



MAXGAUGE REALTIME MONITOR

Instance Name Business Name

OVERALL

ORA102
JAPAN
CHINA
...

MAXGAUGE for Oracle Web Version 5.3

PRODUCT DOCUMENTATION



- **MAXGAUGE**

- OVERVIEW
- ARCHITECTURE
- FEATURE

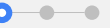
- **REAL-TIME MONITOR**

- OVERVIEW
- VIEW TYPE
- METHOD
- FRAME
- MENU
- ICON
- TOOL
- CONFIG

- **PERFORMANCE ANALYZER**

- OVERVIEW
- SQL ANALYSIS
- TREND ANALYSIS
- VISUALIZATION
- COMPARISON
- CAPACITY
- RAC-EXA





MAXGAUGE for Oracle

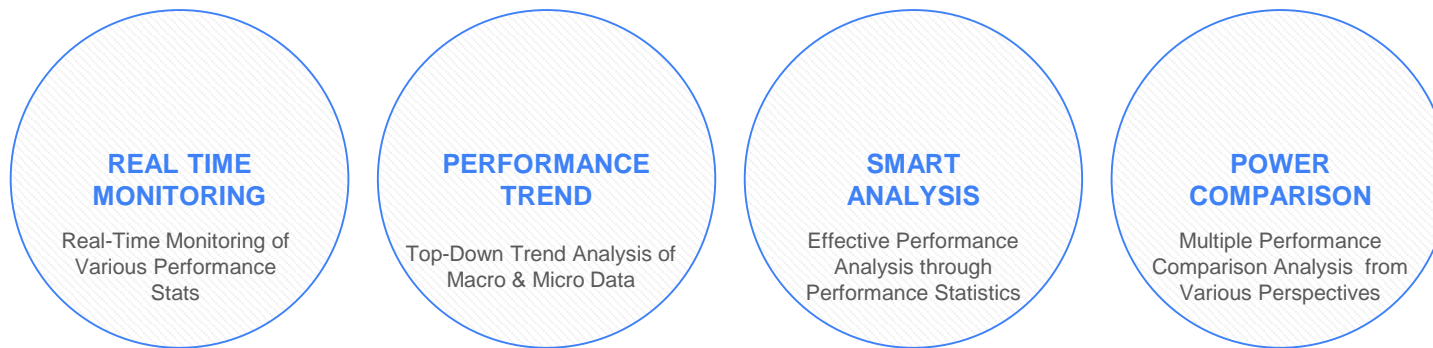
OVERVIEW
ARCHITECTURE
FEATURE



The New MaxGauge is now Faster, Simpler, and Easier to Perceive!

With improved UX, user friendliness is always our top priority.

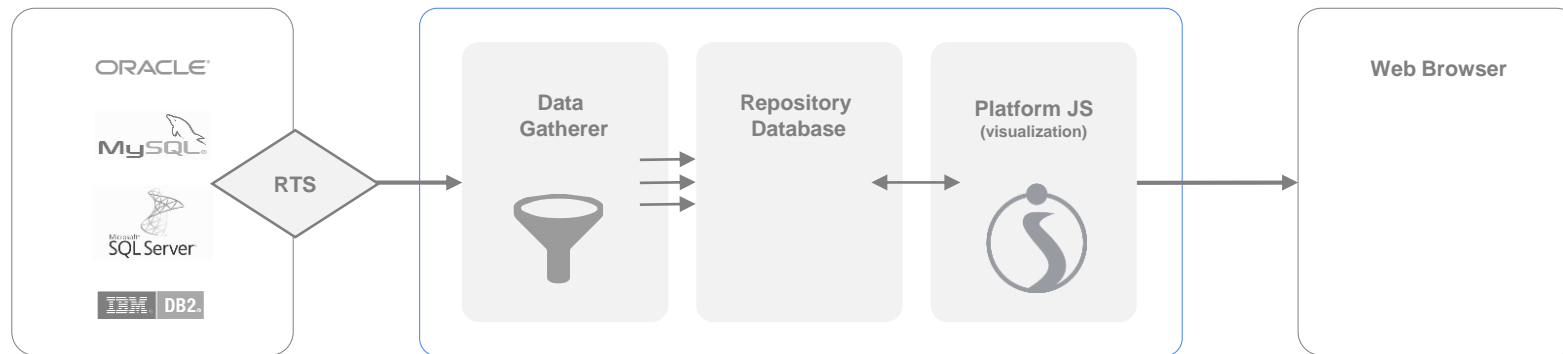
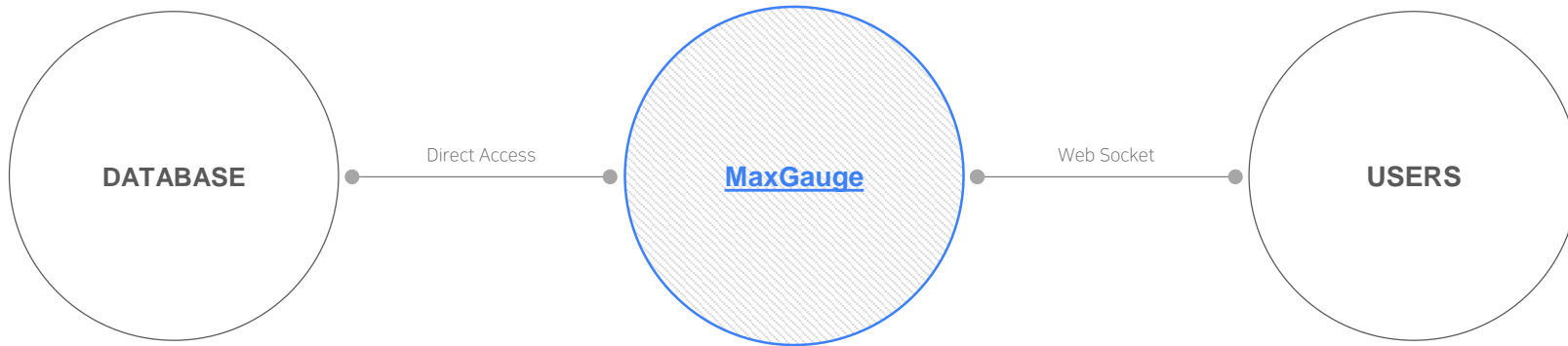
Monitoring is done in real-time from an integrated perspective and it provides most important & detailed information through various performance data.



MaxGauge is a professional software solution for database performance management and helps to effectively manage the database system's availability and performance.

It provides pro-active monitoring techniques which help to recognize problems quickly and analyze bottlenecks in applications effectively, and stores up various performance data to provide a clear analysis report about the effects in comparison to the resource investment.

Collects All Performance Data at **Minimum Workload** for Monitoring and Storage

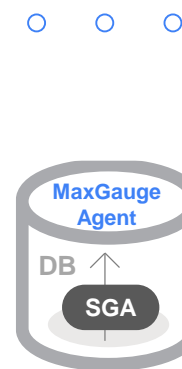


Collects All Performance Data through **Direct Memory Access** Method



When a complicated performance problem occurs,
monitoring and analysis are disabled

Even with a database hang,
monitoring and detailed analysis can be done



Intuitive and Easy User Interface



Database Optimization through a Convenient TOP-DOWN Approach Method



REAL-TIME MONITORING

PERFORMANCE ANALYSIS

STAT/EVENT/RATIO

TOP SESSION

TOP SQL

SESSION DETAILS

WAIT EVENT DETAILS

SQL DETAILS

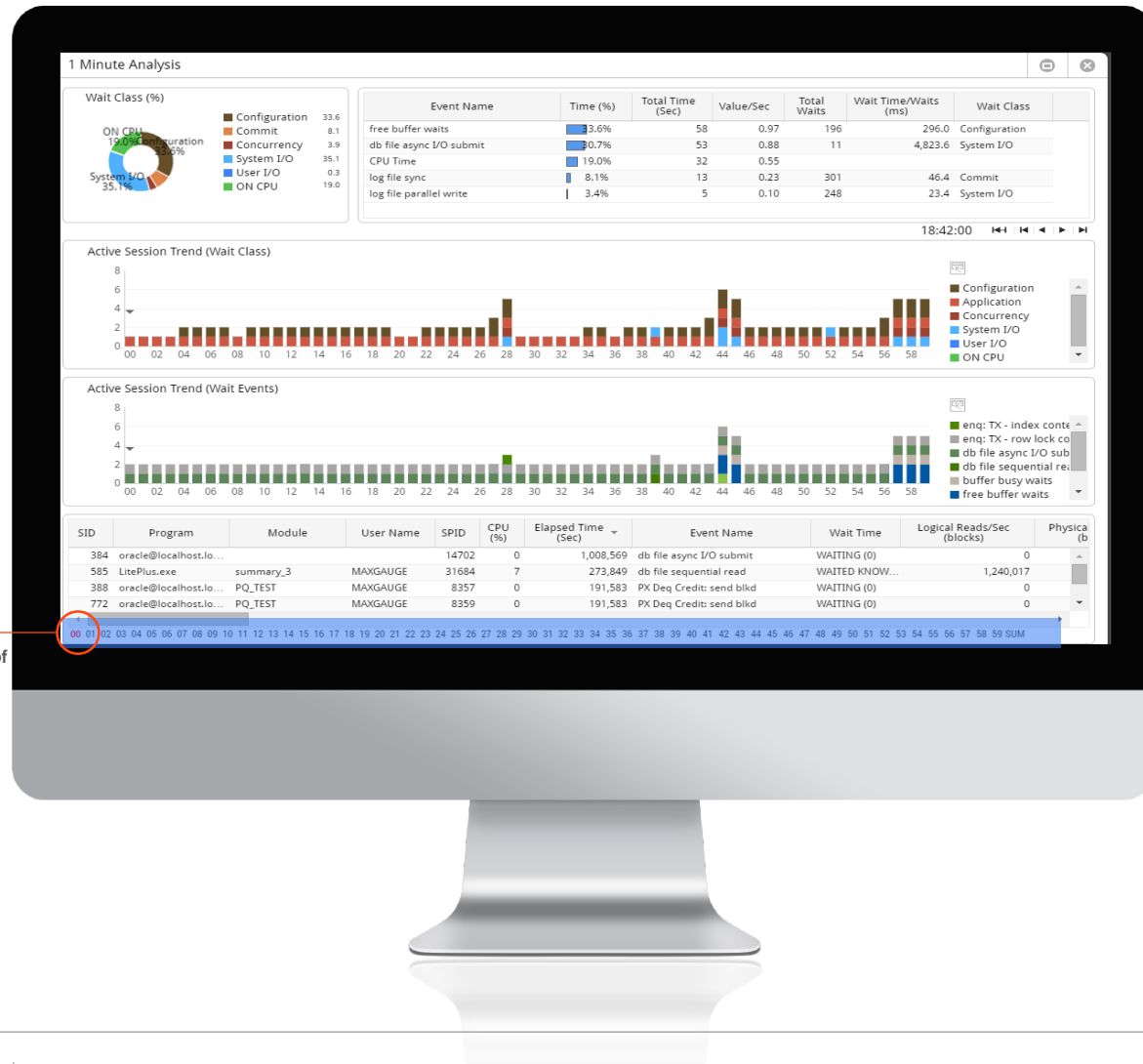
SQL TUNING

↓

EXECUTION PLAN ANALYSIS

All Activity History Data which can be Collected are Stored in 1 Second Unit

00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 SUM



You can analyze the past history in unit of second just as if for real-time.



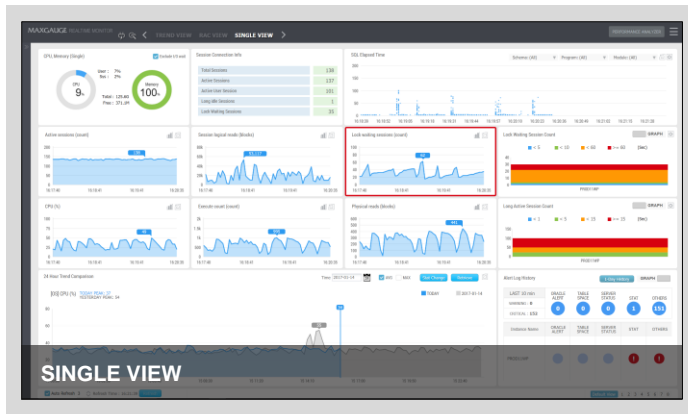
REAL-TIME MONITOR

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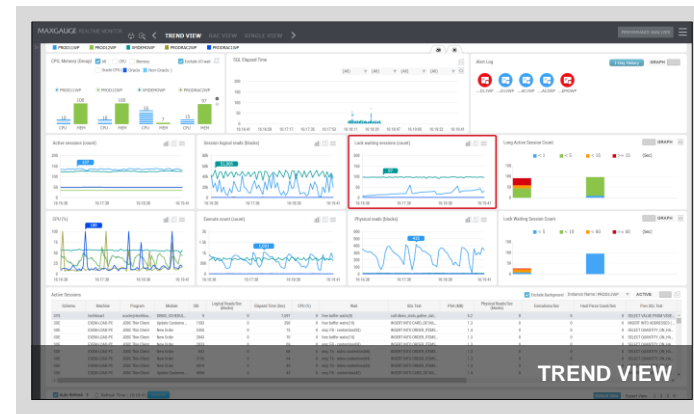


Optimized **Monitoring Patterns** for Database Performance Management

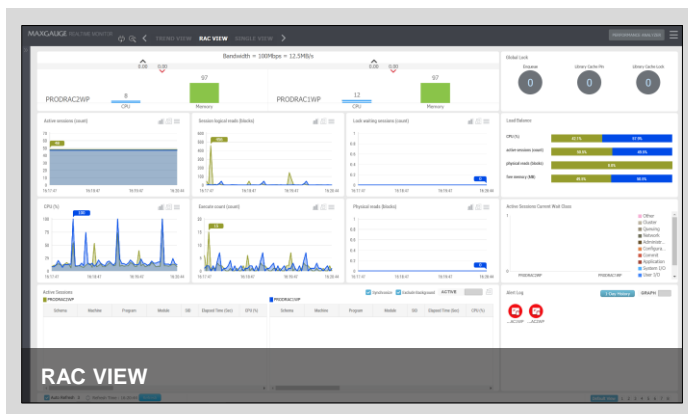
SINGLE VIEW / TREND VIEW / RAC VIEW / EXA VIEW



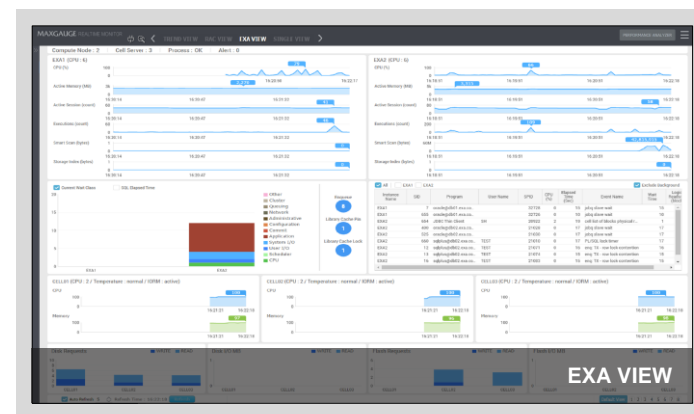
Intensive Monitoring on a Single Database



Optimized Simultaneous Monitoring of Multiple Databases



Effective RAC Monitoring by Adding a Specialized Frame



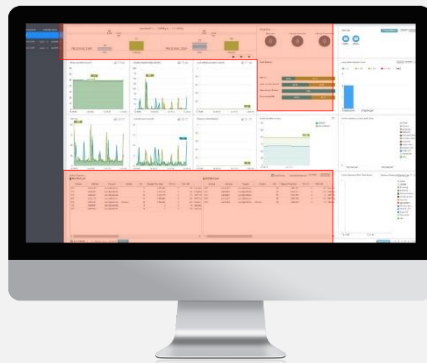
Optimization of Monitoring EXADATA Key Management Items

Provides a Screen Exclusively for RAC Monitoring

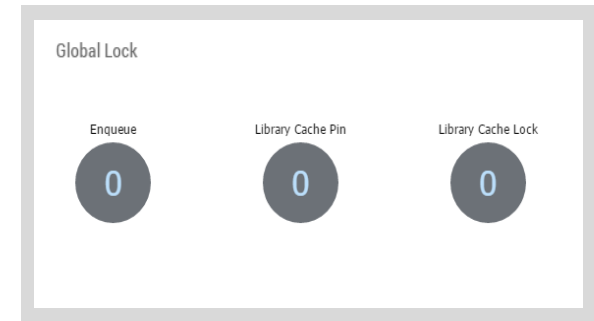
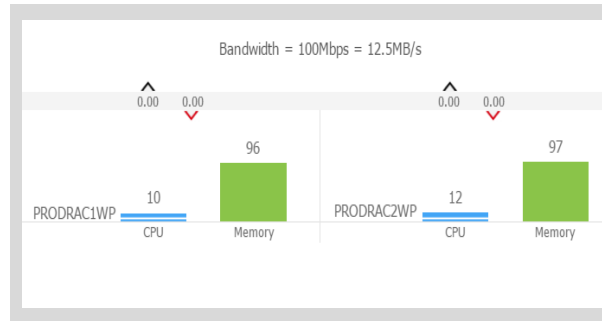
VIEW TYPE

RAC VIEW

Through the RAC View, you can easily check the **Global Lock**, **Load Balance**, and **Network** usage information.

