

Adventure Works Data Warehouse

ETL Design

Change Log

This section is reserved for tracking changes to requirements.

Change Date	Changed By	Description

Template

Create a project containing template components only. Name the package Template.dtsx. When the template project is complete, save to the \template folder on the IT server.

Configuration components

Project-level parameters

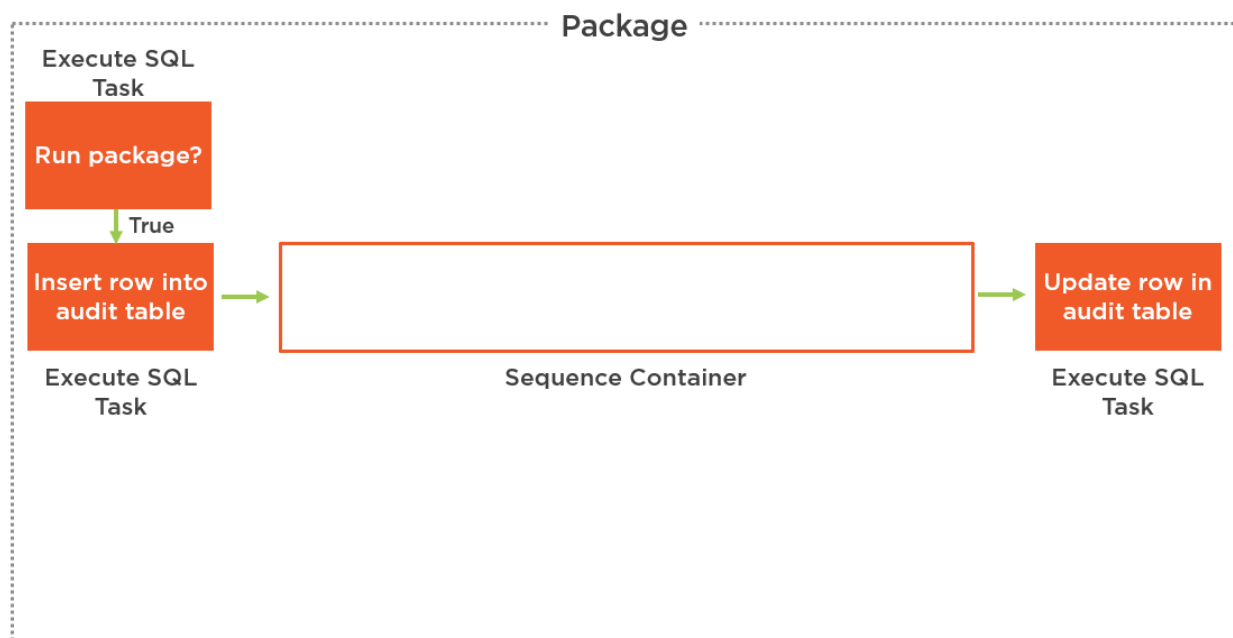
Name	Data Type	Value	Sensitive	Required	Description
DWConnection	String	Data Source=SQLDW;Initial Catalog=AWDW;Provider=SQLNCLI11.1;Integrated Security=SSPI;Auto Translate=False;	False	True	Data warehouse connection string
ErrorPath	String	C:\ssis-awdw-errors\	False	True	Error file path
DWDBName	String	AWDW	False	True	Data warehouse database name
SQLPath	String	C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\MSSQL\DATA\	False	True	SQL Server file path
ALMConnection	String	Data Source=SQLDW;Initial Catalog=AWDW;Provider=SQLNCLI11.1;Integrated Security=SSPI;Auto Translate=False;	False	True	Auditing and logging database connection string
SourceConnection	String	Data Source=SQL01;Initial Catalog=AdventureWorks;Provider=SQLNCLI11.1;Integrated Security=SSPI;Auto Translate=False;	False	True	Source database connection string

StagingConnection	String	Data Source=SQLDW;Initial Catalog=AWDW;Provider=SQLNCL11.1;Integrated Security=SSPI;Auto Translate=False;	False	True	Staging database connection string
LoadType	String	Initial	False	True	Configures initial or incremental workload

Package

The template package must contain tasks and a placeholder sequence container as shown in the diagram below:

- Execute SQL task to check workload configuration table
- Execute SQL task to create a row in the audit table
- Sequence container - empty
- Execute SQL task to update audit table row with metrics and completion



Security

Package protection level: DontSaveSensitive.

Connection managers

Configure the connection managers using standard settings and then parameterize to use project-level parameters for connection strings.

Name	ALM	Type	SQL Server Native Client
Server	SQLDW	Database	AWDW
		Authentication	Windows
Expressions	ConnectionString	@[\$Project::ALMConnection]	

Name	Source	Type	SQL Server Native Client
Server	SQL01	Database	AdventureWorks
		Authentication	Windows
Expressions	ConnectionString	@[\$Project::SourceConnection]	

Name	Staging	Type	SQL Server Native Client
Server	SQLDW	Database	AWDW
		Authentication	Windows
Expressions	ConnectionString	@[\$Project::StagingConnection]	

Name	Target	Type	SQL Server Native Client
Server	SQLDW	Database	AWDW
		Authentication	Windows
Expressions	ConnectionString	@[\$Project::DWConnection]	

Variables

All variables are set to package scope.

Name	Data Type	Value	Expression
AuditKey	Int32	0	
RowCountErrors	Int64	0	
RowCountExtracts	Int64	0	
RowCountFinal	Int64	0	
RowCountInitial	Int64	0	
RowCountInserts	Int64	0	
RowCountUpdates	Int64	0	
RunPackage	Boolean	False	
SourceQuery	String		
SourceQueryWhere	String		
TableMaxDateTime	DateTime	1/1/1900	
TableName	String		

Package parameters

Name	Data Type	Value	Sensitive	Required	Description
ParentAuditKey	Int32	-1	False	True	Audit key passed from calling package

Run package configuration

This task is dependent on the existence of the RunPackages table which must be populated with data.

```
CREATE TABLE RunPackages
(
    TableID int not null IDENTITY,
    TableName varchar(50) not null,
    RunStatus bit not null
)
```

Execute SQL Task			
Name	SQL RunPackage	ResultSet	Single
Description	Check workload configuration		
ConnectionType	OleDb	Connection	Target
SQLSourceType	Direct	SQLStatement	SELECT RunStatus FROM RunPackages where TableName = ?
Parameter Mapping			
Variable Name	Direction	Data Type	Parameter Name
User::TableName	Input	VARCHAR	0
Result Set			
Result Name	Variable Name		
0	User::RunPackage		

Auditing and logging mechanism

Execute SQL Task			
Name	SQL Audit Begin	ResultSet	Single
Description	Insert row into audit table		
ConnectionType	OleDb	Connection	ALM
SQLSourceType	Direct	SQLStatement	EXEC spAuditBegin ?, ?, ?, ?, ?, ?
Parameter Mapping			
Variable Name	Direction	Data Type	Parameter Name
User::TableName	Input	VARCHAR	0
System::PackageName	Input	VARCHAR	1
System::PackageID	Input	GUID	2
System::VersionGUID	Input	GUID	3

System::ExecutionInstanceGUID	Input	GUID	4
\$Package::ParentAuditKey	Input	LONG	5
Result Set			
Result Name	Variable Name		
0	User::AuditKey		

Name	SQL Audit End	ResultSet	None
Description	Update row in audit table		
ConnectionType	OLEDB	Connection	ALM
SQLSourceType	Direct	SQLStatement	EXEC spAuditEnd ?,?,?,?,?,?,?
Parameter Mapping			
Variable Name	Direction	Data Type	Parameter Name
User::RowCountInitial	Input	LARGE_INTEGER	0
User::RowCountExtracts	Input	LARGE_INTEGER	1
User::RowCountInserts	Input	LARGE_INTEGER	2
User::RowCountUpdates	Input	LARGE_INTEGER	3
User::RowCountFinal	Input	LARGE_INTEGER	4
User::RowCountErrors	Input	LARGE_INTEGER	5
User::AuditKey	Input	LONG	6

Containers

Container Type	Name	Contents
Sequence	SEQ Package Logic	Empty

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Run Package	SQL Audit Begin	Expression and constraint	Success	@[User::RunPackage]
SQL Audit Begin	SEQ Package Logic	Constraint	Success	
SEQ Package Logic	SQL Audit End	Constraint	Success	

Project packages

When creating a new SSIS project, remove the default Package.dtsx file from the project and add the following existing items (found in the \template folder on the IT server) to the new project:

- Project.params
- Template.dtsx – rename this package to a unique name

To add these items, follow these steps:

- Right-click the project in the Solution Explorer window
- Point to Add and then select Existing Item
- Navigate to the folder containing the items, select the file and click Add
- When adding Project.params, click Yes when prompted to confirm the overwrite

Continue to add Template.dtsx and rename appropriately for each package that is required for the project.

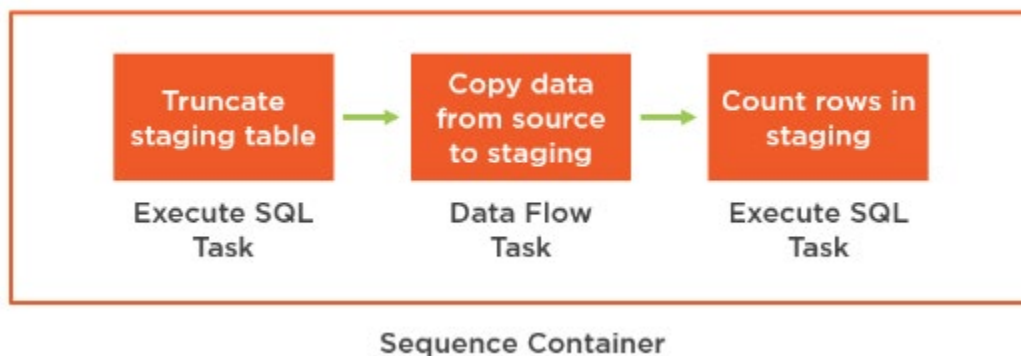
Note that the template uses package-level connection managers. These connection managers are configured with an expression to set the connection string by using values specified in the project-level parameters. Therefore, when changing to a new environment, change the parameter value accordingly. There is no need to configure project-level connection managers in this design.

Be sure to set the project protection level to DontSaveSensitive.

