

# Query plans of RDF-based-approach 1 for Stardog 7.9.0

## Query 1

```
`- Projection(?id, ?lbl) [#51]
  |- MergeJoinOuter(?n1) [#51]
    +- MergeJoin(?n1) [#51]
      | +- Scan[PSOC](?n1, rdfs:label, ?lbl) [#1.2M]
      | |- Projection(?n1) [#9]
      | | |- Filter(!(Bound(?id))) [#9]
      | | |- MergeJoinOuter(?n1) [#18]
      | | | +- Scan[POSC](?n1, ns1:name, "XU JIE") [#18]
      | | | |- Bind("true"^^xsd:boolean AS ?id) sortedBy=?n1 [#674K]
      | | | |- Scan[PSOC](?n1, ns1:PointsTo, ?n) [#674K]
      |- MergeJoin(?n1) [#103]
        +- Scan[POSC](?n1, ns1:name, "XU JIE") [#18]
        |- Scan[PSOC](?n1, ns1:node_id, ?id) [#560K]
```

## Query 2

```
`- Projection(?lbl, ?country) [#2.2K]
  |- Filter(?country != "") [#2.2K]
    |- Projection(?n, ?country, ?lbl) [#2.2K]
      |- Filter(!(Bound(?yafgcvrw))) [#2.2K]
        |- MergeJoinOuter(?n) [#4.4K]
          +- NaryJoin(?n) [#4.4K]
            | +- Scan[PSOC](?n, ns1:countries, ?country) [#463K]
            | +- Scan[PSOC](?n, rdfs:label, ?lbl) [#1.2M]
            | |- Scan[POSC](?n, ns1:name, "EL PORTADOR") [#9.3K]
            |- Bind("true"^^xsd:boolean AS ?yafgcvrw) sortedBy=?n [#674K]
              |- Scan[PSOC](?n, ns1:PointsTo, ?n1) [#674K]
```

### Query 3

```
`- Distinct [#3]
  |- Projection(?lbl) [#617K]
    |- Projection(?n, ?lbl) [#617K]
      |- Filter(!(Bound(?oauqexer))) [#617K]
        |- HashJoinOuter(?n) [#1.2M]
          +- Scan[POSC](?n, rdfs:label, ?lbl) [#1.2M]
            |- Bind("true"^^xsd:boolean AS ?oauqexer) sortBy=?oauqexer [#674K]
              |- Scan[PSOC](?n, ns1:PointsTo, ?n1) [#674K]
```

### Query 4

```
`- Distinct [#3]
  |- Projection(?lbl) [#674K]
    |- MergeJoin(?r1) [#674K]
      +- Scan[PSC](?r1, ns1:PointsTo, _) [#573K]
        |- Scan[PSOC](?r1, rdfs:label, ?lbl) [#1.2M]
```

### Query 5

```
`- Projection(?name, ?lbl) [#3]
  |- MergeJoinOuter(?n2) [#3]
    +- MergeJoin(?n2) [#3]
      | +- Scan[PSOC](?n2, rdfs:label, ?lbl) [#1.2M]
      | |- Sort(?n2) [#3]
      |   |- MergeJoin(?r1) [#3]
      |     +- MergeJoin(?r1) [#214K]
      |       | +- Scan[POSC](?r1, rdfs:label, "intermediary_of") [#214K]
      |       | |- Scan[PSOC](?r1, ns1:PointsTo, ?n2) [#674K]
      |       |- Sort(?r1) [#9]
      |         |- MergeJoin(?n1) [#9]
      |           +- Scan[POSC](?n1, ns1:name, "ORION HOUSE SERVICES (HK) LIMITED") [#1]
      |           |- Scan[PSOC](?n1, ns1:InRelationTo, ?r1) [#674K]
      |- Scan[PSOC](?n2, ns1:name, ?name) [#466K]
```

