

DATABASE ADMINISTRATION

Lab 7 – Database performance

229840 – Wiktor Bechciński

229850 – Kamil Budzyn

Database performance

1. We set the value of the STATISTICS_LEVEL initialization parameter: on the Server tab in the Database Configuration section, select the Initialization Parameters option. In the Initialization Parameters window, on the SPFile tab, in the Name field, enter STATISTICS_LEVEL and click the Go button. Then, on the list of initialization parameters, from the Value drop-down list, select the value ALL, select the Apply changes in SPFile mode to the current running instance (s) option. For static parameters, you must restart the database and click the Apply button.

Initialization Parameters

Current **SPFile**

The parameter values listed here are from the SPFILE `/home/oracle/app/oracle/product/11.2.0/dbhome_2/dbs/spfileorcl.ora`

Name: Basic: Dynamic: Category:

Filter on a name or partial name

☒ Apply changes in SPFile mode to the current running instance(s). For static parameters, you must restart the database.

Select	Name	Help	Revisions	Value	Comments	Type	Basic	Dynamic	Category
<input checked="" type="radio"/>	statistics_level			<input type="text" value="ALL"/>		String		<input checked="" type="checkbox"/>	Diagnostics and Statistics

Current **SPFile**



Update Message

The changes have been made successfully. It may take a while before the changes take effect.

2. Possible values for this parameter are TYPICAL (default), ALL, and BASIC (disable ADDM, not recommended). Set the value of the CONTROL_MANAGEMENT_PACK_ACCESS initialization parameter: on the Server tab in the Database Configuration section, select the Initialization Parameters option. In the Initialization Parameters window, on the SPFile tab, in the Name field, enter CONTROL_MANAGEMENT_PACK_ACCESS and click the Go button. Then, on the list of initialization parameters, from the Value drop-down list, select the DIAGNOSTIC + TUNING value, select the Apply changes in SPFile mode to the current running instance (s) option. For static parameters, you must restart the database and click the Apply button. Possible values for this parameter are DIAGNOSTIC + TUNING, (default value), DIAGNOSTIC and NONE (disable ADDM, not recommended).

Initialization Parameters

Current **SPFile**

The parameter values listed here are from the SPFILE `/home/oracle/app/oracle/product/11.2.0/dbhome_2/dbs/spfileorcl.ora`

Name: Basic: Dynamic: Category:

Filter on a name or partial name

☒ Apply changes in SPFile mode to the current running instance(s). For static parameters, you must restart the database.

Select	Name	Help	Revisions	Value	Comments	Type	Basic	Dynamic	Category
<input checked="" type="radio"/>	control_management_pack_access			<input type="text" value="DIAGNOSTIC+TUNING"/>		String		<input checked="" type="checkbox"/>	Miscellaneous

Current **SPFile**



Update Message

The changes have been made successfully. It may take a while before the changes take effect.

3. Each hour, the database creates a snapshot containing statistical data that can later be used to create reports. Each snapshot data is stored for 8 days by default. You can change these two values (how often the snapshots are taken and how long the snapshots are retained). For this purpose, on

the Server tab in the Statistics Management section we choose the Automatic Workload Repository option.

Automatic Workload Repository

Page Refreshed Nov 28, 2021 1:28:15 PM PST [Refresh](#)

The Automatic Workload Repository is used for storing database statistics that are used for performance tuning.

General

[Edit](#)

Snapshot Retention (days) **8**
Snapshot Interval (minutes) **60**
Collection Level **ALL**
Next Snapshot Capture Time **Nov 28, 2021 2:00:06 PM**

Manage Snapshots and Baselines

[Run AWR Report](#) [Run Compare Periods Report](#)

Snapshots **3**
Baselines **1**
Latest Snapshot Time **Nov 28, 2021 1:00:06 PM**
Earliest Snapshot Time **Nov 28, 2021 10:54:28 AM**

4. In the Automatic Workload Repository window, click the Edit button. In the Edit settings window, in the Snapshot Retention section, select the Use Time-Based Retention option and enter a different value in the Retention period (Days) field. Then, in the Snapshot Collection section, select the System Snapshot Interval option and enter a value between 10 minutes and 1 hour in the Interval field. Then click the OK button.

Database Instance: orcl > Automatic Workload Repository >

Logged in As SYS

Edit Settings


[Show SQL](#) [Cancel](#) [OK](#)

Snapshot Retention ☒ Use Time-Based Retention
Retention Period (Days)
☐ Retain Forever
Snapshot Collection ☒ System Snapshot Interval
Interval
☐ Turn off Snapshot Collection
Collection Level **ALL**

[Show SQL](#) [Cancel](#) [OK](#)

5. The results of the automatic analysis performed by ADDM can be found on the Home tab in the Diagnostic Summary section. To view the list of ADDM findings found by ADDM, click the link next to ADDM Findings in the Diagnostic Summary section on the Home tab.

Diagnostic Summary

ADDM Findings **0**
Alert Log **No ORA- errors**
Active Incidents  **0**
Key SQL Profiles **0**

[Database Instance Health](#)

There isn't link next to „ADDM Findings“

6. The Automatic Database Diagnostic Monitor window appears with a list of notes sorted by most significant at the bottom. To view the details of each comment, click on the link in the Finding column. Attention! A sample list of notes found by ADDM and an example scenario for viewing details of notes found is shown below.

7. By clicking on the Virtual Memory Paging, Commits and Rollbacks, I / O Throughput and Session Connect and Disconnect links, you can see the details of the selected comments in the following windows. After viewing the proposal in the Recommendations section in the Action field to perform administrative actions related to the comment found, we can adapt to this proposal.

8. Viewing the list of alerts. Alerts are database system events that indicate errors and exceeding certain thresholds of various metrics. The system defines a certain set of metrics for which we can set two thresholds: a notification threshold and a critical threshold. Exceeding these thresholds generates an alert with an appropriate message. Due to the

degree of danger to the proper operation of the system, alerts can be divided into ordinary and critical. The administrator must read each alert message and perform some administrative steps to correct the problem. To view the list of alerts, go to the Home tab. The list of alerts is at the bottom of the page.

Attention! An example list of alerts and an example scenario for performing administrative tasks related to selected alerts is presented below.