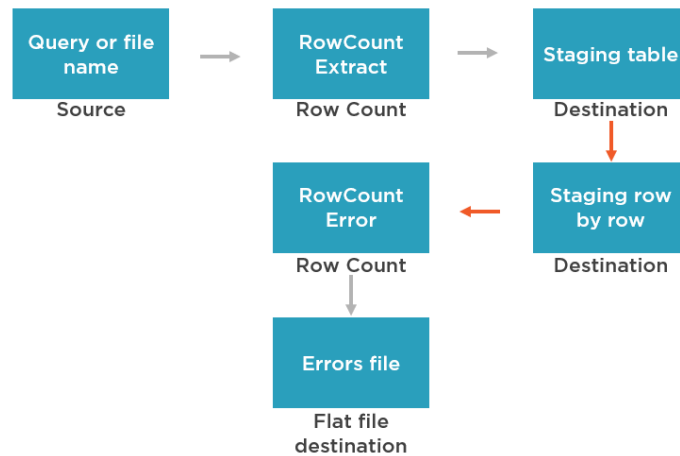
Staging loads

The sequence container for staging loads will conform to the structure shown in the diagram below:

- Execute SQL task to truncate the staging table
- Data Flow task to copy data from the source to the staging table
- Execute SQL task to count the number of rows in staging



The data flow task will follow the pattern shown in the diagram below unless otherwise specified in the table design.



HumanResources.Department

Connection Manager

Name	FF Errors Department	Type	Flat File
File name	HRDepartment.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HRDepartment.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Department

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts

OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Department
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Department
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Department	FF Errors Department	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Department

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [DepartmentID], [Name], [GroupName], [ModifiedDate] FROM [HumanResources].[Department]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Department]	

HumanResources.Employee

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	<i>select convert(bigint, count(*)) from HumanResources.Employee</i>

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	<i>SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]</i>	
SourceQueryWhere	String		
TableName	String	<i>[HumanResources].[Employee]</i>	

HumanResources.EmployeeDepartmentHistory

Connection Manager

Name	FF Errors <i>Employee</i>	Type	Flat File
File name	<i>HREmployee.txt</i>		
Expressions	ConnectionString	<i>@[\$Project::ErrorPath] + "HREmployee.txt"</i>	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Person.Address

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Person.BusinessEntityAddress

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table

OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	

SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Person.CountryRegion

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			

Name	Connection Manager	Overwrite data in file?
FF Errors Employee	FF Errors Employee	Yes

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Person.EmailAddress

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Person.Person

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Person.PersonPhone

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\${Project}::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Person.StateProvince

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Production.Product

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Production.ProductCategory

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table

OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	

SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Production.ProductModel

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			

Name	Connection Manager	Overwrite data in file?
FF Errors Employee	FF Errors Employee	Yes

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Production.ProductSubcategory

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Sales.Customer

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Sales.SalesTerritory

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table

OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[

		ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Sales.SpecialOffer

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable

RC Error		User::RowCountErrors
Flat File Destination		
Name	Connection Manager	Overwrite data in file?
FF Errors Employee	FF Errors Employee	Yes

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Sales.Store

Connection Manager

Name	FF Errors Employee	Type	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HREmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OleDb	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE HumanResources.Employee

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	HumanResources.Employee
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	HumanResources.Employee
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors Employee	FF Errors Employee	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumber],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate],[MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLeaveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhere	String		
TableName	String	[HumanResources].[Employee]	

Sales Targets.xlsx

Connection Manager

Name	FF Errors SalesTargets	Type	Flat File
File name	SalesTargets.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "SalesTargets.txt"	

Name	SalesTargets	Type	Excel
Excel file path	Sales Targets.xlsx		

Tasks

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE SalesTargets

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Name of Excel sheet
Excel Source	SalesTargets	Table or view	Sheet1\$
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	SalesTargets
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	SalesTargets
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors SalesTargets	FF Errors SalesTargets	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	<code>select convert(bigint, count(*)) from SalesTargets</code>

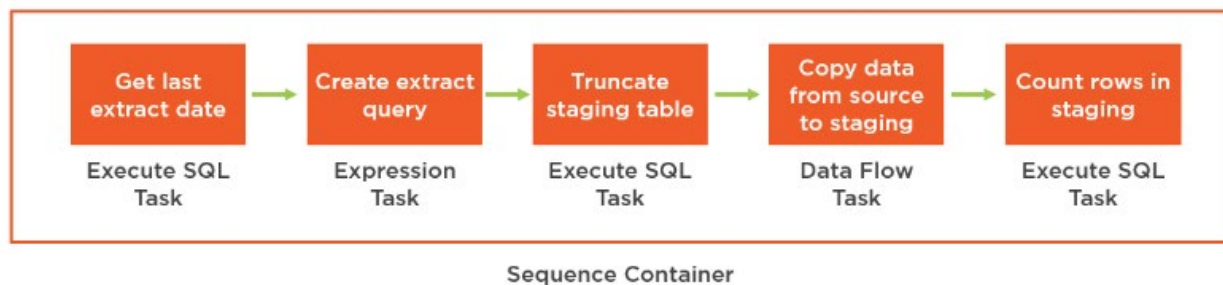
Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String		
SourceQueryWhere	String		
TableName	String	<code>SalesTargets</code>	

Relational fact extracts



Sales.SalesOrderDetail

Connection Manager

Name	FF Errors <code>SalesOrderDetail</code>	Type	Flat File
File name	<code>SalesOrderDetail.txt</code>		
Expressions	ConnectionString	<code>@[\$Project::ErrorPath] + "SalesOrderDetail.txt"</code>	

Tasks

Execute SQL Task			
Name	SQL Get Last Date	ResultSet	SingleRow
Description	Get the date and time of last extract		
ConnectionType	OLEDB	Connection	ALM
SQLSourceType	Direct	SQLStatement	SELECT MAX(TableMaxDateTime) AS TableMaxDateTime FROM DimAudit WHERE TableName = 'FactSales'
Result Set			
Result Name	Variable Name		
0	User::TableMaxDateTime		

Expression Task	
Name	EXP Create Extract SQL
Description	Dynamically generate SQL statement for source component
Expression	@[User::SourceQuery] = @[\$Project::LoadType]=="Initial" ? @[User::SourceQuery] : @[User::SourceQuery] + @[User::SourceQueryWhere] + "" + (DT_STR, 25, 1252) @[User::TableMaxDateTime] + ""

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE Sales.SalesOrderDetail

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table

OLE Destination	Staging	Table or view – fast load	Sales.SalesOrderDetail
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	Sales.SalesOrderDetail
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors SalesOrderDetail	FF Errors SalesOrderDetail	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from Sales.SalesOrderDetail

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Get Last Date	EXP Create Extract SQL	Constraint	Success	
EXP Create Extract SQL	SQL Truncate Table	Constraint	Success	
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [SalesOrderID],[SalesOrderDetailID],[CarrierTrackingNumber],[OrderQty],[ProductID],[SpecialOfferID],[UnitPric	

		e],[UnitPriceDiscount],[LineTotal],[rowguid],[ModifiedDate] FROM [Sales].[SalesOrderDetail]	
SourceQueryWhere	String	WHERE ModifiedDate >	
TableName	String	[Sales].[SalesOrderDetail]	

Sales.SalesOrderHeader

Connection Manager

Name	FF Errors SalesOrderHeader	Type	Flat File
File name	SalesOrderHeader.txt		
Expressions	ConnectionString	@[Project::ErrorPath] + "SalesOrderHeader.txt"	

Tasks

Execute SQL Task			
Name	SQL Get Last Date	ResultSet	SingleRow
Description	Get the date and time of last extract		
ConnectionType	OLEDB	Connection	ALM
SQLSourceType	Direct	SQLStatement	SELECT MAX(TableMaxDateTime) AS TableMaxDateTime FROM DimAudit WHERE TableName = 'FactSales'
Result Set			
Result Name	Variable Name		
0	User::TableMaxDateTime		

Expression Task	
Name	EXP Create Extract SQL
Description	Dynamically generate SQL statement for source component
Expression	@[User::SourceQuery] = @[Project::LoadType]=="Initial" ? @[User::SourceQuery] : @[User::SourceQuery] + @[User::SourceQueryWhere] + "" + (DT_STR, 25, 1252) @[User::TableMaxDateTime] + ""

Execute SQL Task			
Name	SQL Truncate Table	ResultSet	None
Description	Truncate staging table		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE Sales.SalesOrderDetail

Data Flow Task: DFT Extract to Staging			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable
OLE Source	Source	SQL command from variable	User::SourceQuery
Row Count Transform			
Name			Variable
RC Extract			User::RowCountExtracts
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Staging	Table or view – fast load	Sales.SalesOrderDetail
Error Output	Redirect row		
OLE DB Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination by Row	Staging	Table or view	Sales.SalesOrderDetail
Error Output	Redirect row		
Row Count Transform			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors SalesOrderDetail	FF Errors SalesOrderDetail	Yes	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Staging
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from Sales.SalesOrderDetail

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Get Last Date	EXP Create Extract SQL	Constraint	Success	
EXP Create Extract SQL	SQL Truncate Table	Constraint	Success	
SQL Truncate Table	DFT Extract to Staging	Constraint	Success	
DFT Extract to Staging	SQL Count Current Rows Final	Constraint	Success	

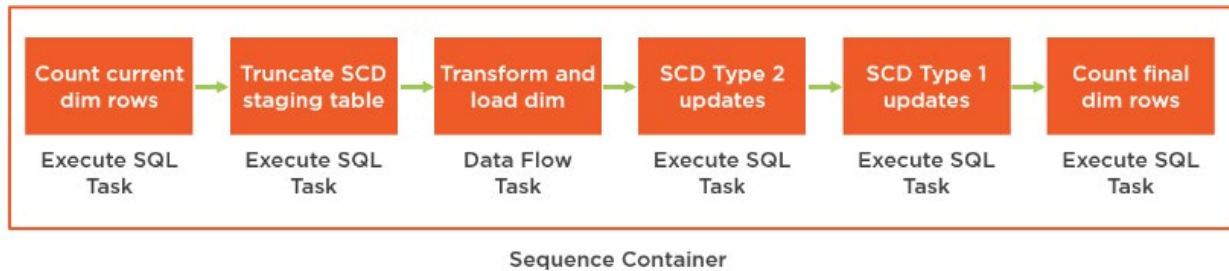
Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [SalesOrderID],[SalesOrderDetailID],[CarrierTrackingNumber],[OrderQty],[ProductID],[SpecialOfferID],[UnitPric e],[UnitPriceDiscount],[LineTotal],[ro wguid],[ModifiedDate] FROM [Sales].[SalesOrderDetail]	
SourceQueryWhere	String	WHERE ModifiedDate >	
TableName	String	[Sales].[SalesOrderDetail]	

