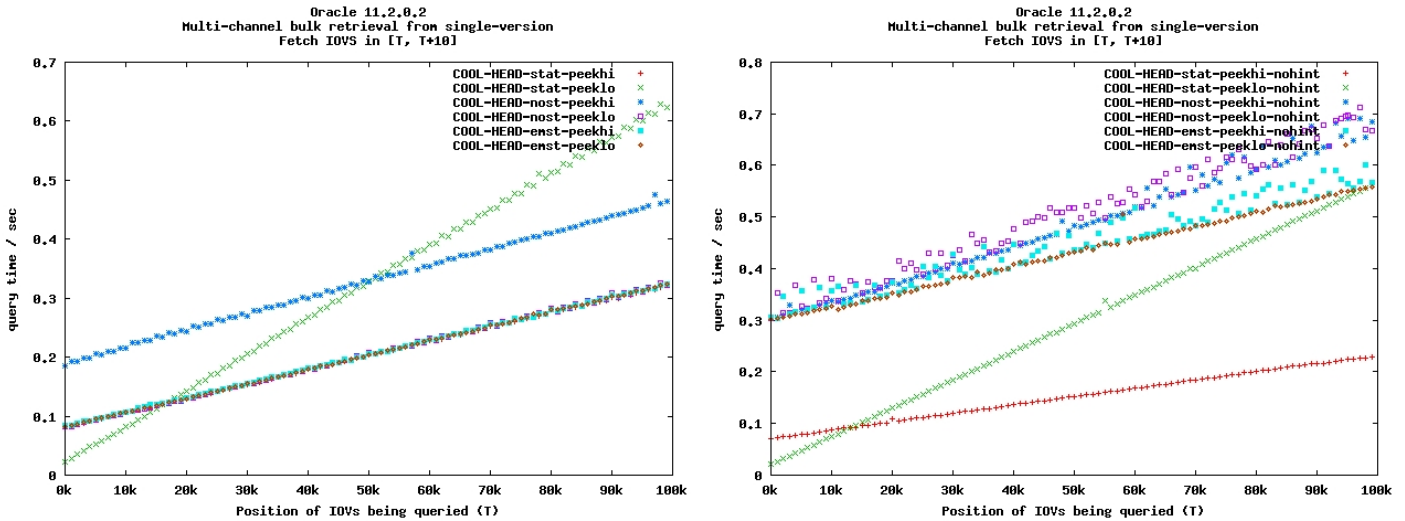


1. Use case SV_R

(COOL-preview on Oracle 11.2.0.2.0)

Oracle Database 11g Enterprise Edition Release 11.2.0.2.0 - 64bit Production

Instance int2r1 (Linux x86_64 on itrac910) 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" ), "since3s") AND
COOL_I3.IOV_SINCE <=: "until3" AND COOL_I3.IOV_UNTIL >: "since3u" 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 9 execution plan(s) from 12 trace files (in /tmp/avalassi/SV_R/11.2.0.2/SV_R on lxmrra5001):

Trace file (stat)-(peek)-(hint)	Exec plan	Bind variables				Hints	
		:since1	:since3s	:until3	:since3u	Used	Unused
stat-peekhi	#1	99000	99000	99010	99000	7	0
stat-peeklo	#2	0	0	10	0	7	0
nost-peekhi	#3	99000	99000	99010	99000	7	0
nost-peeklo	#1	0	0	10	0	7	0
emst-peekhi	#4	99000	99000	99010	99000	7	0
emst-peeklo	#4	0	0	10	0	7	0
stat-peekhi-nohint	#5	99000	99000	99010	99000	3	0
stat-peeklo-nohint	#6	0	0	10	0	3	0
nost-peekhi-nohint	#7	99000	99000	99010	99000	3	0
nost-peeklo-nohint	#8	0	0	10	0	3	0
emst-peekhi-nohint	#9	99000	99000	99010	99000	3	0
emst-peeklo-nohint	#9	0	0	10	0	3	0

