Venzi's Tech-Blog

10 December 2010

Oracle 11gR2 enqueue waits

Filed under: Oracle,Performance — Venzi @ 09:24

Over 1 and a half year ago I posted the enqueue waits for Oracle 10g. Well, a lot has changed in 11g including the enqueue waits. This is the new list of enqueue waits in 11gR2:

Group	Enqueue Type	Description
Auto BMR	enq: AB – ABMR process initialized	Lock held to ensure that ABMR process is initialized
Auto BMR	enq: AB – ABMR process start/stop	Lock held to ensure that only one ABMR is started in the cluster
ASM Disk AU Lock	enq: AD – allocate AU	Synchronizes accesses to a specific ASM disk AU
ASM Disk AU Lock	enq: AD – deallocate AU	Synchronizes accesses to a specific ASM disk AU
ASM Disk AU Lock	enq: AD – relocate AU	Synchronizes accesses to a specific ASM disk AU
Edition Lock	enq: AE – lock	Prevent Dropping an edition in use
Advisor Framework	enq: AF – task serialization	This enqueue is used to serialize access to an advisor task
Analytic Workspace Generation	enq: AG – contention	Synchronizes generation use of a particular workspace
ASM Enqueue	enq: AM – ASM ACD Relocation	Block ASM cache freeze
ASM Enqueue	enq: AM – ASM Amdu Dump	Allow only one AMDU dump when block read failure
ASM Enqueue	enq: AM – ASM File Destroy	Prevent same file deletion race
ASM Enqueue	enq: AM – ASM Password File Update	Allow one ASM password file update per cluster at a time
ASM Enqueue	enq: AM – ASM User	Prevents a user from being dropped if it owns any open files
ASM Enqueue	enq: AM – ASM cache freeze	Start ASM cache freeze
ASM Enqueue	enq: AM – PST split check	Synchronizes check for Storage (PST) split in disk groups
ASM Enqueue	enq: AM – background COD reservation	Reserve a background COD entry
ASM Enqueue	enq: AM – client registration	Registers DB instance to ASM client state object hash
ASM Enqueue	enq: AM – disk offline	Synchronizes disk offlines
ASM Enqueue	enq: AM – group block	ASM group block
ASM Enqueue	enq: AM – group use	Client group use
ASM Enqueue	enq: AM – rollback COD reservation	Reserve a rollback COD entry
ASM Enqueue	enq: AM – shutdown	Prevent DB instance registration during ASM instance shutdown
MultiWriter Object Access	enq: AO – contention	Synchornizes access to objects and scalar variables
Service Operations	enq: AS – service activation	Synchronizes new service activation
Alter Tablespace	enq: AT – contention	Serializes ‘alter tablespace’ operations
Audit index file	enq: AU – audit index file	lock held to operate on the audit index file
ASM volume locks	enq: AV – AVD client registration	Serialize inst reg and first DG use
ASM volume locks	enq: AV – add/enable first volume in DG	Serialize taking the AVD DG enqueue
ASM volume locks	enq: AV – persistent DG number	prevent DG number collisions
ASM volume locks	enq: AV – volume relocate	Serialize relocating volume extents
Analytic Workspace	enq: AW – AW generation lock	In-use generation state for a particular workspace
Analytic Workspace	enq: AW – AW state lock	Row lock synchronization for the AW$ table
Analytic Workspace	enq: AW – AW$ table lock	Global access synchronization to the AW$ table
Analytic Workspace	enq: AW – user access for AW	Synchronizes user accesses to a particular workspace
KSXA Test Affinity Dictionary	enq: AY – contention	Affinity Dictionary test affinity synchronization
Global Transaction Branch	enq: BB – 2PC across RAC instances	2PC distributed transaction branch across RAC instances
BLOOM FILTER	enq: BF – PMON Join Filter cleanup	PMON bloom filter recovery
BLOOM FILTER	enq: BF – allocation contention	Allocate a bloom filter in a parallel statement
Backup/Restore	enq: BR – file shrink	Lock held to prevent file from decreasing in physical size during RMAN backup
Backup/Restore	enq: BR – multi-section restore header	Lock held to serialize file header access during multi-section restore
Backup/Restore	enq: BR – multi-section restore section	Lock held to serialize section access during multi-section restore
Backup/Restore	enq: BR – perform autobackup	Lock held to perform a new controlfile autobackup
Backup/Restore	enq: BR – proxy-copy	Lock held to allow cleanup from backup mode during an RMAN proxy-copy backup
Backup/Restore	enq: BR – request autobackup	Lock held to request controlfile autobackups
Backup/Restore	enq: BR – space info datafile hdr update	Lock held to prevent multiple process to update the headers at the same time
Calibration	enq: CA – contention	Synchronizes various IO calibration runs
Controlfile Transaction	enq: CF – contention	Synchronizes accesses to the controlfile
Cross-Instance Call Invocation	enq: CI – contention	Coordinates cross-instance function invocations
Label Security cache	enq: CL – compare labels	Synchronizes accesses to label cache for label comparison
Label Security cache	enq: CL – drop label	Synchronizes accesses to label cache when dropping a label
ASM Instance Enqueue	enq: CM – gate	serialize access to instance enqueue
ASM Instance Enqueue	enq: CM – instance	indicate ASM diskgroup is mounted
KTCN REG enq	enq: CN – race with init	during descriptor initialization
KTCN REG enq	enq: CN – race with reg	during transaction commit to see concurrent registrations
KTCN REG enq	enq: CN – race with txn	during registration
KTUCLO Master Slave enq	enq: CO – master slave det	enqueue held be Master in Cleanout Optim
Cleanup querycache registrations	enq: CQ – contention	Serializes access to cleanup client query cache registrations
Reuse Block Range	enq: CR – block range reuse ckpt	Coordinates fast block range reuse ckpt
Block Change Tracking	enq: CT – CTWR process start/stop	Lock held to ensure that only one CTWR process is started in a single instance
Block Change Tracking	enq: CT – change stream ownership	Lock held by one instance while change tracking is enabled, to guarantee access to thread-specific resources
Block Change Tracking	enq: CT – global space management	Lock held during change tracking space management operations that affect the entire change tracking file
Block Change Tracking	enq: CT – local space management	Lock held during change tracking space management operations that affect just the data for one thread
Block Change Tracking	enq: CT – reading	Lock held to ensure that change tracking data remains in existence until a reader is done with it
Block Change Tracking	enq: CT – state	Lock held while enabling or disabling change tracking, to ensure that it is only enabled or disabled by one user at a time
Block Change Tracking	enq: CT – state change gate 1	Lock held while enabling or disabling change tracking in RAC
Block Change Tracking	enq: CT – state change gate 2	Lock held while enabling or disabling change tracking in RAC
Cursor	enq: CU – contention	Recovers cursors in case of death while compiling
DbsDriver	enq: DB – contention	Synchronizes modification of database wide supplementallogging attributes
ASM Local Disk Group	enq: DD – contention	Synchronizes local accesses to ASM disk groups
Datafile Online in RAC	enq: DF – contention	Enqueue held by foreground or DBWR when a datafile is brought online in RAC
ASM Disk Group Modification	enq: DG – contention	Synchronizes accesses to ASM disk groups
Direct Loader Index Creation	enq: DL – contention	Lock to prevent index DDL during direct load
Database Mount/Open	enq: DM – contention	Enqueue held by foreground or DBWR to syncrhonize database mount/open with other operations
Diskgroup number generator	enq: DN – contention	Serializes group number generations
ASM Disk Online Lock	enq: DO – Staleness Registry create	Synchronizes Staleness Registry creation
ASM Disk Online Lock	enq: DO – disk online	Synchronizes disk onlines and their recovery

