



User Manual

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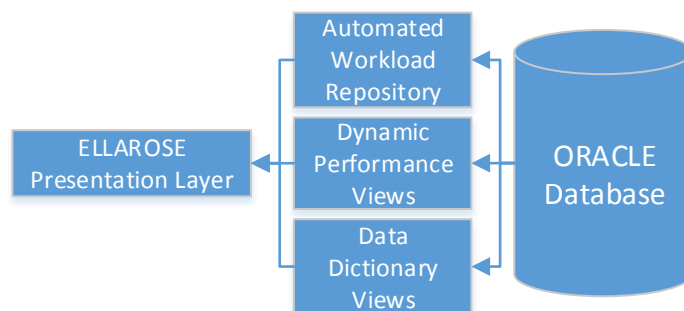
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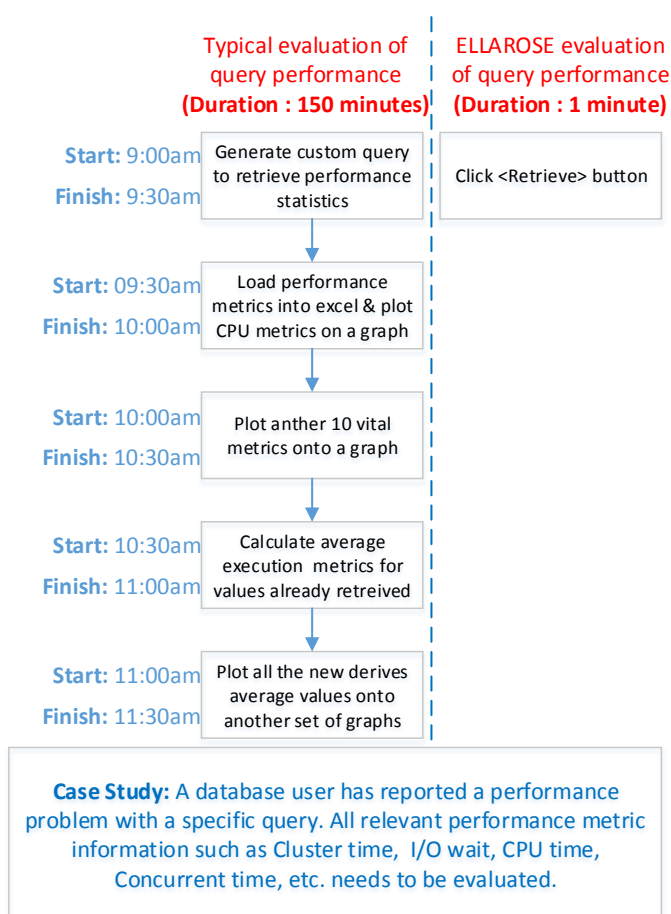
Section 1. Product Synopsis

1.1 Summary

ELLAROSE provides an intuitive and yet simple method for performing database performance management and tuning. By using the databases internal performance metric information ELLAROSE is able to provide a graphical representation on key performance metrics.



Benefits



Many organisations spend a vast amount of time and energy trying to pinpoint complex database performance issues. ELLAROSE aims to drastically reduce the entire performance tuning cycle by extracting and translating all vital performance data and then presenting it in a manner which is comprehensive and yet simple to understand.

ELLAROSE also has functionality to browse storage, security and object information. This additional functionality ensures the Oracle Database Administrator has all database information readily available to support any form of performance management and tuning.

One of the biggest hurdles of performance management is trying to answer the question “Is my database healthy?” ELLAROSE contains functionality that can actually perform this health check. The health check process focuses on parts of the database which primarily contribute to performance degradation.

1.2 Product Functionality

Function	Description	Historical	Real Time
Query Performance	Provides performance metrics on all SQL operations within the database.	✓	
Session Browser	Provides information on all sessions currently running within the database.		✓
SQL Topology	Provides an aggregated view of performance metrics for all SQL operation within the database.	✓	
System Topology	Provides information on system performance metrics to sessions, processes, memory, CPU, I/O, REDO and network traffic.	✓	
Wait Events	Graphical representation on all database wait events.	✓	✓
Latching	Graphical representation on all database latching.		
Buffer Cache Usage	Real time information for database objects currently residing in the buffer cache.		✓
SGA Hit Ratios	Statistics providing hit ratio information for data dictionary, buffer cache and library cache memory structures.	✓	✓
Performance Advisor	Provides performance tuning advice pertaining to SQL, Object segments, PGA, DB cache, Java pool, Shared pool and Streams pool	✓	
Health Check	50 point health check covering various aspects of database performance and stability.	✓	✓
Parameter Check	Audit Trail of all database parameter changes.	✓	
Object Browser	Browser which illustrates all information related to tables, indexes, views, triggers, synonyms, directories, scheduled jobs, sequences, functions, procedures, packages and programs.		✓
Security Browser	Browser which illustrates all information related to users, roles, profiles and tablespace quotas.		✓
Storage Browser	Browser which illustrates all information related to tablespaces and datafiles. Functionality also includes historical and forecasted growth statistics for the purpose of capacity planning.	✓	✓
Object Statistics	Provides performance metrics on object activity pertaining to physical and logical read\write. Functionality also includes historical and forecasted growth statistics for the purpose of capacity planning.	✓	
Datafile Statistics	Provides information on datafile read and write operations in the context of speed and volume.	✓	
Datafile Map	Provides information on how extents and free space are structured within a datafile.		✓
I/O Profile	Provides information on various I/O operations within the database such as Archive logs, Buffer Cache, DBWR, Data Pump, Direct Read\Write, LGWR, Recovery, RMAN, Smartscan ,Streams.	✓	
EXADATA and Flash Statistics	Timeline of performance statistics for EXADATA and Flash events	✓	

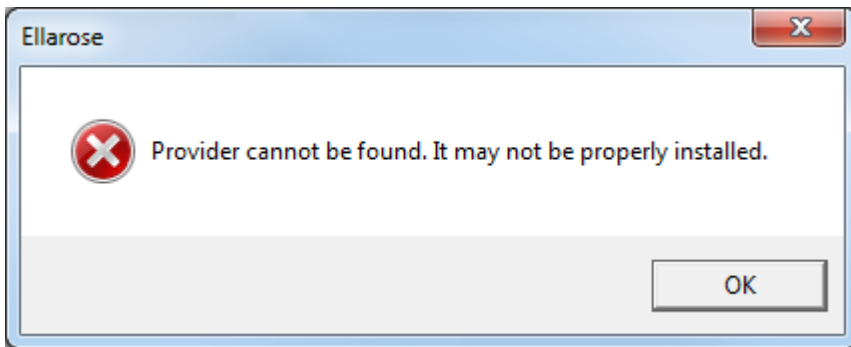
Section 2. Installation and Configuration

2.1 Pre-requisites.

ELLAROSE connects to an Oracle database using SQLNET client services which are installed with Oracle sqlplus. After the installation of sqlplus the tnsnames.ora must be configured as per normal database connection requirements.

Note:

- 1) Failure to install sqlplus and the associated OraOLEDB driver will result in the below error.
- 2) ELLAROSE is a 32-bit application and therefore requires a 32-bit SQL client installation. Failure to install the 32-bit SQL client will result in the below error.



- 3) There are known issues with SQL client installation whereby the OLEDB drivers fail to register. This may result in the “Provider cannot be found” error. To remediate this issue the OLEDB drivers must be manually registered using the below command:
 - regsvr32 <Driver path>\oraoledb11.dll
- 4) ELLAROSE is designed to work with AWR and STATSPACK schema constructs from Oracle version 11g. Backward compatibility for Oracle versions older than 11g is provided as follows:
 - Modify the underlying AWR\Statspack SQL on the “Scripts” tab.
 - Check the “Maintaining Dynamic Script” Checkbox.

2.2 Installation

- Copy all ELLAROSE files into a directory on a local hard drive. For example all files should be placed in c:\ellarose
- Edit the db.ini file and ensure the “**METADATA**” parameter equals the full pathname of where the ELLAROSE files have been placed.

Example:

```
[Main]
ELLAROSEDB=ORACLE
METADATA=c:\Ellarose
```

```
[ORACLE]
Provider=OraOLEDB.Oracle.1;
Persist Security Info=True;
[ORACLE_END]
```

- Populate the sidlist.txt file with the list of TNS entries that ELLAROSE needs to connect to(one per line)

Section 3. Configuration

3.1 Settings

In order to connect to a database the connection details must be specified on the Configuration/Settings tab. All three connection parameters need to be populated to ensure a successful connection to a database.

Illustration 3.1: Settings

Connection Parameters

Parameter	Description
SID	This is the TNS alias to be used for the database connection. TNS aliases are defined within the oracle tnsnames.ora file.
User	Oracle username used to connect to database
Password:	Password of Oracle username

Note: The Oracle user must have access to the data dictionary. To ensure access to the data dictionary the SELECT_CATALOG_ROLE should be granted to whichever user is specified.

Data Source

Parameter	Description
Automatic Workload Repository	Click to retrieve performance metrics from Automatic Workload Repository.
Statspack	Click to retrieve performance metrics from Statspack.

Environment Parameters

Parameter	Description
Metafile Location	Location of installation directory. The following files needs to be exist in this directory: Ellarose.exe, db.ini, Default_SQL_List.txt, sidlist.txt, Ellarose_Help.pdf
Default Interval	Refresh rate of real-time monitoring.
Latch Interval	Refresh rate of real-time monitoring(Instance Latching)
CBC Latch Interval	Refresh rate of real-time monitoring (CBD Latching)

File Parameters

Parameter	Description
CSV Filename	Destination path of where CSV files will be written.
CSV Delimiter	Delimiter character to use during CSV file generation.

Section 4. SQL

4.1 Historical Performance(SQLStat)

Execution statistics for a single or multiple SQL can be analysed based on a pre-determined SQL query. Values entered into the retrieval form determine the scope of the SQL retrieved.

4.1.1 Retrieval

Ellarose(Ver 16.11.01)

SQL Instance Browsers Object Storage Configuration Help

Retrieve Run Statistics SQL Text/Exec Plan Raw Data Script

SQL ID List Filename
Default_SQL_List.txt

Bulk Retrieval

SQL ID	Plan ID	Executions	Elapsed	Rows	I/O
--------	---------	------------	---------	------	-----

Criteria

Load Baseline Metadata

Retrieve Single SQL Stat

Retrieve Bulk SQL Stat

Clear All

Days 1

From 1/MAY/2013 08:00:00

To 1/MAY/2013 08:15:59

Graph Axis Format

Variable (###0.####)

Fixed (###0.000000)

Single Retrieval

<SQL ID>

Illustration 4.1.11: Historical Performance Retrieval

Context:

Component ID	Component Type	Description
SQL ID List Filename	Field	Filename that contains a list of known SQL ID's. Useful for reviewing the execution details of multiple SQL statements.
SQL ID	Field	Restrict criteria based on SQL ID.
Load Baseline Metadata	Button	Loads a series of SQL ID's into the baseline area from the filename provided in "SQL ID List Filename". This file can also contain expected execution baselines such as plan ID and execution counts.
Retrieve Single SQL Stat	Button	Retrieve statistics on a single SQL ID. The SQL statistics retrieved depend on whether the bulk or single radio button is chosen.
Retrieve Bulk SQL Stat	Button	Retrieve SQL execution statistics for SQL ID's shown in the baseline grid.
Days	Field	Number of days of SQL statistics to retrieve.
From/To	Field	Date range of SQL statistics to retrieve.
Graph Axis Format	RadioButton	Format graph axis values to display as fixed or variable length.

Usage, Single SQL ID :

Use this retrieval method to analyse the statistics of a single SQL ID.

- 1) Enter the SQL ID into the SQL ID field.
- 2) Enter the amount of information to retrieve. Either enter the number days of history(from now) or enter a date/time range. Be sure to click the radio button which signifies the appropriate method of date criteria.
- 3) Click the **<Retrieve Single SQL Stat>** button.

Usage, Bulk SQL ID :

Use this retrieval method to analyse the statistics of a multiple SQL ID's.

- 1) Load the SQL ID baseline information into the baseline grid by clicking the **<Load Baseline Metadata>** button. The "SQL ID List Filename" field points to the SQL ID baseline text file.
- 2) Enter the amount of information to retrieve. Either enter the number days of history(from now) or enter a date/time range. Be sure to click the radio button which signifies the appropriate method of date criteria.
- 3) Click the **<Retrieve Bulk SQL Stat>** button to retrieve execution stats for all SQL ID's in the baseline grid.

4.1.2 Run Statistics(Execution Statistics)

SQL execution statistics are displayed according to the criteria entered on the retrieval form. Statistics are categorised and displayed in separate group boxes as per below:

Summary:

The summary information provides a topology on where the SQL is expending its effort.

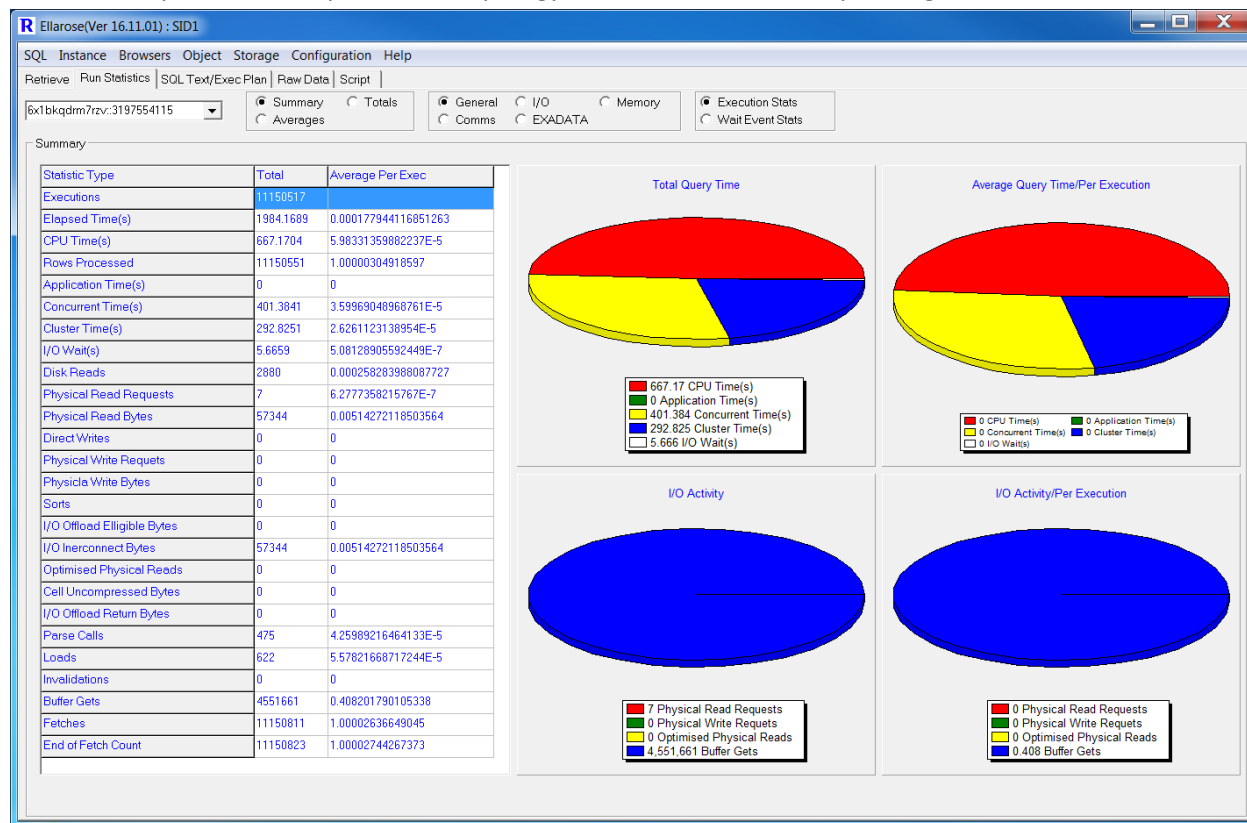


Illustration 4.1.2a: Historical Performance Statistics(Summary)

Values for important SQL metrics (Totals and Averages per execution) are displayed in the grid on the left. These values are analysed further and displayed in pie graphs to provide an insight into the ratio of time and activity incurred by the SQL.

The pie graphs show the ratio of time and activity for various SQL performance metrics as per below:

Total and Average Query Times

- CPU Time
- Application Time
- Concurrent Time
- Cluster Time
- I/O Wait Time

Total and Average I/O Activity

- Physical Read Requests
- Physical Write Requests
- Optimised Physical Reads
- Buffer Gets

Total & Average Information (General Group Box):

The information held in Oracle's AWR snapshots is retrieved and plotted based on the AWR snapshot interval.

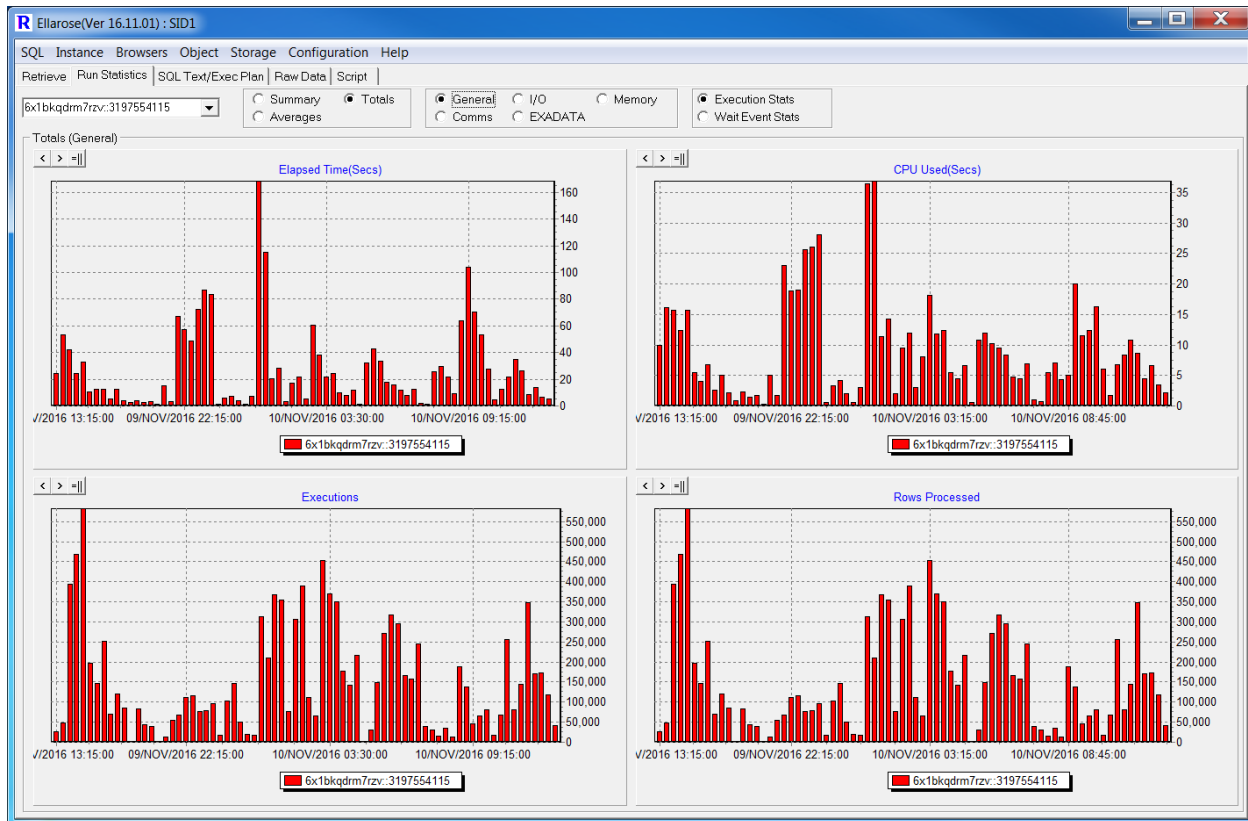


Illustration 4.1.2b: Historical Performance Statistics(General)

The general metrics group box contains the following SQL performance metrics:

- Elapsed Time
- CPU Used
- Executions
- Rows Processed

This information can be viewed as the total value accumulated within the AWR snapshot range or the average value per SQL execution within the AWR snapshot range.

The information held in Oracle's AWR snapshots is retrieved and plotted based on the AWR snapshot interval.

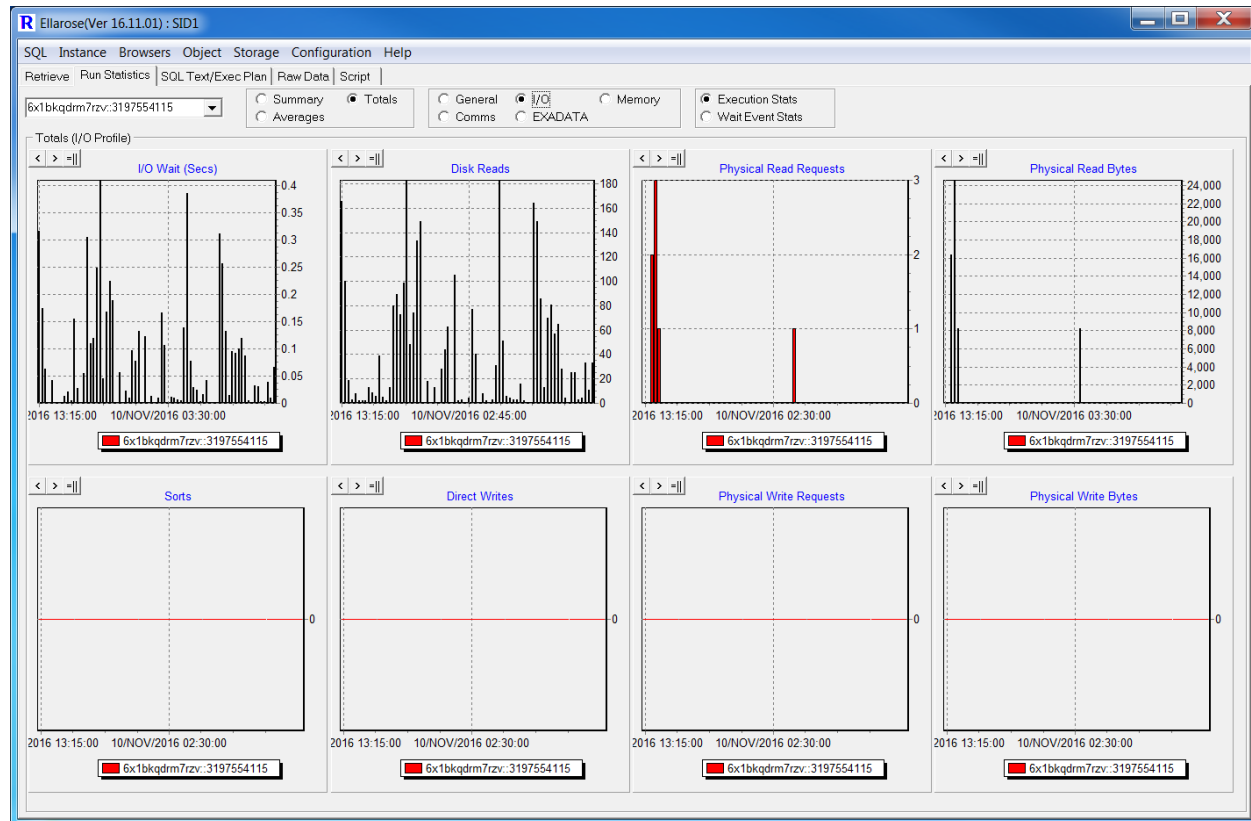


Illustration 4.1.2b: Historical Performance Statistics(I/O)

The I/O metrics group box contains the following SQL performance metrics:

- I/O Wait time
- Disk Reads
- Physical Read Requests
- Physical Read Bytes
- Sorts
- Direct Writes
- Physical Write Requests
- Physical Write Bytes

This information can be viewed as the total value accumulated within the AWR snapshot range or the average value per SQL execution within the AWR snapshot range.

Total & Average Information (Memory Group Box):

The information held in Oracle's AWR snapshots is retrieved and plotted based on the AWR snapshot interval.

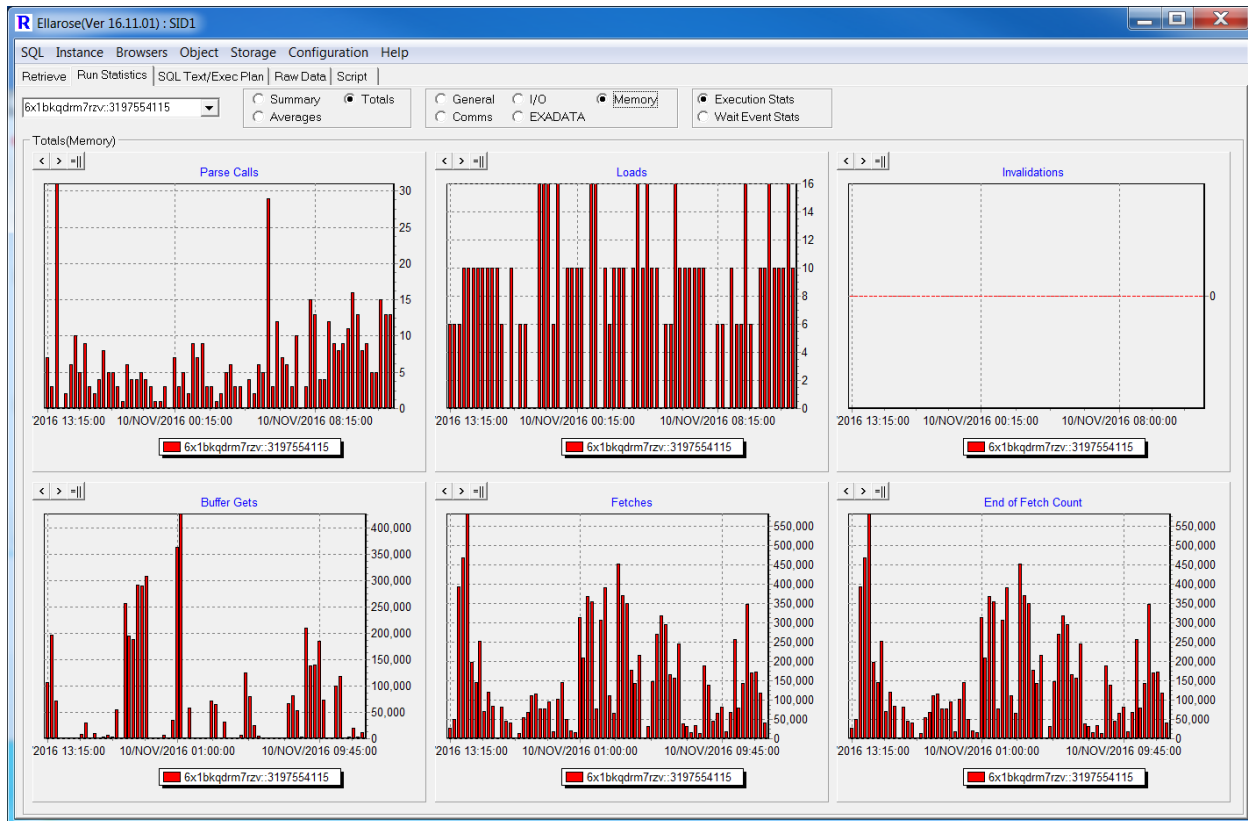


Illustration 4.1.2c: Historical Performance Statistics(Memory)

The memory metrics group box contains the following SQL performance metrics:

- Parse Calls
- Loads
- Invalidations
- Buffer Gets
- Fetches
- End of Fetch Count

This information can be viewed as the total value accumulated within the AWR snapshot range or the average value per SQL execution within the AWR snapshot range.

Total & Average Information (Comms Group Box):

The information held in Oracle's AWR snapshots is retrieved and plotted based on the AWR snapshot interval.

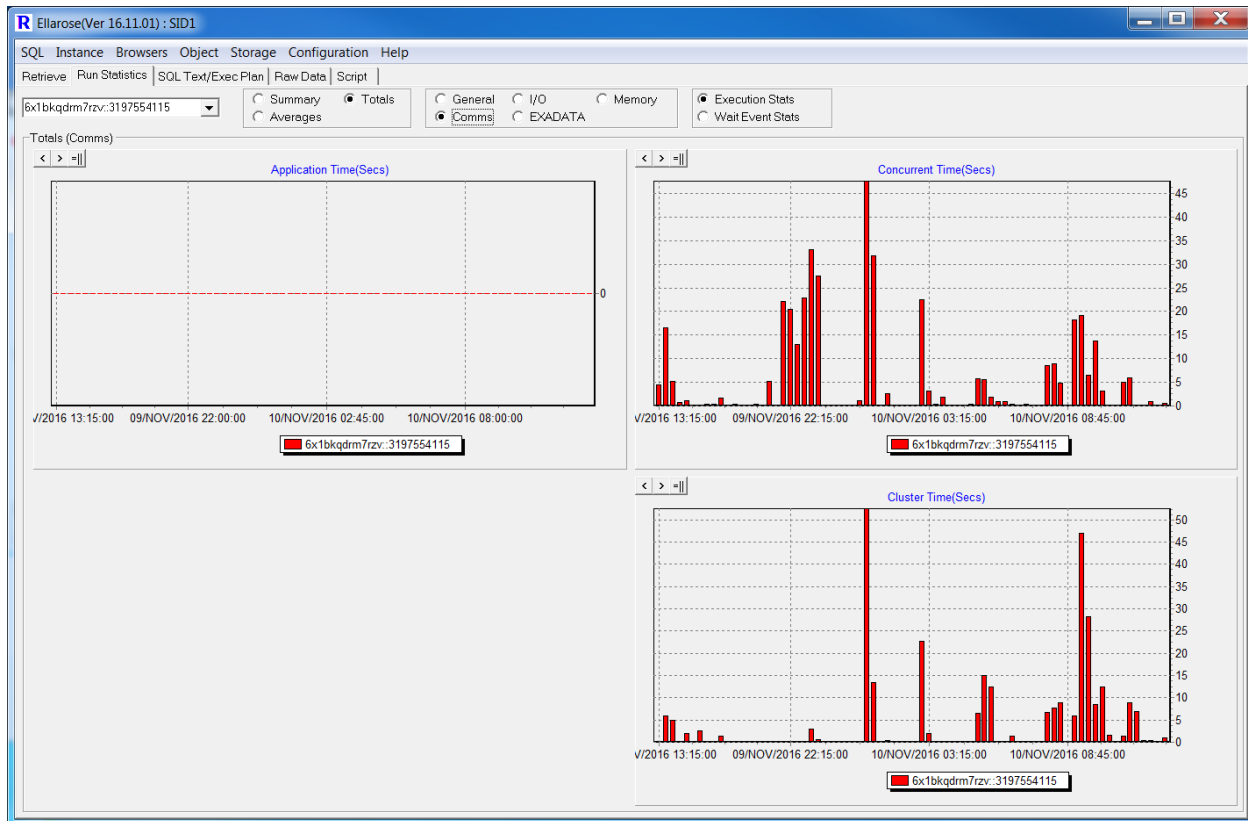


Illustration 4.1.2d: Historical Performance Statistics(Comms)

The memory metrics group box contains the following SQL performance metrics:

- Application Time
- Concurrent Time
- Cluster Time

This information can be viewed as the total value accumulated within the AWR snapshot range or the average value per SQL execution within the AWR snapshot range.

Total & Average Information (EXADATA):

The information held in Oracle's AWR snapshots is retrieved and plotted based on the AWR snapshot interval.

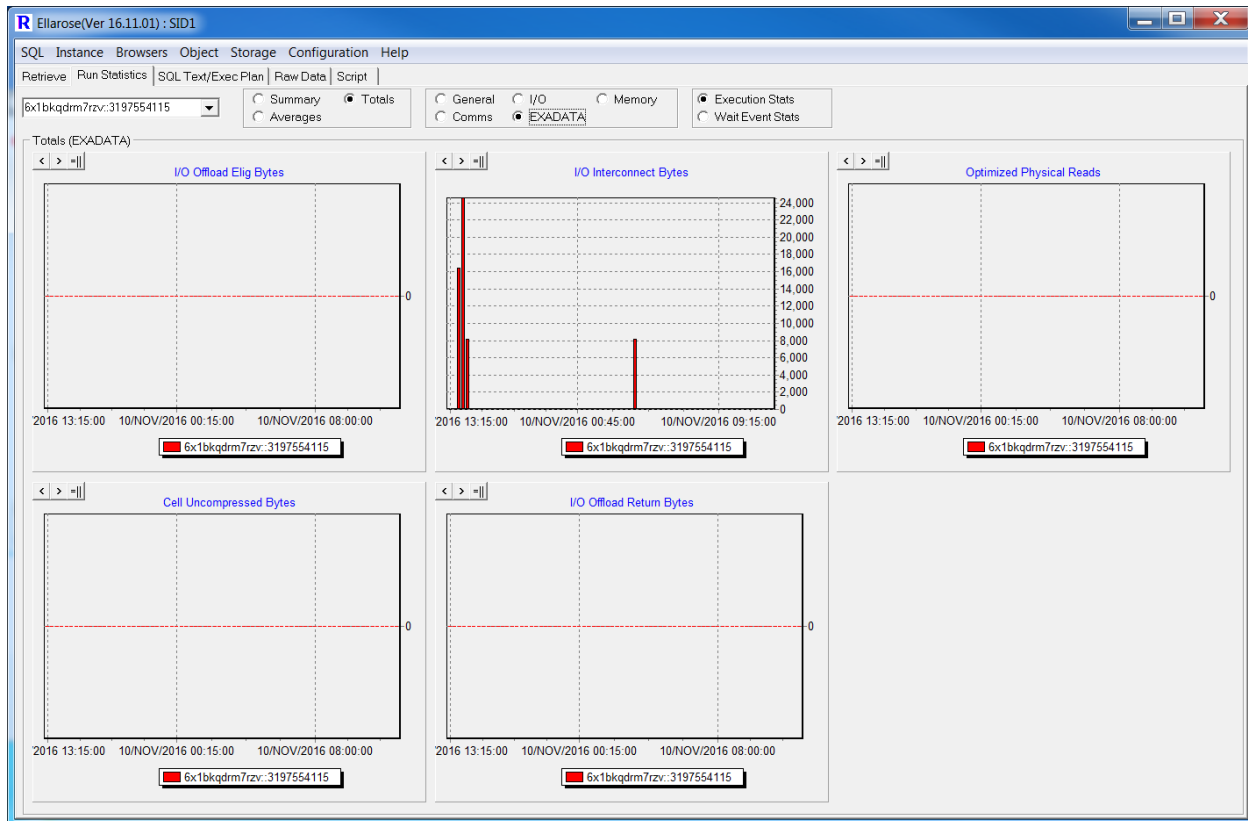




Illustration 4.1.2d: Historical Performance Statistics(EXADATA)

The EXADATA metrics group box contains the following SQL performance metrics:

- I/O Offload Eligible Bytes
- I/O Interconnect Bytes
- Optimized Physical Reads
- Cell Uncompressed Bytes
- I/O Offload Return Bytes

This information can be viewed as the total value accumulated within the AWR snapshot range or the average value per SQL execution within the AWR snapshot range.

