Presto on CDH540 Testing Report
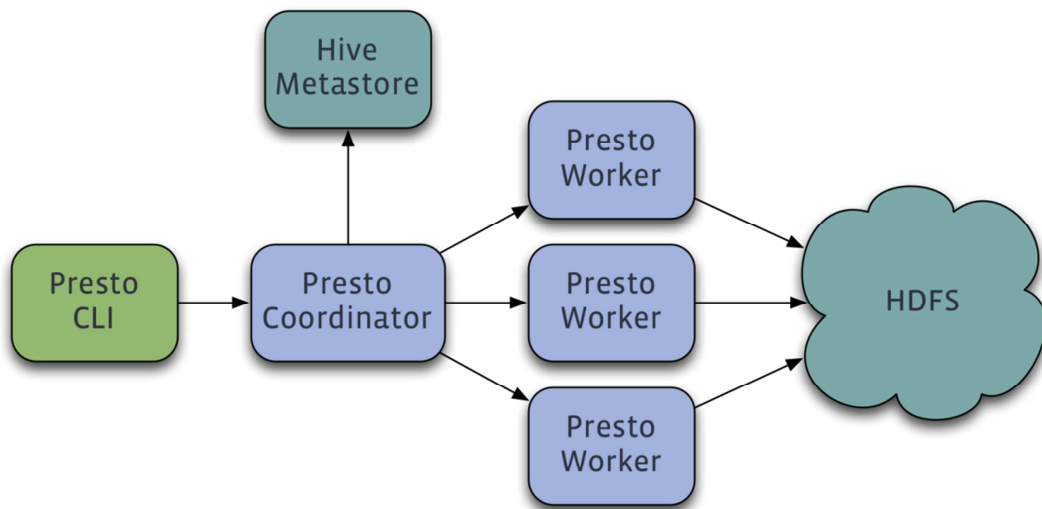
Tao Wu, 08/06/2015

1   Background

We have Hive (based on MapReduce V1 on CDH 4 version and MapReduce V2 on CDH5 version) to do SQL query and SQL job for offline data processing, it can process large-scale of data, but the time cost is minute-level.

Meanwhile, we still have lot of Storage Procedure in SQL Server.

As I mentioned before, we can make a long-term goal to transfer these kind of SQL SP job to big data. But the hive on MaprReduce is no fast enough.

After one week testing and configuration optimization, I found the Presto is really good for SQL Query on Big Data. And I hope to give a demo show to EC team, to discuss what we can do on this fast SQL engine.

Presto is distributed SQL query engine open-sourced by Facebook, now Facebook has used it in PRD over two years, it is the upgrade version for hive in Facebook(hive is also developed and open-source by facebook). NetFlix, Aribnb, and TeraData are engaging in presto open-source community.

2   Environment

1. Centos 6.5 final
2. Oracle JDK1.8.0_51
3. Presto 0.112
4. Hadoop CDH540 (Hadoop-2.6.0-CDH, hive-1.1.0)
5. MySQL for Presto Meta Data
6. 16 node, 1 coordinator, 16 worker. 16 GB HeapSize for Presto Worker.

3   Testing Report

3.1   Check the cluster status

```
Select * from system.runtime.nodes;
```

```
presto:mars> select * from system.runtime.nodes;
                node_id                 |           http_uri            |   node_version      | coordinator | active
----------------------------------------+-------------------------------+---------------------+-------------+--------
 de0ee2bd-4064-49a5-b033-04436822955b   | http://172.16.31.155:8866     | presto-main:0.112   | false       | true
 31330ed9-bba2-4836-957e-bcde0cedf965   | http://172.16.31.143:8866     | presto-main:0.112   | false       | true
 ba64ce7b-4850-4aff-a446-3a79cc603bd0   | http://172.16.31.146:8866     | presto-main:0.112   | false       | true
 10a79203-dc12-4b10-862a-656b3939ed45   | http://172.16.31.153:8866     | presto-main:0.112   | false       | true
 21b80c88-bea2-4f8c-b1c1-b5139db92a27   | http://172.16.31.156:8866     | presto-main:0.112   | false       | true
 7df814c4-021b-4c60-9569-1753eb1f9d24   | http://172.16.31.152:8866     | presto-main:0.112   | false       | true
 a2f1ed5f-dbd2-46d5-b699-82b7752cf3f7   | http://172.16.31.144:8866     | presto-main:0.112   | false       | true
 ce1ccf2f-9cb6-4489-8ed2-cac880eae491   | http://172.16.31.149:8866     | presto-main:0.112   | false       | true
 2c4ba944-cc59-407a-8240-3cffb795ecff   | http://172.16.31.141:8866     | presto-main:0.112   | true        | true
 65e37afc-e439-4e44-b28b-92ff9248a1af   | http://172.16.31.142:8866     | presto-main:0.112   | false       | true
 0d8ebb4b-20ea-459a-bc74-8d46194503d4   | http://172.16.31.148:8866     | presto-main:0.112   | false       | true
 c336f28d-c02b-4366-a411-9bcfaf745553   | http://172.16.31.147:8866     | presto-main:0.112   | false       | true
 dc76d898-8525-45d7-9987-8ebe9092fca0   | http://172.16.31.145:8866     | presto-main:0.112   | false       | true
 07e4cdee-24ce-424d-939e-7bbf7ee7498b   | http://172.16.31.154:8866     | presto-main:0.112   | false       | true
 8f0a52ba-6f58-4e95-99d5-480a4ce420d0   | http://172.16.31.150:8866     | presto-main:0.112   | false       | true
 92251a97-390f-4449-a7b9-a453f4e4fdda   | http://172.16.31.151:8866     | presto-main:0.112   | false       | true
(16 rows)

Query 20150806_164207_00005_hrzhc, FINISHED, 2 nodes
Splits: 2 total, 2 done (100.00%)
0:01 [16 rows, 1.25KB] [19 rows/s, 1.51KB/s]
```

