数据库运维说明书

一、数据库

1. 数据库名称

|  |
| --- |
| select name from v$database; |

1. 数据库唯一名称

|  |
| --- |
| select db\_unique\_name from v$database; |

1. 数据库ID

|  |
| --- |
| select dbid from v$database; |

1. 数据库创建时间

|  |
| --- |
| select to\_char(created,'yyyy/mm/dd hh24:mi:ss') from v$database; |

1. 日志归档模式

|  |
| --- |
| select log\_mode from v$database; |

1. 打开模式

|  |
| --- |
| select open\_mode from v$database; |

1. 数据库角色

|  |
| --- |
| select database\_role from v$database; |

1. 服务器参数文件

|  |
| --- |
| select value from v$parameter where name='spfile'; |

1. 控制文件列表

|  |
| --- |
| select value from v$parameter2 where name='control\_files'; |

1. 检查监听状态

|  |
| --- |
| cmd  lsnrctl status |

二、表空间

1. 检查表空间的使用情况

|  |
| --- |
| select a.tablespace\_name "表空名",  round(total, 2) 表空间大小,  round(free, 2) 表空间剩余大小,  round(total - free, 2) 表空间使用大小,  round((total - free) / total, 4) \* 100 "使用率%"  from (select tablespace\_name, sum(bytes) / power(1024, 3) free  from dba\_free\_space  group by tablespace\_name) a,  (select tablespace\_name, sum(bytes) / power(1024, 3) total  from dba\_data\_files  group by tablespace\_name) b  where a.tablespace\_name = b.tablespace\_name; |

1. 表空间列表

|  |
| --- |
| select name from v$tablespace; |

1. 数据文件列表

|  |
| --- |
| select name from v$datafile; |

1. 临时文件列表

|  |
| --- |
| select name from v$tempfile; |

1. 日志组列表

|  |
| --- |
| select group#, bytes/1024/1024||'M' from v$log; |

1. 检查数据文件的自动增长是否关闭

|  |
| --- |
| select file\_name,autoextensible from dba\_data\_files where autoextensible='SYS'; |

1. 检查是否有用户的缺省表空间和临时表空间设置为SYSTEM表空间

|  |
| --- |
| select username,default\_tablespace,temporary\_tablespace from dba\_users; |

三、用户与模式对象

1. 查看oracle的权限角色:

|  |
| --- |
| Select \* From dba\_role\_privs; --授予用户和其他角色的角色  Select \* From dba\_sys\_privs; --授予用户和其他角色的系统权限  Select \* From dba\_tab\_privs; --数据库中对象的所有授权  Select \* From user\_role\_privs; --查看当前用户的角色 |

1. 数据库用户列表

|  |
| --- |
| select username from dba\_users order by created; |

1. 模式对象数量列表

|  |
| --- |
| desc dba\_objects  select owner, object\_type, count(\*)  from dba\_objects  group by owner, object\_type  order by owner, object\_type; |

1. 计算每个用户占用的磁盘空间

|  |
| --- |
| select owner, sum(bytes) / 1024 / 1024 / 1024 "space(g)"  from dba\_segments  group by owner  order by owner; |

四、实例与会话

1. 检查数据库状态

|  |
| --- |
| select status from v$instance; |

1. 主机名称

|  |
| --- |
| select host\_name from v$instance; |

1. 实例名称

|  |
| --- |
| select instance\_name from v$instance |

1. 服务名称

|  |
| --- |
| select value from v$parameter where name='service\_names'; |

1. 数据库软件版本

|  |
| --- |
| select version from v$instance; |

1. 实例启动时间

|  |
| --- |
| select to\_char(startup\_time,'yyyy/mm/dd hh24:mi:ss') from v$instance; |

1. 当前会话列表

|  |
| --- |
| select sid, serial#, username from v$session; |

1. 检查SGA的使用情况

|  |
| --- |
| select \* from v$sgastat;  select pool,count(pool),sum(bytes)/1024/1024 from v$sgastat group by pool; |

1. 检查回滚段使用情况

|  |
| --- |
| select n.name,wraps,extends,shrinks,optsize,waits,xacts,aveactive,hwmsize from v$rollstat r, v$rollname n where r.usn=n.usn; |

