

成套性检查方法

工具

1. sqldeveloper ;
2. neo4j

简介

1. 真实开发环境，一个项目下可能有5000+以上任务，无法用肉眼观看哪些数据集是否成套。
2. 借用neo4j，cypher 语言查询 数据集之间是否关联。

实验素材

```
1  <!-- 获取成套性实验页面 -->
2  http://192.168.5.100:8082/sysware/task/grid/view/taskDataTreeGrid.simplemesh?
   navigationHandlerBeanName=singleMenuHandler&UIDTOKEN=20180823104228000549b0c6034f552b4d5b8f12
   &taskId=74125610670211F0E053C805A8C03340&id=74125610670211F0E053C805A8C03340&UIDTOKEN=2018082
   3104228000549b0c6034f552b4d5b8f12&rootId=74125610670211F0E053C805A8C03340&currentMenuId=2-1-1-
   1&UIDTOKEN=20180823104228000549b0c6034f552b4d5b8f12
3
4  <!-- twj/123456 -->
```

步骤

- 1 判断哪个任务节点，成套性有问题，记录有问题的taskId。

核心脚本

```
1  /* 获取项目内所有节点 */
2  /* Formatted on 2018/8/23 13:43:27 (QP5 v5.227.12220.39754) */
3  WITH t
4      AS (SELECT tag.id AS id
5            FROM pm_Task_object tag
6            WHERE tag.projectId IN
7                  (SELECT et.projectid
8                     FROM pm_task_object et
9                     WHERE et.id = :taskId
10                    UNION
11                     SELECT eb.projectid
12                        FROM pm_task_object eb
13                        WHERE eb.subprocessid IN
14                              (SELECT a.process_id
15                                 FROM engine_activity a
16                                 WHERE a.activity_id = :taskId))),
17  v
18  AS (SELECT r.activity_data_relation_id AS rid,
19        fac.action_id AS srcId,
20        fac.action_name AS srcName,
21        ta.activity_id AS targetId,
22        ta.activity_name AS targetName
23        FROM engine_activity_data_relation r
24        LEFT JOIN engine_activity fa
25              ON r.from_activity_id = fa.activity_id
26        LEFT JOIN engine_activity_action fac
27              ON fa.activity_id = fac.activity_id
28        LEFT JOIN engine_activity ta
29              ON r.to_activity_id = ta.activity_id
30        WHERE      r.relationtype = 'DATA'
31                  AND fa.activity_type = 'TASK_ACTIVITY'
32                  AND Ta.activity_type <> 'TASK_ACTIVITY'
33                  AND Ta.activity_type <> 'END_ACTIVITY'
34                  AND fac.action_id IN (SELECT t.id FROM t)
35        UNION
36        SELECT r.activity_data_relation_id AS rid,
37              fa.activity_id AS srcId,
38              fa.activity_name AS srcName,
39              tac.action_id AS targetId,
40              tac.action_name AS targetName
41        FROM engine_activity_data_relation r
42        LEFT JOIN engine_activity fa
43              ON r.from_activity_id = fa.activity_id
44        LEFT JOIN engine_activity ta
45              ON r.to_activity_id = ta.activity_id
46        LEFT JOIN engine_activity_action tac
47              ON ta.activity_id = tac.activity_id
```

```

48         WHERE      r.relationtype = 'DATA'
49                   AND fa.activity_type <> 'TASK_ACTIVITY'
50                   AND Ta.activity_type = 'TASK_ACTIVITY'
51                   AND tac.action_id IN (SELECT t.id FROM t)
52     UNION
53     SELECT r.activity_data_relation_id AS rid,
54           fac.action_id AS srcId,
55           fac.action_name AS srcName,
56           tac.action_id AS targetId,
57           tac.action_name AS targetName
58     FROM engine_activity_data_relation r
59     LEFT JOIN engine_activity fa
60           ON r.from_activity_id = fa.activity_id
61     LEFT JOIN engine_activity_action fac
62           ON fa.activity_id = fac.activity_id
63     LEFT JOIN engine_activity ta
64           ON r.to_activity_id = ta.activity_id
65     LEFT JOIN engine_activity_action tac
66           ON ta.activity_id = tac.activity_id
67     WHERE      NVL (fac.action_id, '0') <> '0'
68               AND NVL (tac.action_id, '0') <> '0'
69               AND r.relationtype = 'DATA'
70               AND fa.activity_type = 'TASK_ACTIVITY'
71               AND Ta.activity_type = 'TASK_ACTIVITY'
72               AND tac.action_id IN (SELECT t.id FROM t)
73     UNION
74     SELECT aso.relationid AS rid,
75           aso.srctaskid AS srcId,
76           ftc.name AS srcName,
77           aso.targettaskid AS targetId,
78           ttc.name AS targetName
79     FROM pm_task_association aso
80     LEFT JOIN pm_task_object ftc ON aso.srctaskid = ftc.id
81     LEFT JOIN pm_task_object ttc ON aso.targettaskid = ttc.id
82     WHERE aso.targettaskid IN (SELECT t.id FROM t)
83     UNION
84     SELECT r.activity_data_relation_id AS rid,
85           ta.id AS srcId,
86           ta.name AS srcName,
87           fac.action_id AS targetId,
88           fac.action_name AS targetName
89     FROM engine_activity_data_relation r
90     LEFT JOIN engine_process pb
91           ON R.FROM_ACTIVITY_ID = Pb.start_NODE_ID
92     LEFT JOIN engine_activity_action fac
93           ON R.to_ACTIVITY_ID = fac.activity_id
94     LEFT JOIN pm_task_object ta
95           ON TA.SUBPROCESSID = pb.process_id
96     WHERE      NVL (pb.process_id, '0') <> '0'
97               AND r.relationtype = 'DATA'
98               AND ta.id IN (SELECT t.id FROM t)),
99     AIP
100     AS (SELECT evt.srcid id

