10

Dynamic Performance (V$) Views: V$SCHEDULER_IN_MEMORY_TRACE to V$ZONEMAP_USAGE_STATS

This chapter contains the dynamic performance views `V$SCHEDULER_IN_MEMORY_TRACE` to `V$ZONEMAP_USAGE_STATS`.

10.1 V$SCHEDULER_IN_MEMORY_TRACE

`V$SCHEDULER_IN_MEMORY_TRACE` displays in-memory trace and other information about all processes executing scheduler-related actions.

Column	Datatype	Description
SID	NUMBER	ID of the session generating scheduler trace
SERIAL#	NUMBER	Serial number of the session generating scheduler trace
USER#	NUMBER	Oracle identifier of the user generating scheduler trace
USERNAME	VARCHAR2(128)	Name of the user generating scheduler trace
PROCESSNAME	VARCHAR2(5)	Name of the process generating scheduler trace
PADDR	RAW(8)	Address of the process state object generating scheduler trace
SPID	VARCHAR2(24)	Operating system identifier of the process generating scheduler trace
PID	NUMBER	Oracle identifier of the process generating scheduler trace
TRACE_ST	CLOB	Scheduler trace generated by the process
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **Note:**
> This view is available starting with Oracle Database 23ai.

10.2 V$SCHEDULER_RUNNING_JOBS

`V$SCHEDULER_RUNNING_JOBS` displays information about running Scheduler jobs.

Column	Datatype	Description
SESSION_ID	NUMBER	Identifier of the session running the Scheduler job
SESSION_SERIAL_NUM	NUMBER	Session serial number
JOB_ID	NUMBER	ID of the running Scheduler job
PADDR	RAW(4 | 8)	Process address
OS_PROCESS_ID	VARCHAR2(12)	Operating system process ID
SESSION_STAT_CPU	INTERVAL DAY(2) TO SECOND(3)	CPU statistics for the session
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire multitenant container database (CDB). This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.3 V$SECUREFILE_SHRINK

V$SECUREFILE_SHRINK displays information about SecureFiles Shrink tasks.

Column	Datatype	Description
LOB_OBJD	NUMBER	Database object number for the LOB segment
SHRINK_STATUS	VARCHAR2(40)	Status of the shrink task: • RUNNING • COMPLETE • ERROR
START_TIME	TIMESTAMP(3) WITH TIME ZONE	Date and time at which the shrink task started
END_TIME	TIMESTAMP(3) WITH TIME ZONE	Data and time at which the shrink task ended If SHRINK_STATUS = RUNNING, the value of this column is NULL.
BLOCKS_MOVED	NUMBER	Number of blocks relocated during the shrink task
BLOCKS_FREED	NUMBER	Number of blocks freed during the shrink task
BLOCKS_ALLOCATED	NUMBER	Number of blocks allocated from the tablespace during the shrink task This value includes only blocks allocated by the shrink process. Blocks allocated by other database processes are not included.
EXTENTS_ALLOCATED	NUMBER	Number of extents allocated from the tablespace during the shrink task This value includes only extents allocated by the shrink process. Extents allocated by other database processes are not included.
EXTENTS_FREED	NUMBER	Number of extents freed during the shrink task
EXTENTS_SEALED	NUMBER	Number of candidate extents selected and sealed during the shrink task
AUTOMATIC	NUMBER	Indicates whether the shrink task was started automatically (1) or manually (0)

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Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.4 V$SECUREFILE_TIMER

V$SECUREFILE_TIMER displays information about time taken (in microseconds) by functions of SecureFiles. These timer values are collected per session.

Column	Datatype	Description
NAME	VARCHAR2(50)	Name of the function
LAYER_ID	NUMBER	ID of the layer that the function belongs to: • 0 - Entire Subtree • 1 - Delta Updates • 2 - Write gather cache • 3 - Deduplication • 4 - Compression & Encryption • 5 - Inode • 6 - Space • 7 - Utilities • 8 - Row-Column Intersection
OWNTIME	NUMBER	Total time taken by the function
MAXTIME	NUMBER	Maximum time taken by a single call
MINTIME	NUMBER	Minimum time taken by a single call
INVOCATIONS	NUMBER	Number of times the function was invoked
LAYER_NAME	VARCHAR2(50)	Name of the layer to which the function belongs
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.5 V$SEGMENT_STATISTICS

`V$SEGMENT_STATISTICS` displays information about segment-level statistics.

Column	Datatype	Description
OWNER	VARCHAR2(128)	Owner of the object
OBJECT_NAME	VARCHAR2(128)	Name of the object
SUBOBJECT_NAME	VARCHAR2(128)	Name of the subobject
TABLESPACE_NAME	VARCHAR2(30)	Name of the table space to which the object belongs
TS#	NUMBER	Tablespace number
OBJ#	NUMBER	Dictionary object number of the object
DATAOBJ#	NUMBER	Data object number of the object
OBJECT_TYPE	VARCHAR2(18)	Type of the object
STATISTIC_NAME	VARCHAR2(64)	Name of the statistic
STATISTIC#	NUMBER	Statistic number
VALUE	NUMBER	Statistic value
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.6 V$SEGSTAT

`V$SEGSTAT` displays information about segment-level statistics.

Column	Datatype	Description
TS#	NUMBER	Tablespace number
OBJ#	NUMBER	Dictionary object number
DATAOBJ#	NUMBER	Data object number
STATISTIC_NAME	VARCHAR2(64)	Name of the statistic
STATISTIC#	NUMBER	Statistic number
VALUE	NUMBER	Statistic value
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

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10.7 V$SEGSTAT_NAME

`V$SEGSTAT_NAME` displays information about segment-level statistics properties.

Column	Datatype	Description
STATISTIC#	NUMBER	Statistic number
NAME	VARCHAR2(64)	Name of the statistic
SAMPLED	VARCHAR2(3)	Indicates whether the statistic was collected by sampling (`YES`) or not (`NO`)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.8 V$SERV_MOD_ACT_STATS

`V$SERV_MOD_ACT_STATS` displays the same set of performance statistics as `V$SERVICE_STATS` except for a specific combination of service/module/action names.

When aggregation is enabled for the service name, module, and action name, then this view provides the timing and work done for calls issued for the business transaction.

Column	Datatype	Description
AGGREGATION_TYPE	VARCHAR2(21)	Aggregation statistic type: • `SERVICE_MODULE` - Action value is NULL and the entry is an aggregate for all actions within a given module • `SERVICE_MODULE_ACTION` - Action value is NULL only for an empty action, and the aggregation is on the level of service/module/action
SERVICE_NAME	VARCHAR2(64)	Service name from `V$SERVICES`
MODULE	VARCHAR2(65)	Module name from `DBA_ENABLED_AGGREGATIONS`
ACTION	VARCHAR2(65)	Action name from `DBA_ENABLED_AGGREGATIONS`
STAT_ID	NUMBER	Statistic identifier
STAT_NAME	VARCHAR2(64)	Derived statistic name from `V$STATNAME` and `V$SESS_TIME_MODEL`
VALUE	NUMBER	Cumulative value (in microseconds)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

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> ✏️ **See Also:**
>
> - "V$SERVICE_STATS"
> - "V$STATNAME"
> - "V$SESS_TIME_MODEL"

10.9 V$SERVICE_DRAIN_TIMEOUT_ADVICE

V$SERVICE_DRAIN_TIMEOUT_ADVICE displays information about connection draining.

This view allows you monitor the performance of the draining process, so you can make informed decisions about tuning the drain timeout configuration.

Column	Datatype	Description
SERVICE_ID	NUMBER	Service ID
DRAIN_ORIGIN	VARCHAR2(12)	Draining origin • DISCONNECT - Sessions are being drained by the ALTER SYSTEM DISCONNECT SESSION statement • LOAD BALANCE - Sessions are being drained by Oracle RAC load balancing • PDB - Sessions are being drained by a PDB close • SERVICE - Sessions are being drained by stopping a service
LAST_DRAIN_TIMEOUT	NUMBER	Number of seconds since the last drain timeout
MARKED_TO_DRAIN	NUMBER	Number of sessions marked to drain
DRAINED	NUMBER	Number of sessions drained (includes session that exited on error)
DRAINED_BY_CLIENT	NUMBER	Number of sessions closed by the client during draining
DRAINED_BY_DATABASE	NUMBER	Number of sessions closed by the database during draining
PLANNED_FAILED_OVER	NUMBER	Number of sessions that failed over during draining
DRAINED_INTERVAL01	NUMBER	Number of sessions drained in time interval 01 (Sessions drained in less than or equal to 1 second)
DRAINED_INTERVAL02	NUMBER	Number of sessions drained in time interval 02 (Sessions drained in less than or equal to 5 seconds)
DRAINED_INTERVAL03	NUMBER	Number of sessions drained in time interval 03 (Sessions drained in less than or equal to 10 seconds)
DRAINED_INTERVAL04	NUMBER	Number of sessions drained in time interval 04 (Sessions drained in less than or equal to 30 seconds)
DRAINED_INTERVAL05	NUMBER	Number of sessions drained in time interval 05 Sessions drained in less than or equal to 60 seconds)
DRAINED_INTERVAL06	NUMBER	Number of sessions drained in time interval 06 (Sessions drained in less than or equal to 120 seconds)
DRAINED_INTERVAL07	NUMBER	Number of sessions drained in time interval 07 (Sessions drained in less than or equal to 180 seconds)
DRAINED_INTERVAL08	NUMBER	Number of sessions drained in time interval 08 (Sessions drained in less than or equal to 300 seconds)

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Column	Datatype	Description
DRAINED_INTERVAL09	NUMBER	Number of sessions drained in time interval 09 (Sessions drained in less than or equal to 600 seconds)
DRAINED_INTERVAL10	NUMBER	Number of sessions drained in time interval 10 (Sessions drained in less than or equal to 1200 seconds)
DRAINED_INTERVAL11	NUMBER	Number of sessions drained in time interval 11 (Sessions drained in less than or equal to 3600 seconds (1 hour))
DRAINED_INTERVAL12	NUMBER	Number of sessions drained in time interval 12 (Sessions drained in less than or equal to 7200 seconds (2 hours))
DRAINED_INTERVAL13	NUMBER	Number of sessions drained in time interval 13 (Sessions drained in less than or equal to 14400 seconds (4 hours))
DRAINED_INTERVAL14	NUMBER	Number of sessions drained in time interval 14 (Sessions drained in greater than 14400 seconds (4 hours))
DRAINED_INTERVAL15	NUMBER	Reserved for internal use
DRAINED_INTERVAL16	NUMBER	Reserved for internal use
TERMINATED_BY_DRAIN_TIMEOUT	NUMBER	Number of sessions terminated at drain timeout
IDLE_IN_DRAIN	NUMBER	Number of sessions idle throughout drain timeout
ESTD_DRAIN_TIMEOUT_ADVICE	VARCHAR2(128)	Estimated drain time advice. Possible values include: • Not enough sessions are draining to compute a drain timeout estimation • Waiting for 90% of drained sessions in order to compute a drain timeout advice. • Estimated drain timeout is <advice_in_seconds> seconds Where <advice_in_seconds> is determined by using the number of drained sessions in each time interval
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **✎ Note:**
>
> This view is available starting with Oracle Database 23ai.

10.10 V$SERVICE_EVENT

V$SERVICE_EVENT displays aggregated wait counts and wait times for each wait statistic.

Column	Datatype	Description
SERVICE_NAME	VARCHAR2(64)	Service name from V$SERVICES

Column	Datatype	Description
SERVICE_NAME_HASH	NUMBER	Service name hash from V$SERVICES
EVENT	VARCHAR2(64)	Name of the wait event; derived statistic name from V$EVENT_NAME **See Also:** " Oracle Wait Events"
EVENT_ID	NUMBER	Identifier of the wait event
TOTAL_WAITS	NUMBER	Total number of waits for the event by the service
TOTAL_TIMEOUTS	NUMBER	Total number of timeouts for the event by the service
TIME_WAITED	NUMBER	Total amount of time waited for the event by the service (in hundredths of a second)
AVERAGE_WAIT	NUMBER	Average amount of time waited for the event by the service (in hundredths of a second)
MAX_WAIT	NUMBER	Maximum amount of time waited for the event by the service (in hundredths of a second)
TIME_WAITED_MICRO	NUMBER	Total amount of time waited for the event by the service (in microseconds)
CPU	NUMBER	Total amount of CPU time consumed by the service while implementing the wait event itself (in microseconds)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.11 V$SERVICE_REGION_METRIC

V$SERVICE_REGION_METRIC displays the metric values captured for the most recent 30-second intervals for the workload against each service region available on the database.

Column	Datatype	Description
BEGIN_TIME	DATE	Begin time of the interval
END_TIME	DATE	End time of the interval
INTSIZE_CSEC	NUMBER	Interval size (in hundredths of a second)
SERVICE_ID	NUMBER	Service number (internal)
SERVICE_NETWORK_NAME	VARCHAR2(512)	Network name for the service
REGION_NAME	VARCHAR2(30)	Region name
CALLSPERSEC	NUMBER	Number of user calls per second to the services
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

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> ✏️ **See Also:**
>
> - "V$CHUNK_METRIC"

10.12 V$SERVICE_STATS

`V$SERVICE_STATS` displays a minimal set of performance statistics. These call rate statistics are used for making run-time routing decisions, for tracking service levels, and for per-instance diagnostics per call rate. The elapsed timing for each call provides a relative value across instances for how well a node is processing SQL calls issued under a service name.
When aggregation is enabled for the Service Name, then this view provides the timing and work done for calls issued for the whole service.

Column	Datatype	Description
SERVICE_NAME_HASH	NUMBER	Service name hash from V$SERVICES
SERVICE_NAME	VARCHAR2(64)	Service name from V$SERVICES
STAT_ID	NUMBER	Statistic identifier
STAT_NAME	VARCHAR2(64)	Derived statistic name from V$STATNAME and V$SESS_TIME_MODEL
VALUE	NUMBER	For statistics that measure time (such as the DB CPU, background elapsed time, or parse time elapsed statistics), this column displays a cumulative value in microseconds.
		For other statistics that do not measure time (such as the db block changes, execute count, or logons cumulative statistics), this column displays the appropriate numeric value for the statistic.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include:
		• 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs.
		• 1: This value is used for rows containing data that pertain to only the root
		• *n*: Where *n* is the applicable container ID for the rows containing data

> ✏️ **See Also:**
>
> - "V$SERVICES"
> - "V$STATNAME"
> - "V$SESS_TIME_MODEL"
> - *Oracle Database Performance Tuning Guide* for more information about using database statistics to manage the performance of Oracle Database

10.13 V$SERVICE_WAIT_CLASS

`V$SERVICE_WAIT_CLASS` displays aggregated wait counts and wait times for each wait statistic.

An aggregation of these wait classes is used when thresholds are imported.

Column	Datatype	Description
SERVICE_NAME	VARCHAR2(64)	Service name from `V$SERVICES`
SERVICE_NAME_HASH	NUMBER	Service name hash from `V$SERVICES`
WAIT_CLASS_ID	NUMBER	Identifier of the wait class
WAIT_CLASS#	NUMBER	Number of the wait class
WAIT_CLASS	VARCHAR2(64)	Name of the wait class
TOTAL_WAITS	NUMBER	Total number waits from this wait class by the service
TIME_WAITED	NUMBER	Total amount of time spent in waits from this wait class by the service (in hundredths of a second)
TIME_WAITED_MICRO	NUMBER	Total amount of time spent in waits from this wait class by the service (in microseconds)
CPU	NUMBER	Total amount of CPU time consumed by the service while implementing waits from this wait class (in microseconds)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.14 V$SERVICEMETRIC

`V$SERVICEMETRIC` displays metric values measured on the most recent time interval period for services executing inside the database. Service metrics are measured in 5-second and 1-minute intervals.

Column	Datatype	Description
BEGIN_TIME	DATE	Begin timestamp for the interval period
END_TIME	DATE	End timestamp for the interval period
INTSIZE_CSEC	NUMBER	Interval size (in hundredths of a second)
GROUP_ID	NUMBER	Group ID for the service metric group
SERVICE_NAME_HASH	NUMBER	Service name hash
SERVICE_NAME	VARCHAR2(64)	Service name
CTMHASH	NUMBER	Service create timestamp hash value
ELAPSEDPERCALL	NUMBER	Elapsed time per call (in microseconds). This column is deprecated in favor of the `DBTIMEPERCALL` column.
CPUPERCALL	NUMBER	CPU time per call (in microseconds)
DBTIMEPERCALL	NUMBER	Elapsed time per call (in microseconds)

Column	Datatype	Description
CALLSPERSEC	NUMBER	Number of user calls per second
DBTIMEPERSEC	NUMBER	Database time per second
GOODNESS	NUMBER	Indicates how attractive a given instance is with respect to processing the workload that is presented to the service. A lower number is better. This number is internally computed based on the GOAL (LONG or SHORT) that is specified for the particular service.
DELTA	NUMBER	Indicates the predicted increase in the goodness for every additional session that is routed to this instance
FLAGS	NUMBER	Flags that can be any of the following values: • 0x01 - Service is BLOCKED from accepting new connections • 0x02 - Service is VIOLATING the set threshold on some metric • 0x04 - Goodness is UNKNOWN
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.15 V$SERVICEMETRIC_HISTORY

V$SERVICEMETRIC_HISTORY displays a recent history of the metric values measured in predefined time interval periods for services executing inside the database. Service metrics are measured in 5-second and 1-minute intervals.

Column	Datatype	Description
BEGIN_TIME	DATE	Begin timestamp for the interval period
END_TIME	DATE	End timestamp for the interval period
INTSIZE_CSEC	NUMBER	Interval size (in hundredths of a second)
GROUP_ID	NUMBER	Group ID for the service metric group
SERVICE_NAME_HASH	NUMBER	Service name hash
SERVICE_NAME	VARCHAR2(64)	Service name
CTMHASH	NUMBER	Service create timestamp hash value
ELAPSEDPERCALL	NUMBER	Elapsed time per call (in microseconds). This column is deprecated in favor of the DBTIMEPERCALL column.
CPUPERCALL	NUMBER	CPU time per call (in microseconds)
DBTIMEPERCALL	NUMBER	Elapsed time per call (in microseconds)
CALLSPERSEC	NUMBER	Number of user calls per second
DBTIMEPERSEC	NUMBER	Database time per second

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.16 V$SERVICES

V$SERVICES displays information about the services in the database.

Column	Datatype	Description
SERVICE_ID	NUMBER	Service ID
NAME	VARCHAR2(64)	Name of the service
NAME_HASH	NUMBER	Service name hash
NETWORK_NAME	VARCHAR2(512)	Network name
CREATION_DATE	DATE	Creation date
CREATION_DATE_HASH	NUMBER	Creation date hash
GOAL	VARCHAR2(12)	Runtime Load Balancing Goal being used to create run-time load balancing and connection load balancing advice: • `NONE` • `SERVICE_TIME` - Connections are balanced by response time • `THROUGHPUT` - Connections are balanced by throughput
DTP	VARCHAR2(1)	Indicates whether or not Distributed Transaction Processing is enabled for this service. When Distributed Transaction Processing is set to `Y` (YES), it means that the service is offered at exactly one instance at a time for XA affinity. Possible values: • Y - YES • `N` - NO
AQ_HA_NOTIFICATION	VARCHAR2(3)	Indicates whether FAN - Fast Application Notification for OCI connections is set (`YES`) or not (`NO`)
CLB_GOAL	VARCHAR2(5)	Connection load balancing goal used with statistics that are sent to the listeners to determine how new connections are distributed: • `LONG` - is using session count • `SHORT` - is using service time or throughput

Column	Datatype	Description
COMMIT_OUTCOME	VARCHAR2(3)	For Transaction Guard and Database Native Transaction Guard, indicates whether the database service associated with the user session has the COMMIT_OUTCOME service attribute enabled (YES) or not (NO). This attribute applies on a per session basis and is set at connect time.
		When the value of this column is YES, the commit status is managed for all supported transaction types and the outcome of a COMMIT transaction is preserved after the COMMIT has executed. Refer to the COMMIT_OUTCOME_FASTPATH column to view the preferred method for preserving the commit outcome.
		See Also: *Oracle Database Development Guide* for information about preserving the commit outcome
RETENTION_TIME	NUMBER	For Transaction Guard and Database Native Transaction Guard, when COMMIT_OUTCOME = YES, this value indicates the amount of time (in seconds) that the commit outcome is retained in the database.
REPLAY_INITIATION_TIMEOUT	NUMBER	For Application Continuity, this option specifies the difference between the time (in seconds) of original execution of the first operation of a request and the time that the replay is ready to start after a successful reconnect. Application Continuity will not replay after the specified amount of time has passed. This option is intended to avoid the unintentional execution of a request when a system is recovered after a long period of time. The default is 5 minutes (300 seconds).
SESSION_STATE_CONSISTENCY	VARCHAR2(128)	Describes how non-transactional is changed during a request. This parameter is considered only if failover_type is set to TRANSACTION for Application Continuity. Examples of session state are NLS settings, optimizer preferences, event settings, PL/SQL global variables, temporary tables, advanced queues, LOBs, and result cache. If non-transactional values change after the request starts, the default value of DYNAMIC should be set. Almost all applications should use DYNAMIC mode. If you are unsure, use DYNAMIC mode.
GLOBAL	VARCHAR2(3)	Indicates whether the service is global. A global service is managed by Global Service Manager (GSM) and can be provided by multiple databases that contain replicated data. Possible values: • YES: Indicates the service is global • NO: Indicates the service is not global
PDB	VARCHAR2(128)	Name of a pluggable database (PDB) associated with a given service. Will contain NULL if a database is a non-CDB or if the service is not associated with a PDB (that is, connecting to a CDB using this service will cause a user to connect to the root.)
SQL_TRANSLATION_PROFILE	VARCHAR2(261)	A non-NULL value specifies the initial SQL translation profile for subsequent database connections that use the service and do not specify a SQL translation profile. A NULL value has no effect.
MAX_LAG_TIME	VARCHAR2(128)	The maximum replication lag (in seconds) that is acceptable for a data replica to be used for providing the database service. Can only be specified for global services.
STOP_OPTION	VARCHAR2(128)	Stop option for sessions of this service for planned maintenance
FAILOVER_RESTORE	VARCHAR2(128)	Indicates whether sessions recover their commonly used session state (like NLS, schema) when they are failed over with TAF
DRAIN_TIMEOUT	NUMBER	Number of seconds to wait for sessions to be drained
TABLE_FAMILY_ID	NUMBER	Sharded table family ID associated with the service
PLACEMENT_TEMPLATE	VARCHAR2(64)	Reserved for future use

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Column	Datatype	Description
COMMIT_OUTCOME_FASTPATH	VARCHAR2(3)	For Transaction Guard and Database Native Transaction Guard, when COMMIT_OUTCOME = YES, the value of this column indicates the preferred method for preserving the commit outcome. Possible values: • YES - Database Native Transaction Guard is used. Each transaction is assigned a unique transaction identifier (DB XID) in the database. The DB XID and status of the corresponding transaction are maintained persistently in a transaction table. Note that if COMMIT_OUTCOME = YES, then the value of COMMIT_OUTCOME_FASTPATH defaults to YES. • NO - Transaction Guard is used. A logical transaction ID (LTXID) is set for each user session at login and at each successful commit. LTXIDs are used only when the commit is not in the same round-trip to the database as the start of the transaction. Moreover, some transaction types, such as commit on success transactions, DDL transactions, and PL/SQL transactions, will continue to use LTXIDs in the same round-trip. When Transaction Guard is used, the outcome of a COMMIT transaction is known. If there is an outage, the application can use DBMS_APP_CONT.GET_LTXID_OUTCOME to return a reliable status for the last in-flight work. **See Also:** *Oracle Real Application Clusters Administration and Deployment Guide* for information about logical transaction IDs
TRUE_CACHE_SERVICE	VARCHAR2(64)	True Cache service associated with this database service
PARENT_SERVICE	VARCHAR2(64)	Name of the parent service
TEMPLATE_TIMEOUT	NUMBER	Maximum number of seconds that can pass before templates for the service expire If the value of this column is 0, then template timeout is turned off.
FAILOVER_TYPE	VARCHAR2(128)	AUTO for Transparent Application Continuity, TRANSACTION for Application Continuity, SESSION or SELECT for TAF.
FAILOVER_METHOD	VARCHAR2(128)	TAF only for compatibility - BASIC or NONE
FAILOVER_RETRIES	NUMBER	For Application Continuity and TAF, when reconnecting after a failure, number of attempts to re-connect per incident
FAILOVER_DELAY	NUMBER	For Application Continuity and TAF, when reconnecting after a failure, delay between each connection retry (in seconds)
RESET_STATE	VARCHAR2(6)	Reset state for the service. Possible values: • LEVEL1 • NONE
AUTO_CONNECTION_REBALANCE	VARCHAR2(7)	Drain setting for service load balancing. Possible values: • 0 - DEFAULT • 1 - NONE • 255 - AUTO
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

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10.17 V$SES_OPTIMIZER_ENV

`V$SES_OPTIMIZER_ENV` displays the contents of the optimizer environment used by each session. When a new session is first created, it automatically inherits its optimizer environment from the optimizer environment defined at the instance level by `V$SYS_OPTIMIZER_ENV`. The value of certain parameters can be dynamically modified by issuing an `ALTER SESSION` statement.

Column	Datatype	Description
SID	NUMBER	Session identifier. This column can be used to join with `V$SESSION` on the `SID` column.
ID	NUMBER	Unique identifier of the parameter in the optimizer environment
NAME	VARCHAR2(40)	Name of the parameter
SQL_FEATURE	VARCHAR2(64)	Associated feature control ID
ISDEFAULT	VARCHAR2(3)	Indicates whether the parameter is set to the default value (`YES`) or not (`NO`)
VALUE	VARCHAR2(25)	Value of the parameter for the session
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> ✎ **See Also:**
>
> "V$SYS_OPTIMIZER_ENV"

10.18 V$SESS_IO

`V$SESS_IO` displays I/O statistics for each user session.

Column	Datatype	Description
SID	NUMBER	Session identifier
BLOCK_GETS	NUMBER	Block gets for this session
CONSISTENT_GETS	NUMBER	Consistent gets for this session
PHYSICAL_READS	NUMBER	Physical reads for this session
BLOCK_CHANGES	NUMBER	Block changes for this session
CONSISTENT_CHANGES	NUMBER	Consistent changes for this session
OPTIMIZED_PHYSICAL_READS	NUMBER	Number of physical reads from Database Smart Flash Cache for this session

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.19 V$SESS_TIME_MODEL

V$SESS_TIME_MODEL displays the session-accumulated time for various operations. The time reported is the total elapsed or CPU time (in microseconds). Any timed operation will buffer at most 5 seconds of time data. Specifically, this means that if a timed operation (such as SQL execution) takes a long period of time to perform, the data published to this view is at most missing 5 seconds of the time accumulated for the operation.
The time values are 8-byte integers and can therefore hold approximately 580,000 years of time before wrapping. Background process time is not included in a statistic value unless the statistic is specifically for background processes.

Column	Datatype	Description
SID	NUMBER	Session ID (same as in V$SESSION)
STAT_ID	NUMBER	Statistic identifier for the time statistic
STAT_NAME	VARCHAR2(64)	Name of the statistic (see Table 10-1)
VALUE	NUMBER	Amount of time (in microseconds) that the session has spent in this operation
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

Table 10-1   V$SESS_TIME_MODEL and V$SYS_TIME_MODEL Statistics

Statistic Name	Description
DB time	Amount of elapsed time (in microseconds) spent performing Database user-level calls. This does not include the elapsed time spent on instance background processes such as PMON.
DB CPU	Amount of CPU time (in microseconds) spent on database user-level calls. This does not include the CPU time spent on instance background processes such as PMON.
background elapsed time	Amount of elapsed time (in microseconds) consumed by database background processes.
background CPU time	Amount of CPU time (in microseconds) consumed by database background processes.

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Table 10-1   (Cont.) V$SESS_TIME_MODEL and V$SYS_TIME_MODEL Statistics

Statistic Name	Description
sequence load elapsed time	Amount of elapsed time spent getting the next sequence number from the data dictionary. If a sequence is cached, then this is the amount of time spent replenishing the cache when it runs out. No time is charged when a sequence number is found in the cache. For non-cached sequences, some time will be charged for every nextval call.
parse time elapsed	Amount of elapsed time spent parsing SQL statements. It includes both soft and hard parse time.
hard parse elapsed time	Amount of elapsed time spent hard parsing SQL statements.
SQL execute elapsed time	Amount of elapsed time SQL statements are executing. Note that for select statements this also includes the amount of time spent performing fetches of query results.
connection management call elapsed time	Amount of elapsed time spent performing session connect and disconnect calls.
failed parse elapsed time	Amount of time spent performing SQL parses which ultimately fail with some parse error.
failed parse (out of shared memory) elapsed time	Amount of time spent performing SQL parses which ultimately fail with error `ORA-04031`.
hard parse (sharing criteria) elapsed time	Amount of elapsed time spent performing SQL hard parses when the hard parse resulted from not being able to share an existing cursor in the SQL cache.
hard parse (bind mismatch) elapsed time	Amount of elapsed time spent performing SQL hard parses when the hard parse resulted from bind type or bind size mismatch with an existing cursor in the SQL cache.
PL/SQL execution elapsed time	Amount of elapsed time spent running the PL/SQL interpreter. This does not include time spent recursively executing/parsing SQL statements or time spent recursively executing the Java VM.
PL/SQL compilation elapsed time	Amount of elapsed time spent running the PL/SQL compiler.
inbound PL/SQL rpc elapsed time	Time inbound PL/SQL remote procedure calls have spent executing. It includes all time spent recursively executing SQL and JAVA, and therefore is not easily related to "PL/SQL execution elapsed time".
Java execution elapsed time	Amount of elapsed time spent running the Java VM. This does not include time spent recursively executing/parsing SQL statements or time spent recursively executing PL/SQL.
RMAN cpu time (backup/restore)	Amount of CPU time (in microseconds) spent in RMAN backup and restore operations.
repeated bind elapsed time	Amount of elapsed time spent giving new values to bind variables (rebinding).
OLAP engine elapsed time	Amount of time spent performing OLAP session transactions. This includes time spent on database user-level calls, SQL statement execution, and PL/SQL execution within the OLAP transaction.
OLAP engine CPU time	Amount of CPU time spent on OLAP session transactions. This includes time spent on database user-level calls, SQL statement execution, and PL/SQL execution within the OLAP transaction.

The relationships between the statistics listed in Table 10-1 form two trees in which all the time reported by a child in the tree is contained within the parent in the tree. The following are the relationship trees; the number is the level in the given tree.

```
1) background elapsed time
    2) background cpu time
        3) RMAN cpu time (backup/restore)
```

```
1) DB time
    2) DB CPU
    2) connection management call elapsed time
    2) sequence load elapsed time
    2) sql execute elapsed time
    2) parse time elapsed
        3) hard parse elapsed time
            4) hard parse (sharing criteria) elapsed time
                5) hard parse (bind mismatch) elapsed time
        3) failed parse elapsed time
            4) failed parse (out of shared memory) elapsed time
    2) PL/SQL execution elapsed time
    2) inbound PL/SQL rpc elapsed time
    2) PL/SQL compilation elapsed time
    2) Java execution elapsed time
    2) repeated bind elapsed time
```

The relationship between a parent and a child in the tree indicates containment only. Keep the following in mind regarding the tree:

- Children do not necessarily add up to the parent.

- Children are not necessarily exclusive (that is, they may overlap).

- The union of children does not necessarily cover the whole of the parent.

> **See Also:**
>
> "V$SYS_TIME_MODEL"

10.20 V$SESSION

V$SESSION displays session information for each current session.

Column	Datatype	Description
SADDR	RAW(4 | 8)	Session address
SID	NUMBER	Session identifier
SERIAL#	NUMBER	Session serial number. Used to uniquely identify a session's objects. Guarantees that session-level commands are applied to the correct session objects if the session ends and another session begins with the same session ID.
AUDSID	NUMBER	Auditing session ID • If the database is configured for unified auditing, then this column displays the unified auditing session ID • If the database is configured for mixed mode auditing, then this column displays the traditional auditing session ID
PADDR	RAW(4 | 8)	Address of the process that owns the session
USER#	NUMBER	Oracle user identifier
USERNAME	VARCHAR2(128)	Oracle username

Column	Datatype	Description

COMMAND	NUMBER	Command in progress (last statement parsed).
		
		You can find the command name for any value *n* returned in this COMMAND column by running this SQL query:
		
		``SELECT command_name
		    FROM v$sqlcommand
		    WHERE command_type = n;```
		
		A value of 0 in this COMMAND column means the command is not recorded in V$SESSION.

OWNERID	NUMBER	Identifier of the user who owns the migratable session; the column contents are invalid if the value is 2147483644 For operations using parallel worker processes, interpret this value as a 4-byte value. The low-order 2 bytes represent the session number and the high-order bytes represent the instance ID of the query coordinator.
TADDR	VARCHAR2(16)	Address of the transaction state object
LOCKWAIT	VARCHAR2(16)	Address of the lock the session is waiting for; NULL if none
STATUS	VARCHAR2(8)	Status of the session: • ACTIVE - Session currently executing SQL • INACTIVE - Session which is inactive and either has no configured limits or has not yet exceeded the configured limits • KILLED - Session marked to be terminated • CACHED - Session temporarily cached for use by Oracle*XA • SNIPED - An inactive session that has exceeded some configured limits (for example, resource limits specified for the resource manager consumer group or idle_time specified in the user's profile). Such sessions will not be allowed to become active again.
SERVER	VARCHAR2(9)	Server type: • DEDICATED • SHARED • PSEUDO • POOLED • NONE
SCHEMA#	NUMBER	Schema user identifier
SCHEMANAME	VARCHAR2(128)	Schema user name
OSUSER	VARCHAR2(128)	Operating system client user name
PROCESS	VARCHAR2(24)	Operating system client process ID
MACHINE	VARCHAR2(64)	Operating system machine name
PORT	NUMBER	Client port number
TERMINAL	VARCHAR2(30)	Operating system terminal name
PROGRAM	VARCHAR2(84)	Operating system program name
TYPE	VARCHAR2(10)	Session type
SQL_ADDRESS	RAW(4 | 8)	Used with SQL_HASH_VALUE to identify the SQL statement that is currently being executed
SQL_HASH_VALUE	NUMBER	Used with SQL_ADDRESS to identify the SQL statement that is currently being executed
SQL_ID	VARCHAR2(13)	SQL identifier of the SQL statement that is currently being executed
SQL_CHILD_NUMBER	NUMBER	Child number of the SQL statement that is currently being executed

Column	Datatype	Description
SQL_EXEC_START	DATE	Time when the execution of the SQL currently executed by this session started; NULL if SQL_ID is NULL
SQL_EXEC_ID	NUMBER	SQL execution identifier; NULL if SQL_ID is NULL or if the execution of that SQL has not yet started (see V$SQL_MONITOR)
PREV_SQL_ADDR	RAW(4 | 8)	Used with PREV_HASH_VALUE to identify the last SQL statement executed
PREV_HASH_VALUE	NUMBER	Used with SQL_HASH_VALUE to identify the last SQL statement executed
PREV_SQL_ID	VARCHAR2(13)	SQL identifier of the last SQL statement executed
PREV_CHILD_NUMBER	NUMBER	Child number of the last SQL statement executed
PREV_EXEC_START	DATE	SQL execution start of the last executed SQL statement
PREV_EXEC_ID	NUMBER	SQL execution identifier of the last executed SQL statement
PLSQL_ENTRY_OBJECT_ID	NUMBER	Object ID of the top-most PL/SQL subprogram on the stack; NULL if there is no PL/SQL subprogram on the stack
PLSQL_ENTRY_SUBPROGRAM_ID	NUMBER	Subprogram ID of the top-most PL/SQL subprogram on the stack; NULL if there is no PL/SQL subprogram on the stack
PLSQL_OBJECT_ID	NUMBER	Object ID of the currently executing PL/SQL subprogram; NULL if executing SQL
PLSQL_SUBPROGRAM_ID	NUMBER	Subprogram ID of the currently executing PL/SQL object; NULL if executing SQL
MODULE	VARCHAR2(64)	Name of the currently executing module as set by calling the DBMS_APPLICATION_INFO.SET_MODULE procedure
MODULE_HASH	NUMBER	Hash value of the MODULE column
ACTION	VARCHAR2(64)	Name of the currently executing action as set by calling the DBMS_APPLICATION_INFO.SET_ACTION procedure
ACTION_HASH	NUMBER	Hash value of the ACTION column
CLIENT_INFO	VARCHAR2(64)	Information set by the DBMS_APPLICATION_INFO.SET_CLIENT_INFO procedure
FIXED_TABLE_SEQUENCE	NUMBER	This contains a number that increases every time the session completes a call to the database and there has been an intervening select from a dynamic performance table. This column can be used by performance monitors to monitor statistics in the database. Each time the performance monitor looks at the database, it only needs to look at sessions that are currently active or have a higher value in this column than the highest value that the performance monitor saw the last time. All the other sessions have been idle since the last time the performance monitor looked at the database.
ROW_WAIT_OBJ#	NUMBER	Object ID for the table containing the row specified in ROW_WAIT_ROW#
ROW_WAIT_FILE#	NUMBER	Identifier for the data file containing the row specified in ROW_WAIT_ROW#. This column is valid only if the session is currently waiting for another transaction to commit and the value of ROW_WAIT_OBJ# is not -1.
ROW_WAIT_BLOCK#	NUMBER	Identifier for the block containing the row specified in ROW_WAIT_ROW#. This column is valid only if the session is currently waiting for another transaction to commit and the value of ROW_WAIT_OBJ# is not -1.
ROW_WAIT_ROW#	NUMBER	Current row being locked. This column is valid only if the session is currently waiting for another transaction to commit and the value of ROW_WAIT_OBJ# is not -1.
TOP_LEVEL_CALL#	NUMBER	Oracle top level call number
LOGON_TIME	DATE	Time of logon

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Column	Datatype	Description
LAST_CALL_ET	NUMBER	If the session STATUS is currently ACTIVE, then the value represents the elapsed time (in seconds) since the session has become active. If the session STATUS is currently INACTIVE, then the value represents the elapsed time (in seconds) since the session has become inactive.
PDML_ENABLED	VARCHAR2(3)	This column has been replaced by the PDML_STATUS column
FAILOVER_TYPE	VARCHAR2(13)	Indicates whether failover is enabled for this session: • NONE - Failover is disabled for this session. • SESSION - Transparent application failover (TAF) is enabled for this session and the client can fail over its session following a disconnect. • SELECT - TAF is enabled for this session and the client can fail over queries. The application must not set session state after the initial setup. (Transactions are not included at failover.) • TRANSACTION - Application Continuity (AC) is enabled for this session. This feature is available with the Oracle Real Application Clusters (RAC), Oracle RAC One Node, and Oracle Active Data Guard options. AC hides outages from end users and applications by recovering the database sessions following recoverable outages and planned maintenance. • AUTO - Transparent Application Continuity (TAC) is enabled for this session. This feature is the automated version of Application Continuity (AC) that makes decisions on your behalf. TAC is on by default for Oracle Autonomous Database Cloud and can also be on by default for your applications. **See Also:** • *Oracle Database Net Services Administrator's Guide* for more information on TAF • *Oracle Real Application Clusters Administration and Deployment Guide* for more information on AC • *Oracle Real Application Clusters Administration and Deployment Guide* for more information on TAC
FAILOVER_METHOD	VARCHAR2(10)	Indicates the transparent application failover method for the session: • NONE - Failover is disabled for this session • BASIC - Client itself reconnects following a disconnect • PRECONNECT - Backup instance can support all connections from every instance for which it is backed up
FAILED_OVER	VARCHAR2(3)	Indicates whether the session is running in failover mode and failover has occurred (YES) or not (NO)
RESOURCE_CONSUMER_GROUP	VARCHAR2(32)	Name of the session's current resource consumer group
PDML_STATUS	VARCHAR2(8)	If ENABLED, the session is in a PARALLEL DML enabled mode. If DISABLED, PARALLEL DML enabled mode is not supported for the session. If FORCED, the session has been altered to force PARALLEL DML.
PDDL_STATUS	VARCHAR2(8)	If ENABLED, the session is in a PARALLEL DDL enabled mode. If DISABLED, PARALLEL DDL enabled mode is not supported for the session. If FORCED, the session has been altered to force PARALLEL DDL.
PQ_STATUS	VARCHAR2(8)	If ENABLED, the session is in a PARALLEL QUERY enabled mode. If DISABLED, PARALLEL QUERY enabled mode is not supported for the session. If FORCED, the session has been altered to force PARALLEL QUERY.
CURRENT_QUEUE_DURATION	NUMBER	If queued (1), the current amount of time the session has been queued. If not currently queued, the value is 0.

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Column	Datatype	Description
CLIENT_IDENTIFIER	VARCHAR2(64)	Client identifier of the session
BLOCKING_SESSION_STATUS	VARCHAR2(11)	This column provides details on whether there is a blocking session: • VALID - there is a blocking session, and it is identified in the BLOCKING_INSTANCE and BLOCKING_SESSION columns • NO HOLDER - there is no session blocking this session • NOT IN WAIT - this session is not in a wait • UNKNOWN - the blocking session is unknown
BLOCKING_INSTANCE	NUMBER	Instance identifier of the blocking session. This column is valid only if BLOCKING_SESSION_STATUS has the value VALID.
BLOCKING_SESSION	NUMBER	Session identifier of the blocking session. This column is valid only if BLOCKING_SESSION_STATUS has the value VALID.
FINAL_BLOCKING_SESSION_STATUS	VARCHAR2(11)	The final blocking session is the final element in the wait chain constructed by following the sessions that are blocked by one another starting with this session. In the case of a cyclical wait chain, one of the sessions in the wait chain will be chosen as the final blocker. This column provides details on whether there is a final blocking session: • VALID - there is a final blocking session and it is identified in the FINAL_BLOCKING_INSTANCE and FINAL_BLOCKING_SESSION columns • NO HOLDER - there is no session blocking this session • NOT IN WAIT - this session is not in a wait • UNKNOWN - the final blocking session is unknown
FINAL_BLOCKING_INSTANCE	NUMBER	Instance identifier of the final blocking session. This column is valid only if FINAL_BLOCKING_SESSION_STATUS has the value VALID.
FINAL_BLOCKING_SESSION	NUMBER	Session identifier of the blocking session. This column is valid only if FINAL_BLOCKING_SESSION_STATUS has the value VALID.
SEQ#	NUMBER	A number that uniquely identifies the current or last wait (incremented for each wait)
EVENT#	NUMBER	If the session is currently waiting, then the number of the resource or event for which the session is waiting. If the session is not in a wait, then the number of the resource or event for which the session most recently waited.
EVENT	VARCHAR2(64)	If the session is currently waiting, then the resource or event for which the session is waiting. If the session is not in a wait, then the resource or event for which the session most recently waited. **See Also:** " Oracle Wait Events"
P1TEXT	VARCHAR2(64)	Description of the first wait event parameter
P1	NUMBER	First wait event parameter (in decimal)
P1RAW	RAW(8)	First wait event parameter (in hexadecimal)[1]
P2TEXT	VARCHAR2(64)	Description of the second wait event parameter
P2	NUMBER	Second wait event parameter (in decimal)
P2RAW	RAW(8)	Second wait event parameter (in hexadecimal)[1]
P3TEXT	VARCHAR2(64)	Description of the third wait event parameter
P3	NUMBER	Third wait event parameter (in decimal)
P3RAW	RAW(8)	Third wait event parameter (in hexadecimal)[1]
WAIT_CLASS_ID	NUMBER	Identifier of the class of the wait event
WAIT_CLASS#	NUMBER	Number of the class of the wait event

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Column	Datatype	Description
WAIT_CLASS	VARCHAR2(64)	Name of the class of the wait event
WAIT_TIME	NUMBER	If the session is currently waiting, then the value is 0. If the session is not in a wait, then the value is as follows: • > 0 - Value is the duration of the last wait in hundredths of a second • -1 - Duration of the last wait was less than a hundredth of a second • -2 - Parameter TIMED_STATISTICS was set to false This column has been deprecated in favor of the columns WAIT_TIME_MICRO and STATE.
SECONDS_IN_WAIT	NUMBER	If the session is currently waiting, then the value is the amount of time waited for the current wait. If the session is not in a wait, then the value is the amount of time since the start of the last wait. This column has been deprecated in favor of the columns WAIT_TIME_MICRO and TIME_SINCE_LAST_WAIT_MICRO.
STATE	VARCHAR2(19)	Wait state: • WAITING - Session is currently waiting • WAITED UNKNOWN TIME - Duration of the last wait is unknown; this is the value when the parameter TIMED_STATISTICS is set to false • WAITED SHORT TIME - Last wait was less than a hundredth of a second • WAITED KNOWN TIME - Duration of the last wait is specified in the WAIT_TIME column
WAIT_TIME_MICRO	NUMBER	Amount of time waited (in microseconds). If the session is currently waiting, then the value is the time spent in the current wait. If the session is currently not in a wait, then the value is the amount of time waited in the last wait.
TIME_REMAINING_MICRO	NUMBER	Value is interpreted as follows: • > 0 - Amount of time remaining for the current wait (in microseconds) • 0 - Current wait has timed out • -1 - Session can indefinitely wait in the current wait • NULL - Session is not currently waiting
TOTAL_TIME_WAITED_MICRO	NUMBER	Total time for the current wait (in microseconds) A wait includes code within its beginning and end that can encounter other waits as part of its implementation. For example, a wait might need to acquire a latch to check state to determine when the wait is satisfied, and the latch itself might enter a wait. In this case, when the latch wait ends and returns to the outer wait, the latch time is included in the value of this column, while the value of WAIT_TIME_MICRO is reset to start after the latch wait.
HEUR_TIME_WAITED_MICRO	NUMBER	Heuristic wait time (in microseconds) This value is calculated by attempting to group sequential waits that appear to be the same.
TIME_SINCE_LAST_WAIT_MICRO	NUMBER	Time elapsed since the end of the last wait (in microseconds). If the session is currently in a wait, then the value is 0.
SERVICE_NAME	VARCHAR2(64)	Service name of the session
SQL_TRACE	VARCHAR2(8)	Indicates whether SQL tracing is enabled (ENABLED) or disabled (DISABLED)
SQL_TRACE_WAITS	VARCHAR2(5)	Indicates whether wait tracing is enabled (TRUE) or not (FALSE)
SQL_TRACE_BINDS	VARCHAR2(5)	Indicates whether bind tracing is enabled (TRUE) or not (FALSE)

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Column	Datatype	Description
SQL_TRACE_PLAN_STATS	VARCHAR2(10)	Frequency at which row source statistics are dumped in the trace files for each cursor: • never • first_execution • all_executions
SESSION_EDITION_ID	NUMBER	Shows the value that, in the session, would be reported by sys_context('USERENV', 'SESSION_EDITION_ID')
CREATOR_ADDR	RAW(4 | 8)	Address of the creating process or circuit
CREATOR_SERIAL#	NUMBER	Serial number of the creating process or circuit
ECID	VARCHAR2(64)	Execution context identifier (sent by Application Server)
SQL_TRANSLATION_PROFILE_ID	NUMBER	Object number of the SQL translation profile
PGA_TUNABLE_MEM	NUMBER	The amount of tunable PGA memory (in bytes). Untunable memory is PGA_ALLOC_MEM from V$PROCESS minus PGA_TUNABLE_MEM from V$SESSION.
SHARD_DDL_STATUS	VARCHAR2(8)	Indicates whether shard DDL is enabled in the current session (ENABLED) or not (DISABLED). This value is only relevant for the shard catalog database.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data
EXTERNAL_NAME	VARCHAR2(1024)	External name of the database user. For enterprise users, returns the Oracle Internet Directory DN.
PLSQL_DEBUGGER_CONNECTED	VARCHAR2(5)	Indicates whether the session is connected to a PL/SQL debugger (TRUE) or not (FALSE)
DRAIN_STATUS	VARCHAR2(8)	Draining status • DRAINING • NONE
DRAIN_DEADLINE	TIMESTAMP(6) WITH TIME ZONE	Drain deadline for the session
DRAIN_ORIGIN	VARCHAR2(12)	Draining origin • DISCONNECT - The session is being drained by the ALTER SYSTEM DISCONNECT SESSION statement • LOAD BALANCE - The session is being drained by Oracle RAC load balancing • PDB - The session is being drained by a PDB close • SERVICE - The session is being drained by stopping a service • NONE - The session is not being drained (DRAIN_STATUS = NONE)

[1] The P1RAW, P2RAW, and P3RAW columns display the same values as the P1, P2, and P3 columns, except that the numbers are displayed in hexadecimal.

> **✎ See Also:**
>
> - *Oracle Database Performance Tuning Guide* for an example of using `V$SESSION` to help identify an object that is waiting for buffer busy waits
> - *Oracle Database Performance Tuning Guide* for an example of using `V$SESSION` to determine which sessions are waiting for I/O
> - *Oracle Database PL/SQL Packages and Types Reference* for more information on the `DBMS_APPLICATION_INFO` package

10.21 V$SESSION_BLOCKERS

`V$SESSION_BLOCKERS` displays the blocker sessions for each blocked session. Each row represents a blocked and blocker session pair. If a session is blocked by multiple sessions there will be multiple rows for that blocked session. The maximum number of blocker sessions displayed for a single blocked session is 30. If a session is not blocked by other sessions, then there will be no row in this view for that session.

