

Suggestions for Data Transporter Optimization

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1 Background

Based on the performance metrics from Network Zodiac, the Bole-IGW and Microwave-IGW device group show high disk I/O usage of 85%, which induces log lagging. At peak hour, the Bole-IGW and Microwave-IGW each generate 160,000 per second. And the peak disk I/O is 320MB/s.

2 Solution

We recommend modifying the flush settings of Message Queue, which rely on background flushes done by Linux. Flush settings provide high throughput and low latency. There are a few necessary trade-offs here, including durability, latency, and throughput. We will be focused on latency and throughput.

Therefore, the following parameters will be modified :

- ❶ • `log.flush.interval.messages`: the number of messages to accept before forcing a flush of data to disk.
- `log.flush.interval.ms`: The maximum time a message can sit in a log before we force a flush.

Step 1: Log in to device groups `Bole-IGW` and `Microwave-IGW`, respectively, and backup configuration.

- ❶ "221227" The YYYYMMDD is subject to the actual operation date.

```
cd /data/tsg/olap/galaxy/volumes/kafka/config
cp -r server.properties server.properties_641_221227
```

Step 2: Modifying the parameters of `server.properties`

```
sed -i 's/log.flush.interval.messages/#log.flush.interval.messages/g' server.properties
sed -i 's/log.flush.interval.ms/#log.flush.interval.ms/g' server.properties
```

Step3: To verify the operation result, the parameter needs to be preceded by #

```
cat server.properties | egrep "log.flush.interval.messages|log.flush.interval.ms"
```

```
[root@bigdata-231 kafka]# cat server.properties | egrep "log.flush.interval.messages|log.flush.interval.ms"
#log.flush.interval.messages=10000
#log.flush.interval.ms=1000
[root@bigdata-231 kafka]#
```

Step4: Restart Kafka

```
docker restart kafka
```

Step5: Validation

 Restart and wait about 2 minutes

```
docker exec -it zookeeper zkCli.sh ls /kafka/brokers/id
```

The result will return **1**. As the following figure :

```
[root@bigdata-231 kafka]# docker exec -it zookeeper zkCli.sh ls /kafka/brokers/ids
log4j:WARN No such property [maxFileSize] in org.apache.log4j.DailyRollingFileAppender.
log4j:WARN No such property [dataPattern] in org.apache.log4j.DailyRollingFileAppender.
Connecting to localhost:2181

WATCHER::

WatchedEvent state:SyncConnected type:None path:null
[1]
[root@bigdata-231 kafka]#
```

Checking Flink status:

```
docker exec -it jobmanager flink list
```

All jobs will return ***RUNNING***. As the following figure :

```
[root@bigdata-231 kafka]# docker exec -it jobmanager flink list
Waiting for response...
----- Running/Restarting Jobs -----
09.12.2022 10:29:58 : 835d78e9b5491864e7953b5791b45401 : RELATIONSHIP-RADIUS-ACCOUNT (RUNNING)
09.12.2022 10:31:32 : 8d91abd4cc31b49d7aab5f848377339a : DOS-SKETCH-RECORD (RUNNING)
09.12.2022 10:31:56 : 817005816c04b7fbf337edb0ccca995d : ETL-ACTIVE-DEFENCE-EVENT-COMPLETED (RUNNING)
09.12.2022 10:32:18 : efd106d5b4002538377aaf3f607a1a01 : ETL-BGP-RECORD-COMPLETED (RUNNING)
09.12.2022 10:32:42 : 6f1b22c0aa140f39b8c175c5c4c5b360 : ETL-GTPC-RECORD-COMPLETED (RUNNING)
09.12.2022 10:33:06 : d59749950b4777168013d69ef3a82bfd : ETL-INTERIM-SESSION-RECORD-COMPLETED (RUNNING)
09.12.2022 10:33:29 : 7a6873b452d6b51309a73012eb0e1dea : ETL-PROXY-EVENT-COMPLETED (RUNNING)
09.12.2022 10:33:51 : d7ec811cd5464468de19f25e6ebaea67 : ETL-RADIUS-RECORD-COMPLETED (RUNNING)
09.12.2022 10:34:14 : ae4f8e683d6fd50a7e70b3d78fb3710d : ETL-SECURITY-EVENT-COMPLETED (RUNNING)
09.12.2022 10:34:38 : 65bcd22e98a988795cc0176dac474679 : ETL-SESSION-RECORD-COMPLETED (RUNNING)
09.12.2022 10:35:02 : 573c35ba4836ebcd8e123ec625e55f5c : ETL-VOIP-RECORD-COMPLETED (RUNNING)
09.12.2022 10:35:25 : 7d023cea22b1319b80e32441ee635e09 : INTERNAL-PACKET-CAPTURE-EVENT (RUNNING)
09.12.2022 10:35:47 : d592c134a178bd06666c946f000dbfad : PXY-EXCH-INTERMEDIA-CERT (RUNNING)
09.12.2022 10:36:10 : fdf6001b2cffe9bd9fca678a8d444c4d2 : SYS-PACKET-CAPTURE-EVENT (RUNNING)
09.12.2022 10:36:34 : 03a2e42a83d324e25dab4bd722533406 : TRAFFIC-METRICS (RUNNING)
09.12.2022 10:37:24 : 30706b44ed01e7080082a890a74368b2 : RADIUS-ON-OFF (RUNNING)
09.12.2022 10:37:52 : 115d97c8025551c8d031b7ff692291ec : VOIP-RELATION (RUNNING)
09.12.2022 10:38:22 : 41162d8d92b879bd729643a84b744d63 : RELATIONSHIP-GTPC-USER (RUNNING)
-----
No scheduled jobs.
```