

DSS012 - Data Sync - How to collect and analyse performance of on - premise Data Sync member

Last updated by | Keith Elmore | Apr 5, 2021 at 7:57 AM PDT

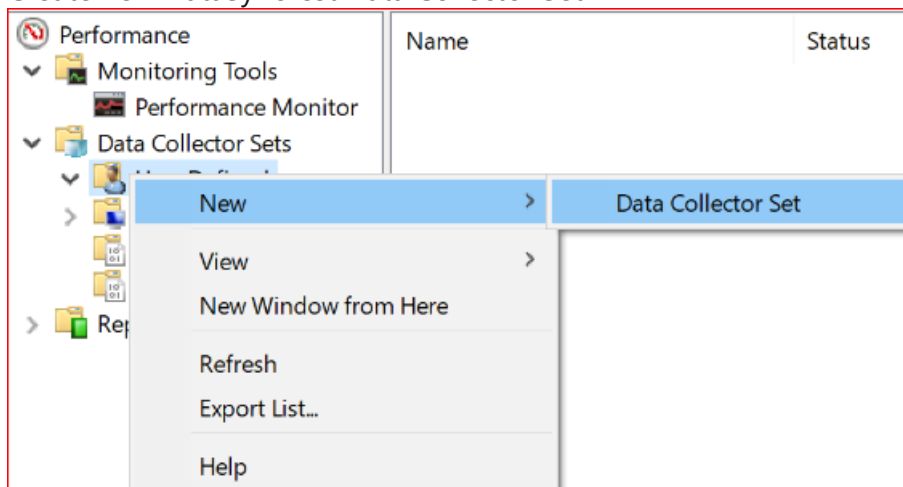
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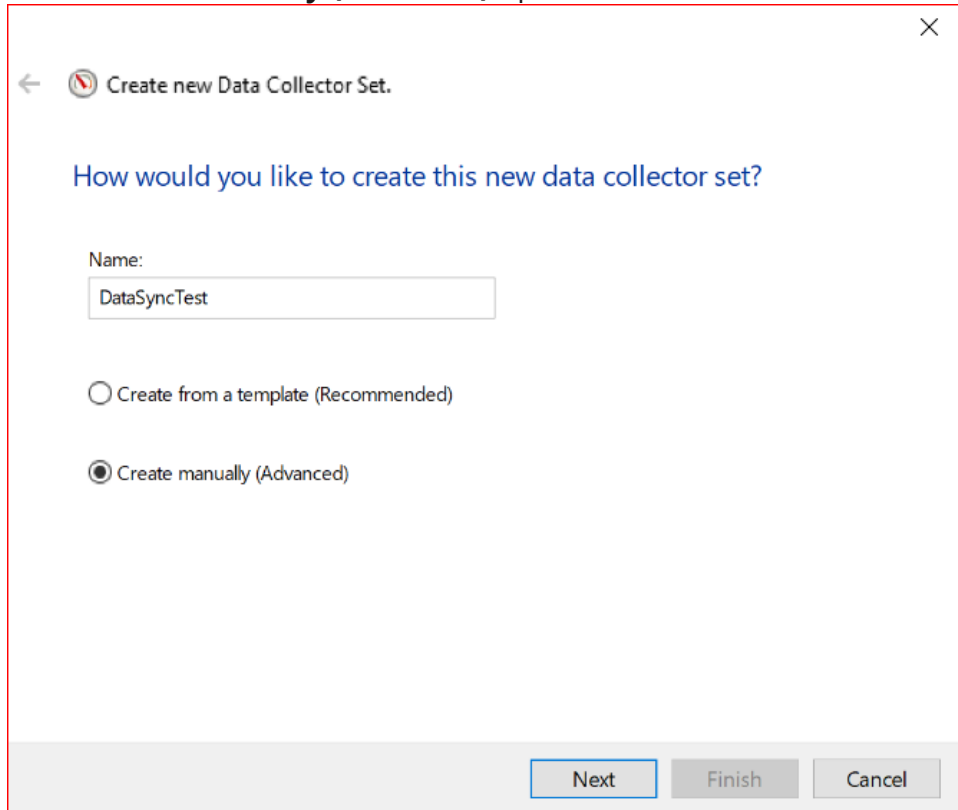
Collect Performance monitor log while reproducing the issue.

Below is a customer- ready action plan

1. Open performance monitor. Start -> Run -> **perfmon**
2. Create new DataSyncTest Data Collector Set



3. Select **Create manually (Advanced)** option and click Next



← Create new Data Collector Set.

How would you like to create this new data collector set?

