

# Tidal Automation Adapter for Apache® Airflow

Orchestrate Airflow activities within enterprise processes

## KEY BENEFITS:

**Incorporate** complex Airflow Directed Acyclic Graphs (DAGs) into business workflows

**Apply** a richer set of scheduling constructs than what is available in Airflow

**Enable** Developers to focus on higher value work instead of scheduling tasks

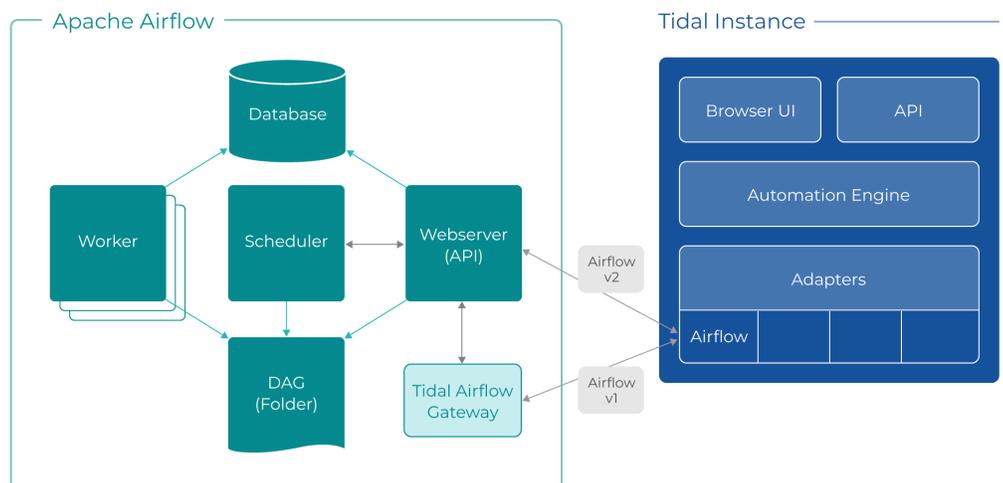
## PRODUCT OVERVIEW

Apache Airflow is an open-source platform for creating, running and monitoring workflows. Users develop Python language scripts that define Directed Acyclic Graphs (DAGs). These DAGs specify dependencies and a sequence of steps (or tasks) to run either on a defined schedule or based on external event triggers. Airflow is popular among developers who need to monitor and manage data pipelines, particularly in data science teams.

Our adapter for Airflow provides seamless integration and automation of Airflow DAG executions into your Tidal-managed processes. With more robust scheduling functionality than the basic features in Airflow, the Tidal platform enables you to include complex DAGs as Airflow jobs within your enterprise workflows and schedule those jobs based on other dependencies and resources. Centralized management frees up developers from scheduling and monitoring so they can focus on higher value activities.

Whether you have one or 100 Airflow servers, Tidal efficiently scales to support the scheduling and orchestration of your Airflow tasks.

## ARCHITECTURE DIAGRAM



Our adapter for Airflow runs as part of the Tidal instance. An additional Tidal component is installed on the Airflow server when running Airflow v1. For Airflow v2, our adapter works directly through the Airflow API.