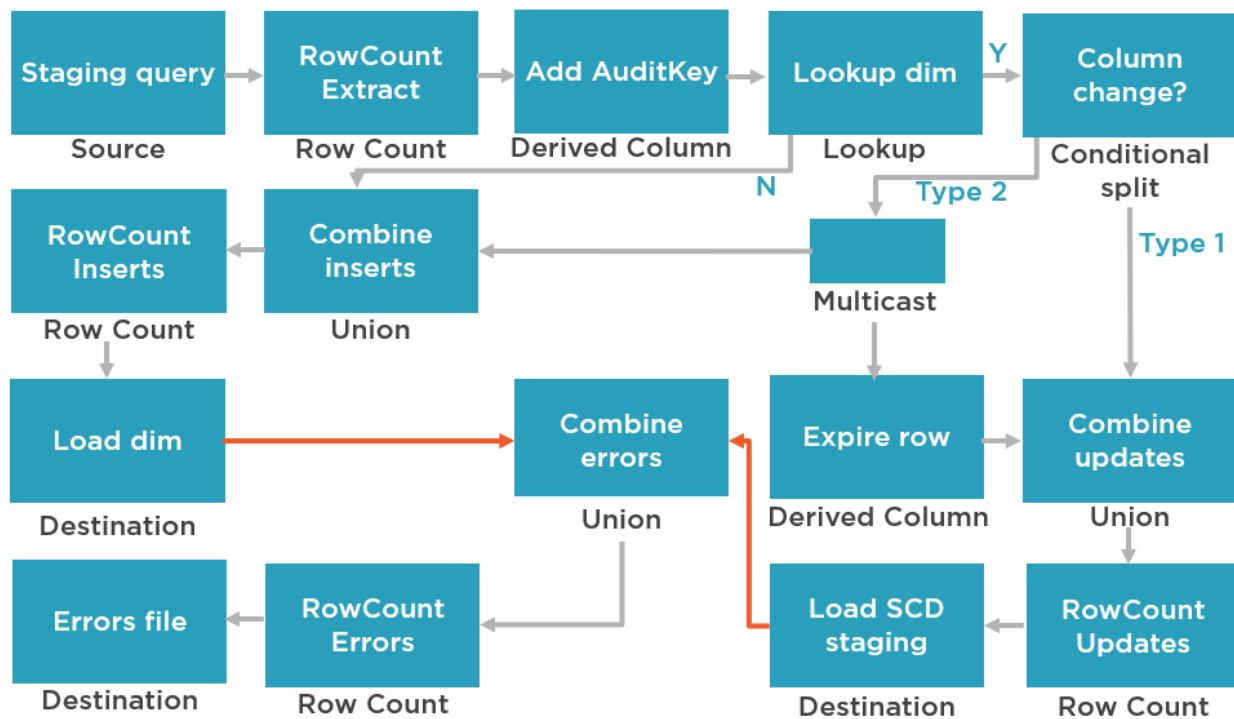
Dimension loads

The sequence container for dimension loads will conform to the structure shown in the diagram below:

- Execute SQL task to count the number of rows in the table before the load
- Execute SQL task to truncate the SCD staging table
- Data Flow task to copy data from the staging table to the target table and perform transformations
- Execute SQL task to update SCD type 2 columns in the dimension table, if applicable
- Execute SQL task to update SCD type 1 columns in the dimension table
- Execute SQL task to count the number of rows in the table after the load



The data flow will follow the pattern shown in the diagram below unless otherwise specified in the package design.



Note: The DimDate table is not loaded from a source but will be populated with a one-time script by the data warehouse DBA team. Therefore, no package for loading this table is required.

DimCampaign

Connection Manager

Name	FF Errors DimCampaign	Type	Flat File
File name	DimCampaign.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "DimCampaign.txt"	

Tasks

Execute SQL Task			
Name	SQL Count Rows Initial	ResultSet	SingleRow
Description	Count rows in dimension table before extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimCampaign
Result Set			
Result Name	Variable Name		
0	User::RowCountInitial		

Execute SQL Task			
Name	SQL Truncate SCD Staging Table	ResultSet	None
Description	Truncate SCD staging table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE tmp_scd_DimCampaign

Data Flow Task: DFT Load Target				
OLE DB Source				
Name	Connection Manager	Data Access Mode	Variable	
OLE Source	Source	SQL command from variable	User::SourceQuery	
Row Count Transform				
Name			Variable	
RC Extract			User::RowCountExtracts	
Derived Column Transform				
Name	DC Audit Key			
Derived Column Name	Derived Column	Expression	Data Type	Length
InsertAuditKey	<add as new column>	@[User::AuditKey]	four-byte signed integer	
Lookup Transform				
Cache mode	Full cache	Connection type	OLE DB connection manager	
No matching rows?	Redirect to no match output	Connection	Target	
SQL Query	SELECT * FROM DimCampaign	Input Columns (match on)	Input: CampaignID Lookup: CampaignID	
Lookup Columns	CampaignName	Output Alias Columns	dim_CampaignName	

	CampaignType CampaignCategory DiscountPct CampaignStartDate CampaignEndDate MinQty MaxQty		dim_CampaignType dim_CampaignCategory dim_DiscountPct dim_CampaignStartDate dim_CampaignEndDate dim_MinQty dim_MaxQty
Row Count Transform Input: No match output from Conditional Split Transform			
Name		Variable	
RC Insert		User::RowCountInserts	
OLE DB Destination Input: Output from RC Insert			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Target	Table or view – fast load	DimCampaign
Error Output	Redirect row		
OLE DB Destination Input: Output from OLE Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination By Row	Target	Table or view	DimCampaign
Error Output	Redirect row		
Conditional Split Transform Input: Match output from Lookup Transform			
Name		CS Changed Columns	
Order	Output Name	Condition	
1	SCD	(REPLACENULL(CampaignName, "") !=REPLACENULL(dim_CampaignName, "")) (REPLACENULL(CampaignType, "") !=REPLACENULL(dim_CampaignType, "")) (REPLACENULL(CampaignCategory, "") !=REPLACENULL(dim_CampaignCategory, "")) (REPLACENULL(DiscountPct, 0) !=REPLACENULL(dim_DiscountPct, 0)) (REPLACENULL(CampaignStartDate, "") !=REPLACENULL(dim_CampaignStartDate, "")) (REPLACENULL(CampaignEndDate, "") !=REPLACENULL(dim_CampaignEndDate, "")) (REPLACENULL(MinQty, 0) !=REPLACENULL(dim_MinQty, 0)) (REPLACENULL(MaxQty, 0) !=REPLACENULL(dim_MaxQty, 0))	
Row Count Transform Input: SCD output from Conditional Split Transform			
Name		Variable	
RC Update		User::RowCountUpdates	
OLE DB Destination Input: Output from RC Update			

Name	Connection Manager	Data Access Mode	Table
OLE Destination tmp scd	Target	Table or view – fast load	tmp_scd_DimCampaign
Error Output	Redirect row		
OLE DB Destination Input: Output from OLE Destination tmp scd			
Name	Connection Manager	Data Access Mode	Table
OLE Destination tmp scd by Row	Target	Table or view	tmp_scd_DimCampaign
Error Output	Redirect row		
Union Input1: Output from OLE Destination tmp scd by Row Input2: Output from OLE Destination By Row			
Name	UNI Errors		
Row Count Transform Input: Output from Union UNI Errors			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors DimCampaign	FF Errors DimCampaign	Yes	

Execute SQL Task			
Name	SQL SCD1 Updates	ResultSet	None
Description	Update Type 1 columns in dimension table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	UPDATE target SET target.CampaignName = source.CampaignName, target.CampaignType = source.CampaignType, target.CampaignCategory = source.CampaignCategory, target.DiscountPct = source.DiscountPct, target.CampaignStartDate = source.CampaignStartDate, target.CampaignEndDate = source.CampaignEndDate, target.MinQty = source.MinQty, target.MaxQty = source.MaxQty, target.UpdateAuditKey = source.InsertAuditKey FROM DimCampaign target JOIN tmp_scd_DimCampaign source ON target.CampaignID = source.CampaignID

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimCampaign

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Count Rows Initial	SQL Truncate SCD Staging Table	Constraint	Success	

SQL Truncate SCD Staging Table	DFT Load Target	Constraint	Success	
DFT Load Target	SQL SCD1 Updates	Constraint	Success	
SQL SCD1 Updates	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT SpecialOfferID AS CampaignID, left(Description,50) AS CampaignName, Type AS CampaignType, Category AS CampaignCategory, DiscountPct, StartDate AS CampaignStartDate, EndDate AS CampaignEndDate, MinQty, MaxQty FROM Sales.SpecialOffer	
SourceQueryWhere	String		
TableName	String	DimCampaign	

DimCustomer

Connection Manager

Name	FF Errors DimCustomer	Type	Flat File
File name	DimCustomer.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "DimCustomer.txt"	

Tasks

Execute SQL Task			
Name	SQL Count Rows Initial	ResultSet	SingleRow
Description	Count rows in dimension table before extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimCustomer
Result Set			
Result Name	Variable Name		
0	User::RowCountInitial		

Execute SQL Task			
Name	SQL Truncate SCD Staging Table	ResultSet	None
Description	Truncate SCD staging table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE tmp_scd_DimCustomer

Data Flow Task: DFT Load Target				
OLE DB Source				
Name	Connection Manager	Data Access Mode	Variable	
OLE Source	Source	SQL command from variable	User::SourceQuery	
Row Count Transform				
Name			Variable	
RC Extract			User::RowCountExtracts	
Derived Column Transform				
Name	DC Audit Key Start Date			
Derived Column Name	Derived Column	Expression	Data Type	Length
InsertAuditKey	<add as new column>	@[User::AuditKey]	four-byte signed integer	
StartDate	Replace 'StartDate'	(DT_DATE)(@[System::StartTime])	date	
Lookup Transform				
Cache mode	Full cache	Connection type	OLE DB connection manager	
No matching rows?	Redirect to no match output	Connection	Target	

SQL Query	SELECT * FROM DimCustomer	Input Columns (match on)	Input: CustomerID Lookup: CustomerID
Lookup Columns	Channel CustomerFullName CustomerTitle FirstName MiddleName LastName EmailAddress Phone AddressLine1 AddressLine2 City StateProvinceCode StateProvince CountryCode Country PostalCode RetailerName	Output Alias Columns	dim_Channel dim_CustomerFullName dim_CustomerTitle dim_FirstName dim_MiddleName dim_LastName dim_EmailAddress dim_Phone dim_AddressLine1 dim_AddressLine2 dim_City dim_StateProvinceCode dim_StateProvince dim_CountryCode dim_Country dim_PostalCode dim_RetailerName
Union Input1: No match output from Lookup Input2: Output from Multicast			
Name	UNI All Inserts		
Row Count Transform Input: No match output from Lookup			
Name	Variable		
RC Insert	User::RowCountInserts		
OLE DB Destination Input: Output from RC Insert			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Target	Table or view – fast load	DimCustomer
Error Output	Redirect row		
OLE DB Destination Input: Output from OLE Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination By Row	Target	Table or view	DimCustomer
Error Output	Redirect row		
Conditional Split Transform Input: Match output from Lookup Transform			
Name	CS Changed Columns		
Order	Output Name	Condition	
1	SCD2	(REPLACENULL(City, '') !=REPLACENULL(dim_City, ''))	

