**1、往es导入数据**

我是用spark往es写入数据的，内存4g，用10个executor，需要大概2个多小时将userid的全量数据导入es。

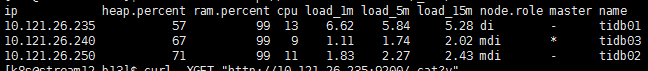
cookieid的标签有问题，导入了一少部分数据。

同时导入userid和cookieid，先启动userid的任务，后启动cookieid的任务，cookieid的任务导入不成功，一直连接不上集群。

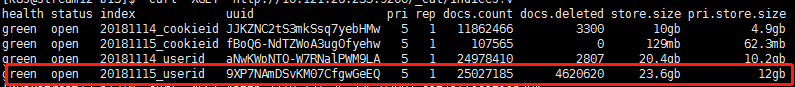
**2、计算人群测试。**

新的es集群版本 6.3.0，有三个节点：tidb01、tidb02、tidb03

节点的情况：



现在es集群中的全部索引：



**下面开始测试：**

因为cookieid没有全量数据，下面的测试都是通过userid的数据来测试的。

分三个测试用例，简单条件，复杂一点的条件，带人群减法的复杂计算。

**测试用例1——简单条件的人群计算：**

[{"A121U002\_0\_010":"","A121U002\_0\_011":"","A121U002\_0\_003":""},{"A111U041\_0\_002":""},{"A111U008\_0\_001":""},{"A220U029\_0\_001":"[5,null]"}]

curl -XPOST "http://10.121.26.235:9200/20181115\_userid/tags/\_search" -H 'Content-Type: application/json' -d'

{"size":0,"query":{"bool":{"must":[{"exists":{"field":"tags.A111U041\_0\_002"}},{"exists":{"field":"tags.A111U008\_0\_001"}},{"range":{"tags.A220U029\_0\_001":{"gte":5}}},{"bool":{"should":[{"exists":{"field":"tags.A121U002\_0\_010"}},{"exists":{"field":"tags.A121U002\_0\_011"}},{"exists":{"field":"tags.A121U002\_0\_003"}}]}}]}}}'

es查询耗时：0.119s

impala计算 16.34s

**测试用例2——复杂条件的人群计算：**

[{"A121U002\_0\_001":"","A121U002\_0\_002":"","A121U002\_0\_007":""},{"A111U008\_0\_001":""},{"A221U024\_0\_001":""},{"C120U007\_2\_001":"[1,null]"},{"C120U007\_2\_002":"[1,null]"},{"C120U007\_2\_003":"[1,null]"},{"C120U007\_2\_004":"[1,null]"},{"C120U007\_2\_005":"[1,null]"},{"C120U007\_2\_006":"[1,null]"},{"C120U007\_2\_008":"[1,null]"},{"C120U007\_2\_010":"[1,null]"},{"C120U007\_2\_011":"[1,null]"},{"C120U007\_2\_012":"[1,null]"},{"C120U007\_2\_013":"[1,null]"},{"C120U007\_2\_014":"[1,null]"},{"C120U007\_2\_015":"[1,null]"},{"C120U007\_2\_016":"[1,null]"}]

{"took":238,"timed\_out":false,"\_shards":{"total":5,"successful":5,"skipped":0,"failed":0},"hits":{"total":9512,"max\_score":12.0,"hits":[]}}

curl -XPOST "http://10.121.26.235:9200/20181115\_userid/tags/\_search" -H 'Content-Type: application/json' -d'

{"size":0,"query":{"bool":{"must":[{"bool":{"should":[{"exists":{"field":"tags.A121U002\_0\_010"}},{"exists":{"field":"tags.A121U002\_0\_011"}},{"exists":{"field":"tags.A121U002\_0\_003"}}]}},{"exists":{"field":"tags.A111U008\_0\_001"}},{"exists":{"field":"tags.A221U024\_0\_001"}},{"bool":{"should":[{"range":{"tags.C120U007\_2\_001":{"gte":1}}},{"range":{"tags.C120U007\_2\_002":{"gte":1}}},{"range":{"tags.C120U007\_2\_003":{"gte":1}}},{"range":{"tags.C120U007\_2\_004":{"gte":1}}},{"range":{"tags.C120U007\_2\_005":{"gte":1}}},{"range":{"tags.C120U007\_2\_006":{"gte":1}}},{"range":{"tags.C120U007\_2\_008":{"gte":1}}},{"range":{"tags.C120U007\_2\_010":{"gte":1}}},{"range":{"tags.C120U007\_2\_011":{"gte":1}}},{"range":{"tags.C120U007\_2\_012":{"gte":1}}},{"range":{"tags.C120U007\_2\_013":{"gte":1}}},{"range":{"tags.C120U007\_2\_014":{"gte":1}}},{"range":{"tags.C120U007\_2\_015":{"gte":1}}},{"range":{"tags.C120U007\_2\_016":{"gte":1}}}]}}]}}}'

