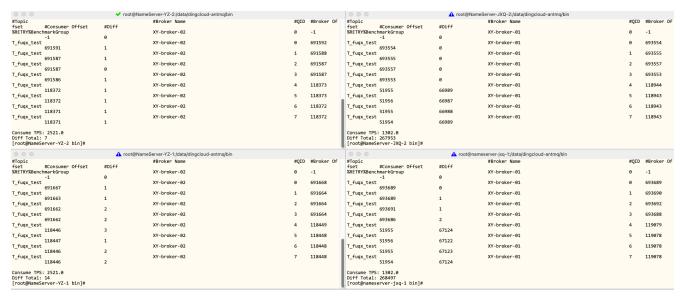
MQ 消息堆积原因分析

部署情况

酒仙桥机房			亦庄机房		
hostname	ip	角色	hostname	ip	角色
namesrv-jxq-1	100.73.14.170	nginx-namesrv/brok er-01-logserver	namesrv-yz-1	100.73.14.180	nginx-namesrv/brok er-02-logserver
namesrv-jxq-2	100.73.14.171	nginx-mqagent	namesrv-yz-2	100.73.14.181	nginx-mqagent
namesrv-jxq-1	100.73.14.170	namesrv	namesrv-yz-1	100.73.14.180	namesrv
namesrv-jxq-2	100.73.14.171	namesrv	namesrv-yz-2	100.73.14.181	namesrv
	100.73.14.172	broker-01-master		100.73.14.184	broker-01-slave
	100.73.14.173	broker-01-slave		100.73.14.185	broker-01-slave
	100.73.14.174	broker-02-slave		100.73.14.182	broker-02-master
	100.73.14.175	broker-02-slave		100.73.14.183	broker-02-slave

晓月机房消息堆积



查看consumerstatus

```
[root@NameServer-YZ-2 bin]# cat 1712043517454/*188
  #Consumer Properties#
adjustThreadPoolNumsThreshold
   unitMode
                                                                                                                        false
  consumerGroup
messageModel
allocateMessageQueueStrategy
                                                                                                                         BenchmarkGroup
                                                                                                                        CLUSTERING
com.jiedaibao.antmq.client.consumer.rebalance.AllocateMessageQueueAveragely@2106b899
ANTMQ1_3_10
  PROP_CLIENT_VERSION
consumeConcurrentlyMaxSpan
postSubscriptionWhenPull
                                                                                                                        2000
false
 postubscriptionwhenfull
consumeTimestamp
PROP_CONSUME_TYPE
consumeMessageBatchMaxSize
defaultMQPushConsumerImpl
PROP_THREADPOOL_CORE_SIZE
pullThresholdForQueue
                                                                                                                        20240402150052
                                                                                                                         CONSUME_PASSIVELY
                                                                                                                        com.jiedaibao.antmq.client.impl.consumer.DefaultMQPushConsumerImpl@6cb80a0e
   consumeFromWhere
                                                                                                                         CONSUME_FROM_FIRST_OFFSET
  pullInterval
PROP_NAMESERVER_ADDR
pullBatchSize
                                                                                                                        100.73.14.180:9876;100.73.14.181:9876;
                                                                                                                        32
   consumeThreadMin
PROP_CONSUMER_START_TIMESTAMP
                                                                                                                        1712043052781
   consumeThreadMax
   subscription
PROP_CONSUMEORDERLY
                                                                                                                    : \verb|com.jiedaibao.antmq.example.benchmark.ConsumerBenchmark| \verb|s2@5492e6bf| \\
   messageListener
   #Consumer Subscription#
                                                                                                                                                     ClassFilter: false
ClassFilter: false
  001 Topic: %RETRY%BenchmarkGroup
002 Topic: T_fuqx_test
                                                                                                                                                                                                                   SubExpression: *
SubExpression: *
   #Consumer Offset#
  #Topic
%RETRY%BenchmarkGroup
                                                                                                   #Broker Name
                                                                                                                                                                                                  #QID #Consumer Offset
                                                                                                   XY-broker-02
 T_fuqx_test
T_fuqx_test
T_fuqx_test
T_fuqx_test
T_fuqx_test
T_fuqx_test
                                                                                                   XY-broker-02
XY-broker-02
                                                                                                                                                                                                                   706194
706189
                                                                                                   XY-broker-02
                                                                                                                                                                                                                    706188
                                                                                                  XY-broker-02
XY-broker-02
                                                                                                                                                                                                                    706188
                                                                                                                                                                                                                    132974
  T_fuqx_test
T_fuqx_test
T_fuqx_test
                                                                                                   XY-broker-02
                                                                                                                                                                                                                    132974
                                                                                                   XY-broker-02
                                                                                                                                                                                                                    132974
                                                                                                   XY-broker-02
100000
false
false
fulse
                                                                          com.jiedaibao.antmq.client.impl.consumer.DefaultMQPushConsumerImpl@194bb573
                                                                         1000
CONSUME_FROM_FIRST_OFFSET
                                                                          100.73.14.180:9876;100.73.14.181:9876;
32
                                                                         1712043052760
                                                                      : {}
: false
: com.jiedaibao.antmq.example.benchmark.ConsumerBenchmark$2@5e4df4c2
 #Consumer Subscription#
801 Topic: %RETRY%BenchmarkGroup
802 Topic: T_fuqx_test
                                                                                          ClassFilter: false SubExpression: *
ClassFilter: false SubExpression: *
```