		(REPLACENULL(StateProvinceCode, "") !=REPLACENULL(dim_StateProvinceCode, "")) (REPLACENULL(StateProvince, "") !=REPLACENULL(dim_StateProvince, "")) (REPLACENULL(CountryCode, "") !=REPLACENULL(dim_CountryCode, "")) (REPLACENULL(Country, "") !=REPLACENULL(dim_Country, "")) (REPLACENULL(PostalCode, "") !=REPLACENULL(dim_PostalCode, ""))		
2	SCD	(REPLACENULL(Channel, "") !=REPLACENULL(dim_Channel, "")) (REPLACENULL(CustomerFullName, "") !=REPLACENULL(dim_CustomerFullName, "")) (REPLACENULL(CustomerTitle, "") !=REPLACENULL(dim_CustomerTitle, "")) (REPLACENULL(FirstName, "") !=REPLACENULL(dim_FirstName, "")) (REPLACENULL(MiddleName, "") !=REPLACENULL(dim_MiddleName, "")) (REPLACENULL(LastName, "") !=REPLACENULL(dim_LastName, "")) (REPLACENULL(EmailAddress, "") !=REPLACENULL(dim_EmailAddress, "")) (REPLACENULL(Phone, "") !=REPLACENULL(dim_Phone, "")) (REPLACENULL(AddressLine1, "") !=REPLACENULL(dim_AddressLine1, "")) (REPLACENULL(AddressLine2, "") !=REPLACENULL(dim_AddressLine2, "")) (REPLACENULL(RetailerName, "") !=REPLACENULL(dim_RetailerName, ""))		
Multicast Transform				
Input: SCD2 output from Conditional Split Transform				
Derived Column Transform				
Input: Multicast				
Name		DC Expire		
Derived Column Name	Derived Column	Expression	Data Type	Length
EndDate	Replace 'EndDate'	[StartDate]	date	
IsCurrent	Replace 'IsCurrent'	"N"	Unicode string	
Union Transform				
Input1: Output from DC Expire				
Input2: SCD output from Conditional Split Transform				
Name		UNI All Updates		
Row Count Transform				
Input: Output from UNI All Updates				

Name	Variable		
RC Update	User::RowCountUpdates		
OLE DB Destination Input: Output from RC Update			
Name	Connection Manager	Data Access Mode	Table
OLE Destination tmp scd	Target	Table or view – fast load	tmp_scd_DimCustomer
Error Output	Redirect row		
OLE DB Destination Input: Output from OLE Destination tmp scd			
Name	Connection Manager	Data Access Mode	Table
OLE Destination tmp scd by Row	Target	Table or view	tmp_scd_DimCustomer
Error Output	Redirect row		
Union Input1: Output from OLE Destination tmp scd by Row Input2: Output from OLE Destination By Row			
Name	UNI Errors		
Row Count Transform Input: Output from Union UNI Errors			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors DimCustomer	FF Errors DimCustomer	Yes	

Execute SQL Task			
Name	SQL SCD2 Updates	ResultSet	None
Description	Update Type 2 columns in dimension table		
ConnectionType	OleDb	Connection	Target
SQLSourceType	Direct	SQLStatement	UPDATE target SET target.EndDate = source.EndDate, target.IsCurrent = source.IsCurrent target.UpdateAuditKey = source.AuditKey FROM DimCustomer target JOIN tmp_scd_DimCustomer source on target.CustomerID = source.CustomerID AND target.UpdateAuditKey <> source.InsertAuditKey AND target.EndDate = '9999-12- 31'

Execute SQL Task			
Name	SQL SCD1 Updates	ResultSet	None
Description	Update Type 1 columns in dimension table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	UPDATE target SET target.Channel = source.Channel, target.CustomerFullName = source.CustomerFullName, target.CustomerTitle = source.CustomerTitle , target.FirstName = source.FirstName, target.MiddleName = source.MiddleName, target.LastName = source.LastName, target.EmailAddress = source.EmailAddress, target.Phone = source.Phone, target.AddressLine1 = source.AddressLine1, target.AddressLine2 = source.AddressLine2, target.RetailerName = source.RetailerName, target.UpdateAuditKey = source.InsertAuditKey FROM DimCustomer target JOIN tmp_scd_DimCustomer source ON target.CustomerID = source.CustomerID

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimCustomer

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Count Rows Initial	SQL Truncate SCD Staging Table	Constraint	Success	
SQL Truncate SCD Staging Table	DFT Load Target	Constraint	Success	
DFT Load Target	SQL SCD2 Updates	Constraint	Success	
SQL SCD2 Updates	SQL SCD1 Updates	Constraint	Success	
SQL SCD1 Updates	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	<pre> with businessentitycontacttype as (select BusinessEntityID, max(ct.ContactTypeID) as ContactTypeID from Person.BusinessEntityContact bec left outer join Person.ContactType ct on ct.ContactTypeID = bec.ContactTypeID group by BusinessEntityID) select case when c.PersonID is not null then c.PersonID else StoreID end as CustomerID , case when StoreID is not null then 'Retailer' else 'Online' end as Channel , case when StoreID is not null then convert(varchar(10), StoreID) + ' ' + s.Name else convert(varchar(10), c.PersonID) + ' ' + coalesce(p.FirstName, '') + ' ' + LEFT(coalesce(p.MiddleName, ''),1) + case when p.MiddleName is not null then ' ' else '' end + coalesce(p.LastName, '') end as CustomerFullName </pre>	

		, case when c.PersonID is not null then p.Title when p2.BusinessEntityID is not null then p2.Title end as Title , case when c.PersonID is not null then p.FirstName when p2.BusinessEntityID is not null then p2.FirstName end as FirstName , case when c.PersonID is not null then p.MiddleName when p2.BusinessEntityID is not null then p2.MiddleName end as MiddleName , case when c.PersonID is not null then p.LastName when p2.BusinessEntityID is not null then p2.LastName end as LastName , case when c.PersonID is not null then ea.EmailAddress when p2.BusinessEntityID is not null then ea2.EmailAddress end as EmailAddress , pp.PhoneNumber as Phone , case when StoreID is not null then a2.AddressLine1 else a.AddressLine1 end as AddressLine1 , case when StoreID is not null then a2.AddressLine2 else a.AddressLine2 end as AddressLine2 , case when StoreID is not null then a2.City else a.City end as City , case when StoreID is not null then sp2.StateProvinceCode else sp.StateProvinceCode end as StateProvinceCode , case when StoreID is not null then sp2.Name else sp.Name end as StateProvince , case when StoreID is not null then cr2.CountryRegionCode else cr.CountryRegionCode end as CountryRegionCode , case when StoreID is not null then cr2.Name else cr.Name end as Country	
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		, case when StoreID is not null then a2.PostalCode else a.PostalCode end as PostalCode , s.Name as RetailerName from Sales.Customer c left outer join Person.Person p on p.BusinessEntityID = c.PersonID left outer join Person.EmailAddress ea on ea.BusinessEntityID = p.BusinessEntityID left outer join Person.PersonPhone pp on pp.BusinessEntityID = p.BusinessEntityID left outer join Person.BusinessEntityAddress bea on bea.BusinessEntityID = p.BusinessEntityID left outer join Person.BusinessEntityAddress bea2 on bea2.BusinessEntityID = c.StoreID left outer join Person.Address a on a.AddressID = bea.AddressID left outer join Person.Address a2 on a2.AddressID = bea2.AddressID left outer join Person.StateProvince sp on a.StateProvinceID = sp.StateProvinceID left outer join Person.StateProvince sp2 on a2.StateProvinceID = sp2.StateProvinceID left outer join Person.CountryRegion cr on cr.CountryRegionCode = sp.CountryRegionCode left outer join Person.CountryRegion cr2 on cr2.CountryRegionCode = sp2.CountryRegionCode left outer join Sales.Store s on c.StoreID = s.BusinessEntityID left outer join businessentitycontacttype bect on bect.BusinessEntityID = s.BusinessEntityID left outer join Person.BusinessEntityContact bec on bect.BusinessEntityID = bec.BusinessEntityID and bect.ContactTypeID = bec.ContactTypeID	
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		left outer join Person.Person p2 on p2.BusinessEntityID = bec.PersonID left outer join Person.EmailAddress ea2 on ea2.BusinessEntityID = p2.BusinessEntityID	
SourceQueryWhere	String		
TableName	String	DimCustomer	

DimEmployee
Connection Manager

Name	FF Errors DimEmployee	Type	Flat File
File name	DimEmployee.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "DimEmployee.txt"	

Tasks

Execute SQL Task			
Name	SQL Count Rows Initial	ResultSet	SingleRow
Description	Count rows in dimension table before extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimEmployee
Result Set			
Result Name	Variable Name		
0	User::RowCountInitial		

Execute SQL Task			
Name	SQL Truncate SCD Staging Table	ResultSet	None
Description	Truncate SCD staging table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE tmp_scd_DimEmployee

Data Flow Task: DFT Load Target			
OLE DB Source			
Name	Connection Manager	Data Access Mode	Variable

OLE Source	Source	SQL command from variable	User::SourceQuery	
Row Count Transform				
Name			Variable	
RC Extract			User::RowCountExtracts	
Derived Column Transform				
Name	DC Audit Key Start Date			
Derived Column Name	Derived Column	Expression	Data Type	Length
InsertAuditKey	<add as new column>	@[User::AuditKey]	four-byte signed integer	
StartDate	Replace 'StartDate'	(DT_DATE)(@[System::StartTime])	date	
EmploymentEndDate	<add as new column>	[CurrentFlag]==0? (DT_DATE)(@[System::StartTime]) : NULL(DT_DATE)	date	
Lookup Transform				
Cache mode	Full cache	Connection type	OLE DB connection manager	
No matching rows?	Redirect to no match output	Connection	Target	
SQL Query	SELECT * FROM DimEmployee	Input Columns (match on)	Input: EmployeeID Lookup: EmployeeID	
Lookup Columns	EmployeeFullName EmployeeFirstName EmployeeLastName EmployeeMiddleName IsCurrentEmployee IsSalesPerson JobTitle DepartmentID Department DepartmentGroup HireDate EmploymentEndDate LoginID EmployeeEmailAddresses EmployeePhone	Output Alias Columns	dim_EmployeeFullName dim_EmployeeFirstName dim_EmployeeLastName dim_EmployeeMiddleName dim_IsCurrentEmployee dim_IsSalesPerson dim_JobTitle dim_DepartmentID dim_Department dim_DepartmentGroup dim_HireDate dim_EmploymentEndDate dim_LoginID dim_EmployeeEmailAddresses dim_EmployeePhone	
Union Input1: No match output from Lookup Input2: Output from Multicast				
Name	UNI All Inserts			

