



**SITECORE  
USER GROUP**  
MEET UP - CHENNAI 2019

# SUG CHENNAI Meet Up

## Aug 31<sup>st</sup> 2019

Connect and Collaborate @ <https://sugchennai.in/>

# Sitecore xDB Migration

*Sitecore 8.2 to 9.1*

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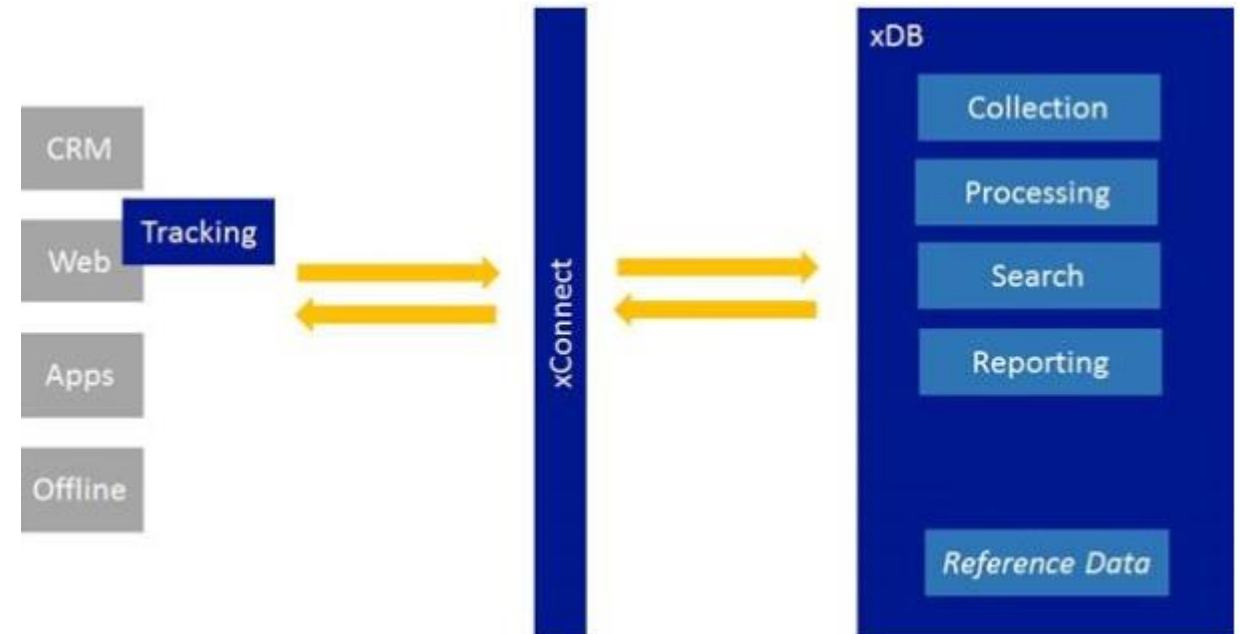
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# Agenda

1. Introduction to xDB
2. xDB Migration from Sitecore 8.2 to 9.1
3. Troubleshooting
4. Q&A

## Introduction to xDB

1. xDB in Sitecore
2. Who uses xDB?
3. xDB Storage roles
4. xDB Index





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# xDB Migration from Sitecore 8.2 to 9.1

# Pre-requisites

1. Sitecore 9.1 instance
2. MongoDB database that contains the xDB data
3. Download xDB migration tool 2.1.0 packages  
[https://dev.sitecore.net/Downloads/Sitecore\\_xDB\\_Data\\_Migration\\_Tool/2x/xDB\\_Data\\_Migration\\_Tool\\_210.aspx](https://dev.sitecore.net/Downloads/Sitecore_xDB_Data_Migration_Tool/2x/xDB_Data_Migration_Tool_210.aspx)
4. Set Maximum Request Size on xConnect Server

By default, IIS limits the amount of data that can be accept by the web server. This default setting reduces the effects of certain types of denial-of-service attacks.

This setting configured in the HTTP runtime settings section in web.config. The property is maxRequestLength:

```
<system.web>
  <compilation debug="true" targetFramework="4.6.2" />
  <httpRuntime targetFramework="4.6.2"
    maxRequestLength="1048576"
    maxUrlLength="8192"
    maxQueryStringLength="8192"
    requestPathInvalidCharacters="" />
  <customErrors mode="RemoteOnly" />
</system.web>
```

It is recommend that this value will increased to the maximum value [2147483647](#) while the migration process is running.

# Installing xDB Data Migration Tool

1. Install the downloaded packages and follow the below order to install these packages.
  - 1.1 Data Exchange Framework 2.1.0
  - 1.2 MongoDB Provider for Data Exchange Framework 2.1.0
  - 1.3 xConnect Provider for Data Exchange Framework 2.1.0
  - 1.4 xDB Data Migration Tool for Data Exchange Framework 2.1.0
  
2. Install Verification Database.

# Configuring xDB Data Migration Tool

1. Add connection string of MongoDB and verification database on CM server.

## MongoDB:

```
<add name="mongo.sample"  
connectionString="mongodb://[Username]:[Password]@[ServerName]:[PortNo]/[DatabaseName]?replicaSet=repdev&  
p;readPreference=Primary&authSource=$external&authMechanism=PLAIN"/>
```

## Verification DB:

```
<add name="def.verification" connectionString="Data  
Source=[DBServerName];Database=[DBNamePrefix]_1_sitecore_Reporting;Integrated Security=SSPI;Persist Security  
Info=True;MultiSubnetFailover=True" />
```

