DBPLUS

DBPLUS
Performance Monitor for SQL Server
description of changes in version 2021.2

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Below is a list of changes in the DBPLUS Performance Monitor system for monitoring Microsoft SQL Server instances.

New in 2021.2

1.1. Collision Monitoring and Spin locks

In the latest version of the application, we have added a new function - SPINLOCK monitoring. Spinlock is a very "light" synchronization mechanism in the SQL Server engine that protects access to the data structure (not to the database data itself).

The occurrence of collisions and spinlocks is perfectly normal in a busy system. Sometimes a bottleneck can occur on systems with more CPUs where collisions are more likely - this can drain CPU resources when multiple threads are trying to get a spinlock.

SpinLock monitoring can prove very useful when there is a high **SOS_SCHEDULER_YIELD** wait level. Wait itself is not a cause for concern, unless it is one of the top waits and system performance is slowing down.

SPINLOCK monitoring is available from the instance details level in the **Latches & Literals tab**, the **Spin Lock sub-tab** *Overview*.
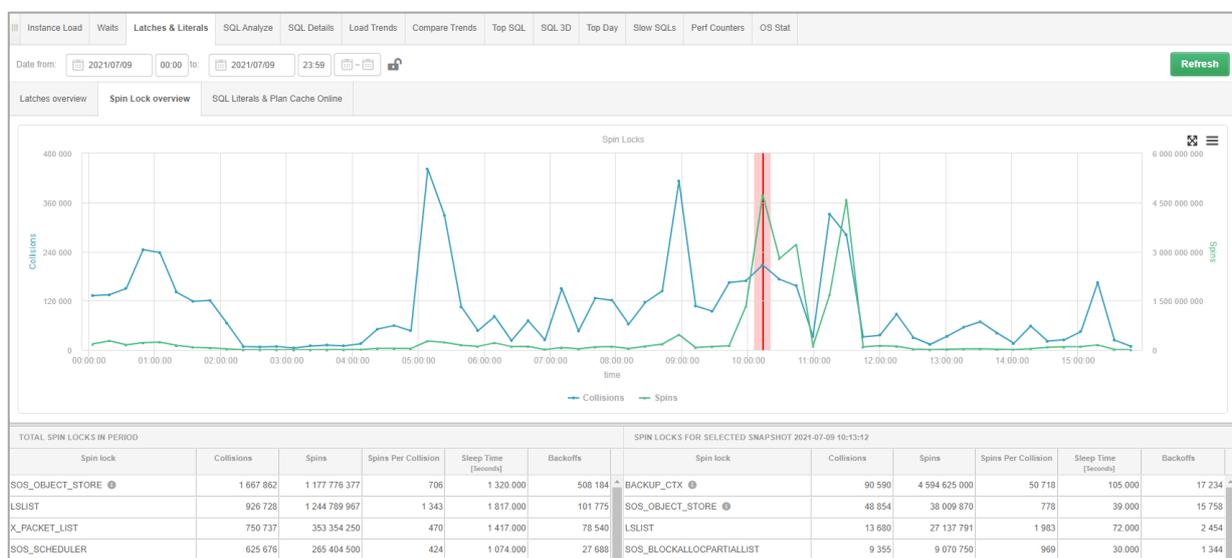
After enter the tab, a graph will be displayed that shows the number of collisions and "Spins" occurring in the monitored database in a given period of time. The table on the left below the chart presents the statistics of SpinLocks in total for the entire period presented in the chart. By clicking on a point on the graph, the User can obtain detailed information on the presence of SpinLocks at a given point in time.

The cause of the problem may be different depending which SpinLock is top at the moment.

1.2. Generate a report based on Anomaly Monitor

As part of the Anomaly Monitor module, where information about problems detected in the monitored database is presented, a reporting module is available. The reporting module is available under the Report button. The report is generated in the * .docx format.
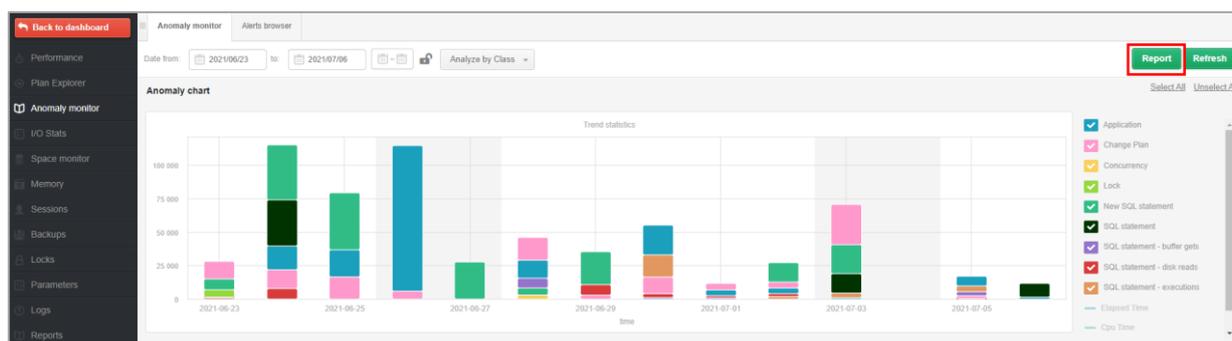
A report from a given period can be generated by the User using the saved template (TEMPLATE), which has been predefined in DBPLUS, or by configuring their own report.

