

EXPLAIN QUERY PLAN REPORT on 3_followupgrant

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1. SQL statement q3_followupgrants_query.sql

```
-- The purpose of query - to review existing grantees privileges
-- against grantees privileges allowed.
-- The review report generated with review status indicating if existing granted
-- privileged:
-- is OK (i.e. meet GRANTEES_PRIVILEGES_ALLOWED list)
-- or NOTOK (i.e. does not meet GRANTEES_PRIVILEGES_ALLOWED list)
-- The review report has format like csv and can be imported into MS EXEL
WITH
TABLES_TO_CHECK
(TSNAME, TABNAME, DBNAME, CREATOR) --, LABEL)
AS (SELECT TSNAME, NAME, DBNAME, CREATOR --, LABEL
FROM SYSTABLES
WHERE TYPE = "T"
AND DBNAME LIKE "%TESTDB%"),
GRANTEES_PRIVILEGES_ALLOWED -- the part should be updated with needed data on grants allowed
(CHECK_GROUPS, ALTERAUTH, DELETEAUTH, INDEXAUTH, INSERTAUTH, SELECTAUTH, UPDATEAUTH)
AS (SELECT "CHECK_GROUP_1", "G", "G", "G", "G", "G", "G"
FROM SYSDUMMY1 UNION
SELECT "CHECK_GROUP_2", " ", " ", " ", " ", " ", "Y", " "
FROM SYSDUMMY1 UNION
SELECT "CHECK_GROUP_3", " ", "Y", " ", "Y", "Y", "Y"
FROM SYSDUMMY1 UNION
SELECT "CHECK_GROUP_4", "G", "G", "G", "G", "G", "G"
FROM SYSDUMMY1 UNION
SELECT "CHECK_GROUP_5", " ", " ", " ", " ", " ", "Y", " "
FROM SYSDUMMY1 UNION
SELECT "CHECK_GROUP_6", " ", "Y", " ", "Y", "Y", "Y"
FROM SYSDUMMY1 UNION
SELECT "CHECK_GROUP_7", "G", "G", "G", "G", "G", "G"
FROM SYSDUMMY1 UNION
SELECT "CHECK_GROUP_8", " ", "Y", " ", "Y", "Y", "Y"
FROM SYSDUMMY1 UNION
SELECT "CHECK_GROUP_9", " ", " ", " ", " ", " ", "Y", " "
FROM SYSDUMMY1),
GRANTEES_PRIVILEGES_EXIST
(GRANTEE, TTNAME, ALTERAUTH, DELETEAUTH, INDEXAUTH, INSERTAUTH, SELECTAUTH, UPDATEAUTH)
AS (SELECT GRANTEE, TTNAME, MAX(ALTERAUTH), MAX(DELETEAUTH), MAX(INDEXAUTH),
MAX(INSERTAUTH), MAX(SELECTAUTH), MAX(UPDATEAUTH)