Id	Operation	Name
0	SELECT STATEMENT	
1	SORT ORDER BY	
2	NESTED LOOPS	
3	NESTED LOOPS	
4	VIEW	VW_SQ_1
5	FILTER	
6	HASH GROUP BY	
7	INDEX FULL SCAN	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

5 - filter(COALESCE(MAX("COOL_I1"."IOV_SINCE"),:sinc3s)<=:until3)
7 - access("COOL_I1"."IOV_SINCE"<=:since1)
7 - filter("COOL_I1"."IOV_SINCE"<=:since1)
8 - access("ITEM_0"="COOL_I3"."CHANNEL_ID" AND
"COOL_I3"."IOV_SINCE">=COALESCE("MAX(COOL_I1.IOV_SINCE)",: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 AND "COOL_I3"."CHANNEL_ID" IS NOT NULL))

/*+

BEGIN_OUTLINE_DATA

IGNORE_OPTIM_EMBEDDED_HINTS

OPTIMIZER_FEATURES_ENABLE('11.2.0.2')

DB_VERSION('11.2.0.2')

ALL_ROWS

OUTLINE_LEAF(@"SEL\$009E028F")

OUTLINE_LEAF(@"SEL\$693E4321")

ELIMINATE_JOIN(@"SEL\$DC3943C0" "COOL_C2"@"MAIN")

OUTLINE(@"MAX1")

OUTLINE(@"SEL\$DC3943C0")

UNNEST(@"MAX1")

OUTLINE(@"SEL\$B2D7668E")

OUTLINE(@"MAIN")

NO_ACCESS(@"SEL\$693E4321" "VW_SQ_1"@"SEL\$B2D7668E")

***INDEX**(@"SEL\$693E4321" "COOL_I3"@"MAIN" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"*

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

LEADING(@"SEL\$693E4321" "VW_SQ_1"@"SEL\$B2D7668E" "COOL_I3"@"MAIN")

USE_NL(@"SEL\$693E4321" "COOL_I3"@"MAIN")

NLJ_BATCHING(@"SEL\$693E4321" "COOL_I3"@"MAIN")

***INDEX**(@"SEL\$009E028F" "COOL_I1"@"MAX1" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"*

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

USE_HASH_AGGREGATION(@"SEL\$009E028F")

END_OUTLINE_DATA

*/

Id	Operation	Name
0	SELECT STATEMENT	
1	SORT ORDER BY	
2	HASH JOIN	
3	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS
4	INDEX SKIP SCAN	XSV_RCWD_F0001_IOVS_CSU_3INDX
5	VIEW	VW_SQ_1
6	FILTER	
7	HASH GROUP BY	
8	INDEX SKIP SCAN	XSV_RCWD_F0001_IOVS_CSU_3INDX

2 - access("ITEM_0"="COOL_I3"."CHANNEL_ID")
 2 - filter("COOL_I3"."IOV_SINCE">=COALESCE("MAX(COOL_I1.IOV_SINCE)",:sinc3s))
 4 - access("COOL_I3"."IOV_UNTIL">:sinc3u AND "COOL_I3"."IOV_SINCE"<=:until3)
 4 - filter(("COOL_I3"."IOV_SINCE"<=:until3 AND "COOL_I3"."CHANNEL_ID" IS NOT NULL AND "COOL_I3"."IOV_UNTIL">:sinc3u))
 6 - filter(COALESCE(MAX("COOL_I1"."IOV_SINCE"),:sinc3s)<=:until3)
 8 - access("COOL_I1"."IOV_SINCE"<=:since1)
 8 - filter("COOL_I1"."IOV_SINCE"<=:since1)