2. Verify following parameter exists in connectionString.config file.
  - 2.1. xconnect.collection
  - 2.2. xconnect.collection.certificate
  - 2.3. xdb.referencedata.client
  - 2.4. xdb.referencedata.client.certificate



# Deploy Collection Model

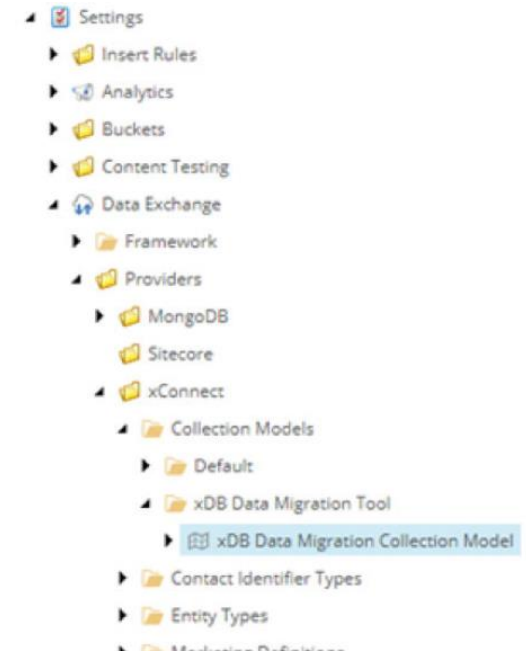
1. Access the following path in content editor on CM Sitecore instance.

Sitecore > System > Settings > Data Exchange > Providers > xConnect > Collection Models > xDB Data Migration Tool > xDB Data Migration Collection Model

2. In data exchange ribbon, click Convert Model to JSON



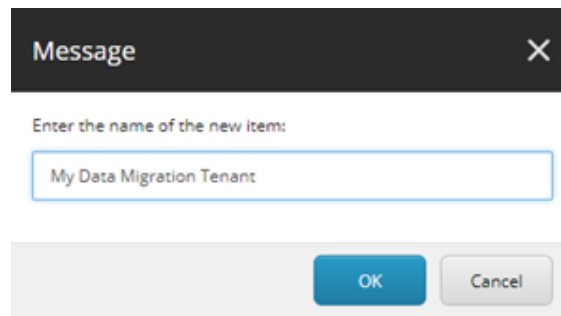
3. Browser will prompt to download a JSON file, Save the file
4. Deploy this custom collection model to both the [xConnect service](#) and [xConnect indexer service](#). Copy the JSON file to following locations,
  - 4.1. [xConnect collection service root]\Website\App\_data\Models
  - 4.2. [xConnect indexer service root]\Website\App\_data\Models



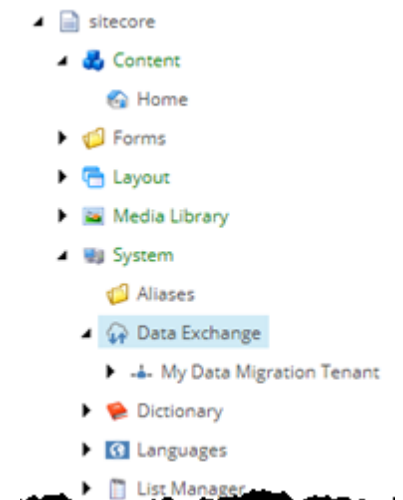
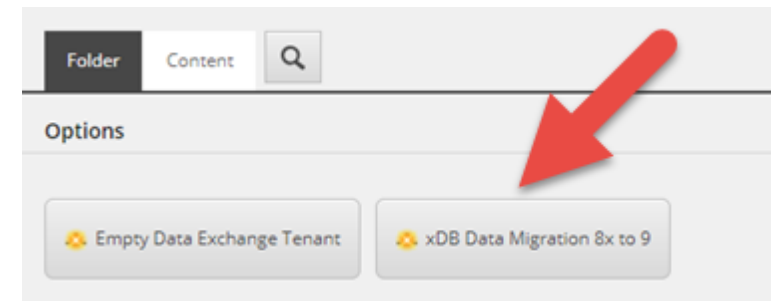
# Create Tenant

A tenant is an item that organizes all of the settings related to the data migration process.

1. Access the following path in content editor, Sitecore > System > Data Exchange
2. Add a new item using the option xDB Data Migration 8x to 9
3. Enter the name for the tenant and click OK.



4. When the tenant is created, we can see its listed under sitecore > System > Data Exchange



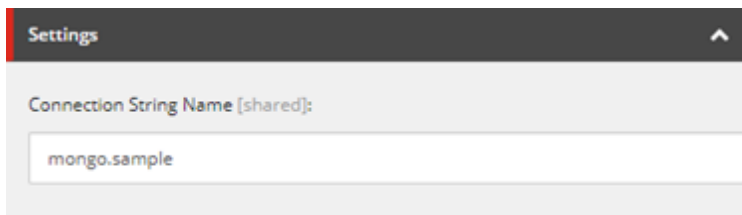
# Configure Endpoints

We have to configure 3 endpoints,

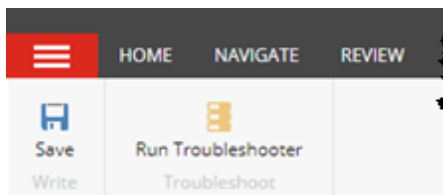
1. Mongo Database Endpoint
2. xConnect Client Endpoint
3. xDB Reference Data Client Endpoint