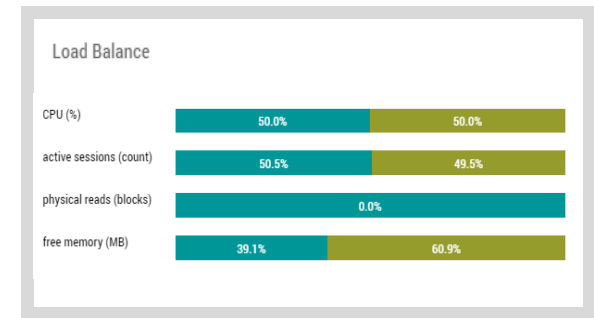


DETAIL VIEW



Active Sessions (RAC)

PRODRAC1WP					PRODRAC2WP				
Schema	Machine	Program	Module	SID	Schema	Machine	Program	Module	SID
SYS	weheh1	oracle@weheh1...		26	SYS	weheh2	oracle@weheh1...		26
SYS	weheh1	oracle@weheh1...		42	SYS	weheh2	oracle@weheh1...		43
SYS	weheh1	oracle@weheh1...		52	SYS	weheh2	oracle@weheh1...		53
SYS	weheh1	oracle@weheh1...		57	SYS	weheh2	oracle@weheh1...		62
SYS	weheh1	oracle@weheh1...	Streams	81	SYS	weheh2	oracle@weheh1...	Streams	66



FEATURE

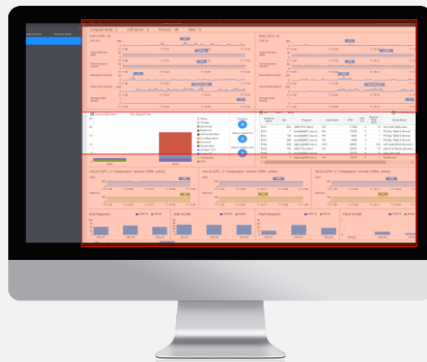
- Network(Bandwidth, Link)
- Global Lock(Enqueue, Library Cache Pin, Library Cache Lock)
- Load Balance(CPU, Free Memory, Active Session, Physical Reads)

Provides a Screen Exclusively for EXADATA Monitoring

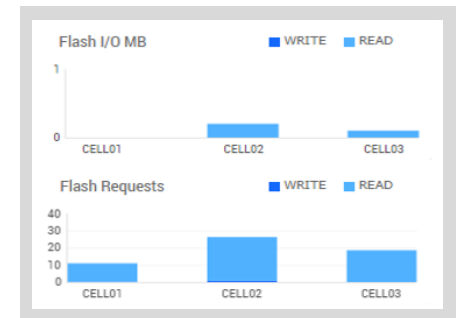
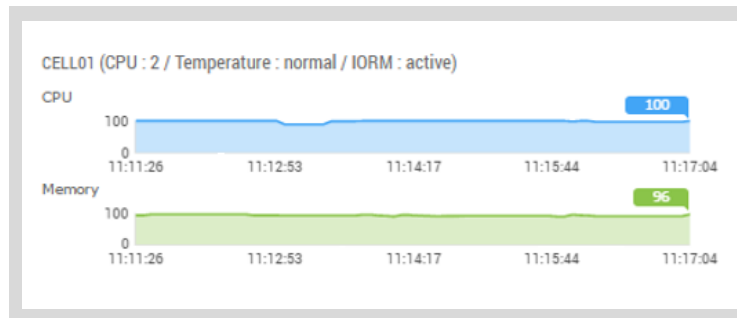
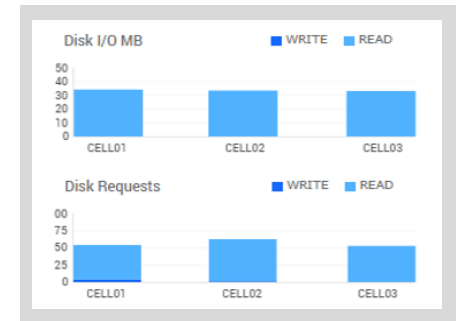
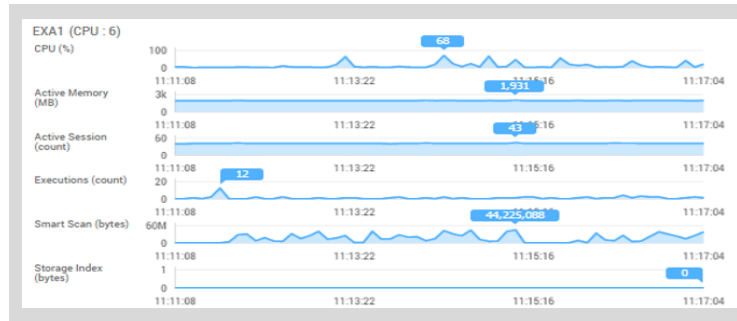
VIEW TYPE

EXA VIEW

The EXA VIEW provides the main stats generation rate such as **Smart Scan and Storage Index** which are necessary for EXADATA monitoring. It also provides the **Cell Server's Resource Usage** and information regarding **Disk/Flash**, which not only help to serve the purpose of DB monitoring but, even providing an effective control over the EXADATA platform.



DETAIL VIEW



FEATURE

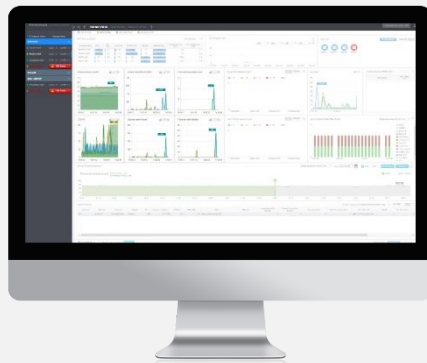
-
- Smart Scan
- Storage Index
- Disk Request, I/O
- Flash Request, I/O
- CELL Server Resource (CPU, Memory)

Drill Down Based on **Top Down Approach**

MONITORING METHOD

TOP DOWN APPROACH

Through the Top Down Approach which works through **System > Session > SQL**, you can easily identify the components that are negatively affecting the database in real-time.



DETAIL VIEW

TOP Session (Stat) [PROD11WP] - session logical reads

SID	Serial	Module	Action	Program	Value
2227	39219	Update Custom...	findCustomer	JDBC Thin Client	2623
2225	53879	New Order		JDBC Thin Client	336
1282	27219	New Order		JDBC Thin Client	295
2226	50555	New Order		JDBC Thin Client	287
645	62419	New Order	getAddressDet...	JDBC Thin Client	280
1587	58263	New Order		JDBC Thin Client	280
640	23775	New Order		JDBC Thin Client	277
1903	47923	New Order	getCardDetails...	JDBC Thin Client	203
1272	40999	New Order		JDBC Thin Client	199
1593	3935	New Order	getCardDetails...	JDBC Thin Client	190
1579	62959	Browse and ltp...	getCustomerD...	JDBC Thin Client	169
340	63827	Browse Produc...	getCustomerD...	JDBC Thin Client	152
649	19825	Browse Produc...	getCustomerD...	JDBC Thin Client	147
650	43163	Browse Produc...	getProductDet...	JDBC Thin Client	145

Schema	Program	Module	SPID	SID	Serial	Status	Logical Reads/Sec (Blocks)	Physical Reads/Sec (Blocks)	Block Changes/Sec (Blocks)
SYS	ora/iBExecIn...		132240	1	14074	ACTIVE	0	0	0
SOE	JDBC Thin Client	New Order	88120	2	4233	ACTIVE	0	0	0
SYS	ora/iBExecIn...	Streams	132442	65	5362	ACTIVE	0	0	0
SOE	JDBC Thin Client	Sales Rep Query	88132	67	2623	ACTIVE	0	0	0
SYS	ora/iBExecIn...		132250	129	4932	ACTIVE	0	0	0
SOE	JDBC Thin Client	Sales Rep Query	88134	130	5010	ACTIVE	0	0	0
SYS	ora/iBExecIn...		132195	193	4991	ACTIVE	0	0	0
SYS	ora/iBExecIn...	Streams	132446	195	3054	ACTIVE	0	0	0
SOE	JDBC Thin Client	Sales Rep Query	88137	197	1982	ACTIVE	0	0	0
SYS	ora/iBExecIn...		132196	257	2398	ACTIVE	0	0	0
SYS	ora/iBExecIn...		132263	299	6529	ACTIVE	0	0	0
SYS	ora/iBExecIn...		132262	301	2334	ACTIVE	0	0	0
SYS	ora/iBExecIn...		132265	322	2807	ACTIVE	0	0	0
SOE	JDBC Thin Client	New Order	31665	324	4247	ACTIVE	0	0	0
SYS	ora/iBExecIn...		132264	385	13479	ACTIVE	0	0	0
SYS	ora/iBExecIn...	UTLX	132277	386	5143	ACTIVE	0	0	0
SOE	JDBC Thin Client	New Order	131667	387	8893	ACTIVE	0	0	0
SOE	JDBC Thin Client	Sales Rep Query	131669	450	8925	ACTIVE	0	0	0

Session Detail [PROD11WP] - SID : 4721

Event	Wait	TimeWaited (Sec)	SQL ID	Instance#	Module	Update Customer Details
log buffer write	0.67	0.00	0.01	0	Action	
log file sync	2.53	0.00	0.00	0	Client info	Singlebatch Load Generator
all file sequential read	4.67	0.00	0.26	0	Current wait	seq: Tx: index contention
enqueue	6.43	0.00	0.00	0	Seq: Wait: Seconds in wait	Waiting (order=947)
enqueue (enqueue)	6.43	0.00	0.00	0	State (blocking session)	Waiting (order=947)
enqueue (enqueue)	6.43	0.00	0.00	0	FS (enqueue/lock)	TxWait
enqueue (enqueue)	6.43	0.00	0.00	0	FS (enqueue)	28779482
enqueue (enqueue)	6.43	0.00	0.00	0	FS (enqueue)	75162

SQL Detail [PROD11WP] SID: 4721, SQL ID: f7rxuc2t6487, SQL Addr: 533EAE500, SQL Hash: 4066527495

Schema	Module	Elapsed Time (Sec)	Elapsed Time (Sec)
SOE	New Order	0.001	\$5,669,578
SOE	New Order	0.001	CPU Time (Sec)
SOE	New Order	0.001	100,863
SOE	New Order	0.000	Application Wait Time (Sec)
SOE	New Order	0.000	Application Wait Time (Sec)
SOE	New Order	0.003	Concurrency Wait Time (Sec)
SOE	New Order	0.000	Concurrency Wait Time (Sec)
SOE	New Order	0.000	Cluster Wait Time (Sec)
SOE	New Order	0.072	Cluster Wait Time (Sec)
SOE	New Order	0.072	User IO Wait Time (Sec)
SOE	New Order	0.072	User IO Wait Time (Sec)
SOE	New Order	1.7	Buffer Gets (Blocks)
SOE	New Order	1.7	Buffer Gets (Blocks)
SOE	New Order	0.7	Disk Reads/Sec (Blocks)
SOE	New Order	0.7	Disk Reads/Sec (Blocks)
SOE	New Order	1.0	Rows (Sec)
SOE	New Order	1.0	Rows (Sec)
SOE	New Order	0.0	# of Sorts/Sec
SOE	New Order	0.0	# of Sorts/Sec

```

SQL Execution Plan
-----
1  INSERT INTO order_items
2     (order_id,
3      line_item_id,
4      product_id,
5      unit_price,
6      quantity,
7      get_crap,
8      order_id,
9      estimated_delivery)
10  VALUES
11     (84,
12      195,
13      195,
14      195,
15      195,
16      195,
17      195,
18      195)
  
```

FEATURE

- Process (Session) Connection related to Each Stat
- Session Manager Connection
- Session Detail Connection and SQL Confirmation (Kill Session, Trace)

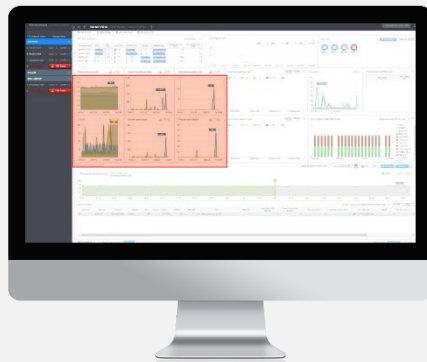
Provides Various Performance Stats TRENDS

FRAME

TREND CHART

-

The TREND CHART provides a chart format monitoring screen by using stats related to the database activities and delays. By default, it provides 6 Main Performance Stats for monitoring, however you can change or expand the number of performance stats as desired depending on the system or nature of the business.



DETAIL VIEW



FEATURE

-
- Frame Docking
- Oracle Wait / Stat / Ratio / OS Stat Change
- Manage Graph / Bar Format Change
- Scale Up Feature Included

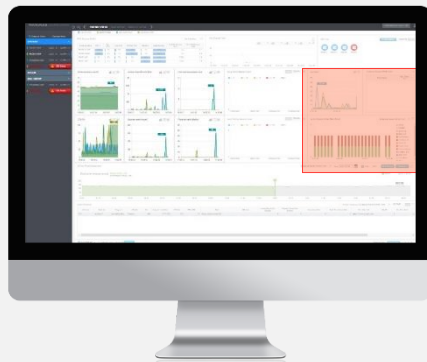
Intensive Monitoring of Wait Event Status

FRAME

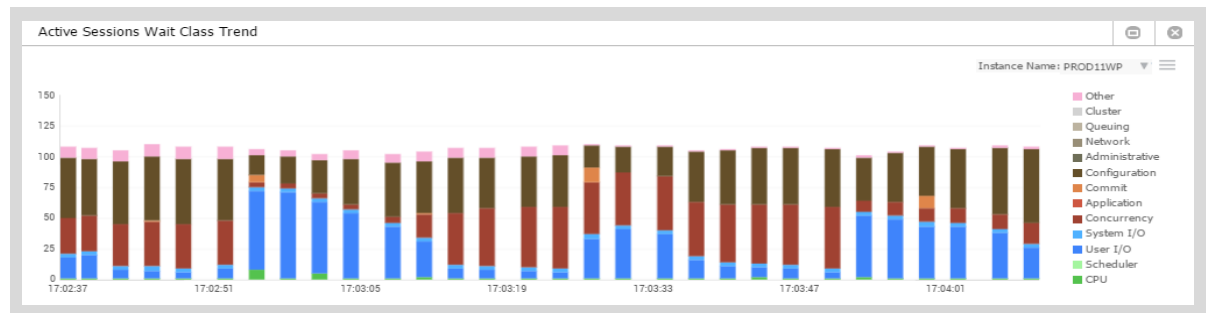
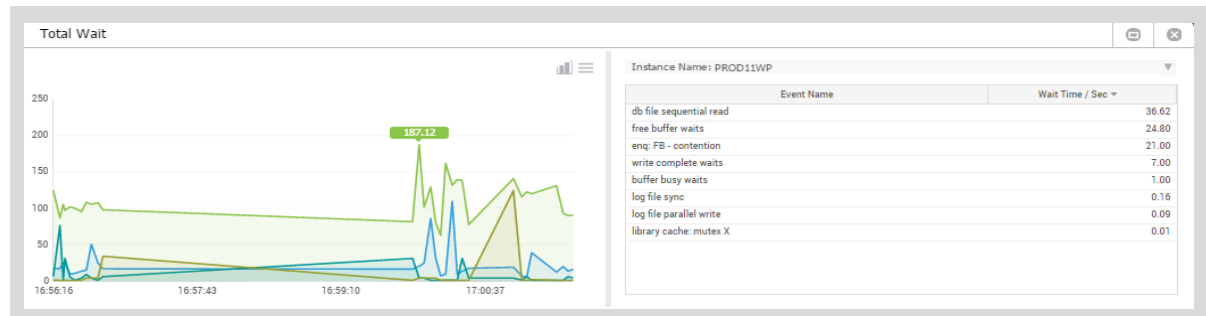
WAIT EVENT

Total Wait provides Wait Time by Trend and Wait Event of the Total Wait Time, by each Instance.

