

DBPLUS
Performance Monitor for SQL Server
description of the changes in the version 2020.1

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Table of Contents

<i>New in version 2020.1</i>	3
1.1 A mechanism for formatting and parsing queries	3
1.1.1 Format SQL text queries.....	4
1.2 Quick access to session history for queries.....	5
1.3 Grid manager on Load Trends/SQL details pages	6
1.4 Monitoring of interrupted queries	8
1.5 Remembering settings on the screen.....	10
1.6 New Jobs screen	10
1.7 Export / Import statistics of monitored databases	13
1.8 General improvements.....	17
1.8.1 Separate Plans as the default chart in SQL Details	17
1.8.2 Change data filtering (Wait).....	17
1.8.3 Slow SQLs adds the Buffer quality column.....	17
1.8.4 Changes on the Space Monitor screen.....	18
1.8.4.1 Correction of an error with the presentation of information on FILESTREAM data file size.....	18
1.8.4.2 Addition of information on the occupation at the file level	18
1.8.5 Preview of log files in the browser	19
1.8.6 Verification of the monitoring procedure	19
1.8.6.1 Process collecting data for monitoring	19
1.8.6.2 Deleting historical data process	22
1.8.7 New version available info	22

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

New in version 2020.1

1.1 A mechanism for formatting and parsing queries

In the new version of the application for the SQL Server platform, we have added a mechanism for formatting and parsing queries run on the monitored instance. This is the first version of this function and will be developed by subsequent releases. In the current version, the parsing mechanism is available only on the Show Plan Objects screen in the SQL Details tab.

In the current version, the Show Plan Objects view showed the content of the query in unformatted form.

The screenshot shows the 'SQL TEXT (QUERY HASH: 6B42D7F4D0384E49)' window with the following query:

```
SELECT DISTINCT TOP 7 "role"."RoleId" AS "roleId", "role"."Name" AS "name", CONVERT(BIGINT, "role"."VersionNumber") AS "versionnumber" FROM "role" JOIN SystemUserRoles AS "systemuserroles" ON ("role"."RoleId" = "systemuserroles"."RoleId" AND ("systemuserroles"."SystemUserId" = @SystemId)) WHERE ("role"."Name" = @Name) ORDER BY "role"."RoleId" ASC
```

The 'EXPLAIN PLAN (PLAN HASH: 9E208ABC979C36C4F)' window shows the following plan:

```
-Database: InterCars_MSCRM
-SELECT ( Cost = 0.022858 , Rows = 0 , CPU = 0 , IO = 0 )
-Top ( Cost = 0.022858 , Rows = 2,44444 , CPU = 0.000000444444 , IO = 0 )
-Distinct Sort ( Cost = 0.022877 , Rows = 2,44444 , CPU = 0.000106666 , IO = 0.0116161 )
-Compute Scalar ( Cost = 0.014889 , Rows = 2,44444 , CPU = 0.000000444444 , IO = 0 )
-Inner Join-Hashed Lookup ( Cost = 0.011888 , Rows = 2,44444 , CPU = 0.000106666 , IO = 0 )
-Index Seek ([SystemUserRoles].[UD_SystemUserRoles] [systemuserroles]) ( Cost = 0.0022579 , Rows = 2,44444 , CPU = 0.000000444444 , IO = 0 )
-Clustered Index Seek ([RoleBase].[cnds_PrimaryKey_Role] [T1]) ( Cost = 0.0001067 , Rows = 1 , CPU = 0.000000444444 , IO = 0 )
-Plan Compilation Time: 12 ms
```

The 'OBJECTS USED IN EXPLAIN PLAN' table is as follows:

Type	Owner	Object Name	Table Name	Database
index	[dbo]	[UQ_SystemUserRoles]	[SystemUserRoles]	InterCars_MSCRM
index	[dbo]	[cnds_PrimaryKey_Role]	[RoleBase]	InterCars_MSCRM
table	[dbo]	[SystemUserRoles]	[SystemUserRoles]	InterCars_MSCRM
table	[dbo]	[RoleBase]	[RoleBase]	InterCars_MSCRM

The 'INDEXES FOR SELECTED OBJECT (DBO)[SYSTEMUSERROLES]' table is as follows:

Index name	Enabled	Index columns	Included columns	Seeks	Scans	Lookups	Updates
cnds_PrimaryKey_SystemU...	✓	SystemUserRoleId		985	8 805	1 123	213
Indi_Sync_VersionNumber	✓	VersionNumber		0	0	0	213
ndi_for_cascaderelationsh...	✓	RoleId		247	0	0	213
UQ_SystemUserRoles	✓	SystemUserId, RoleId		10 161 765	1 189	0	213

The new function is available in two modes:

- manual,
- automatic.

In the **manual** mode, after enter Show Plan Objects and press the **[Parse SQL Query]** button, the query is formatted and parsed. Formatting the query changes the presentation in the SQL TEXT window to a form that facilitates query analysis.

The parsing function in the current version gives the opportunity to highlight columns that belong to the given object participating in the query. In the following case, the **[SystemUserRoles]**, table was selected on the query, and all columns associated with the table.

Depending on the object that the User indicates, the objects are marked in different colors:

- Table (green),
- Indexes (yellow).

The highlighting is performed in both the SQL TEXT and EXPLAIN_PLAN fields.

The screenshot shows the 'SQL TEXT (QUERY HASH: 6B42D7F4D0384E49)' window with the following query:

```
SELECT DISTINCT TOP 5001
  "role"."roleId" AS "roleId",
  "role"."name" AS "name",
  CONVERT(BIGINT, "role"."versionnumber") AS "versionnumber"
FROM "role" AS "role"
JOIN SystemUserRoles AS "systemuserroles"
ON ("role"."roleId" = "systemuserroles"."roleId"
OR ("role"."roleId" = "systemuserroles"."roleId"
AND ("systemuserroles"."systemuserid" = @SystemId) ))
WHERE ( ("role"."Name" = @Name) )
ORDER BY
  "role"."roleId" ASC
```

The 'EXPLAIN PLAN (PLAN HASH: 9E208ABC979C36C4F)' window shows the following plan:

```
-Database: InterCars_MSCRM
-SELECT ( Cost = 0.022858 , Rows = 0 , CPU = 0 , IO = 0 )
-Top ( Cost = 0.022858 , Rows = 2,44444 , CPU = 0.000000444444 , IO = 0 )
-Distinct Sort ( Cost = 0.022877 , Rows = 2,44444 , CPU = 0.000106666 , IO = 0.0116161 )
-Compute Scalar ( Cost = 0.014889 , Rows = 2,44444 , CPU = 0.000000444444 , IO = 0 )
-Inner Join-Hashed Lookup ( Cost = 0.011888 , Rows = 2,44444 , CPU = 0.000106666 , IO = 0 )
-Index Seek ([SystemUserRoles].[UD_SystemUserRoles] [systemuserroles]) ( Cost = 0.0022579 , Rows = 2,44444 , CPU = 0.000000444444 , IO = 0 )
-Clustered Index Seek ([RoleBase].[cnds_PrimaryKey_Role] [T1]) ( Cost = 0.0001067 , Rows = 1 , CPU = 0.000000444444 , IO = 0 )
-Plan Compilation Time: 12 ms
```

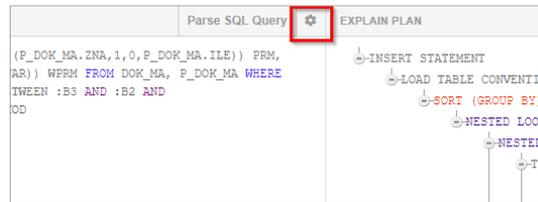
The 'OBJECTS USED IN EXPLAIN PLAN' table is as follows:

Type	Owner	Object Name	Table Name	Database
index	[dbo]	[UQ_SystemUserRoles]	[SystemUserRoles]	InterCars_MSCRM
index	[dbo]	[cnds_PrimaryKey_Role]	[RoleBase]	InterCars_MSCRM
table	[dbo]	[SystemUserRoles]	[SystemUserRoles]	InterCars_MSCRM
table	[dbo]	[RoleBase]	[RoleBase]	InterCars_MSCRM

The 'INDEXES FOR SELECTED OBJECT (DBO)[SYSTEMUSERROLES]' table is as follows:

Index name	Enabled	Index columns	Included columns	Seeks	Scans	Lookups	Updates
cnds_PrimaryKey_SystemU...	✓	SystemUserRoleId		985	8 805	1 123	213
Indi_Sync_VersionNumber	✓	VersionNumber		0	0	0	213
ndi_for_cascaderelationsh...	✓	RoleId		247	0	0	213
UQ_SystemUserRoles	✓	SystemUserId, RoleId		10 144 238	1 189	0	213

As part of the mechanism, it is possible to select the range of highlighted objects on the query. To change the configuration, click the **[cog]** button on the Show plan Objects page.

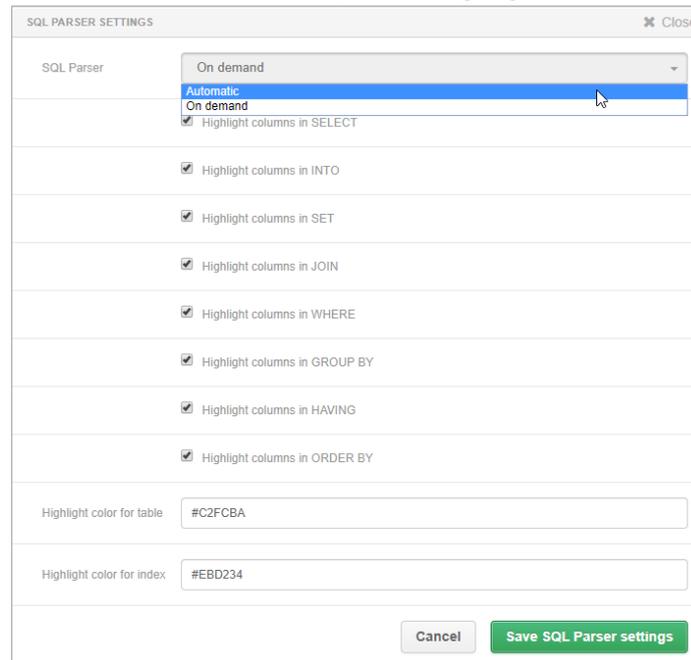


As a result of the click, a window will open where the User can choose:

- SQL Parser – On demand/Automatic – parsing mode.

Depending on the mode, when the User enter the Show Plan Objects screen, the query will be automatically formatted and parsed (Automatic mode).

- Highlight columns - depending on the selection, the columns in the query will be highlighted
- Highlight color – color selection for table / index highlight.



Depending on the selected option (checkbox selected), the User can highlight columns located in any part of the analyzed query.

Each time after parsing the query, the User will receive information about the status of the performed operation. Under the first version of the parser mechanism, not all types of queries were handled. Support for subsequent queries will be added in each subsequent release.

If everything went well, the button on the right will be presented in this form:



In case the query was formatted correctly, however, there was a problem with reading all objects from the query:



When the "X" character is presented after parsing, it means that the query could not be properly formatted as well as the parsing done. Support for such queries will be provided in subsequent version updates.



1.1.1 Format SQL text queries

On each page where the query text is presented, a [SQL Format] button has been added, after which query text will be formatted.