/*+

```

BEGIN_OUTLINE_DATA
  IGNORE_OPTIM_EMBEDDED_HINTS
  OPTIMIZER_FEATURES_ENABLE('11.2.0.2')
  DB_VERSION('11.2.0.2')
  ALL_ROWS
  OUTLINE_LEAF(@"SEL$009E028F")
  OUTLINE_LEAF(@"SEL$693E4321")
  ELIMINATE_JOIN(@"SEL$DC3943C0" "COOL_C2"@"MAIN")
  OUTLINE(@"MAX1")
  OUTLINE(@"SEL$DC3943C0")
  UNNEST(@"MAX1")
  OUTLINE(@"SEL$B2D7668E")
  OUTLINE(@"MAIN")
  INDEX_SS(@"SEL$693E4321" "COOL_I3"@"MAIN" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"
"XSV_RCWD_F0001_IOVS"."IOV_SINCE" "XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))
  NO_ACCESS(@"SEL$693E4321" "VW_SQ_1"@"SEL$B2D7668E")
  LEADING(@"SEL$693E4321" "COOL_I3"@"MAIN" "VW_SQ_1"@"SEL$B2D7668E")
  USE_HASH(@"SEL$693E4321" "VW_SQ_1"@"SEL$B2D7668E")
  INDEX_SS(@"SEL$009E028F" "COOL_I1"@"MAX1" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"
"XSV_RCWD_F0001_IOVS"."IOV_SINCE" "XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))
  USE_HASH_AGGREGATION(@"SEL$009E028F")
END_OUTLINE_DATA
*/

```

Id	Operation	Name
0	SELECT STATEMENT	
1	SORT ORDER BY	
2	HASH JOIN	
3	JOIN FILTER CREATE	:BF0000
4	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS
5	INDEX FULL SCAN	XSV_RCWD_F0001_IOVS_CSU_3INDX
6	VIEW	VW_SQ_1
7	FILTER	
8	HASH GROUP BY	
9	JOIN FILTER USE	:BF0000
10	INDEX FULL SCAN	XSV_RCWD_F0001_IOVS_CSU_3INDX

```

2 - access("ITEM_0"="COOL_I3"."CHANNEL_ID")
2 - filter("COOL_I3"."IOV_SINCE">=COALESCE("MAX(COOL_I1.IOV_SINCE)",:sinc3s))
5 - access("COOL_I3"."IOV_UNTIL">:sinc3u AND "COOL_I3"."IOV_SINCE"<=:until3)
5 - filter(("COOL_I3"."IOV_SINCE"<=:until3 AND "COOL_I3"."IOV_UNTIL">:sinc3u AND
"COOL_I3"."CHANNEL_ID" IS NOT NULL))
7 - filter(COALESCE(MAX("COOL_I1"."IOV_SINCE"),:sinc3s)<=:until3)
10 - access("COOL_I1"."IOV_SINCE"<=:since1)
10 - filter("COOL_I1"."IOV_SINCE"<=:since1)

```

```
/*+
```

```

BEGIN_OUTLINE_DATA
  IGNORE_OPTIM_EMBEDDED_HINTS
  OPTIMIZER_FEATURES_ENABLE('11.2.0.2')
  DB_VERSION('11.2.0.2')
  ALL_ROWS
  OUTLINE_LEAF(@"SEL$009E028F")
  OUTLINE_LEAF(@"SEL$693E4321")
  ELIMINATE_JOIN(@"SEL$DC3943C0" "COOL_C2"@"MAIN")
  OUTLINE(@"MAX1")
  OUTLINE(@"SEL$DC3943C0")
  UNNEST(@"MAX1")
  OUTLINE(@"SEL$B2D7668E")
  OUTLINE(@"MAIN")
  INDEX(@"SEL$693E4321" "COOL_I3"@"MAIN" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"
"XSV_RCWD_F0001_IOVS"."IOV_SINCE" "XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))
  NO_ACCESS(@"SEL$693E4321" "VW_SQ_1"@"SEL$B2D7668E")
  LEADING(@"SEL$693E4321" "COOL_I3"@"MAIN" "VW_SQ_1"@"SEL$B2D7668E")
  USE_HASH(@"SEL$693E4321" "VW_SQ_1"@"SEL$B2D7668E")
  PX_JOIN_FILTER(@"SEL$693E4321" "VW_SQ_1"@"SEL$B2D7668E")
  INDEX(@"SEL$009E028F" "COOL_I1"@"MAX1" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"
"XSV_RCWD_F0001_IOVS"."IOV_SINCE" "XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))
  USE_HASH_AGGREGATION(@"SEL$009E028F")
END_OUTLINE_DATA
*/

