BEN WEISSMAN

The SSIS Package that tunes itself

Who am I?

Ben Weissman

Please Talk Data To Me

SOLISYON

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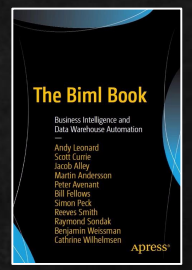

BimlHero CERTIFIED EXPERT

Microsoft CERTIFIED
Solutions Associate
Machine Learning

Microsoft CERTIFIED
Solutions Expert
Data Management and Analytics

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I ♥ DATA

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Big Data
Data Science
Artificial Intelligence

MICROSOFT PROFESSIONAL PROGRAM

1. A SHORT INTRODUCTION TO BIML

THE 3D PRINTER FOR SSIS AND MORE.

What is Biml?

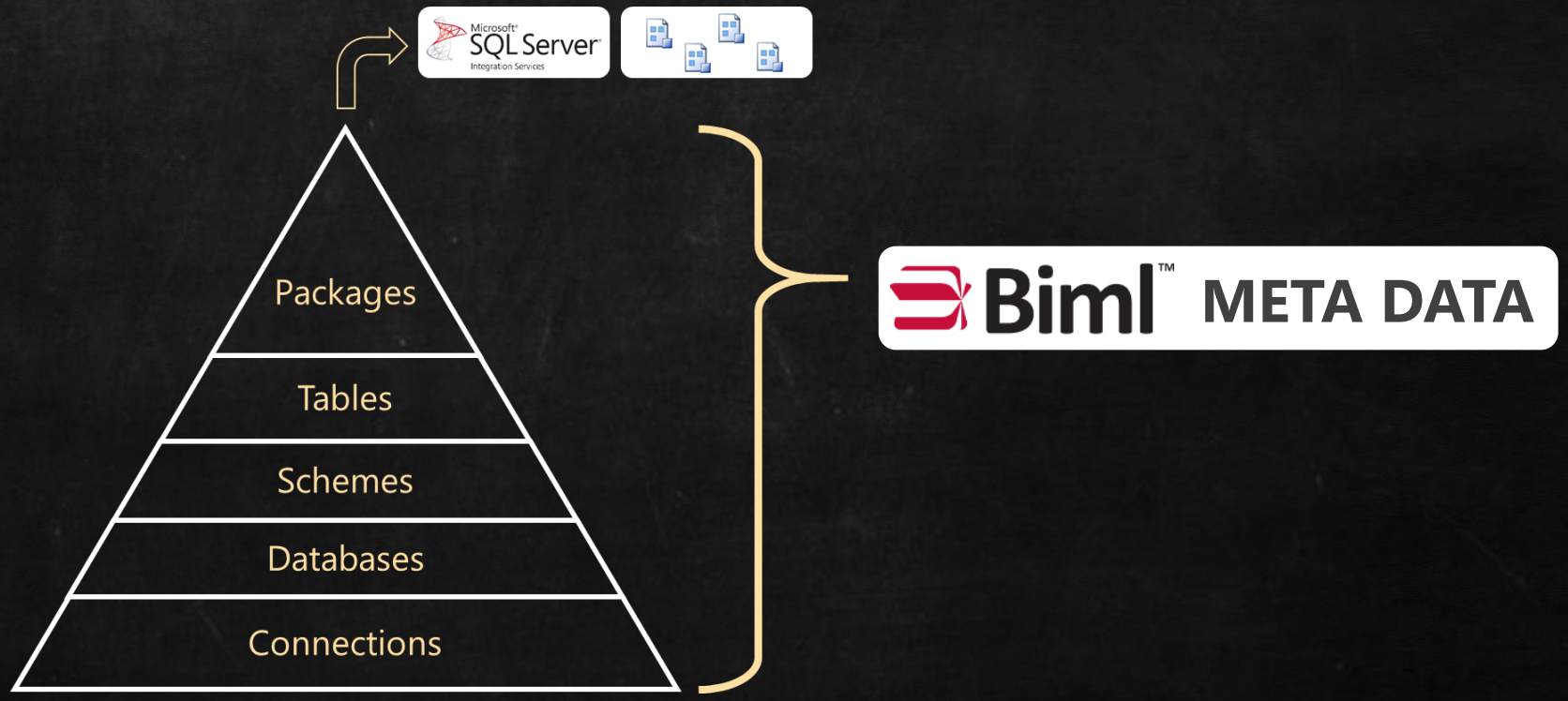
- Biml is the Business Intelligence Markup Language
- Developed by Varigence
- This is Biml:

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

- Enhanced by APIs and BimlScript, it becomes very powerful
- Can be used for T-SQL, SSIS and SSAS

Biml Frontends

Basic Concept of Biml



How does it work?

Biml Code

XML, BimlScript, C#, VB
…

Biml Engine

Result

SQL Server Tables,
DTSX Packages etc.

But what does that mean?

