

Model Governance

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Model Governance

To capture and view centralized information about your ML projects, models, and builds in Apache Atlas (Data Catalog) for a specific environment, governance must be enabled.

Enabling model governance

You must enable governance to capture and view information about your ML projects, models, and builds centrally from Apache Atlas (Data Catalog) for a given environment. If you do not select this option while provisioning Cloudera AI Workbenches, then integration with Atlas will not work.

About this task

Procedure

1. Go to Cloudera AI and click Provision Workbench on the top-right corner.
2. Enter the Cloudera AI Workbench name and other details.
3. Click Advanced Options.
4. Select Enable Governance.

Registering training data lineage using a linking file

The Cloudera AI projects, model builds, model deployments, and associated metadata are tracked in Apache Atlas, which is available in the environment's SDX cluster. You can also specify additional metadata to be tracked for a given model build. For example, you can specify metadata that links training data to a project through a special file called the linking file (lineage.yaml).

The lineage.yaml file describes additional metadata and the lineage relationships between the project's models and training data. You can use a single lineage.yaml file for all the models within the project.



Note: Your lineage file should be present in your project before you create a model build. The lineage file is parsed and metadata is attached during the model build process.

1. Create a YAML file in your Cloudera AI project called lineage.yaml.
If you have used a template to create your project, a lineage.yaml file should already exist in your project.
2. Insert statements in the file that describe the relationships you want to track between a model and the training data. You can include additional descriptive metadata through key-value pairs in a metadata section.

YAML	YAML Structure	Description
Model name	Top-level entry	A Cloudera AI model name associated with the current project. There can be more than one model per linking file.
hive_table_qualified_names	Second-level entry	This pre-defined key introduces sequence items that list the names of Hive tables used as training data.
Table names	Sequence items	The qualified names of Hive tables used as training data enclosed in double quotation marks. Qualified names are of the format <i>DB-NAME.TABLE-NAME@CLUSTER-NAME</i>
metadata	Second-level entry	This pre-defined key introduces additional metadata to be included in the Atlas representation of the relationship between the model and the training data.

YAML	YAML Structure	Description
<i>KEY:VALUE</i>	Third-level entries	Key-value pairs that describe information about how this data is used in the model. For example, consider including the query text that is used to extract training data or the name of the training file used.

The following example linking file shows entries for two models in your project: modelName1 and modelName2:

```
modelName1:
  hive_table_qualified_names:
    - "db.table1@namespace"
    - "db.table2@ns"
  metadata:
    key1: value1
    key2: value2
    query: "select id, name from table"
    training_file: "fit.py"
modelName2:
  hive_table_qualified_names:
    - "db.table2@ns"
```

Viewing lineage for a model deployment in Atlas

You can view the lineage information for a particular model deployment and trace it back to the specific data that was used to train the model through the Atlas' Management Console.

Procedure

1. Navigate to Management Console Environments , select your environment, and then under Quick Links select Atlas.
2. Search for ml_model_deployment. Click the model deployment of your interest.
3. Click the Lineage tab to see a visualization of lineage information for the particular model deployment and trace it back to the specific data that was used to train the model.

You can also search for a specific table, click through to its Lineage tab and see if the table has been used in any model deployments.