Boost Your Productivity Through ETL Automation Using Biml





Nice to meet you.

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What is Bim!?

- Business Intelligence Markup Language
- XML Based
- To develop business Intelligence Objects

Biml Express: Databases, Schemas, Tables, Views, Columns, SSIS Packages

Biml Studio : SSAS Cubes, Azure Data Factory

- Programming Language for creating data warehouse and other data solutions
- Easy and free way to automate the creation of SSIS

Creator of Biml

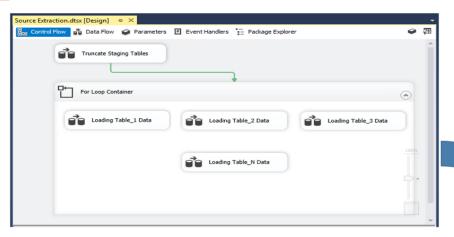
- Scott Currie is the founder and CEO of Varigence, Inc.
- 2008 : Scott created Biml
- 2009 : Biml was released for the first time by Varigence
- Worked for seven years at Microsoft on several projects



Why Use Biml?



Data Source





Staging



When to Use?

- Generating SSIS packages
- For large projects with common patterns and repetitions

When not to Use?

- Packages without common pattern
- Not a tool for automating deployment processes (Biml Studio supports automating deployment)
- Not a pre-defined Data Warehouse framework or ETL framework
- Cannot be part of continues integration

Biml Tools?

Biml Express

Plugin for Visual Studio

Code editor with syntax highlighting, Biml IntelliSense and error handling

Reverse Engineer from SSIS to BIML (Available from 2018)

https://varigence.com/bimlexpress

Biml Studio

Full-stack automation and transformers

\$3999/year (Support and upgrades included)

https://varigence.com/bimlstudio

How does Biml work?



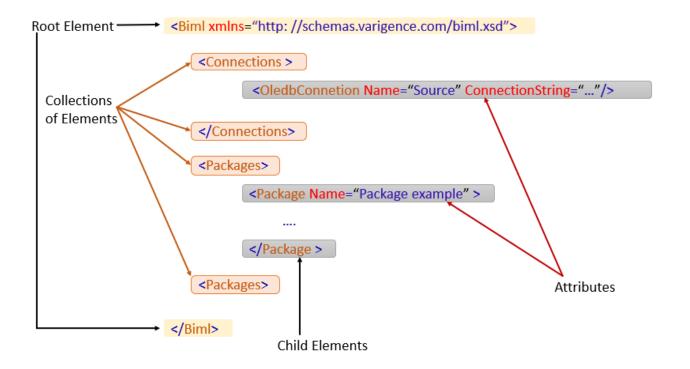


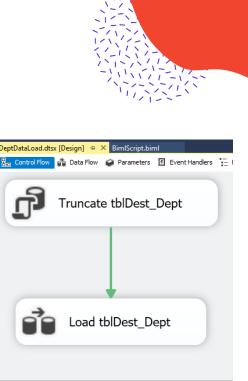






Biml Syntax





Connection Managers

SSISLoad_Dest SSISLoad_Source



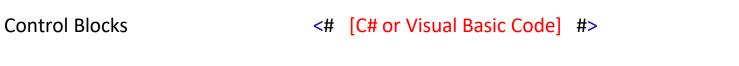
What is BimlScript?

Scripting Language that extends BIML with C# or VB code blocks

Can be used for:

Importing database structure and metadata
Looping over tables and columns
Replacing static values by expressions
Defining variables which can be re-used in the code
Generating, controlling and manipulating BIML code