Alerts

Category Critical **0** Warning **10**

Severity	Category	Name	Impact	Message	Alert Triggered
	Invalid Objects by Schema	Owner's Invalid Object Count		9 object(s) are invalid in the OLAPSYS schema.	Feb 8, 2011 4:15:24 PM
	Invalid Objects by Schema	Owner's Invalid Object Count		8 object(s) are invalid in the SYS schema.	Feb 8, 2011 4:15:24 PM
	Invalid Objects by Schema	Owner's Invalid Object Count		6 object(s) are invalid in the MDSYS schema.	Feb 8, 2011 4:15:24 PM
	Invalid Objects by Schema	Owner's Invalid Object Count		5 object(s) are invalid in the XFILES schema.	Feb 8, 2011 4:15:24 PM
	Invalid Objects by Schema	Owner's Invalid Object Count		5 object(s) are invalid in the XDBPM schema.	Feb 8, 2011 4:15:24 PM
	Invalid Objects by Schema	Owner's Invalid Object Count		5 object(s) are invalid in the PUBLIC schema.	Apr 18, 2010 9:42:07 AM
	Invalid Objects by Schema	Owner's Invalid Object Count		4 object(s) are invalid in the XDB schema.	Feb 8, 2011 4:15:24 PM
	Invalid Objects by Schema	Owner's Invalid Object Count		34 object(s) are invalid in the WMSYS schema.	Feb 8, 2011 4:15:24 PM
	Invalid Objects by Schema	Owner's Invalid Object Count		3 object(s) are invalid in the ORDSYS schema.	Feb 8, 2011 4:15:24 PM
	Invalid Objects by Schema	Owner's Invalid Object Count		15 object(s) are invalid in the SYSMAN schema.	Feb 8, 2011 4:15:24 PM

9. On the list of alerts, click on the first position marked by a rectangle. It concerns 9 database objects that are not up-to-date and require recompilation

Owner's Invalid Object Count: Invalid Object Owner OLAPSYS: Last 24 hours

Last Updated Feb 23, 2011 1:04:35 PM PST
View Data

Invalid Object Owner **OLAPSYS**

Statistics

Last Known Value **No data**
Average Value **No data**
High Value **No data**
Low Value **No data**
Warning Threshold **2**
Critical Threshold **Not Defined**
Occurrences Before Alert **1**
Corrective Action **None**

Metric Value

No data is currently available.

Alert History

Comment for Most Recent Alert

Severity	Timestamp	Message	Last Comment	D
	Feb 8, 2011 4:15:24 PM	9 object(s) are invalid in the OLAPSYS schema.		

10. A window appears in which we click the Invalid Objects Details option.

Invalid Object Details: OLAPSYS

Page Refreshed Nov 28, 2021 2:00:56 PM [Refresh](#)

This table shows the current invalid objects in the database. Some objects may become valid after Recompilation.

Recompile Delete			
Select All Select None			
Select	Name	Type	Status
<input type="checkbox"/>	CWM2_OLAP_MANAGER	PACKAGE BODY	INVALID
<input type="checkbox"/>	CWM2_OLAP_UTILITY	PACKAGE BODY	INVALID
<input type="checkbox"/>	CWM2_OLAP_EXPORT	PACKAGE BODY	INVALID
<input type="checkbox"/>	CWM2_OLAP_PC_TRANSFORM	PACKAGE BODY	INVALID
<input type="checkbox"/>	CWM2_OLAP_AW_AWUTIL	PACKAGE BODY	INVALID
<input type="checkbox"/>	OLAPFACTVIEW	PACKAGE BODY	INVALID
<input type="checkbox"/>	OLAPDIMVIEW	PACKAGE BODY	INVALID
<input type="checkbox"/>	DBMS_ODM	PACKAGE BODY	INVALID
<input type="checkbox"/>	CWM2_OLAP_OLAPAPI_ENABLE	PACKAGE BODY	INVALID

[TIP](#) You have selected 0 rows from previously viewed record sets.

11. A window appears in which we click on the Select All option and then click on the button Recompile.

Invalid Object Details: OLAPSYS

Page Refreshed Nov 28, 2021 2:00:56 PM [Refresh](#)

This table shows the current invalid objects in the database. Some objects may become valid after Recompilation.

Recompile Delete			
Select All Select None			
Select	Name	Type	Status
<input checked="" type="checkbox"/>	CWM2_OLAP_MANAGER	PACKAGE BODY	INVALID
<input checked="" type="checkbox"/>	CWM2_OLAP_UTILITY	PACKAGE BODY	INVALID
<input checked="" type="checkbox"/>	CWM2_OLAP_EXPORT	PACKAGE BODY	INVALID
<input checked="" type="checkbox"/>	CWM2_OLAP_PC_TRANSFORM	PACKAGE BODY	INVALID
<input checked="" type="checkbox"/>	CWM2_OLAP_AW_AWUTIL	PACKAGE BODY	INVALID
<input checked="" type="checkbox"/>	OLAPFACTVIEW	PACKAGE BODY	INVALID
<input checked="" type="checkbox"/>	OLAPDIMVIEW	PACKAGE BODY	INVALID
<input checked="" type="checkbox"/>	DBMS_ODM	PACKAGE BODY	INVALID
<input checked="" type="checkbox"/>	CWM2_OLAP_OLAPAPI_ENABLE	PACKAGE BODY	INVALID

[TIP](#) You have selected 0 rows from previously viewed record sets.

12. A window appears displaying a message stating that all selected objects have been recompiled. Thus, the problem was solved.

Invalid Object Details: OLAPSYS

[Update Message](#)

All objects selected have been successfully compiled and become valid objects, they are removed from the invalid objects result table.

[Successfully Recompiled Objects](#) - OLAPSYS.CWM2_OLAP_MANAGER, OLAPSYS.CWM2_OLAP_UTILITY, OLAPSYS.CWM2_OLAP_EXPORT, OLAPSYS.CWM2_OLAP_PC_TRANSFORM, OLAPSYS.CWM2_OLAP_AW_AWUTIL, OLAPSYS.OLAPFACTVIEW, OLAPSYS.OLAPDIMVIEW, OLAPSYS.DBMS_ODM, OLAPSYS.CWM2_OLAP_OLAPAPI_ENABLE

Page Refreshed Nov 28, 2021 2:00:56 PM [Refresh](#)

This table shows the current invalid objects in the database. Some objects may become valid after Recompilation.

Select	Name	Type	Status
	No object found.		

[TIP](#) You have selected 0 rows from previously viewed record sets.

13. Next, on the list of alerts, click on the second position marked by a rectangle. It concerns 6 database objects that are not up-to-date and require recompilation.

