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 Tempate.dtsx. When the template project is complete, save to the \template folder on the IT server.

Configuration components

Project-level parameters

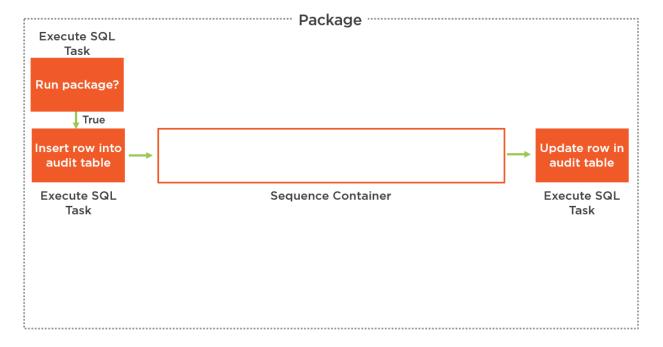
Name	Data Type	Value	Sensitive	Requir ed	Description
DWConnection	String	Data Source=SQLDW;Initial Catalog=AWDW;Provider=SQLNCL I11.1;Integrated Security=SSPI;Auto Translate=False;	False	True	Data warehouse connection string
ErrorPath	String	C:\ssis-awdw-errors\	False	True	Error file path
DWDBName	String	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=SQLNCL I11.1;Integrated Security=SSPI;Auto Translate=False;	False	True	Auditing and logging database connection string
SourceConnection	String	Data Source=SQL01;Initial Catalog=AdventureWorks;Provide r=SQLNCLI11.1;Integrated Security=SSPI;Auto Translate=False;	False	True	Source database connection string

StagingConnectio	String	Data Source=SQLDW;Initial	False	True	Staging database
n		Catalog=AWDW;Provider=SQLNCL			connection
		I11.1;Integrated			string
		Security=SSPI;Auto			
		Translate=False;			
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	Туре	SQL Server Native Client
Server	SQLDW	Database	AWDW
		Authentication	Windows
Expressions	ConnectionString	@[\$Project::ALMConnection]	

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

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

Name	Target	Туре	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.

Execute SQL Task					
Name	SQL RunPackage	ResultSet	Single		
Description	Check workload con	figuration			
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 a	udit 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	Success	@[User::RunPackage]
		constraint		
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.

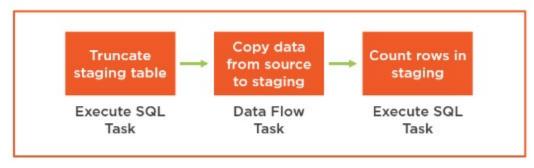
Note that the template uses package-level connection managers. These connection managers are configured with an expression to set the connection string by using values specified in the project-level parameters. Therefore, when changing to a new environment, change the parameter value accordingly. There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

Be sure to set the project protection level to DontSaveSensitive.

Staging loads

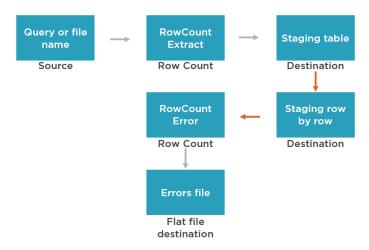
The sequence container for staging loads will conform to the structure shown in the diagram below:

- 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



Sequence Container

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	Туре	Flat File
File name	HRDepartment.txt		
Expressions	ConnectionString	@[\$Project::ErrorPath] + "HRDepartment.txt"	

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	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	HumanResources.Department	
		load		
Error Output	Redirect row			
OLE DB Destination				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination by	Staging	Table or view	HumanResources.Department	
Row				
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	Yes		
	Department			

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

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

Variables

7 0.7.7 0.10.7 0.0			
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	Туре	Flat File
File name	HREmployee.txt		
Expressions	ConnectionString	@[\$Project::Erro	rPath] + "HREmployee.txt"

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

Data Flow Task: DFT Extract to Staging				
OLE DB Source	Attract to Stagnig		_	
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	ResultSet	None		
	Rows Final				
Description	Count rows in staging table after extract				
ConnectionType	OLEDB Connection Staging				
SQLSourceType	Direct SQLStatement sel		select convert(bigint,		
			count(*)) from		
			HumanResources.Employee		

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

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumbe r],[LoginID],[OrganizationNode],[Org anizationLevel],[JobTitle],[BirthDate], [MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLe aveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources],[Employee]	
SourceQueryWhe re	String		
TableName	String	[HumanResources]. [Employee]	

Human Resources. Employee Department History

Connection Manager

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

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

Data Flow Task: DFT Extract to Staging						
OLE DB Source	OLE DB Source					
Name	Connection Manager	Data Access Mode	Variable			
OLE Source	Source	SQL command from	User::SourceQuery			
		variable				
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	HumanResources.Employee			
		load				
Error Output	Redirect row					
OLE DB Destination						
Name	Connection Manager	Data Access Mode	Table			
OLE Destination by	Staging	Table or view	HumanResources.Employee			
Row						
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	ResultSet	None	
	Rows Final			
Description	Count rows in staging table after extract			
ConnectionType	OLEDB Connection Staging			
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee	

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

Variables

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

Person.Address

Connection Manager

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

Execute SQL Task					
Name	SQL Truncate	ResultSet	None		
	Table				
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	OLE DB Source					
Name	Connection Manager	Data Access Mode	Variable			
OLE Source	Source	SQL command from	User::SourceQuery			
		variable				
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	HumanResources.Employee			
		load				
Error Output	Redirect row					
OLE DB Destination						
Name	Connection Manager	Data Access Mode	Table			
OLE Destination by	Staging	Table or view	HumanResources.Employee			
Row						
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		

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

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumbe r],[LoginID],[OrganizationNode],[Org anizationLevel],[JobTitle],[BirthDate], [MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLe aveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhe re	String		
TableName	String	[HumanResources]. [Employee]	

Person. Business Entity Address

Connection Manager

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

Execute SQL Task					
Name	SQL Truncate	ResultSet	None		
	Table				
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	User::SourceQuery			
		variable				
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	HumanResources.Employee		
		load			
Error Output	Redirect row				
OLE DB Destination					
Name	Connection Manager	Data Access Mode	Table		
OLE Destination by	Staging	Table or view	HumanResources.Employee		
Row					
Error Output	Redirect row	Redirect row			
Row Count Transform					
Name			Variable		
RC Error	Use		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 ResultSet N		None		
	Rows Final				
Description	Count rows in staging table after extract				
ConnectionType	OLEDB Connection Staging				
SQLSourceType	Direct SQLStatement select convert(bigint,		select convert(bigint,		
			count(*)) from		
			HumanResources.Employee		

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

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT	
		[BusinessEntityID],[NationalIDNumbe	
		r],[LoginID],[OrganizationNode],[Org	
		anizationLevel],[JobTitle],[BirthDate],	
		[MaritalStatus],[Gender],[HireDate],[
		SalariedFlag],[VacationHours],[SickLe	
		aveHours],[CurrentFlag],[rowguid],[
		ModifiedDate] FROM	
		[HumanResources].[Employee]	

SourceQueryWhe	String		
re			
TableName	String	[HumanResources]. [Employee]	

Person.CountryRegion

Connection Manager

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

Execute SQL Task					
Name	SQL Truncate Table	ResultSet	None		
Description	Truncate staging tab	le			
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 ResultSet		None		
	Rows Final				
Description	Count rows in stagin	g table after extra	ct		
ConnectionType	OLEDB Connection Staging				
SQLSourceType	SQLSourceType Direct SQLStatement select col		select convert(bigint,		
			count(*)) from		
			HumanResources.Employee		

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

Variables

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

Person.EmailAddress

Connection Manager

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

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

Data Flow Task: DFT Extract to Staging						
OLE DB Source	OLE DB Source					
Name	Connection Manager	Data Access Mode	Variable			
OLE Source	Source	SQL command from	User::SourceQuery			
		variable				
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	HumanResources.Employee			
		load				
Error Output	Redirect row					
OLE DB Destination						
Name	Connection Manager	Data Access Mode	Table			
OLE Destination by	Staging	Table or view	HumanResources.Employee			
Row						
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	ResultSet	None		
	Rows Final				
Description	Count rows in stagin	g table after extra	ct		
ConnectionType	OLEDB	Connection	Staging		
SQLSourceType Direct		SQLStatement	select convert(bigint, count(*)) from HumanResources.Employee		