Column	Datatype	Description
SID	NUMBER	Blocked session's Oracle session identifier
SESS_SERIAL#	NUMBER	Blocked session's Oracle session serial number
WAIT_ID	NUMBER	A number identifying the wait for the blocked session
WAIT_EVENT	NUMBER	Resource or event number for which the blocked session is waiting
WAIT_EVENT_TEXT	VARCHAR2(64)	Resource or event for which the blocked session is waiting
BLOCKER_INSTANCE_ID	NUMBER	Blocker session's instance identifier
BLOCKER_SID	NUMBER	Blocker session's Oracle session identifier
BLOCKER_SESS_SERIAL#	NUMBER	Blocker session's Oracle session serial number
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.22 V$SESSION_CONNECT_INFO

`V$SESSION_CONNECT_INFO` displays information about network connections for all currently logged in sessions.

Column	Datatype	Description
SID	NUMBER	Session identifier (can be used to join this view with `V$SESSION`)

Column	Datatype	Description
SERIAL#	NUMBER	Session serial number. Used to uniquely identify a session's objects. Guarantees that session-level commands are applied to the correct session objects if the session ends and another session begins with the same session ID. (Can be used to join this view with V$SESSION.)
AUTHENTICATION_TYPE	VARCHAR2(26)	How the user was authenticated: • DATABASE - Username/password authentication • OS - Operating system external user authentication • NETWORK - Network protocol or ANO authentication • PROXY - OCI proxy connection authentication • SERVER • PASSWORD • EXTERNAL ADAPTERS • INTERNAL • GLOBAL • EXTERNAL • PASSWORD BASED GLOBAL USER
OSUSER	VARCHAR2(128)	External username for this database user
NETWORK_SERVICE_BANNER	VARCHAR2(4000)	Product banners for each Oracle Net service used for this connection (one row per banner)
CLIENT_CHARSET	VARCHAR2(40)	Client character set as specified in the NLS_LANG environment variable or in the OCIEnvNlsCreate() call; Unknown if the Oracle client is older than release 11.1 or the connection is through the JDBC thin driver
CLIENT_CONNECTION	VARCHAR2(13)	Client server connection flags: • Heterogeneous • Homogeneous
CLIENT_OCI_LIBRARY	VARCHAR2(27)	OCI client library: • Home-based • Full Instant Client • Light Weight Instant Client • OCI • Unknown
CLIENT_VERSION	VARCHAR2(40)	Client library version number
CLIENT_DRIVER	VARCHAR2(30)	Client driver name
CLIENT_LOBATTR	VARCHAR2(23)	Client LOB flags: • Client Temp Lob Rfc On • Client Temp Lob Rfc Off
CLIENT_REGID	NUMBER	Query cache registration ID sent by the client
CLIENT_CONNECTION_STRING	VARCHAR2(4000)	Connection string used to establish the connection
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **✎ See Also:**
>
> "V$SESSION"

10.23 V$SESSION_CURSOR_CACHE

V$SESSION_CURSOR_CACHE displays information on cursor usage for the current session.

> **✎ Note:**
>
> The V$SESSION_CURSOR_CACHE view is not a measure of the effectiveness of the SESSION_CACHED_CURSORS initialization parameter.

Column	Datatype	Description
MAXIMUM	NUMBER	Maximum number of cursors to cache. Once you hit this number, some cursors will need to be closed in order to open more. The value in this column is derived from the initialization parameter SESSION_CACHED_CURSORS.
COUNT	NUMBER	Current number of cursors (whether they are in use or not)
OPENS	NUMBER	Cumulative total of cursor opens minus one. This is because the cursor that is currently open and being used for this query is not counted in the OPENS statistic.
HITS	NUMBER	Cumulative total of cursor open hits
HIT_RATIO	NUMBER	Ratio of the number of times an open cursor was found divided by the number of times a cursor was sought
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **✎ See Also:**
>
> "SESSION_CACHED_CURSORS"

10.24 V$SESSION_EVENT

V$SESSION_EVENT displays information on waits for an event by a session. Note that the TIME_WAITED and AVERAGE_WAIT columns will contain a value of zero on those platforms that do not support a fast timing mechanism. If you are running on one of these platforms and you

want this column to reflect true wait times, then you must set `TIMED_STATISTICS` to `true` in the parameter file; doing this will have a small negative effect on system performance.

> ✎ **See Also:**
>
> "TIMED_STATISTICS"

Column	Datatype	Description
SID	NUMBER	Session identifier
EVENT	VARCHAR2(64)	Name of the wait event; derived statistic name from `V$EVENT_NAME` **See Also:** " Oracle Wait Events"
TOTAL_WAITS	NUMBER	Total number of waits for the event by the session
TOTAL_TIMEOUTS	NUMBER	Total number of timeouts for the event by the session
TIME_WAITED	NUMBER	Total amount of time waited for the event by the session (in hundredths of a second)
AVERAGE_WAIT	NUMBER	Average amount of time waited for the event by the session (in hundredths of a second)
MAX_WAIT	NUMBER	Maximum amount of time waited for the event by the session (in hundredths of a second)
TIME_WAITED_MICRO	NUMBER	Total amount of time waited for the event by the session (in microseconds)
CPU	NUMBER	Total amount of CPU time consumed by the session while implementing the wait event itself (in microseconds)
EVENT_ID	NUMBER	Identifier of the wait event
WAIT_CLASS_ID	NUMBER	Identifier of the wait class of the wait event
WAIT_CLASS#	NUMBER	Number of the wait class of the wait event
WAIT_CLASS	VARCHAR2(64)	Name of the wait class of the wait event
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.25 V$SESSION_FIX_CONTROL

`V$SESSION_FIX_CONTROL` displays information about Fix Control (enabled/disabled) for the current session.

Column	Datatype	Description
SESSION_ID	NUMBER	Session identifier (can be used to join this view with `V$SESSION`)
BUGNO	NUMBER	Bug number (as fix control identifier)
VALUE	NUMBER	Current value set for the fix control
SQL_FEATURE	VARCHAR2(64)	Feature control ID

Column	Datatype	Description
DESCRIPTION	VARCHAR2(64)	Description of the fix control
OPTIMIZER_FEATURE_ENABLE	VARCHAR2(25)	Version on (and after) which the fix is enabled by default
EVENT	NUMBER	Event formerly used to control the fix
IS_DEFAULT	NUMBER	Indicates whether the current value is the same as the default (1) or not (0)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.26 V$SESSION_LONGOPS

V$SESSION_LONGOPS displays the status of various operations that run for longer than 6 seconds (in absolute time). These operations currently include many backup and recovery functions, statistics gathering, and query execution, and more operations are added for every Oracle release.
To monitor query execution progress, you must be using the cost-based optimizer and you must:

• Set the TIMED_STATISTICS or SQL_TRACE parameters to true

• Gather statistics for your objects with the DBMS_STATS package

You can add information to this view about application-specific long-running operations by using the DBMS_APPLICATION_INFO.SET_SESSION_LONGOPS procedure.

Column	Datatype	Description
SID	NUMBER	Identifier of the session processing the long-running operation. If multiple sessions are cooperating in the long-running operation, then SID corresponds to the main session.
SERIAL#	NUMBER	Serial number of the session processing the long-running operation. If multiple sessions are cooperating in the long-running operation, then SERIAL# corresponds to the main session. SERIAL# is used to uniquely identify a session's objects. Guarantees that session-level commands are applied to the correct session objects if the session ends and another session begins with the same session ID.
OPNAME	VARCHAR2(64)	Brief description of the operation
TARGET	VARCHAR2(64)	Object on which the operation is carried out
TARGET_DESC	VARCHAR2(32)	Description of the target
SOFAR	NUMBER	Units of work done so far for the operation specified in the OPNAME column
TOTALWORK	NUMBER	Total units of work for the operation specified in the OPNAME column
UNITS	VARCHAR2(32)	Units of measurement
START_TIME	DATE	Starting time of the operation
LAST_UPDATE_TIME	DATE	Time when statistics were last updated for the operation

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Column	Datatype	Description
TIMESTAMP	DATE	Timestamp specific to the operation
TIME_REMAINING	NUMBER	Estimate (in seconds) of time remaining for the operation to complete
ELAPSED_SECONDS	NUMBER	Number of elapsed seconds from the start of the operations
CONTEXT	NUMBER	Context
MESSAGE	VARCHAR2(512)	Statistics summary message
USERNAME	VARCHAR2(30)	User ID of the user performing the operation
SQL_ADDRESS	RAW(4 | 8)	Used with the value of the SQL_HASH_VALUE column to identify the SQL statement associated with the operation
SQL_HASH_VALUE	NUMBER	Used with the value of the SQL_ADDRESS column to identify the SQL statement associated with the operation
SQL_ID	VARCHAR2(13)	SQL identifier of the SQL statement associated with the long operation, if any
SQL_PLAN_HASH_VALUE	NUMBER	SQL plan hash value; NULL if SQL_ID is NULL
SQL_EXEC_START	DATE	Time when the execution of the SQL started; NULL if SQL_ID is NULL
SQL_EXEC_ID	NUMBER	SQL execution identifier (see V$SQL_MONITOR)
SQL_PLAN_LINE_ID	NUMBER	SQL plan line ID corresponding to the long operation; NULL if the long operation is not associated with a line of the execution plan
SQL_PLAN_OPERATION	VARCHAR2(30)	Plan operation name; NULL if SQL_PLAN_LINE_ID is NULL
SQL_PLAN_OPTIONS	VARCHAR2(30)	Plan operation options; NULL if SQL_PLAN_LINE_ID is NULL
QCSID	NUMBER	Session identifier of the parallel coordinator
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **See Also:**
>
> • "TIMED_STATISTICS"
>
> • "SQL_TRACE"
>
> • *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_APPLICATION_INFO.SET_SESSION_LONGOPS procedure
>
> • *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_STATS package

10.27 V$SESSION_OBJECT_CACHE

V$SESSION_OBJECT_CACHE displays object cache statistics for the current user session on the local server (instance).

Column	Datatype	Description
PINS	NUMBER	Number of object pins or look-ups in the cache
HITS	NUMBER	Number of object pins that found the object already in the cache
TRUE_HITS	NUMBER	Number of object pins that found the object already in the cache and in the desired state (thus, not requiring refresh from the database)
HIT_RATIO	NUMBER	Ratio of HITS / PINS
TRUE_HIT_RATIO	NUMBER	Ratio of TRUE_HITS/PINS
OBJECT_REFRESHES	NUMBER	Number of objects in the cache that were refreshed with a new value from the database
CACHE_REFRESHES	NUMBER	Number of times the whole cache (all objects) were refreshed
OBJECT_FLUSHES	NUMBER	Number of objects in the cache that were flushed to the database
CACHE_FLUSHES	NUMBER	Number of times the whole cache (all objects) were flushed to the database
CACHE_SHRINKS	NUMBER	Number of times the cache was shrunk to the optimal size
CACHED_OBJECTS	NUMBER	Number of objects currently cached
PINNED_OBJECTS	NUMBER	Number of objects currently pinned
CACHE_SIZE	NUMBER	Current size of the cache (in bytes)
OPTIMAL_SIZE	NUMBER	Optimal size of the cache (in bytes)
MAXIMUM_SIZE	NUMBER	Maximum size of the cache (in bytes)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.28 V$SESSION_WAIT

V$SESSION_WAIT displays the current or last wait for each session.

Column	Datatype	Description
SID	NUMBER	Session identifier; maps to V$SESSION.SID
SEQ#	NUMBER	A number that uniquely identifies the current or last wait (incremented for each wait)
EVENT	VARCHAR2(64)	If the session is currently waiting, then the resource or event for which the session is waiting. If the session is not in a wait, then the resource or event for which the session most recently waited. **See Also:** " Oracle Wait Events"
P1TEXT	VARCHAR2(64)	Description of the first wait event parameter
P1	NUMBER	First wait event parameter (in decimal)
P1RAW	RAW(8)	First wait event parameter (in hexadecimal)[1]
P2TEXT	VARCHAR2(64)	Description of the second wait event parameter
P2	NUMBER	Second wait event parameter (in decimal)

Column	Datatype	Description
P2RAW	RAW(8)	Second wait event parameter (in hexadecimal)[1]
P3TEXT	VARCHAR2(64)	Description of the third wait event parameter
P3	NUMBER	Third wait event parameter (in decimal)
P3RAW	RAW(8)	Third wait event parameter (in hexadecimal)[1]
WAIT_CLASS_ID	NUMBER	Identifier of the class of the wait event
WAIT_CLASS#	NUMBER	Number of the class of the wait event
WAIT_CLASS	VARCHAR2(64)	Name of the class of the wait event
WAIT_TIME	NUMBER	If the session is currently waiting, then the value is `0`. If the session is not in a wait, then the value is as follows: `> 0` - Value is the duration of the last wait in hundredths of a second `-1` - Duration of the last wait was less than a hundredth of a second `-2` - Parameter `TIMED_STATISTICS` was set to `false` This column has been deprecated in favor of the columns `WAIT_TIME_MICRO` and `STATE`.
SECONDS_IN_WAIT	NUMBER	If the session is currently waiting, then the value is the amount of time waited for the current wait. If the session is not in a wait, then the value is the amount of time since the start of the last wait. This column has been deprecated in favor of the columns `WAIT_TIME_MICRO` and `TIME_SINCE_LAST_WAIT_MICRO`.
STATE	VARCHAR2(19)	Wait state: `WAITING` - Session is currently waiting `WAITED UNKNOWN TIME` - Duration of the last wait is unknown; this is the value when the parameter `TIMED_STATISTICS` is set to `false` `WAITED SHORT TIME` - Last wait was less than a hundredth of a second `WAITED KNOWN TIME` - Duration of the last wait is specified in the `WAIT_TIME` column
WAIT_TIME_MICRO	NUMBER	Amount of time waited (in microseconds). If the session is currently waiting, then the value is the time spent in the current wait. If the session is currently not in a wait, then the value is the amount of time waited in the last wait.
TIME_REMAINING_MICRO	NUMBER	Value is interpreted as follows: `> 0` - Amount of time remaining for the current wait (in microseconds) `0` - Current wait has timed out `-1` - Session can indefinitely wait in the current wait - NULL - Session is not currently waiting
TOTAL_TIME_WAITED_MICRO	NUMBER	Total time for the current wait (in microseconds) A wait includes code within its beginning and end that can encounter other waits as part of its implementation. For example, a wait might need to acquire a latch to check state to determine when the wait is satisfied, and the latch itself might enter a wait. In this case, when the latch wait ends and returns to the outer wait, the latch time is included in the value of this column, while the value of `WAIT_TIME_MICRO` is reset to start after the latch wait.
HEUR_TIME_WAITED_MICRO	NUMBER	Heuristic wait time (in microseconds) This value is calculated by attempting to group sequential waits that appear to be the same.

Column	Datatype	Description
TIME_SINCE_LAST_WAIT_MIC RO	NUMBER	Time elapsed since the end of the last wait (in microseconds). If the session is currently in a wait, then the value is `0`.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

1 The `P1RAW`, `P2RAW`, and `P3RAW` columns display the same values as the `P1`, `P2`, and `P3` columns, except that the numbers are displayed in hexadecimal.

> ✎ **See Also:**
>
> "TIMED_STATISTICS" and " Oracle Wait Events"

10.29 V$SESSION_WAIT_CLASS

`V$SESSION_WAIT_CLASS` displays the time spent in various wait event operations on a per-session basis.

Column	Datatype	Description
SID	NUMBER	Session identifier
SERIAL#	NUMBER	Serial number
WAIT_CLASS_ID	NUMBER	Identifier of the wait class
WAIT_CLASS#	NUMBER	Number of the wait class
WAIT_CLASS	VARCHAR2(64)	Name of the wait class
TOTAL_WAITS	NUMBER	Total number waits from this wait class by the session
TIME_WAITED	NUMBER	Total amount of time spent in waits from this wait class by the session (in hundredths of a second)
TIME_WAITED_MICRO	NUMBER	Total amount of time spent in waits from this wait class by the session (in microseconds)
CPU	NUMBER	Total amount of CPU time consumed by the session while implementing waits from this wait class (in microseconds)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.30 V$SESSION_WAIT_HISTORY

`V$SESSION_WAIT_HISTORY` displays the last 10 wait events for each active session.

Column	Datatype	Description
SID	NUMBER	Session identifier
SEQ#	NUMBER	Sequence of wait events; 1 is the most recent
EVENT#	NUMBER	Event number
EVENT	VARCHAR2(64)	Resource or event for which the session is waiting
P1TEXT	VARCHAR2(64)	Description of the first wait event parameter
P1	NUMBER	First wait event parameter (in decimal)
P2TEXT	VARCHAR2(64)	Description of the second wait event parameter
P2	NUMBER	Second wait event parameter (in decimal)
P3TEXT	VARCHAR2(64)	Description of the third wait event parameter
P3	NUMBER	Third wait event parameter (in decimal)
WAIT_TIME	NUMBER	Amount of time waited (in hundredths of a second)
WAIT_TIME_MICRO	NUMBER	Amount of time waited (in microseconds)
TIME_SINCE_LAST_WAIT_MICRO	NUMBER	Time elapsed (in microseconds) since the end of the previous wait in the wait history
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.31 V$SESSIONS_COUNT

`V$SESSIONS_COUNT` displays the current number of sessions for each PDB.

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data
USER_SESSION_COUNT	NUMBER	Displays the current number of user sessions for the PDB
RECURSIVE_SESSION_COUNT	NUMBER	Displays the current number of recursive sessions for the PDB

10.32 V$SESSMETRIC

V$SESSMETRIC displays the metric values for all sessions.

Column	Datatype	Description
BEGIN_TIME	DATE	Begin time of the interval
END_TIME	DATE	End time of the interval
INTSIZE_CSEC	NUMBER	Interval size (in hundredths of a second)
SESSION_ID	NUMBER	Session ID
SESSION_SERIAL_NUM	NUMBER	Session serial number
CPU	NUMBER	CPU usage
PHYSICAL_READS	NUMBER	Number of physical reads
LOGICAL_READS	NUMBER	Number of logical reads
PGA_MEMORY	NUMBER	PGA size at the end of the interval
HARD_PARSES	NUMBER	Number of hard parses
SOFT_PARSES	NUMBER	Number of soft parses
PHYSICAL_READ_PCT	NUMBER	Physical read ratio
LOGICAL_READ_PCT	NUMBER	Logical read ratio
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.33 V$SESSTAT

V$SESSTAT displays user session statistics. To find the name of the statistic associated with each statistic number (STATISTIC#), query the V$STATNAME view.

Column	Datatype	Description
SID	NUMBER	Session identifier
STATISTIC#	NUMBER	Statistic number **Note:** Statistics numbers are not guaranteed to remain constant from one release to another. Therefore, you should rely on the statistics name rather than its number in your applications.
VALUE	NUMBER	Statistic value

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> ✎ **See Also:**
>
> "V$STATNAME" and "Statistics Descriptions"

10.34 V$SGA

`V$SGA` displays summary information about the system global area (SGA).

Column	Datatype	Description
NAME	VARCHAR2(20)	SGA component group
VALUE	NUMBER	Memory size (in bytes)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.35 V$SGA_CURRENT_RESIZE_OPS

`V$SGA_CURRENT_RESIZE_OPS` displays information about SGA resize operations which are currently in progress. An operation can be a grow or a shrink of a dynamic SGA component. All sizes are expressed in bytes.

Column	Datatype	Description
COMPONENT	VARCHAR2(64)	Component name
OPER_TYPE	VARCHAR2(13)	Operation type: • STATIC • INITIALIZING • DISABLED • GROW • SHRINK • SHRINK_CANCEL

Column	Datatype	Description
OPER_MODE	VARCHAR2(9)	Operation mode: • MANUAL • DEFERRED • IMMEDIATE
PARAMETER	VARCHAR2(80)	Name of the parameter for the resize operation
INITIAL_SIZE	NUMBER	Parameter value at the start of the operation
TARGET_SIZE	NUMBER	Desired value of the parameter after the resize
CURRENT_SIZE	NUMBER	Current value of the parameter
START_TIME	DATE	Start time of the operation
LAST_UPDATE_TIME	DATE	Last time progress was made for the operation
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.36 V$SGA_DYNAMIC_COMPONENTS

V$SGA_DYNAMIC_COMPONENTS displays information about the dynamic SGA components. This view summarizes information based on all completed SGA resize operations since instance startup. All sizes are expressed in bytes.

Column	Datatype	Description
COMPONENT	VARCHAR2(64)	Component name
CURRENT_SIZE	NUMBER	Current size of the component
MIN_SIZE	NUMBER	Minimum size of the component since instance startup
MAX_SIZE	NUMBER	Maximum size of the component since instance startup
USER_SPECIFIED_SIZE	NUMBER	Value of the user parameter for the component
OPER_COUNT	NUMBER	Number of operations since instance startup
LAST_OPER_TYPE	VARCHAR2(13)	Last completed operation for the component: • STATIC • INITIALIZING • DISABLED • GROW • SHRINK • SHRINK_CANCEL
LAST_OPER_MODE	VARCHAR2(9)	Mode of the last completed operation: • MANUAL • DEFERRED • IMMEDIATE
LAST_OPER_TIME	DATE	Start time of the last completed operation
GRANULE_SIZE	NUMBER	Granularity of the grow or the shrink operation

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Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.37 V$SGA_DYNAMIC_FREE_MEMORY

V$SGA_DYNAMIC_FREE_MEMORY displays information about the amount of SGA memory available for future dynamic SGA resize operations.

Column	Datatype	Description
CURRENT_SIZE	NUMBER	Amount of available memory (in bytes)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.38 V$SGA_RESIZE_OPS

V$SGA_RESIZE_OPS displays information about the last 800 completed SGA resize operations. This does not include in-progress operations. All sizes are expressed in bytes.

Column	Datatype	Description
COMPONENT	VARCHAR2(64)	Component name
OPER_TYPE	VARCHAR2(13)	Operation type: • STATIC • INITIALIZING • DISABLED • GROW • SHRINK • SHRINK_CANCEL
OPER_MODE	VARCHAR2(9)	Operation mode: • MANUAL • DEFERRED • IMMEDIATE
PARAMETER	VARCHAR2(80)	Name of the parameter for the resize operation
INITIAL_SIZE	NUMBER	Parameter value at the start of the operation
TARGET_SIZE	NUMBER	Requested value of the parameter after the resize
FINAL_SIZE	NUMBER	Real value of the parameter after the resize

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Column	Datatype	Description
STATUS	VARCHAR2(9)	Completion status of the operation: • INACTIVE • PENDING • COMPLETE • CANCELLED • ERROR
START_TIME	DATE	Start time of the operation
END_TIME	DATE	End time of the operation
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.39 V$SGA_TARGET_ADVICE

V$SGA_TARGET_ADVICE displays information about the SGA_TARGET initialization parameter.

Column	Datatype	Description
SGA_SIZE	NUMBER	Size of the SGA
SGA_SIZE_FACTOR	NUMBER	Ratio between the SGA_SIZE and the current size of the SGA
ESTD_DB_TIME	NUMBER	Estimated DB_TIME for this SGA_SIZE
ESTD_DB_TIME_FACTOR	NUMBER	Ratio between ESTD_DB_TIME and DB_TIME for the current size of the SGA
ESTD_PHYSICAL_READS	NUMBER	Estimated number of physical reads
ESTD_BUFFER_CACHE_SIZE	NUMBER	Estimated size of the buffer cache
ESTD_SHARED_POOL_SIZE	NUMBER	Estimated size of the shared pool
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **See Also:**
>
> "SGA_TARGET"

10.40 V$SGAINFO

V$SGAINFO displays size information about the SGA, including the sizes of different SGA items, the granule size, and free memory.

Column	Datatype	Description
NAME	VARCHAR2(32)	Name of the SGA size item
BYTES	NUMBER	Size of the item (in bytes)
RESIZEABLE	VARCHAR2(3)	Indicates whether the item is resizeable (Yes) or not (No)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.41 V$SGASTAT

V$SGASTAT displays detailed information on the system global area (SGA).

Column	Datatype	Description
POOL	VARCHAR2(14)	Designates the pool in which the memory in NAME resides: • in-memory pool - Memory is allocated from the In-Memory pool • java pool - Memory is allocated from the Java pool • large pool - Memory is allocated from the large pool • numa pool - Memory is allocated from the NUMA pool • shared pool - Memory is allocated from the shared pool • streams pool - Memory is allocated from the Streams pool
NAME	VARCHAR2(26)	SGA component name
BYTES	NUMBER	Memory size (in bytes)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.42 V$SHARD_ACK_RECEIVER

V$SHARD_ACK_RECEIVER displays information about ACK receiver processes.

Column	Datatype	Description
SID	NUMBER	Session identifier of the ACK receiver process
SERIAL#	NUMBER	Session serial number of the ACK receiver process
RU_ID	NUMBER	Replication unit (RU) identifier
STARTUP_TIME	DATE	ACK receiver start time
STATE	VARCHAR2(27)	State of the ACK receiver: • ACTIVE • INITIALIZING • POSTING USER TRANSACTION • WAITING FOR ACK FROM SENDER • WAITING FOR EOS FROM SENDER
STATE_CHANGED_TIME	DATE	Time at which the ACK receiver state last changed
ACK_SENDER_PEER_ID	NUMBER	ACK sender's database identifier of the follower
TOTAL_ACKS_RECEIVED	NUMBER	Total number of ACKs received
ACK_RECEIVED_TIME	DATE	Time at which ACK was last received
LAST_ACK_LOG_INDEX_RECEIVED	NUMBER	Last received ACK log index
SPID	VARCHAR2(12)	OS process identifier
LCR_CREATE_TIME	DATE	Commit LCR creation time
DB_ID	NUMBER	Database identifier
IO_SYNC_READ_TIME	NUMBER	Time spent on synchronous reads on Raft logs (in microseconds)
IO_ASYNC_CNT_LK_AHD_READS	NUMBER	Number of asynchronous reads on Raft logs
IO_CNT_BLK_ASYNC_READ	NUMBER	Number of times blocking was required while waiting for asynchronous look-ahead reads
IO_TIME_BLK_ASYNC_READ	NUMBER	Time spent waiting for asynchronous look-ahead reads (in microseconds)
IO_ASYNC_BLOCKS_READ	NUMBER	Total number of file blocks read asynchronously
IO_ASYNC_CACHE_HITS	NUMBER	Number of file blocks used from the look-ahead buffer
IO_BSRCH_SYNC_RDS	NUMBER	Number of times binary search was invoked to find a specific LCR
IO_CNT_CACHE_INVALID	NUMBER	Number of look-ahead read blocks that were stale
IO_BLKS_REQUIRED	NUMBER	Number of look-ahead blocks that were required
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.43 V$SHARD_ACK_SENDER

`V$SHARD_ACK_SENDER` displays information about ACK sender processes.

Column	Datatype	Description
SID	NUMBER	Session identifier of the ACK sender process
SERIAL#	NUMBER	Session serial number of the ACK sender process
RU_ID	NUMBER	Replication unit (RU) identifier
STARTUP_TIME	DATE	ACK sender start time
STATE	VARCHAR2(25)	State of the ACK sender: • ACTIVE • CONNECTING TO LEADER • INITIALIZING • SENDING ACK • WAITING FOR LCR PERSISTER
STATE_CHANGED_TIME	DATE	Time at which the ACK sender state last changed
LEADER_ID	NUMBER	Database identifier of the leader of the RU
TOTAL_ACKS_SENT	NUMBER	Total number of ACKs sent
ACK_TIME	DATE	Time at which ACK was last sent
LAST_ACK_LOG_INDEX_SENT	NUMBER	Last sent ACK log index
SPID	VARCHAR2(12)	OS process identifier
DB_ID	NUMBER	Database identifier
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **✎ Note:**
>
> This view is available starting with Oracle Database 23ai.

10.44 V$SHARD_APPLY_COORDINATOR

`V$SHARD_APPLY_COORDINATOR` displays information about apply coordinator processes.

Column	Datatype	Description
SID	NUMBER	Session identifier of the apply coordinator process
SERIAL#	NUMBER	Session serial number of the apply coordinator process

Column	Datatype	Description
STATE	VARCHAR2(21)	Apply coordinator state: • `ABORTING` - Stopping because of an apply error • `APPLYING` - Passing transactions to apply servers • `IDLE` - Performing no work • `INITIALIZING` - Initializing • `SHUTTING DOWN CLEANLY` - Stopping without an error
APPLY#	NUMBER	Apply process number An apply process is an Oracle background process, prefixed by `ap`.
APPLY_NAME	VARCHAR2(128)	Name of the apply process
TOTAL_APPLIED	NUMBER	Number of transactions applied by the apply process since the apply process was last started
TOTAL_WAIT_DEPS	NUMBER	Number of times, since the apply process was last started, that an apply server waited to apply a logical change record (LCR) in a transaction until another apply server applied a transaction, because of a dependency between the transactions
TOTAL_WAIT_COMMITS	NUMBER	Number of times, since the apply process was last started, that an apply server waited to commit a transaction until another apply server committed a transaction to serialize commits
TOTAL_ADMIN	NUMBER	Number of administrative jobs issued since the apply process was last started
TOTAL_ASSIGNED	NUMBER	Number of transactions assigned to apply servers since the apply process was last started
TOTAL_RECEIVED	NUMBER	Number of transactions received by the coordinator process since the apply process was last started
TOTAL_IGNORED	NUMBER	Number of transactions that were received by the coordinator, but were ignored because they had been previously applied
TOTAL_ROLLBACKS	NUMBER	Number of transactions that were rolled back due to unexpected contention
TOTAL_ERRORS	NUMBER	Number of transactions applied by the apply process that resulted in an apply error since the apply process was last started
UNASSIGNED_COMPLETE_TXNS	NUMBER	Number of unassigned complete transactions
AUTO_TXN_BUFFER_SIZE	NUMBER	Auto-tuned transaction buffer size
LWM_TIME	DATE	Time at which the LCR with the lowest log index was recorded The creation time of the LCR with the lowest LCR log index was also recorded at this time.
LWM_LCR_LOG_INDEX	NUMBER	LCRs with a commit log index less than or equal to this number have definitely been applied, but some LCRs with a higher commit log index also may have been applied.
LWM_LCR_CREATE_TIME	DATE	Time at which the LCR corresponding to the low watermark was created
HWM_TIME	DATE	Time at which the LCR with the highest log index was recorded The creation time of the LCR with the highest LCR log index was also recorded at this time.
HWM_LCR_LOG_INDEX	NUMBER	No LCR with a commit log index greater than this LCR log index has been applied
HWM_LCR_CREATE_TIME	DATE	Time at which the LCR corresponding to the high watermark was created
STARTUP_TIME	DATE	Apply coordinator process start time

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Column	Datatype	Description
ELAPSED_SCHEDULE_TIME	NUMBER	Time elapsed (in hundredths of a second) spent scheduling transactions since the apply process was last started
ELAPSED_IDLE_TIME	NUMBER	Elapsed idle time (in hundredths of a second) since the apply process was last started
PROCESSED_LCR_LOG_INDEX	NUMBER	LCR log index currently processed by the apply coordinator
ACTIVE_SERVER_COUNT	NUMBER	Number of active servers
RU_ID	NUMBER	Replication unit (RU) identifier
DB_ID	NUMBER	Database identifier
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.45 V$SHARD_APPLY_LCR_READER

V$SHARD_APPLY_LCR_READER displays information about apply LCR reader processes.

Column	Datatype	Description
SID	NUMBER	Session identifier of the apply LCR reader process
SERIAL#	NUMBER	Session serial number of the apply LCR reader process
APPLY#	NUMBER	Apply process number An apply process is an Oracle background process, prefixed by `ap`.
APPLY_NAME	VARCHAR2(128)	Name of the apply process group
STATE	VARCHAR2(36)	State of the apply LCR reader: • `DEQUEUING LCR` • `ENQUEUING LCR` • `GENERATING HASH VALUES` • `IDLE` • `INITIALIZING` • `READ ON DISK LCRS` • `WAITING ON EMPTY INBOUND QUEUE` • `WAITING ON FULL INBOUND QUEUE`
TOTAL_LCRS_DEQUEUED	NUMBER	Total number of LCRs read
DEQUEUE_TIME	DATE	Last read LCR time
DEQUEUED_LCR_LOG_INDEX	NUMBER	Last read LCR log index

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Column	Datatype	Description
DEQUEUED_LCR_CREATE_TIME	DATE	Last read LCR create time
RU_ID	NUMBER	Replication unit (RU) identifier
DB_ID	NUMBER	Database identifier
TOTAL_ON_DISK_LCRS_READ	NUMBER	Number of LCRs read from disk
LAST_ON_DISK_LCR_LOG_INDEX	NUMBER	Last LCR log index read from disk
STARTUP_TIME	DATE	Apply LCR reader start time
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.46 V$SHARD_APPLY_READER

V$SHARD_APPLY_READER displays information about apply reader processes.

Column	Datatype	Description
SID	NUMBER	Session identifier of the apply reader process
SERIAL#	NUMBER	Session serial number of the apply reader process
APPLY#	NUMBER	Apply process number An apply process is an Oracle background process, prefixed by `ap`.
APPLY_NAME	VARCHAR2(128)	Name of the apply process
STATE	VARCHAR2(36)	State of the apply reader: • DEQUEUE LCRS • IDLE • INITIALIZING • PAUSED - WAITING FOR DDL TO COMPLETE • SCHEDULE TRANSACTIONS • SPILLING
TOTAL_LCRS_DEQUEUED	NUMBER	Total number of LCRs read
TOTAL_LCRS_SPILLED	NUMBER	Total number of LCRs spilled
DEQUEUE_TIME	DATE	Last read LCR time
DEQUEUED_LCR_LOG_INDEX	NUMBER	Last read LCR log index
DEQUEUED_LCR_CREATE_TIME	DATE	Last read LCR create time

Column	Datatype	Description
SGA_USED	NUMBER	Amount of SGA memory (in bytes) used by the apply process since it was last started
ELAPSED_DEQUEUE_TIME	NUMBER	Time elapsed (in hundredths of a second) while dequeuing the last LCR
ELAPSED_SCHEDULE_TIME	NUMBER	Time elapsed (in hundredths of a second) spent scheduling transactions since the apply process was last started
ELAPSED_SPILL_TIME	NUMBER	Time elapsed (in hundredths of a second) while spilling LCRs
LAST_BROWSE_LOG_INDEX	NUMBER	Last browsed LCR log index
OLDEST_LOG_INDEX	NUMBER	Oldest log index
OLDEST_XIDUSN	NUMBER	Transaction ID undo segment number of the oldest transaction
OLDEST_XIDSLT	NUMBER	Transaction ID slot number of the oldest transaction
OLDEST_XIDSQN	NUMBER	Transaction ID sequence number of the oldest transaction
SPILL_LWM_LOG_INDEX	NUMBER	Spill low-watermark log index
OLDEST_TRANSACTION_ID	VARCHAR2(128)	Oldest transaction ID
TOTAL_LCRS_WITH_DEP	NUMBER	Number of LCRs with row-level dependencies since the apply process last started
TOTAL_LCRS_WITH_WMDEP	NUMBER	Number of LCRs with watermark dependencies since the apply process last started
		A watermark dependency occurs when an apply process must wait until the apply process's low watermark reaches a particular threshold.
TOTAL_IN_MEMORY_LCRS	NUMBER	Total number of LCRs currently in memory
SGA_ALLOCATED	NUMBER	Total amount of shared memory (in bytes) allocated from the SGA for the apply process since the apply process last started
RU_ID	NUMBER	Replication unit (RU) identifier
DB_ID	NUMBER	Database identifier
TOTAL_ON_DISK_LCRS_READ	NUMBER	Number of LCRs read from disk
LAST_ON_DISK_LCR_LOG_INDEX	NUMBER	Last LCR log index read from disk
STARTUP_TIME	DATE	Apply reader process start time
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.47 V$SHARD_APPLY_SERVER

V$SHARD_APPLY_SERVER displays information about apply server components.

Column	Datatype	Description
SID	NUMBER	Session identifier of the apply server component
SERIAL#	NUMBER	Session serial number of the apply server component
APPLY#	NUMBER	Apply process number An apply process is an Oracle background process, prefixed by ap.
APPLY_NAME	VARCHAR2(128)	Name of the apply process
SERVER_ID	NUMBER	Parallel execution server number of the apply server
STATE	VARCHAR2(20)	State of the apply server: • ADD PARTITION • DROP PARTITION • EXECUTE TRANSACTION • GET TRANSACTIONS • IDLE • INACTIVE • INITIALIZING • POLL SHUTDOWN • RECORD LOW-WATERMARK • REQUEST UA SESSION • ROLLBACK TRANSACTIONS • SPILL • TRANSACTION CLEANUP • WAIT COMMIT • WAIT DEPENDENCY • WAIT FOR CLIENT • WAIT FOR NEXT CHUNK • WAIT POST COMMIT
XIDUSN	NUMBER	Transaction ID undo segment number of the transaction currently being applied
XIDSLT	NUMBER	Transaction ID slot number of the transaction currently being applied
XIDSQN	NUMBER	Transaction ID undo sequence number of the transaction currently being applied
COMMIT_LOG_INDEX	NUMBER	Commit log index of the transaction currently being applied
DEP_XIDUSN	NUMBER	Transaction ID undo segment number of a transaction on which the transaction being applied by this apply server depends
DEP_XIDSLT	NUMBER	Transaction ID slot number of a transaction on which the transaction being applied by this apply server depends
DEP_XIDSQN	NUMBER	Transaction ID sequence number of a transaction on which the transaction being applied by this apply server depends
DEP_COMMIT_LOG_INDEX	NUMBER	Commit log index of the transaction on which this apply server depends
CURRENT_LOG_INDEX	NUMBER	Current LCR log index being applied by the apply server. This value is reset to 1 at the beginning of each transaction.
TOTAL_ASSIGNED	NUMBER	Number of transactions assigned to the apply server since the apply process was last started

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Column	Datatype	Description
TOTAL_ADMIN	NUMBER	Number of administrative jobs performed by the apply server since the apply process was last started. See the STATE information in this view for the types of administrative jobs.
TOTAL_ROLLBACKS	NUMBER	Number of transactions assigned to this server that were rolled back
TOTAL_LCRS_APPLIED	NUMBER	Total number of LCRs applied by this apply server since the apply process was last started
APPLY_TIME	DATE	Time the last LCR was applied
APPLIED_LCR_LOG_INDEX	NUMBER	Last applied LCR log index
APPLIED_LCR_CREATE_TIME	DATE	Last applied LCR create time
ELAPSED_DEQUEUE_TIME	NUMBER	Time elapsed (in hundredths of a second) while dequeuing LCRs
ELAPSED_APPLY_TIME	NUMBER	Time elapsed (in hundredths of a second) applying LCRs since the apply process was last started
TRANSACTION_ID	VARCHAR2(128)	ID of the transaction that the worker process is applying
TOTAL_LCRS_RETRIED	NUMBER	Total number of LCRs retried by this server
LCR_RETRY_ITERATION	NUMBER	Retry iteration for this transaction by this server
TOTAL_TXNS_RETRIED	NUMBER	Total number of LCRs retried by this server
TXN_RETRY_ITERATION	NUMBER	Retry iteration for this transaction by this server
TOTAL_TXNS_RECORDED	NUMBER	Total transactions recorded in error queue by this server
RU_ID	NUMBER	Replication unit (RU) identifier
DB_ID	NUMBER	Database identifier
STARTUP_TIME	DATE	Apply server process start time
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.48 V$SHARD_LCR_LOGS

V$SHARD_LCR_LOGS displays information about LCR logs.

Column	Datatype	Description
INST_ID	NUMBER	Instance ID
RU_ID	NUMBER	Replication unit (RU) ID
NAME	VARCHAR2(257)	Name and path of the log file

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Column	Datatype	Description
SIZE_GB	NUMBER	Size of the log file (in gigabytes)
ROTD_IDX	NUMBER	Rotated index
CURR_FILE	VARCHAR2(1)	Indicates whether the file is current (Y) or not (N)
STIDX_HIGH	NUMBER	High 4 bytes of the starting log index in the log file
STIDX_LOW	NUMBER	Low 4 bytes of the starting log index in the log file
ENDIDX_HIGH	NUMBER	High 4 bytes of the ending log index in the log file
ENDIDX_LOW	NUMBER	Low 4 bytes of the ending logindex in the log file
START_SEC	NUMBER	Time when this log file was first written to, measured in seconds from the epoch
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.49 V$SHARD_LCR_PERSISTER

V$SHARD_LCR_PERSISTER displays information about LCR persister processes.

This view displays one row for each LCR persister for a replication unit (RU).

Column	Datatype	Description
SID	NUMBER	Session identifier of the LCR persister process
SERIAL#	NUMBER	Session serial number of the LCR persister process
RU_ID	NUMBER	Replication unit (RU) identifier
STARTUP_TIME	DATE	LCR persister process start time
STATE	VARCHAR2(30)	State of the LCR persister: • ACTIVE • INITIALIZING • READING FROM IO • WAITING FOR BUFFERS TO PERSIST • WAITING ON EMPTY QUEUE • WRITING TO IO
STATE_CHANGED_TIME	DATE	Time at which the LCR persister state last changed
PERSISTED_LOG_INDEX	NUMBER	Last persisted LCR log index
PERSISTED_TIMESTAMP	DATE	Timestamp of the last persisted LCR

Column	Datatype	Description
IOBUF_INIT_US	NUMBER	Write buffer initialization time (in microseconds)
LEAD_IO_ISSUED_COUNT	NUMBER	Number of times I/O was issued on the leader
LEAD_IO_ISSUED_US	NUMBER	Time spent (in microseconds) during I/O on the leader
LEAD_IO_ISSUED_BLKS	NUMBER	Number of blocks written on the leader
LEAD_IO_FETCHED_COUNT	NUMBER	Number of times LCR persister issued fetch on the leader
LEAD_IO_FETCHED_US	NUMBER	Time (in microseconds) to fetch blocks
LEAD_IO_FETCHED_SUCCESS	NUMBER	Number of times the LCR persister actually fetched
LEAD_IO_BLOCKED_COUNT	NUMBER	Number of times I/O blocked on the leader
LEAD_IO_BLOCKED_US	NUMBER	Time (in microseconds) spent while the I/O was blocked
LEAD_IO_COMMITS_COUNT	NUMBER	Number of times commit processed on the leader
FOLL_IO_ISSUED_COUNT	NUMBER	Number of times I/O was issued on the follower
FOLL_IO_ISSUED_US	NUMBER	Time spent during I/O on the follower (in microseconds)
FOLL_IO_ISSUED_BLKS	NUMBER	Number of blocks written on the follower
FOLL_IO_COMMITS_COUNT	NUMBER	Number of times commit processed on the follower
SPID	VARCHAR2(12)	OS process identifier
DB_ID	NUMBER	Database identifier
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.50 V$SHARD_LCR_PRODUCER

V$SHARD_LCR_PRODUCER displays information about LCR producer processes.

Column	Datatype	Description
SID	NUMBER	Session identifier of the LCR producer process
SERIAL#	NUMBER	Session serial number of the LCR producer process
RU_ID	NUMBER	Replication unit (RU) identifier
STARTUP_TIME	DATE	LCR producer process start time

Column	Datatype	Description
STATE	VARCHAR2(33)	State of the LCR producer: • ACTIVE • BROWSING LCR • DEQUEUING LCR • ENQUEUING LCR • INITIALIZING • WAITING FOR MEMORY • WAITING ON EMPTY INBOUND QUEUE • WAITING ON SUBSCRIBERS TO DEQUEUE
STATE_CHANGED_TIME	DATE	Time at which the LCR producer state last changed
OUTBOUND_QUEUE_SIZE	NUMBER	Outbound queue size
TOTAL_AVAILABLE_LCRS_IN_OUTBOUND_QUEUE	NUMBER	Total number of LCRs available in the outbound queue
NEXT_LOG_INDEX	NUMBER	Next LCR log index
TOTAL_LCRS_DEQUEUED	NUMBER	Total number of LCRs dequeued from the foreground queue
LAST_DEQUEUED_LCR_LOG_INDEX	NUMBER	Last dequeued LCR log index
TOTAL_LCRS_ENQUEUED	NUMBER	Total number of LCRs enqueued into the outbound queue
LAST_ENQUEUED_TIME	DATE	Last LCR enqueued time
LAST_ENQUEUED_LCR_TIME	DATE	Creation time of the last LCR enqueued
LAST_ENQUEUED_LCR_LOG_INDEX	NUMBER	Last enqueued LCR log index
SPID	VARCHAR2(12)	OS process identifier
DB_ID	NUMBER	Database identifier
FLWCTRL_PEERS	VARCHAR2(64)	Flow control state
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.51 V$SHARD_NETWORK_RECEIVER

V$SHARD_NETWORK_RECEIVER displays information about network receiver processes.

Column	Datatype	Description
SID	NUMBER	Session identifier of the network receiver process
SERIAL#	NUMBER	Session serial number of the network receiver process
APPLY_NAME	VARCHAR2(128)	Name of the apply process
STARTUP_TIME	DATE	Network receiver start time
RU_ID	NUMBER	Replication unit (RU) identifier
SPILL_LWM	NUMBER	Highest log index of LCRs that an apply has persisted to its spilled tables
LAST_RECEIVED_LOG_INDEX	NUMBER	Log index of the last received LCR
TOTAL_LCRS_RECEIVED	NUMBER	Total number of LCRs received
TOTAL_AVAILABLE_LCRS	NUMBER	Total number of LCRs available in knlbm
STATE	VARCHAR2(38)	State of the network receiver: • Enqueueing LCRs • Initializing • Receiving LCRs • Sending unapplied txns • Waiting for apply error to be resolved • Waiting for apply to be unsuspended • Waiting for apply to dequeue • Waiting for flush request to complete • Waiting for memory • Waiting for message from peer
SPID	VARCHAR2(12)	OS process identifier
LAST_RECEIVED_LCR_TIME	DATE	Time last LCR was received
LAST_RECEIVED_LCR_CREATE_TIME	DATE	Creation time of last received LCR
REMOTE_PEER_ID	NUMBER	Database ID of the leader of this RU
TOTAL_SKIPPED_ENQUEUE_LCRS	NUMBER	Total number of LCRs skipped for enqueueing to apply queue
LAST_SKIPPED_ENQUEUE_LCR_LOG_INDEX	NUMBER	LCR log index of the last skipped enqueue to the apply queue
DB_ID	NUMBER	Database identifier
TOTAL_BYTES_RECEIVED	NUMBER	Total number of bytes received
IO_SYNC_READ_TIME	NUMBER	Time spent on synchronous reads on Raft logs (in microseconds)
IO_ASYNC_CNT_LK_AHD_READS	NUMBER	Number of asynchronous reads on Raft logs
IO_CNT_BLK_ASYNC_READ	NUMBER	Number of times blocking was required while waiting for asynchronous look-ahead reads
IO_TIME_BLK_ASYNC_READ	NUMBER	Time spent waiting for asynchronous look-ahead reads (in microseconds)
IO_ASYNC_BLOCKS_READ	NUMBER	Total number of file blocks read asynchronously
IO_ASYNC_CACHE_HITS	NUMBER	Number of file blocks used from the look-ahead buffer
IO_BSRCH_SYNC_RDS	NUMBER	Number of times binary search was invoked to find a specific LCR
IO_CNT_CACHE_INVALID	NUMBER	Number of look-ahead read blocks that were stale
IO_BLKS_REQUIRED	NUMBER	Number of look-ahead blocks that were required

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Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **✎ Note:**
>
> This view is available starting with Oracle Database 23ai.

10.52 V$SHARD_NETWORK_SENDER

V$SHARD_NETWORK_SENDER displays information about network sender processes.

Column	Datatype	Description
SID	NUMBER	Session identifier of the network sender process
SERIAL#	NUMBER	Session serial number of the network sender process
RU_ID	NUMBER	Replication unit (RU) identifier
REMOTE_PEER_ID	NUMBER	Remote follower's database identifier of this RU
STARTUP_TIME	DATE	Network sender process start time
STATE	VARCHAR2(22)	State of the network sender: • ACTIVE • BROWSING LCR • CONNECTING TO FOLLOWER • DEQUEUING LCR SENDING LCR • INITIALIZING • WAITING ON EMPTY QUEUE
STATE_CHANGED_TIME	DATE	Time at which the network sender state last changed
TOTAL_LCRS_SENT	NUMBER	Number of LCRs sent
BROWSED_TIME	DATE	Last browsed LCR time
LAST_BROWSED_LCR_LOG_INDEX	NUMBER	Last browsed LCR log index
SEND_TIME	DATE	Time at which last LCR was sent
LAST_SENT_LCR_LOG_INDEX	NUMBER	Last sent LCR log index
LAST_SENT_LCR_TIME	DATE	Creation time of the last sent LCR
ELAPSED_PROPAGATION_TIME	NUMBER	Amount of time taken to propogate LCRs (in what unit of time?)
AVAILABLE_LCRS	NUMBER	Number of LCRs available in outbound queue
SPID	VARCHAR2(12)	OS process identifier
CONNECT_ERROR_COUNT	NUMBER	Number of network sender connection errors

Column	Datatype	Description
DB_ID	NUMBER	Database identifier
TOTAL_BYTES_SENT	NUMBER	Total number of bytes sent
IO_SYNC_READ_TIME	NUMBER	Time spent on synchronous reads on Raft logs (in microseconds)
IO_ASYNC_CNT_LK_AHD_READS	NUMBER	Number of asynchronous reads on Raft logs
IO_CNT_BLK_ASYNC_REA	NUMBER	Number of times blocking was required while waiting for asynchronous look-ahead reads
IO_TIME_BLK_ASYNC_READ	NUMBER	Time spent waiting for asynchronous look-ahead reads (in microseconds)
IO_ASYNC_BLOCKS_READ	NUMBER	Total number of file blocks read asynchronously
IO_ASYNC_CACHE_HITS	NUMBER	Number of file blocks used from the look-ahead buffer
IO_BSRCH_SYNC_RDS	NUMBER	Number of times binary search was invoked to find a specific LCR
IO_CNT_CACHE_INVALID	NUMBER	Number of look-ahead read blocks that were stale
IO_BLKS_REQUIRED	NUMBER	Number of look-ahead blocks that were required
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.53 V$SHARD_REPLICATION_UNIT

V$SHARD_REPLICATION_UNIT displays information about replication units (RUs) that are present in a shard.

