Power Query Parametrization

The goal of this guideline is to keep all data source connections of a Power BI report in one central place. Every data source – SharePoint site, SQL server, database, file path or API URL – is stored as a **parameter** in Power Query and referenced in the source and navigation steps of all queries. No query contains a hard-coded connection.

1. Why parametrize data sources?

- **Single point of change:** if a SharePoint site moves or a database is renamed, only one parameter is edited – not every query that uses it.
- **Safe switch between environments:** test and production use the same report; only the parameter values differ.
- **Transparency:** all connections are visible at a glance in the query group "Source" – helpful for documentation, audits and handovers.
- **Changeable after publishing:** parameters can be adjusted in the Power BI Service without opening Power BI Desktop or republishing the report.
- **Data security:** the M code of a query only contains the parameter name, not the server, database or SharePoint URL. Queries can be pasted into an AI tool, a forum post, a ticket or the documentation without exposing any data source – as long as the parameter values themselves are not shared.

2. Naming convention

Parameters start with the prefix `par_`, followed by the source type and a short name. Everything is written in lower case, words are separated by underscores.

source type	naming convention	example
SharePoint Online site	par_spo_<name>	par_spo_sales
SQL Server	par_sql_server	par_sql_server
SQL database	par_sql_db	par_sql_db
File or folder path	par_path_<name>	par_path_budget
Web / API URL	par_url_<name>	par_url_exchangerates

3. Creating parameters

In the Power Query Editor open **Home** → **Manage Parameters** → **New Parameter**. Create one parameter per data source.

a. Text parameter with a free value

Typical for SharePoint sites, file paths and URLs. Recommended settings:

- **Name:** according to the naming convention, e.g. `par_spo_sales`
- **Description:** what the source is and who owns it – the description is shown as a tooltip in Power BI Desktop
- **Required:** checked
- **Type:** Text
- **Suggested values:** Any value
- **Current value:** the full address, e.g. `https://datasyn.sharepoint.com/sites/sales/`

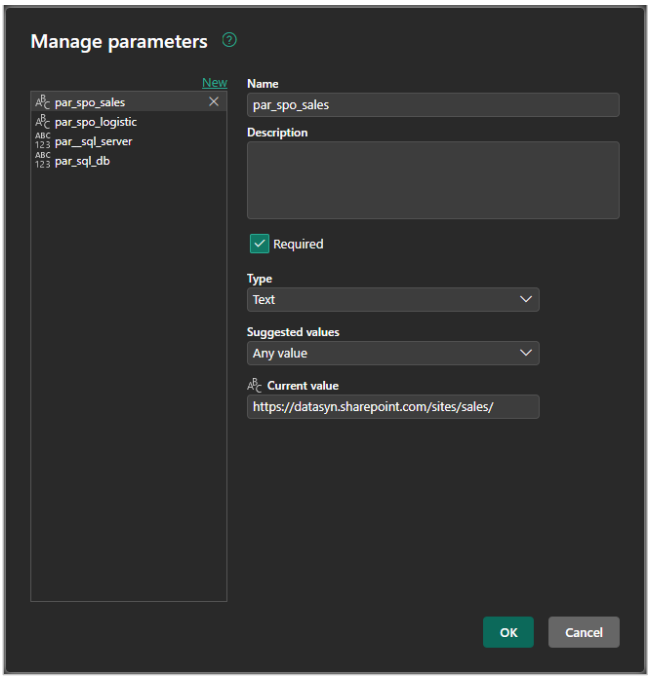


Figure 1: Text parameter for a SharePoint Online site

b. Parameter with a list of values

For sources that exist in several environments – e.g. a test and a production database – choose **Suggested values: List of values** and enter one value per line. The current value is then picked from a drop-down, which prevents typos when switching the environment.

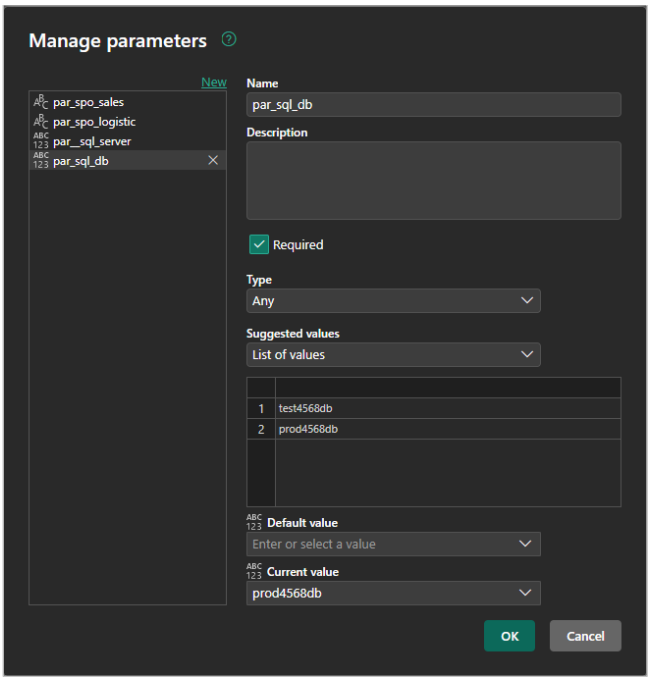


Figure 2: Parameter with a list of values for the test and production database

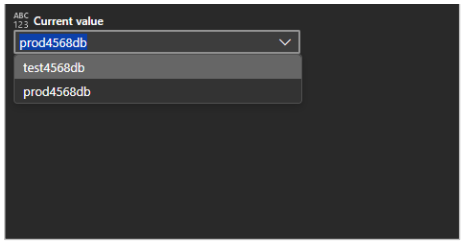


Figure 3: Switching the environment via the drop-down of the current value

> **Important:** set the type to **Text**, not **Any**. Parameters of type Any are shown read-only in the Power BI Service and can then only be changed in Power BI Desktop (see section 5).

c. Grouping parameters

Move all parameters into the query group **Source** (right-click → Move To Group). The query list then shows every connection with its current value in brackets.