```

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101         FROM (SELECT v.*,
102                 (SELECT COUNT (*)
103                 FROM v v3
104                 WHERE v3.targetid = v.srcid)
105                 cn
106         FROM v) evt
107 UNION
108 SELECT evt.targetid id
109        FROM (SELECT v.*,
110                (SELECT COUNT (*)
111                FROM v v3
112                WHERE v3.targetid = v.srcid)
113                cn
114        FROM v) evt),
115 PT
116 AS (SELECT D.ID
117      FROM PM_DATA_OBJECT D
118      WHERE D.DEFAULTSET = 1 AND (d.taskId IN (SELECT AIP.ID FROM AIP))),
119 TP
120 AS (SELECT TA.NAME N1,
121        AD.VERSIONNAME V1,
122        A.SRCID S1,
123        A.Srcrevision SV1,
124        AD.TASKID T1,
125        TB.NAME N2,
126        BD.VERSIONNAME V2,
127        A.TARGETID S2,
128        A.TARGETREVISION SV2,
129        BD.TASKID T2
130      FROM pm_association_relation_old a
131      LEFT JOIN pm_Data_object_old ad
132              ON a.srcid = ad.id AND a.srcrevision = ad.revision
133      LEFT JOIN PM_TASK_OBJECT TA ON AD.TASKID = TA.ID
134      LEFT JOIN pm_Data_object_old bd
135              ON a.targetid = bd.id AND a.targetrevision = bd.revision
136      LEFT JOIN PM_TASK_OBJECT TB ON BD.TASKID = TB.ID
137      WHERE a.description IN ('1', '3')
138             AND a.srcid IN (SELECT ID FROM PT)
139             AND a.targetid IN (SELECT ID FROM PT)
140             AND ( ad.statusid IN ('published')
141                   OR ad.sharestatusid IN ('shared')
142                   OR (ad.statusid IN ('confirmed')))),
143 king
144 AS (SELECT ROWNUM cn, tpv.*
145      FROM (SELECT N1 "name",
146                 V1 "version",
147                 S1 "dataId",
148                 SV1 "revision",
149                 T1 "taskId"
150      FROM tp
151      UNION
152      SELECT N2,
153             V2,

