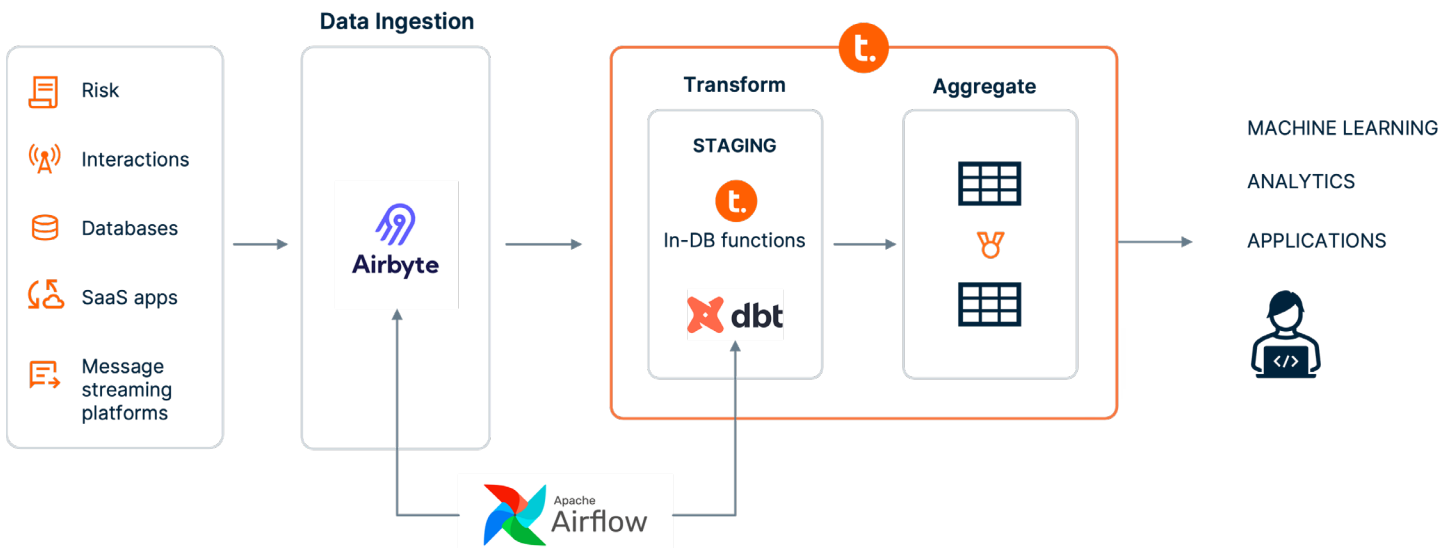# Leverage Airbyte Cloud, Apache Airflow™, and dbt for Increased Data Engineering Efficiency
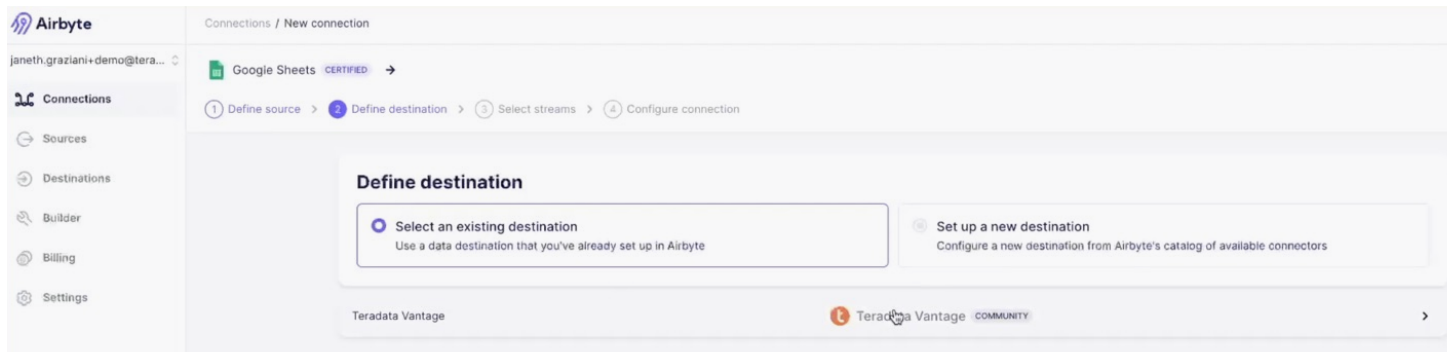
Modern data stack integrations

Data engineers working with Teradata are used to managing large volumes of data. Managing extract, load, and transform (ELT) pipelines is now easier with new features and integrations from Teradata. Here's how data engineers can leverage Airbyte Cloud, Apache Airflow™, and dbt (data build tool) to increase productivity.

Managing extract, load, and transform (ELT) pipelines is now easier with new features from Teradata.

