

DBPLUS
Performance Monitor for PostgreSQL
description of changes in version 2022.1

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Table of Contents

1	System_Stats Extension - New PostgreSQL Monitoring Capabilities.....	3
2	Data management in the DBPLUS repository database	4
3	Anomaly Monitor	5
4	Bug fixes and improvements.....	5
4.1.	Improvements on the Show Plan Objects page	5
4.1.	Database Instance change	6
4.2.	Shared Dashboard with the Performance Monitor application for SAP Hana	6

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

New in 2022.1

1 System_Stats Extension - New PostgreSQL Monitoring Capabilities

In the latest version of the Performance Monitor application, we have added support for the PostgreSQL System_Stats extension. It is an extension for PostgreSQL database version for Linux as well as Windows and MacOS.

The extension allows you to use the function to monitor system processes, the level of CPU utilization, memory and disk resources.

Additional information about the extension as well as downloads are available at the following link:

https://github.com/EnterpriseDB/system_stats

In order to use the extension by the DBPLUS Performance Monitor application, after installing the extension in the monitored PostgreSQL instance, you should grant the rights to the monitoring user. To do this, refresh the privileges in the DBPLUS Wizard console available on the Windows server with the DBPLUS application installed. After entering the console for the selected PostgreSQL instance, go to the settings (by clicking the **[gear]** icon for the given instance). Then select the Refresh privileges option and select the **Use SYSTEM_STATS extension to monitor OS statistics** option. We confirm the selection by clicking on Refresh user privileges.

The screenshot shows a 'User refresh privileges' dialog box. At the top, it says 'Postgres Instance refreshing user privileges' and 'Instance is refreshing user privileges (in case of broken)'. Below this, there are sections for 'Instance details', 'Features and privileges', and 'Sysadmin connection credentials (for instance)'. In the 'Features and privileges' section, the checkbox 'Use SYSTEM_STAT extension to monitor OS statistics' is checked and highlighted with a red box. At the bottom, there are three buttons: 'Test connection', 'Refresh user privileges' (highlighted in green), and 'Close'.

Permissions can also be granted from the level of PostgreSQL instance by executing the following command for the user indicated for monitoring:

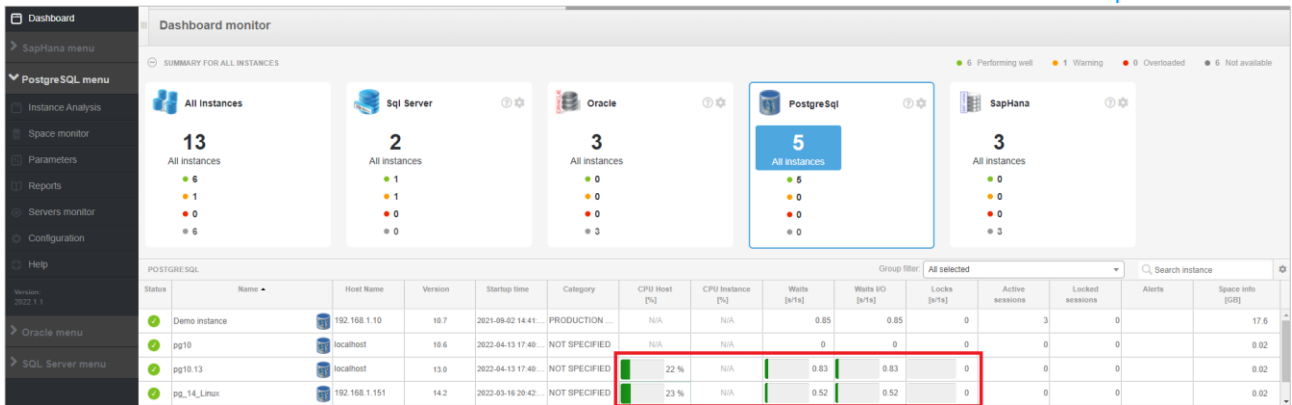
```
GRANT monitor_system_stats to [...];
```

New functionalities of DBPLUS monitoring

By using the DBPLUS extension, it is possible to monitor the load on the server on which the PostgreSQL instance is installed.