Active Session Wait Class Trend provides the number of sessions in each group of active session wait events grouped by class.



DETAIL VIEW



FEATURE

-
- Frame Docking
- Provides Wait Time by each Wait Event
- Graph / Bar Change Possible
- Top Session Connection
- Provides Number of Session Related to each Wait Class

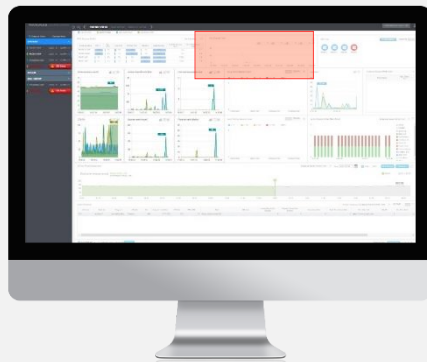
Real-Time Diagnosis of SQL Elapsed Time

FRAME

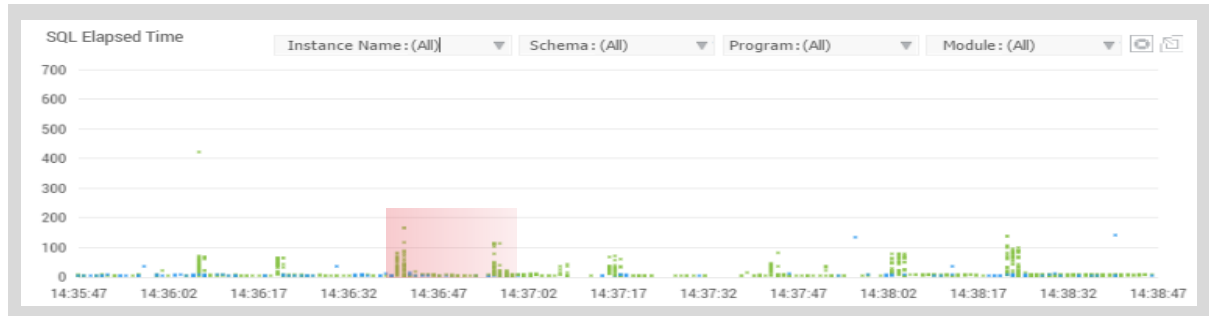
SQL ELASED TIME

-

You can check the **SQL Elapsed Time Distribution** by instance. You can also check detailed information such as STAT/ Plan/ Bind Value of SQLs in the mouse-drag selected period.



DETAIL VIEW



Instance Name	Time	SID	Elapsed Time (Sec)	User	Module	Program	SQL ID	Address	Hash Value
PROD12..	2017-02-03 14:33:38	1	1,376.5			oracle@techlinu...	bsa0vjftg3uw	00000054FAA...	157021372-
PROD12..	2017-02-03 14:33:47	577	45.5			oracle@techlinu...	fqtzxh9nv5jk1	00000053B38...	177332384-
PROD12..	2017-02-03 14:34:20	194	20.7	SYS	sqlplus@techlinu...	sqlplus@techlin...	1h50ks4ncswfn	00000055FF3C...	684487124
PROD12..	2017-02-03 14:34:50	449	18.3		MMON_SLAVE	oracle@techlinu...	fq3f1vdv581ds	00000053F894...	198521797?
PROD12..	2017-02-03 14:33:38	259	16.9		Streams	oracle@techlinu...	cv959u044n88s	00000053FA9...	139075864
PROD12..	2017-02-03 14:33:38	514	14.5		Streams	oracle@techlinu...	cv959u044n88s	00000053FA9...	139075864
PROD12..	2017-02-03 14:35:00	449	10.3		MMON_SLAVE	oracle@techlinu...	a6ygl0r9s5xuj	00000054B038...	354857556!
PROD12..	2017-02-03 14:35:01	259	8.8		MMON_SLAVE	oracle@techlinu...	dvvb42b3hfyr	00000053F506...	333915621!
PROD12..	2017-02-03 14:34:39	67	8.2		MMON_SLAVE	oracle@techlinu...	f6cz4n8y72xdc	00000053F9B...	101406865!
PROD12..	2017-02-03 14:34:39	259	7.2		MMON_SLAVE	oracle@techlinu...	fgcvcnf0ab9dh	00000053F7B6...	215833950-
PROD12..	2017-02-03 14:35:00	449	6.8		MMON_SLAVE	oracle@techlinu...	3f5a0000000000	000000000000	0000000000

FEATURE

-

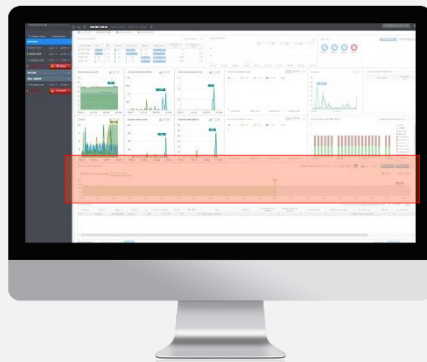
- Frame Docking
- Provides SQL List by Elapsed Time
- Provides SQL Full Text, SQL Plan, Bind Value

Provides Comparison Analysis Feature by Linking with PA

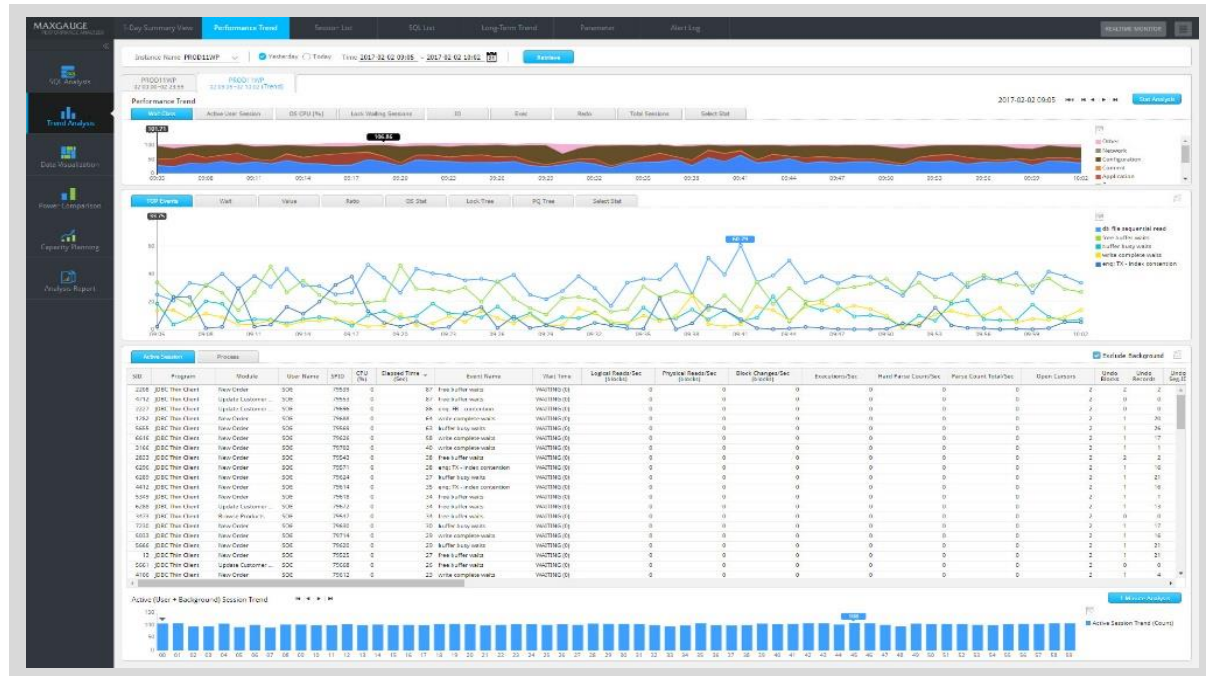
FRAME

24 HOUR TREND & COMPARISON

You can compare the performance trends of today and yesterday or any select dates and intuitively identify the performance issues.



DETAIL VIEW



FEATURE

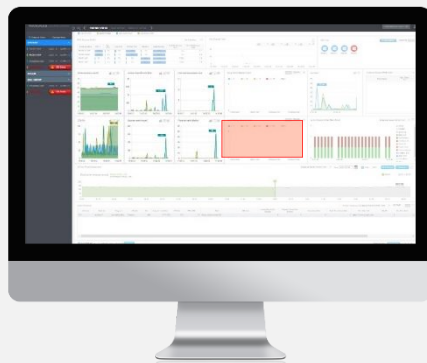
-
- Frame Docking
- Manage Stats Selection
- Manage Date Selection
- PA Performance Trend Connection

Lock / PQ Monitoring Feature

FRAME

LOCK TREE & PQ SESSION

You can use the **Lock Tree** to check the relationship between lock holding sessions and wait sessions in a tree structure. You can also check information such as SQL and Dead Lock generation status and Lock Type information. Furthermore, it displays the relationship of coordinator and slave in a tree format in regards to the issued **Parallel SQL**, and job distribution among the slaves can be monitored.



DETAIL VIEW

Lock Tree

Instance Name: PROD11WP

SID	SPID	Instance Name	Type Held	Mode Held	Type Requested	Mode Requested	Status	Wait	SQL ID	SQL Plan Hash
4100	21276	PROD11WP	TX	Exclusive	None	None	ACTIVE	free buffer waits(9)	f7rxuxt64k87	0
4102	21327	PROD11WP	---	---	TX	Exclusive	ACTIVE	enq: TX - index contention(9)	f7rxuxt64k87	0
340	21301	PROD11WP	---	---	TX	Exclusive	ACTIVE	enq: TX - index contention(9)	f7rxuxt64k87	0
5032	21335	PROD11WP	---	---	TX	Exclusive	ACTIVE	enq: TX - index contention(7)	f7rxuxt64k87	0
1281	21411	PROD11WP	---	---	TX	Exclusive	ACTIVE	enq: TX - index contention(3)	f7rxuxt64k87	0
1593	21259	PROD11WP	---	---	HW	Exclusive	ACTIVE	enq: HW - contention(9)	gh2g2tynpcpv1	0
7233	21297	PROD11WP	---	---	HW	Exclusive	ACTIVE	enq: HW - contention(8)	gzhkw1qu6fwxm	3241608609
2227	21263	PROD11WP	---	---	HW	Exclusive	ACTIVE	enq: HW - contention(7)	gzhkw1qu6fwxm	3241608609
2225	21314	PROD11WP	---	---	HW	Exclusive	ACTIVE	enq: HW - contention(5)	gzhkw1qu6fwxm	3241608609
4412	21331	PROD11WP	---	---	HW	Exclusive	ACTIVE	enq: HW - contention(6)	gzhkw1qu6fwxm	3241608609
4735	21280	PROD11WP	---	---	HW	Exclusive	ACTIVE	enq: HW - contention(6)	gzhkw1qu6fwxm	3241608609
5661	21390	PROD11WP	---	---	HW	Exclusive	ACTIVE	enq: HW - contention(6)	gzhkw1qu6fwxm	3241608609

PQ Sessions

Instance Name: M50RAC1

SID	Schema	Program	Module	CPID	SPID	Status	Serial	Logical Reads/Sec (blocks)	Physical Reads/Sec (blocks)	Block Changes/Sec (blocks)	Executions/Sec	CPU (%)
# 154	MAXGAUGE	oracle@rac1 (P...	MAXGAUGE@K...	7903	7903	INACTIVE	6841	0	0	0	0	0
Total (0)								0	0	0	0	0
# 36	MAXGAUGE	oracle@rac1 (P...	MAXGAUGE@K...	7901	7901	INACTIVE	5004	0	0	0	0	0
Total (1)								0	0	0	0	0
# 46	MAXGAUGE	LitePlus.exe	MAXGAUGE@K...	7788:11680	7870	ACTIVE	6633	0	0	0	0	0
29	MAXGAUGE	oracle@rac1 (P...	MAXGAUGE@K...	7899	7899	INACTIVE	21126	0	0	0	0	0
179	MAXGAUGE	oracle@rac1 (P...	MAXGAUGE@K...	7897	7897	INACTIVE	3241	0	0	0	0	0
Total (1)								0	0	0	0	0
# 21	MAXGAUGE	LitePlus.exe	MAXGAUGE@K...	7788:11680	7906	ACTIVE	14795	0	0	0	0	0
55	MAXGAUGE	oracle@rac1 (P...	MAXGAUGE@K...	7910	7910	INACTIVE	3404	0	0	0	0	0
181	MAXGAUGE	oracle@rac1 (P...	MAXGAUGE@K...	7908	7908	INACTIVE	1660	0	0	0	0	0
Total (1)								0	0	0	0	0

FEATURE

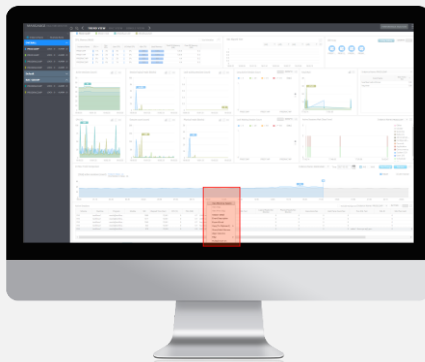
-
- Frame Docking
- Provides Lock Wait Session and Holder Session
- Session Detail Connection (Kill Session, Trace)
- Provides the Relationship of Coordinator and Slave
- Provides Parallel SQL's Elapsed Time and Wait Time

Check **Blocking Session** Information with One-Click

MENU

VIEW BLOCKING SESSION

Not only the transaction related locks (TX/TM), but even for the lock types whose holder information cannot be known through a general method, you can use the **Blocking Session link feature to trace the root cause**. Once you connect to the Session Detail screen, you can execute session control functions (Kill Session, Trace).