Owner's Invalid Object Count: Invalid Object Owner MDSYS: Last 24 hours

Last Updated Feb 23, 2011 1:04:35 PM PST

View Data Last 24 hours

Invalid Object Owner **MDSYS**

Statistics

Last Known Value **No data**
Average Value **No data**
High Value **No data**
Low Value **No data**
☐ Warning Threshold **2**
Critical Threshold **Not Defined**
Occurrences Before Alert **1**
Corrective Action **None**

Metric Value



Alert History

Comment for Most Recent Alert Add Comment

Severity	Timestamp	Message	Last Comment	De
	Feb 8, 2011 4:15:24 PM	6 object(s) are invalid in the MDSYS schema.		

Related Links

[Compare Objects Invalid Object Owner](#)
[Metric and Policy Settings](#)

[Compare Targets](#)

[Invalid Objects Details](#)

14. A window appears in which we click on the Invalid Objects Details option.

15. A window appears in which we click on the Select All option and then click on the button Recompile.

Invalid Object Details: MDSYS

Page Refreshed Nov 28, 2021 2:05:35 PM Refresh

This table shows the current invalid objects in the database. Some objects may become valid after Recompilation.

Recompile Delete			
Select All Select None			
Select	Name	Type	Status
<input checked="" type="checkbox"/>	SDO_GEOR_INT	PACKAGE BODY	INVALID
<input checked="" type="checkbox"/>	SDO_ROUTER_PARTITION	PACKAGE BODY	INVALID
<input checked="" type="checkbox"/>	SDO_NET_PARTITION	PACKAGE	INVALID
<input checked="" type="checkbox"/>	SDO_NET_PARTITION	PACKAGE BODY	INVALID
<input checked="" type="checkbox"/>	SDO_NET	PACKAGE BODY	INVALID
<input checked="" type="checkbox"/>	SDO_OLS	PACKAGE BODY	INVALID

☒ **TIP** You have selected 0 rows from previously viewed record sets.

16. A window appears displaying a message stating that all selected objects have been recompiled. Thus, the problem was solved.

Invalid Object Details: MDSYS

Update Message

All objects selected have been successfully compiled and become valid objects, they are removed from the invalid objects result table.
[Successfully Recompiled Objects](#) - MDSYS.SDO_GEOR_INT, MDSYS.SDO_ROUTER_PARTITION, MDSYS.SDO_NET_PARTITION, MDSYS.SDO_NET_PARTITION, MDSYS.SDO_NET, MDSYS.SDO_OLS

Page Refreshed Nov 28, 2021 2:05:35 PM Refresh

This table shows the current invalid objects in the database. Some objects may become valid after Recompilation.

Select	Name	Type	Status
	No object found.		

☒ **TIP** You have selected 0 rows from previously viewed record sets.

17. Manually create snapshots of statistical data. We create snapshots manually in a situation when we need to create such a snapshot immediately. We cannot wait for the snapshot to be automatically

generated. To create a snapshot, on the Performance tab in the Additional Monitoring Links section, select the Snapshots option.

Snapshots

A snapshot is a collection of database statistics at a single point in time. You can use the information in snapshots to diagnose database problems.

Page Refreshed Nov 28, 2021 2:13:13 PM PST [Refresh](#)

Select Beginning Snapshot

Go To Time
(Example: 12/15/03)

[Create](#)

Select	ID	Capture Time	Collection Level	Within A Baseline
<input type="radio"/>	2859	Nov 28, 2021 10:54:28 AM	TYPICAL	
<input type="radio"/>	2860	Nov 28, 2021 12:39:59 PM	TYPICAL	
<input type="radio"/>	2861	Nov 28, 2021 1:00:05 PM	TYPICAL	
<input type="radio"/>	2862	Nov 28, 2021 1:30:17 PM	ALL	
<input checked="" type="radio"/>	2863	Nov 28, 2021 1:40:21 PM	ALL	
<input type="radio"/>	2864	Nov 28, 2021 2:00:30 PM	ALL	

18. In the Snapshots window, click the Create button.

Confirmation

Are you sure you want to create a manual snapshot?

Snapshots are created automatically by the database. Creating one manually may affect the results of the automatic snapshot immediately following.

[No](#) [Yes](#)

[Database](#) | [Setup](#) | [Preferences](#) | [Help](#) | [Logout](#)

19. In the Confirmation window, click the Yes button.

Processing: Create Snapshot

[Cancel](#)

A snapshot is now being taken.



Taking snapshot.

[Cancel](#)

[Database](#) | [Setup](#) | [Preferences](#) | [Help](#) | [Logout](#)

20. The Snapshots window appears with the new snapshot added. Click on the link with the snapshot number.

Snapshot Details

View ADDM Run

Details Report

Beginning Snapshot ID **2864** Ending Snapshot ID **2865**
Beginning Snapshot Capture Time **Nov 28, 2021 2:00:30 PM** Ending Snapshot Capture Time **Nov 28, 2021 2:14:09 PM**

Previous 1-27 of 27 Next

Name ▲	Value	Per Second	Per Transaction
DB cpu (seconds)	0.00	0.00	0.00
DB time (seconds)	2,843.10	3.48	8.75
db block changes	32,944.00	40.27	101.37
execute count	27,682.00	33.84	85.18
global cache cr block receive time (seconds)	0.00	0.00	0.00
global cache cr blocks received	0.00	0.00	0.00
global cache current block receive time (seconds)	0.00	0.00	0.00
global cache current blocks received	0.00	0.00	0.00
global cache get time (seconds)	0.00	0.00	0.00
global cache gets	0.00	0.00	0.00
opened cursors cumulative	25,251.00	30.87	77.70
parse count (total)	12,952.00	15.83	39.85
parse time cpu (seconds)	9.10	0.01	0.03
parse time elapsed (seconds)	22.33	0.03	0.07
physical reads	11,958.00	14.62	36.79
physical writes	2,024.00	2.47	6.23
redo size (KB)	8,005.86	9.79	24.63
session cursor cache hits	19,146.00	23.41	58.91
session logical reads	145,002.00	177.26	446.16
sql execute cpu time (seconds)	0.00	0.00	0.00
sql execute elapsed time (seconds)	0.00	0.00	0.00
user calls	3,500.00	4.28	10.77
user commits	325.00	0.40	1.00
user rollbacks	0.00	0.00	0.00
workarea executions - multipass	0.00	0.00	0.00
workarea executions - onepass	0.00	0.00	0.00
workarea executions - optimal	4,000.00	4.89	12.31

Previous 1-27 of 27 Next

21. The Snapshot Details window appears. The data contained in this window is useful for experienced administrators. We go to the Report tab.