This view displays one row for each RU.

Column	Datatype	Description
SHARD_ID	NUMBER	Shard database identifier
RU_ID	NUMBER	Replication unit (RU) identifier
LEADER_ID	NUMBER	Leader's SHARD_ID for the corresponding RU
ROLE	NUMBER	Role of the shard for the RU: • `1` - The shard is the leader • `2` - The shard is the follower • `3` - The shard is a candidate for leader election
TERM	NUMBER	Term number This value is incremented each time a new leader is elected.

Column	Datatype	Description
COMMITIDX	NUMBER	LCRs with a log index of COMMITIDX or lower have consensus
OLDAPPIDX	NUMBER	Oldest log index that an apply process group may need
APPLYLWMIDX	NUMBER	Position of apply low watermark on the follower
ONDISKIDX	NUMBER	Persisted log index
FLAGS	NUMBER	State of the shard with respect to the RU: • 0x00000001 - PRE-SHUTDOWN • 0x00000002 - IN MOVE • 0x00000004 - IN COPY • 0x00000008 - LEADER NOT RECOVERED • 0x00000010 - OPEN LEADER • 0x00000020 - ELECTION REQUEST • 0x00000040 - AFTER VOTE • 0x00000080 - DRAIN KNLBM LEADER TO FOLLOWER When a shard becomes follower, the knlb buffer should be drained. • 0x00000100 - BARRIER DDL SUSPEND • 0x00000200 - BARRIER DDL RESUME • 0x00000400 - RESUME NOTIFICATION • 0x00000800 - RU LOADED • 0x00001000 - SUSPEND APPLY KNLB ENQ • 0x00002000 - NETWORK RECEIVER RAISED • 0x00004000 - ERROR CHECK HINT Set by foreground using DBMS_APPLY_ADM.DELETE_ALL_ERRORS. When this flag is set, the network receiver can immediately check the number of apply errors without waiting for a timeout. • 0x00008000 - SUSPEND CHECK HINT Set by foreground using DBMS_APPLY_ADM.DELETE_ALL_ERRORS. When this flag is set, the network receiver can immediately check the apply suspend status without waiting for a timeout. • 0x00010000 - ERRORS When this flag is set, the RU has active errors. The flag will be unset upon successful recovery. • 0x00020000 - GP AUTO RESTART • 0x00040000 - FOLLOWER CATCHUP • 0x00100000 - DELETE LOG STOP ENQ • 0x00200000 - OPTIMISE APPLY STOP DELETE LOG TAIL
ROLE_CHANGED_TIME	TIMESTAMP(6)	Time at which the role for the RU in the shard last changed
RECOVERY_TIME	TIMESTAMP(6)	Amount of time taken for recovery
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **✎ Note:**
>
> This view is available starting with Oracle Database 23ai.

10.54 V$SHARED_POOL_ADVICE

`V$SHARED_POOL_ADVICE` displays information about estimated parse time in the shared pool for different pool sizes. The sizes range from 10% of the current shared pool size or the amount of pinned library cache memory (whichever is higher) to 200% of the current shared pool size, in equal intervals. The value of the interval depends on the current size of the shared pool.

Column	Datatype	Description
SHARED_POOL_SIZE_FOR_EST IMATE	NUMBER	Shared pool size for the estimate (in megabytes)
SHARED_POOL_SIZE_FACTOR	NUMBER	Size factor with respect to the current shared pool size
ESTD_LC_SIZE	NUMBER	Estimated memory in use by the library cache (in megabytes)
ESTD_LC_MEMORY_OBJECTS	NUMBER	Estimated number of library cache memory objects in the shared pool of the specified size
ESTD_LC_TIME_SAVED	NUMBER	Estimated elapsed parse time saved (in seconds), owing to library cache memory objects being found in a shared pool of the specified size. This is the time that would have been spent in reloading the required objects in the shared pool had they been aged out due to insufficient amount of available free memory.
ESTD_LC_TIME_SAVED_FACTO R	NUMBER	Estimated parse time saved factor with respect to the current shared pool size
ESTD_LC_LOAD_TIME	NUMBER	Estimated elapsed time (in seconds) for parsing in a shared pool of the specified size
ESTD_LC_LOAD_TIME_FACTOR	NUMBER	Estimated load time factor with respect to the current shared pool size
ESTD_LC_MEMORY_OBJECT_HI TS	NUMBER	Estimated number of times a library cache memory object was found in a shared pool of the specified size
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.55 V$SHARED_POOL_LRU_EFFORT

`V$SHARED_POOL_LRU_EFFORT` displays information about shared pool LRU scans.

This view allows you to determine the amount of time spent scanning the shared pool LRU in an effort to free up space.

Column	Datatype	Description
DSIDX	NUMBER	Shared pool subpool to which this data pertains

Column	Datatype	Description
SECONDS_AGO	NUMBER	Number of seconds that have elapsed since this scan row was performed
MS_SPENT	NUMBER	Number of milliseconds spent performing the scan
REQUEST_SIZE	NUMBER	Size of the memory request
REQ_COMMENT	VARCHAR2(20)	Comment for the chunk being requested
BYTES_FREED	NUMBER	Number of bytes freed to satisfy this request
OBJECTS_FREED	NUMBER	Number of objects evicted to satisfy this request
RETURN_ZERO	NUMBER	Number of times an eviction request was rejected
RETURN_ZERO_COMMENT	VARCHAR2(20)	Comment for the first RETURN_ZERO object
LATCH_SKIPPED	NUMBER	Number of times an object was skipped because of an incompatible latch
TIMESTAMP	NUMBER	Time at which the scan was performed
SID	NUMBER	ID of the session that requested the scan
REPORT_TIME	NUMBER	Time at which the report was run You can compare to this column to the TIMESTAMP column.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **✎ Note:**
>
> This view is available starting with Oracle Database 23ai.

10.56 V$SHARED_POOL_RESERVED

V$SHARED_POOL_RESERVED displays statistics that help you tune the reserved pool and space within the shared pool.

Column	Datatype	Description
FREE_SPACE	NUMBER	Total amount of free space on the reserved list in bytes[1]
AVG_FREE_SIZE	NUMBER	Average size of the free memory on the reserved list in bytes[1]
FREE_COUNT	NUMBER	Number of free pieces of memory on the reserved list[1]
MAX_FREE_SIZE	NUMBER	Size of the largest free piece of memory on the reserved list in bytes[1]
USED_SPACE	NUMBER	Total amount of used memory on the reserved list in bytes[1]
AVG_USED_SIZE	NUMBER	Average size of the used memory on the reserved list in bytes[1]
USED_COUNT	NUMBER	Number of used pieces of memory on the reserved list[1]
MAX_USED_SIZE	NUMBER	Size of the largest used piece of memory on the reserved list in bytes[1]

Column	Datatype	Description
REQUESTS	NUMBER	Number of times that the reserved list was searched for a free piece of memory[1]
REQUEST_MISSES	NUMBER	Number of times the reserved list did not have a free piece of memory to satisfy the request, and started flushing objects from the LRU list[1]
LAST_MISS_SIZE	NUMBER	Request size of the last request miss in bytes, when the reserved list did not have a free piece of memory to satisfy the request and started flushing objects from the LRU list[1]
MAX_MISS_SIZE	NUMBER	Request size of the largest request miss in bytes, when the reserved list did not have a free piece of memory to satisfy the request and started flushing objects from the LRU list[1]
REQUEST_FAILURES	NUMBER	Number of times that no memory was found to satisfy a request. If an internal flush (used to free up memory) does not meet a memory need, then the error ORA-04031 occurs.[2]
LAST_FAILURE_SIZE	NUMBER	Request size of the last failed request in bytes. If an internal flush (used to free up memory) does not meet a memory need, then the error ORA-04031 occurs.[2]
ABORTED_REQUEST_THRESHOLD	NUMBER	Minimum size of a request in bytes which signals an ORA-04031 error without flushing objects[2]
ABORTED_REQUESTS	NUMBER	Number of requests that signalled an ORA-04031 error without flushing objects[2]
LAST_ABORTED_SIZE	NUMBER	Last size of the request in bytes that returned an ORA-04031 error without flushing objects from the LRU list[2]
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

[1] These columns are valid only if the initialization parameter SHARED_POOL_RESERVED_SIZE is set to a valid value.

[2] These columns contain values which are valid even if SHARED_POOL_RESERVED_SIZE is not set.

10.57 V$SHARED_SERVER

V$SHARED_SERVER displays information on the shared server processes.

Column	Datatype	Description
NAME	VARCHAR2(4)	Name of the server
PADDR	RAW(4 | 8)	Server's process address

Column	Datatype	Description
STATUS	VARCHAR2(16)	Server status: • `EXEC` - Executing SQL • `WAIT (ENQ)` - Waiting for a lock • `WAIT (SEND)` - Waiting to send data to user • `WAIT (COMMON)` - Idle; waiting for a user request • `WAIT (RECEIVE)` - Waiting for records to be shown in the client application • `WAIT (RESET)` - Waiting for a circuit to reset after a break • `QUIT` - Terminating
MESSAGES	NUMBER	Number of messages processed
BYTES	NUMBER	Total number of bytes in all messages
BREAKS	NUMBER	Number of breaks
CIRCUIT	RAW(4 | 8)	Address of the circuit currently being serviced
IDLE	NUMBER	Total idle time (in hundredths of a second)
BUSY	NUMBER	Total busy time (in hundredths of a second)
IN_NET	NUMBER	Total incoming network wait time (in hundredths of a second)
OUT_NET	NUMBER	Total outgoing network wait time (in hundredths of a second)
REQUESTS	NUMBER	Total number of requests taken from the common queue in this server's lifetime
BOUND_TIME	NUMBER	Time that a circuit and shared server have been bound (in centiseconds)
BOUND_REASON	VARCHAR2(32)	Provides a reason (a short explanation) for why a shared server and circuit could not be unbound. This column is empty when a circuit is not bound to a server. When the server starts serving a circuit, `BOUND_REASON` is empty and remains empty unless the server tries unsuccessfully to unbind the circuit (after it finishes serving the current request). When this column is not empty, it will be cleared once the server and circuit are unbound (that is, once the resources preventing the session migration to another shared server are released).
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.58 V$SHARED_SERVER_MONITOR

V$SHARED_SERVER_MONITOR displays information for tuning the shared server.

Column	Datatype	Description
MAXIMUM_CONNECTIONS	NUMBER	Highest number of virtual circuits in use at one time since the instance started. If this value reaches the value set for the CIRCUITS initialization parameter, then consider raising the value of CIRCUITS. **See Also:** "CIRCUITS"
MAXIMUM_SESSIONS	NUMBER	Highest number of shared server sessions in use at one time since the instance started. If this reaches the value set for the SHARED_SERVER_SESSIONS initialization parameter, then consider raising the value of SHARED_SERVER_SESSIONS. **See Also:** "SHARED_SERVER_SESSIONS"
SERVERS_STARTED	NUMBER	Total number of shared servers started since the instance started (but not including those started during startup)
SERVERS_TERMINATED	NUMBER	Total number of shared servers stopped by Oracle since the instance started
SERVERS_HIGHWATER	NUMBER	Highest number of servers running at one time since the instance started. If this value reaches the value set for the MAX_SHARED_SERVERS initialization parameter, then consider raising the value of SHARED_SERVERS. **See Also:** "SHARED_SERVERS"
DISPATCHERS_CPU	NUMBER	Total CPU time of all dispatchers since the instance started (in millionths of a second)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • _n_: Where _n_ is the applicable container ID for the rows containing data

10.59 V$SHARED_SERVER_STAT

V$SHARED_SERVER_STAT displays statistics for all shared server processes. The statistics are cumulative from the start of the instance.

Column	Datatype	Description
MESSAGES	NUMBER	Number of messages processed
BYTES	NUMBER	Total number of bytes in all messages
IDLE	NUMBER	Total idle time (in hundredths of a second)
BUSY	NUMBER	Total busy time (in hundredths of a second)
IN_NET	NUMBER	Total incoming network wait time (in hundredths of a second)
OUT_NET	NUMBER	Total outgoing network wait time (in hundredths of a second)
REQUESTS	NUMBER	Total number of requests taken from the common queue

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include:
		• 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs.
		• 1: This value is used for rows containing data that pertain to only the root
		• *n*: Where *n* is the applicable container ID for the rows containing data

10.60 V$SORT_SEGMENT

V$SORT_SEGMENT displays information about every sort segment in a given instance. The view is only updated when the tablespace is of the TEMPORARY type.

Column	Datatype	Description
TABLESPACE_NAME	VARCHAR2(30)	Name of the tablespace
SEGMENT_FILE	NUMBER	File number of the first extent
SEGMENT_BLOCK	NUMBER	Block number of the first extent
EXTENT_SIZE	NUMBER	Extent size
CURRENT_USERS	NUMBER	Number of active users of the segment
TOTAL_EXTENTS	NUMBER	Total number of extents in the segment
TOTAL_BLOCKS	NUMBER	Total number of blocks in the segment
USED_EXTENTS	NUMBER	Extents allocated to active sorts
USED_BLOCKS	NUMBER	Blocks allocated to active sorts
FREE_EXTENTS	NUMBER	Extents not allocated to any sort
FREE_BLOCKS	NUMBER	Blocks not allocated to any sort
ADDED_EXTENTS	NUMBER	Number of extent allocations
EXTENT_HITS	NUMBER	Number of times an unused extent was found in the pool
FREED_EXTENTS	NUMBER	Number of deallocated extents
FREE_REQUESTS	NUMBER	Number of requests to deallocate
MAX_SIZE	NUMBER	Maximum number of extents ever used
MAX_BLOCKS	NUMBER	Maximum number of blocks ever used
MAX_USED_SIZE	NUMBER	Maximum number of extents used by all sorts
MAX_USED_BLOCKS	NUMBER	Maximum number of blocks used by all sorts
MAX_SORT_SIZE	NUMBER	Maximum number of extents used by an individual sort
MAX_SORT_BLOCKS	NUMBER	Maximum number of blocks used by an individual sort
RELATIVE_FNO	NUMBER	Relative file number of the sort segment header
TS#	NUMBER	Tablespace number

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Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data
IS_LOCAL_TEMP	NUMBER	Indicates whether the sort segment is allocated from a local temporary tablespace (1) or not (0).

10.61 V$SPPARAMETER

V$SPPARAMETER displays information about the contents of the server parameter file. If a server parameter file was not used to start the instance, then each row of the view will contain FALSE in the ISSPECIFIED column.

Column	Datatype	Description
FAMILY	VARCHAR2(80)	For internal use only
SID	VARCHAR2(80)	SID for which the parameter is defined.
NAME	VARCHAR2(80)	Name of the parameter
TYPE	VARCHAR2(11)	Parameter type
VALUE	VARCHAR2(255)	Parameter value (null if a server parameter file was not used to start the instance)
DISPLAY_VALUE	VARCHAR2(255)	Parameter value in a user-friendly format. For example, if the VALUE column shows the value 262144 for a big integer parameter, then the DISPLAY_VALUE column will show the value 256K.
ISSPECIFIED	VARCHAR2(6)	Indicates whether the parameter was specified in the server parameter file (TRUE) or not (FALSE)
ORDINAL	NUMBER	Position (ordinal number) of the parameter value (0 if a server parameter file was not used to start the instance). Useful only for parameters whose values are lists of strings.
UPDATE_COMMENT	VARCHAR2(255)	Comments associated with the most recent update (null if a server parameter file was not used to start the instance)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.62 V$SQL

V$SQL lists statistics on shared SQL areas without the GROUP BY clause and contains one row for each child of the original SQL text entered. Statistics displayed in V$SQL are normally updated at the end of query execution. However, for long running queries, they are updated

every 5 seconds. This makes it easy to see the impact of long running SQL statements while they are still in progress.

Column	Datatype	Description
SQL_TEXT	VARCHAR2(1000)	First thousand characters of the SQL text for the current cursor
SQL_FULLTEXT	CLOB	Full text for the SQL statement exposed as a CLOB column. The full text of a SQL statement can be retrieved using this column instead of joining with the V$SQLTEXT dynamic performance view.
SQL_ID	VARCHAR2(13)	SQL identifier of the parent cursor in the library cache
SHARABLE_MEM	NUMBER	Amount of shared memory used by the child cursor (in bytes)
PERSISTENT_MEM	NUMBER	Fixed amount of memory used for the lifetime of the child cursor (in bytes)
RUNTIME_MEM	NUMBER	Fixed amount of memory required during the execution of the child cursor
SORTS	NUMBER	Number of sorts that were done for the child cursor
LOADED_VERSIONS	NUMBER	Indicates whether the context heap is loaded (1) or not (0)
OPEN_VERSIONS	NUMBER	Indicates whether the child cursor is locked (1) or not (0)
USERS_OPENING	NUMBER	Number of users that have any of the child cursors open
FETCHES	NUMBER	Number of fetches associated with the SQL statement
EXECUTIONS	NUMBER	Number of executions that took place on this object since it was brought into the library cache
PX_SERVERS_EXECUTIONS	NUMBER	Total number of executions performed by parallel execution servers (0 when the statement has never been executed in parallel)
END_OF_FETCH_COUNT	NUMBER	Number of times this cursor was fully executed since the cursor was brought into the library cache. The value of this statistic is not incremented when the cursor is partially executed, either because it failed during the execution or because only the first few rows produced by this cursor are fetched before the cursor is closed or re-executed. By definition, the value of the END_OF_FETCH_COUNT column should be less or equal to the value of the EXECUTIONS column.
USERS_EXECUTING	NUMBER	Number of users executing the statement
LOADS	NUMBER	Number of times the object was either loaded or reloaded
FIRST_LOAD_TIME	VARCHAR2(19)	Timestamp of the parent creation time
INVALIDATIONS	NUMBER	Number of times this child cursor has been invalidated
PARSE_CALLS	NUMBER	Number of parse calls for this child cursor
DISK_READS	NUMBER	Number of disk reads for this child cursor
DIRECT_WRITES	NUMBER	Number of direct writes for this child cursor
DIRECT_READS	NUMBER	Number of direct reads for this child cursor
BUFFER_GETS	NUMBER	Number of buffer gets for this child cursor
APPLICATION_WAIT_TIME	NUMBER	Application wait time (in microseconds)
CONCURRENCY_WAIT_TIME	NUMBER	Concurrency wait time (in microseconds)
CLUSTER_WAIT_TIME	NUMBER	Cluster wait time (in microseconds)
USER_IO_WAIT_TIME	NUMBER	User I/O Wait Time (in microseconds)
PLSQL_EXEC_TIME	NUMBER	PL/SQL execution time (in microseconds)
JAVA_EXEC_TIME	NUMBER	Java execution time (in microseconds)
ROWS_PROCESSED	NUMBER	Total number of rows the parsed SQL statement returns

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Column	Datatype	Description
COMMAND_TYPE	NUMBER	Oracle command type definition
OPTIMIZER_MODE	VARCHAR2(10)	Mode under which the SQL statement was executed
OPTIMIZER_COST	NUMBER	Cost of this query given by the optimizer
OPTIMIZER_ENV	RAW(2000)	Optimizer environment
OPTIMIZER_ENV_HASH_VALUE	NUMBER	Hash value for the optimizer environment
PARSING_USER_ID	NUMBER	User ID of the user who originally built this child cursor
PARSING_SCHEMA_ID	NUMBER	Schema ID that was used to originally build this child cursor
PARSING_SCHEMA_NAME	VARCHAR2(128)	Schema name that was used to originally build this child cursor
KEPT_VERSIONS	NUMBER	Indicates whether this child cursor has been marked to be kept pinned in the cache using the DBMS_SHARED_POOL package
ADDRESS	RAW(4 | 8)	Address of the handle to the parent for this cursor
TYPE_CHK_HEAP	RAW(4 | 8)	Descriptor of the type check heap for this child cursor
HASH_VALUE	NUMBER	Hash value of the parent statement in the library cache
OLD_HASH_VALUE	NUMBER	Old SQL hash value
PLAN_HASH_VALUE	NUMBER	Numeric representation of the current SQL plan for this cursor. Comparing one PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line).
FULL_PLAN_HASH_VALUE	NUMBER	Numeric representation of the complete SQL plan for this cursor. Comparing one FULL_PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line). Note that the FULL_PLAN_HASH_VALUE cannot be compared across databases releases. It is not backward compatible.
CHILD_NUMBER	NUMBER	Number of this child cursor
SERVICE	VARCHAR2(64)	Service name
SERVICE_HASH	NUMBER	Hash value for the name listed in the SERVICE column
MODULE	VARCHAR2(64)	Contains the name of the module that was executing when the SQL statement was first parsed, which is set by calling DBMS_APPLICATION_INFO.SET_MODULE
MODULE_HASH	NUMBER	Hash value of the module listed in the MODULE column
ACTION	VARCHAR2(64)	Contains the name of the action that was executing when the SQL statement was first parsed, which is set by calling DBMS_APPLICATION_INFO.SET_ACTION
ACTION_HASH	NUMBER	Hash value of the action listed in the ACTION column
SERIALIZABLE_ABORTS	NUMBER	Number of times the transaction failed to serialize, producing ORA-08177 errors, per cursor
OUTLINE_CATEGORY	VARCHAR2(64)	If an outline was applied during construction of the cursor, then this column displays the category of that outline. Otherwise the column is left blank.
CPU_TIME	NUMBER	CPU time (in microseconds) used by this cursor for parsing, executing, and fetching

Column	Datatype	Description
ELAPSED_TIME	NUMBER	Elapsed database time (in microseconds) used by this cursor for parsing, executing, and fetching. If the cursor uses parallel execution, then ELAPSED_TIME is the cumulative time for the query coordinator, plus all parallel query worker processes.
		Note that this column displays database time, not wall clock time. In some cases, ELAPSED_TIME can exceed the duration of the query. For example, this can occur for parallel queries.
OUTLINE_SID	NUMBER	Outline session identifier
CHILD_ADDRESS	RAW(4 | 8)	Address of the child cursor
SQLTYPE	NUMBER	Denotes the version of the SQL language used for this statement
REMOTE	VARCHAR2(1)	Indicates whether the cursor is remote mapped (Y) or not (N)
OBJECT_STATUS	VARCHAR2(19)	Status of the cursor:
		• VALID - Valid, authorized without errors
		• VALID_AUTH_ERROR - Valid, authorized with authorization errors
		• VALID_COMPILE_ERROR - Valid, authorized with compilation errors
		• VALID_UNAUTH - Valid, unauthorized
		• INVALID_UNAUTH - Invalid, unauthorized
		• INVALID - Invalid, unauthorized but keep the timestamp
LITERAL_HASH_VALUE	NUMBER	Hash value of the literals which are replaced with system-generated bind variables and are to be matched, when CURSOR_SHARING is used. This is not the hash value for the SQL statement. If CURSOR_SHARING is not used, then the value is 0.
LAST_LOAD_TIME	VARCHAR2(19)	Time at which the query plan was loaded into the library cache
IS_OBSOLETE	VARCHAR2(1)	Indicates whether the cursor has become obsolete (Y) or not (N). This can happen if the number of child cursors is too large.
IS_BIND_SENSITIVE	VARCHAR2(1)	Indicates whether the cursor is bind sensitive (Y) or not (N). A query is considered bind-sensitive if the optimizer peeked at one of its bind variable values when computing predicate selectivities and where a change in a bind variable value may cause the optimizer to generate a different plan.
IS_BIND_AWARE	VARCHAR2(1)	Indicates whether the cursor is bind aware (Y) or not (N). A query is considered bind-aware if it has been marked to use extended cursor sharing. The query would already have been marked as bind-sensitive.
IS_SHAREABLE	VARCHAR2(1)	Indicates whether the cursor can be shared (Y) or not (N)
CHILD_LATCH	NUMBER	Child latch number that is protecting the cursor. This column is obsolete and maintained for backward compatibility.
SQL_PROFILE	VARCHAR2(64)	SQL profile used for this statement, if any
SQL_PATCH	VARCHAR2(128)	SQL patch used for this statement, if any
SQL_PLAN_BASELINE	VARCHAR2(128)	SQL plan baseline used for this statement, if any
PROGRAM_ID	NUMBER	Program identifier
PROGRAM_LINE#	NUMBER	Program line number
EXACT_MATCHING_SIGNATURE	NUMBER	Signature calculated on the normalized SQL text. The normalization includes the removal of white space and the uppercasing of all non-literal strings.
FORCE_MATCHING_SIGNATURE	NUMBER	Signature used when the CURSOR_SHARING parameter is set to FORCE
LAST_ACTIVE_TIME	DATE	Time at which the query plan was last active
BIND_DATA	RAW(2000)	Bind data

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Column	Datatype	Description
TYPECHECK_MEM	NUMBER	Typecheck memory
IO_CELL_OFFLOAD_ELIGIBLE_BYTES	NUMBER	Number of I/O bytes which can be filtered by the Exadata storage system **See Also:** Oracle Exadata Storage Server Software documentation for more information
IO_INTERCONNECT_BYTES	NUMBER	Number of I/O bytes exchanged between Oracle Database and the storage system
PHYSICAL_READ_REQUESTS	NUMBER	Number of physical read I/O requests issued by the monitored SQL
PHYSICAL_READ_BYTES	NUMBER	Number of bytes read from disks by the monitored SQL
PHYSICAL_WRITE_REQUESTS	NUMBER	Number of physical write I/O requests issued by the monitored SQL
PHYSICAL_WRITE_BYTES	NUMBER	Number of bytes written to disks by the monitored SQL
OPTIMIZED_PHY_READ_REQUESTS	NUMBER	Number of physical read I/O requests from Database Smart Flash Cache issued by the monitored SQL
LOCKED_TOTAL	NUMBER	Total number of times the child cursor has been locked
PINNED_TOTAL	NUMBER	Total number of times the child cursor has been pinned
IO_CELL_UNCOMPRESSED_BYTES	NUMBER	Number of uncompressed bytes (that is, size after decompression) that are offloaded to the Exadata cells **See Also:** Oracle Exadata Storage Server Software documentation for more information
IO_CELL_OFFLOAD_RETURNED_BYTES	NUMBER	Number of filtered bytes returned by Exadata cells (that is, the number of bytes returned after processing has been offloaded on the Exadata cells) **See Also:** Oracle Exadata Storage Server Software documentation for more information
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data
IS_REOPTIMIZABLE	VARCHAR2(1)	This column shows whether the next execution matching this child cursor will trigger a reoptimization. The values are: • `Y`: If the next execution will trigger a reoptimization • `R`: If the child cursor contains reoptimization information, but will not trigger reoptimization because the cursor was compiled in reporting mode • `N`: If the child cursor has no reoptimization information
IS_RESOLVED_ADAPTIVE_PLAN	VARCHAR2(1)	This column shows whether all of the adaptive parts of a plan have been resolved to the final plan. Once the plan is resolved, the plan hash value and the plan displayed by `DBMS_XPLAN` will not change through the end of execution. The values for this column are: • `NULL`: If the plan is not adaptive • `Y`: If the plan is fully resolved • `N`: If the plan is not yet fully resolved **See Also:** *Oracle Database PL/SQL Packages and Types Reference* for more information about the `DBMS_XPLAN` package
IM_SCANS	NUMBER	Number of In-Memory Column Store (IM column store) segment scans

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Column	Datatype	Description
IM_SCAN_BYTES_UNCOMPRESSED	NUMBER	Uncompressed size of data scanned from the IM column store
IM_SCAN_BYTES_INMEMORY	NUMBER	In-memory size of data scanned from the IM column store
DDL_NO_INVALIDATE	VARCHAR2(1)	Indicates if a DDL statement updated a dependent object and did not invalidate this cursor. The values are: • N: There has not been a DDL statement that updated a dependent object without invalidating this cursor. • Y: A DDL statement updated a dependent object and did not invalidate this cursor, but the cursor has not executed since this happened. • X: A DDL statement updated a dependent object and did not invalidate this cursor, and the cursor has executed since this happened.
IS_ROLLING_INVALID	VARCHAR2(1)	Indicates if this cursor is rolling invalidated. The values are: • N: This cursor is not rolling invalidated. • Y: This cursor is rolling invalidated, but the cursor has not executed in this state. • X: This cursor is rolling invalidated, and the cursor has executed in this state.
IS_ROLLING_REFRESH_INVALID	VARCHAR2(1)	Indicates if this cursor is rolling invalidated and requires execution time refresh. The values are: • N: This cursor is not a cursor that is rolling invalidated and requires execution time refresh. • Y: This cursor is rolling invalidated and requires execution time refresh, but the cursor has not executed in this state. • X: This cursor is rolling invalidated and requires execution time refresh, and the cursor has executed in this state.
RESULT_CACHE	VARCHAR2(1)	Indicates whether the SQL statement used the result cache (Y) or not (N)
SQL_QUARANTINE	VARCHAR2(128)	If the execution plan for this cursor is quarantined, then this column contains the name of the SQL quarantine configuration (corresponds to the NAME column in the DBA_SQL_QUARANTINE view). Otherwise, this column is null.
AVOIDED_EXECUTIONS	NUMBER	Number of times this cursor was prevented from being used due to the plan being quarantined
HEAP0_LOAD_TIME	DATE	Time at which heap0 of the library cache object was loaded
HEAP6_LOAD_TIME	DATE	Time at which heap6 of the library cache object was loaded A time difference of more than one minute between HEAP0_LOAD_TIME and HEAP6_LOAD_TIME indicates that heap6 has been partially reloaded. For example, the database might have aged out heap6 due to shared pool space pressure and reloaded it at a later time.
RESULT_CACHE_REJECTION_REASON	NUMBER	Numeric code representing the reason for a result cache rejection This column is populated when the query contains a result cache row source (RESULT_CACHE=Y), but fails to create or finish writing a result object. The reason for this failure is recorded as a numeric code in this column. See Block Listing Reasons for a list of rejection codes and recommended remedial actions. If the query does not contain a result cache row source (RESULT_CACHE=N) or the query reused an existing result, then the value of this column is null.

Block Listing Reasons

Table 10-2   Result Cache Rejection Reason Codes

Code	Reason for Result Cache Rejection	Recommended Remedial Action
0	Success	N/A
1000	Result size exceeds per-result limit for in-memory	Increase the value of one or both of the RESULT_CACHE_MAX_SIZE and RESULT_CACHE_MAX_RESULT initialization parameters, or enable spilling results to disk.
1001	Result size exceeds per-result limit on disk	Increase the value of one or both of the RESULT_CACHE_MAX_TEMP_SIZE and RESULT_CACHE_MAX_TEMP_RESULT initialization parameters.
2000	Unable to acquire enqueues	The system is busy; try again later.
2001	Unable to acquire a DML locks on a referenced object	The system is busy; try again later.
2002	Unable to acquire a row cache lock on referenced objects	The system is busy; try again later.
2003	Unable to allocate memory	The system is busy; try again later.
3000	Result cache ID for the query is blocklisted	Remove the cache ID from the blocklist by using the DBMS_RESULT_CACHE package. Exercise caution because the query may have been intentionally blocklisted.
3001	An object referenced in the query is blocklisted	Remove the object ID from the blocklist by using the DBMS_RESULT_CACHE package. Exercise caution because the object may have been intentionally blocklisted.
4001	Result cache is bypassed	The result cache was bypassed with DBMS_RESULT_CACHE.BYPASS or by setting the RESULT_CACHE_MAX_SIZE initialization parameter to 0. Exercise caution because the bypass may have been intentional.
4002	Result cache is corrupt	Reset the result cache by using DBMS_RESULT_CACHE.FLUSH. If that does not resolve the problem, then restart the PDB or instance.
4003	RCBG process is down in Oracle RAC	Restart the Oracle RAC instance
4004	The query was only partially executed	The cursor should be fully executed. If the cursor is being executed as part of PL/SQL, then it should be fetched from until the NO_DATA_FOUND error is returned. If the cursor is being executed as part of a SQL query, then do not cancel it by terminating the process (such as typing CTRL+C).
4005	Temporary space cannot be allocated because the RCBG process is down	Restart the Oracle RAC instance
9999	Unknown reason	Unknown

> **✎ See Also:**
>
> - "V$SQLTEXT"
> - *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_SHARED_POOL package
> - *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_APPLICATION_INFO.SET_MODULE procedure
> - *Oracle Database PL/SQL Packages and Types ReferenceOracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_APPLICATION_INFO.SET_ACTION procedure
> - *Oracle Database PL/SQL Packages and Types ReferenceOracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_XPLAN package

10.63 V$SQL_BIND_CAPTURE

V$SQL_BIND_CAPTURE displays information on bind variables used by SQL cursors. Each row in the view contains information for one bind variable defined in a cursor. This includes:

- Reference to the cursor defining the bind variable

  (hash_value, address) for the parent cursor and (hash_value, child_address) for the child cursor.

- Bind metadata

  Name, position, data type, character set ID, precision, scale, and maximum length of the bind variable.

- Bind data

  One of the bind values used for the bind variable during a past execution of its associated SQL statement. Bind values are not always captured for this view. Bind values are displayed by this view only when the type of the bind variable is simple (this excludes LONG, LOB, and ADT data types) and when the bind variable is used in the WHERE or HAVING clauses of the SQL statement.

Bind capture is disabled when the STATISTICS_LEVEL initialization parameter is set to BASIC. This view can be joined with V$SQLAREA on (HASH_VALUE, ADDRESS) and with V$SQL on (HASH_VALUE, CHILD_ADDRESS).

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Address of the parent cursor
HASH_VALUE	NUMBER	Hash value of the parent cursor in the library cache. The hash value is a fixed index for the view and should always be used to speed up access to the view.
SQL_ID	VARCHAR2(13)	SQL identifier of the parent cursor in the library cache
CHILD_ADDRESS	RAW(4 | 8)	Address of the child cursor
CHILD_NUMBER	NUMBER	Child cursor number
NAME	VARCHAR2(128)	Name of the bind variable

Column	Datatype	Description
POSITION	NUMBER	Position of the bind variable in the SQL statement
DUP_POSITION	NUMBER	If the binding is performed by name and the bind variable is duplicated, then this column gives the position of the primary bind variable.
DATATYPE	NUMBER	Internal identifier for the bind data type. Beginning in Oracle Database 12*c*, a number representing a PL/SQL data type can appear in this column.
DATATYPE_STRING	VARCHAR2(15)	Textual representation of the bind data type. Beginning in Oracle Database 12*c*, a text representation of a PL/SQL-only data type can appear in this column. If the actual data type is a PL/SQL sub type, the name of the data type, not the sub type will be displayed.
CHARACTER_SID	NUMBER	National character set identifier
PRECISION	NUMBER	Precision (for numeric binds)
SCALE	NUMBER	Scale (for numeric binds)
MAX_LENGTH	NUMBER	Maximum bind length
WAS_CAPTURED	VARCHAR2(3)	Indicates whether the bind value was captured (YES) or not (NO)
LAST_CAPTURED	DATE	Date when the bind value was captured. Bind values are captured when SQL statements are executed. To limit the overhead, binds are captured at most every 15 minutes for a given cursor.
VALUE_STRING	VARCHAR2(4000)	Value of the bind represented as a string
VALUE_ANYDATA	ANYDATA	Value of the bind represented using the ANYDATA data type. This representation is useful to programmatically decode the value of the bind variable. This column is NULL if a PL/SQL-only data type appears in the DATATYPE column.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **✎ See Also:**
>
> • "STATISTICS_LEVEL"
> • "V$SQLAREA"
> • "V$SQL"
> • "V$ALL_SQL_BIND_CAPTURE"

10.64 V$SQL_BIND_DATA

V$SQL_BIND_DATA describes information related to bind variables.

V$SQL_BIND_DATA describes, for each distinct bind variable in each cursor owned by the session querying this view:

- Actual bind data, if the bind variable is user defined
- The underlying literal, if the `CURSOR_SHARING` parameter is set to `FORCE` and the bind variable is system generated. (System-generated binds have a value of `256` in the `SHARED_FLAG2` column.)

Column	Datatype	Description
CURSOR_NUM	NUMBER	Cursor number for this bind
POSITION	NUMBER	Bind position
DATATYPE	NUMBER	Internal identifier for the bind data type. Beginning in Oracle Database 12*c*, a number representing a PL/SQL data type can appear in this column.
SHARED_MAX_LEN	NUMBER	Shared maximum length for this bind from the shared cursor object associated with this bind
PRIVATE_MAX_LEN	NUMBER	Private maximum length for this bind sent from the client
ARRAY_SIZE	NUMBER	Maximum number of array elements (for array binds only)
PRECISION	NUMBER	Precision (for numeric binds)
SCALE	NUMBER	Scale (for numeric binds)
SHARED_FLAG	NUMBER	Shared bind data flags
SHARED_FLAG2	NUMBER	Shared bind data flags (continued)
BUF_ADDRESS	RAW(4 | 8)	Bind buffer memory address
BUF_LENGTH	NUMBER	Bind buffer length
VAL_LENGTH	NUMBER	Actual bind value length
BUF_FLAG	NUMBER	Bind buffer flags
INDICATOR	NUMBER	Bind indicator
VALUE	VARCHAR2(4000)	Contents of the bind buffer
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> ✏ **See Also:**
>
> "CURSOR_SHARING"

10.65 V$SQL_BIND_METADATA

`V$SQL_BIND_METADATA` describes metadata related to bind variables.

`V$SQL_BIND_METADATA` describes, for each distinct bind variable in each cursor owned by the session querying this view:

- Bind metadata provided by the client, if the bind variable is user defined

- Metadata based on the underlying literal, if the `CURSOR_SHARING` parameter is set to `FORCE` and the bind variable is system-generated.

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Memory address of the child cursor that owns this bind variable
POSITION	NUMBER	Bind position
DATATYPE	NUMBER	Internal identifier for the bind data type. Beginning in Oracle Database 12*c*, a number representing a PL/SQL data type can appear in this column.
MAX_LENGTH	NUMBER	Maximum length of the bind value
ARRAY_LEN	NUMBER	Maximum number of array elements (for array binds only)
BIND_NAME	VARCHAR2(128)	User-defined or system-generated bind variable name (if used)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> ✎ **See Also:**
>
> "CURSOR_SHARING"

10.66 V$SQL_CS_HISTOGRAM

`V$SQL_CS_HISTOGRAM` summarizes the monitoring information stored by adaptive cursor sharing. This information is used to decide whether to enable extended cursor sharing for a query. It is stored in a histogram, whose bucket's contents are exposed by this view.

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Address of the handle to the parent for this cursor
HASH_VALUE	NUMBER	Hash value of the parent statement in the library cache
SQL_ID	VARCHAR2(13)	SQL identifier of the parent cursor in the library cache
CHILD_NUMBER	NUMBER	Number of the child cursor being monitored
BUCKET_ID	NUMBER	Bucket number of the monitoring histogram
COUNT	NUMBER	Value in this bucket of the histogram
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.67 V$SQL_CS_SELECTIVITY

`V$SQL_CS_SELECTIVITY` exposes the valid selectivity ranges for a child cursor in extended cursor sharing mode. A valid range consists of a low and high value for each predicate containing binds. Each predicate's selectivity (with the current bind value) must fall between the corresponding low and high values in order for the child cursor to be shared.

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Address of the handle to the parent for this cursor
HASH_VALUE	NUMBER	Hash value of the parent statement in the library cache
SQL_ID	VARCHAR2(13)	SQL identifier of the parent cursor in the library cache
CHILD_NUMBER	NUMBER	Number of the child cursor
PREDICATE	VARCHAR2(40)	Predicate whose selectivity must fall between low and high values
RANGE_ID	NUMBER	Identifier for the range used to match up the low and high values for multiple predicates
LOW	VARCHAR2(10)	Lower bound for allowable selectivity
HIGH	VARCHAR2(10)	Upper bound for allowable selectivity
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.68 V$SQL_CS_STATISTICS

`V$SQL_CS_STATISTICS` contains the raw execution statistics used by the monitoring component of adaptive cursor sharing. A sample of the executions is monitored. This view exposes which executions were sampled, and what the statistics were for those executions. The statistics are cumulative for each distinct set of bind values.

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Address of the handle to the parent for this cursor
HASH_VALUE	NUMBER	Hash value of the parent statement in the library cache
SQL_ID	VARCHAR2(13)	SQL identifier of the parent cursor in the library cache
CHILD_NUMBER	NUMBER	Number of the child cursor being monitored
BIND_SET_HASH_VALUE	NUMBER	Hash of the values of the binds
PEEKED	VARCHAR2(1)	Indicates if this is the bind set used to build the cursor (Y) or not (N)
EXECUTIONS	NUMBER	Number of times this bind set has been executed and monitored
ROWS_PROCESSED	NUMBER	Cumulative number of rows processed by all row sources in the plan over all monitored executions with this bind set
BUFFER_GETS	NUMBER	Cumulative number of buffer gets over all monitored executions with this bind set

Column	Datatype	Description
CPU_TIME	NUMBER	Cumulative CPU time (in microseconds) used by this cursor for monitored executions with this bind set
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.69 V$SQL_CURSOR

V$SQL_CURSOR displays debugging information for each cursor associated with the session querying this view.

Column	Datatype	Description
CURNO	NUMBER	Cursor number
FLAG	NUMBER	Flags set in the cursor
STATUS	VARCHAR2(9)	Status of the cursor; that is, what state the cursor is in
PARENT_HANDLE	RAW(4 | 8)	Pointer to the parent cursor handle
PARENT_LOCK	RAW(4 | 8)	Pointer to the parent cursor lock
CHILD_LOCK	RAW(4 | 8)	Pointer to the child cursor lock
CHILD_PIN	RAW(4 | 8)	Pointer to the child cursor pin
PERS_HEAP_MEM	NUMBER	Total amount of memory allocated from persistent heap for this cursor
WORK_HEAP_MEM	NUMBER	Total amount of memory allocated from the work heap for this cursor
BIND_VARS	NUMBER	Total number of bind positions in the query currently parsed into this cursor
DEFINE_VARS	NUMBER	Total number of define variables in the query currently parsed into this cursor
BIND_MEM_LOC	VARCHAR2(64)	Which memory heap the bind variables are stored in: either the UGA or the CGA
INST_FLAG	VARCHAR2(64)	Instantiation object flags
INST_FLAG2	VARCHAR2(64)	Instantiation object flags (continued)
CHILD_HANDLE	RAW(4 | 8)	Pointer to the child cursor handle
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.70 V$SQL_HISTORY

`V$SQL_HISTORY` displays SQL statements tracked by SQL history monitoring.

This view is populated only when the `SQL_HISTORY_ENABLED` initialization parameter is set to `true`.

Column	Datatype	Description
KEY	NUMBER	Artificial key to efficiently read a specific SQL history data entry For internal use only.
SQL_ID	VARCHAR2(13)	SQL identifier of the SQL statement
ELAPSED_TIME	NUMBER	Elapsed time (in microseconds) for the SQL statement
CPU_TIME	NUMBER	CPU time (in microseconds) for the SQL statement
BUFFER_GETS	NUMBER	Number of buffer get operations for the SQL statement
IO_INTERCONNECT_BYTES	NUMBER	Number of I/O bytes exchanged between Oracle Database and the storage system for the SQL statement
PHYSICAL_READ_REQUESTS	NUMBER	Number of physical read I/O requests issued by the SQL statement
PHYSICAL_READ_BYTES	NUMBER	Number of bytes read from disk by the SQL statement
PHYSICAL_WRITE_REQUESTS	NUMBER	Number of physical write I/O requests issued by the SQL statement
PHYSICAL_WRITE_BYTES	NUMBER	Number of bytes written to disk by the SQL statement
PLSQL_EXEC_TIME	NUMBER	PL/SQL execution time (in microseconds) for the SQL statement
JAVA_EXEC_TIME	NUMBER	Java execution time (in microseconds) for the SQL statement
CLUSTER_WAIT_TIME	NUMBER	Cluster wait time (in microseconds) for the SQL statement
CONCURRENCY_WAIT_TIME	NUMBER	Concurrency wait time (in microseconds) for the SQL statement
APPLICATION_WAIT_TIME	NUMBER	Application wait time (in microseconds) for the SQL statement
USER_IO_WAIT_TIME	NUMBER	User I/O Wait Time (in microseconds) for the SQL statement
IO_CELL_UNCOMPRESSED_BYTES	NUMBER	Number of uncompressed bytes (that is, size after decompression) that are offloaded to the Exadata cells for the SQL statement **See Also:** Oracle Exadata Storage Server Software documentation for more information
IO_CELL_OFFLOAD_ELIGIBLE_BYTES	NUMBER	Number of I/O bytes that can be filtered by the Exadata storage system for the SQL statement **See Also:** Oracle Exadata Storage Server Software documentation for more information
SQL_TEXT	VARCHAR2(100)	Up to the first 100 characters of the text of the SQL statement
PLAN_HASH_VALUE	NUMBER	SQL plan hash value
SQL_EXEC_ID	NUMBER	SQL execution identifier
SQL_EXEC_START	DATE	Time at which the SQL statement execution started
LAST_ACTIVE_TIME	DATE	Time at which the SQL statement execution was last active
SESSION_USER#	NUMBER	Unique ID number for the session user who issued the SQL statement
CURRENT_USER#	NUMBER	Unique number identifying the current user
CHILD_NUMBER	NUMBER	Child number of the SQL statement
SID	NUMBER	Session ID for the SQL statement's session
SESSION_SERIAL#	NUMBER	Session serial number for the SQL statement's session

ORACLE

Column	Datatype	Description
MODULE_HASH	NUMBER	Hash value for the module name corresponding to the executing session
ACTION_HASH	NUMBER	Hash value for the action name corresponding to the executing session
SERVICE_HASH	NUMBER	Hash value for the service name corresponding to the executing session
IS_FULL_SQLTEXT	VARCHAR2(1)	Indicates whether the SQL_TEXT column displays the entire SQL text (Y) or not (N)
ERROR_SIGNALLED	VARCHAR2(1)	Indicates whether the SQL statement generated an error (Y) or not (N)
ERROR_NUMBER	NUMBER	If the SQL statement failed to execute, the error number (for example, 932 for error ORA-00932)
ERROR_FACILITY	VARCHAR2(4)	If the SQL statement failed to execute, the error facility (for example, ORA for error ORA-00932)
STATEMENT_TYPE	VARCHAR2(5)	Type of SQL statement: • DDL • DML • PLSQL • QUERY • OTHER
IS_PARALLEL	VARCHAR2(1)	Indicates whether the SQL ran as a parallel execution (Y) or not (N)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

> **See Also:**
>
> "SQL_HISTORY_ENABLED"

10.71 V$SQL_JOIN_FILTER

V$SQL_JOIN_FILTER displays performance information about the characteristics of join filters when they are used for a parallel cursor. (A join filter is a bitmap filter applied to table rows before a join operation in order to avoid parallel communication.)

Column	Datatype	Description
QC_SESSION_ID	NUMBER	QC (Query Coordinator) session ID of the given cursor for the given parallel query
QC_INSTANCE_ID	NUMBER	QC (Query Coordinator) instance ID of the given cursor for the given parallel query
SQL_PLAN_HASH_VALUE	NUMBER	SQL plan hash value of the given cursor for the given parallel query
FILTER_ID	NUMBER	An ID that identifies the join filter in the given cursor and corresponds to the filter ID in the execution plan
LENGTH	NUMBER	Total size of the join filter field
BITS_SET	NUMBER	Number of bits set in this filter
FILTERED	NUMBER	Number of rows seen by the join filter
PROBED	NUMBER	Number of rows of the right table that have been tested against the bitmap filter. This is the sum of the filtered rows plus the non-filtered rows.
ACTIVE	NUMBER	Whether the filter is active (Yes) or not (No)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.72 V$SQL_MONITOR

V$SQL_MONITOR displays SQL statements whose execution have been (or are being) monitored by Oracle.

This view contains global, high-level information about simple and composite database operations.

Oracle Database monitors simple database operations, which are top SQL statements and PL/SQL subprograms, when any of the following conditions is true:

• The operations run in parallel.

• The operations have consumed at least 5 seconds of CPU or I/O time in a single execution.

• Tracking for the operations is forced by the /*+ MONITOR */ hint.

For simple database operations, monitoring statistics are not cumulative over several executions. In this case, one entry in V$SQL_MONITOR is dedicated to a single execution of a SQL statement. If the database monitors two executions of the same SQL statement, then each execution has a separate entry in V$SQL_MONITOR.

For simple database operations, V$SQL_MONITOR has one entry for the parallel execution coordinator process and one entry for each parallel execution server process. Each entry has corresponding entries in V$SQL_PLAN_MONITOR. Because the processes allocated for the parallel execution of a SQL statement are cooperating for the same execution, these entries share the same execution key (the combination of SQL_ID, SQL_EXEC_START, and SQL_EXEC_ID).

