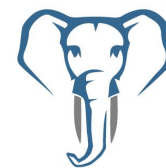


# Migrating with Debezium

Mike Fowler - Principal Data Engineer, Public Cloud Practice

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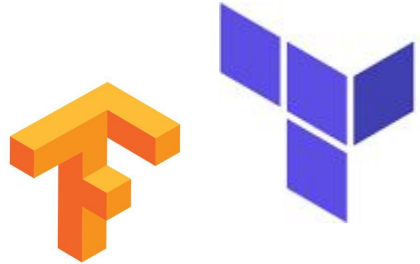
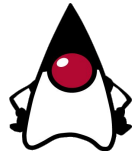
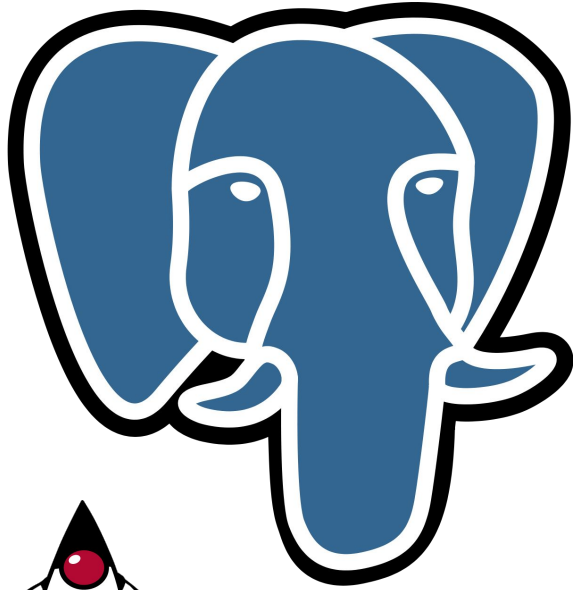
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# About Me



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Data Governance and Intelligence across  
Cloud Apps and Infrastructure



re  
SOCIAL

# Assess



# Refactor



# Migrate



# How do we get from A to B?

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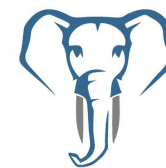
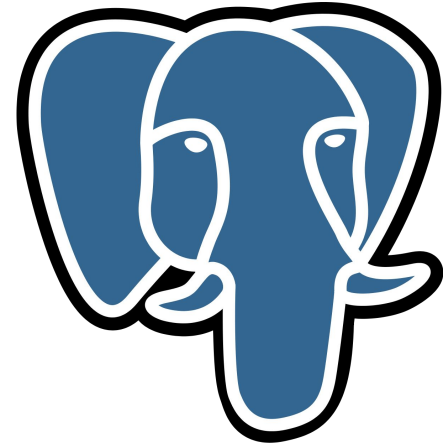
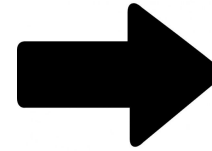
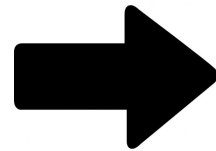
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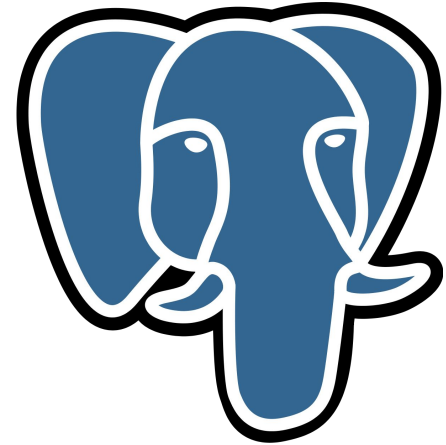
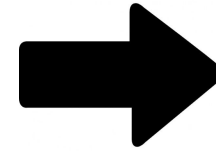
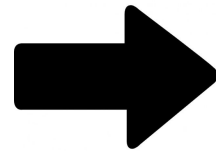
# Option: CSV Extract, Transform & Load

