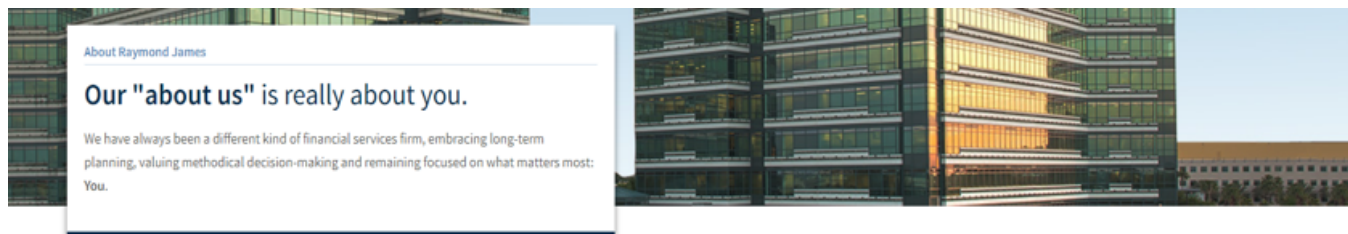

RAYMOND JAMES FINANCIAL

[HTTPS://WWW.RAYMONDJAMES.COM/](https://www.raymondjames.com/)



About Us

When Bob James founded Raymond James, he did so based on a belief that clients deserved more than help with investment decisions, they needed advice that considered their entire financial picture.

Today, that client-focused approach has extended to serve more than 3 million client accounts through 7,300 financial advisors in the United States, Canada and overseas. Further, the company has expanded through the years to serve corporations, institutions and municipalities through significant capital markets, banking and asset management services.

**No matter the business, we believe if we do what's right for clients,
we'll help them achieve success while also realizing our own.
It's that simple.**

TRIDIB DAS

Work Experience:

Raymond James – Senior Oracle DBA

American Express – Senior Oracle DBA

Tata Consultancy Services – Oracle DBA

Oracle 9i/10g/11g/12c/18c, RAC, ADG, GG, Exadata, ODA, PCA, OEM
10g/11g/12c/13c

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USE CASE

- EXADATA X6-2 HALF RACK

- IM_PARENT - 4 GB, 39M rows
- IM_CHILD1 - 2.484 GB, 29M rows
- IM_CHILD2 – 3.316 GB, 41M rows

- Return Large # of Rows Query (around 9M)
 - . SELECT /*+ PARALLEL(2) */ C2.ACG_TP_ID FROM TRIDIB.IM_PARENT P,
 - . TRIDIB.IM_CHILD1 C1, TRIDIB.IM_CHILD2 C2 WHERE P.CASH_POS_TP_ID = 1 AND
 - . P.PK1 = C1.FK1 AND C2.CASH_POS_TP_ID = 1 AND C1.ORIG_QTY > 10 AND C2.FK2 =
 - . C1.PK2

- Return Small # of Rows Query (around 295K)
 - . SELECT /*+ PARALLEL(2) */ C2.ACG_TP_ID FROM TRIDIB.IM_PARENT P,
 - . TRIDIB.IM_CHILD1 C1, TRIDIB.IM_CHILD2 C2 WHERE P.CASH_POS_TP_ID = 7 AND
 - . P.PK1 = C1.FK1 AND C2.FK2 = C1.PK2

SMART SCAN (RETURN ROWS 9M)

Buffer Gets	IO Requests	Cell Offload Efficiency	Database Time	Wait Activity
1M	8977	73.15%	24s	100%