```

Id	Operation	Name
0	SELECT STATEMENT	
1	SORT ORDER BY	
2	NESTED LOOPS	
3	NESTED LOOPS	
4	VIEW	VW_SQ_1
5	FILTER	
6	HASH GROUP BY	
7	INDEX FULL SCAN	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

5 - filter(COALESCE(MAX("COOL_I1"."IOV_SINCE"),:sinc3s)<=:until3)

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

7 - filter("COOL_I1"."IOV_SINCE"<=:since1)

8 - access("ITEM_0"="COOL_I3"."CHANNEL_ID" AND

"COOL_I3"."IOV_SINCE">=COALESCE("MAX(COOL_I1.IOV_SINCE)",: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"."CHANNEL_ID" IS NOT NULL AND "COOL_I3"."IOV_UNTIL">:sinc3u))

/*+

BEGIN_OUTLINE_DATA

IGNORE_OPTIM_EMBEDDED_HINTS

OPTIMIZER_FEATURES_ENABLE('11.2.0.2')

DB_VERSION('11.2.0.2')

ALL_ROWS

OUTLINE_LEAF(@"SEL\$009E028F")

OUTLINE_LEAF(@"SEL\$693E4321")

ELIMINATE_JOIN(@"SEL\$DC3943C0" "COOL_C2"@"MAIN")

OUTLINE(@"MAX1")

OUTLINE(@"SEL\$DC3943C0")

UNNEST(@"MAX1")

OUTLINE(@"SEL\$B2D7668E")

OUTLINE(@"MAIN")

NO_ACCESS(@"SEL\$693E4321" "VW_SQ_1"@"SEL\$B2D7668E")

***INDEX**(@"SEL\$693E4321" "COOL_I3"@"MAIN" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"*

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

LEADING(@"SEL\$693E4321" "VW_SQ_1"@"SEL\$B2D7668E" "COOL_I3"@"MAIN")

USE_NL(@"SEL\$693E4321" "COOL_I3"@"MAIN")

NLJ_BATCHING(@"SEL\$693E4321" "COOL_I3"@"MAIN")

***INDEX**(@"SEL\$009E028F" "COOL_I1"@"MAX1" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"*

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

USE_HASH_AGGREGATION(@"SEL\$009E028F")

END_OUTLINE_DATA

*/

Id	Operation	Name
0	SELECT STATEMENT	
1	SORT ORDER BY	
2	NESTED LOOPS	
3	NESTED LOOPS	
4	VIEW	VW_SQ_1
5	FILTER	
6	HASH GROUP BY	
7	INDEX FAST FULL SCAN	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

5 - filter(COALESCE(MAX("COOL_I1"."IOV_SINCE"),:sinc3s)<=:until3)

7 - filter("COOL_I1"."IOV_SINCE"<=:since1)

8 - access("ITEM_0"="COOL_I3"."CHANNEL_ID" AND

"COOL_I3"."IOV_SINCE">=COALESCE("MAX(COOL_I1.IOV_SINCE)",: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 AND "COOL_I3"."CHANNEL_ID" IS NOT NULL))

/*+

BEGIN_OUTLINE_DATA

IGNORE_OPTIM_EMBEDDED_HINTS

OPTIMIZER_FEATURES_ENABLE('11.2.0.2')

DB_VERSION('11.2.0.2')

ALL_ROWS

OUTLINE_LEAF(@"SEL\$009E028F")

OUTLINE_LEAF(@"SEL\$693E4321")

ELIMINATE_JOIN(@"SEL\$DC3943C0" "COOL_C2"@"MAIN")

OUTLINE(@"MAX1")

OUTLINE(@"SEL\$DC3943C0")

UNNEST(@"MAX1")

OUTLINE(@"SEL\$B2D7668E")

OUTLINE(@"MAIN")

NO_ACCESS(@"SEL\$693E4321" "VW_SQ_1"@"SEL\$B2D7668E")

INDEX(@"SEL\$693E4321" "COOL_I3"@"MAIN" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"

