Module 10

Monitoring

Module overview

- Dynamic Management Views
- Windows Performance Monitor
- Extended Events
- Glenn Berry's diagnostic queries
- First responder kit
- Other 3:rd party tools
- How to create a baseline

Dynamic Management Objects

- You should be familiar with these by now
- Used to monitor SQL Server
- Some are server-scoped
- Some are database-scoped
- Queried using Transact-SQL
- GRANT SERVER STATS required for non-sysadmins

System Dynamic Management Views
https://docs.microsoft.com/en-us/sql/relational-databases/system-dynamic-management-views/system-dynamic-management-views

Windows Performance Monitor

- Displays real-time performance data
- Monitors system and application health
- Saves performance data to text files or database
- Enables creation of custom data collector set
- Can respond to alerts

Monitor Resource Usage (Performance Monitor)
https://docs.microsoft.com/en-us/sql/relational-databases/performance-monitor/monitor-resource-usage-system-monitor

15 SQL Server Performance Counters to Monitor In 2022
https://www.sentryone.com/blog/allenwhite/sql-server-performance-counters-to-monitor

SQL Server Perfmon (Performance Monitor) Best Practices
https://www.brentozar.com/archive/2006/12/dba-101-using-perfmon-for-sql-performance-tuning/

PAL, on Github
https://github.com/clinthuffman/PAL

Interpreting the counter values from sys.dm_os_performance_counters
https://docs.microsoft.com/en-us/archive/blogs/psssql/interpreting-the-counter-values-from-sys-dm_os_performance_counters

Troubleshooting SQL Server issues with sys.dm_os_performance_counters
https://www.sqlshack.com/troubleshooting-sql-server-issues-sys-dm_os_performance_counters/

Extended Events

- Already been discussed

Glenn Berry's diagnostic queries

- A bunch of queries
- Gives you an insight into the instance and database(s)
- Go over the script and execute those that are of interest to you
- See Glenn's comments and recommendations
- Take notes as you are doing this
  - Revisit those notes after
  - Take appropriate actions

Glenn berry's diagnostic queries
https://glennsqlperformance.com/resources/

First responder kit

- A bunch of stored procedures
- sp_blitz
  - "Free SQL Server Health Check Script"
- sp_BlitzFirst
  - "Helps You Troubleshoot Slow SQL Servers"
- sp_BlitzIndex
  - "SQL Server's Index Sanity Test"
- sp_BlitzCache
  - "Find Your Worst-Performing Queries"
- sp_BlitzWho
  - "Tells you what's really happening"
- sp_BlitzQueryStore
  - Look for periods with high activity and expensive queries

First responder kit download
https://www.brentozar.com/first-aid/

Documentation
https://github.com/BrentOzarULTD/SQL-Server-First-Responder-Kit/tree/main#sp_blitz-overall-health-check

List of blog posts, including some that give tips on using sp_Blitz procedures for various purposes
https://www.brentozar.com/archive/2022/10/erik-darlings-month-of-free-tools-training/

Other 3:rd party tools

- sp_whoisactive
- sp_PressureDetector
  - Diagnose CPU or memory pressure
- sp_HumanEvents
  - Create XE trace for you, based on your interest
  - Run the trace for a while
  - Show you the result

Demo Perfmon baseline

sp_whoisactive Downloads
http://whoisactive.com/downloads/

sp_whoisactive Documentation
https://whoisactive.com/docs/

5 common SQL Server Problems to Troubleshoot with sp_WhoIsActive
https://straightpathsql.com/archives/2023/01/5-common-sql-server-problems-to-troubleshoot-with-sp_whoisactive/

sp_PressureDetector
https://erikdarlingdata.com/sp_pressuredetector/

sp_HumanEvents
https://erikdarlingdata.com/sp_humanevents/

sp_HumanEvents: Usage and Guidelines
https://erikdarlingdata.com/sp_humanevents-usage-and-guidelines/

How to create a baseline

- Buy a 3:rd party tool
  - If you want something packaged and good
  - Compare the products and pick one that suits you
- Roll your own
  - Be careful to scope your work

Demo Perfmon baseline

No lab for this module