Database	Query text	Query Hash	Plan Hash	Use plan guide	Elapsed Time [seconds]	Cpu Time [seconds]	Time per 1 exec [seconds]	Executions	Disk reads [blocks]	Buffer gets [blocks]	Buffer writes [blocks]	Rows processed	Elapsed Time Load [%]	Cpu Time Load [%]
Not spe...	select @cpu_sq = isnull(SQLProcess...	0x3D7B0EF32...	0x23146811...		5.08	5.08	0.0862	59	0	0	0	59	82	82
master	set @cpu_sq_dc = (select cnt_valu...	0x692F1B5AE...	0x238D370...		0.53	0.53	0.0009	596	0	0	0	596	9	9
master	select get_query_hash, qst query_pla...	0x9AE6BC268...	0x33A3AF8...		0.03	0.03	0.0010	29	0	0	0	0	0	0
Not spe...	select q_wait_type, sum(q_wait_time...	0xb0E675F72F...	0x556AD1...		0.08	0.08	0.0014	59	0	0	0	4 838	1	1
Not spe...	SELECT target_data FROM sys.dm...	0x52B3B6CED...	0x99E4203...		0.23	0.22	0.0762	3	0	0	0	3	4	3
Not spe...	select ? as rec_type,s.session_id, s.p...	0xF08DA1D55...	0xB14512F...		0.09	0.09	0.0031	30	0	8 678	0	30	1	1
Not spe...	select null as var0, total_elapsed_tm...	0xC4569E4085...	0xD48ABA...		0.16	0.16	0.0054	30	0	0	0	5	3	3


```

STATEMENT TEXT FOR QUERY HASH: 0XB0E675F72F7AC2FB
SELECT
  Q.Wait_Type,
  SUM(Q.Wait_Time_Ms) AS Wait_Time_Ms
FROM
  (SELECT
    S.Wait_Type,
    S.Wait_Time_Ms
  FROM
    SYS.DM_OB_WAITS_STATES A
  WHERE
    A.Wait_Time_Ms > 0
  UNION ALL
  SELECT
    O.Wait_Type,
    O.Wait_Duration_Ms AS Wait_Time_Ms
  FROM
    SYS.DM_OB_WAITING_TASKS O
  WHERE
    Wait_Duration_Ms > 1000
  ) Q
  
```

1.2 Quick access to session history for queries

In the new version of the application we have added the ability to quickly go to session history for a given query. In the DBPLUS Performance Monitor application, the **[+]** button will always appear when the Query hash query identifier is presented (after press this button a window with available actions appears). In the new version, apart from the option to go to the SQL Details screen, the option to go to session history has been added.

The screenshot displays the DBPLUS Performance Monitor interface. At the top, there's a navigation bar with options like 'Instance Load', 'Waits', 'Latches', 'SQL Analyze', 'SQL Details', 'Load Trends', 'Compare Trends', 'Top SQL', 'SQL 3D', 'Top Day', 'Slow SQLs', 'Perf Counters', and 'OS Stat'. Below this is a 'Performance' section with a date range filter (2020/03/28 00:00 to 2020/03/28 23:59) and a 'Refresh' button. The main area shows an 'SQL SERVER INSTANCE LOAD' graph. Below the graph is a 'Sql Statements' table with columns for Database, Query text, Query Hash, Plan Hash, Use plan guide, Elapsed Time, Cpu Time, Time per 1 exec, Executions, Disk reads, Buffer gets, Buffer writes, Rows processed, Elapsed Time Load, and Cpu Time Load. A red box highlights a '+' button next to a query hash in the table. A dropdown menu is open, showing options: 'SQL Details', 'New session history', and 'Add to query history list'. The 'New session history' option is highlighted.

After pressing the button, a session history window dedicated to the given query is opened. The window always opens in the context of a given day (sysdate). The user also has the option of applying several filters available so far on the session history screen.

A quick transition to the session history screen speeds up the analysis of the performance of a given query and enables, e.g. identification of the User who performs the analyzed query.

The option of going to session history by pressing the button available on the bar above the query text has been added to the SQL Details screen.

The screenshot shows the SQL Details page for instance 0x038B015C7EDC8153. The SQL query is a complex SELECT statement with multiple joins and filters. Below the query, there is a table titled 'SQL STATISTICS' with columns for Date, Plan hash, Elapsed Time, Cpu Time, Rows processed, Executions, Disk Reads, Buffers Get, Buffers Write, Buffer Quality, Gen. Num, and Elapsed Time per 1 Exec. The table contains data for four different dates in 2020, showing performance metrics for a specific plan hash (0xE22A43AC8E).

1.3 Grid manager on Load Trends/SQL details pages

We have introduced the function of change the settings for tables visible on application pages. The ability to change settings will be introduced in stages, each release will be followed by additional tables. This was first introduced on the **Load Trends** and **SQL Details** pages.

The User for these tables on the pages can change for each of the columns:

- Order of displayed columns
- Visibility of columns
- Change the format
- Change of precision
- Change of width

Additionally, it is now possible to hide the Summary row on each page, using the settings available after press the **[cog]** icon. As before, the data contained in the grid can be freely exported to a file.

The order of displayed columns

To change the order of columns, click on the header of the column, hold down the mouse button, drag the columns and drop them to the desired place on the table.

The screenshot shows the 'POSTGRESQL TRENDS STATISTICS' table. The columns include Logdate, Elapsed Time, Executions, Active sessions, Blks read, Blks written, Temp blks written, Wait time, IO time, Lock time, Rollbacks, Tuples returned, Rows, No of temp files, Data written to temp, Blk read time, Blk write time, and Blks hit. A red box highlights the 'Blks read' column header, indicating a user interaction.

Visibility of columns

To hide a column, right-click on the column header to be hidden. A popup menu will open where the Hide column button should be selected. The indicated column is hidden.

The screenshot shows the 'POSTGRESQL TRENDS STATISTICS' table with a context menu open over the 'Blks dirtied' column header. The menu options include 'Units format' (set to Blocks), 'Number format' (set to Standard), 'Precision' (set to 0), 'Hide column', and 'Apply'. The 'Blks dirtied' column is currently hidden from the table view.

To reveal a column, click the **[cog]** button in the upper right corner of the table. After the popup menu open, select the **[Show hidden columns]** option, then indicate the column you want to rediscover in the table. The uncovered column will appear last on the right side of the table.

Logdate	Elapsed Time	Rows	Blks hit	Blks dirtied	Temp blks read	Temp blks written	IO time	Active sessions	Sessions	Connecto	Commits	Rollbacks	Tuples returned	Tuples fetched	Tuples inserted	Tuples updated	Tuples deleted	Conflicts	
2020-03-09	77.11	279 140	1 466 007	21 084	20 747	20 720	0	0	10	221	34 014	2 574	15 519 ...	1 696 148	23 612				
2020-03-02	78.36	308 416	1 497 210	22 705	22 156	22 127	0	0	11	259	36 694	2 760	16 272 ...	1 680 252	25 262				
2020-03-11	83.50	260 606	1 411 514	20 303	19 182	19 157	0	0	10	205	31 745	2 397	16 038 ...	1 369 643	21 825	9 237	21 418	0	0
2020-03-12	107.87	369 647	2 059 855	26 495	26 927	26 892	0	0	10	292	43 992	3 119	25 940 ...	2 164 687	29 606	12 373	24 629	0	35
2020-03-10	110.70	306 760	1 665 009	24 667	23 921	23 790	0	0	10	257	39 351	2 944	18 880 ...	1 594 995	26 992	11 495	13 362	0	31
2020-03-05	151.89	352 929	1 863 128	23 097	22 994	22 964	0	0	16	421	41 915	3 087	23 357 ...	1 867 391	28 029	11 356	20 597	0	0
2020-03-03	158.78	310 732	1 599 230	22 259	21 302	21 274	0	0	12	278	38 813	2 974	17 803 ...	1 414 794	27 081	11 200	12 110	0	28
2020-03-06	166.14	359 203	1 987 850	22 912	22 954	22 924	0	0	14	359	41 954	2 839	25 747 ...	2 045 668	25 653	10 320	21 641	0	30
2020-03-04	217.67	338 158	1 796 034	20 756	20 695	20 668	0	0	16	377	41 716	2 937	20 901 ...	1 660 824	23 436	9 518	19 064	0	27

Change of data format / precision

To change the data format settings, precision, right-click on the column heading where you want to change the data. After making changes, save the changes by click **[Apply]** button.

Logdate	Elapsed Time	Rows	Blks hit	Blks dirtied	Temp blks read	Temp blks written	IO time	Active sessions	Sessions	Connecto	Commits	Rollbacks	Tuples returned	Tuples fetched	Tuples inserted	Tuples updated	Tuples deleted	Conflicts	
2020-03-02	52.77	13 902	17 053	0	0	0	0	0	0	1	87	10 974	47	893 425	46 707	0	0	0	0
2020-03-03	55.78	15 605	17 161	0	0	0	0	0	0	1	94	10 642	51	908 387	47 850	0	0	0	0
2020-03-04	69.25	18 808	48 363	0	0	0	0	0	0	2	122	11 043	67	909 159	48 982	0	0	0	0
2020-03-05	63.48	18 113	27 936	0	0	0	0	0	0	2	108	11 673	68	965 965	55 008	0	0	0	0
2020-03-06	55.19	16 672	17 567	0	0	0	0	0	0	1	90	11 349	62	943 042	53 902	0	0	0	0
2020-03-09	52.05	15 005	15 398	0	0	0	0	0	0	1	81	10 212	44	831 409	43 034	0	0	0	0
2020-03-10	72.16	17 223	17 570	0	0	0	0	0	0	1	93	11 712	48	949 987	49 221	0	0	0	0
2020-03-11	52.77	13 902	17 053	0	0	0	0	0	0	1	75	9 442	40	765 231	39 834	0	0	0	0
2020-03-12	71.77	19 490	20 008	0	0	0	0	0	0	1	105	13 232	61	1 085 776	57 771	0	0	0	0
2020-03-13	21.96	6 680	6 982	0	0	0	0	0	0	1	36	4 524	23	368 729	19 262	0	0	0	0
2020-03-16	33.76	8 902	9 152	0	0	0	0	0	0	1	48	6 038	28	494 780	26 137	0	0	0	0

Change of width

To change the column width, click the column edge, hold and move it to the right or left to change the width.

The current solution used in the DBPLUS application adjusts the width of the columns to the width of the screen. Therefore, with many columns in the table, the width of the columns will always be converted in proportion to the width of the screen.

Logdate	Elapsed Time	Rows	Blks hit	Blks dirtied	Temp blks read	Temp blks written	IO time	Sessions	Tuples inserted	Tuples updated	Tuples deleted	Conflicts	No of temp files	Data written to temp	Deadlocks	Blk read time	Blk write time	Executions	Blks written	
2020-03-02	49.93	16 120	16 510	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	8 109	0
2020-03-03	55.78	15 605	17 161	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7 842	0
2020-03-04	69.25	18 808	48 363	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	8 305	0
2020-03-05	63.48	18 113	27 936	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	8 668	0
2020-03-06	55.19	16 672	17 567	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	8 379	0
2020-03-09	52.05	15 005	15 398	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7 547	0
2020-03-10	72.16	17 223	17 570	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	8 663	0
2020-03-11	52.77	13 902	17 053	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	8 304	0
2020-03-12	71.77	19 490	20 008	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	9 816	0
2020-03-13	21.96	6 680	6 982	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3 362	0

Storage of table configurations

The configuration for each of the tables is saved in two ways: at the browser cache level on the user's computer or in the repository database.