BimIScript Code Blocks



Text Blocks <#= [C# or Visual Basic Code] #>

Directives <#@ DirectiveName [AttributeName="AttributeValue"] ... #>

BimIScript Syntax

Directive

```
<#@ template language = " C# " hostspecific = "true" #>
         <#@ import namespace=" Varigence.Biml.CoreLowerrer.SchemaManagemant" #>
         <# var connection = SchemaManager.CreateConnectionNode(...); #>
         <# var metadata = conncetion.GetDatabaseSchema(); #>
         <Biml xmlns="http://schemas.varigence.com/biml.xsd">
             <Packages>
                    <# foreach (var table in metadata.TableNodes) > { # >
                            <Package Name = "Load <#=table.Name#> "></Package>
                    <# } # >
Control Blocks
                                                                   SSIS Packages
                                                   Text Block
                                                                      Load_Employee.dtsx
               </Packages>
                                                                      Load Person.dtsx
                                                                      Load Product.dtsx
             </Biml>

□ (...).dtsx
```

Function: GetDatabaseSchema()

Ways to Import Metadata

GetDatabaseSchema() -

Import all schemas and tables.

GetDatabaseSchema(ImportOptions) -

Import all schemas, tables and views. Exclude objects by ImportOptions.

${\tt GetDatabaseSchema(IncludedSchemas,IncludedTables,ImportOptions)} - \\$

Import specific schemas, tables and/or views. Exclude objects by ImportOptions.

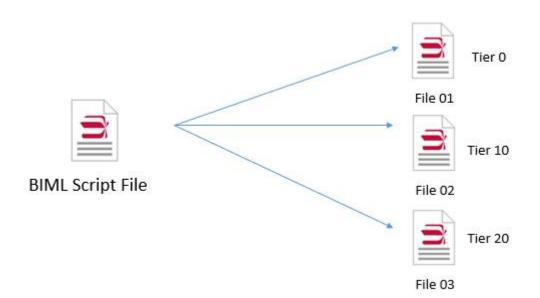
Create Tiered Files

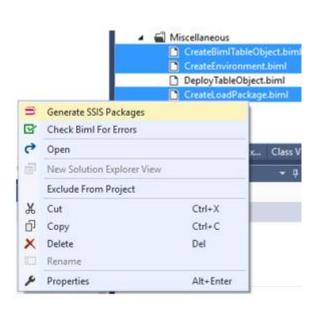
Defines which objects are available to the subsequent tiers.

Control compile order

Syntax : <@ template tier = "1" #>

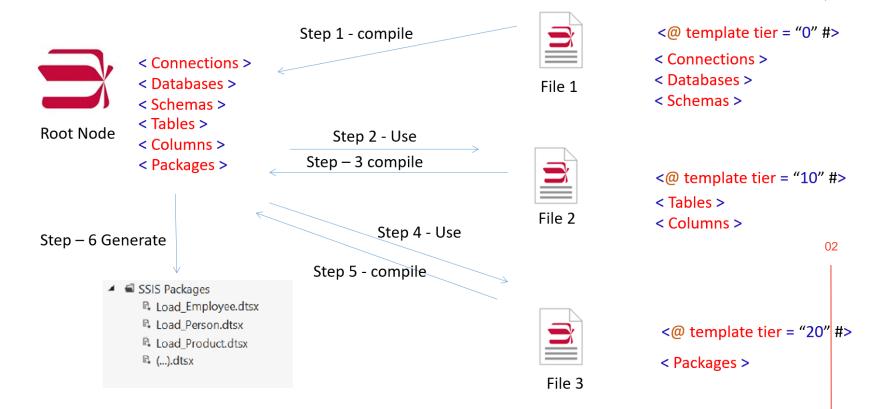
Multiple Biml files can be compiled together





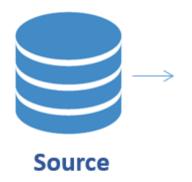
How RootNode gets meta data

Higher tiers can use objects in RootNode from Lower tiers





Overview



In-memory representation of source objects

Generate DDL of target tables

Generate basic staging load package



Staging

06

Advantages



Create many SSIS packages from only one Biml file



Reusability

Code can be re-used on other platforms and projects



Flexibility

easy to adjust and expand code for many SSIS packages at once

Important Links

https://www.varigence.com/

http://bimlscript.com/

https://www.cathrinewilhelmsen.net/biml/

http://www.sqlservercentral.com/articles/BIML/

Thank Youl