查看topicroute,发现topic

```
✓ root@NameServer-YZ-2:/data/dingcloud-antmq/bin

                                                                                                                                                                                                                                                                                                             ▲ root@NameServer-JXQ-2:/data/dingcloud-antmq/bin
                                                                                                                                                                                                                                                                                     "perm":6,
"readQueueNums":8,
"topicSynFlag":0,
"writeQueueNums":8
                                               brokerAddrs":{0:"100.73.14.182:10911"
                                             },
"brokerName":"XY-broker-02",
"writeable":true
                                            "brokerAddrs":{},
"brokerName":"XY-broker-01",
"writeable":true
                                                                                                                                                                                                                                              ot@NameServer-JXQ-2 bin]# sh ./mgadmin topicroute -n127.0.0.1:9876 -t T_fupx_test
a hotSpot(TM) 64-Bit Server VM warning: ignoring option Permiziez=12ms; upport was removed in 8.0
a hotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=128m; support was removed in 8.0
                                                                                                                                                                                                                                                                                        prokerAddrs":{0:"100.73.14.172:10911"
                                             "brokerName":"XY-broker-01",
"perm":6,
                                                                                                                                                                                                                                                                                    },
"brokerName":"XY-broker-01",
"writeable":true
                                                                                                                                                                                                                                                                                     "brokerName":"XY-br
"perm":6,
"readQueueNums":8,
"topicSynFlag":0,
"writeQueueNums":8
                                             "perm":6,
"readQueueNums":8,
"topicSynFlag":0,
"writeOueueNums":8
}
[root@NameServer-YZ-2 bin]#
                                                                                                                                                                                                                                   [root@NameServer-JXQ-2 bin]#

✓ root@NameServer-JXQ-1:/data/dingcloud-antmq/bin

✓ root@NameServer-YZ-1:/data/dingcloud-antmq/bin

                                                                                                                                                                                                                                                                  }
}
[prot@WameServer-YZ-1 bin]# sh ./mqadmin topicroute -n127.8.0.1:9876 -t T_fuqx_test
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option PermSize-1Zem; support was removed in 8.0
Java HotSpot(TM) 64-Bit Server VM warning: ingnoring option Man2PermSize-1Zem; support was removed in 8.0
                                                                                                                                                                                                                                        }
[root@NameServer-JXQ-1 bin]# sh ./mqadmin topicroute -n127.0.0.1:9876 -t T_fuqx_test
Java Hotspot(TM) 64-81t Server VM warning: ignoring option PermsIze=128m; support was removed in 8.0
Java Hotspot(TM) 64-81t Server VM warning: ignoring option MaxPermSize=128m; support was removed in 8.0
                                             },
"brokerName":"XY-broker-02",
"writeable":true
                                                                                                                                                                                                                                                                                     },
"brokerName":"XY-broker-01",
"writeable":true
                                                                                                                                                                                                                                                                 }
               ],
"filterServerTable":{},
"aueueDatas":[
                                                                                                                                                                                                                                                      ],
"filterServerTable":{},
"queueDatas":[
                                             "brokerName": "XY-broker-02",
"perm":6,
"readQueueNums":8,
"topicSynflag":0,
"writeQueueNums":8
                                                                                                                                                                                                                                                                                     "brokerName":"XY-broker-01",
"penm":6,
"readQueueNums":8,
"topicSynFlag":0,
"writeQueueNums":8
                                                                                                                                                                                                                                   | [root@NameServer-JXQ-1 bin]#
               meServer-YZ-1 bin]#
    ult 🕃 📵 10 💮 esh dba 🌑 dba 👚 mysgl 127 💮 dba_db 👚 lest dba_manager 🌑 test root 🌑 root ( 🎵 Read Time 👚 mysglbinlog ( ) mysglbinlog gild 🐧 acciver root ( ) root ( 7 ) codis 🕞 root ( ) 👚 mylogin ( ) 192.52
```