Id	Operation	Name	Estimated Rows	Cost	Action Period (11s)	Execs	Rows	Memory (Max)	Temp (Max)	IO Requests	Cell Offload Efficiency	CPU Activity	Wait Activity
0	SELECT STATEMENT					5	9M					11%	
1	PX COORDINATOR					5	9M					5.6%	
2	PX SEND QC (RANDOM)	:TQ10002	27M	8368		2	9M						
3	HASH JOIN		27M	8368		2	9M	289.7MB				33%	
4	PX RECEIVE		5M	4583		2	5M						
5	PX SEND BROADCAST	:TQ10001	5M	4583		2	5M						
6	HASH JOIN BUFFERED		5M	4583		2	2M	512.7MB	47.0MB	182 (2.0%)		27%	
7	PX BLOCK ITERATOR		12M	1732		2	12M						
8	TABLE ACCESS STORAGE FULL	IM_PARENT	12M	1732		27	12M			1867 (20%)		16%	100%
9	PX RECEIVE		5M	2812		2	9M						
10	PX SEND BROADCAST	:TQ10000	5M	2812		2	9M						
11	PX BLOCK ITERATOR		5M	2812		2	5M						
12	TABLE ACCESS STORAGE FULL	IM_CHILD1	5M	2812		27	5M	14.1MB		2974 (33%)	96.97%		
13	PX BLOCK ITERATOR		23M	3713		2	23M						
14	TABLE ACCESS STORAGE FULL	IM_CHILD2	23M	3713		27	23M	14.1MB		3954 (44%)	92.12%	5.6%	

IN MEMORY (RETURN ROWS 9M)

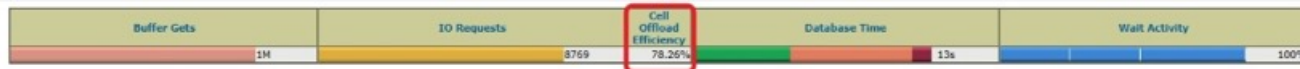
Buffer Gets	Database Time	Wait Activity
9	9%	

SQL Plan Monitoring Details (Plan Hash Value=1338398725)

Id	Operation	Name	Estimated Rows	Cost	Active Period	Execs	Rows	Memory (Max)	Temp (Max)	IO Requests	CPU Activity	Wait Activity
0	SELECT STATEMENT				10s	1	9M				28%	
1	HASH JOIN		27M	18886		1	9M	137.6MB				
2	JOIN FILTER CREATE	:BF0000	5M	9612		1	2M					
3	HASH JOIN		5M	9612		1	2M	311.2MB			28%	
4	JOIN FILTER CREATE	:BF0001	5M	5174		1	5M					
5	TABLE ACCESS INMEMORY FULL	IM_CHILD1	5M	5174		1	5M				14%	
6	JOIN FILTER USE	:BF0001	12M	3188		1	1M					
7	TABLE ACCESS INMEMORY FULL	IM_PARENT	12M	3188		1	1M					
8	JOIN FILTER USE	:BF0000	23M	6835		1	5M					
9	TABLE ACCESS INMEMORY FULL	IM_CHILD2	23M	6835		1	5M				28%	

No I/O

SMART SCAN (RETURN ROWS 295K)



Id	Operation	Name	Estimated Rows	Cost	Active Period	Execs	Rows	Memory (Max)	Temp (Max)	IO Requests	Cell Offload Efficiency	CPU Activity	Wait Activity
0	SELECT STATEMENT				65	5	295K						
1	PX COORDINATOR					5	295K			2 (<0.1%)			
2	PX SEND QC (RANDOM)	:TQ10001	887K	8108		2	295K						
3	HASH JOIN		887K	8108		2	295K	18.2MB					
4	JOIN FILTER CREATE	:BF000	225K	4375		2	151K						
5	PX RECEIVE		225K	4375		2	151K						
6	PX SEND BROADCAST	:TQ10000	225K	4375		2	151K						
7	HASH JOIN		225K	4375		2	75297	12.2MB					
8	JOIN FILTER CREATE	:BF001	50124	1732		2	100K						
9	TABLE ACCESS STORAGE FULL	IM_PARENT	50124	1732		2	100K			1839 (20%)		100%	71%
10	JOIN FILTER USE	:BF001	30M	2579		2	1M						
11	PX BLOCK ITERATOR		30M	2579		2	1M						
12	TABLE ACCESS STORAGE FULL	IM_CHILD1	30M	2579		27	1M	14.1MB		2974 (33%)	99.05%		28%
13	JOIN FILTER USE	:BF000	40M	3648		2	3M						
14	PX BLOCK ITERATOR		40M	3648		2	3M						
15	TABLE ACCESS STORAGE FULL	IM_CHILD2	40M	3648		27	3M	14.1MB		3954 (45%)	99.01%		

