

DBPLUS  
Performance Monitor for Oracle  
description of changes in version 2020.3

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Below is a list of changes to the DBPLUS Performance Monitor system for monitoring Oracle databases.

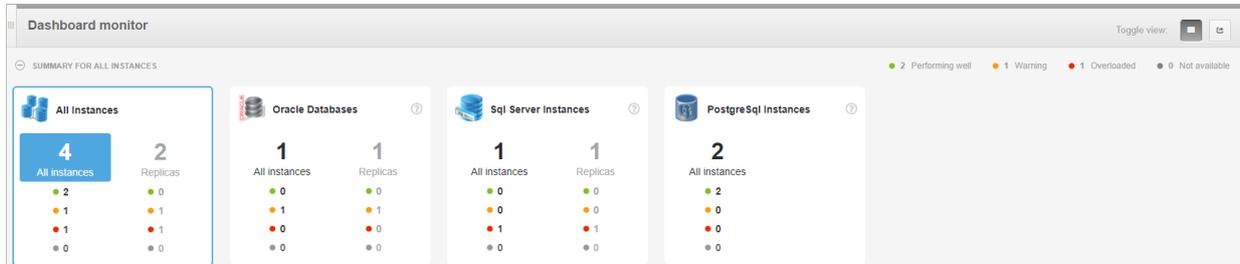
New in version 2020.3

## 1.1 Shared Dashboard - next edition

In version 2020.3.1, we improved the Dashboard screen. As before, this screen enables online viewing for all monitored databases for each of the three available platforms (Oracle, SQL Server, PostgreSQL).

Information about status of monitored databases is available in the summary in two variants:

- Primary view:



This view allows you to filter the databases depending on the needs, by the current status, and can easily extract a group of databases for which the Standby database is configured (by selecting the Replicas part).

- Minimized view



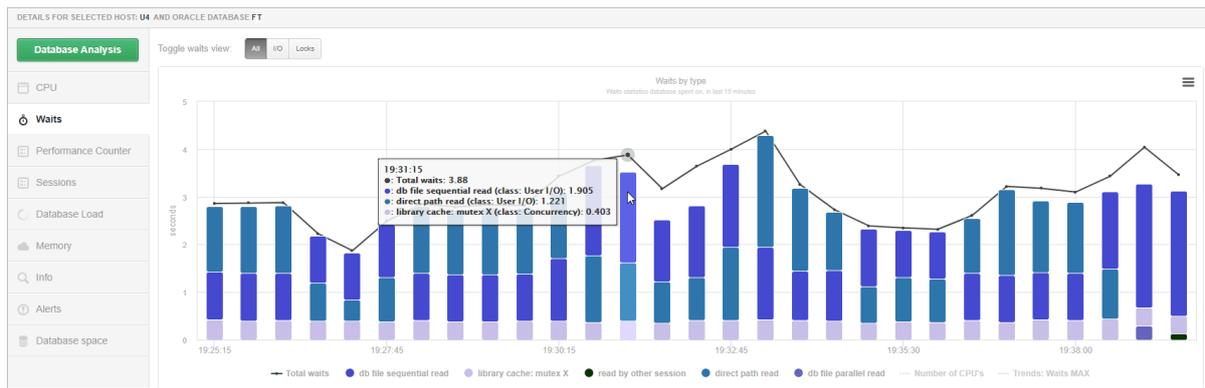
This view is available after clicking the minus icon in the **SUMMARY FOR ALL INSTANCES** bar. It only contains information on the number of databases in a given and group, and allows easy navigation between them.