3.2 Simple count query

Select count(1) as rowcount from truesight_page_orc;

Done in 8 seconds, 831434942 rows.

```
presto:mars> select count(1) as rowcount from truesight_page_orc;
 rowcount
----------
 831434942
(1 row)

Query 20150806_164521_00007_hrzhc, FINISHED, 16 nodes
Splits: 3,872 total, 3,872 done (100.00%)
0:08 [831M rows, 290GB] [99.9M rows/s, 34.9GB/s]
```

3.3 Simple distinct query

Select distinct(dt) from truesight_page_orc;

Done in 20 seconds on 800 million records, 10 days data.

```
presto:mars> select distinct(dt) from truesight_page_orc;
    dt
----------
 20150729
 20150728
 20150803
 20150727
 20150731
 20150804
 20150801
 20150802
 20150730
 20150726
(10 rows)


Query 20150806_164621_00008_hrzhc, FINISHED, 16 nodes
Splits: 3,880 total, 3,880 done (100.00%)
0:20 [831M rows, 290GB] [41.6M rows/s, 14.5GB/s]
```

3.4 Condition query (filter)

`Select * from truesight_page_orc where dt='20150726' and hour='00' and lower(cs_host) like 'secure%';`

Done in 17 seconds on 800 million records.

```
presto:mars> select * from truesight_page_orc where dt='20150726' and hour='00' and lower(cs_host) like 'secure%';
 x_location | x_record_type |  x_page_id  | x_session_id |  x_server_id  |       x_page_name        |         cs_host          |
------------+---------------+-------------+--------------+---------------+--------------------------+--------------------------+---------------------------------------
 EE         | PAGE          | 54378100441 |  4484798514  | 172.16.20.147 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378124466 |  4484873264  | 172.16.20.134 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378116308 |  4484873830  | 172.16.20.146 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378112173 |  4484873315  | 172.16.20.147 | orderhistory             | secure.newegg.com        | /NewMyAccount/OrderHistory.aspx
 EE         | PAGE          | 54378113669 |  4484873902  | 172.16.20.147 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378103734 |  4484098949  | 172.16.20.147 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378117063 |  4484873142  | 172.16.20.145 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378113355 |  4484873123  | 172.16.20.147 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378117688 |  4484873142  | 172.16.20.134 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378116632 |  4484874324  | 172.16.20.145 | shoppingcart             | secure.newegg.com        | /Shopping/ShoppingCart.aspx
 EE         | PAGE          | 54378129519 |  4484873142  | 172.16.20.134 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378116071 |  4484382263  | 172.16.34.9   | from                     | secure.newegg.com        | /5505E12A-1DDD-B941-AA43-E6A8DAFF
 EE         | PAGE          | 54379804149 |  4485002288  | 172.16.20.147 | lastpurchaseddate        | secure.neweggbusiness.com| /new/ajax/lastpurchaseddate
 EE         | PAGE          | 54379803651 |  4484382263  | 172.16.34.9   | from                     | secure.newegg.com        | /5505E12A-1DDD-B941-AA43-E6A8DAFF
 EE         | PAGE          | 54379802724 |  4485000245  | 172.16.34.7   | checkoutstep3            | secure.newegg.com        | /GlobalShopping/CheckoutStep3.asp
 EE         | PAGE          | 54379080273 |  4484944945  | 172.16.34.7   | list                     | secure.ows.newegg.com    | /customers/order.egg/list
 EE         | PAGE          | 54379084938 |  4484947364  | 172.16.34.5   | shoppingcart             | secure.newegg.com        | /Shopping/ShoppingCart.aspx
 EE         | PAGE          | 54379074666 |  4484914362  | 172.16.20.134 | 38247312                 | secure.ows.newegg.com    | /Premier.egg/IsPremierMembership/