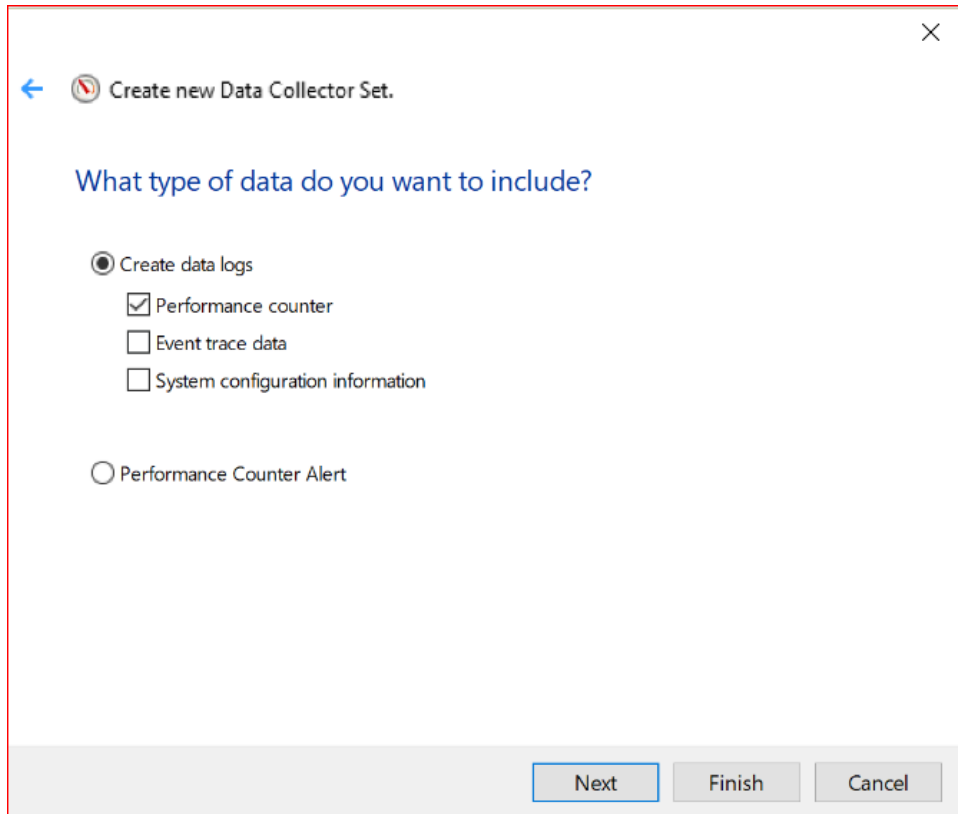
Name:
DataSyncTest

☐ Create from a template (Recommended)

☒ Create manually (Advanced)

Next Finish Cancel

4. Select Performance Counter and click on Finish



← Create new Data Collector Set.

What type of data do you want to include?

