

or和UNION ALL效率问题

本来以为 or和union all的效率不会差太多，今天在项目做的时候发现效率差了，非常多，因为是全表扫描，用的last_mod和id，每次10000条。

用or的时候越往后 越慢（暂时还不知道为什么，开始挺快的。。。待查证原因），后来换成union all 速度飞快。17秒完事，但是or 10分钟都不止，速度至少差了10倍以上。

后来在增加last_mod和id的联合索引之后，or的查询速度明显提高了，但还是越往后速度越慢。

union all的速度一直很稳定。平均查询1W条数据在80毫秒左右。

加了联合索引后的执行计划

OR的情况

```
EXPLAIN select id, (EXTRACT(EPOCH FROM last_mod )*1000000)::bigint as version
      from table
      where ((last_mod = to_timestamp(1533874618.556410) and id > 123)) or last_mod > to_timestamp
(1533874618.556410)  order by last_mod,ID limit 10000
```

开始运行时间在120毫秒左右， 执行计划：

QUERY PLAN
Limit (cost=0.00..1037.41 rows=10000 width=38)
-> Index Scan using hs_hotel_score_last_mod_id_idx on hs_hotel_score (cost=0.00..308671.88 rows=2975412 width=38)
Filter: (((last_mod = '2018-08-10 12:16:58.55641+08'::timestamp with time zone) AND (id > 85035)) OR (last_mod > '2018-08-10 12:16:58.55641+08'::timestamp with time zone))

UNION ALL

```
EXPLAIN (select id, (EXTRACT(EPOCH FROM last_mod )*1000000)::bigint as version
      from table
      where (last_mod = to_timestamp(1534232667.772445) and id > 1) )
UNION all (select id,(EXTRACT(EPOCH FROM last_mod )*1000000)::bigint as version, status
      from table
      where last_mod > to_timestamp(1534232667.772445)  order by last_mod,ID limit 10000)
```

运行时间在80毫秒左右， 执行计划：

QUERY PLAN
Result (cost=0.00..1125.92 rows=10001 width=38)
-> Append (cost=0.00..1125.92 rows=10001 width=38)
-> Index Scan using hs_hotel_score_last_mod_id_idx on hs_hotel_score (cost=0.00..8.75 rows=1 width=38)
Index Cond: ((last_mod = '2018-08-14 15:44:27.772445+08'::timestamp with time zone) AND (id > 1))
-> Subquery Scan on "SELECT* 2" (cost=0.00..1117.16 rows=10000 width=38)
-> Limit (cost=0.00..1017.16 rows=10000 width=38)
-> Index Scan using hs_hotel_score_last_mod_id_idx on hs_hotel_score (cost=0.00..279558.50 rows=2748415 width=38)
Index Cond: (last_mod > '2018-08-14 15:44:27.772445+08'::timestamp with time zone)