Snapshot Details

[Details](#)[Report](#)

WORKLOAD REPOSITORY report for

DB Name	DB Id	Instance	Inst num	Startup Time	Release	RAC
ORCL	1229390655	orcl	1	28-Nov-21 11:11	11.2.0.2.0	NO

Host Name	Platform	CPU(s)	Cores	Sockets	Memory (GB)
localhost.localdomain	Linux IA (32-bit)	2	2	1	3.46

	Snap Id	Snap Time	Sessions	Cursors/Session
Begin Snap:	2864	28-Nov-21 14:00:30	49	4.5
End Snap:	2865	28-Nov-21 14:14:09	51	4.3
Elapsed:		13.64 (mins)		
DB Time:		4.49 (mins)		

Report Summary

Cache Sizes

	Begin	End		
Buffer Cache:	68M	68M	Std Block Size:	8K
Shared Pool Size:	180M	180M	Log Buffer:	5,868K

22. On the Report tab, we can see details about the database statistics.

23. And in the Report tab, click the View ADDM Run button.

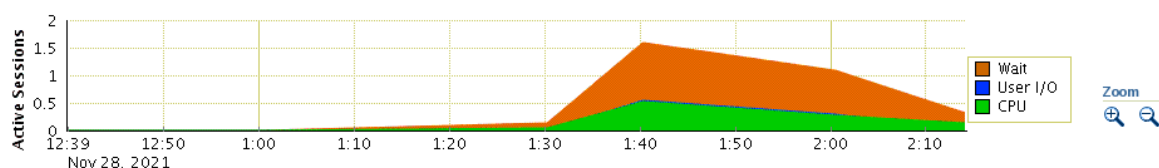
Automatic Database Diagnostic Monitor (ADDM)

Page Refreshed Nov 28, 2021 2:21:18 PM PST [Refresh](#)

Database Activity

[Run ADDM](#) [Finding History](#)

The icon selected below the graph identifies the ADDM analysis period. Click on a different icon to select a different analysis period.



[TIP](#) For an explanation of the icons and symbols used in this page, see the [Icon Key](#)

ADDM Performance Analysis

Task Name **ADDM:1229390655_1_2865**

[Filters](#) [View Snapshots](#) [View Report](#)

Task Owner **SYS**

Average Active Sessions **0.3**

Period Start Time **Nov 28, 2021 2:00:30 PM PST**

Period Duration **13.6**
(minutes)

Impact (%)	Finding	Occurrences (24 hrs ending with analysis period)
ADDM did not find any problems during this period		

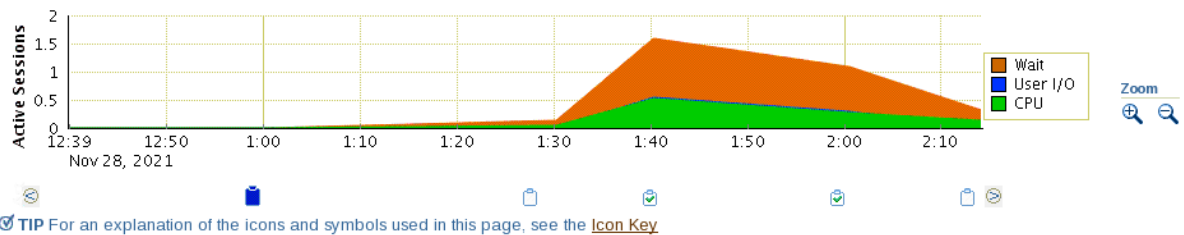
[Informational Findings](#)

24. The ADDM window appears. In the ADDM window, by clicking on the buttons below the graphs, you can change the period for which the statistical data is displayed.

Database Activity

Run ADDM Finding History

The icon selected below the graph identifies the ADDM analysis period. Click on a different icon to select a different analysis period.



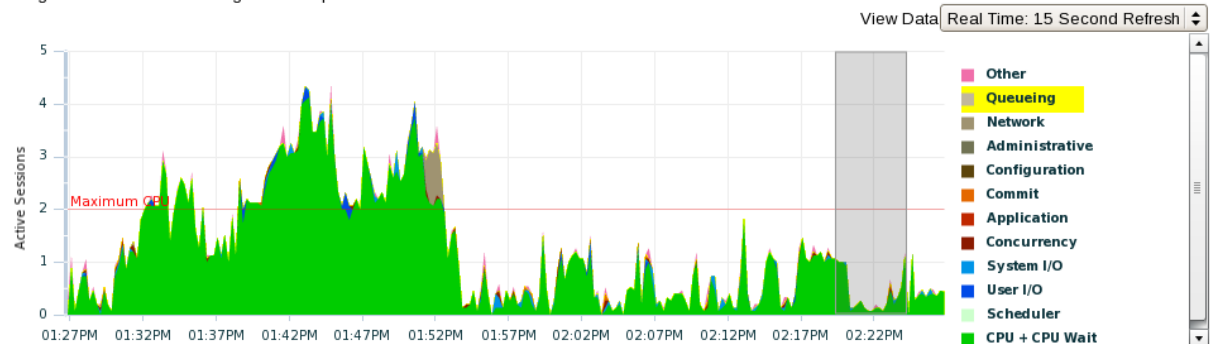
25. Viewing statistical data on the operation of an instance. In order to display statistics on sessions and SQL commands consuming the most resources, on the Performance tab in the Additional Monitoring Links section, select the Top Activity option.

Database Instance: orcl >

Logged in As SYS

Top Activity

Drag the shaded box to change the time period for the detail section below.



Detail for Selected 5 Minute Interval

Start Time Nov 28, 2021 2:18:58 PM PST

Run ASH Report

Top SQL

Select Activity (%)

Data for the chosen interval is not available.

SQL ID SQL Type

Total Sample Count: 0

Top Sessions

View Top Sessions

Activity (%)

Data for the chosen interval is not available.

Session ID User Name Program

Total Sample Count: 0

26. In this window, you can grab the gray box representing the period for which the statistical data has been displayed with the mouse and move the box to display the data for the period of interest. On the right side there is a legend containing the individual resources of the base. Below is the Top SQL section for the commands that consume the most system resources. We can click on the link with the command ID and view the details related to that command.

SQL Details: 5a1j61u6hy9dy

Switch to SQL ID View Data

Text

```
select module, count(*)
from v$active_session_history
where sample_time > sysdate - 1/24 and service_hash = :1 group by module order by count(*) desc
```

Details

Select the plan hash value to see the details below. Plan Hash Value

[Statistics](#) [Activity](#) [Plan](#) [Plan Control](#) [Tuning History](#) [SQL Monitoring](#)

Summary

Drag the shaded box to change the time period for the detail section below.

Detail for Selected 5 Minute Interval

Start Time **Nov 28, 2021 2:23:48 PM**

27. There is also a Top Sessions section in the Top Activity window. We can click on the link in the Session Id or User Name column and view the details related to that session.

