

INFORME DE AJUSTE INSTANCIA DE BASE DE DATOS ORACLE 9i

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INSTANCIA DE BASE DE DATOS

Nombre de la Instancia de Base de Datos (ORACLE SID)	PPL
Fecha de Creación de la instancia	24 de Septiembre de 2003
Tipo de Archivado	NOARCHIVELOG
Versión	Oracle9i Enterprise Edition Release 9.2.0.5.1 – Production
Core Versión	CORE 9.2.0.6.0 Production

Recomendación

Es muy recomendable la aplicación de los últimos parches de seguridad, ya que últimamente se han detectado problemas de seguridad serios en las distintas versiones de Oracle.

OPCIONES DE BASE DE DATOS

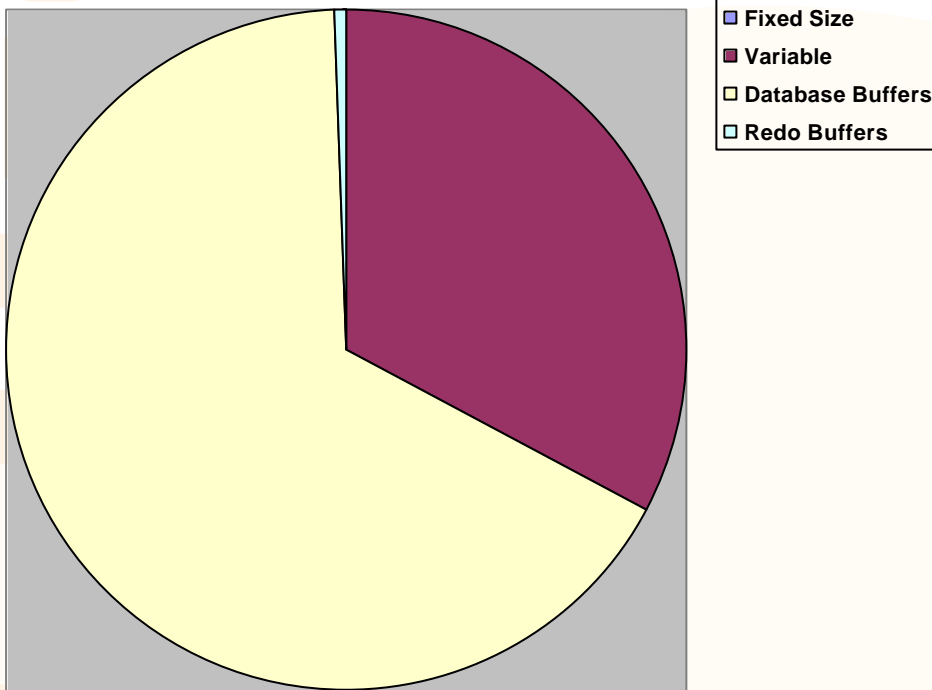
Partitioning	TRUE	Visual Information Retrieval	TRUE
Objects	TRUE	Export Transportable Tablespaces	TRUE
Real Application Clusters	FALSE	Transparent Application Failover	TRUE
Advanced Replication	TRUE	Fast-Start Fault Recovery	TRUE
Bit-Mapped Indexes	TRUE	Sample Scan	TRUE
Connection Multiplexing	TRUE	Duplexed Backups	TRUE
Connection Pooling	TRUE	Java	TRUE
Database Queuing	TRUE	Olap Window Functions	TRUE
Incremental Backup And Recovery	TRUE	Block Media Recovery	TRUE
Instead-Of Triggers	TRUE	Fine-Grained Auditing	TRUE
Parallel Backup And Recovery	TRUE	Application Role	TRUE
Parallel Execution	TRUE	Enterprise User Security	TRUE
Parallel Load	TRUE	Oracle Data Guard	TRUE
Point-In-Time Tablespace Recovery	TRUE	Oracle Label Security	FALSE
Fine-Grained Access Control	TRUE	Olap	TRUE
Proxy Authentication/Authorization	TRUE	Heap Segment Compression	TRUE
Change Data Capture	TRUE	Join Index	TRUE
Plan Stability	TRUE	Trial Recovery	TRUE
Online Index Build	TRUE	Oracle Data Mining	TRUE
Coalesce Index	TRUE	Online Redefinition	TRUE
Managed Standby	TRUE	Streams	TRUE

Materialized View Rewrite	TRUE	File Mapping	TRUE
Materialized View Warehouse Refresh	TRUE		
Database Resource Manager	TRUE		
Spatial	TRUE		



CONFIGURACIÓN DE SGA

AREA	Tamaño (bytes)
Fixed Size	738.584
Variable Size	520.093.696
Database Buffers	1.056.964.608
Redo Buffers	10.641.408
TOTAL SGA	1.588.438.296



FICHEROS DE DATOS

NOMBRE DEL FICHERO	TABLESPACE	TAMANO	BYTES USADOS	% USO
C:\ORACLE\ORADATA\PPL\CWMLITE01.DBF	CWMLITE	20.971.520	11.730.944	55.94
E:\ORACLE\ORADATA\PPL\DATA_E.ORA	CWMLITE		0	
F:\ORACLE\ORADATA\PPL\DATA_F.ORA	CWMLITE		0	
E:\ORACLE\ORADATA\PPL\INDEX_E.ORA	CWMLITE		0	
F:\ORACLE\ORADATA\PPL\INDEX_F.ORA	CWMLITE		0	
G:\ORACLE\ORADATA\PPL\DAT01.ORA	DAT01	6.442.450.944	1.312.948.224	20.38
C:\ORACLE\ORADATA\PPL\DAT02.ORA	DAT02	2.147.483.648	463.011.840	21.56
C:\ORACLE\ORADATA\PPL\DRSYS01.DBF	DRSYS	20.971.520	10.092.544	48.13
C:\ORACLE\ORADATA\PPL\EXAMPLE01.DBF	EXAMPLE	155.975.680	154.140.672	98.82
C:\ORACLE\ORADATA\PPL\INDX.DBF	INDX	1.073.741.824	0	0
I:\ORACLE\ORADATA\PPL\INDX02.ORA	INDX02	4.294.967.296	471.793.664	10.98
C:\ORACLE\ORADATA\PPL\ODM01.DBF	ODM	20.971.520	9.699.328	46.25
C:\ORACLE\ORADATA\PPL\SYSTEM01.DBF	SYSTEM	440.401.920	431.685.632	98.02
C:\ORACLE\ORADATA\PPL\TOOLS01.DBF	TOOLS	10.485.760	0	0
C:\ORACLE\ORADATA\PPL\UNDOTBS01.DBF	UNDOTBS1	1.541.406.720	25.346.048	1.64
C:\ORACLE\ORADATA\PPL\USERS01.DBF	USERS	26.214.400	0	0
C:\ORACLE\ORADATA\PPL\XDB01.DBF	XDB	46.530.560	46.268.416	99.44
TOTAL	N/A	16.242.573.312	2.936.717.312	N/A

Recomendación

No es aconsejable que haya ficheros de datos alojados en los discos de sistema. en este caso además es donde está alojado el tablespace SYSTEM.

Lo mismo es aplicable para los ficheros que soportan a los tablespaces de índices no deberían estar en la unidad donde está el sistema operativo. por otra parte para reducir la contingencia los ficheros de índices deben estar en unidades donde no estén alojados los ficheros de datos, si es posible en unidades de disco soportadas por diferentes canales SCSI.

Por otra parte ORACLE recomienda no esté usado más de un 70% del disco donde se almacenen los ficheros de datos o índices, nuestra recomendación es del 50-60%.

GESTION DEL ALMACENAMIENTO

Por tablespace

TABLESPACE	INITIAL EXTENT	NEXT EXTENT	MIN EXTENTS	MAX EXTENTS	PERCENT INCREASE	MIN EXT SIZE	STATUS	CONTENTS
CWMLITE	65.536		1	2.147.483.645		65.536	ONLINE	PERMANENT
DAT01	65.536		1	2.147.483.645		65.536	ONLINE	PERMANENT
DAT02	65.536		1	2.147.483.645		65.536	ONLINE	PERMANENT
DRSYS	65.536		1	2.147.483.645		65.536	ONLINE	PERMANENT
EXAMPLE	65.536		1	2.147.483.645		65.536	ONLINE	PERMANENT
INDX	65.536		1	2.147.483.645		65.536	ONLINE	PERMANENT
INDX02	65.536		1	2.147.483.645		65.536	ONLINE	PERMANENT
ODM	65.536		1	2.147.483.645		65.536	ONLINE	PERMANENT
SYSTEM	65.536		1	2.147.483.645		65.536	ONLINE	PERMANENT
TEMP1	1.048.576	1.048.576	1		0	1.048.576	ONLINE	TEMPORARY
TEMP2	1.048.576	1.048.576	1		0	1.048.576	ONLINE	TEMPORARY
TOOLS	65.536		1	2.147.483.645		65.536	ONLINE	PERMANENT
UNDOTBS1	65.536		1	2.147.483.645		65.536	ONLINE	UNDO
USERS	65.536		1	2.147.483.645		65.536	ONLINE	PERMANENT
XDB	65.536		1	2.147.483.645				

Por Objeto

Todos los objetos de la base de datos tienen un almacenamiento configurado con los parámetros por defecto de ORACLE

Recomendación

Es aconsejable el uso de parámetros de Storage personalizados para cada tipo de objeto y tablespace. no es lo mismo un tablespace que almacene tablas que otro que almacene índices. tampoco es lo mismo gestionar el almacenamiento con una tabla con muchos registros que para otra que tenga muy pocos... si se realizan muchas modificaciones sobre registros o pocas. etc...