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

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumbe r],[LoginID],[OrganizationNode],[Org anizationLevel],[JobTitle],[BirthDate], [MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLe aveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhe	String		
re			
TableName	String	[HumanResources]. [Employee]	

Person.Person

Connection Manager

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

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

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

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

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

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumbe r],[LoginID],[OrganizationNode],[Org anizationLevel],[JobTitle],[BirthDate], [MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLe aveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhe re	String		
TableName	String	[HumanResources]. [Employee]	

Person.PersonPhone

Connection Manager

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

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	OLE DB Source						
Name	Connection Manager	Data Access Mode	Variable				
OLE Source	Source	SQL command from	User::SourceQuery				
		variable					
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	HumanResources.Employee				
		load					
Error Output	Redirect row						
OLE DB Destination							
Name	Connection Manager	Data Access Mode	Table				
OLE Destination by	Staging	Table or view	HumanResources.Employee				
Row							
Error Output	Redirect row						
Row Count Transform							
Name			Variable				
RC Error User::RowCou			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	ResultSet	None		
	Rows Final				
Description	Count rows in staging table after extract				
ConnectionType	OLEDB	Connection	Staging		
SQLSourceType	Direct SQLStatement select convert(bigint,		select convert(bigint,		
	count(*)) from		count(*)) from		
			HumanResources.Employee		

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

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumbe r],[LoginID],[OrganizationNode],[Org anizationLevel],[JobTitle],[BirthDate], [MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLe aveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhe re	String		
TableName	String	[HumanResources]. [Employee]	

Person.StateProvince

Connection Manager

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

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

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

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

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

Variables

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

Production.Product

Connection Manager

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

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

Data Flow Task: DFT F	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	ction Manager Overwrite data in file?			
FF Errors Employee	FF Errors Employee	Yes			

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

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

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumbe r],[LoginID],[OrganizationNode],[OrganizationLevel],[JobTitle],[BirthDate], [MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLe	
		aveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhe	String		
re			
TableName	String	[HumanResources]. [Employee]	

Production.ProductCategory

Connection Manager

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

Execute SQL Task					
Name	SQL Truncate	ResultSet	None		
	Table				
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	HumanResources.Employee	
		load		
Error Output	Redirect row			
OLE DB Destination				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination by	Staging	Table or view	HumanResources.Employee	
Row				
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	ResultSet	None		
	Rows Final				
Description	Count rows in staging table after extract				
ConnectionType	OLEDB Connection Staging				
SQLSourceType	Direct SQLStatement select convert(bigin		select convert(bigint,		
			count(*)) from		
			HumanResources.Employee		

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

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT	
		[BusinessEntityID],[NationalIDNumbe	
		r],[LoginID],[OrganizationNode],[Org	
		anizationLevel],[JobTitle],[BirthDate],	
		[MaritalStatus],[Gender],[HireDate],[
		SalariedFlag],[VacationHours],[SickLe	
		aveHours],[CurrentFlag],[rowguid],[
		ModifiedDate] FROM	
		[HumanResources].[Employee]	

SourceQueryWhe	String		
re			
TableName	String	[HumanResources]. [Employee]	

Production.ProductModel

Connection Manager

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

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

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

Variables

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

${\bf Product Subcategory}$

Connection Manager

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

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

Data Flow Task: DFT Extract to Staging							
OLE DB Source	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	Flat File Destination						
Name	Connection Manager	Overwrite data in file	?				
FF Errors Employee	FF Errors Employee	Yes					

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

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

Variables

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

Sales.Customer

Connection Manager

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

Execute SQL Task					
Name	SQL Truncate	ResultSet	None		
	Table				
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	User::SourceQuery		
		variable			
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	HumanResources.Employee		
		load			
Error Output	Redirect row				
OLE DB Destination					
Name	Connection Manager	Data Access Mode	Table		
OLE Destination by	Staging	Table or view	HumanResources.Employee		
Row					
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		

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

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumbe r],[LoginID],[OrganizationNode],[Org anizationLevel],[JobTitle],[BirthDate], [MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLe aveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources].[Employee]	
SourceQueryWhe	String		
re			
TableName	String	[HumanResources]. [Employee]	

Sales.SalesTerritory

Connection Manager

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

Execute SQL Task					
Name	SQL Truncate	ResultSet	None		
	Table				
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	OLE DB Source						
Name	Connection Manager	Data Access Mode	Variable				
OLE Source	Source	SQL command from	User::SourceQuery				
		variable					
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	Staging	Table or view	HumanResources.Employee		
Row					
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	ResultSet	None		
	Rows Final				
Description	Count rows in staging table after extract				
ConnectionType	OLEDB	Connection	Staging		
SQLSourceType	Direct	SQLStatement	select convert(bigint,		
			count(*)) from		
			HumanResources.Employee		

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

Variables

Name	Data Type	Value	Expression
SourceQuery	String	SELECT	
		[BusinessEntityID],[NationalIDNumbe	
		r],[LoginID],[OrganizationNode],[Org	
		anizationLevel],[JobTitle],[BirthDate],	
		[MaritalStatus],[Gender],[HireDate],[
		SalariedFlag],[VacationHours],[SickLe	
		aveHours],[CurrentFlag],[rowguid],[

		ModifiedDate] FROM	
		[HumanResources].[Employee]	
SourceQueryWhe	String		
re			
TableName	String	[HumanResources]. [Employee]	

Sales.SpecialOffer

Connection Manager

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

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

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

Name	Data Type	Value	Expression
SourceQuery	String	SELECT [BusinessEntityID],[NationalIDNumbe r],[LoginID],[OrganizationNode],[Org anizationLevel],[JobTitle],[BirthDate], [MaritalStatus],[Gender],[HireDate],[SalariedFlag],[VacationHours],[SickLe aveHours],[CurrentFlag],[rowguid],[ModifiedDate] FROM [HumanResources],[Employee]	
SourceQueryWhe re	String	t i i i i i i i i i i i i i i i i i i i	
TableName	String	[HumanResources]. [Employee]	

Sales.Store

Connection Manager

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

Execute SQL Task					
Name	SQL Truncate	ResultSet	None		
	Table				
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	User::SourceQuery		
		variable			
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	HumanResources.Employee		
		load			
Error Output	Redirect row				
OLE DB Destination					
Name	Connection Manager	Data Access Mode	Table		
OLE Destination by	Staging	Table or view	HumanResources.Employee		
Row					
Error Output	Redirect row				
Row Count Transform					
Name			Variable		
RC Error			User::RowCountErrors		
Flat File Destination	Flat File Destination				
Name	Connection Manager Overwrite data in file?				
FF Errors Employee	FF Errors Employee	Yes			

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

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

Variables

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

Sales Targets.xlsx

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

Name	SalesTargets	Туре	Excel
Excel file	Sales Targets.xlsx		
path			

Execute SQL Task				
Name	SQL Truncate	ResultSet	None	
	Table			
Description	Truncate staging ta	Truncate staging table		
ConnectionType	OLEDB	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	1			
Name			Variable	
RC Extract			User::RowCountExtracts	
OLE DB Destination				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination	Staging	Table or view – fast	SalesTargets	
		load		
Error Output	Redirect row		•	
OLE DB Destination				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination by	Staging	Table or view	SalesTargets	
Row				
Error Output	Redirect row		•	
Row Count Transform	1			
Name			Variable	
RC Error	User::RowCountErrors		User::RowCountErrors	
Flat File Destination				
Name	Connection Manager	Overwrite data in file?		
FF Errors	FF Errors	Yes		
SalesTargets	SalesTargets			

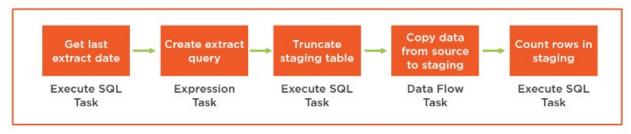
Execute SQL Task			
Name	SQL Count Current	ResultSet	None
	Rows Final		
Description	Count rows in staging table after extract		
ConnectionType	OLEDB Connection Staging		
SQLSourceType	Direct SQLStatement select convert(bigint,		
			count(*)) from SalesTargets

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

Variables

Name	Data Type	Value	Expression
SourceQuery	String		
SourceQueryWhe	String		
re			
TableName	String	SalesTargets	

