

## Power BI Service vs. Gateway vs. Report Server

*Three names you'll often mix up — here's what each one actually does.*

### The Three Pieces, in One Line Each

|                               |                                                                                                                                                              |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power BI Service</b>       | The cloud hub (app.powerbi.com) where reports are published, viewed, shared, and turned into dashboards.                                                     |
| <b>Power BI Gateway</b>       | A small piece of software installed inside your network that lets the cloud Service safely reach data sitting behind your firewall.                          |
| <b>Power BI Report Server</b> | A separate, on-premises product that hosts and serves Power BI reports (and traditional paginated reports) entirely on your own servers — no cloud involved. |

### Power BI Gateway: Why the Cloud Needs Help Seeing Your Data

The Power BI Service lives in Microsoft's cloud. Your company database, file server, or local Excel files live behind your firewall. The cloud can't reach through that firewall on its own — the Gateway is the secure bridge that lets it.

- **Where it runs:** Installed on a local PC or server inside your network, not in the cloud.
- **When you need it:** Any time a report published to the Service needs to refresh from an on-premises source (SQL Server, a network file, an internal system).
- **How it works:** Acts as a secure go-between: the Service requests a refresh, the Gateway fetches the data locally, encrypts it, and sends it up to the cloud report.
- **Good to know:** It has no reporting interface of its own — it's plumbing, not a place to view reports.

### A Scenario You'll Likely Run Into: The "Static Data" Problem

Say you build a report from a SQL Server database, then publish it to the Service. Here's what happens next, step by step.

1. **Publish:** When you publish from Power BI Desktop, it uploads both your report design and a snapshot of your data as it looked at that moment.
2. **Refresh fails:** Without a Gateway, clicking Refresh in the Service will fail silently — the cloud can't reach the SQL Server behind your office firewall, so your data stays frozen at that snapshot.
3. **Warning sign:** Power BI shows a warning icon next to your dataset; hover over it and it will tell you a gateway is missing or misconfigured.
4. **Manual fix:** You'll need to reopen the file locally, click Refresh in Desktop to pull new data, then Publish again to overwrite the cloud copy.

*That manual republish is fine for a quick project of your own — but it's exactly why businesses install a Gateway: it automates the refresh on a schedule instead of relying on someone remembering to republish.*

## Power BI Report Server vs. Power BI Service

Report Server is not “Power BI, but on-premises.” It’s a narrower product, closer in spirit to SQL Server Reporting Services with Power BI reports added on.

|                                         | Power BI Service                | Power BI Gateway            | Power BI Report Server              |
|-----------------------------------------|---------------------------------|-----------------------------|-------------------------------------|
| <b>Runs where</b>                       | Microsoft's cloud               | Inside your network         | Inside your network                 |
| <b>Hosts reports?</b>                   | Yes — full web portal           | No — no reporting UI at all | Yes — web portal                    |
| <b>Hosts dashboards?</b>                | Yes — pinned tiles, alerts, Q&A | —                           | No                                  |
| <b>Report types</b>                     | Power BI reports                | N/A (data bridge only)      | .pbix<br>.rdl (paginated) reports   |
| <b>Needs a Gateway?</b>                 | Yes, for on-prem data           | —                           | No — already on-prem                |
| <b>Cycle for Updates from Microsoft</b> | Continuous, monthly             | Tied to Service releases    | A few times a year<br>(Jan/May/Sep) |

## What You Give Up by Going 100% Report Server

Some organizations run Report Server exclusively — no cloud Service at all — for data-privacy, compliance, or connectivity reasons. That trade-off means giving up:

- **AI features:** Q&A natural-language search, quick insights, and other AI-assisted features.
- **Dashboards:** Report Server has no dashboard object — no pinned tiles, no cross-report canvas, no data alerts.
- **Feature pace:** New capabilities reach the Service every month; Report Server only a few times a year.
- **App integration:** Native embedding with Teams, SharePoint Online, and Power Automate is cloud-only.

## Bottom Line

### Think of it this way:

- Power BI Service is the destination in the cloud.
- Power BI Gateway is the secure road that lets the cloud reach data trapped behind your firewall.
- Power BI Report Server is a different building entirely — an on-premises alternative to the cloud destination, not a piece of the same road.