Oracle Database monitors composite database operations when either of the following conditions is true:

- A database operation was started with `DBMS_SQL_MONITOR.BEGIN_OPERATION` and the operation has consumed at least 5 seconds of CPU or I/O time.

- Tracking for the operation is forced by setting `FORCE_TRACKING` to `Y` in `DBMS_SQL_MONITOR.BEGIN_OPERATION`.

For composite database operations, each row contains an operation whose statistics are accumulated over the SQL statements and PL/SQL subprograms that run in the same session as part of the operation.

The `V$SQL_MONITOR` view contains a subset of the statistics available in `V$SQL`. However, unlike `V$SQL`, monitoring statistics are not cumulative over several executions. Instead, one entry in `V$SQL_MONITOR` is dedicated to a single execution of a SQL statement. If the database monitors two executions of the same SQL statement, then each execution has a separate entry in `V$SQL_MONITOR`.

The primary key is the combination of the columns `SQL_ID`, `SQL_EXEC_START`, and `SQL_EXEC_ID`.

`V$SQL_MONITOR` has one entry for the parallel execution coordinator process, and one entry for each parallel execution server process. Each entry has corresponding entries in `V$SQL_PLAN_MONITOR`. Because the processes allocated for the parallel execution of a SQL statement are cooperating for the same execution, these entries share the same execution key (the composite `SQL_ID`, `SQL_EXEC_START`, and `SQL_EXEC_ID`). You can aggregate the execution key to determine the overall statistics for a parallel execution.

When the SQL statement being monitored is executing, statistics in `V$SQL_MONITOR` are generally refreshed in near real time, once every second. Once the execution ends, monitoring information is not deleted immediately. Instead, it is kept in `V$SQL_MONITOR` for at least one minute. The entry will eventually be deleted to reclaim its space as new statements are monitored.

Column	Datatype	Description
KEY	NUMBER	Artificial join key to efficiently join `V$SQL_MONITOR` with its corresponding plan level monitoring statistics stored in `V$SQL_PLAN_MONITOR`
REPORT_ID	NUMBER	Unique ID of the XML report stored in Automatic Workload Repository (AWR) for this monitored entity
STATUS	VARCHAR2(19)	SQL execution status: • `QUEUED` - SQL statement is queued • `EXECUTING` - SQL statement is still executing • `DONE (ERROR)` - Execution terminated with an error • `DONE (FIRST N ROWS)` - Execution terminated by the application before all rows were fetched • `DONE (ALL ROWS)` - Execution terminated and all rows were fetched • `DONE` - Execution terminated (parallel execution)
USER#	NUMBER	User ID of the database user who issued the SQL being monitored
USERNAME	VARCHAR2(128)	User name of the database user who issued the SQL being monitored
MODULE	VARCHAR2(64)	Name of the executing module when sampled, as set by the `DBMS_APPLICATION_INFO.SET_MODULE` procedure
ACTION	VARCHAR2(64)	Name of the executing action when sampled, as set by the `DBMS_APPLICATION_INFO.SET_ACTION` procedure
SERVICE_NAME	VARCHAR2(64)	Service name of the user session

Column	Datatype	Description
CLIENT_IDENTIFIER	VARCHAR2(64)	Client identifier from the user session
CLIENT_INFO	VARCHAR2(64)	Client information for the user session
PROGRAM	VARCHAR2(84)	Name of the operating system program that issued the monitored SQL
PLSQL_ENTRY_OBJECT_ID	NUMBER	Object ID of the top-most PL/SQL subprogram on the stack; NULL if there is no PL/SQL subprogram on the stack
PLSQL_ENTRY_SUBPROGRAM_ID	NUMBER	Subprogram ID of the top-most PL/SQL subprogram on the stack; NULL if there is no PL/SQL subprogram on the stack
PLSQL_OBJECT_ID	NUMBER	Object ID of the currently executing PL/SQL subprogram; NULL if executing SQL
PLSQL_SUBPROGRAM_ID	NUMBER	Subprogram ID of the currently executing PL/SQL object; NULL if executing SQL
FIRST_REFRESH_TIME	DATE	Time when monitoring of the SQL statement started, generally a few seconds after execution start time
LAST_REFRESH_TIME	DATE	Time when statistics in V$SQL_MONITOR were last updated for the SQL statement. Statistics are generally refreshed every second when the statement executes.
REFRESH_COUNT	NUMBER	Number of times V$SQL_MONITOR statistics have been refreshed (generally once every second when the SQL statement executes)
DBOP_EXEC_ID	NUMBER	Database operation execution identifier for the current execution. If the type is SQL, the DBOP_EXEC_ID will be NULL.
DBOP_NAME	VARCHAR2(30)	Database operation name. If the type is SQL, the DBOP_NAME will be NULL.
SID	NUMBER	Session identifier executing (or having executed) the SQL statement being monitored
PROCESS_NAME	VARCHAR2(5)	Process name identifier executing (or having executed)the statement; ora if the process is foreground, else the background process name (for example, p001 for PX server p001)
SQL_ID	VARCHAR2(13)	SQL identifier of the statement being monitored
SQL_TEXT	VARCHAR2(2000)	Up to the first 2000 characters of the text of the SQL being monitored
IS_FULL_SQLTEXT	VARCHAR2(1)	Indicates whether the SQL_TEXT column has the entire SQL text (Y) or not (N)
SQL_EXEC_START	DATE	Time when the execution started
SQL_EXEC_ID	NUMBER	Execution identifier. Together, the three columns SQL_ID, SQL_EXEC_START, and SQL_EXEC_ID represent the execution key. The execution key is used to uniquely identify one execution of the SQL statement.
SQL_PLAN_HASH_VALUE	NUMBER	SQL plan hash value
SQL_FULL_PLAN_HASH_VALUE	NUMBER	Numeric representation of the complete SQL plan for this cursor. Comparing one SQL_FULL_PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line). Note that the SQL_FULL_PLAN_HASH_VALUE cannot be compared across databases releases. It is not backward compatible.
EXACT_MATCHING_SIGNATURE	NUMBER	Signature calculated on the normalized SQL text. The normalization includes the removal of white space and the uppercasing of all non-literal strings.
FORCE_MATCHING_SIGNATURE	NUMBER	Same as EXACT_MATCHING_SIGNATURE but literals in the SQL text are replaced by binds

Column	Datatype	Description
SQL_CHILD_ADDRESS	RAW(4 | 8)	Address of the child cursor (can be used with SQL_ID to join with V$SQL)
SESSION_SERIAL#	NUMBER	Session serial number executing the statement being monitored
PX_IS_CROSS_INSTANCE	VARCHAR2(1)	Indicates whether the SQL statement ran parallel across multiple instances (Y) or not (N)
PX_MAXDOP	NUMBER	Maximum degree of parallelism for any plan operation executed on behalf of the monitored SQL
PX_MAXDOP_INSTANCES	NUMBER	Number of database instances touched at the maximum degree of parallelism
PX_SERVERS_REQUESTED	NUMBER	Total number of parallel execution servers requested to execute the monitored SQL
PX_SERVERS_ALLOCATED	NUMBER	Actual number of parallel execution servers allocated to execute the query
PX_SERVER#	NUMBER	Logical parallel execution server process number executing (or having executed) the statement being monitored; NULL if this monitoring entry is not associated with an execution server. This is a logical number within the parallel server set (see SERVER# in V$PX_SESSION).
PX_SERVER_GROUP	NUMBER	Logical parallel execution server group number to which PX_SERVER# belongs (see SERVER_GROUP in V$PX_SESSION); NULL if this monitoring entry is not associated with a parallel execution server. This value is generally 1 unless the SQL statement has one or more parallel sub-queries.
PX_SERVER_SET	NUMBER	Number (1 or 2) of the logical set of parallel execution servers to which PX_SERVER# belongs (see SERVER_SET in V$PX_SESSION); NULL if this monitoring entry is not associated with a parallel execution server
PX_QCINST_ID	NUMBER	Instance identifier where the parallel execution coordinator runs; NULL if PX_SERVER# is NULL
PX_QCSID	NUMBER	Session identifier for the parallel execution coordinator; NULL if PX_SERVER# is NULL
ERROR_NUMBER	VARCHAR2(40)	Error number encountered in case a SQL fails to execute successfully (for example, 932 in case of ORA-00932)
ERROR_FACILITY	VARCHAR2(4)	Error facility in case a SQL fails to execute successfully (for example, ORA in case of ORA-00932)
ERROR_MESSAGE	VARCHAR2(256)	Detailed error message displayed corresponding to the error number and error facility when a SQL fails to execute successfully
BINDS_XML	CLOB	Information about bind variables used with the SQL, such as name, position, value, data type, and so on (stored in XML format)

Column	Datatype	Description
OTHER_XML	CLOB	Provides extra information specific to an execution step of the execution plan. The content of this column is structured using XML, which allows multiple pieces of information to be stored, including the following: • Name of the schema against which the query was parsed • Release number of the Oracle Database that produced the explain plan • Hash value associated with the execution plan • Name (if any) of the outline or the SQL profile used to build the execution plan • Indication of whether or not dynamic statistics were used to produce the plan • The outline data, a set of optimizer hints that can be used to regenerate the same plan • Additional data that describes the relationship between rows in the plan table and subplans of adaptive plans
ELAPSED_TIME	NUMBER	Elapsed time (in microseconds); updated as the statement executes
QUEUING_TIME	NUMBER	Duration of time (in microseconds) spent by SQL in the statement queue
CPU_TIME	NUMBER	CPU time (in microseconds); updated as the statement executes
FETCHES	NUMBER	Number of fetches associated with the SQL statement; updated as the statement executes
BUFFER_GETS	NUMBER	Number of buffer get operations; updated as the statement executes
DISK_READS	NUMBER	Number of disk reads; updated as the statement executes
DIRECT_WRITES	NUMBER	Number of direct writes; updated as the statement executes
IO_INTERCONNECT_BYTES	NUMBER	Number of I/O bytes exchanged between Oracle Database and the storage system
PHYSICAL_READ_REQUESTS	NUMBER	Number of physical read I/O requests issued by the monitored SQL
PHYSICAL_READ_BYTES	NUMBER	Number of bytes read from disks by the monitored SQL
PHYSICAL_WRITE_REQUESTS	NUMBER	Number of physical write I/O requests issued by the monitored SQL
PHYSICAL_WRITE_BYTES	NUMBER	Number of bytes written to disks by the monitored SQL
APPLICATION_WAIT_TIME	NUMBER	Application wait time (in microseconds); updated as the statement executes
CONCURRENCY_WAIT_TIME	NUMBER	Concurrency wait time (in microseconds); updated as the statement executes
CLUSTER_WAIT_TIME	NUMBER	Cluster wait time (in microseconds); updated as the statement executes
USER_IO_WAIT_TIME	NUMBER	User I/O Wait Time (in microseconds); updated as the statement executes
PLSQL_EXEC_TIME	NUMBER	PL/SQL execution time (in microseconds); updated as the statement executes
JAVA_EXEC_TIME	NUMBER	Java execution time (in microseconds); updated as the statement executes

Column	Datatype	Description
RM_LAST_ACTION	VARCHAR2(48)	The most recent action that was taken on this SQL operation by Resource Manager. Its value is one of the following: • CANCEL_SQL • KILL_SESSION • LOG_ONLY • SWITCH TO <CG NAME> For the last value, <CG NAME> is the name of the consumer group that the SQL operation was switched to. If the Resource Plan has since been changed then <CG NAME> is the ID of the consumer group.
RM_LAST_ACTION_REASON	VARCHAR2(128)	The reason for the most recent action that was taken on this SQL operation by Resource Manager. Its value is one of the following: • SWITCH_CPU_TIME • SWITCH_IO_REQS • SWITCH_IO_MBS • SWITCH_ELAPSED_TIME • SWITCH_IO_LOGICAL
RM_LAST_ACTION_TIME	DATE	The time of the most recent action that was taken on this SQL operation by Resource Manager
RM_CONSUMER_GROUP	VARCHAR2(128)	The current consumer group for this SQL operation
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data
CON_NAME	VARCHAR2(128)	Container name of the object. The value of this column is NULL in non-CDBs.
ECID	VARCHAR2(64)	Execution context identifier (sent by Application Server)
IS_ADAPTIVE_PLAN	VARCHAR2(1)	Indicates whether the statistics are from an adaptive plan (Y) or not (N).
IS_FINAL_PLAN	VARCHAR2(1)	Indicates whether the statistics are from the final plan (Y) or not (N).
IN_DBOP_NAME	VARCHAR2(30)	If the SQL that is monitored was executed by a session that was also monitored by a database operation (DBOP), then this column specifies the name of that DBOP
IN_DBOP_EXEC_ID	NUMBER	If the SQL that is monitored was executed by a session that was also monitored by a database operation (DBOP), then this column specifies the execution ID of that DBO
IO_CELL_UNCOMPRESSED_BYTES	NUMBER	Number of uncompressed bytes (that is, size after decompression) that are offloaded to the Exadata cells **See Also:** Oracle Exadata Storage Server Software documentation for more information
IO_CELL_OFFLOAD_ELIGIBLE_BYTES	NUMBER	Number of I/O bytes which can be filtered by the Exadata storage system **See Also:** Oracle Exadata Storage Server Software documentation for more information

Column	Datatype	Description
IO_CELL_OFFLOAD_RETURNED _BYTES	NUMBER	Number of filtered bytes returned by Exadata cells (that is, the number of bytes returned after processing has been offloaded on the Exadata cells) **See Also:** Oracle Exadata Storage Server Software documentation for more information
CURRENT_USER#	NUMBER	Unique number identifying the current user
CURRENT_USERNAME	VARCHAR2(128)	Username for the current user
PDB_REPORT_ID	NUMBER	Unique ID of the XML report of a PDB monitored entity that is stored in the CDB's Automatic Workload Repository (AWR) tables
PDB_ID	NUMBER	Container ID of the PDB
PARSING_SCHEMA#	NUMBER	Identifier of the parsing schema
PARSING_SCHEMA_NAME	VARCHAR2(128)	Name of the parsing schema

> ✎ **See Also:**
>
> - "V$SQL_PLAN_MONITOR"
> - "V$ALL_SQL_MONITOR"
> - *Oracle Database SQL Tuning Guide* for more information about monitoring database operations
> - *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_APPLICATION_INFO.SET_MODULE procedure
> - *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_APPLICATION_INFO.SET_ACTION procedure

10.73 V$SQL_MONITOR_SESSSTAT

V$SQL_MONITOR_SESSSTAT displays information about statistics that are exposed in V$SESSTAT.

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data
KEY	NUMBER	Artificial join key to efficiently join with other database operation views
STATISTIC#	NUMBER	Statistic number
VALUE	NUMBER	Value associated with the statistic

> **See Also:**
>
> "V$SESSTAT"

10.74 V$SQL_MONITOR_STATNAME

`V$SQL_MONITOR_STATNAME` provides information about the plan line statistics exposed in `V$SQL_PLAN_MONITOR`. A plan line statistic is identified by its group ID (column `GROUP_ID`) and its ID (column `ID`).

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data
ID	NUMBER	Plan line statistic ID
GROUP_ID	NUMBER	Plan line statistic group ID
NAME	VARCHAR2(40)	Short name for the statistic
DESCRIPTION	VARCHAR2(200)	Short description for the statistic
TYPE	NUMBER	Reserved for internal use
FLAGS	NUMBER	Reserved for internal use

> **See Also:**
>
> "V$SQL_PLAN_MONITOR"

10.75 V$SQL_OPTIMIZER_ENV

`V$SQL_OPTIMIZER_ENV` displays the contents of the optimizer environment used to build the execution plan of a SQL cursor. This view can be joined with `V$SQLAREA` on (`HASH_VALUE`, `ADDRESS`) and with `V$SQL` on (`HASH_VALUE`, `CHILD_ADDRESS`).

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Address of the parent cursor
HASH_VALUE	NUMBER	Hash value of the parent cursor in the library cache. The hash value is the fixed index for the view and should be used when querying `V$SQL_OPTIMIZER_ENV` to avoid scanning the entire library cache.
SQL_ID	VARCHAR2(13)	SQL identifier
CHILD_ADDRESS	RAW(4 | 8)	Address of the child cursor
CHILD_NUMBER	NUMBER	Child cursor number

Column	Datatype	Description
ID	NUMBER	Unique identifier of the parameter in the optimizer environment
NAME	VARCHAR2(40)	Name of the parameter
ISDEFAULT	VARCHAR2(3)	Indicates whether the parameter is set to the default value (YES) or not (NO)
VALUE	VARCHAR2(25)	Value of the parameter
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.76 V$SQL_PLAN

V$SQL_PLAN contains the execution plan information for each child cursor loaded in the library cache.

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Address of the handle to the parent for this cursor
HASH_VALUE	NUMBER	Hash value of the parent statement in the library cache. The two columns ADDRESS and HASH_VALUE can be used to join with V$SQLAREA to add the cursor-specific information.
SQL_ID	VARCHAR2(13)	SQL identifier of the parent cursor in the library cache
PLAN_HASH_VALUE	NUMBER	Numerical representation of the current SQL plan for this cursor. Comparing one PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line).
FULL_PLAN_HASH_VALUE	NUMBER	Numeric representation of the complete SQL plan for this cursor. Comparing one FULL_PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line). Note that the FULL_PLAN_HASH_VALUE cannot be compared across databases releases. It is not backward compatible.
CHILD_ADDRESS	RAW(4 | 8)	Address of the child cursor
CHILD_NUMBER	NUMBER	Number of the child cursor that uses this execution plan. The columns ADDRESS, HASH_VALUE, and CHILD_NUMBER can be used to join with V$SQL to add the child cursor-specific information.
TIMESTAMP	DATE	Date and time when the execution plan was generated
OPERATION	VARCHAR2(30)	Name of the internal operation performed in this step (for example, TABLE ACCESS)
OPTIONS	VARCHAR2(30)	A variation on the operation described in the OPERATION column (for example, FULL)
OBJECT_NODE	VARCHAR2(40)	Name of the database link used to reference the object (a table name or view name). For local queries that use parallel execution, this column describes the order in which output from operations is consumed.
OBJECT#	NUMBER	Object number of the table or the index

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Column	Datatype	Description
OBJECT_OWNER	VARCHAR2(128)	Name of the user who owns the schema containing the table or index
OBJECT_NAME	VARCHAR2(128)	Name of the table or index
OBJECT_ALIAS	VARCHAR2(261)	Alias for the object
OBJECT_TYPE	VARCHAR2(20)	Type of the object
OPTIMIZER	VARCHAR2(20)	Current mode of the optimizer for the first row in the plan (statement line), for example, ALL_ROWS. When the operation is a database access (for example, TABLE ACCESS), this column indicates whether or not the object is analyzed.
ID	NUMBER	A number assigned to each step in the execution plan
PARENT_ID	NUMBER	ID of the next execution step that operates on the output of the current step
DEPTH	NUMBER	Depth (or level) of the operation in the tree. It is not necessary to issue a CONNECT BY statement to get the level information, which is generally used to indent the rows from the PLAN_TABLE table. The root operation (statement) is level 0.
POSITION	NUMBER	Order of processing for all operations that have the same PARENT_ID
SEARCH_COLUMNS	NUMBER	Number of index columns with start and stop keys (that is, the number of columns with matching predicates)
COST	NUMBER	Cost of the operation as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is null.
CARDINALITY	NUMBER	Estimate, by the cost-based optimizer, of the number of rows produced by the operation
BYTES	NUMBER	Estimate, by the cost-based optimizer, of the number of bytes produced by the operation
OTHER_TAG	VARCHAR2(35)	Describes the contents of the OTHER column. See EXPLAIN PLAN for values.
PARTITION_START	VARCHAR2(64)	Start partition of a range of accessed partitions
PARTITION_STOP	VARCHAR2(64)	Stop partition of a range of accessed partitions
PARTITION_ID	NUMBER	Step that computes the pair of values of the PARTITION_START and PARTITION_STOP columns
OTHER	VARCHAR2(4000)	Other information specific to the execution step that users may find useful. See EXPLAIN PLAN for values.
DISTRIBUTION	VARCHAR2(20)	Stores the method used to distribute rows from producer query servers to consumer query servers
CPU_COST	NUMBER	CPU cost of the operation as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is null.
IO_COST	NUMBER	I/O cost of the operation as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is null.
TEMP_SPACE	NUMBER	Temporary space usage of the operation (sort or hash-join) as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is null.
ACCESS_PREDICATES	VARCHAR2(4000)	Predicates used to locate rows in an access structure. For example, start or stop predicates for an index range scan.
FILTER_PREDICATES	VARCHAR2(4000)	Predicates used to filter rows before producing them

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Column	Datatype	Description
PROJECTION	VARCHAR2(4000)	Expressions produced by the operation
TIME	NUMBER	Elapsed time (in seconds) of the operation as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is null.
QBLOCK_NAME	VARCHAR2(128)	Name of the query block
REMARKS	VARCHAR2(4000)	Remarks
OTHER_XML	CLOB	Provides extra information specific to an execution step of the execution plan. The content of this column is structured using XML, which allows multiple pieces of information to be stored, including the following: • Name of the schema against which the query was parsed • Release number of the Oracle Database that produced the explain plan • Hash value associated with the execution plan • Name (if any) of the outline or the SQL profile used to build the execution plan • Indication of whether or not dynamic statistics were used to produce the plan • The outline data, a set of optimizer hints that can be used to regenerate the same plan • Additional data that describes the relationship between rows in the plan table and subplans of adaptive plans
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • `n`: Where *n* is the applicable container ID for the rows containing data

10.77 V$SQL_PLAN_MONITOR

V$SQL_PLAN_MONITOR displays plan level monitoring statistics for each SQL statement found in V$SQL_MONITOR. Each row in V$SQL_PLAN_MONITOR corresponds to an operation of the execution plan being monitored. As with V$SQL_MONITOR, statistics exposed in V$SQL_PLAN_MONITOR are generally updated every second when the statement executes. These statistics are recycled on the same basis as V$SQL_MONITOR.

To eliminate the overhead of SQL plan monitoring, statistics collected for each operation of the plan do not record timing information such as elapsed time, CPU time, or I/O time. Instead, this timing information can be estimated quite accurately by joining V$SQL_PLAN_MONITOR with V$ACTIVE_SESSION_HISTORY on SQL_ID, SQL_EXEC_START, SQL_EXEC_ID, and SQL_PLAN_LINE_ID (simply named PLAN_LINE_ID in V$SQL_PLAN_MONITOR). The result of that join is a sample of the activity performed by each operation in the plan, from which an estimate of CPU time and wait time can be derived. This can be achieved by breaking statement level monitoring time statistics found in V$SQL_MONITOR in proportion to the number of samples found in V$ACTIVE_SESSION_HISTORY for the corresponding activity type.

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data
KEY	NUMBER	Foreign key to efficiently join V$SQL_PLAN_MONITOR with V$SQL_MONITOR (see V$SQL_MONITOR)
STATUS	VARCHAR2(19)	SQL execution status: • `EXECUTING` - SQL statement is still executing • `DONE (ERROR)` - Execution terminated with an error • `DONE (FIRST N ROWS)` - Execution terminated by the application before all rows were fetched • `DONE (ALL ROWS)` - Execution terminated and all rows were fetched • `DONE` - Execution terminated (parallel execution)
FIRST_REFRESH_TIME	DATE	Time when monitoring of the SQL statement started
LAST_REFRESH_TIME	DATE	Time when statistics were last updated for the SQL statement
FIRST_CHANGE_TIME	DATE	First time a row was produced by this operation
LAST_CHANGE_TIME	DATE	Last time a row was produced by this operation
REFRESH_COUNT	NUMBER	Number of times statistics have been refreshed
SID	NUMBER	Session identifier executing (or having executed) the SQL statement being monitored
PROCESS_NAME	VARCHAR2(5)	Process name identifier
SQL_ID	VARCHAR2(13)	SQL identifier
SQL_EXEC_START	DATE	Time when the execution started
SQL_EXEC_ID	NUMBER	Execution identifier
SQL_PLAN_HASH_VALUE	NUMBER	SQL plan hash value
SQL_CHILD_ADDRESS	RAW(4 | 8)	Address of the child cursor
PLAN_PARENT_ID	NUMBER	ID of the next execution step that operates on the output of the current step
PLAN_LINE_ID	NUMBER	Plan line number for the entry
PLAN_OPERATION	VARCHAR2(30)	Plan operation name (from V$SQL_PLAN)
PLAN_OPTIONS	VARCHAR2(30)	Plan option name (from V$SQL_PLAN)
PLAN_OBJECT_OWNER	VARCHAR2(128)	Name of the user who owns the schema containing the table or index
PLAN_OBJECT_NAME	VARCHAR2(128)	Name of the table or index
PLAN_OBJECT_TYPE	VARCHAR2(20)	Type of the object
PLAN_DEPTH	NUMBER	Depth (or level) of the operation in the tree. It is not necessary to issue a `CONNECT BY` statement to get the level information, which is generally used to indent the rows from the PLAN_TABLE table. The root operation (statement) is level 0.
PLAN_POSITION	NUMBER	Order of processing for all operations that have the same PARENT_ID
PLAN_COST	NUMBER	Cost of the operation as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is NULL.

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Column	Datatype	Description
PLAN_CARDINALITY	NUMBER	Estimate, by the cost-based optimizer, of the number of rows produced by the operation
PLAN_BYTES	NUMBER	Estimate, by the cost-based optimizer, of the number of bytes produced by the operation
PLAN_TIME	NUMBER	Elapsed time (in seconds) of the operation as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is NULL.
PLAN_PARTITION_START	VARCHAR2(64)	Start partition of a range of accessed partitions
PLAN_PARTITION_STOP	VARCHAR2(64)	Stop partition of a range of accessed partitions
PLAN_CPU_COST	NUMBER	CPU cost of the operation as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is NULL.
PLAN_IO_COST	NUMBER	I/O cost of the operation as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is NULL.
PLAN_TEMP_SPACE	NUMBER	Temporary space usage of the operation (sort or hash-join) as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is NULL.
STARTS	NUMBER	Number of times this operation was executed. For example, an operation is executed multiple times when it is on the right side of a nested-loop join (once for each row of the left input of that nested-loop join).
OUTPUT_ROWS	NUMBER	Number of rows produced by this operation since the execution started. This number is cumulated for all executions of this operation. Divide by the value of the STARTS column to compute the average number of rows per execution of the operation. Note that the value in the STARTS column is equal to or higher than the value in the OUTPUT_ROWS column. The value will usually be equal, but depending on internal optimizations a higher value may be seen.
IO_INTERCONNECT_BYTES	NUMBER	Number of I/O bytes exchanged between Oracle Database and the storage system. Maintained only after Oracle starts to monitor the execution.
PHYSICAL_READ_REQUESTS	NUMBER	Number of physical read I/O requests issued by the monitored SQL. Maintained only after Oracle starts to monitor the execution.
PHYSICAL_READ_BYTES	NUMBER	Number of bytes read from disks by the monitored SQL. Maintained only after Oracle starts to monitor the execution.
PHYSICAL_WRITE_REQUESTS	NUMBER	Number of physical write I/O requests issued by the monitored SQL. Maintained only after Oracle starts to monitor the execution.
PHYSICAL_WRITE_BYTES	NUMBER	Number of bytes written to disks by the monitored SQL. Maintained only after Oracle starts to monitor the execution.
WORKAREA_MEM	NUMBER	Amount of memory (in bytes) used by the operation when the query is executing; NULL if the execution is done. This applies only to operations using a work area, such as sort, hash-join, group-by, and so on.
WORKAREA_MAX_MEM	NUMBER	Maximum value (in bytes) for WORKAREA_MEM; NULL if the operation is not using a work area. When the execution is finished, this value will hold the maximum amount of memory consumed by this operation during the execution of the statement.
WORKAREA_TEMPSEG	NUMBER	Amount of temporary space (in bytes) used by the operation when the query is executing; NULL if the operation has not spilled to disk or if the execution is finished

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Column	Datatype	Description
WORKAREA_MAX_TEMPSEG	NUMBER	Maximum value (in bytes) for WORKAREA_TEMPSEG; NULL if this operation never spilled to disk. When the execution is done, this value will hold the maximum amount of temporary space consumed by this operation during the entire execution.
OTHERSTAT_GROUP_ID	NUMBER	Plan line statistic group identifier (see GROUP_ID column in V$SQL_MONITOR_STATNAME)
OTHERSTAT_1_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 1 of that plan line
OTHERSTAT_1_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_1_VALUE	NUMBER	Value of statistic number 1 of that plan line
OTHERSTAT_2_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 2 of that plan line
OTHERSTAT_2_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_2_VALUE	NUMBER	Value of statistic number 2 of that plan line
OTHERSTAT_3_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 3 of that plan line
OTHERSTAT_3_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_3_VALUE	NUMBER	Value of statistic number 3 of that plan line
OTHERSTAT_4_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 4 of that plan line
OTHERSTAT_4_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_4_VALUE	NUMBER	Value of statistic number 4 of that plan line
OTHERSTAT_5_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 5 of that plan line
OTHERSTAT_5_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_5_VALUE	NUMBER	Value of statistic number 5 of that plan line
OTHERSTAT_6_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 6 of that plan line
OTHERSTAT_6_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_6_VALUE	NUMBER	Value of statistic number 6 of that plan line
OTHERSTAT_7_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 7 of that plan line
OTHERSTAT_7_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_7_VALUE	NUMBER	Value of statistic number 7 of that plan line
OTHERSTAT_8_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 8 of that plan line
OTHERSTAT_8_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_8_VALUE	NUMBER	Value of statistic number 8 of that plan line
OTHERSTAT_9_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 9 of that plan line
OTHERSTAT_9_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_9_VALUE	NUMBER	Value of statistic number 9 of that plan line
OTHERSTAT_10_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 10 of that plan line

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Column	Datatype	Description
OTHERSTAT_10_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_10_VALUE	NUMBER	Value of statistic number 10 of that plan line
OTHERSTAT_11_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 11 of that plan line
OTHERSTAT_11_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_11_VALUE	NUMBER	Value of statistic number 11 of that plan line
OTHERSTAT_12_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 12 of that plan line
OTHERSTAT_12_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_12_VALUE	NUMBER	Value of statistic number 12 of that plan line
OTHERSTAT_13_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 13 of that plan line
OTHERSTAT_13_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_13_VALUE	NUMBER	Value of statistic number 13 of that plan line
OTHERSTAT_14_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 14 of that plan line
OTHERSTAT_14_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_14_VALUE	NUMBER	Value of statistic number 14 of that plan line
OTHERSTAT_15_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 15 of that plan line
OTHERSTAT_15_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_15_VALUE	NUMBER	Value of statistic number 15 of that plan line
OTHERSTAT_16_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 16 of that plan line
OTHERSTAT_16_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_16_VALUE	NUMBER	Value of statistic number 16 of that plan line
OTHERSTAT_17_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 17 of that plan line
OTHERSTAT_17_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_17_VALUE	NUMBER	Value of statistic number 17 of that plan line
OTHERSTAT_18_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 18 of that plan line
OTHERSTAT_18_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_18_VALUE	NUMBER	Value of statistic number 18 of that plan line
OTHERSTAT_19_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 19 of that plan line
OTHERSTAT_19_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_19_VALUE	NUMBER	Value of statistic number 19 of that plan line
OTHERSTAT_20_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 20 of that plan line
OTHERSTAT_20_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_20_VALUE	NUMBER	Value of statistic number 20 of that plan line

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Column	Datatype	Description
OTHERSTAT_21_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 21 of that plan line
OTHERSTAT_21_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_21_VALUE	NUMBER	Value of statistic number 21 of that plan line
OTHERSTAT_22_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 22 of that plan line
OTHERSTAT_22_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_22_VALUE	NUMBER	Value of statistic number 22 of that plan line
OTHERSTAT_23_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 23 of that plan line
OTHERSTAT_23_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_23_VALUE	NUMBER	Value of statistic number 23 of that plan line
OTHERSTAT_24_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 24 of that plan line
OTHERSTAT_24_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_24_VALUE	NUMBER	Value of statistic number 24 of that plan line
OTHERSTAT_25_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 25 of that plan line
OTHERSTAT_25_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_25_VALUE	NUMBER	Value of statistic number 25 of that plan line
OTHERSTAT_26_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 26 of that plan line
OTHERSTAT_26_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_26_VALUE	NUMBER	Value of statistic number 26 of that plan line
OTHERSTAT_27_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 27 of that plan line
OTHERSTAT_27_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_27_VALUE	NUMBER	Value of statistic number 27 of that plan line
OTHERSTAT_28_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 28 of that plan line
OTHERSTAT_28_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_28_VALUE	NUMBER	Value of statistic number 28 of that plan line
OTHERSTAT_29_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 29 of that plan line
OTHERSTAT_29_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_29_VALUE	NUMBER	Value of statistic number 29 of that plan line
OTHERSTAT_30_ID	NUMBER	Statistic identifier (see ID column in V$SQL_MONITOR_STATNAME) for statistic number 30 of that plan line
OTHERSTAT_30_TYPE	NUMBER	Reserved for internal use
OTHERSTAT_30_VALUE	NUMBER	Value of statistic number 30 of that plan line

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Column	Datatype	Description
OTHER_XML	CLOB	Provides extra information specific to an execution step of the execution plan. The content of this column is structured using XML, which allows multiple pieces of information to be stored, including the following: • Name of the schema against which the query was parsed • Release number of the Oracle Database that produced the explain plan • Hash value associated with the execution plan • Name (if any) of the outline or the SQL profile used to build the execution plan • Indication of whether or not dynamic statistics were used to produce the plan • The outline data, a set of optimizer hints that can be used to regenerate the same plan • Additional data that describes the relationship between rows in the plan table and subplans of adaptive plans
PLAN_OPERATION_INACTIVE	NUMBER	Indicates whether this plan operation was part of the final resolved plan
PDB_ID	NUMBER	Container ID of the PDB

> ✎ **See Also:**
>
> • "V$SQL_MONITOR_STATNAME"
> • "V$ALL_SQL_PLAN_MONITOR"

10.78 V$SQL_PLAN_STATISTICS

V$SQL_PLAN_STATISTICS provides execution statistics at the row source level for each child cursor.

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Address of the handle to the parent for this cursor
HASH_VALUE	NUMBER	Hash value of the parent statement in the library cache. The two columns ADDRESS and HASH_VALUE can be used to join with V$SQLAREA to locate the parent cursor.
SQL_ID	VARCHAR2(13)	SQL identifier of the parent statement in the library cache
PLAN_HASH_VALUE	NUMBER	Numerical representation of the current SQL plan for this cursor. Comparing one PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line)
FULL_PLAN_HASH_VALUE	NUMBER	Numeric representation of the complete SQL plan for this cursor. Comparing one FULL_PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line). Note that the FULL_PLAN_HASH_VALUE cannot be compared across databases releases. It is not backward compatible.
CHILD_ADDRESS	RAW(4 | 8)	Address of the child cursor

Column	Datatype	Description
CHILD_NUMBER	NUMBER	Number of the child cursor that uses this work area. The columns ADDRESS, HASH_VALUE, and CHILD_NUMBER can be used to join with V$SQL to locate the child cursor using this area.
OPERATION_ID	NUMBER	A number assigned to each step in the execution plan
EXECUTIONS	NUMBER	Number of times this cursor has been executed
LAST_STARTS	NUMBER	Number of times this operation has been started, during the last execution
STARTS	NUMBER	Number of times this operation has been started, accumulated over the past executions
LAST_OUTPUT_ROWS	NUMBER	Number of rows produced by the row source, during the last execution
OUTPUT_ROWS	NUMBER	Number of rows produced by the row source, accumulated over the past executions
LAST_CR_BUFFER_GETS	NUMBER	Number of buffers retrieved in consistent mode, during the last execution. Buffers are usually retrieved in consistent mode for queries.
CR_BUFFER_GETS	NUMBER	Number of buffers retrieved in consistent mode, accumulated over the past executions. Buffers are usually retrieved in consistent mode for queries.
LAST_CU_BUFFER_GETS	NUMBER	Number of buffers retrieved in current mode, during the last execution. Buffers are retrieved in current mode for statements such as INSERT, UPDATE, and DELETE.
CU_BUFFER_GETS	NUMBER	Number of buffers retrieved in current mode, accumulated over the past executions. Buffers are retrieved in current mode for statements such as INSERT, UPDATE, and DELETE.
LAST_DISK_READS	NUMBER	Number of physical disk reads performed by the operation, during the last execution
DISK_READS	NUMBER	Number of physical disk reads performed by the operation, accumulated over the past executions
LAST_DISK_WRITES	NUMBER	Number of physical disk writes performed by the operation, during the last execution
DISK_WRITES	NUMBER	Number of physical disk writes performed by the operation, accumulated over the past executions
LAST_ELAPSED_TIME	NUMBER	Elapsed time (in microseconds) corresponding to this operation, during the last execution
ELAPSED_TIME	NUMBER	Elapsed time (in microseconds) corresponding to this operation, accumulated over the past executions
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **See Also:**
>
> "V$SQLAREA"

10.79 V$SQL_PLAN_STATISTICS_ALL

`V$SQL_PLAN_STATISTICS_ALL` contains memory usage statistics for row sources that use SQL memory (sort or hash-join). This view concatenates information in `V$SQL_PLAN` with execution statistics from `V$SQL_PLAN_STATISTICS` and `V$SQL_WORKAREA`.

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Address of the handle to the parent for this cursor
HASH_VALUE	NUMBER	Hash value of the parent statement in the library cache. The two columns ADDRESS and HASH_VALUE can be used to join with V$SQLAREA to add the cursor-specific information.
SQL_ID	VARCHAR2(13)	SQL identifier of the parent statement in the library cache
PLAN_HASH_VALUE	NUMBER	Numerical representation of the current SQL plan for this cursor. Comparing one PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line)
FULL_PLAN_HASH_VALUE	NUMBER	Numeric representation of the complete SQL plan for this cursor. Comparing one FULL_PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line). Note that the FULL_PLAN_HASH_VALUE cannot be compared across databases releases. It is not backward compatible.
CHILD_ADDRESS	RAW(4 | 8)	Address of the child cursor
CHILD_NUMBER	NUMBER	Number of the child cursor that uses this execution plan. The columns ADDRESS, HASH_VALUE, and CHILD_NUMBER can be used to join with V$SQL to add the child cursor-specific information.
TIMESTAMP	DATE	Date and time when the execution plan was generated
OPERATION	VARCHAR2(30)	Name of the internal operation performed in this step (for example, TABLE ACCESS)
OPTIONS	VARCHAR2(30)	A variation on the operation described in the OPERATION column (for example, FULL)
OBJECT_NODE	VARCHAR2(40)	Name of the database link used to reference the object (a table name or view name). For local queries that use parallel execution, this column describes the order in which output from operations is consumed.
OBJECT#	NUMBER	Object number of the table or the index
OBJECT_OWNER	VARCHAR2(128)	Name of the user who owns the schema containing the table or index
OBJECT_NAME	VARCHAR2(128)	Name of the table or index
OBJECT_ALIAS	VARCHAR2(261)	Alias for the object
OBJECT_TYPE	VARCHAR2(20)	Type of the object
OPTIMIZER	VARCHAR2(20)	Current mode of the optimizer for the first row in the plan (statement line), for example, CHOOSE. When the operation is a database access (for example, TABLE ACCESS), this column indicates whether or not the object is analyzed.
ID	NUMBER	A number assigned to each step in the execution plan
PARENT_ID	NUMBER	ID of the next execution step that operates on the output of the current step
DEPTH	NUMBER	Depth (or level) of the operation in the tree. It is not necessary to issue a CONNECT BY statement to get the level information, which is generally used to indent the rows from the PLAN_TABLE table. The root operation (statement) is level 0.

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Column	Datatype	Description
POSITION	NUMBER	Order of processing for all operations that have the same PARENT_ID
SEARCH_COLUMNS	NUMBER	Number of index columns with start and stop keys (that is, the number of columns with matching predicates)
COST	NUMBER	Cost of the operation as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is null.
CARDINALITY	NUMBER	Estimate, by the cost-based optimizer, of the number of rows produced by the operation
BYTES	NUMBER	Estimate, by the cost-based optimizer, of the number of bytes produced by the operation
OTHER_TAG	VARCHAR2(35)	Describes the contents of the OTHER column. See EXPLAIN PLAN for values.
PARTITION_START	VARCHAR2(64)	Start partition of a range of accessed partitions
PARTITION_STOP	VARCHAR2(64)	Stop partition of a range of accessed partitions
PARTITION_ID	NUMBER	Step that computes the pair of values of the PARTITION_START and PARTITION_STOP columns
OTHER	VARCHAR2(4000)	Other information specific to the execution step that users may find useful. See EXPLAIN PLAN for values.
DISTRIBUTION	VARCHAR2(20)	Stores the method used to distribute rows from producer query servers to consumer query servers
CPU_COST	NUMBER	CPU cost of the operation as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is null.
IO_COST	NUMBER	I/O cost of the operation as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is null.
TEMP_SPACE	NUMBER	Temporary space usage of the operation (sort or hash-join) as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is null.
ACCESS_PREDICATES	VARCHAR2(4000)	Predicates used to locate rows in an access structure. For example, start or stop predicates for an index range scan.
FILTER_PREDICATES	VARCHAR2(4000)	Predicates used to filter rows before producing them
PROJECTION	VARCHAR2(4000)	Expressions produced by the operation
TIME	NUMBER	Elapsed time (in seconds) of the operation as estimated by the optimizer's cost-based approach. For statements that use the rule-based approach, this column is null.
QBLOCK_NAME	VARCHAR2(128)	Name of the query block
REMARKS	VARCHAR2(4000)	Remarks

Column	Datatype	Description
OTHER_XML	CLOB	Provides extra information specific to an execution step of the execution plan. The content of this column is structured using XML, which allows multiple pieces of information to be stored, including the following: • Name of the schema against which the query was parsed • Release number of the Oracle Database that produced the explain plan • Hash value associated with the execution plan • Name (if any) of the outline or the SQL profile used to build the execution plan • Indication of whether or not dynamic statistics were used to produce the plan • The outline data, a set of optimizer hints that can be used to regenerate the same plan • Additional data that describes the relationship between rows in the plan table and subplans of adaptive plans
EXECUTIONS	NUMBER	Number of times this cursor has been executed
LAST_STARTS	NUMBER	Number of times this operation has been started, during the last execution
STARTS	NUMBER	Number of times this operation has been started, accumulated over the past executions
LAST_OUTPUT_ROWS	NUMBER	Number of rows produced by the row source, during the last execution
OUTPUT_ROWS	NUMBER	Number of rows produced by the row source, accumulated over the past executions
LAST_CR_BUFFER_GETS	NUMBER	Number of buffers retrieved in consistent mode, during the last execution. Buffers are usually retrieved in consistent mode for queries.
CR_BUFFER_GETS	NUMBER	Number of buffers retrieved in consistent mode, accumulated over the past executions. Buffers are usually retrieved in consistent mode for queries.
LAST_CU_BUFFER_GETS	NUMBER	Number of buffers retrieved in current mode, during the last execution. Buffers are retrieved in current mode for statements such as INSERT, UPDATE, and DELETE.
CU_BUFFER_GETS	NUMBER	Number of buffers retrieved in current mode, accumulated over the past executions. Buffers are retrieved in current mode for statements such as INSERT, UPDATE, and DELETE.
LAST_DISK_READS	NUMBER	Number of physical disk reads performed by the operation, during the last execution
DISK_READS	NUMBER	Number of physical disk reads performed by the operation, accumulated over the past executions
LAST_DISK_WRITES	NUMBER	Number of physical disk writes performed by the operation, during the last execution
DISK_WRITES	NUMBER	Number of physical disk writes performed by the operation, accumulated over the past executions
LAST_ELAPSED_TIME	NUMBER	Elapsed time (in microseconds) corresponding to this operation, during the last execution
ELAPSED_TIME	NUMBER	Elapsed time (in microseconds) corresponding to this operation, accumulated over the past executions
POLICY	VARCHAR2(10)	Sizing policy for this work area: • MANUAL • AUTO

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Column	Datatype	Description
ESTIMATED_OPTIMAL_SIZE	NUMBER	Estimated size (in KB) required by this work area to execute the operation completely in memory (optimal execution). This is either derived from optimizer statistics or from previous executions.
ESTIMATED_ONEPASS_SIZE	NUMBER	Estimated size (in KB) required by this work area to execute the operation in a single pass. This is either derived from optimizer statistics or from previous executions.
LAST_MEMORY_USED	NUMBER	Memory size (in KB) used by this work area during the last execution of the cursor
LAST_EXECUTION	VARCHAR2(10)	Indicates whether this work area ran using OPTIMAL, ONE PASS, or under ONE PASS memory requirement (MULTI-PASS), during the last execution of the cursor
LAST_DEGREE	NUMBER	Degree of parallelism used, during the last execution of the cursor
TOTAL_EXECUTIONS	NUMBER	Number of times this work area was active
OPTIMAL_EXECUTIONS	NUMBER	Number of times this work area ran in optimal mode
ONEPASS_EXECUTIONS	NUMBER	Number of times this work area ran in one pass mode
MULTIPASSES_EXECUTIONS	NUMBER	Number of times this work area ran below the one pass memory requirement
ACTIVE_TIME	NUMBER	Average time this work area is active (in hundredths of a second)
MAX_TEMPSEG_SIZE	NUMBER	Maximum temporary segment size (in bytes) created by an instantiation of this work area. This column is null if this work area has never spilled to disk.
LAST_TEMPSEG_SIZE	NUMBER	Temporary segment size (in bytes) created in the last instantiation of this work area. This column is null if the last instantiation of this work area did not spill to disk.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data
CON_DBID	NUMBER	The database ID of the PDB

> ✎ **See Also:**
>
> • "V$SQL_PLAN_STATISTICS"
> • "V$SQL_WORKAREA"

10.80 V$SQL_REDIRECTION

V$SQL_REDIRECTION displays SQL statements that are redirected.

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Address of the cursor handle

Column	Datatype	Description
PARENT_HANDLE	RAW(4 | 8)	Address of the parent cursor handle
HASH_VALUE	NUMBER	Hash value of the SQL statement
SQL_ID	VARCHAR2(13)	SQL identifier of the SQL statement
CHILD_NUMBER	NUMBER	Number of the child (instance) for the hash
PARSING_USER_ID	NUMBER	Parsing user ID
PARSING_SCHEMA_ID	NUMBER	Parsing schema ID
COMMAND_TYPE	NUMBER	SELECT, UPDATE, INSERT, MERGE
REASON	VARCHAR2(14)	Reason for redirection ('INVALID OBJECT', 'ROWID', 'QUERY REWRITE', 'READ ONLY')
ERROR_CODE	NUMBER	Error code for local parse
POSITION	NUMBER	Error position, 0 if unknown
SQL_TEXT_PIECE	VARCHAR2(1000)	SQL Text containing position, usually a (qualified) identifier
ERROR_MESSAGE	VARCHAR2(1000)	Error code's corresponding error message resolved in the database language, no arguments resolved
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.81 V$SQL_SHARD

V$SQL_SHARD displays the shard information for a shard query's previous execution. This view uniquely maps a shard SQL fragment of a cross shard query to the target shard database.

Column	Datatype	Description
SQL_ID	VARCHAR2(13)	SQL identifier of a cross shard query on the coordinator
CHILD_NUMBER	NUMBER	Cursor child number of a cross shard query on the coordinator
OPERATION_ID	NUMBER	Operation ID of a remote node for a shard SQL fragment of a cross shard query
SHARD_SQL_ID	VARCHAR2(13)	SQL ID of the SQL segment associated with a remote operation identified by the operation ID in the OPERATION_ID column
SHARD_ID	NUMBER	IDs of shards where the shard SQL fragment was executed
SHARD_CHILD_NUMBER	NUMBER	Cursor child number of a shard SQL fragment on a shard. The default value is 0.

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **See Also:**
>
> *Oracle Globally Distributed Database Guide* for more information about the `V$SQL_SHARD` view

10.82 V$SQL_SHARED_CURSOR

`V$SQL_SHARED_CURSOR` explains why a particular child cursor is not shared with existing child cursors.

Each column identifies a specific reason why the cursor cannot be shared.

You can find additional diagnostic information about the cursors displayed in this view by querying the `V$SQL_SHARED_CURSOR_DIAG` view. Join this view with `V$SQL_SHARED_CURSOR_DIAG` on the `SQL_ID` and `CHILD_NUMBER` columns.