Top Sessions

View

Activity (%) ▾	Session ID	User Name	Program
28.07	158	SYS	oracle@localhost.localdomain (M000)
27.81	32	SYS	OMS
21.93	27	DBSNMP	OMS
10.16	31	SYS	oracle@localhost.localdomain (M001)
2.67	18	DBSNMP	emagent@localhost.localdomain (TNS V1-V3)
1.34	126	SYS	oracle@localhost.localdomain (PSP0)
1.07	25	SYSMAN	OMS
.80	153	SYSMAN	OMS
.80	6	SYS	oracle@localhost.localdomain (CKPT)
.53	36	SYS	oracle@localhost.localdomain (J000)

Total Sample Count: 37

A window appears showing details related to the selected session.

Warning

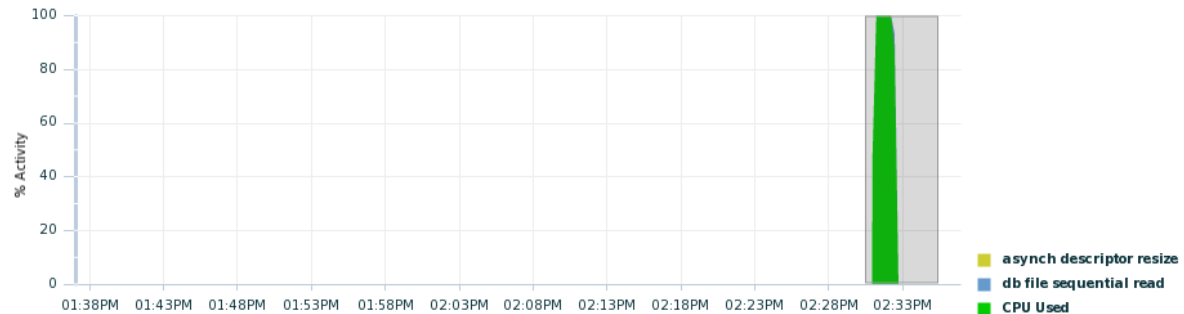
Session has expired.

Session Details: 158 (Unknown)

Collected From Target Nov 28, 2021 2:36:09 PM PST

View Data Real Time: 15 Second Refresh Refresh

Drag the shaded box to change the time period for the detail section below.



Detail for Selected 5 Minute Interval

Start Time Nov 28, 2021 2:30:30 PM

View Show Aggregated Data

Run ASH Report

Previous 1-10 of 30 Next 10

Activity (%)	SQL ID	QC SID	SQL Command	Plan Hash Value	Module	Action	Client ID
44.76	5dfmd823r8dsp		INSERT	646114857	MMON_SLAVE	Auto-Flush Slave Action	
9.52	f0s0bk5k713yb		INSERT	875704766	MMON_SLAVE	Auto-Flush Slave Action	
7.62	8tfvwyvfm5cjp		INSERT	2595645224	MMON_SLAVE	Auto-Flush Slave Action	
4.76	953bgvrvryq1		INSERT	580857396	MMON_SLAVE	Auto-Flush Slave Action	
4.76	2prbzh4qlms7u		INSERT	1532374311	MMON_SLAVE	Auto-Flush Slave Action	
2.86	36z7c4rvtpkw7		INSERT	626663542	MMON_SLAVE	Auto-Flush Slave Action	
2.86	b21xkhy6t2mf		INSERT	917461042	MMON_SLAVE	Auto-Flush Slave Action	
1.90	586b2udq6dbng		INSERT	1523593271	MMON_SLAVE	Auto-Flush Slave Action	
.95	1cq3qr774cu45		INSERT	1031030155	MMON_SLAVE	Auto-Flush Slave Action	
.95	0z1031991hd7w		INSERT	1040065131	MMON_SLAVE	Auto-Flush Slave Action	

28. Viewing statistical data on the operation of an instance. In order to display statistics on sessions and SQL commands consuming the most resources, on the Performance tab in the Additional Monitoring Links section, select the Top Consumers option and view the data on individual tabs: Overview tab.

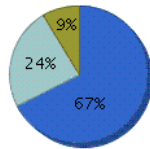
Top Consumers

Latest Data Collected From Target Nov 28, 2021 2:38:27 PM PST [Refresh](#)

[Overview](#) [Top Services](#) [Top Modules](#) [Top Actions](#) [Top Clients](#) [Top Sessions](#)

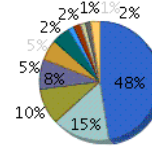
Top consumers for the last 5 minutes.

Top Services



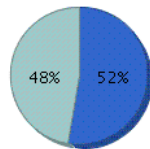
■ SYS\$USERS(67.4%)
■ SYS\$BACKGROUND(24%)
■ orcl(8.6%)

Top Modules (by Service)



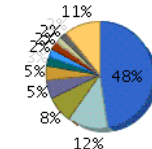
■ Admin Connection (SYS\$USERS)(47.5%)
■ MMON_SLAVE (SYS\$BACKGROUND)(15.4%)
■ emagent_SQL_oracle_database (SYS\$USERS)(10%)
■ Unnamed (SYS\$BACKGROUND)(8.1%)
■ Realtime Connection (SYS\$USERS)(5.4%)
■ OEM.DefaultPool (orcl)(5%)
■ OEM.CacheModeWaitPool (orcl)(1.8%)
■ OEM.SystemPool (orcl)(1.8%)
■ perl@localhost.localdomain (TNS V1-V3) (SYS\$USERS)(1.4%)
■ EM_PING (SYS\$USERS)(1.4%)
■ Other(2.3%)

Top Clients



■ SYS@127.0.0.1@Mozilla/5.0 (X11; U: Linux i686; en-US; rv:1.9.2.9)(52.5%)
■ Unnamed(47.5%)

Top Actions (by Module) (by Service)



■ Unnamed (Admin Connection) (SYS\$USERS)(47.5%)
■ Auto-DBFUS Action (MMON_SLAVE) (SYS\$BACKGROUND)(12.2%)
■ Unnamed (Unnamed) (SYS\$BACKGROUND)(8.1%)
■ Unnamed (Realtime Connection) (SYS\$USERS)(5.4%)

29. Top Services tab.

Top Consumers

Latest Data Collected From Target Nov 28, 2021 2:38:50 PM PST [Refresh](#)

[Overview](#) [Top Services](#) [Top Modules](#) [Top Actions](#) [Top Clients](#) [Top Sessions](#)

View [Active Services](#)

[Enable SQL Trace](#) [Disable SQL Trace](#) [View SQL Trace File](#)