Es necesario hacer un estudio pormenorizado de los objetos para adecuar las características de almacenamiento de cada uno de ellos.

OBJETOS MARCADOS COMO INVALIDOS

OWNER	TIPO	NOMBRE DEL OBJETO	ESTADO
CD	FUNCTION	DT_ADDUSEROBJECT	INVALID
CD	PACKAGE	DFTCONFIGPKGE	INVALID
CD	PACKAGE	DISTRIBUTIONPKGE	INVALID
CD	PACKAGE	INTERFACESDWPKGE	INVALID
CD	PACKAGE	LANLANGPKGE	INVALID
CD	PACKAGE	PACPKGE	INVALID
CD	PACKAGE	ROBINSON_PCK	INVALID
CD	PACKAGE BODY	CD_CHECKMATICULAS	INVALID
CD	PACKAGE BODY	CD_DEDUPACCIONES	INVALID
CD	PACKAGE BODY	DFTCONFIGPKGE	INVALID
CD	PACKAGE BODY	DISTRIBUTIONPKGE	INVALID
CD	PACKAGE BODY	LANLANGPKGE	INVALID
CD	PACKAGE BODY	PACPKGE	INVALID
CD	PACKAGE BODY	PKG NUEVO_RTA	INVALID
CD	PACKAGE BODY	ROBINSON_PCK	INVALID
CD	PROCEDURE	ACTUALIZA_ACCION14	INVALID
CD	PROCEDURE	ACTUALIZA_ROBINSON_AVV	INVALID
CD	PROCEDURE	ACTUALIZA_ROBINSON_GATO	INVALID
CD	PROCEDURE	ACTUALIZA_RTA	INVALID
CD	PROCEDURE	ADDR_NUMVIA_QUITAR_CEROS	INVALID
CD	PROCEDURE	ALLADDS_AFINADO	INVALID
CD	PROCEDURE	ARREGLA_TELEFONOS	INVALID
CD	PROCEDURE	ASIGNA_GRUPOS	INVALID
CD	PROCEDURE	ASIGNA_GRUPOS_ADDR	INVALID
CD	PROCEDURE	AV_POR_CONCESIONARIO	INVALID
CD	PROCEDURE	CARGA_INICIAL	INVALID
CD	PROCEDURE	CARGAR_CLEANSING	INVALID
CD	PROCEDURE	CARGAR_CONSULTACT	INVALID
CD	PROCEDURE	CARGAR_PRECLEANSING	INVALID
CD	PROCEDURE	CLEAN_ADDRESSES	INVALID
CD	PROCEDURE	COMPARA_RTA	INVALID
CD	PROCEDURE	DEDUP_CHECK_CAB	INVALID
CD	PROCEDURE	DEDUP_CHECK_DUP	INVALID
CD	PROCEDURE	DEDUP_CHECK_NOR	INVALID
CD	PROCEDURE	DEDUP_CLEANSING	INVALID

CD	PROCEDURE	DEDUP_DIRECCIONES	INVALID
CD	PROCEDURE	DEDUP_DIRECCIONES_CLTADD	INVALID
CD	PROCEDURE	DEDUP_DUP_DUP	INVALID
CD	PROCEDURE	DEDUP_FICHERO	INVALID
CD	PROCEDURE	DEDUP_FICHERO_REDEDUPLICA	INVALID
CD	PROCEDURE	DEDUP_MAIN	INVALID
CD	PROCEDURE	DEDUP_MAIN_REDEDUPLICA	INVALID
CD	PROCEDURE	DEDUP_MCONTACT	INVALID
CD	PROCEDURE	DEDUP_MSERVICIO	INVALID
CD	PROCEDURE	DEDUP_NACSEX	INVALID
CD	PROCEDURE	DEDUP_NODUP	INVALID
CD	PROCEDURE	DEDUP_NOR_DUP	INVALID
CD	PROCEDURE	DEDUP_NOR_DUP_REDEDUPLICA	INVALID
CD	PROCEDURE	DEDUP_NORMALIZA_DIRECCIONES	INVALID
CD	PROCEDURE	DEDUP_NORMALIZA_NOMBRES	INVALID
CD	PROCEDURE	DEDUP_NORMALIZA_SEXO	INVALID
CD	PROCEDURE	DEDUP_NORM_CAB	INVALID
CD	PROCEDURE	DEDUP_RCLTADD	INVALID
CD	PROCEDURE	DEDUP_RCLTVIN	INVALID
CD	PROCEDURE	DEDUP_ROL_RCLTVIN	INVALID
CD	PROCEDURE	DEDUP_SERVICIO_SC	INVALID
CD	PROCEDURE	DT_DROPUSEROBJECTBYID	INVALID
CD	PROCEDURE	DT_SETPROPERTYBYID	INVALID
CD	PROCEDURE	EXTRAE_ADRESSCP	INVALID
CD	PROCEDURE	EXTRAE_FICHERO_SC	INVALID
CD	PROCEDURE	EXTRAER_ADD	INVALID
CD	PROCEDURE	EXTRAER_ADDR_SOLO	INVALID
CD	PROCEDURE	EXTRAER_CLT_ADD	INVALID
CD	PROCEDURE	EXTRAER_CLT_ADD_AON	INVALID
CD	PROCEDURE	EXTRAER_CLT_ADD_AVV	INVALID
CD	PROCEDURE	EXTRAER_CLT_ADD_GATO	INVALID
CD	PROCEDURE	EXTRAER_CLT_ADD_MGZN	INVALID
CD	PROCEDURE	EXTRAER_CLT_ADD_NIF	INVALID
CD	PROCEDURE	EXTRAER_CLT_ADD_PARA_MINI	INVALID
CD	PROCEDURE	EXTRAER_CLT_AVV_ROBINSON	INVALID
CD	PROCEDURE	EXTRAER_CLT_INTERFACETD	INVALID
CD	PROCEDURE	EXTRAER_INSERT_9	INVALID
CD	PROCEDURE	EXTRAER_RCLTVIN_SERVICIO	INVALID
CD	PROCEDURE	EXTRAER_VIN_ACTIVO	INVALID

CD	PROCEDURE	INSERTA_ACCION	INVALID
CD	PROCEDURE	INSERTA_ACCION19	INVALID
CD	PROCEDURE	INSERTA_ACCION20	INVALID
CD	PROCEDURE	INSERTA_ACCION21	INVALID
CD	PROCEDURE	INSERTA_ACCION22	INVALID
CD	PROCEDURE	INSERT_USER_CONC	INVALID
CD	PROCEDURE	LIMPIA_SERVICIO_MSERVICIO	INVALID
CD	PROCEDURE	LOAD_EXTRAS	INVALID
CD	PROCEDURE	MARCAR_ROBINSON_AVV	INVALID
CD	PROCEDURE	MATRICULA_AON_P	INVALID
CD	PROCEDURE	NIF_IGUALES	INVALID
CD	PROCEDURE	NIF_IGUALES_ADD_ACCIONES	INVALID
CD	PROCEDURE	NIF_IGUALES_CARGAR_CLEAN	INVALID
CD	PROCEDURE	NIF_IGUALES_CARGAR_CLEAN_EXT	INVALID
CD	PROCEDURE	NIF_IGUALES_VER_ACCIONES	INVALID
CD	PROCEDURE	NRESP_ACCION	INVALID
CD	PROCEDURE	OBT_CAB	INVALID
CD	PROCEDURE	ORGANIZA_CONTACTOS	INVALID
CD	PROCEDURE	PONE_PREFIJOS	INVALID
CD	PROCEDURE	PREPARA_FICHERO	INVALID
CD	PROCEDURE	PROCESA_CRITERIUM	INVALID
CD	PROCEDURE	RCLT_REP	INVALID
CD	PROCEDURE	RESPUESTAS_CLT	INVALID
CD	PROCEDURE	RESPUESTAS_CLT_MAG	INVALID
CD	PROCEDURE	ROLLBACK_DEDUP	INVALID
CD	PROCEDURE	RTA_DEDUP	INVALID
CD	PROCEDURE	TIEMPO_PERMANENCIA_TRIOCAR	INVALID
CD	PROCEDURE	UPDATE_MAILING_ERROR	INVALID
CD	PROCEDURE	UPDATEMINI_EUROPCAR	INVALID
CD	PROCEDURE	UPDATE_RCLTADD_ERROR	INVALID
CD	PROCEDURE	UPDATE_SERV_WP	INVALID
CD	PROCEDURE	ZE_RTA_ADDR_CLEAN	INVALID
CD	VIEW	V\$VIN_ORO_TALLER	INVALID
MFO	PACKAGE BODY	BMW_UTL	INVALID
MFO	PACKAGE BODY	INTERFACEPKGGE	INVALID
MFO	PROCEDURE	BORRAME	INVALID
MFO	PROCEDURE	CARGA_INICIAL	INVALID
MFO	PROCEDURE	CARGA_INICIAL_FILE_OLD	INVALID
MFO	PROCEDURE	ENUM_SCRIPT	INVALID

MFO	PROCEDURE	MFO_AJUSTA_COLORES	INVALID
MFO	PROCEDURE	MFO_HST_LOAD	INVALID
MFO	PROCEDURE	MFO_SCRIPT	INVALID
MFO	PROCEDURE	MIGRA_PERIODISTAS_MEDIOS	INVALID
MFO	PROCEDURE	MIGRA_POOL_DE_POOLES	INVALID
MFO	PROCEDURE	PASO_A_VENTAS	INVALID
MFO	VIEW	INTPROCEXEC_VIEW	INVALID
SYSTEM	PACKAGE	DWDATAENTRYPKGE	INVALID
SYSTEM	PACKAGE BODY	DWDATAENTRYPKGE	INVALID
SYSTEM	PACKAGE BODY	UTL_RECOMP	INVALID