Row Count Transform Input: No match output from Lookup				
Name		Variable		
RC Insert		User::RowCountInserts		
OLE DB Destination Input: Output from RC Insert				
Name		Connection Manager	Data Access Mode	Table
OLE Destination		Target	Table or view – fast load	DimEmployee
Error Output		Redirect row		
OLE DB Destination Input: Output from OLE Destination				
Name		Connection Manager	Data Access Mode	Table
OLE Destination By Row		Target	Table or view	DimEmployee
Error Output		Redirect row		
Conditional Split Transform Input: Match output from Lookup Transform				
Name		CS Changed Columns		
Order	Output Name	Condition		
1	SCD2	(REPLACENULL(JobTitle, "") !=REPLACENULL(dim_ JobTitle, "")) (REPLACENULL(DepartmentID, "") !=REPLACENULL(dim_ DepartmentID, "")) (REPLACENULL(Department, "") !=REPLACENULL(dim_ Department, "")) (REPLACENULL(DepartmentGroup, "") !=REPLACENULL(dim_ DepartmentGroup, "")) (REPLACENULL(HireDate, "") !=REPLACENULL(dim_ HireDate, "")) (REPLACENULL(PostalCode, "") !=REPLACENULL(dim_ PostalCode, "")))		
2	SCD	(REPLACENULL(EmployeeFullName, "") !=REPLACENULL(dim_ EmployeeFullName, "")) (REPLACENULL(EmployeeFirstName, "") !=REPLACENULL(dim_ EmployeeFirstName, "")) (REPLACENULL(EmployeeLastName, "") !=REPLACENULL(dim_ EmployeeLastName, "")) (REPLACENULL(EmployeeMiddleName, "") !=REPLACENULL(dim_ EmployeeMiddleName, "")) (REPLACENULL(IsCurrentEmployee, "") !=REPLACENULL(dim_ IsCurrentEmployee, "")) (REPLACENULL(IsSalesPerson, "") !=REPLACENULL(dim_ IsSalesPerson, "")) (REPLACENULL(EmploymentEndDate, "") !=REPLACENULL(dim_ EmploymentEndDate, "")) (REPLACENULL(LoginID, "") !=REPLACENULL(dim_ LoginID, "")))		

		(REPLACENULL(EmployeeEmailAddress, "")) !=REPLACENULL(dim_EmployeeEmailAddress, "")) (REPLACENULL(EmployeePhone, "")) !=REPLACENULL(dim_EmployeePhone, ""))		
Multicast Transform				
Input: SCD2 output from Conditional Split Transform				
Derived Column Transform				
Input: Multicast				
Name		DC Expire		
Derived Column Name	Derived Column	Expression	Data Type	Length
EndDate	Replace 'EndDate'	[StartDate]	date	
IsCurrent	Replace 'IsCurrent'	"N"	Unicode string	
Union Transform				
Input1: Output from DC Expire				
Input2: SCD output from Conditional Split Transform				
Name		UNI All Updates		
Row Count Transform				
Input: Output from UNI All Updates				
Name		Variable		
RC Update		User::RowCountUpdates		
OLE DB Destination				
Input: Output from RC Update				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination tmp scd	Target	Table or view – fast load	tmp_scd_DimEmployee	
Error Output		Redirect row		
OLE DB Destination				
Input: Output from OLE Destination tmp scd				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination tmp scd by Row	Target	Table or view	tmp_scd_DimEmployee	
Error Output		Redirect row		
Union				
Input1: Output from OLE Destination tmp scd by Row				
Input2: Output from OLE Destination By Row				
Name		UNI Errors		
Row Count Transform				
Input: Output from Union UNI Errors				
Name			Variable	
RC Error			User::RowCountErrors	
Flat File Destination				

Name	Connection Manager	Overwrite data in file?
FF Errors DimEmployee	FF Errors DimEmployee	Yes

Execute SQL Task			
Name	SQL SCD2 Updates	ResultSet	None
Description	Update Type 2 columns in dimension table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	UPDATE target SET target.EndDate = source.EndDate, target.IsCurrent = source.IsCurrent target.UpdateAuditKey = source.InsertAuditKey FROM DimEmployee target JOIN tmp_scd_DimEmployee source on target.EmployeeID = source.EmployeeID AND target.UpdateAuditKey <> source.InsertAuditKey AND target.EndDate = '9999-12- 31'

Execute SQL Task			
Name	SQL SCD1 Updates	ResultSet	None
Description	Update Type 1 columns in dimension table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	UPDATE target SET target.EmployeeFullName = source.EmployeeFullName target.EmployeeFirstName = source.EmployeeFirstName target.EmployeeLastName = source.EmployeeLastName target.EmployeeMiddleName = source.EmployeeMiddleName target.IsCurrentEmployee = source.IsCurrentEmployee target.IsSalesPerson = source.IsSalesPerson target.EmploymentEndDate = source.EmploymentEndDate target.LoginID = source.LoginID target.EmployeeEmailAddress = source.EmployeeEmailAddress target.EmployeePhone = source.EmployeePhone, target.UpdateAuditKey = source.InsertAuditKey FROM DimEmployee target JOIN tmp_scd_DimEmployee source ON target.EmployeeID = source.EmployeeID

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimEmployee

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Count Rows Initial	SQL Truncate SCD Staging Table	Constraint	Success	
SQL Truncate SCD Staging Table	DFT Load Target	Constraint	Success	
DFT Load Target	SQL SCD2 Updates	Constraint	Success	
SQL SCD2 Updates	SQL SCD1 Updates	Constraint	Success	
SQL SCD1 Updates	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	<pre> select e.BusinessEntityID as EmployeeID, coalesce(p.FirstName,"") + ' ' + LEFT(coalesce(p.MiddleName,""),1) + case when p.MiddleName is not null then ' ' else '' end + coalesce(p.LastName,"") as EmployeeFullName, p.FirstName as EmployeeFirstName, p.LastName as EmployeeLastName, p.MiddleName as EmployeeMiddleName, case when CurrentFlag = 1 then 'Y' else 'N' end as IsCurrentEmployee, case when sp.BusinessEntityID is not null then 'Y' else 'N' end as IsSalesPerson, JobTitle, d.Name as Department, d.GroupName as DepartmentGroup, HireDate, LoginID, ea.EmailAddress, pp.PhoneNumber from HumanResources.Employee e left outer join Person.Person p on e.BusinessEntityID = p.BusinessEntityID </pre>	

		left outer join Sales.SalesPerson sp on sp.BusinessEntityID = e.BusinessEntityID left outer join HumanResources.EmployeeDepartm entHistory edh on edh.BusinessEntityID = e.BusinessEntityID left outer join HumanResources.Department d on d.DepartmentID = edh.DepartmentID left outer join Person.EmailAddress ea on ea.BusinessEntityID = e.BusinessEntityID left outer join Person.PersonPhone pp on pp.BusinessEntityID = e.BusinessEntityID where edh.EndDate is null	
SourceQueryWhere	String		
TableName	String	DimEmployee	

DimProduct

Connection Manager

Name	FF Errors DimProduct	Type	Flat File
File name	DimProduct.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "DimProduct.txt"	

Tasks

Execute SQL Task			
Name	SQL Count Rows Initial	ResultSet	SingleRow
Description	Count rows in dimension table before extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimProduct
Result Set			
Result Name	Variable Name		
0	User::RowCountInitial		

Execute SQL Task			
Name	SQL Truncate SCD Staging Table	ResultSet	None
Description	Truncate SCD staging table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE tmp_scd_DimProduct

Data Flow Task: DFT Load Target				
OLE DB Source				
Name	Connection Manager	Data Access Mode	Variable	
OLE Source	Source	SQL command from variable	User::SourceQuery	
Row Count Transform				
Name			Variable	
RC Extract			User::RowCountExtracts	
Derived Column Transform				
Name	DC Audit Key Start Date			
Derived Column Name	Derived Column	Expression	Data Type	Length
InsertAuditKey	<add as new column>	@[User::AuditKey]	four-byte signed integer	
StartDate	Replace 'StartDate'	(DT_DATE)(@[System::StartTime])	date	
Lookup Transform				
Cache mode	Full cache	Connection type	OLE DB connection manager	
No matching rows?	Redirect to no match output	Connection	Target	

SQL Query		SELECT * FROM DimProduct		Input Columns (match on)	Input: ProductID Lookup: ProductID
Lookup Columns		Product Name Product Model ID Model Name Product Subcategory Key Color Class Style Size Size Unit of Measure Code Standard Cost List Price Sell Start Date Sell End Date Product Current Status		Output Alias Columns	Product Name Product Model ID Model Name Product Subcategory Key Color Class Style Size Size Unit of Measure Code Standard Cost List Price Sell Start Date Sell End Date Product Current Status
Union Input1: No match output from Lookup Input2: Output from Multicast					
Name		UNI All Inserts			
Row Count Transform Input: No match output from Lookup					
Name		Variable			
RC Insert		User::RowCountInserts			
OLE DB Destination Input: Output from RC Insert					
Name		Connection Manager	Data Access Mode		Table
OLE Destination		Target	Table or view – fast load		DimProduct
Error Output		Redirect row			
OLE DB Destination Input: Output from OLE Destination					
Name		Connection Manager	Data Access Mode		Table
OLE Destination By Row		Target	Table or view		DimProduct
Error Output		Redirect row			
Conditional Split Transform Input: Match output from Lookup Transform					
Name		CS Changed Columns			
Order	Output Name	Condition			
1	SCD2	(REPLACENULL(ProductSubcategoryKey, "") !=REPLACENULL(dim_ProductSubcategoryKey, ""))			

		<pre> (REPLACENULL(StandardCost, "") !=REPLACENULL(dim_StandardCost, "")) (REPLACENULL(ListPrice, "") !=REPLACENULL(dim_ListPrice, "")) </pre>
2	SCD	<pre> (REPLACENULL(ProductName, "") !=REPLACENULL(dim_ProductName, "")) (REPLACENULL(ProductModelID, "") !=REPLACENULL(dim_ProductModelID, "")) (REPLACENULL(ModelName, "") !=REPLACENULL(dim_ModelName, "")) (REPLACENULL(Color, "") !=REPLACENULL(dim_Color, "")) (REPLACENULL(Class, "") !=REPLACENULL(dim_Class, "")) (REPLACENULL(Style, "") !=REPLACENULL(dim_Style, "")) (REPLACENULL(Size, "") !=REPLACENULL(dim_Size, "")) (REPLACENULL(SizeUnitOfMeasureCode, "") !=REPLACENULL(dim_SizeUnitOfMeasureCode, "")) (REPLACENULL(SellStartDate, "") !=REPLACENULL(dim_SellStartDate, "")) (REPLACENULL(SellEndDate, "") !=REPLACENULL(dim_SellEndDate, "")) (REPLACENULL(ProductCurrentStatus, "") !=REPLACENULL(dim_ProductCurrentStatus, "")) </pre>

Multicast Transform

Input: SCD2 output from Conditional Split Transform

Derived Column Transform

Input: Multicast

Name		DC Expire		
Derived Column Name	Derived Column	Expression	Data Type	Length
EndDate	Replace 'EndDate'	[StartDate]	date	
IsCurrent	Replace 'IsCurrent'	"N"	Unicode string	