ASM Disk Online Lock	enq: DO – disk online operation	Represents an active disk online operation
ASM Disk Online Lock	enq: DO – disk online recovery	Synchronizes disk onlines and their recovery
ASM Disk Online Lock	enq: DO – startup of MARK process	Synchronizes startup of MARK process
LDAP Parameter	enq: DP – contention	Synchronizes access to LDAP parameters
Distributed Recovery	enq: DR – contention	Serializes the active distributed recovery operation
Database Suspend	enq: DS – contention	Prevents a database suspend during LMON reconfiguration
Default Temporary Tablespace	enq: DT – contention	Serializes changing the default temporary table spaceand user creation
Diana Versioning	enq: DV – contention	Synchronizes access to lower-version Diana (PL/SQL intermediate representation)
In memory Dispenser	enq: DW – contention	Serialize in memory dispenser operations
Distributed Transaction	enq: DX – contention	Serializes tightly coupled distributed transaction branches
ASM File Access Lock	enq: FA – access file	Synchronizes accesses to open ASM files
Format Block	enq: FB – contention	Ensures that only one process can format data blcoks in auto segment space managed tablespaces
Disk Group Chunk Mount	enq: FC – open an ACD thread	LGWR opens an ACD thread
Disk Group Chunk Mount	enq: FC – recover an ACD thread	SMON recovers an ACD thread
Flashback Database	enq: FD – Flashback coordinator	Synchronization
Flashback Database	enq: FD – Flashback logical operations	Synchronization
Flashback Database	enq: FD – Flashback on/off	Synchronization
Flashback Database	enq: FD – Marker generation	Synchronization
Flashback Database	enq: FD – Restore point create/drop	Synchronization
Flashback Database	enq: FD – Tablespace flashback on/off	Synchronization
KTFA Recovery	enq: FE – contention	Serializes flashback archive recovery
ACD Relocation Gate Enqueue	enq: FG – FG redo generation enq race	resolve race condition to acquire Disk Group Redo Generation Enqueue
ACD Relocation Gate Enqueue	enq: FG – LGWR redo generation enq race	resolve race condition to acquire Disk Group Redo Generation Enqueue
ACD Relocation Gate Enqueue	enq: FG – serialize ACD relocate	only 1 process in the cluster may do ACD relocation in a disk group
Flashback database log	enq: FL – Flashback database log	Synchronization
Flashback database log	enq: FL – Flashback db command	Enqueue used to synchronize Flashback Database and and deletion of flashback logs.
File Mapping	enq: FM – contention	Synchronizes access to global file mapping state
File Object	enq: FP – global fob contention	Synchronizes various File Object(FOB) operations
Disk Group Recovery	enq: FR – contention	begin recovery of disk group
Disk Group Recovery	enq: FR – recover the thread	wait for lock domain detach
Disk Group Recovery	enq: FR – use the thread	indicate this ACD thread is alive
File Set / Dictionary Check	enq: FS – contention	Enqueue used to synchronize recovery and file operations or synchronize dictionary check
Disk Group Redo Generation	enq: FT – allow LGWR writes	allow LGWR to generate redo in this thread
Disk Group Redo Generation	enq: FT – disable LGWR writes	prevent LGWR from generating redo in this thread
DBFUS	enq: FU – contention	This enqueue is used to serialize the capture of the DB Feature Usage and High Water Mark Statistics
ACD Xtnt Info CIC	enq: FX – issue ACD Xtnt Relocation CIC	ARB relocates ACD extent
ASM Disk Header	enq: HD – contention	Serializes accesses to ASM SGA data structures
Queue Page	enq: HP – contention	Synchronizes accesses to queue pages
Hash Queue	enq: HQ – contention	Synchronizes the creation of new queue IDs
Direct Loader High Water Mark	enq: HV – contention	Lock used to broker the high water mark during parallel inserts
Segment High Water Mark	enq: HW – contention	Lock used to broker the high water mark during parallel inserts
Internal	enq: IA – contention	
NID	enq: ID – contention	Lock held to prevent other processes from performing controlfile transaction while NID is running
Label Security	enq: IL – contention	Synchronizes accesses to internal label data structures
