DBPLUS
better performance

DBPLUS
Performance Monitor for MS SQL
description of changes in version 2023.4

Date: December 2023

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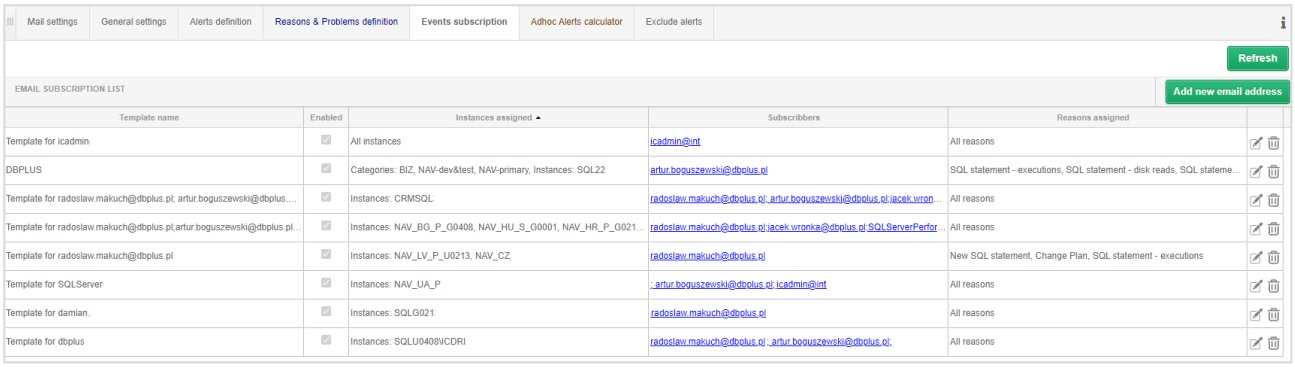
The following is a list of changes to DBPLUS Performance Monitor for monitoring MS SQL databases.

