DBPLUS
better performance

DBPLUS
Performance Monitor dla PostgreSQL
Description of changes in version 2019.3

Date: August 30, 2019

Table of Contents

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

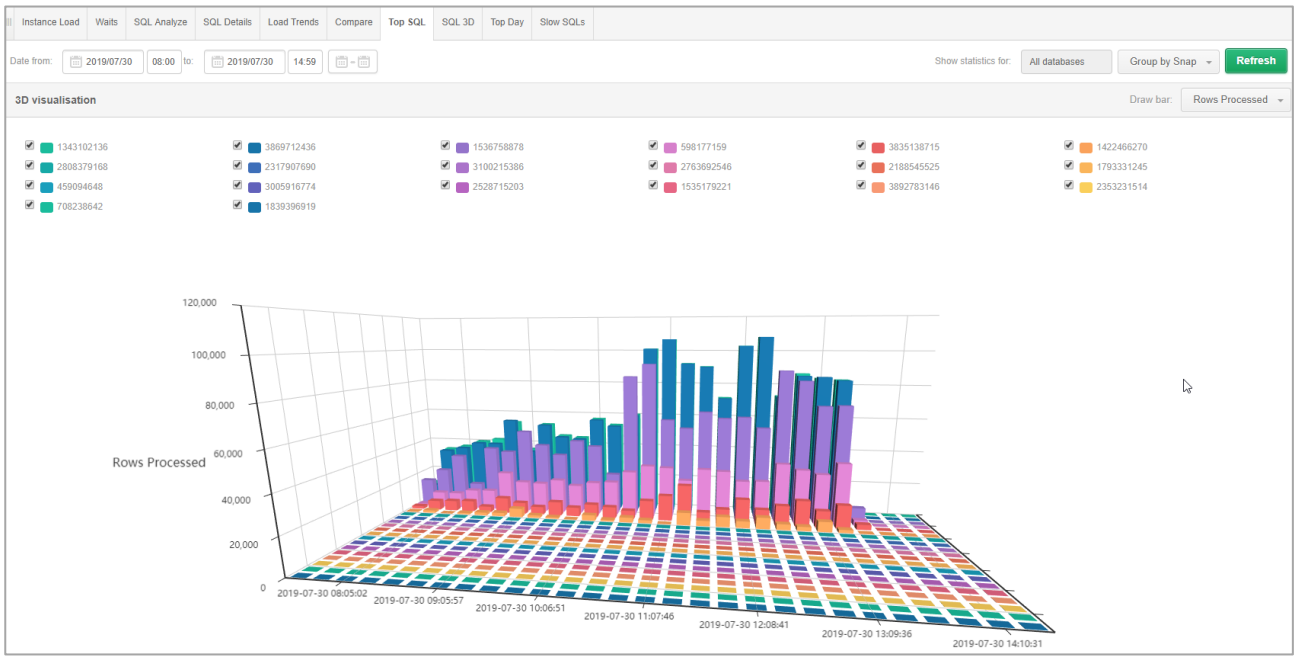
1 New in version 2019.3

1.1 New version of the SQL 3D

In the latest version of the browser, the SQL 3D view has been modified. A new library has been used, making the chart easier to navigate and faster in presenting and reading data contained in the chart. The graph can be rotated vertically and horizontally (by holding the left button of the computer mouse), zooming in and out. At the same time, the previous functionality was saved, where after selecting the bar the tooltip will be shown, which includes:

- Query ID,
- Date details,
- Statistics value,
- Query text.

By unchecking the checkbox next to the queries (above the graph), the user can easily remove the query from the graph.

