



Microsoft

Intelligent Cloud Conference

Copenhagen May 29-30



End-to-end Business Intelligence solution in Azure

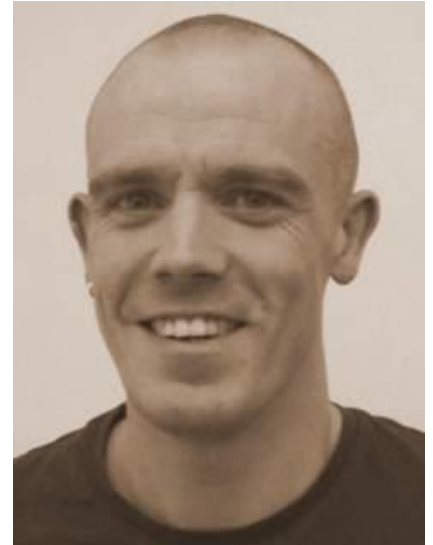
Customer story: Arlagården Plus



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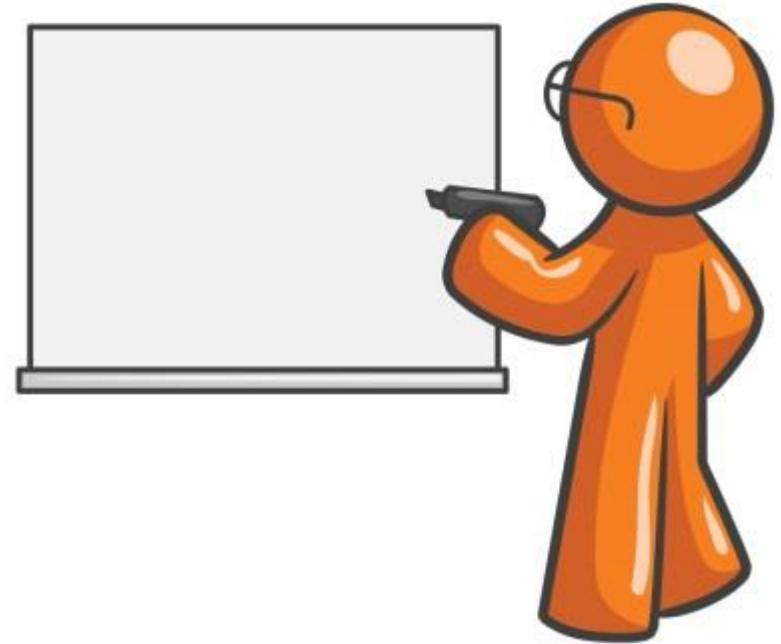
Just Thorning Blindbæk

- ▶ Consultant in justB
- ▶ Trainer at Orange Man
- ▶ Founder of MsBIP Denmark
- ▶ 11 years of experience with Microsoft BI
- ▶ Strong focus on the front-end tools
 - Analysis Services
 - Reporting Services
 - PerformancePoint Services
 - Excel and Power Pivot
 - Power BI
- ▶ just@blindbaek.dk / blog.justB.dk / [@justblindbaek](https://twitter.com/justblindbaek)



Agenda

- ▶ The project
- ▶ The architecture
 - Extract
 - Transform
 - Load
 - Presentation
 - Orchestration
- ▶ Lessons learned



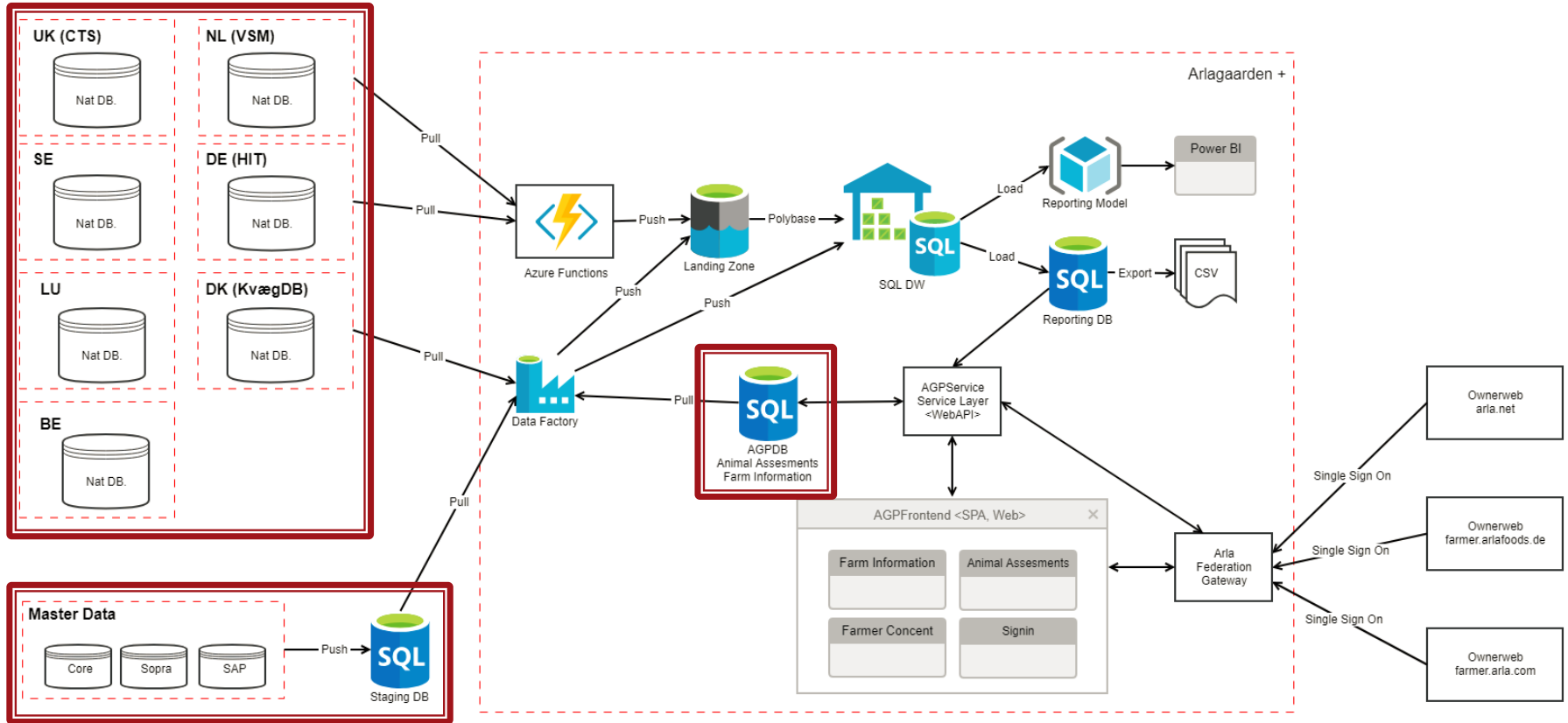
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The Project: Arlagården Plus