Recomendación

Comprobar cada uno de los objetos listados arriba y verificar su estado para que dejen de estar marcados como inválidos, en caso de no ser necesarios proceder a su borrado

USER HIT RATIO

Username	Consistent Gets	DB Blk Gets	Physical Reads	Hit Ratio (1)
MFO	15	0	7	53.33
SYSTEM	975	126	138	87.47
SYSTEM	3.337.515	0	368.822	88.95
SYSTEM	125	119	24	90.16
CD	3.946	0	20	99.49
MFO	1.983.943	998	2.603	99.87
MFO	117.631.777	16.287	18.558	99.98
SYSTEM	43	3	0	100
MFO	944	0	0	100
MFO	187	0	0	100

TABLAS CON ÍNDICES CUESTIONABLES

Owner	Tabla	Columna
CTXSYS	DR\$INDEX_PARTITION	IXP_IDX_ID
MDSYS	SDO_GEOM_METADATA_TABLE	SDO_OWNER
MDSYS	SDO_LRS_METADATA_TABLE	SDO_OWNER
MDSYS	SDO_THEMES_TABLE	SDO_OWNER
MFO	DISDLRZONES	ZONEID
MFO	INTDLRVHLDATA	LOAD_EXEC_ID
OE	INVENTORIES	PRODUCT_ID
OE	ORDER_ITEMS	ORDER_ID
WKSYS	WK\$_ATTR_MAPPING	WK\$IID
WKSYS	WK\$_CRAWLER_SCHED	WK\$IID
WKSYS	WK\$_DATA_SOURCE	WK\$IID
WKSYS	WK\$_DATA_SOURCE_PARAM	WK\$IID
WKSYS	WK\$_DATA_SOURCE_TYPE	WK\$IID
WKSYS	WK\$_DOC_ATTR	WK\$IID
WKSYS	WK\$_MAILLIST	WK\$IID
WKSYS	WK\$_PORTAL	WK\$IID
WKSYS	WK\$_SEARCH_ATTR	WK\$IID
WKSYS	WK\$_SOURCE_GROUP	WK\$IID
WMSYS	WM\$RIC_TABLE	CT_OWNER
XDB	XDB\$CHECKOUTS	VCRUID

Recomendación

Comprobar que los índices listados arriba realmente son necesarios. realiza explain plans sobre las sentencias que atacan a estas tablas y verificar que los índices son usados. en caso de que no sean usados borrar los índices ya que estos penalizan las operaciones de insertado. modificación y borrado de registros.

FOREIGN KEYS SIN ÍNDICE EN LA TABLA HIJA

Owner	Nombre de la Constraint	Columna	Posición	Problema
MDSYS	FK_SRID	SRID	1	No Index
MFO	BMWBRANDS_BMWSERIES_FK1	BRANDID	1	No Index
MFO	BMWVHLAFFECT_FK1	CAMPID	1	No Index
MFO	BMWENGINE_BMWMODELS_FK1	ENGINESERID	1	No Index
MFO	BMWFEATURES_BMWPACKFEAT_FK1	PACKID	1	No Index
MFO	BMWFEATURES_BMWPACKFEAT_FK2	FEATUREID	1	No Index
MFO	BMWFEATURES_BMWVHLFEATS_FK1	FEATUREID	1	No Index
MFO	BMWFEATURETYPE_BMWFEATURES_FK1	FEATTYPEID	1	No Index
MFO	BMWMDLCAT_BMWMDLCAT_FK1	PARENTCATEGORYID	1	No Index
MFO	BMWMDLCAT_BMWMDLELMTS_FK1	CATEGORYID	1	No Index
MFO	BMWMDLELMTS_BMWMDLELMTS_FK1	PARENTELEMENTID	1	No Index
MFO	BMWMDLELMTS_DOPQUOTAINFO_FK1	ELEMENTID	1	No Index
MFO	BMWMDLELMTS_PACSTOCKINFO_FK1	ELEMENTID	1	No Index
MFO	BMWMDLELMTS_RDTSTR_FK1	ELEMENTID	1	No Index
MFO	BMWMDLGRP_BMWMDLCAT_FK1	MODELGRPID	1	No Index
MFO	BMWMODELS_BMWMDLELMTDLS_FK1	MODELID	1	No Index
MFO	BMWMODELS_BMWPRODUCTION_FK1	MODELID	1	No Index
MFO	BMWPRODEVTS_BMWVEHICLES_FK1	PRODEVENTID	1	No Index
MFO	BMWPRODSTATUS_BMWPRODEVTS_FK1	PRODSTATUSID	1	No Index
MFO	BMWPURCH_BMWPURCHDETAIL_FK1	DOCNUM	1	No Index
MFO	BMWPURCH_BMWPURCHDETAIL_FK1	VEHICLEID	2	No Index
MFO	BMWSALEDOCS_BMWSALEDETAIL_FK1	DOCNUM	1	No Index
MFO	BMWSERIES_BMWMODELS_FK1	SERIEID	1	No Index
MFO	BMWVEHICLES_BMWPURCHASES_FK1	VEHICLEID	1	No Index
MFO	BMWVEHICLES_BMWSALEDOCS_FK1	VEHICLEID	1	No Index
MFO	BMWVERSION_BMWMODELS_FK1	BMWVERSIONID	1	No Index
MFO	BMWVHLFEATS_BMWVHLFEATS_FK1	PARENTPACK	1	No Index
MFO	BMWVHLPROPDESC_BMWVHLPROPS_FK1	PROPERTYID	1	No Index
MFO	DFITEMTREE_DFACITIONAUDIT_FK1	ITEMID	1	No Index
MFO	DFITEMTREE_DFITEMTREE_FK1	PARENTITEM	1	No Index
MFO	DFMANITEMTYP_DFAUTODOWN_FK1	ITEMTYPID	1	No Index

MFO	DFMANITEMTYP_DFITEMTREE_FK1	ITEMTYPID	1	No Index
MFO	DISDEALER_BMWPRODEVTS_FK1	INSTALLATIONID	1	No Index
MFO	DISDEALER_BMWVHLAFFECT_FK1	SELLERID	1	No Index
MFO	DISDEALER_BMWVHLAFFECT_FK2	REPAIRERID	1	No Index
MFO	DISDEALER_DISINSTALLHST_FK1	INSTALLATIONID	1	No Index
MFO	DISPARTNERS_BMWSALEDOCS_FK1	DISTRIBUTORID	1	No Index
MFO	DISPARTNERS_PACSTOCKINFO_FK1	DISTRIBUTORID	1	No Index
MFO	DISPARTNERS_RPRTDTSTR_FK1	DISTRIBUTORID	1	No Index
MFO	DISZONES_DISZONES_FK1	MAINZONE	1	No Index
MFO	ENUMS_ENUMVALUES_FK1	ENUMID	1	No Index
MFO	ENUMVALUES_BMWMODELS_FK2	BODYTYPEENUM	1	No Index
MFO	ENUMVALUES_BMWPURCHASES_FK1	PDOCTYPEENUM	1	No Index
MFO	ENUMVALUES_BMWSALEDOCS_FK1	SDOCTYPEENUM	1	No Index
MFO	ENUMVALUES_BMWUSERFIELDS_FK1	FIELDTYPEENUM	1	No Index
MFO	ENUMVALUES_BMWVHLPROPDESC_FK1	PROPERTYDATATYPEENUM	1	No Index
MFO	ENUMVALUES_DFACTIONAUDIT_FK1	AUDITACTIONENUM	1	No Index
MFO	ENUMVALUES_DISDEALERCODES_FK1	CODETYPEENUM	1	No Index
MFO	ENUMVALUES_DISRELSERVICES_FK1	SERVICETYPEENUM	1	No Index
MFO	ENUMVALUES_DISZONEMNGRS_FK1	MNGRROLEENUM	1	No Index
MFO	ENUMVALUES_DISZONES_FK1	ZONETYPEENUM	1	No Index
MFO	ENUMVALUES_FLTEVENTS_FK1	EVTCATEGORYENUM	1	No Index
MFO	ENUMVALUES_FLTFLEETVHLS_FK1	DELREASONENUM	1	No Index
MFO	ENUMVALUES_FLTLOCATIONS_FK1	LOCATIONTYPEENUM	1	No Index
MFO	ENUMVALUES_FLTSPECIALACTOR_FK1	SPECIALTYPEENUM	1	No Index
MFO	ENUMVALUES_LCACTORADDR_FK1	ACTORADDRENUM	1	No Index
MFO	ENUMVALUES_LCADDRESS_FK1	ADDRTYPEENUM	1	No Index
MFO	ENUMVALUES_LCCONTACTS_FK1	CONTACTTYPEENUM	1	No Index
MFO	ENUMVALUES_MDMEDIA_FK1	PERIODENUM	1	No Index
MFO	ENUMVALUES_MDMEDIA_FK2	SCOPEENUM	1	No Index
MFO	ENUMVALUES_MDMEDIA_FK3	MEDIATYPEENUM	1	No Index
MFO	ENUMVALUES_PRACTORRELS_FK1	RELTYPEENUM	1	No Index
MFO	ENUMVALUES_PRACTORS_FK1	ACTORTYPEENUM	1	No Index
MFO	ENUMVALUES_PRPERSONS_FK1	POSTALTYPEENUM	1	No Index
MFO	ENUMVALUES_PRPERSONS_FK2	TITLETYPEENUM	1	No Index
MFO	ENUMVALUES_PRUSERS_FK1	USERTYPEENUM	1	No Index
MFO	ENUMVALUES_SCAPPROLES_FK1	RESTRICTTYPEENUM	1	No Index
MFO	ENUMVALUES_SCAPPS_FK1	RESTRICTTYPEENUM	1	No Index
MFO	ENUMVALUES_SCDOMAINS_FK1	DOMTYPEENUM	1	No Index
MFO	ETAXVERSIONS_BMWMODELS_FK1	ETAXVERSIONSID	1	No Index

