

MileStone 8 Bewijs

Overzicht Vergelijking:

Tabel info voor partitionering:

	SEGMENT_NAME	SEGMENT_TYPE	MB	TABLE_COUNT
1	REVIEWS	TABLE	88	500005

Query:

```
SELECT /*+ NOPARALLEL(r)*/ u.EMAIL, p.NAME, TITLE, CONTENT, POSTEDDATE, LIKES
FROM REVIEWS r
      JOIN USERS u ON r.REVIEW_USER_ID = u.USER_ID
      JOIN SMARTPHONES p ON r.REVIEW_PHONE_ID = p.PHONE_ID
WHERE RATING = 5
GROUP BY p.NAME, u.EMAIL, TITLE, CONTENT, POSTEDDATE, LIKES
ORDER BY LIKES DESC;
```

Explain plan

Operation	Params	Rows	Total Cost	Raw Desc
Select		81744	3174.0	cpu_cost = 330268852, io_cost = 3164
Unknown (PX COORDINATOR)				cpu_cost = null, io_cost = null
Unknown (PX SEND QC (ORDER))		81744	3174.0	cpu_cost = 330268852, io_cost = 3164
Group By (SORT GROUP BY)		81744	3174.0	cpu_cost = 330268852, io_cost = 3164
Unknown (PX RECEIVE)		81744	3174.0	cpu_cost = 330268852, io_cost = 3164
Unknown (PX SEND RANGE)		81744	3174.0	cpu_cost = 330268852, io_cost = 3164
Group By (HASH GROUP BY)		81744	3174.0	cpu_cost = 330268852, io_cost = 3164
Hash Join		81744	3172.0	cpu_cost = 264371818, io_cost = 3164
Full Scan (TABLE ACCESS FULL)	table: USERS;	49256	95.0	cpu_cost = 5746606, io_cost = 94
Hash Join		81744	3077.0	cpu_cost = 250243812, io_cost = 3070
Unknown (PX RECEIVE)		40301	57.0	cpu_cost = 3806206, io_cost = 57
Unknown (PX SEND HYBRID HASH)		40301	57.0	cpu_cost = 3806206, io_cost = 57
Unknown (STATISTICS COLLECTOR)				cpu_cost = null, io_cost = null
Access (VIEW)		40301	57.0	cpu_cost = 3806206, io_cost = 57
Unknown (PX BLOCK ITERATOR)		40301	57.0	cpu_cost = 3806206, io_cost = 57
Full Scan (TABLE ACCESS FULL)	table: SMARTPHONES;	40301	57.0	cpu_cost = 3806206, io_cost = 57
Unknown (PX RECEIVE)		90701	3020.0	cpu_cost = 238279857, io_cost = 3013
Unknown (PX SEND HYBRID HASH)		90701	3020.0	cpu_cost = 238279857, io_cost = 3013
Unknown (PX SELECTOR)				cpu_cost = null, io_cost = null
Full Scan (TABLE ACCESS FULL)	table: REVIEWS;	90701	3020.0	cpu_cost = 238279857, io_cost = 3013

Partitie script:

De rijen worden verdeeld naargelang het aantal likes, we zijn momenteel op zoek naar de reviews met de beste rating

```
ALTER TABLE REVIEWS
  MODIFY
    PARTITION BY RANGE (rating) INTERVAL (1) (
    PARTITION RATED_0 VALUES LESS THAN (1),
    PARTITION RATED_1 VALUES LESS THAN (2),
    PARTITION RATED_2 VALUES LESS THAN (3),
    PARTITION RATED_3 VALUES LESS THAN (4),
    PARTITION RATED_4 VALUES LESS THAN (5),
    PARTITION RATED_5 VALUES LESS THAN (6));
```

Tabel info NA partitionering

	SEGMENT_NAME	SEGMENT_TYPE	MB	TABLE_COUNT
1	REVIEWS	TABLE PARTITION	90.0625	500005

Query:

```
SELECT /*+ NOPARALLEL(r)*/ u.EMAIL, p.NAME, TITLE, CONTENT, POSTEDDATE, LIKES
FROM REVIEWS r
  JOIN USERS u ON r.REVIEW_USER_ID = u.USER_ID
  JOIN SMARTPHONES p ON r.REVIEW_PHONE_ID = p.PHONE_ID
WHERE RATING = 5
GROUP BY p.NAME, u.EMAIL, TITLE, CONTENT, POSTEDDATE, LIKES
ORDER BY LIKES DESC;
```

Explain plan na partitionering

Operation	Params	Rows	Total Cost	Raw Desc
Select		77661	2611.0	cpu_cost = 163028865, io_cost = 260
Unknown (PX COORDINATOR)				cpu_cost = null, io_cost = null
Unknown (PX SEND QC (ORDER))		77661	2611.0	cpu_cost = 163028865, io_cost = 260
Group By (SORT GROUP BY)		77661	2611.0	cpu_cost = 163028865, io_cost = 260
Unknown (PX RECEIVE)		77661	2611.0	cpu_cost = 163028865, io_cost = 260
Unknown (PX SEND RANGE)		77661	2611.0	cpu_cost = 163028865, io_cost = 260
Group By (HASH GROUP BY)		77661	2611.0	cpu_cost = 163028865, io_cost = 260
Hash Join		77661	657.0	cpu_cost = 67722108, io_cost = 655
Full Scan (TABLE ACCESS FULL)	table: USERS;	49256	95.0	cpu_cost = 5746606, io_cost = 94
Hash Join		77660	562.0	cpu_cost = 53798247, io_cost = 561
Unknown (PX RECEIVE)		40301	57.0	cpu_cost = 3806206, io_cost = 57
Unknown (PX SEND HYBRID HASH)		40301	57.0	cpu_cost = 3806206, io_cost = 57
Unknown (STATISTICS COLLECTOR)				cpu_cost = null, io_cost = null
Access (VIEW)		40301	57.0	cpu_cost = 3806206, io_cost = 57
Unknown (PX BLOCK ITERA1)		40301	57.0	cpu_cost = 3806206, io_cost = 57
Full Scan (TABLE ACC table: SMARTPHONES;		40301	57.0	cpu_cost = 3806206, io_cost = 57
Sort (BUFFER SORT)				cpu_cost = null, io_cost = null
Unknown (PX RECEIVE)		96741	505.0	cpu_cost = 41532291, io_cost = 504
Unknown (PX SEND HYBRID HASH)		96741	505.0	cpu_cost = 41532291, io_cost = 504
Unknown (PARTITION RANGE S		96741	505.0	cpu_cost = 41532291, io_cost = 504
Full Scan (TABLE ACCES table: REVIEWS;		96741	505.0	cpu_cost = 41532291, io_cost = 504

Conclusie:

Wanneer we ons baseren op de cost van beide queries zien we dat de eerste query doorheen de hele query een hoge cost heeft. Bij de tweede query zien we in het begin een hogere kost, maar deze neemt zeer snel af, waardoor de efficiëntie ook toeneemt.

De io_cost is ook naar beneden gegaan na het partitioneren, in het eerste deel is dit ongeveer 66% van de vorige waarde, en ook dit gaat drastisch naar beneden naargelang hoe dieper we in de query gaan.

De tijd om uit te voeren is licht gedaald, maar niet zo drastisch als de cost.

Als we naar het algemene beeld kijken heeft het partitioneren er zeker voor gezorgd dat we de query efficiënter hebben kunnen uitvoeren.