In order to permanently save the settings to the repository database, Windows authorization must be enabled in the DBPLUS Performance Monitor application (enabled at the Configuration Wizard level), and the Security module (Menu Configuration> Setings: Security "ON") must be started. The settings are saved for all monitored instances for each user separately.

Restore default settings

If User need to return to the default settings, they can do this by click the cog button and select **[Restore grid defaults]**.

Date	Plan Id	Elapsed Time	Blks read time	Blks write time	Executions	Blks hit	Blks read	Blks dirtied	Blks written	Rows per 1 Exec	Blks hit per 1 Exec
2020-03-16 10:09:01	2626426938	2.9	0	0	60	60	0	0	0	1.00	1.00
2020-03-16 10:39:21	2626426938	2.8	0	0	60	60	0	0	0	1.00	1.00
2020-03-16 10:24:11	2626426938	2.6	0	0	60	60	0	0	0	1.00	1.00
2020-03-16 13:10:11	2626426938	2.4	0	0	59	59	0	0	0	1.00	1.00

At any time, the User can restore the default hit setting for a given column by click on the **[Restore defaults]** button for a given column.

SQL Details

On the SQL Details screen, the User had the option of change the table presentation by check additional checkboxes. In the latest version of changes, grid is possible after select the appropriate item in the Grid view list:

- General statistics (default view),
- Statistics per 1 exec (view with columns converted into a single execution),
- Additional time Details (view contains information about interrupted queries).

Date	Plan hash	Elapsed Time	Cpu Time	Rows processed	Executions	Disk Reads	Disk Reads	Buffers Get	Buffers Write	Buffer Quality	Gen. No
2020-04-0...	0xB4FFE13C6...	69.21	112.3	172 177	1	2 878 198	22 486 MB	6 450 629	2 650	69.2	69 2096280
2020-04-0...	0xB4FFE13C6...	179.96	140.9	172 211	1	6 443 157	50 337 MB	6 450 623	2 650	50.0	179 9760670

After choosing the right view, changing the settings for columns and table is analogous to that described earlier for Load Trends. Changes can be defined for each view separately.

1.4 Monitoring of interrupted queries

In the new version we have added the functionality of monitoring interrupted queries. Interrupted queries are those that were started on the database (they used CPU database resources, memory, etc. during processing), but were not successful. Monitoring involves collecting information about queries:

- interrupted manually by the user,
- z-timeout by the SQL engine e.g. as a result of a long block,
- z-timeout due to deadlock,
- interrupted manually while wait in the lock.

This information is collected based on event monitoring. Information collection is controlled by new parameters, also added in the new version of the application. These parameters are available in the main menu Configuration> Settings and they are:

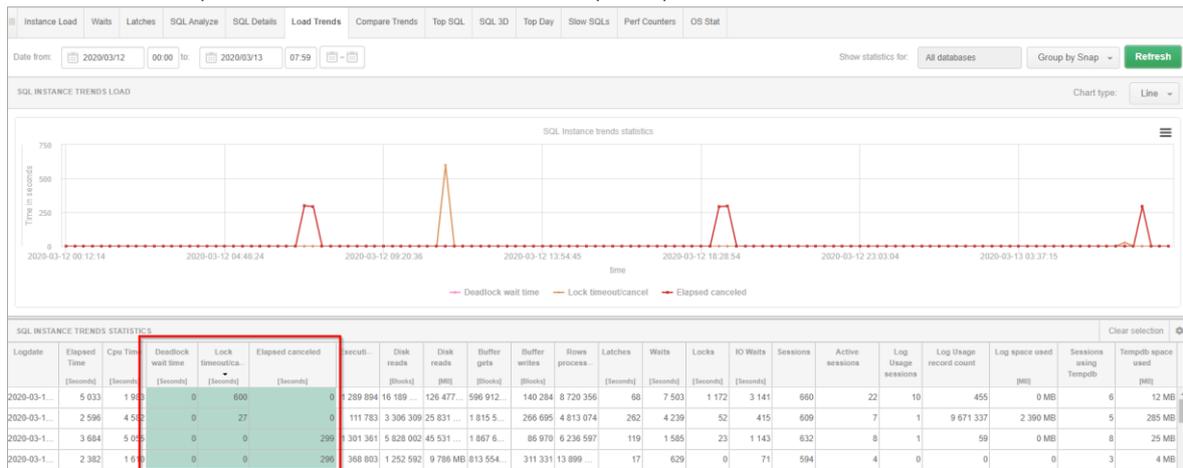
- CANCELED SNAPSHOT FREQUENCY – the time interval between snapshots that retrieve information about broken queries. The shorter the time, the more accurate the monitoring of interrupted queries,
- MONITOR_CANCELED_LOCKING – queries interrupted due to blockage,
- MONITOR_CANCELED_QUERIES – queries interrupted by the user.

Only monitoring of queries interrupted due to blocking is enabled (MONITOR_CANCELED_LOCKING parameter set to ON) by default. To enable monitoring of user interrupted queries, manually change the MONITOR_CANCELED_QUERIES parameter to ON (default OFF).

Parameter	Value	Description	
CANCELED_SNAPSHOT_FREQUENCY	10	The interval time in seconds between each snapshot of checking active sessions with canceled statements/events. The parameter can be setup separately for each instance.	Edit
MONITOR_CANCELED_LOCKING	ON	Enable or disable logic to collect load for canceled locks, locking timeout or deadlock. Utilization of such operations is gathered using extended event feature	Edit
MONITOR_CANCELED_QUERIES	OFF	Enable or disable logic to collect load for canceled statements, client-interrupt requests, timeout due to deadlock. Utilization of such operations is gathered using extended event feature	Edit
DATABASE_CATEGORIZATION_PLUGIN	OFF	In DPM tool each database can have 3 different categories: database type, system category, vendor description. The list of categories and database assignment to those categories, can be managed in Configuration module (pages: References lists, Servers). Categorization is useful for environments with large number of sql instances and databases. It's used for filterisation purposes and such categorizations can be included in the reports. To use this functionality, please set parameter DATABASES_CATEGORIZATION_PLUGIN to on value, otherwise to off	Edit

Statistics of interrupted queries are visible collectively for the entire SQL instance in the LoadTrends tab. These statistics are calculated when there is a query interrupt event in each snap (caused by the user, due to blocking or timeout).

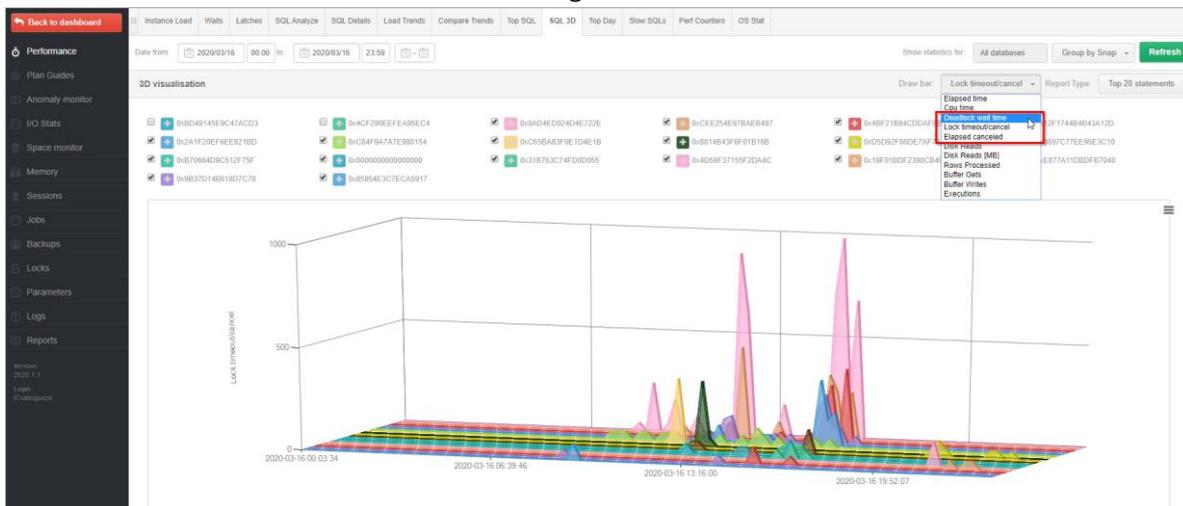
Information on the number of interrupted queries can also be verified using the Compare Trends mechanism to compare statistics for individual days or periods with each other.



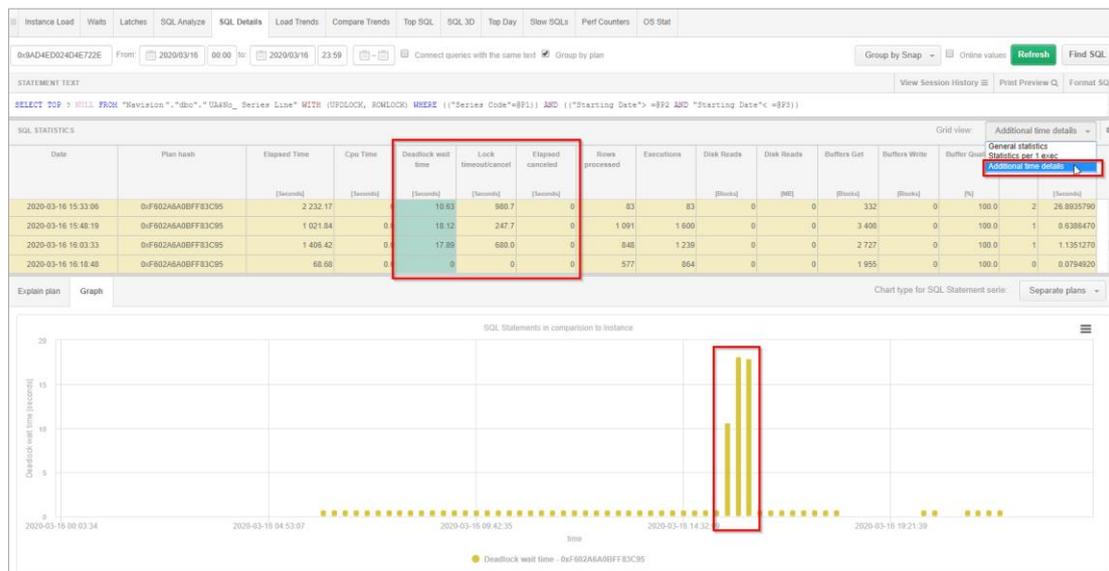
There are three new statistics:

- Deadlock wait time,
- Lock timeout/cancel – time of interrupted query waiting on lock,
- Elapsed Canceled – query time interrupted by the User.

If a high level of one of the statistics is found in the monitored database, the User can verify which queries are interrupted. To search for queries, go to the SQL 3d or Top SQL screen, where new statistics have been made available for searching.