☒ Create data logs

☒ Performance counter

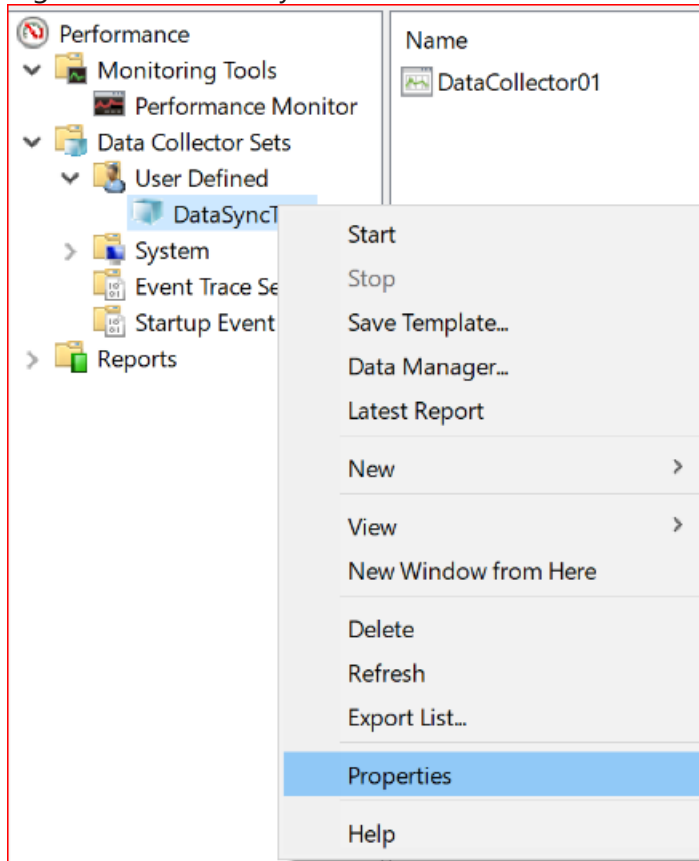
☐ Event trace data

☐ System configuration information

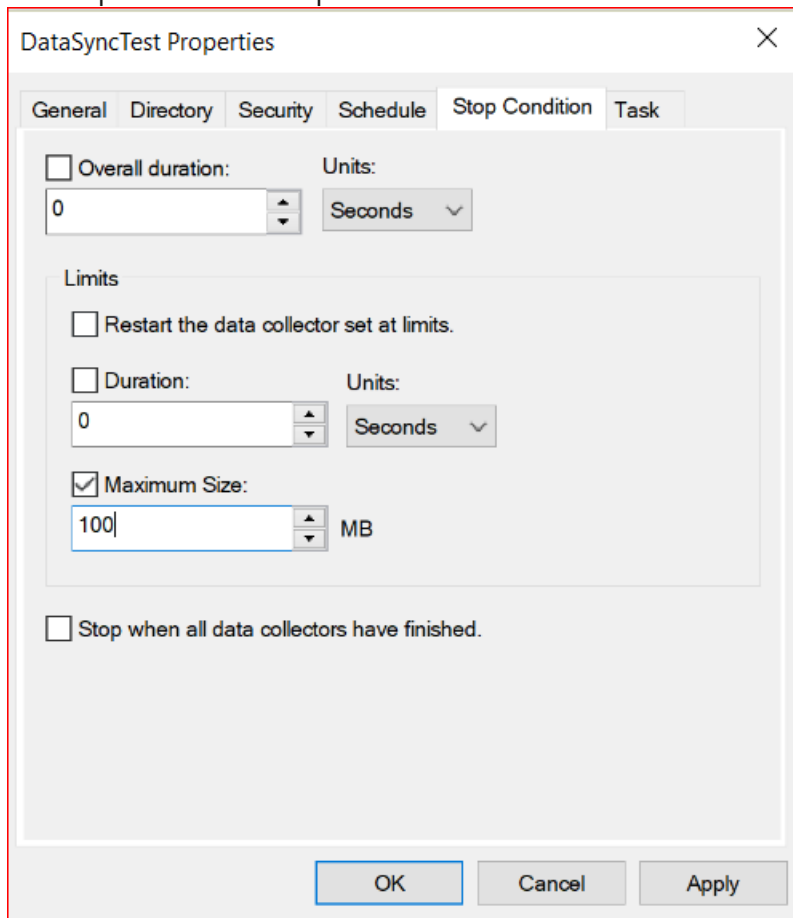
☐ Performance Counter Alert

Next Finish Cancel

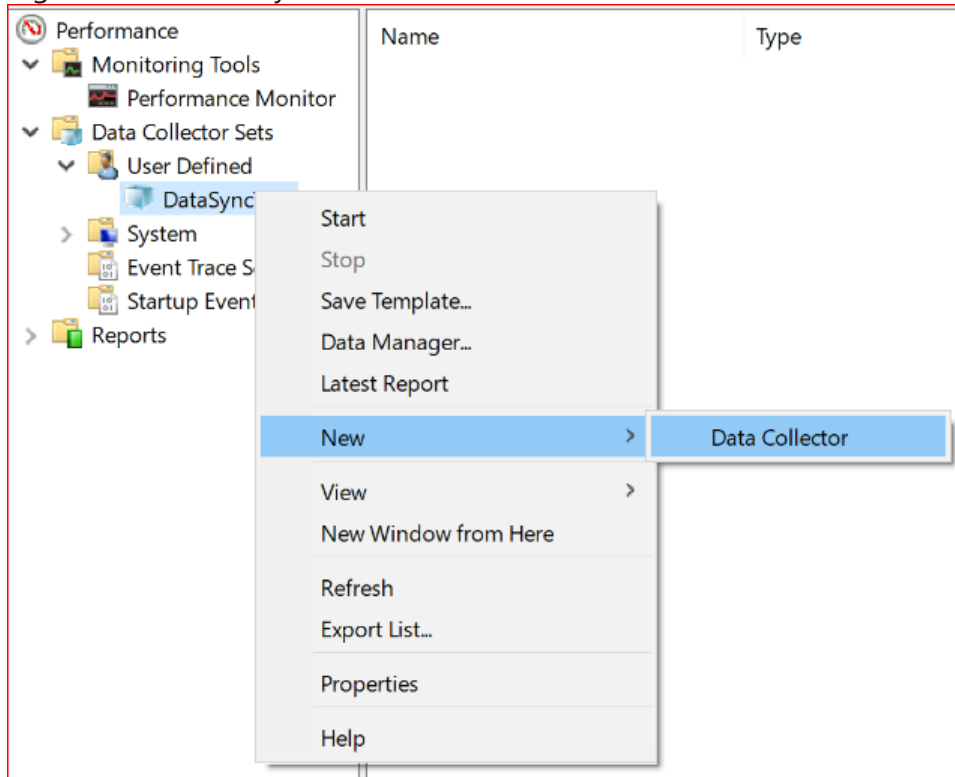
5. Right-Click on DataSyncTest data collector and select Properties