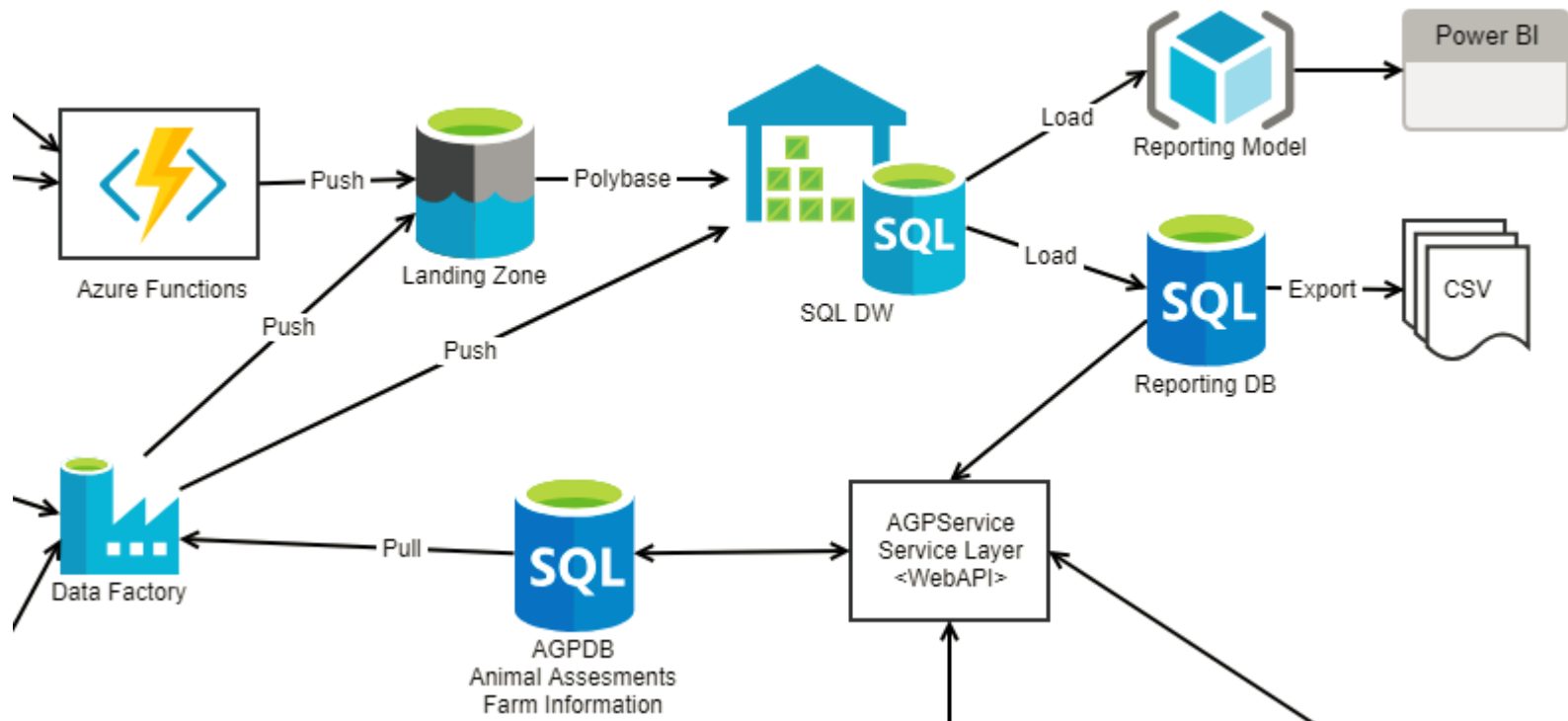
- ▶ Quality Assurance Program
 - 12.000 suppliers in 7 European countries
 - Opt-in gives 1 Eurocent per kg milk
 - Retail requirements to document wellbeing and sustainability
 - Story telling: Makes the milk worth more
- ▶ Collect data and calculate animal welfare indicators
 - Master data (SAP, Sopra, CORE)
 - Survey and assessment (Web app)
 - National herd and animal databases