 EE         | PAGE          | 54379086078 |  4484113232  | 172.16.20.134 | wishlist                 | secure.newegg.ca         | /WebResource/Scripts/CAN/SSL/Wish
 EE         | PAGE          | 54379085421 |  4484382263  | 172.16.34.9   | from                     | secure.newegg.com        | /5505E12A-1DDD-B941-AA43-E6A8DAFF
 EE         | PAGE          | 54379077923 |  4484913651  | 172.16.20.145 | 40945812                 | secure.ows.newegg.com    | /Premier.egg/isPremierMembership/
 EE         | PAGE          | 54379085980 |  4484947560  | 172.16.20.134 | apple-touch-icon-precomposed | secure.newegg.com    | /apple-touch-icon-precomposed.png
 EE         | PAGE          | 54378100585 |  4484768038  | 172.16.20.147 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378113882 |  4484871797  | 172.16.34.6   | securecheckout           | secure.m.newegg.com      | /Account/Login
 EE         | PAGE          | 54378117228 |  4484873222  | 172.16.20.145 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378117344 |  4484873538  | 172.16.20.134 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378116528 |  4484874017  | 172.16.20.134 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378104770 |  4484871935  | 172.16.20.146 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378120793 |  4484873538  | 172.16.20.147 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378121011 |  4484873142  | 172.16.20.145 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378117115 |  4484873902  | 172.16.20.134 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378120353 |  4484873123  | 172.16.20.134 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378105218 |  4484872126  | 172.16.34.9   | 37511031                 | secure.ows.newegg.com    | /Premier.egg/isPremierMembership/
 EE         | PAGE          | 54378125344 |  4484873123  | 172.16.20.146 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378108597 |  4484872759  | 172.16.20.147 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378109185 |  4484873915  | 172.16.20.145 | shoppingcart             | secure.newegg.com        | /Shopping/ShoppingCart.aspx
 EE         | PAGE          | 54378118714 |  4484382263  | 172.16.34.9   | from                     | secure.newegg.com        | /5505E12A-1DDD-B941-AA43-E6A8DAFF
 EE         | PAGE          | 54378116909 |  4484873498  | 172.16.20.145 | accountlogin             | secure.newegg.com        | /NewMyAccount/AccountLogin.aspx
 EE         | PAGE          | 54378092268 |  4484869580  | 172.16.20.134 | shoppingcart             | secure.newegg.com        | /Shopping/ShoppingCart.aspx
 EE         | PAGE          | 54378111269 |  4484818531  | 172.16.34.7   |                          | secure.ows.newegg.com    | /wishlist.egg/detail/
```

```
EE          | PAGE       | 54378133801 |   4484873498 | 172.16.20.134 | accountlogin              | secure.newegg.com           | /NewMyAccount/AccountLogin.aspx
EE          | PAGE       | 54378112260 |   4484871576 | 172.16.20.145 | accountlogin              | secure.newegg.com           | /NewMyAccount/AccountLogin.aspx
EE          | PAGE       | 54378117479 |   4484874017 | 172.16.20.134 | accountlogin              | secure.newegg.com           | /NewMyAccount/AccountLogin.aspx
(query aborted by user)

Query 20150806_165234_00010_hrzhc, RUNNING, 16 nodes
Splits: 3,872 total, 1,120 done (28.93%)
0:17 [420M rows, 165GB] [24.5M rows/s, 9.64GB/s]
```

3.5   Select large result set

`Select * from truesight_page_orc where dt='20150726' and hour='00' and lower(cs_host) like 'secure%';`