DETAIL VIEW

Session Detail [PROD11WP] - SID : 4721]

Activity: CPU, L/Reads, P/Reads, Exec, Redo

Legend: CPU (0), L/Reads (165), P/Reads (5), Exec (19), Redo (3), Wait Time (0)

Buttons: Kill Session, Trace On, Trace Off

Table: Event, Waits, Timeouts, Time Waited (Sec)

Event	Waits	Timeouts	Time Waited (Sec)
free buffer waits	0.67	0.00	0.01
log file sync	2.33	0.00	0.00
db file sequential read	4.67	0.00	0.25
SQL*Net message to client	4.67	0.00	0.00

Table: Name, Value/Sec, Variation

Name	Value/Sec	Variation
CPU used by this session (times)	1	2
redo entries (count)	3	8
execute count (count)	19	58
physical reads (blocks)	5	14
session logical reads (blocks)	165	494
Requests to/from client	5	14
opened cursors cumulative (count)	19	58
user commits (count)	2	7
user calls (count)	7	21
recursive calls (count)	53	160
DB time (times)	19	56

Table: SQLID, Module, Action, Client Info

SQLID	Module	Action	Client Info
budtrjaynvw3	Update Customer Details		Swingbench Load Generator

Current Wait: enq: TX - index contention

Seq: Wait : Seconds in wait: 33069 : 0 : 3

State (Blocking Session): Waiting (Holder:947)

P1 (name|mode): TX|Share

P2 (usn<<16 | slot): 267714582

P3 (sequence): 75152

SQL: `INSERT INTO card_details (card_id, customer_id, card_type, card_number, expiry_date, is_valid, security_code) VALUES (:B2, ...)`

Buttons: Format SQL, View SQL

Auto Refresh: 3, Refresh, Blocking Session

FEATURE

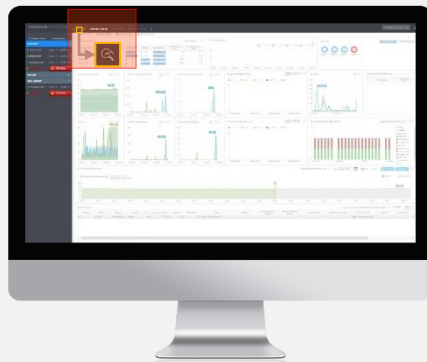
- Provides Blocking Session
- Session Detail Connection (Kill Session, Trace)

Simultaneous PEAK Period Monitoring and **Real-Time Diagnostics**

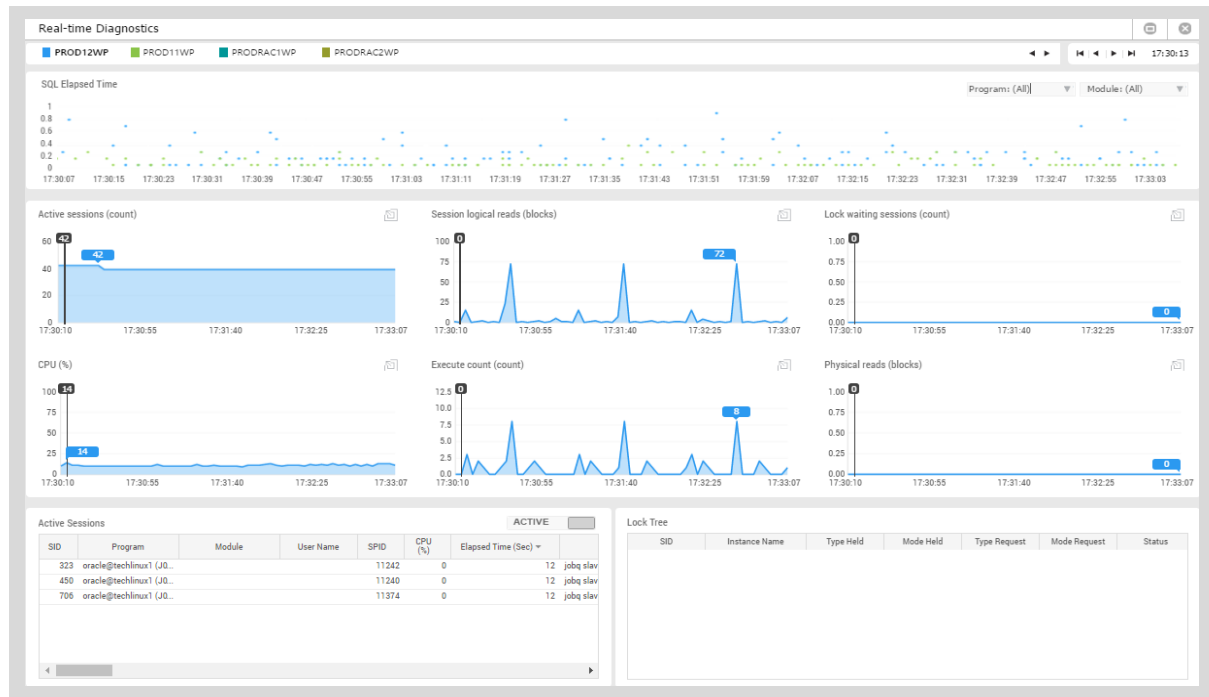
ICON

REAL-TIME DIAGNOSTICS

Provides a feature which quickly diagnoses the problem in the Resource Peak period by using the **Previous 3 Minute Data** without connecting to PA.



DETAIL VIEW



FEATURE

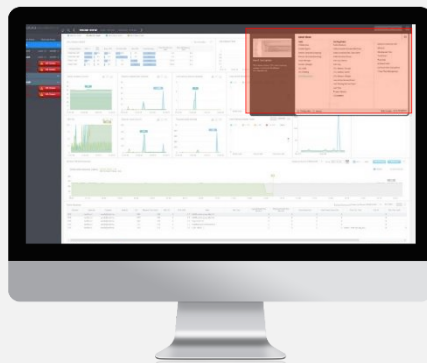
- Check previous DB Status up to 10 minutes maximum from the current time
- Provides SQL Elapsed Time, Trend Chart, Active Session and Lock Tree
- Move from one time point to another in unit of 3 seconds

Provides Wait Event **Description** Feature

TOOL

EVENT DESCRIPTION

During the monitoring process, you can use the Wait Event Description link feature to obtain information such as the **Wait Event Description** and solutions regarding the wait events currently being generated.



DETAIL VIEW

Event Description
⌵ ⌵

Buffer busy waits

- Alter system set dispatcher
- ARCH Remote Write
- ASYN Remote Write
- batched allocate scn lock request
- BFILE check if exists
- BFILE check if open
- BFILE closure
- BFILE get length
- BFILE get name object
- BFILE get path object
- BFILE internal seek
- BFILE open
- BFILE read
- Broadcast msg queue transition
- Broadcast msg recovery queue transition
- buffer busy global cache
- buffer busy global cr
- Buffer busy waits**
- Buffer latch
- Buffer read retry
- cache buffer chains Latch
- cache buffers lru chain Latch
- Checkpoint completed
- Cleanup of aborted processes
- control file parallel write
- Control file sequential read
- Control file single write
- Cursor mutex:s
- Cursor mutex:x
- Cursor pin:s
- Cursor pin:s Wait on x
- Cursor pin:x
- Data Guard Broker: single instance
- Data Guard:process clean up

Buffer busy waits 대기 이벤트

Basic Info

There are four reasons that a session cannot pin a buffer in the buffer cache, and a separate wait event exists for each reason:

- "buffer busy waits": A session cannot pin the buffer in the buffer cache because another session has the buffer pinned.
- "read by other session": A session cannot pin the buffer in the buffer cache because another session is reading the buffer from disk.
- "gc buffer busy acquire": A session cannot pin the buffer in the buffer cache because another session is reading the buffer from the cache of another instance.
- "gc buffer busy release": A session cannot pin the buffer in the buffer cache because another session on another instance is taking the buffer from this cache into its own cache so it can pin it.

Prior to release 10.1, all four reasons were covered by "buffer busy waits." In release 10.1, the "gc buffer busy" wait event covered both the "gc buffer busy acquire" and "gc buffer busy release" wait events.

buffer busy waits 대기 이벤트의 세션이 버퍼캐시에서 버퍼를 확보할 수 없는 원인은 4가지이며, 각 원인 별로 대기이벤트가 존재한다.

- "buffer busy waits": 프로세스 A가 블록 X에 대해 Buffer Lock을 획득하고 있는 상태에서 프로세스 B가 동일 블록에 대해 로 판되지 않는 모드로 Buffer Lock을 획득하려고 할 때 발생하는 대기 이벤트
- "read by other session": 프로세스 A가 블록 X를 디스크에서 메모리로 읽어 들일 때 프로세스 B에서 해당 block에 대해 Buffer Lock을 획득하고자 할 때 발생하는 이벤트
- "gc buffer busy acquire": 로컬캐시에 존재하지 않는 데이터 블록을 읽고자 하는 프로세스는 마스터 노드에 블록 전송을 요청하고 응답 받을 때까지 gc current request를 대기한다. 이때 해당 gc 블록을 다른 Local Session이 요청 하는 경우 발생 하는 이벤트
- "gc buffer busy release": 로컬캐시에 존재하지 않는 데이터 블록을 읽고자 하는 프로세스는 마스터 노드에 블록 전송을 요청하고 응답 받을 때까지 gc current request를 대기한다. 이때 해당 gc 블록을 다른 Remote Session이 요청 하는 경우 발생 하는 이벤트

10.1 릴리즈 이전 버전에서는 위의 4가지 원인 모두 buffer busy waits 에서 포함 되었으나, 10.1 릴리즈부터 gc buffer busy 대기 이벤트가 gc buffer busy acquire/gc buffer busy release로 세분화 된다.

Parameter & Wait Time

Wait Parameters

buffer busy waits 대기 이벤트의 대기 파라미터는 다음과 같다.

- File#
- Block#
- Class

Wait Time

Normal wait time is 1 second. If the session was waiting for a buffer during the last wait, then the next wait will be 3 seconds.

FEATURE

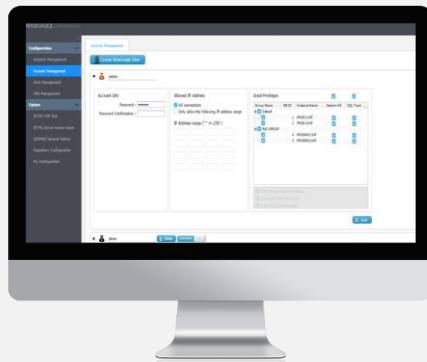
-
- Connect to Active Session Grid
- Wait Event Name Search Feature
- Provides the Root Cause of Wait Event Generation
- Provides Parameter Description

Various Support for **User Management**

CONFIGURATION

ACCOUNT MANAGEMENT

Use the Account Management feature to manage the user account settings.
 You can set the connection **IP Band**, **Database List** and **Privileges**.



DETAIL VIEW

Account Management
SMS Management
Alert Management

Create MaxGauge User

admin

demo

Delete
Unlocked

Account Info

Password :

Password Confirmation :

Role : Common User
 Administrator

Allowed IP Address

All connections
 Only allow the following IP address range

IP Address range ("*" 0~255)

. . .

. . .

. . .

. . .

Grant Privileges

Group Name	DB ID	Instance Name	Session Kill	SQL Trace
Default	1	PROD11WP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	2	PROD12WP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RAC-GROUP	4	PRODRAC1WP	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	3	PRODRAC2WP	<input type="checkbox"/>	<input checked="" type="checkbox"/>

User Script Create Privileges
 View SQL Text Privileges
 View SQL Bind Privileges

Save

FEATURE

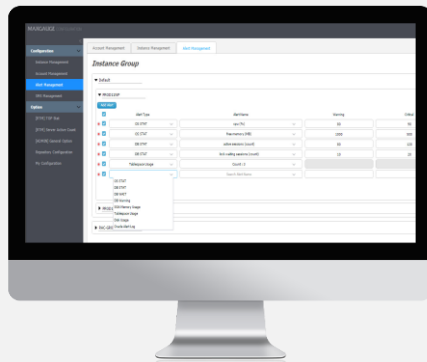
-
- Manage Account Password
- Set Connection IP Band by Account
- Manage and control instances for monitoring by Account
- Manage user privileges of executing SQL Text, SQL Bind, Session Kill and SQL Trace for each instance.

Alert Settings Feature for All Performance Stats

CONFIGURATION

ALERT MANAGEMENT

You can set alerts for all performance stats and wait events available in the oracle for an effective monitoring. You can also set alerts for Main OS Performance Stats and File System Usage, Alert Log and Table space.



DETAIL VIEW

Disk Usage

Warning(%) 75 Critical(%) 95 Apply

Disk	Mount	Warning(%)	Critical(%)
<input checked="" type="checkbox"/> /dev/sda6	/ora11g	75	95
<input checked="" type="checkbox"/> /dev/sda7	/ora12c	75	95
<input checked="" type="checkbox"/> /dev/sda5	/mxg	75	95
<input checked="" type="checkbox"/> /dev/sda9	/ora_data	75	95
<input type="checkbox"/> tmpfs	/dev/shm	0	0
<input type="checkbox"/> devtmpfs	/dev	0	0
<input type="checkbox"/> tmpfs	/sys/fs/cgroup	0	0
<input type="checkbox"/> tmpfs	/run	0	0
<input type="checkbox"/> /dev/sda3	/	0	0

Ok Cancel

Tablespace

Warning(%) 85 Critical(%) 90 Apply

Tablespace	Warning(%)	Critical(%)
<input checked="" type="checkbox"/> SOE	85	90
<input checked="" type="checkbox"/> USERS	85	90
<input checked="" type="checkbox"/> EXAMPLE	85	90
<input type="checkbox"/> SYSTEM	0	0
<input type="checkbox"/> UNDOTBS1	0	0
<input type="checkbox"/> SH	0	0

Ok Cancel

Oracle Alert Log

Oracle Alert Log /ora11g/app/ora11g/diag/rdbms/ora11204/ORA11204

Alert Filtering Options

- Log Switch: Warning
- DDL: Warning
- Checkpoint: Warning
- Error: Critical
- Archiving: None
- Others: None

Add Custom Options (Exclude Priority)

- Text: T
- Pattern: Exclude
- Alert: None

PROD11WP

Add Alert

- OS STAT
- DB STAT
- DB WAIT

Alert Name: active sessions (count)

Search Alert Name: enq: iQ - PXL tree sync at export suosnaro, enq: TQ - TM contention, enq: TS - contention, enq: TT - contention, enq: TW - contention, enq: TX - allocate ITL entry

PROD12WP

FEATURE

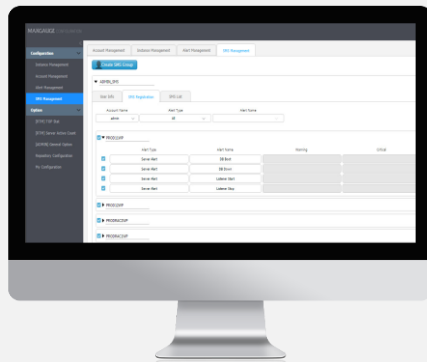
- Manage Threshold Settings by Instance
- Set Thresholds for Stat, Wait Event, Ratio, Resource, Alert Log, File System and Tablespace
- Provides Two Types of Alert Level (Warning, Critical)
- Manage Check Cycle
- SMS Connection

SMS Connection Feature for the Preset Alerts

CONFIGURATION

SMS MANAGEMENT

Provides a feature for connecting with SMS service by using the preset alert information. You can manage the hours open for SMS reception and the hours SMS is not accepted, and select whether to receive SMS or not by user group.



DETAIL VIEW

SMS Schedule Editor

SMS Schedule Name:

Weekly Schedule Setup Clear

	SUN	MON	TUE	WED	THU	FRI	SAT
00							
01							
02							
03							
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

SMS Schedule Enable Period

Always

Specific Times

Add
Delete

From	To	Time Window
02-01	02-28	00~23

SMS Schedule Disable Period

Always

Specific Times

Add
Delete

From	To	Time Window
02-01	02-28	18~23

Save

FEATURE

- Manage the settings for SMS Notification Period
- Configure to set the SMS Notification Days via Weekly Schedule Setup Feature

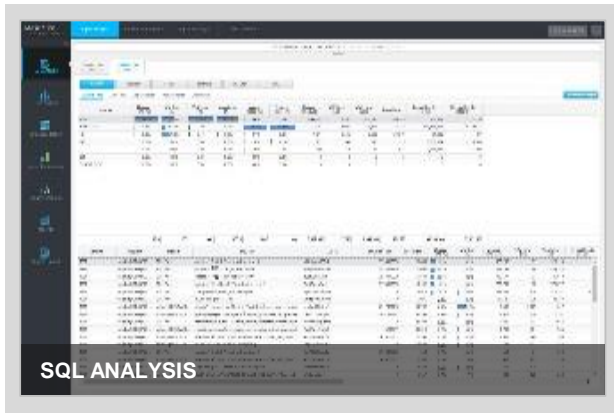
PERFORMANCE ANALYZER

- OVERVIEW
- SQL ANALYSIS
- TREND ANALYSIS
- VISUALIZATION
- COMPARISON
- CAPACITY
- RAC-EXA



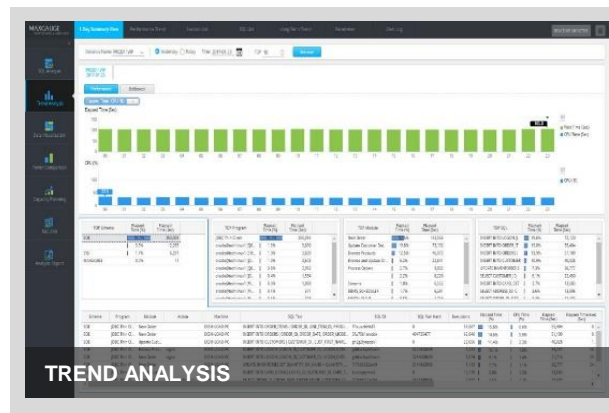
Database's 6 Various Types of Analysis Method Presented