Context:

Component ID	Component Type	Description
SQL_ID::Plan	Pull Down	Selects the SQLID::Execution Plan to plot in the graphs.
Summary,Totals or Averages	Radio Button	Display Summary, averages or total graphs.
General, I/O, Memory, Comms or EXADATA	Radio Button	Display General, I/O,Memory, Comms or EXADATA graphs.
Graph Sizing	Button 	Increase/decrease size of plot area on the graph area. Graphs can also be zoomed in by click and dragging the mouse over the plotted area. <ul style="list-style-type: none">- Zoom In: Top right to bottom left- Zoom Out: Bottom Left to top right
Graph Text Orientation	Button 	Toggle the graphs axis text between vertical and horizontal.
Executions Statistics or Wait Event Statistics	Radio Button	Display Runtime execution statistics(from DBA_HIST_SQLSTAT) or wait event statistics (from DBA_HIST_ACTIVE_SESS_HISTORY)

4.1.3 Run Statistics(Wait Event Statistics)

SQL wait event statistics are displayed according to the criteria established in the retrieval tab.

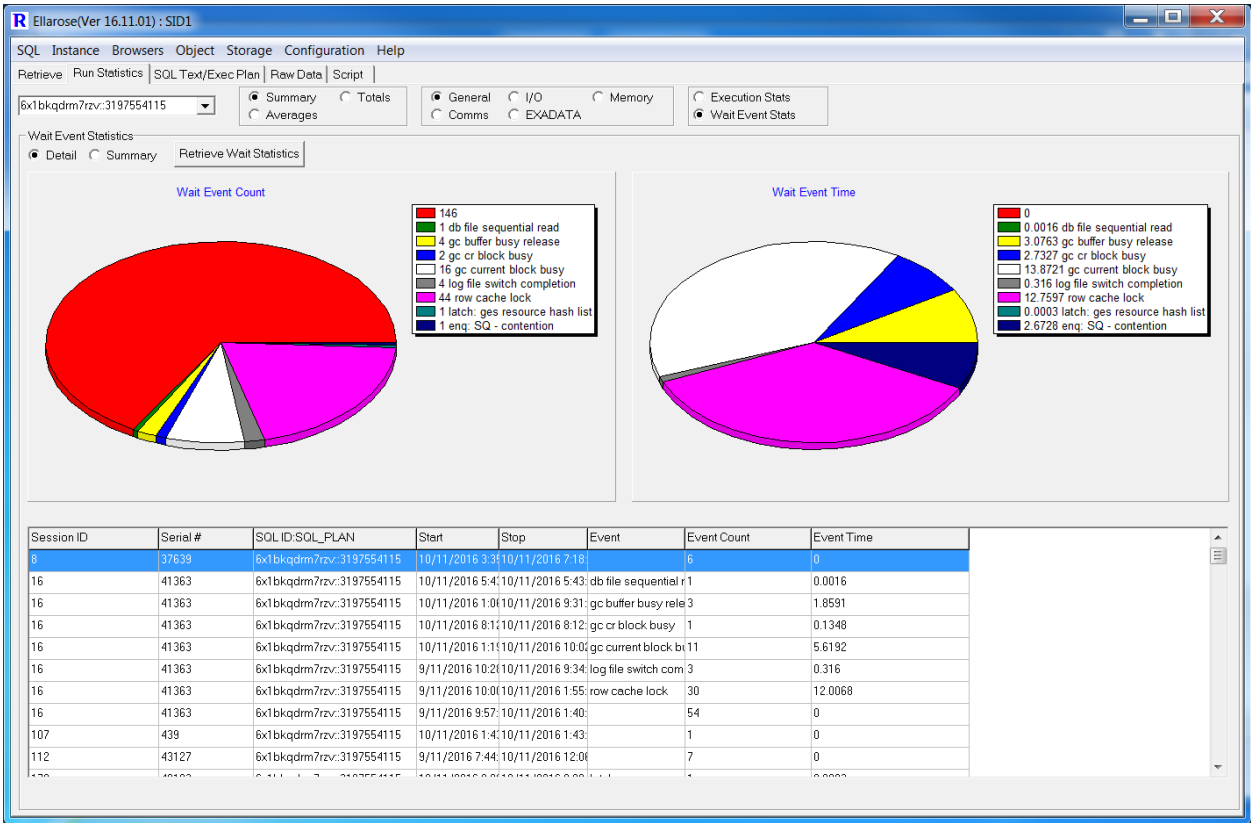


Illustration 4.1.3: Historical Performance Statistics(Wait Events)

Context:

Component ID	Component Type	Description
SQL_ID::Plan	Pull Down	Selects the SQLID::Execution Plan to plot in the graphs.
Retrieve Wait Statistics	Button	Wait event statistics are only retrieved when this button is clicked.
Detail or Summary	Radio Button	Determines what is displayed in the grid. Display detail of active session history (broken down to times and SID) or display summary(total of wait events)

4.1.4 SQL Text/Exec Plan

Displays the SQL text and execution plan details for the chosen SQLID/execution plan combination.

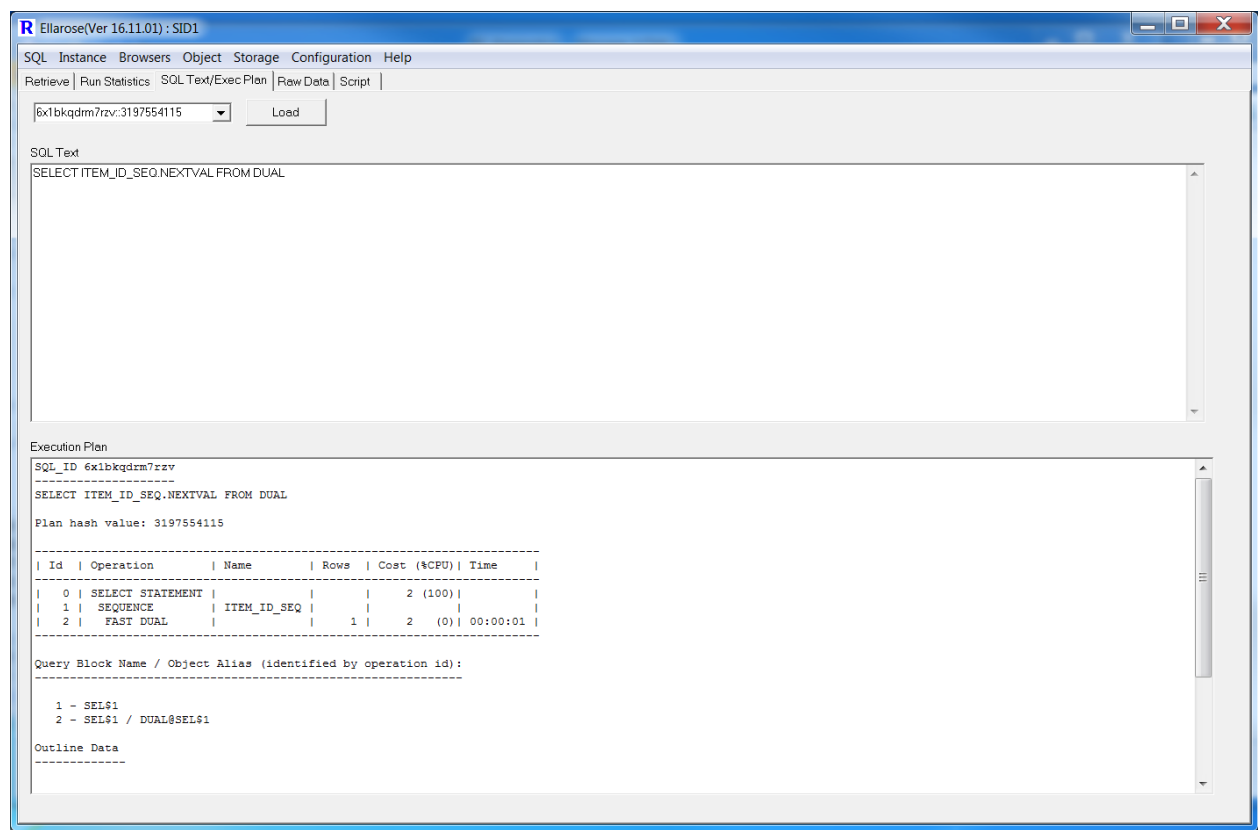


Illustration 4.1.4: SQL Text with Execution Plan

Context:

Component ID	Component Type	Description
SQL_ID::Plan	Pull Down	Selects the SQLID::Execution Plan to load.
Load	Button	Display the SQL text and execution plan for the chosen SQLID::Execution Plan combination .

4.1.5 Raw Data

Display raw data retrieved from the query.

Ellarose(Ver 16.11.01):SID1

SQL Instance Browsers Object Storage Configuration Help

Retrieve | Run Statistics | SQL Text/Exec Plan | Raw Data | Script |

Performance Statistics

Export(CSV)

Snap ID	Begin	End	SQID:PLANID	Executions	Elapsed S	Rows	Reads	I/O Wait	CPU	Sorts	App Wait	Cluster W	Conc Wait	I/O Offload	I/O Inter
118079	09/NOV/2016 15:45:00	09/NOV/2016 16:00:00	6x1bkqdm7rztv:3197554185117	40128	85120	6	0.0045	2.1842	0	0	0.0075	0.0404	0	0	
118090	09/NOV/2016 18:30:00	09/NOV/2016 18:45:00	6x1bkqdm7rztv:319755412333	24019	2333	39	0.1544	0.8609	0	0	0.0019	0.3676	0	0	
118094	09/NOV/2016 19:30:00	09/NOV/2016 19:45:00	6x1bkqdm7rztv:3197554182584	41558	82584	5	0.0275	2.3033	0	0	0	0.0122	0	0	
118095	09/NOV/2016 19:45:00	09/NOV/2016 20:00:00	6x1bkqdm7rztv:3197554144765	25748	44765	2	0.0012	1.374	0	0	0.0015	0.1252	0	0	
118099	09/NOV/2016 20:45:00	09/NOV/2016 21:00:00	6x1bkqdm7rztv:3197554140435	35186	40435	13	0.0548	1.7036	0	0	0.0007	0.3427	0	0	
118101	09/NOV/2016 21:15:00	09/NOV/2016 21:30:00	6x1bkqdm7rztv:319755411531	10367	1531	80	0.3047	0.3273	0	0	0.0007	0.1288	0	0	
118102	09/NOV/2016 21:30:00	09/NOV/2016 21:45:00	6x1bkqdm7rztv:3197554113827	150582	13827	89	0.1099	4.9706	0	0	0	5.1892	0	0	
118103	09/NOV/2016 21:45:00	09/NOV/2016 22:00:00	6x1bkqdm7rztv:3197554154322	34276	54321	73	0.1188	1.783	0	0	0	0.096	0	0	
118104	09/NOV/2016 22:00:00	09/NOV/2016 22:15:00	6x1bkqdm7rztv:3197554167730	671454	67730	99	0.2495	23.1205	0	0	0.0008	22.1214	0	0	
118105	09/NOV/2016 22:15:00	09/NOV/2016 22:30:00	6x1bkqdm7rztv:31975541112282	57278	112281	183	0.4105	18.9328	0	0	0.0015	20.5413	0	0	
118106	09/NOV/2016 22:30:00	09/NOV/2016 22:45:00	6x1bkqdm7rztv:31975541116730	48849	116730	48	0.0457	18.9685	0	0	0.0017	13.0139	0	0	
118107	09/NOV/2016 22:45:00	09/NOV/2016 23:00:00	6x1bkqdm7rztv:3197554176638	726957	76638	74	0.1674	25.6166	0	0	0.0025	22.8742	0	0	
118108	09/NOV/2016 23:00:00	09/NOV/2016 23:15:00	6x1bkqdm7rztv:3197554178057	870742	78056	133	0.2254	26.1266	0	0	2.9982	33.1302	0	0	
118109	09/NOV/2016 23:15:00	09/NOV/2016 23:30:00	6x1bkqdm7rztv:3197554195545	834302	95545	149	0.1883	28.0614	0	0	0.6022	27.4968	0	0	
118110	09/NOV/2016 23:30:00	09/NOV/2016 23:45:00	6x1bkqdm7rztv:3197554118451	10935	18451	0	0	0.5964	0	0	0	0.0003	0	0	
118111	09/NOV/2016 23:45:00	10/NOV/2016 00:00:00	6x1bkqdm7rztv:31975541101872	61543	101872	18	0.0562	3.3275	0	0	0	0.0582	0	0	
118112	10/NOV/2016 00:00:00	10/NOV/2016 00:15:00	6x1bkqdm7rztv:31975541146439	75113	146439	0	0	4.1812	0	0	0	0.0043	0	0	
118113	10/NOV/2016 00:15:00	10/NOV/2016 00:30:00	6x1bkqdm7rztv:3197554150290	3852	50290	13	0.0223	1.9716	0	0	0	0.2435	0	0	
118114	10/NOV/2016 00:30:00	10/NOV/2016 00:45:00	6x1bkqdm7rztv:3197554120686	10568	20685	1	0.0089	0.5828	0	0	0	0.0013	0	0	
118115	10/NOV/2016 00:45:00	10/NOV/2016 01:00:00	6x1bkqdm7rztv:3197554116935	69771	16934	28	0.0975	3.0914	0	0	0	1.196	0	0	
118116	10/NOV/2016 01:00:00	10/NOV/2016 01:15:00	6x1bkqdm7rztv:31975541313486	1685098	313481	44	0.0781	36.4983	0	0	52.5191	47.6174	0	0	
118117	10/NOV/2016 01:15:00	10/NOV/2016 01:30:00	6x1bkqdm7rztv:31975541210354	1151952	210357	63	0.1319	36.8822	0	0	13.4213	31.8455	0	0	
118118	10/NOV/2016 01:30:00	10/NOV/2016 01:45:00	6x1bkqdm7rztv:31975541367682	205001	367683	0	0	11.358	0	0	0	0.215	0	0	
118119	10/NOV/2016 01:45:00	10/NOV/2016 02:00:00	6x1bkqdm7rztv:31975541355423	286248	355421	105	0.1229	14.2935	0	0	0.4532	2.5845	0	0	
118120	10/NOV/2016 02:00:00	10/NOV/2016 02:15:00	6x1bkqdm7rztv:3197554176934	35834	76934	2	0.0021	1.9723	0	0	0	0.0586	0	0	
118121	10/NOV/2016 02:15:00	10/NOV/2016 02:30:00	6x1bkqdm7rztv:31975541307416	173749	307415	3	0.0126	9.5532	0	0	0	0.1546	0	0	
118122	10/NOV/2016 02:30:00	10/NOV/2016 02:45:00	6x1bkqdm7rztv:31975541390814	21481	390810	0	0	11.9918	0	0	0	0.064	0	0	
118123	10/NOV/2016 02:45:00	10/NOV/2016 03:00:00	6x1bkqdm7rztv:31975541112250	52959	112250	4	0.0065	2.0237	0	0	0	0.0189	0	0	

Illustration 4.1.5: Performance Statistics(Raw Data)

Context:

Component ID	Component Type	Description
Export(CSV)	Button	Export the grid details into CSV file. The file will be created in the path specified in the “CSV filename” on the configuration/setting tab.

4.1.6 Script

Controls the query which is submitted to the database to retrieve information.

General Statistics (SQL Stat)

```
select s.snap_id,s.start_time,s.end_time,
x.sql_id||':'||k.plan_hash_value as sqlxec,
nvl(sum(x.executions_delta),0) as exexecs,
nvl(round(sum(x.elapsed_time_delta)/1000000,4),0) as elpas,
nvl(sum(x.rows_processed_delta),0) as rowsp,
nvl(round(sum(x.disk_reads_delta),4),0) as readsp,
nvl(round(sum(x.iowait_delta)/1000000,4),0) as iowaitsp,
nvl(round(sum(x.cpu_time_delta)/1000000,4),0) as cpup,
nvl(round(sum(x.sorts_delta),4),0) as sortp,
nvl(round(sum(x.apwait_delta)/1000000,4),0) as apwaitp,
nvl(round(sum(x.cwait_delta)/1000000,4),0) as cwaitp,
nvl(round(sum(x.cwait_delta)/1000000,4),0) as cwaitp,
nvl(sum(x.io_offload_elig_bytes_delta),0) as iooff,
nvl(sum(x.io_interconnect_bytes_delta),0) as ioint,
nvl(sum(x.optimized_physical_reads_delta),0) as optread,
nvl(sum(x.cell_uncompressed_bytes_delta),0) as uncompb,
nvl(sum(x.io_offload_return_bytes_delta),0) as offb,
nvl(sum(x.direct_writes_delta),0) as dw,
```

☐ Daily Rollup
☐ Maintain Dynamic Script

Wait Event Statistics (Active Session History)

```
select x.session_id,x.session_serial#,x.sql_id||':'||x.sql_plan_hash_value,
min(x.sample_time),max(x.sample_time),x.event,
count(*),sum(x.time_waited)/1000000 from
(select snap_id,session_id,session_serial#,sql_id,sql_plan_hash_value,
event,sample_time,time_waited,p1text,p2text,p3text,p3 from dba_hist_active_sess_history where
sql_id = '6x1bkqdm7rzv'
)x,
(select snap_id from dba_hist_snapshot
where begin_interval_time >= sysdate - 1
group by snap_id) s
where s.snap_id = x.snap_id
group by x.session_id,x.session_serial#,x.sql_id||':'||x.sql_plan_hash_value,x.event
order by x.session_id,x.session_serial#,x.sql_id||':'||x.sql_plan_hash_value,x.event
```

☐ P1text ☐ P1 ☐ P2text ☐ P2 ☐ P3text ☐ P3
☐ Maintain Dynamic Script

SQL Text

```
SELECT sql_text from dba_hist_sqltext where
sql_id = '6x1bkqdm7rzv'
```

☐ Maintain Dynamic Script

SQL Execution Plan

```
SELECT * FROM TABLE(DBMS_XPLAN.DISPLAY_AWR
('6x1bkqdm7rzv','3197554115',null,'ALL +OUTLINE'))
```

☐ Maintain Dynamic Script

Illustration 4.1.6: Scripts used for performance statistics retrieval

Context:

Component ID	Component Type	Description
General Statistics	Textbox	Controls the query over DBA_HIST_SQLSTAT.
Wait Event Statistics	Textbox	Controls the query over DBA_HIST_ACTIVE_SESS_HISTORY.
Daily Rollup	Checkbox	Normally information about a query is displayed based on the frequency of the AWR snapshot(for example 30 minute intervals). Checking this box displays the average of the snapshots over a 24 hour period.
Maintain Dynamic Script	Checkbox	Normally the query is constructed and executed based on literals populated in various fields. The queries in the text boxes can be manually modified and then executed provided the “Maintain Dynamic Script” box is checked. Check this box so the SQL script is not overwritten when the retrieve button is clicked.
P#, P#TEXT	Checkbox	Include P#,P#TEXT columns in the query result.

Section 5. Real Time Performance

5.1 Session Details

Real time session statistics for the entire database can be viewed in one of two methods.

5.1.1 Resource Usage View

The first method is a graphical representation which illustrates the session resource usage.

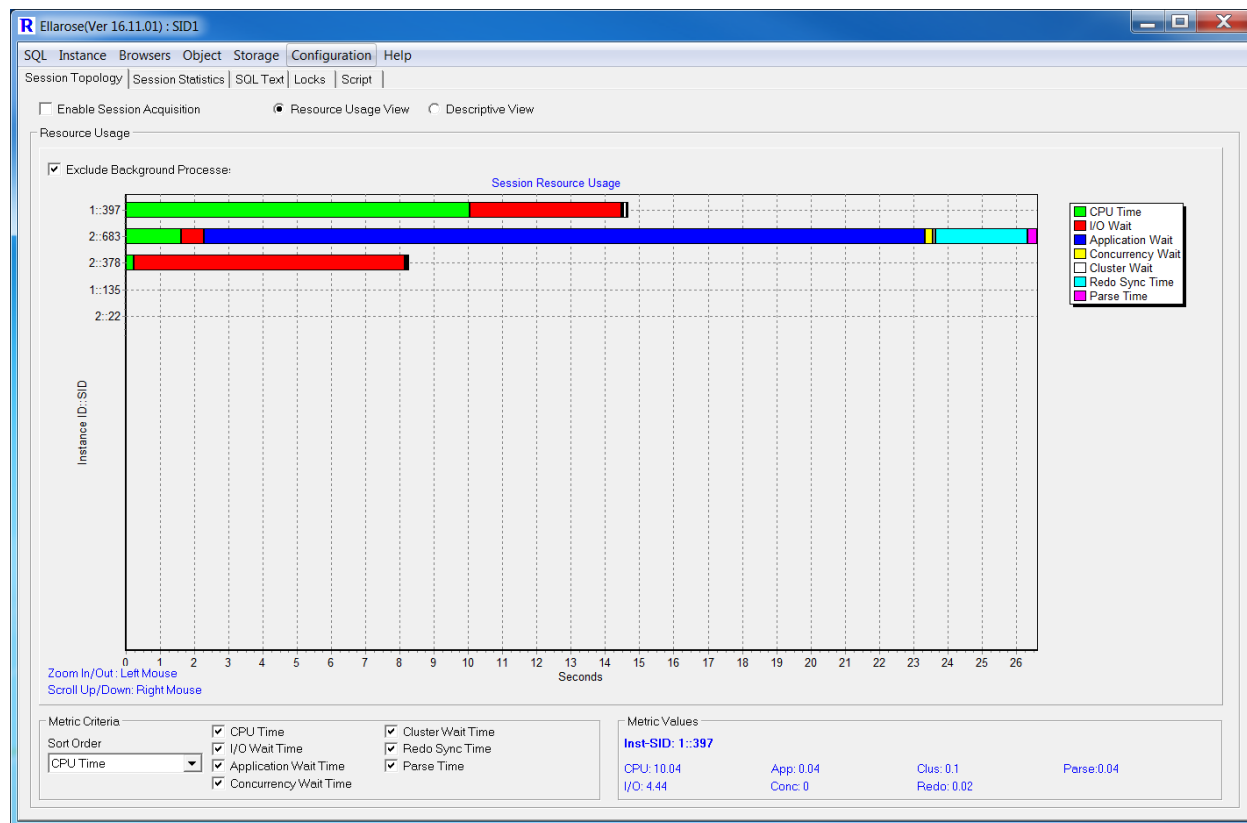


Illustration 5.1.1: Session Resource(Usage View)

Context:

Component ID	Component Type	Description
Enable Session Acquisition	Checkbox	Check to acquire database session information. Session information is retrieved at regular intervals based on the “Default Interval” timer on the configuration/settings tab.
Resource Usage View	Radio Button	Check to put focus on the graphical interpretation of session resource usage.
Descriptive View	Radio Button	Check to put focus on the raw data of session resource usage.
Exclude Background Processes	Checkbox	By default all background processes (E.G:pmon,smon,etc...) are excluded from the graph. Check to include background process resource usage on the graph.
Sort Order	Pull Down	Determines the criteria for sorting the top-down order of session resource usage on the graph.
Resource Scope	Checkbox’s	All resource type (CPU,I/Application Wait Time,etc...) can be included on excluded by toggling these checkbox’s.

Usage:

- 1) Check the “Enable Session Acquisition” checkbox.
- 2) Choose the sort order from the “Sort Order” pull down. This pull down is located within the Metric Criteria Options Panel at the bottom left of the form.
- 3) Choose which session metrics to display on the graph by checking/unchecking the resource checkboxes. The resource checkboxes are located within the Metric Criteria Options Panel at the bottom left of the form.
- 4) By default only foreground processes are plotted. It is possible to plot the Oracle background processes on the graph by unchecking the “Exclude Background Processes” located on the top left of the graph.
- 5) Specific values for each session plotted on the graph can be displayed in the Metric Values Panel by moving the mouse pointer over an individual bar on the graph. The Metric Values Panel is located on the bottom left of the form.

5.1.2 Descriptive View

The second method for viewing session resource usage is the descriptive view. This view displays the raw data of the session resource usage. The top grid displays accumulated session values and the bottom shows the delta values. Delta values are calculated based on the value difference between each acquisition. Acquisition intervals are determined by the default timer value(default 30 seconds) on the configuration form.

Descriptive View

Accumulated Values

Inst #	SID	Serial #	SQL ID:Exec	Status	Username	Type	Program	CPU Time(s)	I/O Wait Time	App Wait Time	Conc Wait Time	Clust Wait Time	Redo Sync	Parse Time(s)
1	1	1		ACTIVE		BACKGROUND	oracle@ohpr181.rcc.nsw.westpac.co	0	0	0	0	0	0	0
1	2	1		ACTIVE		BACKGROUND	oracle@ohpr181.rcc.nsw.westpac.co	0	0	0	0	0	0	0
1	3	1		ACTIVE		BACKGROUND	oracle@ohpr181.rcc.nsw.westpac.co	0	0	6.22	0	0	0	0
1	4	1		ACTIVE		BACKGROUND	oracle@ohpr181.rcc.nsw.westpac.co	0	0	0	0	0	0	0
1	5	1		ACTIVE		BACKGROUND	oracle@ohpr181.rcc.nsw.westpac.co	0.2	0.04	0	0	0	0	0
1	6	1		ACTIVE		BACKGROUND	oracle@ohpr181.rcc.nsw.westpac.co	0	116	0	0.1	0	0	0
1	11	46189		ACTIVE		BACKGROUND	oracle@ohpr181.rcc.nsw.westpac.co	0.22	0.1	0	0.04	0.04	0	0.02
1	15	37563		INACTIVE	TLM_DBOUSER		MatchingServicesConfig	3.6	7.3	0	3.18	1.6	0	2.64
1	19	20915		INACTIVE	TLM_DBOUSER		JDBC Thin Client	130.06	1020.04	0	0.78	85.08	0.56	0.98
1	21	58331		INACTIVE	TLM_DBOUSER		MatchingServicesDBReader	99.34	75.88	0	360.5	76	13.58	0.42
1	25	41841		INACTIVE	TLM_DBOUSER		MatchingServicesDBReader	8.98	26.88	0	39.96	2.28	5.14	0.06
1	27	19283		INACTIVE	TLM_DBOUSER		MatchingServicesController	106.94	962.58	0	0.02	8.72	12.14	0.06

Delta Values

Inst #	SID	Serial #	SQL ID:Exec	Status	Username	Type	Program	CPU Time(s)	I/O Wait Time	App Wait Time	Conc Wait Time	Clust Wait Time	Redo Sync	Parse Time(s)
1	397	46567	%8uzv56uvz	ACTIVE	TLM_DBO_HCI	USER	JDBC Thin Client	10.04	4.44	0.04	0	0.1	0.02	0.04
2	683	59066	3wgMk2i29g	ACTIVE	TLM_DBO_LC0	USER	gems@lnxau2004sp0104.rcc.nsw.westpac.co	1.62	0.66	21.06	0.24	0.0600000000	2.7	0.28
2	86	1		ACTIVE		BACKGROUND	oracle@ohpr182.rcc.nsw.westpac.co	0.8000000000	0	0	0	0	0	0
1	627	1		ACTIVE		BACKGROUND	oracle@ohpr181.rcc.nsw.westpac.co	0.6599999999	0	0	0	0	0	0
1	752	1		ACTIVE		BACKGROUND	oracle@ohpr181.rcc.nsw.westpac.co	0.6200000000	0	0	0	0	0	0
2	1	1		ACTIVE		BACKGROUND	oracle@ohpr182.rcc.nsw.westpac.co	0.2800000000	0	0	0	0	0	0
1	502	1		ACTIVE		BACKGROUND	oracle@ohpr181.rcc.nsw.westpac.co	0.2800000000	0	0	0	0	0	0
2	378	57573	9ffsdpuym54j	ACTIVE	TLM_DBO_HCI	USER	JDBC Thin Client	0.24	7.92	0.02	0.02	0.04	0	0.04
1	257	1		ACTIVE		BACKGROUND	oracle@ohpr181.rcc.nsw.westpac.co	0.1999999999	0.0599999999	0	0	0	0	0.02
2	3	42593		ACTIVE		BACKGROUND	oracle@ohpr182.rcc.nsw.westpac.co	0.18	0.04	0	0	0	0	0
1	129	1		ACTIVE		BACKGROUND	oracle@ohpr181.rcc.nsw.westpac.co	0.0200000000	0	0	0	0	0	0
2	172	1		ACTIVE		BACKGROUND	oracle@ohpr182.rcc.nsw.westpac.co	0.0200000000	0	0	0	0	0	0

Illustration 5.1.2: Session Resource(Descriptive View)

Usage:

- 1) Check on the “Enable Session Acquisition” checkbox.
- 2) Accumulated and Delta values for each session in the database are shown in the grids.

Notes:

- 1) When one of the rows in the top grid(Accumulated Values) is clicked the “Inst ID, SID and Serial#” are automatically populated into the “Session Statistics” form and the “SQL Text” form.
- 2) Foreground and background sessions are displayed in the accumulated and delta grids.

5.2 Session Statistics

Displays delta and accumulated wait events for a specific session.

5.2.1 Wait Events View

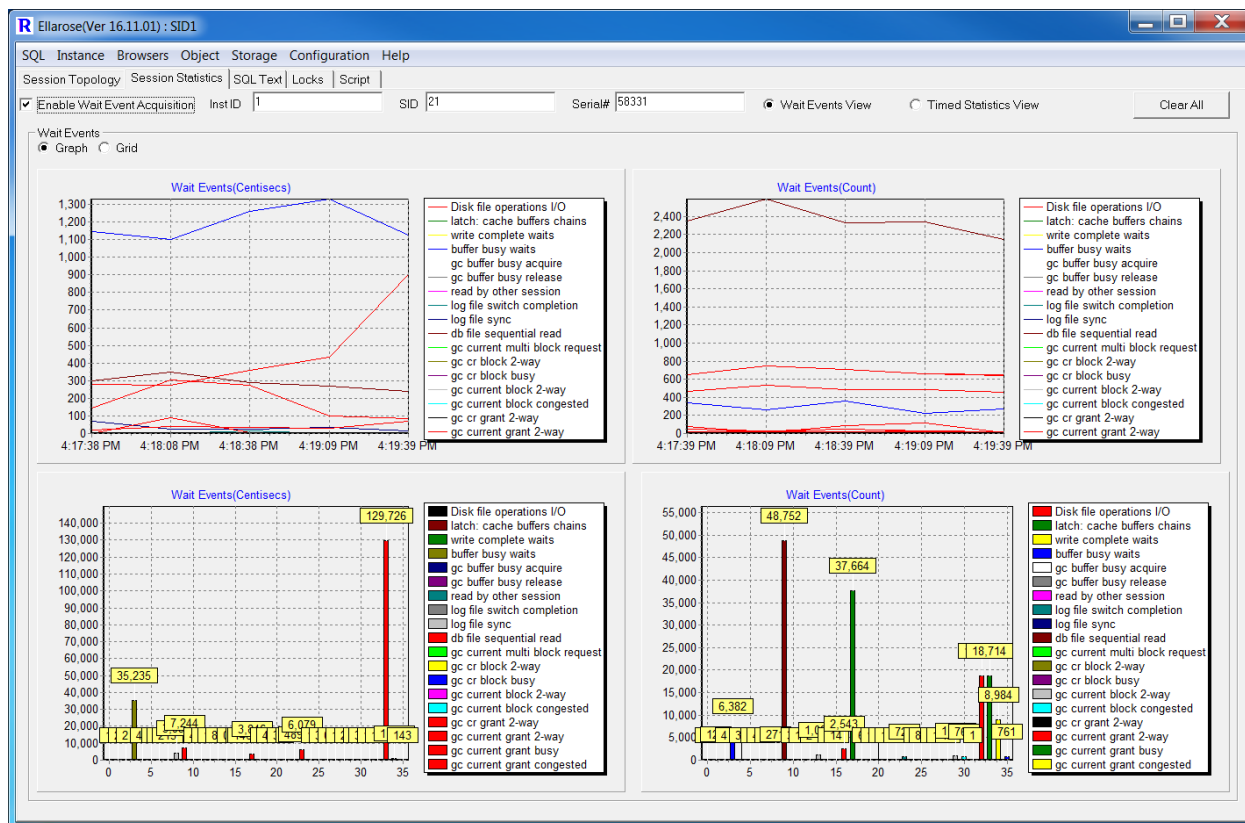


Illustration 5.2.1(a): Session Statistics Wait Events View(Graph)

Wait Times					Wait Counts				
Wait Event	Accumulated	Delta	Min	Max	Wait Event	Accumulated	Delta	Min	Max
Disk file operations I/O	1	0	0	0	Disk file operations I/O	93	2	0	2
latch: cache buffers chains	2	0	0	0	latch: cache buffers chains	122	2	0	3
write complete waits	2	0	0	0	write complete waits	4	0	0	0
buffer busy waits	35235	1126	1100	1330	buffer busy waits	6382	269	227	362
gc buffer busy acquire	46	0	0	0	gc buffer busy acquire	36	0	0	1
gc buffer busy release	0	0	0	0	gc buffer busy release	1	0	0	0
read by other session	22	0	0	1	read by other session	46	0	0	2
log file switch completion	215	0	0	14	log file switch completion	14	0	0	1
log file sync	3955	14	14	69	log file sync	271	3	3	9
db file sequential read	7244	241	241	351	db file sequential read	48752	2147	2147	2591
gc current multi block request	4	2	0	2	gc current multi block request	35	13	0	13
gc cr block 2-way	1	0	0	0	gc cr block 2-way	10	0	0	0
gc cr block busy	15	0	0	0	gc cr block busy	2	0	0	0
gc current block 2-way	83	0	0	0	gc current block 2-way	1082	0	0	0
gc current block congested	0	0	0	0	gc current block congested	1	0	0	0
gc cr grant 2-way	1	0	0	0	gc cr grant 2-way	14	0	0	0
gc current grant 2-way	146	0	0	2	gc current grant 2-way	2543	0	0	21
gc current grant busy	3846	2	1	3	gc current grant busy	37664	21	15	25
gc current grant congested	0	0	0	0	gc current grant congested	6	0	0	0
gc remaster	47	0	0	0	gc remaster	1	0	0	0
direct path read	3	0	0	0	direct path read	3	0	0	0
undo segment extension	8	0	0	0	undo segment extension	13	0	0	0
enq: TX - allocate ITL entry	489	0	0	90	enq: TX - allocate ITL entry	84	3	1	10
enq: TX - index contention	6079	84	84	306	enq: TX - index contention	729	19	19	48
enq: SQ - contention	1	0	0	1	enq: SQ - contention	5	0	0	1
row cache lock	3	0	0	0	row cache lock	83	6	2	6
latch: shared pool	0	0	0	0	latch: shared pool	1	0	0	0

Illustration 5.2.1(b): Session Statistics Wait Events View(Grid)

Context:

Component ID	Component Type	Description
Enable Wait Event Acquisition	Checkbox	Check to acquire database session information. Session information is retrieved at regular intervals based on the "Default Interval" timer on the configuration/settings tab.
Inst ID	Field	Database Instance ID. Populate automatically when a row is selected from the session tab.
SID	Field	Session ID. Populate automatically when a row is selected from the session tab.
Serial#	Field	Session Serial#. Populate automatically when a row is selected from the session tab.
Wait Events (Graph or Grid)	Radio Button	Display wait event information in graph or grid format.
Wait Events View	Radio Button	Displays wait event information about a specific session.
Timed Statistics View	Radio Button	Displays raw performance statistics about a specific session.
Clear All	Button	Clears all graphs.