查看consumerconnection

消费组重新平衡代码调用流程

启动时注册rebalanceService

在 rebalanceService.run() 中 调用

this.mqClientFactory.doRebalance();

Mq ClientInstance.doRebalance()

```
public void doRebalance() {
  for (String group : this.consumerTable.keySet()) {
   MQConsumerInner impl = this.consumerTable.get(group);
   if (impl != null) {
    try {
      impl.doRebalance();
   } catch (Exception e) {
      log.error("doRebalance exception", e);
   }
  }
  }
}
```

RebalanceImpl.doRebalance()

```
public void doRebalance() {
Map<String, SubscriptionData> subTable = this.getSubscriptionInner();
if (subTable != null) {
for (final Entry<String, SubscriptionData> entry : subTable.entrySet()) {
final String topic = entry.getKey();
try {
this.rebalanceByTopic(topic);
} catch (Exception e) {
if (!topic.startsWith(MixAll.RETRY_GROUP_TOPIC_PREFIX)) {
log.warn("rebalanceByTopic Exception", e);
}
}
this.truncateMessageQueueNotMyTopic();
}
```

页 3

RebalanceImpl.rebalanceByTopic()

```
♣ 18 ♣ 1 ★ 22 ^
private void rebalanceByTopic(final String topic) {
         switch (messageModel) {
         case BROADCASTING: {...}
         case CLUSTERING: {
                   Set<MessageQueue> mqSet = this.topicSubscribeInfoTable.get(topic);
                   List<String> cidAll = this.mQClientFactory.findConsumerIdList(topic, consumerGroup);
                   if (null == mgSet) {...}
                   if (null == cidAll) {...}
                   if (maSet != null && cidAll != null) {
                             List<MessageQueue> mgAll = new ArrayList<~>();
                             mgAll.addAll(mgSet);
                             Collections.sort(mgAll):
                             Collections.sort(cidAll);
                             AllocateMessageQueueStrategy strategy = this.allocateMessageQueueStrategy;
                             List<MessageQueue> allocateResult = null;
                             try {...} catch (Throwable e) {...}
                             Set<MessageQueue> allocateResultSet = new HashSet<~>();
                             if (allocateResult != null) {
                                       allocateResultSet.addAll(allocateResult);
                             boolean changed = this.updateProcessQueueTableInRebalance(topic, allocateResultSet);
                             if (changed) {
                                                           "rebalanced allocate source. allocateMessageQueueStrategyName=\{\}, \ group=\{\}, \ topic=\{\}, \ mqAllSize=\{\}, \ cidAllSize=\{\}, \ mqAll=\{\}, \ cidAllSize=\{\}, \ mqAll=\{\}, \ cidAllSize=\{\}, \ mqAllSize=\{\}, \ mqAll
                                                           strategy.getName(), consumerGroup, topic, mqSet.size(), cidAll.size(), mqSet, cidAll);
                                                           "rebalanced result changed. allocateMessageQueueStrategyName={}, group={}, topic={}, ConsumerId={}, rebalanceSize={}, rebalanceMqSet={}",
                                                           strategy.getName(), consumerGroup, topic, this.mQClientFactory.getClientId(),
                                                           allocateResultSet.size(), mqAll.size(), cidAll.size(), allocateResultSet);
                                       this.messageQueueChanged(topic, mqSet, allocateResultSet);
                   break;
```

为什么应用出现 找不到 broker-XX 报错?为什么 消费组无法自动平衡?