MFO	FK_CAMCAMPANA	IDGRUPO	1	No Index
MFO	FK_MATMODELO	IDMARCA	1	No Index
MFO	FK_MATPORGRU	IDGRUSEG	1	No Index
MFO	FK_MATSEGMENT_01	IDGRUSEG	1	No Index
MFO	FK_MATSEGMENT_02	IDMARBW	1	No Index
MFO	FK_MATSEGMENT_2	IDSEGMENT	1	No Index
MFO	FK_MKTACC	IDPART	1	No Index
MFO	FK_MKTACCCC	NCENCOS	1	No Index
MFO	FK_MKTACCNCUE	NNUMCUENTA	1	No Index
MFO	FK_MKTACCNORD	NNUMORD	1	No Index
MFO	FK_MKTACT	NNUMORD	1	No Index
MFO	FK_MKTPART	IDACT	1	No Index
MFO	FK_PAMIVALCRI	IDCODCRI	1	No Index
MFO	FK_PAMIVALPRE	IDCODPRE	1	No Index
MFO	FK_PAPVVALCRI	IDCODCRI	1	No Index
MFO	FK_PAPVVALPRE	IDCODPRE	1	No Index
MFO	FK_VEOBJETIVO	NCODVENESP	1	No Index
MFO	FK_VETIPCLI	NCODVENESP	1	No Index
MFO	FK_VETIPCLICAT	NCODCATEGO	1	No Index
MFO	FLDCONCES_FLDRELSZCON_FK1	CONCESID	1	No Index
MFO	FLDCONCES_FLDTALLER_FK1	CONCESID	1	No Index
MFO	FLDSUBZONA_FLDRELSZCON_FK1	SUBZONAI	1	No Index
MFO	FLDSUBZONA_FLDTALLER_FK1	SUBZONAI	1	No Index
MFO	FLDZONA_FLDSUBZONA_FK1	ZONAI	1	No Index
MFO	FLTEVENTS_FLTVHLEVTS_FK1	FLTEVENTID	1	No Index
MFO	FLTFLEETVHLS_FLTFLEETVHLS_FK1	REPLACESID	1	No Index
MFO	FLTFLEETVHLS_FLTVHLEVTS_FK1	VEHICLEID	1	No Index
MFO	FLTLOCATIONS_FLTFLEETVHLS_FK1	LOCATIONID	1	No Index
MFO	FLTLOCATIONS_FLTORDERTRANS_FK1	LOCATIONDELIVERY	1	No Index
MFO	FLTLOCATIONS_FLTORDERTRANS_FK2	LOCATIONRECEIVER	1	No Index
MFO	FLTLOCATIONS_FLTVHLEVTS_FK1	DELIVERYLOC	1	No Index
MFO	FLTLOCATIONS_FLTVHLEVTS_FK2	RECEPTLOC	1	No Index
MFO	FLTLOCATIONS_FLTVHLEVTS_FK3	USELOC	1	No Index
MFO	FLTLOCATOR_FLTLOCVHL_FK1	NUMBERCARD	1	No Index
MFO	FLTPOOLS_FLTAUTHPERSONS_FK1	POOLID	1	No Index
MFO	FLTPOOLS_FLTLOCATORCODES_FK1	POOLID	1	No Index
MFO	FLTPOOLS_FLTPOOLS_FK1	MAINPOOLID	1	No Index
MFO	FLTPOOLS_FLTPOOLVHLS_FK1	POOLID	1	No Index
MFO	FLTVHLEVTS_FLTEVTSORDTR_FK1	FLTVHLEVTD	1	No Index

MFO	FLTVHLEVTS_FLTFLEETVHLS_FK1	FLTVHLEVTD	1	No Index
MFO	FLTVHLTYPE_FLTFLEETVHLS_FK1	VEHICLETYPEID	1	No Index
MFO	INTLOAD_INTLOADSEXEC_FK1	LOADID	1	No Index
MFO	INTLOADSEXEC_INTPROCEXEC_FK1	LOADEXECID	1	No Index
MFO	LANLANG_LANPHRASES_FK1	LANGCODE	1	No Index
MFO	LCADDRESS_FLTLOCATIONS_FK1	ADDRID	1	No Index
MFO	LCCOUNTRIES_PRPERSONS_FK1	COUNTRYID	1	No Index
MFO	LCREGIONS_LCADDRESS_FK1	COUNTRYID	1	No Index
MFO	LCREGIONS_LCADDRESS_FK1	REGIONID	2	No Index
MFO	MAILAREA_MAILDEFAULT_FK1	AREAID	1	No Index
MFO	MAILAREA_MAILRELARDT_FK1	AREAID	1	No Index
MFO	MAILDISTRIB_MAILRELARDT_FK1	RECIPIENTID	1	No Index
MFO	MAILGROUP_MAILAREA_FK1	GROUPID	1	No Index
MFO	MAILGROUP_MAILDEFAULT_FK1	GROUPID	1	No Index
MFO	MAILTYPE_MAILRELARDT_FK1	TYPEID	1	No Index
MFO	MDPRESSCOMS_MDMEDIA_FK1	COMPANYID	1	No Index
MFO	ORGCOMPANY_FLTFLEETVHLS_FK1	COMPANYID	1	No Index
MFO	ORGCOMPANY_ORGDEPARTMENTS_FK1	COMPANYID	1	No Index
MFO	ORGCOMPANY_ORGEMPCATEG_FK1	COMPANYID	1	No Index
MFO	ORGCOMPANY_SCDOMAININFO_FK1	COMPANYID	1	No Index
MFO	ORGCOMPTRANS_PRCARRIER_FK1	COMPANYID	1	No Index
MFO	ORGDEPARTMENTS_FLTPOOLS_FK1	DEPTID	1	No Index
MFO	ORGDEPTS_ORGDEPTS_FK1	MAINDEPT	1	No Index
MFO	ORGDEPTWRKS_ORGAUTHORIZED_FK1	STARTDATE	3	No Index
MFO	ORGEMPCATEG_ORGDEPTWRKS_FK1	CATID	1	No Index
MFO	PARAMHOURDELIVERY_FK	PARAMHOURDELIVERY	1	No Index
MFO	PARAMHOURRECEIVER_FK	PARAMHOURRECEIVER	1	No Index
MFO	PRACTORS_FLTEVTAUXACTS_FK1	ACTORID	1	No Index
MFO	PRACTORS_FLTFLEETVHLS_FK1	REQUESTBYID	1	No Index
MFO	PRACTORS_FLTFLEETVHLS_FK2	AUTHACTORID	1	No Index
MFO	PRACTORS_FLTVHLEVTS_FK1	AUDITORACTORID	1	No Index
MFO	PRACTORS_FLTVHLEVTS_FK2	DELIVER	1	No Index
MFO	PRACTORS_FLTVHLEVTS_FK3	ACTUSER	1	No Index
MFO	PRACTORS_FLTVHLEVTS_FK4	AUTHBY	1	No Index
MFO	PRACTORS_FLTVHLEVTS_FK5	RECEIVER	1	No Index
MFO	PRACTORS_LCACTORADDR_FK1	ACTORID	1	No Index
MFO	PRACTORS_PRACTORRELS_FK2	ACTORID2	1	No Index
MFO	PRCARRIER_FLTORDERTRANS_FK1	CARRIERID	1	No Index
MFO	PRCARRIER_FLTORDERTRANS_FK1	COMPTRANSPORTID	2	No Index