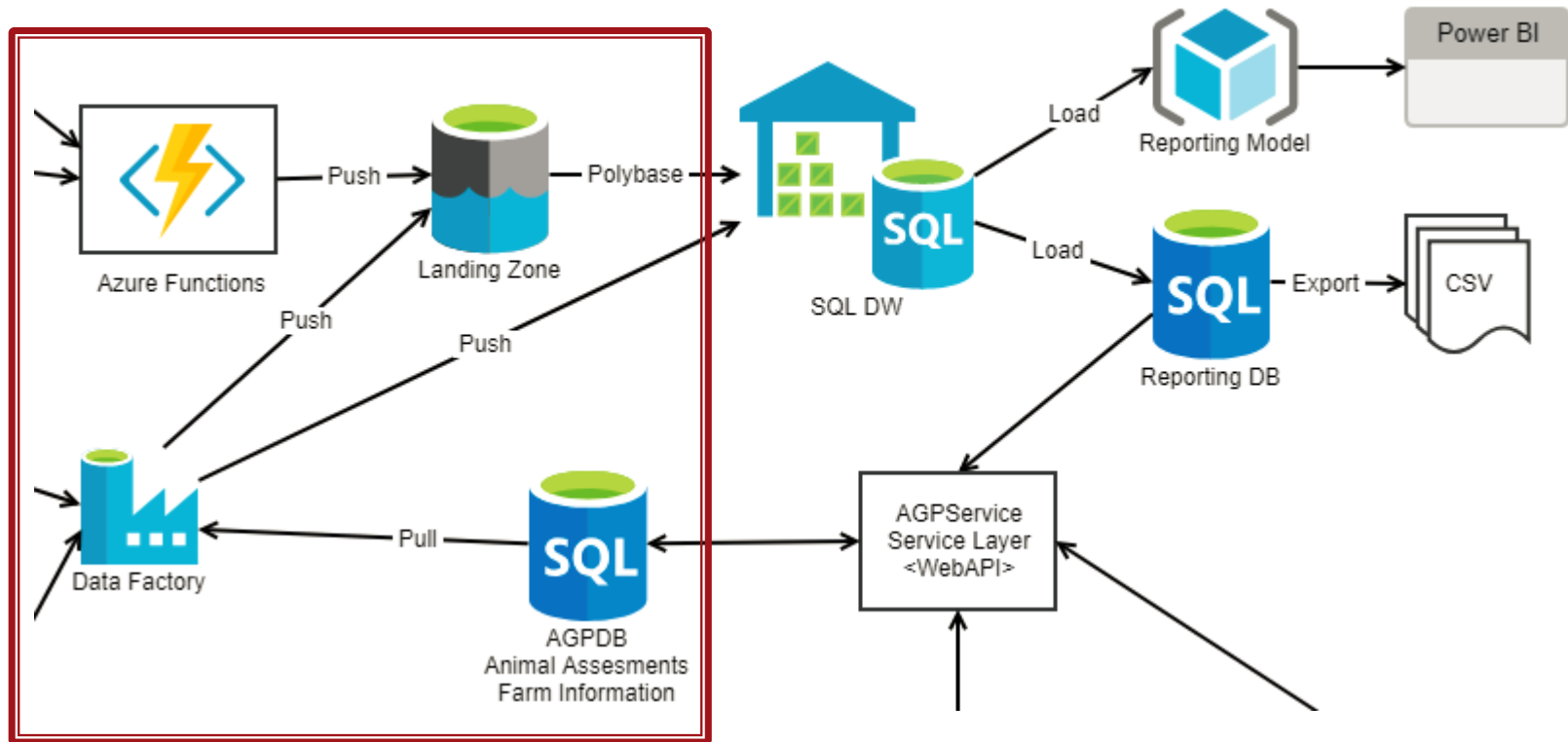
Overall architecture



BI architecture

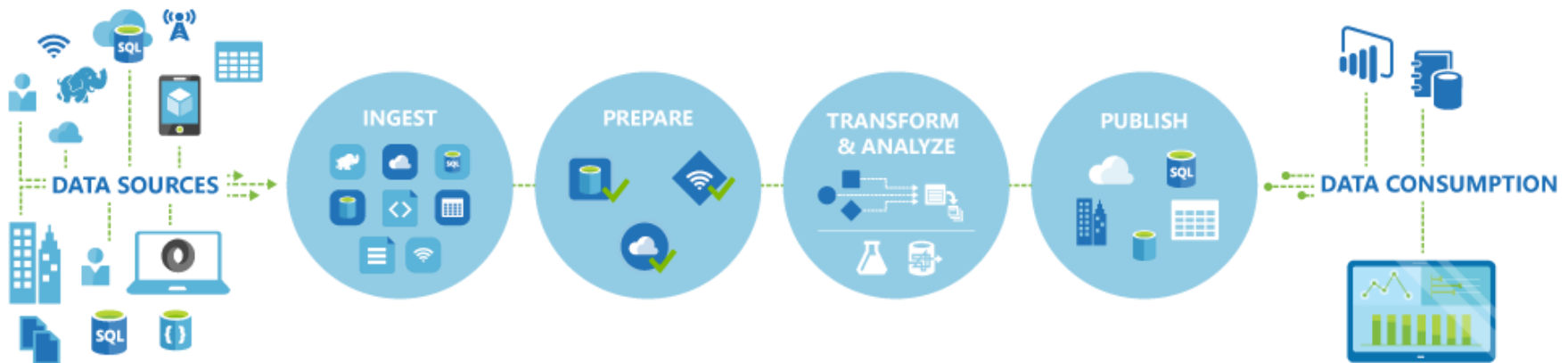


Extract (Ingest/prepare)