# Mongo Database Endpoint

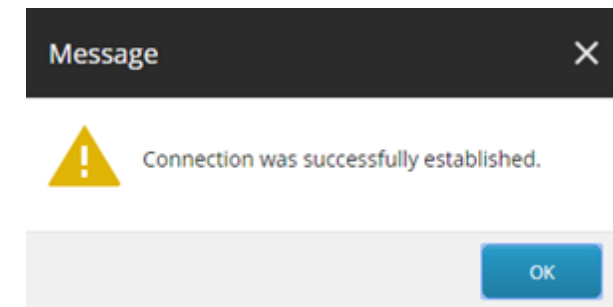
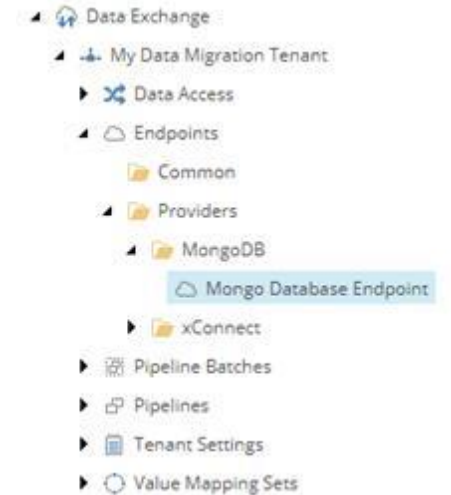
1. Navigate to the Tenant created now under, Sitecore > System > Data Exchange > [My Data Migration Tenant](#) > Endpoints > Providers > MongoDB > [Mongo Database Endpoint](#)
2. In the field Connection String Name, set the name of the connection string for the MongoDB database and Save the item.



3. To test the connection, In the ribbon, click Run Troubleshooter

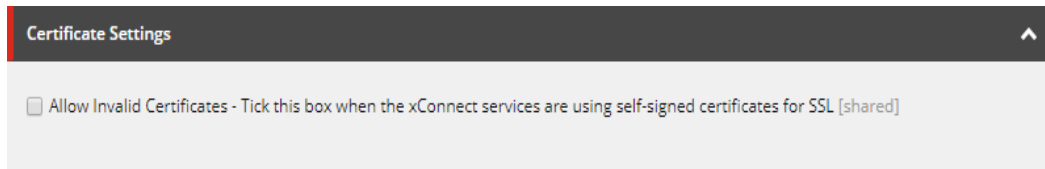


4. A dialog box appears to indicate that the connection has established to the MongoDB database.



# xConnect Client Endpoint

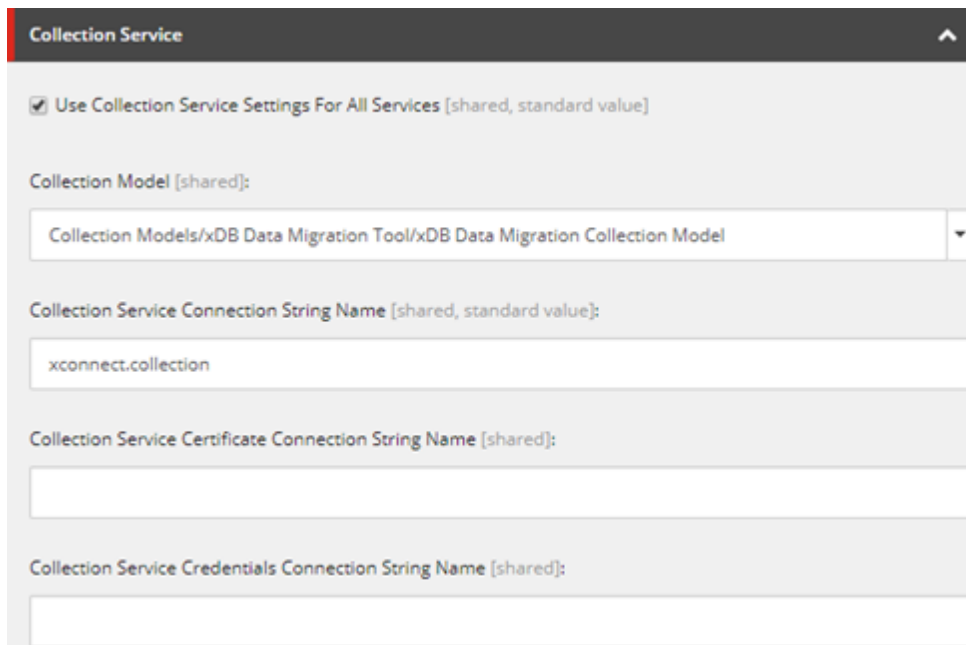
1. Navigate to the Tenant, Sitecore > System > Data Exchange > [My Data Migration Tenant](#) > Endpoints > Providers > xConnect > [xConnect Client Endpoint](#)
2. In “Certificate Settings” section, Check the Allow Invalid Certificates, if xConnect server is using a self-signed certificate for SSL



Certificate Settings

Allow Invalid Certificates - Tick this box when the xConnect services are using self-signed certificates for SSL [shared]

3. In “Collection Service” section, set the name of the connection string for the xConnect client service in the field “Collection Service Connection String Name”



Collection Service

Use Collection Service Settings For All Services [shared, standard value]

Collection Model [shared]:

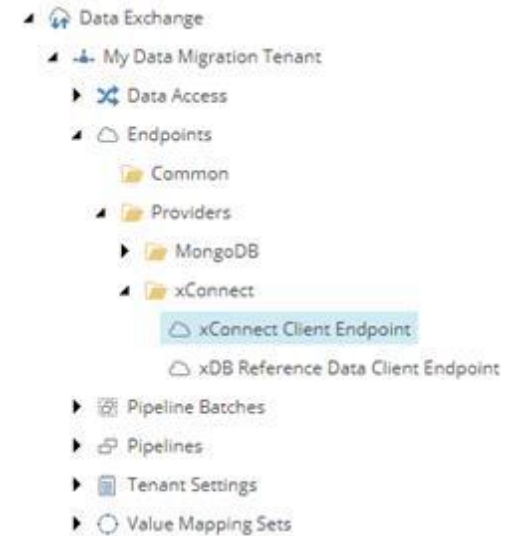
Collection Models/xDB Data Migration Tool/xDB Data Migration Collection Model

Collection Service Connection String Name [shared, standard value]:

xconnect.collection

Collection Service Certificate Connection String Name [shared]:

Collection Service Credentials Connection String Name [shared]:



# xConnect Client Endpoint

4. In the field “Collection Service Certificate Connection String Name”, set the name of the connection string that describes the certificate used to connect to the xConnect client service and Save the item.

**Collection Service**

Use Collection Service Settings For All Services [shared, standard value]

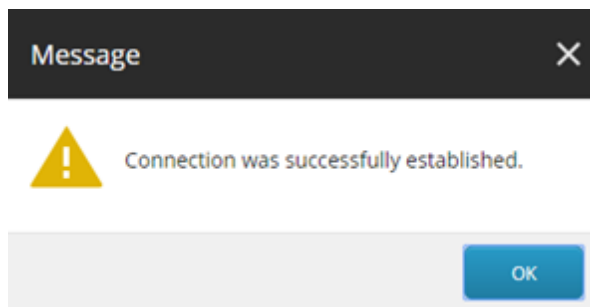
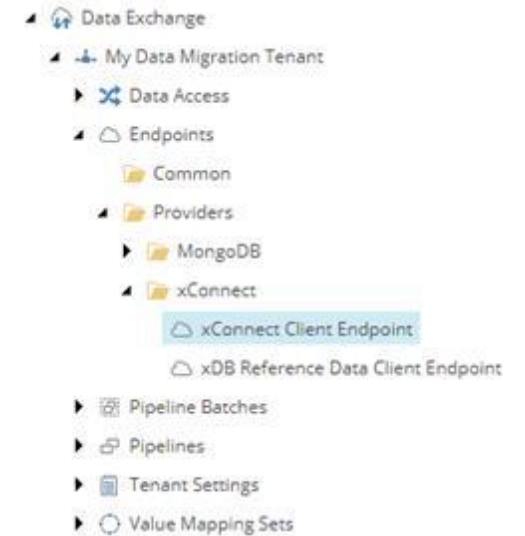
Collection Model [shared]:  
Collection Models/xDB Data Migration Tool/xDB Data Migration Collection Model

Collection Service Connection String Name [shared, standard value]:  
xconnect.collection

**Collection Service Certificate Connection String Name [shared]:**  
xconnect.collection.certificate

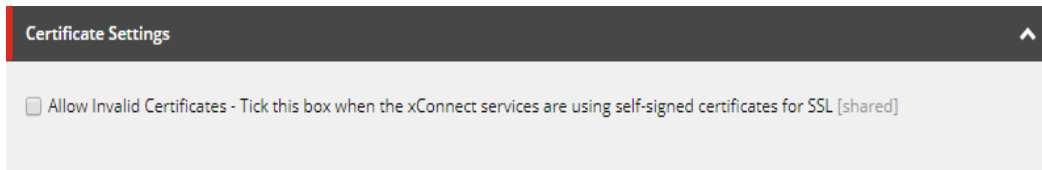
Collection Service Credentials Connection String Name [shared]:

5. In the ribbon, click Run Troubleshooter
6. A dialog box appears to indicate that the connection has established to to the xConnect collection service

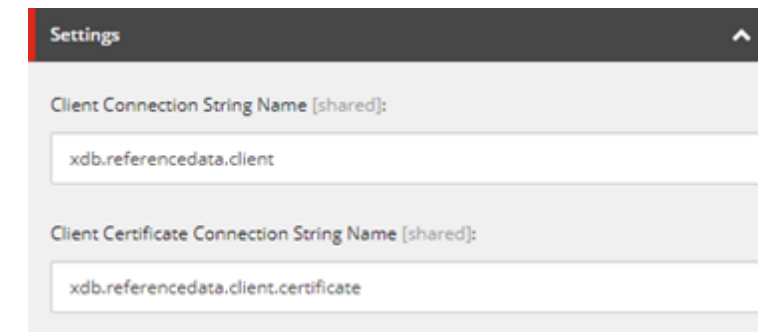
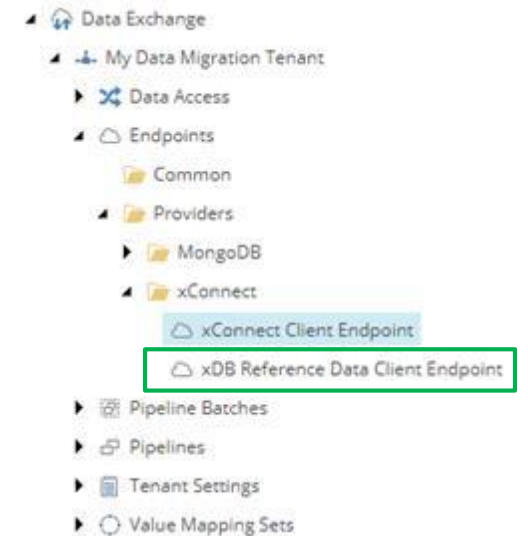
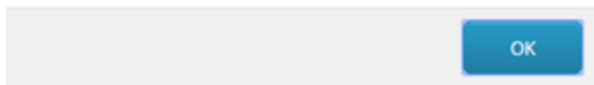


