Building Your ETL Framework with Biml

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Begin at the Beginning

- Slides are on my blog
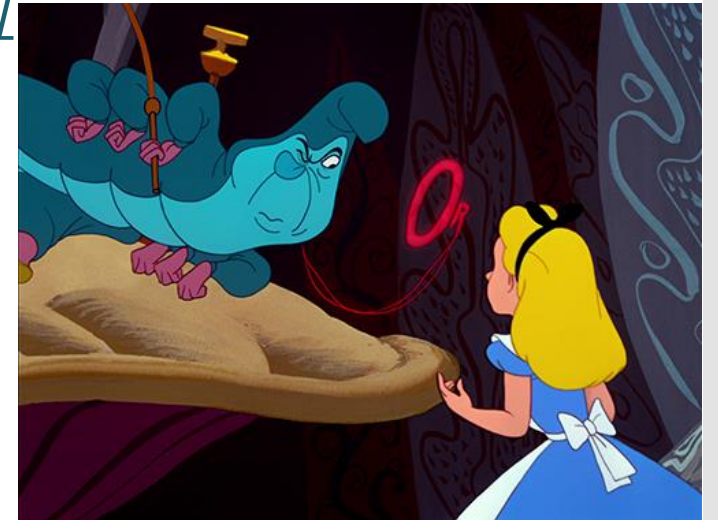- Feel free to share questions and comments throughout the session

Who Are You?

Meagan Longoria

Business Intelligence Consultant at BlueGranite

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Biml

What on Earth is Biml?

- **Business Intelligence Markup Language**

- Domain specific language for describing business intelligence objects
- XML that you can write to:
  - Build packages faster
  - Ensure consistency

- Biml describes
  - SSIS packages, databases, schemas, tables
  - SSAS cubes, facts, dimensions (Mist only)

- Free – comes with BIDS Helper
- BimlExpress – New as of April 2016
- Also available in Mist/BimlStudio and BimlOnline.com

BimlScript

- Allows you to extend Biml with C# or VB.NET

- Classic ASP:HTML :: BimlScript:Biml

- You can use BimlScript to:
  - Replace static values with expressions/variables
  - Include text from another Biml file or text file
  - Import database table schemas (quickly create/update a staging database, make a dev environment look like prod)
  - Turn tedious, repetitive work into reusable scripts

- Learn Biml, then automate it with BimlScript

BimlScript

How It Works

Biml/BimlScript → Biml Compiler (BimlExpress/ BIDSHelper/ MIST) → DTSX packages

BIDS Helper

- https://bidshelper.codeplex.com/
- Choose the correct install for your version of SSDT/SQL Server
- Current version is 1.7
  - Now properly supports SSIS 2014/Visual Studio 2013
  - Several Biml updates, some breaking changes

BIDS Helper

BimlExpress

- https://www.varigence.com/BimlExpress
- Free
- Compatible with SQL Server 2005 – 2016
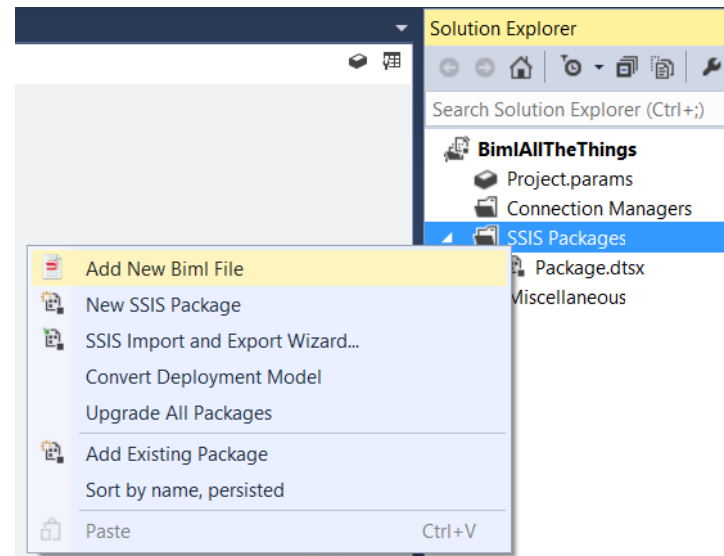- Faster release cycle than BIDS Helper

Biml Studio / Mist

- IDE for authoring Biml code

- Build via GUI or type code

- Includes text editors with syntax highlighting, intellisense and quick-info displays, source control, and multi-monitor support

- **Import existing databases and SSIS packages**

- Free 14-day trial: reverse engineer 5 packages

- Perpetual or subscription licenses available

Mist™

Biml is Awesome

- All generated artifacts appear to be hand built

- Packages can be deployed and run on unmodified SQL Server (no need to install anything on the server running the packages)