Additionally, in the latest version in the grid available for each database, apart from the columns presenting basic data about the database, information is also available on:

- CPU Host – CPU utilization for the server where the database is located,
- CPU Instance – CPU utilization of a given database
- Waits – overall level of expectations [s / 1s]
- Waits I/O – I / O related expectations [s/1s]
- Locks – level of locks on a given instance [s/1s]
- Active Sessions – number of active sessions
- Locked Sessions – level of locked sessions
- Transactions – the number of active transactions in the database
- Alerts – number of alerts (critical/warning)
- Space info – the level of space used for a given instance [GB]

Status	Name	Host Name	Version	Startup time	Category	Repl. status	CPU Host [%]	CPU Instance [%]	Waits [s/1s]	Waits IO [s/1s]	Locks [s/1s]	Active sessions	Locked sessions	Transactions	Alerts	Space info [GB]
●	at	localhost	10.13	2020-10-08 12:...	NOT SPECIFIED		N/A	N/A	0	0	0	0	0	0	0	0.0
●	DESKTOP-HR1BE69\SQL_2019	DESKTOP-H...	2019 (15.0.207...	2020-10-05 16:...	NOT SPECIFIED	AS	12%	0%	0	0	0	1	0	1		25% 0.4
●	Repository instance	localhost	11.8	2020-10-02 14:...	NOT SPECIFIED		N/A	N/A	0	0	0	0	0	0	0	100% 0.1
●	XE	DESKTOP-H...	11.2.0.2.0	2020-10-02 14:...	NOT SPECIFIED		14%	0%	0	0	0	1	0	0		46% 12.3

By selecting a specific column for a given database, the user receives information on changes in statistics in the form of a graph for the last 15 minutes. In the case below, User gets information about the top waits for the FT database.



The dashboard provides access to other columns that the user can freely add to the dashboard screen after selecting the Show hidden columns option in the settings of a given grid (cog icon).

ORACLE DATABASES										Group filter: All selected		Search instance		Hidden columns		Grid options	
Name	Host name	Version	Startup time	Category	CPU Host (%)	CPU Instance (%)	Waits (#/s)	Waits I/O	Locks (#/s)	CPU Number	Elapsed Time (% of trend)	Waits (% of trend)	Waits statistics	Active sessions (% of trend)	Export grid	Export grid with formatted data	
T1	g4	11.2.0.4.0	2020-08-25 16:22...	TESTING ...	62 %	38 %	1.34	1.31	0								
FK	u4	11.2.0.4.0	2020-09-07 17:52...	TESTING ...	46 %	44 %	2.69	2.28	0								
T5	u3	11.2.0.4.0	2020-10-01 17:04...	TESTING ...	4 %	4 %	74.16	0.13	49	77	49	1					
FK	u4	11.2.0.4.0	2020-08-07 14:37...	TESTING ...	33 %	8 %	1.66	1.01	0	19	0				91 %	9253.8	
T8	u4	11.2.0.4.0	2020-08-07 19:09...	TESTING ...	31 %	31 %	1.52	0.89	0	27	0				91 %	24267.4	
FK	g4	11.2.0.4.0	2019-06-10 15:35...	TESTING ...	22 %	6 %	1.43	1.13	0	12	0				91 %	5843.7	

### Changing the status of the monitored database

The change of the instance status is related to exceeding the alarm thresholds for the most important database performance parameters. In the event that the database status changes to orange (Warning) or red (Critical), the information about the cause is available after pointing the mouse at the given status.

The user can define his own alarm thresholds for each of the main database parameters, such as:

- Active\_Sessions
- Instance\_CPU
- Locked\_Sessions
- Server\_CPU
- Waits I/O
- Waits Locks
- Waits Total

This configuration is available in the **Configuration > Settings** menu in the **Dashboard setting** tab. Exceeding a given parameter causes a status change for a given database depending on the exceeded Warning (orange) or Alert (red) threshold. The settings can be modified for all databases on the general level or for a selected database.