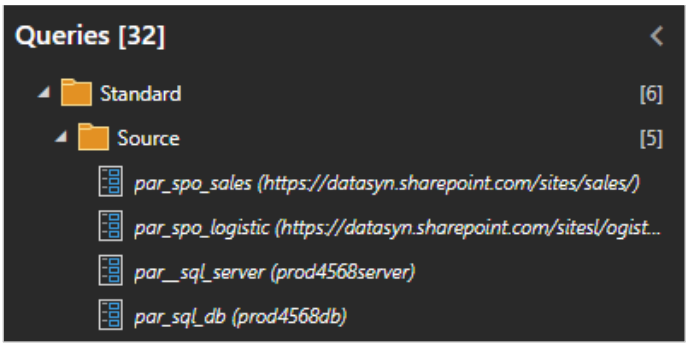


Figure 4: All data source parameters in the query group "Source"

4. Referencing parameters in queries

Replace every hard-coded value in the source and navigation steps with the parameter. Connector dialogs (SQL Server, SharePoint folder, Web, …) offer this directly: switch the field from **Text** to **Parameter** with the small drop-down in front of the input box.

Before – hard-coded:

```
Source = Sql.Database("prod4568server", "prod4568db")
```

After – parametrized:

```
// SQL Server
Source = Sql.Database(par_sql_server, par_sql_db)

// SharePoint Online – source and navigation step
Source = SharePoint.Files(par_spo_sales, [ApiVersion = 15]),
Sales = Source{[Name = "Sales.xlsx", #"Folder Path" = par_spo_sales & "Shared
Documents/"]}[Content]
```

> **Tip:** use the parameter as it is. Building a source address from the result of another query leads to the error "dynamic data source" and blocks the scheduled refresh in the Power BI Service.

5. Changing parameters in the Power BI Service

After publishing, parameters can be changed without Power BI Desktop: in the workspace open the semantic model → **Settings** → **Parameters**, change the value and click **Apply**.

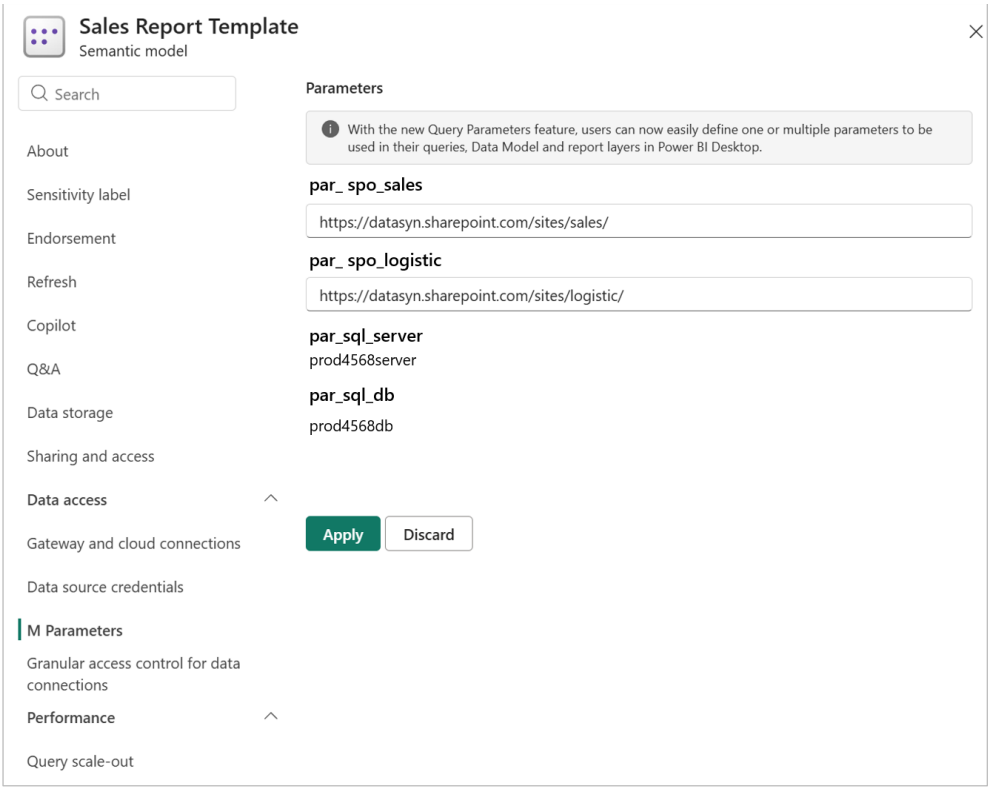


Figure 5: Parameters of the semantic model in the Power BI Service

Text parameters (here `par_spo_sales` and `par_spo_logistic`) can be edited, parameters of type Any (`par_sql_server`, `par_sql_db`) are read-only. After a change:

- check **Data source credentials** and, for on-premises sources, the **gateway connection** of the new source
- start a **refresh** – the new value only takes effect with the next refresh
- with **deployment pipelines**, define parameter rules so the production values are set automatically when deploying from test to production

6. Checklist

- No query contains a hard-coded server, database, URL or path.
- All parameters follow the naming convention `par_<source>_<name>`.
- Type is Text, Required is checked, the description is filled in.
- Sources with several environments use a list of values (test / production).
- All parameters are in the query group "Source".
- After publishing: parameters, data source credentials and refresh are checked in the Power BI Service.