Kti blr lock	enq: IM – contention for blr	Serializes block recovery for IMU txn
Instance Recovery	enq: IR – contention	Synchronizes instance recovery
Instance Recovery	enq: IR – contention2	Synchronizes parallel instance recovery and shutdown immediate
Instance State	enq: IS – contention	Enqueue used to synchronize instance state changes
In-Mem Temp Table Meta Creation	enq: IT – contention	Synchronizes accesses to a temp object’s metadata
Job Queue Date	enq: JD – contention	Synchronizes dates between job queue coordinator and slave processes
Materialized View	enq: JI – contention	Lock held during materialized view operations (like refresh, alter) to prevent concurrent operations on the same materialized view
Job Queue	enq: JQ – contention	Lock to prevent multiple instances from running a single job
Job Scheduler	enq: JS – aq sync	Scheduler evt code and AQ sync
Job Scheduler	enq: JS – contention	Synchronizes accesses to the job cache
Job Scheduler	enq: JS – evt notify	Lock got during event notification
Job Scheduler	enq: JS – evtsub add	Lock got when adding subscriber to event q
Job Scheduler	enq: JS – evtsub drop	Lock got when dropping subscriber to event q
Job Scheduler	enq: JS – job recov lock	Lock to recover jobs running on crashed RAC inst
Job Scheduler	enq: JS – job run lock – synchronize	Lock to prevent job from running elsewhere
Job Scheduler	enq: JS – q mem clnup lck	Lock obtained when cleaning up q memory
Job Scheduler	enq: JS – queue lock	Lock on internal scheduler queue
Job Scheduler	enq: JS – sch locl enqs	Scheduler non-global enqueues
Job Scheduler	enq: JS – wdw op	Lock got when doing window open/close
SQL STATEMENT QUEUE	enq: JX – SQL statement queue	statement
SQL STATEMENT QUEUE	enq: JX – cleanup of queue	release SQL statement resources
Scheduler Master DBRM	enq: KD – determine DBRM master	Determine DBRM master
Scheduler	enq: KM – contention	Synchronizes various Resource Manager operations
Multiple Object Checkpoint	enq: KO – fast object checkpoint	Coordinates fast object checkpoint
Kupp Process Startup	enq: KP – contention	Synchronizes kupp process startup
ASM Attributes Enque	enq: KQ – access ASM attribute	Synchronization of ASM cached attributes
Scheduler Plan	enq: KT – contention	Synchronizes accesses to the current Resource Manager plan
Materialized View Log DDL	enq: MD – contention	Lock held during materialized view log DDL statements
AQ Notification Mail Host	enq: MH – contention	Lock used for recovery when setting Mail Host for AQ e-mail notifications
Master Key	enq: MK – contention	changing values in enc$
AQ Notification Mail Port	enq: ML – contention	Lock used for recovery when setting Mail Port for AQ e-mail notifications
LogMiner	enq: MN – contention	Synchronizes updates to the LogMiner dictionary and prevents multiple instances from preparing the same LogMiner session
MMON restricted session	enq: MO – contention	Serialize MMON operations for restricted sessions
Media Recovery	enq: MR – contention	Lock used to coordinate media recovery with other uses of datafiles
Media Recovery	enq: MR – standby role transition	Lock used to disallow concurrent standby role transition attempt
Materialized View Refresh Log	enq: MS – contention	Lock held during materialized view refresh to setup MV log
Online Datafile Move	enq: MV – datafile move	Held during online datafile move operation or cleanup
MWIN Schedule	enq: MW – contention	This enqueue is used to serialize the calibration of the manageability schedules with the Maintenance Window
ksz synch	enq: MX – sync storage server info	Lock held to generate a response to the storage server information request when an instance is starting up
Outline Cache	enq: OC – contention	Synchronizes write accesses to the outline cache
Online DDLs	enq: OD – Serializing DDLs	Lock to prevent concurrent online DDLs
Outline Name	enq: OL – contention	Synchronizes accesses to a particular outline name
OLAPI Histories	enq: OQ – xsoq*histrecb	Synchronizes access to olapi history parameter CB

