

POWER BI

Power BI is a data visualization and business intelligence tool. It helps people understand their data better by showing it in the form of:

- Charts
- Graphs
- Maps
- Tables
- Dashboards

Instead of reading thousands of rows in Excel, you can look at a dashboard and instantly see what's going on.

What Does Power BI Do?

Power BI allows you to:

- Connect to data from various sources (like Excel, databases, websites, cloud services).
- Clean and transform the data so it's usable.
- Create visual reports and dashboards to show trends, patterns, and summaries.
- Share these insights with others through the web or mobile apps.

Imagine you run an online store and you want to know:

- Which products are selling the most?
- Which region has the most customers?
- How is your monthly revenue growing?

You can:

- Import data from your website, Excel, or database into Power BI.
- Build a report with bar charts, pie charts, and KPIs.
- Analyze it visually to find answers — without writing code or reading long spreadsheets.

Main Parts of Power BI

- Power BI Desktop (for creating reports on your computer)
- Power BI Service (online platform to view and share reports)
- Power BI Mobile App (view dashboards on your phone)
- Power BI Gateway (connect live to on-premises data sources)
- Power BI Report Server (for businesses that want to keep everything on their own servers)

Why Use Power BI?

- Easy to use (drag and drop)
- No coding needed (but supports advanced features like DAX and Power Query)
- Real-time data updates
- Great for business decision-making
- Microsoft integration (Excel, Azure, Teams, etc.)

Why Choose Power BI?

1. Easy to Use (Even for Beginners)

- You don't need to be a programmer or data expert.
- You can just drag and drop to create charts and reports.
- Looks and feels like Excel, so it's familiar for many people.

2. Beautiful, Interactive Dashboards

- Power BI creates dynamic, visually appealing reports.
- You can click on a chart to instantly filter the data across all visuals.
- It makes it easy to spot trends, patterns, and outliers.

3. Connects to Many Data Sources

- You can pull data from:
- Excel
- SQL Databases
- Google Analytics
- Websites
- Cloud services (like Azure, Salesforce)
- Over 100+ connectors available!

4. Automatic Data Refresh

- You can set your data to refresh automatically every day or hour.
- No need to update manually—reports stay up to date in real-time.

5. Great for Teams and Sharing

- Easily share reports with your team through Power BI Service (online).
- View reports on web, phone, or tablet.
- Set up permissions, so each person only sees what they need to.

6. Powerful Data Modeling

- Use DAX (Data Analysis Expressions) to create custom calculations and KPIs.

- Handle large data sets and relationships between tables.

7. Cost-Effective

- Power BI Desktop is free.
- Power BI Pro (for sharing) is cheaper than many other tools (monthly fee).
- Good value for businesses of all sizes.

8. Integration with Microsoft Products

- Works smoothly with:
- Excel
- SharePoint
- Microsoft Teams
- Azure
- Office 365
- Makes it ideal for companies already using Microsoft tools.

9. Strong Community and Support

- Huge online community
- Lots of tutorials, videos, templates
- Frequent updates from Microsoft

10. Security & Governance

- Power BI follows enterprise-level security standards.
- You can control who sees what, with row-level security and admin tools.

Main parts of Power BI

1. Power BI Desktop

“Where reports are created”

What it is:

- Power BI Desktop is a free application you install on your computer. It's the main tool used to create reports, dashboards, and data models.

Key Features:

- Connect to data: Pull in data from Excel, databases, web, etc.
- Clean and transform data: Use Power Query to remove errors, fix data types, combine tables, etc.
- Build visuals: Create charts, graphs, maps, and more using drag-and-drop.
- Model data: Use DAX to create custom formulas, KPIs, and measures.

Design layout: Arrange visuals neatly into pages or dashboards.

Example:

You work in sales. You load Excel sales data into Power BI Desktop, clean it, and create a dashboard showing sales trends, top products, and regional performance.

Purpose:

- Build reports on your local machine.
- Do all heavy data processing before sharing.

2. Power BI Service

“Where reports are published, shared, and viewed online”

What it is:

Power BI Service is the cloud-based (online) platform where you publish, view, and share your reports and dashboards created in Power BI Desktop.

Key Features:

- Publish reports from Desktop to the web.
- Create dashboards by pinning visuals from multiple reports.
- Set up data refresh schedules.
- Collaborate by sharing reports with your team.
- Use apps and workspaces to organize reports and dashboards.
- Manage permissions and security.

Example:

You publish your sales dashboard online to Power BI Service. Your manager can open the link anytime, on any device, and see the updated data.

Purpose:

- Share reports with others in a secure way.
- View and interact with reports online.
- Set up automatic data updates (refresh).

3. Power BI Mobile App

“Access your data and dashboards anywhere”

What it is:

This is the mobile version of Power BI, available for Android and iOS phones and tablets. It lets you view and interact with dashboards and reports on the go.

Key Features:

- View your published dashboards from Power BI Service.
- Receive notifications and alerts based on KPIs.
- Interact with visuals by tapping, filtering, and exploring data.
- Use natural language queries (ask questions like “What were July sales?”).

Example:

You're traveling for work. You open the Power BI mobile app and check this week's sales performance from your phone in 5 seconds.

Purpose:

- Stay informed and make decisions on the move.
- Quick access to data anytime, anywhere.

4. Power BI Gateway

“Bridge between your local data and the cloud”

What it is:

Power BI Gateway is a software you install on your company's server or PC. It acts as a secure bridge between your on-premises data (data that lives in your local network) and Power BI Service (online).

Key Features:

- Keeps your data in your private network, but lets Power BI Service access it securely.
- Supports scheduled refreshes or live connections.
- Used for SQL Server, Excel files on a local server, etc.

Example:

Your company stores financial data in a local SQL Server (not in the cloud). With Power BI Gateway, you can keep the data where it is, but still use and refresh it in your online Power BI reports.

Purpose:

- Securely connect local (on-premises) data to cloud-based Power BI.
- Keep reports up-to-date without moving the actual data.

Component	Purpose	Who Uses It	Installed On
Power BI Desktop	Create reports and visuals	Analysts, Developers	PC
Power BI Service	View, share, and collaborate online	Managers, Teams	Web browser
Power BI Mobile	Access dashboards on the go	Executives, Field teams	Mobile app
Power BI Gateway	Connect on-premises data to Power BI Service	IT Admins, Data Engineers	Local Server