Relational fact extracts



Sequence Container

Sales.SalesOrderDetail

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

Execute SQL Task				
Name	SQL Get Last Date	ResultSet	SingleRow	
Description	Get the date and tim	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	ResultSet	None	
	Table			
Description	Truncate staging t	Truncate staging table		
ConnectionType	OLEDB	Connection	Staging	
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE	
			Sales.SalesOrderDetail	

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

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	

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

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

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

Sales.SalesOrderHeader

Connection Manager

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

Execute SQL Task					
Name	SQL Get Last Date	ResultSet	SingleRow		
Description	Get the date and tim	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 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	ResultSet	None	
	Table			
Description	Truncate staging tab	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	User::SourceQuery	
		variable		
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	Sales.SalesOrderDetail	
		load		
Error Output	Redirect row			
OLE DB Destination				
Name	Connection Manager	Data Access Mode	Table	
OLE Destination by	Staging	Table or view	Sales.SalesOrderDetail	
Row				
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	FF Errors	Yes		
SalesOrderDetail	SalesOrderDetail			

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

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

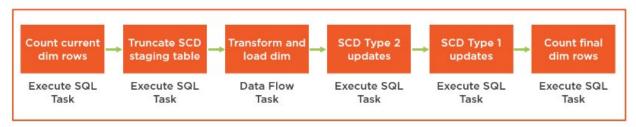
Variables

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

Dimension loads

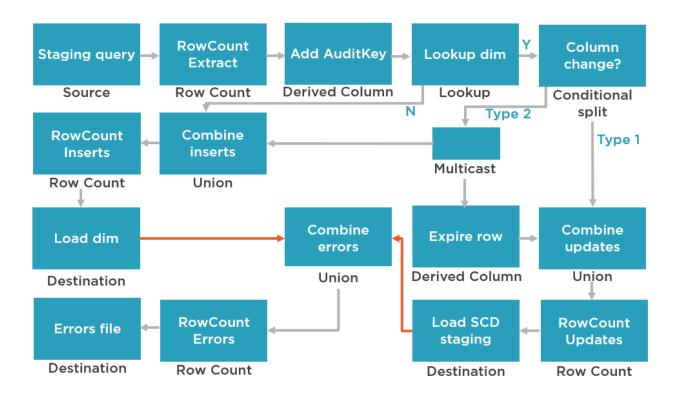
The sequence container for dimension loads will conform to the structure shown in the diagram below:

- 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



Sequence Container

The data flow task 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

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

Execute SQL Task						
Name	SQL Count Rows	ResultSet	SingleRow			
	Initial					
Description	Count rows in dimer	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	ResultSet	None		
	Staging Table				
Description	Truncate SCD stagin	g table			
ConnectionType	OLEDB	OLEDB Connection Target			
SQLSourceType	Direct SQLStatement TRUNCATE TABLE				
			tmp_scd_DimCampaign		

Data Flow Task: DF	Data Flow Task: DFT Load Target								
OLE DB Source	OLE DB Source								
Name		Connection Manager		Data Access Mode		Varia	ble		
OLE Source		Source		SQL command from variable		User	::Soui	rceQuery	
Row Count Transfo	rm								
Name							Varia	ble	
RC Extract							User	::Row	CountExtracts
Derived Column Tra	ansfo	orm							
Name	DC /	Audit Key							
Derived Column	Der	ived Column	Expre	ssio	sion Data Type		уре		Length
Name									
InsertAuditKey	<ad< th=""><th>d as new</th><th>@[Us</th><th>er::<i>/</i></th><th colspan="2">:AuditKey] four-byte</th><th>yte sigr</th><th>ned</th><th></th></ad<>	d as new	@[Us	er:: <i>/</i>	:AuditKey] four-byte		yte sigr	ned	
	colu	ımn>			integer				
Lookup Transform									
Cache mode		Full cache			Connection type			OLE	DB connection
								mar	nager
No matching rows?	1	Redirect to no	match	1	Connection			Targ	get
		output							
SQL Query		SELECT * FROM			Input Columns (match		natch	Inpu	ıt: CampaignID
		DimCampaign	1		on)			Lool	kup: CampaignID
Lookup Columns		CampaignNan	ne		Output A	lias Colu	ımns	dim	_CampaignName

		CampaignType CampaignCategory DiscountPct CampaignStartDate CampaignEndDate MinQty			dim_CampaignType dim_CampaignCategory dim_DiscountPct dim_CampaignStartDate dim_CampaignEndDate dim_MinQty	
		MaxQty			dim_MaxQty	
Row Count 1	Transform					
Input: No ma	atch output	from Conditional Split	t Tra	nsform		
Name				Variable		
RC Insert				User::RowCountInserts		
	OLE DB Destination					
Input: Output from RC Insert						
Name		Connection Manage	er	Data Access Mode	Table	
OLE Destinat		Target		Table or view – fast load	DimCampaign	
Error Out	•	Redirect row				
OLE DB Destination Input: Output from OLE Destination						
Name	It from OLE	Connection Manage		Data Access Mode	Table	
	tion By	Target	er -	Table or view	DimCampaign	
OLE Destination By Target Row			Table Of VIEW	Dillicallipaign		
Error Output Redirect row						
Conditional	•					
		m Lookup Transform				
Name		CS Changed Columns	S			
Order	Output Na					
1	SCD			CampaignName, "")		
				(dim_CampaignName, ""))	
				LL(CampaignType, "")		
				(dim_CampaignType, "")) LL(CampaignCategory, "")		
		4.4.4		(dim_CampaignCategory, (
				LL(DiscountPct, 0)	11	
				(dim_DiscountPct, 0))		
				LL(CampaignStartDate, ""		
				.(dim_CampaignStartDate,	, ""))	
		4.4.4		LL(CampaignEndDate, "")		
				(dim_CampaignEndDate,		
				LL(MinQty, 0) !=REPLACEN		
Row Count 1	[ransform	(KEPLAC	CINO	LL(MaxQty, 0) !=REPLACE	NOLL(UIIII_IVIAXQLY, U))	
		Conditional Split Trans	sforr	m		
Name		The state of the s		Variable		
RC Update				User::RowCountUpdates		
OLE DB Dest	ination					
Input: Outpu	ut from RC U	pdate				

Name	Connection	Data Access Mode	Table			
	Manager					
OLE Destination tmp	Target	Table or view – fast	tmp_scd_DimCampaign			
scd		load				
Error Output	Redirect row	Redirect row				
OLE DB Destination						
Input: Output from O	LE Destination tmp scd					
Name	Connection	Data Access Mode	Table			
	Manager					
OLE Destination tmp	Target	Table or view	tmp_scd_DimCampaign			
scd by Row						
Error Output	Redirect row					
Union						
Input1: Output from (OLE Destination tmp sco	d by Row				
Input2: Output from (DLE Destination By Row	1				
Name	UNI Errors					
Row Count Transform						
Input: Output from U	nion UNI Errors					
Name			Variable			
RC Error			User::RowCountErrors			
Flat File Destination	Flat File Destination					
Name	Connection	Overwrite data in file?	?			
	Manager					
FF Errors	FF Errors	Yes				
DimCampaign	DimCampaign					

Execute SQL Task				
Name	SQL SCD1 Updates	ResultSet	None	
Description	Update Type 1 colur	nns in dimension	table	
ConnectionType	OLEDB	OLEDB Connection Target		
SQLSourceType	Direct	SQLStatement	UPDATE target SET	
			target.CampaignName =	
			source.CampaignName,	
			target.CampaignType =	
			source.CampaignType,	
			target.CampaignCategory =	
			source.CampaignCategory,	
			target.DiscountPct =	
		SO		
			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 stagin	g table after extra	ct		
ConnectionType	OLEDB Connection Target				
SQLSourceType	Direct	SQLStatement	select convert(bigint, count(*)) from DimCampaign		

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

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

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	
SourceQueryWhe re	String		
TableName	String	DimCampaign	

DimCustomer

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

Execute SQL Task						
Name	SQL Count Rows	ResultSet	SingleRow			
	Initial					
Description	Count rows in dimen	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	ResultSet	None		
	Staging Table				
Description	Truncate SCD staging table				
ConnectionType	OLEDB	Connection	Target		
SQLSourceType	Direct	SQLStatement	TRUNCATE TABLE		
			tmp_scd_DimCustomer		