Column	Datatype	Description
SQL_ID	VARCHAR2(13)	SQL identifier
ADDRESS	RAW(4 | 8)	Address of the parent cursor
CHILD_ADDRESS	RAW(4 | 8)	Address of the child cursor
CHILD_NUMBER	NUMBER	Child number
UNBOUND_CURSOR	VARCHAR2(1)	(Y|N) The existing child cursor was not fully built (in other words, it was not optimized)
SQL_TYPE_MISMATCH	VARCHAR2(1)	(Y|N) The SQL type does not match the existing child cursor
OPTIMIZER_MISMATCH	VARCHAR2(1)	(Y|N) The optimizer environment does not match the existing child cursor
OUTLINE_MISMATCH	VARCHAR2(1)	(Y|N) The outlines do not match the existing child cursor
STATS_ROW_MISMATCH	VARCHAR2(1)	(Y|N) The existing statistics do not match the existing child cursor
LITERAL_MISMATCH	VARCHAR2(1)	(Y|N) Non-data literal values do not match the existing child cursor
FORCE_HARD_PARSE	VARCHAR2(1)	(Y|N) For internal use
EXPLAIN_PLAN_CURSOR	VARCHAR2(1)	(Y|N) The child cursor is an explain plan cursor and should not be shared
BUFFERED_DML_MISMATCH	VARCHAR2(1)	(Y|N) Buffered DML does not match the existing child cursor
PDML_ENV_MISMATCH	VARCHAR2(1)	(Y|N) PDML environment does not match the existing child cursor
INST_DRTLD_MISMATCH	VARCHAR2(1)	(Y|N) Insert direct load does not match the existing child cursor

Column	Datatype	Description
SLAVE_QC_MISMATCH	VARCHAR2(1)	(Y|N) The existing child cursor is a worker cursor and the new one was issued by the coordinator (or, the existing child cursor was issued by the coordinator and the new one is a worker cursor)
TYPECHECK_MISMATCH	VARCHAR2(1)	(Y|N) The existing child cursor is not fully optimized
AUTH_CHECK_MISMATCH	VARCHAR2(1)	(Y|N) Authorization/translation check failed for the existing child cursor
BIND_MISMATCH	VARCHAR2(1)	(Y|N) The bind metadata does not match the existing child cursor
DESCRIBE_MISMATCH	VARCHAR2(1)	(Y|N) The typecheck heap is not present during the describe for the child cursor
LANGUAGE_MISMATCH	VARCHAR2(1)	(Y|N) The language handle does not match the existing child cursor
TRANSLATION_MISMATCH	VARCHAR2(1)	(Y|N) The base objects of the existing child cursor do not match
BIND_EQUIV_FAILURE	VARCHAR2(1)	(Y|N) The bind value's selectivity does not match that used to optimize the existing child cursor
INSUFF_PRIVS	VARCHAR2(1)	(Y|N) Insufficient privileges on objects referenced by the existing child cursor
INSUFF_PRIVS_REM	VARCHAR2(1)	(Y|N) Insufficient privileges on remote objects referenced by the existing child cursor
REMOTE_TRANS_MISMATCH	VARCHAR2(1)	(Y|N) The remote base objects of the existing child cursor do not match
LOGMINER_SESSION_MISMATCH	VARCHAR2(1)	(Y|N) LogMiner Session parameters mismatch
INCOMP_LTRL_MISMATCH	VARCHAR2(1)	(Y|N) Cursor might have some binds (literals) which may be unsafe/non-data. Value mismatch.
OVERLAP_TIME_MISMATCH	VARCHAR2(1)	(Y|N) Mismatch caused by setting session parameter ERROR_ON_OVERLAP_TIME
EDITION_MISMATCH	VARCHAR2(1)	(Y|N) Cursor edition mismatch
MV_QUERY_GEN_MISMATCH	VARCHAR2(1)	(Y|N) Internal, used to force a hard-parse when analyzing materialized view queries
USER_BIND_PEEK_MISMATCH	VARCHAR2(1)	(Y|N) Cursor is not shared because value of one or more user binds is different and this has a potential to change the execution plan
TYPCHK_DEP_MISMATCH	VARCHAR2(1)	(Y|N) Cursor has typecheck dependencies
NO_TRIGGER_MISMATCH	VARCHAR2(1)	(Y|N) Cursor and child have no trigger mismatch
FLASHBACK_CURSOR	VARCHAR2(1)	(Y|N) Cursor non-shareability due to flashback
ANYDATA_TRANSFORMATION	VARCHAR2(1)	(Y|N) Is criteria for opaque type transformation and does not match
PDDL_ENV_MISMATCH	VARCHAR2(1)	(Y|N) Environment setting mismatch for parallel DDL cursor (that is, one or more of the following parameter values have changed: PARALLEL_EXECUTION_ENABLED, PARALLEL_DDL_MODE, PARALLEL_DDL_FORCED_DEGREE, or PARALLEL_DDL_FORCED_INSTANCES)
TOP_LEVEL_RPI_CURSOR	VARCHAR2(1)	(Y|N) Is top level RPI cursor
DIFFERENT_LONG_LENGTH	VARCHAR2(1)	(Y|N) Value of LONG does not match
LOGICAL_STANDBY_APPLY	VARCHAR2(1)	(Y|N) Logical standby apply context does not match
DIFF_CALL_DURN	VARCHAR2(1)	(Y|N) If worker SQL cursor/single call
BIND_UACS_DIFF	VARCHAR2(1)	(Y|N) One cursor has bind UACs and one does not
PLSQL_CMP_SWITCHS_DIFF	VARCHAR2(1)	(Y|N) PL/SQL anonymous block compiled with different PL/SQL compiler switches

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Column	Datatype	Description
CURSOR_PARTS_MISMATCH	VARCHAR2(1)	(Y|N) Cursor was compiled with subexecution (cursor parts were executed)
STB_OBJECT_MISMATCH	VARCHAR2(1)	(Y|N) STB is an internal name for a SQL Management Object Mismatch. A SQL Management Object Mismatch means that either a SQL plan baseline, or a SQL profile, or a SQL patch has been created for your SQL statement between the executions. Because a cursor is a read-only entity, a hard parse is forced to be able to create a new cursor that contains information about the new SQL management object related to this SQL statement.
CROSSEDITION_TRIGGER_MISMATCH	VARCHAR2(1)	(Y|N) The set of crossedition triggers to execute might differ
PQ_SLAVE_MISMATCH	VARCHAR2(1)	(Y|N) Top-level worker decides not to share cursor
TOP_LEVEL_DDL_MISMATCH	VARCHAR2(1)	(Y|N) Is top-level DDL cursor
MULTI_PX_MISMATCH	VARCHAR2(1)	(Y|N) Cursor has multiple parallelizers and is worker-compiled
BIND_PEEKED_PQ_MISMATCH	VARCHAR2(1)	(Y|N) Cursor based around bind peeked values
MV_REWRITE_MISMATCH	VARCHAR2(1)	(Y|N) Cursor needs recompilation because an SCN was used during compile time due to being rewritten by materialized view
ROLL_INVALID_MISMATCH	VARCHAR2(1)	(Y|N) Marked for rolling invalidation and invalidation window exceeded
OPTIMIZER_MODE_MISMATCH	VARCHAR2(1)	(Y|N) Parameter OPTIMIZER_MODE mismatch (for example, all_rows versus first_rows_1)
PX_MISMATCH	VARCHAR2(1)	(Y|N) Mismatch in one parameter affecting the parallelization of a SQL statement. For example, one cursor was compiled with parallel DML enabled while the other was not.
MV_STALEOBJ_MISMATCH	VARCHAR2(1)	(Y|N) Cursor cannot be shared because there is a mismatch in the list of materialized views which were stale when the cursor was built
FLASHBACK_TABLE_MISMATCH	VARCHAR2(1)	(Y|N) Cursor cannot be shared because there is a mismatch with triggers being enabled and/or referential integrity constraints being deferred
LITREP_COMP_MISMATCH	VARCHAR2(1)	(Y|N) Mismatch in use of literal replacement
PLSQL_DEBUG	VARCHAR2(1)	(Y|N) Value of the PLSQL_DEBUG parameter for the current session does not match the value used to build the cursor
LOAD_OPTIMIZER_STATS	VARCHAR2(1)	(Y|N) A hard parse is forced to initialize extended cursor sharing
ACL_MISMATCH	VARCHAR2(1)	(Y|N) Cached ACL evaluation result stored in the child cursor is not valid for the current session or user
FLASHBACK_ARCHIVE_MISMATCH	VARCHAR2(1)	(Y|N) Value of the FLASHBACK_DATA_ARCHIVE_INTERNAL_CURSOR parameter for the current session does not match the value used to build the cursor
LOCK_USER_SCHEMA_FAILED	VARCHAR2(1)	(Y|N) User or schema used to build the cursor no longer exists **Note:** This sharing criterion is deprecated
REMOTE_MAPPING_MISMATCH	VARCHAR2(1)	(Y|N) Reloaded cursor was previously remote-mapped and is currently not remote-mapped. Therefore, the cursor must be reparsed.
LOAD_RUNTIME_HEAP_FAILED	VARCHAR2(1)	(Y|N) Loading of run-time heap for the new cursor (or reload of aged out cursor) failed
HASH_MATCH_FAILED	VARCHAR2(1)	(Y|N) No existing child cursors have the unsafe literal bind hash values required by the current cursor
PURGED_CURSOR	VARCHAR2(1)	(Y|N) Child cursor is marked for purging

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Column	Datatype	Description
BIND_LENGTH_UPGRADEABLE	VARCHAR2(1)	(Y|N) Bind length(s) required for the current cursor are longer than the bind length(s) used to build the child cursor
USE_FEEDBACK_STATS	VARCHAR2(1)	(Y|N) A hard parse is forced so that the optimizer can reoptimize the query with improved optimizer inputs (for example, cardinality estimates)
REASON	CLOB	Child number, id, and reason the cursor is not shared. The content of this column is structured using XML. If this column is null, the FORCE_HARD_PARSE, LOAD_RUNTIME_HEAP_FAILED, and HASH_MATCH_FAILED columns may enable you to determine why the child cursor is not shared.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **See Also:**
>
> "V$SQL_SHARED_CURSOR_DIAG"

10.83 V$SQL_SHARED_CURSOR_DIAG

V$SQL_SHARED_CURSOR_DIAG displays diagnostic information about child cursors that cannot be shared with existing child cursors.

You can find additional information about the cursors displayed in this view by querying the V$SQL_SHARED_CURSOR view. Join this view with V$SQL_SHARED_CURSOR on the SQL_ID and CHILD_NUMBER columns.

Column	Datatype	Description
SQL_ID	VARCHAR2(13)	SQL identifier
CHILD_NUMBER	NUMBER	Child number
FAILING_CRITERIA	VARCHAR2(4000)	Reason the child cursor failed to share, in JSON format
DIAG_DATA	CLOB	Diagnostic information, in JSON format
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **✎ Note:**
>
> This view is available starting with Oracle Database 23ai.

> **✎ See Also:**
>
> "V$SQL_SHARED_CURSOR"

10.84 V$SQL_SHARED_MEMORY

`V$SQL_SHARED_MEMORY` displays information about the cursor shared memory snapshot. Each SQL statement stored in the shared pool has one or more child objects associated with it. Each child object has several parts, one of which is the context heap, which holds, among other things, the query plan.

Column	Datatype	Description
SQL_TEXT	VARCHAR2(1000)	SQL text of the shared cursor child object for which this row is displaying information
SQL_FULLTEXT	CLOB	Full text for the SQL statement exposed as a CLOB column. The full text of a SQL statement can be retrieved using this column instead of joining with the V$SQLTEXT dynamic performance view.
HASH_VALUE	NUMBER	Hash value of the above SQL text in the shared pool
SQL_ID	VARCHAR2(13)	SQL identifier of the above SQL text in the shared pool
HEAP_DESC	RAW(4 | 8)	Address of the descriptor for the context heap of the child cursor described in this row
STRUCTURE	VARCHAR2(16)	If the memory chunk described in this row was allocated using a comment of the form "X : Y", then this is the "X" part of the comment
FUNCTION	VARCHAR2(16)	Similar to the STRUCTURE column, this is the "Y" field of the comment
CHUNK_COM	VARCHAR2(16)	Whole comment field that was supplied when this memory chunk was allocated
CHUNK_PTR	RAW(4 | 8)	Starting address of the allocated memory chunk
CHUNK_SIZE	NUMBER	Amount of memory allocated for this chunk
ALLOC_CLASS	VARCHAR2(8)	Class of memory that this chunk of memory belongs to. It will usually be either FREEABLE or PERMANENT.
CHUNK_TYPE	NUMBER	An index into a table of callback functions that tell the server how to re-create this chunk of memory should it need to be removed from the shared pool based on an LRU algorithm
SUBHEAP_DESC	RAW(4 | 8)	If the parent heap of this context heap is itself a subheap, then this is the address of the descriptor of the parent heap

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include:
		• `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs.
		• `1`: This value is used for rows containing data that pertain to only the root
		• *n*: Where *n* is the applicable container ID for the rows containing data

10.85 V$SQL_TESTCASES

V$SQL_TESTCASES displays information about test cases exported by SQL Test Case Builder.

You can use this view in conjunction with the V$DIAG_INCIDENT view. Join the INCIDENT_ID column in this view with the INCIDENT_ID column in V$DIAG_INCIDENT to view information about the test case associated with a particular incident.

The V$SQL_TESTCASES view requires the existence of a TCB root directory named SQL_TCB_DIR. This view will not contain any rows if a TCB root directory does not exist, or if the TCB root directory exists with a name other than SQL_TCB_DIR. The operating system directory to which the TCB root directory refers must be writable by the owner of the Oracle Database binaries.

• In Oracle Autonomous Database environments, the TCB root directory is created automatically on each POD during provisioning.

• For on-premises databases, a user who has been granted the DBA role must explicitly create the TCB root directory. See *Oracle Database Administrator's Guide* for more information.

Column	Datatype	Description
TESTCASE_NAME	VARCHAR2(512)	Test case name
SQL_ID	VARCHAR2(13)	SQL identifier of the SQL statement in the test case
SQL_TEXT	VARCHAR2(1000)	First 1000 characters of text for the SQL statement in the test case
SQL_TEXT_FULL	CLOB	Full text for the SQL statement in the test case, exposed as a CLOB column
INCIDENT_ID	NUMBER	ID for the incident associated with the test case
PROBLEM_TYPE	NUMBER	Type of problem for the incident associated with the test case. Possible values:
		• `1`: Performance problem (PROBLEM_TYPE_PERFORMANCE)
		• `2`: Inconsistent results (PROBLEM_TYPE_WRONG_RESULTS)
		• `3`: Crash in compilation (PROBLEM_TYPE_COMPILATION_ERROR)
		• `4`: Crash in execution (PROBLEM_TYPE_EXECUTION_ERROR)
		These numeric values, and their associated constant values shown in parentheses, correspond to the numeric and constant values for problem type constants in the DBMS_SQLDIAG package. See *Oracle Database PL/SQL Packages and Types Reference* for more information.
CREATION_DATE	TIMESTAMP(6)	Creation time for the incident associated with the test case

Column	Datatype	Description
STATUS	VARCHAR2(10)	Current status for the incident associated with the test case. Possible values: • COMPLETE: The test case export completed successfully • INCOMPLETE: The test case export failed due to an error
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **✎ See Also:**
>
> "V$DIAG_INCIDENT"

10.86 V$SQL_WORKAREA

V$SQL_WORKAREA displays information about work areas used by SQL cursors. Each SQL statement stored in the shared pool has one or more child cursors that are listed in the V$SQL view. V$SQL_WORKAREA lists all work areas needed by these child cursors; V$SQL_WORKAREA can be joined with V$SQLAREA on (ADDRESS, HASH_VALUE) and with V$SQL on (ADDRESS, HASH_VALUE, CHILD_NUMBER).

You can use this view to find out answers to the following questions:

• What are the top 10 work areas that require the most cache area?

• For work areas allocated in AUTO mode, what percentage of work areas are running using maximum memory?

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Address of the parent cursor handle
HASH_VALUE	NUMBER	Hash value of the parent statement in the library cache. Two columns PARENT_HANDLE and HASH_VALUE can be used to join with V$SQLAREA to locate the parent cursor.
SQL_ID	VARCHAR2(13)	SQL identifier of the parent statement in the library cache
CHILD_NUMBER	NUMBER	Number of the child cursor that uses this work area. The columns PARENT_HANDLE, HASH_VALUE, and CHILD_NUMBER can be used to join with V$SQL to locate the child cursor using this area.
WORKAREA_ADDRESS	RAW(4 | 8)	Address of the work area handle. This is the primary key for the view.
OPERATION_TYPE	VARCHAR2(40)	Type of operation using the work area. Can include values such as SORT, HASH JOIN, GROUP BY, BUFFER, BITMAP MERGE, and BITMAP CONSTRUCTION.
OPERATION_ID	NUMBER	A unique number used to identify the operation in the execution plan. This identifier can be joined to V$SQL_PLAN to locate the operation that uses this work area.

Column	Datatype	Description
POLICY	VARCHAR2(10)	Sizing policy for this work area (MANUAL or AUTO)
ESTIMATED_OPTIMAL_SIZE	NUMBER	Estimated size (in bytes) required by this work area to execute the operation completely in memory (optimal execution). Derived from either optimizer statistics or previous executions.
ESTIMATED_ONEPASS_SIZE	NUMBER	Estimated size (in bytes) required by this work area to execute the operation in a single pass. Derived from either optimizer statistics or previous executions.
LAST_MEMORY_USED	NUMBER	Memory (in bytes) used by this work area during the last execution of the cursor
LAST_EXECUTION	VARCHAR2(10)	Indicates whether this work area runs using OPTIMAL, ONE PASS, or ONE PASS memory requirement (or MULTI-PASS), during the last execution of the cursor
LAST_DEGREE	NUMBER	Degree of parallelism used during the last execution of this operation
TOTAL_EXECUTIONS	NUMBER	Number of times this work area was active
OPTIMAL_EXECUTIONS	NUMBER	Number of times this work area ran in optimal mode
ONEPASS_EXECUTIONS	NUMBER	Number of times this work area ran in one-pass mode
MULTIPASSES_EXECUTIONS	NUMBER	Number of times this work area ran below the one-pass memory requirement
ACTIVE_TIME	NUMBER	Average time this work area is active (in hundredths of a second)
MAX_TEMPSEG_SIZE	NUMBER	Maximum temporary segment size (in bytes) created by an instantiation of this work area. This column is NULL if this work area has never spilled to disk.
LAST_TEMPSEG_SIZE	NUMBER	Temporary segment size (in bytes) created in the last instantiation of this work area. This column is NULL if the last instantiation of this work area did not spill to disk.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> ✏ **See Also:**
>
> • "V$SQLAREA"
> • "V$SQL"

10.87 V$SQL_WORKAREA_ACTIVE

V$SQL_WORKAREA_ACTIVE contains an instantaneous view of the work areas currently allocated by the system. You can join this view against V$SQL_WORKAREA on WORKAREA_ADDRESS to access

the definition of that work area. If a work area spills to disk, then this view contains information for the temporary segment created on behalf of this work area.
The last three columns are included to enable joining V$SQL_WORKAREA_ACTIVE with V$TEMPSEG_USAGE to retrieve more information on this temporary segment.

You can use this view to answer the following:

- What are the top 10 largest work areas currently allocated in the system?

- What percentage of memory is over-allocated (EXPECTED_SIZE < ACTUAL_MEM_USED) and under-allocated (EXPECTED_SIZE > ACTUAL_MEM_USED)?

- What are the active work areas using more memory than what is expected by the memory manager?

- What are the active work areas that have spilled to disk?

Column	Datatype	Description
SQL_HASH_VALUE	NUMBER	Hash value of the SQL statement that is currently being executed
SQL_ID	VARCHAR2(13)	SQL identifier of the SQL statement that is currently being executed
SQL_EXEC_START	DATE	Time when the execution of the SQL currently executed by this session started
SQL_EXEC_ID	NUMBER	SQL execution identifier (see V$SQL_MONITOR)
WORKAREA_ADDRESS	RAW(4 | 8)	Address of the work area handle. This is the primary key for the view.
OPERATION_TYPE	VARCHAR2(40)	Type of operation using the work area. Can include values such as SORT, HASH JOIN, GROUP BY, BUFFER, BITMAP MERGE, and BITMAP CONSTRUCTION.
OPERATION_ID	NUMBER	A unique number used to identify the operation in the execution plan. This identifier can be joined to V$SQL_PLAN to locate the operation that uses this work area.
POLICY	VARCHAR2(6)	Sizing policy for this work area (MANUAL or AUTO)
SID	NUMBER	Session identifier
QCINST_ID	NUMBER	Query coordinator instance identifier. Along with QCSID, enables you to uniquely identify the query coordinator.
QCSID	NUMBER	Query coordinator session identifier. This is the same as the SID if the work area is allocated by a serial cursor.
ACTIVE_TIME	NUMBER	Average time this work area is active (in microseconds)
WORK_AREA_SIZE	NUMBER	Maximum size (in bytes) of the work area as it is currently used by the operation
EXPECTED_SIZE	NUMBER	Expected size (in bytes) for this work area. EXPECTED_SIZE is set on behalf of the operation by the memory manager. Memory can be over-allocated when WORK_AREA_SIZE has a higher value than EXPECTED_SIZE. This can occur when the operation using this work area takes a long time to resize it.
ACTUAL_MEM_USED	NUMBER	Amount of PGA memory (in bytes) currently allocated on behalf of this work area. This value should range between 0 and WORK_AREA_SIZE.
MAX_MEM_USED	NUMBER	Maximum memory amount (in bytes) used by this work area
NUMBER_PASSES	NUMBER	Number of passes corresponding to this work area (0 if running in OPTIMAL mode)
TEMPSEG_SIZE	NUMBER	Size (in bytes) of the temporary segment used on behalf of this work area. This column is NULL if this work area has not (yet) spilled to disk.

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Column	Datatype	Description
TABLESPACE	VARCHAR2(128)	Tablespace name for the temporary segment created on behalf of this work area. This column is NULL if this work area has not (yet) spilled to disk.
SEGRFNO#	NUMBER	Relative file number within the tablespace for the temporary segment created on behalf of this work area. This column is NULL if this work area has not (yet) spilled to disk.
SEGBLK#	NUMBER	Block number for the temporary segment created on behalf of this work area. This column is NULL if this work area has not (yet) spilled to disk.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **See Also:**
>
> • "V$SQL_WORKAREA"
> • *Oracle Database Concepts* for more information about SQL work areas

10.88 V$SQL_WORKAREA_HISTOGRAM

V$SQL_WORKAREA_HISTOGRAM displays the cumulative work area execution statistics (cumulated since instance startup) for different work area groups. The work areas are split into 33 groups based on their optimal memory requirements with the requirements increasing in powers of two. That is, work areas whose optimal requirement varies from 0 KB to 1 KB, 1 KB to 2 KB, 2 KB to 4 KB, ... and 2 TB to 4 TB.

For each work area group, the V$SQL_WORKAREA_HISTOGRAM view shows how many work areas in that group were able to run in optimal mode, how many were able to run in one-pass mode, and finally how many ran in multi-pass mode. The DBA can take a snapshot at the beginning and the end of a desired time interval to derive the same statistics for that interval.

Column	Datatype	Description
LOW_OPTIMAL_SIZE	NUMBER	Lower bound for the optimal memory requirement of work areas included in this row (bytes)
HIGH_OPTIMAL_SIZE	NUMBER	Upper bound for the optimal memory requirement of work areas included in this row (bytes)
OPTIMAL_EXECUTIONS	NUMBER	Number of work areas with an optimal memory requirement comprised between LOW_OPTIMAL_SIZE and HIGH_OPTIMAL_SIZE which have been executed in optimal mode since instance startup
ONEPASS_EXECUTIONS	NUMBER	Number of work areas with an optimal memory requirement comprised between LOW_OPTIMAL_SIZE and HIGH_OPTIMAL_SIZE which have been executed in one-pass mode since instance startup

Column	Datatype	Description
MULTIPASSES_EXECUTIONS	NUMBER	Number of work areas with an optimal memory requirement comprised between `LOW_OPTIMAL_SIZE` and `HIGH_OPTIMAL_SIZE` which have been executed in multi-pass mode since instance startup
TOTAL_EXECUTIONS	NUMBER	Sum of `OPTIMAL_EXECUTIONS`, `ONEPASS_EXECUTIONS`, and `MULTIPASSES_EXECUTIONS`
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **See Also:**
>
> *Oracle Database Performance Tuning Guide* for detailed information on how to monitor automatic PGA memory performance using this view

10.89 V$SQLAREA

`V$SQLAREA` displays statistics on shared SQL areas and contains one row per SQL string. It provides statistics on SQL statements that are in memory, parsed, and ready for execution.

Column	Datatype	Description
SQL_TEXT	VARCHAR2(1000)	First thousand characters of the SQL text for the current cursor
SQL_FULLTEXT	CLOB	All characters of the SQL text for the current cursor
SQL_ID	VARCHAR2(13)	SQL identifier of the parent cursor in the library cache
SHARABLE_MEM	NUMBER	Amount of shared memory used by a cursor. If multiple child cursors exist, then the sum of all shared memory used by all child cursors.
PERSISTENT_MEM	NUMBER	Fixed amount of memory used for the lifetime of an open cursor. If multiple child cursors exist, then the fixed sum of memory used for the lifetime of all the child cursors.
RUNTIME_MEM	NUMBER	Fixed amount of memory required during execution of a cursor. If multiple child cursors exist, then the fixed sum of all memory required during execution of all the child cursors.
SORTS	NUMBER	Sum of the number of sorts that were done for all the child cursors
VERSION_COUNT	NUMBER	Number of child cursors that are present in the cache under this parent
LOADED_VERSIONS	NUMBER	Number of child cursors that are present in the cache and have their context heap loaded
OPEN_VERSIONS	NUMBER	Number of child cursors that are currently open under this current parent
USERS_OPENING	NUMBER	Number of users that have any of the child cursors open
FETCHES	NUMBER	Number of fetches associated with the SQL statement
EXECUTIONS	NUMBER	Total number of executions, totalled over all the child cursors

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Column	Datatype	Description
PX_SERVERS_EXECUTIONS	NUMBER	Total number of executions performed by parallel execution servers (0 when the statement has never been executed in parallel)
END_OF_FETCH_COUNT	NUMBER	Number of times this cursor was fully executed since the cursor was brought into the library cache. The value of this statistic is not incremented when the cursor is partially executed, either because it failed during the execution or because only the first few rows produced by this cursor are fetched before the cursor is closed or re-executed. By definition, the value of the END_OF_FETCH_COUNT column should be less or equal to the value of the EXECUTIONS column.
USERS_EXECUTING	NUMBER	Total number of users executing the statement over all child cursors
LOADS	NUMBER	Number of times the object was loaded or reloaded
FIRST_LOAD_TIME	VARCHAR2(19)	Timestamp of the parent creation time
INVALIDATIONS	NUMBER	Total number of invalidations over all the child cursors
PARSE_CALLS	NUMBER	Sum of all parse calls to all the child cursors under this parent
DISK_READS	NUMBER	Sum of the number of disk reads over all child cursors
DIRECT_WRITES	NUMBER	Sum of the number of direct writes over all child cursors
DIRECT_READS	NUMBER	Sum of the number of direct reads over all child cursors
BUFFER_GETS	NUMBER	Sum of buffer gets over all child cursors
APPLICATION_WAIT_TIME	NUMBER	Application wait time (in microseconds)
CONCURRENCY_WAIT_TIME	NUMBER	Concurrency wait time (in microseconds)
CLUSTER_WAIT_TIME	NUMBER	Cluster wait time (in microseconds)
USER_IO_WAIT_TIME	NUMBER	User I/O Wait Time (in microseconds)
PLSQL_EXEC_TIME	NUMBER	PL/SQL execution time (in microseconds)
JAVA_EXEC_TIME	NUMBER	Java execution time (in microseconds)
ROWS_PROCESSED	NUMBER	Total number of rows processed on behalf of this SQL statement
COMMAND_TYPE	NUMBER	Oracle command type definition
OPTIMIZER_MODE	VARCHAR2(10)	Mode under which the SQL statement was executed
OPTIMIZER_COST	NUMBER	Cost of this query given by the optimizer
OPTIMIZER_ENV	RAW(2000)	Optimizer environment
OPTIMIZER_ENV_HASH_VALUE	NUMBER	Hash value for the optimizer environment
PARSING_USER_ID	NUMBER	User ID of the user that has parsed the very first cursor under this parent
PARSING_SCHEMA_ID	NUMBER	Schema ID that was used to parse this child cursor
PARSING_SCHEMA_NAME	VARCHAR2(128)	Schema name that was used to parse this child cursor
KEPT_VERSIONS	NUMBER	Number of child cursors that have been marked to be kept using the DBMS_SHARED_POOL package
ADDRESS	RAW(4 | 8)	Address of the handle to the parent for this cursor
HASH_VALUE	NUMBER	Hash value of the parent statement in the library cache
OLD_HASH_VALUE	NUMBER	Old SQL hash value
PLAN_HASH_VALUE	NUMBER	Numeric representation of the current SQL plan for this cursor. Comparing one PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line).

Column	Datatype	Description
FULL_PLAN_HASH_VALUE	NUMBER	Numeric representation of the complete SQL plan for this cursor. Comparing one FULL_PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line). Note that the FULL_PLAN_HASH_VALUE cannot be compared across databases releases. It is not backward compatible.
MODULE	VARCHAR2(64)	Contains the name of the module that was executing when the SQL statement was first parsed as set by calling DBMS_APPLICATION_INFO.SET_MODULE
MODULE_HASH	NUMBER	Hash value of the module that is named in the MODULE column
ACTION	VARCHAR2(64)	Contains the name of the action that was executing when the SQL statement was first parsed as set by calling DBMS_APPLICATION_INFO.SET_ACTION
ACTION_HASH	NUMBER	Hash value of the action that is named in the ACTION column
SERIALIZABLE_ABORTS	NUMBER	Number of times the transaction failed to serialize, producing ORA-08177 errors, totalled over all the child cursors
OUTLINE_CATEGORY	VARCHAR2(64)	If an outline was applied during construction of the cursor, then this column displays the category of that outline. Otherwise the column is left blank.
CPU_TIME	NUMBER	CPU time (in microseconds) used by this cursor for parsing, executing, and fetching
ELAPSED_TIME	NUMBER	Elapsed time (in microseconds) used by this cursor for parsing, executing, and fetching. If the cursor uses parallel execution, then ELAPSED_TIME is the cumulative time for the query coordinator, plus all parallel query worker processes.
OUTLINE_SID	VARCHAR2(40)	Outline session identifier
LAST_ACTIVE_CHILD_ADDRESS	RAW(4 | 8)	Address (identifier) of the child cursor that was the last to be active in the group (that is, the child cursor on behalf of which statistics in V$SQL were updated)
REMOTE	VARCHAR2(1)	Indicates whether the cursor is remote mapped (Y) or not (N)
OBJECT_STATUS	VARCHAR2(19)	Status of the cursor: • VALID - Valid, authorized without errors • VALID_AUTH_ERROR - Valid, authorized with authorization errors • VALID_COMPILE_ERROR - Valid, authorized with compilation errors • VALID_UNAUTH - Valid, unauthorized • INVALID_UNAUTH - Invalid, unauthorized • INVALID - Invalid, unauthorized but keep the timestamp
LITERAL_HASH_VALUE	NUMBER	Hash value of the literals which are replaced with system-generated bind variables and are to be matched, when CURSOR_SHARING is used. This is not the hash value for the SQL statement. If CURSOR_SHARING is not used, then the value is 0.
LAST_LOAD_TIME	DATE	Time at which the query plan was loaded into the library cache
IS_OBSOLETE	VARCHAR2(1)	Indicates whether the cursor has become obsolete (Y) or not (N). This can happen if the number of child cursors is too large.
IS_BIND_SENSITIVE	VARCHAR2(1)	Indicates whether the cursor is bind sensitive (Y) or not (N). A query is considered bind-sensitive if the optimizer peeked at one of its bind variable values when computing predicate selectivities and where a change in a bind variable value may cause the optimizer to generate a different plan.

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Column	Datatype	Description
IS_BIND_AWARE	VARCHAR2(1)	Indicates whether the cursor is bind aware (Y) or not (N). A query is considered bind-aware if it has been marked to use extended cursor sharing. The query would already have been marked as bind-sensitive.
CHILD_LATCH	NUMBER	Child latch number that is protecting the cursor. This column is obsolete and maintained for backward compatibility.
SQL_PROFILE	VARCHAR2(64)	SQL profile used for this statement, if any
SQL_PATCH	VARCHAR2(128)	SQL patch used for this statement, if any
SQL_PLAN_BASELINE	VARCHAR2(128)	SQL plan baseline used for this statement, if any
PROGRAM_ID	NUMBER	Program identifier
PROGRAM_LINE#	NUMBER	Program line number
EXACT_MATCHING_SIGNATURE	NUMBER	Signature used when the CURSOR_SHARING parameter is set to EXACT
FORCE_MATCHING_SIGNATURE	NUMBER	Signature used when the CURSOR_SHARING parameter is set to FORCE
LAST_ACTIVE_TIME	DATE	Time at which the query plan was last active
BIND_DATA	RAW(2000)	Bind data
TYPECHECK_MEM	NUMBER	Typecheck memory
IO_CELL_OFFLOAD_ELIGIBLE_BYTES	NUMBER	Number of I/O bytes which can be filtered by the Exadata storage system **See Also:** Oracle Exadata Storage Server Software documentation for more information
IO_INTERCONNECT_BYTES	NUMBER	Number of I/O bytes exchanged between Oracle Database and the storage system
PHYSICAL_READ_REQUESTS	NUMBER	Number of physical read I/O requests issued by the monitored SQL
PHYSICAL_READ_BYTES	NUMBER	Number of bytes read from disks by the monitored SQL
PHYSICAL_WRITE_REQUESTS	NUMBER	Number of physical write I/O requests issued by the monitored SQL
PHYSICAL_WRITE_BYTES	NUMBER	Number of bytes written to disks by the monitored SQL
OPTIMIZED_PHY_READ_REQUESTS	NUMBER	Number of physical read I/O requests from Database Smart Flash Cache issued by the monitored SQL
LOCKED_TOTAL	NUMBER	Total number of times the child cursor has been locked
PINNED_TOTAL	NUMBER	Total number of times the child cursor has been pinned
IO_CELL_UNCOMPRESSED_BYTES	NUMBER	Number of uncompressed bytes (that is, size after decompression) that are offloaded to the Exadata cells **See Also:** Oracle Exadata Storage Server Software documentation for more information
IO_CELL_OFFLOAD_RETURNED_BYTES	NUMBER	Number of bytes that are returned by Exadata cell through the regular I/O path **See Also:** Oracle Exadata Storage Server Software documentation for more information
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

Column	Datatype	Description
IS_REOPTIMIZABLE	VARCHAR2(1)	This column shows whether the next execution matching this child cursor will trigger a reoptimization. The values are: • `Y`: If the next execution will trigger a reoptimization • `R`: If the child cursor contains reoptimization information, but will not trigger reoptimization because the cursor was compiled in reporting mode • `N`: If the child cursor has no reoptimization information
IS_RESOLVED_ADAPTIVE_PLAN	VARCHAR2(1)	This column shows whether all of the adaptive parts of a plan have been resolved to the final plan. Once the plan is resolved, the plan hash value and the plan displayed by DBMS_XPLAN will not change through the end of execution. The values for this column are: • `NULL`: If the plan is not adaptive • `Y`: If the plan is fully resolved • `N`: If the plan is not yet fully resolved **See Also:** *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_XPLAN package

> ✎ **See Also:**
>
> • *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_SHARED_POOL package
>
> • *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_APPLICATION_INFO.SET_MODULE procedure
>
> • *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_APPLICATION_INFO.SET_ACTION procedure
>
> • *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_XPLAN package

10.90 V$SQLAREA_PLAN_HASH

V$SQLAREA_PLAN_HASH displays statistics on shared SQL areas (V$SQL) by grouping on the SQL_ID and PLAN_HASH_VALUE columns. It can potentially create several rows for one parent cursor, one for each distinct value of the column PLAN_HASH_VALUE.

Column	Datatype	Description
SQL_TEXT	VARCHAR2(1000)	First thousand characters of the SQL text for the current cursor
SQL_FULLTEXT	CLOB	All characters of the SQL text for the current cursor
ADDRESS	RAW(4 | 8)	Address of the handle to the parent for this cursor
HASH_VALUE	NUMBER	Hash value of the parent statement in the library cache
SQL_ID	VARCHAR2(13)	SQL identifier of the parent cursor in the library cache
PLAN_HASH_VALUE	NUMBER	Numeric representation of the current SQL plan for this cursor. Comparing one PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line).

Column	Datatype	Description
VERSION_COUNT	NUMBER	Number of child cursors that are present in the cache under this parent
LAST_ACTIVE_CHILD_ADDRESS	RAW(4 | 8)	Address (identifier) of the child cursor that was the last to be active in the group (that is, the child cursor on behalf of which statistics in V$SQL were updated)
SHARABLE_MEM	NUMBER	Amount of shared memory used by a cursor. If multiple child cursors exist, then it is the sum of all shared memory used by all child cursors.
PERSISTENT_MEM	NUMBER	Fixed amount of memory used for the lifetime of an open cursor. If multiple child cursors exist, then it is the fixed sum of memory used for the lifetime of all the child cursors.
RUNTIME_MEM	NUMBER	Fixed amount of memory required during execution of a cursor. If multiple child cursors exist, then the fixed sum of all memory required during execution of all the child cursors.
SORTS	NUMBER	Sum of the number of sorts that were done for all the child cursors
LOADED_VERSIONS	NUMBER	Number of child cursors that are present in the cache and that have their context heap loaded
OPEN_VERSIONS	NUMBER	Number of child cursors that are currently open under this parent
USERS_OPENING	NUMBER	Number of users that have any of the child cursors open
USERS_EXECUTING	NUMBER	Total number of users executing the statement over all child cursors
FETCHES	NUMBER	Number of fetches associated with the SQL statement
EXECUTIONS	NUMBER	Total number of executions, totalled over all the child cursors
PX_SERVERS_EXECUTIONS	NUMBER	Total number of executions performed by parallel execution servers (0 when the statement has never been executed in parallel)
END_OF_FETCH_COUNT	NUMBER	Number of times this cursor was fully executed since the cursor was brought into the library cache. The value of this statistic is not incremented when the cursor is partially executed, either because it failed during the execution or because only the first few rows produced by this cursor are fetched before the cursor is closed or re-executed. By definition, the value of the END_OF_FETCH_COUNT column should be less or equal to the value of the EXECUTIONS column.
LOADS	NUMBER	Number of times the object was loaded or reloaded
FIRST_LOAD_TIME	DATE	Timestamp of the parent creation time
LAST_LOAD_TIME	DATE	Time at which the query plan was loaded into the library cache
LAST_ACTIVE_TIME	DATE	Time at which the query plan was last active
LAST_EXEC_START_TIME	DATE	Time at which the most recent execution of this SQL started
INVALIDATIONS	NUMBER	Total number of invalidations over all the child cursors
PARSE_CALLS	NUMBER	Sum of all parse calls to all the child cursors under this parent
DISK_READS	NUMBER	Sum of the number of disk reads over all child cursors
DIRECT_WRITES	NUMBER	Sum of the number of direct writes over all child cursors
BUFFER_GETS	NUMBER	Sum of buffer gets over all child cursors
CPU_TIME	NUMBER	CPU time (in microseconds) used by this cursor for parsing, executing, and fetching
ELAPSED_TIME	NUMBER	Elapsed time (in microseconds) used by this cursor for parsing, executing, and fetching
APPLICATION_WAIT_TIME	NUMBER	Application wait time (in microseconds)
CONCURRENCY_WAIT_TIME	NUMBER	Concurrency wait time (in microseconds)
CLUSTER_WAIT_TIME	NUMBER	Cluster wait time (in microseconds)

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Column	Datatype	Description
USER_IO_WAIT_TIME	NUMBER	User I/O wait time (in microseconds)
PLSQL_EXEC_TIME	NUMBER	PL/SQL execution time (in microseconds)
JAVA_EXEC_TIME	NUMBER	Java execution time (in microseconds)
ROWS_PROCESSED	NUMBER	Total number of rows processed on behalf of this SQL statement
COMMAND_TYPE	NUMBER	Oracle command type definition
OPTIMIZER_MODE	VARCHAR2(10)	Mode under which the SQL statement was executed
OPTIMIZER_COST	NUMBER	Cost of this query given by the optimizer
OPTIMIZER_ENV	RAW(2000)	Optimizer environment
OPTIMIZER_ENV_HASH_VALUE	NUMBER	Hash value for the optimizer environment
PARSING_USER_ID	NUMBER	User ID of the user that has parsed the very first cursor under this parent
PARSING_SCHEMA_ID	NUMBER	Schema ID that was used to parse this child cursor
PARSING_SCHEMA_NAME	VARCHAR2(128)	Schema name that was used to parse this child cursor
KEPT_VERSIONS	NUMBER	Number of child cursors that have been marked to be kept using the DBMS_SHARED_POOL package
MODULE	VARCHAR2(64)	Contains the name of the module that was executing when the SQL statement was first parsed as set by calling DBMS_APPLICATION_INFO.SET_MODULE
MODULE_HASH	NUMBER	Hash value of the module that is named in the MODULE column
ACTION	VARCHAR2(64)	Contains the name of the action that was executing when the SQL statement was first parsed as set by calling DBMS_APPLICATION_INFO.SET_ACTION
ACTION_HASH	NUMBER	Hash value of the action that is named in the ACTION column
SERIALIZABLE_ABORTS	NUMBER	Number of times the transaction failed to serialize, producing ORA-08177 errors, totalled over all the child cursors
OUTLINE_CATEGORY	VARCHAR2(64)	If an outline was applied during construction of the cursor, then this column displays the category of that outline. Otherwise, the column is left blank.
OUTLINE_SID	VARCHAR2(40)	Outline session identifier
REMOTE	VARCHAR2(1)	Indicates whether the cursor is remote mapped (Y) or not (N)
OBJECT_STATUS	VARCHAR2(19)	Status of the cursor: • VALID - Valid, authorized without errors • VALID_AUTH_ERROR - Valid, authorized with authorization errors • VALID_COMPILE_ERROR - Valid, authorized with compilation errors • VALID_UNAUTH - Valid, unauthorized • INVALID_UNAUTH - Invalid, unauthorized • INVALID - Invalid, unauthorized but keep the timestamp
LITERAL_HASH_VALUE	NUMBER	Hash value of the literals which are replaced with system-generated bind variables and are to be matched, when CURSOR_SHARING is used. This is not the hash value for the SQL statement. If CURSOR_SHARING is not used, then the value is 0.
SQL_PROFILE	VARCHAR2(64)	SQL profile used for this statement, if any
PROGRAM_ID	NUMBER	Program identifier
PROGRAM_LINE#	NUMBER	Program line number
EXACT_MATCHING_SIGNATURE	NUMBER	Signature used when the CURSOR_SHARING parameter is set to EXACT

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Column	Datatype	Description
FORCE_MATCHING_SIGNATURE	NUMBER	Signature used when the CURSOR_SHARING parameter is set to FORCE
BIND_DATA	RAW(2000)	Bind data
TYPECHECK_MEM	NUMBER	Typecheck memory
IO_CELL_OFFLOAD_ELIGIBLE_BYTES	NUMBER	Number of I/O bytes which can be filtered by the Exadata storage system **See Also:** Oracle Exadata Storage Server Software documentation for more information
IO_INTERCONNECT_BYTES	NUMBER	Number of I/O bytes exchanged between Oracle Database and the storage system
PHYSICAL_READ_REQUESTS	NUMBER	Number of physical read I/O requests issued by the monitored SQL
PHYSICAL_READ_BYTES	NUMBER	Number of bytes read from disks by the monitored SQL
PHYSICAL_WRITE_REQUESTS	NUMBER	Number of physical write I/O requests issued by the monitored SQL
PHYSICAL_WRITE_BYTES	NUMBER	Number of bytes written to disks by the monitored SQL
OPTIMIZED_PHY_READ_REQUESTS	NUMBER	Number of physical read I/O requests from Database Smart Flash Cache issued by the monitored SQL
IO_CELL_UNCOMPRESSED_BYTES	NUMBER	Number of uncompressed bytes (that is, size after decompression) that are offloaded to the Exadata cells **See Also:** Oracle Exadata Storage Server Software documentation for more information
IO_CELL_OFFLOAD_RETURNED_BYTES	NUMBER	Number of bytes that are returned by Exadata cell through the regular I/O path **See Also:** Oracle Exadata Storage Server Software documentation for more information
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data
CON_DBID	NUMBER	The database ID of the PDB

> **✎ See Also:**
>
> • *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_SHARED_POOL package
>
> • *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_APPLICATION_INFO.SET_MODULE procedure
>
> • *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_APPLICATION_INFO.SET_ACTION procedure

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10.91 V$SQLCOMMAND

`V$SQLCOMMAND` displays the mapping between SQL opcodes and names.

Column	Datatype	Description
COMMAND_TYPE	NUMBER	SQL command number
COMMAND_NAME	VARCHAR2(64)	SQL command name
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.92 V$SQLFN_ARG_METADATA

`V$SQLFN_ARG_METADATA` contains metadata about function arguments. There is one row for each argument of every function found in `V$SQLFN_METADATA`. There are no rows for functions that do not have any arguments.

Column	Datatype	Description
FUNC_ID	NUMBER	Internal function identification number. This column can be used to join with the `V$SQLFN_METADATA` view.
ARGNUM	NUMBER	Argument number
DATATYPE	VARCHAR2(8)	Data type of the argument. The value is NULL if this argument is not used. Otherwise, it can take values of any Oracle data type, family data type, or EXPR data type.
DESCR	VARCHAR2(128)	This column is reserved for future use.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> ✎ **See Also:**
>
> "V$SQLFN_METADATA"

10.93 V$SQLFN_METADATA

`V$SQLFN_METADATA` contains metadata about operators and built-in functions. Note that this view does not contain information about arguments because the number of arguments will be different for various functions. Information about arguments is contained in `V$SQLFN_ARG_METADATA`, which can be joined with `V$SQLFN_METADATA` to get information about any function and its arguments.

Column	Datatype	Description
FUNC_ID	NUMBER	Internal function identification number
NAME	VARCHAR2(128)	Name of the built-in function
MINARGS	NUMBER	Minimum number of arguments for the function
MAXARGS	NUMBER	Maximum number of arguments for the function
DATATYPE	VARCHAR2(8)	Return data type, which can take any Oracle data type values, data type family values, or ARG[n] data types
VERSION	VARCHAR2(12)	Minimum version of the database that has this function
ANALYTIC	VARCHAR2(3)	Indicates whether the function is an analytic function (YES) or not (NO)
AGGREGATE	VARCHAR2(3)	Indicates whether the function is an aggregate function (YES) or not (NO)
OFFLOADABLE	VARCHAR2(3)	Indicates whether execution of the function can be offloaded to the Oracle Exadata Storage Server (YES) or not (NO) **See Also:** Oracle Exadata Storage Server Software documentation for more information
DISP_TYPE	VARCHAR2(13)	Function display type: • NORMAL • ARITHMETIC • PARENTHESIS • REL-OP • CASELIKE • NOPARENTHESIS
USAGE	VARCHAR2(128)	A text explanation of how to use this function. The text is based on the syntax diagram for the function in the *Oracle Database SQL Language Reference*.
DESCR	VARCHAR2(4000)	Description of the function
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **✎ See Also:**
>
> "V$SQLFN_ARG_METADATA"

10.94 V$SQLSTATS

V$SQLSTATS displays basic performance statistics for SQL cursors and contains one row per SQL statement (that is, one row per unique value of SQL_ID). The column definitions for columns in V$SQLSTATS are identical to those in the V$SQL and V$SQLAREA views. However, the V$SQLSTATS view differs from V$SQL and V$SQLAREA in that it is faster, more scalable, and has a greater data retention (the statistics may still appear in this view, even after the cursor has been aged out of the shared pool). Note that V$SQLSTATS contains a subset of columns that appear in V$SQL and V$SQLAREA.