## Query 6

```
`- Projection(?lbl1, ?name, ?link, ?lbl2) [#1.1K]
  `- Union [#1.1K]
    +- MergeJoinOuter(?r1) [#607]
      | +- Sort(?r1) [#607]
      | |   `- MergeJoinOuter(?n2) [#607]
      | |     +- Sort(?n2) [#607]
      | |       |   `- MergeJoin(?n1) [#607]
      | |         |   +- Scan[PSOC](?n1, rdfs:label, ?lbl1) [#1.2M]
      | |         |   `- Sort(?n1) [#607]
      | |         |     +- MergeJoin(?n2) [#607]
      | |         |       +- Scan[PSOC](?n2, rdfs:label, ?lbl2) [#1.2M]
      | |         |       `- Sort(?n2) [#607]
      | |         |         +- MergeJoin(?r1) [#607]
      | |         |           +- MergeJoin(?r1) [#309K]
      | |         |           |   +- Scan[POSC](?r1, rdfs:label, "officer_of") [#309K]
      | |         |           |   `- Scan[PSOC](?r1, ns1:PointsTo, ?n2) [#674K]
      | |         |           |     +- Sort(?r1) [#1.3K]
      | |         |           |     +- MergeJoin(?n1) [#1.3K]
      | |         |           |       +- Scan[POSC](?n1, ns1:name, "BEARER") [#482]
      | |         |           |       +- Scan[PSOC](?n1, ns1:InRelationTo, ?r1) [#674K]
      | |         |           |         +- Scan[PSOC](?n2, ns1:name, ?name) [#466K]
      | |         |           |         +- Scan[PSOC](?r1, ns1:link, ?link) [#674K]
      | |         |           |         +- MergeJoinOuter(?r1) [#482]
      | |         |           |           +- Sort(?r1) [#482]
      | |         |           |           |   +- MergeJoinOuter(?n2) [#482]
      | |         |           |           |     +- Sort(?n2) [#482]
      | |         |           |           |       |   +- MergeJoin(?n1) [#482]
      | |         |           |           |       |     +- Scan[PSOC](?n1, rdfs:label, ?lbl1) [#1.2M]
      | |         |           |           |       |     +- Sort(?n1) [#482]
      | |         |           |           |       |       +- MergeJoin(?n2) [#482]
      | |         |           |           |       |         +- Scan[PSOC](?n2, rdfs:label, ?lbl2) [#1.2M]
      | |         |           |           |       |         +- Sort(?n2) [#482]
      | |         |           |           |       |           +- MergeJoin(?r1) [#482]
      | |         |           |           |       |           +- MergeJoin(?r1) [#309K]
      | |         |           |           |       |             +- Scan[POSC](?r1, rdfs:label, "officer_of") [#309K]
      | |         |           |           |       |             +- Scan[PSOC](?r1, ns1:PointsTo, ?n2) [#674K]
```

```

| |           `─ Sort(?r1) [#1.1K]
| |           `─ MergeJoin(?n1) [#1.1K]
| |           +- Scan[POSC](?n1, ns1:name, "The Bearer") [#426]
| |           `─ Scan[PSOC](?n1, ns1:InRelationTo, ?r1) [#674K]
| `─ Scan[PSOC](?n2, ns1:name, ?name) [#466K]

`─ Scan[PSOC](?r1, ns1:link, ?link) [#674K]

```

## Query 7

```

`─ Projection(?lbl1, ?link, ?lbl2, ?entity_name) [#26]

  `─ Union [#26]

    +- MergeJoinOuter(?n2) [#1]

      | +- Sort(?n2) [#1]

      | | `─ MergeJoinOuter(?r1) [#1]

      | | +- Sort(?r1) [#1]

      | | | `─ MergeJoin(?n1) [#1]

      | | | +- MergeJoin(?n1) [#96K]

      | | | | +- Scan[POSC](?n1, ns1:name, "THE BEARER") [#71K]

      | | | | `─ Scan[PSOC](?n1, rdfs:label, ?lbl1) [#1.2M]

      | | | `─ Sort(?n1) [#6]

      | | | `─ MergeJoin(?r1) [#6]

      | | | +- Scan[POSC](?n1, ns1:InRelationTo, ?r1) [#674K]

      | | | `─ Sort(?r1) [#6]

      | | | `─ MergeJoin(?n2) [#6]

      | | | +- Scan[PSOC](?n2, rdfs:label, ?lbl2) [#1.2M]

      | | | `─ MergeJoin(?n2) [#33]

      | | | +- Scan[POSC](?n2, ns1:status, "Active") [#56K]

      | | | `─ Sort(?n2) [#115]

      | | | `─ MergeJoin(?r1) [#115]

      | | | +- Scan[POSC](?r1, ns1:end_date, "11-APR-2014") [#109]

      | | | `─ Scan[PSOC](?r1, ns1:PointsTo, ?n2) [#674K]

      | | `─ MergeJoin(?r1) [#115]

      | | +- Scan[POSC](?r1, ns1:end_date, "11-APR-2014") [#109]

      | | `─ Scan[PSOC](?r1, ns1:link, ?link) [#674K]

      | `─ Scan[PSOC](?n2, ns1:name, ?entity_name) [#466K]

    `─ MergeJoinOuter(?n2) [#25]

      +- Sort(?n2) [#25]

      | `─ MergeJoinOuter(?r1) [#25]

      | +- Sort(?r1) [#25]