Data Flow Task:	Data Flow Task: DFT Load Target						
OLE DB Source							
Name	Connection Ma	anager	Data A	ccess Mode	٧	Variable	
OLE Source	Source	Source SQL communication variable			U	ser::	SourceQuery
Row Count Tran	sform						
Name					٧	ariab	ole
RC Extract					U	ser::I	RowCountExtracts
Derived Column Transform							
Name	DC Audit Key Start Date						
Derived	Derived	Expression	Expression		Data	9	Length
Column Name	Column				Туре	2	
InsertAuditKey	<add as="" column="" new=""></add>	@[User::	@[User::AuditKey]		four byte sign inte	ed	
StartDate	Replace 'StartDate'	(DT_DATI	(DT_DATE)(@[System::StartTime])		date	!	
Lookup Transfo	rm						
Cache mode	Full cache	Connection type				E DB connection nager	
No matching rows?	Redirect to no	match out	match output Connection			Tar	get

SQL Query		SELECT * EDC	OM DimCustomer	Input Columns	Input: CustomerID
SQL Query		SELECT THE	NVI DIIIICUSTOITIEI	(match on)	Lookup: CustomerID
Lookun		Channel		Output Alias	dim Channel
Lookup Columns		CustomerFull	Marao	Columns	_
Columns				Columns	dim_CustomerFullName
		CustomerTitl	e		dim_CustomerTitle
		FirstName			dim_FirstName
		MiddleName			dim_MiddleName
		LastName			dim_LastName
		EmailAddress	5		dim_EmailAddress
		Phone			dim_Phone
		AddressLine1	-		dim_AddressLine1
		AddressLine2			dim_AddressLine2
		City			dim_City
		StateProvince	eCode		dim_StateProvinceCode
		StateProvince	е		dim_StateProvince
		CountryCode			dim_CountryCode
		Country			dim_Country
		PostalCode			dim_PostalCode
		RetailerName	9		dim_RetailerName
Union					
Input1: No n	natch	output from	Lookup		
•		om Multicast			
Name	_	UNI All Inserts	 S		
Row Count T	Transf	orm			
		output from Lo	ookun		
Name		Variable	- Chap		
RC Insert		User::RowCou	ıntlacerte		
OLE DB Dest			antiniserts		
Input: Outpu					
	ut Iroi		Data Assass Mada		Table
Name		Connection	Data Access Mode		Table
0.55		Manager			
OLE Destinat		Target	Table or view – fas	t load	DimCustomer
Error Out	<u>. </u>	Redirect row			
OLE DB Dest					
	ut fro	m OLE Destina	ation		
Name		Connection	Data Access Mode		Table
		Manager			
OLE Destinat	tion	Target	Table or view		DimCustomer
By Row					
Error Out	put	Redirect row			
Conditional S	Split_	Transfo <u>rm</u>			
			up Transform		
Name		CS Changed (·		
Order	Qut	put Name	Condition		
1	SCD	•		ity, "") !=REPLACENU	II (dim City ""))
				ILV. I :-ILLI LACLINO	ELIGITI CILV. 11

		(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, ""))
		The enterior (and including)

Multicast Transform

Input: SCD2 output from Conditional Split Transform

Derived Column Transform

Input: Multicast

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

	Variable				
RC Update	User::RowCountUpdates				
OLE DB Destination					
Input: Output fro	•				
Name	Connection Manager	Data Access Mode	Table		
OLE	Target	Table or view – fast load	tmp_scd_DimCustomer		
Destination					
tmp scd					
Error	Redirect row				
Output					
OLE DB Destinati					
	om OLE Destination tmp sco				
Name	Connection Manager	Data Access Mode	Table		
OLE	Target	Table or view	tmp_scd_DimCustomer		
Destination					
tmp scd by					
Row					
Error	Redirect row				
Output					
Union					
	rom OLE Destination tmp s				
	rom OLE Destination By Ro	W			
Name	UNI Errors				
Row Count Trans					
	om Union UNI Errors				
Name			Variable		
RC Error			User::RowCountErrors		
Flat File Destinat					
Name	Connection Manager	Overwrite data in file?			
FF Errors	FF Errors DimCustomer	Yes			
DimCustomer					

Execute SQL Task			
Name	SQL SCD2 Updates	ResultSet	None
Description	Update Type 2 colun	nns in dimension t	able
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 colun	nns in dimension t	able
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	ResultSet	None			
	Rows Final					
Description	Count rows in stagi	Count rows in staging table after extract				
ConnectionType	OLEDB	Connection	Target			
SQLSourceType	Direct	SQLStatement	select convert(bigint,			
			count(*)) from DimCustomer			

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

Name	Data Type	Value	Expression
SourceQuery	String	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) + ' ' +	Expression
		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	

, 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

, 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

		left outer join Person.Person p2 on p2.BusinessEntityID = bec.PersonID left outer join Person.EmailAddress ea2 on ea2.BusinessEntityID = p2.BusinessEntityID	
SourceQueryWhe	String		
re			
TableName	String	DimCustomer	

DimEmployee

Connection Manager

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

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 Set					
Result Name	Variable Name					
0	User::RowCountInitial					

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

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

OLE Source	Source		SQL command from variable		l	User::SourceQuery		
Row Count Transfor	m							
Name						V	/ariak	ole
RC Extract						l	Jser::	RowCountExtracts
Derived Column Trai	nsforn	n						
Name	DC A	udit Key	Start D	ate				
Derived Column	Deriv	ved	Expres	sion		Data	3	Length
Name	Colu	mn				Туре	е	
InsertAuditKey	<add< td=""><td>l as</td><td>@[Use</td><td>r::AuditK</td><td>ey]</td><td>four</td><td>-</td><td></td></add<>	l as	@[Use	r::AuditK	ey]	four	-	
	new					byte	?	
	colur	nn>				sign	ed	
						inte	ger	
StartDate	Repla		(DT_D	ATE)(@[S	ystem::StartTim	date)	
	'Star	tDate'	e])					
EmploymentEndDa	<add< td=""><td>l as</td><td>-</td><td>ntFlag]==</td><td></td><td>date</td><td><u> </u></td><td></td></add<>	l as	-	ntFlag]==		date	<u> </u>	
te	new		(DT_D/	ATE)(@[S	ystem::StartTim			
	colur	mn>	e]): N	ULL(DT_C	DATE)			
Lookup Transform								
Cache mode		Full ca	che Connection type		е	OLE	DB connection	
								nager
No matching rows?			Redirect to no match		Connection		Tar	get
		output	-					
SQL Query		SELECT * FROM		Input Columns		Input: EmployeeID		
			mployee		(match on)		Lookup: EmployeeID	
Lookup Columns		EmployeeFullName		Output Alias		dim_EmployeeFullName		
		EmployeeFirstName		Columns		dim_EmployeeFirstName		
		EmployeeLastName						_EmployeeLastName
		EmployeeMiddleNam					_EmployeeMiddleNa	
		e IsCurrentEmpleyee				me	In Comment Francisco	
		IsCurrentEmployee IsSalesPerson					_IsCurrentEmployee _IsSalesPerson	
								_
		JobTitl						_JobTitle
		DepartmentID					_DepartmentID Department	
		Department DepartmentGroup					_DepartmentGroup	
				oup				_DepartmentGroup _HireDate
		HireDate EmploymentEndDate					EmploymentEndDate	
			EmploymentEndDate LoginID					LoginID
	•			ilAddres				_EmployeeEmailAddr
	S		yeeEmailAddres			ess		
	EmployeePho		veePhor	ne				EmployeePhone
Union			,					
Input1: No match ou	ıtp <u>ut f</u>	rom Loc	okup					
Input2: Output from								
Name		All Inse	erts					