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154             S2,
155             SV2,
156             T2
157         FROM tp) tpv)
158
159
160         select 'CREATE (D'||king.cn||':DBS
{ind:''||king.cn||'',name:''||king."version"||king."name"||'',version:''||king."versio
n"||'',dataId:''||king."dataId"||'',revision:''||king."revision"||'',taskId:''||king.
"taskId"||''}')' from king;
161

```

```

1  /* 项目内所有节点关系 */
2  /* Formatted on 2018/8/23 13:43:27 (QP5 v5.227.12220.39754) */
3  WITH t
4      AS (SELECT tag.id AS id
5           FROM pm_Task_object tag
6           WHERE tag.projectId IN
7               (SELECT et.projectid
8                FROM pm_task_object et
9                WHERE et.id = :taskId
10             UNION
11             SELECT eb.projectid
12              FROM pm_task_object eb
13              WHERE eb.subprocessid IN
14                  (SELECT a.process_id
15                   FROM engine_activity a
16                   WHERE a.activity_id = :taskId))),
17  v
18  AS (SELECT r.activity_data_relation_id AS rid,
19       fac.action_id AS srcId,
20       fac.action_name AS srcName,
21       ta.activity_id AS targetId,
22       ta.activity_name AS targetName
23       FROM engine_activity_data_relation r
24       LEFT JOIN engine_activity fa
25           ON r.from_activity_id = fa.activity_id
26       LEFT JOIN engine_activity_action fac
27           ON fa.activity_id = fac.activity_id
28       LEFT JOIN engine_activity ta
29           ON r.to_activity_id = ta.activity_id
30       WHERE      r.relationtype = 'DATA'
31                AND fa.activity_type = 'TASK_ACTIVITY'
32                AND Ta.activity_type <> 'TASK_ACTIVITY'
33                AND Ta.activity_type <> 'END_ACTIVITY'
34                AND fac.action_id IN (SELECT t.id FROM t)
35  UNION
36  SELECT r.activity_data_relation_id AS rid,
37       fa.activity_id AS srcId,
38       fa.activity_name AS srcName,
39       tac.action_id AS targetId,
40       tac.action_name AS targetName

```

```

41      FROM engine_activity_data_relation r
42      LEFT JOIN engine_activity fa
43          ON r.from_activity_id = fa.activity_id
44      LEFT JOIN engine_activity ta
45          ON r.to_activity_id = ta.activity_id
46      LEFT JOIN engine_activity_action tac
47          ON ta.activity_id = tac.activity_id
48  WHERE      r.relationtype = 'DATA'
49      AND fa.activity_type <> 'TASK_ACTIVITY'
50      AND Ta.activity_type = 'TASK_ACTIVITY'
51      AND tac.action_id IN (SELECT t.id FROM t)
52  UNION
53  SELECT r.activity_data_relation_id AS rid,
54      fac.action_id AS srcId,
55      fac.action_name AS srcName,
56      tac.action_id AS targetId,
57      tac.action_name AS targetName
58  FROM engine_activity_data_relation r
59  LEFT JOIN engine_activity fa
60      ON r.from_activity_id = fa.activity_id
61  LEFT JOIN engine_activity_action fac
62      ON fa.activity_id = fac.activity_id
63  LEFT JOIN engine_activity ta
64      ON r.to_activity_id = ta.activity_id
65  LEFT JOIN engine_activity_action tac
66      ON ta.activity_id = tac.activity_id
67  WHERE      NVL (fac.action_id, '0') <> '0'
68      AND NVL (tac.action_id, '0') <> '0'
69      AND r.relationtype = 'DATA'
70      AND fa.activity_type = 'TASK_ACTIVITY'
71      AND Ta.activity_type = 'TASK_ACTIVITY'
72      AND tac.action_id IN (SELECT t.id FROM t)
73  UNION
74  SELECT aso.relationid AS rid,
75      aso.srctaskid AS srcId,
76      ftc.name AS srcName,
77      aso.targettaskid AS targetId,
78      ttc.name AS targetName
79  FROM pm_task_association aso
80  LEFT JOIN pm_task_object ftc ON aso.srctaskid = ftc.id
81  LEFT JOIN pm_task_object ttc ON aso.targettaskid = ttc.id
82  WHERE aso.targettaskid IN (SELECT t.id FROM t)
83  UNION
84  SELECT r.activity_data_relation_id AS rid,
85      ta.id AS srcId,
86      ta.name AS srcName,
87      fac.action_id AS targetId,
88      fac.action_name AS targetName
89  FROM engine_activity_data_relation r
90  LEFT JOIN engine_process pb
91      ON R.FROM_ACTIVITY_ID = Pb.start_NODE_ID
92  LEFT JOIN engine_activity_action fac
93      ON R.to_ACTIVITY_ID = fac.activity_id

```