五、系统参数

1. 最大进程数

|  |
| --- |
| select value from v$parameter where name = 'processes'; |

1. 修改Oracle最大进程数

|  |
| --- |
| a、以sysdba身份登陆PL/SQL 或者 Worksheet  b、查询目前连接数  c、更改系统连接数  alter system set processes=1000 scope=spfile;  d、创建pfile  create pfile from spfile;  e、重启Oracle服务或重启Oracle服务器 |

1. 最大会话数

|  |
| --- |
| select value from v$parameter where name = 'sessions'; |

1. 数据块大小

|  |
| --- |
| select value from v$parameter where name = 'db\_block\_size'; |

1. 游标共享模式

|  |
| --- |
| select value from v$parameter where name = 'cursor\_sharing'; |

1. 多块读批量

|  |
| --- |
| select value from v$parameter where name = 'db\_file\_multiblock\_read\_count'; |

1. 回滚段表空间

|  |
| --- |
| select value from v$parameter where name = 'undo\_tablespace'; |

1. 回滚段保留时间

|  |
| --- |
| select value from v$parameter where name = 'undo\_retention'; |

1. 回滚段管理模式

|  |
| --- |
| select value from v$parameter where name = 'undo\_management'; |

1. 系统全局区目标大小

|  |
| --- |
| select value/1024/1024||'M' from v$parameter where name = 'sga\_target'; |

1. 系统全局区最大值

|  |
| --- |
| select value/1024/1024||'M' from v$parameter where name = 'sga\_max\_size'; |

1. 程序全局区目标和

|  |
| --- |
| select value/1024/1024||'M' from v$parameter where name = 'pga\_aggregate\_target'; |

1. 时间统计

|  |
| --- |
| select value from v$parameter where name = 'timed\_statistics'; |

1. 初始化参数文件

|  |
| --- |
| **select value from v$parameter where name = 'spfile';** |

1. 数据库名称

|  |
| --- |
| select value from v$parameter where name='db\_name'; |

1. 数据库唯一名称

|  |
| --- |
| select value from v$parameter where name='db\_unique\_name'; |

1. 实例名称

|  |
| --- |
| select value from v$parameter where name='instance\_name'; |

1. 服务名称

|  |
| --- |
| select value from v$parameter where name='service\_names'; |

六、当前用户概况

1. 段的总数量

|  |
| --- |
| select count(\*) -- 段的总数量  from user\_segments; |

1. 各类型段的数量

|  |
| --- |
| **-- 查看各种类型的段的数量**  **select segment\_type, -- 段的类型**  **count(\*) -- 该类型的段的数量**  **from user\_segments**  **group by segment\_type**  **order by segment\_type;** |

1. 用户存储空间消耗

|  |
| --- |
| -- 计算整个用户占用的存储空间  select user, -- 数据库用户名  round(sum(bytes/1024/1024/1024),2) as space\_GB -- 占用存储空间大小  from user\_segments; |

1. 前20个大段

|  |
| --- |
| -- 列出占用存储空间最多的前20个段  select segment\_name, -- 段的名称  segment\_type, -- 段的类型  tablespace\_name, -- 所在表空间  bytes, -- 段的大小  round(bytes / 1024 / 1024 / 1024, 3) as space\_gb  from (select segment\_name,  segment\_type,  tablespace\_name,  bytes,  blocks,  extents  from user\_segments  order by bytes desc)  where rownum <= 10; |

1. 计算每个表用的磁盘空间

|  |
| --- |
| select segment\_name, sum(bytes) / 1024 / 1024 "space(mb)"  from dba\_segments  where segment\_name = upper('你要查找的表的名字')  group by segment\_name; |

1. 表的基本信息

|  |
| --- |
| *-- 查看表的基本信息*  *select table\_name, -- 表的名称*  *tablespace\_name, -- 表空间的名称*  *num\_rows, -- 记录数*  *avg\_row\_len, -- 行的平均长度*  *last\_analyzed, -- 统计信息收集时间*  *sample\_size -- 统计信息收集样本*  *from user\_tables*  *where table\_name = 'POSTPAY\_BILLED\_REVENUE';* |