Usage:

- 1) The **"Inst ID, SID and Serial#"** are automatically populated into the **"Session Statistics"** form when one of the rows in the top grid(Accumulated Values) is clicked. Alternatively these values can be manually entered.
- 2) Check the **<Enable Wait Event Acquisition>** checkbox to display details for the chosen session.

Notes/Known Issues:

- 1) **** Bug **** Series colours for bar charts may not match that shown in the legend after the first session information is plotted. Check the plotted graph values against the grid values to determine actual wait time values.

5.2.2 Timed Statistics View

Displays accumulated, delta, min and max event details for a specific session.

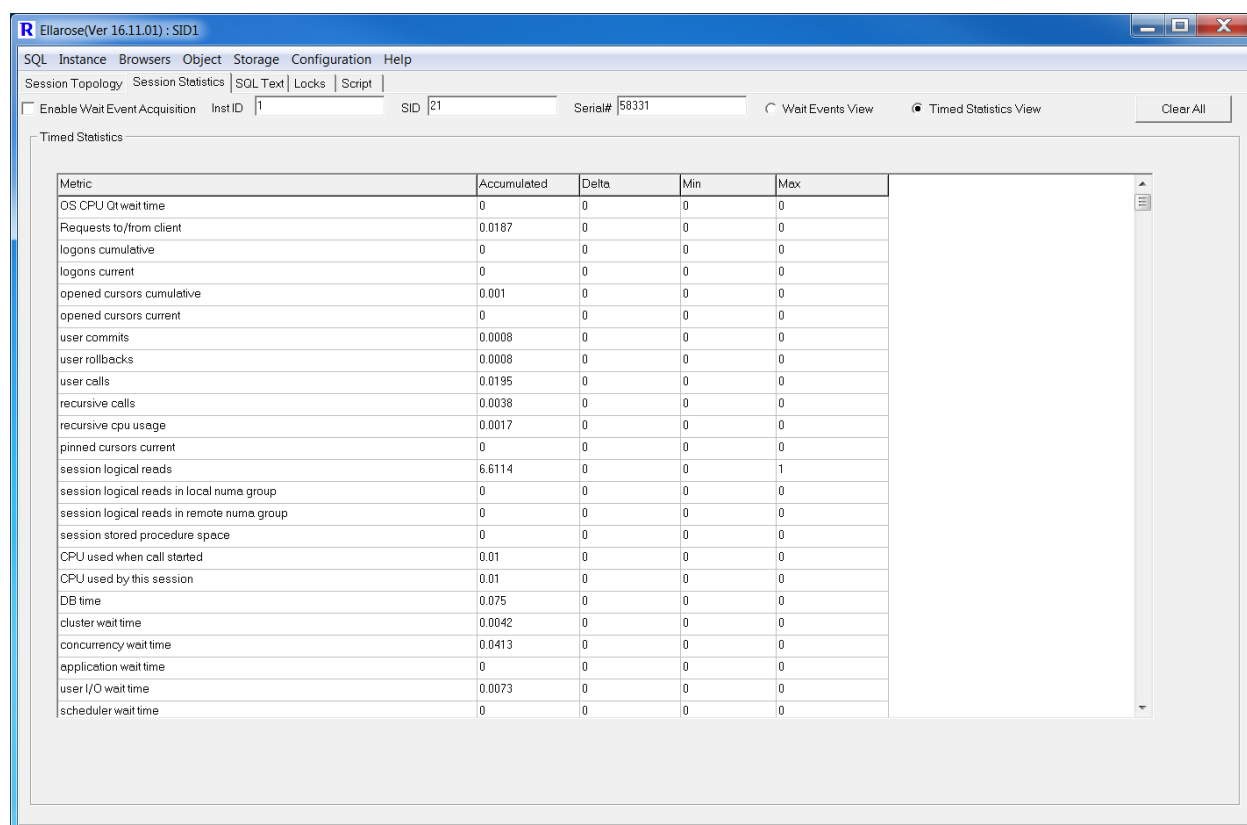


Illustration 5.2.1: Real-Time Timed Statistics for all session

Context:

Component ID	Component Type	Description
Enable Wait Event Acquisition	Checkbox	Check to acquire database session information. Session information is retrieved at regular intervals based on the “Default Interval” timer on the configuration/settings tab.
Inst ID	Field	Database Instance ID. Populate automatically when a row is selected from the session tab.
SID	Field	Session ID. Populate automatically when a row is selected from the session tab.
Serial#	Field	Session Serial#. Populate automatically when a row is selected from the session tab.
Wait Events (Graph or Grid)	Radio Button	Display wait event information in graph or grid format.

5.3 SQL Text

Displays the SQL text and associated execution plan for a given SQL ID

The screenshot shows the 'SQL Text' and 'Execution Plan' tabs in the Ellarose application. The 'SQL Text' tab is active, displaying the following SQL statement:

```
INSERT INTO FND_FILE_TEMP( FILE_ID, FILENAME, NODE_NAME, MIME_TY
PE, REQUEST_ID, EXPIRES, TRANSFER_MODE, NATIVE_CLIENT_ENCODING,
ENABLE_LOGGING) VALUES (:B9, :B8, :B7, :B6, :B5, SYSDATE +
(B4/1440), :B3, :B2, :B1 )
```

The 'Execution Plan' tab is also visible, showing the following execution plan:

```
SQL_ID 9k8xha06umuh5, child number 0
-----
INSERT INTO FND_FILE_TEMP( FILE_ID, FILENAME, NODE_NAME, MIME_TYPE,
REQUEST_ID, EXPIRES, TRANSFER_MODE, NATIVE_CLIENT_ENCODING,
ENABLE_LOGGING) VALUES (:B9, :B8, :B7, :B6, :B5, SYSDATE + (:B4
/1440), :B3, :B2, :B1 )
-----
| Id | Operation | Name | Cost |
| 0 | INSERT STATEMENT | | 1 |
| 1 | LOAD TABLE CONVENTIONAL | | 1 |
-----
```

A note is also displayed: - cpu costing is off (consider enabling it)

Illustration 5.3.1: SQL Text and Execution Plan

Context:

Component ID	Component Type	Description
Inst ID	Field	Database Instance ID. Populated automatically when a row is selected from the session tab.
SID	Field	Session ID. Populated automatically when a row is selected from the session tab.
Serial#	Field	Session Serial#. Populated automatically when a row is selected from the session tab.
SQLID	Dropdown	Used to determine which SQL ID and exec plan combination to display
Load	Button	Loads the SQL text and execution plan for the specified SQLID and exec plan combination.
SQL Text	Memo	SQL text of the SQL ID.
Execution Plan	Memo	Execution plan of the SQL ID and exec plan ID combination.

5.4 Locks

Display session lock information.

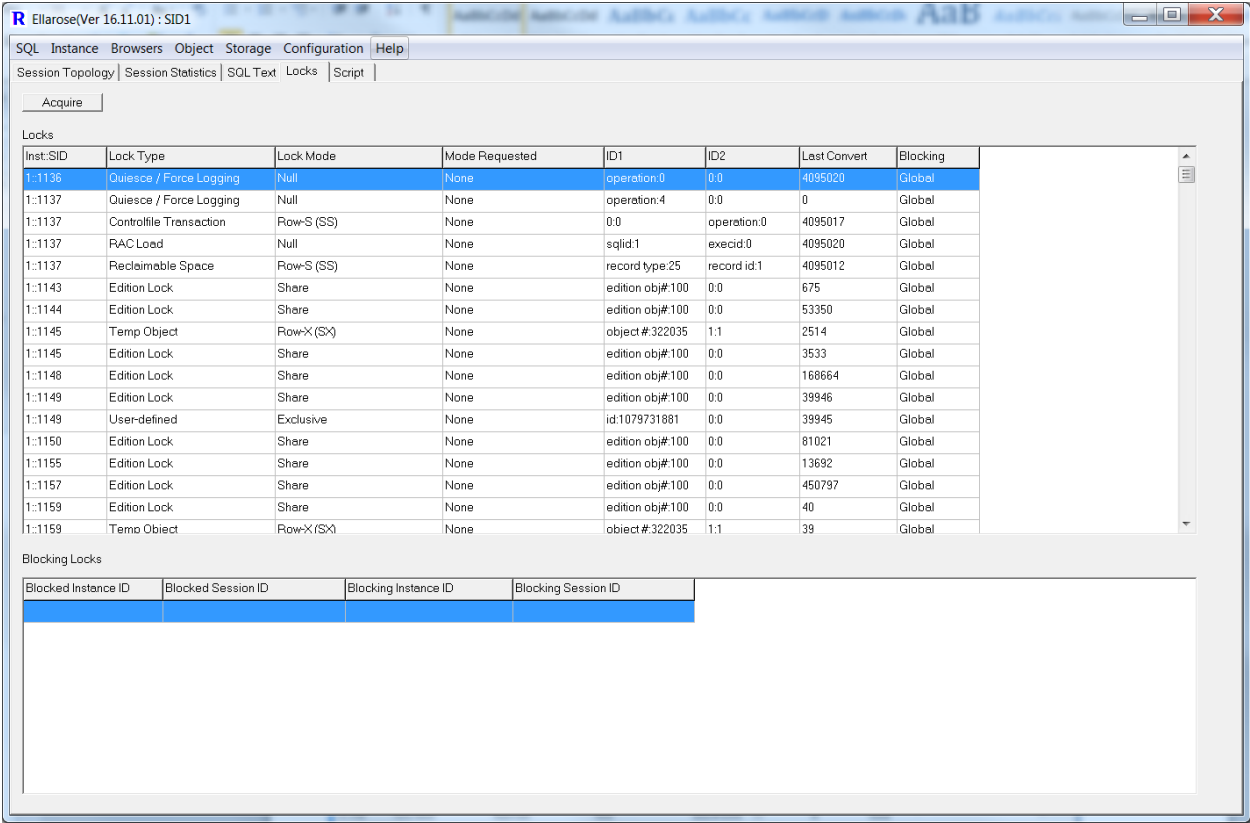


Illustration 5.4: Session Locking Information

Context:

Component ID	Component Type	Description
Acquire	Button	Retrieve lock information from database.

5.5 Script

Controls the scripts executed to retrieve information from the database.

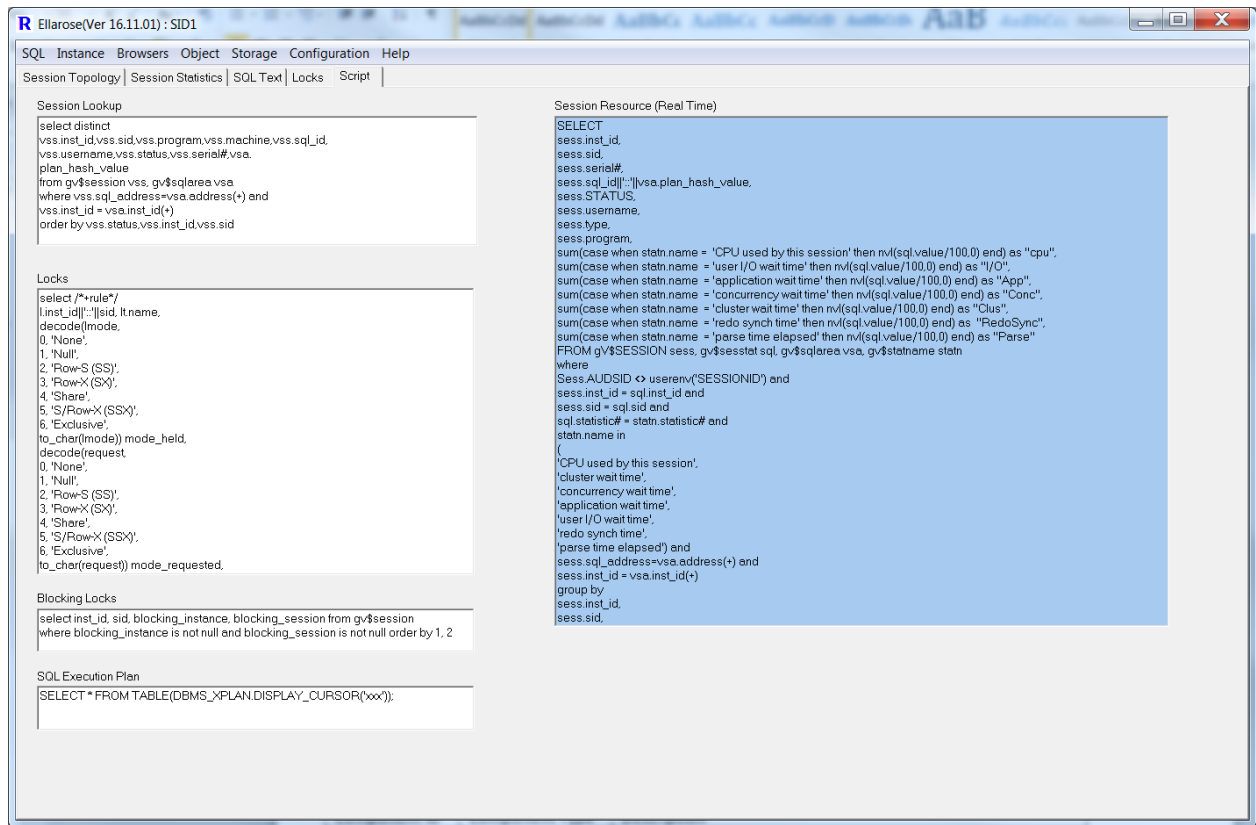


Illustration 5.5: Scripts used to retrieve session information

Context:

Component ID	Component Type	Description
Session Lookup	Textbox	Query to retrieve session information from the database.
Locks	Textbox	Query to retrieve lock information from the database.
Blocking Locks		Query to retrieve blocking lock information from the database.
SQL Execution Plan	Textbox	Query to retrieve execution plan details.
Session Resource	Textbox	Query to retrieve session resource query.

Section 6. SQL Topology

6.1 SQL Topology Stats Page

Displays a summary of SQL executions for a specific date range.

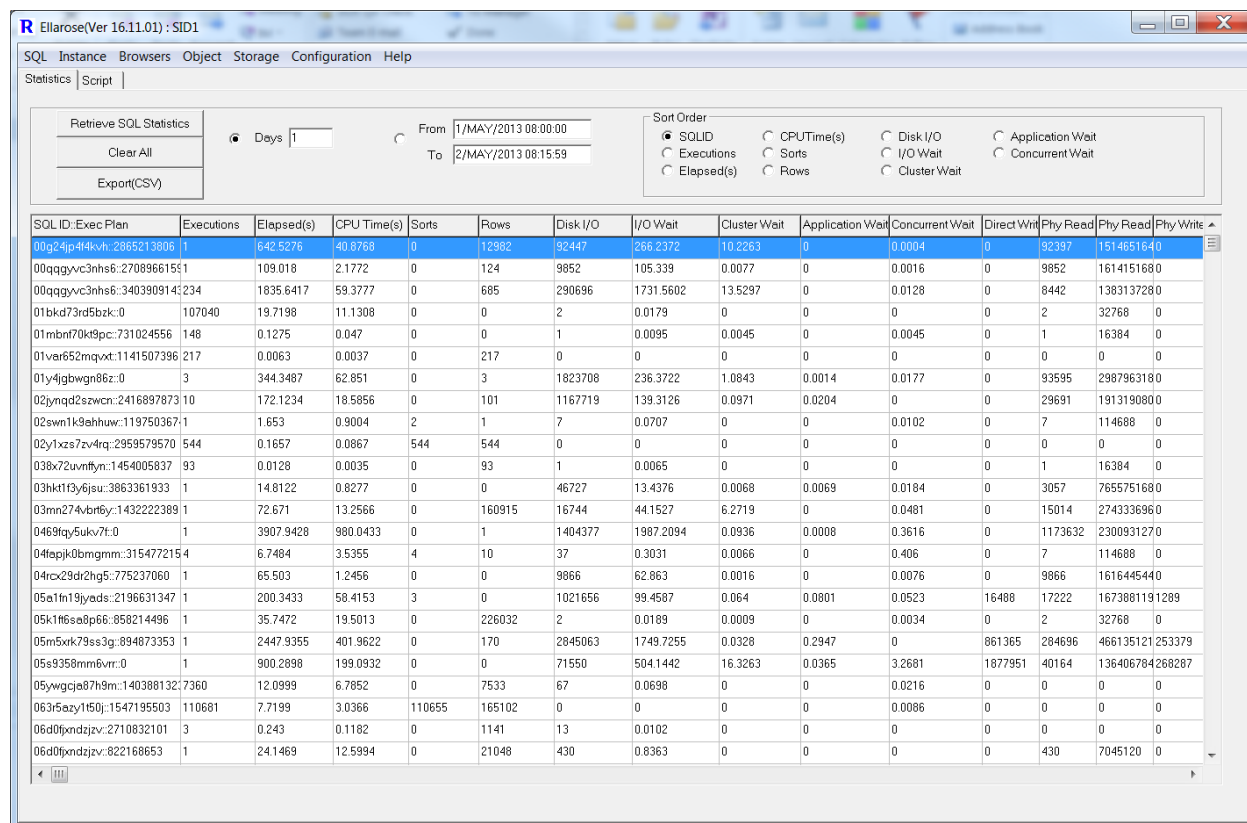


Illustration 6.1: SQL topology view

Context:

Component ID	Component Type	Description
Retrieve SQL Statistics	Button	Retrieve summarised Statistics on all SQL.
Clear All	Button	Clear the results grid.
Export CSV	Button	Export SQL topology grid details into CSV file. The file will be created in the path specified in the “CSV filename” on the configuration/setting tab.
Days	Field	Number of days of SQL statistics to retrieve.
From/To	Field	Date range of SQL statistics to retrieve.
Maintain Dynamic Script	Checkbox	The SQL script in the “ Raw Details ” tab can be tailored to requirements. Check this box so the SQL script is not overwritten when the “ Retrieve SQL Statistics ” button is clicked.
Grid Colum Header buttons	Radio Button	Click on one of the column header radio buttons to sort the contents of the grid. Contents will be sorted from largest to smallest.

6.2 Script

Control the script used to retrieve SQL details.

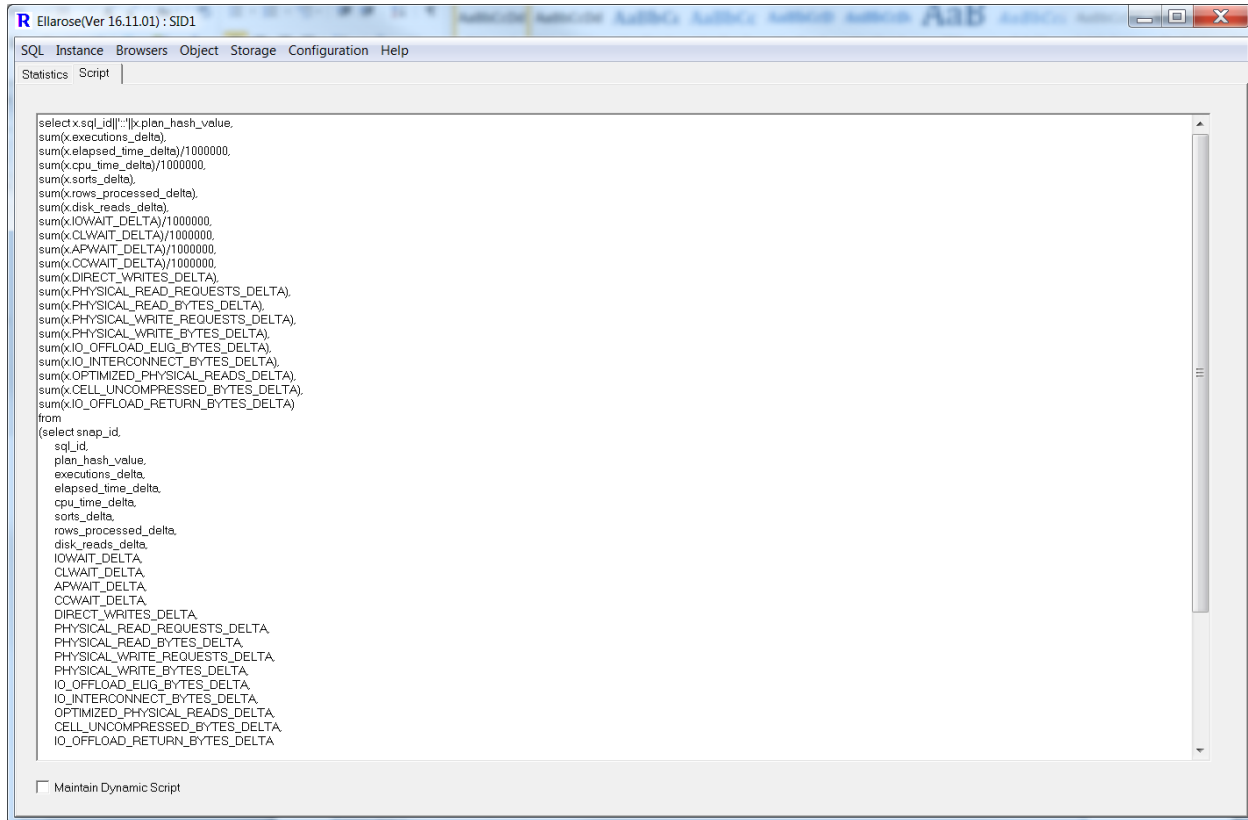


Illustration 6.2: Scripts used to retrieve SQL topology

Section 7. System Topology

System wide database statistics can be analysed based on a pre-determined date range. Values entered into the retrieval form determine the scope of the data retrieved.

7.1 Retrieval Tab

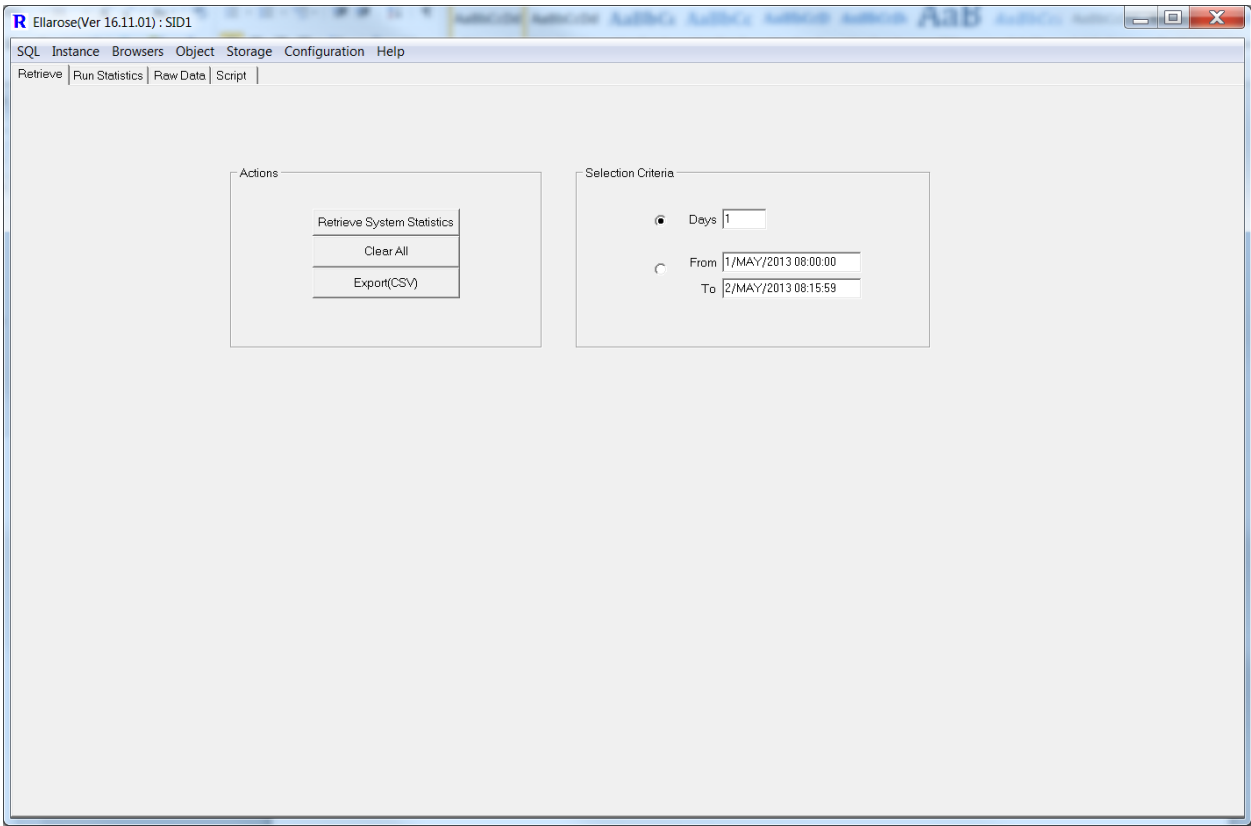


Illustration 7.1: System Topology Retrieval

Context:

Component ID	Component Type	Description
Retrieve System Statistics	Button	Retrieve system wide statistics for the database.
Clear All	Button	Clear all results.
Days	Field	Number of days of system statistics to retrieve.
From/To	Field	Date range of system statistics to retrieve.

7.2 Run Statistics

The information held in Oracle's AWR snapshots pertaining to system performance metrics is retrieved and plotted based on the AWR snapshot interval.

Session Group Box:

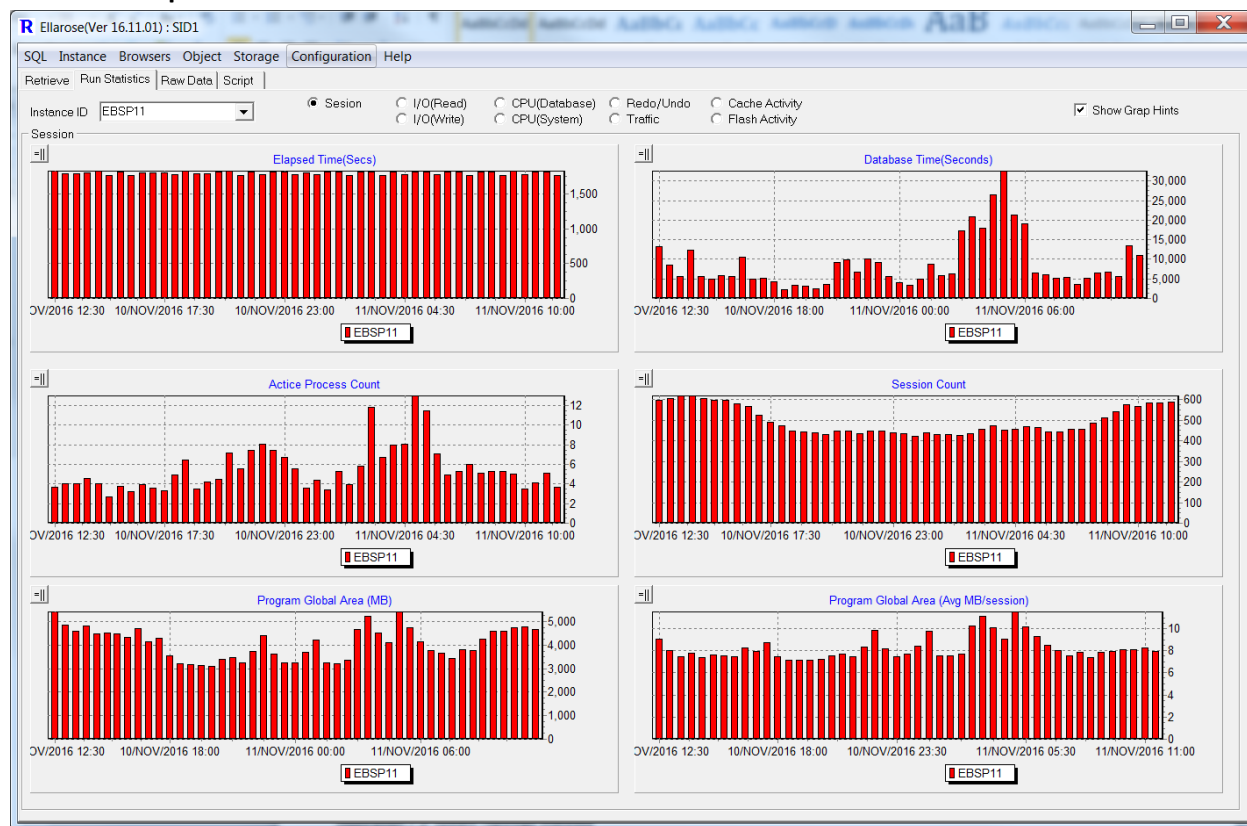


Illustration 7.2a: System Topology Statistics (Session)

The "Session" group box contains the following system performance metrics:

- Elapsed time in between AWR snapshot
- Database Active Time
- Active Process Count
- Session Count(Active and Inactive)
- Program Global Are(MB)
- Program Global Are(Average MB per Session)

I/O Read Group Box:

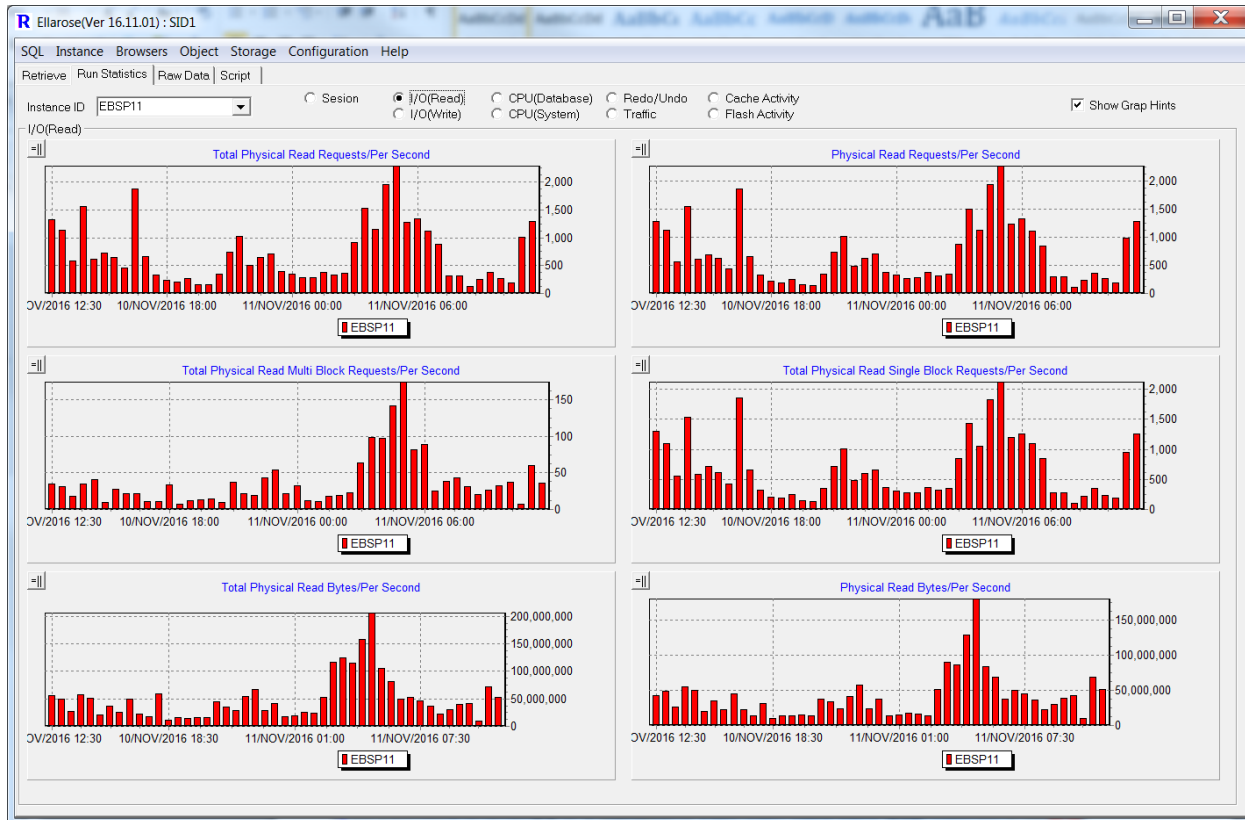


Illustration 7.2b: System Topology Statistics (I/O Read)

The “I/O Read” group box contains the following system performance metrics:

- Total Physical Read Requests per second
- Physical Read Requests per second
- Total Physical Read Multi Block Requests per second
- Total Physical Read Single Block Requests per second
- Total Physical Read Bytes per second
- Physical Read Bytes per second

I/O Write Group Box:

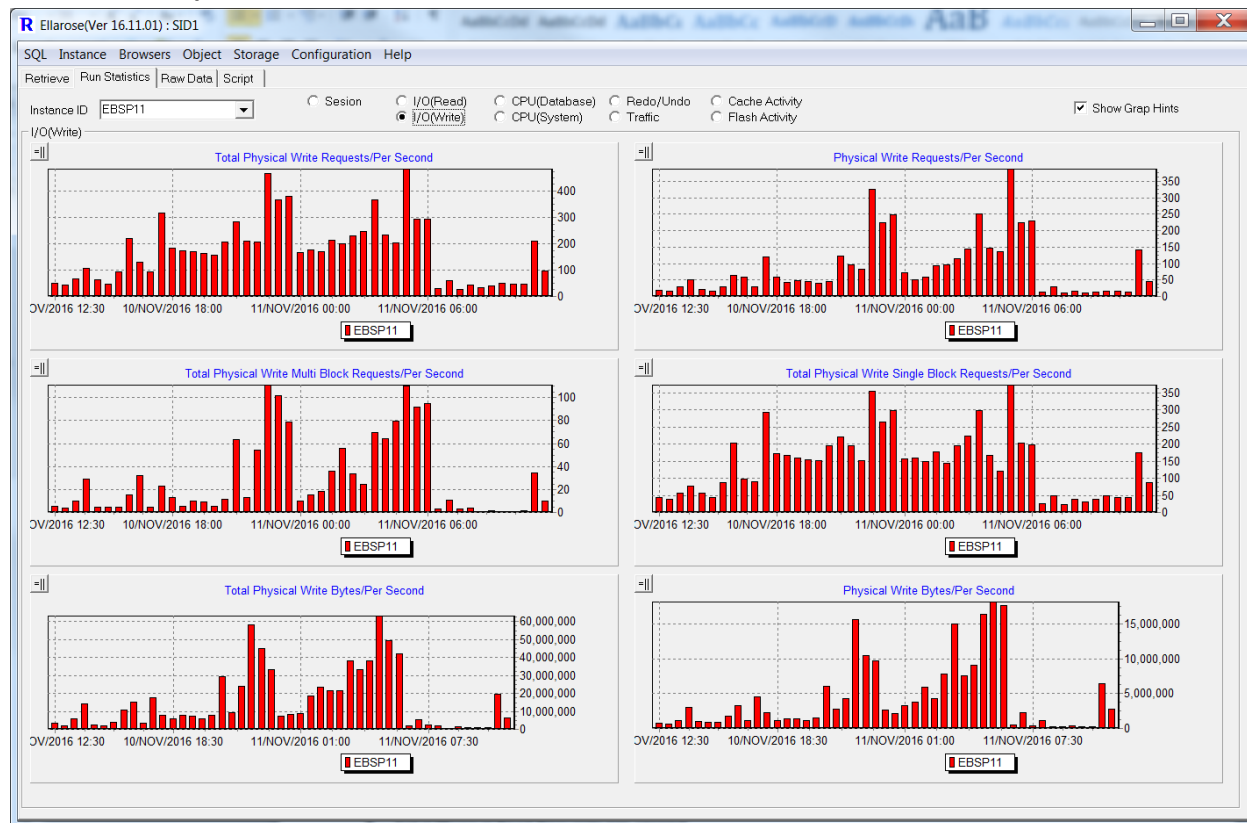


Illustration 7.2c: System Topology Statistics (I/O Write)