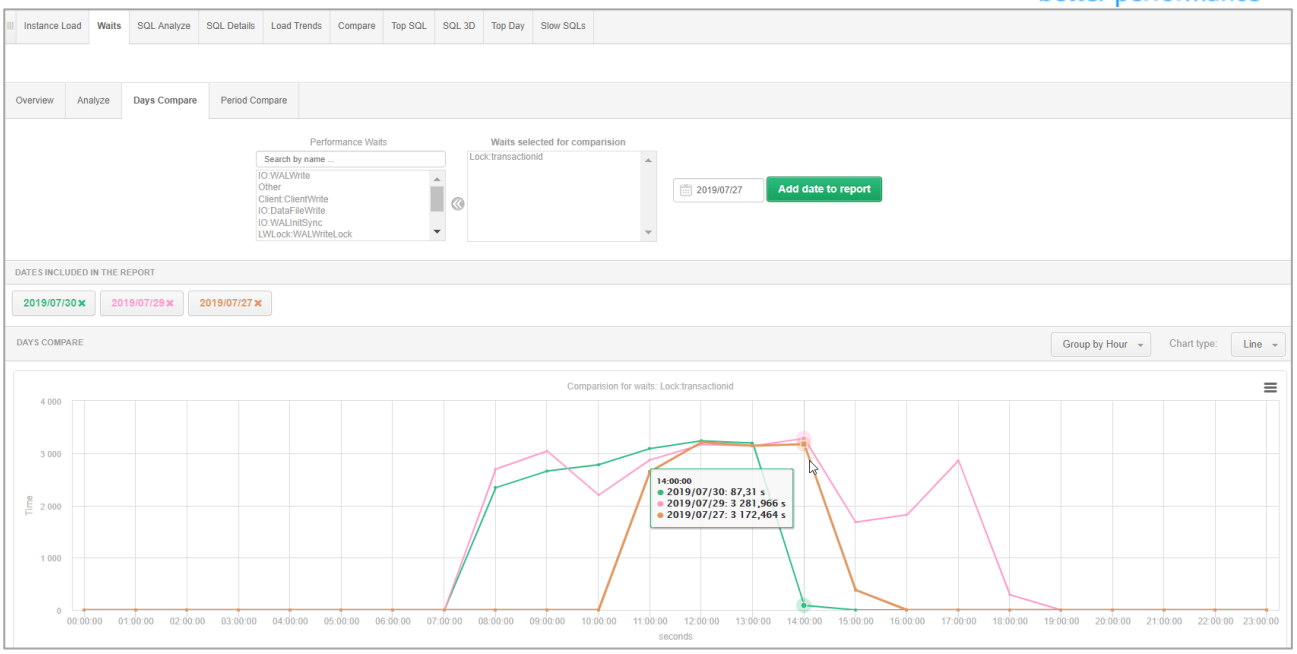


1.2 Comparison of the wait level

In the new version of the application, the function of compare the wait level in the indicated period has been added. Compare is possible from the instance details in the Waits tab. There are two comparison modes:

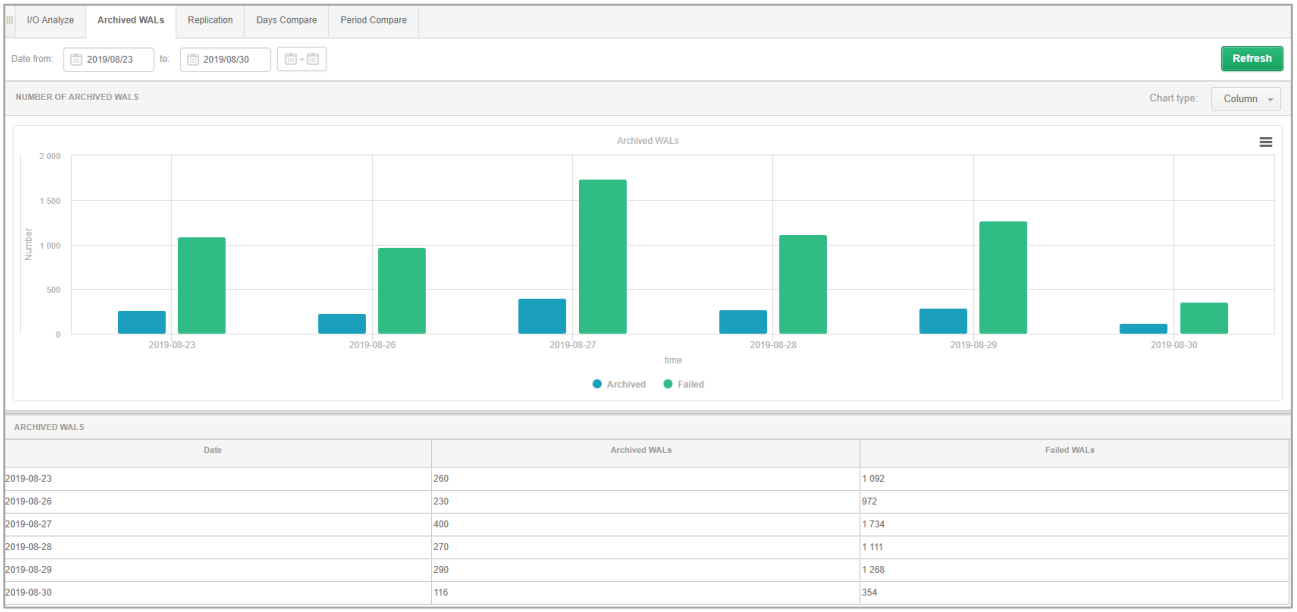
- Days Compare
- Period Compare

In order to compare the validity level, first select the type of validity to be compared from the list (one or more types), then select individual days for comparison (Days compare tab) or whole day ranges (Period Compare tab).