MFO	PRPERSONS_DISZONEMNGRS_FK1	PERSONID	1	No Index
MFO	PRPERSONS_MDJOURNALIST_FK1	PERSONID	1	No Index
MFO	PRPERSONS_ORGDEPTWRKS_FK1	PERSONID	1	No Index
MFO	PRPERSONS_SCACCOUNTINFO_FK1	PERSONID	1	No Index
MFO	SCACCOUNTS_INTNOTIFY_FK1	ACCOUNTID	1	No Index
MFO	SCACCOUNTS_SCACSESSIONS_FK1	ACCOUNTID	1	No Index
MFO	SCAPPROLES_SCACCOUNTROLES_FK1	ROLEID	1	No Index
MFO	SCAPPROLES_SCRESTROLEDOM_FK1	ROLEID	1	No Index
MFO	SCAPPS_SCAPPROLES_FK1	APPID	1	No Index
MFO	SCAPPS_SCRESTAPPDOM_FK1	APPID	1	No Index
MFO	SCDOMAINS_DFITEMTREE_FK1	DOMAINOWNERID	1	No Index
ODM	LIFT_RESULT_ENTRY_FK	LIFT_RESULT_ID	1	No Index
ODM	LIFT_RESULT_FK	LIFT_RESULT_NAME	1	No Index
ODM	MINING_TASK_STATE_FK	ID	1	No Index
ODM	MS_RESULT_FK	MODEL_SEEKER_RESULT_ID	1	No Index
ODM	TEST_RESULT_FK	TEST_RESULT_NAME	1	No Index
OLAPSYS	CWM\$ARGUMENT_FK	PARAMETER_IRID	1	No Index
OLAPSYS	CWM\$CLASSIFICATIONENTRY_FK	CLASSIFICATION_IRID	1	No Index
OLAPSYS	CWM\$CLASSIFICATION_FK	PROJECT_IRID	1	No Index
OLAPSYS	CWM\$CLASSIFICATIONTYPE_FK	PROJECT_IRID	1	No Index
OLAPSYS	CWM\$CUBE_FK	DATAMODEL_IRID	1	No Index
OLAPSYS	CWM\$DIMENSIONATTRIBUTE_FK	ITEMCONTAINER_IRID	1	No Index
OLAPSYS	CWM\$DIMENSION_FK	DATAMODEL_IRID	1	No Index
OLAPSYS	CWM\$DOMAIN_FK	DEFINITIONMODEL_IRID	1	No Index
OLAPSYS	CWM\$FACTLEVELGROUP_FK	FACTUSE_IRID	1	No Index
OLAPSYS	CWM\$FACTLEVELUSE_FK	FACTLEVELGROUP_IRID	1	No Index
OLAPSYS	CWM\$FUNCTION_FK	PROCESSMODEL_IRID	1	No Index
OLAPSYS	CWM\$HIERARCHY_FK	DIMENSION_IRID	1	No Index
OLAPSYS	CWM\$LEVEL_FK	DIMENSION_IRID	1	No Index
OLAPSYS	CWM\$MODEL_FK	PROJECT_IRID	1	No Index
OLAPSYS	CWM\$MODEL_FK_1	MODEL_IRID	1	No Index
OLAPSYS	CWM\$OBJECTTYPE_FK	PROJECT_IRID	1	No Index
OLAPSYS	CWM\$OBJECTTYPE_FK_1	CLASSIFICATIONTYPE_IRID	1	No Index
OLAPSYS	CWM\$PARAMETER_FK	OPERATION_IRID	1	No Index
OLAPSYS	CWM2\$CUBEDIMENSIONUSE_CUBE_FK	CUBE_IRID	1	No Index
OLAPSYS	CWM2\$CUBEDIMENSIONUSE_DIM_FK	DIMENSION_IRID	1	No Index
OLAPSYS	CWM2\$DIMATTR_DIM_FK	DIMENSION_IRID	1	No Index
OLAPSYS	CWM2\$DIMHIERLVLMAP_DHL_FK	DIMHIERLVL_IRID	1	No Index
OLAPSYS	CWM2\$FACTDIMHIERMAP_CUBE_FK	CUBE_IRID	1	No Index

OLAPSYS	CWM2\$FACTDIMHTD_CUBE_FK	CUBE_IRID	1	No Index
OLAPSYS	CWM2\$FACTDIMHTD_FDHM_FK	FACTDIMHIER_IRID	1	No Index
OLAPSYS	CWM2\$FACTKEYDHLM_FKDHM_FK	FACTKEYDIMHIER_IRID	1	No Index
OLAPSYS	CWM2\$FACTKEYDHM_FDHM_FK	FACTDIMHIER_IRID	1	No Index
OLAPSYS	CWM2\$HIERARCHY_DIM_FK	DIMENSION_IRID	1	No Index
OLAPSYS	CWM2\$HIERLEVELREL_CLEVEL_FK	CHILDELEVEL_IRID	1	No Index
OLAPSYS	CWM2\$HIERLEVELREL_DIM_FK	DIMENSION_IRID	1	No Index
OLAPSYS	CWM2\$HIERLEVELREL_HIER_FK	HIERARCHY_IRID	1	No Index
OLAPSYS	CWM2\$HIERLEVELREL_PLEVEL_FK	PARENTLEVEL_IRID	1	No Index
OLAPSYS	CWM2\$LEVELATTR_DIMATTR_FK	DIMATTR_IRID	1	No Index
OLAPSYS	CWM2\$LEVELATTR_DIM_FK	DIMENSION_IRID	1	No Index
OLAPSYS	CWM2\$LEVELATTR_LEVEL_FK	LEVEL_IRID	1	No Index
OLAPSYS	CWM2\$LEVEL_DIM_FK	DIMENSION_IRID	1	No Index
OLAPSYS	CWM2\$LVLATRMAP_HIERLVLREL_FK	HIERLVLREL_IRID	1	No Index
OLAPSYS	CWM2\$LVLATRMAP_LVLATTR_FK	LEVELATTR_IRID	1	No Index
OLAPSYS	CWM2\$MEASURE_CUBE_FK	CUBE_IRID	1	No Index
OLAPSYS	CWM2\$MEASURETABLEMAP_FDHM_FK	FACTDIMHIER_IRID	1	No Index
OLAPSYS	CWM2\$MEASURETABLEMAP_MEAS_FK	MEASURE_IRID	1	No Index
SCOTT	FK_DEPTNO	DEPTNO	1	No Index
SH	CUSTOMERS_COUNTRY_FK	COUNTRY_ID	1	No Index
WKSYS	SYS_C001717	WK\$IID	1	No Index
WKSYS	SYS_C001728	DS_TYPE_ID	2	No Index
WKSYS	SYS_C001746	SG_ID	2	No Index
WKSYS	SYS_C001760	SM_SCHED_ID	2	No Index
WKSYS	SYS_C001789	AU_SEARCH_ATTR_ID	2	No Index
WKSYS	SYS_C001802	WK\$IID	1	No Index
WKSYS	SYS_C001803	WK\$IID	1	No Index
WKSYS	SYS_C001804	PV_DS_ID	2	No Index
WKSYS	SYS_C001804	WK\$IID	1	No Index

Recomendación

Verificar cuales de estas foreign keys necesitaría de un índice sobre la tabla hija, sobre todo tener en cuenta las tablas que tengan un tamaño más considerable. Verificar luego las sentencias que atacan a las tablas implicadas mediante la generación de planes de ejecución y comprobar que se hace uso de los índices creados.

INCONSISTENCIAS EN EL TIPO DE DATOS

OWNER	COLUMNA	TABLA	TIPO DE DATO
MFO	ACC_DIFF	INTPOSTVENTADATA	NUMBER(6)
MFO	ACC_DIFF	INTDLRPRTDATA	NUMBER(14)
MFO	ACC_OBJ	INTDLRPRTDATA	NUMBER(14)
MFO	ACC_OBJ	INTPOSTVENTADATA	NUMBER(9)
MFO	ACC_REAL	INTDLRPRTDATA	NUMBER(14)
MFO	ACC_REAL	INTPOSTVENTADATA	NUMBER(9)
MFO	AVERAGE_MARGIN	INTDLRPRTDATA	NUMBER(14)
MFO	AVERAGE_MARGIN	INTPOSTVENTADATA	NUMBER(6)
MFO	BRANDID	BMWBRANDS	VARCHAR2(10)
MFO	BRANDID	V_COMERCIAL_GROUPS	VARCHAR2(20)
MFO	BRANDID	V_DOPMODEL_GROUPS	VARCHAR2(20)
MFO	BRANDID	V_COMMODEL_GROUPS	VARCHAR2(20)
MFO	BRANDID	V_COMERCIAL_MODELS	VARCHAR2(20)
MFO	BRANDID	BMWSERIES	VARCHAR2(10)
MFO	BRANDID	V_MCOMERCIAL_GROUPS	VARCHAR2(20)
MFO	BRANDID	V_MCOMMODEL_GROUPS	VARCHAR2(20)
MFO	BRANDNAME	BMWBRANDS	VARCHAR2(25)
MFO	BRANDNAME	V_COMMODEL_GROUPS	VARCHAR2(50)
MFO	BRANDNAME	V_DOPMODEL_GROUPS	VARCHAR2(50)
MFO	BRANDNAME	V_COMERCIAL_MODELS	VARCHAR2(50)
MFO	BRANDNAME	V_COMERCIAL_GROUPS	VARCHAR2(50)
MFO	BRANDNAME	V_MCOMERCIAL_GROUPS	VARCHAR2(50)
MFO	BRANDNAME	V_MCOMMODEL_GROUPS	VARCHAR2(50)
MFO	CDESCRI	PAMIDEFCRI	VARCHAR2(25)
MFO	CDESCRI	PAPVDEFCRI	VARCHAR2(50)
MFO	CDESGRUPO	CAMGRUPO	VARCHAR2(100)
MFO	CDESGRUPO	PAMIGRUPO	VARCHAR2(25)
MFO	DESCRIPTION	BMWCAMP	VARCHAR2(100)
MFO	DESCRIPTION	BMWMDLCAT	VARCHAR2(512)
MFO	DESCRIPTION	BMWMDLGRP	VARCHAR2(512)
MFO	DESCRIPTION	BMWUSERTABLE	VARCHAR2(1024)
MFO	DESCRIPTION	BMWUSERFIELDS	VARCHAR2(1024)
MFO	DESCRIPTION	BMWMDLELMTS	VARCHAR2(512)
MFO	IDMODELO	MATMODELO	NUMBER(6)
MFO	IDMODELO	MATPORMOD	NUMBER(6)
MFO	IDMODELO	MATSEGMOD	NUMBER(6)
MFO	IDMODELO	FLDMODELO	VARCHAR2(5)
MFO	LIFE_DIFF	INTDLRPRTDATA	NUMBER(14)
MFO	LIFE_DIFF	INTPOSTVENTADATA	NUMBER(6)
MFO	LIFE_OBJ	INTDLRPRTDATA	NUMBER(14)
MFO	LIFE_OBJ	INTPOSTVENTADATA	NUMBER(9)
MFO	LIFE_REAL	INTDLRPRTDATA	NUMBER(14)
MFO	LIFE_REAL	INTPOSTVENTADATA	NUMBER(9)
MFO	LOCALIDAD	FLDDATOS	VARCHAR2(75)
MFO	LOCALIDAD	FLDDATOS_DUP	VARCHAR2(75)
MFO	LOCALIDAD	RTA_PERIODISTAS	VARCHAR2(26)
MFO	LOCALIDAD	FLDTALLER	VARCHAR2(75)
MFO	MODEL	ETAXVERSIONS	VARCHAR2(40)
MFO	MODEL	INTCIACARDATA	VARCHAR2(4)
MFO	NAME	FLTSPECIALACTOR	VARCHAR2(75)
MFO	NAME	LCADDRESS	VARCHAR2(50)
MFO	NAME	LCCOUNTRIES	VARCHAR2(50)
MFO	NAME	LCREGIONS	VARCHAR2(50)
MFO	NAME	PRPERSONS	VARCHAR2(50)
MFO	NIMPORTE	MKTGASCONC	NUMBER(12)
MFO	NIMPORTE	PAMIVALFIN	NUMBER(15)
MFO	NORM_ORD_EUROS	INTDLRPRTDATA	NUMBER(14)
MFO	NORM_ORD_EUROS	INTPOSTVENTADATA	NUMBER(6)
MFO	NORM_ORD_LINES	INTDLRPRTDATA	NUMBER(14)
MFO	NORM_ORD_LINES	INTPOSTVENTADATA	NUMBER(6)
MFO	OPT_TABLE	INTCIACARDATA	VARCHAR2(1800)
MFO	OPT_TABLE	INTDLRVHLDATA	VARCHAR2(1600)