The “I/O Write” group box contains the following system performance metrics:

- Total Physical Write Requests per second
- Physical Write Requests per second
- Total Physical Write Multi Block Requests per second
- Total Physical Write Single Block Requests per second
- Total Physical Write Bytes per second
- Physical Read Write per second

CPU(Database) Group Box:

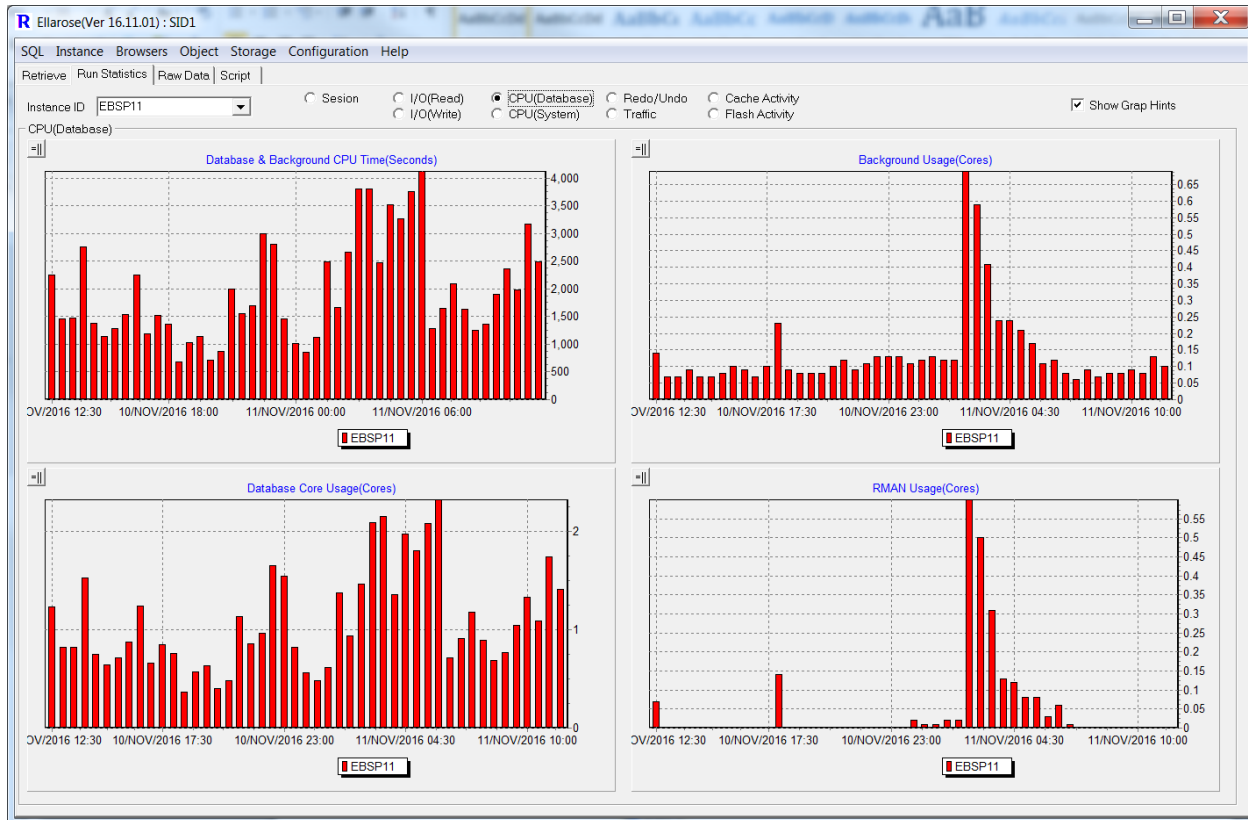


Illustration 7.2d: System Topology Statistics (CPU Database)

The “CPU(Database)” group box contains the following system performance metrics:

- Database and Background CPU time
- Background Usage(Cores)
- Database Core Usage(Cores)
- RMAN Usage(Cores)

CPU(System) Group Box:

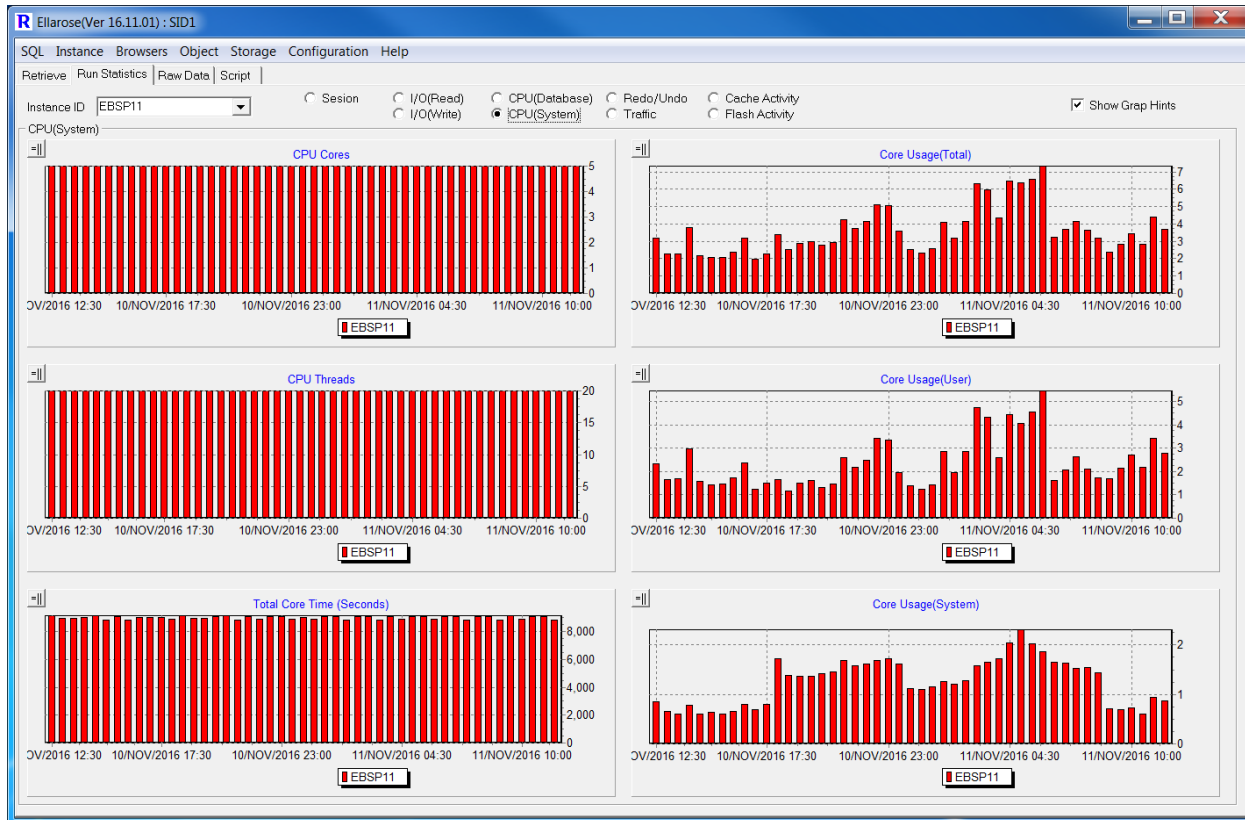


Illustration 7.2e: System Topology Statistics (CPU System)

The “CPU(System)” group box contains the following system performance metrics:

- CPU Core Count
- Core Usage(Total)
- CPU Threads
- Core Usage(User)
- Total Core time in seconds
- Core Usage(System)

REDO/UNDO Group Box:

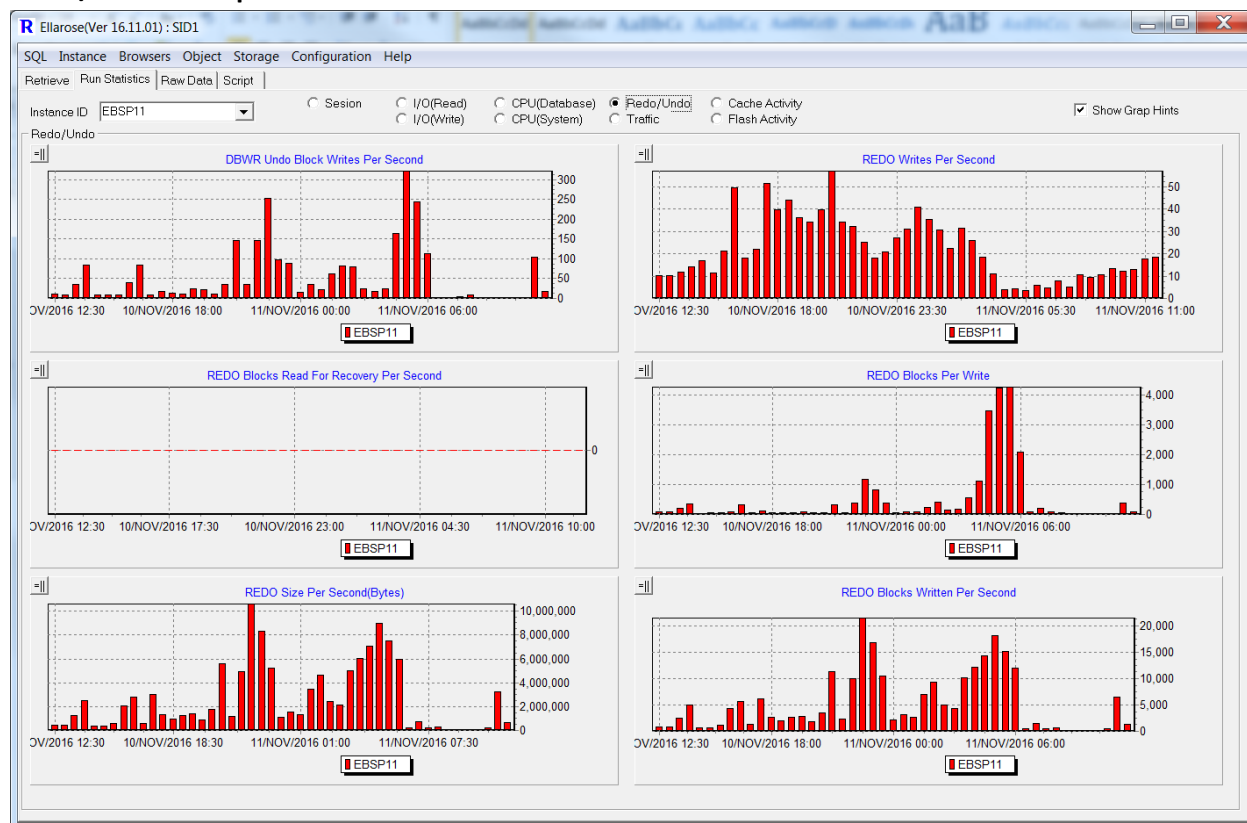


Illustration 7.2f: System Topology Statistics (REDO/UNDO)

The “REDO/UNDO” group box contains the following system performance metrics:

- DBWR undo Block Writes per second
- REDO Writes per second
- REDO Blocks Read for Recovery per second
- REDO Blocks Per Write
- REDO Size(bytes) per second
- REDO Blocks Written per second

Traffic Group Box:

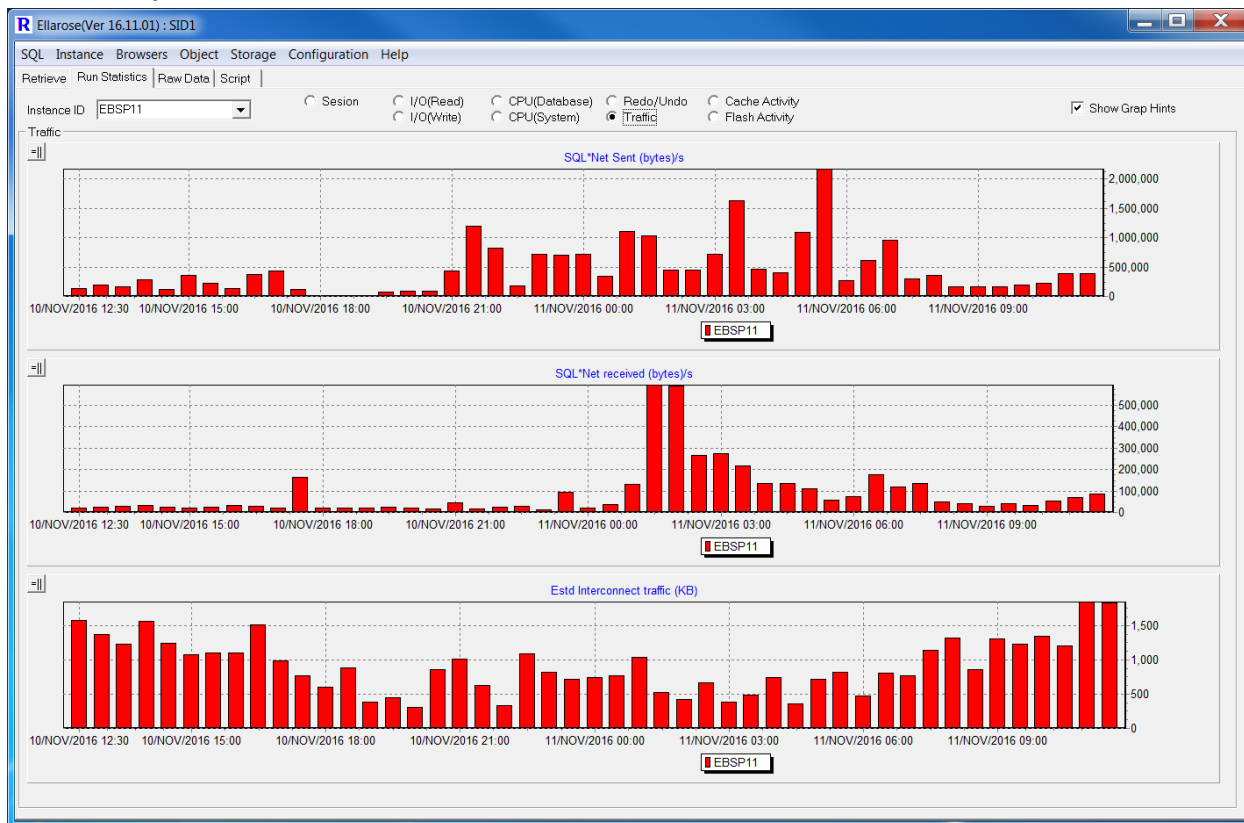


Illustration 7.2g: System Topology Statistics (Traffic)

The “Traffic” group box contains the following system performance metrics:

- SQL Net bytes sent per second
- SQL Net bytes received per second
- Estimated Interconnect traffic(KB)

Cache Activity Group Box:

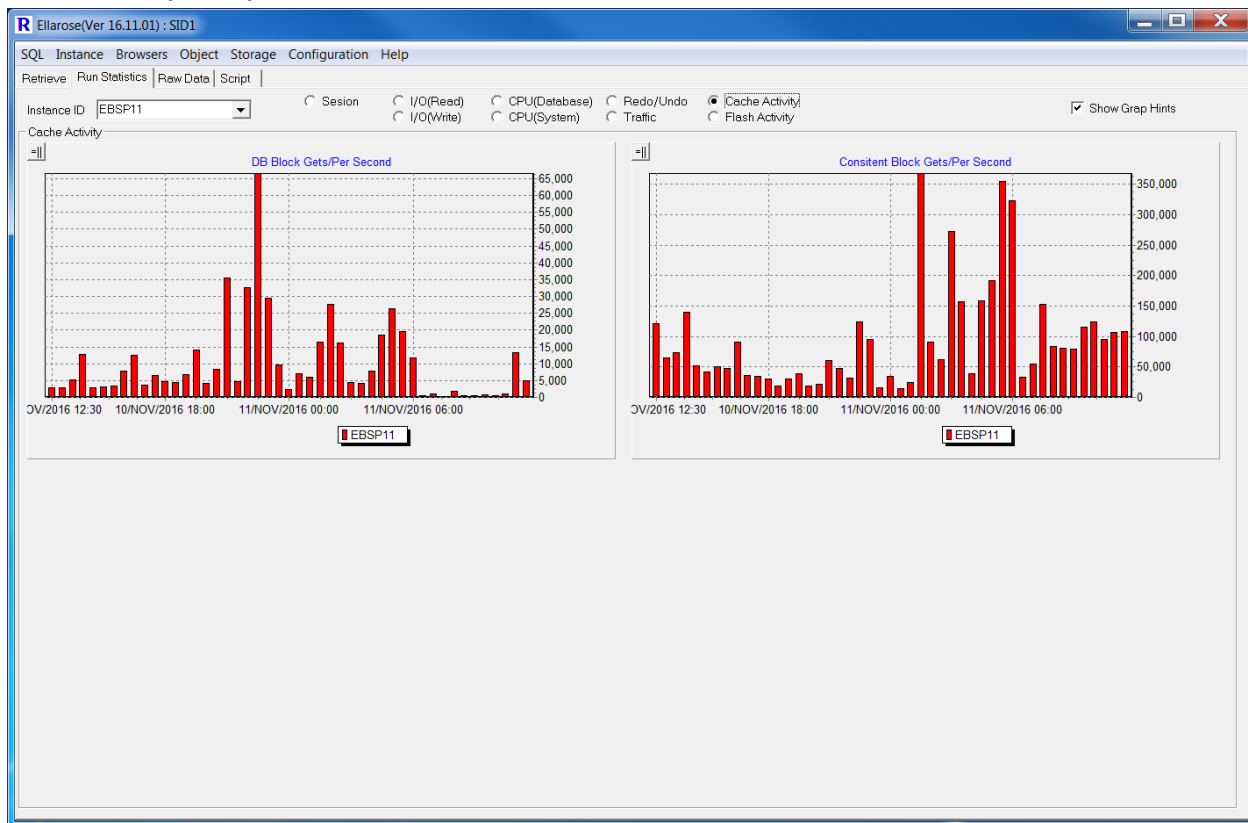


Illustration 7.2h: System Topology Statistics (Cache Activity)

The “Cache Activity” group box contains the following system performance metrics:

- DB Block Gets per second
- Consistent Block Gets per second

Flash Activity Group Box:

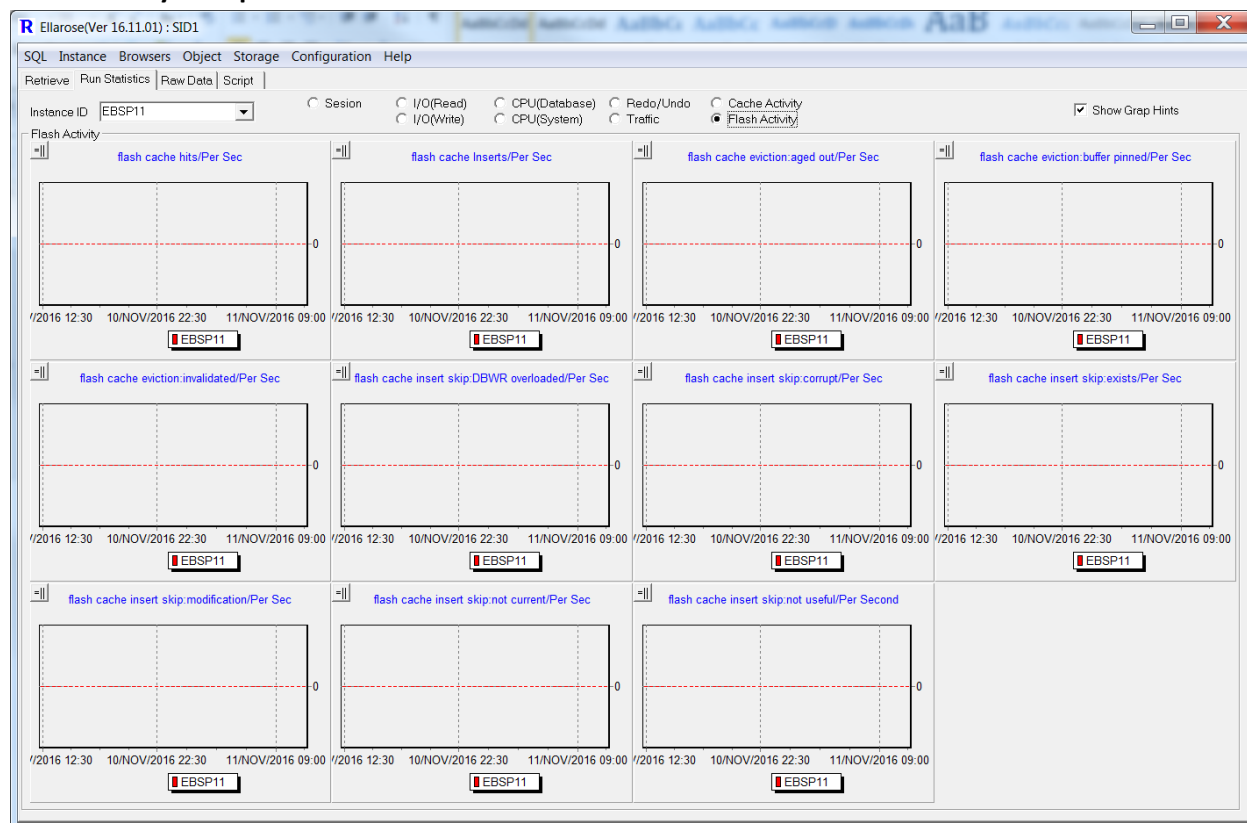


Illustration 7.2i: System Topology Statistics (Flash Activity)

The “Flash Activity” group box contains the following system performance metrics:

- Flash Cache Hits per second
- Flash Cache Inserts per second
- Flash Cache Eviction (aged out) per second
- Flash Cache Eviction (buffer pinned) per second
- Flash Cache Eviction (invalidated) per second
- Flash Cache Insert Skip(DBWR overloaded) per second
- Flash Cache Insert(Skip corrupt) per second
- Flash Cache Insert(Skip exists) per second
- Flash Cache Insert(Skip modification) per second
- Flash Cache Insert(Skip not current) per second
- Flash Cache Insert(Skip not useful) per second

Context:

Component ID	Component Type	Description
Instance ID	Pull Down	Select which instance to display statistics for.
Statistics Type	Radio Button	Selects which set of graphs to display.
Show Grid Hints	Checkbox	Displays a description of the graph when the mouse moves over it.

7.3 Raw Data

Raw data for system statistics.

Snap ID	Begin Snap Time	End Snap Time	InstID	Elapse Time	Session Count	pga (mb)	pga (mb/sess)	CPU Cores	CPU Threads	Active Sessions	Total Core	Host Core	Host User	Host SYS	LC
62149	10/NOV/2016 12:10	10/NOV/2016 13:00	EBSP11	1826	598	5394.997	9.022	5	20	13311.29	9130	3.21	2.35	0.85	3.7
62150	10/NOV/2016 13:10	10/NOV/2016 13:30	EBSP11	1787	606	4837.724	7.983	5	20	8575.89	8935	2.29	1.64	0.65	3.5
62151	10/NOV/2016 13:10	10/NOV/2016 14:00	EBSP11	1797	616	4579.981	7.435	5	20	5548.02	8985	2.29	1.68	0.61	3.5
62152	10/NOV/2016 14:10	10/NOV/2016 14:30	EBSP11	1800	618	4817.185	7.795	5	20	12418.27	9000	3.78	2.99	0.79	4.5
62153	10/NOV/2016 14:10	10/NOV/2016 15:00	EBSP11	1830	605	4481.304	7.407	5	20	5639.73	9150	2.19	1.58	0.6	4.0
62154	10/NOV/2016 15:10	10/NOV/2016 15:30	EBSP11	1769	595	4523.294	7.602	5	20	5001.37	8845	2.06	1.42	0.64	2.7
62155	10/NOV/2016 15:10	10/NOV/2016 16:00	EBSP11	1820	595	4486.177	7.54	5	20	5762.69	9100	2.09	1.48	0.61	3.7
62156	10/NOV/2016 16:10	10/NOV/2016 16:30	EBSP11	1772	580	4310.702	7.432	5	20	5518.06	8860	2.37	1.73	0.65	3.2
62157	10/NOV/2016 16:10	10/NOV/2016 17:00	EBSP11	1810	568	4705.161	8.284	5	20	10479.48	9050	3.18	2.38	0.8	3.5
62158	10/NOV/2016 17:10	10/NOV/2016 17:30	EBSP11	1801	523	4144.146	7.924	5	20	5051.67	9005	1.95	1.26	0.7	3.5
62159	10/NOV/2016 17:10	10/NOV/2016 18:00	EBSP11	1803	491	4281.741	8.72	5	20	5117.78	9015	2.3	1.5	0.8	3.2
62160	10/NOV/2016 18:10	10/NOV/2016 18:30	EBSP11	1785	473	3540.89	7.486	5	20	4185.22	8925	3.37	1.65	1.72	4.5
62161	10/NOV/2016 18:10	10/NOV/2016 19:00	EBSP11	1827	449	3219.7	7.171	5	20	2352.35	9135	2.54	1.16	1.38	6.4
62162	10/NOV/2016 19:10	10/NOV/2016 19:30	EBSP11	1792	442	3162.952	7.156	5	20	3403.61	8960	2.86	1.5	1.36	3.5
62163	10/NOV/2016 19:10	10/NOV/2016 20:00	EBSP11	1791	437	3139.712	7.185	5	20	3176.54	8955	2.98	1.62	1.36	4.2
62164	10/NOV/2016 20:10	10/NOV/2016 20:30	EBSP11	1814	429	3112.767	7.256	5	20	2529.34	9070	2.76	1.33	1.43	4.4
62165	10/NOV/2016 20:10	10/NOV/2016 21:00	EBSP11	1824	449	3388.673	7.547	5	20	3571.83	9120	2.91	1.46	1.46	7.1
62166	10/NOV/2016 21:10	10/NOV/2016 21:30	EBSP11	1761	449	3465.298	7.718	5	20	9238.02	8805	4.26	2.58	1.68	5.5
62167	10/NOV/2016 21:10	10/NOV/2016 22:00	EBSP11	1817	435	3237.444	7.442	5	20	9785.7	9085	3.76	2.17	1.59	7.4
62168	10/NOV/2016 22:10	10/NOV/2016 22:30	EBSP11	1778	446	3722.466	8.346	5	20	6630.69	8890	4.12	2.49	1.62	8.1
62169	10/NOV/2016 22:10	10/NOV/2016 23:00	EBSP11	1814	446	4391.907	9.847	5	20	10029.68	9070	5.12	3.44	1.68	7.4
62170	10/NOV/2016 23:10	10/NOV/2016 23:30	EBSP11	1821	440	3606.196	8.196	5	20	9284.07	9105	5.07	3.35	1.73	6.6
62171	10/NOV/2016 23:10	10/NOV/2016 00:00	EBSP11	1781	436	3261.847	7.481	5	20	5559.57	8905	3.58	1.96	1.62	5.5
62172	11/NOV/2016 00:10	11/NOV/2016 00:30	EBSP11	1801	424	3250.724	7.667	5	20	4112.09	9005	2.52	1.39	1.12	3.6
62173	11/NOV/2016 00:10	11/NOV/2016 01:00	EBSP11	1778	439	3685.485	8.395	5	20	3392.74	8890	2.34	1.24	1.1	4.5
62174	11/NOV/2016 01:10	11/NOV/2016 01:30	EBSP11	1817	429	4206.501	9.805	5	20	5008.87	9085	2.59	1.43	1.15	3.3
62175	11/NOV/2016 01:10	11/NOV/2016 02:00	EBSP11	1817	432	3246.259	7.514	5	20	8651.23	9085	4.11	2.85	1.26	5.3
62176	11/NOV/2016 02:10	11/NOV/2016 02:30	EBSP11	1765	427	3209.841	7.517	5	20	5874.71	8825	3.17	1.97	1.2	3.5
62177	11/NOV/2016 02:10	11/NOV/2016 03:00	EBSP11	1820	433	3347.991	7.732	5	20	6309.58	9100	4.14	2.87	1.28	5.6
62178	11/NOV/2016 03:10	11/NOV/2016 03:30	EBSP11	1817	456	4669.351	10.24	5	20	17342.76	9085	6.33	4.75	1.58	11

Illustration 7.3: System Statistics(Raw Data)

Context:

Component ID	Component Type	Description
Export CSV	Button	Export system wide topology grid details into CSV file. The file will be created in the path specified in the “CSV filename” on the configuration/setting tab.

7.4 Script

Script used to retrieve the system wide details.

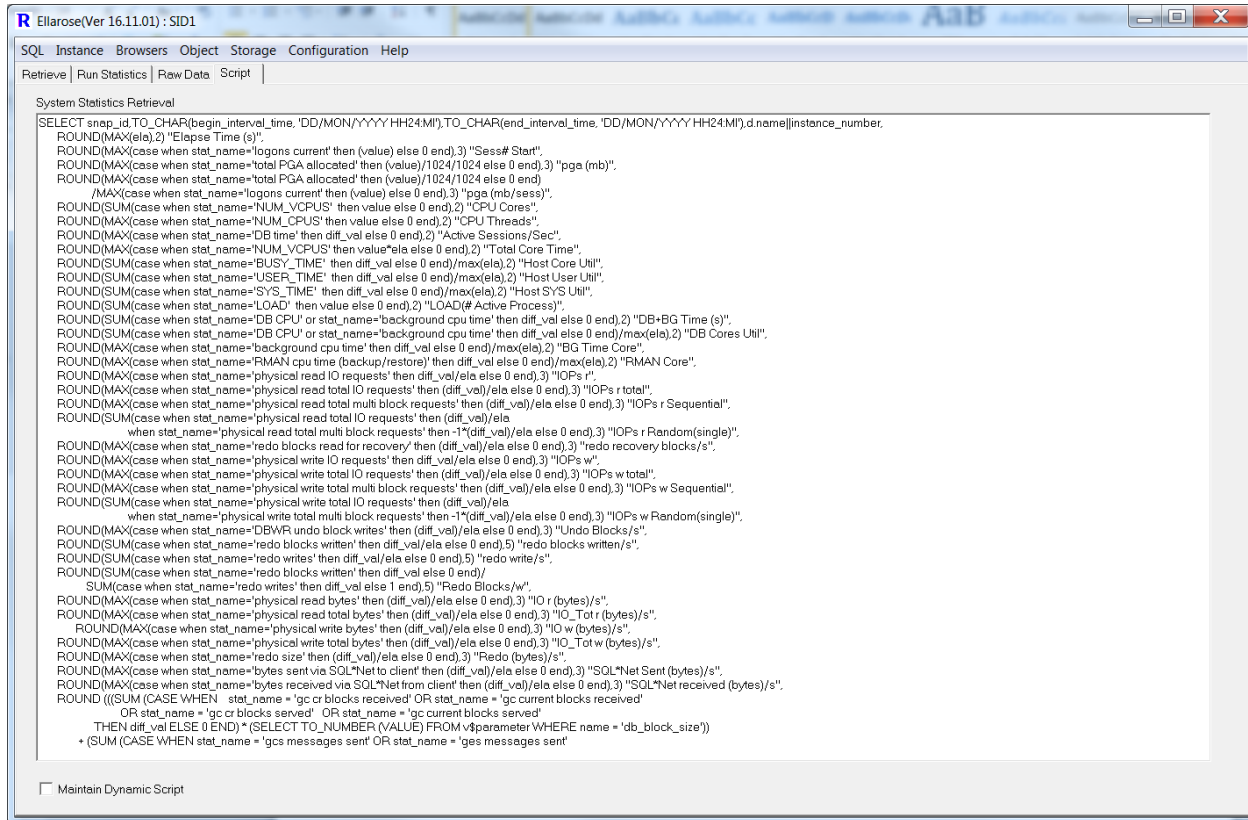


Illustration 7.4: Scripts used to retrieve System topology

Section 8. Instance: Wait Events

8.1 Real Time

Displays database wait events in the real time. The database dynamic performance views are polled at regular intervals, the delta values between polling are plotted into a graphical representation.

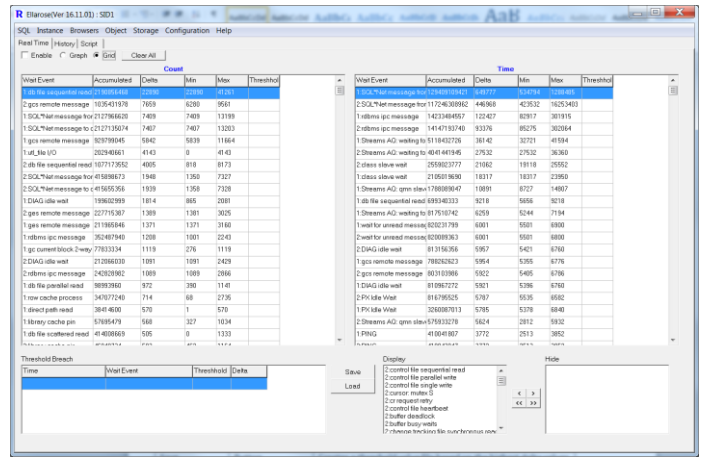
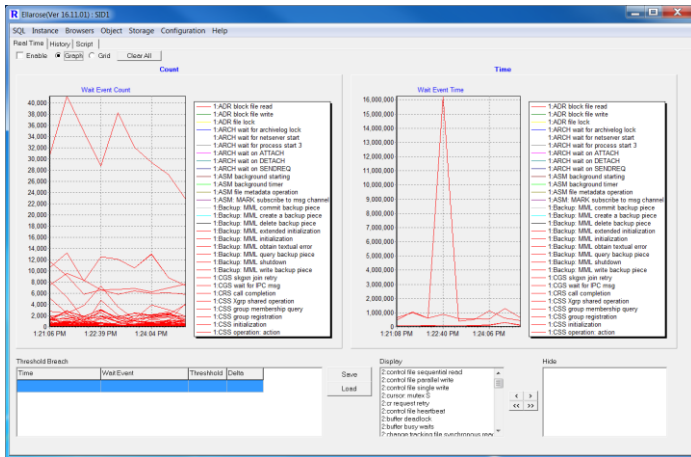


Illustration 8.1: Instance Wait Events (Graphs and Grid view)

Context:

Component ID	Component Type	Description
Enable	Checkbox	Check to acquire database wait event information. Wait event information is retrieved at regular intervals based on the “Default Interval” timer on the configuration/settings tab.
Graph or Grid	Radio Button	Display wait event information in graph or grid format.
Clear All	Button	Clear the contents of graphs, grids and select box.
Save	Button	Creates a threshold value file based on the highest delta values detected. Delta values are calculated when the monitoring is enabled.
Load	Button	Load threshold values from file. Threshold values are stored in a filename <SID>_wait_thresh.txt. The threshold values will be stored in the threshold column in the grid.
< > Move Single	Button	Removes or adds a single wait event type from the graphs.
<< >> Move All	Button	Removes or add all wait event types from the graphs.
Display Box	Select Box	List of wait events that will be included in the graphs.
Hide Box	Select Box	List of wait events that will be removed from the graphs.
Threshold Breach	Grid	List the time and type of wait event that breached a threshold. Breaches of wait event thresholds are only checked if thresholds are first loaded into the grid.
Wait Event Grid	Grid	Displays wait event name with various values: <ul style="list-style-type: none">- Min: Minimum Delta- Max: Maximum Delta- Delta: Last Delta- Accumulated: Number of waits since instance startup- Threshold: Threshold value used for breach detection

8.2 Historical

Displays historical wait event information. Information is retrieved from historical AWR table. The historical delta values are plotted into a graphical representation.