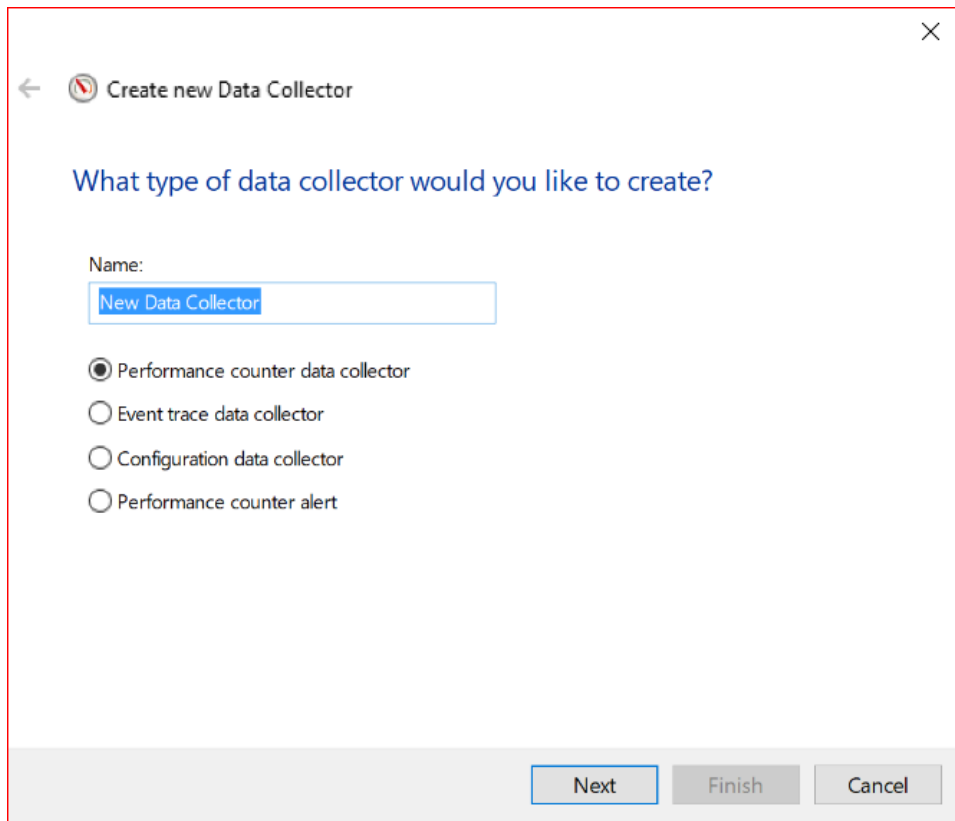
6. On Stop Condition Tab please select Maximum size and click OK.



7. Right-click on DataSyncTest data collector and select New -> Data Collector



8. Select Performance Counter and then click on Next



9. Add following Performance Counters and for each Counters select the options "all counters" and "all instances"

- all SQL Server counters (all counters that begin with Sqlserver or MSSQL\$...)
- Logical disk

- physical disk
- processor
- system
- memory
- process

10. Click on Next (on the screenshot below only one Performance counter is selected, please select counters required for monitoring the issue)

← Create new Data Collector

Which performance counters would you like to log?

Performance counters:

\Process(*)*

Add...