Done in 25 seconds on 800 million records.

```
presto:mars> select * from truesight_page_orc where dt='20150726' and hour='00' and lower(cs_host) like 'secure%';
x_location | x_record_type | x_page_id  | x_session_id | x_server_id   |    x_page_name            |        cs_host                |
-----------+---------------+------------+--------------+---------------+---------------------------+-------------------------------+-------------------------
EE         | PAGE          | 54380711325 |   4484382263 | 172.16.34.9   | from                      | secure.newegg.com             | /5505E12A-1DDD-B941-AA43-E6A8DAF
EE         | PAGE          | 54380694086 |   4484254168 | 172.16.34.9   | 40101472                  | secure.ows.newegg.com         | /Premier.egg/IsPremierMembership
EE         | PAGE          | 54380706500 |   4484950449 | 172.16.34.5   | 2512026                   | secure.ows.newegg.com         | /Premier.egg/isPremierMembership
EE         | PAGE          | 54380714111 |   4484382263 | 172.16.34.9   | from                      | secure.newegg.com             | /5505E12A-1DDD-B941-AA43-E6A8DAF
EE         | PAGE          | 54380710694 |   4484461175 | 172.16.34.1   | 36065525                  | secure.ows.newegg.com         | /Premier.egg/IsPremierMembership
EE         | PAGE          | 54380714399 |   4485063727 | 172.16.34.5   | addtocart                 | secure.newegg.com             | /Shopping/ShoppingCart.aspx
EE         | PAGE          | 54380693291 |   4485052483 | 172.16.20.134 | checkoutstep2             | secure.newegg.com             | /Guest/CheckoutStep3.aspx
EE         | PAGE          | 54380711300 |   4484888246 | 172.16.34.6   | accountlogin              | secure.neweggbusiness.com     | /New/NewMyAccount/AccountLogin.a
EE         | PAGE          | 54380711914 |   4485067469 | 172.16.20.134 | accountlogin              | secure.newegg.com             | /NewMyAccount/AccountLogin.aspx
EE         | PAGE          | 54380714955 |   4484382263 | 172.16.34.9   | from                      | secure.newegg.com             | /5505E12A-1DDD-B941-AA43-E6A8DAF
EE         | PAGE          | 54380717433 |   4485067528 | 172.16.20.134 | accountlogin              | secure.newegg.com             | /NewMyAccount/AccountLogin.aspx
EE         | PAGE          | 54380708533 |   4485063527 | 172.16.20.145 | 49677850                  | secure.ows.newegg.com         | /Premier.egg/isPremierMembership
EE         | PAGE          | 54380690159 |   4485062257 | 172.16.34.7   | shoppingcart              | secure.newegg.com             | /Shopping/ShoppingCart.aspx
EE         | PAGE          | 54380688635 |   4485065550 | 172.16.20.134 | shoppingcart              | secure.newegg.com             | /Shopping/ShoppingCart.aspx
EE         | PAGE          | 54380689603 |   4484113232 | 172.16.20.134 | %5Cetc%5Chosts            | secure.newegg.ca              | /WebResource/Themes/2005/CSS/Sec
EE         | PAGE          | 54380689225 |   4485066336 | 172.16.20.145 | addtocart                 | secure.newegg.com             | /Shopping/ShoppingCart.aspx
EE         | PAGE          | 54380690815 |   4485066305 | 172.16.34.6   | iframe3rdpartycodetotal   | secure.newegg.com             | /Common/ThirdParty/IFrame3rdPart
EE         | PAGE          | 54380688876 |   4485052145 | 172.16.20.145 | createpassword            | secure.newegg.ca              | /NewMyAccount/MessagePage.aspx
EE         | PAGE          | 54380688110 |   4485065132 | 172.16.20.146 | iframe3rdpartycodetotal   | secure.newegg.com             | /Common/ThirdParty/IFrame3rdPart
EE         | PAGE          | 54380690521 |   4485066223 | 172.16.34.7   | minicartupdate            | secure.newegg.com             | /Common/Ajax/MiniCartUpdate.aspx
EE         | PAGE          | 54380688541 |   4485061319 | 172.16.20.145 | paypalreturn              | secure.newegg.com             | /Guest/CheckoutStep3.aspx
EE         | PAGE          | 54380688758 |   4485063374 | 172.16.20.147 | temporarywishlist         | secure.newegg.com             | /WishList/TemporaryWishList.aspx
