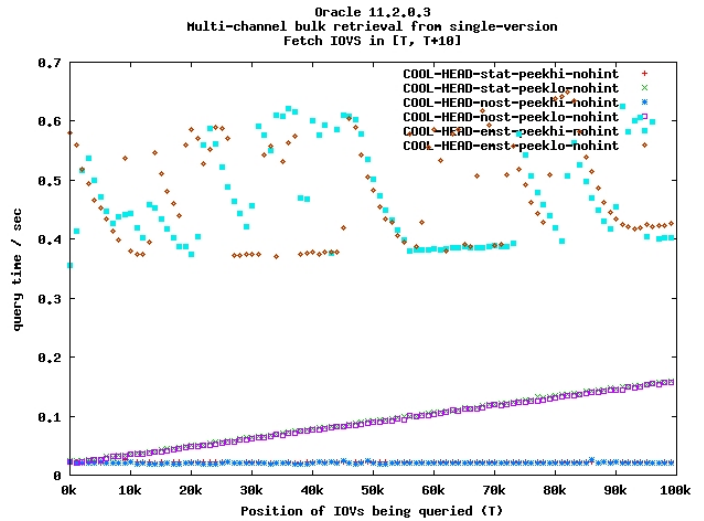
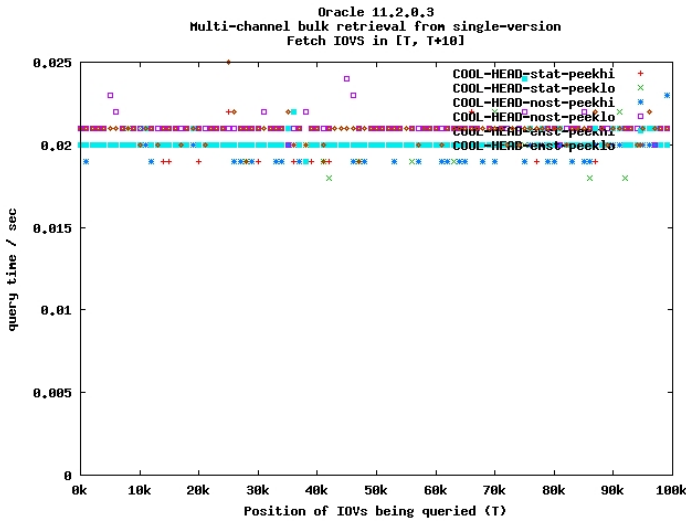


1. Use case SV_R

(COOL-preview on Oracle 11.2.0.3.0)

Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production

Instance int8r1 (Linux x86_64 on itrac1009) on 2011-12-13



Primary SQL statement (hint option=''):

```
SELECT /*+ NO_BIND_AWARE QB_NAME(MAIN) INDEX(@MAIN COOL_I3@MAIN (CHANNEL_ID IOV_SINCE IOV_UNTIL))
LEADING(@MAIN COOL_C2@MAIN COOL_I3@MAIN) USE_NL(@MAIN COOL_I3@MAIN) INDEX(@MAXI COOL_I1@MAXI
(CHANNEL_ID IOV_SINCE IOV_UNTIL)) */ COOL_I3.OBJECT_ID AS "OBJECT_ID", COOL_I3.CHANNEL_ID AS "CHANNEL_ID",
COOL_I3.IOV_SINCE AS "IOV_SINCE", COOL_I3.IOV_UNTIL AS "IOV_UNTIL", COOL_I3.USER_TAG_ID AS "USER_TAG_ID",
COOL_I3.SYS_INSTIME AS "SYS_INSTIME", COOL_I3.LASTMOD_DATE AS "LASTMOD_DATE", COOL_I3.ORIGINAL_ID AS
"ORIGINAL_ID", COOL_I3.NEW_HEAD_ID AS "NEW_HEAD_ID", COOL_I3.I AS "I", COOL_I3."S4k" AS "S4k" FROM
AVALASSI."XSV_RCWD_F0001_CHANNELS" "COOL_C2", AVALASSI."XSV_RCWD_F0001_IOVS" "COOL_I3" WHERE
COOL_I3.CHANNEL_ID=COOL_C2.CHANNEL_ID AND COOL_I3.IOV_SINCE >= COALESCE((SELECT /*+ QB_NAME(MAXI) */
MAX(COOL_I1.IOV_SINCE) FROM AVALASSI.XSV_RCWD_F0001_IOVS COOL_I1 WHERE
COOL_I1.CHANNEL_ID=COOL_C2.CHANNEL_ID AND COOL_I1.IOV_SINCE <=: "since1" ),: "sinc3s") AND
COOL_I3.IOV_SINCE <=: "until3" AND COOL_I3.IOV_UNTIL >: "sinc3u" ORDER BY COOL_I3.CHANNEL_ID ASC,
COOL_I3.IOV_SINCE ASC
```

