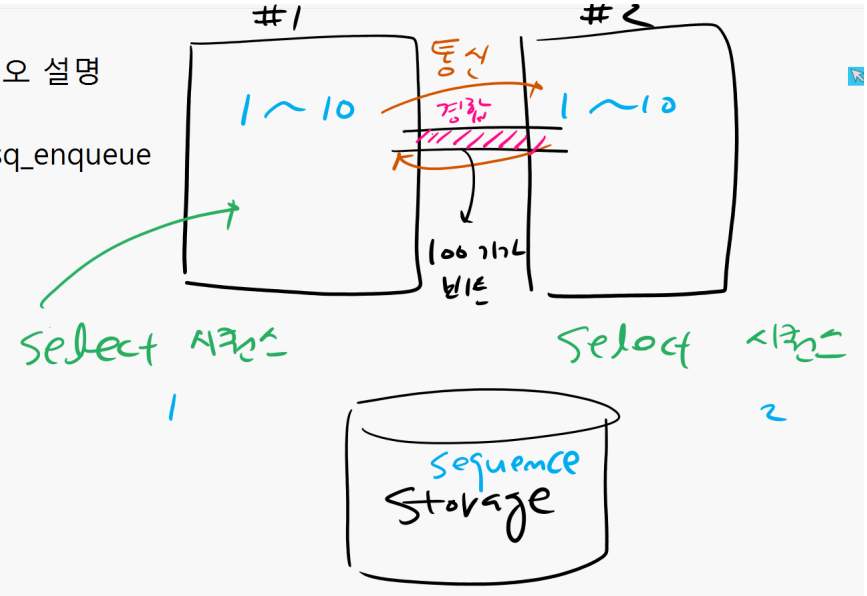
❁ 50. RAC 환경에서 발생하는 SQ enqueue 성능 문제 해결하는 방법 2 (cache + order일 때)

```
sequence 생성 시 안 좋은 상황들 순위
1. nocache
2. cache + order
3. cache 사이즈 작게 + noorder
4. cache 사이즈 크게 + noorder

※ cache + order 시나리오
create sequence seq_sq_enqueue
start with 1
increment by 1
cache 10
order;

=> 1번 노드와 2번 노드가 서로 통신하면서 몇 번까지 번호를 부여했는지 서로
     sequence 사용이 모든 노드에서 빈번해지면 RAC 성능 저하가 발생한다.
     SV-contention 이다.
```

★ cache + order 시나리오 설명

```
create sequence seq_sq_enqueue
start with 1
increment by 1
cache 10
order ;
```



실습
1. owi 유저의 seq_sq_enqueue sequence의 sequence 속성을 확인하시오
```
select sequence_name, cache_size, order_flag
from user_sequences;
```

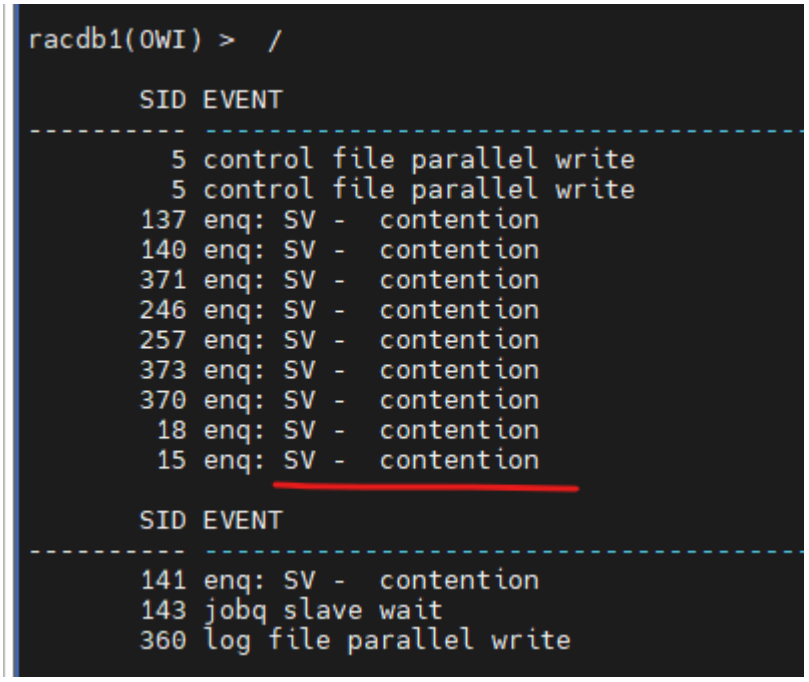
```
racdb1(OWI) >  select sequence_name, cache_size, order_flag
        from user_sequences;
          2
SEQUENCE_NAME                  CACHE_SIZE O
------------------------------ ---------- -
SCENARIO_NO_SEQ                        20 N
SEQ_SQ_ENQUEUE                          0 N
```

2. cache 사이즈는 10으로 하고 order flag는 order로 하시오.
```
alter sequence seq_sq_enqueue cache 10;
alter sequence seq_sq_enqueue order;

select sequence_name, cache_size, order_flag
from user_sequences;
```

```
racdb1(OWI) >   select sequence_name, cache_size, order_flag
        from user_sequences;   2

SEQUENCE_NAME                  CACHE_SIZE O
------------------------------ ---------- -
SCENARIO_NO_SEQ                        20 N
SEQ_SQ_ENQUEUE                         10 Y
```