MFO	PARTS_DIFF	INTDLRPRTDATA	NUMBER(14)
MFO	PARTS_DIFF	INTPOSTVENTADATA	NUMBER(6)
MFO	PARTS_OBJ	INTDLRPRTDATA	NUMBER(14)
MFO	PARTS_OBJ	INTPOSTVENTADATA	NUMBER(9)
MFO	PARTS_REAL	INTDLRPRTDATA	NUMBER(14)
MFO	PARTS_REAL	INTPOSTVENTADATA	NUMBER(9)
MFO	SALES_EXT	INTDLRPRTDATA	NUMBER(14)
MFO	SALES_EXT	INTPOSTVENTADATA	NUMBER(6)
MFO	SALES_TOTAL	INTDLRPRTDATA	NUMBER(14)
MFO	SALES_TOTAL	INTPOSTVENTADATA	NUMBER(11)
MFO	SERIEID	BMWMODELS	VARCHAR2(10)
MFO	SERIEID	BMWSERIES	VARCHAR2(10)
MFO	SERIEID	V_COMERCIAL_MODELS	VARCHAR2(20)
MFO	SERIEID	V_MCOMERCIAL_GROUPS	VARCHAR2(20)
MFO	SERIEID	V_DOPMODEL_GROUPS	VARCHAR2(20)
MFO	SERIEID	V_COMMODEL_GROUPS	VARCHAR2(20)
MFO	SERIEID	V_COMERCIAL_GROUPS	VARCHAR2(20)
MFO	SERIEID	V_MCOMMODEL_GROUPS	VARCHAR2(20)
MFO	STOCK_ROTATION	INTDLRPRTDATA	NUMBER(14)
MFO	STOCK_ROTATION	INTPOSTVENTADATA	NUMBER(6)
MFO	STOCK_VALUE	INTDLRPRTDATA	NUMBER(14)
MFO	STOCK_VALUE	INTPOSTVENTADATA	NUMBER(11)
MFO	TALLERID	FLDDATOS	VARCHAR2(10)
MFO	TALLERID	FLDTALLER	VARCHAR2(10)
MFO	TALLERID	FLDDATOS_DUP	VARCHAR2(10)
MFO	TALLERID	FLDPARQUE	VARCHAR2(5)
MFO	URG_ORD_EUROS	INTDLRPRTDATA	NUMBER(14)
MFO	URG_ORD_EUROS	INTPOSTVENTADATA	NUMBER(6)
MFO	URG_ORD_LINES	INTDLRPRTDATA	NUMBER(14)
MFO	URG_ORD_LINES	INTPOSTVENTADATA	NUMBER(6)
MFO	VERSION	ETAXVERSIONS	VARCHAR2(40)
MFO	VERSION	INTLOAD	VARCHAR2(10)
MFO	VERSION	INTPROCS	VARCHAR2(10)
MFO	ZEMAINID	DISPARTNERS	VARCHAR2(10)
MFO	ZEMAINID	USERSDWLOAD	VARCHAR2(5)

Recomendación

Resolver las inconsistencias de tipo de dato mediante la actualización del modelo de datos.

TABLAS ANALIZADAS

Owner	Objetos analizados	Objetos no Analizados	Total
CTXSYS	0	36	36
MDSYS	0	18	18
MFO	0	182	182
ODM	0	25	25
ODM_MTR	0	12	12
OE	7	2	9
OLAPSYS	0	86	86
ORDSYS	0	5	5
OUTLN	0	3	3
PM	2	0	2

QS	0	15	15
QS_CBADM	0	8	8
QS_CS	0	8	8
QS_ES	0	14	14
QS_OS	0	14	14
QS_WS	0	14	14
SCOTT	0	4	4
SH	15	0	15
WKSYS	0	38	38
WMSYS	0	22	22
XDB	0	5	5

Recomendación

Realizar el análisis de todos los objetos de la base de datos. actualmente al no existir estadísticas sobre los objetos el optimizador basado en costes no está funcionando y todas las sentencias son ejecutadas con el optimizador basado en reglas.

Hay que tener en cuenta que el optimizador basado en reglas esta ya obsoleto (no soportado) por ORACLE versión 10.

Aunque en un principio presente problemas de rendimiento. lo mejor es analizar todas las tablas del entorno de desarrollo y testear para verificar que con el paso del tiempo la ejecución de las distintas sentencias mejora. por otro lado hay que establecer una comparativa entre el rendimiento de costes y reglas a partir de la ejecución de distintas sentencias y no de una sólo o unas pocas ya que puede dar la casualidad que para determinadas sentencias sea mas optima la aplicación del optimizador basado en reglas. establecer esta comparativa también introduciendo el hint RULE en las distintas sentencias para establecer las diferencias de ejecución.

TABLAS E INDICES PARTICIONADOS

No están siendo utilizadas tablas e índices particionados

Recomendación

Aunque el tamaño de las tablas de la instancia no recomienda el uso de tablas e índices particionados, si deben de ser tenidos en cuenta en el futuro cuando el tamaño de las tablas empiece a ser considerable.

BUFFER HIT RATIO

Consistent Gets	DB Blk Gets	Physical Reads	Hit Ratio
14.249.331.494	50.339.448	81.670.861	99.429

LIBRARY CACHE HIT RATIO

Executions	Execution Hits	Hit Ratio	Misses	Hit Ratio
178.968.382	178.615.486	99.803	288.858	99.839

DATA DICTIONARY HIT RATIO

Gets	Cache Misses	Hit Ratio
243.183.325	18.219	99.993

ESTADISTICAS DEL SISTEMA

Stat#	Name	Class	Value
0	logons cumulative	1	2.535
1	logons current	1	22
2	opened cursors cumulative	1	6.815.508
3	opened cursors current	1	79
4	user commits	1	129.222
5	user rollbacks	1	314
6	user calls	1	39.515.051
7	recursive calls	1	186.480.574
8	recursive cpu usage	1	5.476.117
9	session logical reads	1	14.299.692.807
10	session stored procedure space	1	0
11	CPU used when call started	128	17.478.638
12	CPU used by this session	1	17.478.655
13	session connect time	1	2.377.920.830.005
14	process last non-idle time	128	2.373.625.862.709
15	session uga memory	1	76.648.280
16	session uga memory max	1	5.470.540.416
17	messages sent	128	1.420.485
18	messages received	128	1.420.486
19	background timeouts	128	7.584.390
20	session pga memory	1	24.932.752
21	session pga memory max	1	98.042.520
22	enqueue timeouts	4	130
23	enqueue waits	4	7
24	enqueue deadlocks	4	0

25	enqueue requests	4	81.107.982
26	enqueue conversions	4	234.960.364
27	enqueue releases	4	81.107.832
28	global lock sync gets	32	0
29	global lock async gets	32	0
30	global lock get time	32	0
31	global lock sync converts	32	0
32	global lock async converts	32	0
33	global lock convert time	32	0
34	global lock releases	32	0
35	total file opens	8	0
36	opens requiring cache replacement	8	0
37	opens of replaced files	8	0
38	gcs messages sent	32	0
39	ges messages sent	32	0
40	db block gets	8	50.339.448
41	consistent gets	8	14.249.355.322
42	physical reads	8	81.670.861
43	db block changes	8	52.434.886
44	consistent changes	8	6.094.316
45	recovery blocks read	8	19
46	physical writes	8	36.812.856
47	physical writes non checkpoint	8	36.365.080
48	summed dirty queue length	8	30.640
49	DBWR checkpoint buffers written	8	1.102.684
50	DBWR transaction table writes	8	90.149
51	DBWR undo block writes	8	345.971
52	DBWR revisited being-written buffer	8	25
53	DBWR make free requests	8	6.459
54	DBWR free buffers found	8	1.037.084
55	DBWR lru scans	8	6.459
56	DBWR summed scan depth	8	1.056.867
57	DBWR buffers scanned	8	1.056.867
58	DBWR checkpoints	8	77
59	DBWR cross instance writes	40	0
60	DBWR fusion writes	40	0
61	remote instance undo block writes	40	0
62	remote instance undo header writes	40	0
63	prefetch clients - keep	8	0