IN MEMORY (RETURN ROWS 295K)

PX Processes Drill Down					
Name	Type	Server#	Buffer Gets	Database Time	Wait Events
PX Coordinator	QC		10 (3.6%)	0s (4.9%)	
p01w	Set 1	1	69 (25%)	1s (26%)	
p01x	Set 1	2	69 (25%)	1s (26%)	
p01y	Set 2	1	60 (21%)	0s (2%)	
p01z	Set 2	2	66 (24%)	0s (20%)	

Id	Operation	Name	Estimated Rows	Cost	Actual Period	Execs	Rows	Memory (Max)	Temp (Max)	IO Requests	CPU Activity	Wait Activity
0	SELECT STATEMENT				1s	5	295K					
1	PX COORDINATOR					5	295K					
2	PX SEND QC (RANDOM)	:TQ10001	887K	8108		2	295K					
3	HASH JOIN		887K	8108		2	295K	26.2MB				
4	JOIN FILTER CREATE	:BF0000	225K	4375		2	151K					
5	PX RECEIVE		225K	4375		2	151K					
6	PX SEND BROADCAST	:TQ10000	225K	4375		2	151K					
7	HASH JOIN		225K	4375		2	75297	12.3MB			100%	
8	JOIN FILTER CREATE	:BF0001	50124	1732		2	100K					
9	TABLE ACCESS INMEMORY FULL	IM_PARENT	50124	1732		2	100K					
10	JOIN FILTER USE	:BF0001	30M	2579		2	1M					
11	PX BLOCK ITERATOR		30M	2579		2	1M					
12	TABLE ACCESS INMEMORY FULL	IM_CHILD1	30M	2579		40	1M					
13	JOIN FILTER USE	:BF0000	40M	3648		2	2M					
14	PX BLOCK ITERATOR		40M	3648		2	2M					
15	TABLE ACCESS INMEMORY FULL	IM_CHILD2	40M	3648		46	2M					

IN MEMORY JOIN GROUP

Operation	Name	Line ID	Estimated Rows	Cost	Time(0.54985%)	Executions	Actual Rows	Memory (Max)	Temp (Max)	Other	IO Requests	IO Bytes	Activity %
SELECT STATEMENT		0				1	31K						
HASH JOIN		1	66K	6,747		1	31K	157MB					
JOIN FILTER CREATE	BF0000	2	50K	2,534		1	50K						
TABLE ACCESS INMEMORY FULL	IM_PARENT	3	50K	2,534		1	50K						
JOIN FILTER USE	BF0000	4	4,901K	4,199		1	249K						
TABLE ACCESS INMEMORY FULL	IM_CHILD1	5	4,901K	4,199		1	249K						

Other Plan Line Statistics

Build Size 4,129K
 Build Row Count 50K
 Fan-out 8
 Slot Size 516K
 Total Build Partitions 8
 Total Cached Partitions 8
Columnar Encodings Leveraged 1

OK

WINNING FACTOR

- Table in memory with fault tolerance
 - ALTER TABLE TRIDIB.IM_PARENT INMEMORY MEMCOMPRESS FOR QUERY LOW PRIORITY HIGH DISTRIBUTE AUTO **DUPLICATE ALL**

- Keep Column Instead of whole table
 - ALTER TABLE TRIDIB.IM_CHILD1 INMEMORY MEMCOMPRESS FOR QUERY LOW PRIORITY CRITICAL DISTRIBUTE AUTO DUPLICATE ALL **INMEMORY MEMCOMPRESS FOR QUERY LOW** (IM_ID, IM_TP_ID, IM_DSC, EXCLD_IM_ID) **NO INMEMORY** (CO_NUM,CO_EXEC)

- Hash Join

- In memory Join Group (12. 2 feature)
 - [How To Populate In Memory Join Group \(Doc ID 2137389.1\)](#)