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

LEADING(@"SEL\$693E4321" "VW_SQ_1"@"SEL\$B2D7668E" "COOL_I3"@"MAIN")

USE_NL(@"SEL\$693E4321" "COOL_I3"@"MAIN")

NLJ_BATCHING(@"SEL\$693E4321" "COOL_I3"@"MAIN")

INDEX FFS(@"SEL\$009E028F" "COOL_I1"@"MAX1" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"

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

USE_HASH_AGGREGATION(@"SEL\$009E028F")

END_OUTLINE_DATA

*/

Id	Operation	Name
0	SELECT STATEMENT	
1	SORT ORDER BY	
2	HASH JOIN	
3	VIEW	VW_SQ_1
4	FILTER	
5	HASH GROUP BY	
6	INDEX SKIP SCAN	XSV_RCWD_F0001_IOVS_CSU_3INDX
7	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS
8	INDEX RANGE SCAN	XSV_RCWD_F0001_IOVS_SU_2INDX

2 - access("ITEM_0"="COOL_I3"."CHANNEL_ID")
 2 - filter("COOL_I3"."IOV_SINCE">=COALESCE("MAX(COOL_I1.IOV_SINCE)",:sinc3s))
 4 - filter(COALESCE(MAX("COOL_I1"."IOV_SINCE"),:sinc3s)<=:until3)
 6 - access("COOL_I1"."IOV_SINCE"<=:since1)
 6 - filter("COOL_I1"."IOV_SINCE"<=:since1)
 7 - filter("COOL_I3"."CHANNEL_ID" IS NOT NULL)
 8 - access("COOL_I3"."IOV_UNTIL">:sinc3u AND "COOL_I3"."IOV_SINCE"<=:until3)
 8 - filter("COOL_I3"."IOV_UNTIL">:sinc3u)

/*+

```

BEGIN_OUTLINE_DATA
  IGNORE_OPTIM_EMBEDDED_HINTS
  OPTIMIZER_FEATURES_ENABLE('11.2.0.2')
  DB_VERSION('11.2.0.2')
  ALL_ROWS
  OUTLINE_LEAF(@"SEL$009E028F")
  OUTLINE_LEAF(@"SEL$693E4321")
  ELIMINATE_JOIN(@"SEL$DC3943C0" "COOL_C2"@"MAIN")
  OUTLINE(@"MAX1")
  OUTLINE(@"SEL$DC3943C0")
  UNNEST(@"MAX1")
  OUTLINE(@"SEL$B2D7668E")
  OUTLINE(@"MAIN")
  NO_ACCESS(@"SEL$693E4321" "VW_SQ_1"@"SEL$B2D7668E")
  INDEX_RS_ASC(@"SEL$693E4321" "COOL_I3"@"MAIN" ("XSV_RCWD_F0001_IOVS"."IOV_SINCE"
"XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))
  LEADING(@"SEL$693E4321" "VW_SQ_1"@"SEL$B2D7668E" "COOL_I3"@"MAIN")
  USE_HASH(@"SEL$693E4321" "COOL_I3"@"MAIN")
  INDEX_SS(@"SEL$009E028F" "COOL_I1"@"MAX1" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"
"XSV_RCWD_F0001_IOVS"."IOV_SINCE" "XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))
  USE_HASH_AGGREGATION(@"SEL$009E028F")
END_OUTLINE_DATA
*/

```

Id	Operation	Name
0	SELECT STATEMENT	
1	SORT ORDER BY	
2	MERGE JOIN	
3	SORT JOIN	
4	VIEW	VW_SQ_1
5	FILTER	
6	HASH GROUP BY	
7	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS
8	INDEX FULL SCAN	XSV_RCWD_F0001_IOVS_CO_2INDX
9	FILTER	
10	SORT JOIN	
11	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS
12	INDEX RANGE SCAN	XSV_RCWD_F0001_IOVS_SU_2INDX