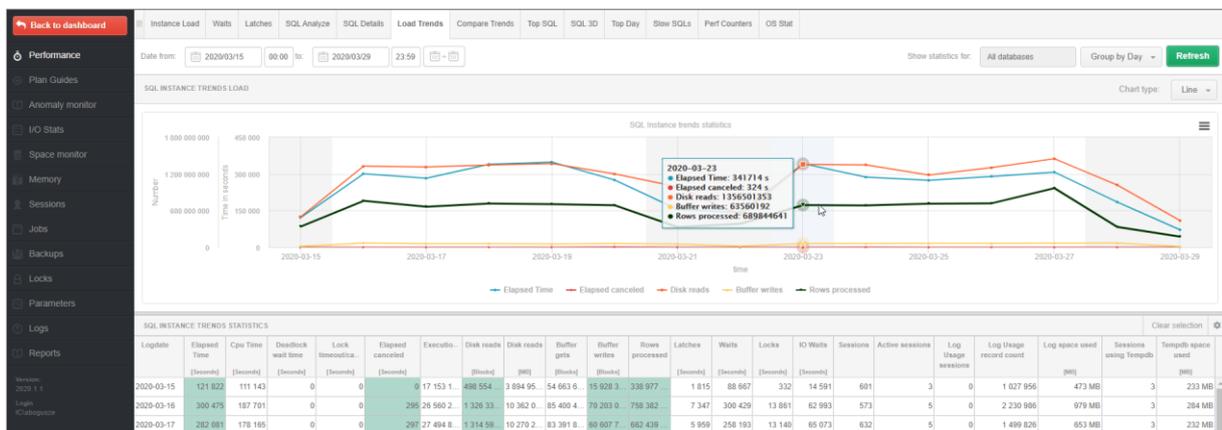
Information about new statistics is also visible on the detail screen of each query on the SQL Details page. To do this, select the dedicated Additional time details table view, which contains columns showing the duration of queries that have been interrupted (unsuccessful). After select the appropriate column, the time query waited in Deadlock (see the figure below) is visible on the chart.



1.5 Remembering settings on the screen

In the new version of the application we have added the function of remembering the last indications made by the User. The function works at the level of database details (Instance Analysis) and consists in remembering the last selection / indication or filter that is selected or searched by the User on a given page in the application.

If we have a "clickable" chart presented on the page, the selected snap indication on the chart is remembered.



Remembering works only within a given database and after the analysis (exiting to Dashboard or changing the database to another one) the application returns to the default settings.

This feature is based on remembering and saving information at the user's session level. Clearing the browser cache returns to the default settings.

1.6 New Jobs screen

In the latest version we have modified the Jobs screen. The change consists in adding job information to the DBPLUS repository (downloaded from the monitored instance at 15-minute intervals), changing the appearance of individual screens, as well as increasing the detail of downloading data by the steps performed within a given job. Information on Jobs is available in two tabs:

- Current Jobs (containing a list of all Jobs saved to the repository),

Job ID	Name	Description	Enabled	Dropped
03984206-3828-4955-942b-c0e6e077689	syspolicy_purge_history	No description available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16e97197-4acc-4149-a444-49c9cd57e1d0	Backup full Subplan_1	No description available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
263c32ed-e629-4d8f-8ad3-048ce481de19	Eksport telefonow -> CSQL01	No description available.	<input type="checkbox"/>	<input type="checkbox"/>
e48672d7-8175-4d7f-c064-093f8e1cde	Backup diff Subplan_1	No description available.	<input type="checkbox"/>	<input type="checkbox"/>
0d872134-e115-4d68-8c67-13055f7838d2	akt_zakup_msc	No description available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
050e530f-a149-4d66-836e-1e10955062a3	Zadanie eksport dostawcwo	Zadanie tymczasowe na prośbę Marcina Lukasika, eksport co 5 minut.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ba5f473f-9c17-4d56-9229-36af9a32da1ca	akt_wzr	No description available.	<input type="checkbox"/>	<input type="checkbox"/>
2d874c6e-adaa-476a-9866-39f1e6219f9e	SSIS_exporty -> CSQL01	No description available.	<input type="checkbox"/>	<input type="checkbox"/>
0eb49532-dae9-4796-a245-3b747952aa0	akt_wzr	No description available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
0956d07-7976-449a-a1b1-3ba209479355	akt_sz_baza	No description available.	<input type="checkbox"/>	<input type="checkbox"/>
59a30a0d-0740-403f-894e-6216ba041164	indeksowanie Subplan_1	No description available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

On the screen for the User a list of jobs downloaded from the repository is presented. The list can be freely filtered based on:

- Job names,
- Job description,
- Owner
- Category,
- Accessibility (Enabled / disabled).

Job removed from the database are still available in the repository and can be viewed by checking the checkbox: *Show dropped jobs*.

After clicking on a row in the table, the user will be presented with information about the job. The current configuration as well as the commissioning schedule will be displayed. In addition, the **[+]** button is presented in the name column for each row, after which you can add a given job to the clipboard: *Add to jobs list* (for later analysis) or go directly to the startup history: *View jobs details*.

Job ID	Name	Description	Enabled	Dropped
115a6e02-d119-47b2-9c3f-8390c000430	akt_rotacja	No description available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16e97197-4acc-4149-a444-49c9cd57e1d0	Backup full Subplan_1	No description available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1da523d2-5825-49e8-82d3-d47504e07881	load_zak_bon_ozrymana	No description available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
27011588-bc7f-42b8-aa45-3fca96e267f1	akt_File	No description available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2e7000ee-6094-4e7f-a5e2-70e948796911	akt_zp_jak_zrb	No description available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3d98377c-3476-4ff0-95e8-ed880a20a514	exp_ora	No description available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
40549f93-207c-48fc-9151-ac5188a5551	akt_sp_miedzela	No description available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- Jobs History (contains information about all jobs started).

Job ID	Name	Description	Enabled	Status	Message	Duration	Date Start	Date End	Owner	Category
9eb40532-dae9-4796-a2-akt_wzr	akt_wzr	No description available.	<input checked="" type="checkbox"/>	Successful	The job succeeded. The Job was invoked by Schedule 16 (X). The last ...	00:00:09	2020-04-01 15:00:00	2020-04-01 15:00:09	ICjstobkows	[Uncategorized] (Loc...
9eb40532-dae9-4796-a2-akt_wzr	akt_wzr	No description available.	<input checked="" type="checkbox"/>	Successful	The job succeeded. The Job was invoked by Schedule 16 (X). The last ...	00:02:04	2020-04-01 15:30:00	2020-04-01 15:32:04	ICjstobkows	[Uncategorized] (Loc...
9eb40532-dae9-4796-a2-akt_wzr	akt_wzr	No description available.	<input checked="" type="checkbox"/>	Successful	The job succeeded. The Job was invoked by Schedule 16 (X). The last ...	00:00:18	2020-04-01 16:00:00	2020-04-01 16:00:18	ICjstobkows	[Uncategorized] (Loc...
9eb40532-dae9-4796-a2-akt_wzr	akt_wzr	No description available.	<input checked="" type="checkbox"/>	Successful	The job succeeded. The Job was invoked by Schedule 16 (X). The last ...	00:00:35	2020-04-01 16:30:00	2020-04-01 16:30:35	ICjstobkows	[Uncategorized] (Loc...
9eb40532-dae9-4796-a2-akt_wzr	akt_wzr	No description available.	<input checked="" type="checkbox"/>	Successful	The job succeeded. The Job was invoked by Schedule 16 (X). The last ...	00:00:15	2020-04-01 17:00:00	2020-04-01 17:00:15	ICjstobkows	[Uncategorized] (Loc...
9eb40532-dae9-4796-a2-akt_wzr	akt_wzr	No description available.	<input checked="" type="checkbox"/>	Successful	The job succeeded. The Job was invoked by Schedule 16 (X). The last ...	00:00:22	2020-04-01 17:30:00	2020-04-01 17:30:22	ICjstobkows	[Uncategorized] (Loc...
9eb40532-dae9-4796-a2-akt_wzr	akt_wzr	No description available.	<input checked="" type="checkbox"/>	Successful	The job succeeded. The Job was invoked by Schedule 16 (X). The last ...	00:00:12	2020-04-01 18:00:00	2020-04-01 18:00:12	ICjstobkows	[Uncategorized] (Loc...
9eb40532-dae9-4796-a2-akt_wzr	akt_wzr	No description available.	<input checked="" type="checkbox"/>	Successful	The job succeeded. The Job was invoked by Schedule 16 (X). The last ...	00:00:23	2020-04-01 18:30:00	2020-04-01 18:30:23	ICjstobkows	[Uncategorized] (Loc...
9eb40532-dae9-4796-a2-akt_wzr	akt_wzr	No description available.	<input checked="" type="checkbox"/>	Successful	The job succeeded. The Job was invoked by Schedule 16 (X). The last ...	00:00:18	2020-04-01 19:00:00	2020-04-01 19:00:18	ICjstobkows	[Uncategorized] (Loc...
9eb40532-dae9-4796-a2-akt_wzr	akt_wzr	No description available.	<input checked="" type="checkbox"/>	Successful	The job succeeded. The Job was invoked by Schedule 16 (X). The last ...	00:01:29	2020-04-01 19:30:00	2020-04-01 19:31:29	ICjstobkows	[Uncategorized] (Loc...
9eb40532-dae9-4796-a2-akt_wzr	akt_wzr	No description available.	<input checked="" type="checkbox"/>	Successful	The job succeeded. The Job was invoked by Schedule 16 (X). The last ...	00:00:22	2020-04-01 20:00:00	2020-04-01 20:00:22	ICjstobkows	[Uncategorized] (Loc...

The screen contains information about the run history for each job in the analyzed SQL instance. The table lists of jobs performed at a given time. In addition, the User can filter the list as on the previous tab using:

- Job names,
- Job description,
- Owner
- Category,
- Duration,
- Status,
- Accessibility (Enabled / disabled).

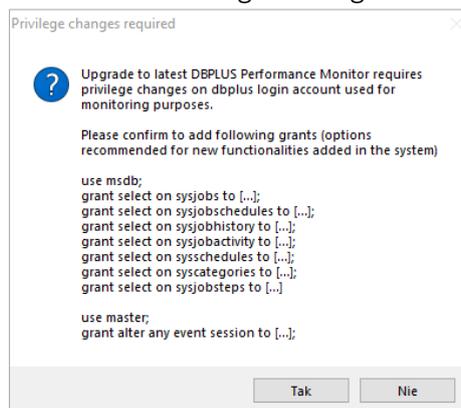
By selecting a row in the table, the User receives information on the entire process with a breakdown into individual steps (*Steps* tab) along with the status for each of the steps separately. The *Graph* tab presents all runs of the selected job in the selected time range. The *Properties* tab presents the configuration (steps and schedule) based on selected job.

By selecting the options: *In Progress (online)*, we also get the opportunity to check the status of currently performed jobs on the SQL instance.