Dashboard screen

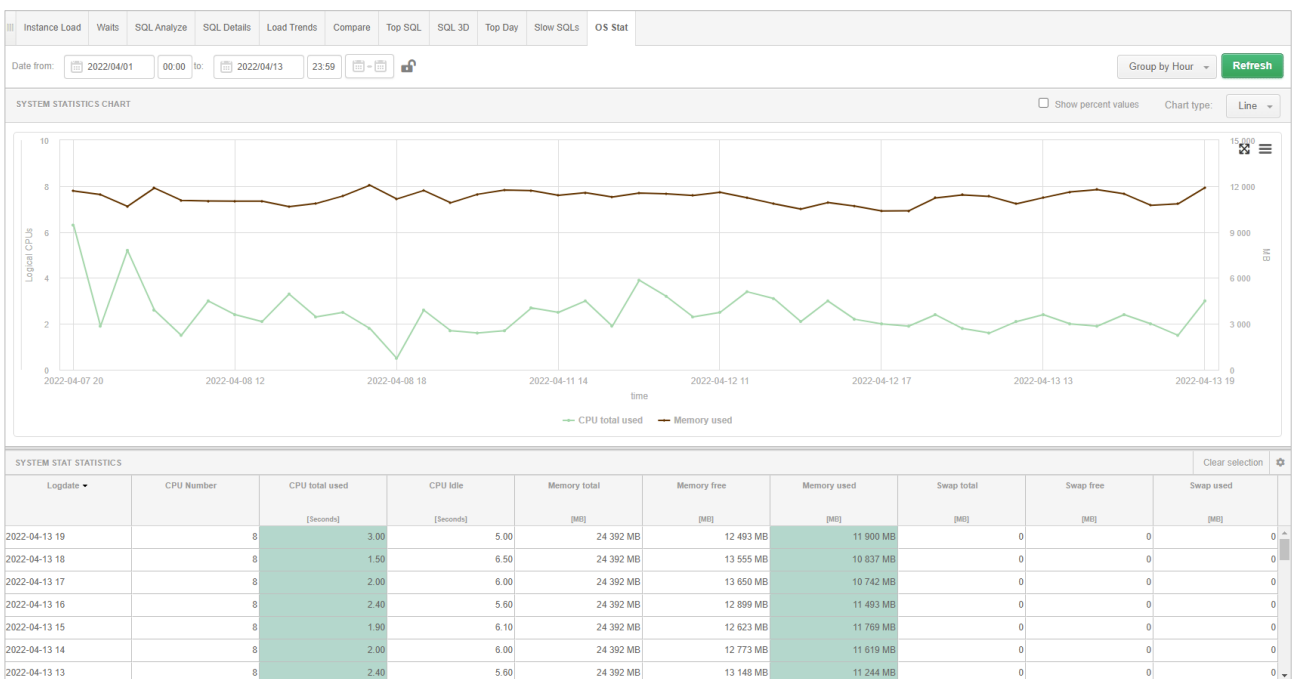
CPU utilization data is collected online and refreshed every 15 seconds. Similarly to the other platforms, after clicking on the CPU Host column, we get a load graph for the last 15 minutes.



Information on the number of processors and the CPU load is visible in the details of the PostgreSQL instance on the graph in the **Instance Load** tab.

OS STAT screen

The extension allows you to monitor the utilization of the server's CPU on which the PostgreSQL instance is located, as well as the memory usage on the server. In the latest version, a new **OS Stat** tab will be visible for PostgreSQL instances with the **System Stats** extension enabled.



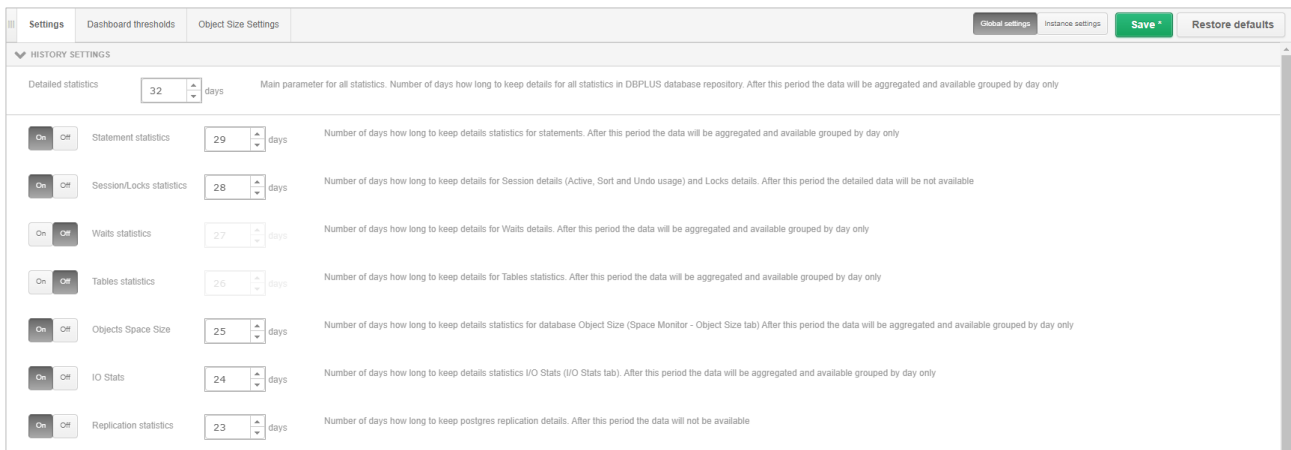
The website will allow you to verify the CPU utilization as well as the level of memory usage on the server, as is the case for other platforms in DBPLUS monitoring.