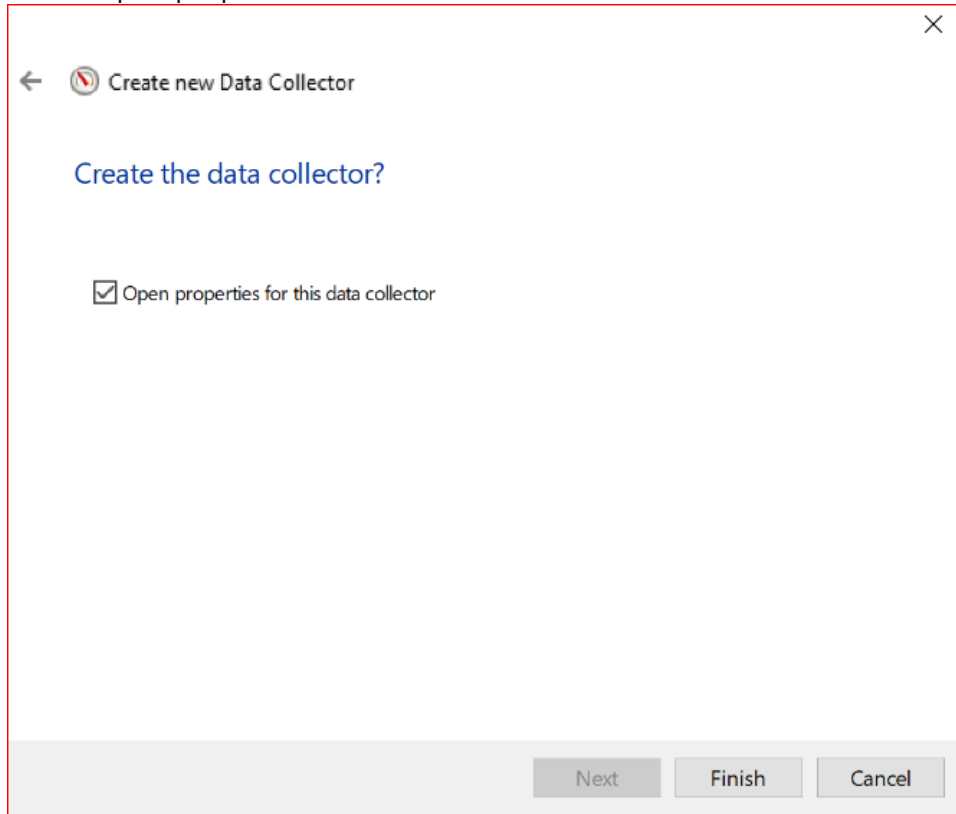
Remove

Sample interval: 15

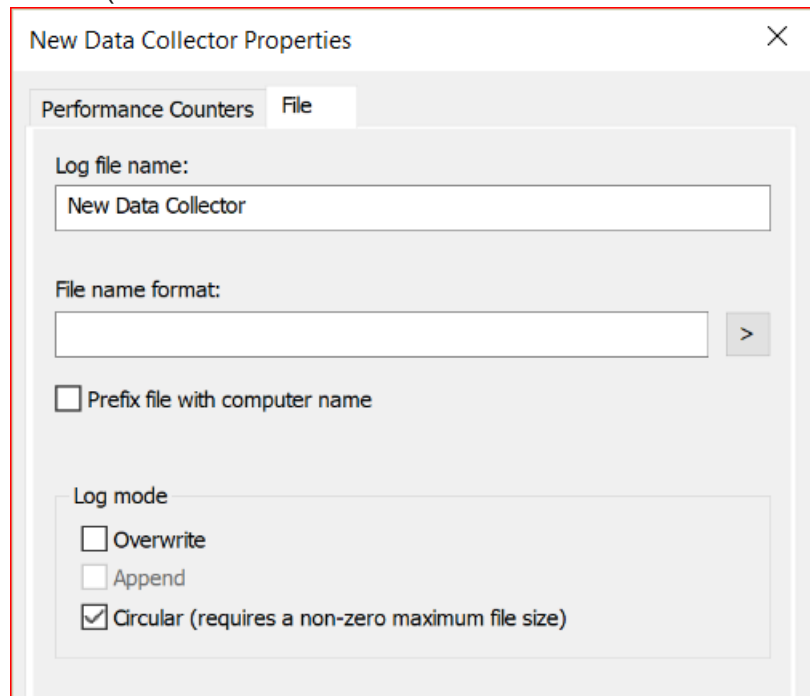
Units: Seconds

Next Finish Cancel

11. Select Open properties and click on Finish

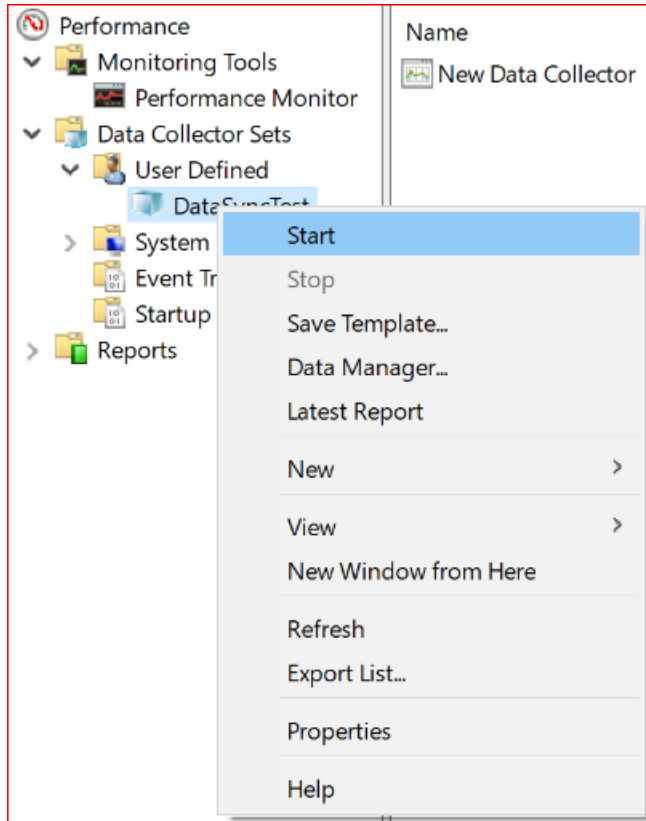


12. On the File Tab select log mode Circular. (**Circular Trace File** Overwrites old data with new data when the



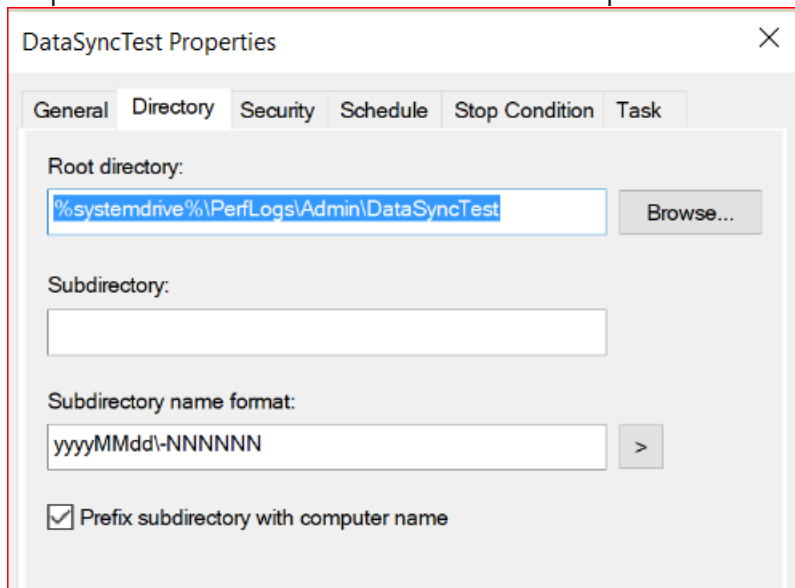
file reaches a specified size limit.)

13. Click on Start



14. Reproduce the issue

15. Stop the trace and send it to us. You can find path to the file in DataSyncTest properties



16. Please send also the latest SQL Server ERRORLOG related to the timeframe of the issue.

Analyze collected Performance Counters

1. Download PAL tool from <https://github.com/clinthuffman/PAL> and start it.

2. On Counter Log TAB select file sent by the customer and click Next

The screenshot shows the 'Counter Log' tab of the PAL Wizard v2.7.7. The 'Counter Log Path' is set to 'D:\SamplePerfmonLog.blg'. The 'Date/Time Range' section has 'Restrict to a Date Time Range' unchecked, with 'Begin Time' and 'End Time' both set to 'Wednesday, September 13, 2017 11:43 AM'. The 'Status' field is empty. 'Previous' and 'Next' buttons are at the bottom right.

3. On Threshold File TAB select SQL Server version of the on-premise Data Sync member and click Next.

NOTE: You can check the file version in the ERRORLOG file sent by the customer. You should see something similar to the following at the beginning of the file.

The screenshot shows the beginning of an ERRORLOG file. The text is as follows:

```
2017-09-07 14:53:31.60 Server Microsoft SQL Server 2014 (SP1-GDR) (KB3194720) - 12.0.4232.0 (X64)
Sep 23 2016 18:45:14