1. 字段的基本信息

|  |
| --- |
| -- 查看字段的基本信息  select table\_name, -- 表的名称  column\_id, -- 字段的顺序  column\_name, -- 字段的名称  data\_type, -- 数据类型  data\_length, -- 字段长度  nullable, -- 是否允许空值  num\_distinct, -- 不同值的个数  num\_nulls -- 空值记录数  from user\_tab\_columns  where table\_name = 'POSTPAY\_BILLED\_REVENUE'  order by column\_id; |

1. 表的备注

|  |
| --- |
| -- 查看表的备注  select table\_name, -- 名称  table\_type, -- 类型  comments -- 备注  from user\_tab\_comments  where table\_name = 'POSTPAY\_BILLED\_REVENUE'; |

1. 字段的备注

|  |
| --- |
| -- 查看字段的备注  select table\_name, -- 表的名称  column\_name, -- 字段的名称  comments -- 备注  from user\_col\_comments  where table\_name = 'POSTPAY\_BILLED\_REVENUE'; |

1. 表的约束

|  |
| --- |
| -- 查看表的约束  select owner,  constraint\_name, -- 约束的名称  constraint\_type, -- 约束的类型  table\_name -- 归属表的名称  from user\_constraints  where table\_name = 'POSTPAY\_BILLED\_REVENUE'  and constraint\_type = 'P'; |

1. 字段的约束

|  |
| --- |
| -- 查看约束的字段  select owner,  constraint\_name, -- 约束的名称  table\_name, -- 归属表的名称  column\_name, -- 字段的名称  position -- 字段的顺序  from user\_cons\_columns  where constraint\_name = 'POSTPAY\_BILLED\_REVENUE\_PK'  order by position; |

1. 索引的字段

|  |
| --- |
| -- 查看索引的字段  select table\_name, -- 表名称  index\_name, -- 字段名称  column\_position, -- 字段顺序  column\_name -- 字段名称  from user\_ind\_columns  where table\_name = 'POSTPAY\_BILLED\_REVENUE'  order by index\_name, column\_position; |

1. 检查是否有失效的索引

|  |
| --- |
| Select \* From User\_Indexes t Where t.Status != 'VALID'; |

1. 对象总数量

|  |
| --- |
| -- 查看对象的数量  select count(\*)  from user\_objects; |

1. 对象分类数量

|  |
| --- |
| -- 查看各种类型对象的数量  select object\_type, -- 对象的类型  count(\*) -- 对象的数量  from user\_objects  group by object\_type  order by object\_type; |

1. 数据库链接列表

|  |
| --- |
| select \* from user\_db\_links; |

1. 大对象列表

|  |
| --- |
| select \* from user\_lobs; |

1. 物化视图列表

|  |
| --- |
| select \* from user\_mviews; |

1. 视图列表

|  |
| --- |
| select \* from user\_views; |

1. 视图长度

|  |
| --- |
| -- 查看视图定义的长度  select owner, view\_name, text\_length from dba\_views where view\_name='&view\_name'; |

1. 视图定义

|  |
| --- |
| -- 从数据字典视图中直接查询视图的定义  select text from dba\_views where view\_name='&view\_name'; |

1. 视图定义

|  |
| --- |
| -- 通过应用程序编程接口获取视图的定义  select dbms\_metadata.get\_ddl('VIEW','&view\_name','CAMPAIGN') from dual; |

1. 检查是否有无效的对象

|  |
| --- |
| col object\_name format a25;  select object\_name,object\_type,owner,status from dba\_objects where status !='VALID' and owner not in ('SYS','SYSTEM')  select owner,object\_name,object\_type from dba\_objects where status='INVALID'; |

1. 检查sequence使用

|  |
| --- |
| set linesize 120  select sequence\_owner,sequence\_name,min\_value,max\_value,increment\_by,last\_number,cache\_size,cycle\_flag from dba\_sequences; |

1. 检查是否有运行失败的job

|  |
| --- |
| col what format a20;  select job,this\_date,this\_sec,next\_date,next\_sec,failures,what from dba\_jobs where failures !=0 or failures is not null; |

1. 检查不起作用的约束

|  |
| --- |
| select owner,constraint\_name,table\_name,constraint\_type,status from dba\_constraints where status='DISABLED' and constraint\_type='p'; |

1. 检查无效的trigger

|  |
| --- |
| select owner,trigger\_name,table\_name,status from dba\_triggers where status='DISABLED'; |