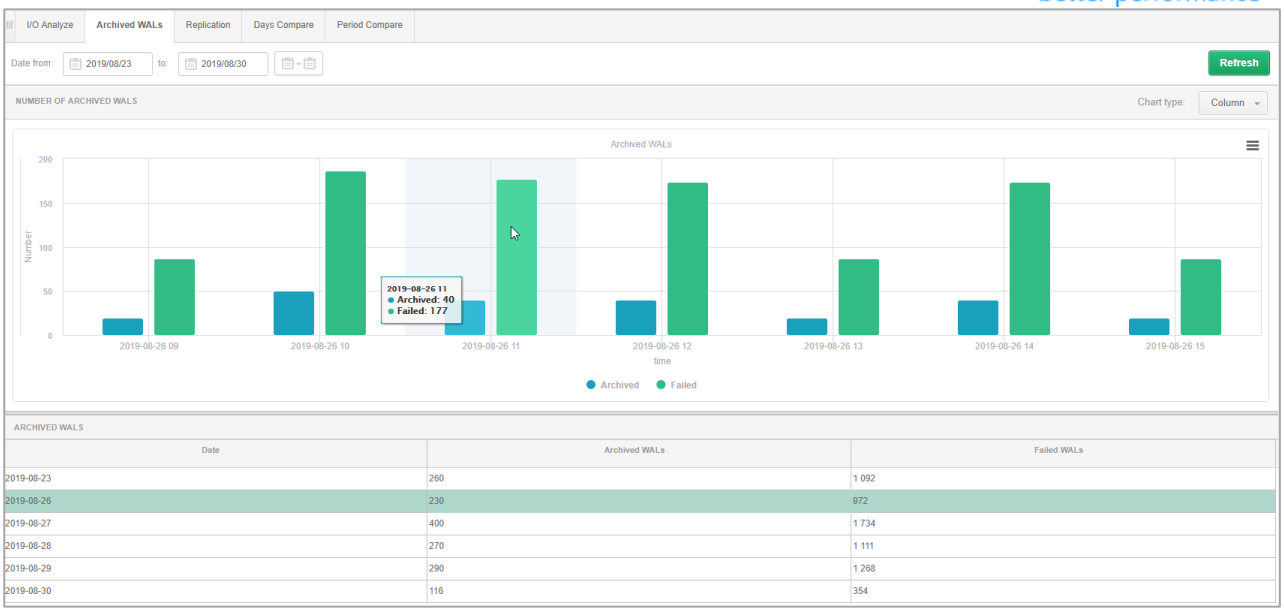


1.3 A new view shows the process of data archiving

In the new version of the application, a view showing the information contained in the system view pg_stat_archiver has been added. The application presents information about the number of correctly archived WAL files and information about the number of polices where the archiving failed.
The data is available in the IO Stats menu in the Archived WALs tab:



Data are available in the division for a given day, after click the indicated row in the table below the chart, detailed information grouped after a snap for a given day will be presented:



1.4 Preview of the replication process

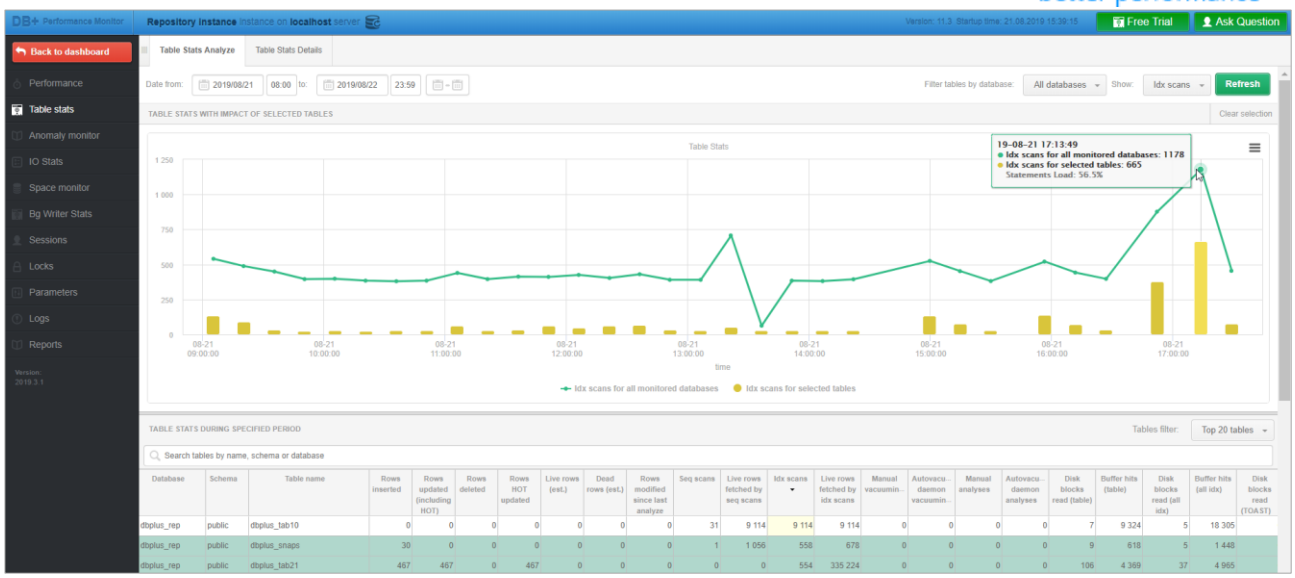
In the latest version of the application, the system view support pg_stat_replication has been added. The data is available in the IO Stats menu in the Replication tab.
After entering the tab, first select one in the replicating processes from the list available in the "WAL sender process" field. Note: in the absence of a replicating process in the dropdown field, the message *No process found* will be displayed.
After select the process, information that contain details of the given process will be displayed:

- Logdate – date of data collection
- PID – sender process ID
- Usename – name of the user logged in to this sender process
- Application name – the name of the application connected to this sender
- Client IP – Client IP connected to this sender
- Backend start – Process start time (time stamp)
- State – the status of the WAL sender
- Write lag [sec]
- Flush lag [sec]
- Replay lag [sec]
- Sync priority – the priority of choosing a standby server
- Sync state – synchronous state of the standby server
- Pending lag [Bytes]
- Write lag [Bytes]
- Flush lag [Bytes]
- Replay lag [Bytes]
- Total lag [Bytes]

1.5 Table stats

In the latest version of the application, the ability to view statistics for tables in PostgreSQL databases has been added. To this end, a new menu item has been added at the level of instance details> Table Stats.
Notice!! If the application is running in Safe mode (the SECURITY parameter is ON), access to the newly created page should be granted (access is denied by default).