SQL ANALYSIS / TREND ANALYSIS / DATA VISUALIZATION / POWER COMPARISON / CAPACITY PLANNING / RAC-EXA



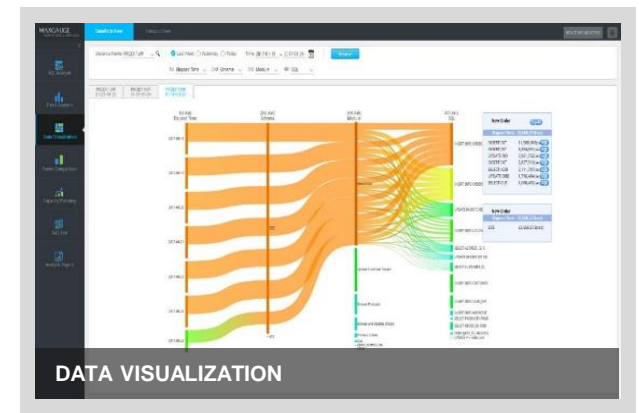
SQL ANALYSIS

Various Performance Analysis of SQL



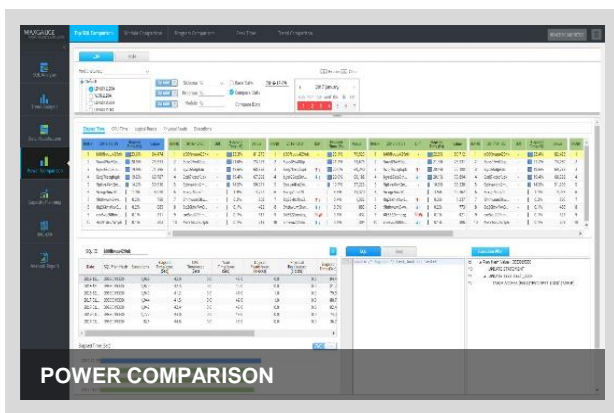
TREND ANALYSIS

Detailed Performance and Problem Analysis



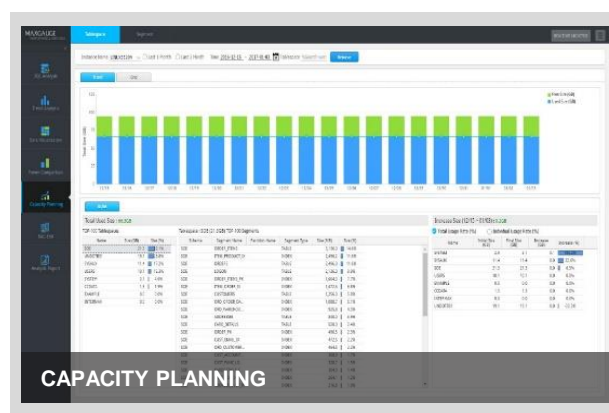
DATA VISUALIZATION

Analysis with Visualization Technique Applied on Data



POWER COMPARISON

Performance Comparison Analysis of Various Perspectives



CAPACITY PLANNING

Database Capacity Trends Analysis



RAC-EXA

Optimized Performance Analysis on EXADATA

Long Term 6 Categories Resource Top-N Statistics Analysis

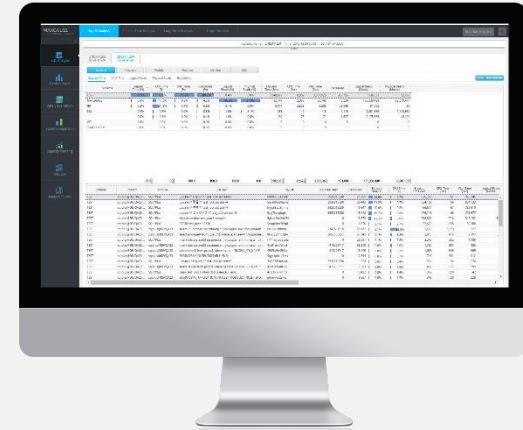
SQL ANALYSIS

TOP-N ANALYSIS

Provides analysis data by Schema / Program / Module / Machine / OS user / SQL Top-N through trends analysis feature.

By getting connected with the Long-Term Trend feature, you can do a long term trends analysis.

FEATURE Top SQL Performance Analysis / Change Target Output Criteria / Sort by Items
Provides SQL Text, Stat information / Provides Execution Plan for each SQL



DETAIL VIEW

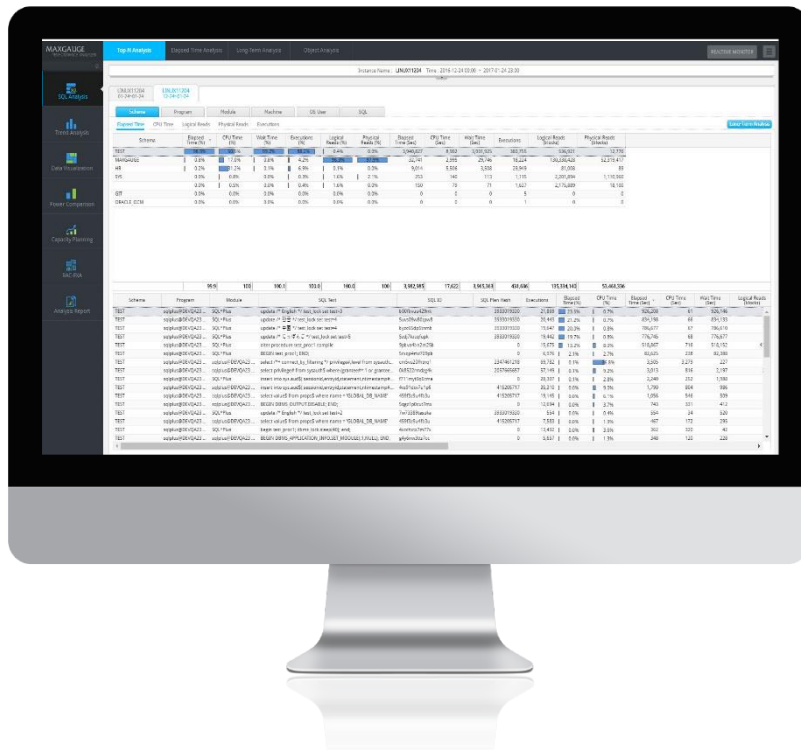
Schema	Program	Module	SQL Text	SQL ID	SQL Plan Hash	Executions	Elapsed Time (%)	CPU Time (%)	Elapsed Time (Sec)	CPU Time (Sec)	Wait Time (Sec)	Logical Reads (blocks)
TEST	sqlplus@DEVQA23 ...	SQL*Plus	update /* English */ test_lock set test=3	b00fbvuu429nk	3933019330	21,869	23.5%	0.7%	926,208	61	926,146	
TEST	sqlplus@DEVQA23 ...	SQL*Plus	update /* 한글 */ test_lock set test=4	5uvs09w80tpw8	3933019330	20,443	21.2%	0.7%	834,198	66	834,133	
TEST	sqlplus@DEVQA23 ...	SQL*Plus	update /* 中国 */ test_lock set test=4	byzc65dp5tnmb	3933019330	19,647	20.0%	0.8%	786,677	67	786,610	
TEST	sqlplus@DEVQA23 ...	SQL*Plus	update /* にっぽんご */ test_lock set test=5	5zrdj7kccqfupk	3933019330	19,442	19.7%	0.8%	776,745	68	776,677	
TEST	sqlplus@DEVQA23 ...	SQL*Plus	alter procedure test_proc1 compile	9pbva4bn2m25b		0	15.67%	8.0%	518,867	716	518,152	4;
TEST	sqlplus@DEVQA23 ...	SQL*Plus	BEGIN test_proc1; END;	5rxqp4mz709pb		0	6.97%	2.7%	82,625	238	82,388	
TEST	sqlplus@DEVQA23 ...	sqlplus@DEVQA23 ...	select /*+ connect_by_filtering */ privilege#,level from sysauth...	cm5vu20fhtnq1	2347461218	69,782	0.1%	6.8%	3,505	3,279	227	
TEST	sqlplus@DEVQA23 ...	sqlplus@DEVQA23 ...	select privilege# from sysauth\$ where (grantee#=1 or grantee...	0k8522rmdzg4k	2057665657	57,149	0.1%	9.2%	3,013	816	2,197	
TEST	sqlplus@DEVQA23 ...	SQL*Plus	insert into sys.aud\$(sessionid,entryid,statement,ntimestamp#...	f711myt0q6cma		0	28,307	0.1%	2.8%	2,240	252	1,988
TEST	sqlplus@DEVQA23 ...	sqlplus@DEVQA23 ...	insert into sys.aud\$(sessionid,entryid,statement,ntimestamp#...	4vs91dcv7u1p6	415205717	35,310	0.0%	9.0%	1,790	804	986	
TEST	sqlplus@DEVQA23 ...	sqlplus@DEVQA23 ...	select value\$ from props\$ where name = 'GLOBAL_DB_NAME'	459f3z9u4fb3u	415205717	19,145	0.0%	6.1%	1,056	546	509	
TEST	sqlplus@DEVQA23 ...	sqlplus@DEVQA23 ...	BEGIN DBMS_OUTPUT.DISABLE; END;	5qgz1p0cut7mx		0	12,694	0.0%	3.7%	743	331	412
TEST	sqlplus@DEVQA23 ...	SQL*Plus	update /* English */ test_lock set test=2	7w73389tasuka	3933019330	554	0.0%	0.4%	554	34	520	
TEST	sqlplus@DEVQA23 ...	sqlplus@DEVQA23 ...	select value\$ from props\$ where name = 'GLOBAL_DB_NAME'	459f3z9u4fb3u	415205717	7,583	0.0%	1.9%	467	172	295	
TEST	sqlplus@DEVQA23 ...	SQL*Plus	begin test_proc1; dbms_lock.sleep(40); end;	4xcchxtx7m77x		0	13,432	0.0%	3.6%	362	320	42
TEST	sqlplus@DEVQA23 ...	sqlplus@DEVQA23 ...	BEGIN DBMS_APPLICATION_INFO.SET_MODULE(1,NULL); END;	g4y6nw3tst7cc		0	5,657	0.0%	1.3%	348	120	228

Intuitive Display of SQL Elapsed Time and Distribution for Analysis

SQL ANALYSIS

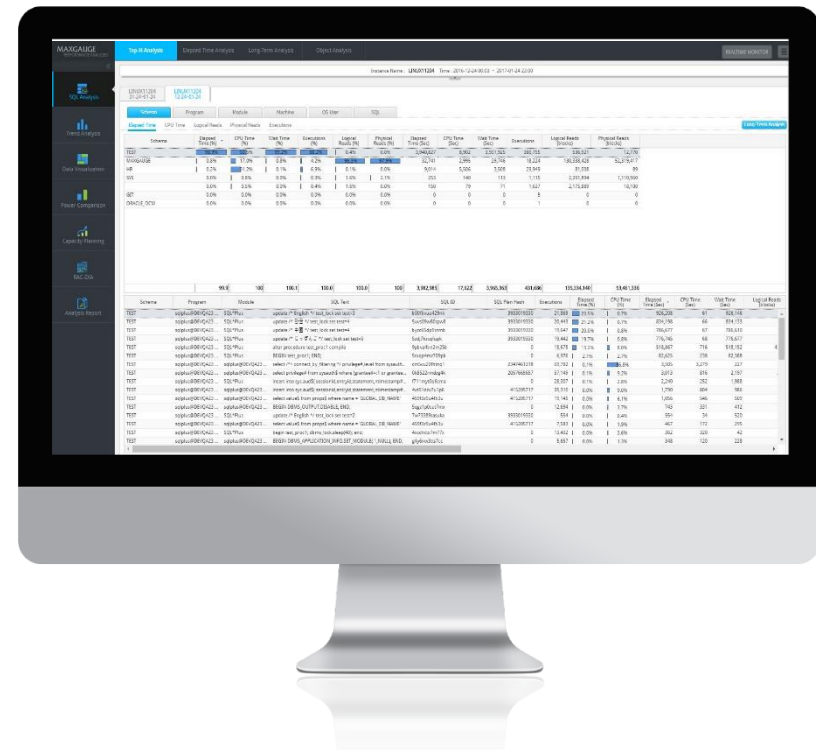
ELAPSED TIME ANALYSIS

FEATURE Wait Class Analysis by each SQL / Top-Down Analysis
 Various Search Conditions Available / Provides SQL History by time



SUMMARY TREND

The SQL elapsed time is provided according to wait class. The analysis period is grouped into categories so you can do a top-down method analysis.



ELAPSED TIME SCATTER

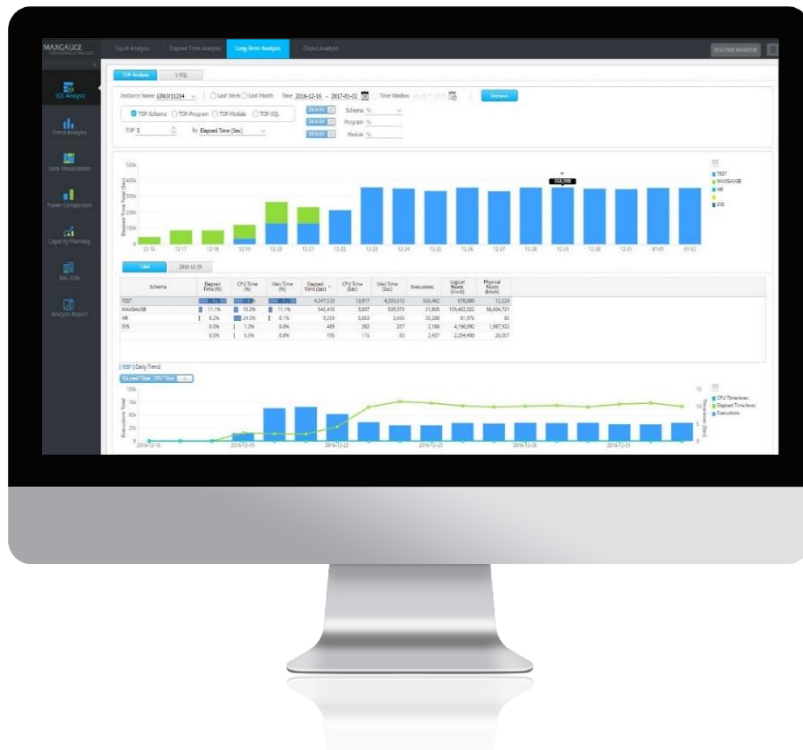
The SQL elapsed time is displayed in a scatter chart which allows you to intuitively analyze the data. If you drag a select time, the corresponding time period's SQL information is displayed.

Long Term Trend Analysis Using 1 Day Average Value for SQL or Top-N

SQL ANALYSIS

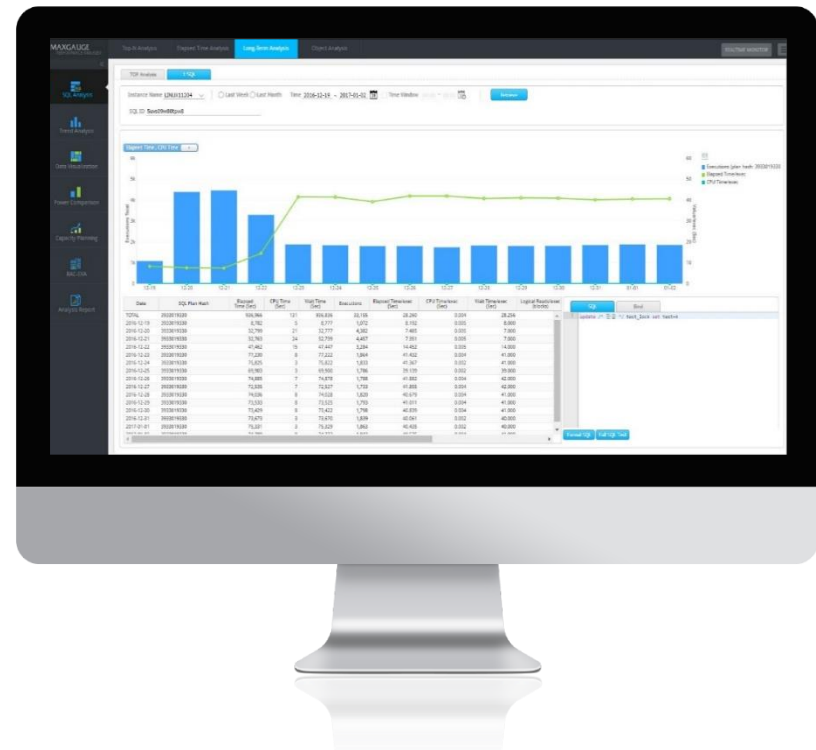
LONG TERM ANALYSIS

FEATURE Long Term Trends Analysis / Grouping by Various Conditions
Individual SQL's Performance History Analysis



TOP ANALYSIS

Provides a long term trend analysis feature for Top-N. The Top-N criteria are Schema/ Program/ Module/ SQL.