Each user can add their own templates or edit existing ones added by other users. Predefined DBPLUS templates cannot be modified.

In the further part of the configuration, the User sets the language in which the report will be generated, the date range for which the reports will be generated, the name of the report and the file.

The report has been divided into chapters that contains specific types of charts. The chapters correspond to the charts available from the DBPLUS application. If User selects the entire chapter with a checkbox, it will automatically not be taken into account when report is generating.

InstanceLoad

It allows to generate a graph of the performance of a SQL instance over a given period of time.

TopWaits

It allows to generate a chart in two variants:
- Top Waits
- Selected Waits

In the case of Top Waits, the chart will show the top expectations that occurred in the database over the period of time indicated. As part of the configuration, the User may indicate the number of waits to be included in the chart and select the option with displaying the summary of the data visible on the chart.

The Selected Waits option allows to generate a chart for waits specified by the User.

Loadtrends

The charts in this chapter provide a long-term presentation of the main performance statistics. Thanks to LoadTrends, it is possible to estimate whether the recent performance changes in the database are bringing the expected effect.

I/O Stats

The graphs available on the screen allow to report the performance of the disk array. User can choose from all I / O performance indicators available in the application.

OS Stats

This chapter allows to generate graphs that show the utilization of the CPU on the database.

Space Size

It allows to generate a graph of the size of the monitored SQL instance. The application also allows the User to generate a graph that shows the size of the database specified by the User. Selecting the additional Show summary option will generate a summary for a given chart in a tabular form.

Main Performance Problem

This chapter was also available in previous versions of the application. Currently, the User can configure the visibility of query plans in the report for problems related to queries.

Note !! The report cannot be run on IE (Internet Explorer).

Problem classes udate

In the DBPLUS performance Monitor application, the Anomaly Monitor menu presents information on the problems detected in the monitored database. Problems are grouped into classes which, in case of problems related to the increase of a given Wait level, will have the name according to the class of the given Waits. Of course, if the problem is not related to the wait, the name of the class has been predefined by DBPLUS analysts so far.

Improved Change Plan alerts

One of the most common problems with database query performance is changing the execution plan. In the Anomaly Monitor module, the application indicates when a plan change causes a performance problem. In the latest version, we have tightened the indication of performance problems related to the plan change in case the plan change occurs several times during a single snap. As part of the improvement, a special algorithm has been added to check whether the plans on which the query works allow raising an alert and reporting anomalies.

1.3. General Improvements

1.3.1. Comparing Explain Plan

In the latest version of the application, we improved the way of showing differences in plans. When the query uses many execution plans in the DBPLUS Performance Monitor application in the SQL Details tab, it is possible to compile performance statistics for each plan. Also, through the Compare plans function, the user can compare the differences between individual execution plans.

In the application, the difference between the plans is marked in yellow. When the execution plan consists of many lines, it is difficult to compare the two plans. In order to facilitate the comparison of statements, "artificial" lines are inserted in some places in the plan.

