

DBPLUS  
Performance Monitor for PostgreSQL  
description of changes in version 2022.3

Table of contents:

<b>1</b>	<b>Anomaly monitor – improvements</b> .....	<b>3</b>
	Report	3
	Analysis of locking problems.....	3
<b>2</b>	<b>Trace session - filter by Hash value</b> .....	<b>3</b>
<b>3</b>	<b>Bug fixes and improvements</b> .....	<b>4</b>
	3.1. Improved query plan generation.....	4

Below is a list of changes to the DBPLUS Performance Monitor system for PostgreSQL database monitoring.

## New in 2022.3 version

### 1 Anomaly monitor – improvements

Anomaly monitor mechanism is a module responsible for automatic real-time detection of performance problems in the monitored database.

#### Report

The Anomaly Monitor report has been modified in the latest version. This report is available at the instance details level in the Anomaly Monitor - Reports menu. The change was to the default version of the report. Users can still create and modify their own versions of the report.

The changes concern the presentation of information on the general performance characteristics of the instance, as well as the presentation of information on the main performance problems detected in the instance in the period for which the report was prepared.

#### Analysis of locking problems

The problem of locks is one of the most common performance problems in relational databases. In the Performance Monitor application, there is an Anomaly Monitor module in which occurrences of events detected by the application affecting the performance of the monitored instance are presented. One of the series of events is Locks.

In the latest version, in addition to sealing the mechanism for collecting locks, functionality was added to verify the causes of locks. The following scenarios have been distinguished in the application:

##### High locking due to sleeping session

The problem caused by leaving an inactive session with an open transaction that holds unapproved changes in the database. The problem cannot be solved on the database server side. Application code, connection and transaction management should be verified to resolve the problem.

##### High locking due to long transaction

The problem caused by opening a long transaction in the database. The process causing the locking and the application code should be verified. The recommendation is to split the process into using shorter database transactions. In addition, verify the transaction isolation mode and check whether the blocked queries, used optimal execution plans.

##### High locking due to long running statement

A problem caused by a long-running query (or a large number of executions). Verify the query's statistics, performance and execution plan.

If any of the scenarios occurs, information about the event will be presented in the application on the Dashboard screen, Anomaly Monitor as well as other screens available in the application.

In addition, information on the cause of the blockages will be available in the report for the period in which the problems described above occurred.

***Note that information on the causes of locks requires additional data collection during monitoring. Therefore, the causes of blockages will be visible only for problems that were detected after the application was updated to the latest version.***

### 2 Trace session - filter by Hash value

In the latest version, the mechanism has been extended by the possibility to search for user sessions which, at the time of verification, execute the query indicated in the filter. The collected data can be analyzed from the application level or exported to \*.csv file.

**TRACE DEFINITION**

Start date: 2022/10/09 21:13

End date: 2022/10/09 21:14

Trace interval: 1 second(s)

Max number of sessions to trace: 10

Filters:

Pid:

Hostname:

Session status: Not selected

Login name:

Wait name:

Application/Program:

Database: All databases

Hash Value: 1188193577

Cancel

Result for trace using Hash value in filter:

The screenshot shows the DBPLUS interface with a sidebar on the left containing navigation options like Performance, Plan Guides, Anomaly monitor, IO Stats, Space monitor, Memory, Sessions, and Jobs. The main area displays a 'TRACE DEFINITIONS LIST' with one entry: '107 Query Hash: 0xD9A25E3C681B93C4' in a 'running' state. Below this, the 'TRACE DETAILS (COLLECTED SESSIONS)' table is shown with columns for Logdate, Session start, Last request date, Transaction start, Session id, Program, NT user name, Login name, Original login name, Status, Hostname, Context info, Wait Name, Database, Query Hash, Plan Hash, Elapsed Time, Cpu Time, Blocking Sid, and Command. The table contains several rows of session data.

Logdate	Session start	Last request date	Transaction start	Session id	Program	NT user name	Login name	Original login name	Status	Hostname	Context info	Wait Name	Database	Query Hash	Plan Hash	Elapsed Time [seconds]	Cpu Time [seconds]	Blocking Sid	Command
2022-10-07 13:29:45	2022-10-07 13:29:45	2022-10-07 13:29:45	2022-10-07 13:29:45	86	SQLAgent	sqlsa_bctest	INTERsql...	INTERsql...	running	SQL22		LCK_M_X	msdb	0xD9A25E...	0xBAA5FB...	0	0	87	SELECT
2022-10-07 13:29:44	2022-10-07 13:29:42	2022-10-07 13:29:42	2022-10-07 13:29:42	145	SQLAgent	sqlsa_bctest	INTERsql...	INTERsql...	running	SQL22		LCK_M_X	msdb	0xD9A25E...	0xBAA5FB...	2	0	130	SELECT
2022-10-07 13:29:44	2022-10-07 13:29:42	2022-10-07 13:29:42	2022-10-07 13:29:42	142	SQLAgent	sqlsa_bctest	INTERsql...	INTERsql...	running	SQL22		LCK_M_X	msdb	0xD9A25E...	0xBAA5FB...	2	0	130	SELECT
2022-10-07 13:29:44	2022-10-07 13:29:42	2022-10-07 13:29:42	2022-10-07 13:29:42	141	SQLAgent	sqlsa_bctest	INTERsql...	INTERsql...	running	SQL22		LCK_M_X	msdb	0xD9A25E...	0xBAA5FB...	2	0	130	SELECT
2022-10-07 13:29:44	2022-10-07 13:29:42	2022-10-07 13:29:42	2022-10-07 13:29:42	132	SQLAgent	sqlsa_bctest	INTERsql...	INTERsql...	running	SQL22		LCK_M_X	msdb	0xD9A25E...	0xBAA5FB...	2	0	130	SELECT
2022-10-07 13:29:44	2022-10-07 13:29:41	2022-10-07 13:29:41	2022-10-07 13:29:41	130	SQLAgent	sqlsa_bctest	INTERsql...	INTERsql...	running	SQL22		LCK_M_X	msdb	0xD9A25E...	0xBAA5FB...	3	0	109	SELECT
2022-10-07 13:29:44	2022-10-07 13:29:42	2022-10-07 13:29:42	2022-10-07 13:29:42	128	SQLAgent	sqlsa_bctest	INTERsql...	INTERsql...	running	SQL22		LCK_M_X	msdb	0xD9A25E...	0xBAA5FB...	2	0	130	SELECT

### 3 Bug fixes and improvements

#### 3.1. Improved query plan generation mechanism

In the latest version, another pack of fixes has been added related to correcting errors during execution plan generation. In PostgreSQL database, execution plan information is not available in system views. The DBPLUS Performance Monitor application generates an execution plan for top queries (the number depends on the parameter settings, the default is 40). For queries with parameters, it is necessary to specify the type and default value of the parameter. In some cases there are errors related to reading the parameter type correctly. The errors are systematically corrected and removed.