Azure Data Factory V1

- ▶ Hybrid data integration at scale
- ▶ Create, plan, administer and monitor data pipelines
- ▶ Execute activities (copy or transform)
- ▶ V2 has parameters, control flow and triggers

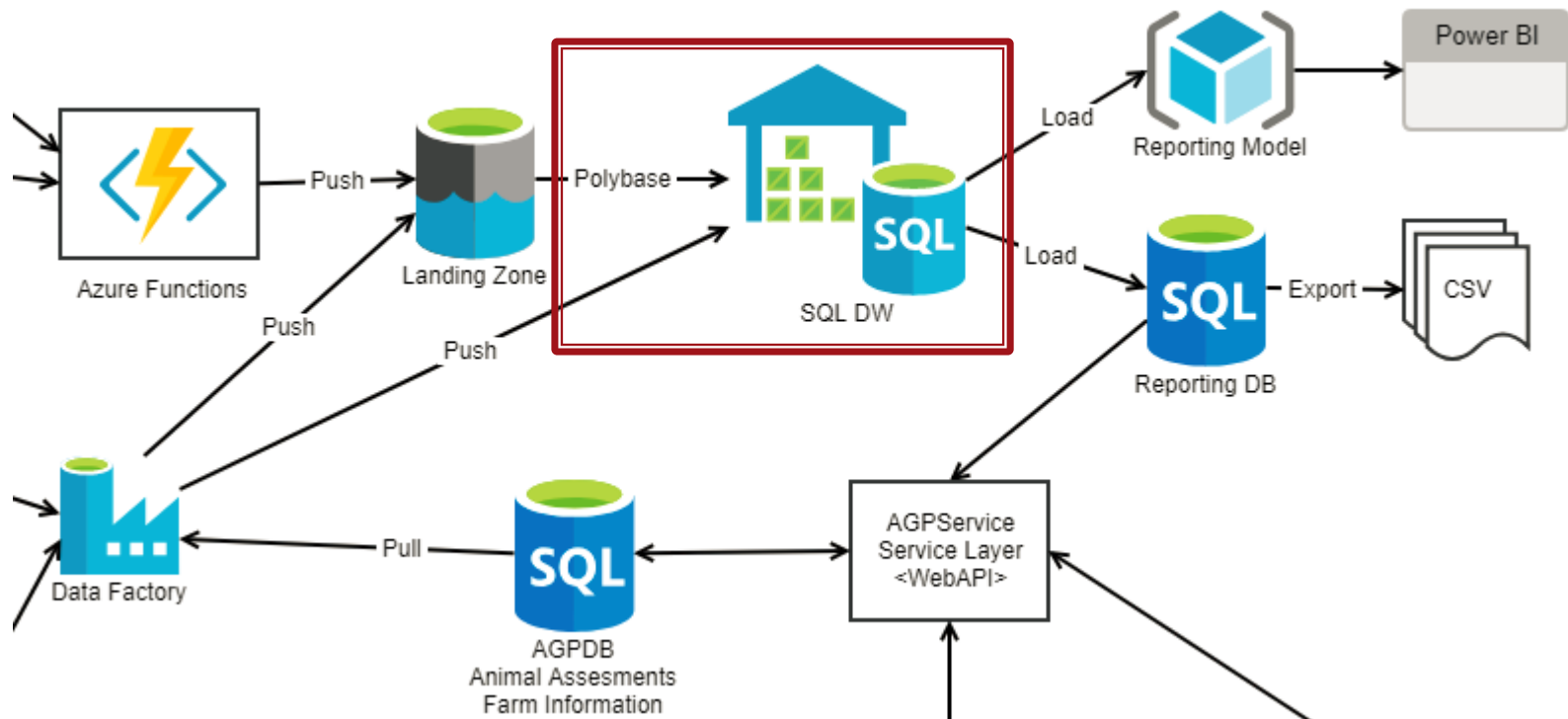


Azure Data Lake Store

- ▶ Unlimited cheap cheap storage
- ▶ Can handle structured, semi-structured, and unstructured data
- ▶ Apache Hadoop file system compatible (HDFS)