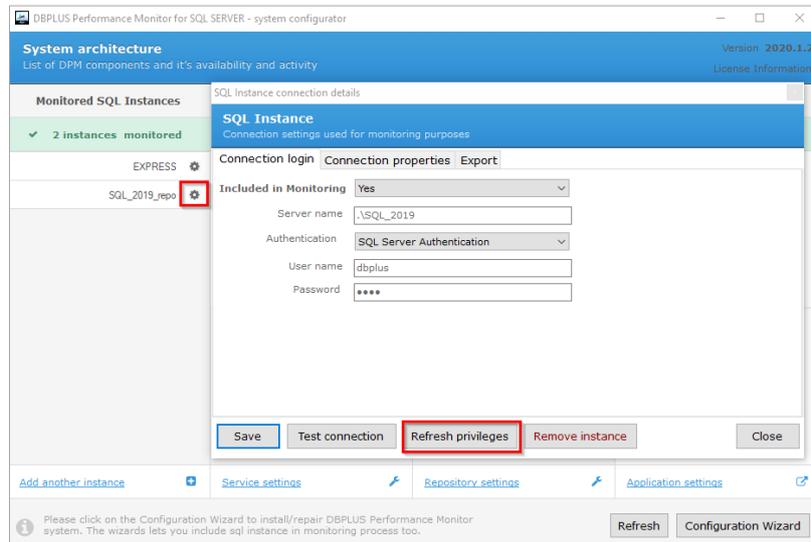
Job Id	Name	Description	Enabled	Status	Message	Duration	Date Start	Date End	Owner	Category
119d097c-97df-44d2-957...	Job_Art	opis dia job	☑	Failed	The job failed. The Job was invoked by Schedule 31 (scheduler_job_art)...	00:00:00	2020-04-01 16:00:00	2020-04-01 16:00:00	DESKTOP-...	Data Collector
119d097c-97df-44d2-957...	Job_Art	opis dia job	☑	Failed	The job failed. The Job was invoked by Schedule 31 (scheduler_job_art)...	00:00:00	2020-04-01 16:00:00	2020-04-01 16:00:00	DESKTOP-...	Data Collector
bc880d53-0ba8-49e4-96...	DBPLUS user update in databases	DBPLUS user update in databases with mis...	☑	Succeeded	The job succeeded. The Job was invoked by Schedule 35 (Schedule to r...	00:00:00	2020-04-01 16:00:00	2020-04-01 16:00:00	DESKTOP-...	[Uncategorized (Loc...

Notice! Granting new permissions when upgrading the application!

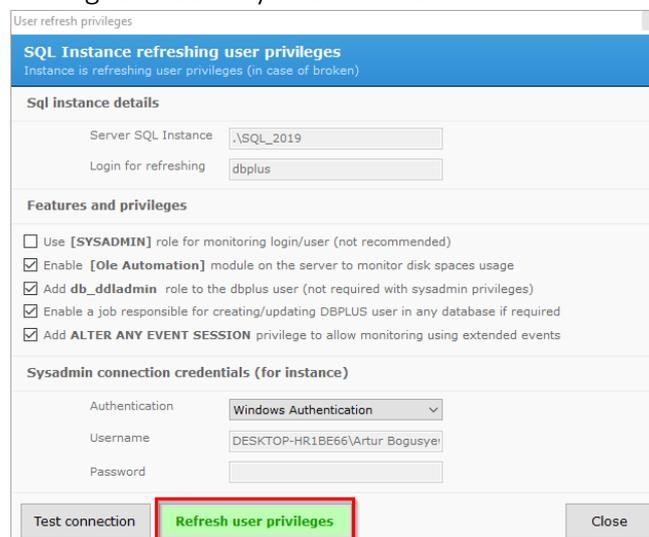
The use of new data on jobs requires new rights to system views for the monitoring user (list of views presented in the figure below). In the process of updating the DBPLUS Performance Monitor application, the administrator will be asked if he agrees to grant additional rights:



If consent is given, new monitoring user privileges for all monitored SQL instances will be granted as part of the upgrade process. In the absence of consent, User can grant permissions at any time from the level of DBPLUS Configuration Wizard. To do this, go to the settings screen for a given SQL instance by clicking the [cog] icon, then select [Refresh privileges].



On the newly opened screen, simply confirm that you want to refresh permissions by clicking [**Refresh Privileges**] again without having to check any checkboxes.



If you are not accepted to automatically grant permissions to system views containing job information and you do not refresh the permissions manually, when entering the jobs screen, you will see a message saying no access with information about the possibility of giving new permissions.

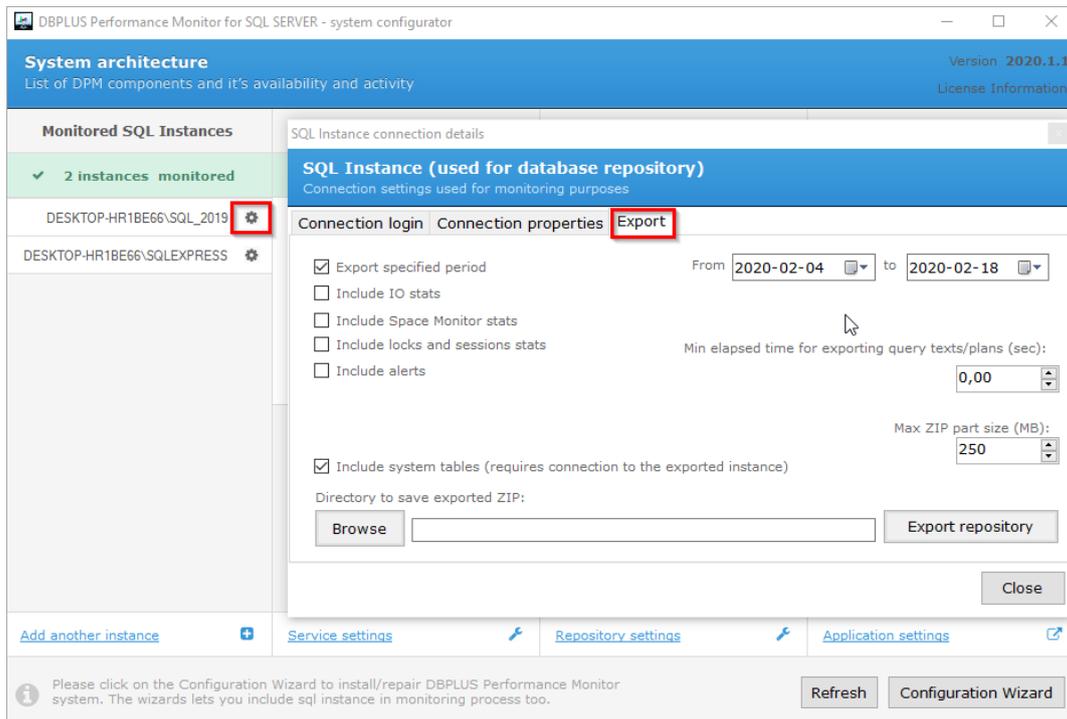
1.7 Export / Import statistics of monitored databases

In the latest version we have added the ability to export / import data collected by DBPLUS Performance Monitor. The user makes both export and import within the same platform, in this case SQL Server. In the current version, the mechanism allows to export the entire database (without date range) as well as selected periods and monitoring modules. Import requires a previously configured repository database, and the result is the addition imported database as a new Sql instance to the current repository.

The imported database is added to the monitoring by default. Collecting data through the "Scheduled Outages" mechanism is blocked (performance statistics are not collected). Enabling statistics collection of an imported database is possible by changing the settings in the Configuration> Scheduled Outages menu for the appropriate SQL Instance.

SQL Instance export

The export can be made from the level of DBPLUS Configuration Wizard. After starting the program, the user goes to the details screen of the instance whose data user wants to export by clicking the button [cog] next to the given database. Then it goes to the Export tab, like below:



The next step is to select the export option. The user can configure:

- date range for which statistics going to be exported (if selected),
- minimum duration of queries (queries below this value will not be exported),
- maximum export file size (another file will be created above this size).

Additionally, the user can choose which data will be exported by select options:

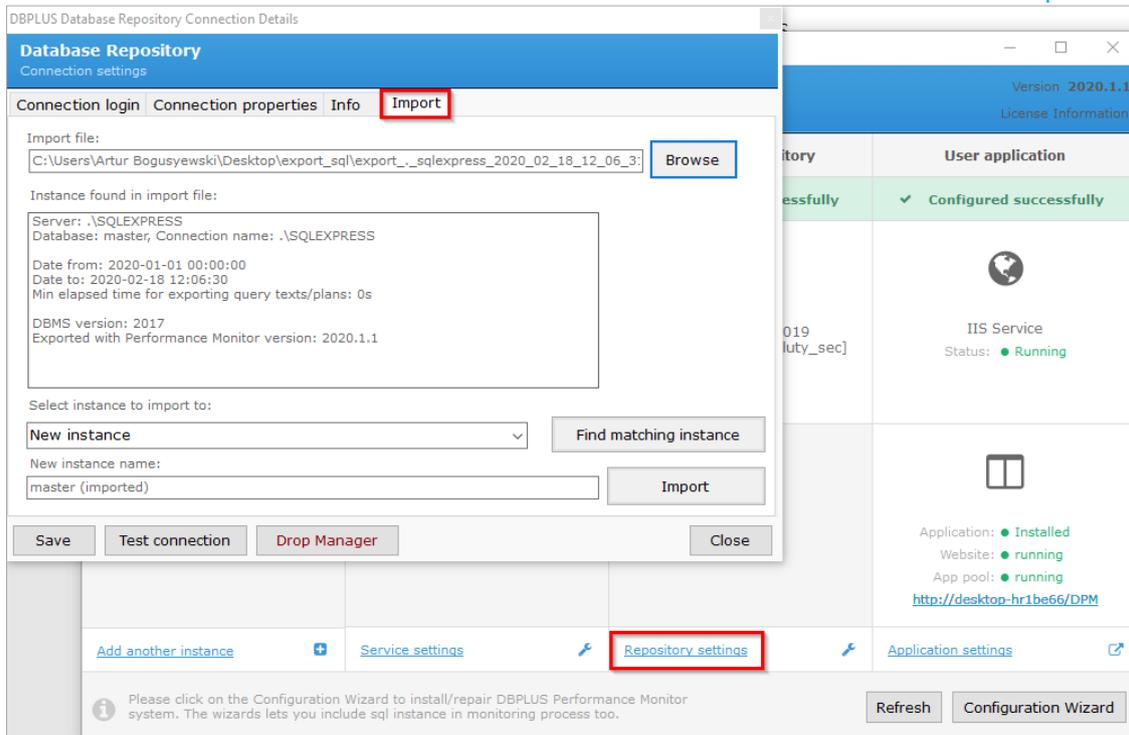
- Include IO stats
- Include Space Monitor Stats
- Include locks and sessions stats
- Include alerts
- Include system tables.

If the "Include system tables" option is selected, online access to the exported database is required to download the data.

After selecting the data for export, indicate the directory where the data file will be saved. A log file will be created in the export directory with information on what data has been exported, and saved data with the exported file or files (depending on the size of the export).

SQL Instance import

The import process can also be performed from the Dbplus Configuration Wizard. The imported database can be added as a new instance as well as part of an instance previously configured for monitoring. The import is started by clicking the "Repository settings" link from the Configuration Wizard and then user goes to the Import tab as shown below:



The first step in importing an SQL Instance is to point to the file with the previously exported database. In case of many export files (the export may contain several files), as the file to be imported, the user indicates file with the extension * .zip. After selecting file, information about the content of files will be presented.