## SCHEDULING AIRFLOW ACTIVITIES IN TIDAL AUTOMATION

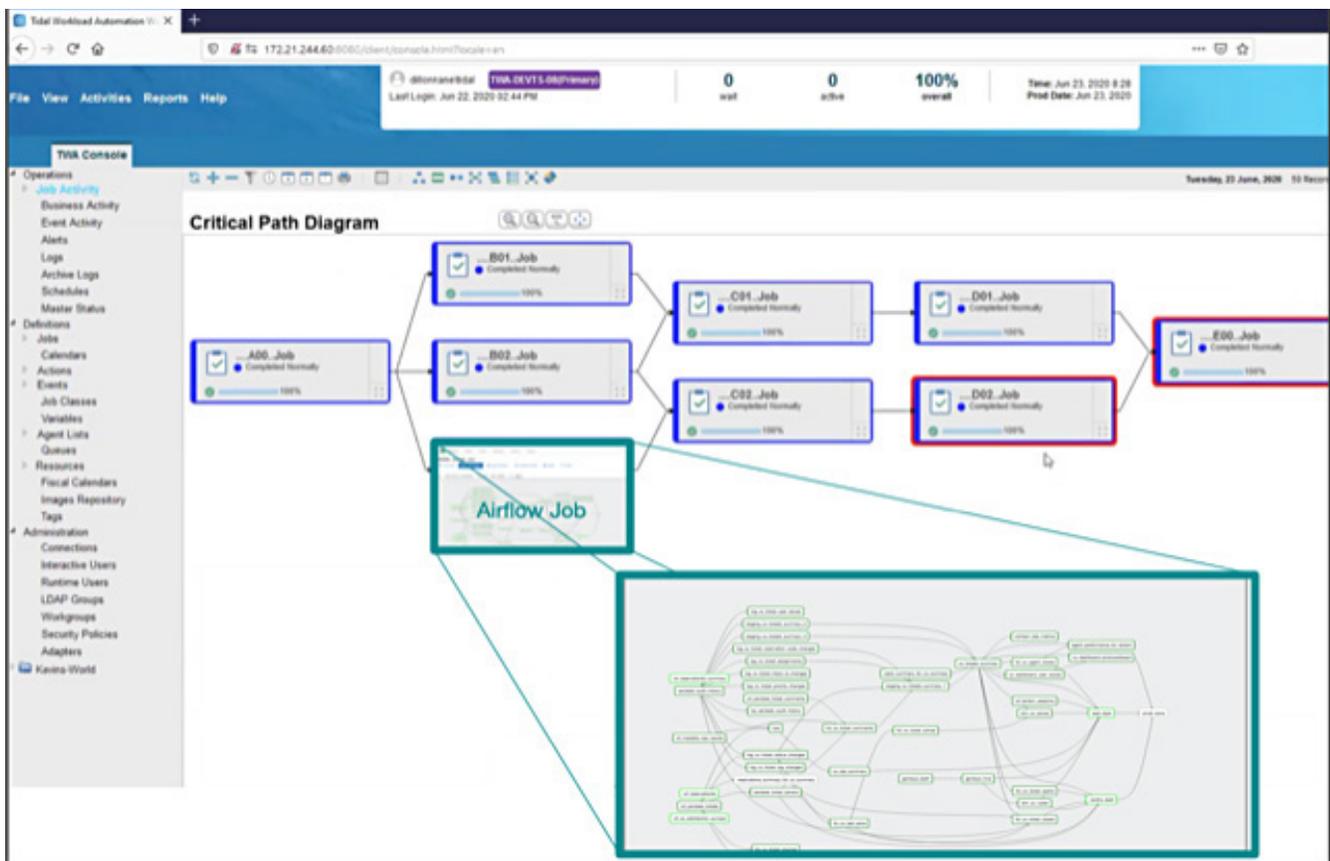
Our adapter for Airflow brings your DAGs into Tidal as Airflow jobs so they can be centrally managed and incorporated into enterprise workflows. Job definitions specific to Airflow are pre-populated in the Tidal UI for easy point-and-click automation.

### Airflow Job Definition

Specify the DAG ID and Tidal will fetch it from Airflow. There are two options to Run the DAG:

- DAG Run (based on Run ID or JSON Configuration)
- Tree view which shows sub-tasks of the DAG

You also have the ability to Run Separate Tasks. You can easily select individual tasks within the overall DAG to be scheduled.



### Tidal's adapter for Airflow enables you to:

- Tie Airflow activities into cross-application enterprise workflows
- Schedule Airflow jobs based on time, events or dependencies external to a DAG
- Verify the availability of external resources – such as Kubernetes – before starting an Airflow job
- Distribute Airflow jobs across multiple Airflow clusters for improved performance



## BUSINESS VALUE

Airflow is growing in popularity for operationalizing enterprise data pipelines. Our adapter provides an effective mechanism for bringing your data science, data ingestion and IoT DAGs into Tidal for centralized automation and management. The Tidal platform delivers greater business value than the embedded Airflow scheduler with:

- Improved scalability
- Alerting and notifications
- Ability to define the right level of controls and permissions
- Self-service for Kubernetes users
- Comprehensive logging to satisfy audit requirements
- Robust calendaring and scheduling functionality

### Why Tidal Administrators Should Consider the Integration:

- Avoid islands of automation and separate schedulers
- Balance resource consumption with meeting SLAs
- Satisfy change management and audit requirements with Tidal's logging

### Why Airflow Users Should Consider Tidal for Scheduling Activities:

- Free up time from 24/7 monitoring and management of Airflow jobs
- Take advantage of more advanced scheduling constructs and calendars
- Ensure you can meet audit requirements for promoting activities to Production