14 BEST PRACTICES FOR Power BI

1. Limit the number of visuals

Placing many visuals in a single report slows report performance.

30 points

cards	=	1
gauges	=	2
charts	=	3
maps	=	3
grids	=	5

Try to limit your visuals to no more than:

1 grid **8** widgets **10** tiles

2. Remove unnecessary interactions

Disabling unnecessary interactions reduces the number of queries and computations.

3. Enable Row-Level Security (RLS)

With RLS, Power BI only imports data the user is authorized to view.

4. Use Microsoft AppSource certified custom visuals

Microsoft verifies that certified custom visuals have robust and well-performing code.

5. Be careful with hierarchical filters

If you observe high page load times when using hierarchical filters, remove the hierarchical filters and instead use multiple filters for the hierarchy.

6. Provide data categorization

By using Power BI data classification, you raise user awareness about the security level that should be used and how reports should be shared inside and outside the organization.

HBI MBI LBI

High Business Impact (HBI) data requires users to get a policy exception to share the data externally. Low Business Impact (LBI) and Medium Business Impact (MBI) data do not require exceptions.

7. Use Enterprise data gateway instead of Personal Gateway

Personal Gateway takes data and imports it into Power BI. Enterprise Gateway imports nothing, which is more efficient when working with large databases.

8. Use different gateways for “Scheduled Refresh”” and “Direct Query”

If the same gateway is used, Direct query will slow down when scheduled data refresh is active.

9. Use an alternative if the chosen visual performs poorly

If a custom visual performs poorly, consider changing it to a different visual.

10. Limit complicated measures and aggregations in data models

Push calculated columns and measures to the source where possible. The closer they are to the source, the higher the likelihood of improved performance. Create calculated measures instead of calculated columns. Use star schema for designing data models.

11. Use slicers sparingly

Slicers are a great way of allowing users to navigate data, but they come at a performance cost. Each slicer generates two queries: one gets the data, and the other fetches selection details.

12. Ensure that the Power BI report and the data source are in the same region

With the tenant and data source in the same region, network latency is reduced. This results in faster data transfer and faster query execution.

13. Import only necessary fields and tables

Keep the model as narrow and lean as possible. Power BI works on columnar indexes; longer and leaner tables are preferred.

14. Ensure the cache update frequency aligns with the data source refresh frequency

By default, the Power BI cache frequency is set to one hour. If, for example, your dataset refreshes only once per day, you should update the cache frequency accordingly.

References

Best design practices for reports and visuals
Microsoft Corporation, published June 16, 2019

Tips for designing a great Power BI dashboard
Microsoft Corporation, published June 21, 2018

Power BI Performance Best Practices
Microsoft Corporation, published July 29, 2018

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