

Installing dbt (Data Build Tool) with Snowflake

This guide walks you through installing **dbt Core** with the **Snowflake adapter** on **Windows**, **Linux**, or **macOS**, including Python setup best practices.

Prerequisites

- [Python \(3.8–3.11 recommended\)](#)
- [pip](#)

☒ Recommended:

Use [pyenv](#) to manage multiple Python versions.

Use a [virtual environment](#) ([venv](#) or [virtualenv](#)) to isolate your project environment.

Windows

1. Install Python

Download from python.org

During installation, check: ☒ *Add Python to PATH*

2. Install dbt with Snowflake adapter

```
pip install dbt-snowflake
```

3. Verify Installation

```
dbt --version
```

Linux (Ubuntu/Debian)

1. Install Python and pip

```
sudo apt update
sudo apt install -y python3 python3-pip
```

2. Install dbt with Snowflake adapter

```
pip install dbt-snowflake
```

3. Verify Installation

```
dbt --version
```

macOS

1. Install Python

Install via [Homebrew](#) or [python.org](#)

2. Install dbt with Snowflake adapter

```
pip install dbt-snowflake
```

3. Verify Installation

```
dbt --version
```

Snowflake Authentication

By default, dbt connects to Snowflake using **username/password login**, which may prompt for **browser-based multi-factor authentication (MFA)** if the user has 2FA enabled.

Development Use Case

To avoid 2FA prompts during development or in CI environments, it's recommended to create a **dedicated service user** with **key-pair authentication**.

☒ Key-Pair Authentication Steps

1. **Generate an RSA private key** and store it securely (e.g., `~/.ssh/snowflake_key.pem`)
2. Upload the public key to the Snowflake user
3. In your `profiles.yml`, set:

```
private_key_path: /path/to/snowflake_key.pem
```

This allows fully automated access **without needing a browser prompt** or 2FA.

This is especially important when running `dbt` inside CI/CD pipelines or scheduled jobs.

Helpful Links

- [dbt Core Installation Docs](#)
- [dbt Snowflake Adapter Docs](#)
- [pyenv GitHub](#)
- [Python Virtual Environments](#)
- [development_process](#)