

从oracle10g开始, 我们可以通过查询v\$database.current\_scn来获取当前数据库的scn, 这个是通过调用"kcmgas"函数来完成的, 这是一个oracle instance的永久内存结构体, 我们可以查询 v\$syssta来观察该函数的调用情况:

**先看对v\$database.current\_scn的查询来获取scn的方式:**

```
alter system checkpoint;
select * from v$sysstat where name like '%kcmgas';
select current_scn from v$database;
select * from v$sysstat where name like '%kcmgas';
select current_scn from v$database;
select * from v$sysstat where name like '%kcmgas';
select current_scn from v$database;
select * from v$sysstat where name like '%kcmgas';
select current_scn from v$database;
select * from v$sysstat where name like '%kcmgas';
select current_scn from v$database;
select * from v$sysstat where name like '%kcmgas';
select current_scn from v$database;
select * from v$sysstat where name like '%kcmgas';
select current_scn from v$database;
```

```
SYS% orcl> alter system checkpoint;
select * from v$sysstat where name like '%kcmgas';
```

System altered.

Elapsed: 00:00:00.00

SYS% orcl>

| STATISTIC# | NAME    | CLASS |
|------------|---------|-------|
| VALUE      | STAT_ID |       |

|                     |  |     |      |
|---------------------|--|-----|------|
| 172 calls to kcmgas |  | 128 | 1236 |
| 4072914524          |  |     |      |

Elapsed: 00:00:00.01

SYS% orcl> select current\_scn from v\$database;

CURRENT\_SCN

1253080

Elapsed: 00:00:00.00

SYS% orcl> select \* from v\$sysstat where name like '%kcmgas';

| STATISTIC# | NAME    | CLASS |
|------------|---------|-------|
| VALUE      | STAT_ID |       |

|                     |  |     |      |
|---------------------|--|-----|------|
| 172 calls to kcmgas |  | 128 | 1237 |
| 4072914524          |  |     |      |

Elapsed: 00:00:00.01

SYS% orcl> select current\_scn from v\$database;

CURRENT\_SCN

1253081

Elapsed: 00:00:00.00

SYS% orcl> select \* from v\$sysstat where name like '%kcmgas';

| STATISTIC#          | NAME    | CLASS |
|---------------------|---------|-------|
| VALUE               | STAT_ID |       |
| 172 calls to kcmgas |         | 128   |
| 4072914524          |         | 1238  |

Elapsed: 00:00:00.00

SYS% orcl> select current\_scn from v\$database;

CURRENT\_SCN  
-----  
1253082

Elapsed: 00:00:00.00

SYS% orcl> select \* from v\$sysstat where name like '%kcmgas';

| STATISTIC#          | NAME    | CLASS |
|---------------------|---------|-------|
| VALUE               | STAT_ID |       |
| 172 calls to kcmgas |         | 128   |
| 4072914524          |         | 1239  |

Elapsed: 00:00:00.00

SYS% orcl> select current\_scn from v\$database;

CURRENT\_SCN  
-----  
1253083

Elapsed: 00:00:00.00

SYS% orcl> select \* from v\$sysstat where name like '%kcmgas';

| STATISTIC#          | NAME    | CLASS |
|---------------------|---------|-------|
| VALUE               | STAT_ID |       |
| 172 calls to kcmgas |         | 128   |
| 4072914524          |         | 1240  |

Elapsed: 00:00:00.00

SYS% orcl> select current\_scn from v\$database;

CURRENT\_SCN  
-----  
1253084

Elapsed: 00:00:00.00

SYS% orcl> select \* from v\$sysstat where name like '%kcmgas';

| STATISTIC# | NAME    | CLASS |
|------------|---------|-------|
| VALUE      | STAT_ID |       |



select \* from v\$sysstat where name like '%kcmgas';

执行结果如下:

SYS% orcl> alter system checkpoint;

System altered.

Elapsed: 00:00:00.00

SYS% orcl> select \* from v\$sysstat where name like '%kcmgas';

| STATISTIC#          | NAME       | CLASS           |
|---------------------|------------|-----------------|
| VALUE               | STAT_ID    |                 |
| 172 calls to kcmgas | 4072914524 | 128 <b>1265</b> |