FROM SYSTABAUTH
WHERE GRANTEE IN
(SELECT CHECK_GROUPS FROM GRANTEES_PRIVILEGES_ALLOWED)
GROUP BY GRANTEE, TTNAME)
-- header of the report
SELECT 'GRANTOR',' GRANTEE',' TTNAME', ' ALTERAUTH', ' DELETEAUTH', ' INDEXAUTH',' INSERTAUTH', '
SELECTAUTH',
' UPDATEAUTH',' Review status'AS OK_STATUS,' Review TIMESTAMP' AS QUERY_TS FROM SYSDUMMY1
UNION
-- content data of the report start
SELECT SA.GRANTOR, SA.GRANTEE, SA.TTNAME ,SA.ALTERAUTH, SA.DELETEAUTH, SA.INDEXAUTH ,SA.INSERTAUTH,
SA.SELECTAUTH, SA.UPDATEAUTH , "not_OK" AS OK_STATUS, strftime( datetime(current_timestamp, 'localtime'))
AS QUERY_TS
FROM SYSTABAUTH SA, TABLES_TO_CHECK TTC, GRANTEES_PRIVILEGES_ALLOWED GPTC, GRANTEES_PRIVILEGES_EXIST GF
WHERE
SA.TTNAME = TTC.TABNAME
AND NOT SA.GRANTEETYPE = "P" -- excluded applications PLAN / PACKAGES
AND SA.GRANTEE = GPTC.CHECK_GROUPS
AND GF.TTNAME = TTC.TABNAME
AND GF.GRANTEE = GPTC.CHECK_GROUPS
AND NOT (GF.ALTERAUTH, GF.DELETEAUTH, GF.INDEXAUTH, GF.INSERTAUTH, GF.SELECTAUTH, GF.UPDATEAUTH) =
(GPTC.ALTERAUTH, GPTC.DELETEAUTH, GPTC.INDEXAUTH, GPTC.INSERTAUTH, GPTC.SELECTAUTH,
GPTC.UPDATEAUTH)
UNION
SELECT SA.GRANTOR, SA.GRANTEE, SA.TTNAME, SA.ALTERAUTH, SA.DELETEAUTH, SA.INDEXAUTH, SA.INSERTAUTH,
SA.SELECTAUTH, SA.UPDATEAUTH, "OK" AS OK_STATUS, strftime( datetime(current_timestamp, 'localtime')) AS
QUERY_TS
FROM SYSTABAUTH SA, TABLES_TO_CHECK TTC, GRANTEES_PRIVILEGES_ALLOWED GPTC, GRANTEES_PRIVILEGES_EXIST GF
WHERE
SA.TTNAME = TTC.TABNAME
AND NOT SA.GRANTEETYPE = "P"
AND SA.GRANTEE = GPTC.CHECK_GROUPS
AND GF.TTNAME = TTC.TABNAME
AND GF.GRANTEE = GPTC.CHECK_GROUPS
AND (GF.ALTERAUTH, GF.DELETEAUTH, GF.INDEXAUTH, GF.INSERTAUTH, GF.SELECTAUTH, GF.UPDATEAUTH)
=(GPTC.ALTERAUTH, GPTC.DELETEAUTH, GPTC.INDEXAUTH, GPTC.INSERTAUTH, GPTC.SELECTAUTH,
GPTC.UPDATEAUTH)
ORDER BY 10,2,3
-- content data of the report end
```