[Select All](#) | [Select None](#)

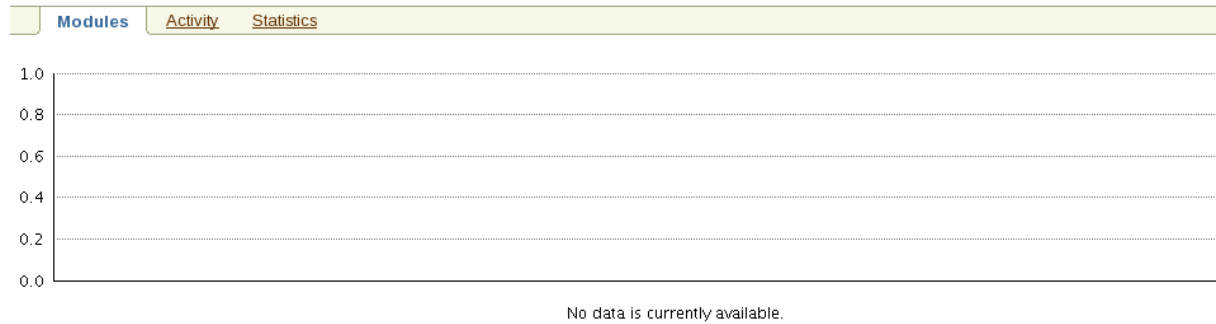
Select	Service	Activity (% for the last 5 minutes)	SQL Trace Enabled	Delta Elapsed Time (seconds)	Cumulative Elapsed Time (seconds)	Delta CPU Time (seconds)	Cumulative CPU Time (seconds)	Delta Physical I/O (blocks)	Cumulative Physical I/O (blocks)
<input type="checkbox"/>	SYS\$USERS	63.0	FALSE	0	3307	0	1061	0	33115
<input type="checkbox"/>	SYS\$BACKGROUND	28.9	FALSE	0	0	0	0	0	48892
<input type="checkbox"/>	orcl	8.1	FALSE	1	476	0	183	0	2911

[Overview](#) [Top Services](#) [Top Modules](#) [Top Actions](#) [Top Clients](#) [Top Sessions](#)

30. By clicking on the selected session identifier in the Service column, we can obtain information about that session.

Service: SYS\$USERS

Latest Data Collected From Target Nov 28, 2021 2:39:59



31. Top Modules tab.

Top Consumers

Latest Data Collected From Target Nov 28, 2021 2:40:00 PM PST [Refresh](#)

Overview Top Services Top Modules Top Actions Top Clients Top Sessions								
View: Active Modules								
Enable Aggregation Disable Aggregation Enable SQL Trace Disable SQL Trace View SQL Trace File								
Select All Select None								
Select	Service	Module	Activity (% for the last 5 minutes)	Aggregation Enabled	SQL Trace Enabled	Delta Elapsed Time (seconds)	Cumulative Elapsed Time (seconds)	Delta C Ti
<input type="checkbox"/>	SYS\$BACKGROUND	MMON_SLAVE	43.8	FALSE	FALSE			
<input type="checkbox"/>	SYS\$USERS	Realtime Connection	17.4	FALSE	FALSE			
<input type="checkbox"/>	SYS\$BACKGROUND	Unnamed	7.6	FALSE	FALSE			
<input type="checkbox"/>	SYS\$USERS	emagent_SQL_oracle_database	6.9	FALSE	FALSE			
<input type="checkbox"/>	SYS\$USERS	Admin Connection	6.9	FALSE	FALSE			
<input type="checkbox"/>	SYS\$USERS	Unnamed	5.6	FALSE	FALSE			
<input type="checkbox"/>	orcl	OEM.DefaultPool	3.8	FALSE	FALSE			
<input type="checkbox"/>	orcl	OEM.CacheModeWaitPool	2.4	FALSE	FALSE			
<input type="checkbox"/>	SYS\$USERS	perl@localhost.localdomain (TNS V1-V3)	1.4	FALSE	FALSE			
<input type="checkbox"/>	SYS\$USERS	EM_PING	1.4	FALSE	FALSE			
<input type="checkbox"/>	orcl	OEM.SystemPool	1.0	FALSE	FALSE			
<input type="checkbox"/>	SYS\$USERS	DBMS_SCHEDULER	.7	FALSE	FALSE			
<input type="checkbox"/>	SYS\$BACKGROUND	Streams	.7	FALSE	FALSE			
<input type="checkbox"/>	SYS\$USERS	Oracle Enterprise Manager.Metric Engine	.3	FALSE	FALSE			
Enable Aggregation Disable Aggregation Enable SQL Trace Disable SQL Trace View SQL Trace File								

32. Top Actions tab

Top Consumers

Latest Data Collected From Target Nov 28, 2021 2:41:51 PM PST [Refresh](#)

[Overview](#) [Top Services](#) [Top Modules](#) [Top Actions](#) [Top Clients](#) [Top Sessions](#)

View [Active Actions](#)

[Enable Aggregation](#) [Disable Aggregation](#) [Enable SQL Trace](#) [Disable SQL Trace](#) [View SQL Trace File](#)

[Select All](#) | [Select None](#)

Select	Service	Module	Action	Activity (% for the last 5 minutes)	Aggregation Enabled	SQL Trace Enabled (s)
<input type="checkbox"/>	SYS\$BACKGROUND	MMON_SLAVE	Auto-DBFUS Action	49.3	FALSE	FALSE
<input type="checkbox"/>	SYS\$USERS	Realtime Connection	Unnamed	25.8	FALSE	FALSE
<input type="checkbox"/>	SYS\$BACKGROUND	Unnamed	Unnamed	6.8	FALSE	FALSE
<input type="checkbox"/>	SYS\$USERS	Unnamed	Unnamed	4.7	FALSE	FALSE
<input type="checkbox"/>	orcl	OEM.DefaultPool	/database/instance/sitemap	3.3	FALSE	FALSE
<input type="checkbox"/>	SYS\$BACKGROUND	MMON_SLAVE	Monitor FRA Space	1.8	FALSE	FALSE
<input type="checkbox"/>	orcl	OEM.CacheModeWaitPool	Unnamed	1.8	FALSE	FALSE
<input type="checkbox"/>	SYS\$USERS	EM_PING	AGENT_STATUS_MARKER	1.5	FALSE	FALSE
<input type="checkbox"/>	SYS\$USERS	perl@localhost.localdomain (TNS V1-V3)	Unnamed	1.2	FALSE	FALSE
<input type="checkbox"/>	SYS\$BACKGROUND	Streams	QMON Slave	.6	FALSE	FALSE
<input type="checkbox"/>	SYS\$BACKGROUND	Streams	QMON Coordinator	.6	FALSE	FALSE
<input type="checkbox"/>	SYS\$USERS	emagent_SQL_oracle_database	wait_bottlenecks	.3	FALSE	FALSE
<input type="checkbox"/>	SYS\$USERS	emagent_SQL_oracle_database	streams_latency_throughput	.3	FALSE	FALSE
<input type="checkbox"/>	SYS\$BACKGROUND	MMON_SLAVE	Abnormal Termination Cleanup	.3	FALSE	FALSE
<input type="checkbox"/>	SYS\$USERS	emagent_SQL_oracle_database	dbjob_status	.3	FALSE	FALSE
<input type="checkbox"/>	orcl	OEM.SystemPool	NotificationMgr	.3	FALSE	FALSE
<input type="checkbox"/>	SYS\$BACKGROUND	Streams	EMON Reliable Slave	.3	FALSE	FALSE
<input type="checkbox"/>	SYS\$USERS	Oracle Enterprise Manager Metric Engine	Unnamed	.3	FALSE	FALSE
<input type="checkbox"/>	orcl	OEM.SystemPool	Unnamed	.3	FALSE	FALSE