Row Count Transform							
Input: No match output from Lookup							
Name	Variable						
RC Insert		Rov	vCountInserts				
OLE DB Destinati							
Input: Output fro	om RC Insert		n n a ation	Data Assass Mada	Table		
Name			onnection anager	Data Access Mode	Table		
OLE Destination			rget	Table or view – fast load	DimEmployee		
Error Output			edirect row	Table of their last load	Dimemployee		
OLE DB Destinati	on						
Input: Output fro		ina	tion				
Name		Сс	nnection	Data Access Mode	Table		
		М	anager				
OLE Destination E	By Row		rget	Table or view	DimEmployee		
Error Output		Re	direct row				
Conditional Split							
Input: Match out	put from Lo		•				
Name	0.1.1	CS	Changed Colum	nns			
Order	Output Name		Condition				
1	SCD2	/ DEDI ACENIUI / InhTitle					
1	JCDZ	CD2 (REPLACENULL(JobTitle, "") !=REPLACENULL(dim_ JobTitle, "")) (REPLACENULL(DepartmentID, "") !=REPLACENULL(dim					
		DepartmentID, ""))					
			•	* *	ACENULL(dim		
			Department, ""))				
			(REPLACENULL(DepartmentGroup, "") !=REPLACENULL(dim_				
			DepartmentGroup, ""))				
			(REPLACENULL(HireDate, "") !=REPLACENULL(dim_HireDate, ""))				
			(REPLACENULL(PostalCode, "") !=REPLACENULL(dim_PostalCode, ""))				
2	CCD		(DEDLACENIUL	/EmployeeEullName ""\			
2	SCD		!=REPLACENULL(dim EmployeeFullName, ""))				
			-KEPLACENOLL(diff_EffipioyeePdiffName,) (REPLACENULL(EmployeeFirstName, "")				
			!=REPLACENULL(dim EmployeeFirstName, ""))				
				ULL(EmployeeLastName, ""			
			!=REPLACENUL	.L(dim_EmployeeLastName,	,""))		
				ULL(EmployeeMiddleName	•		
			!=REPLACENULL(dim_EmployeeMiddleName, ""))				
				(REPLACENULL(IsCurrentEmployee, "")			
))		
				-			
				_	····\		
					-		
1	1			ULL(LoginID, "") !=REPLACE			
2	SCD		(REPLACENT DepartmentID, (REPLACENT Department, "' (REPLACENT DepartmentGround (REPLACENT (REPLACEN	ULL(DepartmentID, "") !=RE "")) ULL(Department, "") !=REPL ')) ULL(DepartmentGroup, "") ULL(DepartmentGroup, "") ULL(HireDate, "") !=REPLAC ULL(PostalCode, "") !=REPLAC (EmployeeFullName, "") L(dim_EmployeeFirstName, "") L(dim_EmployeeFirstName, "" L(dim_EmployeeLastName, "" L(dim_EmployeeLastName, "" L(dim_EmployeeLastName, "" L(dim_EmployeeMiddleName, ULL(EmployeeMiddleName, ULL(IsCurrentEmployee, "") L(dim_IsCurrentEmployee, "") L(dim_IsSalesPerson, "") L(dim_IsSalesPerson, "")) ULL(EmploymentEndDate, ' L(dim_EmploymentEndDate, ' L(dim_EmploymentEndDate, ' L(dim_EmploymentEndDate, '	PLACENULL(dim_ LACENULL(dim_ !=REPLACENULL(dim_ ENULL(dim_HireDate, "") ACENULL(dim_PostalCode "")) , "")) , "")) me, "")) "") e, ""))		

	,							
	(REPLACENULL(EmployeeEmailAddress, "")							
		EPLACENULL(dim_EmployeeEma		"))				
		REPLACENULL(EmployeePhone,						
	!=RI	!=REPLACENULL(dim_EmployeePhone, ""))						
Multicast Transform								
Input: SCD2 output f	rom Conditional	Split Transform						
Derived Column Tran								
Input: Multicast	13101111							
Name	DC Expire							
Derived Column	Derived	Expression	Data	Length				
Name	Column		Туре	2084				
EndDate	Replace	[StartDate]	date					
	'EndDate'	[2.50. 52. 53.5]						
IsCurrent	Replace	"N"	Unicode					
	'IsCurrent'		string					
Union Transform								
Input1: Output from								
Input2: SCD output f								
Name	UNI All Update	S						
Row Count Transform								
Input: Output from L								
Name	Variable							
RC Update	User::RowCou	ntUpdates						
OLE DB Destination								
Input: Output from R	· ·	Data Assess March	T.1.1.					
Name	Connection	Data Access Mode	Table					
OLE Destination tmp	Manager Target	Table or view – fast load	tmn cc	d_DimEmployee				
scd	raiget	Table of view – fast load	tilip_sct	u_Difficiliployee				
Error Output	Redirect row							
OLE DB Destination								
Input: Output from C	DLE Destination t	mp scd						
Name	Connection	Data Access Mode	Table					
	Manager							
OLE Destination tmp	Target	Table or view	tmp_sco	d_DimEmployee				
scd by Row								
Error Output	Redirect row							
Union								
Input1: Output from								
Input2: Output from		By ROW						
Name Row Count Transforr	UNI Errors							
Input: Output from U								
Name	ONI EITOIS		Variable	<u> </u>				
RC Error				owCountErrors				
Flat File Destination			030110					
Hat The Destination								

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

Execute SQL Task						
Name	SQL SCD2 Updates	ResultSet None				
Description	Update Type 2 colun	nns in dimension t	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 colur	nns in dimension	able		
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.lsSalesPerson =		
			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 stagin	g table after extra	ct	
ConnectionType	OLEDB Connection Target			
SQLSourceType	Direct SQLStatement select convert(bigint,			
			count(*)) from DimEmployee	

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

Name	Data Type	Value	Expression
SourceQuery	String	select e.BusinessEntityID as EmployeeID, coalesce(p.FirstName,") + ' ' + LEFT(coalesce(p.MiddleName,"),1)	
		p.BusinessEntityID	

	T		
		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	
SourceQueryWhe	String		
re			
TableName	String	DimEmployee	

DimProduct

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

Execute SQL Task						
Name	SQL Count Rows	ResultSet	SingleRow			
	Initial					
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	ResultSet	None	
	Staging Table			
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		1	Data Access Mode		,	Variable		
	Ma	nager							
OLE Source	Sou	rce		SQL comma	and from variable		User::	SourceQuery	
Row Count Transf	orm								
Name						,	Varial	ble	
RC Extract							User::	RowCountExtracts	
Derived Column T	ransfor	m							
Name	DC Au	dit Key	Start D	ate					
Derived Column	Derived		Expression		Data		Length		
Name	Column				Type				
InsertAuditKey	<add a<="" td=""><td>is new</td><td colspan="2">@[User::AuditKey]</td><td>four</td><td>-</td><td></td></add>	is new	@[User::AuditKey]		four	-			
	colum	n>			byte	9			
					sign	ed			
						inte	ger		
StartDate	Replac	e	(DT_0	DATE)(@[System::StartTime])		date	غ		
'StartDate'									
Lookup Transform									
Cache mode Full ca		Full ca	che Conne		Connection type	onnection type		DB connection	
						manager			
No matching rows? Red		Redire	ect to no match		Connection		Target		
		output							

SQL Query		SELECT * FROM	Input Columns	Input: ProductID		
		DimProduct	(match on)	Lookup: ProductID		
Lookup Columns	i 1	ProductName	Output Alias	ProductName		
		ProductModelID	Columns	ProductModelID		
		ModelName		ModelName		
P		ProductSubcategoryKe	y	ProductSubcategoryKey		
	(Color		Color		
	(Class		Class		
	9	Style		Style		
	9	Size		Size		
	9	SizeUnitOfMeasureCoo	de	SizeUnitOfMeasureCode		
	9	StandardCost		StandardCost		
		ListPrice		ListPrice		
	9	SellStartDate		SellStartDate		
	9	SellEndDate		SellEndDate		
	1	ProductCurrentStatus		ProductCurrentStatus		
Union						
Input1: No matc	h output fr	om Lookup				
Input2: Output f	rom Multio	cast				
Name	UNI A	All Inserts				
Row Count Tran	sform					
Input: No match	output fro	m Lookup				
Name	Varia					
RC Insert User::RowCountInserts						
OLE DB Destinat						
Input: Output from	om RC Inse					
Name		Connection	Data Access Mode	Table		
		Manager				
OLE Destination			Table or view – fast loa	nd DimProduct		
Error Output		Redirect row				
OLE DB Destinat	ion					
Input: Output from	om OLE De	stination				
Name		Connection	Data Access Mode	Table		
		Manager				
OLE Destination	By Row	Target	Table or view	DimProduct		
Error Output Redirect row						
Conditional Split Input: Match ou		า Lookup Transform				
Name		CS Changed Column	S			
Order	Output	Condition				
	Name					
1						
1	SCD2	(REPLACENULL(P	roductSubcategorvKev.	"")		
1	SCD2	(REPLACENTILL (P	roductSubcategoryKey	"")		