```

```

| | `─ MergeJoin(?n1) [#25]
| |   ── MergeJoin(?n1) [#96K]
| | |   ── Scan[POSC](?n1, ns1:name, "THE BEARER") [#71K]
| | | |   `─ Scan[PSOC](?n1, rdfs:label, ?lbl1) [#1.2M]
| | |   `─ Sort(?n1) [#88]
| | | |   `─ MergeJoin(?r1) [#88]
| | | |   ── Scan[POSC](?n1, ns1:InRelationTo, ?r1) [#674K]
| | | |   `─ Sort(?r1) [#88]
| | | | |   `─ MergeJoin(?n2) [#88]
| | | | |   ── Scan[PSOC](?n2, rdfs:label, ?lbl2) [#1.2M]
| | | | |   `─ MergeJoin(?n2) [#287]
| | | | |   ── Scan[POSC](?n2, ns1:status, "Defaulted") [#100K]
| | | | |   `─ Sort(?n2) [#968]
| | | | |   `─ MergeJoin(?r1) [#968]
| | | | |   ── Scan[POSC](?r1, ns1:end_date, "29-DEC-2009") [#860]
| | | | |   `─ Scan[PSOC](?r1, ns1:PointsTo, ?n2) [#674K]
| | |   `─ Scan[PSOC](?r1, ns1:link, ?link) [#674K]
|   `─ Scan[PSOC](?n2, ns1:name, ?entity_name) [#466K]

```

## Query 8

```

`─ Projection(?lbl1, ?name, ?link, ?address) [#151K]
  `─ MergeJoinOuter(?n3) [#151K]
    ── Sort(?n3) [#151K]
      |   `─ MergeJoinOuter(?r1) [#151K]
      |   ── Sort(?r1) [#151K]
      | |   `─ MergeJoinOuter(?n1) [#151K]
      | |   ── MergeJoin(?n1) [#151K]
      | | |   ── Scan[PSOC](?n1, rdfs:label, ?lbl1) [#1.2M]
      | | | |   `─ Sort(?n1) [#151K]
      | | | |   `─ MergeJoin(?r1) [#151K]
      | | | |   ── Scan[POSC](?n1, ns1:InRelationTo, ?r1) [#674K]
      | | | |   `─ MergeJoin(?r1) [#151K]
      | | | |   ── Scan[POSC](?r1, rdfs:label, "registered_address") [#151K]
      | | | |   `─ Scan[PSOC](?r1, ns1:PointsTo, ?n3) [#674K]
      | |   `─ Scan[PSOC](?n1, ns1:name, ?name) [#466K]
      |   `─ Scan[PSOC](?r1, ns1:link, ?link) [#674K]
    `─ Scan[PSOC](?n3, ns1:address, ?address) [#93K]