- Care less about compatibility between different SQL Server Versions
- Increase your productivity by decreasing the time it takes to build stupid data load packages… and to handle changes in meta data
- In my opinion: Biggest advantage comes with standardization so building a staging area will see the highest improvement rates – still, there are 100s of other use cases

DEMO

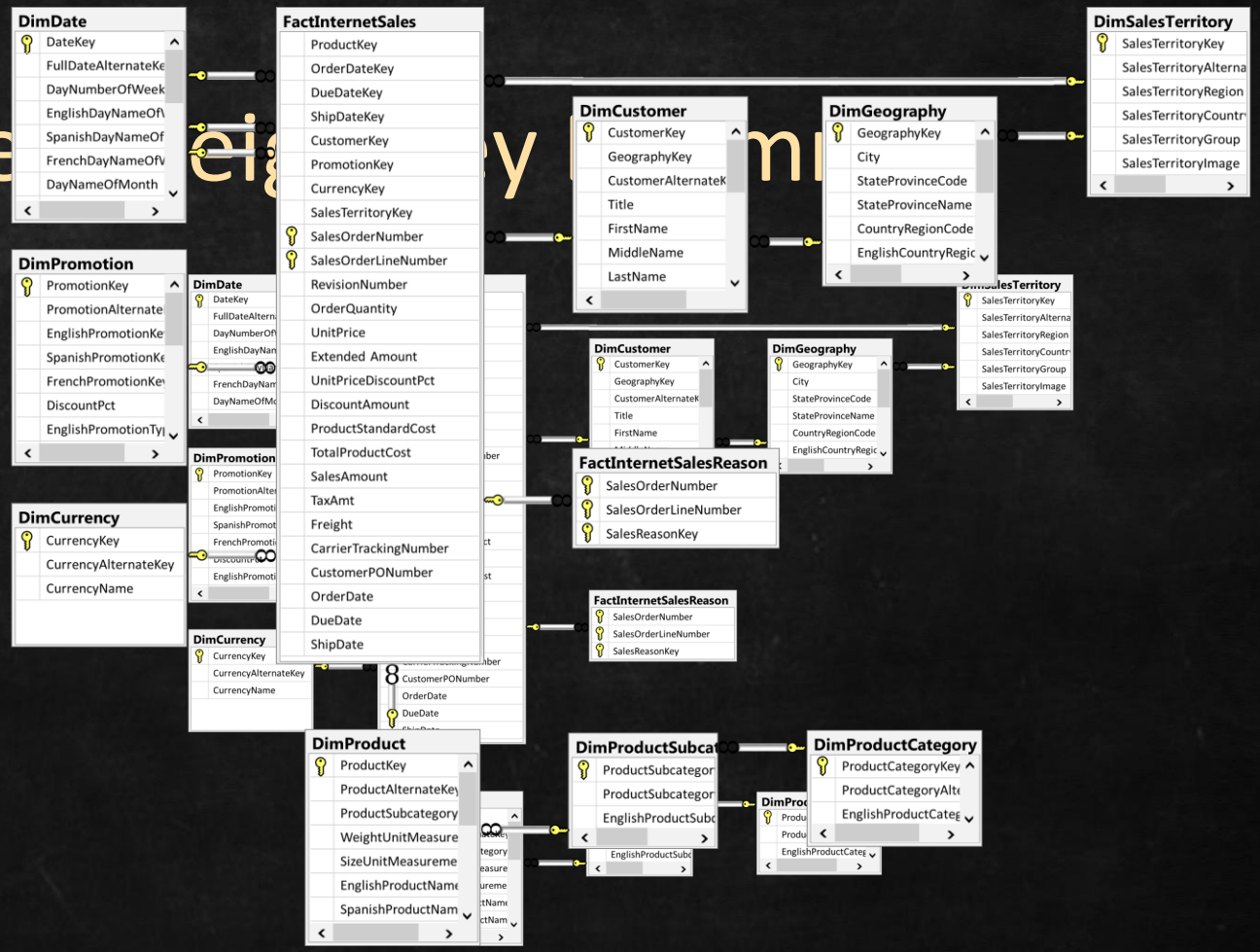
AN INTRODUCTION TO BIML
THE 3D PRINTER FOR SSIS AND MORE.

The Business Intelligence Markup Language

- Basic empty packages
- Automating empty packages with BimlScript
- Automating staging patterns

2. TOPOLOGY SORT

The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CustomerKey
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CurrencyKey
SalesTerritoryKey
SalesOrderNumber
SalesOrderLineNumber
RevisionNumber
OrderQuantity
UnitPrice
Extended Amount
UnitPriceDiscountPct
DiscountAmount
ProductStandardCost
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SalesReasonKey
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DimProductSubcat
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Topology Sort

- Your tables have foreign key constraints
- There may be more tables required over time or tables becoming obsolete
- Therefore, we need to maintain a certain orchestration of our dataflows in SSIS, starting with tables that do not have a foreign key constraint, followed by the descendants

Topology Sort

- Run through a list of all tables
- Mark each table as „visited“ and add them to a list
- Check for any tables pointing to the table that has not been „visited“ yet and add them behind this table so they get loaded afterwards

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TOPOLOGY SORT

Linear

Does that work in parallel as well?!