Copyright (c) Microsoft Corporation
Developer Edition (64-bit) on Windows NT 6.3 <X64> (Build 15063: ) (Hypervisor)
```

The screenshot shows the 'Threshold File' tab of the PAL Wizard v2.7.7. The 'Threshold file title' dropdown is set to 'System Overview'. The 'Threshold file name:' and 'Threshold file description:' fields are empty. The 'Content owner(s):' field is empty. The 'Inherited by the threshold file:' field is empty. The list of threshold files includes 'Microsoft SQL Server 2014' (selected), 'Microsoft SQL Server 2012', 'Microsoft SQL Server 2008 / R2', 'Microsoft SQL Server 2005/2008', 'Microsoft Windows Server 2012 Hyper-V', 'Philips Intellivue Clinical Informatics Portfolio', 'Quick System Overview', 'SharePoint Server 2010', 'System Overview', 'TMG 2010', 'UAG 2010', and 'VMWare'. The 'Auto-detect' button is disabled. The 'Use PAL Collector' link is active. The 'up', 'Add...', 'dn', and 'Remove' buttons are visible. 'Previous' and 'Next' buttons are at the bottom right.

4. Provide additional information about the on-premise server in Question TAB. You can find Memory value in SQL ERRORLOG. You should see some similar

2017-09-07 14:53:33.88 Server Detected 12167 MB of RAM. This is an informational message; no user action is required.

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PAL Wizard v2.7.7

Welcome | Counter Log | Threshold File | **Questions** | Output Options | File Output | Queue | Execute

The threshold file you have chosen has questions that need to be answered in regards to the data the perform log was captured. Click each question on the left and answer the question on the right. Answers revert to default when a different threshold file is chosen.