# xDB Reference Data Client Endpoint

1. Navigate to the Tenant, Sitecore > System > Data Exchange > [My Data Migration Tenant](#) > Endpoints > Providers > xConnect > [xDB Reference Data Client Endpoint](#)
2. In “Certificate Settings” section, Check the Allow Invalid Certificates, if xConnect server is using a self-signed certificate for SSL



3. In “Settings” section, set the name of the connection string for the xConnect reference data service in the field “Client Connection String Name”
4. In the field “Client Certificate Connection String Name”, set the name of the connection string for the xConnect reference data service and Save the item.
5. In the ribbon, click Run Troubleshooter
6. A dialog box appears to indicate that the connection has established to the xConnect reference data service.



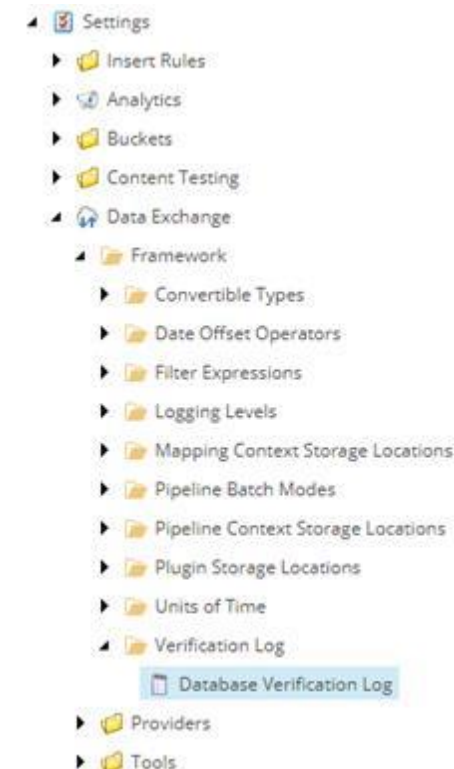
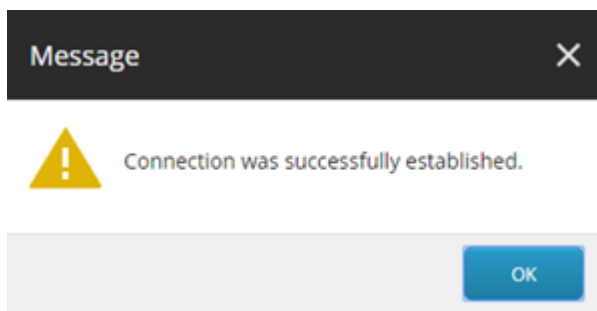
# Configure Verification Database

1. Navigate to Sitecore > System > Settings > Data Exchange > Framework > Verification Log > [Database Verification Log](#)
2. In “Settings” section, set the correct connection string name in the field Connection String Name



The screenshot shows a configuration window titled "Connection". It contains a text input field labeled "Connection String Name [unversioned, shared]:" with the value "def.verification" entered.

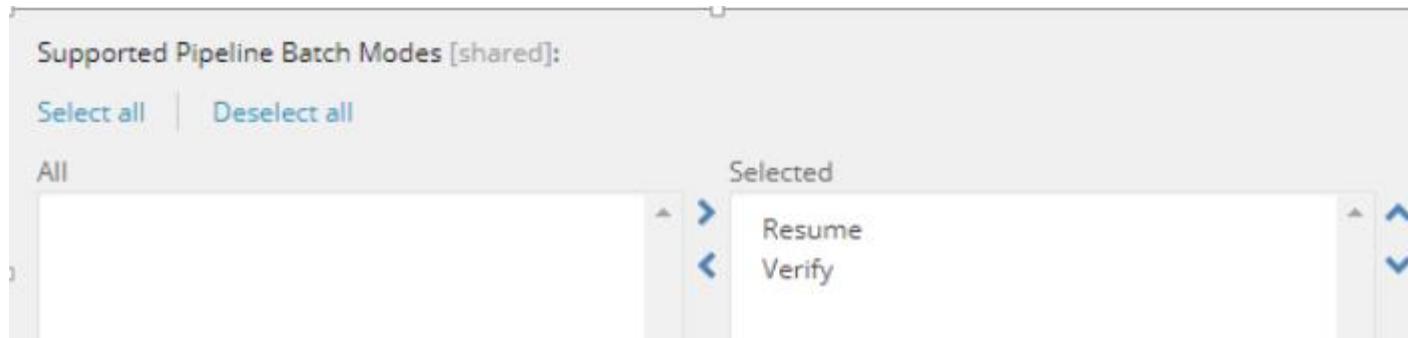
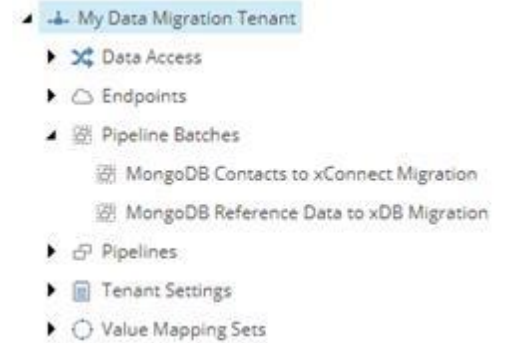
3. Save the item.
4. In the ribbon, click Run Troubleshooter
5. A dialog box appears to indicate that the connection has established to the xConnect reference data service.