- 1. 角色为slave 的 broker 不允许读写,即 isSlaveHide = true。
- 2. 因为在原来的 RouteInfoManager 中,会先将 topic队列信息放入 topic路由数据中的队列信息数据
- 3. namesrv和broker完全是本机房对接本机房的,此时应用生产和消费都在本机房

 - a. 当 namesrv 信息是从nginx静态文件中获取,而静态文件中只有本机房的namesrv,此时 broker 只 向本机房注册,b. 而 当一个集群有两组broker时,而两组broker的master 从 都在 一个机房【idc2】 变为 两个机房 一边一个,例如 broker01 的master 在 idc1, broker02 的 master 在 idc2,
 - i. 此时 通过namesrv 查询 clusterList 集群状态
 - 1. idc1 的 broker 为: broker-01 的 master*1 + broker-01 的 slave*1 + broker-02 的slave *2
 - 2. idc2 的 broker 为: broker-01 的 slave *2 + broker-02 的 master *1 + broker-02的slave *1
 - ii. 通过idc2的 namesrv 查询 topicRoute 获取topic路由信息,会出现如下情况

```
"brokerAddrs":{0:"100.73.14.182:10911"
                           },
"brokerName":"XY-broker-02",
"writeable":true
                            "brokerAddrs":{},
"brokerName":"XY-broker-01",
"writeable":true
             }
],
"filterServerTable":{},
  'queueDatas":[
                            "brokerName":"XY-broker-01",
"perm":6,
"readQueueNums":8,
"topicSynFlag":0,
                             "writeQueueNums":8
                             brokerName": "XY-broker-02",
                            "perm":6,
"readQueueNums":8,
"topicSynFlag":0,
"writeQueueNums":8
             }
]
```