```

## Query 9

```
`- Projection(?lbl, ?name, ?link1, ?first_address, ?link2, ?second_address) [#107K]
  |- MergeJoinOuter(?n3) [#107K]
    +- Sort(?n3) [#107K]
      |   |- MergeJoinOuter(?r2) [#107K]
      |   |   +- Sort(?r2) [#107K]
      |   |   |   |- MergeJoinOuter(?n2) [#107K]
      |   |   |   |   +- Sort(?n2) [#107K]
      |   |   |   |   |   |- MergeJoinOuter(?r1) [#107K]
      |   |   |   |   |   |   +- Sort(?r1) [#107K]
      |   |   |   |   |   |   |   |- MergeJoinOuter(?n1) [#107K]
      |   |   |   |   |   |   |   |   +- Filter(?n2 != ?n3) [#107K]
      |   |   |   |   |   |   |   |   |   |- MergeJoin(?n1) [#214K]
      |   |   |   |   |   |   |   |   |   |   +- MergeJoin(?n1) [#151K]
      |   |   |   |   |   |   |   |   |   |   |   +- Scan[PSOC](?n1, rdfs:label, ?lbl) [#1.2M]
      |   |   |   |   |   |   |   |   |   |   |   |   |- Sort(?n1) [#151K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |- MergeJoin(?r2) [#151K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   +- Scan[POSC](?n1, ns1:InRelationTo, ?r2) [#674K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |- MergeJoin(?r2) [#151K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   +- Scan[POSC](?r2, rdfs:label, "registered_address") [#151K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |- Scan[PSOC](?r2, ns1:PointsTo, ?n3) [#674K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |- Sort(?n1) [#151K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |- MergeJoin(?r1) [#151K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   +- Scan[POSC](?n1, ns1:InRelationTo, ?r1) [#674K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |- MergeJoin(?r1) [#151K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   +- Scan[POSC](?r1, rdfs:label, "registered_address") [#151K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |- Scan[PSOC](?r1, ns1:PointsTo, ?n2) [#674K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |- Scan[PSOC](?n1, ns1:name, ?name) [#466K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |- Scan[PSOC](?r1, ns1:link, ?link1) [#674K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |- Scan[PSOC](?n2, ns1:address, ?first_address) [#93K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |- Scan[PSOC](?r2, ns1:link, ?link2) [#674K]
      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |- Scan[PSOC](?n3, ns1:address, ?second_address) [#93K]
```

## Query 10

```
`- Projection(?link1, ?link2, ?address) [#418K]
  |- MergeJoinOuter(?n3) [#418K]
    +- Sort(?n3) [#418K]
      | |- MergeJoinOuter(?r2) [#418K]
      | | +- Sort(?r2) [#418K]
      | | | |- MergeJoinOuter(?r1) [#418K]
      | | | | +- Sort(?r1) [#418K]
      | | | | | |- HashJoin(?n3) [#418K]
      | | | | | +- MergeJoin(?n1) [#150K]
      | | | | | +- Scan[POSC](?n1, rdfs:label, "officer") [#238K]
      | | | | | |- Sort(?n1) [#151K]
      | | | | | |- MergeJoin(?r1) [#151K]
      | | | | | +- Scan[POSC](?n1, ns1:InRelationTo, ?r1) [#674K]
      | | | | | |- MergeJoin(?r1) [#151K]
      | | | | | +- Scan[POSC](?r1, rdfs:label, "registered_address") [#151K]
      | | | | | |- Scan[PSOC](?r1, ns1:PointsTo, ?n3) [#674K]
      | | | | | |- MergeJoin(?r2) [#126K]
      | | | | | +- MergeJoin(?r2) [#151K]
      | | | | | | +- Scan[POSC](?r2, rdfs:label, "registered_address") [#151K]
      | | | | | | |- Scan[PSOC](?r2, ns1:PointsTo, ?n3) [#674K]
      | | | | | |- Sort(?r2) [#561K]
      | | | | | |- MergeJoin(?n2) [#561K]
      | | | | | +- Scan[POSC](?n2, rdfs:label, "entity") [#214K]
      | | | | | |- Scan[PSOC](?n2, ns1:InRelationTo, ?r2) [#674K]
      | | | |- Scan[PSOC](?r1, ns1:link, ?link1) [#674K]
      | | |- Scan[PSOC](?r2, ns1:link, ?link2) [#674K]
      |- Scan[PSOC](?n3, ns1:address, ?address) [#93K]
```