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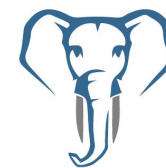
  
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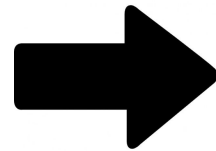
# Option: Initial Load + Change Data Capture

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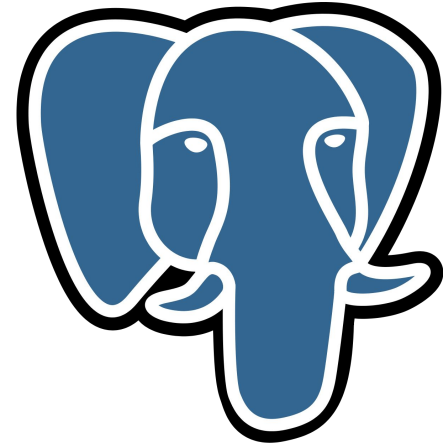
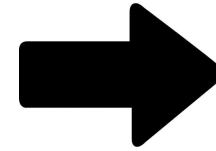
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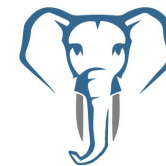


  
kafka



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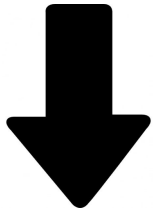
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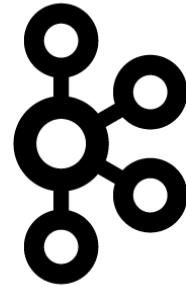
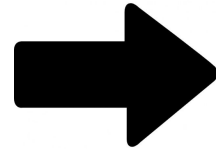
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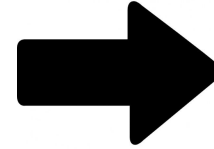
# Option: Initial Load + Change Data Capture



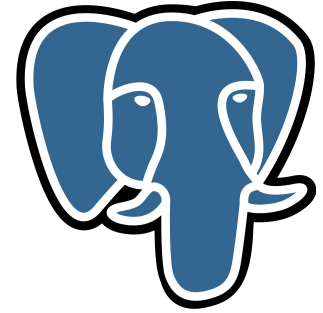
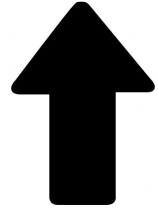
debezium



kafka

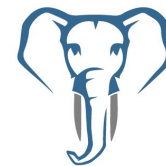


kafka  
connect  
jdbc



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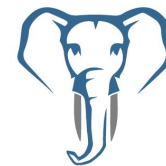
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# Ingredients

- Kafka
- Confluent
  - Schema Registry
  - Kafka Connect JDBC
- Debezium
- MySQL Database (Sakila)
- PostgreSQL

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# Setting up MySQL

```
mysql -e "CREATE DATABASE sakila;"  
mysql -e "CREATE USER sakila IDENTIFIED BY 'sakila';"  
mysql -e "GRANT ALL PRIVILEGES ON *.* TO sakila;"  
mysql -u sakila -psakila sakila < sakila-schema.sql  
mysql -u sakila -psakila sakila < sakila-data.sql
```

<https://dev.mysql.com/doc/sakila/en/>

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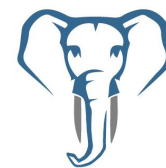


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# Setting up MySQL

```
server-id          = 2019
log_bin            = /var/log/mysql/mysql-bin.log
binlog_format      = row
binlog_row_image   = full
```

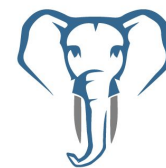


# Setting up PostgreSQL

```
psql -c "CREATE USER sakila WITH PASSWORD 'sakila';"  
psql -c "CREATE DATABASE sakila OWNER sakila;"
```