Airbyte Cloud

Airbyte Cloud allows you to copy data from 300+ sources to Teradata Vantage™ (both on-premises Teradata VantageCore and cloud-based Teradata VantageCloud deployments are supported). After bringing data from a variety of SaaS applications, you can combine it into data products using dbt and leverage ClearScape Analytics™ to analyze and unlock actionable insights.
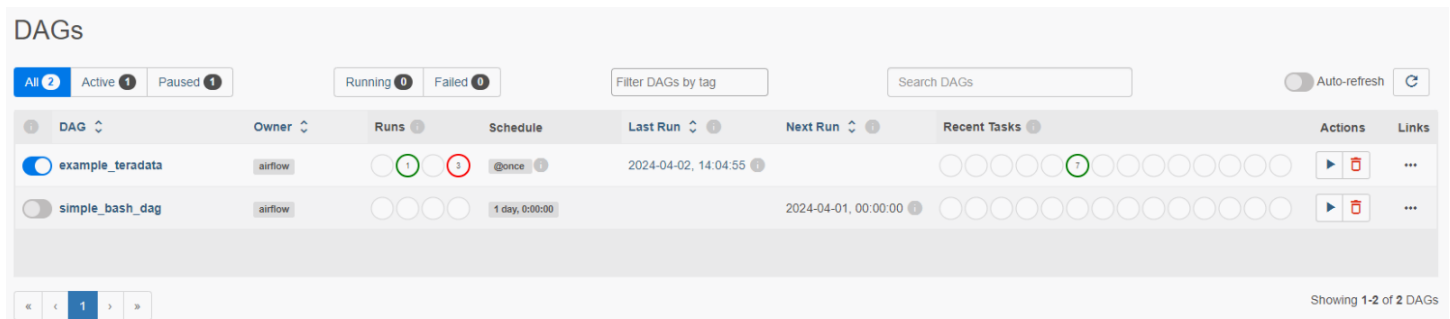

teradata.

Key features

- Handles the extract and load parts of the ELT process

- Offers source connectors that enable the retrieval of data from popular APIs, databases, and SaaS platforms directly into Vantage

- Streamlines data ingestion with a fully managed and hosted service, eliminating the need for time-consuming infrastructure setup and management

Useful links

- Teradata Vantage™ destination now available on Airbyte Cloud Link
Learn more

- Use Airbyte to load data from external sources to Teradata Vantage
Learn more

Apache Airflow™

Airflow is the go-to tool for automating data workflows, and data engineers can now automate Teradata workflows —and save time to work on customer-focused initiatives.

Key features

- Automates and manages complex workflows involving multiple tasks, dependencies, and data processing

- Offers scalability through custom operators, hooks, and plug-ins for platform-specific use cases

- Automates tasks related to cluster provisioning, configuration, deployment, and monitoring
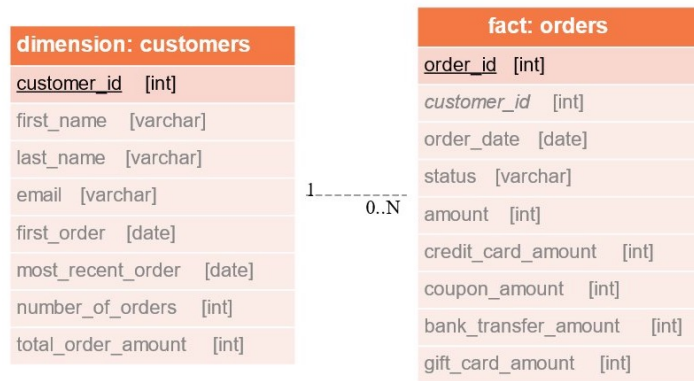
Useful links

- A beginner's guide to orchestrating pipelines with Apache Airflow and Teradata Use Apache Airflow with Teradata Vantage
Learn more

- Execute Airflow workflows that use dbt with Teradata Vantage
Learn more

dbt (data build tool)

dbt is a data transformation tool that enables data to be transformed where it lives—in the data lake and warehouse.

Teradata has added support for dbt data contracts with the dbt-teradata 1.7.1 release, a key data quality assurance tool. And Teradata session mode, the most-used session mode in Teradata environments, is now available for dbt database connections.

Just like interfaces in programming languages, data contracts allow you to define how your data products are seen by other teams. You can evolve your dataset and honor the same data contract to ensure that downstream teams are not affected by your changes.
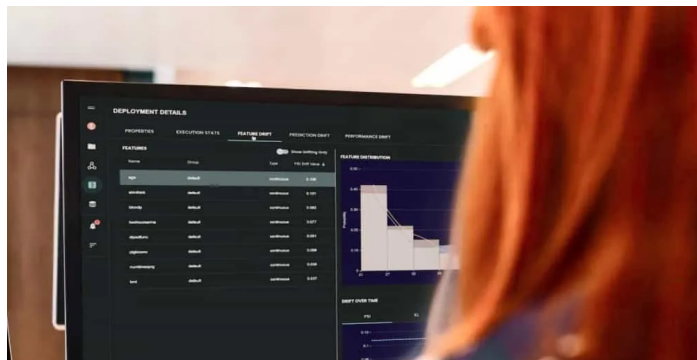
Key features
- Handles the transform in the ELT process
- Facilitates transformation of data into consumable formats for dimensional models for business intelligence (BI) tools, features for AI/ML models, and more

Useful links
- Data transformation with dbt and Teradata Vantage
  Learn more
- Improved data quality in your dbt models with dbt-teradata 1.7.
  Learn more
- dbt with Teradata Vantage
  Learn more

dimension: customers	
customer_id	[int]
first_name	[varchar]
last_name	[varchar]
email	[varchar]
first_order	[date]
most_recent_order	[date]
number_of_orders	[int]
total_order_amount	[int]

fact: orders	
order_id	[int]
customer_id	[int]
order_date	[date]
status	[varchar]
amount	[int]
credit_card_amount	[int]
coupon_amount	[int]
bank_transfer_amount	[int]
gift_card_amount	[int]

1 --------- 0..N

customers	
id	[int]
first_name	[varchar]
last_name	[varchar]
email	[varchar]

1 ----- 0..N

orders	
id	[int]
user_id	[int]
order_date	[date]
status	[varchar]

1 ----- 0..N

payments	
id	[int]
order_id	[int]
payment_method	[int]
amount	[int]

About Teradata

At Teradata, we believe that people thrive when empowered with trusted information. We offer the most complete cloud analytics and data platform for AI. By delivering harmonized data and Trusted AI/ML, we enable more confident decision-making, unlock faster innovation, and drive the impactful business results organizations need most.

Learn more at Teradata.com.

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