Performance Monitor Processing

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Agenda

- Perfmon Overview
- What we should monitor
- Gui vs. Log Mode
- Automating the process
- Parsing and Analyzing the results
- Demo’s

Perfmon / System Monitor

- It's a Windows tool not a SQL Server one
- Allows us to monitor and capture both OS and Application specific counters
- It is fairly lightweight when used properly
- Simple to set up
- Integrates with SQL Server 2005 + 2008 Profiler
- Gives us the ability to see what is going on with a wide range of counters…

What should we monitor?

- Depends on what your goal is
- SQL Server alone has almost 1200 counters
  - sys.dm_os_performance_counters
- Trouble shooting Best Practices
  - Choose the counters relevant to the issue
  - You might have to over do it some
- Generic monitoring Best Practices
  - Don’t over do it
  - Collect just the essentials

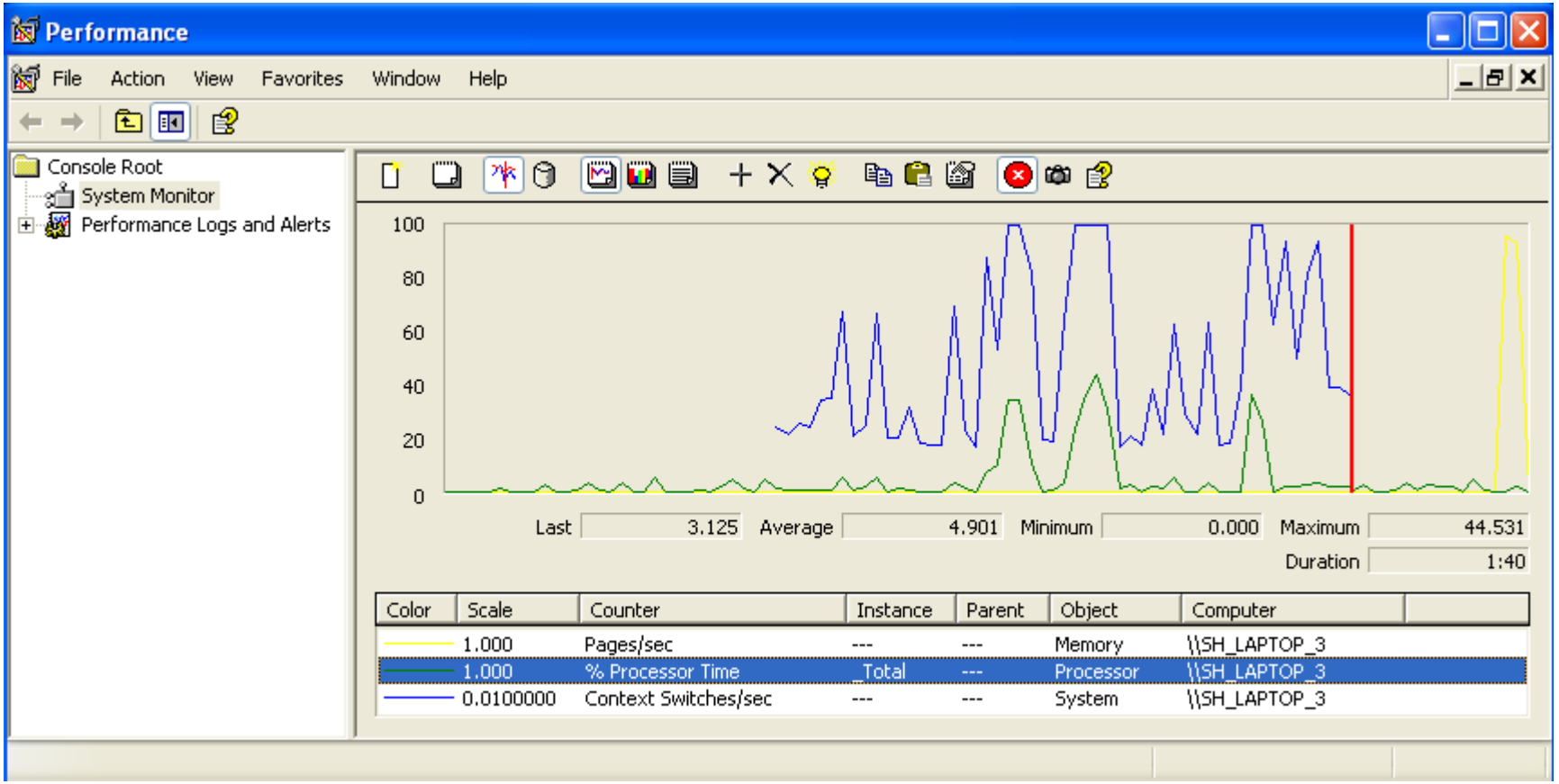
Standard Counters (SQL Server)