OLAPI Histories	enq: OQ – xsoqhiAlloc	Synchronizes access to olapi history allocation
OLAPI Histories	enq: OQ – xsoqhiClose	Synchronizes access to olapi history closing
OLAPI Histories	enq: OQ – xsoqhiFlush	Synchronizes access to olapi history flushing
OLAPI Histories	enq: OQ – xsoqhistrecb	Synchronizes access to olapi history globals
Encryption Wallet	enq: OW – initialization	initializing the wallet context
Encryption Wallet	enq: OW – termination	terminate the wallet context
Property Lock	enq: PD – contention	Prevents others from updating the same property
Parameter	enq: PE – contention	Synchronizes system parameter updates
Password File	enq: PF – contention	Synchronizes accesses to the password file
Global Parameter	enq: PG – contention	Synchronizes global system parameter updates
AQ Notification Proxy	enq: PH – contention	Lock used for recovery when setting Proxy for AQ HTTP notifications
Remote PX Process Spawn Status	enq: PI – contention	Communicates remote Parallel Execution Server Process creation status
Transportable Tablespace	enq: PL – contention	Coordinates plug-in operation of transportable tablespaces
Process Startup	enq: PR – contention	Synchronizes process startup
PX Process Reservation	enq: PS – contention	Parallel Execution Server Process reservation and synchronization
ASM Partnership and Status Table	enq: PT – contention	Synchronizes access to ASM PST metadata
KSV slave startup	enq: PV – syncshut	Synchronizes instance shutdown_slvstart
KSV slave startup	enq: PV – syncstart	Synchronizes slave start_shutdown
Buffer Cache PreWarm	enq: PW – flush prewarm buffers	Direct Load needs to flush prewarmed buffers if DBWR 0 holds enqueue
Buffer Cache PreWarm	enq: PW – perwarm status in dbw0	DBWR 0 holds enqueue indicating prewarmed buffers present in cache
ASM Rollback Recovery	enq: RB – contention	Serializes ASM rollback recovery operations
Result Cache: Enqueue	enq: RC – Result Cache: Contention	Coordinates access to a result-set
RAC Load	enq: RD – RAC load	update RAC load info
Block Repair/Resilvering	enq: RE – block repair contention	Synchronize block repair/resilvering operations
Data Guard Broker	enq: RF – DG Broker Current File ID	Identifies which configuration metadata file is current
Data Guard Broker	enq: RF – FSFO Observer Heartbeat	Captures recent Fast-Start Failover Observer heartbeat information
Data Guard Broker	enq: RF – RF – Database Automatic Disable	Means for detecting when database is being automatically disabled
Data Guard Broker	enq: RF – atomicity	Ensures atomicity of log transport setup
Data Guard Broker	enq: RF – new AI	Synchronizes selection of the new apply instance
Data Guard Broker	enq: RF – synch: DG Broker metadata	Ensures r/w atomicity of DG configuration metadata
Data Guard Broker	enq: RF – synchronization: aifo master	Synchronizes apply instance failure detection and failover operation
Data Guard Broker	enq: RF – synchronization: critical ai	Synchronizes critical apply instance among primary instances
wallet_set_mkey	enq: RK – set key	wallet master key rekey
RAC Encryption Wallet Lock	enq: RL – RAC wallet lock	RAC wallet lock
Redo Log Nab Computation	enq: RN – contention	Coordinates nab computations of online logs during recovery
Multiple Object Reuse	enq: RO – contention	Coordinates flushing of multiple objects
Multiple Object Reuse	enq: RO – fast object reuse	Coordinates fast object reuse
Resilver / Repair	enq: RP – contention	Enqueue held when resilvering is needed or when datablock is repaired from mirror
Workload Capture and Replay	enq: RR – contention	Concurrent invocation of DBMS_WORKLOAD_* package API
Reclaimable Space	enq: RS – file delete	Lock held to prevent file from accessing during space reclaimation
Reclaimable Space	enq: RS – persist alert level	Lock held to make alert level persistent
Reclaimable Space	enq: RS – prevent aging list update	Lock held to prevent aging list update
Reclaimable Space	enq: RS – prevent file delete	Lock held to prevent deleting file to reclaim space