- Free with BIDS Helper, BimlExpress, and BimlOnline

- Benefits:
  - Reduce amount of time it takes to develop an SSIS project
  - Help you recover from drag-and-drop-itis
  - Stop solving the same problems over and over and move on to something new and interesting
  - Employ consistent design patterns
  - Quickly implement an execution framework

Biml Basics


```xml
<Biml xmlns="http://schemas.varigence.com/biml.xsd">
    <Packages>
        <Package Name="MyBlankPackage">

        </Package>
    </Packages>
</Biml>
```
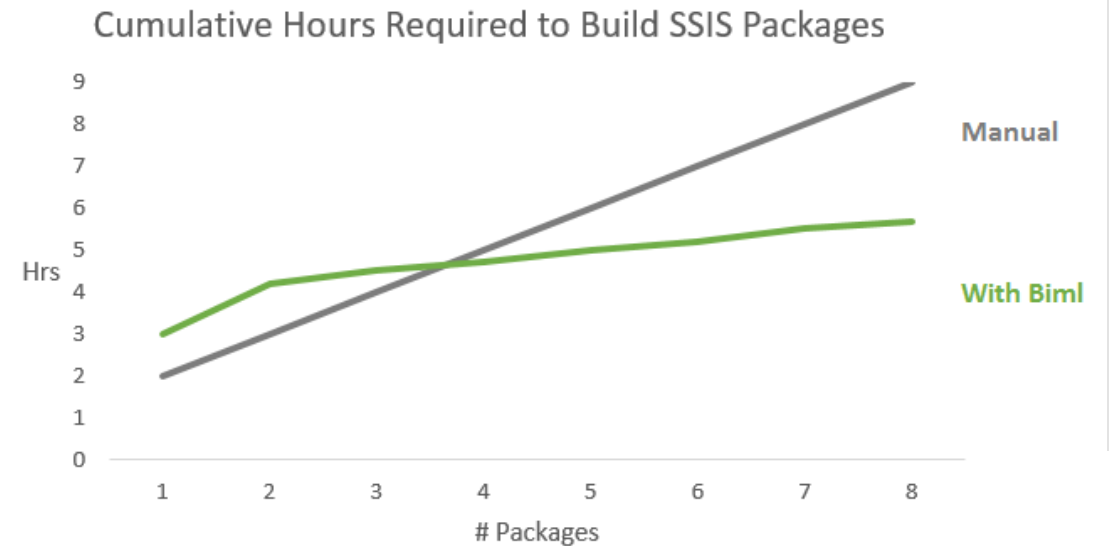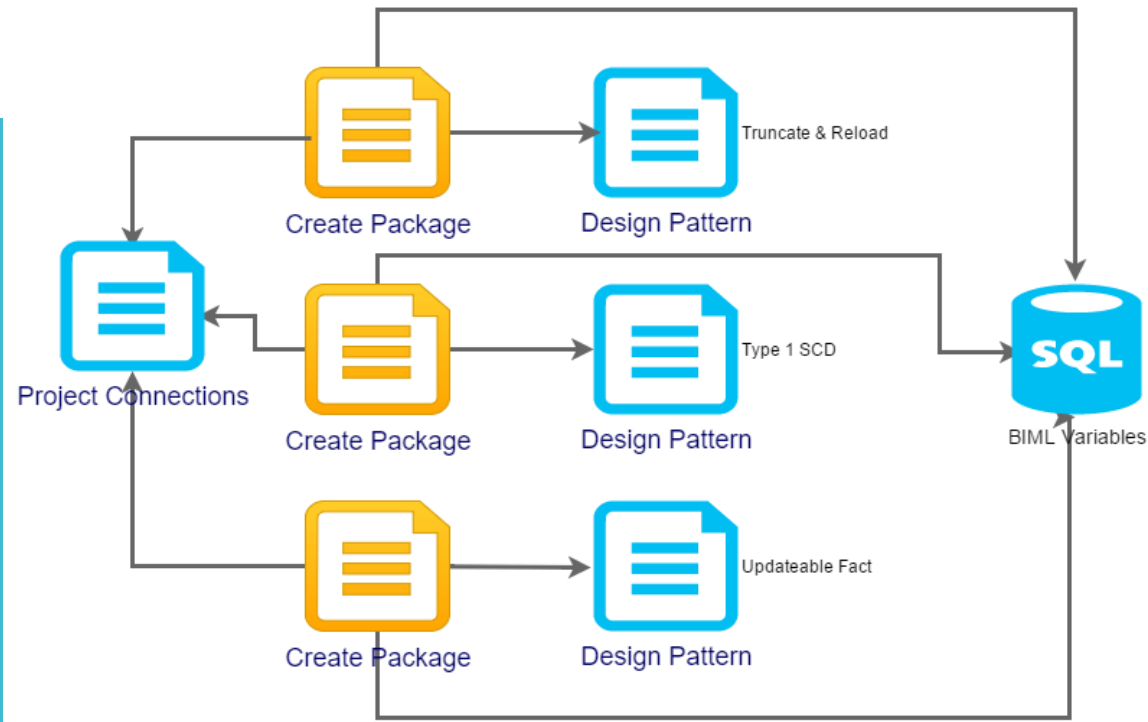
Demo