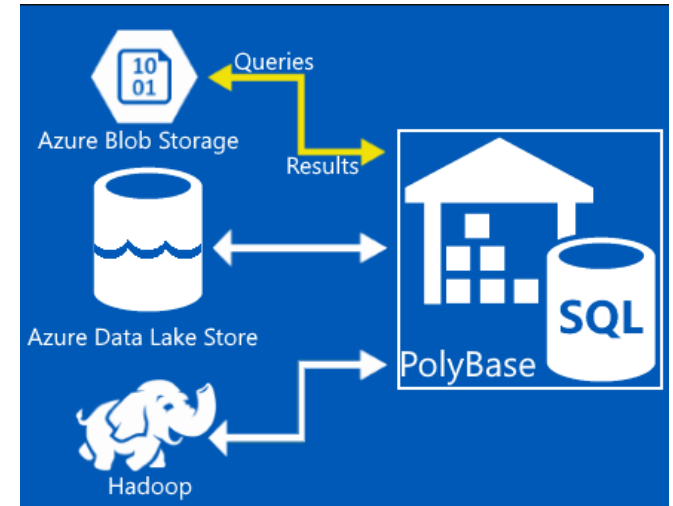


Transform



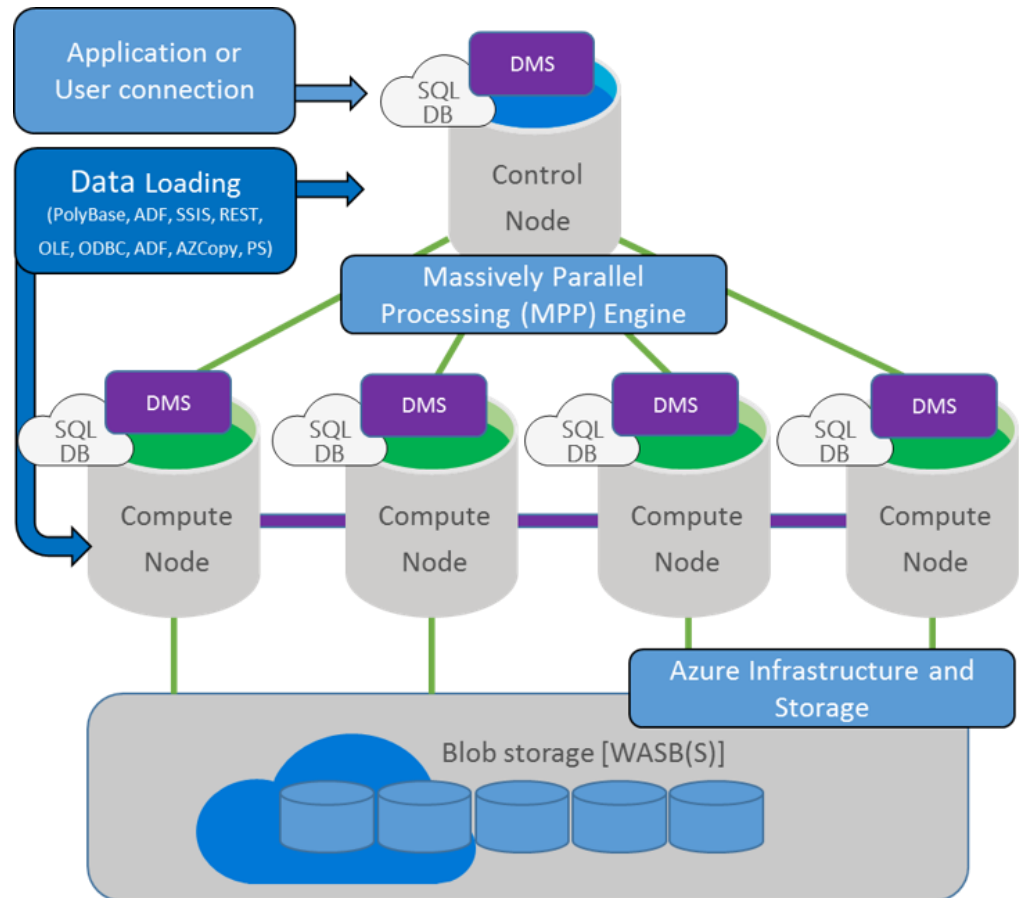
PolyBase

- ▶ Best practice data loading technique from Azure Data Lake Store to Azure SQL DW
- ▶ Massively Parallel Processing Architecture
- ▶ External data source
- ▶ External tables
- ▶ CTAS – Create Table As Select

