|  |  |
| --- | --- |
| **Instructions for implementing schema changes from ODS to Snowflake** | |
| Subject: | Instructions for implementing schema changes from ODS to Snowflake |
| Version: | 1.0 |
| Last Saved Date: | 09/28/2020 3:43 PM |
| Brief Description: | This document describes step by step guide for adding new tables to snowflake environment |

**As a reminder, always check in changes and get latest version after each section. When check in, remember to check in comment.**

**Table of Contents**

[1 Add new tables 3](#__RefHeading___Toc4107_465968725)

[1.1 Deploy ODS source code to existing test ODS database 3](#__RefHeading___Toc4109_465968725)

[1.2 Update table source code in ODS SnowFlake\_Admin database 3](#__RefHeading___Toc4111_465968725)

[1.2.1 Create Table Queries 3](#__RefHeading___Toc4113_465968725)

[1.2.2 Concatenate all table scripts together and create tbldyn.sql 3](#__RefHeading___Toc4115_465968725)

[1.2.3 Update data for adm table of Snowflake Admin 4](#__RefHeading___Toc4117_465968725)

[1.2.4 Update data for adm table of Snowflake\_Database 4](#__RefHeading___Toc5587_465968725)

[1.3 Update view scripts 5](#__RefHeading___Toc4119_465968725)

[1.4 Update function scripts 5](#__RefHeading___Toc4121_465968725)

[1.5 Test data loading 6](#__RefHeading___Toc4125_465968725)

[2 Add New Columns 6](#__RefHeading___Toc4127_465968725)

# **Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Version | Author | Description |
| 09/28/2020 | 1.0 | ValueLabs Team(MMP) | Initial version. |

# Add new tables

## Deploy ODS source code to existing test ODS database

* Go to [Local TFS folder]/CSG/Enterprise/Database/OperationalDataStore/MSSQL/[Product]/CI/OdsDatabase in Command Prompt
* Run install.bat with parameter [Server Name] nt nt [Database Name]
* Here, what we use is WcsOds\_Snowflake database in QSQL110V\WCSODS1 server
* After command finished make sure to use the 2 log file address provided to verify process completed with no error.

## Update table source code in ODS SnowFlake\_Admin database

* Deploy Deploy snowflake Admin source code to existing test snowflake Admin database
* Go to [Local TFSfolder]/CSG/Enterprise/Database/OperationalDataStore/Snowflake/[Product]/CI/OdsDatabaseObjects
* Run install.bat with parameter [Server Name] nt nt [Database Name]
* Here, what we use is Snowflake\_Admin database in QSQL110V\WCSODS1 server
* There are 2 kinds of queries need to be created for each new added table, stg and src

### Create Table Queries

* In $/CSG/Enterprise/Database/OperationalDataStore/Snowflake/SmartAdvisor/CI/OdsDatabaseObjects/Update folder, Automation query for the table conversion is placed.
* dbo.GenerateSnowflakeDdlDriver and dbo.GenerateSnowflakeDdlStgSrcTable
* Create these two stored procedures in Snowflake\_Admin database
* Run dbo.GenerateSnowflakeDdlDriver sp:
  + EXEC GenerateSnowflakeDDLDriver SourceDatabase,InstanceName,OutputPath,Debug

This will create snowflake compatible table ddl for all tables to OutputPath(must be nas, local path will not work)

Once generated copy all files to :

* + [Local TFSfolder]/CSG/Enterprise/Database/OperationalDataStore/Snowflake/[Product]/CI/SnowFlakeDatabase/Tables/Dynamic

Once copied it’s ready for check in.

### Concatenate all table scripts together and create tbldyn.sql

* Run $/CSG/Enterprise/Database/OperationalDataStore/Snowflake/SmartAdvisor/CI/SnowFlakeDatabase/Tables/table\_dynamic.bat in Command Prompt

### Update data for adm table of Snowflake Admin

* In $/CSG/Enterprise/Database/OperationalDataStore/Snowflake/SmartAdvisor/CI/OdsDatabaseObjects/Data/adm.ProcessColumn.txt, add new table’s Columns, ProcessId must be same as in adm.Process table.

