Measuring and Analyzing Storage Subsystem Performance

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Module Summary

Several different methods to measure storage performance

Operating system tools

SQL Server tools

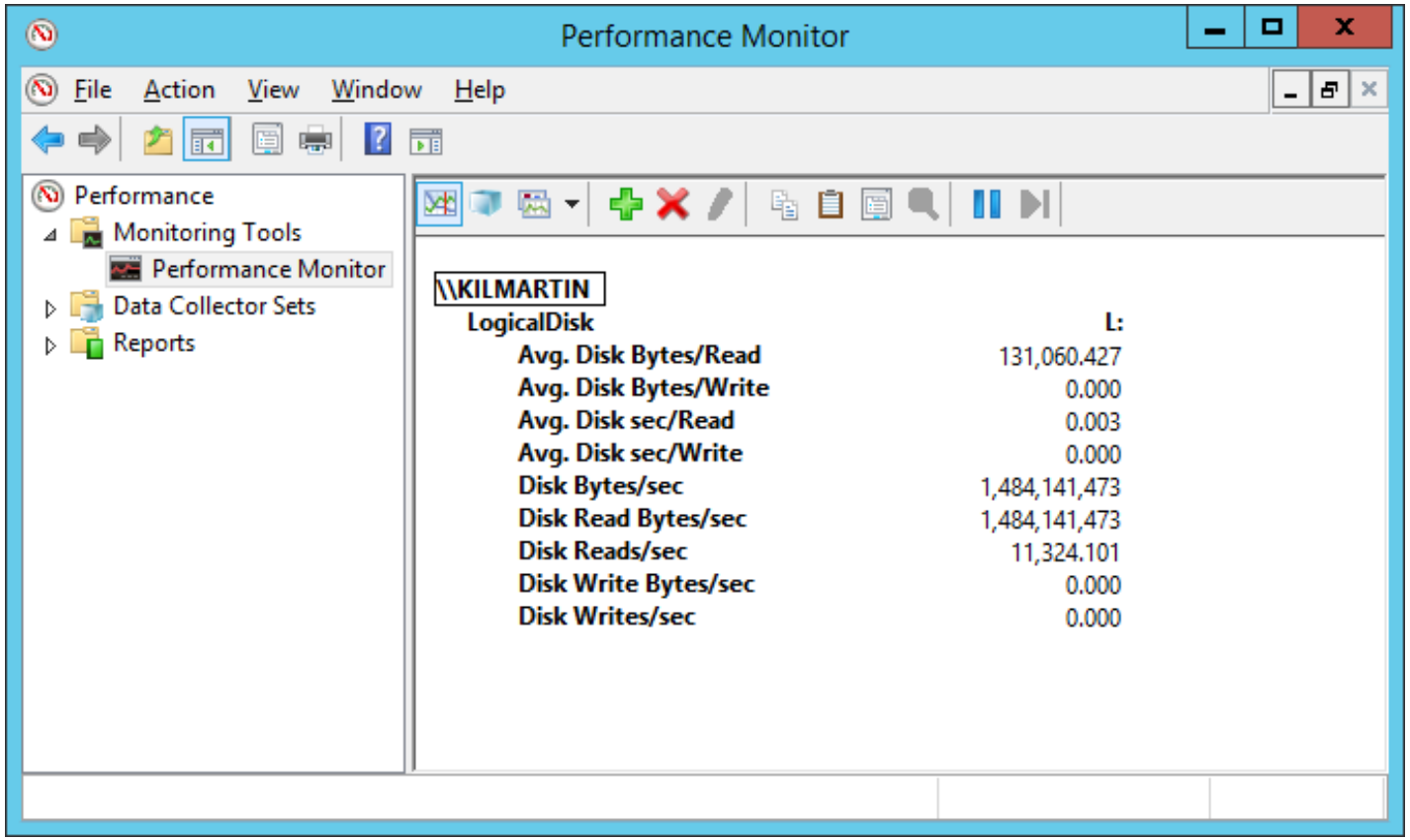
Operating System Tools

Two main tools included with Windows that are useful for measuring storage subsystem performance: Windows Performance Monitor and Windows Resource Monitor

Windows Performance Monitor

Windows Performance Monitor (PerfMon.exe) is a low overhead tool that can display real-time performance data and also capture it to a log file

