

Is Your Power BI Report Slow? Fix This First.



The Star Schema Goal

- A core goal of good data modeling is speed
- Fast reports mean happy and productive users
- Slow reports lead to frustration and abandoned insights
- The star schema is the gold standard for performance
- It simplifies the data structure for the engine
- A clean model is easier to maintain and understand



Mistake 1: Flat Tables

- Avoid using one giant, wide table for everything
- Flat tables contain redundant, repeated data
- This dramatically increases the data model size
- Larger models require more memory and processing
- Relationships and filters become difficult to manage
- Always split data into facts and dimensions



Fix: Build Facts & Dimensions

- Fact tables hold numerical values you want to analyze
- Examples include sales amounts, quantities, or costs
- Dimension tables hold descriptive attributes for filtering
- Examples include dates, products, customers, or regions
- Connect them with simple, single-column relationships
- This is the foundation of the star schema



Mistake 2: Many-To-Many

- Relationships should ideally be one-to-many
- A many-to-many relationship is often a red flag
- It can cause duplicate aggregation of numbers
- This leads to incorrect results in your reports
- The engine must work harder to resolve the logic
- It is a common side effect of poor table design



Fix: Use Bridge Tables

- Resolve many-to-many relationships with a bridge table
- A bridge table sits between two dimension tables
- It breaks the complex link into two simple ones
- This ensures accurate filtering and correct calculations
- Always validate your numbers after implementing a bridge
- This maintains data integrity and report accuracy



Mistake 3: Wrong Data Types

- Using text data types for numbers or dates is costly
- Text columns are much larger and slower to process
- Operations like sorting numbers stored as text are inefficient
- Always use the most specific data type possible
- Use whole numbers for IDs and decimal numbers for values
- Use date data types for all date fields



Pro Performance Tips

- Hide unnecessary columns from the model view
- This reduces clutter and improves model refresh time
- Avoid creating calculated columns when possible
- Use measures for on-the-fly calculations instead
- Limit the use of bi-directional relationships
- They can cause ambiguity and performance overhead



Review & Next Steps

- Audit your current models for flat table structures
- Identify and fix any many-to-many relationships
- Verify all column data types are set correctly
- Hide any columns not used in reporting
- Test report performance after each change
- A clean star schema is the key to speed



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