

Here's a complete guide to connecting **Power BI Desktop** with **Claude AI Desktop** using the **Model Context Protocol (MCP)**:

What's happening under the hood

The Power BI–Claude integration connects Power BI Desktop to Claude AI through an MCP server, so model changes can be driven entirely by natural language. Instead of writing DAX or manually building data tables and relationships, you can ask Claude to do it directly against the open .pbix file.

Prerequisites

You need all three of these installed on the **same Windows machine, same user account**:

1. **Power BI Desktop** (latest version)
2. **Claude Desktop** (latest version from claude.ai)
3. **Visual Studio Code** (latest version)

Treat the three tools as a single stack: same machine, same user, fully updated. Mismatched versions can produce confusing behavior where the MCP server appears installed but never activates.

Step-by-Step Setup

Step 1 — Install the Power BI Modeling MCP Extension in VS Code

1. Open **Visual Studio Code**
2. Go to the **Extensions** panel (sidebar)
3. Search for: Power BI Modeling MCP (by Analysis Services)
4. Install it

Step 2 — Find the Extension's Executable Path

After installing, locate the .exe file for the extension. It will be somewhere like:

```
C:\Users\YourName\.vscode\extensions\analysis-services.powerbi-modeling-mcp-X.X.X-win32-x64\server\powerbi-modeling-mcp.exe
```

Copy this full path.

Step 3 — Configure Claude Desktop

Open the Claude Desktop configuration folder and open the `claude_desktop_config.json` file in a text editor like Notepad. Input the following JSON structure, replacing the command value with the path you copied:

json

```
{
  "mcpServers": {
    "powerbi-modeling-mcp": {
      "command": "C:\\Users\\YourName\\.vscode\\extensions\\analysis-
services.powerbi-modeling-mcp-0.1.9-win32-x64\\server\\powerbi-modeling-
mcp.exe",
      "args": ["--start"],
      "type": "stdio"
    }
  }
}
```

 **Important:** Use **double backslashes** (\\) in the JSON file path, not single ones.

Step 4 — Restart

Save the file (Ctrl+S) and restart your computer to initialize the server.

Step 5 — Open Power BI & Start Prompting

1. Open **Power BI Desktop** with a .pbix file loaded
2. Open **Claude Desktop**
3. Claude will now have access to your active Power BI model

What You Can Do Once Connected

You can automate nearly every aspect of building and managing semantic models without writing a single line of code, including:

- Create DAX measures and calculated columns
- Build date tables and manage relationships

- Analyze naming conventions and fix inconsistencies
 - Generate model documentation as markdown/PDF
 - Run and validate DAX queries
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Common Errors to Avoid

Power BI MCP configuration errors almost always trace back to three things: an incorrect file path, broken slash formatting in JSON, or skipping the mandatory PC restart.

Model Recommendation

For best results with semantic model operations, Microsoft recommends using deep-reasoning models such as Claude Sonnet 4.5. You can select your model in Claude Desktop settings.