Query to populate adm.ProcessColumn

INSERT INTO adm.ProcessColumn

SELECT ProcessId,COLUMN\_NAME,NULL ColumnDescription,0 HoldsPII,NULL ObfuscateWithValue,0 UseForBatchProcessing

from WcsOds\_Snowflake.INFORMATION\_SCHEMA.COLUMNS ic

INNER JOIN WcsOds\_Snowflake.adm.Process p on ic.TargetSchemaName='src' and p.TargetTableName=ic.TABLE\_NAME

WHERE ProcessId = [ProcessId]

AND ordinal\_position > 7

Points to note:

1) For PII data check with PM if any column of new table is PII

if yes then update that column name in adm.ProcessColumn’s HoldsPII as 1

2) If size of table is large check with Aggregators correct column to use for splitting table

set input column name in adm.processCoumn’s UseForBatchProcessing as 1

### Update data for adm table of Snowflake\_Database

* In $/CSG/Enterprise/Database/OperationalDataStore/Snowflake/SmartAdvisor/CI/SnowFlakeDatabase/Data/adm.Process.txt,

Follow the order of ProcessId, insert records for new tables, new table’s ProcessId must be same as in adm.Process table of ODS database.

* In $/CSG/Enterprise/Database/OperationalDataStore/Snowflake/SmartAdvisor/CI/SnowFlakeDatabase/Data/adm.Process\_Primary\_Key.txt,

Add primary key columns for newly added ProcessId.

Query to populate adm.Process\_Primary\_Key

Insert output of below query.

SELECT DISTINCT ProcessId,UPPER(I.COLUMN\_NAME),GETDATE()

FROM wcsods\_snowflake.INFORMATION\_SCHEMA.TABLE\_CONSTRAINTS T

INNER JOIN wcsods\_snowflake.INFORMATION\_SCHEMA.KEY\_COLUMN\_USAGE I

ON CONSTRAINT\_TYPE = 'PRIMARY KEY'

AND I.TABLE\_NAME = T.TABLE\_NAME

AND I.CONSTRAINT\_NAME = T.CONSTRAINT\_NAME

INNER JOIN wcsods\_snowflake.adm.Process P

ON I.TABLE\_NAME = P.TargetTableName

WHERE p.ProcessId = [ProcessId]

## Update view scripts

* In $/CSG/Enterprise/Database/OperationalDataStore/Snowflake/SmartAdvisor/CI/OdsDatabaseObjects/Update folder, Automation query for the table conversion is placed.
* dbo.GenerateSnowflakeDdlDynView.sql
* Create this stored procedure in Snowflake\_Admin database
* Run dbo.GenerateSnowflakeDdlDynView.sql sp:
  + EXEC GenerateSnowflakeDdlDynView SourceDatabase,OutputPath,ProcessId(0 for all),Debug

This will create snowflake compatible view ddl for all tables to OutputPath(must be nas, local path will not work)

Once generated copy all files to :

* + [Local TFSfolder]/CSG/Enterprise/Database/OperationalDataStore/Snowflake/[Product]/CI/SnowFlakeDatabase/Views/Dynamic
* Run $/CSG/Enterprise/Database/OperationalDataStore/Snowflake/SmartAdvisor/CI/OdsDatabaseObjects/Views/vw\_dynamic.bat in Command Prompt to concatenate all view scripts together and create vwdyn.sql

## Update function scripts

* In $/CSG/Enterprise/Database/OperationalDataStore/Snowflake/SmartAdvisor/CI/OdsDatabaseObjects/Update folder, Automation query for the table conversion is placed.
* dbo.GenerateSnowflakeDDLDynFunction
* Create this stored procedure in Snowflake\_Admin database
* Run dbo.GenerateSnowflakeDDLDynFunction sp:
  + EXEC GenerateSnowflakeDDLDynFunction SourceDatabase,OutputPath,ProcessId(0 for all),Debug

This will create snowflake compatible view ddl for all tables to OutputPath(must be nas, local path will not work)

Once generated copy all files to :

* + [Local TFSfolder]/CSG/Enterprise/Database/OperationalDataStore/Snowflake/[Product]/CI/SnowFlakeDatabase/Functions/Dynamic
* Run $/CSG/Enterprise/Database/OperationalDataStore/Snowflake/SmartAdvisor/CI/OdsDatabaseObjects/Functions/fn\_dynamic.bat in Command Prompt to concatenate all function scripts together and create fndyn.sql

## Test data loading

In Dev ODS database, test data extraction.

# Add New Columns

* Currently decided to update it manually on snowflake.
* We have upcoming feature to handle this.