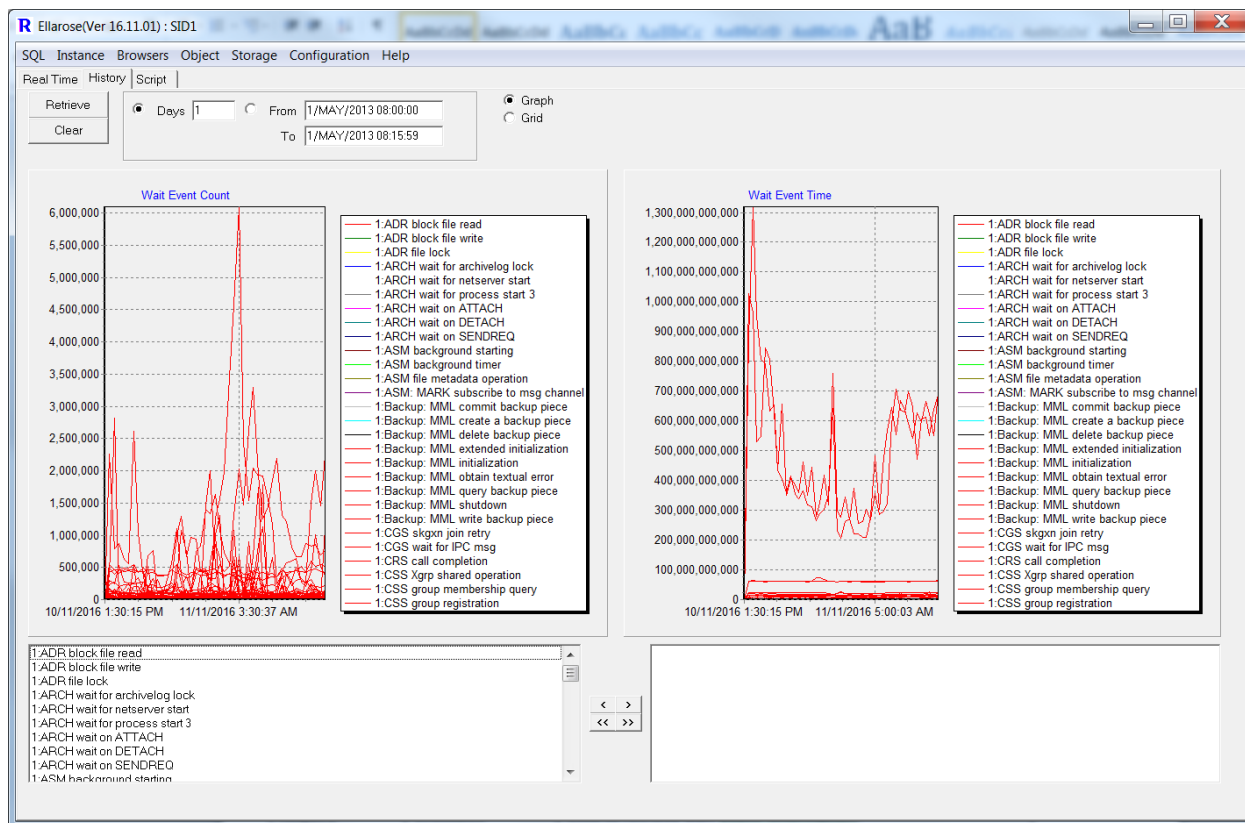


Illustration 8.2: Instance Wait Events(Historical view)

Context:

Component ID	Component Type	Description
Acquire	Checkbox	Click to retrieve wait event information.
Clear	Button	Clear the contents of graphs, grids and select box.
Days	Field	Number of days of SQL statistics to retrieve.
From/To	Field	Date range of SQL statistics to retrieve.
Maintain Dynamic Script	Checkbox	The SQL script in the "Script" tab can be tailored to requirements. Check this box so the SQL script is not overwritten when the "Acquire" button is clicked.
Graph or Grid	Radio Button	Display wait event information in graph or grid format.
< > Move Single	Button	Removes or adds a single wait event type from the graphs.
<< >> Move All	Button	Removes or add all wait event types from the graphs.
Display Box	Select Box	List of wait events that will be included in the graphs.
Hide Box	Select Box	List of wait events that will be removed from the graphs.
Wait Event Grid	Grid	Displays wait event name with various values: <ul style="list-style-type: none"> - Min: Minimum Delta - Max: Maximum Delta - Delta: Last Delta - Accumulated: Number of waits since instance startup - Threshold: Threshold value used for breach detection

8.3 Script

Controls the script used to retrieve real time and historical wait event information.

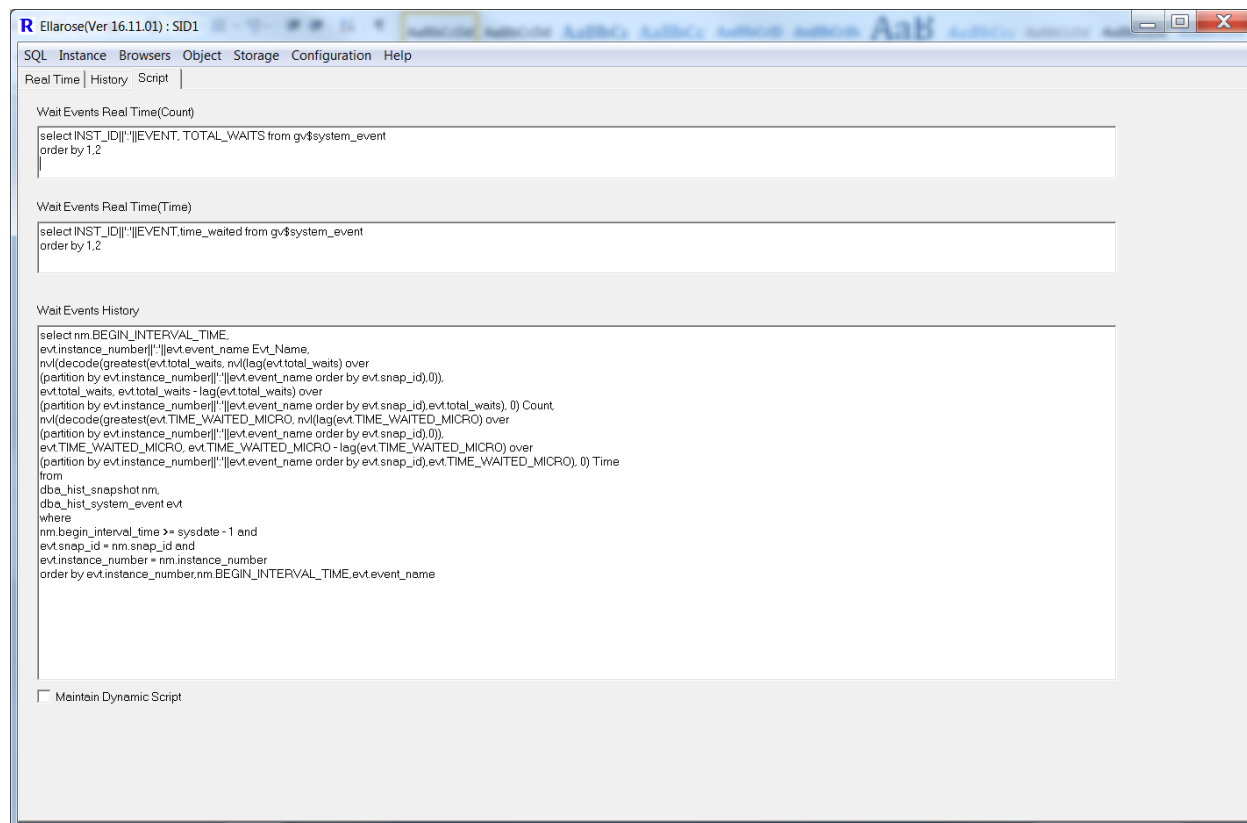


Illustration 8.3: Scripts used to retrieve instance wait event information

Section 9. Instance: Latching

9.1 Latch Overview(Real Time)

Displays database latching events in the real time. The database dynamic performance views are polled at regular intervals, the delta values between polling are plotted into a graphical representation.

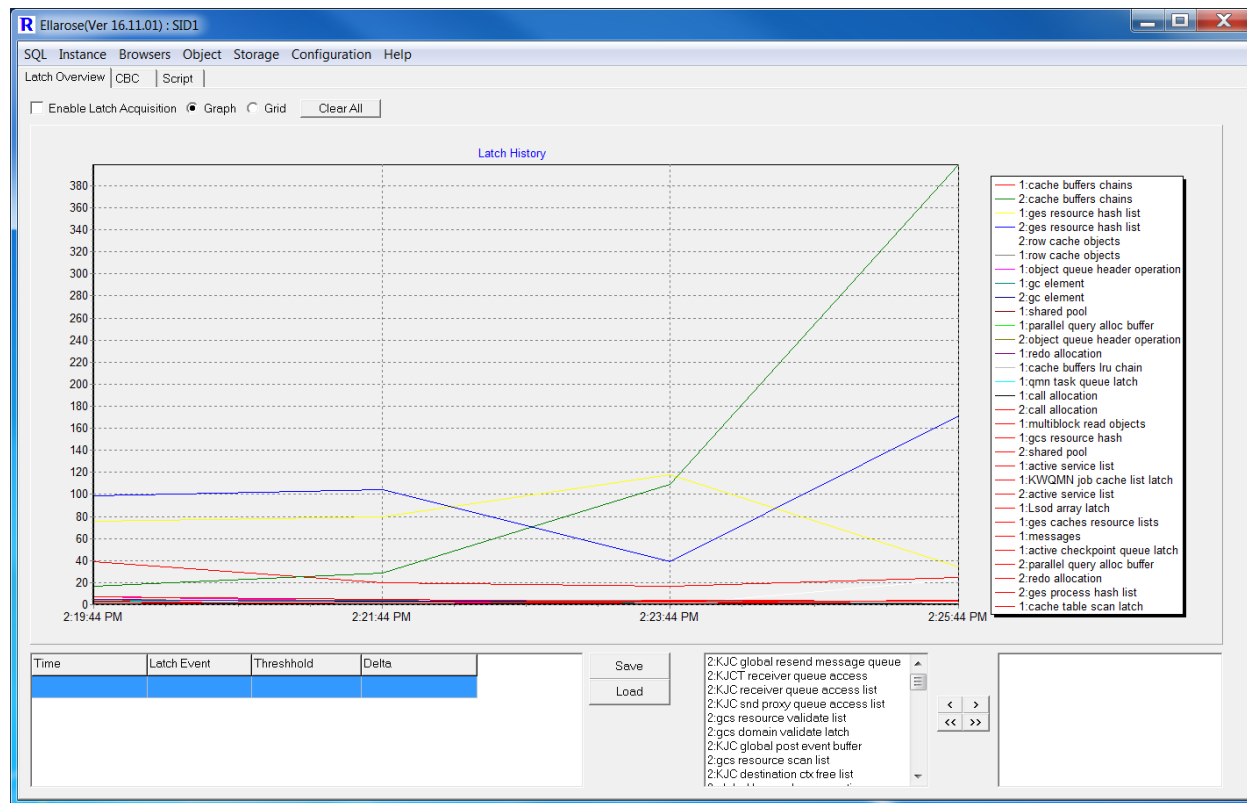


Illustration 9.1: Latch Events(Graph view)

Context:

Component ID	Component Type	Description
Enable Latch Acquisition	Checkbox	Check to acquire database latch event information. Latch event information is retrieved at regular intervals based on the "Latch Interval" timer on the configuration/settings tab.
Clear All	Button	Clear the contents of graphs, grids and select box.
Graph or Grid	Radio Button	Display latch event information in graph or grid format.
Save	Button	Creates a threshold value file based on the highest delta values detected. Delta values are calculated when the monitoring is enabled.
Load	Button	Load threshold values from file. Threshold values are stored in a filename <SID>_latch_thresh.txt. The threshold values will be stored in the threshold column in the grid.
< > Move Single	Button	Removes or adds a single latch event type from the graphs.
<< >> Move All	Button	Removes or add all latch event types from the graphs.
Display Box	Select Box	List of latch events that will be included in the graphs.
Hide Box	Select Box	List of latch events that will be removed from the graphs.
Threshold Breach	Grid	List the time and type of latch event that breached a threshold. Breaches of latch event thresholds are only checked if thresholds are first loaded into the grid.
Latch Event Grid	Grid	Displays latch event name with various values: <ul style="list-style-type: none">- Min: Minimum Delta- Max: Maximum Delta- Delta: Last Delta- Accumulated: Number of latches since instance startup- Threshold: Threshold value used for breach detection

9.2 CBC

Displays database cache buffer chain latching events in the real time. The database dynamic performance viewed are polled at regular intervals, the delta values between polling are plotted into a graphical representation.

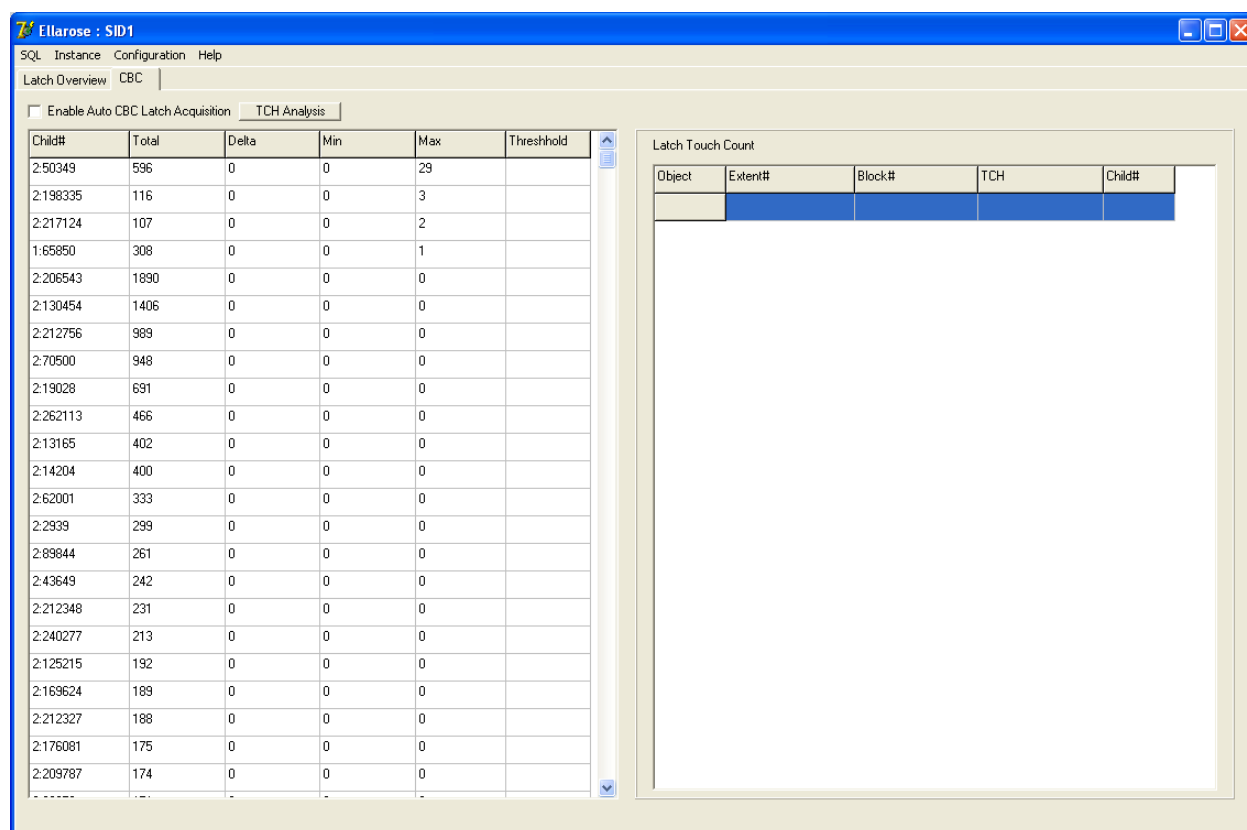


Illustration 9.2: CBC Latch Information

Note:

CBC latch information can take a long time to retrieve. Consider extending the latch interval timer so CBC queries do not start stacking up.

Context:

Component ID	Component Type	Description
Enable Auto CBC Latch Acquisition	Checkbox	Check to acquire database cache buffer chain latch event information. Latch event information is retrieved at regular intervals based on the "Latch Interval" timer on the configuration/settings tab.
Latch Event Grid	Grid	Displays CBC latch event name with various values: <ul style="list-style-type: none"> - Min: Minimum Delta - Max: Maximum Delta - Delta: Last Delta - Accumulated: Number of latches since instance startup - Threshold: Threshold value used for breach detection
TCH analysis	Button	Performs a touch count analysis on the child latch which has been selected.
Latch Touch count Grid	Grid	Displays object information showing hot CBC latches. ** Pressing this button can take a long time to return results**

9.4 Script

Controls the script used to retrieve latch information from the database.

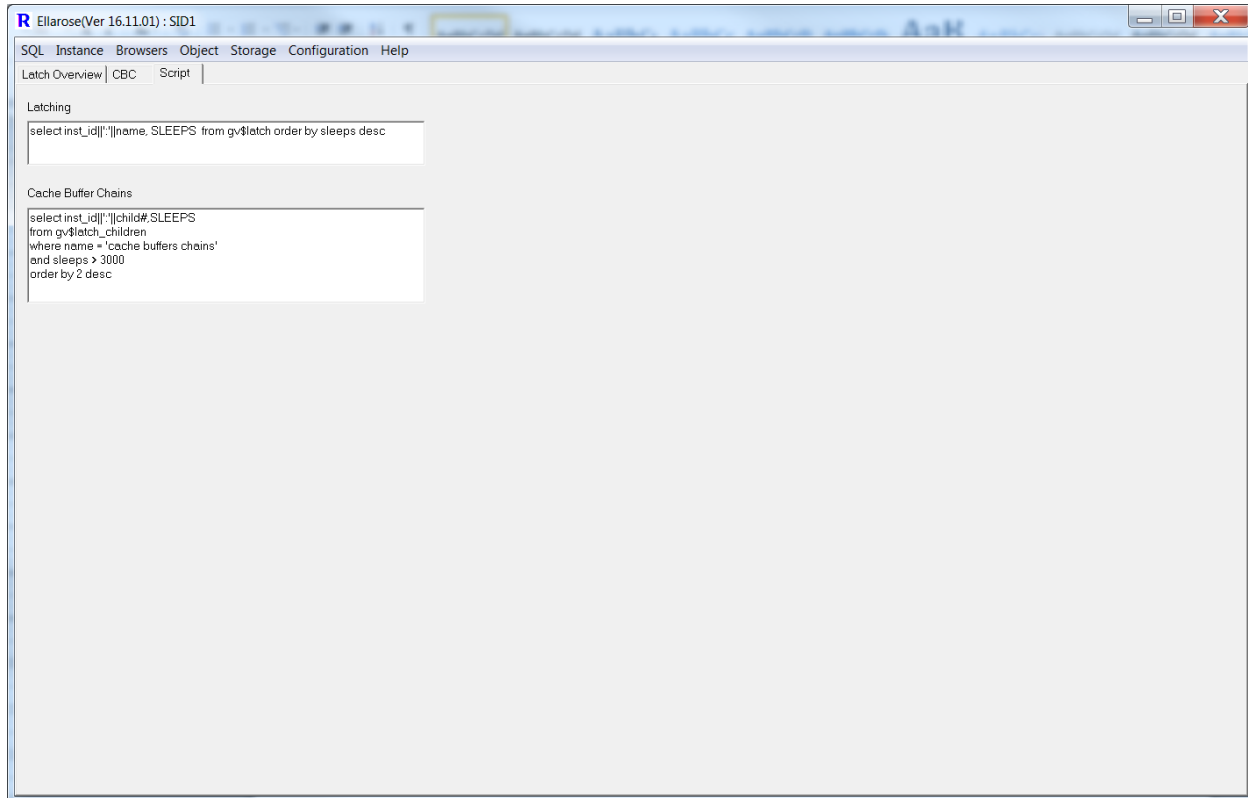


Illustration 9.4: Scripts used to retrieve latch information

Section 10. Buffer Cache Content

Displays every object currently residing in the buffer cache.

10.1 Buffer Cache Content

Ellarose(Ver 16.11.01) : SID1

SQL Instance Browsers Object Storage Configuration Help

Buffer Cache Content | Script

RetrieveClear

Owner	Obj Name	Obj Type	#Blks in Buffer	%Blks in Buffer	Pool Type	Blk Size
GL	GL_JE_LINES	TAB PART	136653	5.867	DEFAULT	16384
HR	PER_ALL_ASSIGNMENTS_F	TABLE	34763	99.482	KEEP	16384
GL	GL_DAILY_BALANCES	TAB PART	25471	7.9818	DEFAULT	16384
HR	PER_ALL_PEOPLE_F	TABLE	22711	99.4004	DEFAULT	16384
GL	GL_JE_LINES_U1	INDEX	22332	0.3181	DEFAULT	16384
HR	PAY_ASSIGNMENT_ACTIONS	TABLE	20733	7.4365	DEFAULT	16384
HR	PER_ABSENCE_ATTENDANCES	TABLE	19733	32.6079	DEFAULT	16384
GL	GL_JE_BATCHES	TABLE	16645	99.6468	DEFAULT	16384
APPLSYS	WF_LOCAL_ROLES	TAB PART	12396	50.5711	DEFAULT	16384
HR	HR_ALL_POSITIONS_F	TABLE	11834	96.3053	DEFAULT	16384
GL	GL_CODE_COMBINATIONS_U1	INDEX	11307	93.9744	DEFAULT	16384
APPLSYS	WF_USER_ROLE_ASSIGNMENTS	TAB PART	10027	22.5103	DEFAULT	16384
HR	PAY_ASSIGNMENT_ACTIONS_PK	INDEX	8689	8.4435	DEFAULT	16384
APPLSYS	FND_CONCURRENT_PROCESSES_N1	INDEX	8007	97.4562	DEFAULT	16384
HR	PAY_ACTION_INTERLOCKS_PK	INDEX	7266	4.0228	DEFAULT	16384
HR	PAY_ACTION_INTERLOCKS	TABLE	6729	5.8057	DEFAULT	16384
FSI	WGL_JR_MTH_JOURNAL_LUST	TABLE	6644	98.869	DEFAULT	16384
BOLINF	WBC_PORTAL_PASS_CHANGE	TABLE	6392	98.8861	DEFAULT	16384
APPLSYS	FND_CONCURRENT_PROCESSES_N2	INDEX	5152	94.9153	DEFAULT	16384
HR	PAY_ELEMENT_ENTRIES_F	TABLE	5144	1.375	DEFAULT	16384
FSI	WGL_ACK_CODE_COMBO_DET_N7	INDEX	4751	91.9311	DEFAULT	16384
HR	PER_PERSON_TYPE_USAGES_F	TABLE	4543	98.5894	DEFAULT	16384
ZX	ZX_PARTY_TAX_PROFILE	TABLE	4513	36.7269	DEFAULT	16384
FSI	WGL_ACK_CODE_COMBINATION_DET	TABLE	4443	33.3759	DEFAULT	16384
BOLINF	WBCPER_NEWHIRE	TABLE	3846	98.5143	DEFAULT	16384
FSI	WGL_DENORM_HIER	TABLE	3832	15.1199	DEFAULT	16384
HR	PER_POSITION_DEFINITIONS	TABLE	3314	95.8912	DEFAULT	16384
APPLSYS	FND_CONCURRENT_REQUESTS	TABLE	3150	98.4375	DEFAULT	16384
IRV	IRV_EVT_BANK_ACCOUNTS	TABLE	3137	98.0312	DEFAULT	16384

Illustration 10.1: Buffer Cache Content

Context:

Component ID	Component Type	Description
Retrieve	Button	Display the current content of the buffer cache.
Clear	Button	Clear the contents of the grid.

Section 11. SGA Hit Ratios

Displays hit ratios for the data dictionary, buffer cache and library cache memory structures.

11.1 SGA Hit Ratios(Real time)

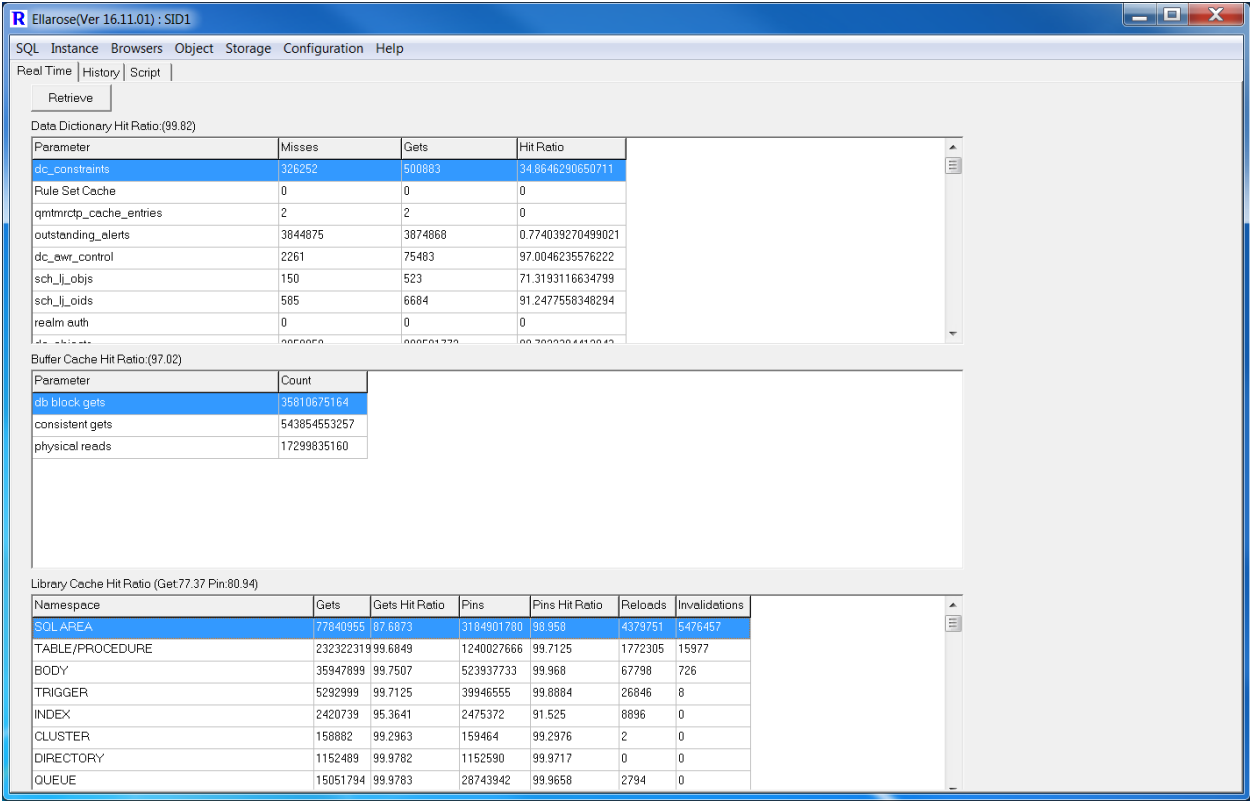


Illustration 11.1: SGA Hit Ratios

Context:

Component ID	Component Type	Description
Retrieve	Button	Displays real time hit ratios for various memory structures of the SGA.

11.2 SGA Hit Ratios(History)

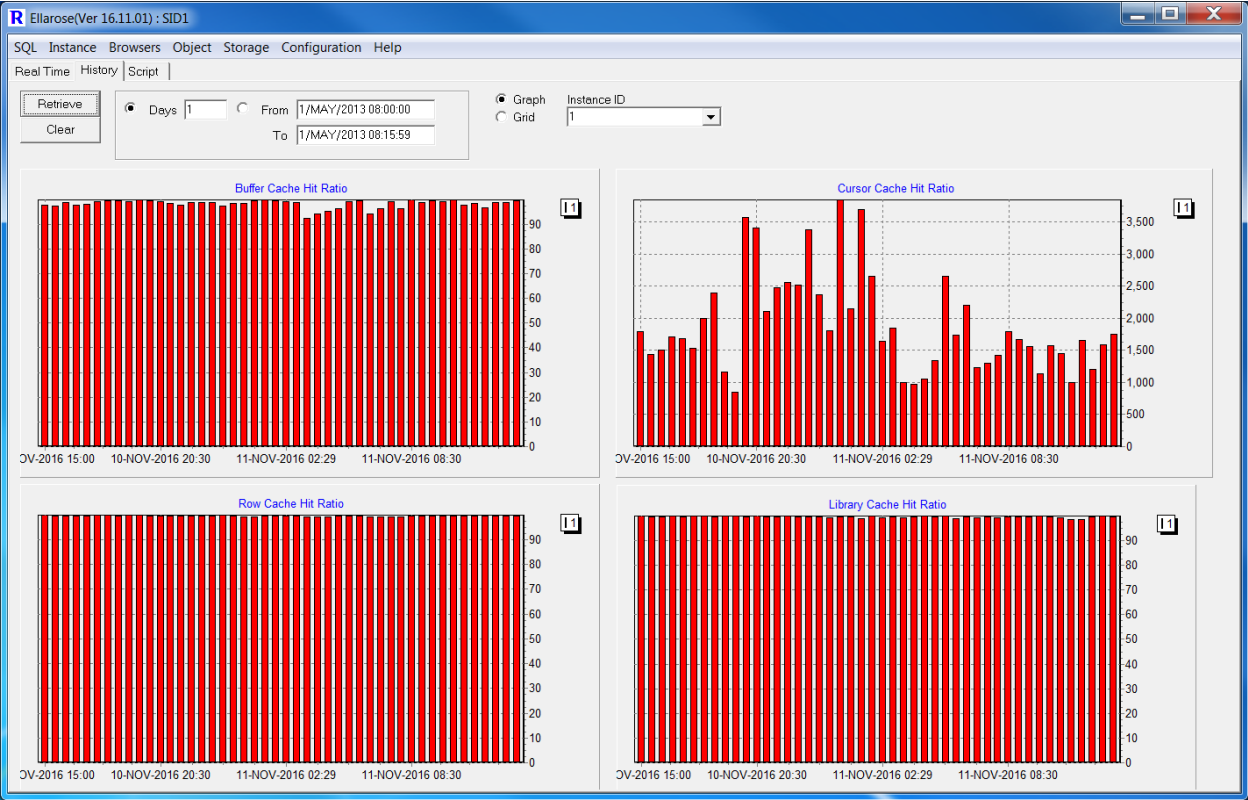


Illustration 11.2: SGA Hit Ratios

Context:

Component ID	Component Type	Description
Retrieve	Button	Displays historical hit ratios for various memory structures of the SGA.
Clear	Button	Clear the contents of graphs.
Days	Field	Number of days of information to retrieve.
From/To	Field	Date range of information to retrieve.
Graph or Grid	Radio Button	Display information in graph or grid format.
Instance ID	Pull Down	Select which instance to display information for.

Section 12. Advisors

12.1 Retrieve

Advisor information can be analysed based on a pre-determined selection criteria. Values entered into the retrieval form determine the scope of the advisor information retrieved.

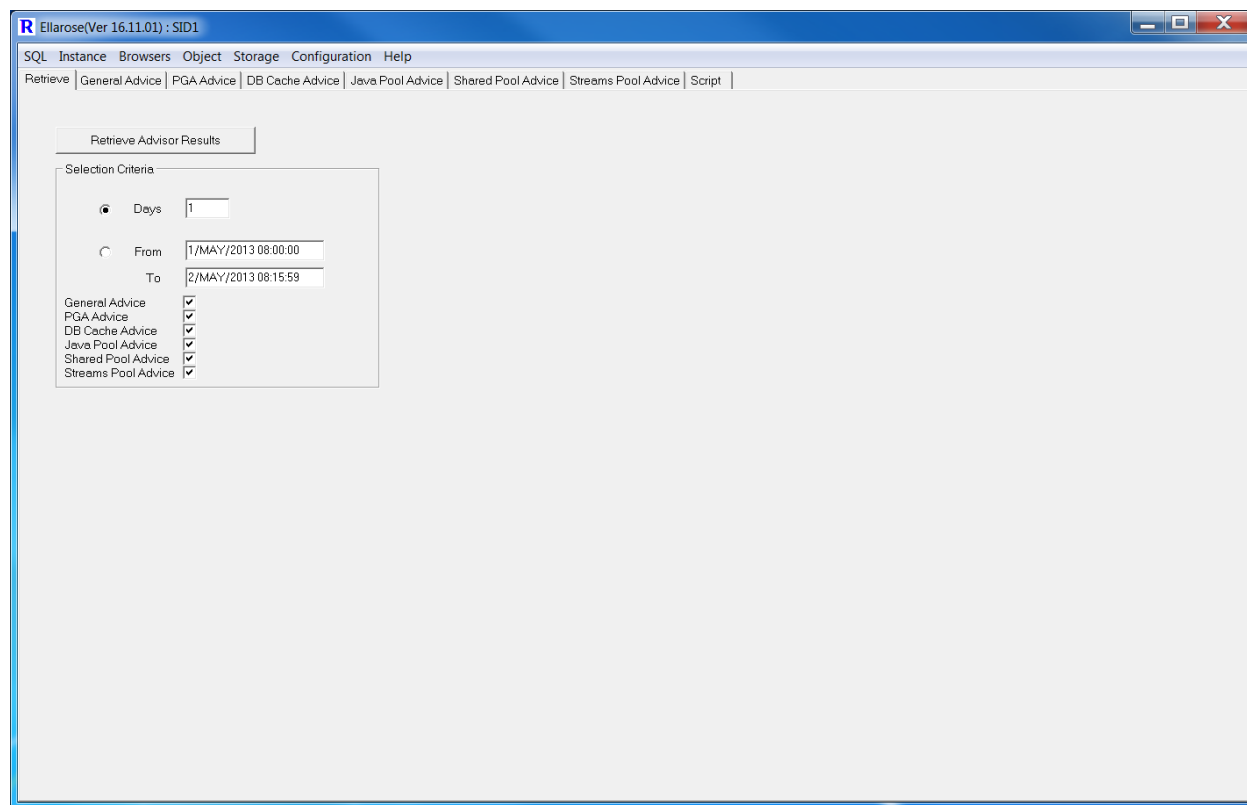


Illustration 12.1: Advisor Retrieval Form

Context:

Component ID	Component Type	Description
Retrieve Advisor Results	Button	Click to retrieve advisor information based on the entered date criteria.
Days	Field	Number of days of advisor information to retrieve.
From/To	Field	Date range of advisor information to retrieve.
General Advice	Checkbox	Check to acquire general advice about the database.
PGA Advice	Checkbox	Check to acquire advice on the PGA.
DB Cache Advice	Checkbox	Check to acquire advice on the DB cache.
Java Pool Advice	Checkbox	Check to acquire advice on the Java Pool.
Shared Pool Advice	Checkbox	Check to acquire advice on the Shared Pool.
Streams Pool Advice	Checkbox	Check to acquire advice on the Streams Pool.