2 Data management in the DBPLUS repository database

In the DBPLUS application, all data related to the monitoring of the instance are saved in one place in the repository database. Detailed data (e.g. query statistics collected at 15-minute intervals) are aggregated into daily data after a certain period of time. Until now, the user had only one main parameter that controlled the retention time of data in the repository.

In the latest version of the application, we have added parameters that enable individual configuration of the data retention time in the DBPLUS **repository** for the most important monitoring areas.

The configuration change is available in the settings menu from the main menu: **Configuration > Settings**. The parameters responsible for setting the time length can be found in the dedicated **HISTORY SETTINGS** section in the **Settings** tab.



The section includes the configuration for the main **Detailed Statistics** parameter, as well as the parameters of the main monitoring areas. Setting the configuration for any of the parameters overwrites the settings of the main parameter. Please note that the change applies to all monitored instances.

Parameters are available for the areas:

- Statements statistics - concerns the query area,
- Session \ Locks statistics - concerns the area of locks and sessions,
- Waits statistics - concerns the wait area,
- Tables statistics - for table statistics. Statistics monitoring for a given table is turned on manually in the settings from a dedicated PostgreSQL instance,
- Objects Space Size - a parameter responsible for the time of keeping information on the size of objects in the monitored database. Object occupancy monitoring is an additional module that we turn on in the settings menu in the Object Size Settings tab,
- IO Stats - the parameter is responsible for the storage time of IO Stats data in the DBPLUS repository,
- Replications statistics - concerns the replication area.

Each change of parameters introduces changes from the next snap for the thread deleting the stories from the repository database. Information on data deletion can be followed in the logs available from the main menu **Servers monitor > Logs** in the **Deletion procedure runtime** tab.

3 Anomaly Monitor

The latest version introduces a number of changes to the functionality of detecting performance problems.

Improved detection calculation for queries that run at fixed times

In the latest version of the algorithm that verifies the occurrence of performance anomalies in the database, we have improved the mechanism that checks whether a given performance problem does not result from a repetitive, constant process that is run periodically on the monitored database. If a disturbance resulting from a cyclical process launched at fixed hours is detected, such an alert will not be generated.

Improvement in Anomaly Report

In the latest version, changes have been made to the Anomaly Monitor report related to:

- Improvement of the currently occurring data presentation errors in the report,
- acceleration of the report generation process,
- improvement of the translation for the Polish version.

4 Bug fixes and improvements

4.1. Improvements on the Show Plan Objects page

Designation of the columns used in the query

In the latest version, we have added functionality that allows faster query performance analysis on the Show Plan Objects screen. The change consists in additionally marking the columns used in a given query in the grid. The change is visible on the screen in the form of an additional column Used in query, which is displayed after the **Parse SQL Query** operation.

Used in Query	Column	Type	Position	Is nullable	Unique values	Most common values
<input checked="" type="checkbox"/>	id	integer	1	YES		
<input checked="" type="checkbox"/>	name	text	2	YES		

4.1. Database Instance change

In the latest version of the application, we have improved the functionality of changing the monitored database instance. In the application, while viewing performance statistics, we have the option of changing the database context. It is possible to change it without having to go back to the Dashboard screen. In order to change the context, it is enough to click on the **[Change]** button available on the blue bar at the top of the screen. After clicking, the list of available monitored databases will be expanded with the possibility of searching by the selected filter or name.

Used database name	Instance name	Host name	Type
TB	ARSIC	u4ura	TESTING DATABASE
FAQICS	ICSP	vm-ko-qa-db-01	TESTING DATABASE
BPPERFIC	ICSP	perf-db-01	TESTING DATABASE
CSPSTG	ICSP	db-01	TESTING DATABASE
PERF2 OCI	ICSP2	perf-db-02	TESTING DATABASE
POC	ORA	glo	TESTING DATABASE

4.2. Shared Dashboard with the Performance Monitor application for SAP Hana

In the latest version of the application, support for the new SAP Hana data platform has been added. Users with multi-platform monitoring can view online all four available platforms on one common Dashboard screen.