	!=RI	EPLACENULL(StandardCost, "") LACENULL(dim_StandardCost, "")) EPLACENULL(ListPrice, "") !=REPLACENULL(dim_ListPrice, ""))				
	!=RI (!=RI (!=RI (!=RI (!=RI (!=RI	PLACENULL(ProductName, 'EPLACENULL(dim_ProductN' REPLACENULL(dim_ProductN' REPLACENULL(dim_ProductN' REPLACENULL(dim_ModelName EPLACENULL(dim_ModelName REPLACENULL(Color, "") !=R REPLACENULL(Style, "") !=R REPLACENULL(Size, "") !=RE REPLACENULL(SizeUnitOfM' EPLACENULL(dim_SizeUnitOfM' EPLACENULL(dim_SellStartDate EPLACENULL(dim_SellStartDate EPLACENULL(dim_SellStartD' REPLACENULL(dim_ProductCurre EPLACENULL(dim_ProductCurre EPLACENULL(dim_Product	ame, "")) lellD, "") lodellD, "")) , "") me, "")) REPLACENULL(dim_G REPLACENULL(dim_S REPLACENULL(dim_S) REPLACENULL(dim_S) REPLACENULL(dim_S) REPLACENULL(dim_S) ReasureCode, "") RefMeasureCode, "") Replacemult	Class, "")) Style, "")) ze, ""))		
Multicast Transford Input: SCD2 output		al Snlit Transform				
Derived Column Tr Input: Multicast						
Name	DC Expire					
Derived Column	Derived	Expression	Data	Length		
Name	Column	 	Туре			
EndDate	Replace 'EndDate'	[StartDate]	date			
IsCurrent	Replace	"N"	Unicode			
Union Transform Input1: Output from Input2: SCD output	t from Condition		string			
Name	UNI All Updat	es				
Row Count Transfo Input: Output from		.				
Name	Variable					
RC Update	User::RowCoเ	ıntUpdates				
OLE DB Destination Input: Output from						
Name	Connection	Data Access Mode	Table			
	Manager					

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

Execute SQL Task	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.lsCurrent =					
			source.lsCurrent					
			target.UpdateAuditKey =					
			source.InsertAuditKey					
			FROM DimProduct target					
			JOIN tmp_scd_DimProduct					
			source on					
			target.ProductID =					
			source.ProductID AND					
			target.UpdateAuditKey <>					
		source.InsertAud						
			target.EndDate = '9999-12-					
			31'					

Execute SQL Task			
Name	SQL SCD1 Updates	ResultSet	None
Description	Update Type 1 colu	mns 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	None					
Description	Count rows in stagin	g table after extra	ct				
ConnectionType	OLEDB	Connection	Target				
SQLSourceType	Direct	select convert(bigint, count(*)) from DimProduct					

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

Variables

Name	Data Type	Value	Expression
SourceQuery	String	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,	

		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	
SourceQueryWhe re	String		
TableName	String	DimProduct	

DimProductCategory

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

Execute SQL Task								
Name	SQL Count Rows	ResultSet	SingleRow					
	Initial							
Description	Count rows in dimer	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	ResultSet	None				
	Staging Table						
Description	Truncate SCD stagin	g table					
ConnectionType	OLEDB	Connection	Target				
SQLSourceType	Direct SQLStatement TRUNCATE TABLE						
			tmp_scd_DimProductCategory				

Data Flow Task: DFT Load Target									
OLE DB Source									
Name	C	Connection		Dat	a Access N	1ode	Vari	able	
	N	Manager							
OLE Source	S	ource		SQI	_ command	l	User	::Sou	rceQuery
				fro	m variable				
Row Count Transfo	rm								
Name							Vari	able	
RC Extract							User	:::Rov	vCountExtracts
Derived Column Transform									
Name	DC /	Audit Key							
Derived Column	Der	ived Column	Expre	essio	n Data Type			Length	
Name									
InsertAuditKey	<ad< th=""><th>d as new</th><th>@[Us</th><th>er::/</th><th>AuditKey]</th><th>four-l</th><th colspan="2">ır-byte</th><th></th></ad<>	d as new	@[Us	er::/	AuditKey]	four-l	ır-byte		
	colu	ımn>				signe	d inte	ger	
Lookup Transform									
Cache mode	•	Full cache			Connection	on type	9	OLE DB connection	
								man	ager
No matching rows?		Redirect to no	o no match Cor		Connection	on		Targ	et
		output							
SQL Query		SELECT * FRO	M		Input Col	umns	_	Inpu	t: ProductCategoryID
		DimProductCa	ategory	/	(match o	n)		Lookup: ProductCategoryID	

Lookup Colu	mns	Product	ProductCategoryName Output Alias				dim_ProductCategoryName	
					Columns			
Row Count T Input: No ma		ut from Cor	nditional Spli	it Tra	ınsform			
Name					Variable			
RC Insert					User::RowCoun	tlnsert	ts	
	OLE DB Destination Input: Output from RC Insert							
Name			tion Manage	er	Data Access Mo	ode	Table	
OLE Destinati	ion	Target	<u> </u>		Table or view –	fast	DimProductCategory	
Error Outp	out	Redirec	t row					
OLE DB Desti Input: Outpu	nation							
Name			tion Manage	er	Data Access Mo	ode	Table	
OLE Destinati Row	ion By	Target	<u> </u>		Table or view		DimProductCategory	
Error Outp	out	Redirec	Redirect row					
Conditional S								
Input: Match output from Lookup Transform								
Name		CS Char	ged Column	S				
Order	Output I	Name	Condition					
1	SCD		-		(ProductCategory		•	
Row Count T	ransform		!=REPLACE	NULL	_(dim_ProductCa	tegoryi	name,))	
Input: SCD or		n Condition	al Split Tran	sfor	m			
Name	atput II oi	ii condition	iai Spiic ITaii	131011	Variable			
RC Update					User::RowCoun	tUnda	tes	
OLE DB Desti	nation				oser into weed in	тории		
Input: Outpu		Update						
Name		Connectio	n	Data	a Access Mode	Table	2	
		Manager						
OLE Destinati	ion tmp	Target		Tabl	le or view – fast	tmp_	scd_DimProductCategory	
scd				load	<u> </u>			
Error Outp		Redirect ro	DW					
OLE DB Desti Input: Outpu			-					
Name		Connectio Manager				Table	2	
OLE Destinati	ion tmp	Target		Table or view		tmp_	scd_DimProductCategory	
Error Outp	out	Redirect ro	DW .			•		
Union								
Input1: Outp	ut from C	DLE Destina	tion tmp scd	l by F	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	Overwrite data in fil	e?				
	Manager						
FF Errors	FF Errors	Yes					
DimProductCategory	DimProductCategory						

Execute SQL Task	Execute SQL Task							
Name	SQL SCD1 Updates	ResultSet	None					
Description	Update Type 1 colur	nns in dimension t	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	ResultSet	None			
	Rows Final					
Description	Count rows in staging table after extract					
ConnectionType	OLEDB Connection Target					
SQLSourceType	Direct	Direct SQLStatement select convert				
	count(*)) from					
			DimProductCategory			

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

Variables

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

DimProductSubcategory

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

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

Execute SQL Task						
Name			None			
	SCD Staging					
	Table					
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 Mar	nager	Data Access Mode		Va	Variable	
OLE Source	S	ource			SQL command Us		ser::So	ourceQuery
Row Count Transfor	m							
Name						Va	ariable	9
RC Extract						U:	ser::Ro	owCountExtracts
Derived Column Tra	nsforr	n						
Name	DC	Audit Key						
Derived Column Name	De	rived Column	Expres	ssion		Data Type		Length
InsertAuditKey		dd as new @[User::AuditKey] fo umn> si			four- signe integ	ed .		
Lookup Transform								
Cache mode		Full cache			Connection type		OLE	DB connection manager
No matching rows?		Redirect to no output	match		Connect	ion	Targ	et