Main hint in alternative SQL statement (hint option=' -nohint'):

```
/*+ NO_BIND_AWARE QB_NAME(MAIN) */
```

Identified 3 execution plan(s) from 12 trace files (in /tmp/avalassi/SV_R/11.2.0.3/SV_R on lxmrra5001):

Trace file (stat)-(peek)-(hint)	Exec plan	Bind variables				Hints	
		:since1	:sinc3s	:until3	:sinc3u	Used	Unused
stat-peekhi	#1	99000	99000	99010	99000	7	0
stat-peeklo	#1	0	0	10	0	7	0
nost-peekhi	#1	99000	99000	99010	99000	7	0
nost-peeklo	#1	0	0	10	0	7	0
emst-peekhi	#1	99000	99000	99010	99000	7	0
emst-peeklo	#1	0	0	10	0	7	0
stat-peekhi-nohint	#1	99000	99000	99010	99000	3	0
stat-peeklo-nohint	#2	0	0	10	0	3	0
nost-peekhi-nohint	#1	99000	99000	99010	99000	3	0
nost-peeklo-nohint	#2	0	0	10	0	3	0
emst-peekhi-nohint	#3	99000	99000	99010	99000	3	0
emst-peeklo-nohint	#3	0	0	10	0	3	0

Id	Operation	Name
0	SELECT STATEMENT	
1	SORT ORDER BY	
2	NESTED LOOPS	
3	NESTED LOOPS	
4	INDEX FULL SCAN	XSV_RCWD_F0001_CHANNELS_PK
5	SORT AGGREGATE	
6	FIRST ROW	
7	INDEX RANGE SCAN (MIN/MAX)	XSV_RCWD_F0001_IOVS_CSU_3INDX
8	INDEX RANGE SCAN	XSV_RCWD_F0001_IOVS_CSU_3INDX
9	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS

4 - filter(COALESCE(, :sinc3s) <=:until3)

7 - access("COOL_I1"."CHANNEL_ID"=:B1 AND "COOL_I1"."IOV_SINCE" <=:since1)

8 - access("COOL_I3"."CHANNEL_ID"="COOL_C2"."CHANNEL_ID" AND
"COOL_I3"."IOV_SINCE" >=COALESCE(, :sinc3s) AND "COOL_I3"."IOV_UNTIL" >:sinc3u AND
"COOL_I3"."IOV_SINCE" <=:until3 AND "COOL_I3"."IOV_UNTIL" IS NOT NULL)

8 - filter("COOL_I3"."IOV_UNTIL" >:sinc3u)

/*+

BEGIN_OUTLINE_DATA

IGNORE_OPTIM_EMBEDDED_HINTS

OPTIMIZER_FEATURES_ENABLE('11.2.0.3')

DB_VERSION('11.2.0.3')

ALL_ROWS

OUTLINE_LEAF(@"MAX1")

OUTLINE_LEAF(@"MAIN")

OUTLINE(@"MAX1")

OUTLINE(@"MAIN")

INDEX(@"MAIN" "COOL_C2"@"MAIN" ("XSV_RCWD_F0001_CHANNELS"."CHANNEL_ID"))

INDEX(@"MAIN" "COOL_I3"@"MAIN" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"

"XSV_RCWD_F0001_IOVS"."IOV_SINCE" "XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))

LEADING(@"MAIN" "COOL_C2"@"MAIN" "COOL_I3"@"MAIN")

USE_NL(@"MAIN" "COOL_I3"@"MAIN")

NLJ_BATCHING(@"MAIN" "COOL_I3"@"MAIN")

PUSH_SUBQ(@"MAX1")

INDEX(@"MAX1" "COOL_I1"@"MAX1" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"

"XSV_RCWD_F0001_IOVS"."IOV_SINCE" "XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))

END_OUTLINE_DATA

*/

Id	Operation	Name
0	SELECT STATEMENT	
1	SORT ORDER BY	
2	NESTED LOOPS	
3	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS
4	INDEX RANGE SCAN	XSV_RCWD_F0001_IOVS_SU_2INDX
5	INDEX UNIQUE SCAN	XSV_RCWD_F0001_CHANNELS_PK
6	SORT AGGREGATE	
7	FIRST ROW	
8	INDEX RANGE SCAN (MIN/MAX)	XSV_RCWD_F0001_IOVS_CSU_3INDX