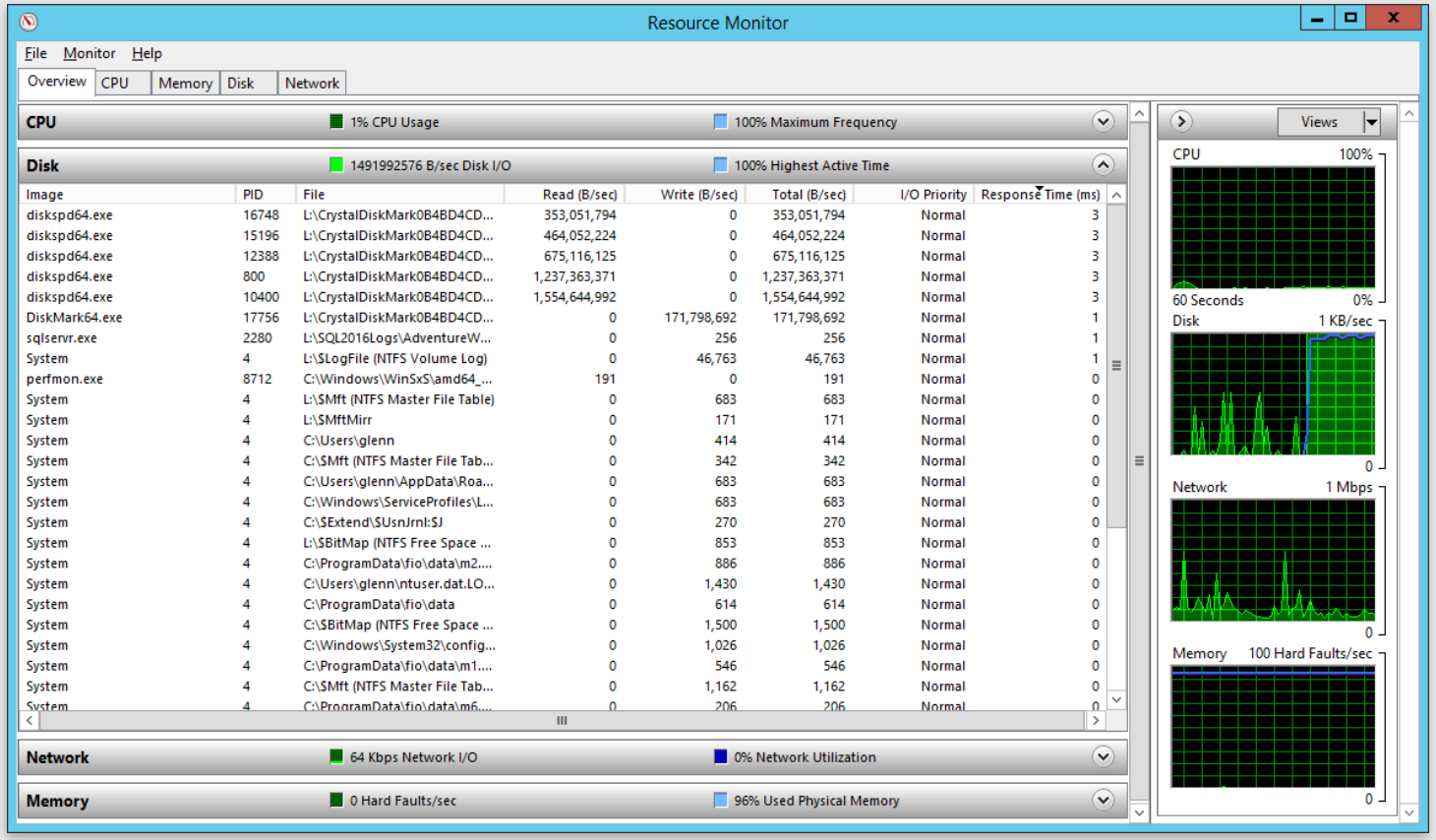
Windows Performance Monitor provides useful real-time, disk-level disk performance metrics



Windows Resource Monitor

Windows Resource Monitor (ResMon.exe) is an easy to use visual tool that exposes Event Tracing for Windows (ETW) data

Windows Resource Monitor provides useful real-time, file-level disk performance metrics



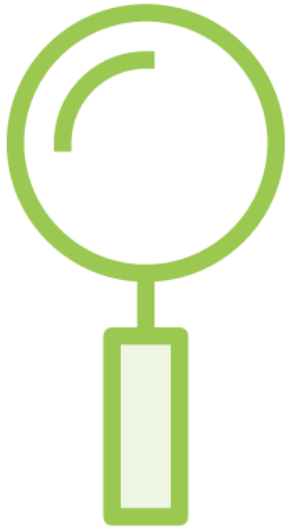
Demo

LogicalDisk counters in Performance Monitor

Demo

Windows Resource Monitor

SQL Server Diagnostic Queries



Set of DMV/DMO queries that collect very useful data about storage subsystem performance from SQL Server perspective

Common I/O Query Result Patterns

Common to see high write latency for tempdb data files

Common to see high read latency for user database data files

Demo

SQL Server I/O-related diagnostic queries

What We Covered

Various methods to measure storage performance

- Operating system tools
- SQL Server tools