

In order to debug issues that may be affecting an airflow pipeline:

- Give the DAGs a makeover: We can start by scrutinizing the DAG structure, dependencies, and scheduling intervals to spot any issues. We would look parallelizing tasks or breaking them down into bite-sized pieces for better workload sharing. If needed, we can implement retries and exponential backoff strategies to keep our tasks on track.
- Look into data partitioning and incremental processing: We could look into slicing data into smaller portions, making it easier to digest and reducing memory usage. We'll also harness the power of incremental processing, using techniques like change data capture (CDC) to focus only on fresh or updated data.
- Improve data queries and storage: Next, we could look into reviewing and upgrading data storage solutions to ensure efficient data retrieval and storage, including any queries/data extraction to reduce execution time and resource usage.
- Scale the Airflow infrastructure: Next, we could scale the airflow infrastructure by adding more worker nodes or setting up a multi-node Airflow cluster, employing autoscaling solutions that dynamically adjust the infrastructure based on resource needs.
- Upgrade monitoring and alerting: We would need to ensure that all of our processes are monitored and logged to identify performance bottlenecks. Establish alerting mechanisms to notify the team about critical failures, allowing for proactive intervention and issue resolution.
- Polish code quality and maintainability: Ensure that we are following the rules of code quality, testing, and continuous integration. Regular code reviews and refactorings will ensure our codebase remains spick-and-span, keeping up with the ever-evolving requirements and technologies.
- Train and upskill the team: Let's foster an environment of continuous learning and knowledge exchange among our teammates. We'll offer training and workshops on Airflow best practices, optimization tricks, and advanced features to keep everyone at the top of their game.