News in version 202 3.4

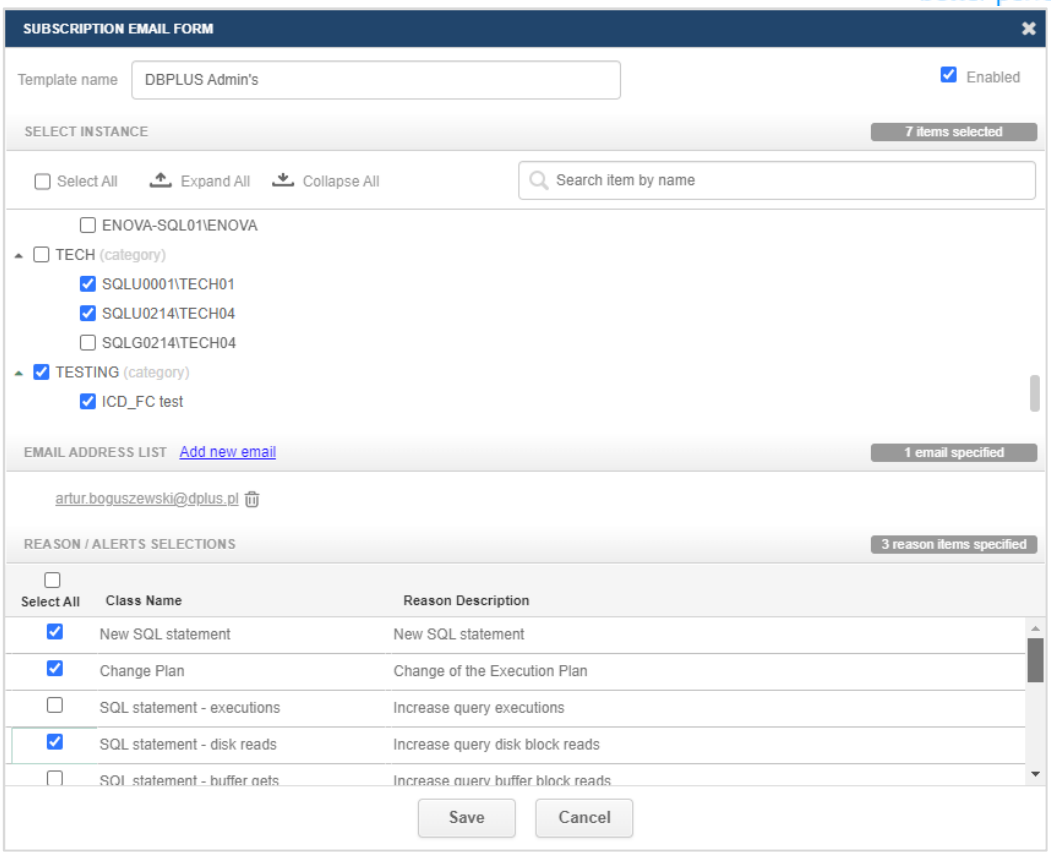
1 Manage email sending from the app

In the latest version of the application, the functionality for managing the sending of email addresses informing about alerts has been modified. Alert information is sent based on events detected by the Anomaly Monitor module. This module analyzes performance trends in the monitored instance and if a problem occurs, the information will be presented in the Performance Monitor application and, if email dispatch has been configured, information about the event will be sent to the specified address.
The improvement introduced in the latest version allows full configuration of email dispatch. The user can indicate which events are to be informed by email.

Configuration is available from the Configuration - Alert setings menu under the **Events subscription** tab.



After uploading the latest application update, the email subscription data will be aggregated and grouped, a template name will be created for each entry - **Template name.**
By default, each entry will contain email sending configurations for each event (alert) **Reasons assigned** will be completed with the value All reason.
The user can add a new entry, change the configuration or delete the shipping configuration.
Adding a new configuration is possible using the **[Add new email address]** button. Within the configuration, the user first indicates for which instances you want alert information to be sent. Instances are grouped into categories. The user has the option to select the entire category or a single instance.



The next step is to add an email address to which information about performance problems will be sent. You can add one or multiple email addresses as part of the configuration.
The last step is to select events for which information is to be sent. The list of events depends on the alerts configured in the **Reasons & Problems** tab **definitions** supplemented with detections sewn in the application code. By default, the following events are available:

- SQL statement - time increase - Increase of query processing time

Indicates an increase in the duration of the Elasped time query.

- SQL statement - executions - Increase query executions

An increase in the number of executions of a given query compared to the statistics collected by monitoring.

- SQL statement - disk reads - Increase query disk block reads

The event reports the return of the number of data blocks read by the query under investigation.

- SQL statement - buffer gets - Increase query buffer block reads

The event informs about the increase in the number of blocks read in memory by the query.

- Online -SQL instance is not available

Event information is sent when the monitored instance is not available.

- New SQL statement

The event informs about a new query that is executed on the monitored instance, which accounts for a significant share of instance utilization.

- Network I/O - High OLEDB event. Waits on remote native Sql Client call(s).

The event examines the OLEDB wait level and compares it with historical data.

- Network I/O - High network wait detections

Verifies the level of waits associated with the Network I/O class.

- Lock - High any locking wait detections

The event reports the occurrence of blockages in the monitored instance.

- Latch - High latches event(s).

Verifies the latch level of the monitored instance.

- Change Plan - Change of the Execution Plan

It is responsible for monitoring the query plans. When a query runs on multiple plans, their statistics are compared. If it is detected that the query is running on a suboptimal plan, information about such an event is displayed as a change of execution plan.

- Buffer I/O - Problem with I/O subsystem storage

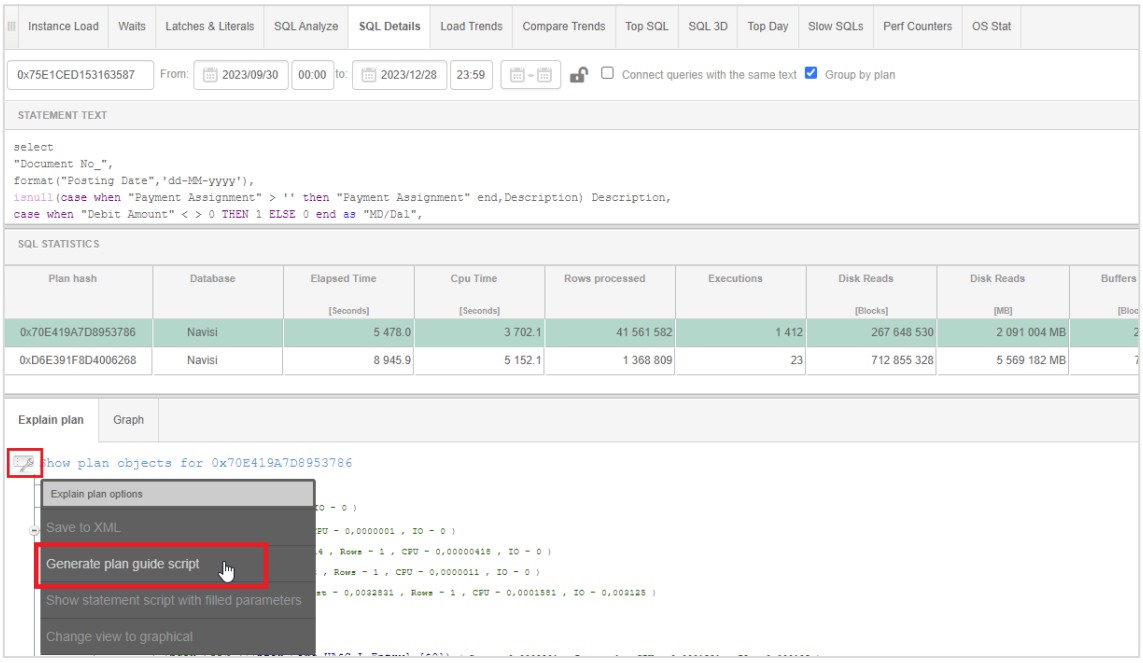
Informs the user about problems with the operation of the disk array.