1SQL ANALYSIS

Provides a long term trends analysis feature for a specific SQL. You can check the daily execution count and elapsed time, I/O, SQL text, and bind information.

SQL Execution Pattern Analysis **By OBJECT**

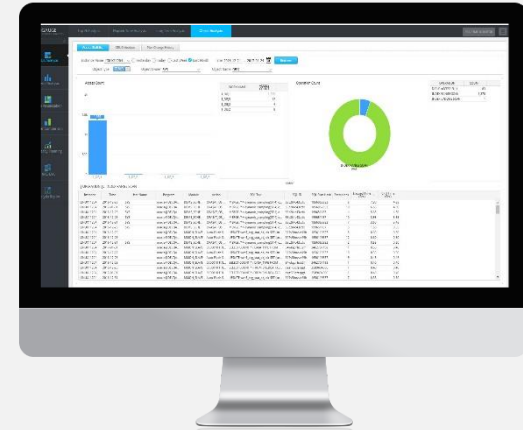
SQL ANALYSIS

OBJECT ANALYSIS – ACCESS STATISTICS

-

You can analyze the execution information of SQL accessing the select object.

You can check Access Operation, Index Scan Operation and Count information, and when you select a specific SQL, it displays the execution plan information.



FEATURE Specific Object Analysis Details / Provides Access Count / Provides Performance of SQL in Access

DETAIL VIEW

SQL Bind

```

1 MERGE /*+ dynamic_sampling(4) dynamic_sampling_est_cdn(ST) */ INTO stats_target$ st
2 USING (SELECT staleness,
3           osize,
4           obj#,
5           type#,
6           aflags,
7           status,
8           sid,
9           serial#,
10          part#,
11          bo#
12          FROM (SELECT /*+ no_expand dynamic_sar
13
14
15
16
17
18
19
                
```

Format SQL

Execution Plan

```

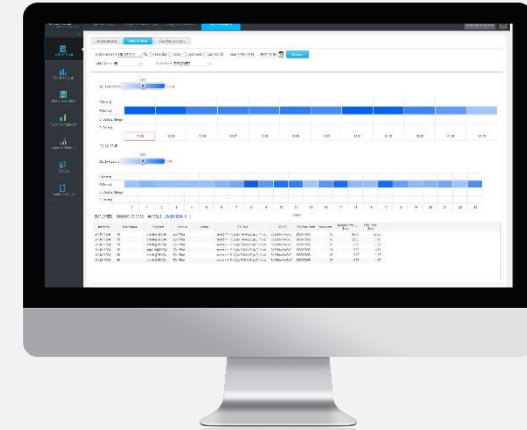
id  Plan Hash Value : 1856052852
*0  MERGE STATEMENT
*1  MERGE SYS.STATS_TARGETS$
*2  VIEW
*3  HASH JOIN (OUTER)  access("ST"."OBJ#"="OBJ#")
*4  VIEW  filter("OSIZE" IS NOT NULL)
*5  UNION-ALL
*6  NESTED LOOPS (OUTER)
*7  NESTED LOOPS (OUTER)
*8  FILTER  filter(((BITAND("T"."FLAGS",16)=16 AND (BITAND("M"."FLAGS",5)>0 OR "M"."INSERTS"+"M"."UPDATES"+"M"."
*9  NESTED LOOPS (OUTER)
*10 NESTED LOOPS (OUTER)
*11 NESTED LOOPS
*12 HASH JOIN (RIGHT ANTI)  access("U"."NAME"="from$_subquery$_096"."MOWNER" AND "O"."NAME"="from
                
```

DML Pattern Analysis of Table

SQL ANALYSIS

OBJECT ANALYSIS – CRUD ANALYSIS

You can analyze the job frequency of table by date/ time using the CRUD(Create/Read/Update/Delete) feature. Using this feature, you can easily identify the table's time at which the DML is frequent.



FEATURE CRUD Analysis of a Specific Segment / Top-Down Analysis / SQL Type and Performance Analysis

DETAIL VIEW



EMPLOYEES 08:00:00~08:59:59 #of SQL [[LINUX11204](#); 6]

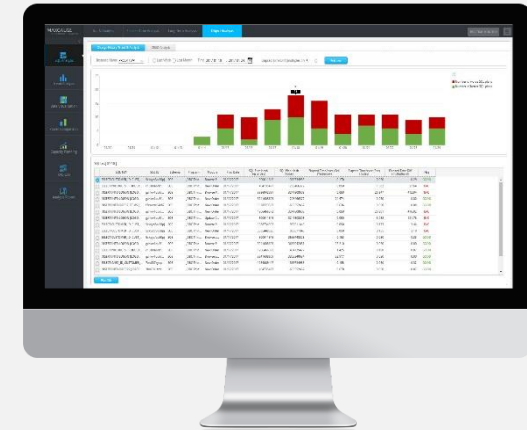
Instance	User Name	Program	Module	Action	SQL Text	SQL ID	SQL Plan Hash	Executions	Elapsed Time (Sec)	CPU Time (Sec)
LINUX11204	HR	oracle@DEVQA2...	SQL*Plus		select /*+ FULL(a) PARALLEL(a,5) */ coun...	8q26khxfkw3b5	203079095	18	68.70	53.30
LINUX11204	HR	oracle@DEVQA2...	SQL*Plus		select /*+ FULL(a) PARALLEL(a,5) */ coun...	8q26khxfkw3b5	203079095	18	20.35	7.10
LINUX11204	HR	oracle@DEVQA2...	SQL*Plus		select /*+ FULL(a) PARALLEL(a,5) */ coun...	8q26khxfkw3b5	203079095	18	13.60	1.70
LINUX11204	HR	sqlplus@DEVQA2...	SQL*Plus		select /*+ FULL(a) PARALLEL(a,5) */ coun...	8q26khxfkw3b5	203079095	54	9.90	4.80
LINUX11204	HR	oracle@DEVQA2...	SQL*Plus		select /*+ FULL(a) PARALLEL(a,5) */ coun...	8q26khxfkw3b5	203079095	18	9.25	1.95
LINUX11204	HR	oracle@DEVQA2...	SQL*Plus		select /*+ FULL(a) PARALLEL(a,5) */ coun...	8q26khxfkw3b5	203079095	18	6.35	1.60

View SQL Plan Change History

SQL ANALYSIS

OBJECT ANALYSIS – PLAN CHANGE HISTORY

Provides trends of the number of SQLs whose execution plan has changed by date.
If you use the Plan Diff feature, you can compare 2 execution plans on one screen.



FEATURE SQL Plan Analysis Details / Performance Improvement Confirmation / Performance History Comparison by Plan

DETAIL VIEW

Time	Sql Plan Hash	Executions	Elapsed Time/exec (Sec)	CPU Time/exec (Sec)	Logical Reads/exec (block)	Physical Reads/exec (block)
2016-12-26 23:50:00	908878949	194	1.400	0.041	235	111
2016-12-27 13:30:00	3380108386	1	75.500	2.300	52,633	16,991

Prev [908878949]

ID	PLAN
0	SELECT STATEMENT
1	* SORT (ORDER BY)
2	*** HASH (GROUP BY)
3	***** HASH JOIN (OUTER)

Current [3380108386]

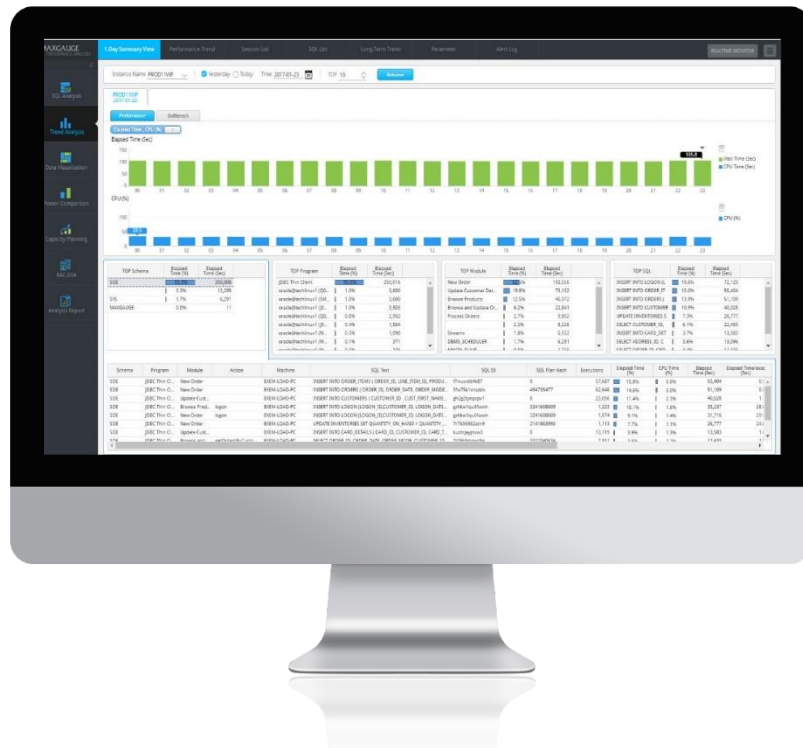
ID	PLAN
0	SELECT STATEMENT
1	* SORT (ORDER BY)
2	*** HASH (GROUP BY)
3	***** HASH JOIN (OUTER)

Quick Check on the Root Cause of Problem in the Peak Period with One-Click

TREND ANALYSIS

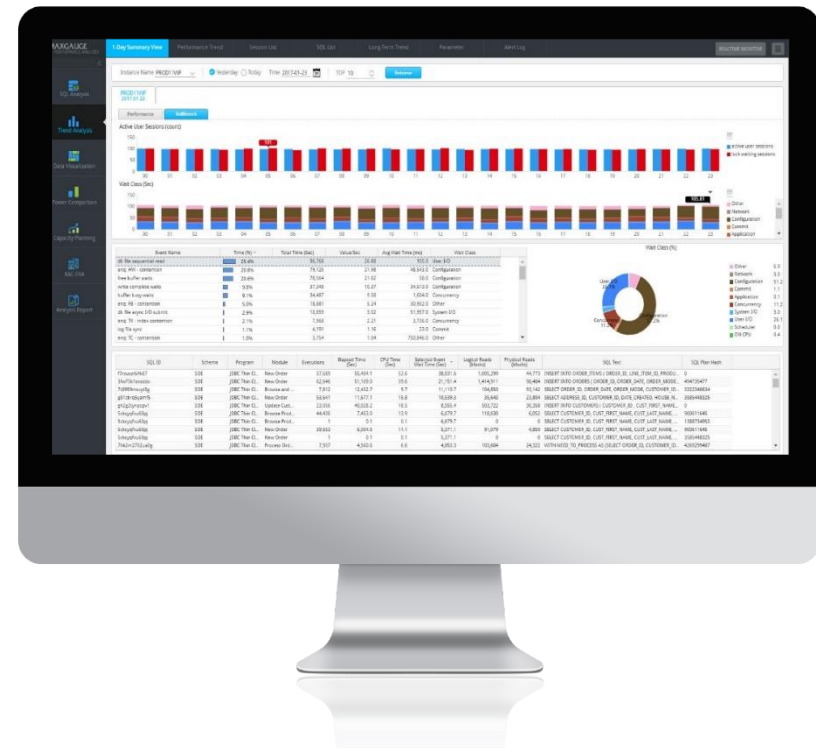
1-DAY SUMMARY VIEW

FEATURE Hourly Performance Trends Analysis / Provides Hourly Event information
Top-Down Analysis / Root Cause SQL Analysis



PERFORMANCE

Provides a feature which allows you to easily identify the peak period by providing hourly average trends graph of main performance stats and wait class.



BOTTLENECK

Provides information of SQLs which waited on the Wait Event. Provides a feature by which you can trace the root cause of the problem through the process of Wait Class -> Wait Event -> SQL Level.

Detailed Analysis of Peak Period with Main Stat and Wait Class

TREND ANALYSIS

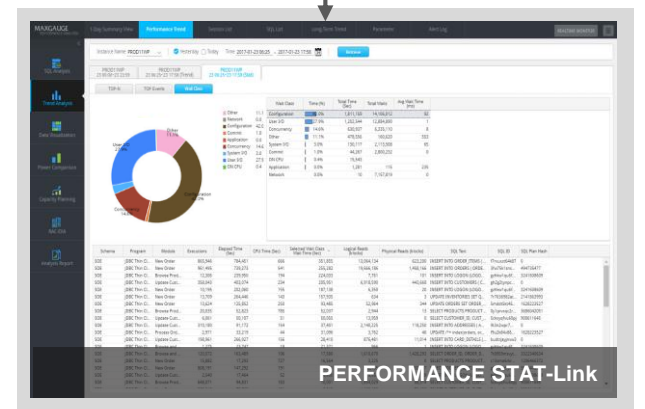
PERFORMANCE TREND

Provides a feature which allows you to easily identify the peak period by providing hourly average trends graph of main stats and wait class.

You can retrieve information about the sessions and SQLs which are causing the overload in regards to the peak period by using Time Slice (Detailed Analysis Feature).

FEATURE

- Trends Analysis by Dates
- Change Main Stats
- Top-Down Analysis
- Provides Session Info in Unit of Second
- 1 Minute Analysis Link

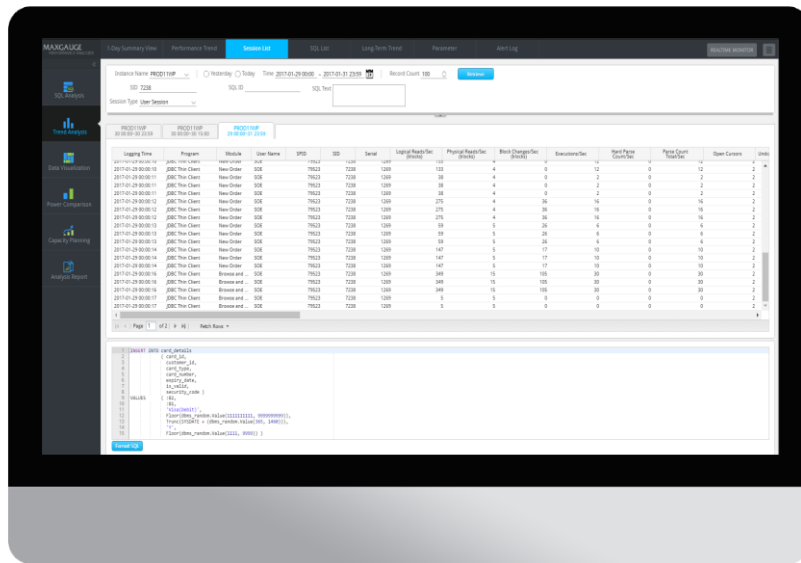


Session and SQL Search by Various Conditions

TREND ANALYSIS

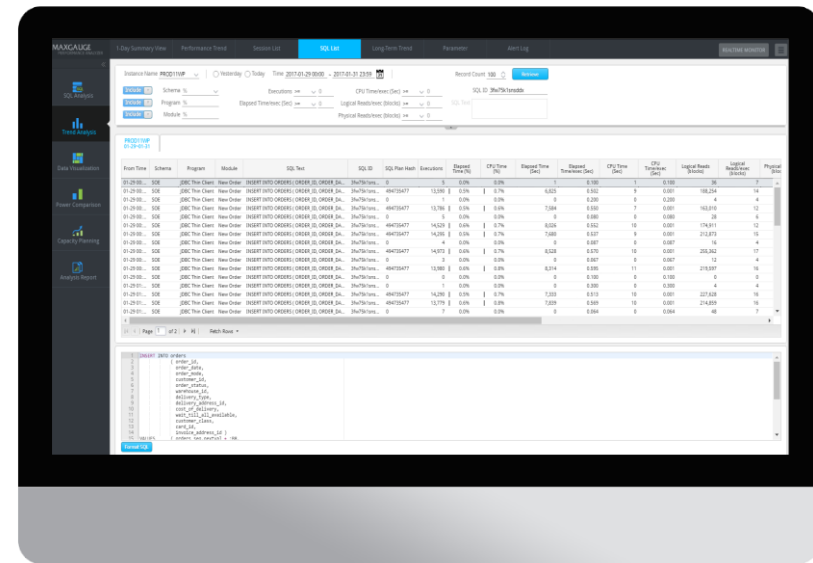
SESSION & SQL LIST

FEATURE Utilize Various Search Conditions / Session Detail Link
SQL Detail Link / Long Term Analysis



SESSION LIST

You can analyze the collected sessions and review the session connection info in unit of second, status, SQL execution information, and wait event.