Usage:

- 1) Enter the amount of information to retrieve. Either enter the number days of history(from now) or enter a date/time range. Be sure to click the radio button which signifies the appropriate method of date criteria.
- 2) Click the **<Retrieve Advisor Results>** button.

12.2 Results

General Advice:

Advisor information is displayed according to the criteria entered on the retrieval form:

The screenshot shows the 'General Advice' window in the ELLAROSE application. The window has a menu bar (SQL, Instance, Browsers, Object, Storage, Configuration, Help) and a toolbar (Retrieve, General Advice, PGA Advice, DB Cache Advice, Java Pool Advice, Shared Pool Advice, Streams Pool Advice, Script). Below the toolbar is a 'Sort Order' section with radio buttons for Impact (selected), Rank, Recommendation Type, and Benefit. A table displays a list of advice items. The first item is selected, and its details are shown in the lower section of the window.

Advice Date	Type	Impact	Rank	Type	Message	Command to Correct	Action Message	Benefit	Benefit Type
11/11/2016 4:00:56 AM	PROBLEM	11554546176	4	SQL Tuning	SQL statements consuming significant database time were found. These statements offer a good opportunity for performance improvement.	RUN SQL TUNING ADVISOR	Run SQL Tuning Advisor on the SELECT statement with SQL_ID "d6f0g089dur6".	1802836992	
11/11/2016 4:00:56 AM	PROBLEM	11554546176	5	SQL Tuning	SQL statements consuming significant database time were found. These statements offer a good opportunity for performance improvement.	RUN SQL TUNING ADVISOR	Run SQL Tuning Advisor on the SELECT statement with SQL_ID "d6f0g089dur6".	1802836992	
11/11/2016 4:00:56 AM	PROBLEM	11554546176	8	SQL Tuning	SQL statements consuming significant database time were found. These statements offer a good opportunity for performance improvement.	RUN SQL TUNING ADVISOR	Run SQL Tuning Advisor on the SELECT statement with SQL_ID "d6f0g089dur6".	1802836992	
11/11/2016 4:00:56 AM	PROBLEM	11554546176	7	SQL Tuning	SQL statements consuming significant database time were found. These statements offer a good opportunity for performance improvement.	RUN SQL TUNING ADVISOR	Run SQL Tuning Advisor on the SELECT statement with SQL_ID "d6f0g089dur6".	1802836992	
11/11/2016 4:00:56 AM	PROBLEM	11554546176	3	SQL Tuning	SQL statements consuming significant database time were found. These statements offer a good opportunity for performance improvement.	RUN SQL TUNING ADVISOR	Run SQL Tuning Advisor on the SELECT statement with SQL_ID "d6f0g089dur6".	1802836992	
11/11/2016 4:00:56 AM	PROBLEM	11554546176	2	SQL Tuning	SQL statements consuming significant database time were found. These statements offer a good opportunity for performance improvement.	RUN SQL TUNING ADVISOR	Run SQL Tuning Advisor on the SELECT statement with SQL_ID "d6f0g089dur6".	1802836992	
11/11/2016 4:00:56 AM	PROBLEM	11554546176	1	SQL Tuning	SQL statements consuming significant database time were found. These statements offer a good opportunity for performance improvement.	RUN SQL TUNING ADVISOR	Run SQL Tuning Advisor on the SELECT statement with SQL_ID "d6f0g089dur6".	1802836992	

Below the table, the 'Finding Type' is set to 'PROBLEM' and the 'Recommendation Type' is set to 'SQL Tuning'. The 'Advice Date' is '11/11/2016 4:00:56 AM', 'Impact' is '11554546176', and 'Rank' is '4'. The 'Message' field contains the text: 'SQL statements consuming significant database time were found. These statements offer a good opportunity for performance improvement.' The 'Command to Fix' is 'RUN SQL TUNING ADVISOR'. The 'Action Message' is 'Run SQL Tuning Advisor on the SELECT statement with SQL_ID "d6f0g089dur6"'. The 'Benefit' is '1802836992' and the 'Benefit Type' is empty.

Illustration 12.2a: General Advice

Usage:

- 1) Double click on a row in the grid to display the complete advice in the fields at the bottom of the form.
- 2) Sort the content of the advice by clicking on any of the radiobuttons show next to "Sort Order"

PGA Advice:

Advisor information is displayed according to the criteria entered on the retrieval form:

Inst#	ESTD Target	Factor	Status	Bytes	ESTD Extra Bytes	ESTD PGA Cache%	EST Overalloc
1	786432000	0.125	ON	14310059557888	4959553416192	74	55960
1	1572864000	0.25	ON	14310059557888	4927444025344	74	53830
1	3145728000	0.5	ON	14310059557888	2749378310144	84	19912
1	4718592000	0.75	ON	14310059557888	1089538193408	93	177
1	6291456000	1	ON	14310059557888	697388227584	95	0
1	7549747200	1.2	ON	14310059557888	605363274496	96	0
1	8808038400	1.4	ON	14310059557888	598007137280	96	0
1	10066329600	1.6	ON	14310059557888	597414456320	96	0
1	11324620800	1.8	ON	14310059557888	597414456320	96	0
1	12582912000	2	ON	14310059557888	597414456320	96	0
1	18874368000	3	ON	14310059557888	597414456320	96	0
1	25165824000	4	ON	14310059557888	597414456320	96	0
1	37748736000	6	ON	14310059557888	597414456320	96	0
1	50331648000	8	ON	14310059557888	597414456320	96	0
2	786432000	0.125	ON	27759190552576	6252097191936	82	67638
2	1572864000	0.25	ON	27759190552576	2579325976576	91	46006
2	3145728000	0.5	ON	27759190552576	1410544280576	95	21866
2	4718592000	0.75	ON	27759190552576	794410071040	97	7365
2	6291456000	1	ON	27759190552576	250580636672	99	2305
2	7549747200	1.2	ON	27759190552576	198916327424	99	627
2	8808038400	1.4	ON	27759190552576	198899542016	99	50
2	10066329600	1.6	ON	27759190552576	198899542016	99	0
2	11324620800	1.8	ON	27759190552576	198899542016	99	0
2	12582912000	2	ON	27759190552576	198899542016	99	0
2	18874368000	3	ON	27759190552576	198899542016	99	0
2	25165824000	4	ON	27759190552576	198899542016	99	0
2	37748736000	6	ON	27759190552576	198899542016	99	0
2	50331648000	8	ON	27759190552576	198899542016	99	0

Illustration 12.2b: PGA Advice

Usage:

- 1) The current memory configuration is shown with a factor of 1. Advice is shown in a predictive model based on changes made to the factor.

DB Cache Advice:

Advisor information is displayed according to the criteria entered on the retrieval form:

Inst#	ID	Name	Block Size	Status	Size EST	Factor	ESTD Buffer	ESTD Read Factor	ESTD Reads	EST Read Time	ESTD % READ	ESTD Cluster Reads	ESTD Cluster
1	1	KEEP	16384	ON	96	0.0938	5892	74951.924	3474471387	20767266	81.6	4294967295	1155450489
1	1	KEEP	16384	ON	192	0.1875	11784	69757.7507	3233690291	19328079	76	4294967295	1075377669
1	1	KEEP	16384	ON	288	0.2813	17676	66313.0977	3074009957	18373643	72.2	4294967295	1022275365
1	1	KEEP	16384	ON	384	0.375	23568	63202.9332	2929835170	17511889	68.8	4294967295	974329370
1	1	KEEP	16384	ON	480	0.4688	29460	59808.8134	2772497352	16571457	65.1	4294967295	922005998
1	1	KEEP	16384	ON	576	0.5625	35352	21384.4825	991299070	5924947	23.3	4294967295	329660785
1	1	KEEP	16384	ON	672	0.6563	41244	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	768	0.75	47136	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	864	0.8438	53028	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	960	0.9375	58920	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	1024	1	62848	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	1056	1.0313	64812	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	1152	1.125	70704	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	1248	1.2188	76596	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	1344	1.3125	82488	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	1440	1.4063	88380	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	1536	1.5	94272	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	1632	1.5938	100164	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	1728	1.6875	106056	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	1824	1.7813	111948	1	46356	70	0	3372446	15415
1	1	KEEP	16384	ON	1920	1.875	117840	1	46356	70	0	3372446	15415
1	3	DEFAULT	16384	ON	896	0.0972	54992	1.939	21546529874	36798058	144.6	287412544	698995
1	3	DEFAULT	16384	ON	1792	0.1944	109984	1.5364	17072340101	25978727	102.1	227730608	553847
1	3	DEFAULT	16384	ON	2688	0.2917	164976	1.2589	13989545421	18524021	72.8	186608736	453837
1	3	DEFAULT	16384	ON	3584	0.3889	219968	1.1637	12931338663	15965102	62.7	172493152	419508
1	3	DEFAULT	16384	ON	4480	0.4861	274960	1.1119	12355809860	14573382	57.3	164816096	400837
1	3	DEFAULT	16384	ON	5376	0.5833	329952	1.0768	11965852711	13630397	53.6	159614384	388186
1	3	DEFAULT	16384	ON	6272	0.6806	384944	1.0513	11682753381	12945820	50.9	155838064	379002
1	3	DEFAULT	16384	ON	7168	0.7778	439936	1.0319	11466313950	12422433	48.8	152950960	371981

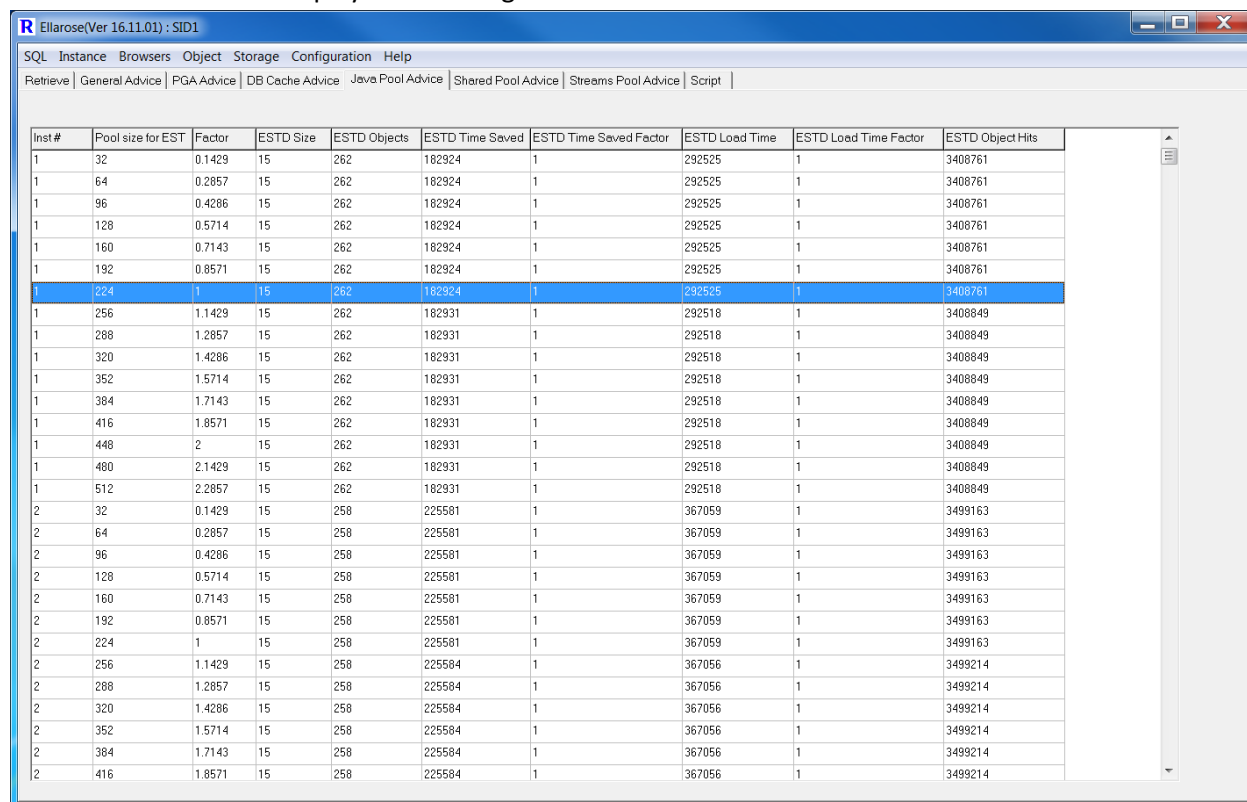
Illustration 12.2c: DB Cache Advice

Usage:

The current memory configuration is shown with a factor of 1. Advice is shown in a predictive model based on changes made to the factor.

Java Pool Advice:

Advisor information is displayed according to the criteria entered on the retrieval form:



Inst#	Pool size for EST	Factor	ESTD Size	ESTD Objects	ESTD Time Saved	ESTD Time Saved Factor	ESTD Load Time	ESTD Load Time Factor	ESTD Object Hits
1	32	0.1429	15	262	182924	1	292525	1	3408761
1	64	0.2857	15	262	182924	1	292525	1	3408761
1	96	0.4286	15	262	182924	1	292525	1	3408761
1	128	0.5714	15	262	182924	1	292525	1	3408761
1	160	0.7143	15	262	182924	1	292525	1	3408761
1	192	0.8571	15	262	182924	1	292525	1	3408761
1	224	1	15	262	182924	1	292525	1	3408761
1	256	1.1429	15	262	182931	1	292518	1	3408849
1	288	1.2857	15	262	182931	1	292518	1	3408849
1	320	1.4286	15	262	182931	1	292518	1	3408849
1	352	1.5714	15	262	182931	1	292518	1	3408849
1	384	1.7143	15	262	182931	1	292518	1	3408849
1	416	1.8571	15	262	182931	1	292518	1	3408849
1	448	2	15	262	182931	1	292518	1	3408849
1	480	2.1429	15	262	182931	1	292518	1	3408849
1	512	2.2857	15	262	182931	1	292518	1	3408849
2	32	0.1429	15	258	225581	1	367059	1	3499163
2	64	0.2857	15	258	225581	1	367059	1	3499163
2	96	0.4286	15	258	225581	1	367059	1	3499163
2	128	0.5714	15	258	225581	1	367059	1	3499163
2	160	0.7143	15	258	225581	1	367059	1	3499163
2	192	0.8571	15	258	225581	1	367059	1	3499163
2	224	1	15	258	225581	1	367059	1	3499163
2	256	1.1429	15	258	225584	1	367056	1	3499214
2	288	1.2857	15	258	225584	1	367056	1	3499214
2	320	1.4286	15	258	225584	1	367056	1	3499214
2	352	1.5714	15	258	225584	1	367056	1	3499214
2	384	1.7143	15	258	225584	1	367056	1	3499214
2	416	1.8571	15	258	225584	1	367056	1	3499214

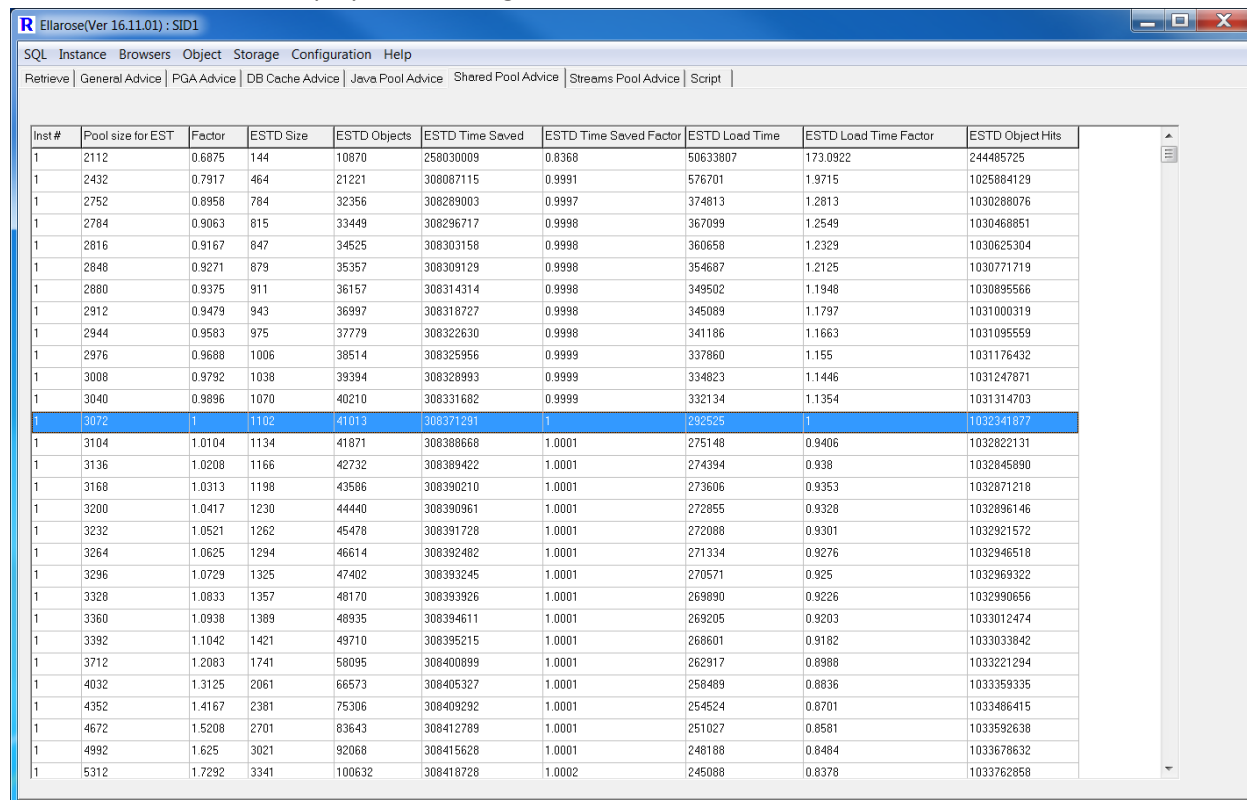
Illustration 12.2d: Java Pool Advice

Usage:

The current memory configuration is shown with a factor of 1. Advice is shown in a predictive model based on changes made to the factor.

Shared Pool Advice:

Advisor information is displayed according to the criteria entered on the retrieval form:



Inst #	Pool size for EST	Factor	ESTD Size	ESTD Objects	ESTD Time Saved	ESTD Time Saved Factor	ESTD Load Time	ESTD Load Time Factor	ESTD Object Hits
1	2112	0.6875	144	10870	258030009	0.8368	50633807	173.0922	244485725
1	2432	0.7917	464	21221	308087115	0.9991	576701	1.9715	1025884129
1	2752	0.8958	784	32356	308289003	0.9997	374813	1.2813	1030288076
1	2784	0.9063	815	33449	308296717	0.9998	367099	1.2549	1030468851
1	2816	0.9167	847	34525	308303158	0.9998	360658	1.2329	1030625304
1	2848	0.9271	879	35357	308309129	0.9998	354687	1.2125	1030771719
1	2880	0.9375	911	36157	308314314	0.9998	349502	1.1948	1030895566
1	2912	0.9479	943	36997	308318727	0.9998	345089	1.1797	1031000319
1	2944	0.9583	975	37779	308322630	0.9998	341186	1.1663	1031095559
1	2976	0.9688	1006	38514	308325956	0.9999	337860	1.155	1031176432
1	3008	0.9792	1038	39394	308328993	0.9999	334823	1.1446	1031247871
1	3040	0.9896	1070	40210	308331682	0.9999	332134	1.1354	1031314703
1	3072	1	1102	41013	308371291	1	292525	1	1032341877
1	3104	1.0104	1134	41871	308388668	1.0001	275148	0.9406	1032822131
1	3136	1.0208	1166	42732	308389422	1.0001	274394	0.938	1032845890
1	3168	1.0313	1198	43586	308390210	1.0001	273606	0.9353	1032871218
1	3200	1.0417	1230	44440	308390961	1.0001	272855	0.9328	1032896146
1	3232	1.0521	1262	45478	308391728	1.0001	272088	0.9301	1032921572
1	3264	1.0625	1294	46614	308392482	1.0001	271334	0.9276	1032946518
1	3296	1.0729	1325	47402	308393245	1.0001	270571	0.925	1032969322
1	3328	1.0833	1357	48170	308393926	1.0001	269890	0.9226	1032990656
1	3360	1.0938	1389	48935	308394611	1.0001	269205	0.9203	1033012474
1	3392	1.1042	1421	49710	308395215	1.0001	268601	0.9182	1033033842
1	3712	1.2083	1741	58095	308400899	1.0001	262917	0.8988	1033221294
1	4032	1.3125	2061	66573	308405327	1.0001	258489	0.8836	1033359335
1	4352	1.4167	2381	75306	308409292	1.0001	254524	0.8701	1033486415
1	4672	1.5208	2701	83643	308412789	1.0001	251027	0.8581	1033592638
1	4992	1.625	3021	92068	308415628	1.0001	248188	0.8484	1033678632
1	5312	1.7292	3341	100632	308418728	1.0002	245088	0.8378	1033762858

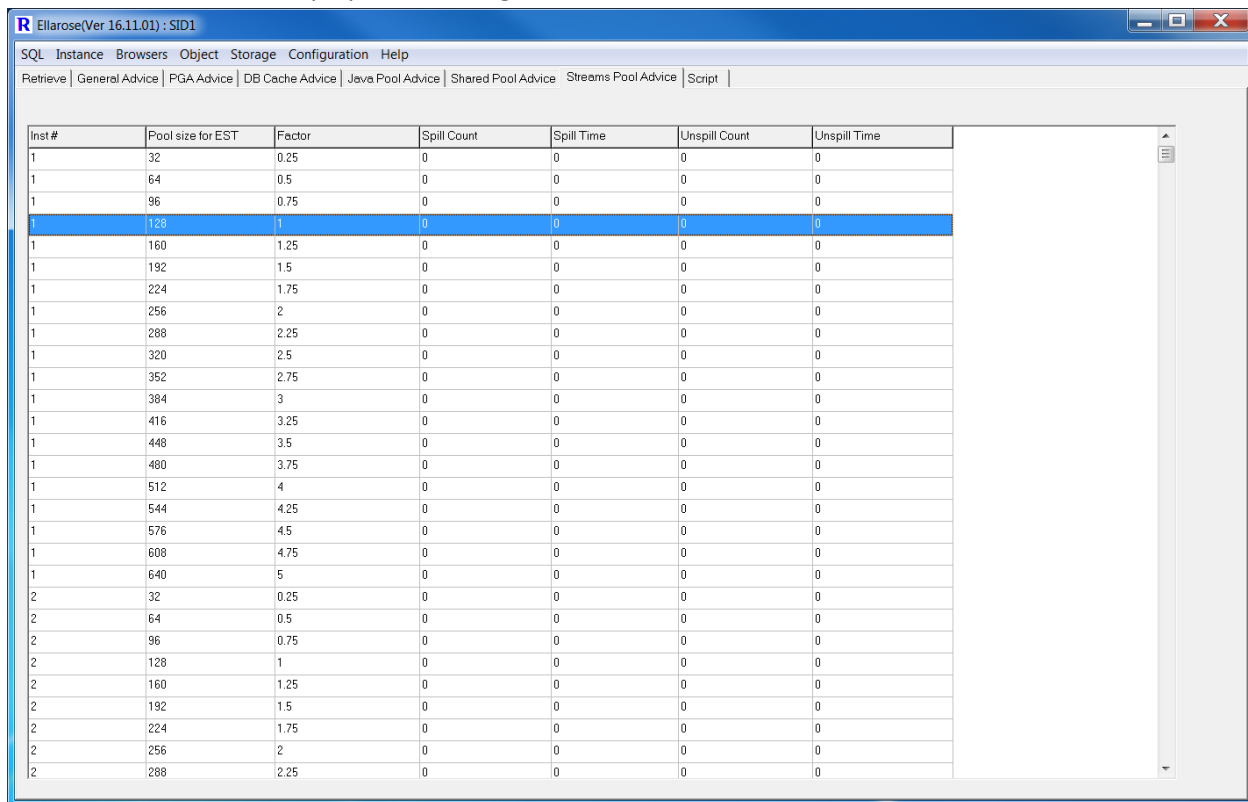
Illustration 12.2e: Shared Pool Advice

Usage:

The current memory configuration is shown with a factor of 1. Advice is shown in a predictive model based on changes made to the factor.

Streams Pool Advice:

Advisor information is displayed according to the criteria entered on the retrieval form:



R Ellarose(Ver 16.11.01) : SID1						
SQL Instance Browsers Object Storage Configuration Help						
Retrieve General Advice PGA Advice DB Cache Advice Java Pool Advice Shared Pool Advice Streams Pool Advice Script						
Inst#	Pool size for EST	Factor	Spill Count	Spill Time	Unspill Count	Unspill Time
1	32	0.25	0	0	0	0
1	64	0.5	0	0	0	0
1	96	0.75	0	0	0	0
1	128	1	0	0	0	0
1	160	1.25	0	0	0	0
1	192	1.5	0	0	0	0
1	224	1.75	0	0	0	0
1	256	2	0	0	0	0
1	288	2.25	0	0	0	0
1	320	2.5	0	0	0	0
1	352	2.75	0	0	0	0
1	384	3	0	0	0	0
1	416	3.25	0	0	0	0
1	448	3.5	0	0	0	0
1	480	3.75	0	0	0	0
1	512	4	0	0	0	0
1	544	4.25	0	0	0	0
1	576	4.5	0	0	0	0
1	608	4.75	0	0	0	0
1	640	5	0	0	0	0
2	32	0.25	0	0	0	0
2	64	0.5	0	0	0	0
2	96	0.75	0	0	0	0
2	128	1	0	0	0	0
2	160	1.25	0	0	0	0
2	192	1.5	0	0	0	0
2	224	1.75	0	0	0	0
2	256	2	0	0	0	0
2	288	2.25	0	0	0	0

Illustration 12.2f: Streams Pool Advice

Usage:

The current memory configuration is shown with a factor of 1. Advice is shown in a predictive model based on changes made to the factor.

12.3 Script

Controls the query which is submitted to the database to retrieve information.

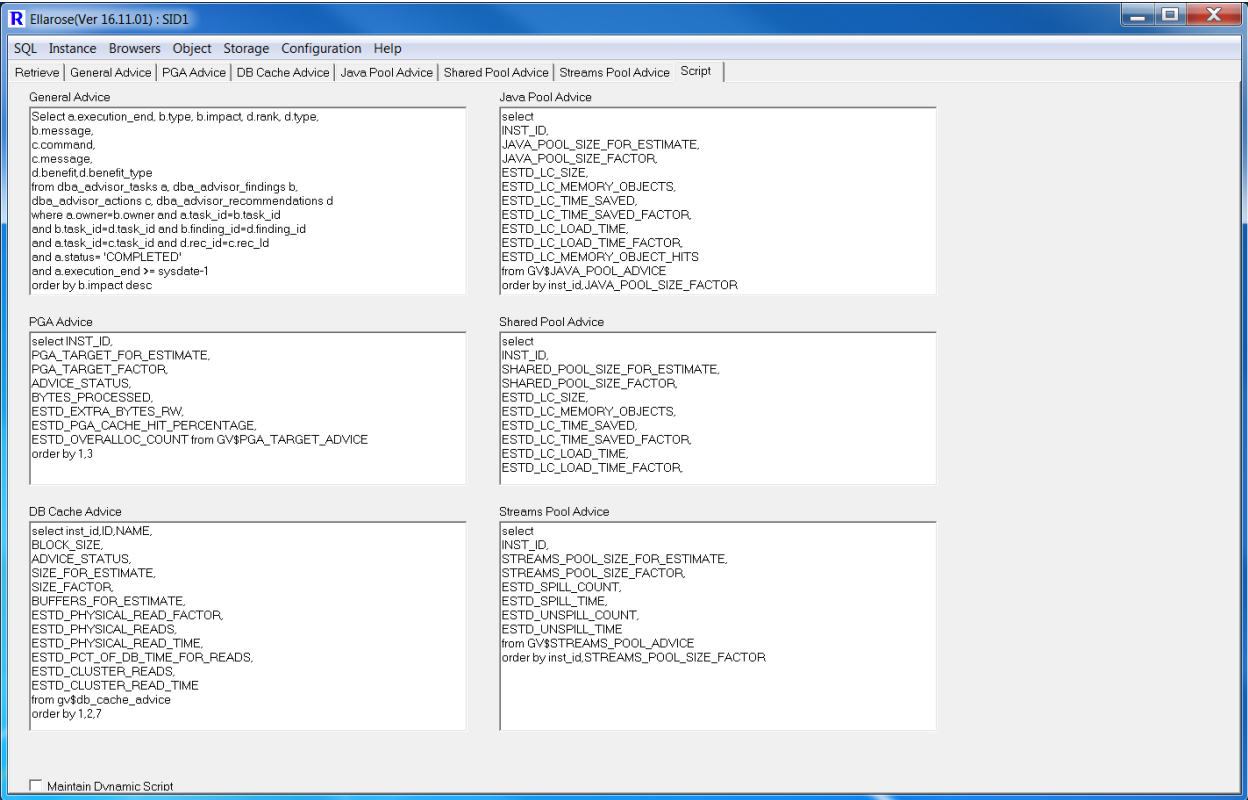


Illustration 12.3: Scripts used to retrieve advisor information

Context:

Component ID	Component Type	Description
Advisor Recommendations Script	Textbox	Controls the queries over the advisor tables.
Maintain Dynamic Script	Checkbox	Normally the query is constructed and executed based on literals populated in various fields. The queries in the text boxes can be manually modified and then executed provided the “Maintain Dynamic Script” box is checked. Check this box so the SQL script is not overwritten when the retrieve button is clicked.

Section 13. Health Check

13.1 Retrieve

Various parts of the database can be analysed to determine the overall health of the database. The scope of the health check is determined by pre-determined selection criteria. Values entered into the retrieval form determine the scope of the health check.

The screenshot shows the 'Retrieve' tab of the Ellarose Health Check Retrieval Form. The form is titled 'Ellarose(Ver 16.11.01) : SID1' and has tabs for 'Retrieve', 'Results', and 'Scripts'. The 'Retrieve' tab is active, showing a 'Retrieve' button and a 'Clear All' button. Below these are several sections for selecting criteria:

- SQL Execution:** Timescale: Default 60 days. Checkboxes: Index Usage, Plan Flip Flops, Long Operations, Hard Parses, Failed Parses, PL/SQL CPU Consumption. Radio buttons: Days 60, From 1/MAY/2013 08:00:00 To 2/MAY/2013 08:15:59. Check: Exclude SYS.SYSTEM.
- Wait Events:** Timescale: Default 7 days. Checkboxes: Top Wait Events, Buffer Busy Waits(By Object), Row Lock Waits(By Object), Trans Slot Waits(By Object). Radio buttons: Days 7, From 1/MAY/2013 08:00:00 To 2/MAY/2013 08:15:59. Check: Exclude SYS.SYSTEM.
- Top Consumers:** Timescale: Default 7 days. Checkboxes: Top Physical I/O(By Object), Top Physical I/O(By Query), Top Logical I/O(By Query), Top Memory(By Query), Top CPU(By Query), Top Elapsed(By Query). Radio buttons: Days 7, From 1/MAY/2013 08:00:00 To 2/MAY/2013 08:15:59.
- REDO:** Timescale: Real Time. Checkboxes: Log Buffer Waits, Log Buffer Latching, Log Wait Times, Log Switch Frequency.
- Object:** Timescale: Real Time. Checkboxes: Unusable Indexes, Invalid Objects, Disabled Constraints, SYS.SYSTEM Objects, Missing Statistics, Stale Statistics, Row Chaining, Orphaned Synonyms. Check: Exclude SYS.SYSTEM.
- Capacity:** Timescale: Real Time. Checkboxes: Tablespace Free Check, Extent Free Check, Orphaned Tablespace, Active Restore Points, TEMP Usage, UNDO Usage, DB File Count.
- Hit Ratios:** Timescale: Real Time. Checkboxes: Data Dictionary, Library Cache(Summary), Library Cache(Detail), Shared Pool, Buffer Cache.
- Memory:** Timescale: Real Time. Checkboxes: PGA Effectiveness, Disk Sorts, Top Latches, Memory Resize Operations, Result Cache Stats.
- File System:** Timescale: Real Time. Checkboxes: CTRL File Multiplexing, CTRL File Retention, REDO Log Multiplexing, UNDO Activity, ASM Diskgroup Stats.

Illustration 13.1: Health Check Retrieval Form

Context:

Component ID	Component Type	Description
Clear All	Button	Clear all results.
Retrieve	Button	Retrieve health information based on selection criteria.
SQL Execution Criteria	Checkbox's	Determines the criteria for analysing SQL Execution health.
Wait Event Criteria	Checkbox's	Determines the criteria for analysing wait event health.
Top Consumers	Checkbox's	Determines the criteria for analysing top resource consumers.
REDO	Checkbox's	Determines the criteria for analysing REDO information.
Object Criteria	Checkbox's	Determines the criteria for analysing object health.
Capacity Criteria	Checkbox's	Determines the criteria for analysing capacity health.
Hit Ratios	Checkbox's	Determines the criteria for analysing database hit ratios.
Memory	Checkbox's	Determines the criteria for analysing database memory health.
File system	Checkbox's	Determines the criteria for analysing file system health.

13.2 Results

Health check information is displayed according to the criteria entered on the retrieval form as per below:

The screenshot displays the Ellarose (Ver 16.11.01) : SID1 interface. The main menu includes SQL, Instance, Browsers, Object, Storage, Configuration, and Help. The 'Retrieve' tab is active, showing several sub-tabs: Object, SQL Execution (selected), Capacity, Wait Events, Top Consumers, REDO, Hit Ratios, Memory, and File System.

The 'SQL Execution' sub-tab is selected, showing a table of 'Index Usage (Indexes not used in 60 days)' and a table of 'Plan Flip Flops (SQL operations with multiple execution plans in the last 60 days)'. The 'Plan Flip Flops' table has columns: SQLID, Number of plans, Total Elapsed(s), Total CPU(s), and Total I/O Wait(s). The 'PL/SQL Consumption' table has columns: Inst#, DB Time, PL/SQL Time, and PL/SQL %.

The 'Long Operations' table shows columns: InstID, SID, Serial#, OP Name, Done(hh:mm), and Left(hh:mm). The 'SQL Hard Parses' table shows columns: Inst#, Time, Stat Name, and Count. The 'SQL Failed Parses' table shows columns: Inst#, Time, Stat Name, and Count.