Union Transform

Input1: Output from DC Expire

Input2: SCD output from Conditional Split Transform

Name	UNI All Updates
-------------	-----------------

Row Count Transform

Input: Output from UNI All Updates

Name	Variable
RC Update	User::RowCountUpdates

OLE DB Destination

Input: Output from RC Update

Name	Connection Manager	Data Access Mode	Table
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OLE Destination tmp scd	Target	Table or view – fast load	tmp_scd_DimProduct
Error Output	Redirect row		
OLE DB Destination Input: Output from OLE Destination tmp scd			
Name	Connection Manager	Data Access Mode	Table
OLE Destination tmp scd by Row	Target	Table or view	tmp_scd_DimProduct
Error Output	Redirect row		
Union Input1: Output from OLE Destination tmp scd by Row Input2: Output from OLE Destination By Row			
Name	UNI Errors		
Row Count Transform Input: Output from Union UNI Errors			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors DimProduct	FF Errors DimProduct	Yes	

Execute SQL Task			
Name	SQL SCD2 Updates	ResultSet	None
Description	Update Type 2 columns in dimension table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	UPDATE target SET target.EndDate = source.EndDate, target.IsCurrent = source.IsCurrent target.UpdateAuditKey = source.InsertAuditKey FROM DimProduct target JOIN tmp_scd_DimProduct source on target.ProductID = source.ProductID AND target.UpdateAuditKey <> source.InsertAuditKey AND target.EndDate = '9999-12- 31'

Execute SQL Task			
Name	SQL SCD1 Updates	ResultSet	None
Description	Update Type 1 columns in dimension table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	UPDATE target SET target.ProductName = source.ProductName target.ProductModelID = source.ProductModelID target.ModelName = source.ModelName target.Color = source.Color target.Class = source.Class target.Style = source.Style target.Size = source.Size target.SizeUnitOfMeasureCode = source.SizeUnitOfMeasureCode target.SellStartDate = source.SellStartDate target.SellEndDate = source.SellEndDate target.ProductCurrentStatus = source.ProductCurrentStatus, target.UpdateAuditKey = source.InsertAuditKey FROM DimProduct target JOIN tmp_scd_DimProduct source ON target.ProductID = source.ProductID

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimProduct

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Count Rows Initial	SQL Truncate SCD Staging Table	Constraint	Success	
SQL Truncate SCD Staging Table	DFT Load Target	Constraint	Success	
DFT Load Target	SQL SCD2 Updates	Constraint	Success	
SQL SCD2 Updates	SQL SCD1 Updates	Constraint	Success	
SQL SCD1 Updates	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	<pre> select ProductID, p.Name as ProductName, p.ProductModelID, pm.Name as ModelName, ProductSubcategoryKey, Color, case when Class = 'H' then 'High' when Class = 'M' then 'Medium' when Class = 'L' then 'Low' when Class is null then 'No class' end as Class, case when Style = 'M' then 'Men' when Style = 'W' then 'Women' when Style = 'U' then 'Unisex' when Style is null then 'No style' end as Style, case when SizeUnitMeasureCode is null then 'N/A' else SizeUnitMeasureCode end as SizeUnitOfMeasureCode, StandardCost, case when ListPrice < StandardCost then StandardCost else ListPrice end as ListPrice, </pre>	

		SellStartDate, SellEndDate, case when DiscontinuedDate is not null then 'Discontinued' else 'Current' end as ProductCurrentStatus from Production.Product p left outer join Production.ProductModel pm on p.ProductModelID = pm.ProductModelID left outer join DimProductSubcategory psc on psc.ProductSubcategoryID = ProductSubcategoryID	
SourceQueryWhere	String		
TableName	String	DimProduct	

DimProductCategory

Connection Manager

Name	FF Errors DimProductCategory	Type	Flat File
File name	DimProductCategory.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "DimProductCategory.txt"	

Tasks

Execute SQL Task			
Name	SQL Count Rows Initial	ResultSet	SingleRow
Description	Count rows in dimension table before extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimProductCategory
Result Set			
Result Name	Variable Name		
0	User::RowCountInitial		

Execute SQL Task			
Name	SQL Truncate SCD Staging Table	ResultSet	None
Description	Truncate SCD staging table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE tmp_scd_DimProductCategory

Data Flow Task: DFT Load Target				
OLE DB Source				
Name	Connection Manager	Data Access Mode	Variable	
OLE Source	Source	SQL command from variable	User::SourceQuery	
Row Count Transform				
Name			Variable	
RC Extract			User::RowCountExtracts	
Derived Column Transform				
Name	DC Audit Key			
Derived Column Name	Derived Column	Expression	Data Type	Length
InsertAuditKey	<add as new column>	@[User::AuditKey]	four-byte signed integer	
Lookup Transform				
Cache mode	Full cache	Connection type	OLE DB connection manager	
No matching rows?	Redirect to no match output	Connection	Target	
SQL Query	SELECT * FROM DimProductCategory	Input Columns (match on)	Input: ProductCategoryID Lookup: ProductCategoryID	

Lookup Columns		ProductCategoryName	Output Alias Columns	dim_ProductCategoryName
Row Count Transform Input: No match output from Conditional Split Transform				
Name			Variable	
RC Insert			User::RowCountInserts	
OLE DB Destination Input: Output from RC Insert				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination	Target	Table or view – fast load	DimProductCategory	
Error Output	Redirect row			
OLE DB Destination Input: Output from OLE Destination				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination By Row	Target	Table or view	DimProductCategory	
Error Output	Redirect row			
Conditional Split Transform Input: Match output from Lookup Transform				
Name		CS Changed Columns		
Order	Output Name	Condition		
1	SCD	(REPLACENULL(ProductCategoryName, "") !=REPLACENULL(dim_ProductCategoryName, ""))		
Row Count Transform Input: SCD output from Conditional Split Transform				
Name			Variable	
RC Update			User::RowCountUpdates	
OLE DB Destination Input: Output from RC Update				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination tmp scd	Target	Table or view – fast load	tmp_scd_DimProductCategory	
Error Output	Redirect row			
OLE DB Destination Input: Output from OLE Destination tmp scd				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination tmp scd by Row	Target	Table or view	tmp_scd_DimProductCategory	
Error Output	Redirect row			
Union Input1: Output from OLE Destination tmp scd by Row Input2: Output from OLE Destination By Row				
Name	UNI Errors			

Row Count Transform		
Input: Output from Union UNI Errors		
Name		Variable
RC Error		User::RowCountErrors
Flat File Destination		
Name	Connection Manager	Overwrite data in file?
FF Errors DimProductCategory	FF Errors DimProductCategory	Yes

Execute SQL Task			
Name	SQL SCD1 Updates	ResultSet	None
Description	Update Type 1 columns in dimension table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	UPDATE target SET target.ProductCategoryName = source.ProductCategoryName, target.UpdateAuditKey = source.InsertAuditKey FROM DimProductCategory target JOIN tmp_scd_DimProductCategory source ON target.ProductCategoryID = source.ProductCategoryID

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimProductCategory

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Count Rows Initial	SQL Truncate SCD Staging Table	Constraint	Success	
SQL Truncate SCD Staging Table	DFT Load Target	Constraint	Success	
DFT Load Target	SQL SCD1 Updates	Constraint	Success	
SQL SCD1 Updates	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT ProductCategoryID, Name AS ProductCategoryName FROM Production.ProductCategory	
SourceQueryWhere	String		
TableName	String	DimProductCategory	

DimProductSubcategory

Connection Manager

Name	FF Errors DimProductSubcategory	Type	Flat File
File name	DimProductSubcategory.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "DimProductSubcategory.txt"	

Tasks

Execute SQL Task			
Name	SQL Count Rows Initial	ResultSet	SingleRow
Description	Count rows in dimension table before extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimProductSubcategory
Result Set			
Result Name	Variable Name		
0	User::RowCountInitial		

Execute SQL Task			
Name	SQL Truncate SCD Staging Table	ResultSet	None
Description	Truncate SCD staging table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE tmp_scd_DimProductSubcategory

Data Flow Task: DFT Load Target				
OLE DB Source				
Name	Connection Manager	Data Access Mode	Variable	
OLE Source	Source	SQL command from variable	User::SourceQuery	
Row Count Transform				
Name			Variable	
RC Extract			User::RowCountExtracts	
Derived Column Transform				
Name	DC Audit Key			
Derived Column Name	Derived Column	Expression	Data Type	Length
InsertAuditKey	<add as new column>	@[User::AuditKey]	four-byte signed integer	
Lookup Transform				
Cache mode	Full cache		Connection type	OLE DB connection manager
No matching rows?	Redirect to no match output		Connection	Target

SQL Query	SELECT * FROM DimProductSubcategory	Input Columns (match on)	Input: ProductSubcategoryID Lookup: ProductSubcategoryID
Lookup Columns	ProductSubcategoryName ProductCategoryKey	Output Alias Columns	dim_ProductSubcategoryName dim_ProductCategoryKey
Row Count Transform Input: No match output from Conditional Split Transform			
Name		Variable	
RC Insert		User::RowCountInserts	
OLE DB Destination Input: Output from RC Insert			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Target	Table or view – fast load	DimProductSubcategory
Error Output	Redirect row		
OLE DB Destination Input: Output from OLE Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination By Row	Target	Table or view	DimProductSubcategory
Error Output	Redirect row		
Conditional Split Transform Input: Match output from Lookup Transform			
Name		CS Changed Columns	
Order	Output Name	Condition	
1	SCD	(REPLACENULL(ProductSubcategoryName , "") !=REPLACENULL(dim_ProductSubcategoryName , "")) (REPLACENULL(ProductCategoryKey, "") !=REPLACENULL(dim_ProductCategoryKey ""))	
Row Count Transform Input: SCD output from Conditional Split Transform			
Name		Variable	
RC Update		User::RowCountUpdates	
OLE DB Destination Input: Output from RC Update			
Name	Connection Manager	Data Access Mode	Table
OLE Destination tmp scd	Target	Table or view – fast load	tmp_scd_DimProductSubcategory
Error Output	Redirect row		
OLE DB Destination Input: Output from OLE Destination tmp scd			

Name	Connection Manager	Data Access Mode	Table
OLE Destination tmp scd by Row	Target	Table or view	tmp_scd_DimProductSubcategory
Error Output	Redirect row		
Union Input1: Output from OLE Destination tmp scd by Row Input2: Output from OLE Destination By Row			
Name	UNI Errors		
Row Count Transform Input: Output from Union UNI Errors			
Name			Variable
RC Error			User::RowCountErrors
Flat File Destination			
Name	Connection Manager	Overwrite data in file?	
FF Errors DimProductSubcategory	FF Errors DimProductSubcategory	Yes	

Execute SQL Task			
Name	SQL SCD1 Updates	ResultSet	None
Description	Update Type 1 columns in dimension table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	UPDATE target SET target.ProductSubcategoryName = source.ProductSubcategoryName, target.ProductCategoryKey = source.ProductCategoryKey, target.UpdateAuditKey = source.InsertAuditKey FROM DimProductSubcategory target JOIN tmp_scd_DimProductSubcategory source ON target.ProductSubcategoryID = source.ProductSubcategoryID