Column	Datatype	Description
SQL_TEXT	VARCHAR2(1000)	First thousand characters of the SQL text for the current cursor
SQL_FULLTEXT	CLOB	Full text for the SQL statement exposed as a CLOB column. THe full text of a SQL statement can be retrieved using this column instead of joining with the V$SQLTEXT view.
SQL_ID	VARCHAR2(13)	SQL identifier of the parent cursor in the library cache
LAST_ACTIVE_TIME	DATE	Last time the statistics of a contributing cursor were updated
LAST_ACTIVE_CHILD_ADDRESS	RAW(4 | 8)	Address of the contributing cursor that last updated these statistics
PLAN_HASH_VALUE	NUMBER	Numeric representation of the current SQL plan for this cursor. Comparing one PLAN_HASH_VALUE to another easily identifies whether or not two plans are the same (rather than comparing the two plans line by line).
PARSE_CALLS	NUMBER	Number of parse calls for all cursors with this SQL text and plan
DISK_READS	NUMBER	Number of disk reads for all cursors with this SQL text and plan
DIRECT_WRITES	NUMBER	Number of direct writes for all cursors with this SQL text and plan
DIRECT_READS	NUMBER	Number of direct reads for all cursors with this SQL text and plan
BUFFER_GETS	NUMBER	Number of buffer gets for all cursors with this SQL text and plan
ROWS_PROCESSED	NUMBER	Total number of rows the parsed SQL statement returns
SERIALIZABLE_ABORTS	NUMBER	Number of times the transaction failed to serialize, producing ORA-08177 errors, per cursor
FETCHES	NUMBER	Number of fetches associated with the SQL statement
EXECUTIONS	NUMBER	Number of executions that took place on this object since it was brought into the library cache
END_OF_FETCH_COUNT	NUMBER	Number of times this cursor was fully executed since the cursor was brought into the library cache. The value of this statistic is not incremented when the cursor is partially executed, either because it failed during the execution or because only the first few rows produced by this cursor are fetched before the cursor is closed or re-executed. By definition, the value of the END_OF_FETCH_COUNT column should be less or equal to the value of the EXECUTIONS column.
LOADS	NUMBER	Number of times the object was either loaded or reloaded
VERSION_COUNT	NUMBER	number of cursors present in the cache with this SQL text and plan
INVALIDATIONS	NUMBER	Number of times this child cursor has been invalidated
PX_SERVERS_EXECUTIONS	NUMBER	Total number of executions performed by parallel execution servers (0 when the statement has never been executed in parallel)
CPU_TIME	NUMBER	CPU time (in microseconds) used by this cursor for parsing, executing, and fetching

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Column	Datatype	Description
ELAPSED_TIME	NUMBER	Elapsed time (in microseconds) used by this cursor for parsing, executing, and fetching. If the cursor uses parallel execution, then ELAPSED_TIME is the cumulative time for the query coordinator, plus all parallel query worker processes.
AVG_HARD_PARSE_TIME	NUMBER	Average hard parse time (in microseconds) used by this cursor
APPLICATION_WAIT_TIME	NUMBER	Application wait time (in microseconds)
CONCURRENCY_WAIT_TIME	NUMBER	Concurrency wait time (in microseconds)
CLUSTER_WAIT_TIME	NUMBER	Cluster wait time (in microseconds). This value is specific to Oracle RAC. It shows the total time spent waiting for all waits that are categorized under the cluster class of wait events. The value is this column is an accumulated wait time spent waiting for Oracle RAC cluster resources.
USER_IO_WAIT_TIME	NUMBER	User I/O wait time (in microseconds)
PLSQL_EXEC_TIME	NUMBER	PL/SQL execution time (in microseconds)
JAVA_EXEC_TIME	NUMBER	Java execution time (in microseconds)
SORTS	NUMBER	Number of sorts that were done for the child cursor
SHARABLE_MEM	NUMBER	Total shared memory (in bytes) currently occupied by all cursors with this SQL text and plan
TOTAL_SHARABLE_MEM	NUMBER	Total shared memory (in bytes) occupied by all cursors with this SQL text and plan if they were to be fully loaded in the shared pool (that is, cursor size)
TYPECHECK_MEM	NUMBER	Typecheck memory
IO_CELL_OFFLOAD_ELIGIBLE _BYTES	NUMBER	Number of I/O bytes which can be filtered by the Exadata storage system **See Also:** Oracle Exadata Storage Server Software documentation for more information
IO_INTERCONNECT_BYTES	NUMBER	Number of I/O bytes exchanged between Oracle Database and the storage system. Typically used for Cache Fusion or parallel queries.
PHYSICAL_READ_REQUESTS	NUMBER	Number of physical read I/O requests issued by the monitored SQL. The requests may not be disk reads.
PHYSICAL_READ_BYTES	NUMBER	Number of bytes read from disks by the monitored SQL
PHYSICAL_WRITE_REQUESTS	NUMBER	Number of physical write I/O requests issued by the monitored SQL
PHYSICAL_WRITE_BYTES	NUMBER	Number of bytes written to disks by the monitored SQL
EXACT_MATCHING_SIGNATURE	NUMBER	Signature used when the CURSOR_SHARING parameter is set to EXACT
FORCE_MATCHING_SIGNATURE	NUMBER	Signature used when the CURSOR_SHARING parameter is set to FORCE
IO_CELL_UNCOMPRESSED_BYT ES	NUMBER	Number of uncompressed bytes (that is, size after decompression) that are offloaded to the Exadata cells **See Also:** Oracle Exadata Storage Server Software documentation for more information
IO_CELL_OFFLOAD_RETURNED _BYTES	NUMBER	Number of bytes that are returned by Exadata cell through the regular I/O path **See Also:** Oracle Exadata Storage Server Software documentation for more information
DELTA_PARSE_CALLS	NUMBER	Number of parse calls for the cursor since the last Automatic Workload Repository (AWR) snapshot **See Also:** *Oracle Database Performance Tuning Guide* for an introduction to AWR

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Column	Datatype	Description
DELTA_DISK_READS	NUMBER	Number of disk reads for the cursor since the last AWR snapshot
DELTA_DIRECT_WRITES	NUMBER	Number of direct writes for the cursor since the last AWR snapshot
DELTA_DIRECT_READS	NUMBER	Number of direct reads for the cursor since the last AWR snapshot
DELTA_BUFFER_GETS	NUMBER	Number of buffer gets for the cursor since the last AWR snapshot
DELTA_ROWS_PROCESSED	NUMBER	Number of rows returned by the cursor since the last AWR snapshot
DELTA_FETCH_COUNT	NUMBER	Number of fetches for the cursor since the last AWR snapshot
DELTA_EXECUTION_COUNT	NUMBER	Number of executions for the cursor since the last AWR snapshot
DELTA_PX_SERVERS_EXECUTIONS	NUMBER	Number of executions performed by parallel execution servers since the last AWR snapshot
DELTA_END_OF_FETCH_COUNT	NUMBER	Number of times the cursor was fully executed since the last AWR snapshot
DELTA_CPU_TIME	NUMBER	CPU time (in microseconds) for the cursor since the last AWR snapshot
DELTA_ELAPSED_TIME	NUMBER	Database time (in microseconds) for the cursor since the last AWR snapshot
DELTA_APPLICATION_WAIT_TIME	NUMBER	Time spent by the cursor (in microseconds) in the Application wait class since the last AWR snapshot
DELTA_CONCURRENCY_TIME	NUMBER	Time spent by the cursor (in microseconds) in the Concurrency wait class since the last AWR snapshot
DELTA_CLUSTER_WAIT_TIME	NUMBER	Time spent by the cursor (in microseconds) in the Cluster wait class since the last AWR snapshot
DELTA_USER_IO_WAIT_TIME	NUMBER	Time spent by the cursor (in microseconds) in the User I/O wait class since the last AWR snapshot
DELTA_PLSQL_EXEC_TIME	NUMBER	Time spent by the cursor (in microseconds) executing PL/SQL since the last AWR snapshot
DELTA_JAVA_EXEC_TIME	NUMBER	Time spent by the cursor (in microseconds) executing Java since the last AWR snapshot
DELTA_SORTS	NUMBER	Number of sorts for the cursor since the last AWR snapshot
DELTA_LOADS	NUMBER	Number of times the cursor was loaded since the last AWR snapshot
DELTA_INVALIDATIONS	NUMBER	Number of times the cursor was invalidated since the last AWR snapshot
DELTA_PHYSICAL_READ_REQUESTS	NUMBER	Number of physical read I/O requests for the cursor since the last AWR snapshot
DELTA_PHYSICAL_READ_BYTES	NUMBER	Number of bytes read from disk for the cursor since the last AWR snapshot
DELTA_PHYSICAL_WRITE_REQUESTS	NUMBER	Number of physical write I/O requests for the cursor since the last AWR snapshot
DELTA_PHYSICAL_WRITE_BYTES	NUMBER	Number of bytes written to disk for the cursor since the last AWR snapshot
DELTA_IO_INTERCONNECT_BYTES	NUMBER	Number of I/O bytes exchanged between the Oracle database and the storage system for the cursor since the last AWR snapshot
DELTA_CELL_OFFLOAD_ELIG_BYTES	NUMBER	Number of I/O bytes which can be filtered by the Exadata storage system for the cursor since the last AWR snapshot **See Also:** Oracle Exadata Storage Server Software documentation for more information

Column	Datatype	Description
DELTA_CELL_UNCOMPRESSED_BYTES	NUMBER	Number of uncompressed bytes that are offloaded to the Exadata cell for the cursor since the last AWR snapshot **See Also:** Oracle Exadata Storage Server Software documentation for more information
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data
CON_DBID	NUMBER	The database ID of the PDB
OBSOLETE_COUNT	NUMBER	Number of times that a parent cursor became obsolete
AVOIDED_EXECUTIONS	NUMBER	Number of executions attempted on this object, but prevented due to the SQL statement being in quarantine
DELTA_AVOIDED_EXECUTIONS	NUMBER	Number of executions attempted on this object, but prevented due to the SQL statement being in quarantine, since the last AWR snapshot

> **See Also:**
>
> • "V$SQL"
> • "V$SQLAREA"

10.95 V$SQLSTATS_PLAN_HASH

V$SQLSTATS_PLAN_HASH displays basic performance statistics for SQL cursors and contains one row per execution plan of a SQL statement (that is, one row per unique combination of SQL_ID and PLAN_HASH_VALUE).
The columns for V$SQLSTATS_PLAN_HASH are the same as those for V$SQLSTATS.

> **See Also:**
>
> "V$SQLSTATS"

10.96 V$SQLTEXT

V$SQLTEXT displays the text of SQL statements belonging to shared SQL cursors in the SGA.

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Used with HASH_VALUE to uniquely identify a cached cursor
HASH_VALUE	NUMBER	Used with ADDRESS to uniquely identify a cached cursor

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Column	Datatype	Description
SQL_ID	VARCHAR2(13)	SQL identifier of a cached cursor
COMMAND_TYPE	NUMBER	Code for the type of SQL statement (SELECT, INSERT, and so on)
PIECE	NUMBER	Number used to order the pieces of SQL text
SQL_TEXT	VARCHAR2(64)	A column containing one piece of the SQL text
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.97 V$SQLTEXT_WITH_NEWLINES

V$SQLTEXT_WITH_NEWLINES is identical to the V$SQLTEXT view except that, to improve legibility, V$SQLTEXT_WITH_NEWLINES does not replace newlines and tabs in the SQL statement with spaces.

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Used with HASH_VALUE to uniquely identify a cached cursor
HASH_VALUE	NUMBER	Used with ADDRESS to uniquely identify a cached cursor
SQL_ID	VARCHAR2(13)	SQL identifier of a cached cursor
COMMAND_TYPE	NUMBER	Code for the type of SQL statement (SELECT, INSERT, and so on)
PIECE	NUMBER	Number used to order the pieces of SQL text
SQL_TEXT	VARCHAR2(64)	A column containing one piece of the SQL text
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> ✎ **See Also:**
>
> "V$SQLTEXT"

10.98 V$STANDBY_EVENT_HISTOGRAM

V$STANDBY_EVENT_HISTOGRAM displays the histogram of apply lag on the physical standby. Each distinct value of apply lag has its own bucket and the count in the corresponding bucket

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represents the number of occurrences so far. The physical standby samples the apply lag every second and increments the corresponding bucket in the histogram.

Column	Datatype	Description
NAME	VARCHAR2(64)	Name of the event (currently `APPLY LAG` is the only valid value)
TIME	NUMBER	Time duration that the bucket represents
UNIT	VARCHAR2(16)	Time unit (`seconds`, `minutes`, `hours`, or `days`)
COUNT	NUMBER	Each row is a histogram bucket for apply lag. `COUNT` is the number of occurrences the apply lag falls into the histogram bucket.
LAST_TIME_UPDATED	VARCHAR2(20)	Last time the bucket was updated by an event falling into that time duration
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.99 V$STANDBY_LOG

`V$STANDBY_LOG` displays information about standby redo logs. Standby redo logs are similar to online redo logs, but standby redo logs are only used on a standby database that is receiving redo data from the primary database.

Column	Datatype	Description
GROUP#	NUMBER	Log group number
DBID	VARCHAR2(40)	Database ID of the primary database to which the standby redo logfile is assigned. If the standby redo logfile is unassigned, the value `UNASSIGNED` will be displayed.
THREAD#	NUMBER	Log thread number
SEQUENCE#	NUMBER	Log sequence number
BYTES	NUMBER	Size of the log (in bytes)
BLOCKSIZE	NUMBER	Block size of the logfile (512 or 4096)
USED	NUMBER	Number of bytes used in the log
ARCHIVED	VARCHAR2(3)	Archive status (`YES`) or (`NO`). See the `STATUS` column for further details.
STATUS	VARCHAR2(10)	Log status: • `UNASSIGNED` - If `ARCHIVED` is `NO`, then the standby redo log has been archived and is again available. If `ARCHIVED` is `YES`, then the standby redo log has never been used and is available. • `ACTIVE` - If `ARCHIVED` is `NO`, then the standby redo log is complete and waiting to be archived. If `ARCHIVED` is `YES`, then the standby redo log is currently being written to and is therefore not ready to be archived. For a given thread, there should be only one such log.
FIRST_CHANGE#	NUMBER	Lowest SCN in the log
FIRST_TIME	DATE	Time of the first SCN in the log

Column	Datatype	Description
NEXT_CHANGE#	NUMBER	All redo records contained within this log will have an SCN lower than NEXT_CHANGE#. Only filled in once the log is complete. Also the lowest SCN of any redo record in the next log.
NEXT_TIME	DATE	All redo records contained within this log will have a timestamp lower than NEXT_TIME. Only filled in once the log is complete. Also the lowest timestamp of any redo record in the next log.
LAST_CHANGE#	NUMBER	Redo in the standby redo log that recovery can possibly apply from the log has an SCN lower than LAST_CHANGE#
LAST_TIME	DATE	Timestamp of LAST_CHANGE#
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.100 V$STATISTICS_LEVEL

V$STATISTICS_LEVEL displays the status of the statistics/advisories controlled by STATISTICS_LEVEL.

Column	Datatype	Description
STATISTICS_NAME	VARCHAR2(64)	Name of the statistic/advisory
DESCRIPTION	VARCHAR2(4000)	Description of the statistic/advisory
SESSION_STATUS	VARCHAR2(8)	Status of the statistic/advisory for the session: • ENABLED • DISABLED
SYSTEM_STATUS	VARCHAR2(8)	System-wide status of the statistic/advisory: • ENABLED • DISABLED
ACTIVATION_LEVEL	VARCHAR2(7)	Indicates the level of STATISTICS_LEVEL that enables the statistic/advisory: • BASIC • TYPICAL • ALL
STATISTICS_VIEW_NAME	VARCHAR2(64)	If there is a single view externalizing the statistic/advisory, then this column contains the name of that view. If there is no such view, then this column is null. If there are multiple views involved, then the DESCRIPTION column mentions the view names.
SESSION_SETTABLE	VARCHAR2(3)	Indicates whether the statistic/advisory can be set at the session level (YES) or not (NO)

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **✎ See Also:**
>
> "STATISTICS_LEVEL"

10.101 V$STATNAME

V$STATNAME displays decoded statistic names for the statistics shown in the V$SESSTAT and V$SYSSTAT tables.

On some platforms, the NAME and CLASS columns contain additional operating system-specific statistics.

Column	Datatype	Description
STATISTIC#	NUMBER	Statistic number **Note:** Statistics numbers are not guaranteed to remain constant from one release to another. Therefore, you should rely on the statistics name rather than its number in your applications.
NAME	VARCHAR2(64)	Statistic name. Names that appear in this column remain stable across Oracle Database releases, and they can be relied on by customer scripts.
CLASS	NUMBER	A number representing one or more statistics classes. The following class numbers are additive: • `1` - User • `2` - Redo • `4` - Enqueue • `8` - Cache • `16` - OS • `32` - Real Application Clusters • `64` - SQL • `128` - Debug • `256` - Instance level
STAT_ID	NUMBER	Identifier of the statistic
DISPLAY_NAME	VARCHAR2(64)	A clearer and more descriptive name for the statistic that appears in the NAME column. Names that appear in the DISPLAY_NAME column can change across Oracle Database releases, therefore customer scripts should not rely on names that appear in the DISPLAY_NAME column across releases.

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Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **See Also:**
>
> • "V$SESSTAT" and "V$SYSSTAT"
> • " Statistics Descriptions" for statistic descriptions
> • Your operating system-specific Oracle documentation

10.102 V$STATS_ADVISOR_RULES

V$STATS_ADVISOR_RULES displays the rule definition information for each Optimizer Statistics Advisor rule.

Column	Datatype	Description
RULE_ID	NUMBER	ID of the rule
NAME	VARCHAR2(64)	Name of the rule
RULE_TYPE	VARCHAR2(9)	Type of the rule: • OBJECT • OPERATION • SYSTEM
DESCRIPTION	VARCHAR2(64)	Description of the rule
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **See Also:**
>
> *Oracle Database SQL Tuning Guide* for more information about Optimizer Statistics Advisor.

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10.103 V$STREAMS_APPLY_COORDINATOR

`V$STREAMS_APPLY_COORDINATOR` displays information about each apply process coordinator. The coordinator for an apply process gets transactions from the apply process reader and passes them to apply servers. An apply process coordinator is a subcomponent of an apply process, outbound server, or inbound server.

Column	Datatype	Description
SID	NUMBER	Session ID of the coordinator's session
SERIAL#	NUMBER	Serial number of the coordinator's session
STATE	VARCHAR2(21)	State of the coordinator: • `INITIALIZING` - Starting up • `IDLE` - Performing no work • `APPLYING` - Passing transactions to apply servers • `SHUTTING DOWN CLEANLY` - Stopping without an error • `ABORTING` - Stopping because of an apply error
APPLY#	NUMBER	Apply process number. An apply process coordinator is an Oracle background process, prefixed by `ap`.
APPLY_NAME	VARCHAR2(128)	Name of the apply process
TOTAL_APPLIED	NUMBER	Total number of transactions applied by the apply process since the apply process was last started
TOTAL_WAIT_DEPS	NUMBER	Number of times since the apply process was last started that an apply server waited to apply a logical change record (LCR) in a transaction until another apply server applied a transaction because of a dependency between the transactions
TOTAL_WAIT_COMMITS	NUMBER	Number of times since the apply process was last started that an apply server waited to commit a transaction until another apply server committed a transaction to serialize commits
TOTAL_ADMIN	NUMBER	Number of administrative jobs issued since the apply process was last started
TOTAL_ASSIGNED	NUMBER	Number of transactions assigned to apply servers since the apply process was last started
TOTAL_RECEIVED	NUMBER	Total number of transactions received by the coordinator process since the apply process was last started
TOTAL_IGNORED	NUMBER	Number of transactions which were received by the coordinator but were ignored because they had been previously applied
TOTAL_ROLLBACKS	NUMBER	Number of transactions which were rolled back due to unexpected contention
TOTAL_ERRORS	NUMBER	Number of transactions applied by the apply process that resulted in an apply error since the apply process was last started
UNASSIGNED_COMPLETE_TXNS	NUMBER	Total number of complete transactions that the coordinator has not assigned to any apply servers
AUTO_TXN_BUFFER_SIZE	NUMBER	Current value of transaction buffer size. Transaction buffer size refers to the number of transactions that the apply reader can assemble ahead of apply servers. The apply process periodically adjusts the transaction buffer size.
LWM_TIME	DATE	Time when the message with the lowest message number was recorded. The creation time of the message with the lowest message number was also recorded at this time.

Column	Datatype	Description
LWM_MESSAGE_NUMBER	NUMBER	Number of the message corresponding to the low watermark. That is, messages with a commit message number less than or equal to this message number have definitely been applied, but some messages with a higher commit message number also may have been applied.
LWM_MESSAGE_CREATE_TIME	DATE	For captured messages, creation time at the source database of the message corresponding to the low watermark. For user-enqueued messages, time when the message corresponding to the low watermark was enqueued into the queue at the local database.
HWM_TIME	DATE	Time when the message with the highest message number was recorded. The creation time of the message with the highest message number was also recorded at this time.
HWM_MESSAGE_NUMBER	NUMBER	Number of the message corresponding to the high watermark. That is, no messages with a commit message number greater than this message number have been applied.
HWM_MESSAGE_CREATE_TIME	DATE	For captured messages, creation time at the source database of the message corresponding to the high watermark. For user-enqueued messages, time when the message corresponding to the high watermark was enqueued into the queue at the local database.
STARTUP_TIME	DATE	Time when the apply process was last started
ELAPSED_SCHEDULE_TIME	NUMBER	Time elapsed (in hundredths of a second) scheduling messages since the apply process was last started
ELAPSED_IDLE_TIME	NUMBER	Elapsed idle time
LWM_POSITION	RAW(64)	Position of the low-watermark LCR
HWM_POSITION	RAW(64)	Position of the high-watermark LCR
PROCESSED_MESSAGE_NUMBER	NUMBER	Message number currently processed by the apply coordinator
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data
ACTIVE_SERVER_COUNT	NUMBER	Active server count

> **Note:**
>
> The ELAPSED_SCHEDULE_TIME column is only populated if the TIMED_STATISTICS initialization parameter is set to true, or if the STATISTICS_LEVEL initialization parameter is set to TYPICAL or ALL.

> **See Also:**
>
> • "TIMED_STATISTICS"
> • "STATISTICS_LEVEL"

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10.104 V$STREAMS_APPLY_READER

`V$STREAMS_APPLY_READER` displays information about each apply reader. The apply reader is a process which reads (dequeues) messages from the queue, computes message dependencies, and builds transactions. It passes the transactions on to the coordinator in commit order for assignment to the apply servers. An apply reader is a subcomponent of an apply process, outbound server, or inbound server.

Column	Datatype	Description
SID	NUMBER	Session ID of the reader's session
SERIAL#	NUMBER	Serial number of the reader's session
APPLY#	NUMBER	Apply process number. An apply process is an Oracle background process, prefixed by `ap`.
APPLY_NAME	VARCHAR2(128)	Name of the apply process
STATE	VARCHAR2(36)	State of the reader: • `INITIALIZING` - Starting up • `IDLE` - Performing no work • `DEQUEUE MESSAGES` - Dequeuing messages from the queue • `SCHEDULE MESSAGES` - Computing dependencies between messages and assembling messages into transactions • `SPILLING` - Spilling unapplied messages from memory to hard disk • `PAUSED – WAITING FOR DDL TO COMPLETE` - Waiting for a data definition language (DDL) logical change record (LCR) to be applied
TOTAL_MESSAGES_DEQUEUED	NUMBER	Total number of messages dequeued since the apply process was last started
TOTAL_MESSAGES_SPILLED	NUMBER	Number of messages spilled by the reader since the apply process was last started
DEQUEUE_TIME	DATE	Time when the last message was received
DEQUEUED_MESSAGE_NUMBER	NUMBER	Number of the last message received
DEQUEUED_MESSAGE_CREATE_TIME	DATE	For captured messages, creation time at the source database of the last message received. For user-enqueued messages, time when the message was enqueued into the queue at the local database.
SGA_USED	NUMBER	Amount (in bytes) of SGA memory used by the apply process since it was last started
ELAPSED_DEQUEUE_TIME	NUMBER	Time elapsed (in hundredths of a second) dequeuing messages since the apply process was last started
ELAPSED_SCHEDULE_TIME	NUMBER	Time elapsed (in hundredths of a second) scheduling messages since the apply process was last started. Scheduling includes computing dependencies between messages and assembling messages into transactions.
ELAPSED_SPILL_TIME	NUMBER	Elapsed time (in hundredths of a second) spent spilling messages since the apply process was last started
LAST_BROWSE_NUM	NUMBER	Reserved for internal use
OLDEST_SCN_NUM	NUMBER	Oldest SCN
LAST_BROWSE_SEQ	NUMBER	Reserved for internal use
LAST_DEQ_SEQ	NUMBER	Last dequeue sequence number

Column	Datatype	Description
OLDEST_XIDUSN	NUMBER	Transaction ID undo segment number of the oldest transaction that either has been applied or is being applied
OLDEST_XIDSLT	NUMBER	Transaction ID slot number of the oldest transaction that either has been applied or is being applied
OLDEST_XIDSQN	NUMBER	Transaction ID sequence number of the oldest transaction that either has been applied or is being applied
SPILL_LWM_SCN	NUMBER	Spill low-watermark SCN
PROXY_SID	NUMBER	When the apply process uses combined capture and apply, the session ID of the propagation receiver that is responsible for direct communication between capture and apply. If the apply process does not use combined capture and apply, then this column is 0.
PROXY_SERIAL	NUMBER	When the apply process uses combined capture and apply, the serial number of the propagation receiver that is responsible for direct communication between capture and apply. If the apply process does not use combined capture and apply, then this column is 0.
PROXY_SPID	VARCHAR2(12)	When the apply process uses combined capture and apply, the process identification number of the propagation receiver that is responsible for direct communication between capture and apply. If the apply process does not use combined capture and apply, then this column is 0.
CAPTURE_BYTES_RECEIVED	NUMBER	When the apply process uses combined capture and apply, the number of bytes received by the apply process from the capture process since the apply process last started. If the apply process does not use combined capture and apply, then this column is not populated.
DEQUEUED_POSITION	RAW(64)	Dequeued position. This column is populated only for an apply process that is functioning as an XStream inbound server.
LAST_BROWSE_POSITION	RAW(64)	Reserved for internal use
OLDEST_POSITION	RAW(64)	The earliest position of the transactions currently being dequeued and applied. This column is populated only for an apply process that is functioning as an XStream inbound server.
SPILL_LWM_POSITION	RAW(64)	Spill low-watermark position. This column is populated only for an apply process that is functioning as an XStream inbound server.
OLDEST_TRANSACTION_ID	VARCHAR2(128)	Oldest transaction ID
TOTAL_LCRS_WITH_DEP	NUMBER	Total number of LCRs with row-level dependencies since the apply process last started
TOTAL_LCRS_WITH_WMDEP	NUMBER	Total number of LCRs with watermark dependencies since the apply process last started. A watermark dependency occurs when an apply process must wait until the apply process's low watermark reaches a particular threshold.
TOTAL_IN_MEMORY_LCRS	NUMBER	Total number of LCRs currently in memory
SGA_ALLOCATED	NUMBER	The total amount of shared memory (in bytes) allocated from the Streams pool for the apply process since the apply process last started
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **✎ Note:**
>
> The `ELAPSED_DEQUEUE_TIME` and `ELAPSED_SCHEDULE_TIME` columns are only populated if the `TIMED_STATISTICS` initialization parameter is set to `true`, or if the `STATISTICS_LEVEL` initialization parameter is set to `TYPICAL` or `ALL`.

> **✎ See Also:**
>
> - "TIMED_STATISTICS"
> - "STATISTICS_LEVEL"

10.105 V$STREAMS_APPLY_SERVER

`V$STREAMS_APPLY_SERVER` displays information about each apply server and its activities. An apply server receives messages from the apply coordinator for an apply process. For each message received, an apply server either applies the message or sends the message to the appropriate apply handler. An apply server is a subcomponent of an apply process, outbound server, or inbound server.

Column	Datatype	Description
SID	NUMBER	Session ID of the apply server's session
SERIAL#	NUMBER	Serial number of the apply server's session
APPLY#	NUMBER	Apply process number. An apply process is an Oracle background process, prefixed by `ap`.
APPLY_NAME	VARCHAR2(128)	Name of the apply process
SERVER_ID	NUMBER	Parallel execution server number of the apply server

Column	Datatype	Description
STATE	VARCHAR2(20)	State of the apply server: • INITIALIZING - Starting up • IDLE - Performing no work • RECORD LOW-WATERMARK - Performing an administrative job that maintains information about the apply progress, which is used in the ALL_APPLY_PROGRESS and DBA_APPLY_PROGRESS data dictionary views • ADD PARTITION - Performing an administrative job that adds a partition that is used for recording information about in-progress transactions • DROP PARTITION - Performing an administrative job that purges rows that were used to record information about in-progress transactions • EXECUTE TRANSACTION - Applying a transaction • WAIT COMMIT - Waiting to commit a transaction until all other transactions with a lower commit SCN are applied. This state is possible only if the COMMIT_SERIALIZATION apply process parameter is set to a value other than DEPENDENT_TRANSACTIONS and the PARALLELISM apply process parameter is set to a value greater than 1. • WAIT DEPENDENCY - Waiting to apply a logical change record (LCR) in a transaction until another transaction, on which it has a dependency, is applied. This state is possible only if the PARALLELISM apply process parameter is set to a value greater than 1. • ROLLBACK TRANSACTION - Rolling back a transaction • TRANSACTION CLEANUP - Cleaning up an applied transaction, which includes removing LCRs from the apply process's queue • WAIT FOR CLIENT - Waiting for an XStream client application to request more LCRs • WAIT FOR NEXT CHUNK - Waiting for the next set of LCRs for a large transaction
XIDUSN	NUMBER	Transaction ID undo segment number of the transaction currently being applied
XIDSLT	NUMBER	Transaction ID slot number of the transaction currently being applied
XIDSQN	NUMBER	Transaction ID sequence number of the transaction currently being applied
COMMITSCN	NUMBER	Commit system change number (SCN) of the transaction currently being applied
DEP_XIDUSN	NUMBER	Transaction ID undo segment number of a transaction on which the transaction being applied by this apply server depends
DEP_XIDSLT	NUMBER	Transaction ID slot number of a transaction on which the transaction being applied by this apply server depends
DEP_XIDSQN	NUMBER	Transaction ID sequence number of a transaction on which the transaction being applied by this apply server depends
DEP_COMMITSCN	NUMBER	Commit system change number (SCN) of the transaction on which this apply server depends
MESSAGE_SEQUENCE	NUMBER	Number of the current message being applied by the apply server. This value is reset to 1 at the beginning of each transaction.
TOTAL_ASSIGNED	NUMBER	Total number of transactions assigned to the apply server since the apply process was last started

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Column	Datatype	Description
TOTAL_ADMIN	NUMBER	Total number of administrative jobs done by the apply server since the apply process was last started. See the STATE information in this view for the types of administrative jobs.
TOTAL_ROLLBACKS	NUMBER	Number of transactions assigned to this server which were rolled back
TOTAL_MESSAGES_APPLIED	NUMBER	Total number of messages applied by this apply server since the apply process was last started
APPLY_TIME	DATE	Time the last message was applied
APPLIED_MESSAGE_NUMBER	NUMBER	Number of the last message applied
APPLIED_MESSAGE_CREATE_TIME	DATE	Creation time at the source database of the last captured message applied. No information about user-enqueued messages is recorded in this column.
ELAPSED_DEQUEUE_TIME	NUMBER	Time elapsed (in hundredths of a second) dequeuing messages since the apply process was last started
ELAPSED_APPLY_TIME	NUMBER	Time elapsed (in hundredths of a second) applying messages since the apply process was last started
COMMIT_POSITION	RAW(64)	Commit position of the transaction. This column is populated only for an apply process that is functioning as an XStream outbound server or inbound server.
DEP_COMMIT_POSITION	RAW(64)	Commit position of the transaction the worker depends on. This column is populated only for an apply process that is functioning as an XStream inbound server.
LAST_APPLY_POSITION	RAW(64)	For inbound servers, the position of the last message applied; for outbound servers, the position of the last message sent to the XStream client application. This column is populated only for an apply process that is functioning as an XStream outbound server or inbound server.
TRANSACTION_ID	VARCHAR2(128)	Transaction ID that the worker is applying. This column is populated only for an apply process that is functioning as an XStream inbound server.
DEP_TRANSACTION_ID	VARCHAR2(128)	Transaction ID of the transaction the worker depends on. This column is populated only for an apply process that is functioning as an XStream inbound server.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data
TOTAL_LCRS_RETRIED	NUMBER	Total number of LCRs retried by this server
LCR_RETRY_ITERATION	NUMBER	Retry iteration for this transaction by this server
TOTAL_TXNS_RETRIED	NUMBER	Total transactions retried by this server
TXN_RETRY_ITERATION	NUMBER	Total retry iterations by this server
TOTAL_TXNS_RECORDED	NUMBER	Total transactions recorded in error queue by this server

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> **Note:**
>
> The `ELAPSED_DEQUEUE_TIME` and `ELAPSED_APPLY_TIME` columns are only populated if the `TIMED_STATISTICS` initialization parameter is set to `true`, or if the `STATISTICS_LEVEL` initialization parameter is set to `TYPICAL` or `ALL`.

> **See Also:**
>
> - "TIMED_STATISTICS"
> - "STATISTICS_LEVEL"

10.106 V$STREAMS_POOL_ADVICE

`V$STREAMS_POOL_ADVICE` displays information about the estimated count of spilled or unspilled messages and the associated time spent in the spill or unspill activity for different Streams pool sizes. The sizes range from 10% to 200% of the current Streams pool size, in equal intervals. The value of the interval depends on the current size of the Streams pool.

Column	Datatype	Description
STREAMS_POOL_SIZE_FOR_ESTIMATE	NUMBER	Streams pool size (in megabytes) for the estimate. The size ranges from values smaller than the current Streams pool size to values larger than the current Streams pool size, and there is a separate row for each increment. There is always an entry that shows the current Streams pool size, and there are always 20 increments. The range and the size of the increments depend on the current size of the Streams pool.
STREAMS_POOL_SIZE_FACTOR	NUMBER	Size factor with respect to the current Streams pool size
ESTD_SPILL_COUNT	NUMBER	Estimated count of messages spilled from the Streams pool
ESTD_SPILL_TIME	NUMBER	Estimated elapsed time (in seconds) to spill
ESTD_UNSPILL_COUNT	NUMBER	Estimated count of unspills (read back from disk)
ESTD_UNSPILL_TIME	NUMBER	Estimated elapsed time (in seconds) to unspill
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.107 V$STREAMS_POOL_STATISTICS

`V$STREAMS_POOL_STATISTICS` displays information about the current Streams pool usage percentage.

Column	Datatype	Description
TOTAL_MEMORY_ALLOCATED	NUMBER	Total memory allocated to the Streams pool (in bytes). It should always be less than the current size of the Streams pool. You can get the percentage of the Streams pool used by dividing TOTAL_MEMORY_ALLOCATED by CURRENT_SIZE.
CURRENT_SIZE	NUMBER	Current size of the Streams pool (in bytes)
SGA_TARGET_VALUE	NUMBER	Value of SGA_TARGET. Used to determine whether or not streams pool automatic tuning is enabled. This should be set even if MEMORY_TARGET is set and SGA_TARGET is not set.
SHRINK_PHASE	NUMBER	This only pertains to the Streams pool in an automatic tuning environment (SGA_TARGET and MEMORY_TARGET set). In this case, this shows whether or not the Streams pool is being asked to shrink. During the shrink phase, enqueues are blocked, flow control is enabled for all components, and cached memory is returned to the SGA.
ADVICE_DISABLED	NUMBER	This determines whether or not Streams pool advice in V$STREAMS_POOL_ADVICE as well as all statistics gathering related to auto-tuning the Streams pool have been disabled.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.108 V$SUBCACHE

V$SUBCACHE displays information about the subordinate caches currently loaded into library cache memory. The view walks through the library cache, printing out a row for each loaded subordinate cache per library cache object.

Column	Datatype	Description
OWNER_NAME	VARCHAR2(64)	Owner of the object containing these cache entries
NAME	VARCHAR2(1000)	Object Name
TYPE	NUMBER	Object Type
HEAP_NUM	NUMBER	Heap number containing this subordinate cache
CACHE_ID	NUMBER	Subordinate cache ID
CACHE_CNT	NUMBER	Number of entries for this cache in this object
HEAP_SZ	NUMBER	Amount of extent space allocated to this heap
HEAP_ALOC	NUMBER	Amount of extent space allocated from this heap
HEAP_USED	NUMBER	Amount of space utilized in this heap

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.109 V$SUBSCR_REGISTRATION_STATS

V$SUBSCR_REGISTRATION_STATS displays information for diagnosability of notifications.

Column	Datatype	Description
REG_ID	NUMBER	Registration identifier
NUM_NTFNS	NUMBER	Number of notifications
NUM_GROUPING_NTFNS	NUMBER	Number of grouping notifications
NUM_NTFNS_CURRENT_GROUP	NUMBER	Number of events received in the current group
LAST_NTFN_START_TIME	TIMESTAMP(3) WITH TIME ZONE	Time when the last notification was started
LAST_NTFN_SENT_TIME	TIMESTAMP(3) WITH TIME ZONE	Time when the last notification was sent
TOTAL_EMON_LATENCY	NUMBER	Total EMON latency (time taken by the EMON worker to process notifications)
EMON#	NUMBER	Active EMON worker serving the registration
ALL_EMON_SERVERS	RAW(2000)	EMON workers that served the registration
TOTAL_PAYLOAD_BYTES_SENT	NUMBER	Total payload bytes sent
SHARD_ID	NUMBER	Shard number for current registration used for Key Based Messaging
NUM_RETRIES	NUMBER	Number of retries in sending notifications
TOTAL_PLSQL_EXEC_TIME	NUMBER	Total PL/SQL callback execution time (relevant only for PL/SQL notifications)
LAST_ERR	VARCHAR2(90)	Last error message
LAST_ERR_TIME	TIMESTAMP(3) WITH TIME ZONE	Time of the last error
LAST_UPDATE_TIME	TIMESTAMP(3) WITH TIME ZONE	Time of the last update
NUM_PENDING_NTFNS	NUMBER	Number of notifications pending to be sent
TOTAL_PENDING_NTFN_BYTES	NUMBER	Total number of bytes for notifications pending to be sent
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

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10.110 V$SYS_OPTIMIZER_ENV

`V$SYS_OPTIMIZER_ENV` displays the contents of the optimizer environment for the instance. The optimizer environment stores the value of the main parameters used by the Oracle optimizer when building the execution plan of a SQL statement. Hence, modifying the value of one or more of these parameters (for example, by issuing an `ALTER SYSTEM` statement) could lead to plan changes.

The parameters displayed by this view are either regular initialization parameters (such as `OPTIMIZER_FEATURES_ENABLE`) or pseudo parameters (such as `ACTIVE_INSTANCE_COUNT`).

Column	Datatype	Description
ID	NUMBER	Unique identifier of the parameter in the optimizer environment
NAME	VARCHAR2(40)	Name of the parameter
SQL_FEATURE	VARCHAR2(64)	Associated feature control ID
ISDEFAULT	VARCHAR2(3)	Indicates whether the parameter is set to the default value (`YES`) or not (`NO`)
VALUE	VARCHAR2(25)	Value of the parameter
DEFAULT_VALUE	VARCHAR2(25)	Default value of the parameter
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> ✎ **See Also:**
>
> • "OPTIMIZER_FEATURES_ENABLE"
> • "ACTIVE_INSTANCE_COUNT"

10.111 V$SYS_TIME_MODEL

`V$SYS_TIME_MODEL` displays the system-wide accumulated times for various operations. The time reported is the total elapsed or CPU time (in microseconds). Any timed operation will buffer at most 5 seconds of time data. Specifically, this means that if a timed operation (such as SQL execution) takes a long period of time to perform, the data published to this view is at most missing 5 seconds of the time accumulated for the operation.

The time values are 8-byte integers and can therefore hold approximately 580,000 years worth of time before wrapping. Background process time is not included in a statistic value unless the statistic is specifically for background processes.

Column	Datatype	Description
STAT_ID	NUMBER	Statistic identifier for the time statistic

Column	Datatype	Description
STAT_NAME	VARCHAR2(64)	Name of the statistic (see Table 10-1)
VALUE	NUMBER	Amount of time (in microseconds) that the system has spent in this operation
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **Note:**
>
> This view returns instance-wide data and a value of 0 in the CON_ID column when queried from the root of a CDB.

10.112 V$SYSAUX_OCCUPANTS

V$SYSAUX_OCCUPANTS displays SYSAUX tablespace occupant information.

Column	Datatype	Description
OCCUPANT_NAME	VARCHAR2(64)	Occupant name
OCCUPANT_DESC	VARCHAR2(64)	Occupant description
SCHEMA_NAME	VARCHAR2(64)	Schema name for the occupant
MOVE_PROCEDURE	VARCHAR2(64)	Name of the move procedure; null if not applicable
MOVE_PROCEDURE_DESC	VARCHAR2(64)	Description of the move procedure
SPACE_USAGE_KBYTES	NUMBER	Current space usage of the occupant (in KB)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.113 V$SYSMETRIC

V$SYSMETRIC displays the system metric values captured for the most current time interval for both the long duration (60-second) and short duration (15-second) system metrics.

Column	Datatype	Description
BEGIN_TIME	DATE	Begin time of the interval

Column	Datatype	Description
END_TIME	DATE	End time of the interval
INTSIZE_CSEC	NUMBER	Interval size (in hundredths of a second)
GROUP_ID	NUMBER	Metric group ID
METRIC_ID	NUMBER	Metric ID
METRIC_NAME	VARCHAR2(64)	Metric name
VALUE	NUMBER	Metric value
METRIC_UNIT	VARCHAR2(64)	Metric unit description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • n: Where n is the applicable container ID for the rows containing data

> ✎ **See Also:**
>
> • "DBA_HIST_SYS_TIME_MODEL"
> • "V$CON_SYSMETRIC"
> • "DBA_HIST_CON_SYS_TIME_MODEL"

10.114 V$SYSMETRIC_HISTORY

V$SYSMETRIC_HISTORY displays all system metric values available in the database. Both long duration (60-second with 1 hour history) and short duration (15-second with one-interval only) metrics are displayed by this view.

Column	Datatype	Description
BEGIN_TIME	DATE	Begin time of the interval
END_TIME	DATE	End time of the interval
INTSIZE_CSEC	NUMBER	Interval size (in hundredths of a second)
GROUP_ID	NUMBER	Metric group ID
METRIC_ID	NUMBER	Metric ID
METRIC_NAME	VARCHAR2(64)	Metric name
VALUE	NUMBER	Metric value
METRIC_UNIT	VARCHAR2(64)	Metric unit description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • n: Where n is the applicable container ID for the rows containing data

> **✏ See Also:**
>
> - "DBA_HIST_SYSMETRIC_HISTORY"
> - "V$CON_SYSMETRIC_HISTORY"
> - "DBA_HIST_CON_SYSMETRIC_HIST"

10.115 V$SYSMETRIC_SUMMARY

V$SYSMETRIC_SUMMARY displays a summary of all system metric values for the long-duration system metrics. The average, maximum value, minimum value, and the value of one standard deviation for the last hour are displayed for each metric item.

Column	Datatype	Description
BEGIN_TIME	DATE	Begin time of the interval
END_TIME	DATE	End time of the interval
INTSIZE_CSEC	NUMBER	Interval size (in hundredths of a second)
GROUP_ID	NUMBER	Metric group ID
METRIC_ID	NUMBER	Metric ID
METRIC_NAME	VARCHAR2(64)	Metric name
NUM_INTERVAL	NUMBER	Number of intervals observed
MAXVAL	NUMBER	Maximum value observed
MINVAL	NUMBER	Minimum value observed
AVERAGE	NUMBER	Average value over the period
STANDARD_DEVIATION	NUMBER	One standard deviation
METRIC_UNIT	VARCHAR2(64)	Metric unit description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • n: Where n is the applicable container ID for the rows containing data

> **✏ See Also:**
>
> - "DBA_HIST_SYSMETRIC_SUMMARY"
> - "V$CON_SYSMETRIC_SUMMARY"
> - "DBA_HIST_CON_SYSMETRIC_SUMM"

10.116 V$SYSSTAT

`V$SYSSTAT` displays system statistics. To find the name of the statistic associated with each statistic number (`STATISTIC#`), query the `V$STATNAME` view.

Column	Datatype	Description
STATISTIC#	NUMBER	Statistic number **Note:** Statistics numbers are not guaranteed to remain constant from one release to another. Therefore, you should rely on the statistics name rather than its number in your applications.
NAME	VARCHAR2(64)	Statistic name. You can get a complete listing of statistic names by querying the `V$STATNAME` view.
CLASS	NUMBER	A number representing one or more statistics class. The following class numbers are additive: • `1` - User • `2` - Redo • `4` - Enqueue • `8` - Cache • `16` - OS • `32` - Real Application Clusters • `64` - SQL • `128` - Debug • `256` - Instance level
VALUE	NUMBER	Statistic value
STAT_ID	NUMBER	Identifier of the statistic
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **✏ Note:**
>
> This view returns instance-wide data and a value of `0` in the `CON_ID` column when queried from the root of a CDB.

> **✏ See Also:**
>
> "V$STATNAME" and " Statistics Descriptions"

10.117 V$SYSTEM_CURSOR_CACHE

`V$SYSTEM_CURSOR_CACHE` displays system wide information on cursor usage.

> ✎ **See Also:**
>
> "V$SESSION_CURSOR_CACHE"

Column	Datatype	Description
OPENS	NUMBER	Cumulative total of cursor opens
HITS	NUMBER	Cumulative total of cursor open hits
HIT_RATIO	NUMBER	Ratio of the number of times an open cursor was found divided by the number of times a cursor was sought
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.118 V$SYSTEM_EVENT

`V$SYSTEM_EVENT` displays information on total waits for an event. Note that the `TIME_WAITED` and `AVERAGE_WAIT` columns will contain a value of zero on those platforms that do not support a fast timing mechanism. If you are running on one of these platforms and you want this column to reflect true wait times, then you must set `TIMED_STATISTICS` to `TRUE` in the parameter file; doing this will have a small negative effect on system performance.

> ✎ **See Also:**
>
> "TIMED_STATISTICS"

Column	Datatype	Description
EVENT	VARCHAR2(64)	Name of the wait event; derived statistic name from `V$EVENT_NAME` **See Also:** " Oracle Wait Events"
TOTAL_WAITS	NUMBER	Total number of waits for the event
TOTAL_TIMEOUTS	NUMBER	Total number of timeouts for the event
TIME_WAITED	NUMBER	Total amount of time waited for the event (in hundredths of a second)
AVERAGE_WAIT	NUMBER	Average amount of time waited for the event (in hundredths of a second)
TIME_WAITED_MICRO	NUMBER	Total amount of time waited for the event (in microseconds)

Column	Datatype	Description
CPU	NUMBER	Total amount of CPU time consumed while implementing the wait event itself (in microseconds)
TOTAL_WAITS_FG	NUMBER	Total number of waits for the event, from foreground sessions
TOTAL_TIMEOUTS_FG	NUMBER	Total number of timeouts for the event, from foreground sessions
TIME_WAITED_FG	NUMBER	Total amount of time waited for the event, from foreground sessions (in hundredths of a second)
AVERAGE_WAIT_FG	NUMBER	Average amount of time waited for the event, from foreground sessions (in hundredths of a second)
TIME_WAITED_MICRO_FG	NUMBER	Total amount of time waited for the event, from foreground sessions (in microseconds)
CPU_FG	NUMBER	Total amount of CPU time consumed while implementing the wait event itself, from foreground sessions (in microseconds)
EVENT_ID	NUMBER	Identifier of the wait event
WAIT_CLASS_ID	NUMBER	Identifier of the wait class of the wait event
WAIT_CLASS#	NUMBER	Number of the wait class of the wait event
WAIT_CLASS	VARCHAR2(64)	Name of the wait class of the wait event
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **Note:**
>
> This view returns instance-wide data and a value of 0 in the CON_ID column when queried from the root of a CDB.

10.119 V$SYSTEM_FIX_CONTROL

V$SYSTEM_FIX_CONTROL displays information about Fix Control (enabled/disabled) at the system level.

Column	Datatype	Description
BUGNO	NUMBER	Bug number (as fix control identifier)
VALUE	NUMBER	Current value set for the fix control
SQL_FEATURE	VARCHAR2(64)	Feature control ID
DESCRIPTION	VARCHAR2(64)	Description of the fix control
OPTIMIZER_FEATURE_ENABLE	VARCHAR2(25)	Version on (and after) which the fix is enabled by default
EVENT	NUMBER	Event formerly used to control this fix

Column	Datatype	Description
IS_DEFAULT	NUMBER	Indicates whether the current value is the same as the default (`1`) or not (`0`)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.120 V$SYSTEM_PARAMETER

`V$SYSTEM_PARAMETER` displays information about the initialization parameters that are currently in effect for the instance. A new session inherits parameter values from the instance-wide values.

Column	Datatype	Description
NUM	NUMBER	Parameter number
NAME	VARCHAR2(80)	Name of the parameter
TYPE	NUMBER	Parameter type: • `1` - Boolean • `2` - String • `3` - Integer • `4` - Parameter file • `5` - Reserved • `6` - Big integer
VALUE	VARCHAR2(4000)	Instance-wide parameter value
DISPLAY_VALUE	VARCHAR2(4000)	Parameter value in a user-friendly format. For example, if the `VALUE` column shows the value `262144` for a big integer parameter, then the `DISPLAY_VALUE` column will show the value `256K`.
DEFAULT_VALUE	VARCHAR2(255)	The default value for this parameter. This is the value of the parameter if a value is not explicitly specified for the parameter.
ISDEFAULT	VARCHAR2(9)	Indicates whether the parameter is set to the default value (`TRUE`) or the parameter value was specified in the parameter file (`FALSE`) The database sets the value of the `ISDEFAULT` column to `TRUE` for parameters that are not specified in the init.ora or server parameter file (SPFILE).
ISSES_MODIFIABLE	VARCHAR2(5)	Indicates whether the parameter can be changed with `ALTER SESSION` (`TRUE`) or not (`FALSE`)

Column	Datatype	Description
ISSYS_MODIFIABLE	VARCHAR2(9)	Indicates whether the parameter can be changed with ALTER SYSTEM and when the change takes effect: • IMMEDIATE - Parameter can be changed with ALTER SYSTEM regardless of the type of parameter file used to start the instance. The change takes effect immediately. • DEFERRED - Parameter can be changed with ALTER SYSTEM regardless of the type of parameter file used to start the instance. The change takes effect in subsequent sessions. • FALSE - Parameter cannot be changed with ALTER SYSTEM unless a server parameter file was used to start the instance. The change takes effect in subsequent instances.
ISPDB_MODIFIABLE	VARCHAR2(5)	Indicates whether the parameter can be modified inside a PDB (TRUE) or not (FALSE). In a non-CDB, the value of this column is NULL.
ISINSTANCE_MODIFIABLE	VARCHAR2(5)	For parameters that can be changed with ALTER SYSTEM, indicates whether the value of the parameter can be different for every instance (TRUE) or whether the parameter must have the same value for all Real Application Clusters instances (FALSE). If the ISSYS_MODIFIABLE column is FALSE, then this column is always FALSE.
ISMODIFIED	VARCHAR2(8)	Indicates how the parameter was modified. If an ALTER SYSTEM was performed, the value will be MODIFIED.
ISADJUSTED	VARCHAR2(5)	Indicates whether Oracle adjusted the input value to a more suitable value (for example, the parameter value should be prime, but the user input a non-prime number, so Oracle adjusted the value to the next prime number)
ISDEPRECATED	VARCHAR2(5)	Indicates whether the parameter has been deprecated (TRUE) or not (FALSE)
ISBASIC	VARCHAR2(5)	Indicates whether the parameter is a basic parameter (TRUE) or not (FALSE)
DESCRIPTION	VARCHAR2(255)	Description of the parameter
UPDATE_COMMENT	VARCHAR2(255)	Comments associated with the most recent update
HASH	NUMBER	Hash value for the parameter name
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

See Also:

"V$PARAMETER" for information about initialization parameters that are currently in effect for a session

10.121 V$SYSTEM_PARAMETER2

V$SYSTEM_PARAMETER2 displays information about the initialization parameters that are currently in effect for the instance, with each list parameter value appearing as a row in the view. A new session inherits parameter values from the instance-wide values.