Then indicate whether the user wants to create a new instance after import or add statistics to an existing database in monitoring.

Important! If you select an existing instance, remember to monitor the continuity of monitored data. If the date ranges overlap, some data may be overwritten and lost without being able to be restored.

After selecting the appropriate option, the Sql instance import from the file begins by clicking the **[Import]** button. After the import is completed, a message about successful import will be presented or error information will be presented, and the details will be saved to the log file created in the import directory.

After successful import, the instance will be added to the repository and visible in the Configuration Wizard, as shown below:

DBPLUS Performance Monitor for SQL SERVER - system configurator

System architecture Version 2020.1.1
License Information

List of DPM components and it's availability and activity

Monitored SQL Instances	Monitoring service	Database repository	User application
<p>✓ 3 instances monitored</p> <p>Copy of SQL Instance (imported) ⚙</p> <p>DESKTOP-HR1BE66\SQL_2019 ⚙</p> <p>DESKTOP-HR1BE66\SQLEXPRESS ⚙</p>	<p>✓ Configured successfully</p> <p></p> <p>DBPLUS Catcher Status: ● Running</p>	<p>✓ Configured successfully</p> <p></p> <p>Server: .\SQL_2019 Database: [DBPLUS_luty_sec]</p>	<p>✓ Configured successfully</p> <p></p> <p>IIS Service Status: ● Running </p> <p></p> <p>Application: ● Installed Website: ● running App pool: ● running http://desktop-hr1be66/DPM</p>
<p>Add another instance </p>	<p>Service settings </p>	<p>Repository settings </p>	<p>Application settings </p>

 Please click on the Configuration Wizard to install/repair DBPLUS Performance Monitor system. The wizards lets you include sql instance in monitoring process too.

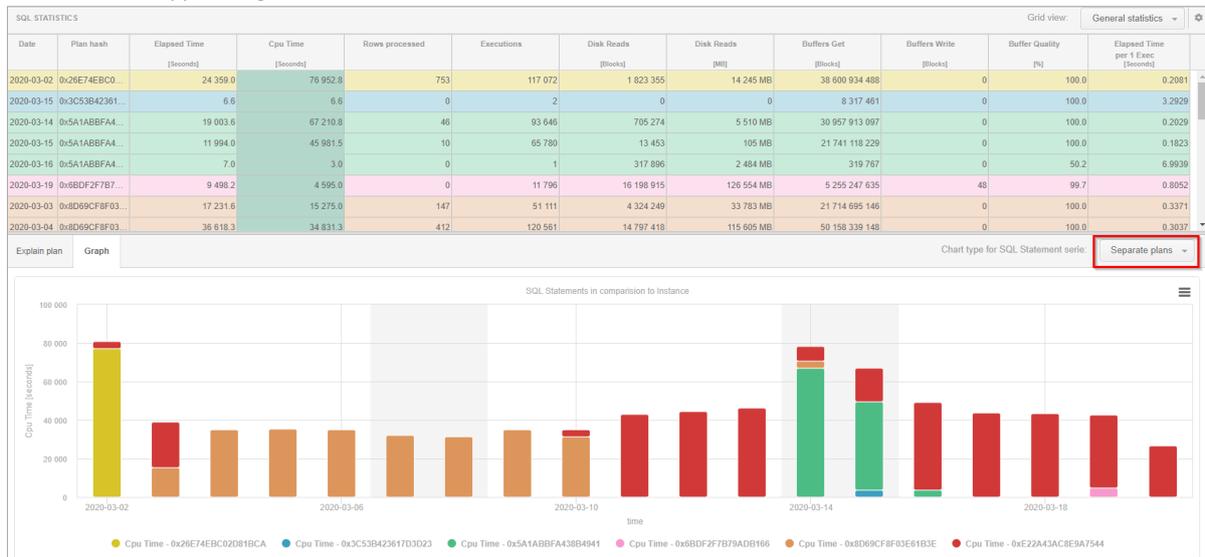
The instance will also be visible from the Dashboard screen. All imported statistics will be available on the Dbplus Performance Monitor screens, similarly to a running instance. Some screens present data directly by downloading it from the monitored database, in such cases information will only be visible if such a connection is possible.

1.8 General improvements

1.8.1 Separate Plans as the default chart in SQL Details

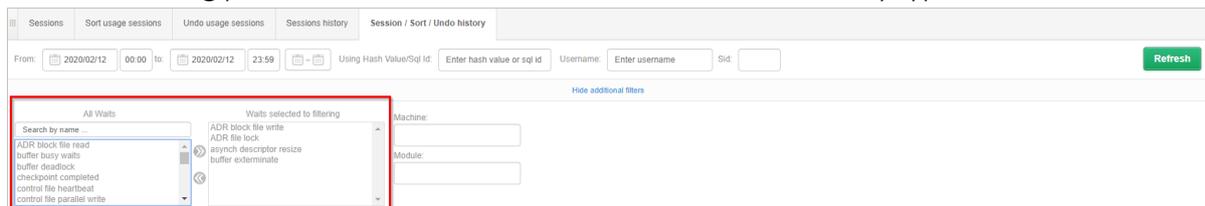
In the latest version we have changed the default settings in the application related to the default chart made available on the Graph tab on the SQL Details page.

This chart presents the statistics selected in the table, broken down into explain plans. If the query is made based on several plans, each query explain plan will be marked with a different color in the table and bar in the chart. To change the chart type and return to the previous version, select a different chart type, e.g. Column.



1.8.2 Change data filtering (Wait)

In the new version of the application we have modified the wait dictionary, after which the user can filter information. In the older version, filter data based on wait was only possible by indicate wait marked as affecting performance. In the latest version User can add any type of wait to the filter.



Changes are available on every screen where filters for wait are available:

- Online sessions (Sessions),
- Session history (Sessions > Session/Sort/Undo history),
- Waits (Waits > Days Compare/Period Compare).

1.8.3 Slow SQLs adds the Buffer quality column

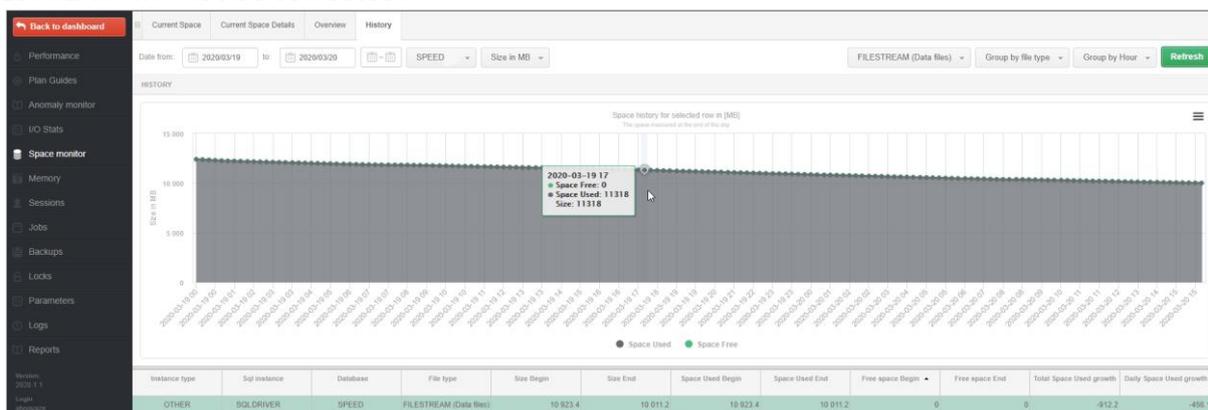
In the new version we have added the Buffer quality column on the Slow SQLs screen. This information will allow the User to estimate whether the query is using the memory buffer or is using disk array resources more.

Query text	Query Hash	Plan Hash	Use plan guide	Elapsed Time [seconds]	Cpu Time [seconds]	Time per 1 exec. [seconds]	Executions	Disk reads [pages]	Buffer gets [pages]	Buffer writes [pages]	Rows processed	Buffer quality [%]
select @cpu_util = isnull(SQLProcessUtilization, 0) ...	0x3D789F32	0x2314681...		81.81	81.79	0.0858	954	0	0	0	954	100.0
SELECT target_data FROM sys.dm_..._session_tar...	0x52B386CED	0x99E4203...		3.63	3.41	0.0757	48	0	0	0	48	100.0
select null as var0, total_elapsed_time as num1, total...	0xC4599E4085	0xD48ABA...		2.53	2.52	0.0053	400	0	0	0	160	100.0
select SessionTrans.session_id, s.status, s.program_...	0x7F851C33A	0xDD9C88...		2.30	2.30	0.0786	30	0	42	0	30	100.0
select ? as rec_type, s.session_id, s.program_name, ...	0xF8DA1D55	0xB14512F...		1.33	1.33	0.0030	449	0	130 572	0	45	100.0
select q.wait_type, sum(q.wait_time_ms) as wait_tim...	0x89E675F2F	0x556AD1...		1.31	1.30	0.0014	953	0	0	0	77 78	100.0
set @cpu_util_pc = (select cntx_value from sys.dm_...	0x892F1B5AE	0x238D370...		0.68	0.68	0.0009	775	0	0	0	775	100.0
select convert(int,avg(num1)) as cpuidle, convert(int...	0xB84404471	0x4F07D0...		0.57	0.57	0.0178	32	0	0	0	32	100.0
select qst.query_hash, qst.query_plan_hash, dc.crea...	0x0AEB8C268	0x33A3AF8...		0.46	0.46	0.0010	464	0	0	0	464	100.0
select @bufferCacheHitRatio = (cntx_value) from sys...	0xFC6D1247D	0xEFC31E...		0.12	0.12	0.0003	358	0	0	0	358	100.0
select @rc = COUNT(*) FROM sys.dm_tran active t...	0xBB33DBE94	0x4D44F7...		0.11	0.11	0.0006	179	0	0	0	179	100.0

1.8.4 Changes on the Space Monitor screen

1.8.4.1 Correction of an error with the presentation of information on FILESTREAM data file size

In the new version we have corrected the error related to the size information of FILESTREAM Data files. The problem was getting wrong information from the system view. The problem has been resolved in the new version. Historical data due to the lack of backlink information about the size of FILESTREAM will not be corrected.



1.8.4.2 Addition of information on the occupation at the file level

Another change is related to the addition of information about file details in the Space Monitor tab at the Instance Analysis level. A new File Name column has been added to provide file location information in the file system. The user now has the option of displaying the data grouped by file, as in the example below. This option has been added on each of the tabs:

- Current space,
- Overview,
- History.

