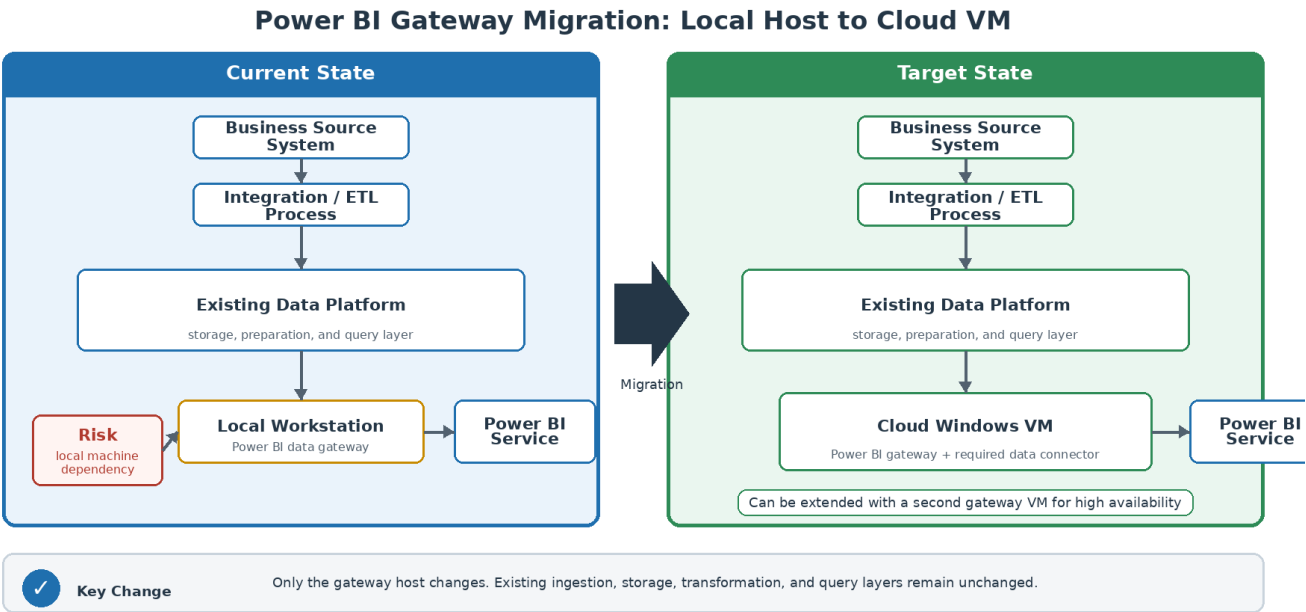


Power BI Gateway Migration: Local Host to Cloud VM

Executive Summary

The existing analytics pipeline remains unchanged. This migration moves the Power BI On-premises Data Gateway from a user-managed workstation to a cloud-hosted Windows VM. The change removes the workstation as a single point of failure and gives scheduled Power BI refreshes a more stable, supportable gateway host.

Migration Diagram



1. Current State

Data is ingested from a business source system into an existing analytics platform, prepared for reporting, and made available through a query layer. Power BI refreshes the dataset through a gateway installed locally on a user-managed workstation.

- Business source system
- Integration/ETL process
- Cloud data lake or analytics storage
- Data preparation and cleanup process
- Query layer used by Power BI
- Power BI Gateway on local workstation
- Power BI Service

Current Component	Role
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Current Component	Role
Business source system	Primary source for operational or business data.
Integration/ETL process	Moves data from the source system into the analytics platform.
Cloud data lake or analytics storage	Stores raw and curated data used for reporting.
Data preparation process	Cleans, structures, and prepares data for analytics.
Query layer	Exposes prepared data to reporting tools.
Local workstation gateway	Current gateway used by Power BI Service for dataset refreshes.

Current Challenges

- The workstation must remain powered on and connected to the internet.
- The workstation is a single point of failure.
- Refreshes can fail if the workstation sleeps, reboots, disconnects, or is unavailable.
- The setup is not ideal for production or business-critical reporting.
- Monitoring, ownership, and scalability are limited.