33. Top Clients Tab.

Top Consumers

Latest Data Collected From Target Nov 28, 2021 2:41:52 PM PST

[Overview](#) [Top Services](#) [Top Modules](#) [Top Actions](#) [Top Clients](#) [Top Sessions](#)

View [Active Clients](#)

[Enable Aggregation](#) [Disable Aggregation](#) [Enable SQL Trace](#) [Disable SQL Trace](#) [View SQL Trace File](#)

[Select All](#) | [Select None](#)

Select	Client ID	Activity (% for the last 5 minutes)	Aggregation Enabled	SQL Trace Enabled	Delta Elapsed Time (seconds)	Cumulative Elapsed Time (seconds)	Delta CPU Time (seconds)	Cumulative CPU Time (seconds)	Delta Physical I/O (blocks)
<input type="checkbox"/>	Unnamed	96.4	FALSE	FALSE					
<input type="checkbox"/>	SYS@127.0.0.1@Mozilla/5.0 (X11; U; Linux i686; en-US; rv:1.9.2.9	3.6	FALSE	FALSE					

34. Top Sessions tab.

Top Consumers

[Overview](#) [Top Services](#) [Top Modules](#) [Top Actions](#) [Top Clients](#) [Top Sessions](#)

[Show Active SQL](#) [Customize](#)

First sample completed, please wait for automatic refresh to get interval-based sessions data

[Overview](#) [Top Services](#) [Top Modules](#) [Top Actions](#) [Top Clients](#) [Top Sessions](#)

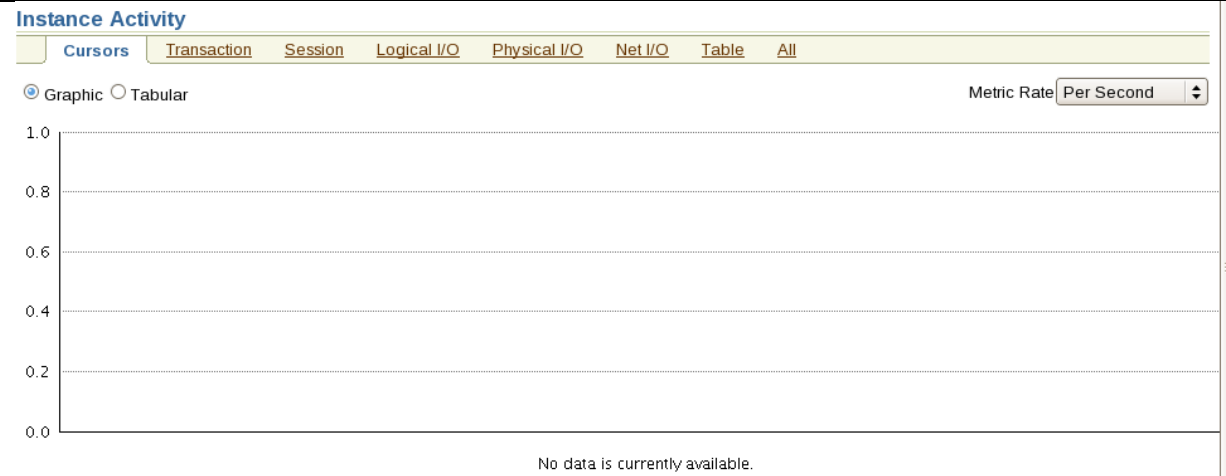
Additional Monitoring Links

Top Sessions and Top SQL data from ASH can be found on the Top Activity page.

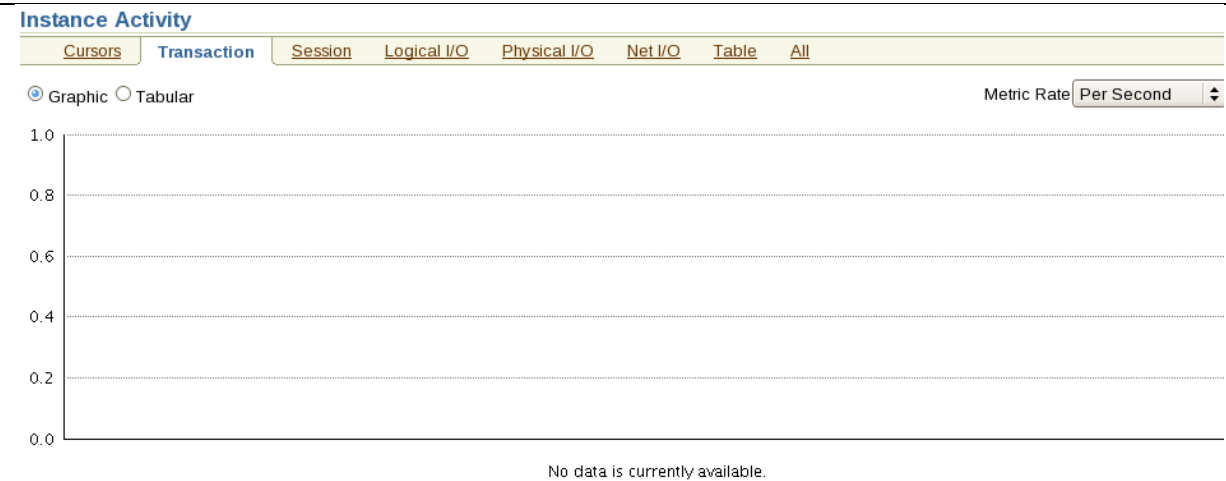
- [Top Activity](#)
- [Duplicate SQL](#)
- [Blocking Sessions](#)
- [Hang Analysis](#)
- [Instance Locks](#)
- [Instance Activity](#)
- [Search Sessions](#)
- [Search SQL](#)
- [Snapshots](#)
- [AWR Baselines](#)
- [SQL Tuning Sets](#)
- [SQL Performance Analyzer](#)
- [SQL Monitoring](#)