BPEHealth: 1000
OLTPvsOLAP: True
OS: 64-bit Windows Server 2008 R2
PhysicalMemory: 4
PLEHealth: 1000
UserVa: 2048
UsingInMem: True

Questions:

BPEHealth
OLTPvsOLAP
OS
PhysicalMemory
PLEHealth
UserVa
UsingInMem

Answer: 4

Question:
How much physical memory (RAM) in GB?
Use the following Powershell command to get the value:
gwmi Win32_ComputerSystem | %
{\$_TotalPhysicalMemory /1GB}

Previous Next

5. Leave Default options on Output Options TAB and click Next

PAL Wizard v2.7.7

Welcome | Counter Log | Threshold File | Questions | **Output Options** | File Output | Queue | Execute

Analysis Interval
The is the time interval in seconds used to divide the counter log into equal parts or "time slices" each with a min, max, avg, and trend value. The analysis interval determines the number of data points in each time slice. The time slices must be larger than the log's sample interval.

Choose AUTO to automatically separate the log(s) into 30 timeslices.

Analysis Interval: **AUTO** seconds

All Counter Stats
Enable this option if you want the PAL tool to process all of the counters found in the counter log. PAL will chart each counter instance and provide statistics on them. Processing all of the counter instances in the log(s) can be resource intensive.

☐ Process all of the counters in the counter log(s)

Previous Next

6. Specify Output directory and click Next

The screenshot shows the 'PAL Wizard v2.7.7' window with the 'File Output' tab selected. The window has a tabbed interface with tabs: Welcome, Counter Log, Threshold File, Questions, Output Options, File Output, Queue, and Execute. The 'File Output' tab contains the following text: 'Specify a directory to create output files. Choose a directory that your user account has write access to such as a directory under your "My Documents" folder or your Desktop.' Below this is a note: 'Note: Items with surrounding square brackets "[]" will be replaced by runtime values of the same name.' The 'Output Directory:' field is set to '[My Documents]\PAL Reports'. There are two sections for output formats: 'HTML Output' and 'XML Output'. Under 'HTML Output', the 'HTML Report' checkbox is checked, the 'HTML Report File Name:' field is '[LogFileName]_PAL_ANALYSIS_[DateTimeStamp].htm', and the 'Path:' field is '[My Documents]\PAL Reports\[LogFileName]_PAL_ANALYSIS_[DateTimeStamp]'. Under 'XML Output', the 'XML Document' checkbox is unchecked, the 'XML Report File Name:' field is '[LogFileName]_PAL_ANALYSIS_[DateTimeStamp].xml', and the 'Path:' field is '[My Documents]\PAL Reports\[LogFileName]_PAL_ANALYSIS_[DateTimeStamp]'. At the bottom right are 'Previous' and 'Next' buttons.

7. On Queue TAB click Next and click Finish on Execute TAB

The screenshot shows the 'PAL Wizard v2.7.7' window with the 'Execute' tab selected. The window has a tabbed interface with tabs: Welcome, Counter Log, Threshold File, Questions, Output Options, File Output, Queue, and Execute. The 'Execute' tab contains the following text: 'Thank you. You have provided enough information to process the log. Click Finish to begin executing the analysis. Optionally, you can run this wizard again to reuse some of the same settings.' Below this are three radio button options: 'Execute: Execute what is currently in the queue/batch file.' (selected), 'Add to Queue: Do not execute yet. I want to add more items to the queue/batch file.', and 'Execute and Restart: Execute the current queue/batch file and create a new one. More than one instance of PAL running at the same time is supported.' Below these is a 'Threading' section with a 'Number of processing threads:' field set to '4' and a checked checkbox 'Execute as a low priority process.' Below this is a descriptive text: 'This is the number of PowerShell sessions/threads that will be created to analyze the counter log. Default is equal to the number of logical processors on this system due to the high processor usage during analysis. If this system is not dedicated to PAL analysis, then execution as a low priority and/or reduction of the threads is recommended.' At the bottom right are 'Previous' and 'Finish' buttons.