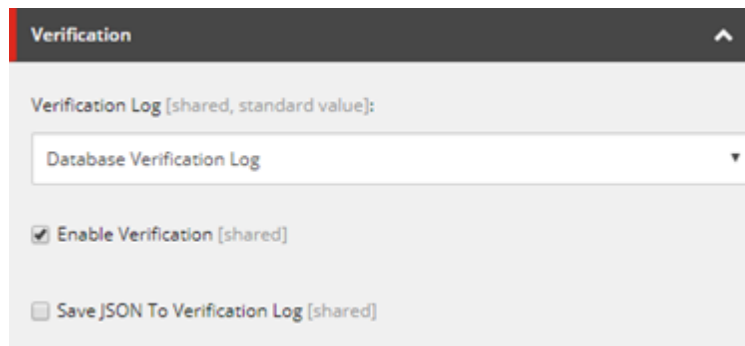


# Enable Verification

1. Navigate to the Tenant, Sitecore > System > Data Exchange > [My Data Migration Tenant](#)
2. Expand Pipeline Batches and Select the pipeline batch of MongoDB contacts to xConnect migration or reference data to xDB migration to enable verification on.
3. In the field Supported Pipeline Batch Modes, add Verify.

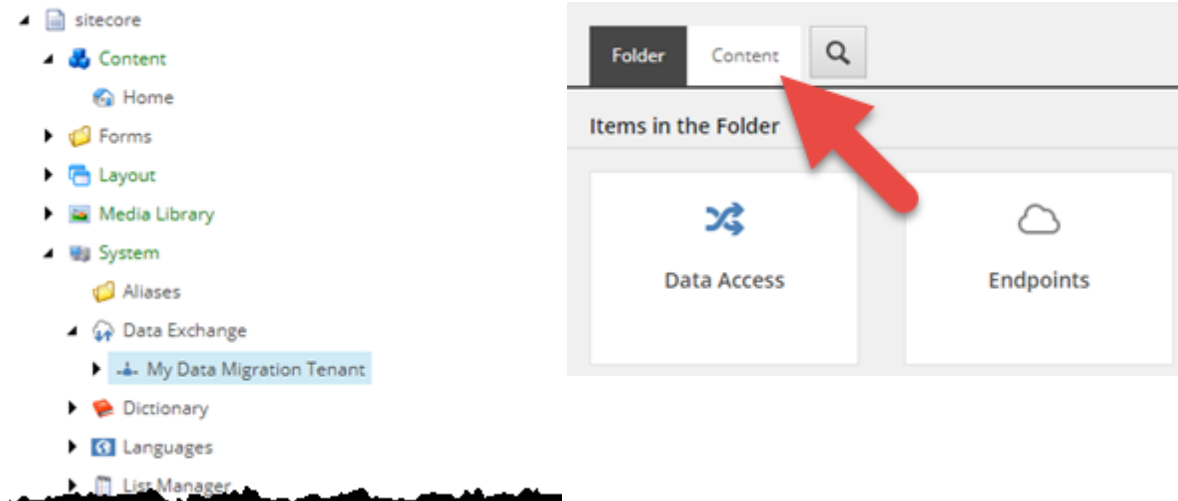


4. Select the “Verification Log”, Check the Enable Verification box and Save the item



# Enable the Tenant

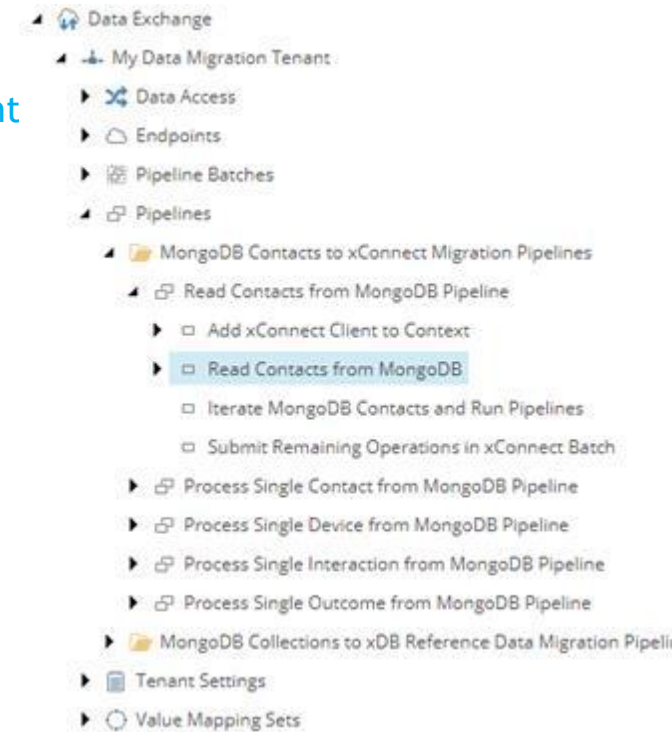
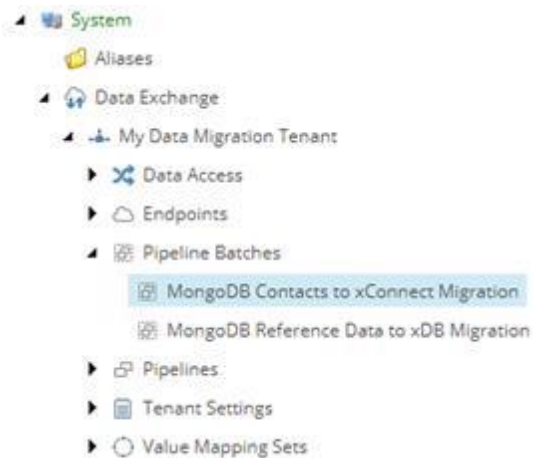
1. By default, the tenant is disabled
2. Navigate to the Tenant, Sitecore > System > Data Exchange > [My Data Migration Tenant](#)
3. Select the Tenant and Select the tab “Content”