- Based on wait - High wait detections

Detection examines trends for waits affecting the performance of the monitored instance. Historical data collected by monitoring is compared with the level of a given wait

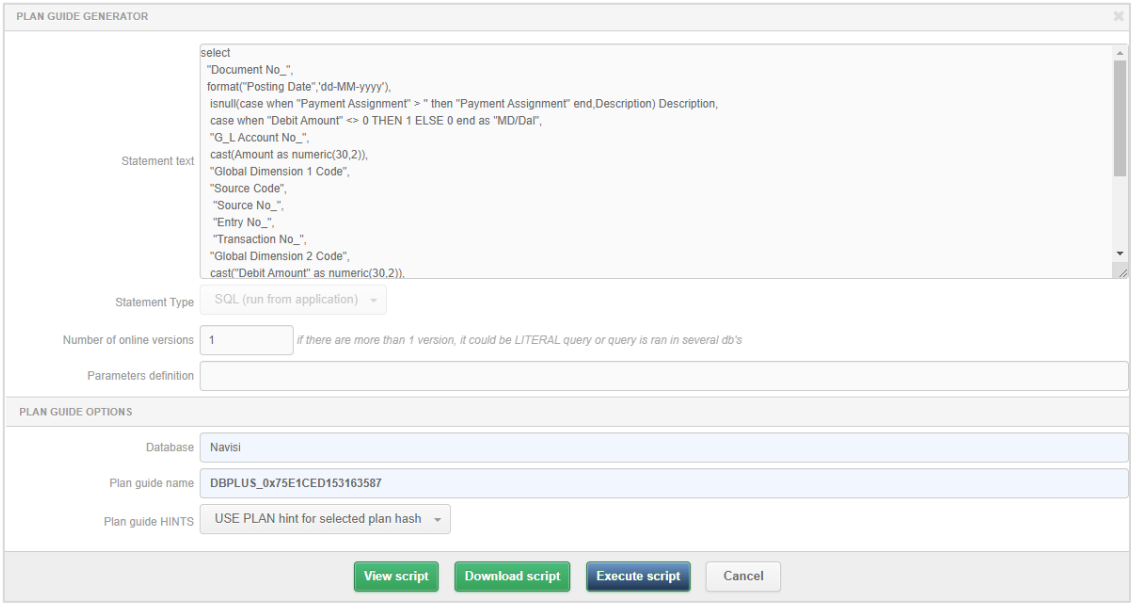
2 Setting up Plan Guide from within the application

In the latest version of the application, the Plan Guide generation mechanism has been expanded. This mechanism allows you to assign an optimal execution plan to a query.
The expansion involves providing the ability to create a Plan Guide directly from within the DBPLUS Performance Monitor application.
Plan guide creation is available at the query analysis level in the Sql Details tab after clicking on the settings icon and selecting **[Generate plan guide script].**



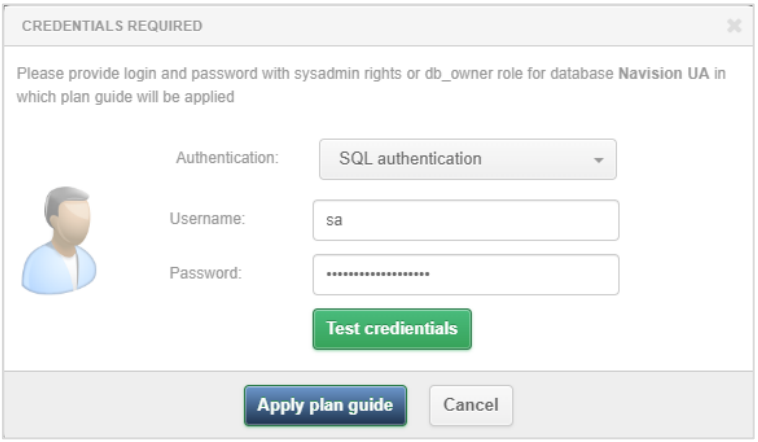
The window that opens will then display information about the possibility of creating a Plan Guide for the query.
The creation of the Plan guide is done through a script, the user has available options such as:

- **View** script - preview the script
- **Download** script - download script to file
- **Execute** script - **execute the** script.