Name	Alert Enabled	Value for Alert	Warning Enabled	Value for Warning	Description	
ACTIVE_SESSIONS	NO		NO		Alert if Active Sessions is equal or greater than value specified in the parameter. Alert is calculated every 15 seconds.	Edit
INSTANCE_CPU	YES	80	YES	50	Alert if oracle instance process utilization is equal or greater than specified in the parameter. Alert is calculated every 15 seconds.	Edit
LOCKED_SESSIONS	NO		NO		Alert if Locked Sessions is equal or greater than value specified in the parameter. Alert is calculated every 15 seconds.	Edit
SERVER_CPU	YES	80	YES	50	Alert if server cpu utilization is equal or greater than specified in the parameter. Alert is calculated every 15 seconds.	Edit
WAITS_IO	YES	80	YES	50	Alert if I/O waits in reference to cpu number is equal or greater than specified in the parameter. Alert is calculated every 15 seconds.	Edit
WAITS_LOCKS	YES	80	YES	50	Alert if locking waits in reference to cpu number is equal or greater than specified in the parameter. Alert is calculated every 15 seconds.	Edit
WAITS_TOTAL	YES	80	YES	50	Alert if total waits in reference to cpu number is equal or greater than specified in the parameter. Alert is calculated every 15 seconds.	Edit

### Visibility of Alerts on the Dashboard screen

In the latest version, Alerts are displayed on the Dashboard screen. Depending on exceeding the alarm threshold, the User receives information about the criticality of the alert and the number of occurrences. Alerts are visible on the screen for a period of 2 hours after their occurrence, for example, if the alert occurred at 09:20, the information on the Dashboard about the alert will be visible until 11:20.

Status	Name	Host Name	Version	Startup time	Category	Repl. status	CPU Host [%]	CPU Instance [%]	Waits [s/r/s]	Waits IO [s/r/s]	Locks [s/r/s]	Active sessions	Locked sessions	Transactions	Alerts	Space info [GB]	
Performing well	KAD	u4u	11.2.0.4.0	2020-08-07 19:...	PRODUCTIO...	OK	61 %	12 %	0.01	0.01	0	3	0	0	7	56 %	113.8
Performing well	KADT1	tfw	11.2.0.4.0	2020-09-10 13:...	TESTING DAT...	OK	55 %	2 %	0.03	0.01	0	2	0	0	0	56 %	113.5

The visibility time of alerts on the Dashboard screen can be configured separately for each platform, using the parameter available in the **Configuration > Settings** menu

Settings	Waits settings	Dashboard setting	Dashboard TV Parameters	Object Size Settings
CURSOR_SNAPSHOT_FREQUENCY		30		The interval time in seconds between each snapshot of FETCH API open cursor statements, made by DBPLUS CATCHER service. The parameter can be setup separately for each instance. In a case of high utilization by FETCH API statements, please consider lower value for CURSOR_SNAPSHOT_FREQUENCY. In a case of rarely executed cursors, please use bigger value for it.
DASHBOARD_ALERTS_TIME_MINUTES		120		Specify how long alerts will be visible on dashboard. The parameter uses minutes units.
DASHBOARD_ANIMATE_PARAMETERS		ON		Setting is valid for DPM dashboard displayed in television mode. Based on it each sql server icon can toggle/animate automatically its parameters like (server cpu, sql instance cpu, waits, sessions, etc.)