Illustration 13.2: Health Check Results

Usage:

- 1) Scroll through various tabs to inspect the health check results for the pre-determined criteria.
- 2) Each health check item has a help button which provides further advice.

13.3 Scripts

Controls the query which is submitted to the database to retrieve information.

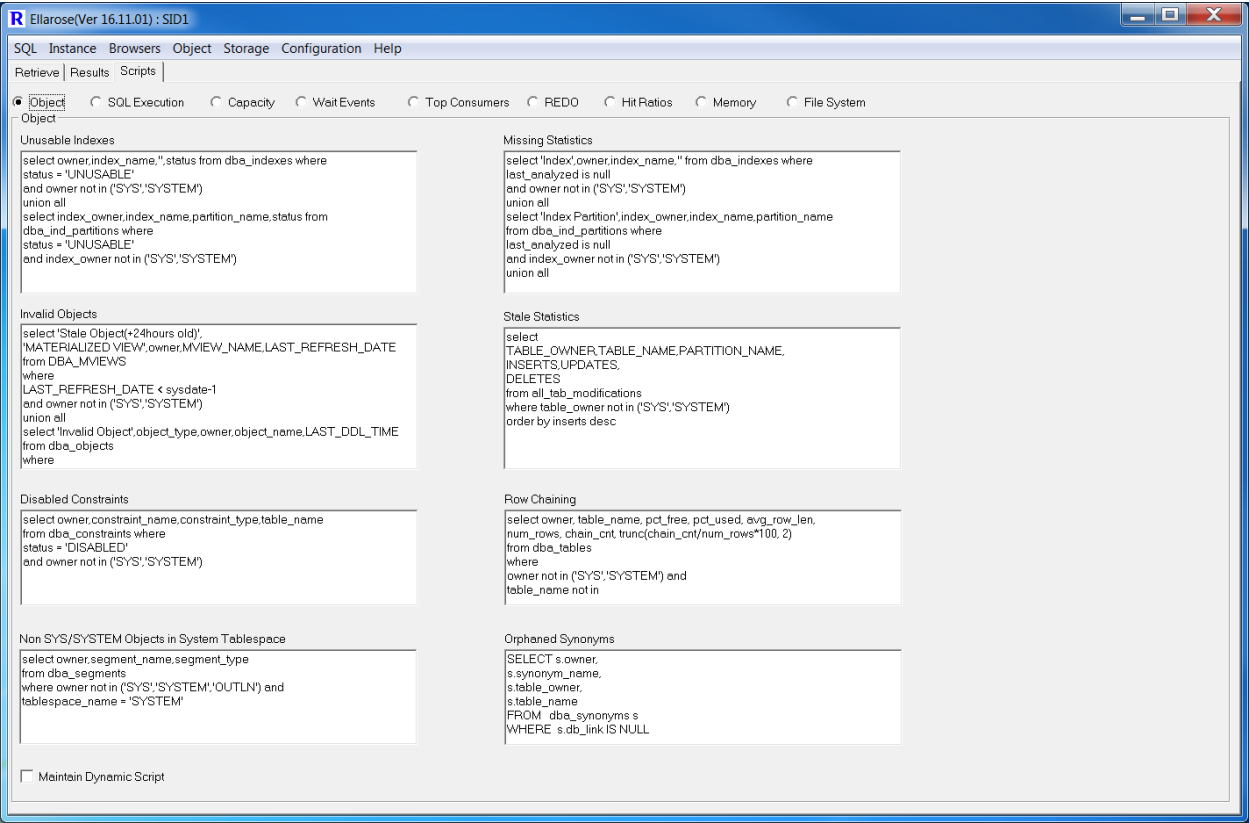


Illustration 13.3: Scripts used to perform database health check

Context:

Component ID	Component Type	Description
Health Check Criteria	Radio Button	Determines which set of health check scripts are displayed.
Health Check Script	Textbox	Determines which health check scripts are executed.
Maintain Dynamic Script	Checkbox	Normally the query is constructed and executed based on literals populated in various fields. The queries in the text boxes can be manually modified and then executed provided the “Maintain Dynamic Script” box is checked. Check this box so the SQL script is not overwritten when the retrieve button is clicked.

Section 14. Object Browser

The object browser is used to display information on various objects within the database.

14.1 Retrieval

The screenshot shows the Ellarose (Ver 16.11.01) : SID1 window. The 'Object Browser' tab is active. On the left, the 'Schema Name' is 'SYSTEM' and the 'Object Name' is 'AQ\$'. A tree view on the left lists various objects under 'TABLE', 'INDEX', and 'VIEW'. The 'TABLE' section is expanded, showing 'SYSTEM.AQ\$_INTERNET_AGENTS'. The 'Table:Structure' tab is selected, displaying the table's structure. The table has three columns: 'AGENT_NAME' (VARCHAR2, 30), 'PROTOCOL' (NUMBER, 22), and 'SPARE1' (VARCHAR2, 128). The table is in the 'SYSTEM' tablespace, has a degree of 1, logging is 'YES', and compression is 'DISABLED'. The 'Buffer Pool' is 'DEFAULT', 'Skip Corrupt Blocks' is 'DISABLED', 'Row Movement' is 'DISABLED', 'Init Trans' is '1', 'Partitioned' is 'NO', 'Partition Type' is empty, 'Sub Partition Type' is empty, and 'Monitoring' is 'YES'.

Illustration 14.1: Object retrieval form

Right Click to refine index retrieval criteria

The 'Index Retrieval Options' dialog box is shown. It contains four checkboxes: 'Index:Structure' (checked), 'Statistics' (checked), 'Partitioning' (checked), 'Storage' (checked), and 'DDL' (checked). There is a close button (X) in the top right corner.

Right Click to refine table retrieval criteria

The 'Table Retrieval Options' dialog box is shown. It contains five checkboxes: 'Table:Structure' (checked), 'Statistics' (checked), 'Partitioning' (checked), 'Indexes' (checked), 'Constraints' (checked), 'Storage' (checked), and 'DDL' (checked). There is a close button (X) in the top right corner.

Context:

Component ID	Component Type	Description
Schema Name	Field	Filter objects based on a schema name. Wildcard of “%” can be used.
Object Name	Field	Filter objects based on an object name. Wildcard of “%” can be used.
Object Type(s)	Checkbox	Filter objects based on an object type. Check the objects which should be returned.
Load/Filter	Button	Retrieve a list of objects into the bottom left tree view based on the filter criteria.

Usage:

- 1) Filter the list of objects to retrieve by entering the required filter information.
- 2) Click the <Load/Filter> button.
- 3) Double click on an object in the bottom left tree view to display detailed information about it.

14.2 Script

The screenshot shows the Ellarose (Ver 16.11.01) : SID1 window. The 'Retrieve' tab is active, and the 'Table' object type is selected. The 'Main Table Information' section displays a SQL script to retrieve table details from the database. The 'Table Columns' section displays a SQL script to retrieve column details. The 'Table Indexes' section displays a SQL script to retrieve index details. The 'Table Constraints' section displays a SQL script to retrieve constraint details. The 'Table Partitions' section displays a SQL script to retrieve partition details. The 'DDL Extraction' section displays a SQL script to extract DDL for a specific table. The 'Table Storage' section displays a SQL script to retrieve storage details for a specific table.

```
select dt.tablespace_name,dt.partitioned,dt.status,
dt.compression,trim(dt.degree) as degree,dt.logging,
dt.monitoring,dt.buffer_pool,
dt.skip_corrupt,dt.row_movement,dt.ini_trans,
dt.pct_free,dt.pct_used,dt.pct_increase,dt.initial_extent,
dt.next_extent,dt.min_extents,dt.max_extents,dt.freelists,dt.freelist_groups,
dpt.partitioning_type,dpt.subpartitioning_type
from dba_tables dt,dba_part_tables dpt where
upper(dt.owner) = 'SYSTEM' and
```

```
select * from
(
select dtp.table_name,dtp.partition_name,' ',dtp.num_rows,dtp.blocks as dtpblocks,dtp.empty_blocks,
dtp.avg_space,dtp.chain_cnt,dtp.avg_row_len,dtp.sample_size,dtp.last_analyzed,
dtp.tablespace_name,dtp.compression,
dtp.buffer_pool,dtp.ini_trans,dtp.user_stats,dtp.global_stats,
dtn.inserts,dtn.deletes,dtn.updates,dtn.timestamp,dtn.truncated,dtn.drop_segments,dtp.high_value,
ds.extents,ds.bytes/1024/1024,ds.blocks
from
dba_tab_partitions dtp,sys.dba_tab_modifications dtn,dba_segments ds
where
upper(dtp.table_owner) = 'SYSTEM' and
upper(dtp.table_name) = 'AQ$_INTERNET_AGENTS' and
dtp.table_owner = dtn.table_owner(+) and
dtp.table_name = dtn.table_name(+) and
dtp.partition_name = dtn.partition_name(+) and
dtn.subpartition_name(+) is null and
dtp.table_owner = ds.owner(+) and
dtp.table_name = ds.segment_name(+) and
```

```
select dbms_metadata.get_ddl('TABLE','AQ$_INTERNET_AGENTS','SYSTEM') from dual
```

```
select sum(extents),sum(round(bytes/1024/1024,4)),sum(blocks)
from dba_segments
where
owner = 'SYSTEM' and
segment_name = 'AQ$_INTERNET_AGENTS'
```

Illustration 14.2: Scripts used to retrieve object information

Section 15. Security Browser

The security browser is used to display information on various security attributes within the database as follows:

- Users(With role summary)
- Users(With role detail – hierarchy view)
- Roles
- Profiles
- Tablespace Quotas

15.1 Retrieval

The screenshot shows the Ellarose Security Browser window. The title bar is 'Ellarose(Ver 16.11.01) : SID1'. The menu bar includes 'SQL', 'Instance', 'Browsers', 'Object', 'Storage', 'Configuration', and 'Help'. The 'Retrieve' tab is selected. On the left, there is a 'Filter' field with a '%' character, a 'Retrieval Options' section with checkboxes for 'User', 'Role', 'Profile', and 'Tablespace Quotas', and a 'Load/Filter' button. Below these is a tree view showing a hierarchy of security objects: 'USER', 'ROLE', 'PROFILE', and 'T/S QUOTAS'. The main area on the right displays the details for the selected object, 'USER'. It includes tabs for 'User', 'Role', 'Profile', and 'Tablespace Quota'. The 'User' tab is active, showing fields for 'Username', 'User ID', 'Status', 'Created', 'Lock Date', 'Expiry Date', 'Profile', 'Def TSpace', and 'Temp TSpace'. Below these fields are two radio buttons: 'Role Summary' (selected) and 'Role Hierarchy'. At the bottom, there is a table with columns: 'Priv Type', 'Grantee', 'Priv Name', 'Grantable', 'Table ID', 'Column ID', and 'Owner'. The table is currently empty.

Illustration 15.1: Security retrieval form

Context:

Component ID	Component Type	Description
Filter	Field	Filter objects based on a security object name. Wildcard of “%” can be used.
Retrieval Options	Checkboxes	Filter security objects based on the security type.
Load/Filter	Button	Load/Filter the security list in the bottom left tree view.

Usage:

- 1) Filter the list of security objects to retrieve by entering the required filter information.
- 2) Click the <Load/Filter> button.
- 3) Double click on a security object in the bottom left tree view to display detailed information about it.

15.2 User Details(Role Summary)

Displays user information with a high level view of role allocation.

The screenshot shows the Ellarose (Ver 16.11.01) : SID1 application window. The interface includes a menu bar (SQL, Instance, Browsers, Object, Storage, Configuration, Help) and a toolbar (Retrieve, Scripts). A left sidebar contains a tree view of users, with 'SYSTEM' selected. The main area displays user details for 'SYSTEM' (User ID 5, Status OPEN, Created 30/04/2013 11:00:36 AM, Profile DEFAULT, Def TSpace SYSTEM, Temp TSpace TEMP). Below this, the 'Role Summary' tab is active, showing a table of privileges granted to the SYSTEM user.

Priv Type	Grantee	Priv Name	Grantable	Table ID	Column ID	Owner
ROLE	SYSTEM	AO_ADMINISTRATOR	YES	-	-	-
ROLE	SYSTEM	DBA	YES	-	-	-
SYSTEM	SYSTEM	ANALYZE ANY	NO	-	-	-
SYSTEM	SYSTEM	CREATE MATERIALIZED VIEW	NO	-	-	-
SYSTEM	SYSTEM	CREATE TABLE	NO	-	-	-
SYSTEM	SYSTEM	GLOBAL QUERY REWRITE	NO	-	-	-
SYSTEM	SYSTEM	SELECT ANY TABLE	NO	-	-	-
SYSTEM	SYSTEM	UNLIMITED TABLESPACE	YES	-	-	-
TABLE	SYSTEM	ALTER	NO	INCEXP	-	SYS
TABLE	SYSTEM	ALTER	NO	INCFIL	-	SYS
TABLE	SYSTEM	ALTER	NO	INCVID	-	SYS
TABLE	SYSTEM	ALTER	YES	X\$PT6SHB0FC20601TE0GOA08S0937	-	XDB
TABLE	SYSTEM	ALTER	YES	XDB\$ACL	-	XDB
TABLE	SYSTEM	ALTER	YES	XDB\$CHECKOUTS	-	XDB
TABLE	SYSTEM	ALTER	YES	XDB\$CONFIG	-	XDB
TABLE	SYSTEM	ALTER	YES	XDB\$D_LINK	-	XDB
TABLE	SYSTEM	ALTER	YES	XDB\$H_INDEX	-	XDB
TABLE	SYSTEM	ALTER	YES	XDB\$H_LINK	-	XDB
TABLE	SYSTEM	ALTER	YES	XDB\$NLOCKS	-	XDB
TABLE	SYSTEM	ALTER	YES	XDB\$RESCONFIG	-	XDB
TABLE	SYSTEM	ALTER	YES	XDB\$RESOURCE	-	XDB
TABLE	SYSTEM	ALTER	YES	XDB\$WORKSPACE	-	XDB
TARI F	SYSTEM	ALTER	YES	XSDATA_SECURITY	-	XDB

Illustration 15.2:User Information(Summary)

Usage:

- 1) Double click on the user name in the left tree view to display details about the user.

15.3 User Details(Role Hierarchy)

Displays user information with a detailed view of role allocation.

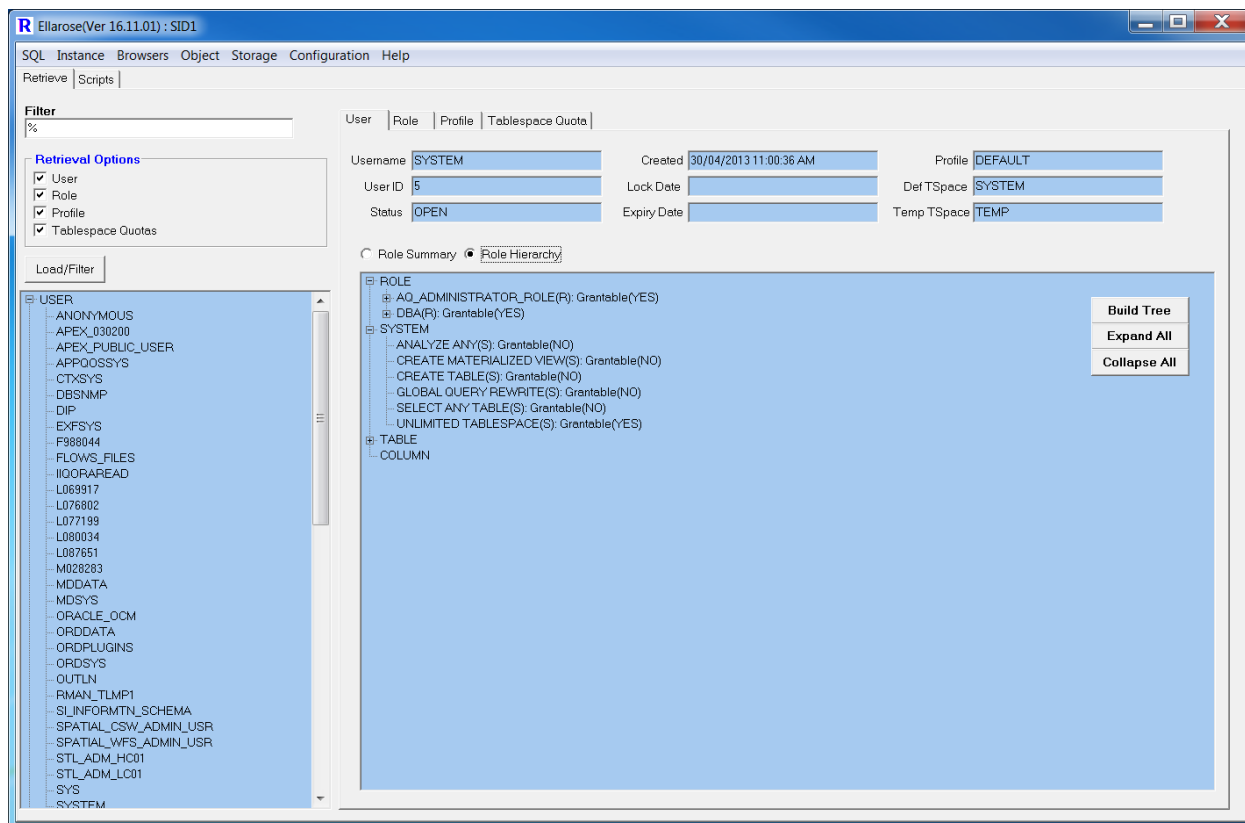


Illustration 15.3:User Information(Detailed)

Usage:

- 1) Double click on the user name in the left tree view to display details about the user.
- 2) Click on the <Build Tree> button to display a hierarchical view of role allocation for the user.

15.4 Role

Displays a hierarchical view of role allocation for a specific user.

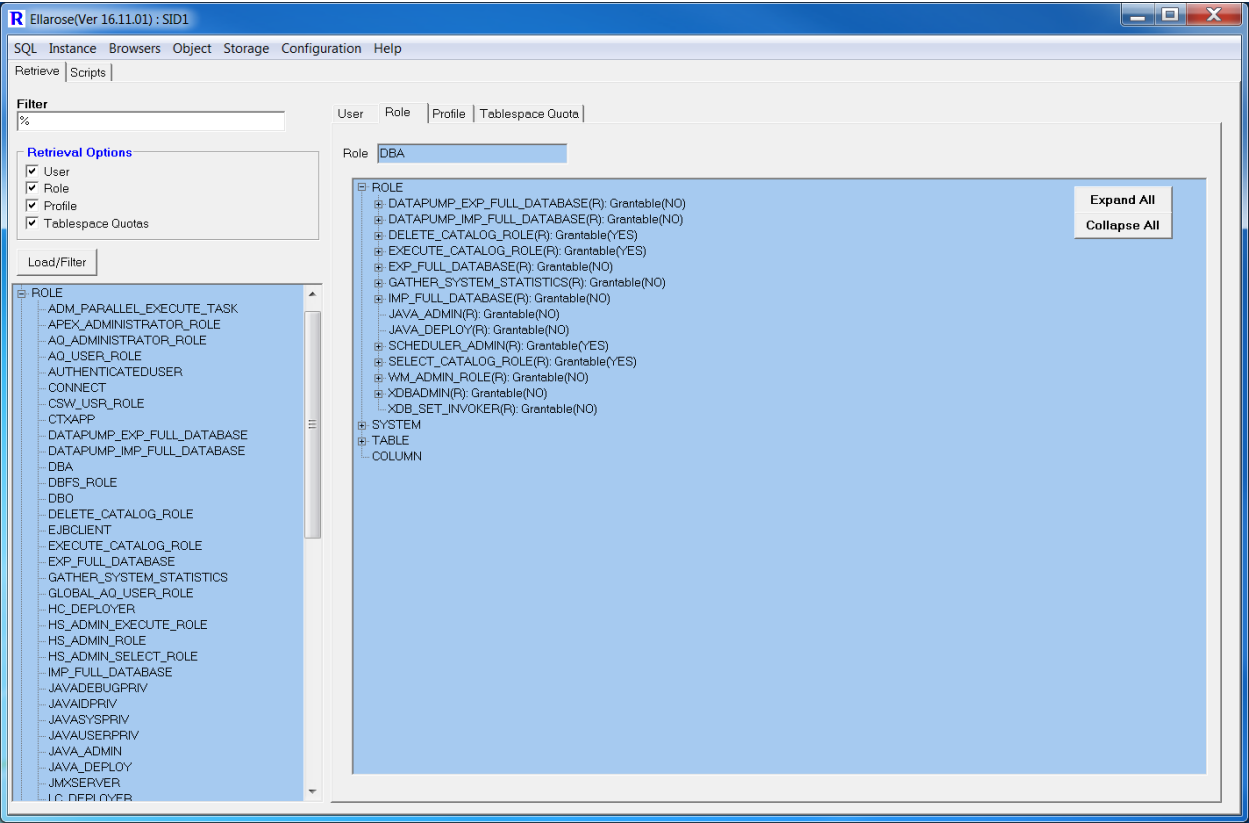


Illustration 15.4: Role Information(Detailed)

Usage:

- 1) Double click on the role name in the left tree view to display details about the role.

15.5 Profile

Display information for the chosen profile.

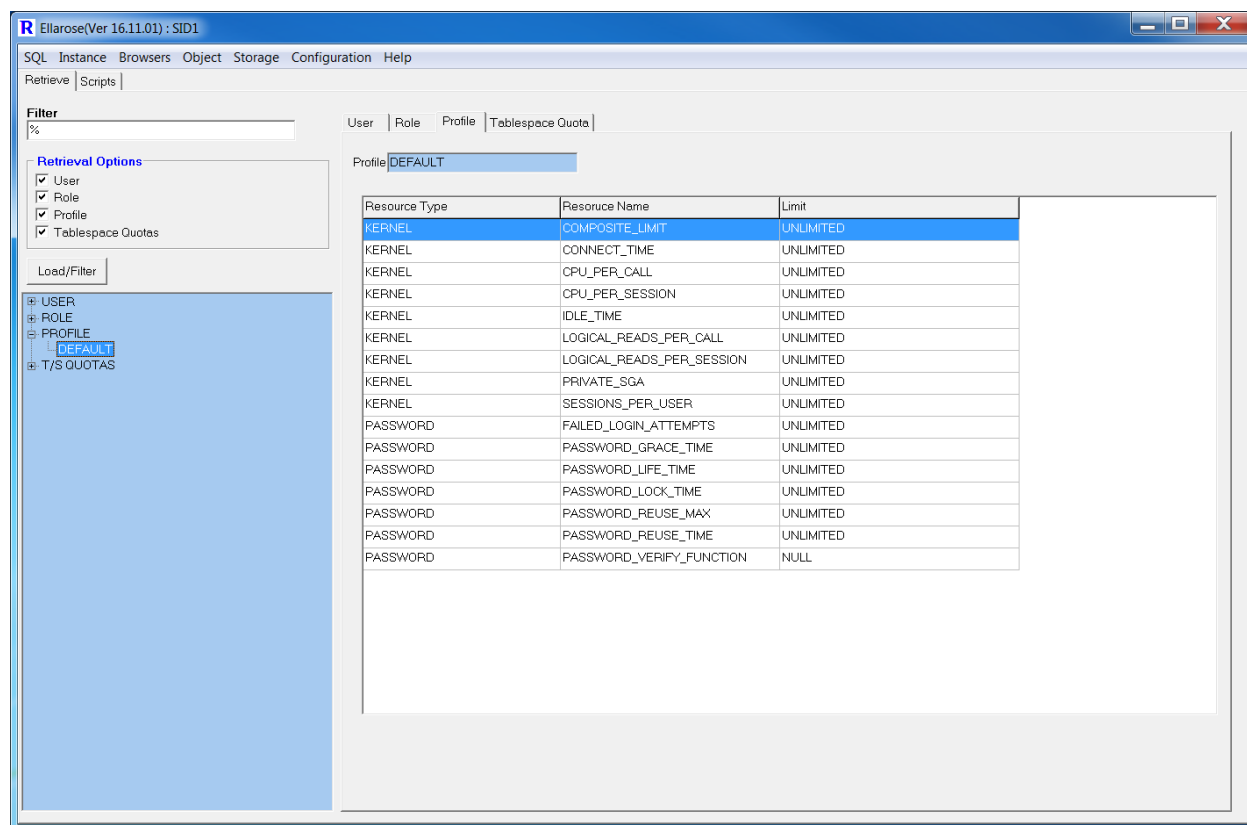


Illustration 15.5: Profile Information

Usage:

- 1) Double click on the profile name in the left tree view to display details about the profile.

15.6 Tablespace Quotas

Display tablespace quota information for the chosen user.

The screenshot shows the Ellarose SQL Enterprise Manager interface. The left pane displays a tree view of database objects, with the 'USERS' tablespace selected. The right pane shows the 'Tablespace Quota' tab for the 'USERS' tablespace. A table displays the quota information for various users.

Username	Bytes	Max Bytes	Blocks	Max blocks	Dropped
LD69917	0	-1	0	-1	NO
L080034	0	-1	0	-1	NO
L087651	0	-1	0	-1	NO
STL_ADM_HC01	262144	1048576	32	128	NO
STL_ADM_LC01	131072	1048576	16	128	NO
TLMSYS	0	-1	0	-1	NO
TLMSYS_LC	0	-1	0	-1	NO
TLM_DBO_HC01	196608	-1	24	-1	NO
TLM_DBO_LC01	252968960	-1	30880	-1	NO
YRSUPP	27394048	-1	3344	-1	NO

Illustration 15.6: Tablespace Quota Information

Usage:

- 1) Double click on the user name in the left tree view to display its tablespace quota information.

15.7 Script

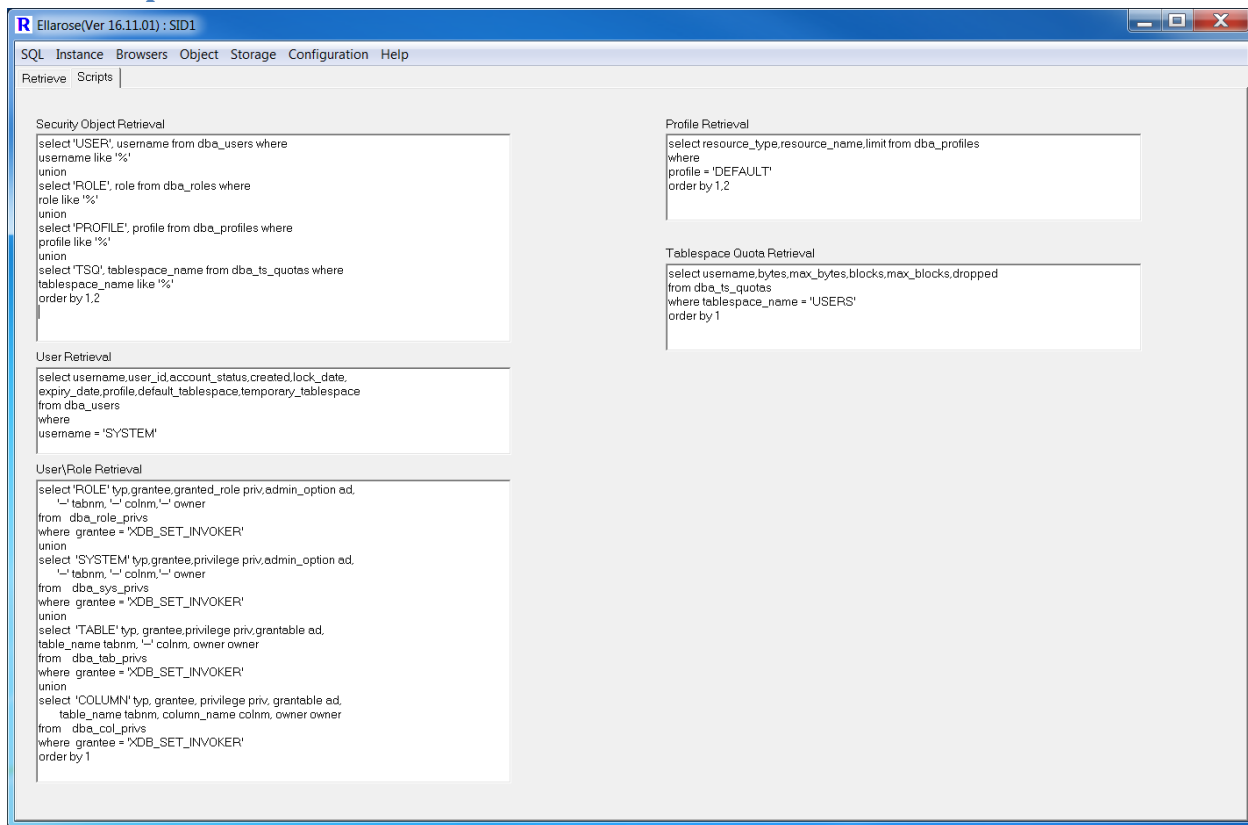


Illustration 15.7: Scripts used to retrieve security object information

Section 16. Storage Browser

Display information for tablespace and datafiles.

16.1 Retrieval

The screenshot shows the Ellarose (Ver 16.11.01) : SID1 application window. The interface includes a menu bar (SQL, Instance, Browsers, Object, Storage, Configuration, Help) and a toolbar (Retrieve, Scripts). On the left, there are input fields for 'Tablespace Name' and 'Datafile Name', both with a '%' wildcard, and a 'Load/Filter' button. Below these is a tree view showing a hierarchy of tablespaces and datafiles. The selected item is 'ITEM_20100801_HIST'. The main area displays detailed information for the selected tablespace and its datafiles. The tablespace details include Status (ONLINE), Contents (PERMANENT), Block Size (8192), Logging (LOGGING), Force Logging (NO), Bigfile (NO), Allocation Type (SYSTEM), Plugged In (NO), Seg Management (AUTO), Ext Management (LOCAL), Def Tab Compression (ENABLED), Retention (NOT APPLY), Initial Extent (65536), Next Extent, Min Extent (1), Max Extent (2147483645), Min Ext Length (65536), and PCT Increase. The datafile details include File ID (442), Bytes (20971520), Relative File ID (442), Max Bytes (31457280000), Status (AVAILABLE), Blocks (2560), Online Status (ONLINE), Max Blocks (3840000), Auto Extend (YES), Increment By (2560), User Bytes (19922944), and User Blocks (2432).

Illustration 16.1:Storage retrieval form

Context:

Component ID	Component Type	Description
Tablespace Name	Field	Filter tablespace information based on tablespace name. Wildcard of “%” can be used.
Datafile Name	Field	Filter datafile information based on datafile name. Wildcard of “%” can be used.
Load/Filter	Button	Load/Filter the tablespace and datafile list in the bottom left tree view.

Usage:

- 1) Filter the list of storage information to retrieve by entering the required filter information.
- 2) Click the <Load/Filter> button.
- 3) Double click on a tablespace or datafile in the bottom left tree view to display detailed information about it.

Section 17. Object Statistics

Display various logical and physical characterises for tables and indexes as follows:

- Physical I/O statistics
- Logical I/O statistics
- Growth Statistics(Trend analysis and forecasting)

17.1 Retrieval

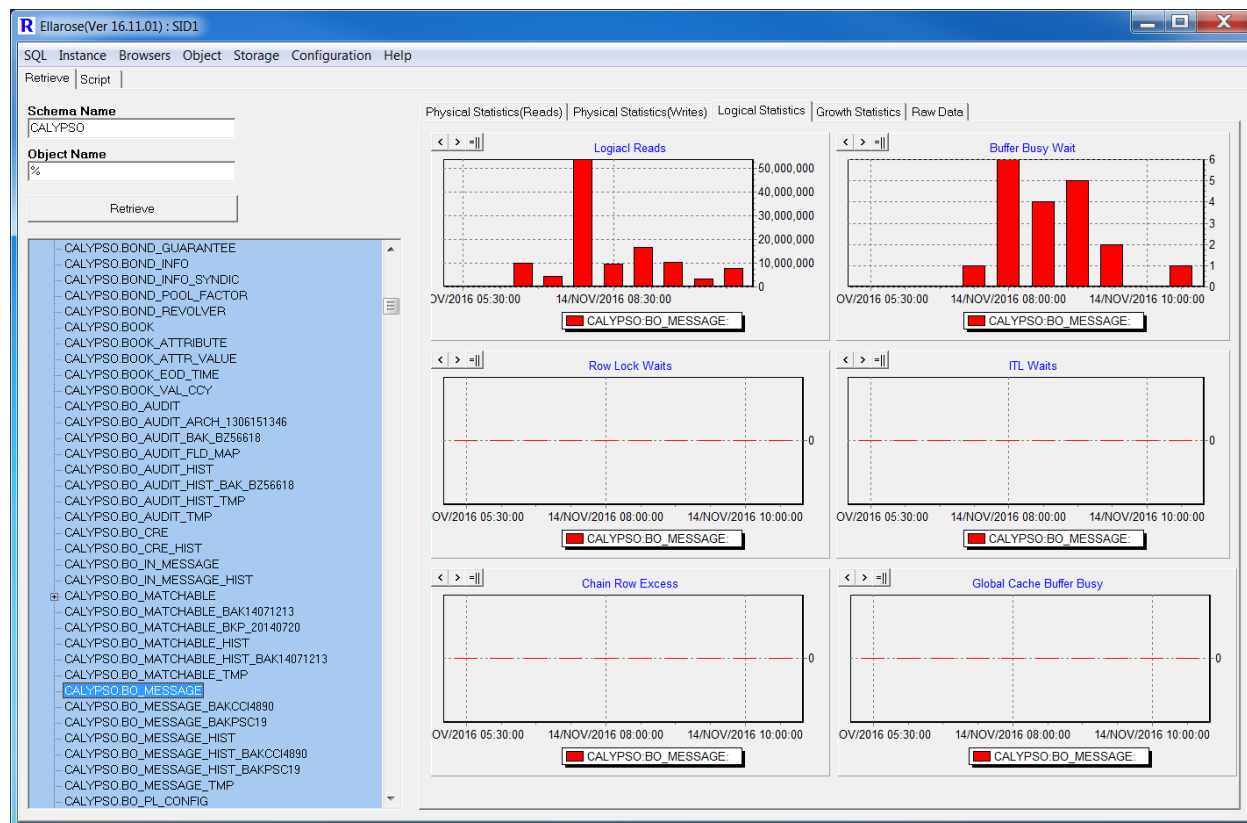


Illustration 17.1: Object statistics retrieval form

Usage:

- 1) Filter the list of object information to retrieve by entering the required filter information.
- 2) Click the <Retrieve> button.
- 3) Double click on an object in the bottom left tree view to display detailed information about it.

