

Hive Troubleshooting

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HeapDumpPath (/tmp) in Hive data nodes gets full due to .hprof files

Condition

The HeapDumpPath (/tmp) in Hive nodes often gets full because of the .hprof files that are generated. Manually deleting these files to free up space does not always help because the files are generated every time there is an exception. Learn how to resolve this issue by modifying the relevant Tez properties.

Cause

A .hprof file is created when a process exits with an Out Of Memory exception, and the file captures the state of Java Virtual Machine (JVM) when it crashes.

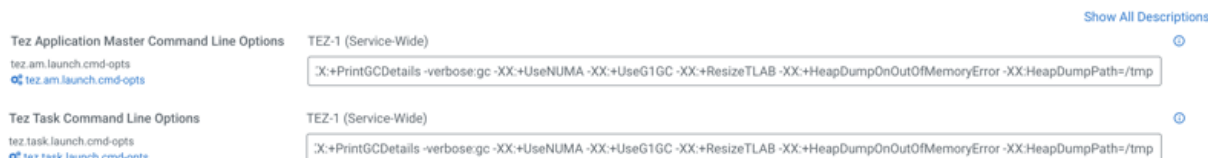
The default value for HeapDumpPath in the Tez Application Master and Tez Task Command Line Options properties is set to /tmp and therefore, Tez saves all the heap dump files in this location.

If you do not want the heap dump files to be saved in /tmp, you can either set the HeapDumpPath value to a different location on the node or choose not to capture heap dump (.hprof) files when a process exits.

Solution

Procedure

1. Log in to Cloudera Manager as an administrator.
2. Go to **Clusters Tez Configuration** and search for the 'Tez Application Master Command Line Options' and 'Tez Task Command Line Options' properties.



3. Choose one of the following solutions:

If you want to...

Choose a different location in the Hive node to capture heap dumps

Disable automatic capture of heap dumps

Then...

Modify the value of XX:HeapDumpPath in the above properties from /tmp to a different location, for example, /var/tmp.

Remove -XX:+HeapDumpOnOutOfMemoryError -XX:HeapDumpPath=/tmp parameters from the above properties.



Note: You can add these parameters when you want to work with heap dumps or when you require heap dumps for debugging purposes.

4. Click **Save Changes**.
5. Restart the Tez service.

Query fails with "Counters limit exceeded" error message

Condition

After upgrading to CDP Private Cloud Base, you may notice that some Hive queries fail with a "Counters limit exceeded: Too many counters: 10001 max=10000" and "Counters limit exceeded: Too many counter groups: 3001 max=3000".


Cause

This issue occurs because a lower value is specified for Apache Tez task counters (tez.counters.max) and counter groups (tez.counters.max.groups), which prevents Tez from executing the DAG. If you are running long queries, increase the value for Tez counters and counter groups.

It is recommended that you set the value of tez.counters.max at the session level and also add it to the allowlist.

Solution

Procedure

1. Log in to Cloudera Manager as an administrator.
2. Go to [Clusters Hive on Tez Configuration](#) and search for 'HiveServer2 Advanced Configuration Snippet (Safety Valve) for hive-site.xml'.
3. Click  and add the property key: hive.security.authorization.sqlstd.confwhitelist.append.
4. Provide the property value, or values, to allowlist, for example: tez\counters\.* or tez\counters\max|tez\counters\max\groups.

This action appends the parameters to the allowlist.

5. Save the changes and restart the Hive on Tez service.
6. From the Beeline shell, set the tez.counters.max property to a higher value and run the query.
set tez.counters.max=50000;
Run the Hive query and if it continues to fail, perform the steps provided below.
7. In Cloudera Manager, go to [Clusters Tez Configuration](#) and search for the tez.counters.max property.
8. Modify the value to 50000, save changes, and refresh the Tez service.
9. Restart the Hive on Tez service and run the Hive query again.

If you encounter the following error, modify the value for tez.counters.max.groups.

```
ERROR : Counters limit exceeded: org.apache.tez.common.counters.LimitExceededException: Too many counter groups: 3001 max=3000
```

10. In Cloudera Manager, go to [Clusters Tez Configuration](#) and search for the tez.counters.max.groups property.
11. Modify the value to 10000, save changes, and refresh the Tez service.
12. Restart the Hive on Tez service and run the Hive query.

Managing high partition workloads

Condition

If you are running high partition workloads, such as a table having 5000 partitions and 100 columns, you may notice the following error when inserting data from a source table to the destination table:

```
ERROR : FAILED: Execution Error, return code 40000 from org.apache.hadoop.hive.ql.exec.MoveTask.  
MetaException(message:One or more instances could not be made persistent)
```

Cause


The issue occurs because the queries are run one at a time and there is no query concurrency. Learn how you can configure the HiveServer (HS2) and Hive Metastore (HMS) services with the recommended values to prevent errors while inserting data into high partition workloads.

Solution

Procedure


1. Log in to Cloudera Manager as an administrator.
2. Go to **Clusters Hive on Tez Configuration** and search for 'HiveServer2 Advanced Configuration Snippet (Safety Valve) for hive-site.xml'.
3. Tune the following HS2 parameters by setting the recommended values.

```
hive.optimize.sort.dynamic.partition.threshold=0;  
hive.thrift.client.max.message.size=2147483647;  
hive.metastore.client.skip.columns.for.partitions=true;  
hive.stats.autogather=false;  
hive.stats.column.autogather=false;  
hive.msck.repair.batch.size=200;
```

If the properties are not available, click  to add custom configurations and set the values.

4. Save the changes and restart the Hive on Tez service.
5. Go to **Clusters Hive Configuration** and search for 'Hive Metastore Server Advanced Configuration Snippet (Safety Valve) for hive-site.xml'.
6. Tune the following HMS parameters by setting the recommended values.

```
hive.metastore.direct.sql.batch.size=5000  
hive.txn.timeout=3600  
hive.metastore.try.direct.sql=true  
hive.metastore.try.direct.sql.ddl=true
```

If the properties are not available, click  to add custom configurations and set the values.

7. Save the changes and restart the Hive service.
8. Run your high partition workloads.

HiveServer is unresponsive due to large queries running in parallel

Condition

HiveServer (HS2) is blocking user queries or sessions because of multiple Hive sessions running in parallel.

Cause

The issue occurs when a large query is running and you submit the same query again. The `hive.query.results.cache.wait.for.pending.results` property forces a query to wait for the pending results of an already running query, in order to use the cached result when it is ready.

You can choose to disable this property to avoid blocking queries submitted by other users or you can avoid running the same large queries parallelly.

Remedy

Procedure

1. Go to **Clusters Hive on Tez Configuration** and add the following property name and its value in the HiveServer2 Advanced Configuration Snippet (Safety Valve) for `hive-site.xml` field:

Name: `hive.query.results.cache.wait.for.pending.results`

Value: `false`

2. Save the changes and restart the Hive on Tez service.