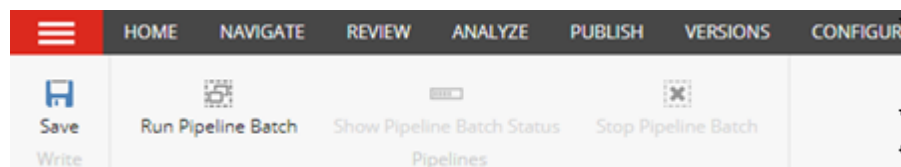
4. In the field Enabled, check the check box and Save the item

# Execute xDB Migration

1. Navigate to the Tenant, Sitecore > System > Data Exchange > [My Data Migration Tenant](#) Pipelines > MongoDB Contacts to xConnect Migration Pipelines > Read Contacts from MongoDB Pipeline > [Read Contacts from MongoDB](#)
2. In the field Maximum Count, leave blank and Save the item
3. Navigate to Pipeline Batches > [MongoDB Contacts to xConnect Migration](#)



4. Select the Item. In the ribbon, Click “Run Pipeline Batch”

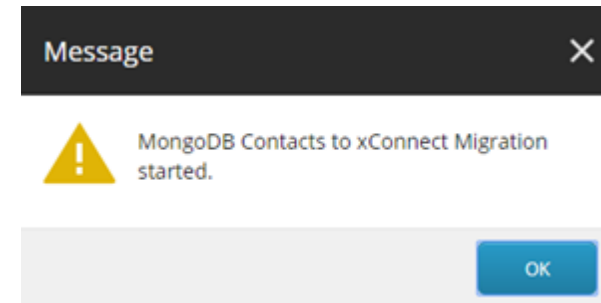
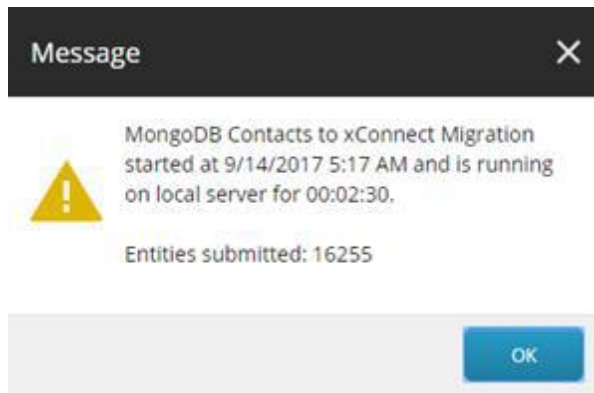


# Execute xDB Migration

5. A message will appear to indicate the pipeline batch has started. Click OK to continue.
6. While the pipeline batch is running, In the ribbon, commands to show the pipeline batch status and to stop the pipeline batch are available



7. Once done with Migration we will get the below message.





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# Troubleshooting

# Troubleshooting - Rebuild the Reporting Database

However, when we try to see the report in Experience analytics dashboard, we are not able to see the data, which is migrated.

1. After 24 hours of Migration, In control panel do the below,
  - Rebuild all indexes
  - Rebuild Database Links for all db's.
  - Navigate to Control panel, Click Deploy Marketing definitions, will get a popup. Click Deploy. We will get a successful message after deploying the selected definitions.
  - Rebuild all indexes again
2. Check the Analytics Dashboard, If its not showing up, follow the below URL and do all manually.

<https://doc.sitecore.com/developers/90/sitecore-experience-platform/en/rebuild-the-reporting-database.html>

## Deploy marketing definitions

### Select the definitions

- Automation plans
- Campaigns
- Events
- Funnels
- Goals
- Marketing assets
- Outcomes
- Page Events
- Behavioral Profiles
- Segments
- Taxonomies

Deploy

Note: Deployment can take a long time.

# Troubleshooting

## Issue - 1

Issue Description: Unable to Establish Connection to MongoDB

Exception thrown: A timeout occurred after 30000ms selecting a server using CompositeServerSelector...  
Sitecore cannot make a connection to the MongoDB server.

Solution:

Ensure the following settings,

- There no network connectivity issues affecting either the Sitecore or the MongoDB server.
- The MongoDB server is running.
- The connection string for the MongoDB server configured properly.

# Troubleshooting

## Issue - 2

Issue Description: Request Handling Size Too Low

Exception thrown: The maximum number of bytes allow to be read from the stream has been exceeded. After the last read operation, a total of ##### bytes has been read from the stream; however a maximum of ##### bytes is allowed. Cause is, the data sync process is sending too much data in a single batch to the xConnect collection serviceA timeout occurred after 30000ms selecting a server using CompositeServerSelector...