- Access Methods\Page Splits/sec
- Buffer Manager\Buffer cache hit ratio
- Buffer Manager\Checkpoint pages/sec
- Buffer Manager\Page life expectancy
- Databases(*)\Transactions/sec
- Databases(tempdb)\Transactions/sec ← Don't forget
- General Statistics\Logins/sec
- General Statistics\User Connections
- Locks(_Total)\Lock Requests/sec
- Locks(_Total)\Lock Waits/sec
- Memory Manager\Target Server Memory (KB)
- Memory Manager\Total Server Memory (KB)
- Memory Manager\Memory Grants Pending
- SQL Statistics\Batch Requests/sec
- SQL Statistics\SQL Compilations/sec
- SQL Statistics\SQL Re-Compilations/sec
- Wait Statistics(Cumulative wait time (ms) per second)\Lock waits
- Wait Statistics(Cumulative wait time (ms) per second)\Network IO waits

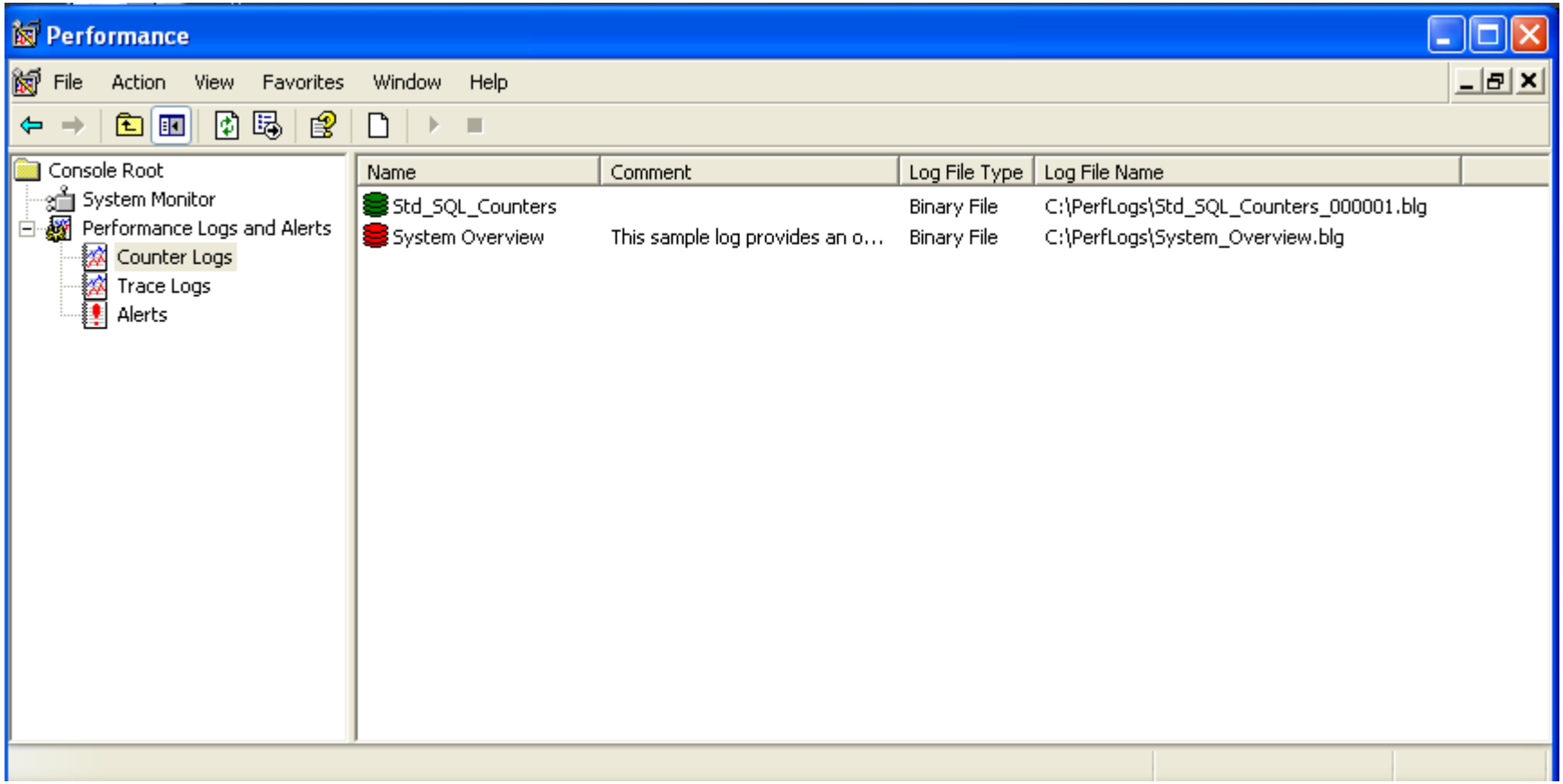
Standard Counters (OS)

