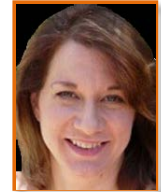


Data Warehousing Packages, Part II

Designing Packages for Extract Transform & Load Projects

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pluralsight 
hardcore developer training

Overview

- **Slowly Changing Dimensions**
- **Load Patterns**
- **Analysis Services Objects**

Slowly Changing Dimensions

■ Type 0



Before Load

SalesTerritoryKey	1
SalesTerritoryAlternateKey	1
SalesTerritoryRegion	Northwest
SalesTerritoryCountry	United States
SalesTerritoryGroup	North America

After Load

SalesTerritoryKey	1
SalesTerritoryAlternateKey	1
SalesTerritoryRegion	Northwest
SalesTerritoryCountry	United States
SalesTerritoryGroup	North America

■ Type 1

ProductCategoryKey	1
ProductCategoryAlternateKey	1
EnglishProductCategoryName	Bikes

ProductCategoryKey	1
ProductCategoryAlternateKey	1
EnglishProductCategoryName	Bicycles

■ Type 2

ProductKey	214
ProductAlternateKey	HL-U509-R
EnglishProductName	Sport-100 Helmet, Red
...	...
ListPrice	34.99
StartDate	2007-07-01
EndDate	

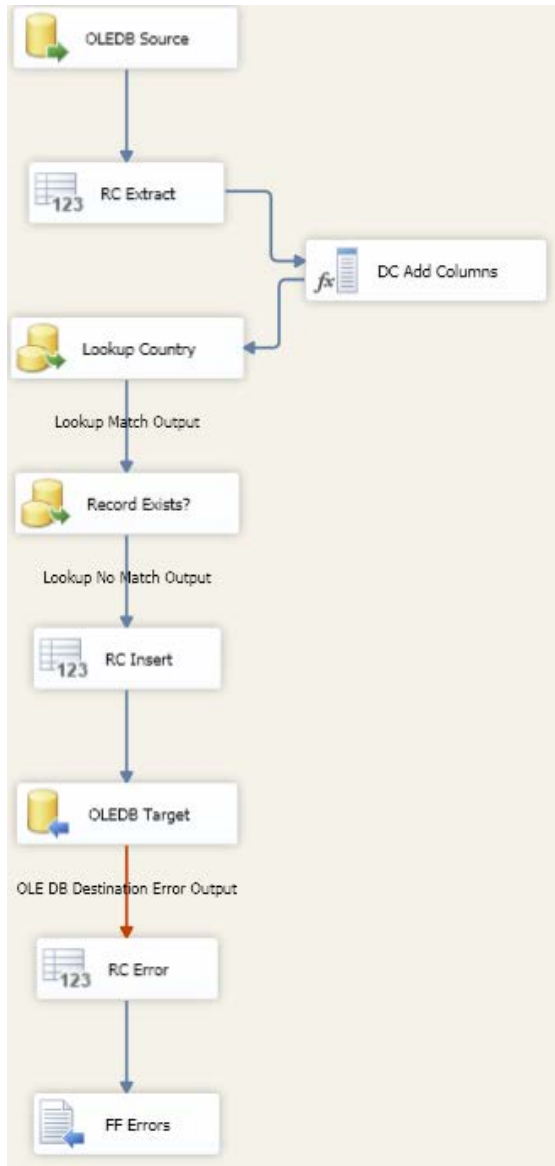
Expire old record

ProductKey	214
ProductAlternateKey	HL-U509-R
EnglishProductName	Sport-100 Helmet, Red
...	...
ListPrice	34.99
StartDate	2007-07-01
EndDate	2013-07-01

Add new record

ProductKey	607
ProductAlternateKey	HL-U509-R
EnglishProductName	Sport-100 Helmet, Red
...	...
ListPrice	34.99
StartDate	2013-07-01
EndDate	