17.2 Script

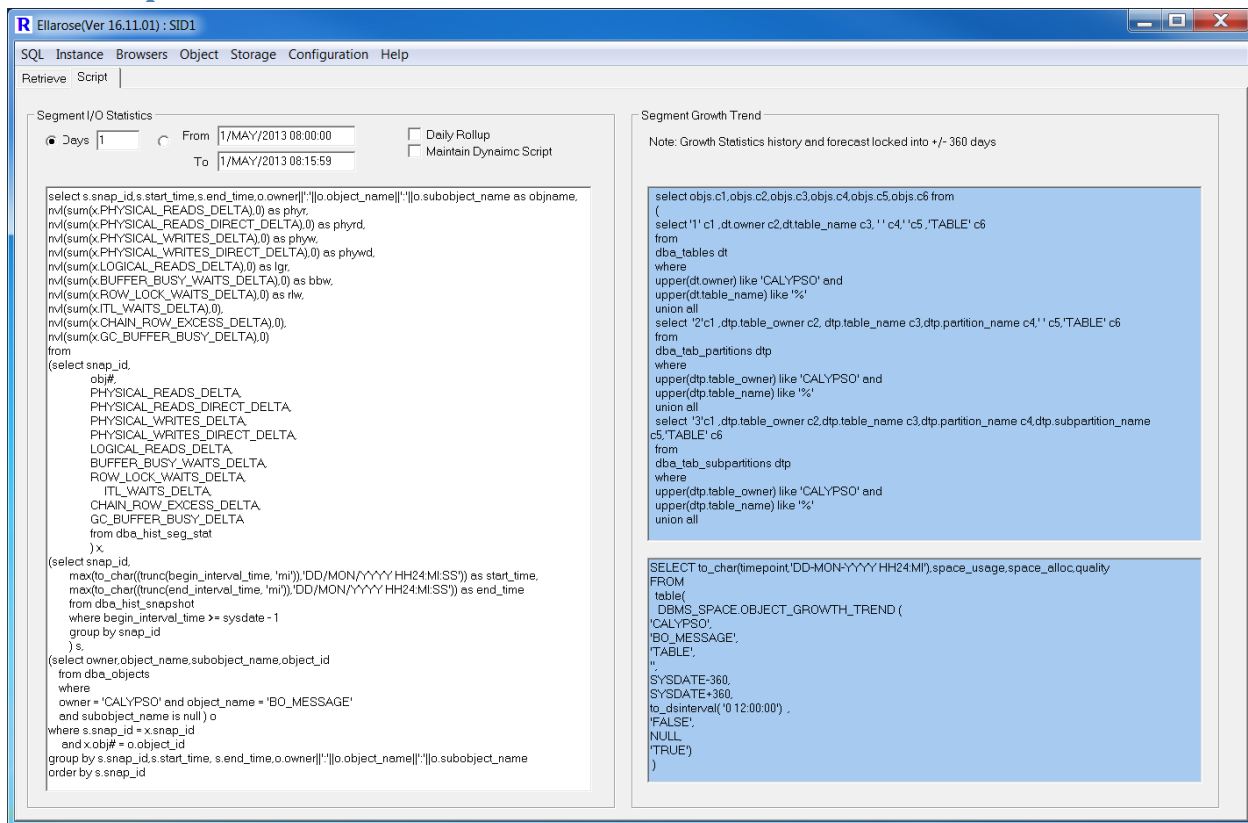


Illustration 17.2: Scripts used to retrieve security object information

Usage:

- 1) I/O statistics can be refined based on a data range. Enter the required date refinements.
- 2) Statistics are usually displayed per AWR snapshot. Click on **<Daily rollup>** to aggregate up to 24 hours.
- 3) The segment I/O statistics can be modified to suit special requirements. Enable the **<Maintain Dynamic Script>** checkbox to ensure modification to the script are not overwritten,

Note:

- 1) The segment growth information is fixed at 360 days history and 360 days forecast.

Section 18. Datafile Statistics

Displays I/O response time information for database files.

18.1 Retrieve

Ellarose(Ver 16.11.01) : SID1

SQL Instance Browsers Object Storage Configuration Help

Retrieve Results Raw Data Script

Retrieve Clear All

Datafile %

Days 1

From 1/MAY/2013 08:00:00

To 1/MAY/2013 08:15:59

Illustration 18.1: Datafile statistics retrieval form

Context:

Component ID	Component Type	Description
Retrieve	Button	Click to retrieve datafile information based on the date criteria.
Clear All	Button	Clear any previous datafile information retrieved.
Days	Field	Number of days of datafile information to retrieve.
From/To	Field	Date range of datafile information to retrieve.

Usage:

- 1) Enter the amount of information to retrieve. Either enter the number days of history(from now) or enter a date/time range. Be sure to click the radio button which signifies the appropriate method of date criteria.
- 2) Click the **<Retrieve>** button.

18.2 Results

Various forms of statistics for datafile operations are available as follows:

- Read and Write operations count
- Total Read and Write Response times
- Average Read and Write Response times

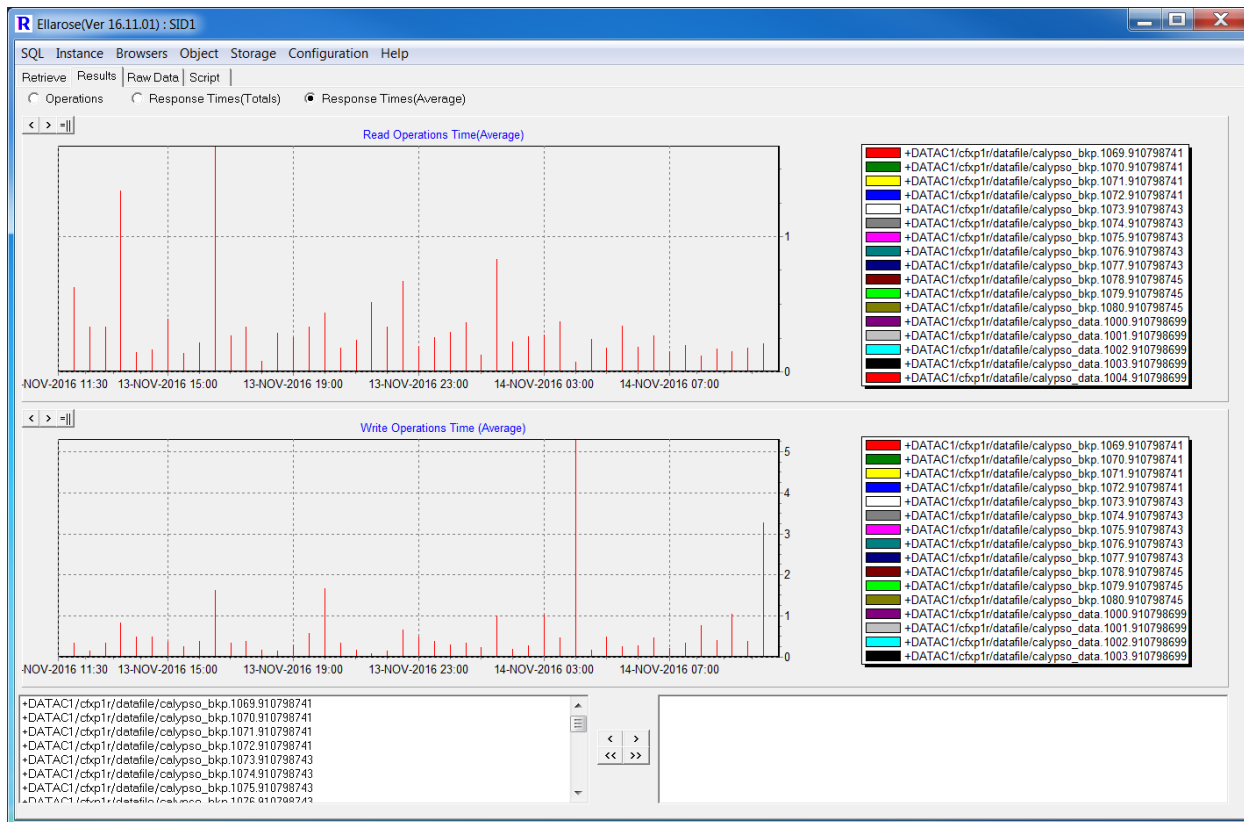


Illustration 18.2: Datafile statistics

Usage:

- 1) Information for individual datafiles can be excluded/included in the graphs by using the directional buttons on the bottom of the form.
- 2) Select the datafile and then click the appropriate directional button



18.3 Raw Data

Display raw data retrieved from the query.

Snap ID	Begin Interval	End Interval	Filename	Read Count	Total Read Time	Write Count	Total Write Time	Avg Read time	Avg Write Time
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_bkp.1069.910798741	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_bkp.1070.910798741	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_bkp.1071.910798741	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_bkp.1072.910798741	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_bkp.1073.910798743	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_bkp.1074.910798743	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_bkp.1075.910798743	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_bkp.1076.910798743	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_bkp.1077.910798743	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_bkp.1078.910798745	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_bkp.1079.910798745	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_bkp.1080.910798745	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.1000.910798699	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.1001.910798699	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.1002.910798699	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.1003.910798699	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.1004.910798699	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.1005.910798701	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.1006.910798701	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.1007.910798701	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.1008.910798701	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.1009.910798701	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.1010.910798701	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.1011.910798703	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.950.910798665	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.951.910798665	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.952.910798667	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.953.910798667	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.954.910798667	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.955.910798669	0	0	0	0	0	0
9326	13-NOV-2016 11:30	13-NOV-2016 12:00	+DATA1/ckpt1r/datafile/calypso_data.956.910798669	0	0	0	0	0	0

Illustration 18.3: Performance Statistics(Raw Data)

18.4 Scripts

Controls the query which is submitted to the database to retrieve information.

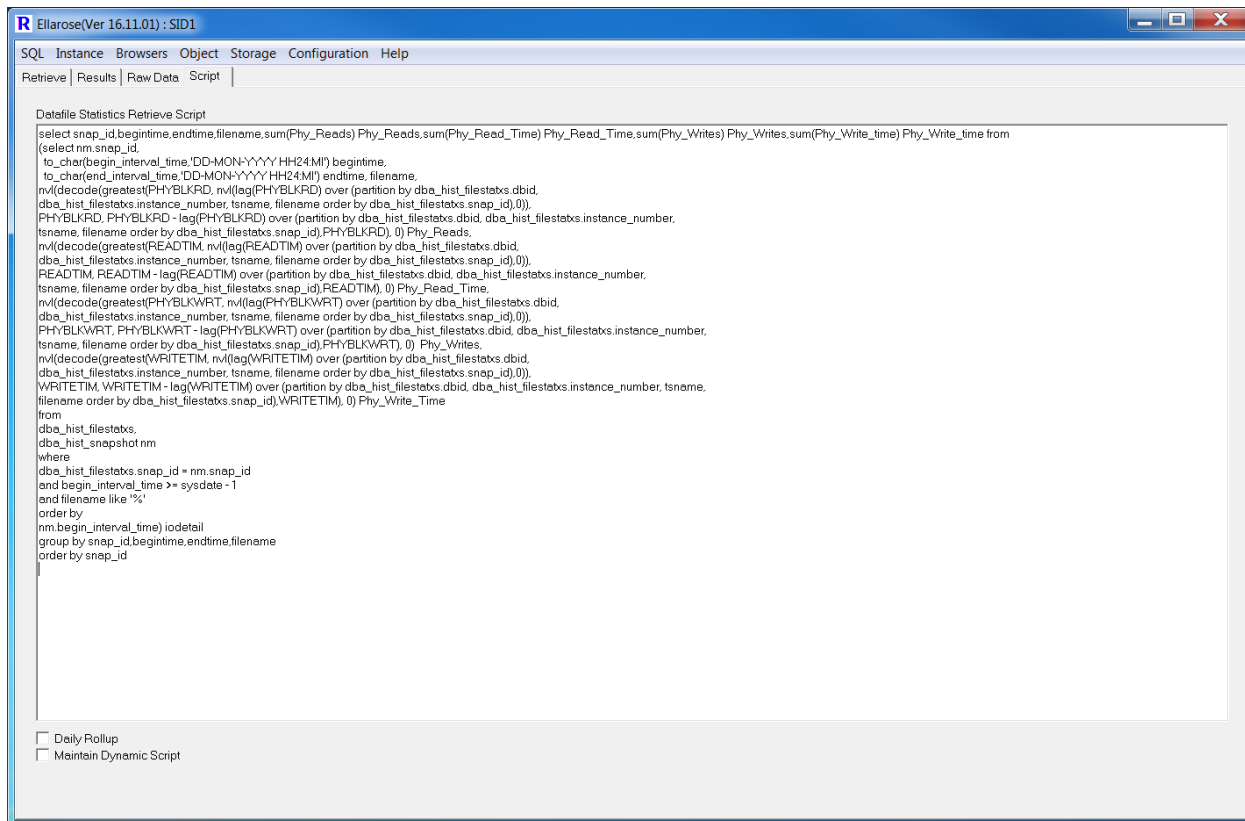


Illustration 18.4: Scripts used for datafile statistics retrieval

Section 19. Datafile Map

19.1 Retrieve

The data file map provides a list of how extents are mapped within a datafile. Such information is useful for object reorganisation and high water mark management.

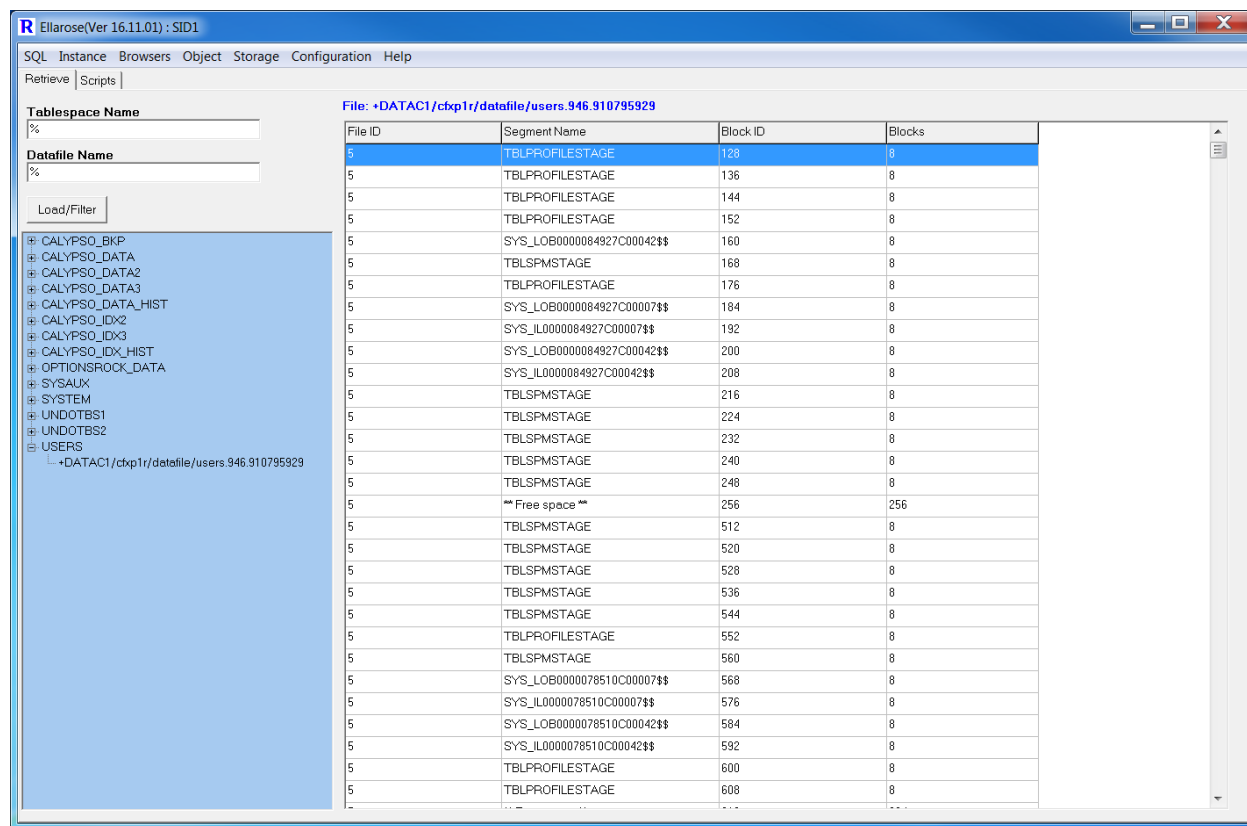


Illustration 18.2: Datafile\extent mapping

Context:

Component ID	Component Type	Description
Tablespace Name	Field	Filter tablespace information based on tablespace name. Wildcard of “%” can be used.
Datafile Name	Field	Filter datafile information based on datafile name. Wildcard of “%” can be used.
Load/Filter	Button	Load/Filter the tablespace and datafile list in the bottom left tree view.

Usage:

- 1) Filter the list of storage information to retrieve by entering the required filter information.
- 2) Click the **<Load/Filter>** button.
- 3) Double click on the datafile in the bottom left tree view to display the datafile extent mapping.

19.2 Scripts

Controls the query which is submitted to the database to retrieve information.

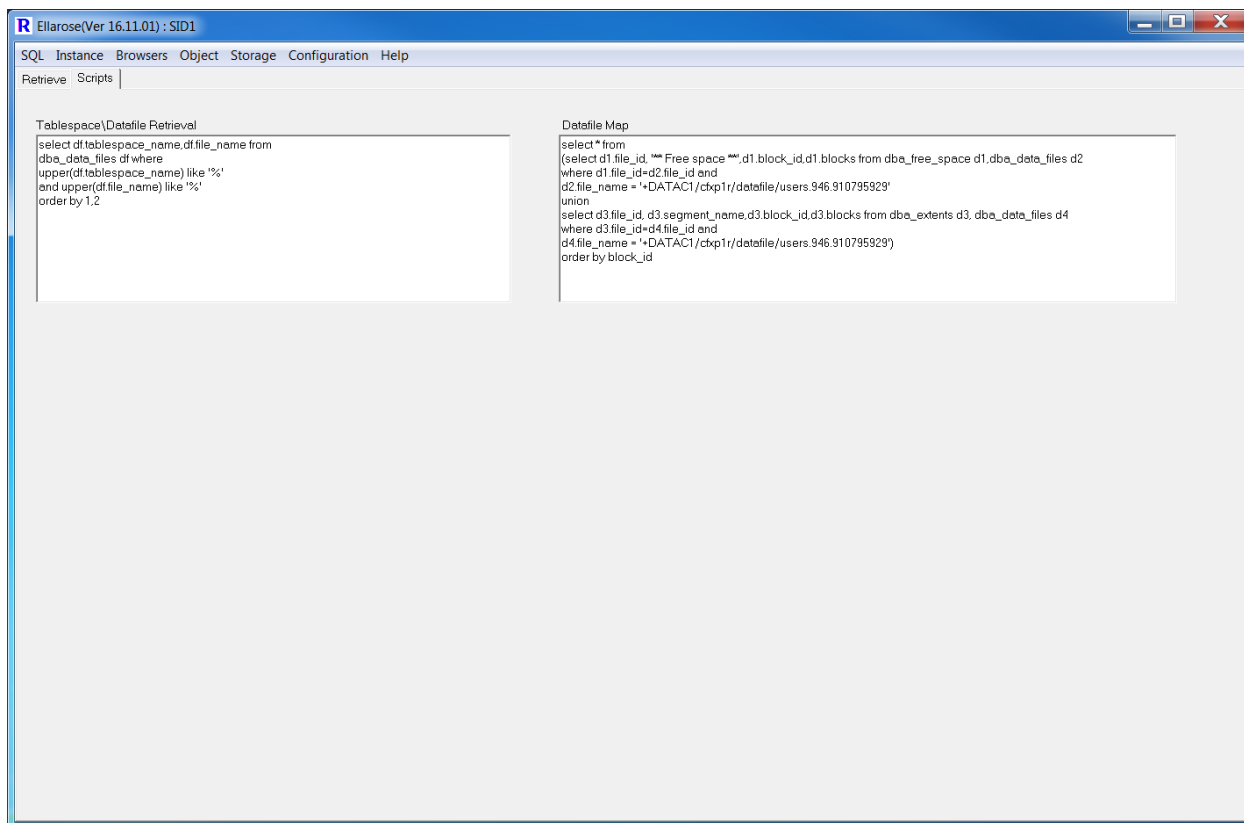


Illustration 19.2: Scripts used for datafile\extent mapping

Section 20. I/O Profile

20.1 Retrieval

A database I/O profile provides information on where all the disk operations in the database are taking place.

Illustration 20.1:I/O profile retrieval form

Context:

Component ID	Component Type	Description
Retrieve I/O Statistics	Button	Retrieve I/O wide statistics for the database.
Clear All	Button	Clear all results.
Export(CSV)	Button	Export the grid details into CSV file. The file will be created in the path specified in the “CSV filename” on the configuration/setting tab.
Days	Field	Number of days of I/O statistics to retrieve.
From/To	Field	Date range of I/O statistics to retrieve.

20.2 Results

Various forms of statistics for I/O operations are available as follows:

- Archive Logs
- Buffer Cache
- DBWR, LGWR
- Data Pump
- Direct Reads & Write
- RMAN
- Recovery
- Smart Scan
- Streams AQ

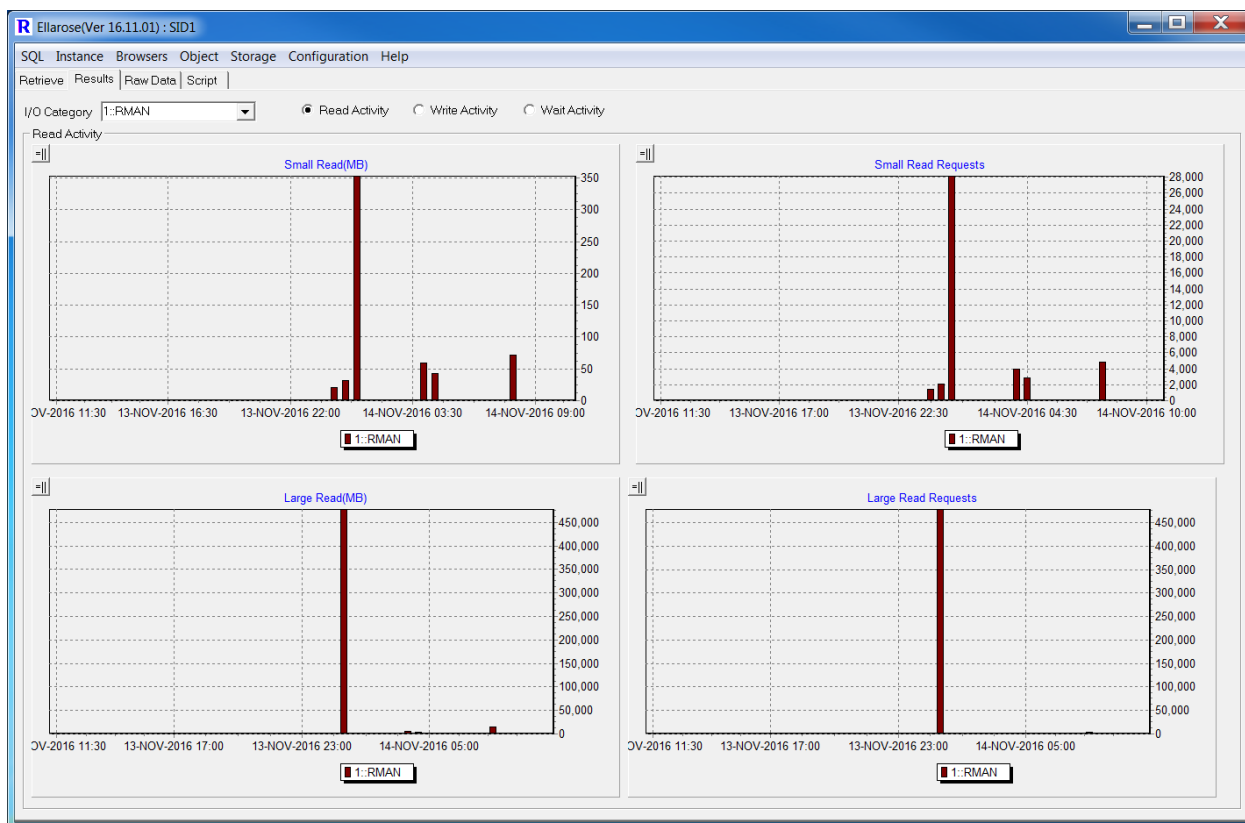


Illustration 18.2: I/O profile statistics

20.3 Scripts

Controls the query which is submitted to the database to retrieve information.

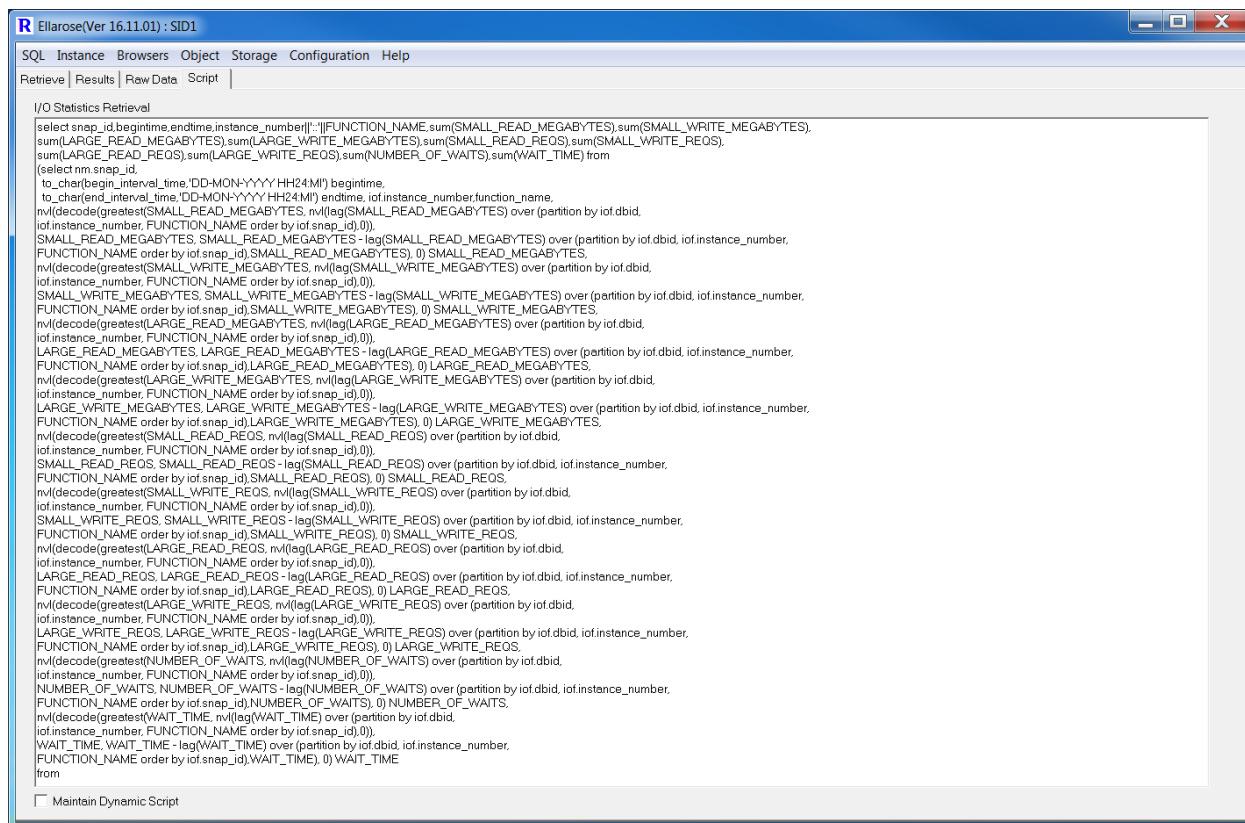


Illustration 20.3: Scripts used for I/O profile retrieval

Section 21. EXADATA and flash

21.1 Historical

Displays historical event information for EXADATA and flash cache operations.

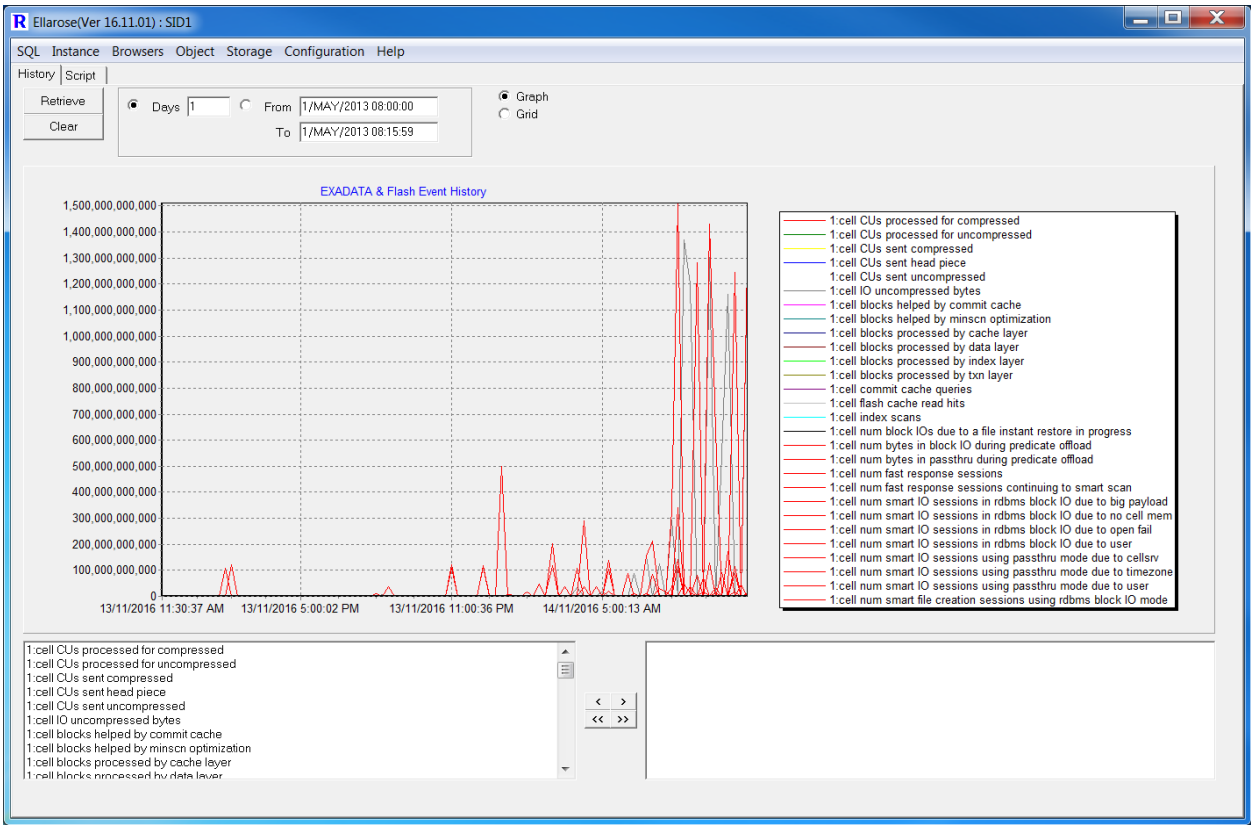


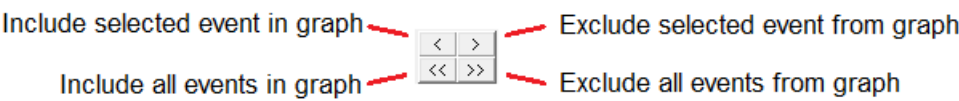
Illustration 21.1 EXADATA and Flash Event Information

Context:

Component ID	Component Type	Description
Retrieve	Button	Click to retrieve information based on the date criteria.
Clear	Button	Clear any previous information retrieved.
Days	Field	Number of days of EXADATA and Flash statistics to retrieve.
From/To	Field	Date range of EXADATA and Flash statistics to retrieve.
Graph/Grid)	Radio Button	Display event information in graph or grid format.

Usage:

- 1) Information for individual ecvents can be excluded/included in the graphs by using the directional buttons on the bottom of the form.
- 2) Select the event and then click the appropriate directional button.



21.2 Scripts

Controls the query which is submitted to the database to retrieve information.

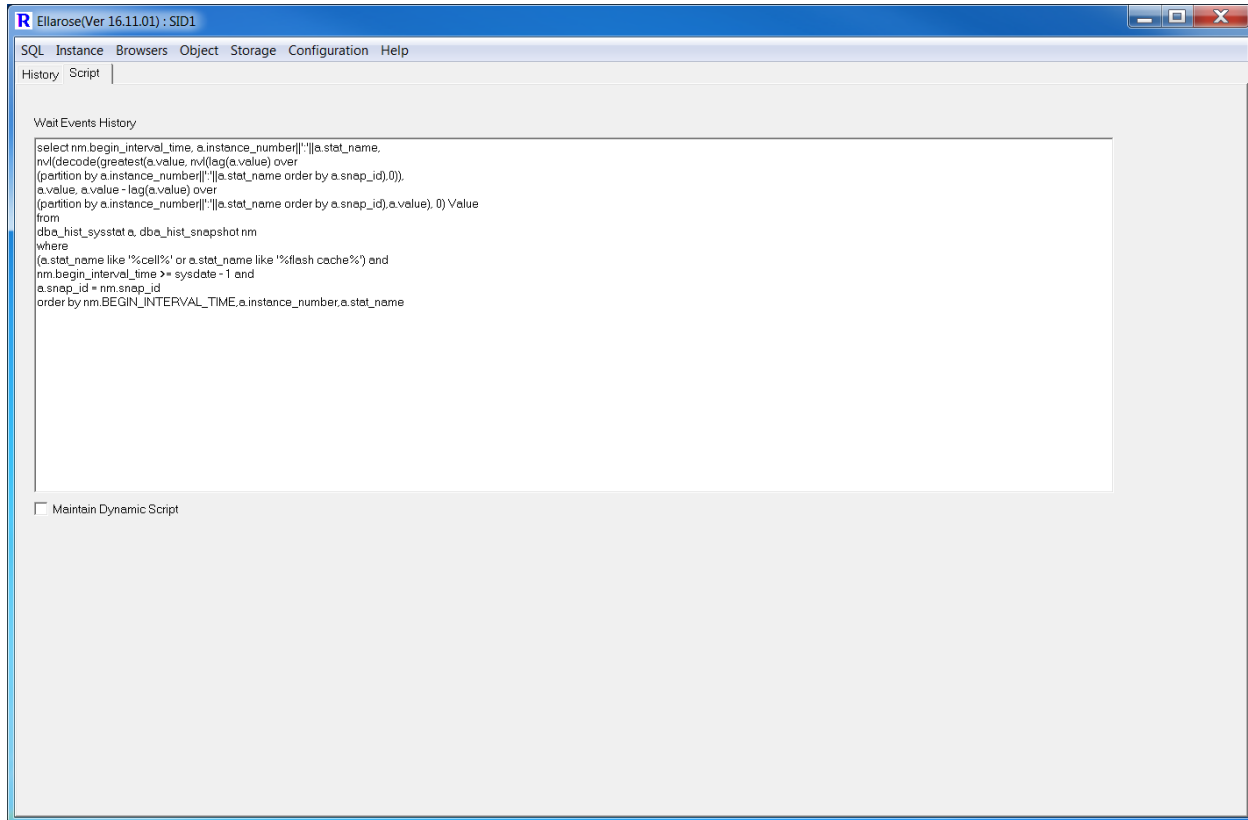


Illustration 21.2: Scripts used for EXADATA and Flash statistics retrieval