- Memory\Available MBytes
- Memory\Pages/sec
- PhysicalDisk(0 C:)\Avg. Disk Queue Length
- PhysicalDisk(0 C:)\Current Disk Queue Length
- PhysicalDisk(0 D:)\Avg. Disk Queue Length
- PhysicalDisk(0 D:)\Current Disk Queue Length
- PhysicalDisk(0 XXX:)\Avg. Disk Queue Length
- PhysicalDisk(0 XXX:)\Current Disk Queue Length
- PhysicalDisk(X)\Avg. Disk sec/Read
- PhysicalDisk(X)\Avg. Disk sec/Write
- Processor(X)\% Processor Time
- System\Context Switches/sec

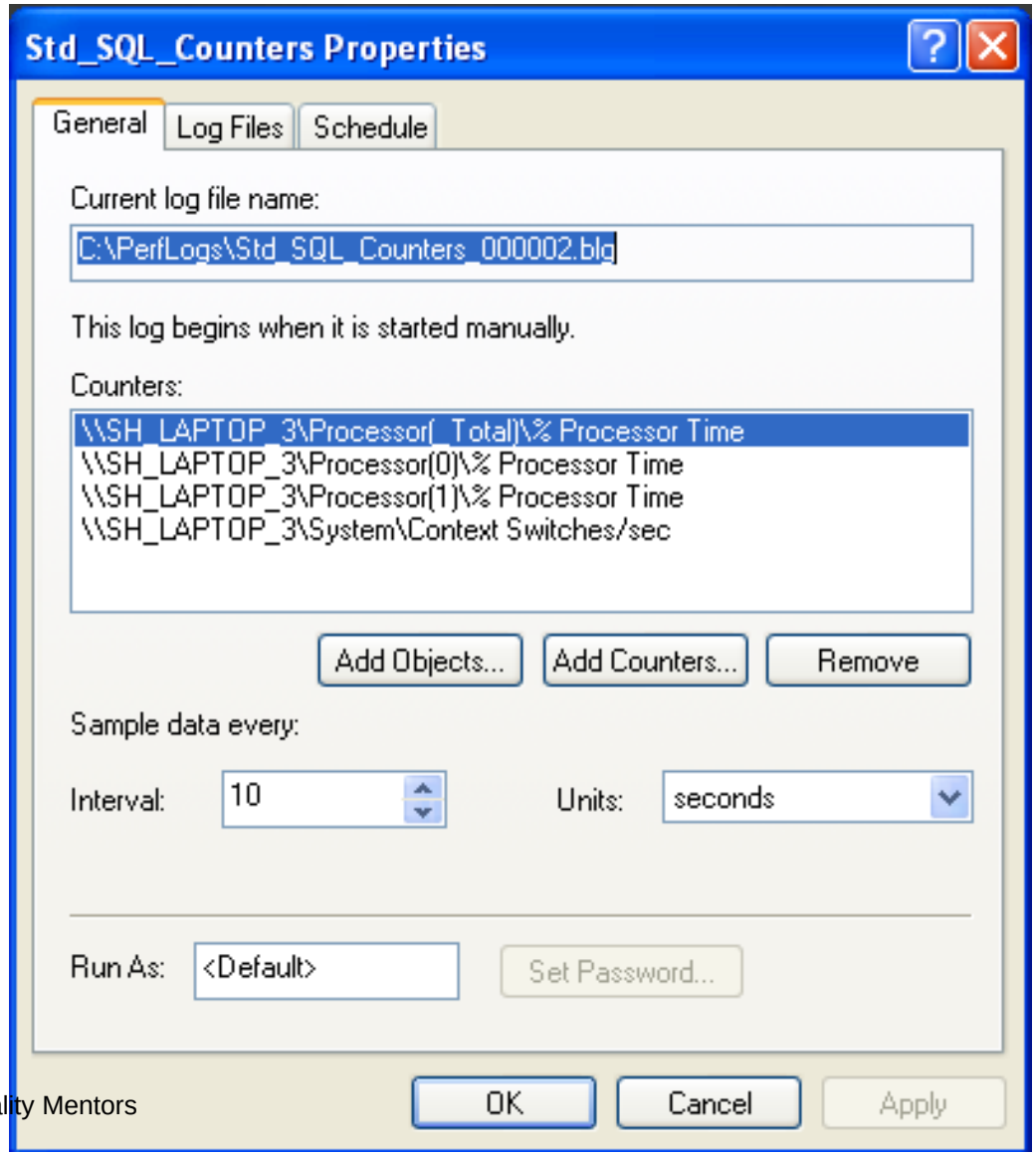
System Monitor (Real Time Mode)