3. 부하를 일으키기 전에 별도의 터미널 창을 열어서 대기 이벤트를 볼 준비를
```
select  sid, event
from gv$session_wait
where  event  not  in ('ASM background timer',
                                                'DIAG idle wait',
                                                'GCR sleep',
                                                'PING',
                                                'PX Deq: Execute
                                                'PX Deq: Executio
                                                'SQL*Net message
                                                'Space Manager: s
```

```
                                                'Streams AQ: qmn
                                                'Streams AQ: qmn
                                                'Streams AQ: wait
                                                'VKTM Logical Idl
                                                'class slave wait
                                                'gcs remote messa
                                                'ges remote messa
                                                'pmon timer',
                                                'rdbms ipc messag
                                                'smon timer',
                                                'wait for unread
  order  by event  asc;

save event.sql

4. 다른 터미널 창에서 owi 유저에서 cache+order 시퀀스에 대한 부하를 일으
(sql 1 owi)
@exec
-------------------------
sq_enqueue
-------------------------
=> 모니터링 하는 터미널 창에서 대기 이벤트를 확인하시오.
=> SV enquque가 발생한다는 것은 sequence의 옵션 설정 중, order flag
     했을 때 발생하는 대기 이벤트다. 1번 노드와 2번 노드가 서로 sequenc
     대기하고 있다는 뜻이다.
```



```
racdb1(OWI) >  /

       SID EVENT
---------- ----------------------------------------
         5 control file parallel write
         5 control file parallel write
       137 enq: SV -  contention
       140 enq: SV -  contention
       371 enq: SV -  contention
       246 enq: SV -  contention
       257 enq: SV -  contention
       373 enq: SV -  contention
       370 enq: SV -  contention
        18 enq: SV -  contention
        15 enq: SV -  contention

       SID EVENT
---------- ----------------------------------------
       141 enq: SV -  contention
       143 jobq slave wait
       360 log file parallel write
```

문제 1. 다시 한번 부하를 일으키는 데 이번에는 부하 일으키기 전에 사진 한번 사진 한번 찍고서 ADDM report를 떠서 오라클이 권장하는 처방전을 출력하시오

```
(sql 1 owi)
@snap

@exec
-------------------------
sq_enqueue
-------------------------
select  sid, event
from gv$session_wait
where  event  not  in ('ASM background timer',
                                                'DIAG idle wait',
                                                'GCR sleep',
                                                'PING',
                                                'PX Deq: Execute
                                                'PX Deq: Executio
                                                'SQL*Net message
                                                'Space Manager: s
                                                'Streams AQ: qmn
                                                'Streams AQ: qmn
                                                'Streams AQ: wait
                                                'VKTM Logical Idl
```

```
                                                'class slave wait
                                                'gcs remote messa
                                                'ges remote messa
                                                'pmon timer',
                                                'rdbms ipc messag
                                                'smon timer',
                                                'wait for unread
  order  by event  asc; -> no rows selected 될 때까지 실행하기

@snap
@?/rdbms/admin/addmrpt.sql
```

```
                            48 28 Mar 2024 13:00      1
                            49 28 Mar 2024 14:00      1
                            50 28 Mar 2024 14:24      1
                            51 28 Mar 2024 14:25      1


Specify the Begin and End Snapshot Ids
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Enter value for begin_snap: 50
Begin Snapshot Id specified: 50

Enter value for end_snap: 51
End   Snapshot Id specified: 51


Specify the Report Name
~~~~~~~~~~~~~~~~~~~~~~~
The default report file name is addmrpt_1_50_51.txt.  To use this name,
press <return> to continue, otherwise enter an alternative.

Enter value for report_name: report11.txt
```

```
Finding 2: Unusual "Other" Wait Event
Impact is 1.45 active sessions, 46.08% of total activity.
-----------------------------------------------------------
Wait event "enq: SV -  contention" in wait class "Other" was consuming
significant database time.

   Recommendation 1: Application Analysis
   Estimated benefit is 1.45 active sessions, 46.08% of total activity.
   ---------------------------------------------------------------
   Action
      Investigate the cause for high "enq: SV -  contention" waits. Refer to
      Oracle's "Database Reference" for the description of this wait event.
   Action
      Look at the "Top SQL Statements" finding for SQL statements consuming
      significant time on the "enq: SV -  contention" wait event. For example,
      the SELECT statement with SQL_ID "gjxq13ucm559c" is responsible for 100%
      of these waits.

   Recommendation 2: Application Analysis
   Estimated benefit is 1.45 active sessions, 46.08% of total activity.
   ---------------------------------------------------------------
   Action
      Investigate the cause for high "enq: SV -  contention" waits in Module
      "sq_enqueue".

   Recommendation 3: Application Analysis
   Estimated benefit is 1.45 active sessions, 46.08% of total activity.
   ---------------------------------------------------------------
   Action
      Investigate the cause for high "enq: SV -  contention" waits in Service
      "SYS$USERS".

   Recommendation 4: Application Analysis
   Estimated benefit is 1.45 active sessions, 46.08% of total activity.
   ---------------------------------------------------------------
   Action
      Investigate the cause for high "enq: SV -  contention" waits with
      P1,P2,P3 ("type|mode, id1, id2") values "1398145029", "87614" and "0"
      respectively
```

=> 처방전 : SV enqueue가 발생하면서 database가 느리다면 sequence의 ≤
변경을 해주면 된다.

```
alter sequence seq_sq_enqueue noorder;
```

```
racdb1(OWI) >  alter sequence seq_sq_enqueue noorder;

Sequence altered.

racdb1(OWI) >
select sequence_name, cache_size, order_flag
from user_sequences;racdb1(OWI) >    2

SEQUENCE_NAME                  CACHE_SIZE O
------------------------------ ---------- -
SCENARIO_NO_SEQ                        20 N
SEQ_SQ_ENQUEUE                         10 N
```