EXPLAIN QUERY PLAN REPORT on 3_followupgrant

2. Explain query plan generated by <EXPLAIN QUERY PLAN sql statement>

2.1. Plain report

| step | id | parent | unused | detail |
|------|-----|--------|--------|--|
| 1 | 2 | 0 | 0 | MERGE (UNION) |
| 2 | 4 | 2 | 0 | LEFT |
| 3 | 6 | 4 | 0 | MERGE (UNION) |
| 4 | 8 | 6 | 0 | LEFT |
| 5 | 11 | 8 | 216 | SCAN SYSDDUMMY1 |
| 6 | 27 | 8 | 0 | USE TEMP B-TREE FOR ORDER BY |
| 7 | 46 | 6 | 0 | RIGHT |
| 8 | 49 | 46 | 0 | MATERIALIZE GRANTEES_PRIVILEGES_ALLOWED |
| 9 | 52 | 49 | 0 | COMPOUND QUERY |
| 10 | 53 | 52 | 0 | LEFT-MOST SUBQUERY |
| 11 | 55 | 53 | 216 | SCAN SYSDDUMMY1 |
| 12 | 67 | 52 | 0 | UNION USING TEMP B-TREE |
| 13 | 69 | 67 | 216 | SCAN SYSDDUMMY1 |
| 14 | 81 | 52 | 0 | UNION USING TEMP B-TREE |
| 15 | 83 | 81 | 216 | SCAN SYSDDUMMY1 |
| 16 | 95 | 52 | 0 | UNION USING TEMP B-TREE |
| 17 | 97 | 95 | 216 | SCAN SYSDDUMMY1 |
| 18 | 109 | 52 | 0 | UNION USING TEMP B-TREE |
| 19 | 111 | 109 | 216 | SCAN SYSDDUMMY1 |
| 20 | 123 | 52 | 0 | UNION USING TEMP B-TREE |
| 21 | 125 | 123 | 216 | SCAN SYSDDUMMY1 |
| 22 | 137 | 52 | 0 | UNION USING TEMP B-TREE |
| 23 | 139 | 137 | 216 | SCAN SYSDDUMMY1 |
| 24 | 151 | 52 | 0 | UNION USING TEMP B-TREE |
| 25 | 153 | 151 | 216 | SCAN SYSDDUMMY1 |
| 26 | 165 | 52 | 0 | UNION USING TEMP B-TREE |
| 27 | 167 | 165 | 216 | SCAN SYSDDUMMY1 |
| 28 | 195 | 46 | 0 | MATERIALIZE GRANTEES_PRIVILEGES_EXIST |
| 29 | 202 | 195 | 216 | SCAN SYSTABAUTH |
| 30 | 207 | 195 | 0 | LIST SUBQUERY 11 |
| 31 | 211 | 207 | 216 | SCAN GRANTEES_PRIVILEGES_ALLOWED |
| 32 | 217 | 207 | 0 | CREATE BLOOM FILTER |
| 33 | 225 | 195 | 0 | USE TEMP B-TREE FOR GROUP BY |
| 34 | 304 | 46 | 248 | SCAN GPTC |
| 35 | 325 | 46 | 53 | SEARCH SA USING AUTOMATIC PARTIAL COVERING INDEX (GRANTEE=?) |
| 36 | 348 | 46 | 53 | SEARCH SYSTABLES USING AUTOMATIC PARTIAL COVERING INDEX (TYPE=? AND NAME=?) |
| 37 | 373 | 46 | 47 | SEARCH GF USING AUTOMATIC COVERING INDEX (TTNAME=? AND GRANTEE=?) |
| 38 | 433 | 46 | 0 | USE TEMP B-TREE FOR ORDER BY |
| 39 | 488 | 2 | 0 | RIGHT |
| 40 | 496 | 488 | 216 | SCAN SYSTABLES |
| 41 | 522 | 488 | 53 | SEARCH SA USING AUTOMATIC PARTIAL COVERING INDEX (TTNAME=?) |
| 42 | 543 | 488 | 53 | SEARCH GF USING AUTOMATIC COVERING INDEX (TTNAME=?) |
| 43 | 549 | 488 | 0 | BLOOM FILTER ON GPTC (ALTERAUTH=? AND DELETEAUTH=? AND INDEXAUTH=? AND INSERTAUTH=? AND SELECTAUTH=? AND UPDATEAUTH=?) |
| 44 | 564 | 488 | 53 | SEARCH GPTC USING AUTOMATIC COVERING INDEX (ALTERAUTH=? AND DELETEAUTH=? AND INDEXAUTH=? AND INSERTAUTH=? AND SELECTAUTH=? AND UPDATEAUTH=?) |



EXPLAIN QUERY PLAN REPORT on 3_followupgrant

| step | id | parent | unused | detail |
|------|-----|--------|--------|------------------------------|
| 45 | 608 | 488 | 0 | USE TEMP B-TREE FOR ORDER BY |