Dimension Load Pattern: Type 0



Connect to staging table

Store row count from staging in variable

Add AuditKey into pipeline

Transformation – varies by dimension

Test for dimension record existence with Lookup

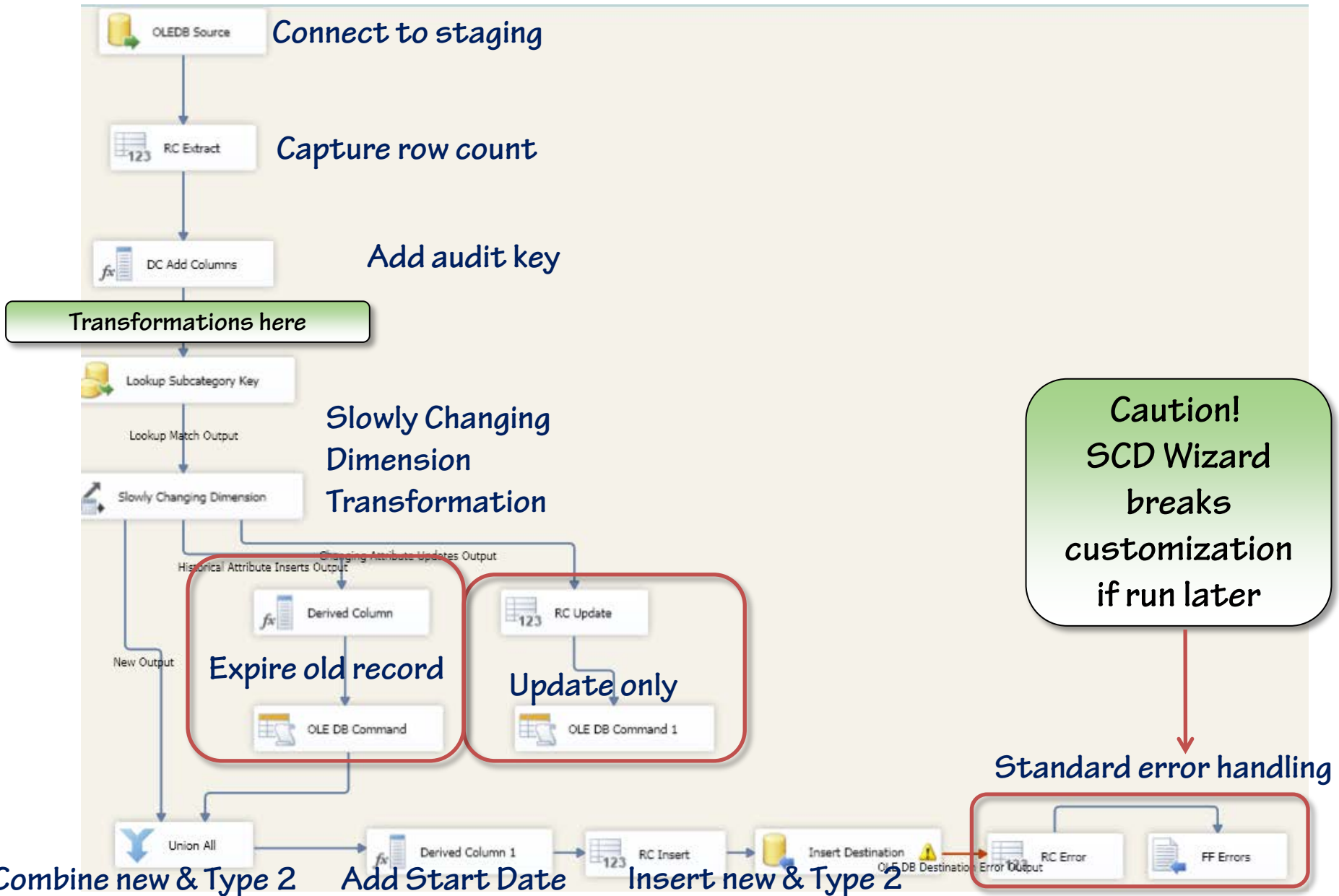
Store row count for records to insert in variable

Load record into dimension table

Store error row count in variable

Save error records

Dimension Load Pattern: Type 1 or Type 2



Other Slowly Changing Dimension Patterns

- **Merge**

- T-SQL Merge Statement BOL <http://tinyurl.com/c84trp>
- Example code <http://tinyurl.com/kt7f2cr>