Date	Instance type	Sql instance	Database	File Type	File Name	Total space	Space	Free	Free [%]
2020-03-29	NAV2009_OLD	SQL01NAV_DE	Clevertog DE	MDF (Data files)	D:\Data\01NAV_DE\Clevertog DE_Data.mdf	10.1	0.1	10.0	0.1
2020-03-29	NAV2009_OLD	SQL01NAV_DE	Clevertog DE	MDF (Data files)	D:\Data\01NAV_DE\Clevertog DE_1_Data.mdf	116.4	111.6	4.8	4.8
2020-03-29	NAV2009_OLD	SQL01NAV_DE	Dev Clevertog DE	MDF (Data files)	D:\Data\01NAV_DE\Dev Clevertog DE_1_Data.mdf	0.0	0.0	0.0	0.0
2020-03-29	NAV2009_OLD	SQL01NAV_DE	Dev Clevertog DE	MDF (Data files)	D:\Data\01NAV_DE\Dev Clevertog DE_1_Data.mdf	64.9	24.6	40.3	62.1
2020-03-29	NAV2009_OLD	SQL01NAV_DE	master	MDF (Data files)	D:\SystemDB\NAV_DE\MSSQL11\NAV_D..._Data.mdf	0.0	0.0	0.0	0.0
2020-03-29	NAV2009_OLD	SQL01NAV_DE	MIDE	MDF (Data files)	D:\Data\01NAV_DE\MIDE.mdf	0.0	0.0	0.0	0.0
2020-03-29	NAV2009_OLD	SQL01NAV_DE	model	MDF (Data files)	D:\SystemDB\NAV_DE\MSSQL11\NAV_D..._Data.mdf	0.0	0.0	0.0	0.0
2020-03-29	NAV2009_OLD	SQL01NAV_DE	msdt	MDF (Data files)	D:\SystemDB\NAV_DE\MSSQL11\NAV_D..._Data.mdf	0.0	0.0	0.0	0.0

1.8.5 Preview of log files in the browser

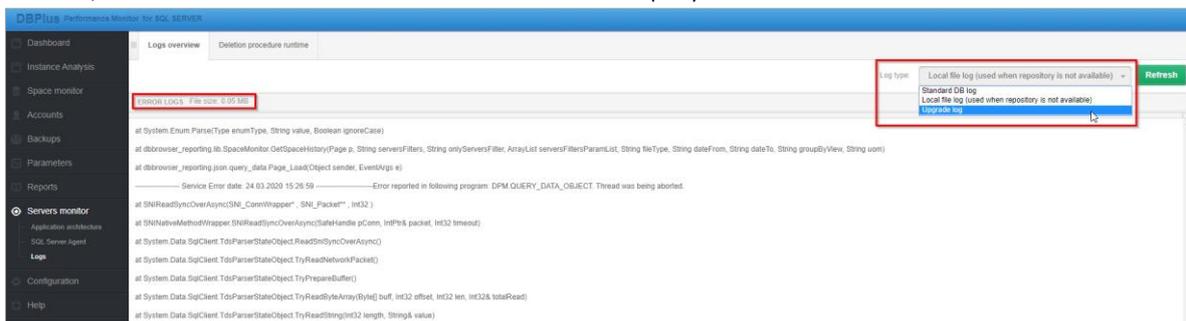
In the new version we have added the ability to view DBPLUS Performance Monitor logs available in the form of files on the application server. This information is available in the main menu in Servers monitor> Logs.

After entering the Logs overview tab, the User will be presented with default logs saved in the Repository database (Standard DB Log), that contain information about problems with possible monitoring.

The User will also have the option of displaying information available in the logs available locally on the application server (Local file log). Information about problems is saved there when it is not possible to save this information in the repository database.

The next log concerns information related to the application update process. This file is created during the application upgrade process (downloading the new version). We save information about changes made to the data model as well as the update process.

In addition, information about the size of the file is displayed for each file.

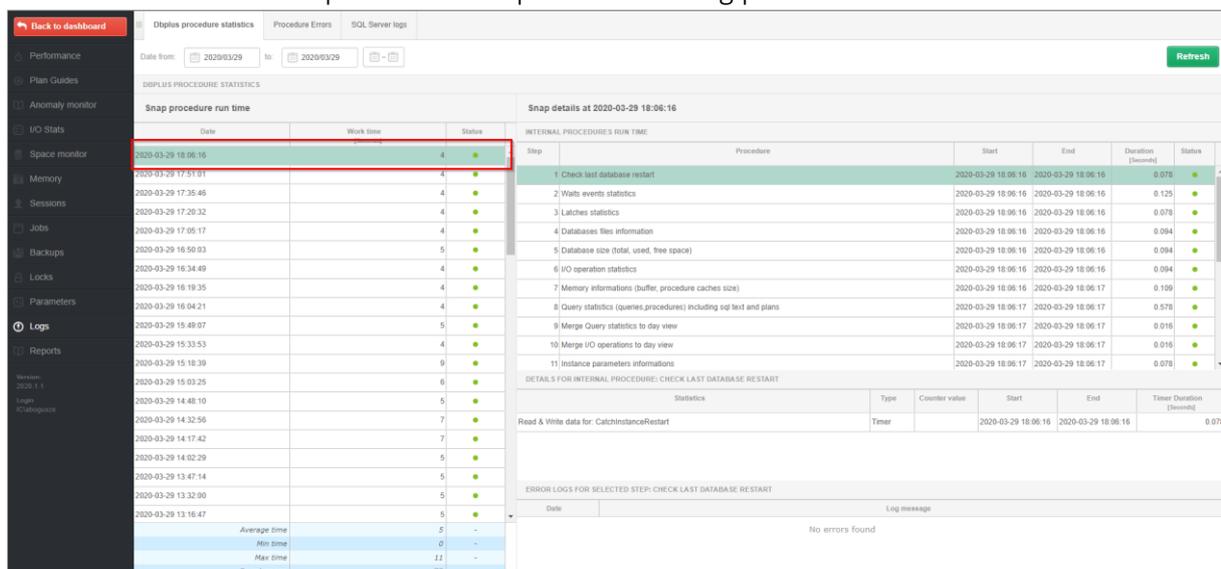


1.8.6 Verification of the monitoring procedure

1.8.6.1 Process collecting data for monitoring

In the latest version of the application, the presentation of information on the times of collecting data from monitored databases by the DBPLUSCATCHER Windows service has been more detailed. This information relates to the procedure for monitoring the database at 15-minute intervals.

The data, as before, is available in the Logs tab at the detail level of the given database. From this version, by clicking on a row in the Snaps table runtime procedure, the User will receive detailed information on the next steps that make up the monitoring procedure.



Then, by pointing to the step (in the Snap details table), the User receives information about the duration of the procedure and the number of rows processed (information available only for certain steps).

Snap details at 2019-12-23 15:39:09

INTERNAL PROCEDURES RUN TIME						
Step	Procedure	Start	End	Duration [Seconds]	Status	
1	Check last database restart	2019-12-23 15:39:09	2019-12-23 15:39:09	0	●	
2	Waits events statistics	2019-12-23 15:39:09	2019-12-23 15:39:09	0.452	●	
3	Latches statistics	2019-12-23 15:39:09	2019-12-23 15:39:10	0.140	●	
4	Operating system information	2019-12-23 15:39:10	2019-12-23 15:39:10	0.016	●	
5	Query statistics (queries.procedures) including sql text and plans	2019-12-23 15:39:10	2019-12-23 15:39:14	4.727	●	
6	Database size (total, used, free space)	2019-12-23 15:39:14	2019-12-23 15:39:14	0	●	
7	I/O operation statistics	2019-12-23 15:39:14	2019-12-23 15:39:14	0.140	●	
8	Memory informations (SGA including shared pool, db cache size)	2019-12-23 15:39:14	2019-12-23 15:39:15	0.328	●	
9	Merge Query statistics to day view	2019-12-23 15:39:15	2019-12-23 15:39:16	1.279	●	
10	Merge I/O operations to day view	2019-12-23 15:39:16	2019-12-23 15:39:16	0.078	●	
11	Parameters informations	2019-12-23 15:39:16	2019-12-23 15:39:16	0.094	●	

DETAILS FOR INTERNAL PROCEDURE: WAITS EVENTS STATISTICS						
Statistics	Type	Counter value	Start	End	Timer Duration [Seconds]	
Read data	Timer		2019-12-23 15:39:09	2019-12-23 15:39:09	0.437	
Write data	Timer		2019-12-23 15:39:09	2019-12-23 15:39:09	0.016	
Rows processed	Counter	58				

ERROR LOGS FOR SELECTED STEP: WAITS EVENTS STATISTICS

Information about the status of a given snap is contained in the Status column. If the monitoring process run correctly, a green dot will be displayed in the column. If one of the monitoring procedure steps has not been performed or has been interrupted and the step concerned is not critical, the User receives information about the reason for the interruption of the step and the status of the entire snap is presented in orange.

Procedure statistics | Procedure Errors

Date from: 2019/12/23 to: 2019/12/23 [Refresh]

DBPLUS PROCEDURE STATISTICS

Snap procedure run time			Snap details at 2019-12-23 14:06:23						
Date	Work time [Seconds]	Status	INTERNAL PROCEDURES RUN TIME						
			Step	Procedure	Start	End	Duration [Seconds]	Status	
2019-12-23 16:08:03	0	● running							
2019-12-23 15:52:49	1	●	1	Check last database restart	2019-12-23 14:06:23	2019-12-23 14:06:23	0	●	
2019-12-23 15:37:36	1	●	2	Waits events statistics	2019-12-23 14:06:23	2019-12-23 14:06:23	0.047	●	
2019-12-23 15:22:23	4	●	3	Latches statistics	2019-12-23 14:06:23	2019-12-23 14:06:23	0.031	●	
2019-12-23 15:07:09	2	●	4	Operating system information	2019-12-23 14:06:23	2019-12-23 14:06:23	0.016	●	
2019-12-23 14:51:56	1	●	5	Query statistics (queries.procedures) including sql text and plans	2019-12-23 14:06:23	2019-12-23 14:06:23	0.671	●	
2019-12-23 14:36:43	1	●	6	Database size (total, used, free space)	2019-12-23 14:06:23	2019-12-23 14:14:45	501.122	●	
2019-12-23 14:21:29	4	●	7	I/O operation statistics	2019-12-23 14:14:45	2019-12-23 14:14:45	0.281	●	
2019-12-23 14:06:23	503	●	8	Memory informations (SGA including shared pool, db cache size)	2019-12-23 14:14:45	2019-12-23 14:14:45	0.125	●	
2019-12-23 13:51:10	1	●	9	Merge Query statistics to day view	2019-12-23 14:14:45	2019-12-23 14:14:45	0.078	●	
2019-12-23 13:35:56	1	●	10	Merge I/O operations to day view	2019-12-23 14:14:45	2019-12-23 14:14:45	0.031	●	
2019-12-23 13:20:43	4	●	11	Parameters informations	2019-12-23 14:14:45	2019-12-23 14:14:45	0.062	●	

DETAILS FOR INTERNAL PROCEDURE: DATABASE SIZE (TOTAL, USED, FREE SPACE)						
Statistics	Type	Counter value	Start	End	Timer Duration [Seconds]	
Read data	Timer		2019-12-23 14:06:23		0	
Write data	Timer				0	
Rows processed	Counter	0				

ERROR LOGS FOR SELECTED STEP: DATABASE SIZE (TOTAL, USED, FREE SPACE)

Date	Log message
2019-12-23 14:14:45	Error reported in following program: StandardSnap: CatchOdbSize. Execution for query SELECT /*- ALL_ROWS */ file_id, nvl(Sum(bytes),0) bytes FROM DBA_free_space GROUP BY file_id timeout-ed at DBPLU.

If there was a problem with the connection at the time of the monitoring procedure or the problem concerned a critical step for a given procedure, the status information is written in red.