```

94         LEFT JOIN pm_task_object ta
95             ON TA.SUBPROCESSID = pb.process_id
96     WHERE      NVL (pb.process_id, '0') <> '0'
97             AND r.relationtype = 'DATA'
98             AND ta.id IN (SELECT t.id FROM t)),
99 AIP
100 AS (SELECT evt.srcid id
101     FROM (SELECT v.*,
102             (SELECT COUNT (*)
103              FROM v v3
104              WHERE v3.targetid = v.srcid)
105             cn
106     FROM v) evt
107 UNION
108 SELECT evt.targetid id
109     FROM (SELECT v.*,
110             (SELECT COUNT (*)
111              FROM v v3
112              WHERE v3.targetid = v.srcid)
113             cn
114     FROM v) evt),
115 PT
116 AS (SELECT D.ID
117     FROM PM_DATA_OBJECT D
118     WHERE D.DEFAULTSET = 1 AND (d.taskId IN (SELECT AIP.ID FROM AIP))),
119 TP
120 AS (SELECT TA.NAME N1,
121     AD.VERSIONNAME V1,
122     A.SRCID S1,
123     A.Srcrevision SV1,
124     AD.TASKID T1,
125     TB.NAME N2,
126     BD.VERSIONNAME V2,
127     A.TARGETID S2,
128     A.TARGETREVISION SV2,
129     BD.TASKID T2
130     FROM pm_association_relation_old a
131     LEFT JOIN pm_Data_object_old ad
132         ON a.srcid = ad.id AND a.srcrevision = ad.revision
133     LEFT JOIN PM_TASK_OBJECT TA ON AD.TASKID = TA.ID
134     LEFT JOIN pm_Data_object_old bd
135         ON a.targetid = bd.id AND a.targetrevision = bd.revision
136     LEFT JOIN PM_TASK_OBJECT TB ON BD.TASKID = TB.ID
137     WHERE      a.description IN ('1', '3')
138             AND a.srcid IN (SELECT ID FROM PT)
139             AND a.targetid IN (SELECT ID FROM PT)
140             AND (    ad.statusid IN ('published')
141                 OR ad.sharestatusid IN ('shared')
142                 OR (ad.statusid IN ('confirmed')))),
143 king
144 AS (SELECT ROWNUM cn, tpv.*
145     FROM (SELECT N1 "name",
146             V1 "version",

```

```

147         S1 "dataId",
148         SV1 "revision",
149         T1 "taskId"
150     FROM tp
151 UNION
152 SELECT N2,
153        V2,
154        S2,
155        SV2,
156        T2
157     FROM tp) tpv)
158
159
160     --      select 'CREATE (D'||king.cn||':DBS
{ind:'||king.cn||',name:'||king."version"||king."name"||',version:'||king."version"||',data
Id:'||king."dataId"||',revision:'||king."revision"||',taskId:'||king."taskId"||'}' from
king;
161
162 , keaf as (SELECT (SELECT king.cn
163                FROM king
164                WHERE king."dataId" = tp.s1 AND king."revision" = tp.sv1)
165            s,
166            (SELECT king.cn
167                FROM king
168                WHERE king."dataId" = tp.s2 AND king."revision" = tp.sv2)
169            e
170     FROM tp )
171
172     select 'CREATE (D'||keaf.s||')-[:mapping]->(D'||keaf.e||')' from keaf;

```

实例生成neo4j脚本

