DSS032 - OutOfMemoryException

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Error - OutOfMemoryException

Issue

Sync suddenly stop with message 'Inner exception: Exception of type 'System.OutOfMemoryException' was thrown.'

Cause

Agent is currently a 32 bit app that can only address up to 2GB of memoy in user mode.

We've seen OutOfMemoryException be caused by the following root causes:

- Big initial sync (use Action Plan # 3)
- Truly out of memory on the machine (use Action Plan # 1)
- Agent running multiple sync groups at the same time (to be confirmed)(use Action Plan # 1)
- Special case when tables have low char columns with the same repeated value (IcM 81064867)(use Action Plan # 2)

New:

We just published the x64 Sync Agent, this should address most of the OOM issues.
It's available in download center: https://www.microsoft.com/en-us/download/details.aspx?id=27693

Please note that this sync agent will be installed side-by-side with the x32 one (%PROGRAMFILES% vs %PROGRAMFILES(X86)%).

You need to uninstall the x32 sync agent, install the x64 one, and re-submitting the agent key. The whole process is like migrating to sync agent 2.0.

You can refer to https://azure.microsoft.com/en-us/blog/migrating-to-azure-data-sync-2-0/ , using the "Alternate method".

Troubleshooting

Action Plan # 1

- **Check memory usage on the machine and DataSyncLocalAgentHost.exe**
- **Collect a memory dump for RCA if none are near the limits**

  Download ProcDump from https://docs.microsoft.com/en-us/sysinternals/downloads/procdump and extract it into a folder in a disk with some space available.

  In the ProdDump folder create a new .bat file with the following content (this will generate up to 50 memory dumps when an exception is raised):

```
cd %~dp0
procdump.exe -ma -e 1 -f OutOfMemoryException -n 50 DataSyncLocalAgentHost.exe
pause
```

  Run this .bat file as Administrator and leave it running.

  Let syncs run, memory dumps will be collected along the way.

  Send us the output of the .bat file and a memory dumps related with out-of-memory exception.

  Please note that we need the text from the .bat window itself also.

- **Stop the current sync and restart local sync agent**

Action Plan # 2

Along with action plan # 1 we may try to reduce the batch sizes.

Customer needs to connect to the sync metadata database and run:

```
UPDATE [dss].[configuration] SET [ConfigValue] = 5 WHERE [ConfigKey] = 'SqlSyncProviderBatchSizeInMB'
UPDATE [dss].[configuration] SET [ConfigValue] = 1000 WHERE [ConfigKey] = 'ApplicationTransactionMaxRowCount'
```

Action Plan # 3

1. Stop the current sync and restart local sync agent.
2. Remove all the tables in the member database which is your sync destination. This is to avoid row by row comparison.
3. Remove the sync member and then add it back. So that we can make sure it does provision.
4. Refresh schema on the azure portal and only choose few tables to sync.

Make sure you click and save. Then trigger sync.

5. Add more tables in the azure portal. Trigger sync again.

6. Repeat step 5 if needed.

This workaround is only valid for initial syncing.

Internal

Strack trace for OOM on the agent, maybe issues finding a continuous free memory space

```
mscorlib.dll!System.Runtime.Serialization.ObjectIDGenerator.Rehash() Line 162
mscorlib.dll!System.Runtime.Serialization.ObjectIDGenerator.GetId(object obj, out bool firstTime = true) Line
mscorlib.dll!System.Runtime.Serialization.Formatters.Binary.ObjectWriter.InternalGetId(object obj = &amp;quot;6649
mscorlib.dll!System.Runtime.Serialization.Formatters.Binary.ObjectWriter.WriteString(System.Runtime.Serializat
mscorlib.dll!System.Runtime.Serialization.Formatters.Binary.ObjectWriter.WriteKnownValueClass(System.Runtime.S
mscorlib.dll!System.Runtime.Serialization.Formatters.Binary.ObjectWriter.WriteArrayMember(System.Runtime.Seria
mscorlib.dll!System.Runtime.Serialization.Formatters.Binary.ObjectWriter.WriteArray(System.Runtime.Serializati
mscorlib.dll!System.Runtime.Serialization.Formatters.Binary.ObjectWriter.Write(System.Runtime.Serialization.Fo
mscorlib.dll!System.Runtime.Serialization.Formatters.Binary.ObjectWriter.Serialize(object graph, System.Runtim
mscorlib.dll!System.Runtime.Serialization.Formatters.Binary.BinaryFormatter.Serialize(System.IO.Stream seriali
Microsoft.Synchronization.Data.dll!Microsoft.Synchronization.Data.DbSyncBatchInfoFactory.Serialize(Microsoft.S
Microsoft.Synchronization.Data.dll!Microsoft.Synchronization.Data.InMemoryBatchProducer.GetFileNameForBatchInf
Microsoft.Synchronization.Data.dll!Microsoft.Synchronization.Data.DbSyncBatchProducer.EnqueueBatchAndRaiseEven
Microsoft.Synchronization.Data.dll!Microsoft.Synchronization.Data.InMemoryBatchProducer.PrepareAndQueueBatch(S
Microsoft.Synchronization.Data.dll!Microsoft.Synchronization.Data.InMemoryBatchProducer.Close()
Microsoft.Synchronization.Data.dll!Microsoft.Synchronization.Data.DbSyncBatchProducer.Dispose()
Microsoft.Synchronization.Data.dll!Microsoft.Synchronization.Data.RelationalSyncProvider.EnumerateChangesInBat
```

