

# [Snowflake] - Expression type does not match column data type, expecting VARIANT but got VARCHAR

Last updated by | Jackie Huang | Jan 4, 2022 at 12:24 AM PST

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## Issue

When customer try to write data into snowflake table, he/she may meet following error:

java.sql.BatchUpdateException: SQL compilation error: Expression type does not match column data type, expecting VARIANT but got VARCHAR

## Root Cause

The column(s) type of input data is string different compared with related column(s) in snowflake sink which is VARIANT.

When we store data with complexed schema (array/map/struct) into new snowflake table, it will automatically convert dataflow type into its physical type "VARIANT".

Column Name	Ordinal ▲	Type	Nullable
movieId	1	NUMBER(38,0)	true
details	2	VARIANT	true

Related value is stored as JSON string.

Row	movieId	details
1	1	{ "releaseDate": "1945-12-12", "ticketPrice": 10.35, "title": "Rambo" }
2	2	{ "releaseDate": "1989-12-01", "ticketPrice": 8.4, "title": "Die Hard" }

## Resolution

For snowflake VARIANT, it can only accept dataflow value which is struct, map or array type. If value of customer input data column(s) is JSON/XML/other string, the customer can use one of following options to solve this issue:

**Option-1:** Use parse transformation <https://docs.microsoft.com/en-us/azure/data-factory/data-flow-parse> before snowflake sink to covert value into struct, map or array type to work around it, for example:

```
source(output(
    movieId as decimal(38,0),
    details as string
),
allowSchemaDrift: true,
validatesSchema: false,
format: 'table') ~> source1
source1 parse(details = details ? (
    title as string,
    releaseDate as date,
    ticketPrice as decimal(10,2)
),
format: 'json',
documentForm: 'singleDocument') ~> Parse1
```

**Note:** The value of snowflake VARIANT type column(s) is read as string in spark by default.

**Option-2:** Login snowflake server (<https://{accountName}.azure.snowflakecomputing.com/>) to change the schema of snowflake target table.

- Create one new column with varchar to store the values.

```
alter table tablename add newcolumnname varchar;
```

- Copy the value of VARIANT into new column

```
update tablename t1 set newcolumnname = t1."details"
```

- Delete unused VARIANT column

```
alter table tablename drop column "details";
```

- Rename new column to be the old name

```
alter table tablename rename column newcolumnname to "details";
```

## Additional Information:

- Icm Reference: N/A
- Author: Zhangyi Yu
- Reviewer: Zhangyi Yu; Shawn Xiao
- Keywords: