

Dynamic DAGs and Scheduling in Airflow

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Dynamic DAG Generation

The screenshot shows a web browser window with the Apache Airflow documentation page for Dynamic DAG Generation. The browser's address bar shows the URL `airflow.apache.org/docs/apache-airflow/stable/howto/dynamic-dag-generation.html#`. The page features the Apache Airflow logo and a navigation menu with links to Community, Meetups, Documentation, Use-cases, Announcements, Blog, and Ecosystem. On the left, a sidebar lists various topics, with 'Dynamic DAG Generation' highlighted. The main content area has a breadcrumb trail 'Home / How-to Guides / Dynamic DAG Generation' and a large heading 'Dynamic DAG Generation'. Below the heading, a paragraph explains that the document describes creating DAGs with dynamically generated structures where the number of tasks remains constant across DAG runs. A 'Note' box highlights the importance of a consistent sequence of tasks and task groups. The text continues, stating that in all cases, DAGs should be generated with a consistent sequence to prevent changes in the Grid View upon refresh. It suggests using a stable sorting mechanism in database queries or the `sorted()` function in Python. On the right, a vertical list of links includes 'Dynamic DAG Generation', 'Dynamic DAGs with environment variables', 'Generating Python code with embedded meta-data', 'Dynamic DAGs with external configuration from a file', and 'Registering dynamic tasks'. A 'Suggest a change on this page' button is visible at the bottom right.

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This document describes creation of DAGs that have a structure generated dynamically, but where the number of tasks in the DAG does not change between DAG Runs. If you want to implement a DAG where number of Tasks (or Task Groups as of Airflow 2.6) can change based on the output/result of previous tasks, see [Dynamic Task Mapping](#).

Note

Consistent sequence of generating tasks and task groups

In all cases where you generate DAGs dynamically, you should make sure that Tasks and Task Groups are generated with consistent sequence every time the DAG is generated, otherwise you will see Tasks and Task Groups changing their sequence in the Grid View every time you refresh the DAG. This can be achieved for example by using a stable sorting mechanism in your Database queries or by using `sorted()` function in Python.

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Hands-on: Dynamic DAGs



Thank you!

See you in the next session 💪