After entering the user page, it is possible to view statistics broken down into all databases or a specific database [Filter tables by database]. After select the database, a graph will be drawn for the default statistics, which can be changed at any time by select a different statistic from the [Show] field and press the [Refresh] button.



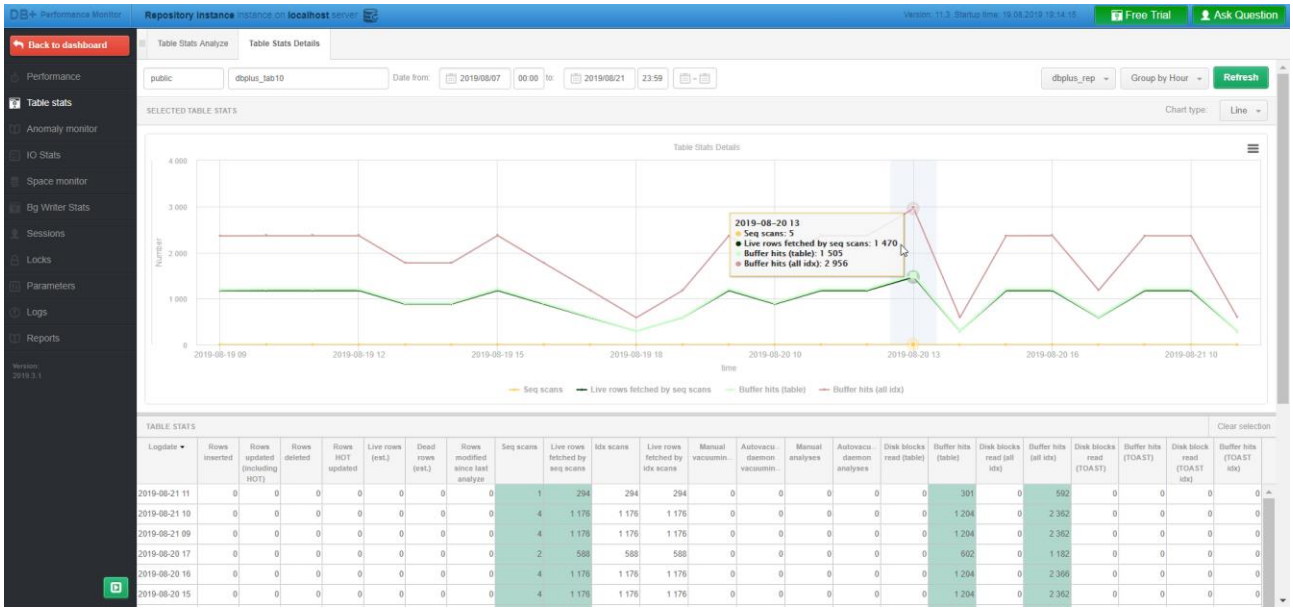
After select the statistics, it is possible to verify the percentage share of a given table compared to other tables. To do this, indicate tables (or many tables at the same time) from the list below the graph, and their total value for a given statistic will be presented on the chart in the form of yellow columns. 20 top tables are visible below the chart, it is possible to change the list to present all tables by changing the [Table filter] field.

For detailed analysis, it is possible to add a table for analysis by click the [+] button next to the table name [Table name] in the grid below the chart. The mechanism works in the same way as when choosing query identifiers. Two options to choose:

- [Add to table identifiers list] - information about the table is added to the clipboard
- [View table details] – go directly to the table details.

If the option to add to clipboard is selected, table identifiers are visible after pressing the green arrow on the left side of the screen. After pressing the button and selecting a table from the list from the clipboard, user will go to the details screen> Table Stats Details.

On the details screen it is possible to analyze detailed statistics for a given table. To analyze the table, first select the database from dropdown and then fill in the schema data and table name manually. If you select a table from the clipboard, after select the table name in the clipboard, the data will be substituted automatically.



To verify a given statistics, indicate the column in the table – column will be marked and data will be transferred to the chart. It is possible to select multiple statistics at once for a single table.
The site can view statistics for tables grouped by:

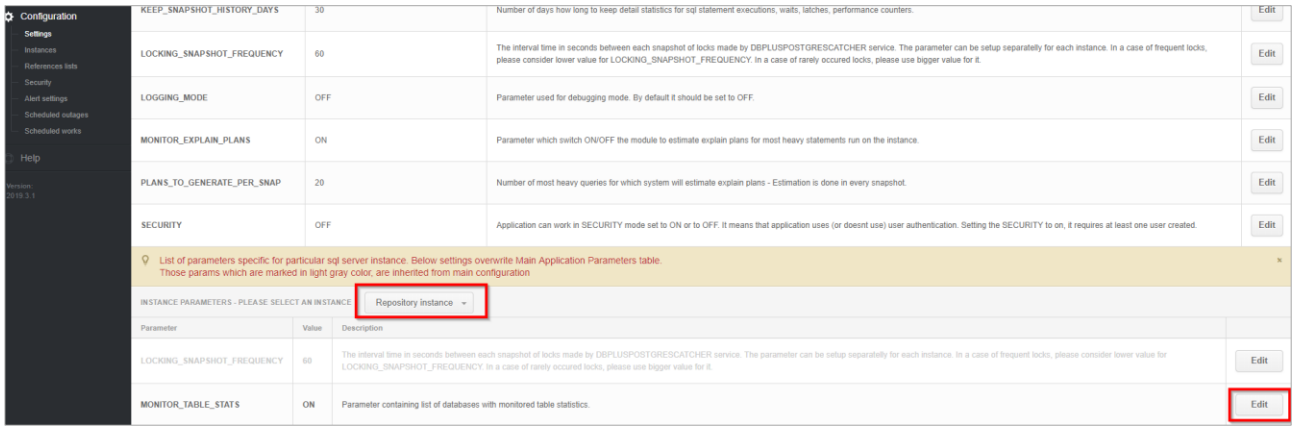
- snap (15 minutes),
- an hour
- a day

- a month
- no group (No group by period)

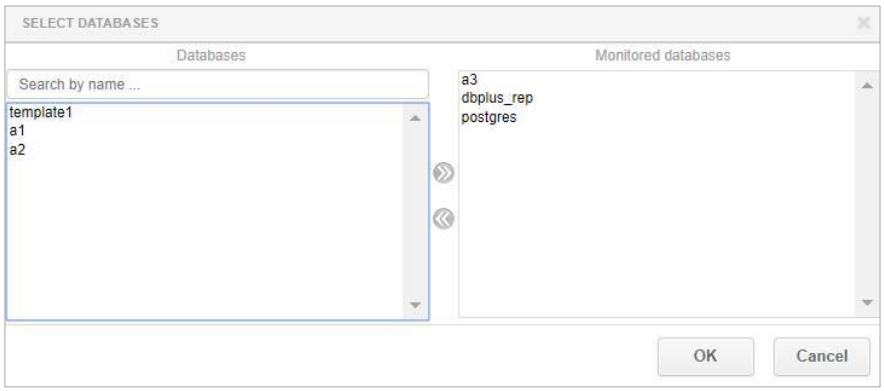
According to the current function, the graph and data in the table can be easily exported to a file.

Collecting information about table statistics requires manual change of settings for each monitored PostgreSQL instance (disabled by default) from the settings level in the main menu (Configuration> Settings). First, User need to select the instance in which You want to change the settings, and then for the MONITOR_TABLE_STATS parameter through the [Edit] button we indicate for which databases we want to enable monitoring table statistics. The changes will be visible after another 15 minutes (snap).

We repeat the changes for each monitored instance.



Selection of databases in PostgreSQL instance for which table statistics will be collect.



1.6 *General improvements*

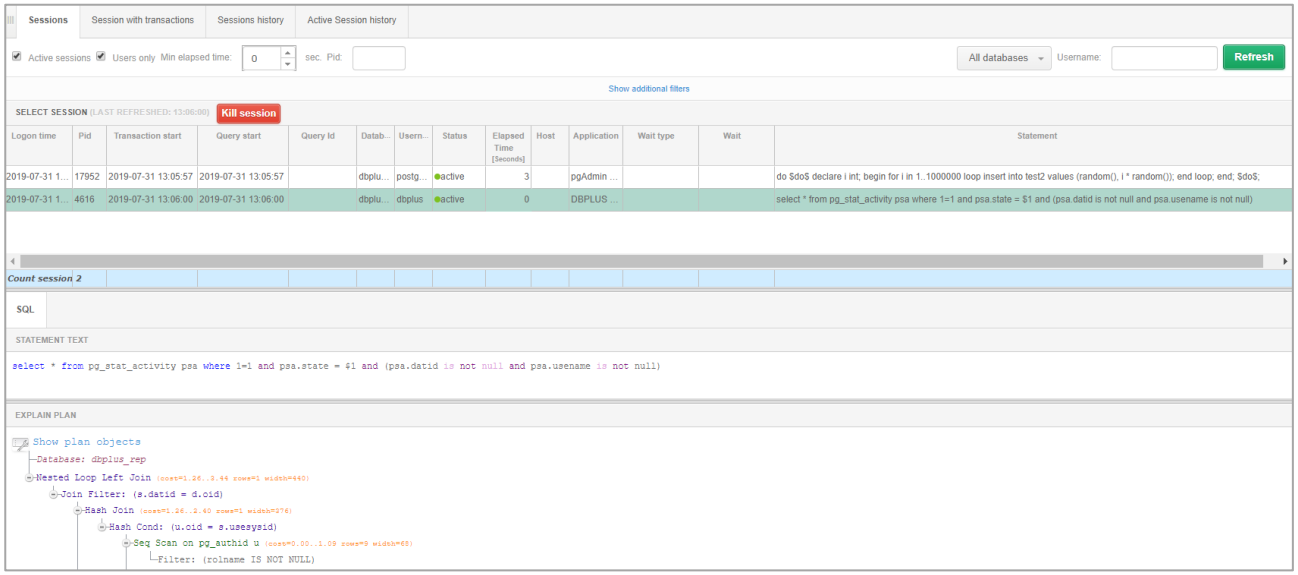
1.6.1 Improving the ergonomics of displaying data in the application

In the latest version of the application, we have improved the data presentation on individual pages. The correction consisted in the modification of pages where empty sections were visible and could not be minimized or moved.