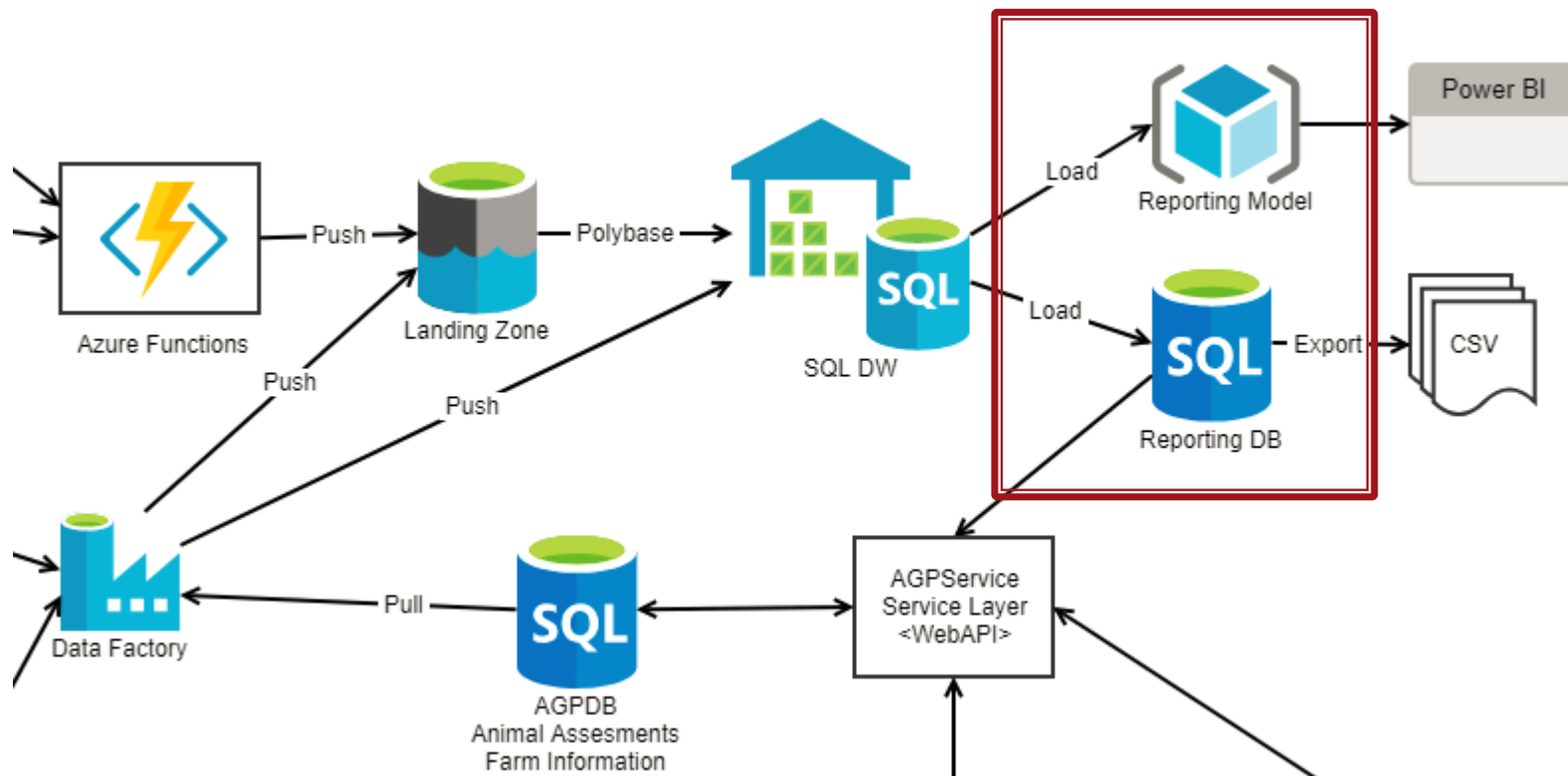


Azure SQL Data Warehouse

- ▶ Built on SQL Server
- ▶ Pause and scale
- ▶ MPP architecture
- ▶ Limited concurrency

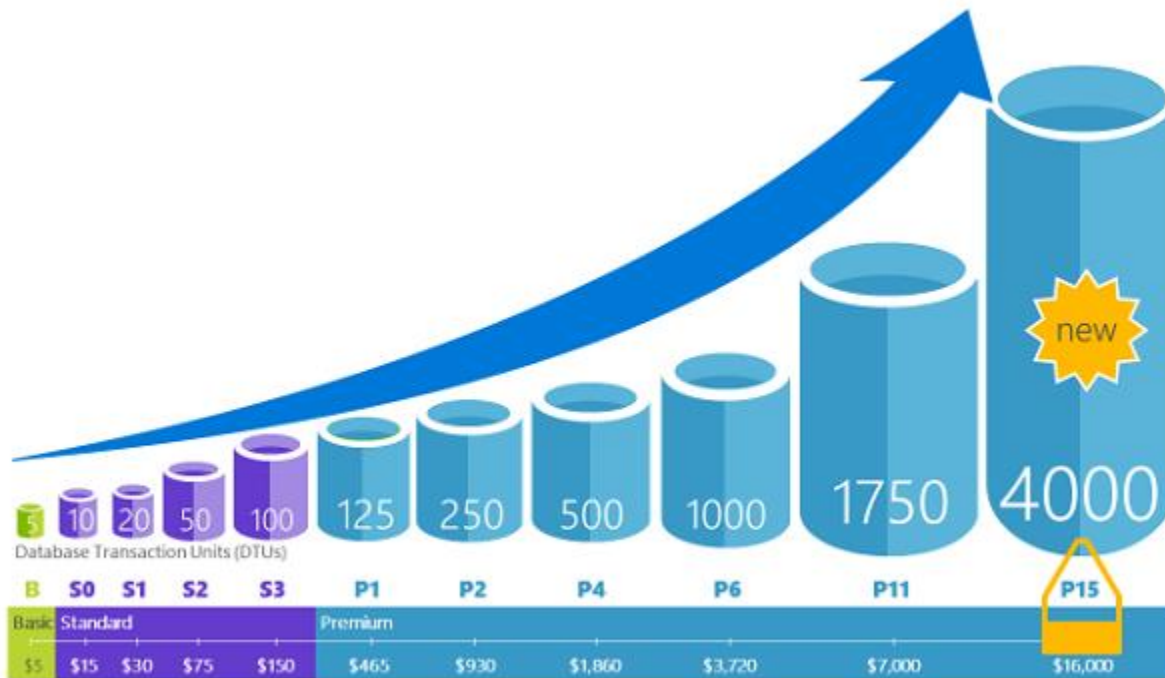


Load (publish)