五、SQL

1. 查找死锁的语句

|  |
| --- |
| Select l.session\_id sid,  s.serial#,  l.locked\_mode,  l.oracle\_username,  l.os\_user\_name,  s.machine,  s.terminal,  o.object\_name,  s.logon\_time  From v$locked\_object l, all\_objects o, v$session s  Where l.object\_id = o.object\_id  And l.session\_id = s.sid  Order By sid, s.serial#; |

1. 查看已经执行过的sql 这些是存在共享池中的：

|  |
| --- |
| Select \* From v$sqlarea t Order By t.LAST\_ACTIVE\_TIME Desc; |

1. 获取SQL消耗资源

|  |
| --- |
| Select Distinct sl.target,  s.sql\_text,  sp.options,  sp.cost,  sp.cpu\_cost,  sp.io\_cost  From v$session\_longops sl, v$sql s, v$sql\_plan sp  Where sl.SQL\_ADDRESS = s.ADDRESS  And sp.address = s.address  And Cost Is Not Null  And options Is Not Null  以上sql通过关联v$sql,v$session\_longops(这个视图存放超过6秒的sql，尤其是存在大量的数据分散读等待事件时)得到相关信息。  target：对象名  sql\_text：sql语句  options:执行情况  cost：总的成本  cpu\_cost：cpu使用情况  io\_cost：磁盘io读写情况 |

1. 查看值得怀疑的SQL

|  |
| --- |
| Select Substr(to\_char(s.pct, '99.00'), 2) || '%' Load,  s.executions executes,  p.sql\_text  From (Select address,  disk\_reads,  executions,  pct,  Rank() Over(Order By disk\_reads Desc) ranking  From (Select address,  disk\_reads,  executions,  100 \* ratio\_to\_report(disk\_reads) Over() pct  From sys.v\_$sql  Where command\_type != 47)  Where disk\_reads > 50 \* executions) s,  sys.v\_$sqltext p  Where s.ranking <= 5  And p.address = s.address  Order By 1, s.address, p.piece; |

1. 查看消耗内存多的SQL

|  |
| --- |
| Select b.username,  a. buffer\_gets,  a.executions,  a.disk\_reads / Decode(a.executions, 0, 1, a.executions),  a.sql\_text SQL  From v$sqlarea a, dba\_users b  Where a.parsing\_user\_id = b.user\_id  And a.disk\_reads > 10000  Order By disk\_reads Desc; |

1. 查看逻辑读多的SQL

|  |
| --- |
| Select \*  From (Select buffer\_gets, sql\_text  From v$sqlarea  Where buffer\_gets > 500000  Order By buffer\_gets Desc)  Where Rownum <= 30; |

1. 查看执行次数多的SQL

|  |
| --- |
| Select sql\_text, executions  From (Select sql\_text, executions From v$sqlarea Order By executions Desc)  Where Rownum < 81; |

1. 查看读硬盘多的SQL

|  |
| --- |
| Select sql\_text, disk\_reads  From (Select sql\_text, disk\_reads From v$sqlarea Order By disk\_reads Desc)  Where Rownum < 21; |

1. 查看排序多的SQL

|  |
| --- |
| Select sql\_text, sorts  From (Select sql\_text, sorts From v$sqlarea Order By sorts Desc)  Where Rownum < 21; |

1. 分析的次数太多，执行的次数太少，要用绑变量的方法来写sql

|  |
| --- |
| Set pagesize 600;  Set linesize 120;  Select Substr(sql\_text, 1, 80) "sql", Count(\*), Sum(executions) "totexecs"  From v$sqlarea  Where executions < 5  Group By Substr(sql\_text, 1, 80)  Having Count(\*) > 30  Order By 2; |

1. 游标的观察

|  |
| --- |
| Set pages 300;  Select Sum(a.value), b.name  From v$sesstat a, v$statname b  Where a.statistic# = b.statistic#  And b.name = 'opened cursors current'  Group By b.name;  Select Count(0) From v$open\_cursor;  Select user\_name, sql\_text, Count(0)  From v$open\_cursor  Group By user\_name, sql\_text  Having Count(0) > 30; |

1. 查看当前用户&username执行的SQL

|  |
| --- |
| Select sql\_text  From v$sqltext\_with\_newlines  Where (hash\_value, address) In  (Select sql\_hash\_value, sql\_address  From v$session  Where username = '&username')  Order By address, piece; |