EE         | PAGE          | 54380689396 |   4485066336 | 172.16.20.145 | shoppingcart              | secure.newegg.ca              | /Shopping/ShoppingCart.aspx
EE         | PAGE          | 54380689394 |   4485065972 | 172.16.20.147 | iframe3rdpartycodetotal   | secure.newegg.com             | /Common/ThirdParty/IFrame3rdPart
EE         | PAGE          | 54380688091 |   4485062237 | 172.16.20.134 | wishcartplus              | secure.newegg.com             | /WishList/TemporaryWishList.aspx
EE         | PAGE          | 54380691533 |   4485066161 | 172.16.34.9   | checkstatebyip            | secure.newegg.com             | /Common/Ajax/CheckStateByIP.aspx
EE         | PAGE          | 54380689175 |   4485054927 | 172.16.20.146 | shoppingcart              | secure.newegg.com             | /Shopping/ShoppingLogin.aspx
EE         | PAGE          | 54380689316 |   4485064798 | 172.16.20.147 | checkoutstep3             | secure.newegg.com             | /GlobalShopping/CheckoutStep3.as
EE         | PAGE          | 54380691202 |   4485064221 | 172.16.34.9   | accountlogin              | secure.newegg.com             | /NewMyAccount/AccountLogin.aspx
EE         | PAGE          | 54380685670 |   4485063751 | 172.16.20.145 | addtocart                 | secure.newegg.com             | /Shopping/ShoppingCart.aspx
EE         | PAGE          | 54380688381 |   4485065972 | 172.16.20.147 | addtocart                 | secure.newegg.com             | /Shopping/ShoppingCart.aspx
EE         | PAGE          | 54380688115 |   4485063751 | 172.16.20.145 | iframe3rdpartycodetotal   | secure.newegg.com             | /Common/ThirdParty/IFrame3rdPart
EE         | PAGE          | 54380689597 |   4485018684 | 172.16.20.145 | orderhistory              | secure.newegg.com             | /NewMyAccount/OrderHistory.aspx
EE         | PAGE          | 54380690766 |   4485066293 | 172.16.34.9   | shoppingcart              | secure.newegg.com             | /Shopping/ShoppingCart.aspx
EE         | PAGE          | 54380688439 |   4485065550 | 172.16.20.134 | shoppingcart              | secure.newegg.com             | /Shopping/ShoppingCart.aspx
EE         | PAGE          | 54380688324 |   4484795152 | 172.16.20.145 |                           | secure.ows.newegg.com         | /wishlist.egg/detail/
EE         | PAGE          | 54380689083 |   4485062453 | 172.16.20.134 | responseorderfrombank     | secure.newegg.com             | /Shopping/CheckoutStep3.aspx
EE         | PAGE          | 54380688127 |   4485066180 | 172.16.20.145 | addtocart                 | secure.newegg.ca              | /Shopping/ShoppingCart.aspx
EE         | PAGE          | 54380689562 |   4485062774 | 172.16.20.134 | messages                  | secure.newegg.com             | /NewMyAccount/Messages.aspx
EE         | PAGE          | 54380691362 |   4484939415 | 172.16.34.7   | shoppingcartisdirectcheckout | secure.ows.newegg.com      | /api/ShoppingCartIsDirectCheckou
EE         | PAGE          | 54380690702 |   4484924703 | 172.16.34.6   | shoppingcart              | secure.newegg.com             | /Shopping/ShoppingCart.aspx
EE         | PAGE          | 54379544556 |   4484980610 | 172.16.34.6   | iframe3rdpartycodetotal   | secure.newegg.com             | /Common/ThirdParty/IFrame3rdParty
EE         | PAGE          | 54379544386 |   4484978030 | 172.16.20.134 | 21447005                  | secure.ows.newegg.com         | /Premier.egg/IsPremierMembership/
EE         | PAGE          | 54379546180 |   4484979425 | 172.16.34.5   | subscriptions             | secure.newegg.ca              | /NewMyAccount/MessagePage.aspx
EE         | PAGE          | 54380245599 |   4483945871 | 172.16.34.9   | accountlogin              | secure.neweggbusiness.com     | /new/newmyaccount/accountlogin.as
(query aborted by user)

Query 20150806_165536_00014_hrzhc, RUNNING, 16 nodes
Splits: 3,872 total, 595 done (15.37%)
0:25 [317M rows, 129GB] [12.8M rows/s, 5.19GB/s]
```