Stack trace for OOM related with BinaryFormatter issue caused by multiple strings with the same value

```
id:SyncServiceTask_ExceptionProcessingRequest, rId:, sId:b375b9d2-4596-4a69-9b87-71dc351108bc, taskId:5436756f
 at Microsoft.Synchronization.Data.RelationalSyncProvider.ConsumeBatchFromProducer(DbSyncScopeMetadata scopeMe
 at Microsoft.Synchronization.Data.RelationalSyncProvider.GetChanges(DbSyncScopeMetadata scopeMetadata&amp;# 4
 at Microsoft.Synchronization.Data.RelationalSyncProvider.GetChangeBatch(UInt32 batchSize&amp;# 44; SyncKnowle
 at Microsoft.Synchronization.KnowledgeProviderProxy.GetChangeBatch(UInt32 dwBatchSize&amp;# 44; ISyncKnowledg
 at Microsoft.Synchronization.CoreInterop.ISyncSession.Start(CONFLICT_RESOLUTION_POLICY resolutionPolicy&amp;#
 at Microsoft.Synchronization.KnowledgeSyncOrchestrator.DoOneWaySyncHelper(SyncIdFormatGroup sourceIdFormats&a
 at Microsoft.Synchronization.KnowledgeSyncOrchestrator.DoOneWayKnowledgeSync(SyncDataConverter sourceConverte
 at Microsoft.Synchronization.KnowledgeSyncOrchestrator.Synchronize()
 at Microsoft.Synchronization.SyncOrchestrator.Synchronize()
 at Microsoft.SqlAzureDataSync.SyncControllerLib.SyncController.SyncInternal(SyncJobParams syncJobParams&amp;#
 at Microsoft.SqlAzureDataSync.LocalAgentHost.LocalAgentSyncControllerService.ExecuteSync(SyncJobParams syncJo
 at Microsoft.SqlAzureDataSync.SyncControllerLib.SyncController.Sync(String scopeName&amp;# 44; SyncJobParams
 at Microsoft.SqlAzureDataSync.SyncControllerLib.SyncTask.&amp;lt;&amp;gt;c__DisplayClass6.&amp;lt;Execute&amp
 at Microsoft.Practices.TransientFaultHandling.RetryPolicy.ExecuteAction[TResult](Func`1 func)
 at Microsoft.SqlAzureDataSync.ClientServerCommon.CommonHelperMethods.ExecuteAction[T](Func`1 func&amp;# 44; I
 at Microsoft.SqlAzureDataSync.SyncControllerLib.SyncTask.Execute(),'
The internal array cannot expand to greater than Int32.MaxValue elements.,Source=mscorlib,StackTrace= at Syste
 at System.Runtime.Serialization.ObjectIDGenerator.GetId(Object obj&amp;# 44; Boolean&amp;amp; firstTime)
 at System.Runtime.Serialization.Formatters.Binary.ObjectWriter.InternalGetId(Object obj&amp;# 44; Boolean ass
 at System.Runtime.Serialization.Formatters.Binary.ObjectWriter.WriteString(NameInfo memberNameInfo&amp;# 44;
 at System.Runtime.Serialization.Formatters.Binary.ObjectWriter.WriteKnownValueClass(NameInfo memberNameInfo&a
 at System.Runtime.Serialization.Formatters.Binary.ObjectWriter.WriteArrayMember(WriteObjectInfo objectInfo&am
 at System.Runtime.Serialization.Formatters.Binary.ObjectWriter.WriteArray(WriteObjectInfo objectInfo&amp;# 44
 at System.Runtime.Serialization.Formatters.Binary.ObjectWriter.Write(WriteObjectInfo objectInfo&amp;# 44; Nam
 at System.Runtime.Serialization.Formatters.Binary.ObjectWriter.Serialize(Object graph&amp;# 44; Header[] inHe
 at System.Runtime.Serialization.Formatters.Binary.BinaryFormatter.Serialize(Stream serializationStream&amp;#
 at Microsoft.Synchronization.Data.DbSyncBatchInfoFactory.Serialize(DbSyncBatchInfo batchInfo&amp;# 44; String
 at Microsoft.Synchronization.Data.InMemoryBatchProducer.GetFileNameForBatchInfo(DbSyncBatchInfo wrapper)
 at Microsoft.Synchronization.Data.DbSyncBatchProducer.EnqueueBatchAndRaiseEvent(DbSyncBatchInfo batchInfo)
 at Microsoft.Synchronization.Data.InMemoryBatchProducer.PrepareAndQueueBatch(DataSet batchDataSet&amp;# 44; B
```

Classification

Root cause Tree - DataSync/Service Issue/Uncoded

How good have you found this content?