are not database specific
- **Many SQL Server instances have instance-level performance issues**
  - These queries help you focus your tuning efforts in the right area
- **My Pluralsight course *Scaling SQL Server 2012 – Part 1* covers best practice instance-level performance considerations**
  - http://bit.ly/1iL0NQR
- **Joe Sack's Pluralsight course *SQL Server: Common Performance Issue Patterns* is a valuable resource**
  - http://bit.ly/1nTzupp

Summary

- **DMV/DMO queries can help you detect many performance issues**
  - They can help you get to the root cause more quickly
- **They are easy to use compared to other diagnostic methods**
  - No special configuration is required
  - Just VIEW SERVER STATE permission
- **DMV/DMO information is not persisted between restarts**
  - Unless you capture and write to a user database

Course Structure

- **Module 1: Introduction**
- **Module 2: Instance-Level Performance Queries Part 1**
- **Module 3: Instance-Level Performance Queries Part 2**
- **The *SQL Server 2014: DMV Diagnostic Queries – Part 1* course covers instance-level configuration queries**
- **The *SQL Server 2014: DMV Diagnostic Queries – Part 3* course will cover database-level performance queries**