1.6.2 Summary of statistics

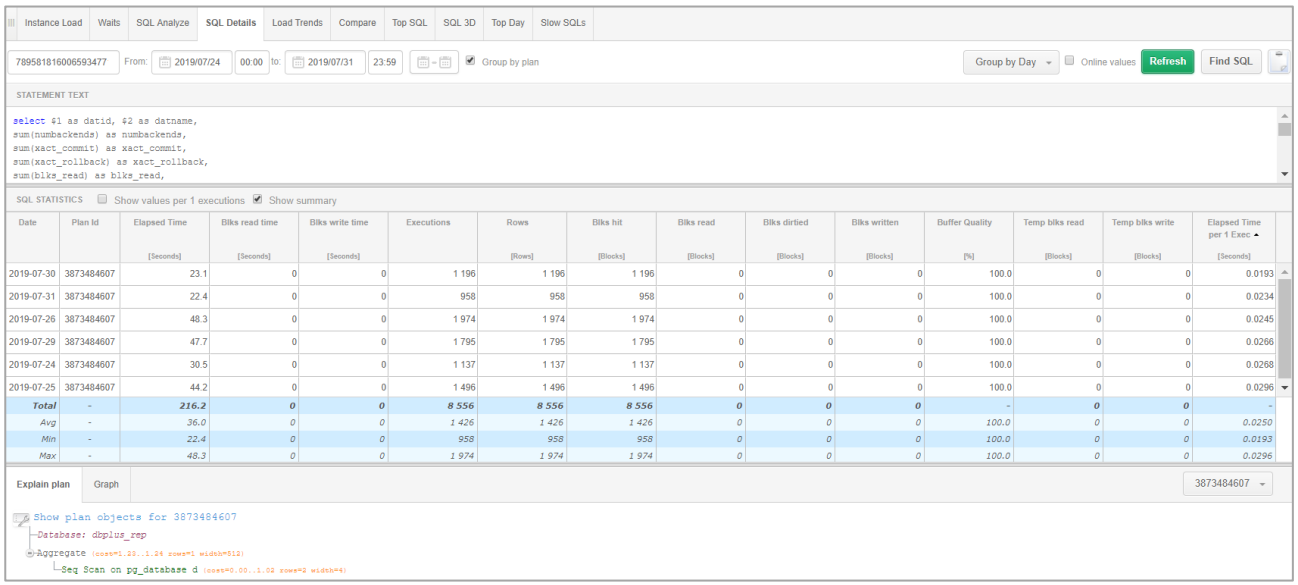
The latest version adds a summary of the data presented in the tables. Summaries are available for the most important screens in the application:

- Session (online sessions) – information about the number of active sessions is available

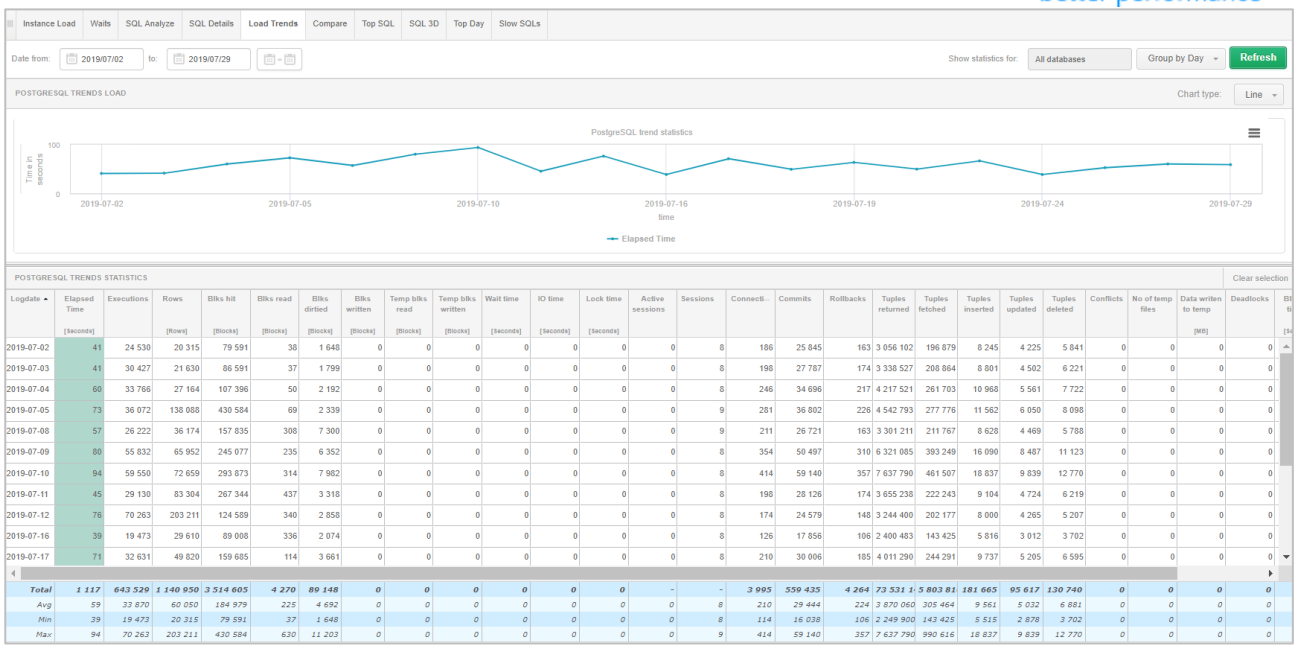


- SQL Details (query details) – the information is grouped into total (Total), medium (Avg), minimum (Min), maximum (Max) values.