Reclaimable Space	enq: RS – read alert level	Lock held to read alert level
Reclaimable Space	enq: RS – record reuse	Lock held to prevent file from accessing while reusing circular record
Reclaimable Space	enq: RS – write alert level	Lock held to write alert level
Redo Thread	enq: RT – contention	Thread locks held by LGWR, DBW0, and RVWR to indicate mounted or open status
Redo Thread	enq: RT – thread internal enable/disable	Thread locks held by CKPT to synchronize thread enable and disable
Rolling Migration	enq: RU – contention	Serializes rolling migration operations
Rolling Migration	enq: RU – waiting	Results of rolling migration CIC
Materialized View Flags	enq: RW – MV metadata contention	Lock held by CREATE/ALTER/DROP materialized viewwhile updating materialized view flags in detail tables
ASM Extent Relocation Lock	enq: RX – relocate extent	Synchronizes relocating ASM extents
LogicalStandby	enq: SB – contention	Synchronizes Logical Standby metadata operations
Session Migration	enq: SE – contention	Synchronizes transparent session migration operations
AQ Notification Sender	enq: SF – contention	Lock used for recovery when setting Sender for AQ e-mail notifications
Active Session History Flushing	enq: SH – contention	Should seldom see this contention as this Enqueue is always acquired in no-wait mode
Streams Table Instantiation	enq: SI – contention	Prevents multiple streams tabel instantiations
KTSJ Slave Task Cancel	enq: SJ – Slave Task Cancel	Serializes cancelling task executed by slave process
Shrink Segment	enq: SK – contention	Serialize shrink of a segment
Serialize Lock request	enq: SL – escalate lock	sending lock escalate to LCK0
Serialize Lock request	enq: SL – get lock	sending lock req to LCK0
Serialize Lock request	enq: SL – get lock for undo	sending lock req for undo to LCK0
Shared Object	enq: SO – contention	Synchronizes access to Shared Object (PL/SQL Shared Object Manager)
Spare Enqueue	enq: SP – contention	(1) due to one-off patch
Spare Enqueue	enq: SP – contention 2	(2) due to one-off patch
Spare Enqueue	enq: SP – contention 3	(3) due to one-off patch
Spare Enqueue	enq: SP – contention 4	(4) due to one-off patch
Sequence Cache	enq: SQ – contention	Lock to ensure that only one process can replenish the sequence cache
Synchronized Replication	enq: SR – contention	Coordinates replication / streams operations
Sort Segment	enq: SS – contention	Ensures that sort segments created during parallel DML operations aren’t prematurely cleaned up
Space Transaction	enq: ST – contention	Synchronizes space management activities in dictionary-managed tablespaces
SaveUndo Segment	enq: SU – contention	Serializes access to SaveUndo Segment
Suspend Writes	enq: SW – contention	Coordinates the ‘alter system suspend’ operation
Instance Undo	enq: TA – contention	Serializes operations on undo segments and undo tablespaces
SQL Tuning Base Existence Cache	enq: TB – SQL Tuning Base Cache Load	Synchronizes writes to the SQL Tuning Base Existence Cache
SQL Tuning Base Existence Cache	enq: TB – SQL Tuning Base Cache Update	Synchronizes writes to the SQL Tuning Base Existence Cache
Tablespace Checkpoint	enq: TC – contention	Lock held to guarantee uniqueness of a tablespace checkpoint
Tablespace Checkpoint	enq: TC – contention2	Lock of setup of a unqiue tablespace checkpoint in null mode
KTF map table enqueue	enq: TD – KTF dump entries	KTF dumping time/scn mappings in SMON_SCN_TIME table
KTF broadcast	enq: TE – KTF broadcast	KTF broadcasting
Temporary File	enq: TF – contention	Serializes dropping of a temporary file
Threshold Chain	enq: TH – metric threshold evaluation	Serializes threshold in-memory chain access
Auto Task Serialization	enq: TK – Auto Task Serialization	Lock held by MMON to prevent other MMON spawning of Autotask Slave
Auto Task Serialization	enq: TK – Auto Task Slave Lockout	Serializes spawned Autotask Slaves
Log Lock	enq: TL – contention	Serializes threshold log table read and update
DML	enq: TM – contention	Synchronizes accesses to an object