1.3.2. Full screen

An option to present charts and execution plans on the whole screen has been added to the application. The function is available after clicking on the "full screen" button in the upper-right corner of the chart / execution plan.
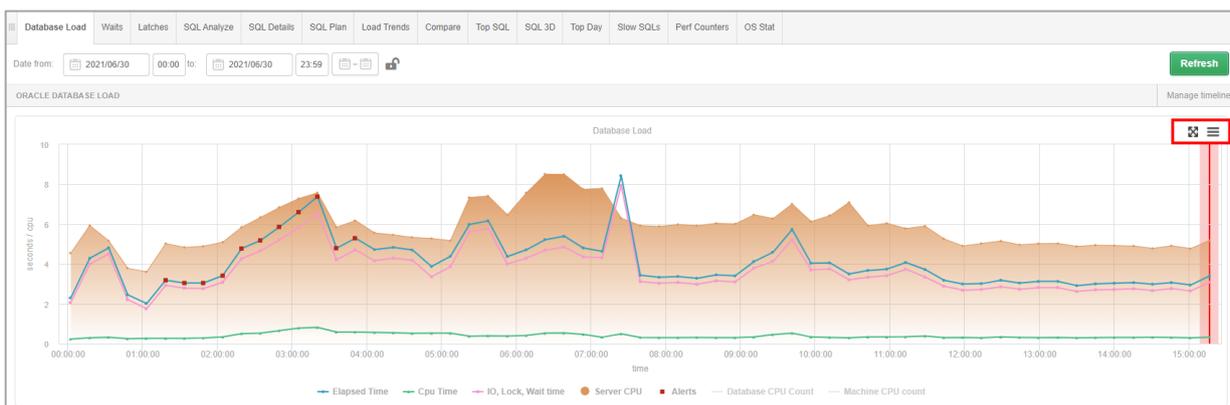
The option is available for the single plan view as well as for the Compare Plans option.
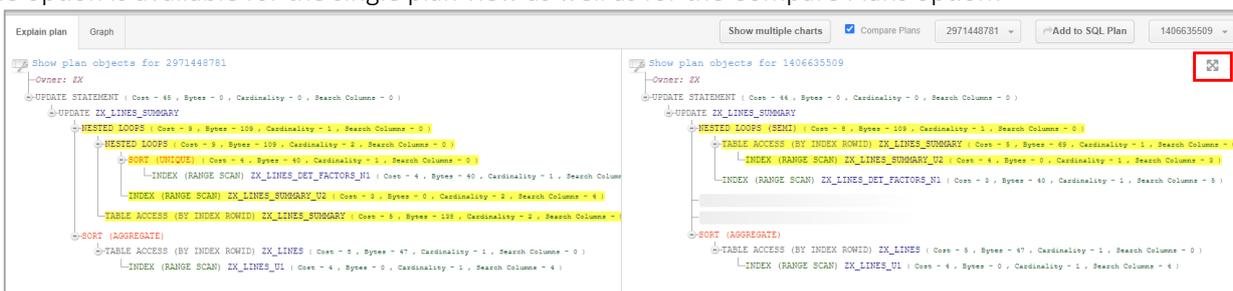
After clicking on the "full screen" icon, the information contained in the inquiry plans will be displayed in full screen in a new browser window. This will greatly facilitate the possibility of analyzing query plans.

1.3.3. Small fixes and improvements

New parameter that filters session histories - Blocking Session id
In the latest version of the application, we have added the ability to search session history based on the blocking session ID. For this purpose, go to the screen available in the Sessions menu in the session history and in the additional filter, complete the field with the blocking session ID - Blocking session id.
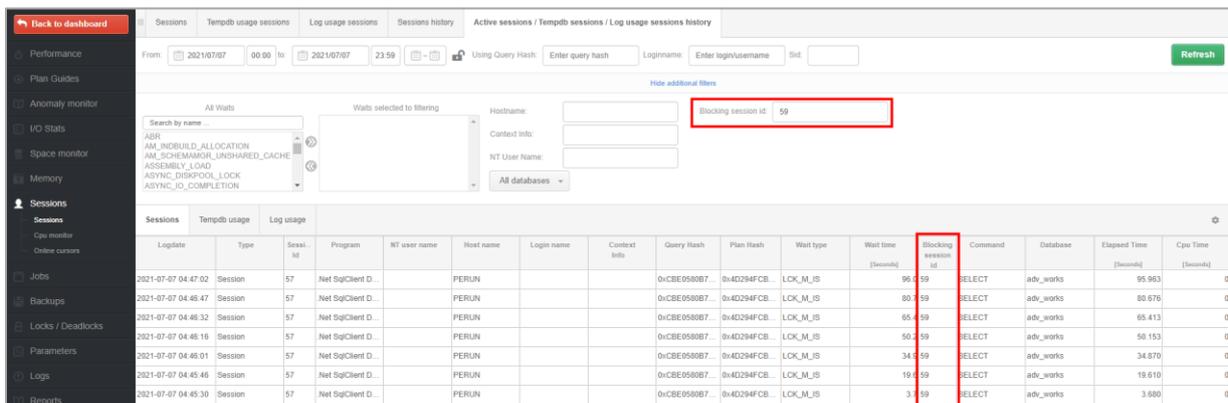
Thanks to this, the User is able to obtain information which sessions were blocked by a given session.

New databse parameters added
In the latest version, we added the **isAutoUpdateStatiscticsAsync** parameter to the monitoring. Information about changes is available in the **Parameters> Database parameters** menu.