5 - filter(COALESCE(MAX("COOL_I1"."IOV_SINCE"),:sinc3s)<=:until3)
7 - filter("COOL_I1"."IOV_SINCE"<=:since1)
9 - filter("COOL_I3"."IOV_SINCE">=COALESCE("MAX(COOL_I1.IOV_SINCE)",:sinc3s))
10 - access("ITEM_0"="COOL_I3"."CHANNEL_ID")
10 - filter("ITEM_0"="COOL_I3"."CHANNEL_ID")
11 - filter("COOL_I3"."CHANNEL_ID" IS NOT NULL)
12 - access("COOL_I3"."IOV_UNTIL">:sinc3u AND "COOL_I3"."IOV_SINCE"<=:until3)
12 - filter("COOL_I3"."IOV_UNTIL">:sinc3u)

/*+

```

BEGIN_OUTLINE_DATA
  IGNORE_OPTIM_EMBEDDED_HINTS
  OPTIMIZER_FEATURES_ENABLE('11.2.0.2')
  DB_VERSION('11.2.0.2')
  ALL_ROWS
  OUTLINE_LEAF(@"SEL$009E028F")
  OUTLINE_LEAF(@"SEL$693E4321")
  ELIMINATE_JOIN(@"SEL$DC3943C0" "COOL_C2"@ "MAIN")
  OUTLINE(@"MAX1")
  OUTLINE(@"SEL$DC3943C0")
  UNNEST(@"MAX1")
  OUTLINE(@"SEL$B2D7668E")
  OUTLINE(@"MAIN")
  NO_ACCESS(@"SEL$693E4321" "VW_SQ_1"@ "SEL$B2D7668E")
  INDEX_RS_ASC(@"SEL$693E4321" "COOL_I3"@ "MAIN" ("XSV_RCWD_F0001_IOVS"."IOV_SINCE"
"XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))
  LEADING(@"SEL$693E4321" "VW_SQ_1"@ "SEL$B2D7668E" "COOL_I3"@ "MAIN")
  USE_MERGE(@"SEL$693E4321" "COOL_I3"@ "MAIN")
  INDEX(@"SEL$009E028F" "COOL_I1"@ "MAX1" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"
"XSV_RCWD_F0001_IOVS"."OBJECT_ID"))
  USE_HASH_AGGREGATION(@"SEL$009E028F")
END_OUTLINE_DATA
*/

```


Id	Operation	Name
0	SELECT STATEMENT	
1	SORT ORDER BY	
2	HASH JOIN	
3	VIEW	VW_SQ_1
4	FILTER	
5	HASH GROUP BY	
6	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS
7	INDEX FULL SCAN	XSV_RCWD_F0001_IOVS_CO_2INDX
8	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS
9	INDEX RANGE SCAN	XSV_RCWD_F0001_IOVS_SU_2INDX

```

2 - access("ITEM_0"="COOL_I3"."CHANNEL_ID")
2 - filter("COOL_I3"."IOV_SINCE">=COALESCE("MAX(COOL_I1.IOV_SINCE)",:sinc3s))
4 - filter(COALESCE(MAX("COOL_I1"."IOV_SINCE"),:sinc3s)<=:until3)
6 - filter("COOL_I1"."IOV_SINCE"<=:since1)
8 - filter("COOL_I3"."CHANNEL_ID" IS NOT NULL)
9 - access("COOL_I3"."IOV_UNTIL">:sinc3u AND "COOL_I3"."IOV_SINCE"<=:until3)
9 - filter("COOL_I3"."IOV_UNTIL">:sinc3u)