Presenting the list parameter values in this format enables you to quickly determine the values for a list parameter. For example, if a parameter value is a, b, then the V$SYSTEM_PARAMETER view does not tell you if the parameter has two values (both a and b) or one value (a, b). V$SYSTEM_PARAMETER2 makes the distinction between the list parameter values clear.

Column	Datatype	Description
NUM	NUMBER	Parameter number
NAME	VARCHAR2(80)	Name of the parameter
TYPE	NUMBER	Parameter type: • 1 - Boolean • 2 - String • 3 - Integer • 4 - Parameter file • 5 - Reserved • 6 - Big integer
VALUE	VARCHAR2(4000)	Parameter value
DISPLAY_VALUE	VARCHAR2(4000)	Parameter value in a user-friendly format. For example, if the VALUE column shows the value 262144 for a big integer parameter, then the DISPLAY_VALUE column will show the value 256K.
ISDEFAULT	VARCHAR2(6)	Indicates whether the parameter is set to the default value (TRUE) or the parameter value was specified in the parameter file (FALSE)
ISSES_MODIFIABLE	VARCHAR2(5)	Indicates whether the parameter can be changed with ALTER SESSION (TRUE) or not (FALSE)
ISSYS_MODIFIABLE	VARCHAR2(9)	Indicates whether the parameter can be changed with ALTER SYSTEM and when the change takes effect: • IMMEDIATE - Parameter can be changed with ALTER SYSTEM regardless of the type of parameter file used to start the instance. The change takes effect immediately. • DEFERRED - Parameter can be changed with ALTER SYSTEM regardless of the type of parameter file used to start the instance. The change takes effect in subsequent sessions. • FALSE - Parameter cannot be changed with ALTER SYSTEM unless a server parameter file was used to start the instance. The change takes effect in subsequent instances.
ISPDB_MODIFIABLE	VARCHAR2(5)	Indicates whether the parameter can be modified on a per-PDB basis (TRUE) or not (FALSE). In a non-CDB, the value of this column is NULL.
ISINSTANCE_MODIFIABLE	VARCHAR2(5)	For parameters that can be changed with ALTER SYSTEM, indicates whether the value of the parameter can be different for every instance (TRUE) or whether the parameter must have the same value for all Real Application Clusters instances (FALSE). If the ISSYS_MODIFIABLE column is FALSE, then this column is always FALSE.
ISMODIFIED	VARCHAR2(8)	Indicates how the parameter was modified. If an ALTER SYSTEM was performed, the value will be MODIFIED.

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Column	Datatype	Description
ISADJUSTED	VARCHAR2(5)	Indicates whether Oracle adjusted the input value to a more suitable value (for example, the parameter value should be prime, but the user input a non-prime number, so Oracle adjusted the value to the next prime number)
ISDEPRECATED	VARCHAR2(5)	Indicates whether the parameter has been deprecated (TRUE) or not (FALSE)
ISBASIC	VARCHAR2(5)	Indicates whether the parameter is a basic parameter (TRUE) or not (FALSE)
DESCRIPTION	VARCHAR2(255)	Description of the parameter
ORDINAL	NUMBER	Position (ordinal number) of the parameter value. Useful only for parameters whose values are lists of strings.
UPDATE_COMMENT	VARCHAR2(255)	Comments associated with the most recent update
HASH	NUMBER	Hash value for the parameter name
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> ✎ **See Also:**
>
> "V$SYSTEM_PARAMETER"

10.122 V$SYSTEM_WAIT_CLASS

V$SYSTEM_WAIT_CLASS displays the instance-wide time totals for each registered wait class.

Column	Datatype	Description
WAIT_CLASS_ID	NUMBER	Identifier of the wait class
WAIT_CLASS#	NUMBER	Number of the wait class
WAIT_CLASS	VARCHAR2(64)	Name of the wait class
TOTAL_WAITS	NUMBER	Total number of waits from this wait class
TIME_WAITED	NUMBER	Total amount of time spent in waits from this wait class (in hundredths of a second)
TIME_WAITED_MICRO	NUMBER	Total amount of time spent in waits from this wait class (in microseconds)
CPU	NUMBER	Total amount of CPU time consumed while implementing waits from this wait class (in microseconds)
TOTAL_WAITS_FG	NUMBER	Total number of waits for this wait class, from foreground sessions
TIME_WAITED_FG	NUMBER	Total amount of time spent in waits from this wait class, from foreground sessions (in hundredths of a second)

Column	Datatype	Description
TIME_WAITED_MICRO_FG	NUMBER	Total amount of time spent in waits from this wait class, from foreground sessions (in microseconds)
CPU_FG	NUMBER	Total amount of CPU time consumed while implementing waits from this wait class, from foreground sessions (in microseconds)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **Note:**
>
> This view returns instance-wide data and a value of 0 in the CON_ID column when queried from the root of a CDB.

10.123 V$TABLE_ACCESS_STATS

V$TABLE_ACCESS_STATS displays the scan count for tables and partitions.

The scan data collection begins at instance startup.

Column	Datatype	Description
OBJECT_ID	NUMBER	Object ID of the table or partition
READ_COUNT	NUMBER	Aggregated scan count since instance startup
LAST_ACCESSED_TIME	TIMESTAMP(0)	Date and time of the most recent scan
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.124 V$TABLESPACE

V$TABLESPACE displays tablespace information from the control file.

Column	Datatype	Description
TS#	NUMBER	Tablespace number
NAME	VARCHAR2(30)	Tablespace name
INCLUDED_IN_DATABASE_BAC KUP	VARCHAR2(3)	Indicates whether the tablespace is included in full database backups using the `BACKUP DATABASE` RMAN command (`YES`) or not (`NO`); `NO` only if the `CONFIGURE EXCLUDE` RMAN command was used for this tablespace
BIGFILE	VARCHAR2(3)	Indicates whether the tablespace is a bigfile tablespace (`YES`) or a smallfile tablespace (`NO`)
FLASHBACK_ON	VARCHAR2(3)	Indicates whether the tablespace participates in `FLASHBACK DATABASE` operations (`YES`) or not (`NO`)
ENCRYPT_IN_BACKUP	VARCHAR2(3)	Indicates whether encryption is turned ON or off at the tablespace level: • `ON` - Encryption is turned ON at the tablespace level • `OFF` - Encryption is turned OFF at the tablespace level • NULL - Encryption is neither explicitly turned on nor off at the tablespace level (default or when cleared)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.125 V$TDM_STATS

`V$TDM_STATS` describes statistics for Oracle Connection Manager in Traffic Director Mode (CMAN-TDM).

Column	Datatype	Description
CMAN_ID	VARCHAR2(1024)	CMAN-TDM host name
GATEWAY_ID	NUMBER	Index of the gateway process of CMAN-TDM
SERVICE_NAME	VARCHAR2(1024)	Reserved for future use
PRCP_NUM_REQUESTS	NUMBER	Number of client requests that resulted in acquire on the Proxy Resident Connection Pool (PRCP)
PRCP_NUM_BUSY_CONNECTION S	NUMBER	Number of busy server connections in the PRCP
PRCP_NUM_OPEN_CONNECTION S	NUMBER	Number of busy and free server connections in the PRCP
PRCP_HISTORIC_MAX_CONNEC TIONS	NUMBER	Maximum size (number of connections) that the PRCP has ever reached
PRCP_NUM_WAITS	NUMBER	Total number of client requests that waited due to unavailability of free server connections in the PRCP This value accumulates since the start of the process.
PRCP_NUM_WAITS_ACTIVE	NUMBER	Number of active client requests currently waiting due to unavailability of free server connections in the PRCP
PRCP_NUM_HITS	NUMBER	Total number of times that client requests found matches in the PRCP

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Column	Datatype	Description
PRCP_NUM_INBOUND_CONNECT IONS	NUMBER	Total Number of active client connections for the PRCP
EDITION	VARCHAR2(1024)	Database edition name associated with the PRCP
UPDATED_TIME	TIMESTAMP(6) WITH TIME ZONE	Date and time at which the statistics were uploaded to the PDB
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.126 V$TEMP_CACHE_TRANSFER

V$TEMP_CACHE_TRANSFER is deprecated. The information that was provided in this view is now provided in the V$INSTANCE_CACHE_TRANSFER and V$SEGMENT_STATISTICS views.

Column	Datatype	Description
FILE_NUMBER	NUMBER	Number of the temp file
X_2_NULL	NUMBER	Number of blocks with Exclusive-to-NULL conversions; always `0`
X_2_NULL_FORCED_WRITE	NUMBER	Number of Exclusive-to-NULL forced writes; always `0`
X_2_NULL_FORCED_STALE	NUMBER	Number of Exclusive-to-NULL blocks converted to CR; always `0`
X_2_S	NUMBER	Number of blocks with Exclusive-to-Shared conversions; always `0`
X_2_S_FORCED_WRITE	NUMBER	Number of Exclusive-to-Shared forced writes; always `0`
S_2_NULL	NUMBER	Number of blocks with Shared-to-NULL conversions; always `0`
S_2_NULL_FORCED_STALE	NUMBER	Number of Shared-to-NULL blocks converted to CR; always `0`
RBR	NUMBER	Number of reuse blocks cross-instance calls; always `0`
RBR_FORCED_WRITE	NUMBER	Number of blocks written due to reuse blocks cross-instance calls; always `0`
NULL_2_X	NUMBER	Number of blocks with NULL-to-Exclusive conversions; always `0`
S_2_X	NUMBER	Number of blocks with Shared-to-Exclusive conversions; always `0`
NULL_2_S	NUMBER	Number of blocks with NULL-to-Shared conversions; always `0`

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> ✎ **See Also:**
>
> • "V$INSTANCE_CACHE_TRANSFER"
> • "V$SEGMENT_STATISTICS"

10.127 V$TEMP_EXTENT_MAP

V$TEMP_EXTENT_MAP displays the status of each unit for all LOCALLY MANAGED temporary tablespaces.

Column	Datatype	NULL	Description
TABLESPACE_NAME	VARCHAR2(30)	NOT NULL	Name of the tablespace this unit belongs to
FILE_ID	NUMBER		Absolute file number
BLOCK_ID	NUMBER		Begin block number for this unit
BYTES	NUMBER		Bytes in the extent
BLOCKS	NUMBER		Blocks in the extent
OWNER	NUMBER		Instance which owns this unit
RELATIVE_FNO	NUMBER		Relative file number
CON_ID	NUMBER		The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.128 V$TEMP_EXTENT_POOL

V$TEMP_EXTENT_POOL displays the state of temporary space cached and used for the instance. Note that loading of the temporary space cache is lazy and that instances can be dormant.

Column	Datatype	NULL	Description
TABLESPACE_NAME	VARCHAR2(30)	NOT NULL	Name of the tablespace

Column	Datatype	NULL	Description
FILE_ID	NUMBER		Absolute file number
EXTENTS_CACHED	NUMBER		Number of extents that have been cached
EXTENTS_USED	NUMBER		Number of extents that are actually being used
BLOCKS_CACHED	NUMBER		Number of blocks that are cached
BLOCKS_USED	NUMBER		Number of blocks that are used
BYTES_CACHED	NUMBER		Number of bytes that are cached
BYTES_USED	NUMBER		Number of bytes that are used
RELATIVE_FNO	NUMBER		Relative file number
CON_ID	NUMBER		The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.129 V$TEMP_SPACE_HEADER

V$TEMP_SPACE_HEADER displays aggregate information per file per LOCALLY MANAGED temporary tablespace regarding how much space is currently being used and how much is free as identified in the space header.

Column	Datatype	NULL	Description
TABLESPACE_NAME	VARCHAR2(30)	NOT NULL	Name of the temporary tablespace
FILE_ID	NUMBER		Absolute file number
BYTES_USED	NUMBER		How many bytes are in use
BLOCKS_USED	NUMBER		How many blocks are in use
BYTES_FREE	NUMBER		How many bytes are free
BLOCKS_FREE	NUMBER		How many blocks are free
RELATIVE_FNO	NUMBER		The relative file number for the file
CON_ID	NUMBER		The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.130 V$TEMPFILE

V$TEMPFILE displays temp file information.

Column	Datatype	Description
FILE#	NUMBER	Absolute file number
CREATION_CHANGE#	NUMBER	Creation System Change Number (SCN)
CREATION_TIME	DATE	Creation time
TS#	NUMBER	Tablespace number
RFILE#	NUMBER	Relative file number in the tablespace
STATUS	VARCHAR2(7)	Status of the file (OFFLINE|ONLINE)
ENABLED	VARCHAR2(10)	Enabled for read and/or write
BYTES	NUMBER	Size of the file in bytes (from the file header)
BLOCKS	NUMBER	Size of the file in blocks (from the file header)
CREATE_BYTES	NUMBER	Creation size of the file (in bytes)
BLOCK_SIZE	NUMBER	Block size for the file
NAME	VARCHAR2(513)	Name of the file
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.131 V$TEMPORARY_LOBS

V$TEMPORARY_LOBS displays information about temporary and abstract LOBs.

Column	Datatype	Description
SID	NUMBER	Session ID
CACHE_LOBS	NUMBER	Number of cache temp LOBs
NOCACHE_LOBS	NUMBER	Number of nocache temp LOBs
ABSTRACT_LOBS	NUMBER	Number of abstract LOBs
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.132 V$TEMPSEG_USAGE

V$TEMPSEG_USAGE describes temporary segment usage.

Column	Datatype	Description
USERNAME	VARCHAR2(128)	User who requested temporary space
USER	VARCHAR2(128)	This column is obsolete and maintained for backward compatibility. The value of this column is always equal to the value in USERNAME.
SESSION_ADDR	RAW(4 | 8)	Session address
SESSION_NUM	NUMBER	Serial number of session
SQLADDR	RAW(4 | 8)	Address of SQL statement
SQLHASH	NUMBER	Hash value of SQL statement
SQL_ID	VARCHAR2(13)	SQL identifier of SQL statement
TABLESPACE	VARCHAR2(30)	Tablespace in which space is allocated
CONTENTS	VARCHAR2(9)	Indicates whether tablespace is TEMPORARY or PERMANENT
SEGTYPE	VARCHAR2(12)	Type of sort segment: • DATA • HASH • INDEX • LOB_DATA • LOB_INDEX • RESULT_CACHE • SORT • TEMP_UNDO
SEGFILE#	NUMBER	File number of initial extent
SEGBLK#	NUMBER	Block number of the initial extent
EXTENTS	NUMBER	Extents allocated to the sort
BLOCKS	NUMBER	Extents in blocks allocated to the sort
SEGRFNO#	NUMBER	Relative file number of initial extent
TS#	NUMBER	Tablespace number
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data
SQL_ID_TEMPSEG	VARCHAR2(13)	SQL identifier of the SQL statement that created the temporary segment

10.133 V$TEMPSTAT

V$TEMPSTAT displays information about file read/write statistics.

Column	Datatype	Description
FILE#	NUMBER	Number of the file
PHYRDS	NUMBER	Number of physical reads done
PHYWRTS	NUMBER	Number of times DBWR is required to write
PHYBLKRD	NUMBER	Number of physical blocks read

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Column	Datatype	Description
PHYBLKWRT	NUMBER	Number of blocks written to disk, which may be the same as PHYWRTS if all writes are single blocks
SINGLEBLKRDS	NUMBER	Number of single block reads
READTIM	NUMBER	Time (in hundredths of a second) spent doing reads if the TIMED_STATISTICS parameter is true; 0 if false
WRITETIM	NUMBER	Time (in hundredths of a second) spent doing writes if the TIMED_STATISTICS parameter is true; 0 if false
SINGLEBLKRDTIM	NUMBER	Cumulative single block read time (in hundredths of a second)
AVGIOTIM	NUMBER	Average time (in hundredths of a second) spent on I/O, if the TIMED_STATISTICS parameter is true; 0 if false
LSTIOTIM	NUMBER	Time (in hundredths of a second) spent doing the last I/O, if the TIMED_STATISTICS parameter is true; 0 if false
MINIOTIM	NUMBER	Minimum time (in hundredths of a second) spent on a single I/O, if the TIMED_STATISTICS parameter is true; 0 if false
MAXIORTM	NUMBER	Maximum time (in hundredths of a second) spent doing a single read, if the TIMED_STATISTICS parameter is true; 0 if false
MAXIOWTM	NUMBER	Maximum time (in hundredths of a second) spent doing a single write, if the TIMED_STATISTICS parameter is true; 0 if false
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> ✎ **See Also:**
>
> "TIMED_STATISTICS"

10.134 V$TEMPUNDOSTAT

V$TEMPUNDOSTAT shows various statistics related to the temporary undo log for this database instance. It displays a histogram of statistical data to show how the system is working. Each row in the view keeps statistics collected in the instance for a 10-minute interval. The rows are in the descending order of the BEGIN_TIME column value. This view contains a total of 576 rows, spanning a 4-day cycle. This view is similar to the V$UNDOSTAT view.

Column	Datatype	Description
BEGIN_TIME	DATE	Identifies the beginning of the time interval
END_TIME	DATE	Identifies the end of the time interval

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Column	Datatype	Description
UNDOTSN	NUMBER	Represents the last active undo tablespace in the duration of time. The tablespace ID of the active undo tablespace is returned in this column. If more than one undo tablespace was active in that period, the active undo tablespace that was active at the end of the period is reported.
TXNCOUNT	NUMBER	Total number of transaction that have bound to the temp undo segment contained in above tablespace within the interval period
MAXCONCURRENCY	NUMBER	Highest number of transactions executed concurrently which modified temporary objects within the interval period
MAXQUERYLEN	NUMBER	Reserved for future use
MAXQUERYID	VARCHAR2(13)	Reserved for future use
UNDOBLKCNT	NUMBER	Total number of temporary undo blocks consumed
EXTCNT	NUMBER	Total number of extents consumed
USCOUNT	NUMBER	Temp undo segments created in this period
SSOLDERRCNT	NUMBER	Identifies the number of times the error ORA-01555 occurred. You can use this statistic to decide whether or not the UNDO_RETENTION initialization parameter is set properly given the size of the undo tablespace. Increasing the value of UNDO_RETENTION can reduce the occurrence of this error.
NOSPACEERRCNT	NUMBER	Total number of times the error 'no space left for temporary undo' was raised
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **See Also:**
>
> "V$UNDOSTAT"

10.135 V$TEXT_WAITING_EVENTS

V$TEXT_WAITING_EVENTS displays information about Oracle Text index maintenance events that have been delayed due to errors or contentions.

Column	Datatype	Description
OWNER#	NUMBER	Text index owner number
TABLE#	NUMBER	Base table object number
INDEX#	NUMBER	Text index object number
TABLE_PARTITION#	NUMBER	Table partition object number
INDEX_PARTITION#	NUMBER	Index partition object number

Column	Datatype	Description
EVENT_TYPE	VARCHAR2(26)	Text index maintenance event type: - NONE - SYNC-Mapping Timeout - SYNC-Mapping - SYNC-Ranges - SYNC-Scheduler - SYNC-Postings Serial - SYNC-Postings Concurrent - SYNC-Writer - SYNC-Cleanup batches - SYNC-Inspect - MONITOR - EVENT Stats - EVENT Stats Clean up - OPTIMIZE-Scheduler Timeout - OPTIMIZE-Scheduler - OPTIMIZE-Merge
ITERATION	NUMBER	Event retry iteration number This value is a number between 0 and 10.
WAIT_TIME	NUMBER	Total time (in milliseconds) that the event will be waiting
ELAPSED_TIME	NUMBER	Elapsed time (in milliseconds) since the event started waiting The difference between WAIT_TIME and ELAPSED_TIME indicates how much longer the event will be left waiting.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. 1: This value is used for rows containing data that pertain to only the root - n: Where n is the applicable container ID for the rows containing data

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.136 V$THREAD

V$THREAD displays thread information from the control file. This view does not return meaningful results on a physical standby database.

Column	Datatype	Description
THREAD#	NUMBER	Thread number
STATUS	VARCHAR2(6)	Thread status (OPEN| CLOSED)
ENABLED	VARCHAR2(8)	Enabled status: DISABLED, (enabled) PRIVATE, or (enabled) PUBLIC

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Column	Datatype	Description
GROUPS	NUMBER	Number of log groups assigned to this thread
INSTANCE	VARCHAR2(80)	Instance name, if available
OPEN_TIME	DATE	Last time the thread was opened
CURRENT_GROUP#	NUMBER	Current log group
SEQUENCE#	NUMBER	Sequence number of current log
CHECKPOINT_CHANGE#	NUMBER	SCN at last checkpoint
CHECKPOINT_TIME	DATE	Time of last checkpoint
ENABLE_CHANGE#	NUMBER	SCN at which thread was enabled
ENABLE_TIME	DATE	Time of enable SCN
DISABLE_CHANGE#	NUMBER	SCN at which thread was disabled
DISABLE_TIME	DATE	Time of disable SCN
LAST_REDO_SEQUENCE#	NUMBER	Last redo sequence number written by LGWR
LAST_REDO_BLOCK	NUMBER	Last redo block written by LGWR
LAST_REDO_CHANGE#	NUMBER	SCN of last redo for the thread
LAST_REDO_TIME	DATE	Time of last redo for the thread
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.137 V$THRESHOLD_TYPES

V$THRESHOLD_TYPES displays information about threshold types.

Column	Datatype	Description
METRICS_ID	NUMBER	Metrics ID
METRICS_GROUP_ID	NUMBER	Metrics group ID
OPERATOR_MASK	NUMBER	Operator mask
OBJECT_TYPE	VARCHAR2(64)	Object type: • SYSTEM • FILE • SERVICE • EVENT_CLASS • TABLESPACE • SESSION
ALERT_REASON_ID	NUMBER	ID of the alert reason
METRIC_VALUE_TYPE	NUMBER	Metric value type

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.138 V$TIMER

V$TIMER displays the elapsed time in hundredths of a second. Time is measured since the beginning of the epoch, which is operating system specific, and wraps around to 0 again whenever the value overflows four bytes (roughly 497 days).

Column	Datatype	Description
HSECS	NUMBER	Elapsed time (in hundredths of a second)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.139 V$TIMEZONE_FILE

V$TIMEZONE_FILE describes the time zone file that is currently in use by the database.

Column	Datatype	Description
FILENAME	VARCHAR2(20)	Time zone file name
VERSION	NUMBER	Time zone file version
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.140 V$TIMEZONE_NAMES

V$TIMEZONE_NAMES displays valid time zone names.

Column	Datatype	Description
TZNAME	VARCHAR2(64)	Time zone region (for example, US/Pacific)
TZABBREV	VARCHAR2(64)	Corresponding daylight abbreviation (for example, PDT)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.141 V$TOPLEVELCALL

V$TOPLEVELCALL displays the mapping between Oracle top level calls and names.

Column	Datatype	Description
TOP_LEVEL_CALL#	NUMBER	Oracle top level call number
TOP_LEVEL_CALL_NAME	VARCHAR2(64)	Oracle top level call name
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.142 V$TRANSACTION

V$TRANSACTION lists the active transactions in the system.

Column	Datatype	Description
ADDR	RAW(4 | 8)	Address of the transaction state object
XIDUSN	NUMBER	Undo segment number
XIDSLOT	NUMBER	Slot number
XIDSQN	NUMBER	Sequence number
UBAFIL	NUMBER	Undo block address (UBA) filenum
UBABLK	NUMBER	UBA block number
UBASQN	NUMBER	UBA sequence number
UBAREC	NUMBER	UBA record number
STATUS	VARCHAR2(16)	Status
START_TIME	VARCHAR2(20)	Start time (wall clock)
START_SCNB	NUMBER	Start system change number (SCN) base
START_SCNW	NUMBER	Start SCN wrap

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Column	Datatype	Description
START_UEXT	NUMBER	Start extent number
START_UBAFIL	NUMBER	Start UBA file number
START_UBABLK	NUMBER	Start UBA block number
START_UBASQN	NUMBER	Start UBA sequence number
START_UBAREC	NUMBER	Start UBA record number
SES_ADDR	RAW(4 | 8)	User session object address
FLAG	NUMBER	Flag
SPACE	VARCHAR2(3)	YES if a space transaction
RECURSIVE	VARCHAR2(3)	YES if a recursive transaction
NOUNDO	VARCHAR2(3)	YES if a no undo transaction
PTX	VARCHAR2(3)	YES if parallel transaction
NAME	VARCHAR2(256)	Name of a named transaction
PRV_XIDUSN	NUMBER	Previous transaction undo segment number
PRV_XIDSLT	NUMBER	Previous transaction slot number
PRV_XIDSQN	NUMBER	Previous transaction sequence number
PTX_XIDUSN	NUMBER	Rollback segment number of the parent XID
PTX_XIDSLT	NUMBER	Slot number of the parent XID
PTX_XIDSQN	NUMBER	Sequence number of the parent XID
DSCN-B	NUMBER	This column is obsolete and maintained for backward compatibility. The value of this column is always equal to the value in DSCN_BASE.
DSCN-W	NUMBER	This column is obsolete and maintained for backward compatibility. The value of this column is always equal to the value in DSCN_WRAP.
USED_UBLK	NUMBER	Number of undo blocks used
USED_UREC	NUMBER	Number of undo records used
LOG_IO	NUMBER	Logical I/O
PHY_IO	NUMBER	Physical I/O
CR_GET	NUMBER	Consistent gets
CR_CHANGE	NUMBER	Consistent changes
START_DATE	DATE	Start time (wall clock)
DSCN_BASE	NUMBER	Dependent SCN base
DSCN_WRAP	NUMBER	Dependent SCN wrap
START_SCN	NUMBER	Start SCN
DEPENDENT_SCN	NUMBER	Dependent SCN
XID	RAW(8)	Transaction XID
PRV_XID	RAW(8)	Previous transaction XID
PTX_XID	RAW(8)	Parent transaction XID
TXN_PRIORITY	VARCHAR2(7)	Priority of the transaction (HIGH, MEDIUM, or LOW) for the Priority Transactions feature
PRIORITY_TXNS_WAIT_TARGET	NUMBER	If TXN_PRIORITY is HIGH or MEDIUM, the maximum number of seconds the transaction will wait for a row lock before the database rolls back a lower priority transaction holding the lock If the priority is LOW, the value of this column is 0.

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Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.143 V$TRANSACTION_ENQUEUE

V$TRANSACTION_ENQUEUE displays locks owned by transaction state objects.

Column	Datatype	Description
ADDR	RAW(4 | 8)	Address of lock state object
KADDR	RAW(4 | 8)	Address of lock
SID	NUMBER	Identifier for session holding or acquiring the lock
TYPE	VARCHAR2(2)	Type of lock. TX indicates transaction enqueue.
ID1	NUMBER	Lock identifier #1 (depends on type)
ID2	NUMBER	Lock identifier #2 (depends on type)
LMODE	NUMBER	Lock mode in which the session holds the lock: • 0 - none • 1 - null (NULL) • 2 - row-S (SS) • 3 - row-X (SX) • 4 - share (S) • 5 - S/Row-X (SSX) • 6 - exclusive (X)
REQUEST	NUMBER	Lock mode in which the process requests the lock: • 0 - none • 1 - null (NULL) • 2 - row-S (SS) • 3 - row-X (SX) • 4 - share (S) • 5 - S/Row-X (SSX) • 6 - exclusive (X)
CTIME	NUMBER	Time since current mode was granted
BLOCK	NUMBER	The lock is blocking another lock
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.144 V$TRANSPORTABLE_PLATFORM

`V$TRANSPORTABLE_PLATFORM` displays all platforms that support cross-platform tablespace transport. Specifically, it lists all platforms supported by the RMAN `CONVERT TABLESPACE` command, along with the endianness of each platform.

Column	Datatype	Description
PLATFORM_ID	NUMBER	Platform identification number
PLATFORM_NAME	VARCHAR2(101)	Platform name
ENDIAN_FORMAT	VARCHAR2(14)	Platform endian format: • `Big` • `Little` • `UNKNOWN FORMAT`
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.145 V$TRUE_CACHE

`V$TRUE_CACHE` displays True Cache configuration information.

- When you query this view on a True Cache, it returns a single row of information about the primary database to which the True Cache is connected.

- When you query this view on a primary database, it returns one row of information for each True Cache that is connected to the primary database.

Column	Datatype	Description
MY_DG_ID	NUMBER	Data Guard hash ID • When queried on a True Cache, the Data Guard ID of the True Cache • When queried on a primary database, the Data Guard ID of the primary database
REMOTE_DG_ID	NUMBER	Remote Data Guard hash ID • When queried on a True Cache, the Data Guard ID of the primary database • When queried on a primary database, the Data Guard ID of the True Cache

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Column	Datatype	Description
DEST_ID	NUMBER	Log archive destination parameter identifier • When queried on a True Cache, the value of this column is always `0`, because a True Cache does not send online redo log blocks to any destination. • When queried on a primary database, the corresponding destination ID (_n_) of the `LOG_ARCHIVE_DEST_n` initialization parameter. This parameter specifies the network name of the True Cache so that the primary database knows where to send online redo log blocks. This column matches the `DEST_ID` column in other views related to Data Guard and redo transport services, such as the `V$ARCHIVE_DEST` and `V$DATAGUARD_STATUS` views.
TRUE_CACHE_NAME	VARCHAR2(30)	Unique database name (`DB_UNIQUE_NAME`) of the True Cache
PRIMARY_NAME	VARCHAR2(30)	Unique database name (`DB_UNIQUE_NAME`) of the primary database
STATUS	VARCHAR2(256)	Text describing the current status of the True Cache configuration If there is an issue with the True Cache configuration, then this column displays information about the issue. If there are no issues with the True Cache configuration, then the value of this column is `HEALTHY`.
REMOTE_VERSION	VARCHAR2(18)	Remote database version • When queried on a True Cache, the database version of the primary database • When queried on a primary database, the database version of the True Cache
CON_ID	NUMBER	The ID of the container to which the data pertains The value of this column is always `0` (`CDB$ROOT` container).

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.146 V$TRUE_CACHE_KEEP

`V$TRUE_CACHE_KEEP` displays objects that are assigned to the `KEEP` buffer cache for True Cache.

Column	Datatype	Description
TS_NUMBER	NUMBER	Tablespace number
DATA_OBJECT_ID	NUMBER	Dictionary object number of the segment that contains the object
CON_ID	NUMBER	The ID of the container to which the data pertains

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.147 V$TRUE_CACHE_STAT

`V$TRUE_CACHE_STAT` displays information about True Cache metrics.

This view is populated only on a True Cache.

Column	Datatype	Description
MY_DGID	NUMBER	Data Guard hash ID for True Cache
REMOTE_DGID	NUMBER	Data Guard hash ID for the primary database
DEST_ID	NUMBER	Log archive destination parameter identifier The value of this column is always `0`.
NAME	VARCHAR2(32)	Name of the metric: • `apply lag` - Apply lag is a measure of the degree to which the data in True Cache lags behind the data in the primary database, due to delays in propagating and applying redo to True Cache. • `list of blocks fetch latency` - The average latency of True Cache while fetching blocks from the primary database in list of blocks fetch mode. • `multiblock fetch latency` - The average latency of True Cache while fetching blocks from the primary database in multiblock fetch mode. • `prewarm progress` - The current progress of True Cache prewarming its own buffer cache by proactively fetching the list of blocks remembered from the last warmed up state, that is, from the previous instance lifetime. • `single block fetch latency` - The average latency of True Cache while fetching blocks from the primary database in single block fetch mode. • `transport lag` - Transport lag is a measure of the degree to which the transport of redo to True Cache lags behind the generation of redo on the primary database. If there are one or more redo gaps on True Cache, the transport lag is calculated as if no redo has been received after the beginning of the earliest redo gap. **Note:** The `apply finish time` and `estimated startup time` metrics are not meaningful on a True Cache and can be ignored.
VALUE	VARCHAR2(64)	Value of the metric
UNIT	VARCHAR2(32)	Unit of measurement
TIME_COMPUTED	VARCHAR2(32)	Local time on True Cache when the metric was computed
DATA_TIME	VARCHAR2(32)	Local time on True Cache when the data used to compute the metric was received The `apply lag` and `transport lag` metrics are computed based on data that is periodically received from the primary database. An unchanging value in this column across multiple queries indicates that True Cache is not receiving data from the primary database.
CON_ID	NUMBER	The ID of the container to which the data pertains. The value of this column is always `0` (`CDB$ROOT` container).

> **Note:**
>
> This view is available starting with Oracle Database 23ai.

10.148 V$TSDP_SUPPORTED_FEATURE

`V$TSDP_SUPPORTED_FEATURE` displays information about the features supported by Transparent Sensitive Data Protection (TSDP).

Column	Datatype	Description
FEATURE_NAME	VARCHAR2(200)	The name of the supported feature
FUNCTIONALITY	VARCHAR2(200)	The functionality that is supported within the feature. If all of the functionality of the feature is supported, the value is `ALL`, otherwise the value will show the specific functionality that is supported.
COMMENTS$	VARCHAR2(4000)	More information regarding the support for the feature and the specific functionality
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **See Also:**
>
> *Oracle Database Security Guide* for more information about using Transparent Sensitive Data Protection.

10.149 V$TYPE_SIZE

`V$TYPE_SIZE` displays the sizes of various database components for use in estimating data block capacity.

Column	Datatype	Description
COMPONENT	VARCHAR2(8)	Component name, such as segment or buffer header
TYPE	VARCHAR2(8)	Component type
DESCRIPTION	VARCHAR2(32)	Description of the component
TYPE_SIZE	NUMBER	Size of the component

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.150 V$UNDOSTAT

V$UNDOSTAT displays a histogram of statistical data to show how well the system is working. The available statistics include undo space consumption, transaction concurrency, and length of queries executed in the instance. You can use this view to estimate the amount of undo space required for the current workload. Oracle uses this view to tune undo usage in the system. The view returns NULL values if the system is in manual undo management mode. Each row in the view keeps statistics collected in the instance for a 10-minute interval. The rows are in descending order by the BEGIN_TIME column value. Each row belongs to the time interval marked by (BEGIN_TIME, END_TIME). Each column represents the data collected for the particular statistic in that time interval. The first row of the view contains statistics for the (partial) current time period. The view contains a total of 576 rows, spanning a 4 day cycle.

Column	Datatype	Description
BEGIN_TIME	DATE	Identifies the beginning of the time interval
END_TIME	DATE	Identifies the end of the time interval
UNDOTSN	NUMBER	Represents the last active undo tablespace in the duration of time. The tablespace ID of the active undo tablespace is returned in this column. If more than one undo tablespace was active in that period, the active undo tablespace that was active at the end of the period is reported.
UNDOBLKS	NUMBER	Represents the total number of undo blocks consumed. You can use this column to obtain the consumption rate of undo blocks, and thereby estimate the size of the undo tablespace needed to handle the workload on your system.
TXNCOUNT	NUMBER	Identifies the total number of transactions executed within the period
MAXQUERYLEN	NUMBER	Identifies the length of the longest query (in seconds) executed in the instance during the period. You can use this statistic to estimate the proper setting of the UNDO_RETENTION initialization parameter. The length of a query is measured from the cursor open time to the last fetch/execute time of the cursor. Only the length of those cursors that have been fetched/executed during the period are reflected in the view.
MAXQUERYID	VARCHAR2(13)	SQL identifier of the longest running SQL statement in the period
MAXCONCURRENCY	NUMBER	Identifies the highest number of transactions executed concurrently within the period
UNXPSTEALCNT	NUMBER	Number of attempts to obtain undo space by stealing unexpired extents from other transactions
UNXPBLKRELCNT	NUMBER	Number of unexpired blocks removed from certain undo segments so they can be used by other transactions
UNXPBLKREUCNT	NUMBER	Number of unexpired undo blocks reused by transactions

Column	Datatype	Description
EXPSTEALCNT	NUMBER	Number of attempts to steal expired undo blocks from other undo segments
EXPBLKRELCNT	NUMBER	Number of expired undo blocks stolen from other undo segments
EXPBLKREUCNT	NUMBER	Number of expired undo blocks reused within the same undo segments
SSOLDERRCNT	NUMBER	Identifies the number of times the error `ORA-01555` occurred. You can use this statistic to decide whether or not the `UNDO_RETENTION` initialization parameter is set properly given the size of the undo tablespace. Increasing the value of `UNDO_RETENTION` can reduce the occurrence of this error.
NOSPACEERRCNT	NUMBER	Identifies the number of times space was requested in the undo tablespace and there was no free space available. That is, all of the space in the undo tablespace was in use by active transactions. The corrective action is to add more space to the undo tablespace.
ACTIVEBLKS	NUMBER	Total number of blocks in the active extents of the undo tablespace for the instance at the sampled time in the period
UNEXPIREDBLKS	NUMBER	Total number of blocks in the unexpired extents of the undo tablespace for the instance at the sampled time in the period
EXPIREDBLKS	NUMBER	Total number of blocks in the expired extents of the undo tablespace for the instance at the sampled time in the period
TUNED_UNDORETENTION	NUMBER	Amount of time (in seconds) for which undo will not be recycled from the time it was committed. At any point in time, the latest value of `TUNED_UNDORETENTION` is used to determine whether data committed at a particular time in the past can be recycled. The value of this column is not meaningful on an Oracle Active Data Guard standby database instance, because the system does not tune this value on such instances.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> ✎ **See Also:**
>
> "UNDO_RETENTION"

10.151 V$UNUSABLE_BACKUPFILE_DETAILS

`V$UNUSABLE_BACKUPFILE_DETAILS` displays information about all backup files (backup pieces, proxy copies, or copies) that are marked unavailable and expired. You can select one of the rows and use `BTYPE_KEY` or `FILETYPE_KEY` to change the status of a backup file set or a specific file to available.

Column	Datatype	Description
SESSION_KEY	NUMBER	Session identifier
SESSION_RECID	NUMBER	Session record ID
SESSION_STAMP	NUMBER	Session stamp
RMAN_STATUS_RECID	NUMBER	Record ID of the corresponding row in the control file
RMAN_STATUS_STAMP	NUMBER	Timestamp of the row in the controlfile
BTYPE	CHAR(9)	Backup type container. Possible values are: BACKUPSET, IMAGECOPY, PROXYCOPY.
BTYPE_KEY	NUMBER	Unique identifier for the backup type, either BS_KEY or COPY_KEY.
ID1	NUMBER	If BACKUPSET, it contains SET_STAMP. If IMAGECOPY or PROXYCOPY, it is RECID from the control file.
ID2	NUMBER	If BACKUPSET, it contains SET_COUNT. If IMAGECOPY or PROXYCOPY, it is STAMP.
FILETYPE	VARCHAR2(15)	Type of file. Possible values are: BACKUPPIECE, COPY, PROXYCOPY.
FILETYPE_KEY	NUMBER	Backup piece key if the file is a backup piece; otherwise COPY_KEY.
STATUS	VARCHAR2(1)	Status of the backup file, either U (unavailable) or X (expired)
FILESIZE	NUMBER	Size of the file
DEVICE_TYPE	VARCHAR2(17)	Type of device on which the file resides
FILENAME	VARCHAR2(513)	Name of the file
MEDIA	VARCHAR2(65)	Name of the media on which the copy resides. This value is informational only. It is not needed for restore.
MEDIA_POOL	NUMBER	Media pool in which the copy resides. This is the same value that was entered in the POOL operand of the Recovery Manager BACKUP command.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.152 V$VERSION

V$VERSION displays the version number of Oracle Database. The database components have the same version number as the database, so the version number is returned only once.

Column	Datatype	Description
BANNER	VARCHAR2(129)	Component name and version number
BANNER_FULL	VARCHAR2(258)	The new 2 line banner format introduced in Oracle Database 18c. The banner displays the database release and version number.
BANNER_LEGACY	VARCHAR2(129)	The legacy 1 line banner used before Oracle Database 18c. This column displays the same value as the BANNER column.

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Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.153 V$VPD_POLICY

V$VPD_POLICY displays all the fine-grained security policies and predicates associated with the cursors currently in the library cache.

Column	Datatype	Description
ADDRESS	RAW(4 | 8)	Cursor address
PARADDR	RAW(4 | 8)	Parent cursor address
SQL_HASH	NUMBER	SQL hash number
SQL_ID	VARCHAR2(13)	SQL identifier
CHILD_NUMBER	NUMBER	Cursor's child number under the parent
OBJECT_OWNER	VARCHAR2(128)	Owner of the object with the policy
OBJECT_NAME	VARCHAR2(128)	Name of the object with the policy
POLICY_GROUP	VARCHAR2(128)	Name of the policy group
POLICY	VARCHAR2(128)	Name of the policy
POLICY_FUNCTION_OWNER	VARCHAR2(128)	Owner of the policy function
PREDICATE	VARCHAR2(4000)	Predicate for the policy (truncated to 4000 bytes in length)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.154 V$WAIT_CHAINS

V$WAIT_CHAINS displays information about blocked sessions. A wait chain is composed of sessions that are blocked by one another. Each row represents a blocked and blocker session pair. If a wait chain is not a cyclical wait chain, then the last row for the chain does not have a blocker.

Column	Datatype	Description
CHAIN_ID	NUMBER	A number identifying the wait chain

Column	Datatype	Description
CHAIN_IS_CYCLE	VARCHAR2(5)	Indicates whether the final blocked session in the wait chain is blocked by the initial blocked session (TRUE) or not (FALSE)
CHAIN_SIGNATURE	VARCHAR2(801)	An Oracle-specific text signature of the wait chain. This signature can be used to identify similar wait chains.
CHAIN_SIGNATURE_HASH	NUMBER	A numeric representation of CHAIN_SIGNATURE
INSTANCE	NUMBER	Blocked session's instance identifier
OSID	VARCHAR2(25)	Blocked session's operating system process identifier
PID	NUMBER	Blocked session's Oracle process identifier
SID	NUMBER	Blocked session's Oracle session identifier
SESS_SERIAL#	NUMBER	Blocked session's Oracle session serial number
PDB_ID	NUMBER	Blocked session's PDB identifier
PDB_NAME	VARCHAR2(31)	Blocked session's PDB name
BLOCKER_IS_VALID	VARCHAR2(5)	Indicates whether the blocked session has a blocker (TRUE) or not (FALSE)
BLOCKER_INSTANCE	NUMBER	Blocker session's instance identifier; NULL if BLOCKER_IS_VALID is FALSE
BLOCKER_OSID	VARCHAR2(25)	Blocker session's operating system process identifier; NULL if BLOCKER_IS_VALID is FALSE
BLOCKER_PID	NUMBER	Blocker session's Oracle process identifier; NULL if BLOCKER_IS_VALID is FALSE
BLOCKER_SID	NUMBER	Blocker session's Oracle session identifier; NULL if BLOCKER_IS_VALID is FALSE
BLOCKER_SESS_SERIAL#	NUMBER	Blocker session's Oracle session serial number; NULL if BLOCKER_IS_VALID is FALSE
BLOCKER_PDB_ID	NUMBER	Blocker session's PDB identifier
BLOCKER_PDB_NAME	VARCHAR2(31)	Blocker session's PDB name
BLOCKER_CHAIN_ID	NUMBER	If not NULL, then the blocker session is a member of another chain specified by this chain identifier. For the remaining wait chain information, see the wait chain with the specified CHAIN_ID.
IN_WAIT	VARCHAR2(5)	Indicates whether the blocked session is in a wait (TRUE) or not (FALSE)
TIME_SINCE_LAST_WAIT_SECS	NUMBER	Number of seconds since the last time the blocked session waited; NULL if IN_WAIT is TRUE
WAIT_ID	NUMBER	A number identifying the wait; NULL if IN_WAIT is FALSE
WAIT_EVENT	NUMBER	Resource or event number for which the blocked session is waiting; NULL if IN_WAIT is FALSE
WAIT_EVENT_TEXT	VARCHAR2(64)	Resource or event for which the blocked session is waiting; NULL if IN_WAIT is FALSE
P1	NUMBER	First additional wait parameter; NULL if IN_WAIT is FALSE
P1_TEXT	VARCHAR2(64)	Description of the first additional wait parameter; NULL if IN_WAIT is FALSE
P2	NUMBER	Second additional wait parameter; NULL if IN_WAIT is FALSE
P2_TEXT	VARCHAR2(64)	Description of the second additional wait parameter; NULL if IN_WAIT is FALSE
P3	NUMBER	Third additional wait parameter; NULL if IN_WAIT is FALSE

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Column	Datatype	Description
P3_TEXT	VARCHAR2(64)	Description of the third additional wait parameter; NULL if IN_WAIT is FALSE
IN_WAIT_SECS	NUMBER	Seconds the blocked session has been in the current wait; NULL if IN_WAIT is FALSE
TIME_REMAINING_SECS	NUMBER	Seconds remaining until the blocked session ends its wait (–1 if the blocked session can indefinitely wait); NULL if IN_WAIT is FALSE
NUM_WAITERS	NUMBER	Number of sessions waiting for the blocked session
ROW_WAIT_OBJ#	NUMBER	Object ID for the table containing the row specified in ROW_WAIT_ROW#; NULL if IN_WAIT is FALSE
ROW_WAIT_FILE#	NUMBER	Identifier for the data file containing the row specified in ROW_WAIT_ROW#; NULL if IN_WAIT is FALSE. This column is valid only if the blocked session is currently waiting for another transaction to commit and the value of ROW_WAIT_OBJ# is not –1.
ROW_WAIT_BLOCK#	NUMBER	Identifier for the block containing the row specified in ROW_WAIT_ROW#; NULL if IN_WAIT is FALSE. This column is valid only if the blocked session is currently waiting for another transaction to commit and the value of ROW_WAIT_OBJ# is not –1.
ROW_WAIT_ROW#	NUMBER	Current row being locked; NULL if IN_WAIT is FALSE. This column is valid only if the blocked session is currently waiting for another transaction to commit and the value of ROW_WAIT_OBJ# is not –1.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.155 V$WAITCLASSMETRIC

V$WAITCLASSMETRIC displays metric values of wait classes for the most recent 60-second interval. A history of the last one hour will be kept in the system.

Column	Datatype	Description
BEGIN_TIME	DATE	Begin time of the interval
END_TIME	DATE	End time of the interval
INTSIZE_CSEC	NUMBER	Interval size (in hundredths of a second)
WAIT_CLASS#	NUMBER	Number of the class of the wait event
WAIT_CLASS_ID	NUMBER	Identifier of the class of the wait event
AVERAGE_WAITER_COUNT	NUMBER	Average waiter count
DBTIME_IN_WAIT	NUMBER	Percent of database time spent in the wait
TIME_WAITED	NUMBER	Time waited during the interval (in hundredths of a second)
WAIT_COUNT	NUMBER	Number of times waited
TIME_WAITED_FG	NUMBER	Amount of time (in hundredths of a second) spent in waits from this wait class in foreground sessions

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Column	Datatype	Description
WAIT_COUNT_FG	NUMBER	Number of times foreground processes waited
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.156 V$WAITCLASSMETRIC_HISTORY

V$WAITCLASSMETRIC_HISTORY displays metric values of wait classes for all intervals in the last one hour.

The columns for V$WAITCLASSMETRIC_HISTORY are the same as those for V$WAITCLASSMETRIC.

> ✎ **See Also:**
>
> "V$WAITCLASSMETRIC"

10.157 V$WAITSTAT

V$WAITSTAT displays block contention statistics. This table is only updated when timed statistics are enabled.

Column	Datatype	Description
CLASS	VARCHAR2(18)	Class of the block
COUNT	NUMBER	Number of waits by this `OPERATION` for this `CLASS` of block
TIME	NUMBER	Sum of all wait times for all the waits by this `OPERATION` for this `CLASS` of block (in centiseconds)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.158 V$WALLET

`V$WALLET` displays metadata of certificates that may be used as a master key for Transparent Data Encryption.

> **Note:**
>
> The use of PKI encryption with Transparent Data Encryption is deprecated. To configure Transparent Data Encryption, use the `ADMINISTER KEY MANAGEMENT` SQL statement. See *Oracle Database Transparent Data Encryption Guide* for more information.

Column	Datatype	Description
CERT_ID	VARCHAR2(52)	A unique certificate identifier value used to specify a particular PKI certificate for use as the master key
DN	VARCHAR2(255)	Distinguished name of a particular PKI certificate
SERIAL_NUM	VARCHAR2(40)	Unique serial number assigned to a certificate by the issuer or signer
ISSUER	VARCHAR2(255)	Distinguished name of the Certificate Authority or issuer that issued and signed the certificate
KEYSIZE	NUMBER	Size of the PKI key associated with the certificate
STATUS	VARCHAR2(16)	Current status of the certificate: • `UNUSED` • `IN USE` • `USED` This column allows the user to identify whether a certificate is currently in use or has already been used for Transparent Data Encryption.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.159 V$WORKLOAD_REPLAY_THREAD

`V$WORKLOAD_REPLAY_THREAD` displays information for all the different types of replay sessions.