SQL LIST

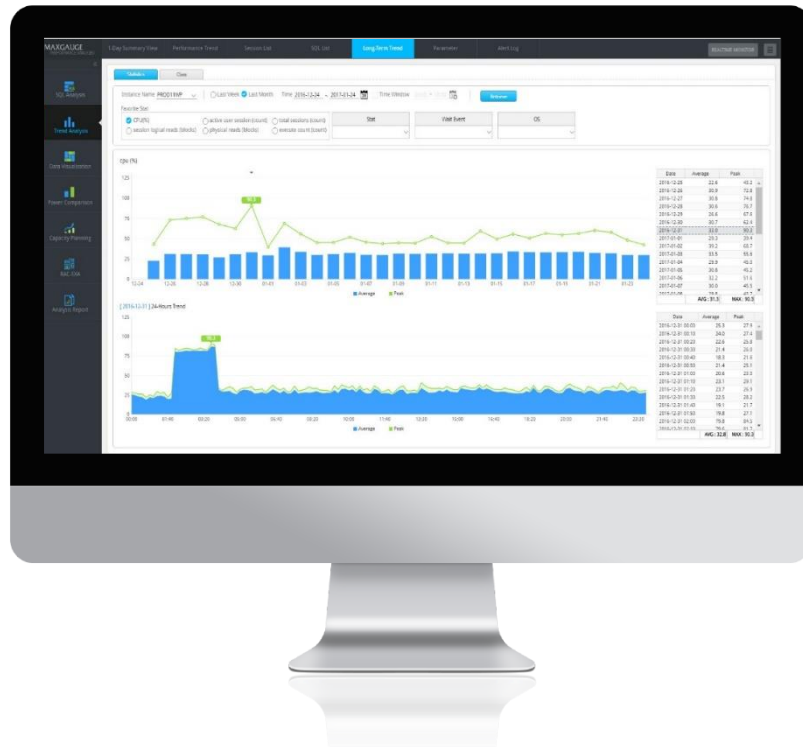
You can analyze a specific SQL's execution information. It is saved every 10 minutes in a summary, and you can analyze the overall SQL performance and the session connection information.

Session, SQL Search of Main Stat and Wait Class Using 1 Day Average Value

TREND ANALYSIS

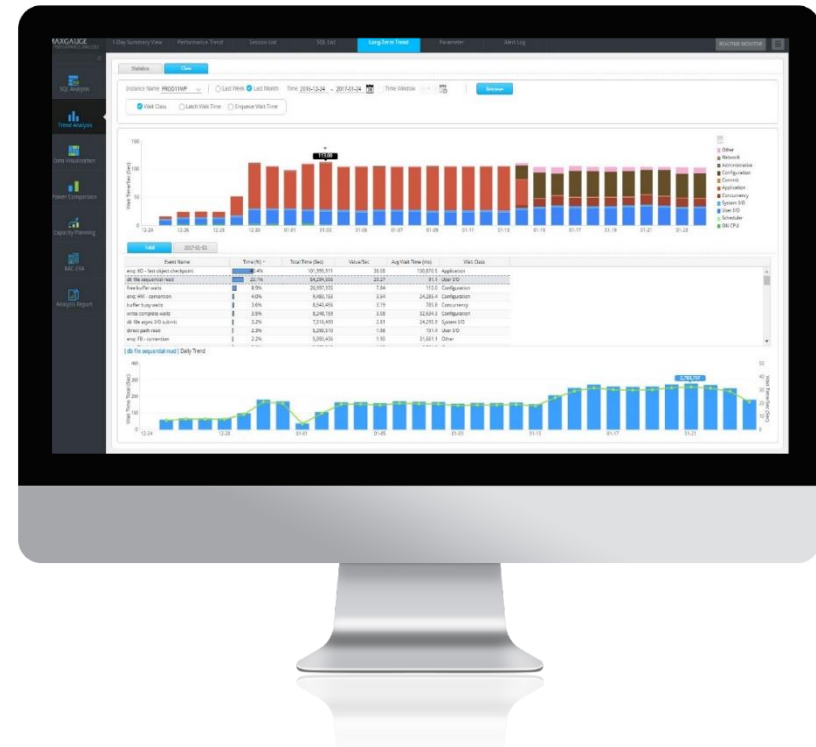
LONG TERM TREND

FEATURE Long Term Trend Analysis / Provides Average and Maximum Values by Stat
Provides Wait Event Trend



STATISTICS TREND

It provides the main performance stat's average value and maximum value by date and by time, and the long term trend analysis is possible.



CLASS TREND

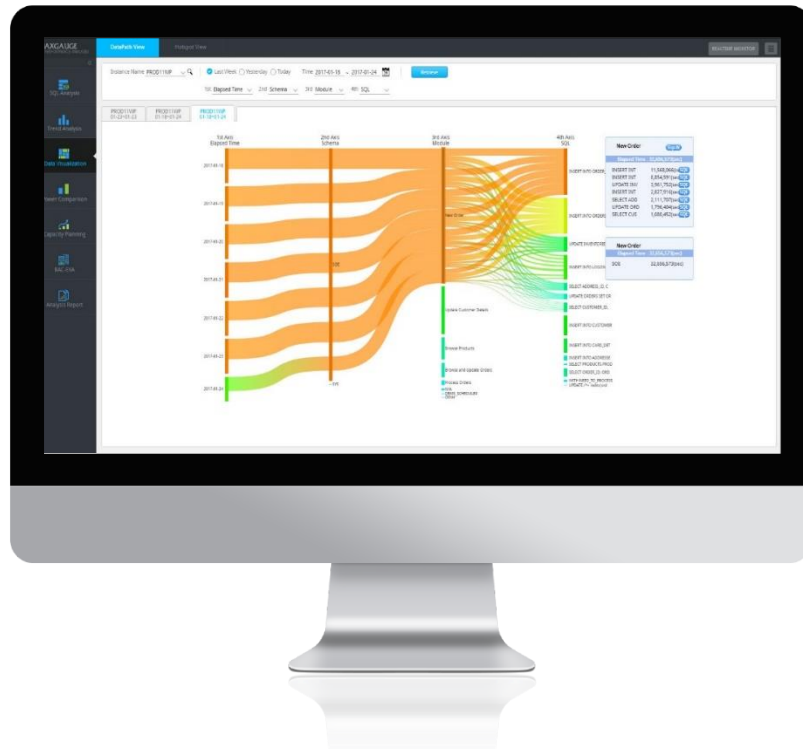
Provides long term trends of wait time by Wait Event (Class) and wait events generated; and a specific wait event's wait time by date.

Data Visualization Technique Which Allows You to Identify the Hotspot At a Glance

VISUALIZATION

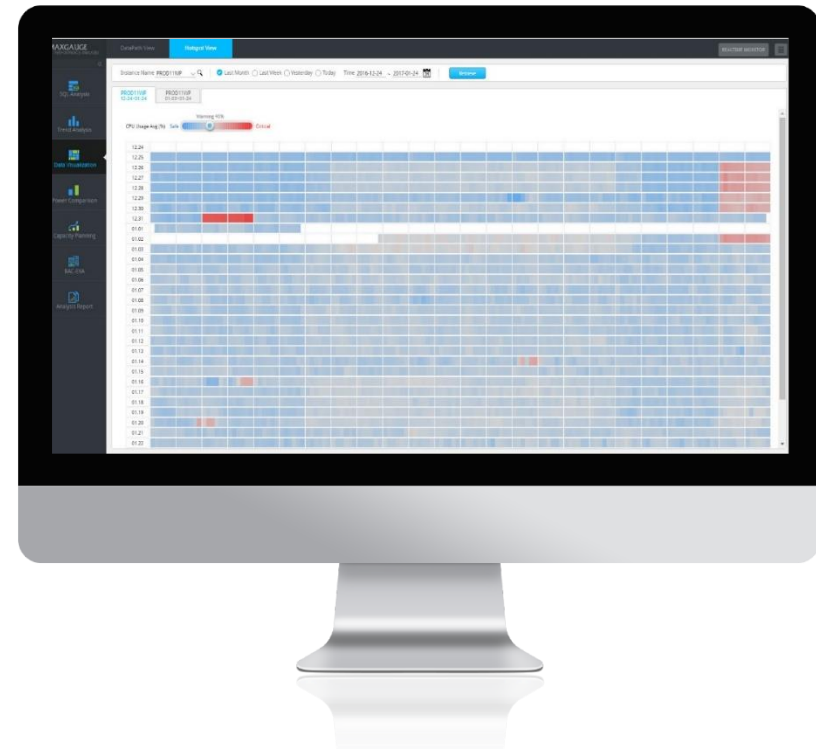
DATA VISUALIZATION

FEATURE Program, Schema, SQL Link / Data Access Visualization / Provides CPU Trend by Period



DATAPATH VIEW

Bidirectional analysis of data size of Instance / Schema / Program / SQL regarding multiple databases (or multiple dates for a single database) can be done, and the UI allows you to understand it intuitively.



HOTSPOT VIEW

Provides a feature which allows you to quickly and easily identify the Hotspot based on CPU(%) for multiple databases (or multiple dates for a single database).

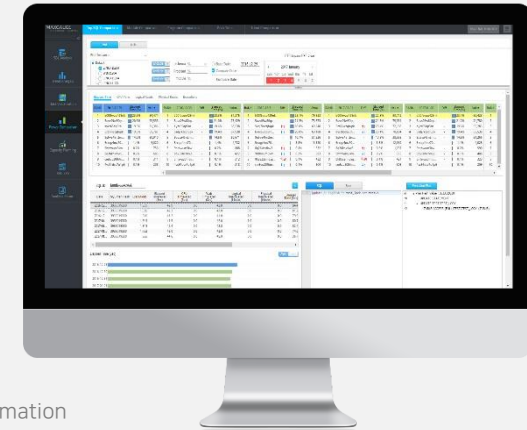
Top-SQL Rank Comparison Analysis through the Top SQL Comparison

POWER COMPARISON

TOP SQL COMPARISON

Provides a feature for comparing the Top SQLs of the standard against the Top SQLs of the comparing dates. By comparing the SQL ranking by date, you can use this as a basic resource for monitoring SQLs that are causing problem or the influx of new jobs. Long term trend analysis can be done by linking with the Long-Term Trend feature.

FEATURE SQL 1:M, N:M Comparison / Change Output Criteria / Provides Diff Values by Date / Provides SQL, Bind, Plan Information



DETAIL VIEW

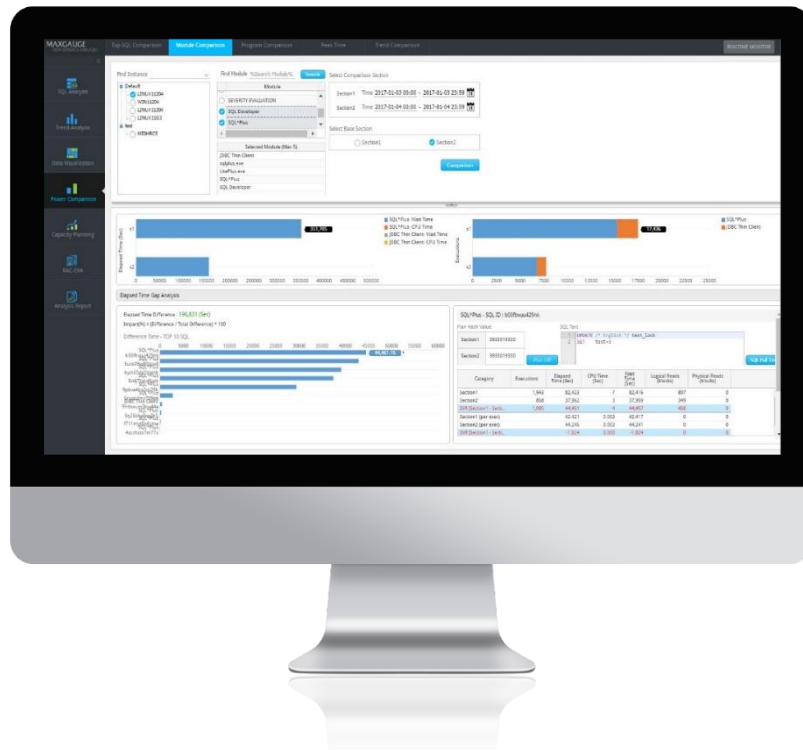
Elapsed Time		CPU Time		Logical Reads		Physical Reads		Executions																
RANK	2016-12-29	Elapsed Time (%)	Value	RANK	2016-12-30	Diff	Elapsed Time (%)	Value	RANK	2016-12-31	Diff	Elapsed Time (%)	Value	RANK	2017-01-01	Diff	Elapsed Time (%)	Value	RANK	2017-01-02	Diff	Elapsed Time (%)	Value	RANK
1	b00fbvuu429nk	23.6%	84,474	1	b00fbvuu429nk	-	23.3%	81,275	1	b00fbvuu429nk	-	23.1%	79,923	1	b00fbvuu429nk	-	22.8%	80,712	1	b00fbvuu429nk	-	23.4%	82,423	1
2	5uvs09w80tp...	20.5%	73,533	2	5uvs09w80tp...	-	21.0%	73,429	2	5uvs09w80tp...	-	21.3%	73,673	2	5uvs09w80tp...	-	21.3%	75,331	2	5uvs09w80tp...	-	21.2%	74,780	2
3	byzc65dp5tn...	19.9%	71,386	3	byzc65dp5tn...	-	19.6%	68,538	3	5zsj7kzcfupk	↑1	20.0%	69,240	3	5zsj7kzcfupk	↑1	20.4%	72,188	3	byzc65dp5tn...	-	19.6%	69,283	3
4	5zsj7kzcfupk	19.5%	69,787	4	5zsj7kzcfupk	-	19.4%	67,938	4	byzc65dp5tn...	↓1	20.0%	69,188	4	byzc65dp5tn...	↓1	20.1%	70,894	4	5zsj7kzcfupk	-	19.4%	68,538	4
5	9pbva4b n2m...	14.2%	50,910	5	9pbva4b n2m...	-	14.5%	50,671	5	9pbva4b n2m...	-	10.7%	37,226	5	9pbva4b n2m...	-	10.8%	38,338	5	9pbva4b n2m...	-	14.5%	51,266	5
6	5rxqp4mz70...	1.4%	5,020	6	5rxqp4mz70...	-	1.4%	4,722	6	5rxqp4mz70...	-	3.8%	13,320	6	5rxqp4mz70...	-	3.5%	12,362	6	5rxqp4mz70...	-	1.1%	4,025	6
7	9hthwum3kw...	0.2%	750	7	9hthwum3kw...	-	0.2%	808	7	8q26khxfkw3...	↑1	0.4%	1,332	7	8q26khxfkw3...	↑1	0.3%	1,237	7	9hthwum3kw...	-	0.2%	590	7
8	8q26khxfkw3...	0.2%	685	8	8q26khxfkw3...	-	0.1%	422	8	9hthwum3kw...	↓1	0.3%	883	8	9hthwum3kw...	↓1	0.2%	773	8	8q26khxfkw3...	-	0.1%	488	8
9	cm5vu20fhtn...	0.1%	311	9	cm5vu20fhtn...	-	0.1%	312	9	0k8522rmdzg...	NLW	0.1%	432	9	0k8522rmdzg...	NLW	0.1%	421	9	cm5vu20fhtn...	-	0.1%	323	9
10	4vs91dcv7u1p6	0.1%	203	10	4vs91dcv7u1p6	-	0.1%	218	10	cm5vu20fhtn...	↓1	0.1%	304	10	cm5vu20fhtn...	↓1	0.1%	306	10	4vs91dcv7u1p6	-	0.1%	209	10

Module & Program Comparison Analysis

POWER COMPARISON

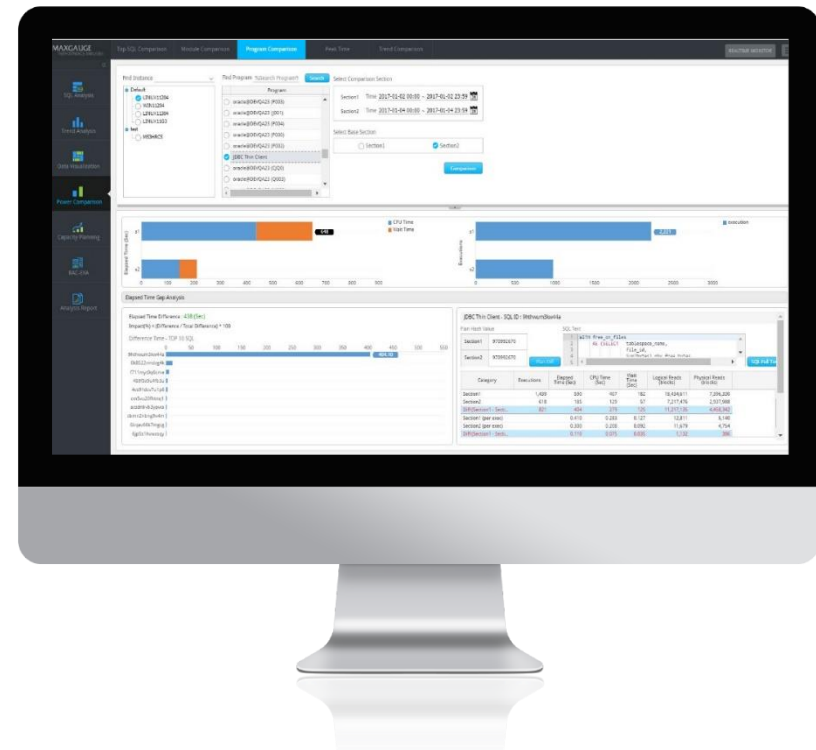
CLIENT COMPARISON

FEATURE Comparison Module & Program / Provides Diff Values in Reference to the Base Date



MODULE COMPARISON

In the event of a specific module's performance degradation, this feature allows you to compare against the previous execution history.



