


Global Azure 2024 is here!

We are communities around the world , organizing localized hybrid events and live streams for everyone around the world to join and learn about Azure from the best-in-class community leaders.

 Welcome! to Sofia Bulgaria



 Microsoft Bulgaria
Global Azure 2024

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TROUBLESHOOTING POWER BI PERFORMANCE WITH DATABRICKS

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WORLD BANK GROUP

AGENDA

Power BI and Databricks

Performance Basics

Practical troubleshooting tools and
techniques

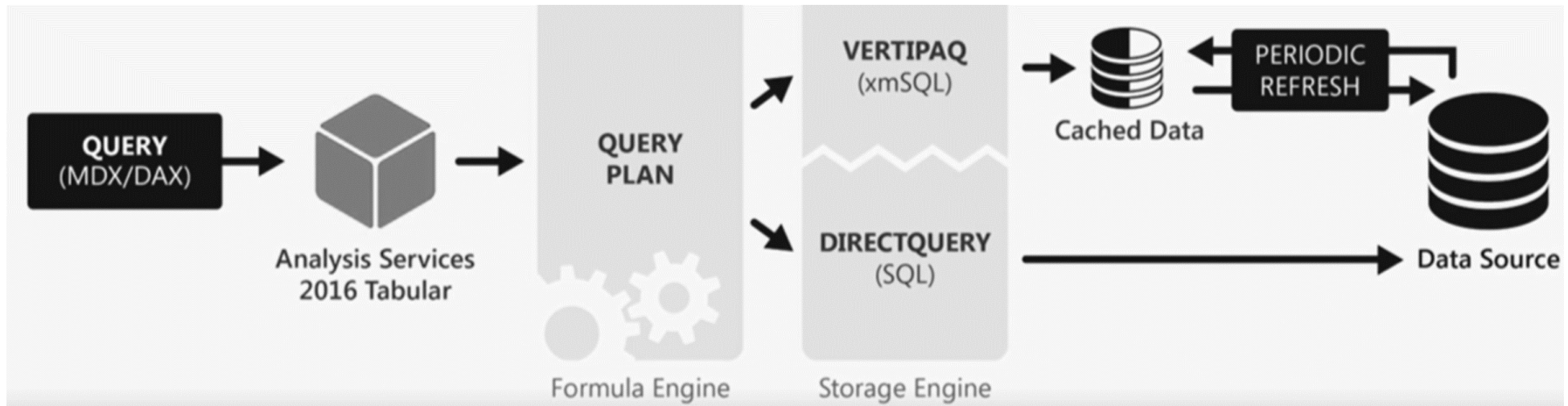
Optimization for Power BI

Optimization for Databricks

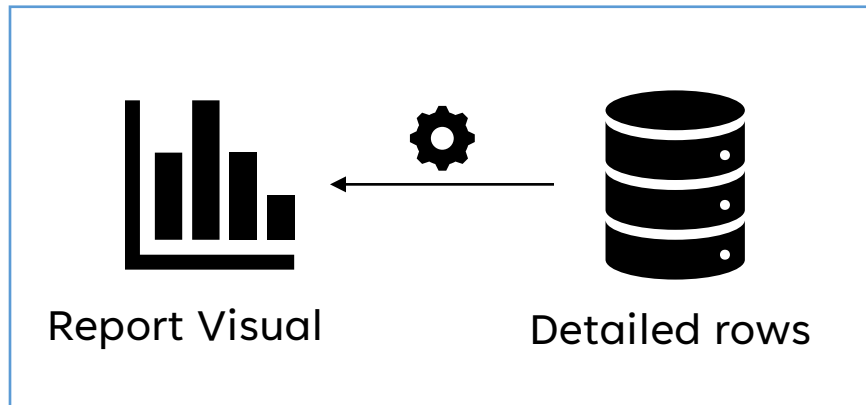
QUICK RECALL

- Formula engine
 - Produce query plans
 - Data request from SE
 - Single threaded

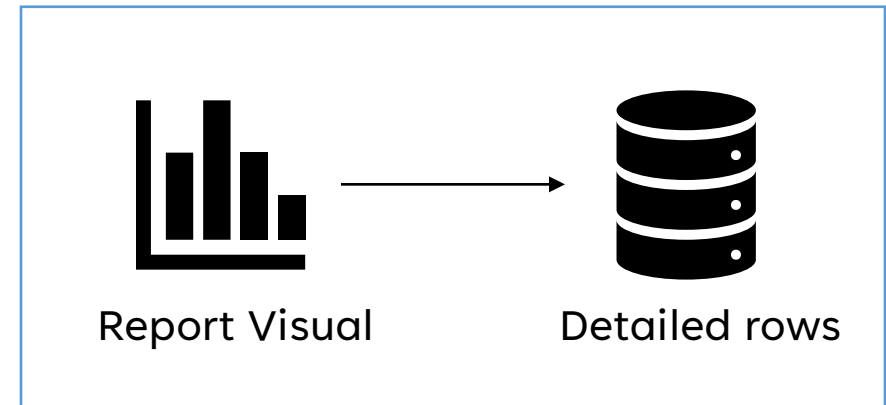
- Storage engine:
 - Returns data to FE
 - Multi-threaded