3.6   Complicated query with filter, like, group by, order by, count, top.

```
select
c_ip,
cs_uri_stem,
cs_host,
count(cs_uri_stem) ct,
cs_method,
sc_status,
```

```
count( distinct x_session_id) sessioncount
from oos.traffic_data_orc
where lower(cs_host) like 'secure%'
and c_ip<>'' and c_ip <> '198.100.137.34'
group by c_ip, cs_uri_stem,cs_host,cs_method,sc_status
having count(cs_uri_stem)>500
limit 100;
```

Done in 1 minute 10 seconds on 800 million records.

```
presto:mars> select c_ip, cs_uri_stem, cs_host, count(cs_uri_stem) ct, cs_method, sc_status, count( distinct x_session_id) sessioncount from mars.truesight_page_orc
ere lower(cs_host) like 'secure%' and c_ip<>'' and c_ip <> '204.14.213.149' group by c_ip, cs_uri_stem,cs_host,cs_method,sc_status having count(cs_uri_stem)>500 orde
by ct desc limit 100;
       c_ip       |                          cs_uri_stem                          |         cs_host         |  ct   | cs_method | sc_status | ses
------------------+---------------------------------------------------------------+-------------------------+-------+-----------+-----------+----
 184.173.129.66   | /Captcha/Index                                                | secure.m.newegg.com     | 99818 | GET       |       200 |
 74.86.197.38     | /Shopping/ShoppingCart.aspx                                   | secure.newegg.com       | 60287 | GET       |       200 |
 50.17.119.107    | /new/newmyaccount/b2baccountregistration.aspx                 | secure.neweggbusiness.com | 28437 | GET     |       302 |
 50.17.119.107    | /new/newmyaccount/accountlogin.aspx                           | secure.neweggbusiness.com | 28434 | GET     |       302 |
 74.62.251.236    | /5505E12A-1DDD-B941-AA43-E6A8DAFF4410/88F27D2C-8ABD-D14A-89F8-E4144E28F19A/from/ | secure.neweggbusiness.com | 22288 | GET | 404 |
 54.237.246.232   | /new/newmyaccount/accountlogin.aspx                           | secure.neweggbusiness.com | 21300 | GET     |       302 |
 54.237.246.232   | /new/newmyaccount/b2baccountregistration.aspx                 | secure.neweggbusiness.com | 21292 | GET     |       302 |
 206.190.149.45   | /Shopping/ShoppingCart.aspx                                   | secure.newegg.ca        | 20107 | GET       |       200 |
 54.209.60.63     | /NewMyAccount/AccountLogin.aspx                               | secure.newegg.com       | 19051 | GET       |       200 |
 73.231.112.43    | /A5CB5E92-38C3-3340-8F97-D8FB99C6A833/467BB893-5028-FF4C-9D03-C214AC447B20/from/ | secure.newegg.com | 17681 | GET | 404 |
 54.83.105.242    | /new/newmyaccount/b2baccountregistration.aspx                 | secure.neweggbusiness.com | 15948 | GET     |       302 |
 54.83.105.242    | /new/newmyaccount/accountlogin.aspx                           | secure.neweggbusiness.com | 15943 | GET     |       302 |
 54.83.206.213    | /Shopping/AddToCart.aspx                                      | secure.newegg.com       | 14629 | GET       |       302 |