PROGRAM COMPARISON

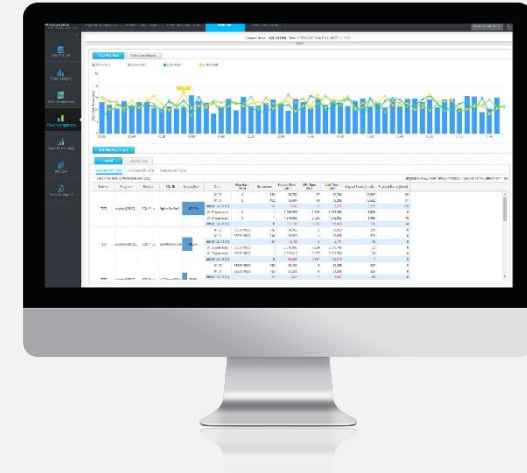
In the event of a specific program's performance degradation, this feature allows you to compare against the previous execution history.

Peak Time Comparison Analysis

POWER COMPARISON

PEAK TIME COMPARISON

In the event performance degradation period is generated, this feature allows you to compare the corresponding time point of previous dates.



FEATURE Provides Peak Time by Date / Provides SQL Diff Values by Date / SQL Detail Link

DETAIL VIEW

Compare with 01/01 Compare with 12/31 Compare with 12/30

Wait Time Total Difference:4,540 (Sec) Impact(%) = SQL Wait Time Difference / Total Wait Time Difference * 100

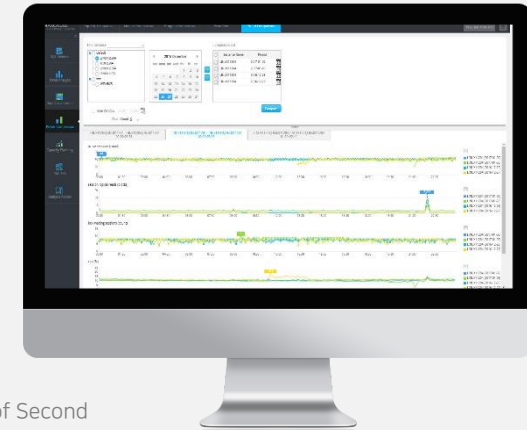
Schema	Program	Module	SQL ID	Impact(%)	Date	Plan Hash Value	Executions	Elapsed Time (Sec)	CPU Time (Sec)	Wait Time (Sec)	Logical Reads (block)	Physical Reads (block)
TEST	sqlplus@DEVQA...	SQL*Plus	9pbva4bn2m25b	162.5%	01.02	0	548	20,790	27	20,763	15,907	62
					01.01	0	492	13,404	18	13,385	12,682	91
					diff (01.02-01.01)		56	7,386	9	7,378	3,225	-29
					01.02 (per exec)	0	1	2,086.099	2.706	2,083.393	1,600	6
					01.01 (per exec)	0	1	1,514.999	2.036	1,512.963	1,405	10
			diff (01.02-01.01)		0	571.100	0.670	570.430	195	-4		
TEST	sqlplus@DEVQA...	SQL*Plus	5uvs09w80tpw8	46.3%	01.02	3933019330	736	30,962	3	30,959	299	0
					01.01	3933019330	716	28,859	1	28,858	374	0
					diff (01.02-01.01)		20	2,103	2	2,101	-75	0
			01.02 (per exec)	3933019330	1	2,316.002	0.234	2,315.768	22	0		

Intuitive Performance Comparison Through Time Matching

POWER COMPARISON

TREND COMPARISON

This feature allows the user to select a desired instance's specific date for comparison to analyze the performance stats. This feature can be used to compare and analyze among the different nodes in a RAC environment, or by instance dates on which the same task is repeated.



FEATURE Multiple Instances Trends Comparison / Multiple Dates Simultaneous Comparison Analysis / Session Info in Unit of Second

DETAIL VIEW

Active Session
Process

All
 LINUX11204 [2017-01-02]
 LINUX11204 [2017-01-03]
 LINUX11204 [2016-12-26]
 LINUX11204 [2016-12-27]
 Exclude Background

Alias	SID	Program	Module	User Name	SPID	CPU (%)	Elapsed Time (Sec)	Event Name	Wait Time	Logical Reads/Sec (blocks)	Physical Reads/Sec (blocks)	Block Changes/Sec (blocks)	Executions/Sec	Hard Parse Count/Sec	Parse C Total/
LINUX11204 [2017-...	51	LitePlus.exe	MAXGAUGE@LOC...	MAXGAUGE	13328	0	10,172	SQL*Net message from client	WAITING (0)		0	0	0	0	0
LINUX11204 [2017-...	28	LitePlus.exe	MAXGAUGE@LOC...	MAXGAUGE	13235	0	10,159	enq: TX - row lock contention	WAITING (0)		0	0	0	0	0
LINUX11204 [2017-...	32	oracle@DEVQA23...			15653	0	42	job q slave wait	WAITING (0)		0	0	0	0	0
LINUX11204 [2017-...	38	oracle@DEVQA23...			15651	0	22	job q slave wait	WAITING (0)		0	0	0	0	0
LINUX11204 [2016-...	45	oracle@DEVQA23...			13802	0	9	job q slave wait	WAITING (0)		0	0	0	0	0
LINUX11204 [2016-...	52	oracle@DEVQA23...			13804	0	9	job q slave wait	WAITING (0)		0	0	0	0	0

Active (User + Background) Session Trend

1 Minute Analysis

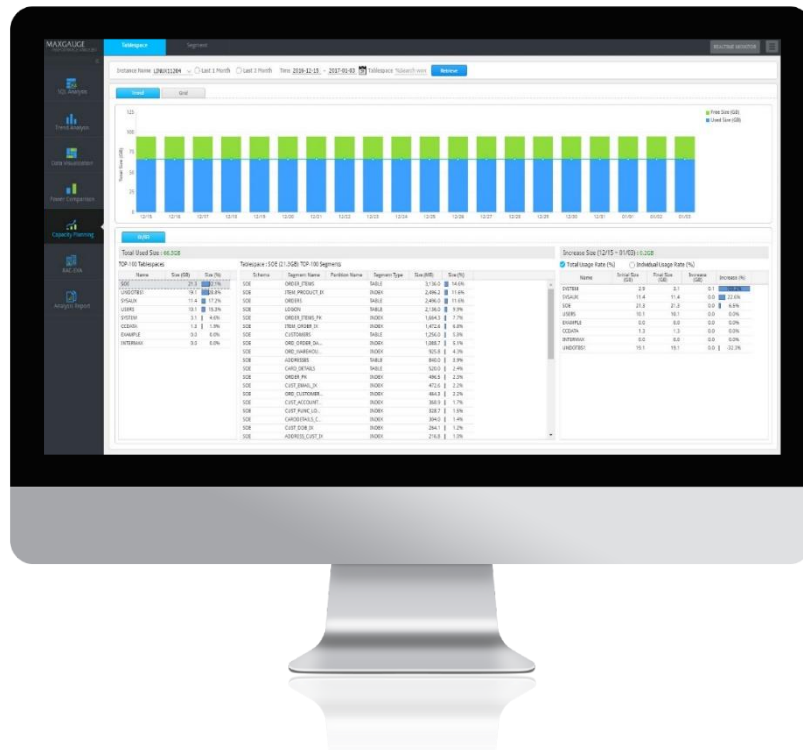
- LINUX11204 [2017-01-02]
- LINUX11204 [2017-01-03]
- LINUX11204 [2016-12-27]

Usage Trends Useful for Database Capacity Planning

CAPACITY

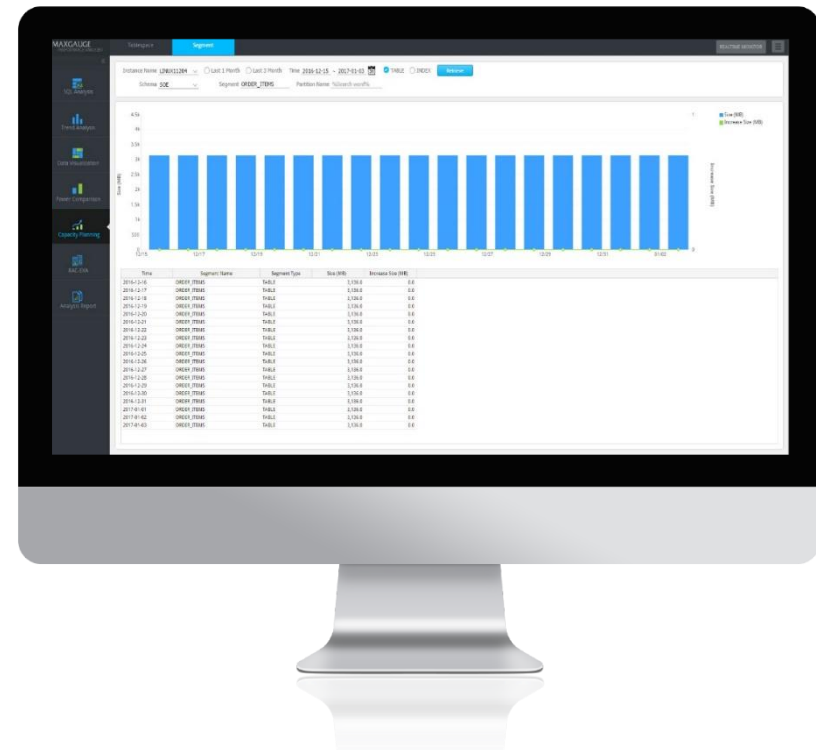
CAPACITY PLANNING

FEATURE Provides Tablespace Info / Provides Size Increase Ratio by Data
Provides Detailed Segment Info



TABLESPACE TREND

Provides trends of tablespace usage and free space. It also provides information about the Top-N segment within the tablespace in which the usage increase ratio is high.



SEGMENT TREND

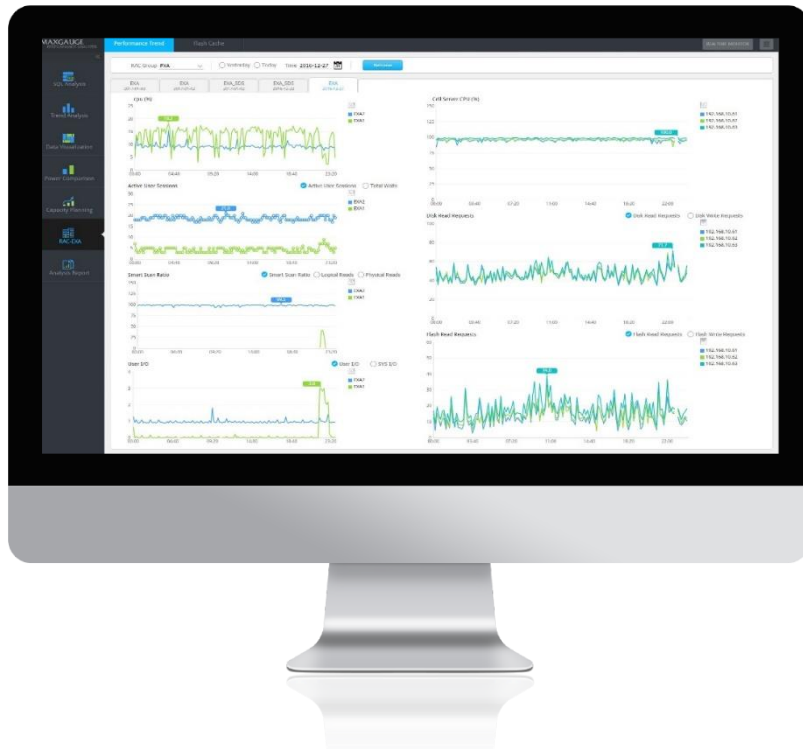
Provides information about the daily incremental values and the size of particular segment (TABLE, INDEX, PARTITION).

Provides EXADATA Analysis Feature

RAC-EXA

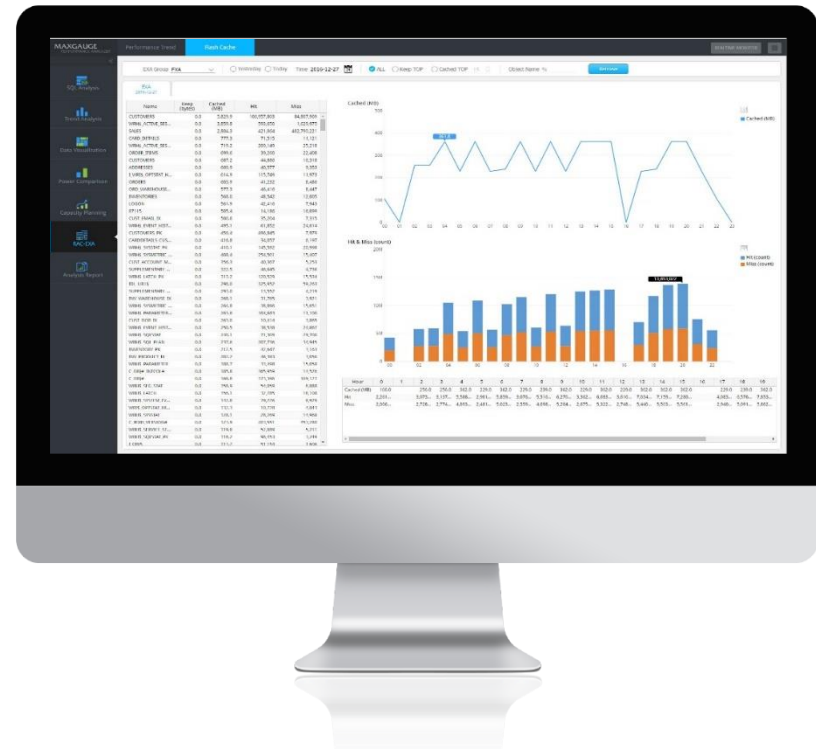
RAC-EXA ANALYSIS

FEATURE Provides Cell Server Performance Info / Provides Smart Scan Usage
Provides Flash Cache Usage



PERFORMANCE TREND

The cell server and the DB performance stats are configured into one screen which allows you to easily identify and analyze the EXADATA overload period.



FLASH CACHE

Displays EXADATA's Flash Cache Hit/Miss Count grouped by time and object unit.



Thank you