Azure SQL Database

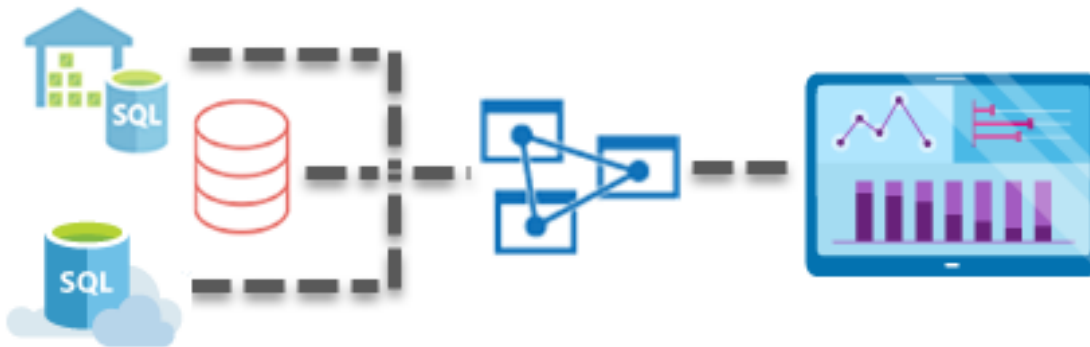
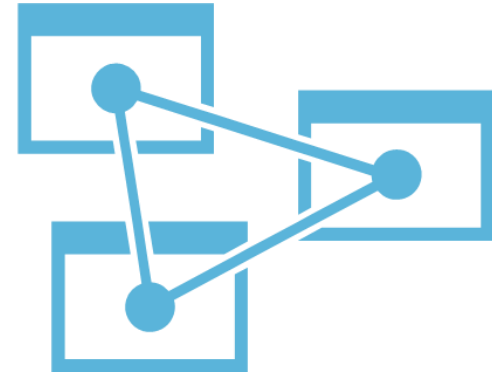
- ▶ Relational database-as-a service
- ▶ Scale to your needs



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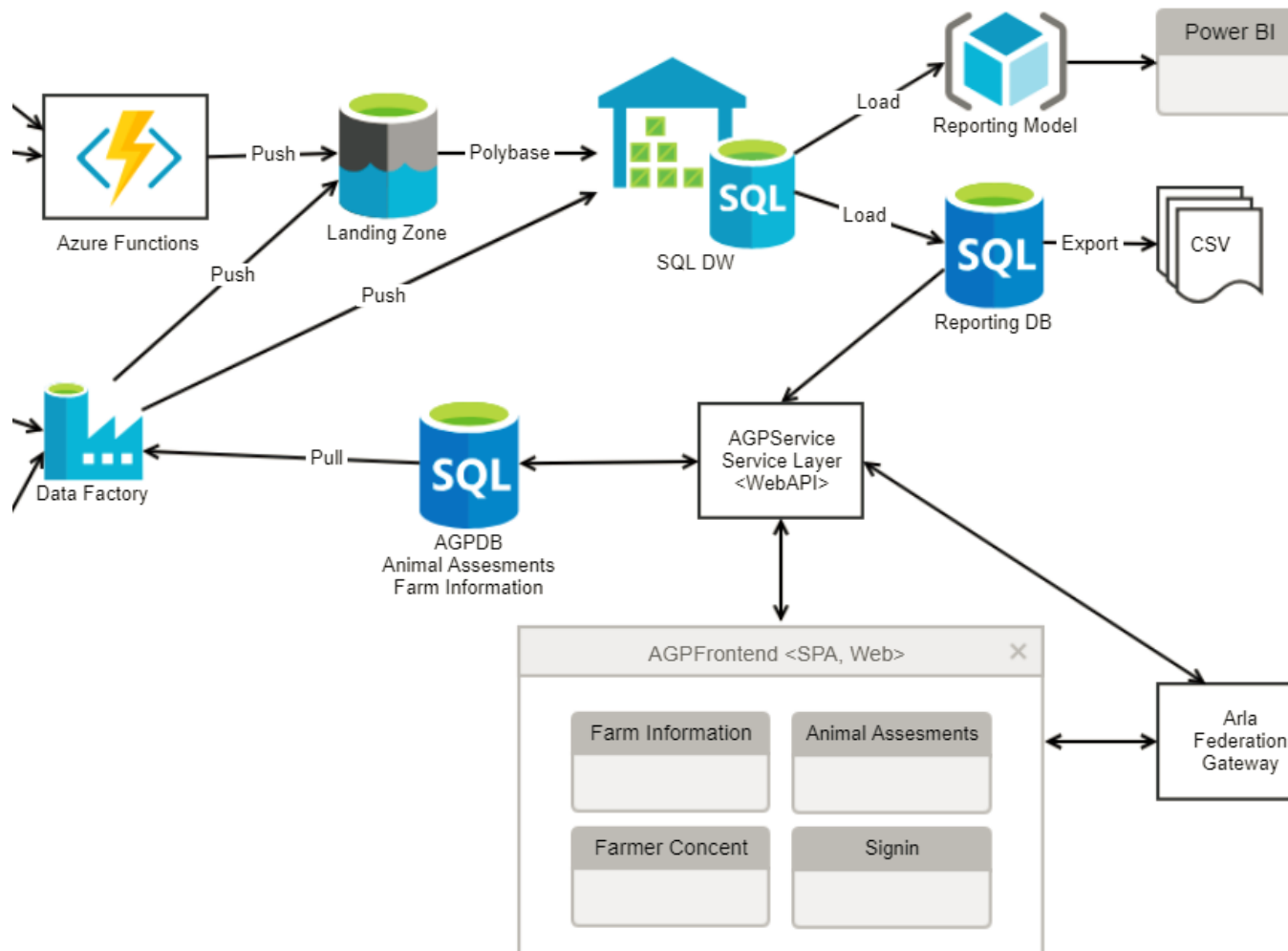
Azure Analysis Services