 50.17.119.107    | /new/feedback/rateproduct.aspx                                | secure.neweggbusiness.com | 12512 | GET     |       302 |
 54.209.60.63     | /Shopping/ShoppingCart.aspx                                   | secure.newegg.com       | 12394 | GET       |       200 |
 24.236.250.254   | /New/404.aspx                                                 | secure.neweggbusiness.com | 12100 | GET     |       302 |
 107.145.126.131  | /CB13D742-B070-844E-9B19-97E8D7803993/945B30F5-3345-6446-9275-3889E67860D3/from | secure.newegg.com | 12052 | POST |     302 |
 54.83.206.213    | /Shopping/ShoppingCart.aspx                                   | secure.neweggbusiness.com | 11642 | GET     |       302 |
 71.190.132.28    | /New/NewMyAccount/AccountLogin.aspx                           | secure.neweggbusiness.com | 11206 | GET     |       200 |
 216.52.208.149   | /Common/Ajax/TrackOrderHandler.aspx                          | secure.newegg.com       | 10889 | GET       |       200 |
 71.21.34.177     | /GiftCard/BalanceCheck.aspx                                   | secure.newegg.com       |  9954 | POST      |       200 |
 202.133.226.43   | /ShoppingLogin.egg                                            | secure.ows.newegg.com   |  9629 | POST      |       200 |
 54.237.246.232   | /new/feedback/rateproduct.aspx                                | secure.neweggbusiness.com |  9475 | GET     |       302 |
 54.241.198.78    | /Shopping/AddToCart.aspx                                      | secure.newegg.com       |  9105 | HEAD      |       302 |
 50.18.94.121     | /Shopping/AddToCart.aspx                                      | secure.newegg.com       |  8800 | HEAD      |       302 |
 54.151.42.39     | /Shopping/AddToCart.aspx                                      | secure.newegg.com       |  8142 | HEAD      |       302 |
 174.115.118.120  | /WebResource/Themes/2005/CSS/CAN/font-awesome.v1.s.10706.2.css | secure.newegg.ca      |  7490 | HEAD      |       200 |
 204.89.152.90    | /new/ajax/lastpurchaseddate                                   | secure.neweggbusiness.com |  6795 | GET     |       200 |
 162.17.27.238    | /Guest/OrderStatus.aspx                                       | secure.newegg.com       |  6638 | GET       |       200 |
 172.56.12.76     | /ShoppingCart                                                 | secure.m.newegg.com     |  6276 | GET       |      NULL |
 54.83.105.242    | /new/feedback/rateproduct.aspx                                | secure.neweggbusiness.com |  6222 | GET     |       302 |
 162.17.27.238    | /Guest/OrderLogin.aspx                                        | secure.newegg.com       |  5951 | POST      |       302 |
 54.83.105.242    | /new/newmyaccount/accountlogin.aspx                           | secure.neweggbusiness.com |  5812 | GET     |       200 |
 54.83.105.242    | /new/newmyaccount/b2baccountregistration.aspx                 | secure.neweggbusiness.com |  5812 | GET     |       200 |