POWER BI IMPORT VS DIRECT QUERY

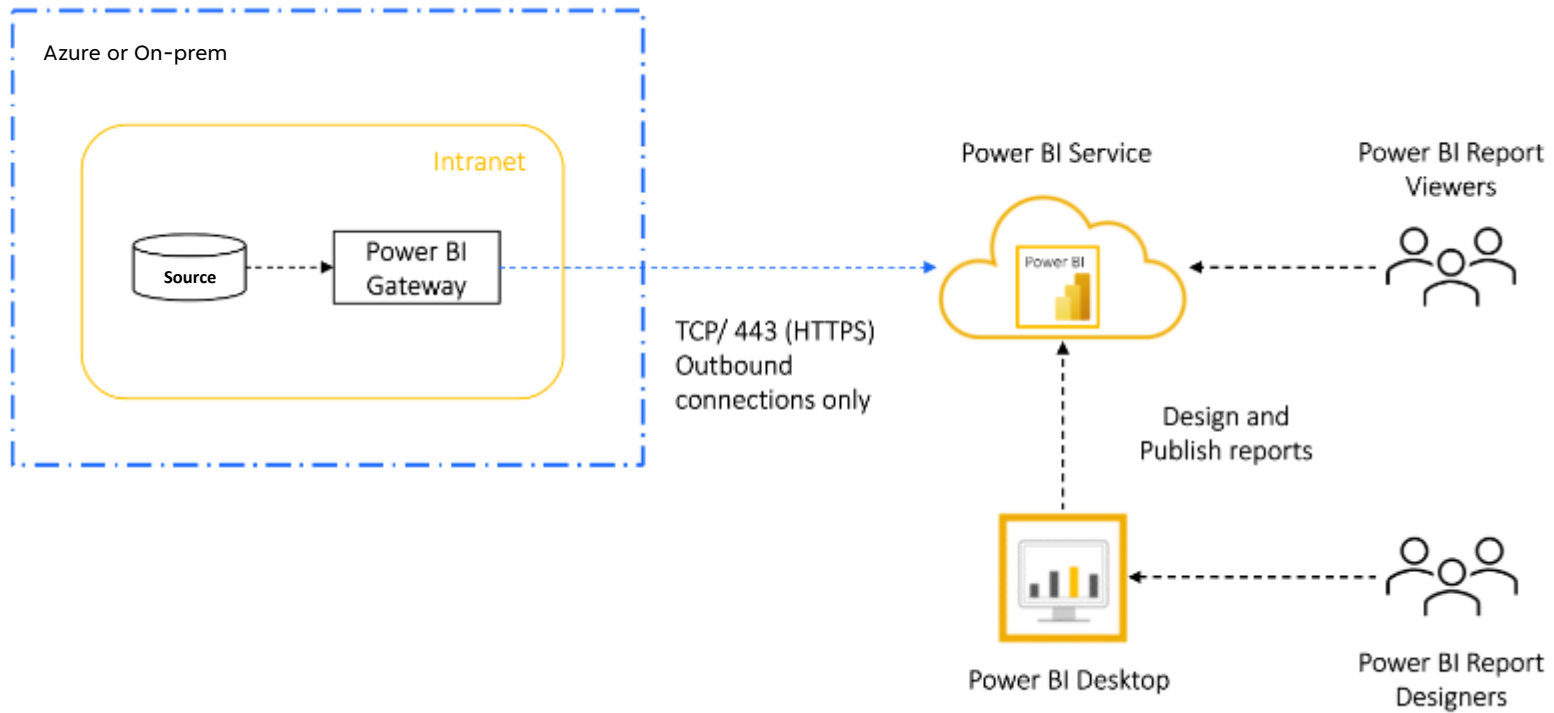


Import



Direct Query

POWER BI GATEWAY



DATABRICKS COMPUTE TYPES



STANDARD (INTERACTIVE)
CLUSTERS



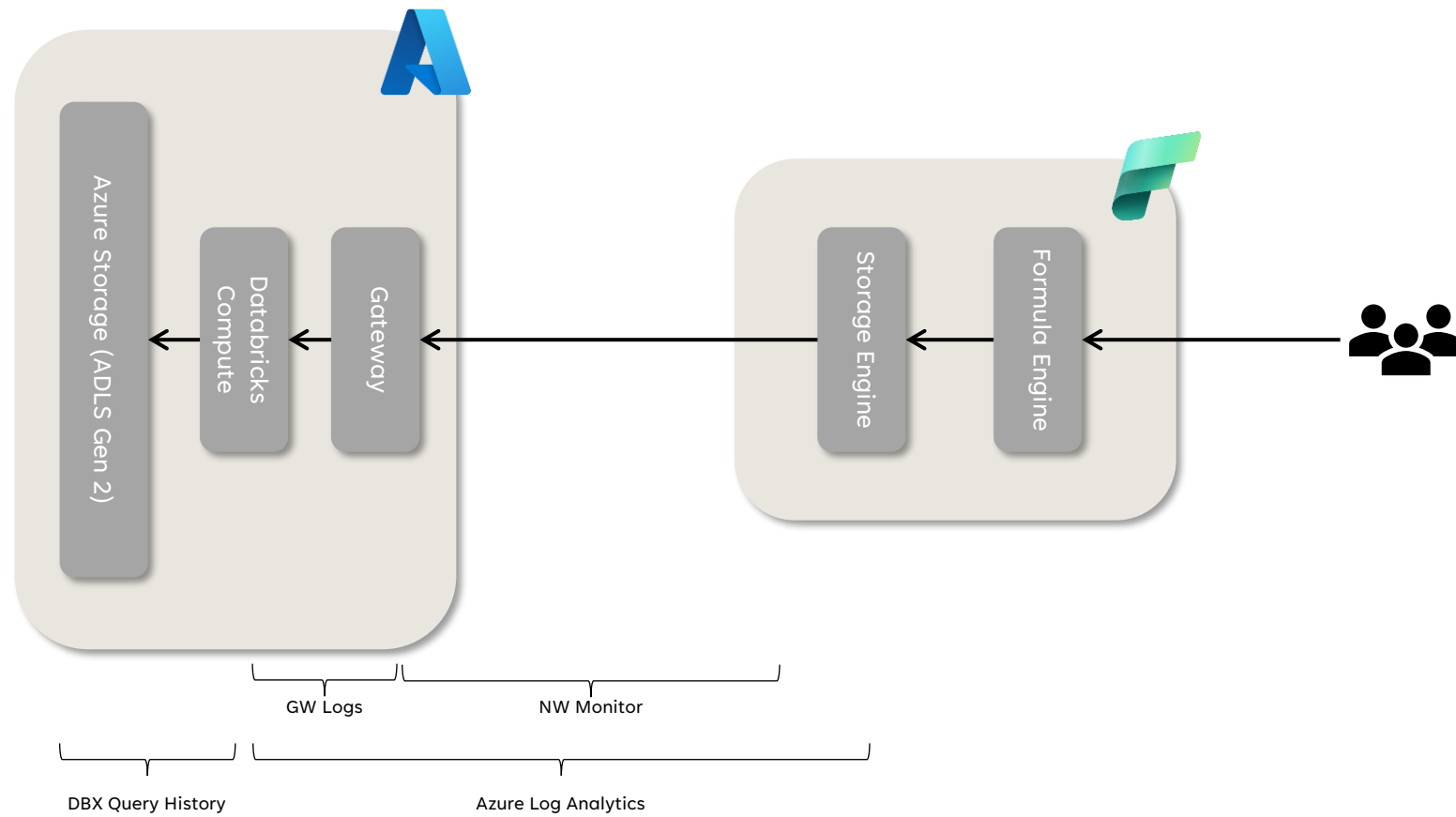
JOB CLUSTERS

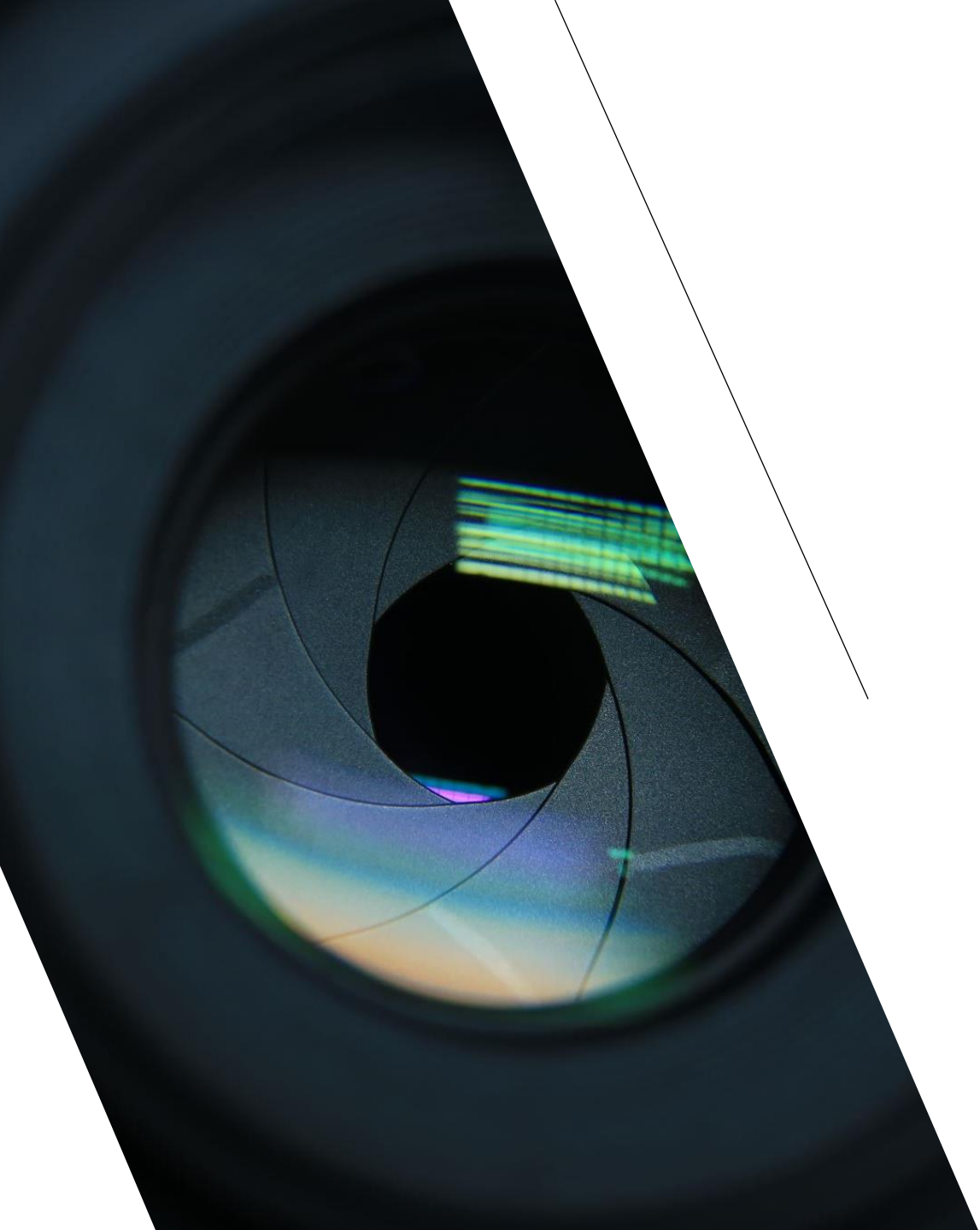


SQL WAREHOUSE
COMPUTE



BRINGING IT ALL TOGETHER





DEMO



OPTIMIZATION TECHNIQUES

[\(1\) Power BI on Databricks Best Practices - YouTube](#)

POWER BI

- Import vs Direct Mode
 - For Import -> Query Folding
- Star Schema
- Composite models, Aggregations, Hybrid Tables
- Query Reduction Settings (Apply/Clear All Slicer Window)
