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How to Analyze Performance Monitor Data Using PAL

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My Assumptions About You

- You may be a DBA Administrator or DBA Developer.
- You may be a part-time or full-time DBA.
- You probably have more than one year's experience as a SQL Server DBA.
- You have experience using Performance Monitor (Perfmon) and are familiar with common Perfmon counters.

What We are Going to Learn Today

- What is PAL
- Pros and Cons of Using PAL
- How to Collect a Proper Perfmon Log File
- How to Install PAL
- Using PAL to Analyze Perfmon Data
- How to Read PAL Reports
- How to Modify PAL for Your Own Needs
- How to Get PAL to Create a Perfmon Log Template For You

What is PAL

- PAL is a free tool from Microsoft that can be downloaded from pal.codeplex.com.
- PAL is designed to consume a Perfmon log, which then summarizes and analyzes the log data.
- The result is a HTML report that summarizes Perform log counters, and flags conditions where potential bottlenecks may exist.
- In essence, the goal of PAL is to makes it easier for you to analyze large amounts of Perfmon data quickly and easily.

Benefits of Using PAL

- Helps you to separate actual problems from the typical noise of server activity. (Demo)
- Helps you determine the proper counters to use. (Demo)
- Helps you to determine the proper counter thresholds to use to determine if there is a problem. Threshold data is provided by the Microsoft Product Support team, among others.
- Besides analyzing standard counters, it also creates and analyzes derived counters.
- PAL can be used as a learning tool, finding out what Microsoft recommends for specific counter thresholds.
- PAL can be modified to suit many of your needs, should you not like the provided counters and thresholds.

Disadvantages of Using PAL

- PAL is not a total solution, but just another useful tool in the DBA toolbox that can make your job easier.
- Like most DBA tools, the data it provides is only useful if you have a good understanding of how SQL Server works. While it provides you the data, you have to figure out what to do with it.
- The analysis is not particularly fine-grained, which means some detail is lost, which could prevent you from identifying some types of underlying problems.
- Doesn't yet include a SQL Server 2008 template, but the SQL Server 2005 template works fine (it just doesn't include the new 2008 counters).

How to Collect a Perfmon Log File

- Because PAL uses Perfmon logs for analysis, the analysis that PAL does is based on the quality of the data collected. To collect good data:
 - Collect data during typical workloads for baselines, or problem workloads to resolve specific problems.
 - Be sure to include all the counters needed by PAL (more on this later)
 - Keep collection times reasonable (how long Perfmon is run)
 - Collect data points at least once every 15 seconds
 - Collect the perform log remotely and store to disk, not in a database
 - Store the log in the default .blg format (.csv is also OK)
- Demo

How to Install PAL

- Select a non-production computer (a desktop or laptop is fine) to install and run the software.
- Download and install the free Microsoft Log Parser 2.2. from:
<http://www.microsoft.com/downloads/details.aspx?FamilyID=890cd06b-abf8-4c25-91b2-f8d975cf8c07&displaylang=en>
- Download and install PAL from: <http://pal.codeplex.com>
- The program is titled “PAL” and is located at the top of the “All Programs” from the Start Menu, after installation.

Using PAL to Analyze Perfmon Data

- Select the Perform log to analyze
- Restrict time range if desired
- Select threshold file
- Answer variable questions
- Select analysis interval
- Select report output folder and format
- Execute analysis
- Demo

How to Read PAL Reports

- HTML report includes these parts:
 - Summary, so you can quickly identify any alerts
 - Tool parameters you entered before analysis
 - Alerts listed in chronological order
- Demo

How to Modify PAL for Your Own Needs

- If you like, you can add or remove counters from any PAL template.
- You can also create derived counters based on the available data already collected, or by adding your own questions (which are used for your custom analysis).
- In addition, you can modify the thresholds used to determine alerts.
- Demo

How to Get PAL to Create a Perfmon Log Template For You

- Only works for default instance. Named instances require that Perfmon log template be created manually (use HTM below file as guide).
- From the *PAL Threshold File* tab, select the proper template from the *Threshold File Title*, and select *Export Perfmon Template File*. This creates a HTM file.
- Drag and drop this HTM file to an active Perfmon window.
- Save as a new Data Collector set.
- Remove unnecessary counters, and set any desired properties.
- Demo

Takes Homes for Today

- PAL can be a very useful tool, assuming that it is used for its intended purpose, and you understand how to apply the feedback you have received from it.
- Be sure the Perfmon data you are analyzing is representative of a typical/problem workload.
- Be sure to run PAL on a non-production box.
- If you haven't tried PAL for analyzing your Perfmon logs, then give it a try.

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