Boost It With BimlScript

- Include
- CallBimlScript

Demo

The Magic of BimlScript

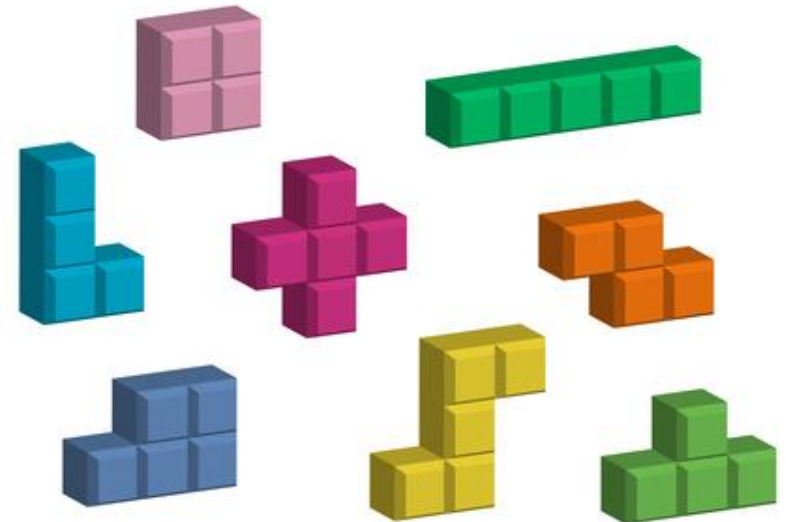Cumulative Hours Required to Build SSIS Packages

Frameworks & Templates

Get a Framework!

- Frameworks facilitate quicker start and completion of projects

- Reusable design patterns facilitate better SSIS testing

- Frameworks enable using less senior resources while maintaining quality

- Common design patterns make life easier for DBAs and support engineers

- Design patterns help junior devs understand why/how we need to solve problems rather than focusing on the mechanics of learning different frameworks/design patterns to be able to work with different architects.

Example SSIS Framework

- 4 schemas: ETL, Staging, Transform, DM (dimensional model)
- ETL schema contains two tables:
  - PackageControl: Package execution details for easy querying and restartability
  - PackageDependency: Lists packages in groups and orders them for execution
- Staging tables include all columns from source table for thin tables, select columns for wide tables, + audit fields
- Views used to transform data and do lookups for dims and facts
- Master packages for staging, dims, facts use package dependency for order and concurrency and package control for restartability
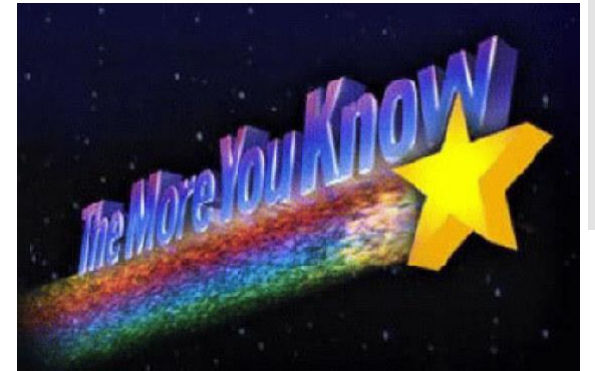
Demo

Biml + Frameworks & Patterns = Happy SSIS

- Don't make decisions you've already made before
- Don't leave it to chance that a developer has manually changed all settings or mapped all fields
- Make quick changes to multiple similar packages all at once
- Quickly solve known problems with existing solutions and focus on the fun, new challenges
- Spend your extra time actually testing your SSIS packages

Resources for Further Learning

- Varigence Biml forums: https://www.varigence.com/Forums?forumName=Biml

- BimlScript.com http://bimlscript.com/Develop/Resources

- Stairway to Biml: http://www.sqlservercentral.com/articles/BIML/100552/

- BIDS Helper documentation: https://bidshelper.codeplex.com/documentation

- http://geekswithblogs.net/darrengosbell/archive/2015/04/24/bids-helper-1.7.0-released.aspx

- http://www.amazon.com/Server-Integration-Services-Design-Patterns/dp/1484200837

- https://varigence.com/Documentation/Samples/Biml/

- https://datasavvy.wordpress.com/category/biml/

- http://billfellows.blogspot.com/

- http://www.cathrinewilhelmsen.net/tag/biml/

Biml Tools

- BIDSHelper - http://bidshelper.codeplex.com/
- BimlExpress – https://www.varigence.com/BimlExpress
- BimlOnline - http://bimlonline.com/
- BimlStudio (Mist) - https://varigence.com/Mist
- BimlFlex and Vivid – Coming Soon!

Final Questions and Comments

Feel free to contact me with questions or feedback.

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