Identity Columns with Databricks Delta

Ryan Chynoweth

2 min read · Apr 10, 2022

Introduction

Identity columns are used to generate unique values for different types of analytics and Lakehouse workloads. One of the most common reasons to use them is to build a relationship between fact and dimension tables for faster joins, lookups, and processing. Creating unique keys in Apache Spark has traditionally been more difficult than it should have been.

A common resource I like to share with customers is a live stream by Denny Lee and Douglas Moore from Databricks where they discuss generating unique keys and the different options when using Apache Spark. The key takeaway from the video is that there was a trade off between performance and reliability of the generated sequences. Meaning, I can have low spread of the numbers generated but I would suffer performance or I could have great performance but a large spread of the sequence.

New Feature in Databricks Delta

Now with Databricks Runtime 10.4 LTS we have finally made identity columns for Delta tables generally available (was available previously as a private preview feature). The values generated by this feature are not guaranteed to be consecutive but it is a best effort to keep the gap as small as possible while maintaining high performance. It does guarantee that the values will be unique so you can easily create surrogate keys for your workloads

Because there always seems to be FUD about these type of data warehouse features against Databricks. It is good to note that even Snowflake's identity column feature does not guarantee sequential keys without gaps, and but there are alternate options to doing so. This is an almost identical feature comparison between the two products. Although, the big drawback is that Snowflake requires you to store your data in a proprietary data format and access everything via SQL. While Databricks has open language and storage support.

Creating a Table with an Identity Column

Identity columns are created by using the Databricks Delta generated column feature. In this example we will do the following:

- Create a database with a location. Creating databases with a location will allow you to easily manage all your tables and save them to your own cloud storage account which is recommended.
- Change my default database
- Create my table and supply the generated column

- Copy data into my table using COPY INTO, notice I do not supply the id column.

```
CREATE DATABASE IF NOT EXISTS my_database
COMMENT 'my demo database'
LOCATION 's3a://demo/my_database' ;

USE my_database;

CREATE TABLE my_table (
id BIGINT GENERATED ALWAYS AS IDENTITY
value STRING,
amount double

) USING delta;

COPY INTO my_table
FROM (SELECT value, amount
       FROM 's3a://bronze/demo/table/*.parquet'
     )
FILEFORMAT = PARQUET;
```

For more information please refer to the Databricks Documentation, specifically the parameters section.

Conclusion

Identity columns using Delta Lake just got easier! Try it out and let me know what you think!

Disclaimer: these are my own thoughts and opinions and not a reflection of my employer

Databricks Delta Lake Identity Columns Databricks Sql

Written by Ryan Chynoweth

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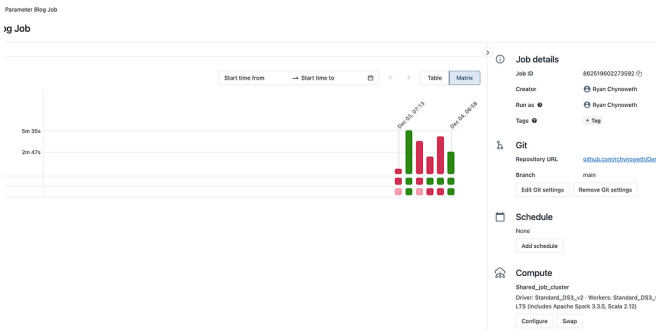

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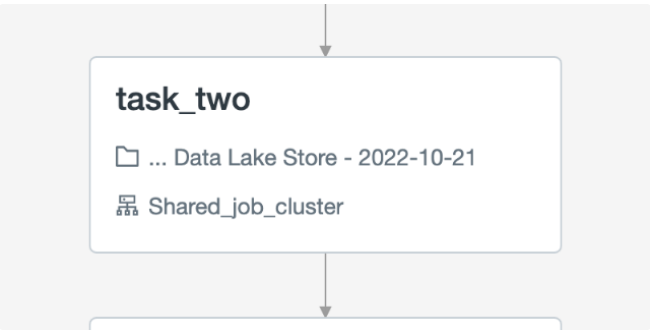

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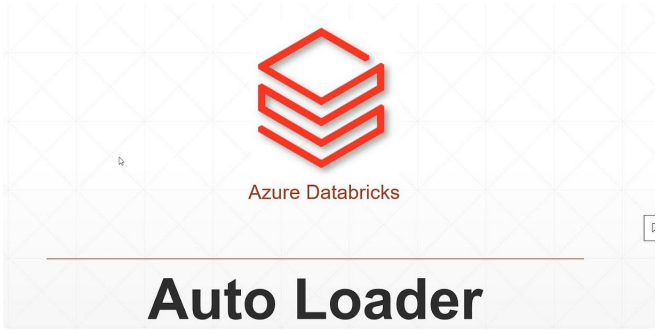

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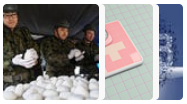

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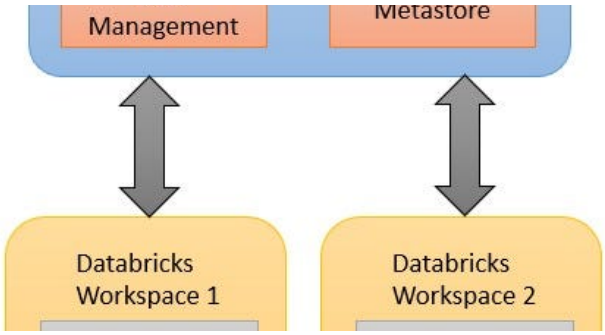

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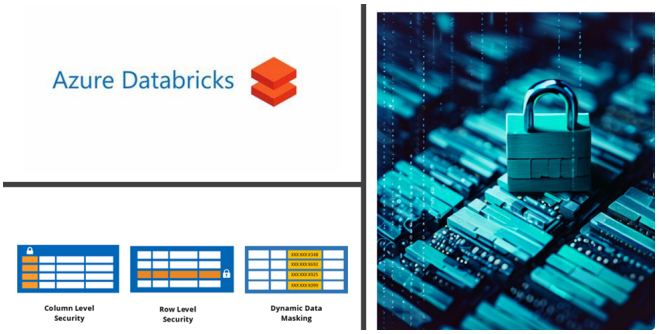

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