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# Setting up Debezium

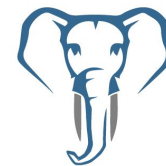
```
{ "name": "mysql-connector",  
  "config": {  
    "Connector.class": "io.debezium.connector.mysql.MySqlConnector",  
    "database.hostname": "192.168.100.8",  
    "database.port": "3306",  
    "database.user": "sakila",  
    "database.password": "sakila",  
    "database.server.id": "184054",  
    "database.server.name": "mysql",  
    "database.whitelist": "sakila",  
    "database.history.kafka.bootstrap.servers": "127.0.0.1:9092",  
    "database.history.kafka.topic": "dbhistory.sakila",  
    "include.schema.changes": "true" }  
}
```

# Adding the Debezium Kafka Connector

```
curl -X POST
  -d @mysql.json
  http://localhost:8083/connectors
  --header "Content-Type:application/json"
```

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# Verifying What's Happened

```
# ./kafka-topics.sh --list --zookeeper localhost:2181
...
dbhistory.sakila
mysql
mysql.sakila.actor
mysql.sakila.address
mysql.sakila.category
mysql.sakila.city
...
```

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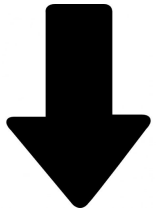
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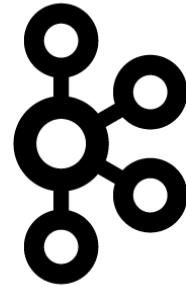
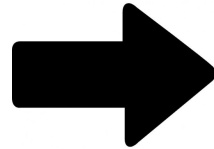
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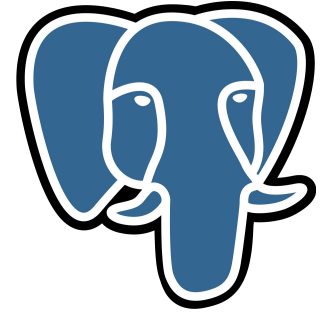
# Interlude: The Story so Far



debezium

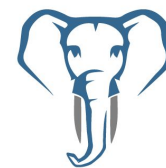


kafka



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# Setting up Kafka Connect JDBC

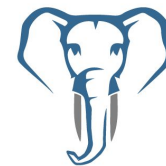
```
{  "name": "psql-sakila-sink-actor",
  "config": {
    "connector.class": "io.confluent.connect.jdbc.JdbcSinkConnector",
    "tasks.max": "1",
    "topics": "mysql.sakila.actor",
    "connection.url":
      "jdbc:postgresql://192.168.100.9:5432/sakila?user=sakila&password=sakila",
    "transforms": "unwrap",
    "transforms.unwrap.type": "io.debezium.transforms.UnwrapFromEnvelope",
    "auto.create": "true",
    "insert.mode": "upsert",
    "table.name.format": "actor",
    "pk.fields": "actor_id",
    "pk.mode": "record_value"  } }
```

# Adding the Kafka JDBC Connector

```
curl -X POST
  -d @jdbc.json
  http://localhost:8083/connectors
  --header "Content-Type:application/json"
```

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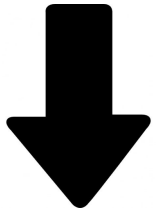
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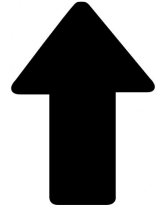
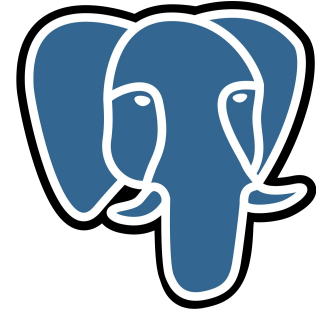
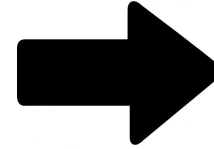
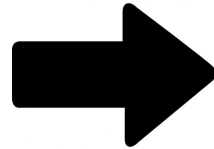
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# Tada!



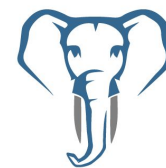
debezium



kafka  
connect  
jdbc

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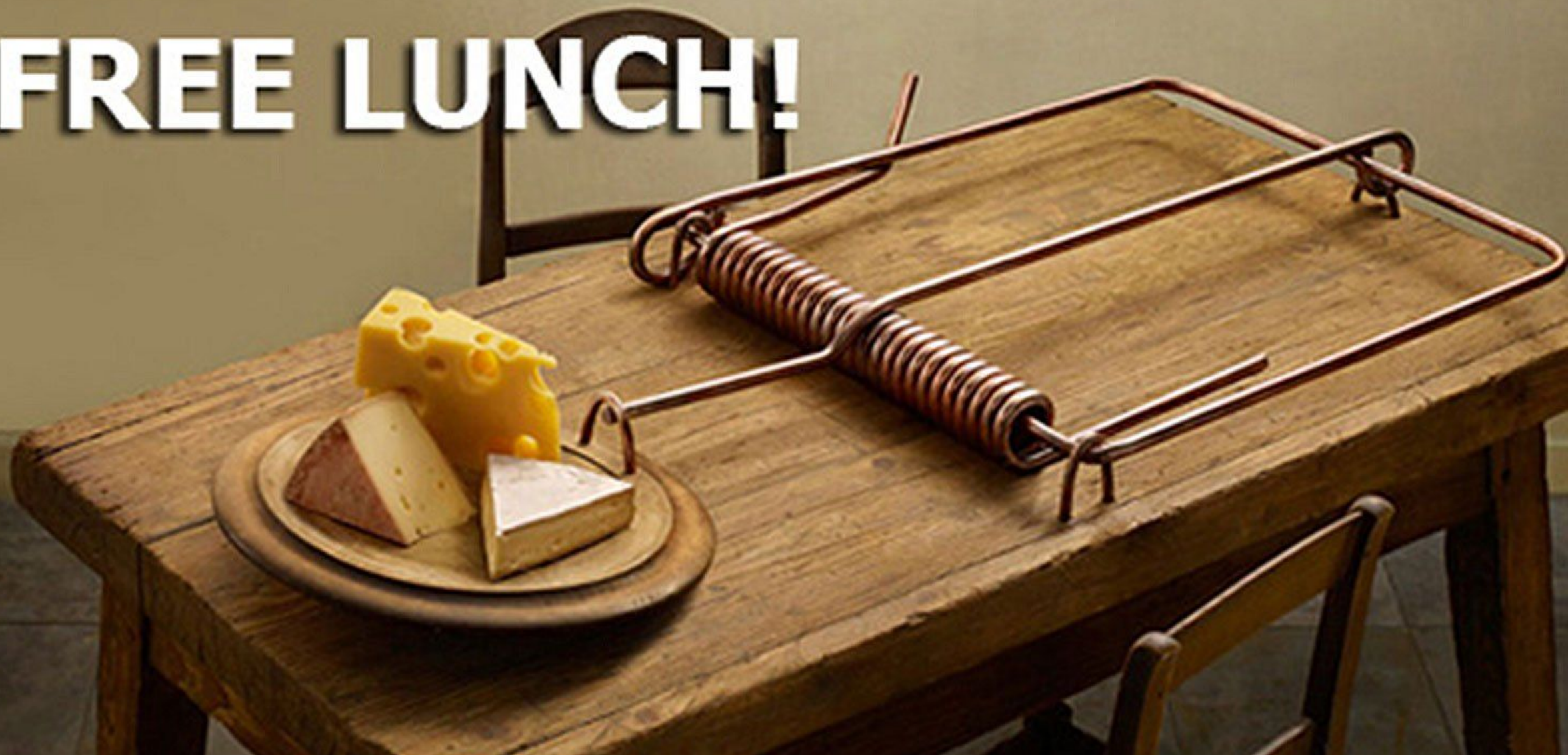


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# Demo



# Questions ?



Mike Fowler



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www.mlfowler.com



mike.fowler@claranet.uk

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