- Load all tables without any dependencies and mark them as loaded
- Load all immediate decendants
- Run all remaining tables in groups until they are all done

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TOPOLOGY SORT

Parallel

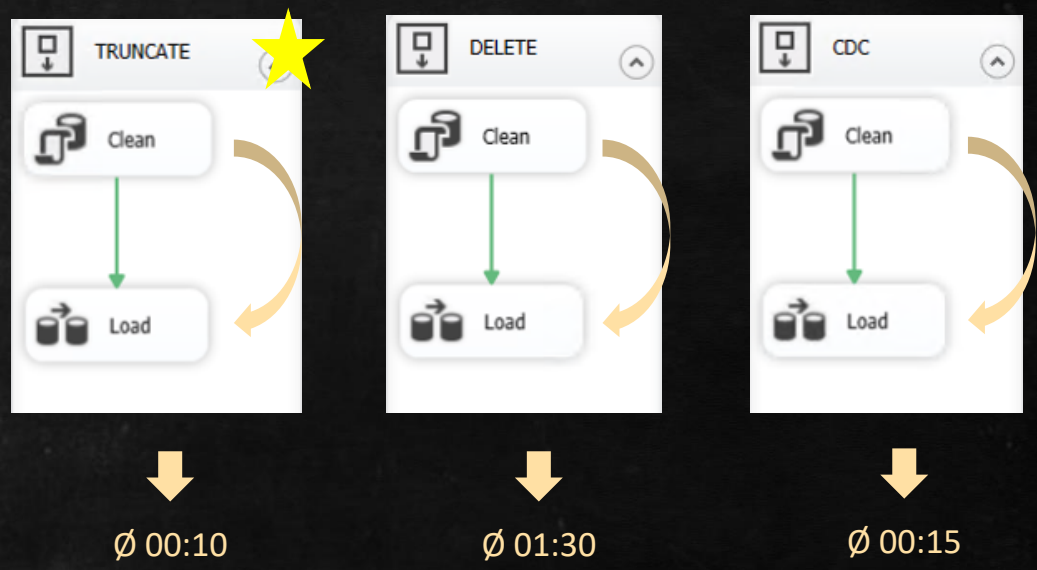
3. PATTERN EVALUATION

Pattern Evaluation

- Most tables can be loaded using different patterns (DELETE, TRUNCATE, CDC etc.) and/or connectors
- This patterns will usually show different performance results
- Their performance and therefore the “best pattern” may change over time
- We want to identify the best performing pattern and use it in our regular loads

Pattern Evaluation

- Execute each pattern n times
- Get the average execution time
- Mark the „best“ pattern



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PATTERN EVALUATION

4. PERFECT CURRENCY

Perfect Concurrency

- My Source and/or Target only allow a certain (reasonable) number of connections at a time
- I want all my dataflows to complete in total as fast as possible
- MaxConcurrent will not necessarily bring them in a good order
- I want small Dataflows to run in linear groups while larger tasks should run individually in parallel

Perfect Concurrency

- Define the number of
  which results in SSIS c
- Get the average execu ataflow,
  ordered by time desc
- Put each table in the „sm lles container at
  that time and recalculate t e co tainer sizes
- This results in a more or less equ
  distribution of tables along the cont ers

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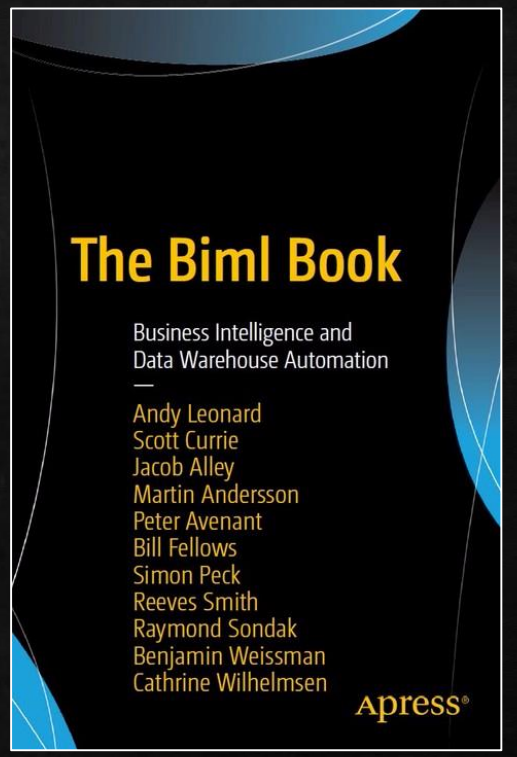
PERFECT CURRENCY

Want to learn more about Biml?

- http://biml.blog/
- http://www.bimlscript.com/
- http://www.cathrinewilhelmsen.net/biml/



QUESTIONS?

BEN WEISSMAN

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If not now, feel free to reach out anytime!

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http://biml.blog/

FEEDBACK FORMS

PLEASE FILL OUT AND PASS TO YOUR ROOM
HELPER BEFORE YOU LEAVE THE SESSION

FRIDAY NIGHT, SQLBITS

PROHIBITION PARTY

THANK YOU!

BEN WEISSMAN

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