## Query 11

```
`- Projection(?name, ?valid, ?sourceID) [#3.0K]
  |- MergeJoinOuter(?n1) [#3.0K]
    +- Sort(?n1) [#3.0K]
      | |- MergeJoinOuter(?r1) [#3.0K]
      | | +- MergeJoinOuter(?r1) [#3.0K]
      | | | +- Sort(?r1) [#3.0K]
      | | | |- MergeJoin(?n4) [#3.0K]
      | | | | +- Scan[POSC](?n4, rdfs:label, "officer") [#238K]
      | | | | |- Sort(?n4) [#3.0K]
      | | | | |- MergeJoin(?n1) [#3.0K]
      | | | | | +- Scan[POSC](?n1, rdfs:label, "intermediary") [#14K]
      | | | | | |- Sort(?n1) [#3.6K]
      | | | | | |- MergeJoin(?r1) [#3.6K]
      | | | | | | +- Scan[POSC](?n1, ns1:InRelationTo, ?r1) [#674K]
      | | | | | | |- Sort(?r1) [#3.6K]
      | | | | | | |- HashJoin(?n3) [#3.6K]
      | | | | | | | +- MergeJoin(?r3) [#153K]
      | | | | | | | | +- Scan[POSC](?n4, ns1:InRelationTo, ?r3) [#674K]
      | | | | | | | | |- Sort(?r3) [#153K]
      | | | | | | | | | |- MergeJoin(?n3) [#153K]
      | | | | | | | | | | +- Scan[POSC](?n3, rdfs:label, "address") [#93K]
      | | | | | | | | | | |- Scan[POSC](?r3, ns1:PointsTo, ?n3) [#674K]
      | | | | | | | | | |- MergeJoin(?r2) [#9.8K]
      | | | | | | | | | | +- Scan[PSOC](?r2, ns1:PointsTo, ?n3) [#674K]
      | | | | | | | | | | |- Sort(?r2) [#9.8K]
      | | | | | | | | | | |- MergeJoin(?n2) [#9.8K]
      | | | | | | | | | | | +- Scan[PSOC](?n2, ns1:InRelationTo, ?r2) [#674K]
      | | | | | | | | | | | |- MergeJoin(?n2) [#525K]
      | | | | | | | | | | | | +- Scan[POSC](?n2, rdfs:label, "entity") [#214K]
      | | | | | | | | | | | | |- Scan[POSC](?r1, ns1:PointsTo, ?n2) [#674K]
      | | | | | | | | | | | |- Scan[PSOC](?r1, ns1:valid_until, ?valid) [#1.2M]
      | | | | | | | | | | | |- Scan[PSOC](?r1, ns1:sourceID, ?sourceID) [#1.2M]
      | | | | | | | | | | | |- Scan[PSOC](?n1, ns1:name, ?name) [#466K]
```



## Query 12

```

- Projection(?officer_name, ?link1, ?officer2_name, ?link2, ?entity_name, ?intermediary_name, ?valid_until, ?e_name) [#177]
  - MergeJoinOuter(?n6) [#177]
    +- Sort(?n6) [#177]
      |   - MergeJoinOuter(?r4) [#177]
      |     +- Sort(?r4) [#177]
      |       |   - MergeJoinOuter(?n5) [#177]
      |       |     +- Sort(?n5) [#177]
      |       |       |   - MergeJoinOuter(?n4) [#177]
      |       |       |     +- Sort(?n4) [#177]
      |       |       |       |   - MergeJoinOuter(?r3) [#177]
      |       |       |       |     +- Sort(?r3) [#177]
      |       |       |       |       |   - MergeJoinOuter(?n2) [#177]
      |       |       |       |       |     +- Sort(?n2) [#177]
      |       |       |       |       |       |   - MergeJoinOuter(?r1) [#177]
      |       |       |       |       |       |     +- Sort(?r1) [#177]
      |       |       |       |       |       |       |   - MergeJoinOuter(?n1) [#177]
      |       |       |       |       |       |       |     +- Sort(?n1) [#177]
      |       |       |       |       |       |       |       |   - Filter(?n6 != ?n4) [#177]
      |       |       |       |       |       |       |       |   - HashJoin(?n5) [#354]
      |       |       |       |       |       |       |       |     +- MergeJoin(?n6) [#167K]
      |       |       |       |       |       |       |       |       | +- Scan[POSC](?n6, rdfs:label, "entity") [#214K]
      |       |       |       |       |       |       |       |       |   - Sort(?n6) [#214K]
      |       |       |       |       |       |       |       |       |   - MergeJoin(?r5) [#214K]
      |       |       |       |       |       |       |       |       |     +- Scan[POSC](?n5, ns1:InRelationTo, ?r5) [#674K]
      |       |       |       |       |       |       |       |       |   - MergeJoin(?r5) [#214K]
      |       |       |       |       |       |       |       |       |     +- Scan[POSC](?r5, rdfs:label, "intermediary_of") [#214K]
      |       |       |       |       |       |       |       |       |   - Scan[PSOC](?r5, ns1:PointsTo, ?n6) [#674K]
      |       |       |       |       |       |       |       |   - HashJoin(?r4) [#194]
      |       |       |       |       |       |       |     +- MergeJoin(?n5) [#558K]
      |       |       |       |       |       |       |       | +- Scan[POSC](?n5, rdfs:label, "intermediary") [#14K]
      |       |       |       |       |       |       |       |   - Scan[PSOC](?n5, ns1:InRelationTo, ?r4) [#674K]
      |       |       |       |       |       |       |   - MergeJoin(?n4) [#235]
      |       |       |       |       |       |     +- MergeJoin(?n4) [#167K]
      |       |       |       |       |       |       | +- Scan[POSC](?n4, rdfs:label, "entity") [#214K]
      |       |       |       |       |       |       |   - Sort(?n4) [#214K]
      |       |       |       |       |       |       |   - MergeJoin(?r4) [#214K]