To see summary of statistics, select the new *Show Summary* checkbox.



- Load Trends – the information is grouped into total (Total), medium (Avg), minimum (Min), maximum (Max) values.



Logdate	Elapsed Time [seconds]	Executions	Rows [Rows]	Blks hit [Blocks]	Blks read [Blocks]	Blks dirtied [Blocks]	Blks written [Blocks]	Temp blks read [Blocks]	Temp blks written [Blocks]	Wait time [seconds]	IO time [seconds]	Lock time [seconds]	Active sessions	Sessions	Connecti...	Commits	Rollbacks	Tuples returned	Tuples fetched	Tuples inserted	Tuples updated	Tuples deleted	Conflicts	No of temp files	Data written to temp [MB]	Deadlocks
2019-07-02	41	24 530	20 315	79 591	38	1 648	0	0	0	0	0	0	0	8	186	25 845	163	3 056 102	196 879	8 245	4 225	5 841	0	0	0	0
2019-07-03	41	30 427	21 630	86 591	37	1 799	0	0	0	0	0	0	0	8	198	27 787	174	3 338 527	208 864	8 801	4 502	6 221	0	0	0	0
2019-07-04	60	33 766	27 164	107 396	50	2 192	0	0	0	0	0	0	0	8	246	34 696	217	4 217 521	261 703	10 968	5 561	7 722	0	0	0	0
2019-07-05	73	36 072	138 088	430 584	69	2 339	0	0	0	0	0	0	0	9	281	36 802	226	4 542 793	277 776	11 562	6 050	8 098	0	0	0	0
2019-07-08	57	26 222	36 174	157 835	308	7 300	0	0	0	0	0	0	0	9	211	26 721	163	3 301 211	211 767	8 628	4 469	5 788	0	0	0	0
2019-07-09	80	55 832	65 952	245 077	235	6 352	0	0	0	0	0	0	0	8	354	50 497	310	6 321 085	393 249	16 090	8 487	11 123	0	0	0	0
2019-07-10	94	59 550	72 659	293 873	314	7 982	0	0	0	0	0	0	0	8	414	59 140	357	7 637 790	461 507	18 837	9 839	12 770	0	0	0	0
2019-07-11	45	29 130	83 304	267 344	437	3 318	0	0	0	0	0	0	0	8	198	28 126	174	3 655 238	222 243	9 104	4 724	6 219	0	0	0	0
2019-07-12	76	70 263	203 211	124 589	340	2 858	0	0	0	0	0	0	0	8	174	24 579	148	3 244 400	202 177	8 000	4 265	5 207	0	0	0	0
2019-07-16	39	19 473	29 610	89 008	336	2 074	0	0	0	0	0	0	0	8	126	17 856	106	2 400 483	143 425	5 816	3 012	3 702	0	0	0	0
2019-07-17	71	32 631	49 820	159 685	114	3 661	0	0	0	0	0	0	0	8	210	30 006	185	4 011 290	244 291	9 737	5 205	6 595	0	0	0	0
Total	*1 117*	*643 529*	*1 140 950*	*3 514 605*	*4 270*	*89 148*	*0*	*0*	*0*	*0*	*0*	*0*	*-*	*-*	*3 995*	*559 435*	*4 264*	*73 531 1:*	*5 803 81*	*181 665*	*95 617*	*130 740*	*0*	*0*	*0*	*0*
Avg	*59*	*33 870*	*60 050*	*184 979*	*225*	*4 692*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*210*	*29 444*	*224*	*3 870 060*	*305 464*	*9 561*	*5 032*	*6 881*	*0*	*0*	*0*	*0*
Min	*39*	*19 473*	*20 315*	*79 591*	*37*	*1 648*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*114*	*16 038*	*106*	*2 249 900*	*143 425*	*5 515*	*2 878*	*3 702*	*0*	*0*	*0*	*0*
Max	*94*	*70 263*	*203 211*	*430 584*	*630*	*11 203*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*9*	*414*	*59 140*	*357*	*7 637 790*	*990 616*	*18 837*	*9 839*	*12 770*	*0*	*0*	*0*	*0*