8. Wait when the HTML report is generated. It may take several minutes, depending on the source file size.

9. The report is self-explaining, you will see counters description, graphs . For example,

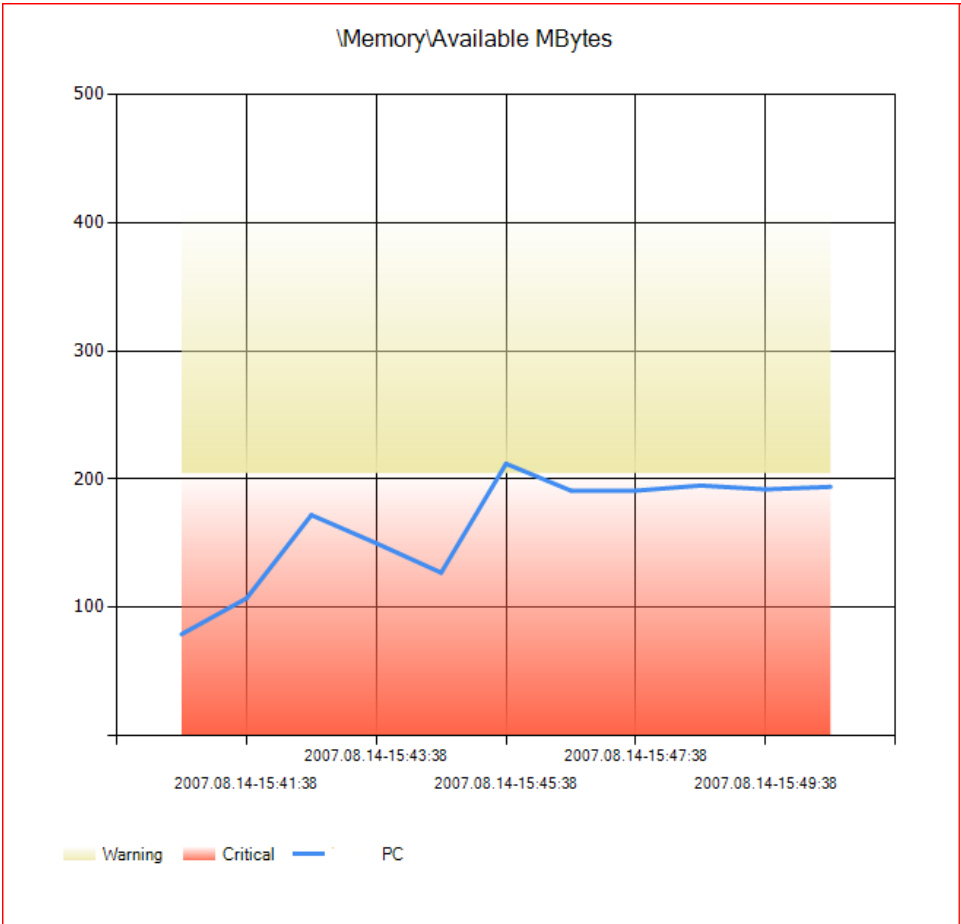
Memory Available MBytes

Description: Available MBytes is the amount of physical RAM, in megabytes, immediately available for

allocation to a process or for system use. It is equal to the sum of memory assigned to the standby (cached), free and zero page lists. If this counter is low, then the computer is running low on physical memory (RAM). This analysis will alert a Warning if this counter's value is less than 10% of the physical memory installed and will alert a critical if this counter's value is less than 100 MB.

References:

- [PerfGuide: Low Available RAM](#) 
- Chapter 8: Physical Memory of the [Windows Performance Analysis Field Guide](#)  by Clint Huffman



Overall Counter Instance Statistics									
Condition	\Memory\Available MBytes	Min	Avg	Max	Hourly Trend	Std Deviation	10% of Outliers Removed	20% of Outliers Removed	30% of Outliers Removed
Less than 5 percent of RAM is available or less than 64 MB of RAM is available	PC	79	155	212	2,260	43	160	156	151

Alerts									
Time Range	Condition	Counter	Min	Avg	Max	Hourly Trend			
2007.08.14-15:40:38 - 2007.08.14-15:41:38	Less than 5 percent of RAM is available or less than 64 MB of RAM is available	PC\Memory\Available MBytes	79	79	79	0			
2007.08.14-15:41:38 - 2007.08.14-15:42:38	Less than 5 percent of RAM is available or less than 64 MB of RAM is available	PC\Memory\Available MBytes	107	107	107	5,040			
2007.08.14-15:42:38 - 2007.08.14-15:43:38	Less than 5 percent of RAM is available or less than 64 MB of RAM is available	PC\Memory\Available MBytes	172	172	172	8,370			
2007.08.14-15:43:38 - 2007.08.14-15:44:38	Less than 5 percent of RAM is available or less than 64 MB of RAM is available	PC\Memory\Available MBytes	158	158	158	4,360			
2007.08.14-15:44:38 - 2007.08.14-15:45:38	Less than 5 percent of RAM is available or less than 64 MB of RAM is available	PC\Memory\Available MBytes	127	127	127	2,160			
2007.08.14-15:45:38 - 2007.08.14-15:46:38	Less than 10 percent of RAM is available	PC\Memory\Available MBytes	212	212	212	4,788			
2007.08.14-15:46:38 - 2007.08.14-15:47:38	Less than 5 percent of RAM is available or less than 64 MB of RAM is available	PC\Memory\Available MBytes	191	191	191	3,360			
2007.08.14-15:47:38 - 2007.08.14-15:48:38	Less than 5 percent of RAM is available or less than 64 MB of RAM is available	PC\Memory\Available MBytes	191	191	191	2,260			
2007.08.14-15:48:38 - 2007.08.14-15:49:38	Less than 5 percent of RAM is available or less than 64 MB of RAM is available	PC\Memory\Available MBytes	195	195	195	3,410			
2007.08.14-15:49:38 - 2007.08.14-15:49:58	Less than 5 percent of RAM is available or less than 64 MB of RAM is available	PC\Memory\Available MBytes	192	192	192	2,260			

How good have you found this content?