35. Viewing statistics about the operation of an instance. In order to display statistics on the

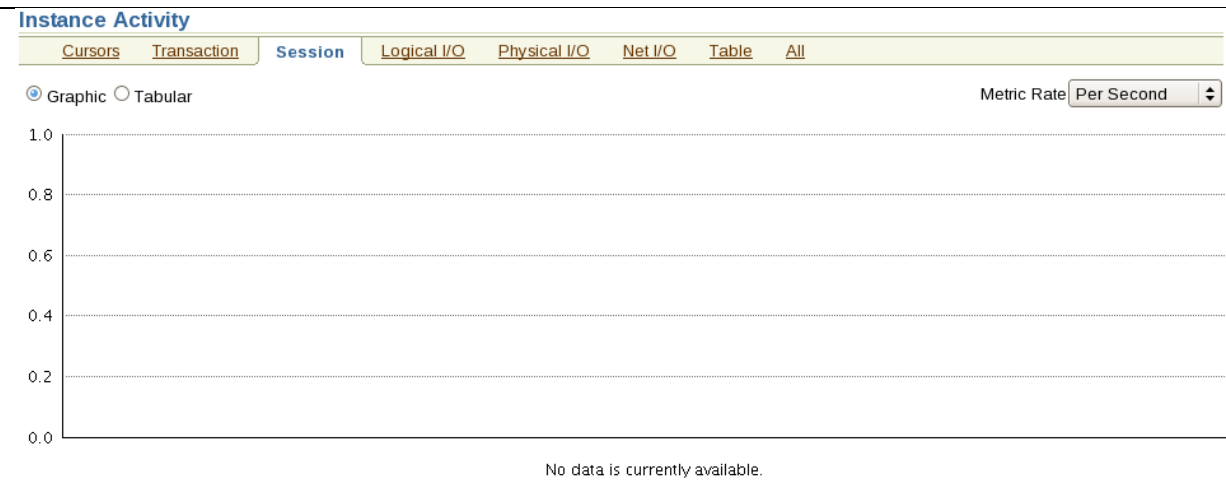
functioning of an instance, on the Performance tab in the Additional Monitoring Links section, select the Instance Activity option and view the data on individual tabs: Cursors tab.



36. The Transactions tab.



37. Sessions tab.



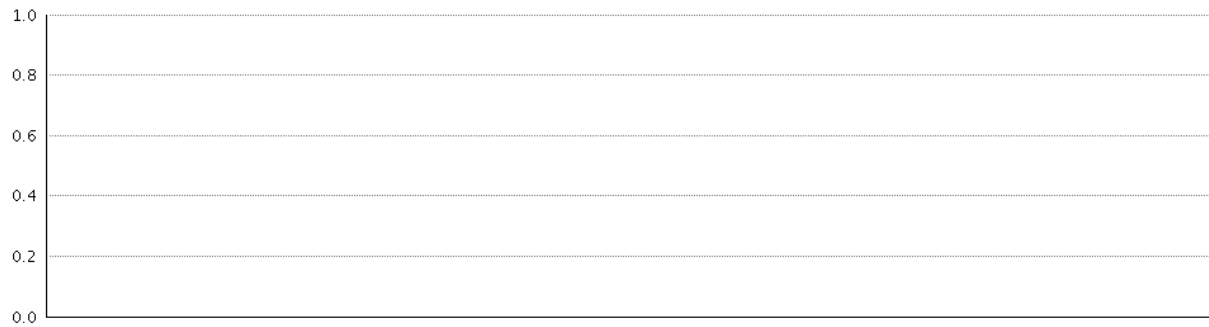
38. The logical I / O tab.

Instance Activity

[Cursors](#) [Transaction](#) [Session](#) [Logical I/O](#) [Physical I/O](#) [Net I/O](#) [Table](#) [All](#)

☒ Graphic ☐ Tabular

Metric Rate [Per Second](#) 



No data is currently available.

39. The Physical I / O tab

Instance Activity

[Cursors](#) [Transaction](#) [Session](#) [Logical I/O](#) [Physical I/O](#) [Net I/O](#) [Table](#) [All](#)

☒ Graphic ☐ Tabular

Metric Rate [Per Second](#) 




No data is currently available.

40. Net I / O tab.

Instance Activity

[Cursors](#) [Transaction](#) [Session](#) [Logical I/O](#) [Physical I/O](#) [Net I/O](#) [Table](#) [All](#)

☒ Graphic ☐ Tabular

Metric Rate [Per Second](#) 



No data is currently available.

41. Table tab.

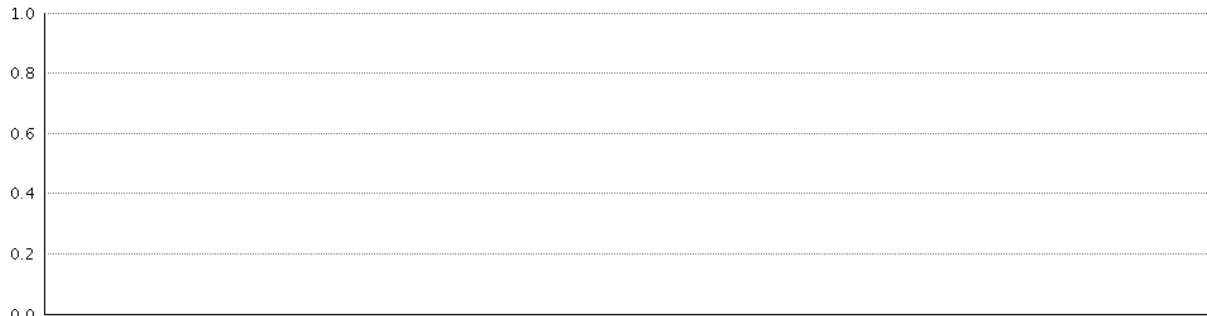
Instance Activity

Cursors	Transaction	Session	Logical I/O	Physical I/O	Net I/O	Table	All
---------	-------------	---------	-------------	--------------	---------	-------	-----

☒ Graphic ☐ Tabular

Metric Rate

Per Second



No data is currently available.