Elapsed: 00:00:00.01

SYS% orcl> exec dbms\_lock.sleep(5);

select to\_char(dbms\_flashback.get\_system\_change\_number,'xxxxxxxxxxxxxxxxxxxxxx')

hex\_scn,dbms\_flashback.get\_system\_change\_number decimal\_curscn from dual;

select \* from v\$sysstat where name like '%kcmgas';

exec dbms\_lock.sleep(5);

select to\_char(dbms\_flashback.get\_system\_change\_number,'xxxxxxxxxxxxxxxxxxxxxx')

hex\_scn,dbms\_flashback.get\_system\_change\_number decimal\_curscn from dual;

select \* from v\$sysstat where name like '%kcmgas';

exec dbms\_lock.sleep(5);

select to\_char(dbms\_flashback.get\_system\_change\_number,'xxxxxxxxxxxxxxxxxxxxxx')

hex\_scn,dbms\_flashback.get\_system\_change\_number decimal\_curscn from dual;

select \* from v\$sysstat where name like '%kcmgas';

exec dbms\_lock.sleep(5);

select to\_char(dbms\_flashback.get\_system\_change\_number,'xxxxxxxxxxxxxxxxxxxxxx')

hex\_scn,dbms\_flashback.get\_system\_change\_number decimal\_curscn from dual;

select \* from v\$sysstat where name like '%kcmgas';

exec dbms\_lock.sleep(5);

select to\_char(dbms\_flashback.get\_system\_change\_number,'xxxxxxxxxxxxxxxxxxxxxx')

hex\_scn,dbms\_flashback.get\_system\_change\_number decimal\_curscn from dual;

select \* from v\$sysstat where name like '%kcmgas';

exec dbms\_lock.sleep(5);

select to\_char(dbms\_flashback.get\_system\_change\_number,'xxxxxxxxxxxxxxxxxxxxxx')

hex\_scn,dbms\_flashback.get\_system\_change\_number decimal\_curscn from dual;

select \* from v\$sysstat where name like '%kcmgas';

PL/SQL procedure successfully completed.

Elapsed: 00:00:05.01

SYS% orcl>

| HEX_SCN | DECIMAL_CURSCN |
|---------|----------------|
| 1320cc  | <b>1253580</b> |

Elapsed: 00:00:00.01

SYS% orcl>

| STATISTIC# | NAME | CLASS |
|------------|------|-------|
|------------|------|-------|

```
VALUE    STAT_ID
-----
          172 calls to kcmgas                128    1265
4072914524
```

```
Elapsed: 00:00:00.00
SYS% orcl>
PL/SQL procedure successfully completed.
```

```
Elapsed: 00:00:05.01
SYS% orcl>
HEX_SCN          DECIMAL_CURSCN
-----
          1320ce    1253582
```

```
Elapsed: 00:00:00.00
SYS% orcl>
STATISTIC# NAME                CLASS
VALUE    STAT_ID
-----
          172 calls to kcmgas                128    1265
4072914524
```

```
Elapsed: 00:00:00.00
SYS% orcl>
PL/SQL procedure successfully completed.
```

```
Elapsed: 00:00:05.00
SYS% orcl>
HEX_SCN          DECIMAL_CURSCN
-----
          1320cf    1253583
```

```
Elapsed: 00:00:00.00
SYS% orcl>
STATISTIC# NAME                CLASS
VALUE    STAT_ID
-----
          172 calls to kcmgas                128    1265
4072914524
```

```
Elapsed: 00:00:00.01
SYS% orcl>
PL/SQL procedure successfully completed.
```

```
Elapsed: 00:00:05.01
SYS% orcl>
HEX_SCN          DECIMAL_CURSCN
-----
          1320d1    1253585
```

```
Elapsed: 00:00:00.00
SYS% orcl>
STATISTIC# NAME                CLASS
```

```
VALUE    STAT_ID
-----
172 calls to kcmgas 128 1265
4072914524
```

Elapsed: 00:00:00.00

SYS% orcl>

PL/SQL procedure successfully completed.

Elapsed: 00:00:05.01

SYS% orcl>

```
HEX_SCN          DECIMAL_CURSCN
-----
1320d3          1253587
```

Elapsed: 00:00:00.00

SYS% orcl>

```
STATISTIC# NAME CLASS
```

```
VALUE    STAT_ID
-----
172 calls to kcmgas 128 1265
4072914524
```

Elapsed: 00:00:00.00

SYS% orcl>

PL/SQL procedure successfully completed.

Elapsed: 00:00:05.01

SYS% orcl>

```
HEX_SCN          DECIMAL_CURSCN
-----
1320d4          1253588
```

Elapsed: 00:00:00.00

SYS% orcl>

```
STATISTIC# NAME CLASS
```

```
VALUE    STAT_ID
-----
172 calls to kcmgas 128 1265
4072914524
```

Elapsed: 00:00:00.00

SYS% orcl> SYS% orcl> SYS% orcl>

SYS% orcl>

可见，通过dump sga中scn变量的方式是会调用"kcmgas"函数的。

通过dump sga中的scn变量来获取scn的方式：  
测试脚本如下：



```
exec dbms_lock.sleep(5);
oradebug dumpvar sga kcsghscn_
select * from v$sysstat where name like '%kcmgas';
exec dbms_lock.sleep(5);
oradebug dumpvar sga kcsghscn_
select * from v$sysstat where name like '%kcmgas';
```

PL/SQL procedure successfully completed.

