**Azure Blob Storage → Databricks → Snowflake → Power BI**

**Architecture Overview**

**Complete Cloud Infrastructure:**

* **Data Storage**: Azure Blob Storage
* **Data Processing**: Azure Databricks
* **Data Warehouse**: Snowflake
* **Visualization**: Power BI

A black background with a black square

AI-generated content may be incorrect.

**Phase 1: Azure Storage Setup**

**Create Azure Storage Account**

**Step 1: Navigate to Azure Portal**

* Go to [portal.azure.com](https://portal.azure.com/)
* Sign in with your credentials

A screenshot of a computer

AI-generated content may be incorrect.

**Step 2: Create Storage Account**

* Click "Create a resource"
* Search for "Storage Account"
* Click "Create"

A screenshot of a computer

AI-generated content may be incorrect.

**Step 3: Configure Storage Account**

* **Subscription**: Select your Azure subscription
* **Resource Group**: Create new "ItTechGenie-RG"
* **Storage account name**: ittechgeniestorage
* **Region**: East US
* **Performance**: Standard
* **Redundancy**: Locally-redundant storage (LRS)

A screenshot of a computer

AI-generated content may be incorrect. **Step 4: Create Container**

* Go to your storage account
* Navigate to "Containers" in left sidebar
* Click "+ Container"
* **Name**: sales-data
* **Public access level**: Private

A computer screen with a blue border

AI-generated content may be incorrect.

**Upload Dataset to Azure Blob**

**Method 1: Azure Portal Upload**

* Navigate to "sales-data" container
* Click "Upload" button
* Select your sales\_data.csv file
* Click "Upload"

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

**Method 2: Azure Cloud Shell**

bash

# Open Cloud Shell from Azure Portal (top ribbon)

# Upload your file to Cloud Shell first

az storage blob upload \

--account-name ittechgeniestorage \

--container-name sales-data \

--name sales\_data.csv \

--file sales\_data.csv \

--auth-mode login

**Phase 2: Databricks Workspace Setup**

**Create Databricks Workspace**

**Step 1: Create Databricks Service**

* Azure Portal → "Create a resource"
* Search for "Azure Databricks"
* Click "Create"

A screenshot of a computer

AI-generated content may be incorrect.

**Step 2: Configure Workspace**

* **Workspace name**: ittechgenie-databricks
* **Region**: East US (same as storage)
* **Pricing Tier**: Premium

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

**Step 3: Create Cluster**

* Open Databricks Workspace
* Navigate to "Compute" in left sidebar
* Click "Create Cluster"

**Step 4: Cluster Configuration**

* **Cluster name**: snowflake-pipeline
* **Cluster mode**: Single Node
* **Databricks runtime version**: 12.2 LTS
* **Node type**: Standard\_DS3\_v2
* **Auto-termination**: 30 minutes

A screenshot of a computer

AI-generated content may be incorrect.

**Phase 3: Snowflake Configuration**

**Snowflake Account Setup**

**Step 1: Create Snowflake Objects**  
In Snowflake web interface, run these SQL commands:

sql

-- Create Warehouse

CREATE WAREHOUSE ITTG\_WAREHOUSE

WAREHOUSE\_SIZE = XSMALL

AUTO\_SUSPEND = 300

AUTO\_RESUME = TRUE;

-- Create Database and Schemas

CREATE DATABASE ITTG\_SALES\_DB;

CREATE SCHEMA ITTG\_SALES\_DB.RAW\_DATA;

CREATE SCHEMA ITTG\_SALES\_DB.CLEAN\_DATA;

CREATE SCHEMA ITTG\_SALES\_DB.ANALYTICS;

-- Create Role and Permissions

CREATE ROLE DATA\_ENGINEER;

GRANT USAGE ON WAREHOUSE ITTG\_WAREHOUSE TO ROLE DATA\_ENGINEER;

GRANT ALL ON DATABASE ITTG\_SALES\_DB TO ROLE DATA\_ENGINEER;

**Step 2: Azure-Snowflake Integration**

sql

-- Create storage integration

CREATE STORAGE INTEGRATION azure\_sales\_integration

TYPE = EXTERNAL\_STAGE

STORAGE\_PROVIDER = AZURE

ENABLED = TRUE

AZURE\_TENANT\_ID = 'your-azure-tenant-id'

STORAGE\_ALLOWED\_LOCATIONS = ('azure://ittechgeniestorage.blob.core.windows.net/sales-data/');

-- Get integration details for Azure configuration

DESC STORAGE INTEGRATION azure\_sales\_integration;

**Step 3: Complete Azure Authorization**

* Note the AZURE\_CONSENT\_URL from description output
* Open URL in browser and authenticate
* Grant Snowflake access to Azure storage

A screenshot of a computer

AI-generated content may be incorrect.

**Phase 4: Databricks Pipeline Implementation**

**Create Databricks Notebooks**

A screenshot of a computer program

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

A black screen with blue and white text

AI-generated content may be incorrect.

A screen shot of a computer

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer program

AI-generated content may be incorrect.

A screen shot of a computer

AI-generated content may be incorrect.

A black screen with a white text

AI-generated content may be incorrect.

A black rectangular object with a white circle

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

A screen shot of a computer

AI-generated content may be incorrect.

A black rectangular object with a blue border

AI-generated content may be incorrect.

**Phase 5: Power BI Reporting**

**Connect Power BI to Snowflake**

**Step 1: Open Power BI Desktop**

* Launch Power BI Desktop on your local machine
* This is the ONLY step that happens locally

**Step 2: Snowflake Connection**

* Click "Get Data"
* Search for "Snowflake"
* Click "Connect"

A screenshot of a computer

AI-generated content may be incorrect.

**Step 3: Connection Details**

* **Server**: your\_account.snowflakecomputing.com
* **Warehouse**: ITTG\_WAREHOUSE
* **Database**: ITTG\_SALES\_DB
* **Schema**: CLEAN\_DATA

**Step 4: Import Data**

* Select "Import" connectivity mode
* Choose the views: VW\_POWERBI\_SALES\_DASHBOARD and SALES\_SUMMARY\_MONTHLY
* Click "Load"

A screenshot of a computer

AI-generated content may be incorrect. **Create Power BI Report**

**Recommended Visualizations:**

**Page 1: Sales Overview**

* **Total Sales** (Card visual)
* **Total Profit** (Card visual)
* **Sales by Month** (Line chart)
* **Sales by Region** (Stacked column chart)
* **Top Categories** (Bar chart)

**Page 2: Regional Performance**

* **Sales by Region** (Map visual)
* **Profit Margin by Category** (Matrix visual)
* **Customer Distribution** (Pie chart)
* **Monthly Trends by Region** (Line chart)

**Page 3: Product Analysis**

* **Sales by Subcategory** (Treemap)
* **Quantity vs Profit** (Scatter chart)
* **Discount Impact** (Line and clustered column chart)

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.