If you choose to execute the script from within the application after clicking **[Execute script]**, you must specify a user with administrator privileges or the owner of the database in which the guide plan will be backed up.

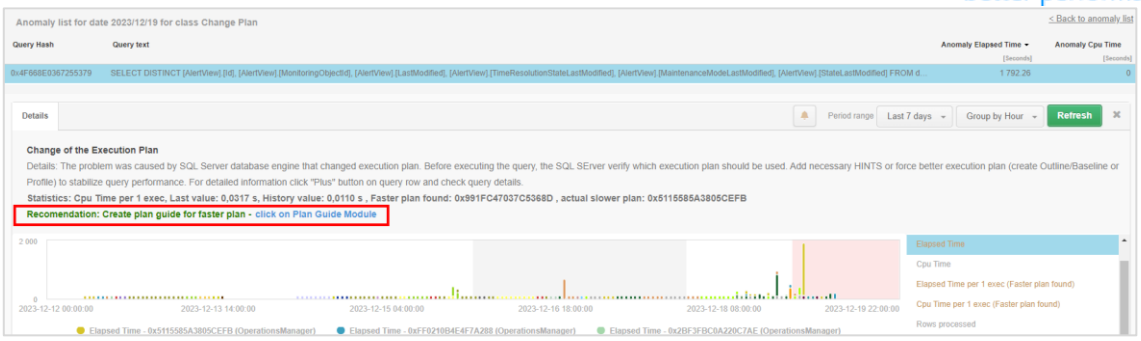
Attention!!! User data will be used only for one-time execution of the script and will not be saved anywhere.



To create a Plan guide, click on the **[Apply plan guide]** button.

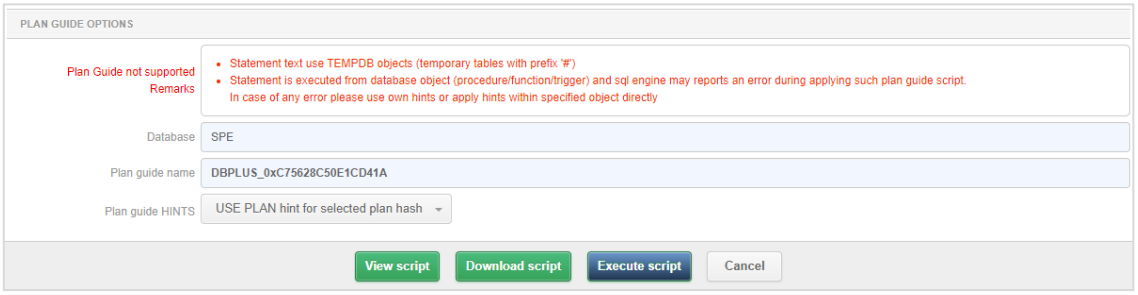
Plan Guide from within Anomaly Monitor

Plan Guide creation is also possible from within Anomaly Monitor. If the module detects an execution plan change problem, information about the detection of a faster plan and the possibility of creating a Plan Guide to improve performance will be made available from the dedicated query level.



The Plan Guide mechanism also has its limitations, which prevent the assignment of an optimal plan for a problematic query. These limitations can be related, for example, to the design of the query itself, the existence of temporary objects or the execution of the query from the procedure level. If such a limitation is detected, the user will be informed by an applied message.

An example of a message indicating that Plan Guide cannot be set up:



3 Minor fixes and improvements

3.1. Improved Change Plan alert mechanism

In the latest version, we added support for the case in which an alert was generated related to a change in the execution plan. In some cases, there was a change of execution plan in which the SQL engine gave a new Plan Hash identifier but the plan itself was identical to the one previously executed.
In this case, in addition to comparing plan statistics, the plan itself is also compared. In the case where the functions in the query plan are the same and only the plan identifier has changed, the information about such an event will not trigger an execution plan change alert.

3.2. Improved grouping of instances on the Dashboard screen

At the request of some of our customers, we have added the ability to filter database instances which have several categories assigned. For this purpose, we have added a checkbox **[Common]** after selecting which only those instances will be displayed that meet the condition of assigning categories selected in the field **Category filter**.

Categories can be assigned in the **Configuration - Servers** menu, by selecting a category in the details for the instance.