 54.83.206.213    | /Shopping/ShoppingCart.aspx                                   | secure.newegg.com       |  5770 | GET       |       200 |
 204.89.152.91    | /Common/ThirdParty/IFrame3rdPartyCodeTotal.aspx              | secure.newegg.com       |  5669 | GET       |       200 |
 107.145.126.131  | /CB13D742-B070-844E-9B19-97E8D7803993/945B30F5-3345-6446-9275-3889E67860D3/from/ | secure.newegg.com |  5278 | GET |     404 |
 54.237.246.232   | /new/newmyaccount/accountlogin.aspx                           | secure.neweggbusiness.com |  4850 | GET     |       200 |
 54.237.246.232   | /new/newmyaccount/b2baccountregistration.aspx                 | secure.neweggbusiness.com |  4845 | GET     |       200 |

 24.189.141.202   | /Shopping/ShoppingCart.aspx                                   | secure.newegg.com       |  2264 | GET       |       200 |
 198.205.118.69   | /Shopping/ShoppingCart.aspx                                   | secure.newegg.com       |  2245 | GET       |       200 |
 24.236.250.254   | /new/shopping/shoppinglogin.aspx                              | secure.neweggbusiness.com |  2226 | GET     |       200 |
 24.236.250.254   | /new/newmyaccount/accountlogin.aspx                           | secure.neweggbusiness.com |  2223 | GET     |       200 |
 72.52.77.18      | /Shopping/ShoppingCart.aspx                                   | secure.newegg.com       |  2174 | GET       |       200 |
 54.237.246.232   | /New/NewMyAccount/AccountLogin.aspx                           | secure.neweggbusiness.com |  2165 | GET     |       200 |
 24.188.80.93     | /Shopping/ShoppingCart.aspx                                   | secure.newegg.com       |  2149 | GET       |       200 |
 204.89.152.90    | /new/ajax/email                                               | secure.neweggbusiness.com |  2134 | GET     |       200 |
 208.94.246.251   | /Shopping/ShoppingCart.aspx                                   | secure.newegg.com       |  2131 | GET       |       200 |
(100 rows)

Query 20150806_165754_00016_hrzhc, FINISHED, 16 nodes
Splits: 3,888 total, 3,888 done (100.00%)
1:10 [831M rows, 290GB] [11.8M rows/s, 4.13GB/s]
```
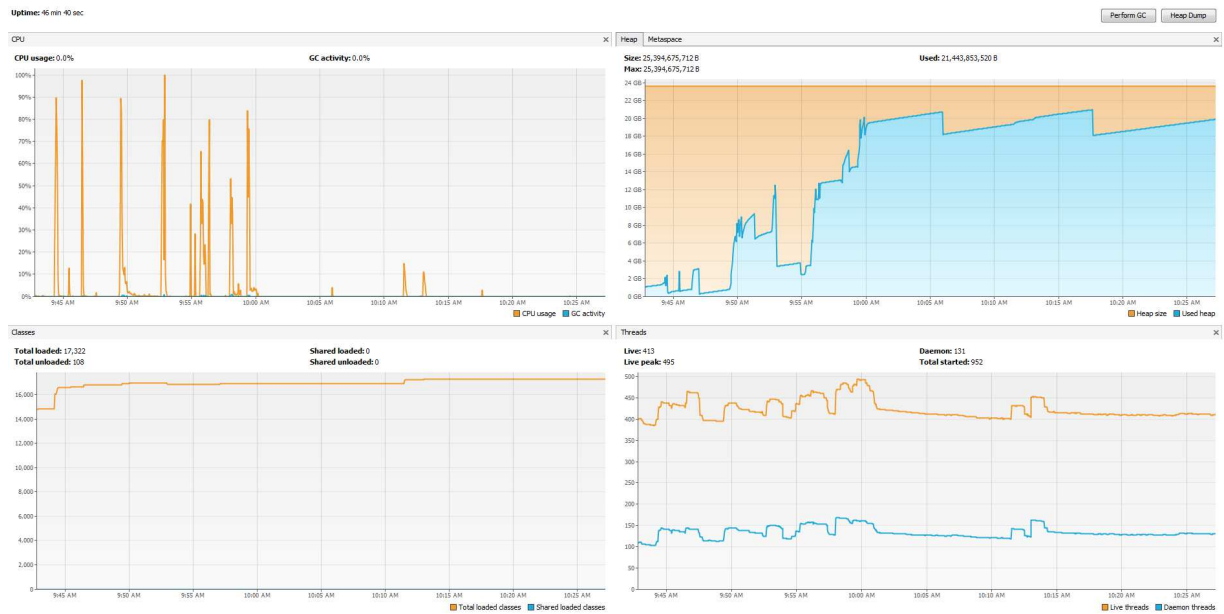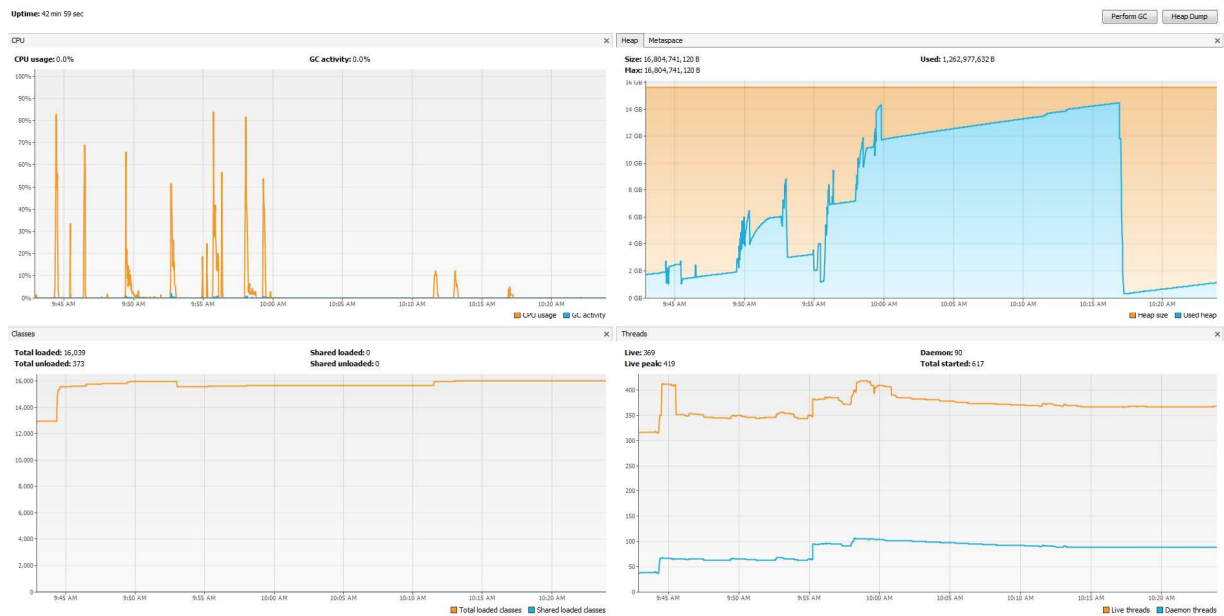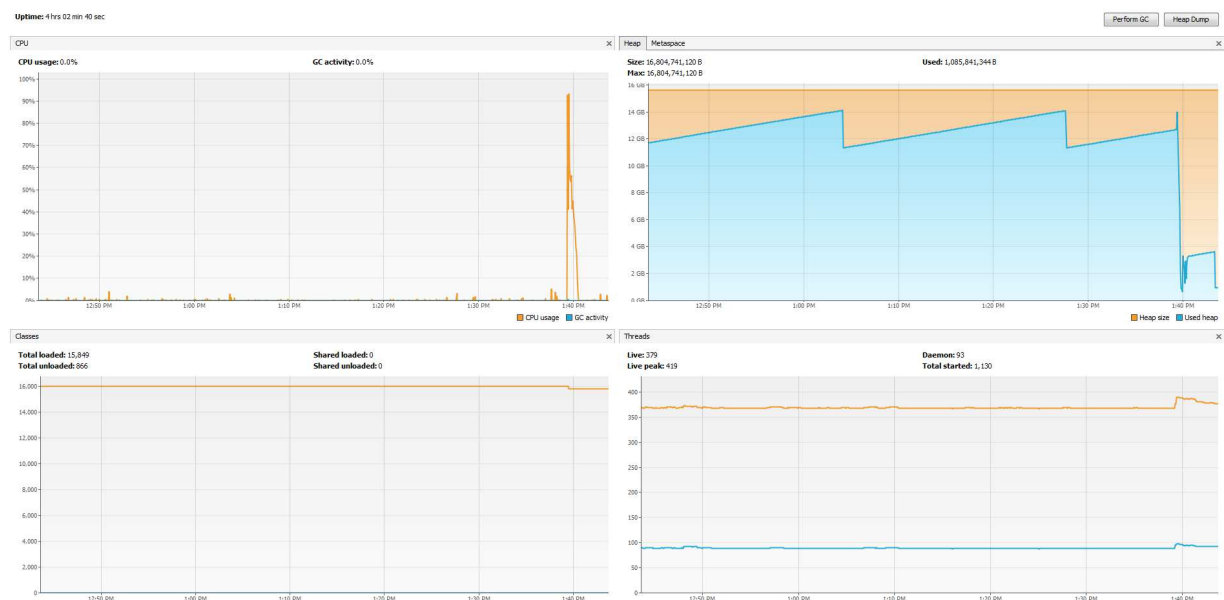
4   Server Pressure Monitor

CPU will get peak when heavy query, but just a few seconds.

Memory will increase slowly, and GC can handle it.

4.1 Coordinator Status

4.2 Worker Status

4. ORC File vs CSV File

CSV File costs more CPU, and job may fail. ORC file can provide better and more stable performance.

```
select
c_ip,
cs_uri_stem,
cs_host,
```

```
count(cs_uri_stem) ct,
cs_method,
sc_status,
count( distinct x_session_id) sessioncount
from oos.traffic_data
where dt like '2015072%' and lower(cs_host) like 'secure%'
and c_ip<>'' and c_ip <> '198.100.137.34'
group by c_ip, cs_uri_stem,cs_host,cs_method,sc_status
having count(cs_uri_stem)>500
limit 1000;
```


The coordinator may hang, and cannot support more queries.