Elapsed: 00:00:05.00

```
SYS% orcl> kcsghscn_ [060019598, 0600195C8] = 00132068 00000000 00000000 00000000 00003D1F
00000000 00000000 00000000 00000000 00000000 60019278 00000000
```

SYS% orcl>

| STATISTIC# | NAME            | CLASS |
|------------|-----------------|-------|
| VALUE      | STAT_ID         |       |
| 172        | calls to kcmgas | 128   |
| 4072914524 |                 | 1260  |

Elapsed: 00:00:00.00

SYS% orcl>

PL/SQL procedure successfully completed.

Elapsed: 00:00:05.01

```
SYS% orcl> kcsghscn_ [060019598, 0600195C8] = 0013206A 00000000 00000000 00000000 00003D21
00000000 00000000 00000000 00000000 00000000 60019278 00000000
```

SYS% orcl>

| STATISTIC# | NAME            | CLASS |
|------------|-----------------|-------|
| VALUE      | STAT_ID         |       |
| 172        | calls to kcmgas | 128   |
| 4072914524 |                 | 1260  |

Elapsed: 00:00:00.01

SYS% orcl>

PL/SQL procedure successfully completed.

Elapsed: 00:00:05.01

```
SYS% orcl> kcsghscn_ [060019598, 0600195C8] = 0013206C 00000000 00000000 00000000 00003D23
00000000 00000000 00000000 00000000 00000000 60019278 00000000
```

SYS% orcl>

| STATISTIC# | NAME            | CLASS |
|------------|-----------------|-------|
| VALUE      | STAT_ID         |       |
| 172        | calls to kcmgas | 128   |
| 4072914524 |                 | 1260  |

Elapsed: 00:00:00.00

SYS% orcl>

PL/SQL procedure successfully completed.

Elapsed: 00:00:05.00

```
SYS% orcl> kcsghscn_ [060019598, 0600195C8] = 0013206D 00000000 00000000 00000000 00003D24
00000000 00000000 00000000 00000000 00000000 60019278 00000000
```



```

SYS% orcl>
STATISTIC# NAME                                CLASS
VALUE     STAT_ID
-----
          172 calls to kcmgas                    128      1260
4072914524

```

Elapsed: 00:00:00.01

SYS% orcl>

PL/SQL procedure successfully completed.

Elapsed: 00:00:05.00

```

SYS% orcl> kcslf kcsn [060019598, 0600195C8) = 0013206F 00000000 00000000 00000000 00003D26
00000000 00000000 00000000 00000000 00000000 60019278 00000000

```

SYS% orcl>

```

STATISTIC# NAME                                CLASS
VALUE     STAT_ID
-----
          172 calls to kcmgas                    128      1260
4072914524

```

Elapsed: 00:00:00.01

SYS% orcl>

PL/SQL procedure successfully completed.

Elapsed: 00:00:05.01

```

SYS% orcl> kcslf kcsn [060019598, 0600195C8) = 00132071 00000000 00000000 00000000 00003D28
00000000 00000000 00000000 00000000 00000000 60019278 00000000

```

SYS% orcl>

```

STATISTIC# NAME                                CLASS
VALUE     STAT_ID
-----
          172 calls to kcmgas                    128      1260
4072914524

```

Elapsed: 00:00:00.00

SYS% orcl>

PL/SQL procedure successfully completed.

Elapsed: 00:00:05.00

```

SYS% orcl> kcslf kcsn [060019598, 0600195C8) = 00132072 00000000 00000000 00000000 00003D29
00000000 00000000 00000000 00000000 00000000 60019278 00000000

```

SYS% orcl>

```

STATISTIC# NAME                                CLASS
VALUE     STAT_ID
-----
          172 calls to kcmgas                    128      1260
4072914524

```

Elapsed: 00:00:00.00

SYS% orcl>

SYS% orcl>

可见，通过dump sga中scn变量的方式是不会调用"kcngas"函数的。

**结论:**

只有通过v\$database.current\_scn的方式获取scn才会调用函数“kcmgas”

而通过oradebug dump sga scn变量的方式和dbms\_flashback.get\_system\_change\_number,这个两种方式是不会调用函数“kcmgas”的