EXPLAIN QUERY PLAN REPORT on 3_followupgrant

2.2. GRAPH report

```
EXPLAIN QUERY PLAN
step 1.... |__MERGE (UNION)...node(id: 2)
step 2.... |  |--LEFT...node(id: 4)
step 3.... |  |__MERGE (UNION)...node(id: 6)
step 4.... |  |  |--LEFT...node(id: 8)
step 5.... |  |  |  |--SCAN SYSDDUMMY1...node(id: 11, notused: 216)
step 6.... |  |  |  |__USE TEMP B-TREE FOR ORDER BY...node(id: 27)
step 7.... |  |  |__RIGHT...node(id: 46)
step 8.... |  |  |--MATERIALIZE GRANTEES_PRIVILEGES_ALLOWED...node(id: 49)
step 9.... |  |  |__COMPOUND QUERY...node(id: 52)
step 10... |  |  |  |--LEFT-MOST SUBQUERY...node(id: 53)
step 11... |  |  |  |  |--SCAN SYSDDUMMY1...node(id: 55, notused: 216)
step 12... |  |  |  |  |--UNION USING TEMP B-TREE...node(id: 67)
step 13... |  |  |  |  |__SCAN SYSDDUMMY1...node(id: 69, notused: 216)
step 14... |  |  |  |  |--UNION USING TEMP B-TREE...node(id: 81)
step 15... |  |  |  |  |__SCAN SYSDDUMMY1...node(id: 83, notused: 216)
step 16... |  |  |  |  |--UNION USING TEMP B-TREE...node(id: 95)
step 17... |  |  |  |  |__SCAN SYSDDUMMY1...node(id: 97, notused: 216)
step 18... |  |  |  |  |--UNION USING TEMP B-TREE...node(id: 109)
step 19... |  |  |  |  |__SCAN SYSDDUMMY1...node(id: 111, notused: 216)
step 20... |  |  |  |  |--UNION USING TEMP B-TREE...node(id: 123)
step 21... |  |  |  |  |__SCAN SYSDDUMMY1...node(id: 125, notused: 216)
step 22... |  |  |  |  |--UNION USING TEMP B-TREE...node(id: 137)
step 23... |  |  |  |  |__SCAN SYSDDUMMY1...node(id: 139, notused: 216)
step 24... |  |  |  |  |--UNION USING TEMP B-TREE...node(id: 151)
step 25... |  |  |  |  |__SCAN SYSDDUMMY1...node(id: 153, notused: 216)
step 26... |  |  |  |  |--UNION USING TEMP B-TREE...node(id: 165)
step 27... |  |  |  |  |__SCAN SYSDDUMMY1...node(id: 167, notused: 216)
step 28... |  |  |--MATERIALIZE GRANTEES_PRIVILEGES_EXIST...node(id: 195)
step 29... |  |  |--SCAN SYSTABAUTH...node(id: 202, notused: 216)
step 30... |  |  |--LIST SUBQUERY 11...node(id: 207)
step 31... |  |  |  |--SCAN GRANTEES_PRIVILEGES_ALLOWED...node(id: 211, notused: 216)
step 32... |  |  |  |__CREATE BLOOM FILTER...node(id: 217)
step 33... |  |  |  |__USE TEMP B-TREE FOR GROUP BY...node(id: 225)
step 34... |  |  |--SCAN GPTC...node(id: 304, notused: 248)
step 35... |  |  |--SEARCH SA USING AUTOMATIC PARTIAL COVERING INDEX (GRANTEE=?)...node(id: 325, notused: 53)
step 36... |  |  |--SEARCH SYSTABLES USING AUTOMATIC PARTIAL COVERING INDEX (TYPE=? AND NAME=?)...node(id: 348, notused: 53)
step 37... |  |  |--SEARCH GF USING AUTOMATIC COVERING INDEX (TTNAME=? AND GRANTEE=?)...node(id: 373, notused: 47)
step 38... |  |  |__USE TEMP B-TREE FOR ORDER BY...node(id: 433)
step 39... |__RIGHT...node(id: 488)
step 40... |  |--SCAN SYSTABLES...node(id: 496, notused: 216)
step 41... |  |--SEARCH SA USING AUTOMATIC PARTIAL COVERING INDEX (TTNAME=?)...node(id: 522, notused: 53)
step 42... |  |--SEARCH GF USING AUTOMATIC COVERING INDEX (TTNAME=?)...node(id: 543, notused: 53)
step 43... |  |--BLOOM FILTER ON GPTC (ALTERAUTH=? AND DELETEAUTH=? AND INDEXAUTH=? AND INSERTAUTH=? AND SELECTAUTH=? AND UPDATEAUTH=?)...node(id: 549)
step 44... |  |--SEARCH GPTC USING AUTOMATIC COVERING INDEX (ALTERAUTH=? AND DELETEAUTH=? AND INDEXAUTH=? AND INSERTAUTH=? AND SELECTAUTH=? AND UPDATEAUTH=?)...node(id: 564, notused: 53)
step 45... |  |__USE TEMP B-TREE FOR ORDER BY...node(id: 608)
```