

LogChief Administrator Configuration Mapping Quick Guide



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Version History

Version	Date	Person	File Name
1.0	Sept 2021	N Verma	LogChiefConfigurationMapping_QuickGuide

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1.0 Overview

LogChief is a data logging tool which uses data / field mapping to log data and encourage discipline data logging. Mapping is the key for LogChief. Mapping helps to generate logging screen, dropdowns and other key aspects of data logging. Using the mapping we establish a relationship between the database tables, where a table will act as parent and one, or more tables can act as children. This relationship enables LogChief to log data in a hierarchical pattern.

This guide is applicable to LogChief Administrators. If you are a LogChief User only, this guide is not applicable.

2.0 Mapping

Mapping data is the key part of data logging. It consists of two parts:

- 1) establishing the relationship between the tables and
- 2) establishing the relationship between the columns from the selected tables.

LogChief uses these relationships to generate hierarchy between the tables and allow users to log hierarchical and managed data.

2.1 Mapping Parent and Child relationship

In common mapping;

- a) tblDHColl will act as parent and tblDHAlteration, tblDHLithology, tblDHSamp will act as children.
- b) DataSet and HoleID from tblDHColl table will flow towards tblDHAlteration, tblDHLithology, tblDHSamp tables i.e. user will first log DataSet and HoleID in tblDHColl table and then based on DataSet and HoleID, other related data will be logged in tblDHAlteration, tblDHLithology, tblDHSamp tables.
- c) For the Parent table few columns will act as "DropDown Headers" and few will act as "Primary Fields" e.g.
- d) for tblDHColl, DataSet will act as "DropDown Header" and HoleID will act as "Primary Field".

All mapped columns from Parent will become "DropDown Headers" for children tables and we need to establish new "Primary Fields" for children. e.g.

- For tblDHAlteration, DataSet and HoleID will act as "DropDown Headers" and Depth_From field can be mapped as "Primary Field 1" & Depth To field can be mapped as "Primary Field 2"
- For tblDHSamp, DataSet and HoleID will act as "DropDown Headers" and SampleID field can be mapped as "Primary Field 1" and Depth_From field can be mapped as "Primary Field 2" or we may not need to map "Primary Field 2" based on primary key of the table tblDHSamp.

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2.2 Mapping Parent and Child Tables

LogChief incorporates;

- Three "DropDown Headers" for Parent Table HeaderID 01, HeaderID 02, HeaderID 03.
- There are two "Primary Fields" and they are called FieldID 01 and FieldID 02.
- Among these only Header 01 and Field 01 are required fields i.e. you need at-least one "DropDown Header" and one "Primary Field".
- If you want more than one "DropDown Header", you need to make sure they have a single foreign key from one table i.e. if you want to map HeaderID 01, HeaderID 02 and HeaderID 03, their values must come from the same library table.

Example One:

tblFSSamp as Parent-Table

DataSet as HeaderID 01

Site ID as HeaderID 02

Line ID as HeaderID 03

Because their foreign key is:

```
ALTER TABLE [dbo].[tblFSSamp] WITH NOCHECK ADD CONSTRAINT
[FK_tblFSSamp_tblFSSite_DataSet_Site_ID_Line_ID] FOREIGN KEY([DataSet], [Site_ID], [Line_ID])

REFERENCES [dbo].[tblFSSite] ([DataSet], [Site_ID], [Line_ID])
```

Example Two:

If you map tblFSSite as Parent-Table,

You can only map;

DateSet as HeaderID 01

Site ID as FieldID 01

Line_ID as FieldID 02

There is a field "Drive_ID" with foreign key in tbIFSSite but we can't map it as "HeaderID 02" because it's library table is different than "DataSet" field's library table

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ALTER TABLE [dbo].[tblFSSite] WITH NOCHECK ADD CONSTRAINT [FK_tblFSSite_tblSYSDataSet_DataSet] FOREIGN KEY([DataSet]) REFERENCES [dbo].[tblSYSDataSet] ([DataSet])

ALTER TABLE [dbo].[tblFSSite] WITH NOCHECK ADD CONSTRAINT [FK_tblFSSite_tblLIBDriveID_Drive_ID] FOREIGN KEY([Drive_ID]) REFERENCES [dbo].[tblLIBDriveID] ([Code])

For children tables LogChief provides five "DropDown Headers" and they are called HeaderID 01, HeaderID 02, HeaderID 03, HeaderID 04 and HeaderID 05 along with two "Primary Fields" and they are called FieldID 01 and FieldID 02.

Number of "DropDown Headers" for Child-Table is directly proportional to number of fields mapped for Parent-Table. e.g. if you have mapped all five columns in Parent-Table, Child-Table will have five "DropDown Headers".

Parent-Table	Child-Table
HeaderID 01	HeaderID 01
HeaderID 02	HeaderID 02
HeaderID 03	HeaderID 03
FieldID 01	HeaderID 04
FieldID 02	HeaderID 05

As explained, these combinations will change based on parent column mappings e.g.