Snap procedure run time			Snap details at 2019-12-23 16:15:00					
Date	Work time [seconds]	Status	INTERNAL PROCEDURES RUN TIME					
2019-12-23 16:15:00		●	Step	Procedure	Start	End	Duration [seconds]	Status
2019-12-23 16:00:00		●	1	No any steps executed for specified snapshot			0	●
2019-12-23 15:45:00		●						
2019-12-23 15:30:00		●						
2019-12-23 15:15:00		●						
2019-12-23 15:00:00		●						
2019-12-23 14:45:00		●						
2019-12-23 14:30:00		●						
2019-12-23 14:15:00		●						
2019-12-23 14:00:00		●						
2019-12-23 13:45:00		●						
2019-12-23 13:30:00		●						
2019-12-23 13:15:00		●						
2019-12-23 13:00:00		●						
2019-12-23 12:45:00		●						
2019-12-23 12:30:00		●						
2019-12-23 12:15:00		●						
2019-12-23 12:00:00		●						
2019-12-23 11:45:00		●						
2019-12-23 11:30:00		●						
Average time	0	-	DETAILS FOR INTERNAL PROCEDURE					
Min time	0	-	Statistics	Type	Counter value	Start	End	Timer Duration [seconds]
Max time	0	-	Please select internal procedure					
Count snaps	65	-	ERROR LOGS FOR SELECTED SNAPSHOT					
			Date	Log message				
			2019-12-23 16:10:03	Error reported in following program: SessionsUndoLockSort: SnapRunnerLocks Run. ORA-12541: TNS: No listener at OracleInternal ConnectionPool PoolManager 3.Get(ConnectionString ciWithDirOrNewPwId, ...				
			2019-12-23 16:10:05	Error reported in following program: Dashboard: SnapRunner DashboardSnapQueries: ORA-12541: TNS: No listener at DBPLUS Catcher facade SQLFacadeDashboard DashboardSnapQueries(Boolean deleteCl, ...				
			2019-12-23 16:10:34	Error reported in following program: SessionsUndoLockSort: SnapRunnerLocks Run. ORA-12541: TNS: No listener at OracleInternal ConnectionPool PoolManager 3.Get(ConnectionString ciWithDirOrNewPwId, ...				

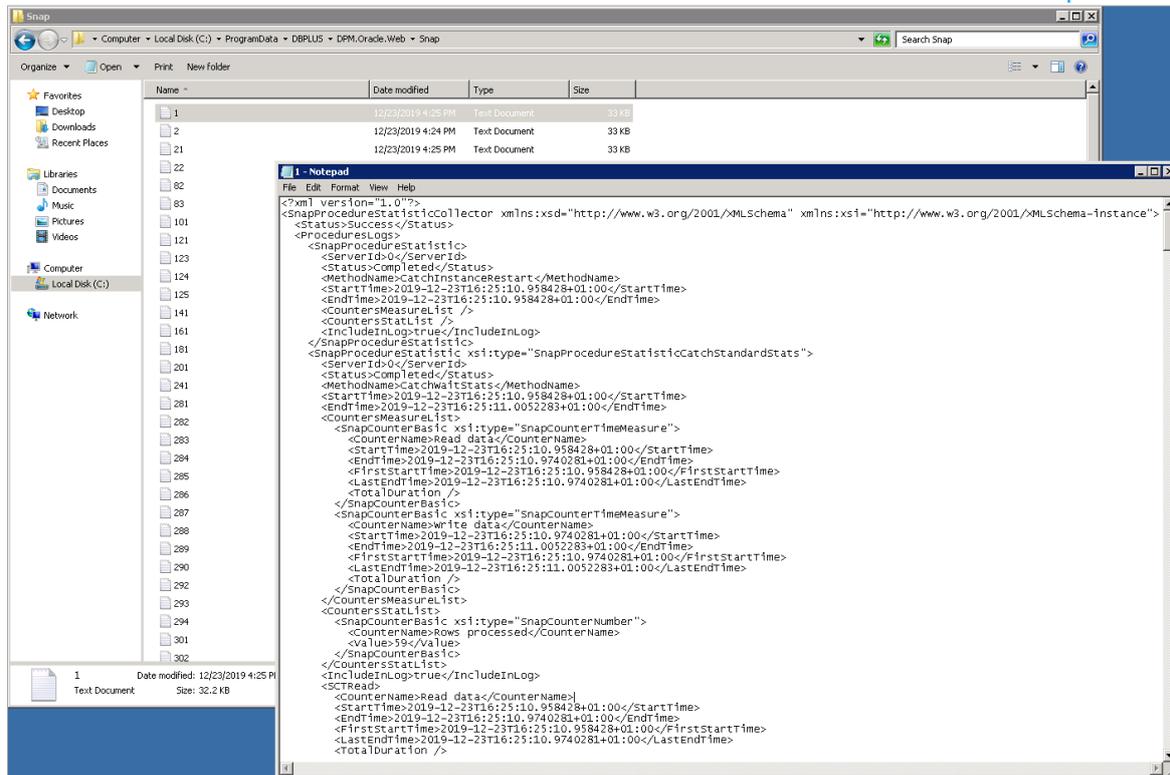
If the monitoring procedure is in progress, this information is visible in the status (running) field, as well as the Online steps refresh button is visible, after which the information on the monitoring procedure progress is refreshed.

Snap procedure run time			Snap details at 2019-12-24 10:28:11 with selected currently executed step					
Date	Work time [seconds]	Status	INTERNAL PROCEDURES RUN TIME					
2019-12-24 10:28:11	7	● running	Step	Procedure	Start	End	Duration [seconds]	Status
2019-12-24 10:12:59	36	●	1	Check last database restart	2019-12-24 10:28:11	2019-12-24 10:28:11	0	●
2019-12-24 09:57:46	72	●	2	Waits events statistics	2019-12-24 10:28:11	2019-12-24 10:28:16	5.444	●
2019-12-24 09:42:34	35	●	3	Latches statistics	2019-12-24 10:28:16	2019-12-24 10:28:17	0.234	●
2019-12-24 09:27:21	34	●	4	Operating system information	2019-12-24 10:28:17	2019-12-24 10:28:17	0.047	●
2019-12-24 09:12:09	33	●	5	Query statistics (queries.procedures) including sql text and plans	2019-12-24 10:28:17		0.858	●
2019-12-24 08:56:57	61	●						
2019-12-24 08:41:42	36	●						
2019-12-24 08:26:29	45	●						
2019-12-24 08:11:16	32	●						
2019-12-24 07:56:03	65	●						
2019-12-24 07:40:51	30	●						
2019-12-24 07:25:38	34	●						
2019-12-24 07:10:25	31	●						
2019-12-24 06:55:13	60	●						
2019-12-24 06:40:00	29	●						
2019-12-24 06:24:47	32	●						
2019-12-24 06:09:34	38	●						
2019-12-24 05:54:21	45	●						
2019-12-24 05:39:09	84	●						

In addition, all problems related to the monitoring procedure are available in the form of a list on the Procedure Errors tab.

Information on the monitoring procedure is also included in the form of a file on the application server. The file contains information about the last snap performed on a given database. The file is in the folder: C:\ProgramData\DBPLUS\DPM.Web\Snap

Each file is marked with a digit assigned to the database when it is included in the monitoring (dbplus_central_servers table in the DBPLUS schema in the repository database).



1.8.6.2 Deleting historical data process

Another change consists in separating the process of deleting historical data. Depending on the KEEP_SNAPSHOT_HISTORY_DAYS parameter (Performance in the Settings menu), the Performance Monitor application deletes historical data - older than the number of days in the parameter. Details (collected every 15 minutes) are deleted. Aggregated data for the whole day is never deleted and is stored throughout the monitoring period.

The process of deleting detailed data is also monitored. The process runs every snap (15 minutes). Details about the process are available in the main menu Servers monitor > Logs in the Deletion tab runtime procedure.

The page contains information about the total duration of the entire procedure, and about the time of individual components and the number of deleted records from dedicated tables from the DBPLUS schema in the repository database.

Procedure run time		Snap deletion details at 2019-12-24 11:12:13							
Date	Work time (seconds)	Status	Step	Procedure	Start	End	Duration (seconds)	Deleted rows	Status
2019-12-24 11:42:39	14	●	1	DeletionSettings	2019-12-24 11:12:13	2019-12-24 11:12:14	0.468	0	●
2019-12-24 11:27:26	13	●	2	Delete dbplus_errlog	2019-12-24 11:12:14	2019-12-24 11:12:14	0	0	●
2019-12-24 11:12:13	21	●	3	Delete dbplus_alert_emails	2019-12-24 11:12:14	2019-12-24 11:12:14	0	2	●
2019-12-24 10:57:00	15	●	4	Delete dbplus_tab4_log	2019-12-24 11:12:14	2019-12-24 11:12:14	0.016	0	●
2019-12-24 10:41:47	18	●	5	Delete dbplus_tab_catcher	2019-12-24 11:12:14	2019-12-24 11:12:14	0	1	●
2019-12-24 10:26:34	17	●	6	Delete snap table: dbplus_tab4	2019-12-24 11:12:14	2019-12-24 11:12:16	2.371	5 000	●
2019-12-24 10:11:21	15	●	7	Delete snap table: dbplus_tab2	2019-12-24 11:12:16	2019-12-24 11:12:16	0.156	4 144	●
2019-12-24 09:56:08	16	●	8	Delete snap table: dbplus_tab17	2019-12-24 11:12:16	2019-12-24 11:12:16	0.047	2 609	●
2019-12-24 09:40:55	13	●	9	Delete snap table: dbplus_tab18	2019-12-24 11:12:16	2019-12-24 11:12:17	0.577	27 078	●
2019-12-24 09:25:42	14	●	10	Delete snap table: dbplus_tab19	2019-12-24 11:12:17	2019-12-24 11:12:18	1.357	9 637	●
2019-12-24 09:10:29	17	●	11	Delete snap table: dbplus_tab16	2019-12-24 11:12:18	2019-12-24 11:12:18	0.016	0	●
2019-12-24 08:55:13	11	●	12	Delete snap table: dbplus_tab15_rowc	2019-12-24 11:12:18	2019-12-24 11:12:18	0.109	2 471	●
2019-12-24 08:40:00	13	●	13	Delete snap table: dbplus_tab4_inspect	2019-12-24 11:12:18	2019-12-24 11:12:18	0	0	●
2019-12-24 08:24:46	16	●	14	Delete snap table: dbplus_tab_resoon_log	2019-12-24 11:12:18	2019-12-24 11:12:18	0.047	918	●
2019-12-24 08:09:34	18	●	15	Delete snap table: dbplus_snaps_tab1	2019-12-24 11:12:18	2019-12-24 11:12:18	0	0	●
2019-12-24 07:54:21	15	●							

1.8.7 New version available info

From version 2020.1, information about available new versions of the DBPLUS Performance Monitor application will also be visible from the User's browser. If a new version of the application is available, information about it will be displayed on the Dashboard main screen.

After clicking the button, the User will receive information about the changes contained in the new version and will be able to download the installer program.



The button will be visible to all users by default, if you want to limit the visibility of the button, this can be done by disable access to the given functionality in the Configuration> Security menu (requires the Security option to be set to "ON").