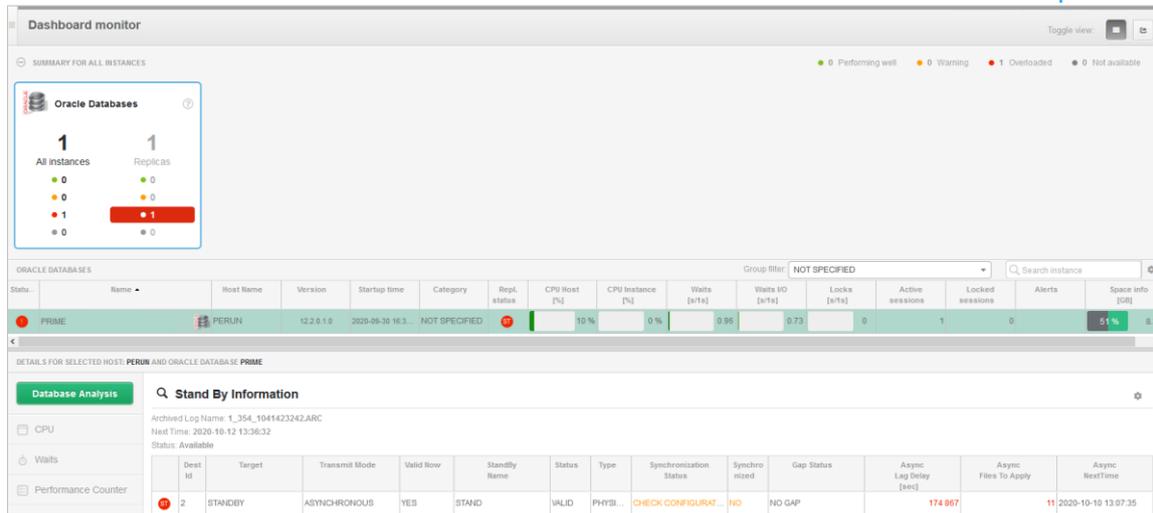
### 1.1.3 Monitoring Standby

In the latest version of the application, we have added the functionality of monitoring database in Standby mode. Information about standby mode is detected automatically after starting the application. For standby databases, there is a separate **Replicas section** in the Oracle database group. The number means how many PRIMARY databases connected to DBPLUS monitoring are configured with the option of transferring changes to Standby databases.

Status	Name	Host Name	Version	Startup time	Category	Repl. status	CPU Host [%]	CPU Instance [%]	Waits [s/r/s]	Waits IO [s/r/s]	Locks [s/r/s]	Active sessions	Locked sessions	Transactions	Alerts	Space info [GB]	
Warning	XE	DESKTOP-H...	11.2.0.2.0	2020-10-02 14:...	NOT SPECIFIED	ST	29 %	0 %	0	0	0	1	0	0	0	46 %	12.3

Standby status information is available in the **Replica Status** column for Oracle databases. Depending on the status, the icon changes color to inform about problems with the Standby replication. The status changes depending on the configuration status read from the database system views as well as on the basis of predefined thresholds for statistics available on the DBPLUS dashboard:

- Async Log Delay - delay time between PRIMARY and STANDBY base,
- Async Files to Apply - the number of log files left to be applied on the STANDBY database.



The user can configure the values for the above parameters. Configuration is available from the **Configuration> Settings** menu in the **Dashboard Settings** tab.

Settings	Waits settings	Dashboard setting	Dashboard TV Parameters	Object Size Settings	
ST_FILES_TO_APPLY	YES	2	NO		Alert if Number of Files to Apply is equal or greater than value specified in the parameter. Alert is calculated every 15 seconds. <span>Edit</span>
ST_LAG_DELAY_SECONDS	YES	3600	NO		Alert if Lag Delay in [seconds] is equal or greater than value specified in the parameter. Alert is calculated every 15 seconds. <span>Edit</span>