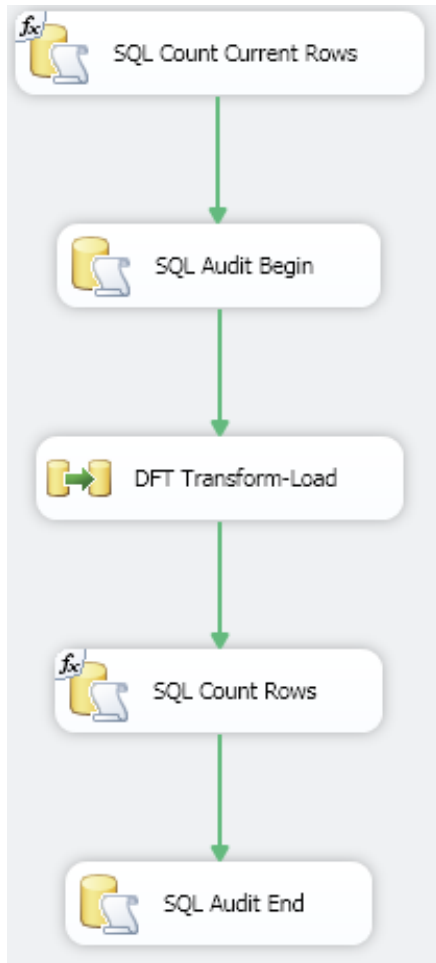
- **Change Data Capture (CD)**

- SQL Server 2008: Improving Incremental Loads with CDC <http://tinyurl.com/l7rb4cu>
- CDC in SSIS for SQL Server 2012 <http://tinyurl.com/7umlerf>

- **Custom Components**

- SSIS SCD Component <http://tinyurl.com/ou5ne79>
- CozyRoc's Table Difference <http://tinyurl.com/n48rtot>