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OleDb	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimProductSubcategory

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Count Rows Initial	SQL Truncate SCD Staging Table	Constraint	Success	
SQL Truncate SCD Staging Table	DFT Load Target	Constraint	Success	
DFT Load Target	SQL SCD1 Updates	Constraint	Success	
SQL SCD1 Updates	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT ProductSubcategoryID, Name AS ProductSubcategoryName, ProductCategoryKey FROM Production.ProductSubcategory ps left outer join DimProductCategory pc on pc.ProductCategoryID = ps.ProductCategoryID	
SourceQueryWhere	String		
TableName	String	DimProductSubcategory	

DimTerritory

Connection Manager

Name	FF Errors DimTerritory	Type	Flat File
File name	DimTerritory.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "DimTerritory.txt"	

Tasks

Execute SQL Task			
Name	SQL Count Rows Initial	ResultSet	SingleRow
Description	Count rows in dimension table before extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimTerritory
Result Set			
Result Name	Variable Name		
0	User::RowCountInitial		

Execute SQL Task			
Name	SQL Truncate SCD Staging Table	ResultSet	None
Description	Truncate SCD staging table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE tmp_scd_DimTerritory

Data Flow Task: DFT Load Target				
OLE DB Source				
Name	Connection Manager	Data Access Mode	Variable	
OLE Source	Source	SQL command from variable	User::SourceQuery	
Row Count Transform				
Name			Variable	
RC Extract			User::RowCountExtracts	
Derived Column Transform				
Name	DC Audit Key			
Derived Column Name	Derived Column	Expression	Data Type	Length
InsertAuditKey	<add as new column>	@[User::AuditKey]	four-byte signed integer	
Lookup Transform				
Cache mode	Full cache	Connection type	OLE DB connection manager	
No matching rows?	Redirect to no match output	Connection	Target	
SQL Query	SELECT * FROM DimTerritory	Input Columns (match on)	Input: TerritoryID Lookup: TerritoryID	
Lookup Columns	TerritoryName	Output Alias Columns	dim_TerritoryName	

	CountryName GroupName		dim_CountryName dim_GroupName
Row Count Transform Input: No match output from Conditional Split Transform			
Name		Variable	
RC Insert		User::RowCountInserts	
OLE DB Destination Input: Output from RC Insert			
Name	Connection Manager	Data Access Mode	Table
OLE Destination	Target	Table or view – fast load	DimTerritory
Error Output	Redirect row		
OLE DB Destination Input: Output from OLE Destination			
Name	Connection Manager	Data Access Mode	Table
OLE Destination By Row	Target	Table or view	DimTerritory
Error Output	Redirect row		
Conditional Split Transform Input: Match output from Lookup Transform			
Name		CS Changed Columns	
Order	Output Name	Condition	
1	SCD	(REPLACENULL(TerritoryName, "") !=REPLACENULL(dim_TerritoryName, "")) (REPLACENULL(CountryName, "") !=REPLACENULL(dim_CountryName, "")) (REPLACENULL(GroupName, "") !=REPLACENULL(dim_GroupName, ""))	
Row Count Transform Input: SCD output from Conditional Split Transform			
Name		Variable	
RC Update		User::RowCountUpdates	
OLE DB Destination Input: Output from RC Update			
Name	Connection Manager	Data Access Mode	Table
OLE Destination tmp scd	Target	Table or view – fast load	tmp_scd_DimTerritory
Error Output	Redirect row		
OLE DB Destination Input: Output from OLE Destination tmp scd			
Name	Connection Manager	Data Access Mode	Table
OLE Destination tmp scd by Row	Target	Table or view	tmp_scd_DimTerritory
Error Output	Redirect row		

Union		
Input1: Output from OLE Destination tmp scd by Row		
Input2: Output from OLE Destination By Row		
Name	UNI Errors	
Row Count Transform		
Input: Output from Union UNI Errors		
Name		Variable
RC Error		User::RowCountErrors
Flat File Destination		
Name	Connection Manager	Overwrite data in file?
FF Errors DimTerritory	FF Errors DimTerritory	Yes

Execute SQL Task			
Name	SQL SCD1 Updates	ResultSet	None
Description	Update Type 1 columns in dimension table		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	UPDATE target SET target.TerritoryName = source.TerritoryName, target.CountryName = source.CountryName, target.GroupName = source.GroupName, target.UpdateAuditKey = source.InsertAuditKey FROM DimTerritory target JOIN tmp_scd_DimTerritory source ON target.TerritoryID = source.TerritoryID

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimTerritory

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Count Rows Initial	SQL Truncate SCD Staging Table	Constraint	Success	
SQL Truncate SCD Staging Table	DFT Load Target	Constraint	Success	
DFT Load Target	SQL SCD1 Updates	Constraint	Success	
SQL SCD1 Updates	SQL Count Current Rows Final	Constraint	Success	

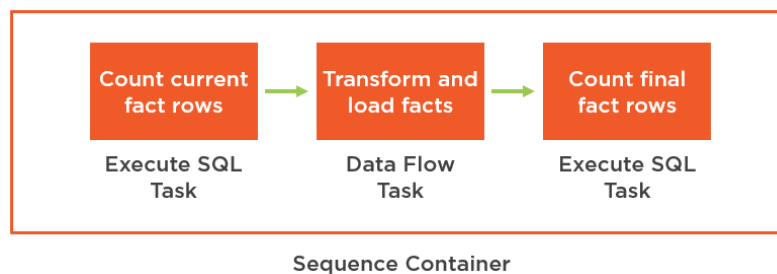
Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT TerritoryID, Name AS TerritoryName, cr.Name as CountryName, Group as GroupName FROM Sales.SalesTerritory st left outer join Person.CountryRegion cr on cr.CountryRegionCode = st.CountryRegionCode	
SourceQueryWhere	String		
TableName	String	DimTerritory	

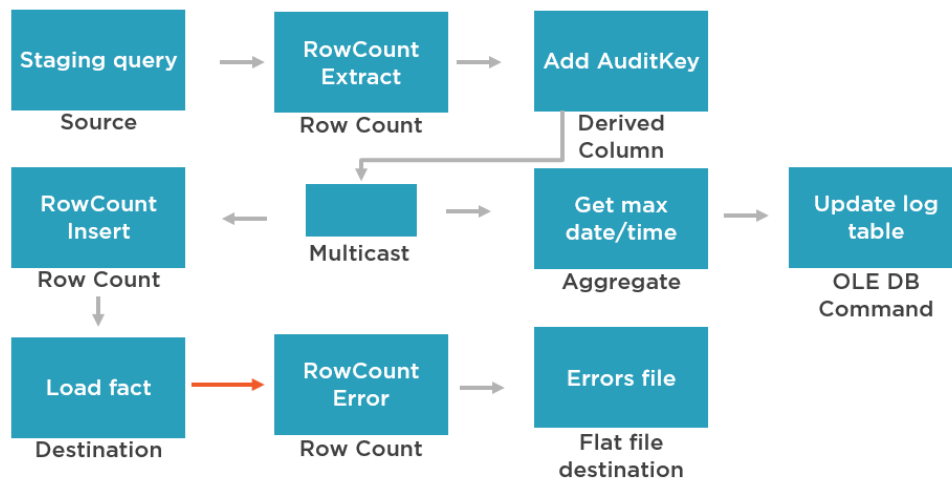
Fact loads

The sequence container for fact loads will conform to the structure shown in the diagram below:

- Execute SQL task to count the number of rows in the table before the load
- Data Flow task to copy data from the staging table to the target table and perform transformations
- Execute SQL task to count the number of rows in the table after the load



The data flow task will follow the pattern shown in the diagram below unless otherwise specified in the package design.



FactSales

Connection Manager

Name	FF Errors FactSales	Type	Flat File
File name	FactSales.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "FactSales.txt"	

Tasks

Execute SQL Task			
Name	SQL Count Rows Initial	ResultSet	SingleRow
Description	Count rows in dimension table before extract		
ConnectionType	OleDb	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from FactSales
Result Set			
Result Name	Variable Name		
0	User::RowCountInitial		

Data Flow Task: DFT Load Target				
OLE DB Source				
Name	Connection Manager	Data Access Mode	Variable	
OLE Source	Source	SQL command from variable	User::SourceQuery	
Row Count Transform				
Name			Variable	
RC Extract			User::RowCountExtracts	
Derived Column Transform				
Name	DC Audit Key			
Derived Column Name	Derived Column	Expression	Data Type	Length
InsertAuditKey	<add as new column>	@[User::AuditKey]	four-byte signed integer	
Multicast				
Row Count Transform				
Input: Output from Multicast				
Name		Variable		
RC Insert		User::RowCountInserts		
OLE DB Destination				
Input: Output from RC Insert				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination	Target	Table or view – fast load	FactSales	
Error Output	Redirect row			
OLE DB Destination				
Input: Output from OLE Destination				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination By Row	Target	Table or view	FactSales	
Error Output	Redirect row			
Row Count Transform				
Input: Output from OLE Destination By Row				
Name			Variable	
RC Error			User::RowCountErrors	
Flat File Destination				
Input: Output from RC Error				
Name	Connection Manager	Overwrite data in file?		
FF Errors FactSales	FF Errors FactSales	Yes		
Aggregate Transform				
Input: Output from Multicast				
Name	AGG Max Date			
Input Column	Output Alias	Operation		
AuditKey	AuditKey	Group by		

ModifiedDate	ModifiedDate	Maximum
ODC Update Max Date		
OleDbConnection	Target	
SqlCommand	update DimAudit set TableMaxDateTime = ? where AuditKey = ?	
Input Column	Destination Column	
ModifiedDate	Param_0	
AuditKey	Param_1	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from FactSales

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Count Rows Initial	DFT Load Target	Constraint	Success	
DFT Load Target	SQL Count Current Rows Final	Constraint	Success	

Variables

Name	Data Type	Value	Expression
SourceQuery	String	select coalesce(DateKey, -1) as DateKey, coalesce(CustomerKey, -1) as CustomerKey, coalesce(EmployeeKey, -1) as EmployeeKey, coalesce(TerritoryKey, -1) as TerritoryKey, coalesce(ProductKey, -1) as ProductKey, coalesce(CampaignKey, -1) as CampaignKey, OrderQty as SalesQuantity, LineTotal - (OrderQty * UnitPriceDiscount) as SalesAmount,	

		OrderQty * UnitPriceDiscount as DiscountAmount, StandardCost as ProductCost, soh.SalesOrderID as OrderNumber, SalesOrderDetailID as OrderLineNumber from Sales.SalesOrderHeader soh inner join Sales.SalesOrderDetail sod on soh.SalesOrderID = sod.SalesOrderID left outer join DimDate d on d.FullDate = soh.OrderDate left outer join DimCustomer c on c.CustomerID = soh.CustomerID left outer join DimProduct p on p.ProductID = sod.ProductID left outer join DimEmployee e on e.EmployeeID = soh.SalesPersonID left outer join DimTerritory t on t.TerritoryID = soh.TerritoryID left outer join DimCampaign cp on cp.SpecialOfferID = sod.SpecialOfferID	
SourceQueryWhere	String		
TableName	String	FactSales	