64	prefetch clients - recycle	8	0
65	prefetch clients - default	8	1
66	prefetch clients - 2k	8	0
67	prefetch clients - 4k	8	0
68	prefetch clients - 8k	8	0
69	prefetch clients - 16k	8	0
70	prefetch clients - 32k	8	0
71	change write time	8	22.375
72	redo synch writes	8	126.413
73	redo synch time	8	170.507
74	exchange deadlocks	8	0
75	free buffer requested	8	49.373.689
76	dirty buffers inspected	8	10.791
77	pinned buffers inspected	8	1.086
78	hot buffers moved to head of LRU	8	29.156.419
79	free buffer inspected	8	13.430
80	commit cleanout failures: write disabled	8	0
81	commit cleanout failures: block lost	8	57
82	commit cleanout failures: cannot pin	8	0
83	commit cleanout failures: hot backup in progress	8	0
84	commit cleanout failures: buffer being written	8	1.747
85	commit cleanout failures: callback failure	8	9.478
86	commit cleanouts	8	8.696.800
87	commit cleanouts successfully completed	8	8.685.518
88	recovery array reads	8	0
89	recovery array read time	8	0
90	CR blocks created	8	192.190
91	current blocks converted for CR	8	0
92	switch current to new buffer	8	2.574.501
93	write clones created in foreground	8	1.959
94	write clones created in background	8	0
95	prefetched blocks	8	24.434.090
96	prefetched blocks aged out before use	8	3.412
97	physical reads direct	8	35.390.230
98	physical writes direct	8	35.669.526
99	physical reads direct (lob)	8	0
100	physical writes direct (lob)	8	0
101	cold recycle reads	8	0
102	consistent gets - examination	8	12.585.838.416

103	shared hash latch upgrades - no wait	8	260.913.794
104	shared hash latch upgrades - wait	8	185.669
105	calls to kcmgcs	128	854.655
106	calls to kcmgrs	128	0
107	calls to kcmgas	128	8.460.847
108	next scns gotten without going to GES	32	0
109	Unnecessary process cleanup for SCN batching	32	0
110	calls to get snapshot scn: kcmgss	32	191.565.049
111	kcmgss waited for batching	32	0
112	kcmgss read scn without going to GES	32	0
113	kcmccs called get current scn	32	0
114	redo entries	2	26.772.255
115	redo size	2	7.323.836.024
116	redo buffer allocation retries	2	212
117	redo wastage	2	354.793.348
118	redo writer latching time	2	1.279
119	redo writes	2	1.267.869
120	redo blocks written	2	15.485.852
121	redo write time	2	1.446.010
122	redo log space requests	2	290
123	redo log space wait time	2	7.547
124	redo log switch interrupts	2	0
125	redo ordering marks	2	728
126	global cache gets	40	0
127	global cache get time	40	0
128	global cache converts	40	0
129	global cache convert time	40	0
130	global cache cr blocks received	40	0
131	global cache cr block receive time	40	0
132	global cache current blocks received	40	0
133	global cache current block receive time	40	0
134	global cache cr blocks served	40	0
135	global cache cr block build time	40	0
136	global cache cr block flush time	40	0
137	global cache cr block send time	40	0
138	global cache current blocks served	40	0
139	global cache current block pin time	40	0
140	global cache current block flush time	40	0
141	global cache current block send time	40	0

142	global cache freelist waits	40	0
143	global cache defers	40	0
144	global cache convert timeouts	40	0
145	global cache blocks lost	40	0
146	global cache claim blocks lost	40	0
147	global cache blocks corrupt	40	0
148	global cache prepare failures	40	0
149	global cache skip prepare failures	40	0
150	total number of slots	8	0
151	instance recovery database freeze count	32	0
152	background checkpoints started	8	75
153	background checkpoints completed	8	75
154	number of map operations	8	0
155	number of map misses	8	0
156	serializable aborts	1	0
157	transaction lock foreground requests	128	0
158	transaction lock foreground wait time	128	0
159	transaction lock background gets	128	0
160	transaction lock background get time	128	0
161	transaction tables consistent reads - undo records applied	128	5.034
162	transaction tables consistent read rollbacks	128	84
163	data blocks consistent reads - undo records applied	128	6.081.546
164	no work - consistent read gets	128	1.400.159.855
165	cleanouts only - consistent read gets	128	32.180
166	rollbacks only - consistent read gets	128	585.536
167	cleanouts and rollbacks - consistent read gets	128	69.744
168	RowCR attempts	128	0
169	RowCR hits	128	0
170	RowCR - row contention	128	0
171	rollback changes - undo records applied	128	31.670
172	transaction rollbacks	128	1.896
173	immediate (CURRENT) block cleanout applications	128	61.854
174	immediate (CR) block cleanout applications	128	101.924
175	deferred (CURRENT) block cleanout applications	128	5.398.564
176	commit txn count during cleanout	128	68.085
177	active txn count during cleanout	128	552.345
178	cleanout - number of ktugct calls	128	578.837
179	immediate CR cleanouts (index blocks)	128	0
180	deferred CUR cleanouts (index blocks)	128	0

181	Commit SCN cached	128	484
182	Cached Commit SCN referenced	128	202.508.532
183	number of auto extends on undo tablespace	128	0
184	number of drop segment calls under space pressure	128	0
185	total number of undo segments dropped	128	0
186	table scans (short tables)	64	10.810.325
187	table scans (long tables)	64	12.514
188	table scans (rowid ranges)	64	42
189	table scans (cache partitions)	64	0
190	table scans (direct read)	64	0
191	table scan rows gotten	64	25.093.037.276
192	table scan blocks gotten	64	421.600.436
193	table fetch by rowid	64	5.811.448.890
194	table fetch continued row	64	72.466.918
195	cluster key scans	64	4.245.888
196	cluster key scan block gets	64	7.894.866
197	rows fetched via callback	64	4.558.424.406
198	leaf node splits	128	13.904
199	leaf node 90-10 splits	128	1.497
200	branch node splits	128	45
201	native hash arithmetic execute	64	0
202	native hash arithmetic fail	64	0
203	index fast full scans (full)	64	158
204	index fast full scans (rowid ranges)	64	0
205	index fast full scans (direct read)	64	0
206	index fetch by key	128	4.943.789.260
207	index scans kdlixs1	128	235.410.929
208	session cursor cache hits	64	3.942.398
209	session cursor cache count	64	879
210	cursor authentications	128	16.149
211	queries parallelized	32	1
212	DML statements parallelized	32	0
213	DDL statements parallelized	32	0
214	DFO trees parallelized	32	1
215	Parallel operations not downgraded	32	0
216	Parallel operations downgraded to serial	32	0
217	Parallel operations downgraded 75 to 99 pct	32	0
218	Parallel operations downgraded 50 to 75 pct	32	0
219	Parallel operations downgraded 25 to 50 pct	32	1

220	Parallel operations downgraded 1 to 25 pct	32	0
221	PX local messages sent	32	237
222	PX local messages recv'd	32	237
223	PX remote messages sent	32	0
224	PX remote messages recv'd	32	0
225	buffer is pinned count	72	6.561.490.661
226	buffer is not pinned count	72	10.616.434.680
227	no buffer to keep pinned count	72	259
228	table lookup prefetch client count	8	0
229	workarea memory allocated	64	3.032
230	workarea executions - optimal	64	156.585.542
231	workarea executions - onepass	64	267
232	workarea executions - multipass	64	0
233	parse time cpu	64	54.213
234	parse time elapsed	64	119.880
235	parse count (total)	64	6.863.390
236	parse count (hard)	64	301.603
237	parse count (failures)	64	268.851
238	execute count	64	156.294.152
239	bytes sent via SQL*Net to client	1	67.685.287.978
240	bytes received via SQL*Net from client	1	1.886.155.084
241	SQL*Net roundtrips to/from client	1	39.331.845
242	bytes sent via SQL*Net to dblink	1	2.857.576.994
243	bytes received via SQL*Net from dblink	1	3.238.074.836
244	SQL*Net roundtrips to/from dblink	1	56.886.792
245	sorts (memory)	64	79.771.640
246	sorts (disk)	64	33.196
247	sorts (rows)	64	7.874.171.619
248	OTC commit optimization attempts	128	0
249	OTC commit optimization hits	128	0
250	OTC commit optimization failure - setup	128	0

ESTADISTICAS DE SGA

Statistic Name	Pool	Bytes
buffer_cache		1.056.964.608
Checkpoint queue	shared pool	2.053.120

dictionary cache	shared pool	3.229.952
errors	shared pool	62.176
event statistics per sess	shared pool	1.904.000
fixed allocation callback	shared pool	552
fixed_sga		738.584
free memory	java pool	27.762.688
free memory	large pool	167.772.160
free memory	shared pool	20.671.016
joxlod: in ehe	shared pool	253.768
joxs heap init	shared pool	4.240
KGK heap	shared pool	7.000
KGLS heap	shared pool	5.026.872
KQR L PO	shared pool	2.071.216
KQR M PO	shared pool	1.154.824
KQR S SO	shared pool	7.680
KQR X PO	shared pool	43.792
library cache	shared pool	39.737.144
log_buffer		10.617.856
memory in use	java pool	5.791.744
miscellaneous	shared pool	29.808.816
MTTR advisory	shared pool	174.824
parameters	shared pool	270.240
PLS non-lib hp	shared pool	2.088
PL/SQL DIANA	shared pool	4.409.592
PL/SQL MPCODE	shared pool	3.317.048
PL/SQL PPCODE	shared pool	313.528
PL/SQL SOURCE	shared pool	504
pl/sql source	shared pool	7.464
PX subheap	shared pool	23.704
sim memory hea	shared pool	1.010.544
sql area	shared pool	178.252.544
subheap	shared pool	102.312
table definiti	shared pool	5.288
trigger defini	shared pool	2.712
trigger inform	shared pool	1.936
trigger source	shared pool	2.584
type object de	shared pool	162.128
XDB Schema Cac	shared pool	5.796.504
1M buffer	shared pool	2.098.176