- Assume Referential integrity
- Configuration Settings
 - (PQ) Maximum Connection per Data source
 - (PQ) Maximum Number of simultaneous evaluations.
 - (PQ) Maximum number of jobs
 - (DQ) MaxParallelismPerQuery (overwritten by On-Prem GW settings)



DATABRICKS

- Use Delta format. Use Not NULL where possible
- Use Predictive Optimization (preview), Liquid Clustering (preview). Avoid partitioning for data < 1TB
- Use AUTO OPTIMIZE
- Run ANALYZE TABLE regularly
- Use Z-Order
- Consider using narrow data types
- Use Serverless (if allowed). Use Scale-out. Be careful with Caching
- Optimize for cost (Autostop)
- Use Materialized Views



RESOURCES

Gateway monitor report - <https://github.com/RuiRomano/pbigtwmonitor>

Realistic Load Testing Tool - <https://github.com/datalakin/PowerBI-Tools-For-Capacities> -

Log Analytics Report - <https://github.com/microsoft/PowerBI-LogAnalytics-Template-Reports>

Power BI on Databricks Best Practices - YouTube - <https://www.youtube.com/watch?v=nRx5pVdtMQA>

Session Slides and Materials - <https://github.com/spirieff/GlobalAzure2024>



Thank You



Global Azure Bulgaria 2024

Next Conference

Beer.js Summit 2024

24 July 2024

Majmunarkika Park

Next Conference

AI

Industrial Summit 2024

Sofia Tech Park