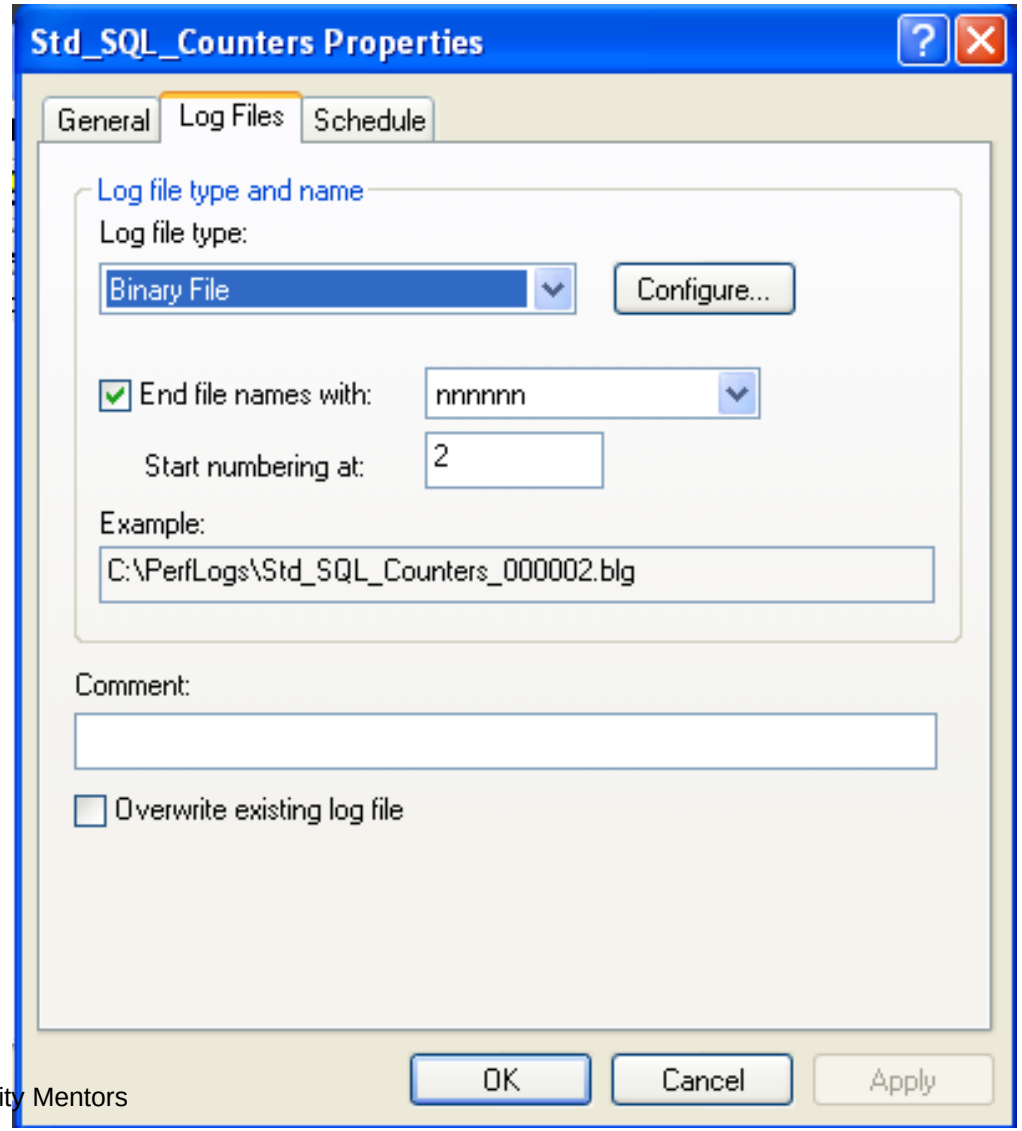
System Monitor (Log Mode)