4 - access("COOL_I3"."IOV_UNTIL">:sinc3u AND "COOL_I3"."IOV_SINCE"<=:until3)
 4 - filter("COOL_I3"."IOV_UNTIL">:sinc3u)
 5 - access("COOL_I3"."CHANNEL_ID"="COOL_C2"."CHANNEL_ID")
 5 - filter(("COOL_I3"."IOV_SINCE">=COALESCE(, :sinc3s) AND COALESCE(, :sinc3s)<=:until3))
 8 - access("COOL_I1"."CHANNEL_ID"=:B1 AND "COOL_I1"."IOV_SINCE"<=:since1)

/*+

```

BEGIN_OUTLINE_DATA
  IGNORE_OPTIM_EMBEDDED_HINTS
  OPTIMIZER_FEATURES_ENABLE('11.2.0.3')
  DB_VERSION('11.2.0.3')
  ALL_ROWS
  OUTLINE_LEAF(@"MAX1")
  OUTLINE_LEAF(@"MAIN")
  OUTLINE(@"MAX1")
  OUTLINE(@"MAIN")
  INDEX_RS_ASC(@"MAIN" "COOL_I3"@"MAIN" ("XSV_RCWD_F0001_IOVS"."IOV_SINCE"
"XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))
  INDEX(@"MAIN" "COOL_C2"@"MAIN" ("XSV_RCWD_F0001_CHANNELS"."CHANNEL_ID"))
  LEADING(@"MAIN" "COOL_I3"@"MAIN" "COOL_C2"@"MAIN")
  USE_NL(@"MAIN" "COOL_C2"@"MAIN")
  PUSH_SUBQ(@"MAX1")
  INDEX(@"MAX1" "COOL_I1"@"MAX1" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"
"XSV_RCWD_F0001_IOVS"."IOV_SINCE" "XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))
END_OUTLINE_DATA
*/

```

Id	Operation	Name
0	SELECT STATEMENT	
1	NESTED LOOPS	
2	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS
3	INDEX FULL SCAN	XSV_RCWD_F0001_IOVS_CSU_3INDX
4	INDEX UNIQUE SCAN	XSV_RCWD_F0001_CHANNELS_PK
5	SORT AGGREGATE	
6	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS
7	INDEX RANGE SCAN	XSV_RCWD_F0001_IOVS_CO_2INDX

3 - access("COOL_I3"."IOV_UNTIL">:sinc3u AND "COOL_I3"."IOV_SINCE"<=:until3)
3 - filter(("COOL_I3"."IOV_SINCE"<=:until3 AND "COOL_I3"."IOV_UNTIL">:sinc3u))
4 - access("COOL_I3"."CHANNEL_ID"="COOL_C2"."CHANNEL_ID")
4 - filter(("COOL_I3"."IOV_SINCE">=COALESCE(, :sinc3s) AND COALESCE(, :sinc3s)<=:until3))
6 - filter("COOL_I1"."IOV_SINCE"<=:since1)
7 - access("COOL_I1"."CHANNEL_ID"=:B1)

/*+

```

BEGIN_OUTLINE_DATA
  IGNORE_OPTIM_EMBEDDED_HINTS
  OPTIMIZER_FEATURES_ENABLE('11.2.0.3')
  DB_VERSION('11.2.0.3')
  ALL_ROWS
  OUTLINE_LEAF(@"MAX1")
  OUTLINE_LEAF(@"MAIN")
  OUTLINE(@"MAX1")
  OUTLINE(@"MAIN")
  INDEX(@"MAIN" "COOL_I3"@ "MAIN" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"
"XSV_RCWD_F0001_IOVS"."IOV_SINCE" "XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))
  INDEX(@"MAIN" "COOL_C2"@ "MAIN" ("XSV_RCWD_F0001_CHANNELS"."CHANNEL_ID"))
  LEADING(@"MAIN" "COOL_I3"@ "MAIN" "COOL_C2"@ "MAIN")
  USE_NL(@"MAIN" "COOL_C2"@ "MAIN")
  PUSH_SUBQ(@"MAX1")
  INDEX_RS_ASC(@"MAX1" "COOL_I1"@ "MAX1" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"
"XSV_RCWD_F0001_IOVS"."OBJECT_ID"))
END_OUTLINE_DATA
*/

```