- ▶ Analysis Services Tabular
- ▶ Easy scale up and out
- ▶ Power BI on top



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Presentation

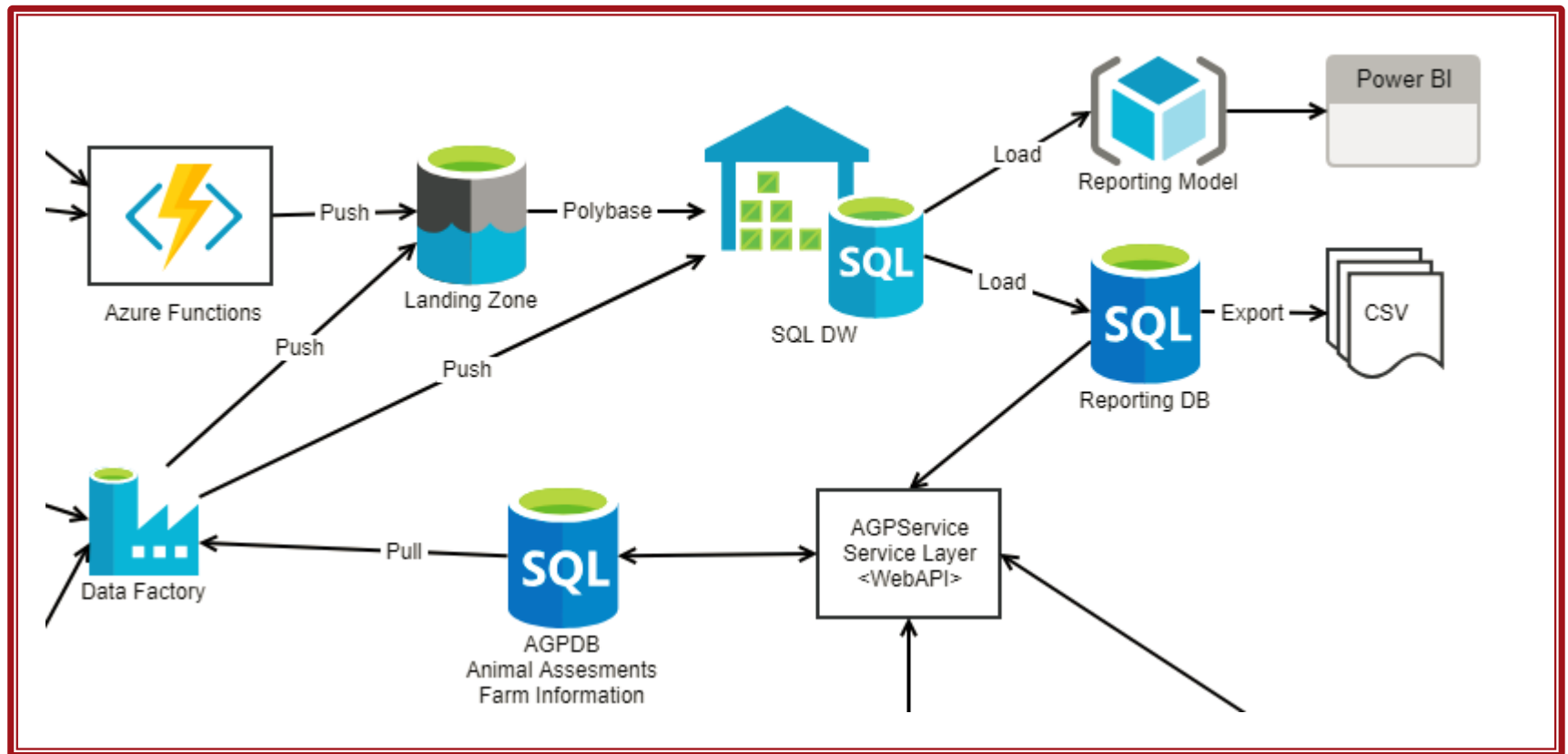


Power BI Embedded

- ▶ Stunning visuals, reports and dashboards directly into the application
- ▶ Easy implementation
- ▶ Security handled with RLS in the Model

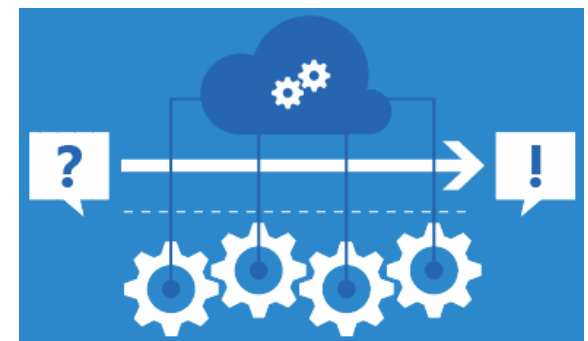


Orchestration



Azure Automation Runbooks

- ▶ Process Automation
- ▶ PowerShell scripts
- ▶ Integration with other Azure services
 - Start Azure Data Factory pipelines
 - Turn Azure SQL DWH on and off
 - Execute stored procedures in DWH
 - Process Azure Analysis Services



Lessons learned

▶ Plus

- Start service – fast going
- Easy to test different services
- Many options for mixing services

▶ Challenges

- Overview of possibilities and limitations
- Cumbersome orchestrating of Azure Data Factory
- Missing Visual Studio template to Azure SQL DW
- Limited SQL syntax support in Azure SQL DW
- No support for translations in Power BI

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