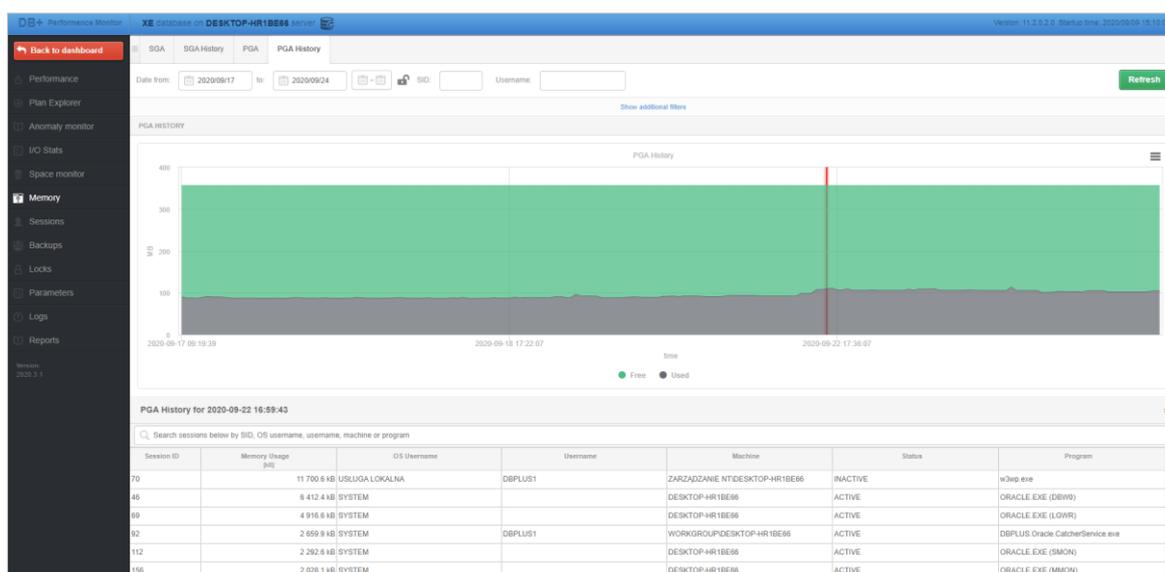
The parameters have two thresholds: Critical and Warning, depending on the threshold being exceeded, the status presented on the Dashboard will change, respectively the **red** color for Critical and **orange** for the Warning threshold. Parameters can be set for all databases in the general part or values can be configured for a dedicated database. Parameters are predefined by DBPLUS Administrators.

## 1.2 General improvements

### 1.2.1 Collecting information about busy of PGA

In the latest version, the ability to collect information about sessions that dispose of PGA memory has been added. To verify which sessions were utilizing PGA memory at a given moment, go to the details of a given database, then select Memory from the menu on the left and go to the PGA History tab.

As before, the graph will be presented with the distribution of memory usage divided into Free and Used. By click a point on the graph, User will receive information about the sessions that utilized memory at a given point in time. Like in the picture below.



Information about memory utilization sessions is not available by default. In order to start collecting detailed information about the PGA occupancy, change the **CATCH\_PGA\_STATS** parameter value available in the Configuration menu Settings.

Parameter	Value	Description	
CATCH_PGA_STATS	OFF	Param used during collecting information about the PGA. Set param to [ON] means start collecting statistics and store in repository. This functionality, due to the large number of data to be collected, can significantly affect the size of the DBPLUS repository.	Edit
CATCH_SHARED_POOL_MIN_OBJECT_SIZE	5	Param used during collecting information about the shared pool utilization. Param means the minimum SHARED POOL space occupied by the query group. Parameter is a [MB] and default value is 5.	Edit

### 1.2.2 Improving the mechanism of collecting data from monitored databases

In the last version, we improved the process of downloading data from databases connected to monitoring. It mainly improves and protects against problems with queries retrieving information from system views. In some cases, performance issues in the database caused the retrieval threads to hang, which could cause monitoring to hang.

The improvement consists in the verification of threads retrieving data from databases. If a given thread is inactive, they are restarted.

### 1.2.3 Hiding points on the plot

In the latest version, we have added the ability to hide the selected point on the chart. In order to hide a given point, hold down the **CTRL** key on the keyboard and at the same time **indicate the point** on the graph that is to be hidden. This functionality will significantly facilitate the performance of the analysis performed over a longer period of time. Hiding a point in the graph does not change the data available under the graph. The functionality is intended only to facilitate reading the data available in the chart. Changes have been made to the charts available on the tabs:

- Load trends
- SQL Details
- OS Stat
- I/O Stats

### 1.2.4 SQL FIND search improved

In the latest version, we have improved the query search using the SQL FIND functionality, available in the SQL Details tab. Saving previously searched queries / objects has been improved. Additionally, we improved the search method so that the case of the searched object is not important.