SQL Query		SELECT *	FROM		Input Input: ProductSubcategory		Input: ProductSubcategoryID
		DimProd	uctSubcatego	ry	Columns		Lookup:
					(match on)		ProductSubcategoryID
Lookup Column	S	Product ⁹	SubcategoryN	ame	Output Alia	is (dim_ProductSubcategoryNa
		Product	CategoryKey		Columns	1	me
						(dim_ProductCategoryKey
Row Count Tran							
_	Input: No match output from Conditional Split Transfe						
Name					Variable		
RC Insert					User::Row	Coun	tInserts
OLE DB Destina							
Input: Output fr	om RC Ins	1			I		
Name		Connec	tion Manager		Data Acces Mode	SS	Table
OLE Destination		Target			Table or vi	ew	DimProductSubcategory
					– fast load		
Error Output		Redirect	t row				
OLE DB Destina							
Input: Output fr	om OLE D	1			T		
Name		Connec	tion Manager		Data Acces	SS	Table
					Mode		
OLE Destination		Target			Table or vi	ew	DimProductSubcategory
Error Output		Redirect	t row				
Conditional Spli							
Input: Match ou	itput from						
Name			ged Columns				
Order	Output N	vame	Condition	/5	roductSubcategoryName		
1	SCD		-	-		_	•
			,)!=REPLA ,""))	ACEINU	LL(dim_Proc	ucts	ubcategoryName
			,)) (REPLAC	ENHILL	(ProductCate	ogory	(Kov. "")
			!=REPLACEN		•		*
			KEI LACEN	JELL	10000000	Juicg	or they if
Row Count Tran	sform						
Input: SCD outp		onditional	Split Transfo	rm			
Name					Variable		
RC Update					User::RowCountUpdates		
OLE DB Destina	tion						
Input: Output fr		date					
Name			n Manager	Data Mod	Access e	Tab	le
OLE Destination	tmp 1			Table	e or view –	tmp	scd_DimProductSubcatego
scd		J		fast l		ry	
Error Output	F	Redirect ro	W				
OLE DB Destina							
Input: Output from OLE Destination tmp scd							
input: Output fr	om OLE <u>D</u>	estin <u>ation</u>	tmp scd				

Name	Connection Manager	Data Access Mode	Table				
OLE Destination tmp	Target	Table or view	tmp_scd_DimProductSubcatego				
scd by Row			ry				
Error Output	Redirect row						
Union							
Input1: Output from OL	Input1: Output from OLE Destination tmp scd by Row						
Input2: Output from OL	LE Destination By Row						
Name	UNI Errors						
Row Count Transform							
Input: Output from Uni	on UNI Errors						
Name			Variable				
RC Error			User::RowCountErrors				
Flat File Destination							
Name	Connection Manager	Overwrite data i	n file?				
FF Errors	FF Errors	Yes					
DimProductSubcatego	DimProductSubcategor						
ry	у						

Execute SQL Task	Execute SQL Task						
Name	SQL SCD1 Updates	ResultSet	None				
Description	Update Type 1 colu	umns in dimensior	n 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	ResultSet	None				
	Rows Final						
Description	Count rows in staging table after extract						
ConnectionType	OLEDB	Connection	Target				
SQLSourceType	Direct	SQLStatement	select convert(bigint,				
	count(*)) from						
			DimProductSubcategory				

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

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	
SourceQueryWhe	String		
re			
TableName	String	DimProductSubcategory	

DimTerritory

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

Execute SQL Task								
Name	SQL Count Rows	ResultSet	SingleRow					
	Initial							
Description	Count rows in dimer	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	ResultSet	None				
	Staging Table						
Description	Truncate SCD staging	Truncate SCD staging table					
ConnectionType	OLEDB	Connection	Target				
SQLSourceType	Direct SQLStatement TRUNCATE TABLE						
			tmp_scd_DimTerritory				

Data Flow Task: DF	Data Flow Task: DFT Load Target								
OLE DB Source	OLE DB Source								
Name		Connection		Dat	Data Access Mode		Varia	ble	
OLE Source					GQL command from large		User	::Sour	rceQuery
Row Count Transfo	rm								
Name							Varia	ble	
RC Extract							User	::Row	CountExtracts
Derived Column Tra	ansfo	orm							
Name	DC /	Audit Key							
Derived Column	Der	ived Column	Expre	essio	ion Data Type		уре		Length
Name									
InsertAuditKey	<ad< th=""><th>d as new</th><th>@[Us</th><th>er::/</th><th colspan="2">AuditKey] four-byte sign</th><th>ned</th><th></th></ad<>	d as new	@[Us	er::/	AuditKey] four-byte sign		ned		
	colu	ımn>				intege	r		
Lookup Transform									
Cache mode		Full cache			Connection type			OLE DB connection	
								mar	nager
No matching rows?	No matching rows? Redirect to no match		h	Connection			Targ	get	
		output							
SQL Query		SELECT * FRO	FROM Inp		Input Columns (match		natch	Inpu	ıt: TerritoryID
		DimTerritory			on)			Lool	kup: TerritoryID
Lookup Columns		TerritoryNam	e		Output A	lias Colu	ımns	dim	_TerritoryName

		Country					dim_CountryName	
Dow Count T	'uo poto uno	GroupN	ame				dim_GroupName	
Row Count Transform Input: No match output from Conditional Split Transform								
Name					Variable			
RC Insert					User::RowCountInserts			
OLE DB Dest	ination							
Input: Output from RC Insert								
Name		Connec	tion Manage	er	Data Access Mod	le	Table	
OLE Destinat	ion	Target			Table or view – fa	ast	DimTerritory	
					load			
Error Out		Redirec	t row					
OLE DB Dest								
Input: Outpu	it from Ol						1 = 11	
Name			tion Manage	er	Data Access Mod	le	Table	
OLE Destinat	ion By	Target			Table or view		DimTerritory	
Row	1	D. div	.					
Error Out		Redirec	trow					
			n Transform					
Input: Match output from Lookup Transform Name CS Changed Columns								
Order	Output		Condition	15				
1	SCD	Ivaille		MI II I <i>(</i>	TerritoryName, ""	<u> </u>		
*	JCD		-		(dim_TerritoryNar		1	
					LL(CountryName,			
					(dim_CountryNam	-		
					LL(GroupName, ""			
					(dim_GroupName	•		
Row Count T	ransform				<u> </u>			
Input: SCD o	utput froi	m Condition	nal Split Trar	nsforr	n			
Name					Variable			
RC Update					User::RowCountl	Jpdates	3	
OLE DB Dest								
Input: Outpu	it from RO							
Name		Connectio	n	Data	Access Mode	Table		
		Manager						
OLE Destinat	ion tmp	Target			e or view – fast	tmp_s	scd_DimTerritory	
scd		Dadimit		load				
Error Out		Redirect ro	OW					
OLE DB Destination Input: Output from OLE Destination tmp scd								
Name Connection Data Access Mode Table								
Name		Manager Data Access Wode Table						
OLE Destinat	ion tmn	Target		Tahl	e or view	tmn	scd_DimTerritory	
scd by Row		iaiget			C DI VICVV	b_3	_Dimitoritiony	
Error Out	out	Redirect re	ow.			<u> </u>		
	Treatification							

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

Execute SQL Task							
Name	SQL SCD1 Updates	ResultSet	None				
Description	Update Type 1 colun	nns in dimension t	able				
ConnectionType	OLEDB	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	ResultSet	None				
	Rows Final						
Description	Count rows in stagin	g table after extra	ct				
ConnectionType	OLEDB	Connection	Target				
SQLSourceType	Direct SQLStatement select convert(bigint,						
			count(*)) from DimTerritory				

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

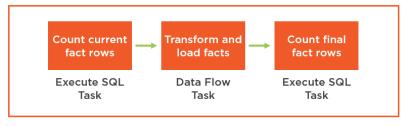
Variables

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	
SourceQueryWhe	String		
re			
TableName	String	DimTerritory	

Fact loads

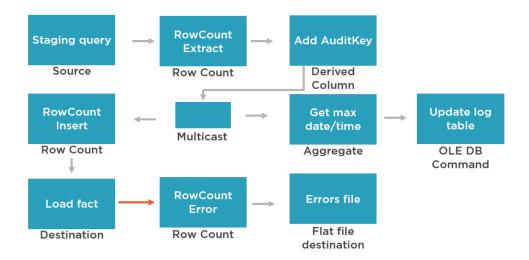
The sequence container for fact loads will conform to the structure shown in the diagram below:

- 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



Sequence Container

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	Туре	Flat File
File name	FactSales.txt		
Expressions	ConnectionString	@[\$Project::Erro	rPath] + "FactSales.txt"

Tasks

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

Data Flow Task: DFT	Load Target							
OLE DB Source								
Name	Connection		Data	Data Access Mode		Variabl	Variable	
	Manager							
OLE Source	Source		SQL	command	I from	User::S	ourceQuery	
			vari	able			·	
Row Count Transfor	m							
Name						Variabl	e	
RC Extract						User::R	owCountExtracts	
Derived Column Transform								
Name	DC Audit Key							
Derived Column	Derived Column	Expr	essio	n	Data T	уре	Length	
Name		-						
InsertAuditKey	<add as="" new<="" td=""><td>@[U</td><td>ser::A</td><td>uditKey]</td><td>four-by</td><td>te signed</td><td>t</td></add>	@[U	ser::A	uditKey]	four-by	te signed	t	
· · · · · · · · · · · · · · · · · · ·	column>				integer	_		
Multicast								
Row Count Transfor	m							
Input: Output from I	Multicast							
Name				Variable				
RC Insert				User::Ro	wCountl	nserts		
OLE DB Destination								
Input: Output from I	RC Insert							
Name	Connection N	/ lanag	er	r Data Access Mode			Table	
OLE Destination	Target	<u>~</u>		Table or view – fa		ast	FactSales	
				load				
Error Output	Redirect row							
OLE DB Destination								
Input: Output from (OLE Destination							
Name	Connection N	⁄lanag	er	Data Acc	ess Mod	de	Table	
OLE Destination By	Target			Table or	view		FactSales	
Row								
Error Output	Redirect row							
Row Count Transfor								
Input: Output from 0	OLE Destination By	Row						
Name				Va		-	Variable	
RC Error						User::RowCountErrors		
Flat File Destination								
Input: Output from RC Error								
Name	Connection	nnection Overwrite data in file?						
	Manager							
FF Errors FactSales Yes								
Aggregate Transforn								
Input: Output from I								
Name	AGG Max Date							
Input Column	Output Alias		<u> </u>	ration				
AuditKey	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	None			
Description	Count rows in staging table after extract				
ConnectionType	OLEDB Connection Target				
SQLSourceType	Direct SQLStatement select convert(bigint,				
			count(*)) from FactSales		

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
SourceQueryWhe	String	300.5pecialoneno
re	Julig	
<u> </u>	Ctring	FactSales
TableName	String	ractodies

FactSalesTarget

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

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 Set					
Result Name	Variable Name					
0	User::RowCountInitial					

Data Flow Task: DFT Load Target								
OLE DB Source								
Name		Connection Da Manager		Data	Data Access Mode		Variable	
OLE Source	S	Source SQ		SQL varia	command able	l from	User::Sou	rceQuery
Row Count Transform								
Name							Variable	
RC Extract							User::Row	/CountExtracts
Derived Column Tra	ansfo	rm						
Name	DC A	Audit Key						
Derived Column Name	Deri	ived Column	Expre	essior	1	Data Ty	ype	Length
InsertAuditKey		d as new @[User::		ser::A	uditKey]	four-byte signed integer		
Multicast								
Row Count Transfo	rm							
Input: Output from	Mult	ticast						
Name					Variable			
RC Insert					User::Ro	wCountl	nserts	
OLE DB Destination								
Input: Output from	RC Ir	nsert						
Name		Connection N	/lanage	er	Data Access Mode		le Ta	ble
OLE Destination		Target	Target		Table or view – fast load		ast Fa	ctSalesTarget
Error Output		Redirect row						
OLE DB Destination Input: Output from		Destination						
Name					Data Access Mode		le Ta	ble
OLE Destination By Row		Target			Table or view		Fa	ctSalesTarget

Error Output	Redirect row				
Row Count Transform					
Input: Output from OLE Destination By Row					
Name	lame Variable				
RC Error			User::RowCountErrors		
Flat File Destination					
Input: Output from RO	Error				
Name	Connection	Overwrite data in file?	•		
	Manager				
FF Errors	FF Errors	Yes			
FactSalesTarget	FactSalesTarget				
Aggregate Transform					
Input: Output from M	ulticast				
Name	AGG Max Date				
Input Column	Output Alias	Operation			
AuditKey	AuditKey	Group by			
ModifiedDate	ModifiedDate	Maximum			
ODC Update Max Date	e				
OleDbConnection	DleDbConnection Target				
SqlCommand	Command				
Input Column	Destination Column				
ModifiedDate	Param_0				
AuditKey	Param_1				

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

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

Variables

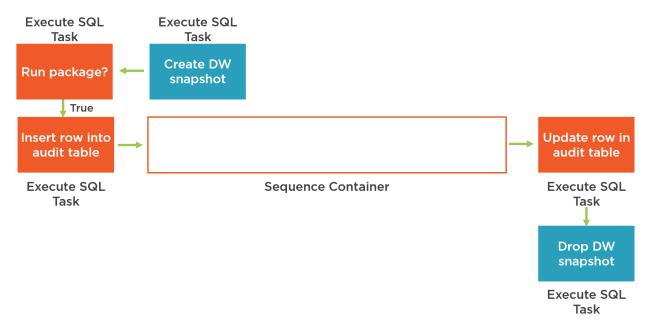
Name	Data Type	Value	Expression
SourceQuery	String	select coalesce(DateKey, -1) as DateKey, coalesce(EmployeeKey, -1) as EmployeeKey, coalesce(ProductCategoryKey, -1) as ProductCategoryKey, SalesTarget as TargetSalesAmount from SalesTargets st left outer join DimDate d on d.FullDate = QuotaDate left outer join DimEmployee e on e.EmployeeID = st.EmployeeID left outer join DimProductCategory pc on pc.ProductCategoryName = st.CategoryName	
SourceQueryWhe re	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	ResultSet	None		
	Snapshot				
Description	Create a snapshot of	f the data wareho	use before running jobs		
ConnectionType	OLEDB	Connection	Target		
SQLSourceType	Direct	SQLStatement	CREATE DATABASE		
			AWDW_dbssetl ON (NAME =		
			AWDW, FILENAME =		
			'C:\Program Files\Microsoft		
	SQL		SQL		
	Server\MSSQL14.MS		Server\MSSQL14.MSSQLServe		
			r\MSSQL\Data\AWDW_etl.ss'		
) AS SNAPSHOT OF AWDW		
Expression					
SQLStatementSource	"CREATE DATABASE" + @[\$Project::DWDBName] + "_dbssetl ON (
	NAME = " + @[\$Project::DWDBName] + ", FILENAME = "" +				
	@[\$Project::SQLPath] + @[\$Project::DWDBName] + "_etl.ss' ') AS				
	SNAPSHOT OF " + @[\$Project::DWDBName]				

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

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

Sequence Container Contents

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

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	Extract Human	Child package	ParentAuditKey	
Resources	Resources	Parent package	User::AuditKey	
Department	Department.dt			
	SX			
EP Extract Human	Extract Human	Child package	ParentAuditKey	
Resources Employee	Resources			
, ,	Employee.dtsx	Parent package	User::AuditKey	
EP Extract Human	Extract Human	Child package	ParentAuditKey	
Resources Employee	Resources			
Department History	Employee			
	Department	Parent package	User::AuditKey	
	History.dtsx			

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

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

Transform-load jobs

Sequence Container Contents

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

Dimension load jobs

Sequence Container Contents

Execute Package	Package Name	Parameter bindings		Precedence
Task				Constraints
EP Load	Load	Child package	ParentAuditKey	
DimProductCategory	DimProductCat egory.dtsx	Parent package	User::AuditKey	
EP Load	Load	Child package	ParentAuditKey	From EP
DimProductSubcateg	DimProductSu			DimProductCategory
ory	bcategory.dtsx	Parent package	User::AuditKey	Constraint
				Success
EP Load DimProduct	Load	Child package	ParentAuditKey	From EP
	DimProduct.dt			DimProductSubcatego
	SX	Parent package	User::AuditKey	ry
		Farent package	OseiAdditivey	Constraint
				Success

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

Fact load jobs

Sequence Container Contents

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