```

```
/*+
```

```

  BEGIN_OUTLINE_DATA
    IGNORE_OPTIM_EMBEDDED_HINTS
    OPTIMIZER_FEATURES_ENABLE('11.2.0.2')
    DB_VERSION('11.2.0.2')
    ALL_ROWS
    OUTLINE_LEAF(@"SEL$009E028F")
    OUTLINE_LEAF(@"SEL$693E4321")
    ELIMINATE_JOIN(@"SEL$DC3943C0" "COOL_C2"@"MAIN")
    OUTLINE(@"MAX1")
    OUTLINE(@"SEL$DC3943C0")
    UNNEST(@"MAX1")
    OUTLINE(@"SEL$B2D7668E")
    OUTLINE(@"MAIN")
    NO_ACCESS(@"SEL$693E4321" "VW_SQ_1"@"SEL$B2D7668E")
    INDEX_RS_ASC(@"SEL$693E4321" "COOL_I3"@"MAIN" ("XSV_RCWD_F0001_IOVS"."IOV_SINCE"
"XSV_RCWD_F0001_IOVS"."IOV_UNTIL"))
    LEADING(@"SEL$693E4321" "VW_SQ_1"@"SEL$B2D7668E" "COOL_I3"@"MAIN")
    USE_HASH(@"SEL$693E4321" "COOL_I3"@"MAIN")
    INDEX(@"SEL$009E028F" "COOL_I1"@"MAX1" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"
"XSV_RCWD_F0001_IOVS"."OBJECT_ID"))
    USE_HASH_AGGREGATION(@"SEL$009E028F")
  END_OUTLINE_DATA
*/

```

Id	Operation	Name
0	SELECT STATEMENT	
1	SORT ORDER BY	
2	NESTED LOOPS	
3	NESTED LOOPS	
4	VIEW	VW_SQ_1
5	FILTER	
6	HASH GROUP BY	
7	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS
8	INDEX FULL SCAN	XSV_RCWD_F0001_IOVS_CO_2INDX
9	INDEX RANGE SCAN	XSV_RCWD_F0001_IOVS_CSU_3INDX
10	TABLE ACCESS BY INDEX ROWID	XSV_RCWD_F0001_IOVS

```

5 - filter(COALESCE(MAX("COOL_I1"."IOV_SINCE"),:sinc3s)<=:until3)
7 - filter("COOL_I1"."IOV_SINCE"<=:since1)
9 - access("ITEM_0"="COOL_I3"."CHANNEL_ID" AND
"COOL_I3"."IOV_SINCE">=COALESCE("MAX(COOL_I1.IOV_SINCE)",:sinc3s) AND
"COOL_I3"."IOV_UNTIL">:sinc3u AND "COOL_I3"."IOV_SINCE"<=:until3 AND "COOL_I3"."IOV_UNTIL"
IS NOT NULL)
9 - filter(("COOL_I3"."CHANNEL_ID" IS NOT NULL AND "COOL_I3"."IOV_UNTIL">:sinc3u))

```

```
/*+
```

```
  BEGIN_OUTLINE_DATA
```

```
    IGNORE_OPTIM_EMBEDDED_HINTS
```

```
    OPTIMIZER_FEATURES_ENABLE('11.2.0.2')
```

```
    DB_VERSION('11.2.0.2')
```

```
    ALL_ROWS
```

```
    OUTLINE_LEAF(@"SEL$009E028F")
```

```
    OUTLINE_LEAF(@"SEL$693E4321")
```

```
    ELIMINATE_JOIN(@"SEL$DC3943C0" "COOL_C2"@"MAIN")
```

```
    OUTLINE(@"MAX1")
```

```
    OUTLINE(@"SEL$DC3943C0")
```

```
    UNNEST(@"MAX1")
```

```
    OUTLINE(@"SEL$B2D7668E")
```

```
    OUTLINE(@"MAIN")
```

```
    NO_ACCESS(@"SEL$693E4321" "VW_SQ_1"@"SEL$B2D7668E")
```

```
    INDEX(@"SEL$693E4321" "COOL_I3"@"MAIN" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"
```

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

```
    LEADING(@"SEL$693E4321" "VW_SQ_1"@"SEL$B2D7668E" "COOL_I3"@"MAIN")
```

```
    USE_NL(@"SEL$693E4321" "COOL_I3"@"MAIN")
```

```
    NLJ_BATCHING(@"SEL$693E4321" "COOL_I3"@"MAIN")
```

```
    INDEX(@"SEL$009E028F" "COOL_I1"@"MAX1" ("XSV_RCWD_F0001_IOVS"."CHANNEL_ID"
```

```
"XSV_RCWD_F0001_IOVS"."OBJECT_ID"))
```

```
    USE_HASH_AGGREGATION(@"SEL$009E028F")
```

```
  END_OUTLINE_DATA
```

```
*/
```