ESTADISTICAS DE ESPERAS

Clase	Número	Tiempo
bitmap block	0	0
bitmap index block	0	0
data block	240074	111972
extent map	0	0
file header block	1	0
free list	0	0
save undo block	0	0
save undo header	0	0
segment header	2	9
sort block	0	0
system undo block	0	0
system undo header	0	0
undo block	6	0
undo header	109	22
unused	0	0
1st level bmb	0	0
2nd level bmb	0	0
3rd level bmb	0	0

Recomendación

La contención en bloques de datos es alta por lo que se recomienda añadir nuevos procesos DBWR que reduzcan esa contención.

ESTADISTICAS DE ORDENACION

Sort Parameter	Value
sorts (memory)	79.771.685
sorts (disk)	33.196
sorts (rows)	7.874.176.994
% of disk sorts	.04

ESTADISTICAS DE I/O A DISCO

File Name	Physical Reads	Reads %	Physical Writes	Writes %	Total Block I/O (1)
C:\ORACLE\ORADATA\IPPL\DAT02.ORA	8.391.908	38.41	168.724	14.76	27.993.247
G:\ORACLE\ORADATA\IPPL\DAT01.ORA	12.583.078	57.59	371.361	32.48	17.871.734
I:\ORACLE\ORADATA\IPPL\INDX02.ORA	511.622	2.34	112.182	9.81	630.660
C:\ORACLE\ORADATA\IPPL\UNDOTBS01.DBF	1.358	.01	438.123	38.32	439.538
C:\ORACLE\ORADATA\IPPL\SYSTEM01.DBF	232.267	1.06	47.793	4.18	360.684
C:\ORACLE\ORADATA\IPPL\XDB01.DBF	58.352	.27	77	.01	58.567
C:\ORACLE\ORADATA\IPPL\INDX.DBF	8.684	.04	4.707	.41	33.580
C:\ORACLE\ORADATA\IPPL\EXAMPLE01.DBF	27.701	.13	77	.01	27.814
C:\ORACLE\ORADATA\IPPL\CWMLITE01.DBF	14.067	.06	77	.01	14.144
C:\ORACLE\ORADATA\IPPL\DRSYS01.DBF	12.267	.06	77	.01	12.344
C:\ORACLE\ORADATA\IPPL\ODM01.DBF	9.396	.04	77	.01	9.473
C:\ORACLE\ORADATA\IPPL\TOOLS01.DBF	105	0	77	.01	182
C:\ORACLE\ORADATA\IPPL\USERS01.DBF	105	0	77	.01	182
E:\ORACLE\ORADATA\IPPL\DATA_E.ORA	0	0	0	0	0
F:\ORACLE\ORADATA\IPPL\DATA_F.ORA	0	0	0	0	0
E:\ORACLE\ORADATA\IPPL\INDEX_E.ORA	0	0	0	0	0
F:\ORACLE\ORADATA\IPPL\INDEX_F.ORA	0	0	0	0	0

File Name	Physical Reads (1)	Reads %	Total Block I/O
G:\ORACLE\ORADATA\IPPL\DAT01.ORA	12.583.078	57.59	17.871.734
C:\ORACLE\ORADATA\IPPL\DAT02.ORA	8.391.908	38.41	27.993.247
I:\ORACLE\ORADATA\IPPL\INDX02.ORA	511.622	2.34	630.660
C:\ORACLE\ORADATA\IPPL\SYSTEM01.DBF	232.267	1.06	360.684
C:\ORACLE\ORADATA\IPPL\XDB01.DBF	58.352	.27	58.567
C:\ORACLE\ORADATA\IPPL\EXAMPLE01.DBF	27.701	.13	27.814
C:\ORACLE\ORADATA\IPPL\CWMLITE01.DBF	14.067	.06	14.144
C:\ORACLE\ORADATA\IPPL\DRSYS01.DBF	12.267	.06	12.344
C:\ORACLE\ORADATA\IPPL\ODM01.DBF	9.396	.04	9.473
C:\ORACLE\ORADATA\IPPL\INDX.DBF	8.684	.04	33.580
C:\ORACLE\ORADATA\IPPL\UNDOTBS01.DBF	1.358	.01	439.538
C:\ORACLE\ORADATA\IPPL\TOOLS01.DBF	105	0	182
C:\ORACLE\ORADATA\IPPL\USERS01.DBF	105	0	182
E:\ORACLE\ORADATA\IPPL\DATA_E.ORA	0	0	0
F:\ORACLE\ORADATA\IPPL\DATA_F.ORA	0	0	0

E:\ORACLE\ORADATA\PP\INDEX_E.ORA	0	0	0
F:\ORACLE\ORADATA\PP\INDEX_F.ORA	0	0	0
File Name	Physical Writes (1)	Writes %	Total Block I/O
C:\ORACLE\ORADATA\PP\UNDOTBS01.DBF	438.123	38.32	439.538
G:\ORACLE\ORADATA\PP\DAT01.ORA	371.361	32.48	17.871.734
C:\ORACLE\ORADATA\PP\DAT02.ORA	168.724	14.76	27.993.247
I:\ORACLE\ORADATA\PP\INDX02.ORA	112.182	9.81	630.660
C:\ORACLE\ORADATA\PP\SYSTEM01.DBF	47.793	4.18	360.684
C:\ORACLE\ORADATA\PP\INDX.DBF	4.707	.41	33.580
C:\ORACLE\ORADATA\PP\CWMLITE01.DBF	77	.01	14.144
C:\ORACLE\ORADATA\PP\TOOLS01.DBF	77	.01	182
C:\ORACLE\ORADATA\PP\XDB01.DBF	77	.01	58.567
C:\ORACLE\ORADATA\PP\USERS01.DBF	77	.01	182
C:\ORACLE\ORADATA\PP\ODM01.DBF	77	.01	9.473
C:\ORACLE\ORADATA\PP\DRSYS01.DBF	77	.01	12.344
C:\ORACLE\ORADATA\PP\EXAMPLE01.DBF	77	.01	27.814
E:\ORACLE\ORADATA\PP\DATA_E.ORA	0	0	0
F:\ORACLE\ORADATA\PP\DATA_F.ORA	0	0	0
E:\ORACLE\ORADATA\PP\INDEX_E.ORA	0	0	0
F:\ORACLE\ORADATA\PP\INDEX_F.ORA	0	0	0

Recomendación

Las estadísticas de entrada y salida a disco también refuerzan la recomendación anterior de mover los ficheros a unidades distintas, intentando evitar el disco de sistema operativo, donde sólo debería encontrarse los ficheros que soportan al tablespaces SYSTEM.

REDO LOG

Miembro	Tamaño (bytes)	Número de miembros	Archivado
C:\ORACLE\ORADATA\PPL\REDO003.LOG	104.857.600	1	NO
E:\ORACLE\ORADATA\PPL\REDO001.LOG	104.857.600	1	NO
F:\ORACLE\ORADATA\PPL\REDO002.LOG	104.857.600	1	NO

Recomendación

Los grupos de redo log no tienen salvaguarda, esto es, no existe un espejo para cada uno de los grupos de REDO LOG, cada grupo de redo log debería al menos tener dos miembros (un espejo). En cualquier caso la distribución de los distintos ficheros hace pensar que se ha producido una confusión entre lo que sería el grupo de redo log y los miembros. Los tres grupos de redo log pueden estar dispuestos en la misma unidad de disco, lo que debe ser colocado en distintas unidades son los miembros de cada grupo. Un esquema más correcto sería:

```
C:/GRUPO1-MIEMBRO1
D:/GRUPO1-MIEMBRO2
C:/GRUPO2-MIEMBRO1
D:/GRUPO2-MIEMBRO2
C:/GRUPO3-MIEMBRO1
D:/GRUPO3-MIEMBRO2
```

Parametro	Valor
redo blocks written	15.486.203
redo buffer allocation retries	212
redo entries	26.772.753
redo log space requests	290
redo log space wait time	7.547
redo ordering marks	728
redo size	7.323.975.364
redo synch time	170.720
redo synch writes	126.539
redo wastage	354.828.076
redo write time	1.446.250
redo writer latching time	1.279
redo writes	1.267.998

Recomendación

El valor de redo buffer allocation retries (212) indica el número de intentos para encontrar espacio en el buffer de redo, un valor mayor que 0 indica que el redo writer está fallando. Esto puede ser causado por log switches o checkpoints. Con el ajuste del parámetro LOG_CHECKPOINT_INTERVAL y LOG_CHECKPOINT_TIMEOUT en el fichero init.ora. se minimizará el número de checkpoints. También es posible solucionar el problema aumentando el número de procesos LGWR mediante los parámetros LGWR_IO_SLAVES y ARCH_IO_SLAVES.