Parent-Table	Child-Table
HeaderID 01	HeaderID 01
HeaderID 02	HeaderID 02
FieldID 01	HeaderID 03

Parent-Table	Child-Table
HeaderID 01	HeaderID 01
FieldID 01	HeaderID 02
FieldID 02	HeaderID 03

You need to map FieldID 01 and / or FieldID 02 as per the requirement for Children tables.

Please remember the column mappings are based on the datatype of the column not column name. e.g.

• For Parent-Table, "DataSet" is mapped as "HeaderID 01". For Child-Table, you can map any column as "HeaderID 01" who can hold "NVARCHAR (30)" value which is the datatype of "DataSet" column in Parent-Table.

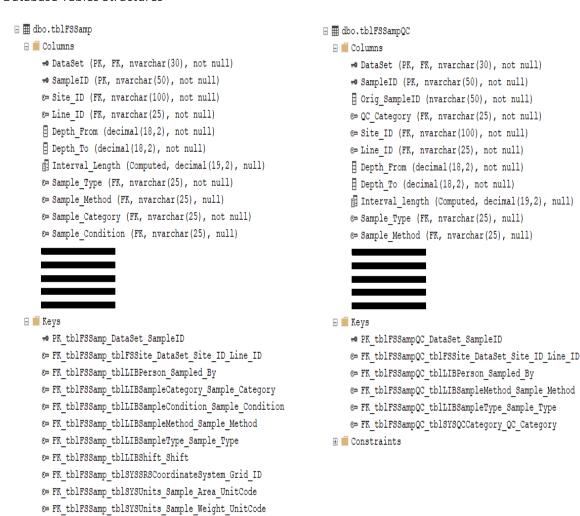
Another important note: For Child-Table columns mapping, foreign-key is not required to map the columns as "DropDown Header". LogChief will directly pass the values from Parent-Table to Child-Table for mapped "DropDown Header" columns using hierarchical "DropDown List" and this list is based on all the columns mapped for Parent Table.

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Example Three:

Database Tables Structures



Proposed LogChief columns mapping

Constraints

Parent Table		Child	Table	
tblFSSamp	le		tblFSSamp	leQC
Header 01	DataSet		Header 01	DataSet
Header 02	Site_ID		Header 02	Site_ID
Header 03	Line_ID		Header 03	Line_ID
Field 01	SampleID		Header 04	Orig_SampleID
Field 02			Header 05	
			Field 01	SampleID
			Field 02	Depth From

Outcomes from the example above:

- 01. There are four columns mapped in Parent-Table, three Headers and one Field, so Child-Table will have four Header-Columns and Field-Columns will be based on Primary-Key of the table
- 02. There are no foreign-key for "Orig SampleID", however we mapped as "Header 04"
- 03. "FieldID 01" name in Parent-Table is "SampleID" but "HeaderID 04" field name for Child-Table is "Orig SampleID" so the name doesn't matter only the Data-Type matters and they must be the same

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04. LogChief will generate dummy foreign-key for Child-Table tblFSSampleQC which will have four columns and it will look like

ALTER TABLE [dbo].[tblFSSampQC] WITH NOCHECK ADD CONSTRAINT

[FK_tblFSSampQC_tblFSSamp_DataSet_Site_ID_Line_ID_Orig_SampleID] FOREIGN

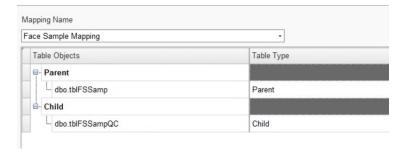
KEY([DataSet], [Site_ID], [Line_ID], [Orig_SampleID])

REFERENCES [dbo].[tblFSSamp] ([DataSet], [Site_ID], [Line_ID], [SampleID])

- 05. User will not see this foreign-key on database
- 06. User can still map "FieldID 02" for Child-Table if that is the requirement of "Primary Key" of database table

On LogChief, it will look like:

01. Table Mapping: Establishing the relationship between the table

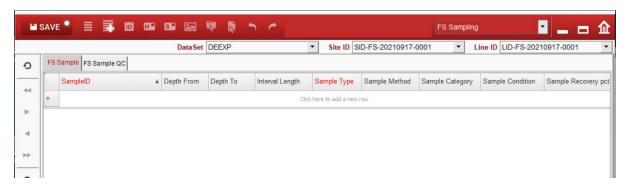


02. Columns Mappings



03. On Logging Screen

For Parent Table:



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For Child Table:





In most cases you don't need to map "Primary Field 2" for children tables unless it is mentioned in "Primary Keys" of the database table

2.3 Mapping Parent Tables Only

When a Child-Table is not required, still you need minimum two columns where one column can act as "DropDown Header" and another one as "Primary Field" e.g.