Temp Object	enq: TO – contention	Synchronizes DDL and DML operations on a temp object
Runtime Fixed Table Purge	enq: TP – contention	Lock held during purge and dynamic reconfiguration of fixed tables.
Queue table enqueue	enq: TQ – DDL contention	TM access to the queue table
Queue table enqueue	enq: TQ – DDL-INI contention	Streams DDL on queue table
Queue table enqueue	enq: TQ – INI contention	TM access to the queue table
Queue table enqueue	enq: TQ – TM contention	TM access to the queue table
Temporary Segment	enq: TS – contention	Serializes accesses to temp segments
Tablespace	enq: TT – contention	Serializes DDL operations on tablespaces
Cross-Instance Transaction	enq: TW – contention	Lock held by one instance to wait for transactions on all instances to finish
Transaction	enq: TX – allocate ITL entry	Allocating an ITL entry in order to begin a transaction
Transaction	enq: TX – contention	Lock held by a transaction to allow other transactions to wait for it
Transaction	enq: TX – index contention	Lock held on an index during a split to prevent other operations on it
Transaction	enq: TX – row lock contention	Lock held on a particular row by a transaction to prevent other transactions from modifying it
User-defined	enq: UL – contention	Lock used by user applications
Undo Segment	enq: US – contention	Lock held to perform DDL on the undo segment
AQ Notification Watermark	enq: WA – contention	Lock used for recovery when setting Watermark for memory usage in AQ notifications
AWR Flush	enq: WF – contention	This enqueue is used to serialize the flushing of snapshots
Write gather local enqueue	enq: WG – delete fso	acquire lobid local enqueue when deleting fso
Write gather local enqueue	enq: WG – lock fso	acquire lobid local enqueue when locking fso
Being Written Redo Log	enq: WL – RAC-wide SGA contention	Serialize access to RAC-wide SGA
Being Written Redo Log	enq: WL – RFS global state contention	Serialize access to RFS global state
Being Written Redo Log	enq: WL – Test access/locking	Testing redo transport access/locking
Being Written Redo Log	enq: WL – contention	Coordinates access to redo log files and archive logs
WLM Plan Operations	enq: WM – WLM Plan activation	Synchronizes new WLM Plan activation
AWR Purge	enq: WP – contention	This enqueue handles concurrency between purging and baselines
LNS archiving log	enq: WR – contention	Coordinates access to logs by Async LNS and ARCH/FG
XDB Configuration	enq: XC – XDB Configuration	Lock obtained when incrementing XDB configuration version number
Auto Online Exadata disks	enq: XD – ASM disk drop/add	Serialize Auto Drop/Add Exadata disk operations
AQ Notification No-Proxy	enq: XH – contention	Lock used for recovery when setting No Proxy Domains for AQ HTTP notifications
ASM Extent Fault Lock	enq: XL – fault extent map	Keep multiple processes from faulting in the same extent chunk
ASM Extent Relocation Enqueue	enq: XQ – purification	wait for relocation before doing block purification
ASM Extent Relocation Enqueue	enq: XQ – recovery	prevent relocation during _recovery_asserts checking
ASM Extent Relocation Enqueue	enq: XQ – relocation	wait for recovery before doing relocation
Quiesce / Force Logging	enq: XR – database force logging	Lock held during database force logging mode
Quiesce / Force Logging	enq: XR – quiesce database	Lock held during database quiesce
Internal Test	enq: XY – contention	Lock used for internal testing
Audit Partition	enq: ZA – add std audit table partition	lock held to add partition to std audit table
FGA Partition	enq: ZF – add fga audit table partition	lock held to add partition to fga audit table
File Group	enq: ZG – contention	Coordinates file group operations
Compression Analyzer	enq: ZH – compression analysis	Synchronizes analysis and insert into compression$, prevents multiple threads analyzing the same table during a load
Global Context Action	enq: ZZ – update hash tables	lock held for updating global context hash tables