```

1  CREATE (D1:DBS {ind:'1',name:'A—维设
   计',version:'A',dataId:'2018082310543300077795d0047b89ed4988ad59',revision:'562220',taskId:'
   7412514FAAE211ECE053C805A8C03AA3'})
2  CREATE (D2:DBS {ind:'2',name:'B—维设
   计',version:'B',dataId:'2018082310543300077795d0047b89ed4988ad59',revision:'562258',taskId:'
   7412514FAAE211ECE053C805A8C03AA3'})
3  CREATE (D3:DBS {ind:'3',name:'A外换热设
   计',version:'A',dataId:'20180823105446000803b552203374034326b3e6',revision:'562231',taskId:'
   7412561066F611F0E053C805A8C03340'})
4  CREATE (D4:DBS {ind:'4',name:'B外换热设
   计',version:'B',dataId:'20180823105446000803b552203374034326b3e6',revision:'562267',taskId:'
   7412561066F611F0E053C805A8C03340'})
5  CREATE (D5:DBS {ind:'5',name:'A性能CFX设
   计',version:'A',dataId:'20180823105434000065c63b0708b37846a2a5b0',revision:'562225',taskId:'
   7412514FAAEB11ECE053C805A8C03AA3'})
6  CREATE (D6:DBS {ind:'6',name:'B性能CFX设
   计',version:'B',dataId:'20180823105434000065c63b0708b37846a2a5b0',revision:'562263',taskId:'
   7412514FAAEB11ECE053C805A8C03AA3'})

```

```
7 CREATE (D7:DBS {ind:'7',name:'B总体外
发',version:'B',dataId:'20180823105306000504f79d9fe5e7a64c158c30',revision:'562214',taskId:'
741251B71E5811EAE053C805A8C0D903'})
8 CREATE (D8:DBS {ind:'8',name:'C总体外
发',version:'C',dataId:'20180823105306000504f79d9fe5e7a64c158c30',revision:'562254',taskId:'
741251B71E5811EAE053C805A8C0D903'})
9 CREATE (D9:DBS {ind:'9',name:'A涡轮传热外
发',version:'A',dataId:'201808231054470004459281f122dfcc44fda810',revision:'562238',taskId:'
74125610670C11F0E053C805A8C03340'})
10 CREATE (D10:DBS {ind:'10',name:'A涡轮强度分
析',version:'A',dataId:'201808231055000006582e8676bbde924110842b',revision:'562241',taskId:'
741251BA999C11E8E053C805A8C0062E'})
11 CREATE (D11:DBS {ind:'11',name:'A非设计点设
计',version:'A',dataId:'20180823105447000157118c1003cebd47f9bb67',revision:'562235',taskId:'
74125610670211F0E053C805A8C03340'})
12
13 CREATE (D3)-[:mapping]->(D9)
14 CREATE (D11)-[:mapping]->(D9)
15 CREATE (D7)-[:mapping]->(D10)
16 CREATE (D5)-[:mapping]->(D10)
17 CREATE (D3)-[:mapping]->(D10)
18 CREATE (D2)-[:mapping]->(D6)
19 CREATE (D7)-[:mapping]->(D1)
20 CREATE (D1)-[:mapping]->(D5)
21 CREATE (D8)-[:mapping]->(D2)
22 CREATE (D8)-[:mapping]->(D4)
23 CREATE (D6)-[:mapping]->(D4)
24 CREATE (D7)-[:mapping]->(D3)
25 CREATE (D5)-[:mapping]->(D3)
26 CREATE (D7)-[:mapping]->(D11)
27 CREATE (D5)-[:mapping]->(D11)
28 CREATE (D3)-[:mapping]->(D11)
```