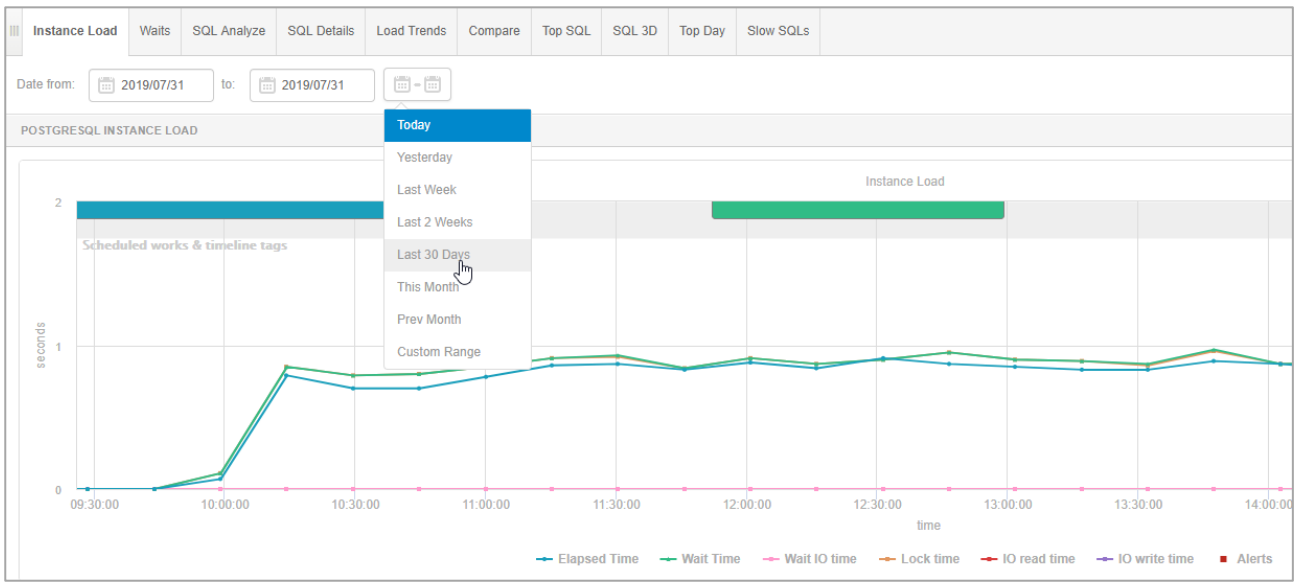
In case when a single row is presented in the table, the summary will not be presented.

1.6.3 Quick configuration of dates from the calendar

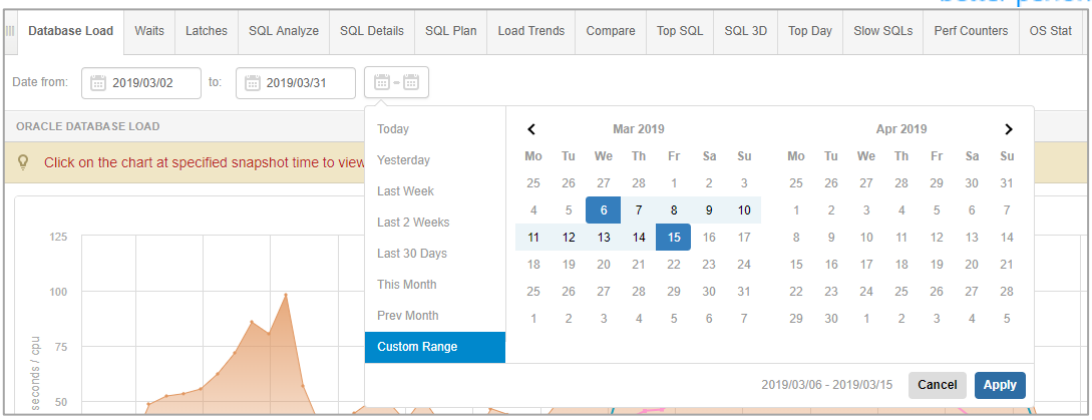
In the new version, we've added a new improvement in the form of speed dialing on most major screens. After click the button, user can choose from several defined options:

- Today
- Yesterday
- Last Week
- Last 2 Weeks
- Last 30 days
- This Month – the scope of the current month from 1 to the last day of the month,
- Prev Month – the range of the entire previous month from 1 to the last day of the month,
- Custom Range – selection of date range manually.

After select any range from the list, click the [Refresh] button to refresh the page. An example screen below:



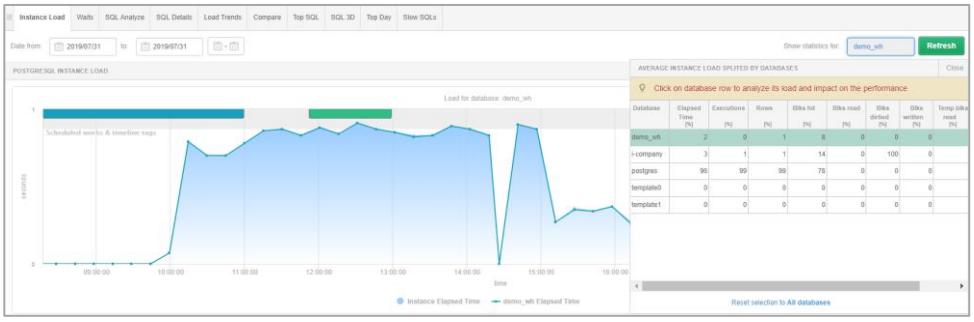
To select the **Custom Range** date range, first select the start date, then indicate the end date. The selection is accepted via the [**Apply**] button.



1.6.4 Addition of statistics presentation broken down into databases

In the new version, the **option** related to browsing queries broken down by a specific database in the instance has been added. After select the database that interest us, the data is available for the selected database, in relation to all databases for PostgreSQL instances. This option has been added on the following pages:

- Top SQL,
- Instance Load,



- Load trends,