For those who made it all to the bottom here a little extra:

While I just found the enqueue waits for 10g on the internet I managed to find out how to retrieve that information. And believe it or not – it's available just over a simple query:

```
1 SELECT eq_name "Group", ev.name "Enqueue Type", eq.req_description "Description"
2  FROM v$enqueue_statistics eq, v$event_name ev
3  WHERE eq.event#=ev.event#
4  ORDER BY ev.name;
```


Comments (5)

5 Comments »

1. Very nicely done.

   Thanks for the post.

   Amazingly enough, we have an instance going crazy on CO enqueue failures. I gather this means the PQO needs a bit of slapping around, but…we shall see….let the digging commence!

   Comment by Ross — 10 February 2011 @ 07:50 | Reply

2. Outstanding! I stumbled across this today while searching for the definition of one of the enques (output from snapper). Using your query I wrote a quick PL/SQL block to output the definitions as a JavaScript associative array and I've now added to my AWR Formatter:
   http://tylermuth.wordpress.com/2011/04/20/awr-formatter/

   So, all of these events are linked to their definitions when viewing an AWR now.

   Regards,
   Tyler

   Comment by Tyler Muth — 28 April 2011 @ 16:24 | Reply

   - Glad that it helped you Tyler! Btw: You don't wanna port your AWR formatter to FireFox, do you?!

Comment by Venzi — 28 April 2011 @ 17:34 | Reply

3. 

   This is very attention-grabbing, You are an overly skilled blogger. I have joined your feed and look forward to in the hunt for extra of your excellent post. Also, I have shared your website in my social networks

   Comment by text check — 31 December 2011 @ 14:00 | Reply

4. 

   Slightly tidier output for your query:

   SET LINES 200
   COL group_name FORMAT A32 HEADING “Group”
   COL name FORMAT A41 HEADING “Enqueue Type”
   COL description FORMAT a120 HEADING “Description”

   SELECT eq_name group_name, ev.name name, eq.req_description description
   FROM v$enqueue_statistics eq, v$event_name ev
   WHERE eq.event#=ev.event#
   ORDER BY ev.name
   /

   Comment by John Thomas — 23 July 2012 @ 11:18 | Reply

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