Solution:

The amount of data the xConnect collection service can accept has configured in the collection service's web.config file. Increase the following value:

configuration > system.web > httpRuntime > [@maxRequestLength](#)



# Troubleshooting

## Issue - 3

Issue Description: When we trigger the task and it ran for around 15-20 mins. After that we see an error in admin page as below,

Exception thrown: This SqlTransaction has completed; it is no longer usable. at System.Data.SqlClient.SqlTransaction.ZombieCheck() at System.Data.SqlClient.SqlTransaction.Commit() at Sitecore.Analytics.Aggregation.History.SqlRebuildProcessStateDataProvider.d\_\_3.MoveNext() --- End of stack trace from previous location where exception was thrown --- at System.Runtime.ExceptionServices.ExceptionDispatchInfo.Throw() at System.Runtime.CompilerServices.TaskAwaiter.HandleNonSuccessAndDebuggerNotification(Task task) at Sitecore.Analytics.Aggregation.History.ReportingStorageManager.d\_\_27.MoveNext()

### Solution:

To resolve this issue, try decreasing the maximumBatchSize value in the \App\_Config\Sitecore\Marketing.xDB\Sitecore.Analytics.Processing.Aggregation.Services.config file:

```
<AGGREGATOR TYPE="SITECORE.ANALYTICS.AGGREGATION.INTERACTIONAGGREGATIONAGENT, SITECORE.ANALYTICS.AGGREGATION">
```

```
...
```

```
<PARAM DESC="MAXIMUMBATCHSIZE" TYPE="SITECORE.ANALYTICS.CORE.CONFIGURATIONHELPER, SITECORE.ANALYTICS.CORE" FACTORYMETHOD="TOSHORT" ARG0="32" />
```

```
...
```

```
</AGGREGATOR>
```

and the <historyWorker> node as well:

```
<HISTORYWORKER TYPE="SITECORE.ANALYTICS.AGGREGATION.DATA.PROCESSING.INTERACTIONHISTORYWORKER, SITECORE.ANALYTICS.AGGREGATION">
```

```
<PARAM DESC="MAXIMUMBATCHSIZE" TYPE="SITECORE.ANALYTICS.CORE.CONFIGURATIONHELPER, SITECORE.ANALYTICS.CORE" FACTORYMETHOD="TOSHORT" ARG0="16" />
```

```
</HISTORYWORKER>
```

# Troubleshooting

## Issue - 3

### Solution contd...

Check schema difference between primary and secondary reporting database. In our case, the check constraint has applied in Fact\_Visits table in secondary database.

Execute the following query,

```
ALTER TABLE [DBO].[FACT_VISITS] NOCHECK CONSTRAINT [FK_FACT_VISITS_CONTACTS]
```

# Troubleshooting

## Issue - 4

Issue Description: Rebuild Index is not processing

Exception thrown: InteractionBatchAggregator: Aggregation of an interaction failed. Please note, that more interactions might fail with the same reason.

```
System.InvalidOperationException: No known predicate type could be determined from  
'Sitecore.Analytics.OmniChannel.Conditions.Channel.CurrentInteractionsOnChannelCondition,Sitecore.Analytics.OmniChannel' specified in the  
definition item (Id = '2f421912-f1b3-49d8-82b8-50a64c80e4e3', db = 'master') : Could not load type  
'Sitecore.Analytics.OmniChannel.Conditions.Channel.CurrentInteractionsOnChannelCondition' from assembly 'Sitecore.Analytics.OmniChannel'. --->  
Sitecore.XConnect.Segmentation.ExpressionBuilder.PredicateDescriptorException: No known predicate type could be determined from  
'Sitecore.Analytics.OmniChannel.Conditions.Channel.CurrentInteractionsOnChannelCondition,Sitecore.Analytics.OmniChannel' specified in the  
definition item (Id = '2f421912-f1b3-49d8-82b8-50a64c80e4e3', db = 'master') : Could not load type  
'Sitecore.Analytics.OmniChannel.Conditions.Channel.CurrentInteractionsOnChannelCondition' from assembly 'Sitecore.Analytics.OmniChannel'. --->  
System.TypeLoadException: Could not load type 'Sitecore.Analytics.OmniChannel.Conditions.Channel.CurrentInteractionsOnChannelCondition' from  
assembly 'Sitecore.Analytics.OmniChannel'.
```

```
at System.RuntimeTypeHandle.GetTypeByName(String name, Boolean throwOnError, Boolean ignoreCase, Boolean reflectionOnly,  
StackCrawlMarkHandle stackMark, IntPtr pPrivHostBinder, Boolean loadTypeFromPartialName, ObjectHandleOnStack type)
```

```
at System.RuntimeTypeHandle.GetTypeByName(String name, Boolean throwOnError, Boolean ignoreCase, Boolean reflectionOnly, StackCrawlMark&  
stackMark, IntPtr pPrivHostBinder, Boolean loadTypeFromPartialName)
```

```
at System.Type.GetType(String typeName, Boolean throwOnError)
```

# Troubleshooting

## Issue - 4

### Solution:

1. Navigate to Sitecore > System > Marketing Control Panel > Experience Analytics > Dimensions > Visits > By Search Keyword.
2. Delete all the items with its Sub-Items.
3. Use the below query against the xdb.referencedata database to delete all records of the definitions, which are referring to an obsolete condition:

```
DELETE FROM [DEFINITIONS] WHERE TYPEID='8A33B457-ECD3-43DD-AF37-C4001050B910' AND  
CONVERT(VARCHAR(MAX),[DATA]) LIKE '%CONDITIONS%'
```



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*Thank You*

Sitecore xDB Migration from 8.2 to 9.1

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