可以看到broker-01 的broker地址为空

```
\uparrow \downarrow \varnothing \leftarrow \rightarrow Unified viewer \blacktriangledown Do not ignore \blacktriangledown Highlight words \blacktriangledown \overleftrightarrow{\times} \diamondsuit ?
⊕ df9daba0
db678891 (RouteInfoManager.java)
> Q- isSlaveHide
                                                                 × ← Cc W .*
                                                                                       1/7 ↑ ↓ ▽ :
            * <u>wautnor</u> Lixinwen
  55 55
             * @since 2013-7-2
   56 56
   57 57
   58
      58
            public class RouteInfoManager {
   59
       59
                 private static final Logger log = LoggerFactory.getLogger(LoggerName.NamesrvLoggerName);
   60 60
                 private final ReadWriteLock lock = new ReentrantReadWriteLock();
   61 61
                private final HashMap<String/* topic */, List<QueueData>> topicQueueTable;
                 private final HashMap<String/* brokerName */, BrokerData> brokerAddrTable;
   62 62
   63
       63
                 private final HashMap<String, BrokerManageData> brokerManageAddrTable;
                 private final HashMap<String/* clusterName */, Set<String/* brokerName */>> clusterAddrTable;
   64
       64
                 private final HashMap<String/* brokerAddr */, BrokerLiveInfo> brokerLiveTable;
   65 65
   66 66
                 private final HashMap<String/* brokerAddr */, List<String>> filterServerTable;
   67
                 // hide slave route
      67
   68
       68
                 private volatile boolean isSlaveHide = true;
   69 69
   70 70
                 private final NamesrvController controller;
   71 71
   72
       72
                 public RouteInfoManager(final NamesrvController controller) {
   73
       73
                     this.topicQueueTable = new HashMap<String, List<QueueData>>(1024);
   74 74
                     this.brokerAddrTable = new HashMap<String, BrokerData>(128);
   75 75
                     this.brokerManageAddrTable = new HashMap<String, BrokerManageData>(128);
                     this.clusterAddrTable = new HashMap<String, Set<String>>(32);
   76 76
   77
       77
                      this.brokerLiveTable = new HashMap<String, BrokerLiveInfo>(256);
   78 78
                     this.filterServerTable = new HashMap<String, List<String>>(256);
   79 79
                      this.controller = controller;
   80 80
                 }
```

```
3 differences
                         InfoManager.iava)
public TopicRouteData pickupTopicRouteData(final NIOConnection connection, final String topic) {
                                 TopicRouteData topicRouteData = new TopicRouteData();
                                 iopiccontestat topiccontestat = new iopiccontestat();
boolean foundBrokerData = false;
boolean foundBrokerData = false;
Set<String> brokerNameSet = new HashSet<String>();
List<BrokerData> brokerDatalist = new LinkedList<BrokerData>();
topicRouteData.setBrokerDataS(brokerDataList);
                                 HashMap<String, List<String>> filterServerMap = new HashMap<String, List<String>>();
topicRouteData.setFilterServerTable(filterServerMap);
                                       try {
                                              this.lock.readLock().lockInterruptibly():
                                             this.lock.readLock().lockInterruptibly();
ListQueveBata = queveBatalist = this.topicQueveTable.get(topic);
if (queveDataList != null) {
    topicRouteData.setQueveDatas(queveDataList);
    foundQueveBata = true;
    topicRouteData.setQueveDatas(queveDataList);
    foundQueveData = true;
  562 562
563 563
564 564
565 565
566 567
567 567
568 568
569 579
571 571
572 572
573 573
574 574
575 575
576 576
                                                    Iterator<QueueData> it = queueDataList.iterator();
                                                    while (it.hasNext()) {
   QueueData qd = it.next();
                                                          brokerNameSet.add(qd.getBrokerName());
                                                   brokerDataClone.setBrokerName(brokerData.getBrokerName());
HashMap<Long, String> addrMapClone = new HashMap<Long, String>();
                                                                 // 如果客户媒连接的是管理网、则返回管理网的broker挑扯
  $92 $92
$93 $93
$94 $94
$95 $95
$96 $96
$97 $97
$98 $98
$99 $99
680 680
681 681
682 682
683 683
684 684
685 685
686 686
687 687
                                                                                          connection, brokerName);
                                                                } else {
   addrMapClone.putAll(brokerData.getBrokerAddrs());
                                                                 HashMap<Long, String> setMap = new HashMap<Long, String>();
                                                                 for (Long brokerId : addrMapClone.keySet()) {
   if (brokerId == MixAll.MASTER_ID) {
                                                                              setMap.put(brokerId, addrMapClone.get(brokerId));
                                                                      } else if (brokerId.equals(MixAll.LOGSERVER)) {
   // log server always not seen
} else if (itsSlaveHide) {
   setMap.put(brokerId, addrMapClone.get(brokerId));
                                                               brokerDataClone.setBrokerAddrs(setMap);
  698 629
699 621
618 622
611 623
612 624
613 625
614 626
615 627
616 628
617 629
618 639
                                                                 brokerDataList.add(brokerDataClone);
                                                                 foundBrokerData = true;
                                                                 // "Mamuriter server
for (frial String brokerAddr: brokerDataClone.getBrokerAddrs().values()) {
    List<String> filterServerList = this.filterServerTable.get(brokerAddr);
    filterServerMap.put(brokerAddr, filterServerList);
                                                     topicRouteData.setQueueDatas(queueDataList);
                                                   foundQueueData = true;
  619 633
628 634
621 635
622 636
623 637
624 638
625 639
626 640
627 641
628 642
629 643
630 644
631 645
631 645
633 647
634 648
635 649
635 649
636 651
                                      } finally {
                                              this.lock.readLock().unlock();
                                } catch (Exception e) {
    log.error("pickupTopicRouteData Exception", e);
                                 if (log.isDebugEnabled()) {
                                       log.debug("pickupTopicRouteData {} {}", topic, topicRouteData);
                                 if (foundBrokerData && foundQueueData) {
                                        return topicRouteData;
                           private boolean isManageNet(final NIOConnection connection) {
```