```

									+ Scan[POSC](?r4, rdfs:label, "intermediary_of") [#214K]
									`- Scan[PSOC](?r4, ns1:PointsTo, ?n4) [#674K]
									`- Sort(?n4) [#386]
									`- HashJoin(?n2) [#386]
									+ MergeJoin(?r3) [#309K]
									+ Scan[POSC](?n2, ns1:InRelationTo, ?r3) [#674K]
									`- MergeJoin(?r3) [#309K]
									+ Scan[POSC](?r3, rdfs:label, "officer_of") [#309K]
									`- Scan[PSOC](?r3, ns1:PointsTo, ?n4) [#674K]
									`- MergeJoin(?n1) [#132]
									+ Scan[POSC](?n1, rdfs:label, "officer") [#238K]
									`- Sort(?n1) [#133]
									`- MergeJoin(?n2) [#133]
									+ MergeJoin(?n2) [#34K]
									+ Scan[POSC](?n2, rdfs:label, "officer") [#238K]
									`- Sort(?n2) [#34K]
									`- MergeJoin(?n3) [#34K]
									+ Scan[POSC](?n3, rdfs:label, "address") [#93K]
									`- Sort(?n3) [#151K]
									`- MergeJoin(?r2) [#151K]
									+ Scan[POSC](?n2, ns1:InRelationTo, ?r2) [#674K]
									`- MergeJoin(?r2) [#151K]
									+ Scan[POSC](?r2, rdfs:label, "registered_address") [#151K]
									`- Scan[PSOC](?r2, ns1:PointsTo, ?n3) [#674K]
									`- Sort(?n2) [#309K]
									`- MergeJoin(?r1) [#309K]
									+ Scan[POSC](?n1, ns1:InRelationTo, ?r1) [#674K]
									`- MergeJoin(?r1) [#309K]
									+ Scan[POSC](?r1, rdfs:label, "officer_of") [#309K]
									`- Scan[PSOC](?r1, ns1:PointsTo, ?n2) [#674K]
									`- Scan[PSOC](?n1, ns1:name, ?officer_name) [#466K]
									`- Scan[PSOC](?r1, ns1:link, ?link1) [#674K]
									`- Scan[PSOC](?n2, ns1:name, ?officer2_name) [#466K]
									`- Scan[PSOC](?r3, ns1:link, ?link2) [#674K]
									`- Scan[PSOC](?n4, ns1:name, ?entity_name) [#466K]
									`- Scan[PSOC](?n5, ns1:name, ?intermediary_name) [#466K]
									`- Scan[PSOC](?r4, ns1:valid_until, ?valid_until) [#1.2M]
									`- Scan[PSOC](?n6, ns1:name, ?e_name) [#466K]