FactSalesTarget

Connection Manager

Name	FF Errors FactSalesTarget	Type	Flat File
File name	FactSalesTarget.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "FactSalesTarget.txt"	

Tasks

Execute SQL Task			
Name	SQL Count Rows Initial	ResultSet	SingleRow
Description	Count rows in dimension table before extract		
ConnectionType	OleDb	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from FactSalesTarget
Result Set			
Result Name	Variable Name		
0	User::RowCountInitial		

Data Flow Task: DFT Load Target				
OLE DB Source				
Name	Connection Manager	Data Access Mode	Variable	
OLE Source	Source	SQL command from variable	User::SourceQuery	
Row Count Transform				
Name			Variable	
RC Extract			User::RowCountExtracts	
Derived Column Transform				
Name	DC Audit Key			
Derived Column Name	Derived Column	Expression	Data Type	Length
InsertAuditKey	<add as new column>	@[User::AuditKey]	four-byte signed integer	
Multicast				
Row Count Transform				
Input: Output from Multicast				
Name		Variable		
RC Insert		User::RowCountInserts		
OLE DB Destination				
Input: Output from RC Insert				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination	Target	Table or view – fast load	FactSalesTarget	
Error Output	Redirect row			
OLE DB Destination				
Input: Output from OLE Destination				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination By Row	Target	Table or view	FactSalesTarget	

Error Output	Redirect row	
Row Count Transform		
Input: Output from OLE Destination By Row		
Name	Variable	
RC Error	User::RowCountErrors	
Flat File Destination		
Input: Output from RC Error		
Name	Connection Manager	Overwrite data in file?
FF Errors FactSalesTarget	FF Errors FactSalesTarget	Yes
Aggregate Transform		
Input: Output from Multicast		
Name	AGG Max Date	
Input Column	Output Alias	Operation
AuditKey	AuditKey	Group by
ModifiedDate	ModifiedDate	Maximum
ODC Update Max Date		
OleDbConnection	Target	
SqlCommand	update DimAudit set TableMaxDateTime = ? where AuditKey = ?	
Input Column	Destination Column	
ModifiedDate	Param_0	
AuditKey	Param_1	

Execute SQL Task			
Name	SQL Count Current Rows Final	ResultSet	None
Description	Count rows in staging table after extract		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from FactSalesTarget

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Count Rows Initial	DFT Load Target	Constraint	Success	
DFT Load Target	SQL Count Current Rows Final	Constraint	Success	

Variables

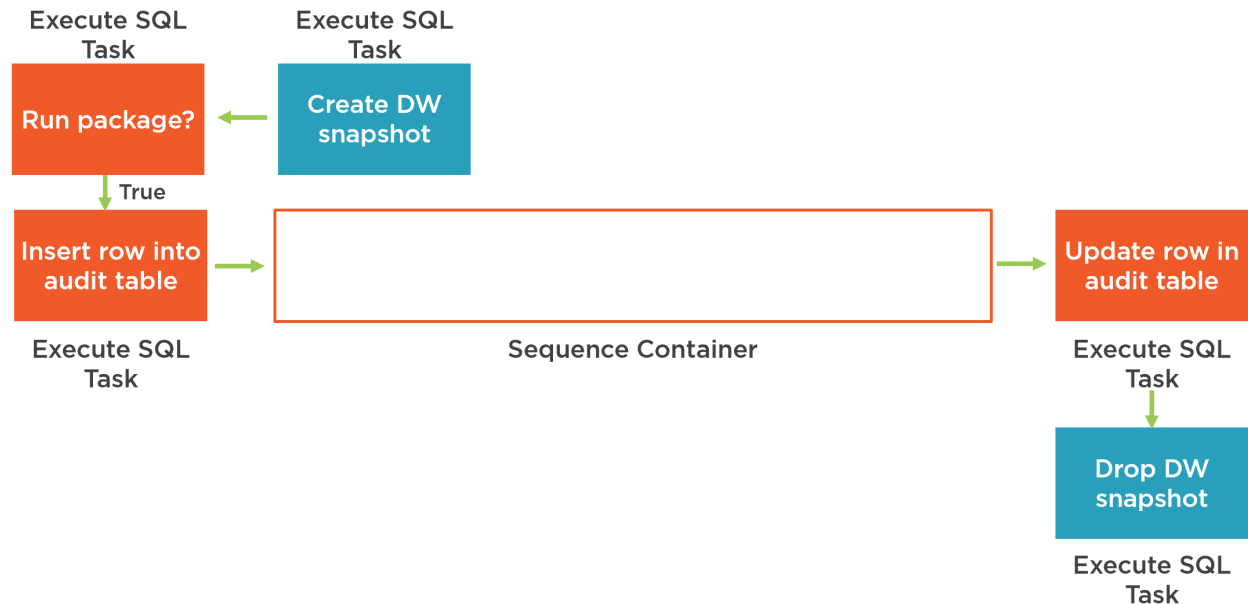
Name	Data Type	Value	Expression
SourceQuery	String	<pre>select coalesce(DateKey, -1) as DateKey, coalesce(EmployeeKey, -1) as EmployeeKey, coalesce(ProductCategoryKey, -1) as ProductCategoryKey, SalesTarget as TargetSalesAmount from SalesTargets st left outer join DimDate d on d.FullDate = QuotaDate left outer join DimEmployee e on e.EmployeeID = st.EmployeeID left outer join DimProductCategory pc on pc.ProductCategoryName = st.CategoryName</pre>	
SourceQueryWhere	String		
TableName	String	FactSalesTarget	

Parent packages

The parent packages use the template package as a base and then use Execute Process tasks in the Sequence Container to orchestrate the flow of jobs.

Data Warehouse jobs

The outermost parent package begins the workflow and also includes additional Execute SQL Tasks to create and drop the data warehouse snapshot, as shown in the following diagram.



Tasks in addition to template tasks

Execute SQL Task			
Name	SQL Create Snapshot	ResultSet	None
Description	Create a snapshot of the data warehouse before running jobs		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	CREATE DATABASE AWDW_dbsssetl ON (NAME = AWDW, FILENAME = 'C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLServer\MSSQL\Data\AWDW_etl.ss') AS SNAPSHOT OF AWDW
Expression			
SQLStatementSource	"CREATE DATABASE " + @[\$Project::DWDBName] + "_dbsssetl ON (NAME = " + @[\$Project::DWDBName] + ", FILENAME = "" + @[\$Project::SQLPath] + @[\$Project::DWDBName] + "_etl.ss') AS SNAPSHOT OF " + @[\$Project::DWDBName]		

Execute SQL Task			
Name	SQL Drop Snapshot	ResultSet	None
Description	Drops the snapshot of the data warehouse after running jobs		
ConnectionType	OLEDB	Connection	Target
SQLSourceType	Direct	SQLStatement	DROP DATABASE AWDW_dbsssetl
Expression			
SQLStatementSource	"DROP DATABASE " + @[\$Project::DWDBName] + "_dbsssetl"		

Precedence constraints

Executable Start	Executable End	Constraint Type	Evaluation	Expression
SQL Create Snapshot	SQL Run Package	Constraint	Success	
SQL Run Package	SQL Audit Begin	Expression and constraint	Success	@[User::RunPackage]
SQL Audit Begin	SEQ Package Logic	Constraint	Success	
SEQ Package Logic	SQL Audit End	Constraint	Success	
SQL Audit End	SQL Drop Snapshot	Constraint	Success	

Sequence Container Contents

Execute Package Task	Package Name	Parameter bindings		Precedence Constraints
EP Extract jobs	Extract jobs.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Transform-load jobs	Transform-load jobs.dtsx	Child package	ParentAuditKey	From EP Extract jobs Constraint Success
		Parent package	User::AuditKey	

Other parent jobs

These parent packages control the workflow for the respective operations and are based on the template package. Only the sequence container contents differ between jobs.

Extract jobs

Sequence Container Contents

Execute Package Task	Package Name	Parameter bindings		Precedence Constraints
EP Extract Human Resources Department	Extract Human Resources Department.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Human Resources Employee	Extract Human Resources Employee.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Human Resources Employee Department History	Extract Human Resources Employee Department History.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	

Execute Package Task	Package Name	Parameter bindings		Precedence Constraints
EP Extract Person Address	Extract Person Address.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Person Business Entity Address	Extract Person Business Entity Address.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Person Country Region	Extract Person Country Region.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Person Email Address	Extract Person Email Address.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Person Person	Extract Person Person.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Person Person Phone	Extract Person Person Phone.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Person State Province	Extract Person State Province.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Production Product	Extract Production Product.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Production Product Category	Extract Production Product Category.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Production Product Subcategory	Extract Production Product Subcategory.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Sales Customer	Extract Sales Customer.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Sales Sales Territory	Extract Sales Sales Territory.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Sales Special Offer	Extract Sales Special Offer.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	

Execute Package Task	Package Name	Parameter bindings		Precedence Constraints
EP Extract Sales Store	Extract Sales Store.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Sales Targets	Extract Sales Targets.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Sales Sales Order Detail	Extract Sales Sales Order Detail.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Extract Sales Sales Order Header	Extract Sales Sales Order Header.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	

Transform-load jobs

Sequence Container Contents

Execute Package Task	Package Name	Parameter bindings		Precedence Constraints
EP Dimension load jobs	Dimension load jobs.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Fact load jobs	Fact load jobs.dtsx	Child package	ParentAuditKey	From EP Dimension load jobs Constraint Success
		Parent package	User::AuditKey	

Dimension load jobs

Sequence Container Contents

Execute Package Task	Package Name	Parameter bindings		Precedence Constraints
EP Load DimProductCategory	Load DimProductCategory.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Load DimProductSubcategory	Load DimProductSubcategory.dtsx	Child package	ParentAuditKey	From EP DimProductCategory Constraint Success
		Parent package	User::AuditKey	
EP Load DimProduct	Load DimProduct.dtsx	Child package	ParentAuditKey	From EP DimProductSubcategory Constraint Success
		Parent package	User::AuditKey	

Execute Package Task	Package Name	Parameter bindings		Precedence Constraints
EP Load DimCampaign	Load DimCampaign.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Load DimCustomer	Load DimCustomer.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Load DimEmployee	Load DimEmployee.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Load DimTerritory	Load DimTerritory.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	

Fact load jobs

Sequence Container Contents

Execute Package Task	Package Name	Parameter bindings		Precedence Constraints
EP Load FactSales	Load FactSales.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	
EP Load Fact Sales Targets	Load FactSalesTargets.dtsx	Child package	ParentAuditKey	
		Parent package	User::AuditKey	