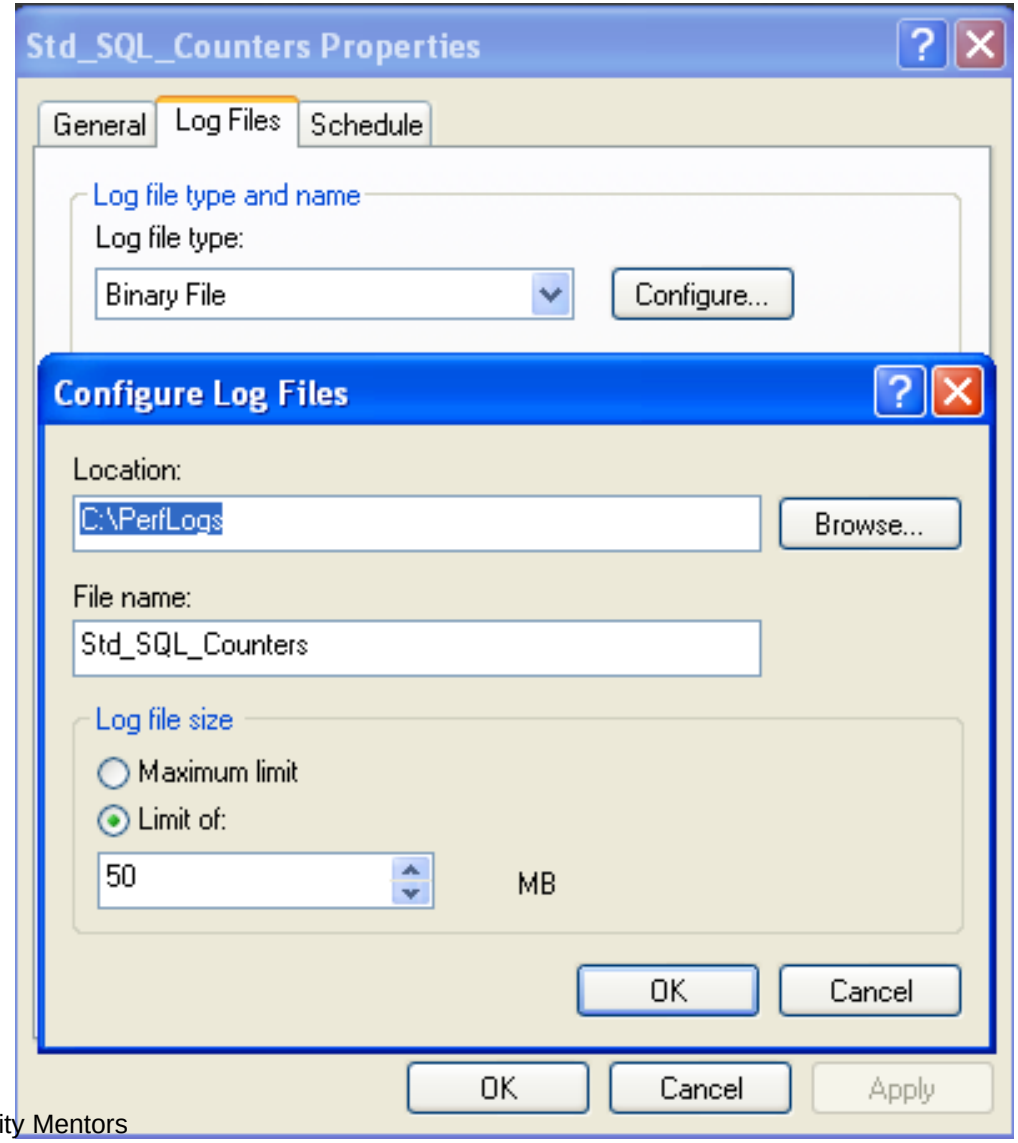
Selecting Counters



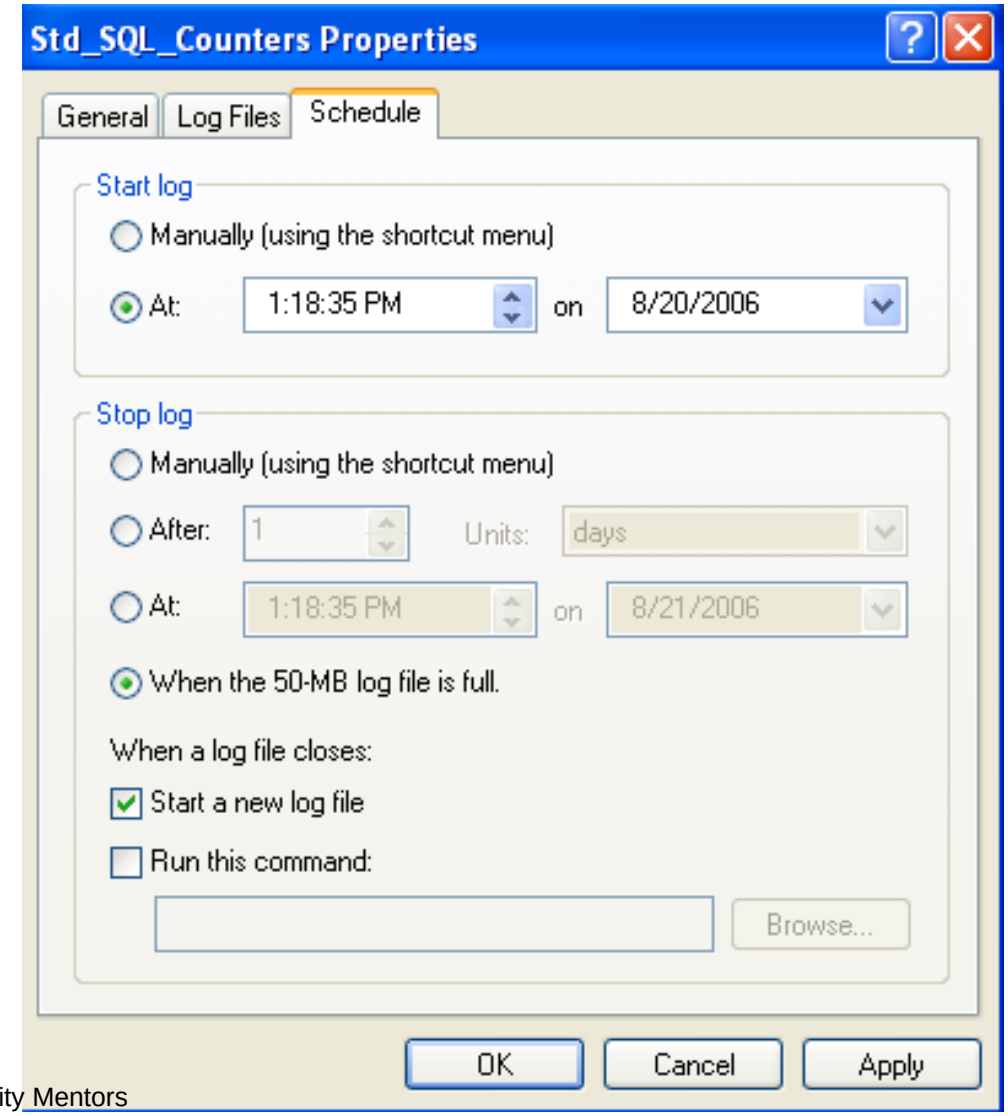
File Type & Behavior



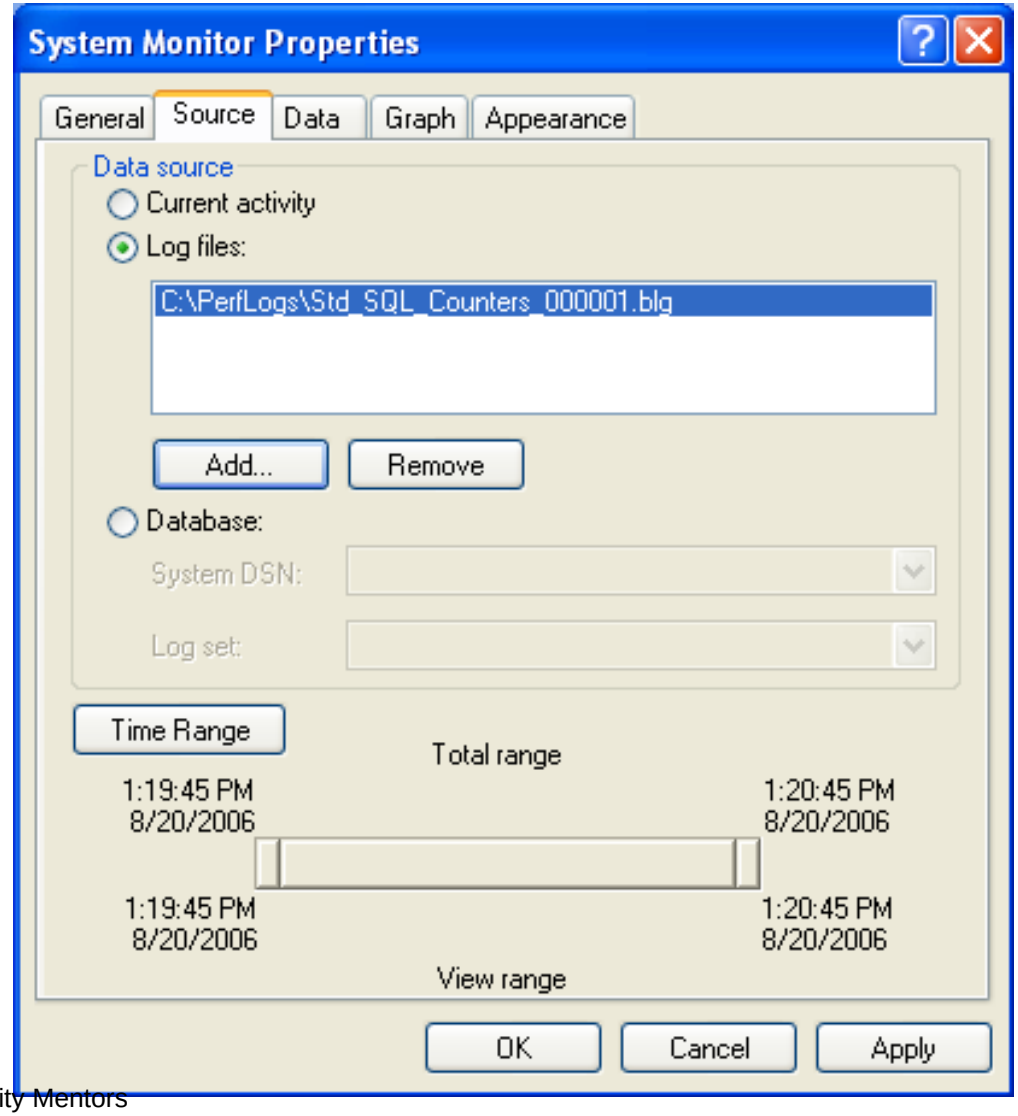
File Properties



Schedule & Rollover



Load the Log File



Demonstration

Manually Creating Perfmon Logs

Logman.exe

- Creates, starts, stops & updates perfmon logs
- Examples:

```
logman create counter perf_log -c “\Processor(_Total)\% Processor Time”

logman start perf_log

logman update perf_log -si 10 -f csv –v mmddhhmm
```

Relog.exe

- Extracts data from log files and creates new ones
- Examples:

```
Relog logfile.csv -c "\Processor(_Total)\% Processor Time" -o logfile.blg

relog logfile.blg -cf counters.txt -f blg

relog logfile.blg -f csv -o logfile.csv -t 2

relog logfile.blg -q -o counters.txt
```