Column	Datatype	Description
CLOCK	NUMBER	Current simulated SCN based on the SCN recorded at capture time
NEXT_TICKER	NUMBER	Next stream ID that will increment the `CLOCK` after a commit action
SID	NUMBER	Session ID of the replay session
SERIAL#	NUMBER	Session serial number of the replay session
SPID	VARCHAR2(24)	The server process ID of the replay session

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Column	Datatype	Description
LOGON_USER	VARCHAR2(128)	Logon username of the replay session
LOGON_TIME	DATE	Logon time of the replay session
EVENT	VARCHAR2(64)	Event name
EVENT_ID	NUMBER	Event identifier
EVENT#	NUMBER	Event operation code
P1TEXT	VARCHAR2(64)	Text for event parameter 1
P1	NUMBER	Value of event parameter 1
P2TEXT	VARCHAR2(64)	Text for event parameter 2
P2	NUMBER	Value of event parameter 2
P3TEXT	VARCHAR2(64)	Text for event parameter 3
P3	NUMBER	Value of event parameter 3
WAIT_FOR_SCN	NUMBER	The captured SCN for which the current user call should wait
FILE_ID	NUMBER	The stream ID that is being replayed
CALL_COUNTER	NUMBER	The call counter of the user call that is being replayed
DEPENDENT_SCN	NUMBER	The dependent SCN, captured to order the commit actions using block-level dependencies
STATEMENT_SCN	NUMBER	Statement SCN
COMMIT_WAIT_SCN	NUMBER	The (maximum) SCN that the current commit should wait for
POST_COMMIT_SCN	NUMBER	The next SCN after the current commit
ACTION_TYPE	NUMBER	The type of commits. The possible values are: COMMIT, ROLLBACK, FAKED_COMMIT, and NULL. A value of NULL means it is not a commit operation.
SESSION_TYPE	VARCHAR2(13)	The type of replay session: LOGON ADMIN DISPATCHER REPLAY
WRC_ID	NUMBER	Unique replay client ID assigned by the server to all participating replay clients when replay starts
SCHEDULE_CAP_ID	NUMBER	An unique identifier for a workload capture added to a replay schedule. A value of 0 is used for a non-consolidated replay.
FILE_NAME	VARCHAR2(51)	File name of the captured stream
SKIP_IT	VARCHAR2(1)	Whether or not the current replayed user call is skipped or not
DIRTY_BUFFERS	VARCHAR2(1)	Reserved for internal use
DBTIME	NUMBER	Accumulated database time for the replay session
NETWORK_TIME	NUMBER	Accumulated network time for the replay session
THINK_TIME	NUMBER	Accumulated think time for the replay session
TIME_GAIN	NUMBER	If nonzero, the accumulated time in macro seconds indicating how fast the replay is
TIME_LOSS	NUMBER	If nonzero, the accumulated time in macro seconds indicating how slow the replay is
USER_CALLS	NUMBER	Total number of user calls
PLSQL_CALLS	NUMBER	Total number of PL/SQL calls recorded in the workload capture

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Column	Datatype	Description
PLSQL_SUBCALLS	NUMBER	Total number of calls recorded in the workload capture for SQL executed from PL/SQL
PLSQL_DBTIME	NUMBER	Total amount of database time in microseconds from PL/SQL calls that have been recorded in the workload capture
CLIENT_OS_USER	VARCHAR2(15)	Operating system username of the replay client
CLIENT_HOST	VARCHAR2(64)	Host name of the replay client
CLIENT_PID	VARCHAR2(24)	Process ID of the replay client
PROGRAM	VARCHAR2(84)	Program name of the replay client
CAPTURE_ELAPSED_TIME	NUMBER	Total amount of elapsed time of a session since capture starts (in seconds)
REPLAY_ELAPSED_TIME	NUMBER	Total amount of elapsed time of a session since replay starts (in seconds)
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

10.160 V$XML_AUDIT_TRAIL

V$XML_AUDIT_TRAIL shows standard, fine-grained, SYS, and mandatory audit records written in XML format files.

> **Note:**
>
> This view is deprecated and applies only to traditional auditing. Traditional auditing is desupported starting in Oracle Database 23ai. Though traditional auditing is desupported, any current traditional audit settings that you have will still be honored and are viewable with this view. See *Oracle Database Security Guide* for more information about how this desupport works.

Column	Datatype	Description
AUDIT_TYPE	NUMBER	Type of audit row: • 1 = Standard XML Audit • 2 = Fine Grained XML Audit • 4 = SYS XML Audit • 8 = Mandatory XML Audit
SESSION_ID	NUMBER	Numeric ID for the Oracle session
PROXY_SESSIONID	NUMBER	Proxy session serial number, if an enterprise user has logged in through a proxy mechanism
STATEMENTID	NUMBER	Numeric ID for the statement run (a statement may cause multiple audit records)

Column	Datatype	Description
ENTRYID	NUMBER	Numeric ID for the audit trail entry in the session
EXTENDED_TIMESTAMP	TIMESTAMP(6) WITH TIME ZONE	Timestamp of the audited operation (the timestamp of the user's logon for entries is created by AUDIT SESSION)
GLOBAL_UID	VARCHAR2(32)	Global user identifier for the user, if the user has logged in as an enterprise user
DB_USER	VARCHAR2(128)	Database username of the user whose actions were audited
CLIENTIDENTIFIER	VARCHAR2(64)	Client identifier in the Oracle session
EXT_NAME	VARCHAR2(1024)	User's external name
OS_USER	VARCHAR2(128)	Operating system logon user name of the user whose actions were audited
OS_HOST	VARCHAR2(128)	Client host system name
OS_PROCESS	VARCHAR2(16)	Operating system process identifier of the Oracle server process
TERMINAL	VARCHAR2(30)	Identifier for the user's terminal
INSTANCE_NUMBER	NUMBER	Instance number as specified by the INSTANCE_NUMBER initialization parameter
OBJECT_SCHEMA	VARCHAR2(128)	Owner of the audited object
OBJECT_NAME	VARCHAR2(128)	Name of the object affected by the action
POLICY_NAME	VARCHAR2(128)	Name of the fine-grained auditing policy
NEW_OWNER	VARCHAR2(128)	Owner of the object named in the NEW_NAME column
NEW_NAME	VARCHAR2(128)	New name of object after renaming, or the name of an underlying object (for example, CREATE INDEX owner.obj_name ON new_owner.new_name)
ACTION	NUMBER	Numeric code for the action type
STATEMENT_TYPE	NUMBER	Description of the action
TRANSACTIONID	RAW(8)	Identifier of the transaction in which the object is accessed or modified
RETURNCODE	NUMBER	Oracle error code generated by the action. Zero if the action succeeded.
SCN	NUMBER	System change number (SCN) of the query
COMMENT_TEXT	VARCHAR2(4000)	Text comments on standard audit entries. Also indicates how the user was authenticated - the method can be one of the following: • DATABASE - authentication was done by password • NETWORK - authentication was done by Oracle Net Services or the Advanced Networking Option • PROXY - the client was authenticated by another user. The name of the proxy user follows the method type.

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Column	Datatype	Description
AUTH_PRIVILEGES	VARCHAR2(34)	Privileges granted or revoked by a GRANT or REVOKE statement recorded for standard audit trail entry
		The value of this column is a 34-character string of Y and dash (-) characters. Each character corresponds to a numbered privilege in the following list. The left-most character corresponds to privilege 0, the next character corresponds to privilege 1, and so on. The right-most character corresponds to privilege 33.
		0 - ALTER 1 - AUDIT 2 - COMMENT 3 - DELETE 4 - GRANT 5 - INDEX 6 - INSERT 7 - LOCK 8 - CREATE 9 - SELECT 10 - UPDATE 11 - REFERENCES 12 - EXECUTE 13 - VIEW 14 - DROP 15 - ANALYZE 16 - CREATE 17 - READ 18 - WRITE 19 - KEEP SEQUENCE 20 - ENQUEUE 21 - DEQUEUE 22 - UNDER 23 - ON COMMIT 24 - REWRITE 25 - UPSERT 26 - DEBUG 27 - FLASHBACK 28 - MERGE 29 - USE 30 - FLASHBACK ARCHIVE 31 - DIRECTORY EXECUTE 32 - SIGN 33 - COLLECT DEBUG INFO
		A Y indicates that the privilege was granted or revoked by the statement. A dash indicates that the privilege was not affected by the statement. For example, the following value indicates that the MERGE privilege was granted or revoked by the statement:
		---------------------------Y-----
GRANTEE	VARCHAR2(128)	User who granted or revoked the privilege
PRIV_USED	NUMBER	Numerical code of privileges, if any, used in the action

Column	Datatype	Description
SES_ACTIONS	VARCHAR2(16)	Session summary for standard audit records. A string of 12 characters, one for each action type, in the following order: Alter, Audit, Comment, Delete, Grant, Index, Insert, Lock, Rename, Select, Update, Flashback. Values: - = None, S=Success, F=Failure, B=Both
OS_PRIVILEGE	VARCHAR2(7)	This column is populated only for administrative authentication audit records. It contains the administrative privilege used (for example, SYSDBA, SYSOPER, NONE). For all other types of audit records, the value of this column is null.
ECONTEXT_ID	VARCHAR2(64)	Application execution context identifier
SQL_BIND	VARCHAR2(4000)	List of bind variables used in the statement
SQL_TEXT	VARCHAR2(4000)	The statement or command that triggered the audit event
OBJ_EDITION_NAME	VARCHAR2(128)	Name of the edition containing the audited object
DBID	NUMBER	Database identifier of the audited database
RLS_INFO	VARCHAR2(4000)	Stores virtual private database (VPD) policy names and predicates separated by delimiter. To format the output into individual rows, use the DBMS_AUDIT_UTIL.DECODE_RLS_INFO_ATRAIL_XML function.
CURRENT_USER	VARCHAR2(128)	Effective user for the statement execution
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **✎ Note:**
>
> The SQL_BIND and SQL_TEXT columns are only populated if the AUDIT_TRAIL initialization parameter is set to xml, extended or if the AUDIT_SYS_OPERATIONS initialization parameter is set to TRUE.

> **✎ See Also:**
>
> • "UNIFIED_AUDIT_TRAIL"
> • "AUDIT_SYS_OPERATIONS"
> • "AUDIT_TRAIL"
> • *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_AUDIT_UTIL.DECODE_RLS_INFO_ATRAIL_XML function.

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10.161 V$XSTREAM_APPLY_COORDINATOR

`V$XSTREAM_APPLY_COORDINATOR` displays information about each XStream apply process coordinator. The coordinator for an apply process gets transactions from the apply process reader and passes them to apply servers. An apply process coordinator is a subcomponent of an apply process, outbound server, or inbound server.

Column	Datatype	Description
SID	NUMBER	Session ID of the coordinator's session
SERIAL#	NUMBER	Serial number of the coordinator's session
STATE	VARCHAR2(21)	State of the coordinator: • `INITIALIZING` - Starting up • `IDLE` - Performing no work • `APPLYING` - Passing transactions to apply servers • `SHUTTING DOWN CLEANLY` - Stopping without an error • `ABORTING` - Stopping because of an apply error
APPLY#	NUMBER	Apply process number. An apply process coordinator is an Oracle background process, prefixed by `ap`.
APPLY_NAME	VARCHAR2(128)	Name of the apply process
TOTAL_APPLIED	NUMBER	Total number of transactions applied by the apply process since the apply process was last started
TOTAL_WAIT_DEPS	NUMBER	Number of times since the apply process was last started that an apply server waited to apply a logical change record (LCR) in a transaction until another apply server applied a transaction because of a dependency between the transactions
TOTAL_WAIT_COMMITS	NUMBER	Number of times since the apply process was last started that an apply server waited to commit a transaction until another apply server committed a transaction to serialize commits
TOTAL_ADMIN	NUMBER	Number of administrative jobs issued since the apply process was last started
TOTAL_ASSIGNED	NUMBER	Number of transactions assigned to apply servers since the apply process was last started
TOTAL_RECEIVED	NUMBER	Total number of transactions received by the coordinator process since the apply process was last started
TOTAL_IGNORED	NUMBER	Number of transactions which were received by the coordinator but were ignored because they had been previously applied
TOTAL_ROLLBACKS	NUMBER	Number of transactions which were rolled back due to unexpected contention
TOTAL_ERRORS	NUMBER	Number of transactions applied by the apply process that resulted in an apply error since the apply process was last started
UNASSIGNED_COMPLETE_TXNS	NUMBER	Total number of complete transactions that the coordinator has not assigned to any apply servers
LWM_TIME	DATE	Time when the message with the lowest message number was recorded. The creation time of the message with the lowest message number was also recorded at this time.
LWM_MESSAGE_NUMBER	NUMBER	Number of the message corresponding to the low watermark. That is, messages with a commit message number less than or equal to this message number have definitely been applied, but some messages with a higher commit message number also may have been applied.

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Column	Datatype	Description
LWM_MESSAGE_CREATE_TIME	DATE	For captured messages, creation time at the source database of the message corresponding to the low watermark. For user-enqueued messages, time when the message corresponding to the low watermark was enqueued into the queue at the local database.
HWM_TIME	DATE	Time when the message with the highest message number was recorded. The creation time of the message with the highest message number was also recorded at this time.
HWM_MESSAGE_NUMBER	NUMBER	Number of the message corresponding to the high watermark. That is, no messages with a commit message number greater than this message number have been applied.
HWM_MESSAGE_CREATE_TIME	DATE	For captured messages, creation time at the source database of the message corresponding to the high watermark. For user-enqueued messages, time when the message corresponding to the high watermark was enqueued into the queue at the local database.
STARTUP_TIME	DATE	Time when the apply process was last started
ELAPSED_SCHEDULE_TIME	NUMBER	Time elapsed (in hundredths of a second) scheduling messages since the apply process was last started
ELAPSED_IDLE_TIME	NUMBER	Elapsed idle time
LWM_POSITION	RAW(64)	Position of the low-watermark LCR
HWM_POSITION	RAW(64)	Position of the high-watermark LCR
PROCESSED_MESSAGE_NUMBER	NUMBER	Message number currently processed by the apply coordinator
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data
ACTIVE_SERVER_COUNT	NUMBER	Active server count

> **✎ Note:**
>
> The ELAPSED_SCHEDULE_TIME column is only populated if the TIMED_STATISTICS initialization parameter is set to true, or if the STATISTICS_LEVEL initialization parameter is set to TYPICAL or ALL.

> **✎ See Also:**
>
> • "TIMED_STATISTICS"
> • "STATISTICS_LEVEL"

10.162 V$XSTREAM_APPLY_READER

`V$XSTREAM_APPLY_READER` displays information about each XStream apply reader. The apply reader is a process which reads (dequeues) messages from the queue, computes message dependencies, and builds transactions. It passes the transactions on to the coordinator in commit order for assignment to the apply servers. An apply reader is a subcomponent of an apply process, outbound server, or inbound server.

Column	Datatype	Description
SID	NUMBER	Session ID of the reader's session
SERIAL#	NUMBER	Serial number of the reader's session
APPLY#	NUMBER	Apply process number. An apply process is an Oracle background process, prefixed by ap.
APPLY_NAME	VARCHAR2(128)	Name of the apply process
STATE	VARCHAR2(36)	Shows the state of the apply reader and the hash server. The possible values include: • INITIALIZING - Starting up • IDLE - Performing no work • DEQUEUE MESSAGES - Dequeuing messages from the queue • SCHEDULE MESSAGES - Computing dependencies between messages and assembling messages into transactions • SPILLING - Spilling unapplied messages from memory to hard disk • PAUSED – WAITING FOR DDL TO COMPLETE - Waiting for a data definition language (DDL) logical change record (LCR) to be applied The state of the apply reader is displayed first, followed by the state of the hash server. A semicolon separates the apply reader state from the hash server state.
TOTAL_MESSAGES_DEQUEUED	NUMBER	Total number of messages dequeued since the apply process was last started
TOTAL_MESSAGES_SPILLED	NUMBER	Number of messages spilled by the reader since the apply process was last started
DEQUEUE_TIME	DATE	Time when the last message was received
DEQUEUED_MESSAGE_NUMBER	NUMBER	Number of the last message received
DEQUEUED_MESSAGE_CREATE_TIME	DATE	For captured messages, creation time at the source database of the last message received. For user-enqueued messages, time when the message was enqueued into the queue at the local database.
SGA_USED	NUMBER	Amount (in bytes) of SGA memory used by the apply process since it was last started
ELAPSED_DEQUEUE_TIME	NUMBER	Time elapsed (in hundredths of a second) dequeuing messages since the apply process was last started
ELAPSED_SCHEDULE_TIME	NUMBER	Time elapsed (in hundredths of a second) scheduling messages since the apply process was last started. Scheduling includes computing dependencies between messages and assembling messages into transactions.
ELAPSED_SPILL_TIME	NUMBER	Elapsed time (in hundredths of a second) spent spilling messages since the apply process was last started
OLDEST_SCN_NUM	NUMBER	Oldest SCN

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Column	Datatype	Description
OLDEST_XIDUSN	NUMBER	Transaction ID undo segment number of the oldest transaction that either has been applied or is being applied
OLDEST_XIDSLT	NUMBER	Transaction ID slot number of the oldest transaction that either has been applied or is being applied
OLDEST_XIDSQN	NUMBER	Transaction ID sequence number of the oldest transaction that either has been applied or is being applied
SPILL_LWM_SCN	NUMBER	Spill low-watermark SCN
PROXY_SID	NUMBER	When the apply process uses combined capture and apply, the session ID of the propagation receiver that is responsible for direct communication between capture and apply. If the apply process does not use combined capture and apply, then this column is 0.
PROXY_SERIAL	NUMBER	When the apply process uses combined capture and apply, the serial number of the propagation receiver that is responsible for direct communication between capture and apply. If the apply process does not use combined capture and apply, then this column is 0.
PROXY_SPID	VARCHAR2(12)	When the apply process uses combined capture and apply, the process identification number of the propagation receiver that is responsible for direct communication between capture and apply. If the apply process does not use combined capture and apply, then this column is 0.
BYTES_RECEIVED	NUMBER	When the apply process uses combined capture and apply, the number of bytes received by the apply process from the capture process since the apply process last started. If the apply process does not use combined capture and apply, then this column is not populated.
DEQUEUED_POSITION	RAW(64)	Dequeued position. This column is populated only for an apply process that is functioning as an XStream inbound server.
SPILL_LWM_POSITION	RAW(64)	Spill low-watermark position. This column is populated only for an apply process that is functioning as an XStream inbound server.
OLDEST_TRANSACTION_ID	VARCHAR2(128)	Oldest transaction ID
TOTAL_LCRS_WITH_DEP	NUMBER	Total number of LCRs with row-level dependencies since the apply process last started
TOTAL_LCRS_WITH_WMDEP	NUMBER	Total number of LCRs with watermark dependencies since the apply process last started. A watermark dependency occurs when an apply process must wait until the apply process's low watermark reaches a particular threshold.
TOTAL_IN_MEMORY_LCRS	NUMBER	Total number of LCRs currently in memory
SGA_ALLOCATED	NUMBER	The total amount of shared memory (in bytes) allocated from the XStreams pool for the apply process since the apply process last started
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data

> **✎ Note:**
>
> The `ELAPSED_SCHEDULE_TIME` column is only populated if the `TIMED_STATISTICS` initialization parameter is set to `true`, or if the `STATISTICS_LEVEL` initialization parameter is set to `TYPICAL` or `ALL`.

> **✎ See Also:**
>
> - "TIMED_STATISTICS"
> - "STATISTICS_LEVEL"

10.163 V$XSTREAM_APPLY_RECEIVER

`V$XSTREAM_APPLY_RECEIVER` displays information about the message receiver of the apply process. The values are reset to zero when the database (or instance in an Oracle Real Application Clusters (Oracle RAC) environment) restarts, when apply migrates to another instance, or when the XStream process is stopped.

Column	Datatype	Description
SID	NUMBER	Session ID of the apply receiver
SERIAL#	NUMBER	Serial number of the apply receiver
APPLY_NAME	VARCHAR2(128)	Name of the apply process
STARTUP_TIME	DATE	Startup time of the apply process
SOURCE_DATABASE_NAME	VARCHAR2(128)	Name of the source database
ACKNOWLEDGEMENT	NUMBER	Acknowledgement SCN of the messages received by the receiver
LAST_RECEIVED_MSG	NUMBER	Last received message
TOTAL_MESSAGES_RECEIVED	NUMBER	Total number of messages received
TOTAL_AVAILABLE_MESSAGES	NUMBER	Number of available messages
STATE	VARCHAR2(44)	State of the apply receiver: • Initializing • Sending unapplied txns • Waiting for message from client • Waiting for LCR from client • Receiving LCRs • Evaluating rules • Enqueueing LCRS • Waiting for memory • Waiting for apply to read • Waiting for client flush request to complete • Waiting for client commit to complete
LAST_RECEIVED_MSG_POSITION	RAW(64)	Last received message position
ACKNOWLEDGEMENT_POSITION	RAW(64)	Acknowledgement position of the messages received by the receiver. Corresponds to `ACKNOWLEDGEMENT`, except the value is in position rather than SCN.

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

10.164 V$XSTREAM_APPLY_SERVER

V$XSTREAM_APPLY_SERVER displays information about each XStream apply server and its activities. An apply server receives messages from the apply coordinator for an apply process. For each message received, an apply server either applies the message or sends the message to the appropriate apply handler. An apply server is a subcomponent of an apply process, outbound server, or inbound server.

Column	Datatype	Description
SID	NUMBER	Session ID of the apply server's session
SERIAL#	NUMBER	Serial number of the apply server's session
APPLY#	NUMBER	Apply process number. An apply process is an Oracle background process, prefixed by ap.
APPLY_NAME	VARCHAR2(128)	Name of the apply process
SERVER_ID	NUMBER	Parallel execution server number of the apply server

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Column	Datatype	Description
STATE	VARCHAR2(20)	State of the apply server: • INITIALIZING - Starting up • IDLE - Performing no work • RECORD LOW-WATERMARK - Performing an administrative job that maintains information about the apply progress, which is used in the ALL_APPLY_PROGRESS and DBA_APPLY_PROGRESS data dictionary views • ADD PARTITION - Performing an administrative job that adds a partition that is used for recording information about in-progress transactions • DROP PARTITION - Performing an administrative job that purges rows that were used to record information about in-progress transactions • EXECUTE TRANSACTION - Applying a transaction • WAIT COMMIT - Waiting to commit a transaction until all other transactions with a lower commit SCN are applied. This state is possible only if the COMMIT_SERIALIZATION apply process parameter is set to a value other than DEPENDENT_TRANSACTIONS and the PARALLELISM apply process parameter is set to a value greater than 1. • WAIT DEPENDENCY - Waiting to apply a logical change record (LCR) in a transaction until another transaction, on which it has a dependency, is applied. This state is possible only if the PARALLELISM apply process parameter is set to a value greater than 1. • ROLLBACK TRANSACTION - Rolling back a transaction • TRANSACTION CLEANUP - Cleaning up an applied transaction, which includes removing LCRs from the apply process's queue • WAIT FOR CLIENT - Waiting for an XStream client application to request more LCRs • WAIT FOR NEXT CHUNK - Waiting for the next set of LCRs for a large transaction
XIDUSN	NUMBER	Transaction ID undo segment number of the transaction currently being applied
XIDSLT	NUMBER	Transaction ID slot number of the transaction currently being applied
XIDSQN	NUMBER	Transaction ID sequence number of the transaction currently being applied
COMMITSCN	NUMBER	Commit system change number (SCN) of the transaction currently being applied
DEP_XIDUSN	NUMBER	Transaction ID undo segment number of a transaction on which the transaction being applied by this apply server depends
DEP_XIDSLT	NUMBER	Transaction ID slot number of a transaction on which the transaction being applied by this apply server depends
DEP_XIDSQN	NUMBER	Transaction ID sequence number of a transaction on which the transaction being applied by this apply server depends
DEP_COMMITSCN	NUMBER	Commit system change number (SCN) of the transaction on which this apply server depends
MESSAGE_SEQUENCE	NUMBER	Number of the current message being applied by the apply server. This value is reset to 1 at the beginning of each transaction.
TOTAL_ASSIGNED	NUMBER	Total number of transactions assigned to the apply server since the apply process was last started

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Column	Datatype	Description
TOTAL_ADMIN	NUMBER	Total number of administrative jobs done by the apply server since the apply process was last started. See the STATE information in this view for the types of administrative jobs.
TOTAL_ROLLBACKS	NUMBER	Number of transactions assigned to this server which were rolled back
TOTAL_MESSAGES_APPLIED	NUMBER	Total number of messages applied by this apply server since the apply process was last started
APPLY_TIME	DATE	Time the last message was applied
APPLIED_MESSAGE_NUMBER	NUMBER	Number of the last message applied
APPLIED_MESSAGE_CREATE_TIME	DATE	Creation time at the source database of the last captured message applied. No information about user-enqueued messages is recorded in this column.
ELAPSED_DEQUEUE_TIME	NUMBER	Time elapsed (in hundredths of a second) dequeuing messages since the apply process was last started
ELAPSED_APPLY_TIME	NUMBER	Time elapsed (in hundredths of a second) applying messages since the apply process was last started
COMMIT_POSITION	RAW(64)	Commit position of the transaction. This column is populated only for an apply process that is functioning as an XStream inbound server.
DEP_COMMIT_POSITION	RAW(64)	Commit position of the transaction the worker depends on. This column is populated only for an apply process that is functioning as an XStream inbound server.
LAST_APPLY_POSITION	RAW(64)	For inbound servers, the position of the last message applied; for outbound servers, the position of the last message sent to the XStream client application. This column is populated only for an apply process that is functioning as an XStream outbound server or inbound server.
TRANSACTION_ID	VARCHAR2(128)	Transaction ID that the worker is applying. This column is populated only for an apply process that is functioning as an XStream inbound server.
DEP_TRANSACTION_ID	VARCHAR2(128)	Transaction ID of the transaction the worker depends on. This column is populated only for an apply process that is functioning as an XStream inbound server.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data
TOTAL_LCRS_RETRIED	NUMBER	Total number of LCRs retried by this server
LCR_RETRY_ITERATION	NUMBER	Retry iteration for this transaction by this server
TOTAL_TXNS_RETRIED	NUMBER	Total transactions retried by this server
TXN_RETRY_ITERATION	NUMBER	Retry iteration for this transaction by this server
TOTAL_TXNS_RECORDED	NUMBER	Total transactions recorded in error queue by this server

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> **Note:**
>
> The `ELAPSED_SCHEDULE_TIME` column is only populated if the `TIMED_STATISTICS` initialization parameter is set to `true`, or if the `STATISTICS_LEVEL` initialization parameter is set to `TYPICAL` or `ALL`.

> **See Also:**
>
> - "TIMED_STATISTICS"
> - "STATISTICS_LEVEL"

10.165 V$XSTREAM_CAPTURE

`V$XSTREAM_CAPTURE` displays information about each capture process that sends LCRs to an XStream outbound server.

Column	Datatype	Description
SID	NUMBER	Session identifier of the capture process
SERIAL#	NUMBER	Session serial number of the capture process session
CAPTURE#	NUMBER	Capture process number. A capture process is an Oracle background process prefixed by `cp`
CAPTURE_NAME	VARCHAR2(128)	Name of the capture process
LOGMINER_ID	NUMBER	Session ID of the Oracle LogMiner session associated with the capture process
STARTUP_TIME	DATE	Time when the capture process was last started

Column	Datatype	Description
STATE	VARCHAR2(551)	State of the capture process: • `INITIALIZING` - Starting up. • `WAITING FOR DICTIONARY REDO` - Waiting for redo log files containing the dictionary build related to the first SCN to be added to the capture process session. A capture process cannot begin to scan the redo log files until all of the log files containing the dictionary build have been added. • `DICTIONARY INITIALIZATION` - Processing a dictionary build. • `MINING (PROCESSED SCN = scn_value)` - Mining a dictionary build at the SCN *scn_value*. • `LOADING (step X of Y)` - Processing information from a dictionary build and currently at step *X* in a process that involves *Y* steps, where *X* and *Y* are numbers. • `CAPTURING CHANGES` - Scanning the redo log for changes that satisfy the capture process rule sets. • `WAITING FOR REDO` - Waiting for new redo log files to be added to the capture process session. The capture process has finished processing all of the redo log files added to its session. This state is possible if there is no activity at a source database. For a downstream capture process, this state is possible if the capture process is waiting for new log files to be added to its session. • `EVALUATING RULE` - Evaluating a change against a capture process rule set. • `CREATING LCR` - Converting a change into an LCR. • `ENQUEUING MESSAGE` - Enqueuing an LCR that satisfies the capture process rule sets into the capture process queue. • `PAUSED FOR FLOW CONTROL` - Unable to enqueue LCRs either because of low memory or because propagations and outbound servers are consuming messages slower than the capture process is creating them. This state indicates flow control that is used to reduce spilling of captured LCRs when propagation or apply has fallen behind or is unavailable. • `WAITING FOR THE BUFFERED QUEUE TO SHRINK` - Waiting for the buffered queue to change to a smaller size. The buffered queue shrinks when there is a memory limitation or when an administrator reduces its size. • `WAITING FOR n SUBSCRIBER(S) INITIALIZING` - Waiting for outbound servers that receive LCRs from the capture process to start, where *n* is the number of apply processes. • `WAITING FOR TRANSACTION` - Waiting for LogMiner to provide more transactions. • `WAITING FOR INACTIVE DEQUEUERS` - Waiting for the capture process's queue subscribers to start. The capture process stops enqueuing LCRs if there are no active subscribers to the queue. • `SUSPENDED FOR AUTO SPLIT/MERGE` - Waiting for a merge operation to complete. • `SHUTTING DOWN` - Stopping. • `ABORTING` - Terminating.
TOTAL_PREFILTER_DISCARDED	NUMBER	Total number of prefiltered messages discarded
TOTAL_PREFILTER_KEPT	NUMBER	Total number of prefiltered messages kept
TOTAL_PREFILTER_EVALUATIONS	NUMBER	Total number of prefilter evaluations

Column	Datatype	Description
TOTAL_MESSAGES_CAPTURED	NUMBER	Total number of redo entries passed by LogMiner to the capture process for detailed rule evaluation since the capture process last started. A capture process converts a redo entry into a message and performs detailed rule evaluation on the message when capture process prefiltering cannot discard the change.
CAPTURE_TIME	DATE	Time when the most recent message was captured
CAPTURE_MESSAGE_NUMBER	NUMBER	Number of the most recently captured message
CAPTURE_MESSAGE_CREATE_TIME	DATE	Creation time of the most recently captured message
TOTAL_MESSAGES_CREATED	NUMBER	Count associated with ELAPSED_LCR_TIME to calculate rate
TOTAL_FULL_EVALUATIONS	NUMBER	Count associated with ELAPSED_RULE_TIME to calculate rate
TOTAL_MESSAGES_ENQUEUED	NUMBER	Total number of messages enqueued since the capture process was last started
ENQUEUE_TIME	DATE	Time when the last message was enqueued
ENQUEUE_MESSAGE_NUMBER	NUMBER	Number of the last enqueued message
ENQUEUE_MESSAGE_CREATE_TIME	DATE	Creation time of the last enqueued message
AVAILABLE_MESSAGE_NUMBER	NUMBER	For local capture, the last redo SCN flushed to the log files. For downstream capture, the last SCN added to LogMiner through the archived redo log files.
AVAILABLE_MESSAGE_CREATE_TIME	DATE	For local capture, the time the SCN was written to the log file. For downstream capture, the time the most recent archived redo log file (containing the most recent SCN) was added to LogMiner.
ELAPSED_CAPTURE_TIME	NUMBER	Elapsed time (in hundredths of a second) scanning for changes in the redo log since the capture process was last started
ELAPSED_RULE_TIME	NUMBER	Elapsed time (in hundredths of a second) evaluating rules since the capture process was last started
ELAPSED_ENQUEUE_TIME	NUMBER	Elapsed time (in hundredths of a second) enqueuing messages since the capture process was last started
ELAPSED_LCR_TIME	NUMBER	Elapsed time (in hundredths of a second) creating LCRs since the capture process was last started
ELAPSED_REDO_WAIT_TIME	NUMBER	Elapsed time (in hundredths of a second) spent by the capture process in the WAITING FOR REDO state
ELAPSED_PAUSE_TIME	NUMBER	Elapsed flow control pause time (in hundredths of a second)
STATE_CHANGED_TIME	DATE	Time at which the state of the capture process changed
SGA_USED	NUMBER	The total amount of shared memory (in bytes) currently used by the capture process out of the amount allocated (SGA_ALLOCATED)
SGA_ALLOCATED	NUMBER	The total amount of shared memory (in bytes) allocated from the Streams pool for the capture process
BYTES_OF_REDO_MINED	VARCHAR2(64)	The total amount of redo data mined (in bytes) since the capture process last started
SESSION_RESTART_SCN	VARCHAR2(64)	The SCN from which the capture process started mining redo data when it was last started

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Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **Note:**
>
> The `ELAPSED_CAPTURE_TIME`, `ELAPSED_RULE_TIME`, `ELAPSED_ENQUEUE_TIME`, `ELAPSED_LCR_TIME`, and `ELAPSED_REDO_WAIT_TIME` columns are only populated if the `TIMED_STATISTICS` initialization parameter is set to `true`, or if the `STATISTICS_LEVEL` initialization parameter is set to `TYPICAL` or `ALL`.

> **See Also:**
>
> • "TIMED_STATISTICS"
> • "STATISTICS_LEVEL"

10.166 V$XSTREAM_MESSAGE_TRACKING

`V$XSTREAM_MESSAGE_TRACKING` displays information about LCRs tracked through the stream that are processed by XStream components.

You can track an LCR through a stream using one of the following methods:

• Set the `message_tracking_frequency` capture process parameter to `1` or another relatively low value for XStream Outbound processes.

• Set the `message_tracking_frequency` apply process parameter to `1` or another relatively low value for XStream Inbound processes.

• Use the `DBMS_XSTREAM_ADM.SET_MESSAGE_TRACKING` procedure to specify a tracking label that becomes part of each LCR generated by the current session.

When the actions parameter in the `DBMS_XSTREAM_ADM.SET_MESSAGE_TRACKING` procedure is set to `DBMS_XSTREAM_ADM.ACTION_MEMORY`, information about the LCRs is tracked in memory, and this view is populated with information about the LCRs. Currently, `DBMS_XSTREAM_ADM.ACTION_MEMORY` is the only valid setting for the `actions` parameter in the procedure.

> **✎ Note:**
>
> This view does not display information about messages flowing in an Oracle GoldenGate configuration. To view information about such message streams, query the `V$GOLDENGATE_MESSAGE_TRACKING` view.

Column	Datatype	Description
TRACKING_LABEL	VARCHAR2(128)	User-specified tracking label
TAG	RAW(30)	First 30 bytes of the tag of the LCR
COMPONENT_NAME	VARCHAR2(128)	Name of the component that processed the LCR
COMPONENT_TYPE	VARCHAR2(128)	Type of the component that processed the LCR
ACTION	VARCHAR2(50)	Action performed on the LCR
ACTION_DETAILS	VARCHAR2(100)	Details of the action
TIMESTAMP	TIMESTAMP(9) WITH TIME ZONE	Time when the action was performed
MESSAGE_CREATION_TIME	DATE	Time when the message was created
MESSAGE_NUMBER	NUMBER	SCN of the message
TRACKING_ID	RAW(16)	Globally unique OID of the LCR
SOURCE_DATABASE_NAME	VARCHAR2(128)	Name of the source database
OBJECT_OWNER	VARCHAR2(128)	Owner of the object
OBJECT_NAME	VARCHAR2(128)	Name of the object
XID	VARCHAR2(128)	Transaction ID
COMMAND_TYPE	VARCHAR2(128)	Command type of the LCR
MESSAGE_POSITION	RAW(64)	Position of the message
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **✎ See Also:**
>
> • "V$GOLDENGATE_MESSAGE_TRACKING"
>
> • *Oracle Database PL/SQL Packages and Types Reference* for more information about the DBMS_XSTREAM_ADM package
>
> • *Oracle Database XStream Guide* for more information about XStream concepts

10.167 V$XSTREAM_OUTBOUND_SERVER

V$XSTREAM_OUTBOUND_SERVER displays statistics about an outbound server. An outbound server sends LCRs to the XStream client application.

> **Note:**
>
> When the COMMITTED_DATA_ONLY column is YES in the V$XSTREAM_OUTBOUND_SERVER view, the V$STREAMS_APPLY_SERVER view provides additional information about the outbound server process, and information about the apply server background processes used by the outbound server.

Column	Datatype	Description
SID	NUMBER	Session ID of the outbound server's session
SERIAL#	NUMBER	Serial number of the outbound server's session
SPID	VARCHAR2(12)	Process identification number of the operating-system process that sends LCRs to the client application
SERVER_NAME	VARCHAR2(128)	Name of the outbound server
STARTUP_TIME	DATE	Time when the client application attached to the outbound server

Column	Datatype	Description
STATE	VARCHAR2(19)	State of the outbound server
		When the COMMITTED_DATA_ONLY column shows YES, the following states are possible:
		• INITIALIZING - Starting up the outbound server.
		• IDLE - Performing no work because there are no LCRs to send to the XStream client application.
		• GET TRANSACTIONS - Receiving transactions from the outbound server's apply coordinator.
		• SEND TRANSACTION - Sending a transaction to an XStream client application.
		• WAIT FOR NEXT CHUNK - Waiting for the next set of LCRs for a large transaction.
		• TRANSACTION CLEANUP - Cleaning up an applied transaction, which includes removing LCRs from the outbound server's queue.
		• WAIT FOR CLIENT - Waiting for an XStream client application to request more LCRs.
		When the COMMITTED_DATA_ONLY column shows NO, the following states are possible:
		• INITIALIZING - Starting up the outbound server.
		• INITIALIZING RULE EVALUATION CONTEXT - Initializing the context to evaluate the outbound server's rules.
		• IDLE - Performing no work because there is no LCR to send to the XStream client application.
		• BROWSING LCR - Browsing the outbound server's queue for next LCR.
		• EVALUATING RULES - Evaluating an LCR against a rule set.
		• DEQUEUING LCR - Dequeuing an LCR from the outbound server's queue.
		• SENDING LCR - Sending an LCR to an XStream client application.
		• WAITING FOR CAPTURE TO TERMINATE - Waiting for the capture process to become disabled.
		• SUSPENDED DUE TO A DROPPED SUBSCRIBER - Suspended because a connected subscriber was dropped. For example, a subscriber can be dropped during a split or merge operation.
		• SUSPENDED FOR AUTO SPLIT/MERGE - Suspended because an automatic split or merge operation is being performed.
		• WAITING ON EMPTY QUEUE - Waiting for more LCRs from the capture process.
		• WAITING FOR CLIENT - Waiting for the XStream client application to request more LCRs.
		• WAITING FOR CAPTURE TO INITIALIZE - Waiting for the capture process to finish the data dictionary build.
		• WAITING TO ATTACH TO CAPTURE - Waiting for the outbound server to attach to the capture process.
		When a state refers to a capture process, it is the capture process that captures changes for the outbound server. When a state refers to a propagation, it is the outbound server that sends LCRs to the XStream client application.
XIDUSN	NUMBER	Transaction ID undo segment number of the transaction currently being processed. This column is populated only if the COMMITTED_DATA_ONLY column shows YES. When the COMMITTED_DATA_ONLY column shows NO, this column is NULL.

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Column	Datatype	Description
XIDSLT	NUMBER	Transaction ID slot number of the transaction currently being processed. This column is populated only if the COMMITTED_DATA_ONLY column shows YES. When the COMMITTED_DATA_ONLY column shows NO, this column is NULL.
XIDSQN	NUMBER	Transaction ID sequence number of the transaction currently being processed. This column is populated only if the COMMITTED_DATA_ONLY column shows YES. When the COMMITTED_DATA_ONLY column shows NO, this column is NULL.
COMMITSCN	NUMBER	Commit SCN of the transaction currently being processed. This column is populated only if the COMMITTED_DATA_ONLY column shows YES. When the COMMITTED_DATA_ONLY column shows NO, this column is NULL.
TOTAL_TRANSACTIONS_SENT	NUMBER	Total number of transactions sent by the outbound server to the XStream client application since the last time the client application attached to the outbound server. This column is populated only if the COMMITTED_DATA_ONLY column shows YES. When the COMMITTED_DATA_ONLY column shows NO, this column is NULL.
MESSAGE_SEQUENCE	NUMBER	Number of the current LCR being processed by the outbound server. This value is reset to 1 at the beginning of each transaction. This column is populated only if the COMMITTED_DATA_ONLY column shows YES. When the COMMITTED_DATA_ONLY column shows NO, this column is NULL.
TOTAL_MESSAGES_SENT	NUMBER	Total number of LCRs sent by the outbound server to the XStream client application since the last time the client application attached to the outbound server
SEND_TIME	DATE	Time the last LCR was sent by the outbound server to the XStream client application
LAST_SENT_MESSAGE_NUMBER	NUMBER	Message number of the last LCR sent by the outbound server to the XStream client application
LAST_SENT_MESSAGE_CREATE_TIME	DATE	Creation time at the source database of the last LCR sent by the outbound server to the client application
ELAPSED_SEND_TIME	NUMBER	Time elapsed (in hundredths of a second) sending LCRs to the XStream client application since the last time the client application attached to the outbound server
COMMIT_POSITION	RAW(64)	Commit position of the transaction currently being processed. This column is populated only if the COMMITTED_DATA_ONLY column shows YES. When the COMMITTED_DATA_ONLY column shows NO, this column is NULL.
LAST_SENT_POSITION	RAW(64)	Position of the last LCR sent to the XStream client application. This column is populated only if the COMMITTED_DATA_ONLY column shows YES. When the COMMITTED_DATA_ONLY column shows NO, this column is NULL.
BYTES_SENT	NUMBER	Total number of bytes sent by the outbound server to the XStream client application since the last time the client application attached to the outbound server
COMMITTED_DATA_ONLY	CHAR(3)	YES if the outbound server can send only LCRs in committed transactions to the XStream client application. A committed transaction is an assembled, noninterleaving transaction with no rollbacks. NO if the outbound server can send LCRs in transactions that have not yet committed to the XStream client application. This mode is for internal Oracle use only.

Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

> **✎ See Also:**
>
> "V$STREAMS_APPLY_SERVER"

10.168 V$XSTREAM_TABLE_STATS

V$XSTREAM_TABLE_STATS shows the statistics for all the tables processed by each apply server for the XStream session.

Column	Datatype	Description
APPLY_NAME	VARCHAR2(128)	Name of XStream Out or XStream In process
SERVER_ID	NUMBER	Parallel apply server worker ID. If the server ID is 0, then this is an aggregate of statistics for servers that may have been automatically shutdown due to session inactivity.
SOURCE_TABLE_OWNER	VARCHAR2(128)	Source owner of the captured or replicated table
SOURCE_TABLE_NAME	VARCHAR2(128)	Source name of the captured or replicated table
DESTINATION_TABLE_OWNER	VARCHAR2(128)	Target owner of the captured or replicated table
DESTINATION_TABLE_NAME	VARCHAR2(128)	Target name of the captured or replicated table
LAST_UPDATE	DATE	Time of last update
TOTAL_INSERTS	NUMBER	Number of insert operations on this table processed by this apply server for the current session
TOTAL_UPDATES	NUMBER	Number of update operations on this table processed by this apply server for the current session
TOTAL_DELETES	NUMBER	Number of delete operations on this table processed by this apply server for the current session
INSERT_COLLISIONS	NUMBER	Number of insert collisions on this table encountered by this apply server for the current session
UPDATE_COLLISIONS	NUMBER	Number of update collisions on this table encountered by this apply server for the current session
DELETE_COLLISIONS	NUMBER	Number of delete collisions on this table encountered by this apply server for the current session
REPERROR_RECORDS	NUMBER	Number of change records that were recorded on this table by this apply server for the current session
REPERROR_IGNORES	NUMBER	Number of ignored change records on this table by this apply server for the current session
WAIT_DEPENDENCIES	NUMBER	Number of waits for this table due to dependency for the current session

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Column	Datatype	Description
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • n: Where n is the applicable container ID for the rows containing data
CDR_INSERT_ROW_EXISTS	NUMBER	Number of conflicts where an insert gets an ORA-00001 error
CDR_UPDATE_ROW_EXISTS	NUMBER	Number of conflicts where an update gets an ORA-26786 error
CDR_UPDATE_ROW_MISSING	NUMBER	Number of conflicts where an update gets an ORA-26787 error
CDR_DELETE_ROW_EXISTS	NUMBER	Number of conflicts where a delete gets an ORA-26786 error
CDR_DELETE_ROW_MISSING	NUMBER	Number of conflicts where a delete gets an ORA-26787 error
CDR_SUCCESSFUL_RESOLUTIONS	NUMBER	Number of successfully resolved conflicts
CDR_FAILED_RESOLUTIONS	NUMBER	Number of conflicts that could not be resolved due to an error during resolution
LOB_OPERATIONS	NUMBER	The number of LOB updates (LOB writes, LOB trims, and LOB erases) applied by the inbound server.

> ✎ **See Also:**
>
> *Oracle Database XStream Guide* for more information about XStream conflict detection and resolution

10.169 V$XSTREAM_TRANSACTION

V$XSTREAM_TRANSACTION displays information about transactions that are being processed by capture processes, outbound servers, and inbound servers. This view can identify long running transactions and to display how many LCRs are being processed in each transaction. This view only contains information about captured LCRs. It does not contain information about user-enqueued LCRs or user messages.
This view only shows information about LCRs that are being processed because they satisfied the rule sets for the component at the time of the query. For capture processes, this view only shows information about changes in transactions that the capture process has converted into LCRs. It does not show information about all the active transactions present in the redo log.

For outbound servers, this view only shows information about LCRs that the outbound server has dequeued. It does not show information about LCRs in the outbound server's queue. For outbound servers, information about a transaction remains in the view until the transaction is sent to the XStream client application.

For inbound servers, information about a transaction remains in the view until the transaction commits or until the entire transaction is rolled back.

Column	Datatype	Description
COMPONENT_NAME	VARCHAR2(128)	Name of the component

Column	Datatype	Description
COMPONENT_TYPE	VARCHAR2(20)	Type of component • `CAPTURE` - Capture process • `APPLY` - Apply reader subcomponent in an outbound server or inbound server • `PROPAGATION_SENDER` - Propagation sender that sends LCRs from a capture process to an outbound server
XIDUSN	NUMBER	Transaction ID undo segment number of the transaction
XIDSLT	NUMBER	Transaction ID slot number of the transaction
XIDSQN	NUMBER	Transaction ID sequence number of the transaction
CUMULATIVE_MESSAGE_COUNT	NUMBER	Number of LCRs processed in the transaction. If a component is restarted while the transaction is being processed, then this column shows the number of LCRs processed in the transaction since the component was started.
TOTAL_MESSAGE_COUNT	NUMBER	Total number of LCRs processed in the transaction by an outbound server or inbound server. This column does not pertain to capture processes.
FIRST_MESSAGE_TIME	DATE	Time stamp of the first LCR processed in the transaction. If a capture process is restarted while the transaction is being processed, then this column shows the time stamp of the first LCR processed after the capture process was started.
FIRST_MESSAGE_NUMBER	NUMBER	SCN of the first message in the transaction. If a capture process is restarted while the transaction is being processed, then this column shows the SCN of the first message processed after the capture process was started.
LAST_MESSAGE_TIME	DATE	Time stamp of the last LCR processed in the transaction
LAST_MESSAGE_NUMBER	NUMBER	SCN of the most recent message encountered for the transaction
FIRST_MESSAGE_POSITION	RAW(64)	Position of the first message seen by an XStream inbound server This column is populated only for an apply process that is functioning as an XStream inbound server.
LAST_MESSAGE_POSITION	RAW(64)	Position of the last message seen by an XStream inbound server. This column is populated only for an apply process that is functioning as an XStream inbound server.
TRANSACTION_ID	VARCHAR2(128)	Transaction ID for an XStream inbound server. This column is populated only for an apply process that is functioning as an XStream inbound server.
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • `0`: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • `1`: This value is used for rows containing data that pertain to only the root • _n_: Where _n_ is the applicable container ID for the rows containing data

10.170 V$ZONEMAP_USAGE_STATS

V$ZONEMAP_USAGE_STATS displays zone map usage statistics.

Column	Datatype	Description
ZONEMAP	VARCHAR2(257)	Name of the zone map in the form of *owner.name*
PRUNING_TYPE	VARCHAR2(11)	Type of data pruning performed using the zone map
EXECUTIONS	NUMBER	Number of executions, including parallel worker executions
BASE_COUNT	NUMBER	Base count accumulated over number of executions
PRUNED_COUNT	NUMBER	Pruned count accumulated over number of executions
CON_ID	NUMBER	The ID of the container to which the data pertains. Possible values include: • 0: This value is used for rows containing data that pertain to the entire CDB. This value is also used for rows in non-CDBs. • 1: This value is used for rows containing data that pertain to only the root • *n*: Where *n* is the applicable container ID for the rows containing data

The ratio (PRUNED_COUNT / BASE_COUNT) shows the fraction of data pruned by the zone map.

Part IV

Appendixes

This part includes the following appendixes:

- Database Limits
- SQL Scripts
- Oracle Wait Events
- Oracle Enqueue Names
- Statistics Descriptions
- Background Processes

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