es查询耗时：0.072s

impala查询 24.83s

**测试用例3——带人群减法的计算**

[{"A121U002\_0\_002":"","A121U002\_0\_010":"","A121U002\_0\_001":""},{"C120U001\_6\_001":"[1,null]"},{"C120U001\_6\_002":"[1,null]"},{"C120U001\_6\_005":"[1,null]"},{"C120U001\_6\_006":"[1,null]"},{"C120U001\_6\_008":"[1,null]"},{"C120U001\_6\_009":"[1,null]"},{"C120U001\_6\_013":"[1,null]"},{"C120U001\_6\_027":"[1,null]"},{"C120U001\_6\_028":"[1,null]"},{"C120U001\_6\_029":"[1,null]"},{"C120U001\_6\_032":"[1,null]"},{"C120U001\_6\_033":"[1,null]"},{"C120U001\_6\_035":"[1,null]"},{"C120U001\_6\_037":"[1,null]"},{"C120U036\_6\_001":"[1,null]"},{"C120U036\_6\_002":"[1,null]"},{"C120U036\_6\_003":"[1,null]"},{"C120U036\_6\_004":"[1,null]"},{"C120U036\_6\_005":"[1,null]"},{"C120U036\_6\_006":"[1,null]"},{"C120U036\_6\_007":"[1,null]"},{"C120U036\_6\_009":"[1,null]"},{"C120U036\_6\_010":"[1,null]"},{"C120U036\_6\_011":"[1,null]"},{"C120U036\_6\_012":"[1,null]"},{"C120U036\_6\_013":"[1,null]"},{"C120U036\_6\_015":"[1,null]"},{"C120U003\_6\_001":"[1,null]"},{"C120U003\_6\_002":"[1,null]"},{"C120U003\_6\_003":"[1,null]"},{"C120U003\_6\_004":"[1,null]"},{"C120U003\_6\_005":"[1,null]"},{"C120U003\_6\_007":"[1,null]"},{"C120U003\_6\_008":"[1,null]"},{"C120U003\_6\_009":"[1,null]"},{"C120U003\_6\_010":"[1,null]"},{"C120U003\_6\_012":"[1,null]"}]

curl -XPOST "http://10.121.26.235:9200/20181115\_userid/tags/\_search" -H 'Content-Type: application/json' -d'