Relog.exe

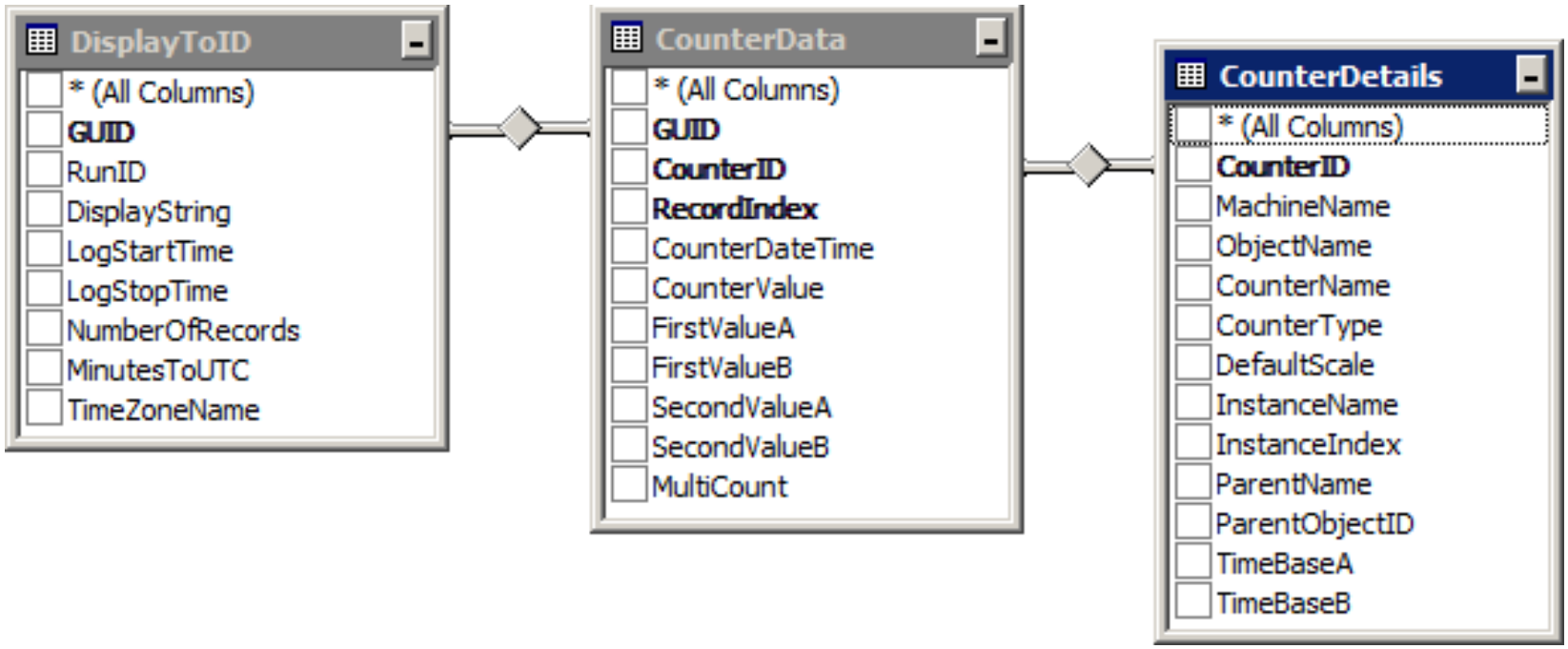
- Extracts data from log files and imports the data to SQL Server
- If using 64 bit you need the 32 bit ODBC driver since Relog is a 32 bit app

- http://msdn.microsoft.com/en-us/library/ms712362%28VS.85%29.aspx

```
c:\windows\sysWOW64\odbcad32.exe

Relog C:\PerfStuff\Traces\LogFile.blg -f SQL
-o SQL:SQL2008OLEDB!PerfTest
```

Normalized Counter Data



Analysis of Log Data

- PAL
- http://pal.codeplex.com/releases/view/51623
- Log Parser
- http://www.microsoft.com/downloads/details.aspx?FamilyID=890cd06b-abf8-4c25-91b2-f8d975cf8c07&DisplayLang=en
- Relog & Logman
- http://support.microsoft.com/kb/303133
- http://technet2.microsoft.com/WindowsServer/en/library/96bdd30a-4323-4334-acaf-76af2b00c9f41033.mspx?mfr=true
- http://technet2.microsoft.com/WindowsServer/en/library/25d92f21-ffad-45c7-824e-b8c291559ebd1033.mspx?mfr=true

Demonstration

Automating Perfmon Collection

Questions