Dimension Load Pattern



Count records in dimension table

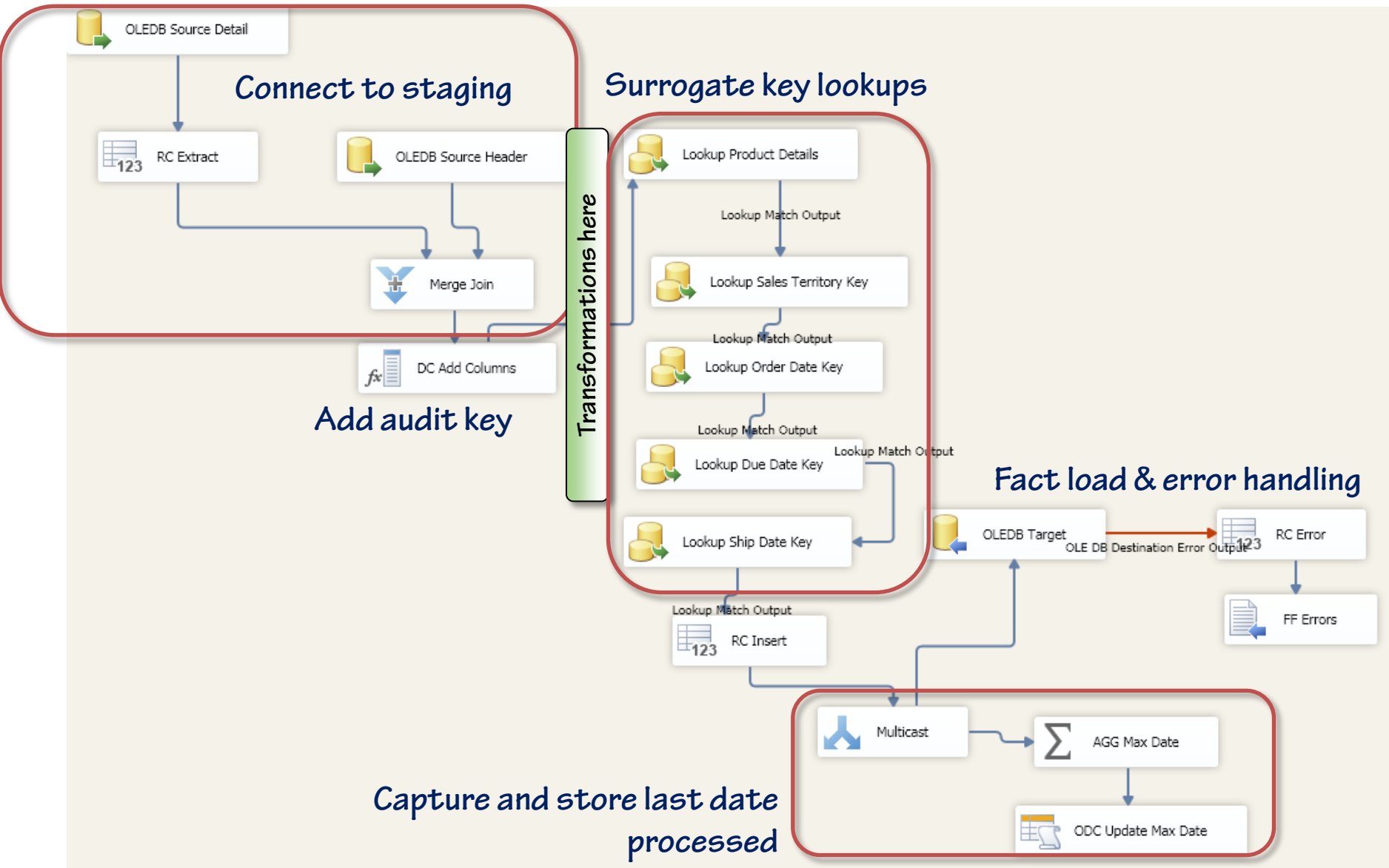
Add record to audit table

Extract data from staging and load into dimension table

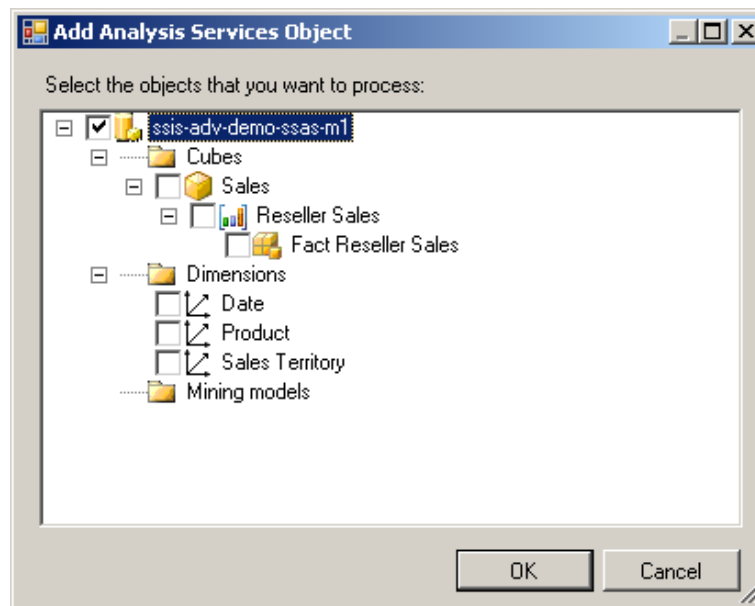
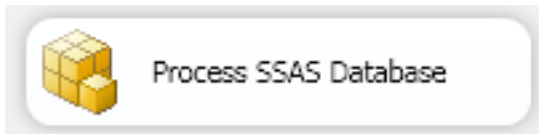
Count records in dimension table

Update audit record

Fact Table Load Pattern



Analysis Services Objects



Object Name	Type	Process Options	Settings
 ssis-adv-demo-ssas-m1	Database	Process Full	

Summary

- **Slowly Changing Dimensions**
 - Type 0 – no change, Type 1 – update, Type 2 – expire old and add new
- **Load Patterns**
 - Dimension loads, fact loads
- **Analysis Services Objects**
 - Analysis Services Processing Task, object selection, processing options

Resources

- **Microsoft Data Warehouse Toolkit, Second Edition**
 - <http://tinyurl.com/qf84vl7>
- **Kimball Group**
 - <http://kimballgroup.com>
- **Using Star Join and Few-Outer-Row Optimizations to Improve Data Warehousing Queries**
 - <http://tinyurl.com/nyvww6j>
- **Integration Services Error and Message Reference**
 - <http://tinyurl.com/mo796jp>