{"size":0,"query":{"bool":{"must":[{"bool":{"should":[{"exists":{"field":"tags.A121U002\_0\_002"}},{"exists":{"field":"tags.A121U002\_0\_010"}},{"exists":{"field":"tags.A121U002\_0\_001"}}]}},{"bool":{"should":[{"range":{"tags.C120U001\_6\_002":{"gte":1}}},{"range":{"tags.C120U001\_6\_005":{"gte":1}}},{"range":{"tags.C120U001\_6\_006":{"gte":1}}},{"range":{"tags.C120U001\_6\_008":{"gte":1}}},{"range":{"tags.C120U001\_6\_009":{"gte":1}}},{"range":{"tags.C120U001\_6\_013":{"gte":1}}},{"range":{"tags.C120U001\_6\_027":{"gte":1}}},{"range":{"tags.C120U001\_6\_028":{"gte":1}}},{"range":{"tags.C120U001\_6\_029":{"gte":1}}},{"range":{"tags.C120U001\_6\_032":{"gte":1}}},{"range":{"tags.C120U001\_6\_033":{"gte":1}}},{"range":{"tags.C120U001\_6\_035":{"gte":1}}},{"range":{"tags.C120U001\_6\_037":{"gte":1}}},{"range":{"tags.C120U036\_6\_001":{"gte":1}}},{"range":{"tags.C120U036\_6\_002":{"gte":1}}},{"range":{"tags.C120U036\_6\_003":{"gte":1}}},{"range":{"tags.C120U036\_6\_004":{"gte":1}}},{"range":{"tags.C120U036\_6\_005":{"gte":1}}},{"range":{"tags.C120U036\_6\_006":{"gte":1}}},{"range":{"tags.C120U036\_6\_007":{"gte":1}}},{"range":{"tags.C120U036\_6\_009":{"gte":1}}},{"range":{"tags.C120U036\_6\_010":{"gte":1}}},{"range":{"tags.C120U036\_6\_011":{"gte":1}}},{"range":{"tags.C120U036\_6\_012":{"gte":1}}},{"range":{"tags.C120U036\_6\_013":{"gte":1}}},{"range":{"tags.C120U036\_6\_015":{"gte":1}}},{"range":{"tags.C120U003\_6\_001":{"gte":1}}},{"range":{"tags.C120U003\_6\_002":{"gte":1}}},{"range":{"tags.C120U003\_6\_003":{"gte":1}}},{"range":{"tags.C120U003\_6\_004":{"gte":1}}},{"range":{"tags.C120U003\_6\_005":{"gte":1}}},{"range":{"tags.C120U003\_6\_007":{"gte":1}}},{"range":{"tags.C120U003\_6\_008":{"gte":1}}},{"range":{"tags.C120U003\_6\_009":{"gte":1}}},{"range":{"tags.C120U003\_6\_010":{"gte":1}}},{"range":{"tags.C120U003\_6\_012":{"gte":1}}}]}}]}}}'

{"took":517,"timed\_out":false,"\_shards":{"total":5,"successful":5,"skipped":0,"failed":0},"hits":{"total":605869,"max\_score":0.0,"hits":[]}}

es查询耗时：0.525s

减去人群1的规则：

[{"A121U002\_0\_010":"","A121U002\_0\_011":"","A121U002\_0\_003":""},{"A111U041\_0\_002":""},{"A111U008\_0\_001":""},{"A220U029\_0\_001":"[5,null]"}]

减去人群2的规则：

[{"A121U002\_0\_001":"","A121U002\_0\_002":"","A121U002\_0\_007":""},{"A111U008\_0\_001":""},{"A221U024\_0\_001":""},{"C120U007\_2\_001":"[1,null]"},{"C120U007\_2\_002":"[1,null]"},{"C120U007\_2\_003":"[1,null]"},{"C120U007\_2\_004":"[1,null]"},{"C120U007\_2\_005":"[1,null]"},{"C120U007\_2\_006":"[1,null]"},{"C120U007\_2\_008":"[1,null]"},{"C120U007\_2\_010":"[1,null]"},{"C120U007\_2\_011":"[1,null]"},{"C120U007\_2\_012":"[1,null]"},{"C120U007\_2\_013":"[1,null]"},{"C120U007\_2\_014":"[1,null]"},{"C120U007\_2\_015":"[1,null]"},{"C120U007\_2\_016":"[1,null]"}]

curl -XPOST "http://10.121.26.235:9200/20181115\_userid/tags/\_search" -H 'Content-Type: application/json' -d'