2. Target State

The Power BI gateway is moved to a cloud-hosted Windows VM. The existing source, ingestion, storage, preparation, and query layers remain unchanged. Power BI Service uses the cloud-hosted gateway for manual and scheduled refreshes.

- Business source system
- Integration/ETL process
- Cloud data lake or analytics storage
- Data preparation and cleanup process
- Query layer used by Power BI
- Cloud-hosted Windows VM with Power BI On-premises Data Gateway and required data connector
- Power BI Service

Target Component	Role
Cloud-hosted Windows VM	Dedicated machine that replaces the local workstation as the gateway host.
Power BI On-premises Data Gateway	Installed in standard mode on the VM and registered for refresh operations.
Data connector/DSN	Allows the gateway to connect to the existing query layer using approved settings.
Power BI Service	Uses the cloud-hosted gateway for manual and scheduled refreshes.

3. Migration Process

Step 1: Provision cloud-hosted Windows VM

Create a Windows Server VM in the approved cloud environment. Start with a moderate VM size and scale based on refresh load. Ensure outbound internet access is allowed and the VM remains online continuously.

Step 2: Install Power BI Gateway

Install the Power BI On-premises Data Gateway in standard mode. Sign in using the appropriate Power BI or Microsoft 365 service account. Register a new gateway and securely save the recovery key.

Step 3: Install required data connector

Install the required ODBC or native data connector on the VM. Configure the same connection settings where possible, including region or endpoint, query location, authentication method, catalog, database, and DSN name.

Step 4: Configure data-platform access

Ensure the credentials used by the gateway can query the data platform, read required metadata, read required data, and write or read query results where applicable.

Step 5: Add gateway connection in Power BI Service

In Power BI Service, go to Manage connections and gateways, select the new cloud-hosted gateway, add or update the data source, and map the dataset to the new gateway.

Step 6: Test manual refresh

Run a manual refresh and validate that the gateway is online, the data connection succeeds, the refresh completes, and report values match the current refresh path.

Step 7: Switch scheduled refresh

Update scheduled refresh to use the cloud-hosted gateway. Monitor the first refreshes using Power BI refresh history, gateway logs, VMhealth, and query history.

Step 8: Decommission local gateway

Once testing is successful, disable or remove the local gateway to avoid confusion and ensure Power BI uses the cloud-hosted gateway going forward.

4. Configuration Checklist

Area	Item	Status
Cloud VM	Windows VM provisioned and running	Pending
Cloud VM	Backup and monitoring configured	Pending
Gateway	Power BI Gateway installed in standard mode	Pending
Gateway	Gateway recovery key stored securely	Pending
Data connector	Required driver or connector installed	Pending
Data connector	DSN or connection settings configured and tested	Pending
Data platform	Permissions validated for query, metadata, data, and result access	Pending
Power BI	Dataset mapped to new gateway	Pending
Power BI	Manual refresh successful	Pending
Power BI	Scheduled refresh switched and monitored	Pending

5. Risks and Controls

Risk	Control
Gateway VM is offline	Enable monitoring, alerts, backup, and appropriate restart policies.

Risk	Control
Refresh fails due to credentials	Use approved service credentials and validate permissions before cutover.
Connection mismatch between old and new host	Use the same DSN or connection settings where possible, or update Power BI dataset mapping.
Single VM becomes a new single point of failure	For production, deploy a second VM and add it to a Power BI gateway cluster.
Security exposure on VM	Restrict access using cloud security controls, least privilege, and managed administration practices.

6. Production Recommendations

- Use a dedicated service account for gateway ownership and refresh credentials.
- Consider a two-node Power BI gateway cluster for high availability.
- Enable VM backup and monitoring alerts.
- Document data connector settings and the gateway recovery-key storage location.
- Store and manage credentials securely according to company policy.
- Remove the old local gateway after successful cutover.

7. Expected Outcome

After the migration, Power BI refreshes no longer depend on a local workstation. The gateway runs on a cloud-hosted Windows VM while the existing analytics pipeline remains intact. This provides a more reliable refresh path and prepares the environment for future high availability if required.