If you need to map tblContractHeader as Parent-Table, the structure of the table would be as follows;

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Table tblContractHeader has only one column as primary-key and that column doesn't have foreign-key either hence you cannot make that column as "HeaderID 01". In this case you have two options;

- 01. We will look for "NOT NULL" column with foreign-key and use it as "DropDown Header"
- 02. We can add new "NOT NULL" column with foreign-key and use it as "DropDown Header"

Looking at the table structure, Contract_Currency is a "NOT NULL" column with foreign-key and it will be the "DropDown Header".

Mapping will look like:

Parent Table	
tblContrac	tHeader
Header 01	Contract_Currency
Header 02	
Header 03	
Field 01	ContractID
Field 02	

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3.0 Example Case Study

Mapping for Sample Dispatch Submission Plugin by Naresh Verma

I was working on "Sample Dispatch Submission Plugin" and needed to create the following mapping to send data from Configuration maxgeo Data Schema (MDS) to Master MDS:

Parent Table	Child Tables
dbo.tblSYSAssDispatchHeader	dbo.tbl SYSAss Dispatch Consignment
	dbo.tbl SYSAss Dispatch Details
	dbo.tbl SYSAss Dispatch Group Details
	dbo.tblSYSAssDispatchSampleRegiste

To design the mapping, I looked at the table structure.

When I looked at tblSYSAssDispatchHeader table, I found it perfectly fit for Parent-Table as it's primary-key has one column called **DispatchID** and there is another "NOT NULL" column with foreign-key called **CotractID**.

However, when I looked at the Child-Tables structure, I didn't find ContractID column in any Child-Tables. Hence the chances of making ContractID as "HeaderID 01" become zero.

Now I looked at the structure of all five tables to find out at-least two common columns in all the tables; and I ended up with "DispatchID" and "Data_Source" columns, one problem solved. However, as we all know, Data_Source column doesn't have foreign-key in any table in MDS. Foreign-key is the main requirement to map any column as "HeaderID 01" for Parent-Table.

Now I am only left with one option

01. Add a column with foreign-key in Parent-Table, tblSYSAssDispatchHeader and add the same column in all Child-Tables, without foreign-key.

Note: In this kind of situation, we are safe to add "*LG_SD*" column in Parent-Table and set foreign-key to "*tblSYSLGSD*" table. In all the Child-Tables, we can simply add "*LG_SD*" column. No need to add foreign-key for Child-Tables.

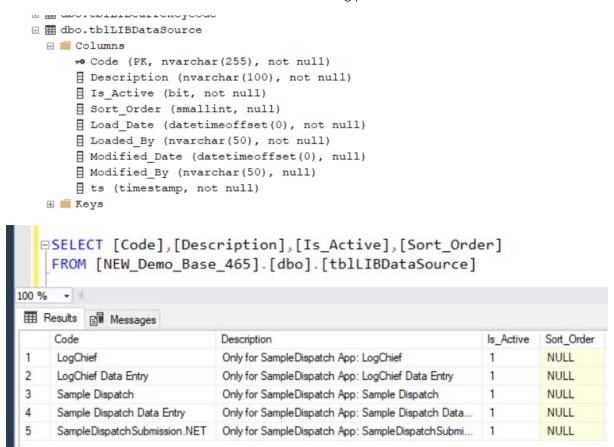
Instead of going through option 1, I did a detailed study of the requirement and found that it will work if;

- I add a new library table
- insert all the possible values for the "Data_Source" column
- create a foreign-key to tblSYSAssDispatchHeader
- use "Data Source" as "HeaderID 01.

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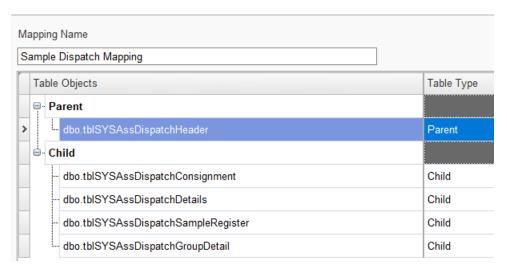
So I added tblLIBDataSource table and added the following possible values



And then I added foreign-key to tblSYSAssDispatchHeader table:

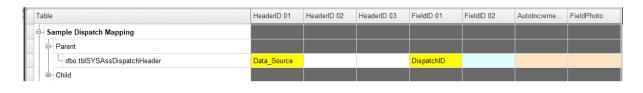
ALTER TABLE [dbo].[tblSYSAssDispatchHeader] WITH CHECK ADD CONSTRAINT [FK tblSYSAssDispatchHeader tblLIBDataSource Data Source] FOREIGN KEY([Data_Source]) REFERENCES [dbo].[tblLIBDataSource] ([Code])

After making these changes, I was successfully able to create the desired mapping:



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This solution is working, and the user can synchronise data from LogChief Configuration to MDS using LogChief or MxSync-Utility.

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