{"size":0,"query":{"bool":{"must":[{"bool":{"should":[{"exists":{"field":"tags.A121U002\_0\_002"}},{"exists":{"field":"tags.A121U002\_0\_010"}},{"exists":{"field":"tags.A121U002\_0\_001"}}]}},{"bool":{"should":[{"range":{"tags.C120U001\_6\_002":{"gte":1}}},{"range":{"tags.C120U001\_6\_005":{"gte":1}}},{"range":{"tags.C120U001\_6\_006":{"gte":1}}},{"range":{"tags.C120U001\_6\_008":{"gte":1}}},{"range":{"tags.C120U001\_6\_009":{"gte":1}}},{"range":{"tags.C120U001\_6\_013":{"gte":1}}},{"range":{"tags.C120U001\_6\_027":{"gte":1}}},{"range":{"tags.C120U001\_6\_028":{"gte":1}}},{"range":{"tags.C120U001\_6\_029":{"gte":1}}},{"range":{"tags.C120U001\_6\_032":{"gte":1}}},{"range":{"tags.C120U001\_6\_033":{"gte":1}}},{"range":{"tags.C120U001\_6\_035":{"gte":1}}},{"range":{"tags.C120U001\_6\_037":{"gte":1}}},{"range":{"tags.C120U036\_6\_001":{"gte":1}}},{"range":{"tags.C120U036\_6\_002":{"gte":1}}},{"range":{"tags.C120U036\_6\_003":{"gte":1}}},{"range":{"tags.C120U036\_6\_004":{"gte":1}}},{"range":{"tags.C120U036\_6\_005":{"gte":1}}},{"range":{"tags.C120U036\_6\_006":{"gte":1}}},{"range":{"tags.C120U036\_6\_007":{"gte":1}}},{"range":{"tags.C120U036\_6\_009":{"gte":1}}},{"range":{"tags.C120U036\_6\_010":{"gte":1}}},{"range":{"tags.C120U036\_6\_011":{"gte":1}}},{"range":{"tags.C120U036\_6\_012":{"gte":1}}},{"range":{"tags.C120U036\_6\_013":{"gte":1}}},{"range":{"tags.C120U036\_6\_015":{"gte":1}}},{"range":{"tags.C120U003\_6\_001":{"gte":1}}},{"range":{"tags.C120U003\_6\_002":{"gte":1}}},{"range":{"tags.C120U003\_6\_003":{"gte":1}}},{"range":{"tags.C120U003\_6\_004":{"gte":1}}},{"range":{"tags.C120U003\_6\_005":{"gte":1}}},{"range":{"tags.C120U003\_6\_007":{"gte":1}}},{"range":{"tags.C120U003\_6\_008":{"gte":1}}},{"range":{"tags.C120U003\_6\_009":{"gte":1}}},{"range":{"tags.C120U003\_6\_010":{"gte":1}}},{"range":{"tags.C120U003\_6\_012":{"gte":1}}}]}}],"must\_not":[{"bool":{"should":[{"bool":{"must":[{"bool":{"should":[{"exists":{"field":"tags.A121U002\_0\_010"}},{"exists":{"field":"tags.A121U002\_0\_011"}},{"exists":{"field":"tags.A121U002\_0\_003"}}]}},{"exists":{"field":"tags.A111U041\_0\_002"}},{"exists":{"field":"tags.A111U008\_0\_001"}},{"range":{"tags.A220U029\_0\_001":{"gte":5}}}]}},{"bool":{"must":[{"bool":{"should":[{"exists":{"field":"tags.A121U002\_0\_001"}},{"exists":{"field":"tags.A121U002\_0\_002"}},{"exists":{"field":"tags.A121U002\_0\_007"}}]}},{"exists":{"field":"tags.A111U008\_0\_001"}},{"exists":{"field":"tags.A221U024\_0\_001"}},{"bool":{"should":[{"range":{"tags.C120U007\_2\_001":{"gte":1}}},{"range":{"tags.C120U007\_2\_002":{"gte":1}}},{"range":{"tags.C120U007\_2\_003":{"gte":1}}},{"range":{"tags.C120U007\_2\_004":{"gte":1}}},{"range":{"tags.C120U007\_2\_005":{"gte":1}}},{"range":{"tags.C120U007\_2\_006":{"gte":1}}},{"range":{"tags.C120U007\_2\_008":{"gte":1}}},{"range":{"tags.C120U007\_2\_010":{"gte":1}}},{"range":{"tags.C120U007\_2\_011":{"gte":1}}},{"range":{"tags.C120U007\_2\_012":{"gte":1}}},{"range":{"tags.C120U007\_2\_013":{"gte":1}}},{"range":{"tags.C120U007\_2\_014":{"gte":1}}},{"range":{"tags.C120U007\_2\_015":{"gte":1}}},{"range":{"tags.C120U007\_2\_016":{"gte":1}}}]}}]}}]}}]}}}'

{"took":782,"timed\_out":false,"\_shards":{"total":5,"successful":5,"skipped":0,"failed":0},"hits":{"total":598345,"max\_score":0.0,"hits":[]}}

es查询耗时：0.792s

impala查询 48.17s