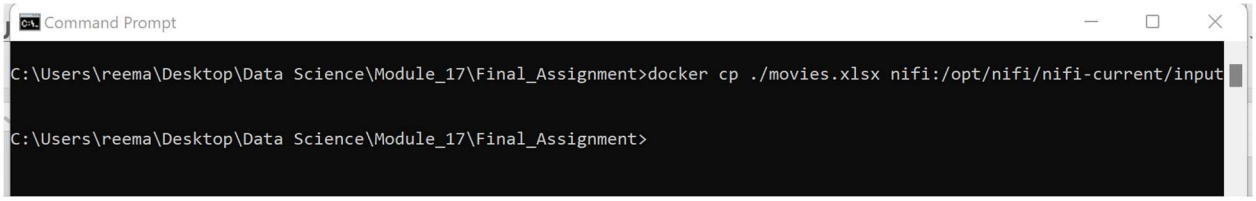
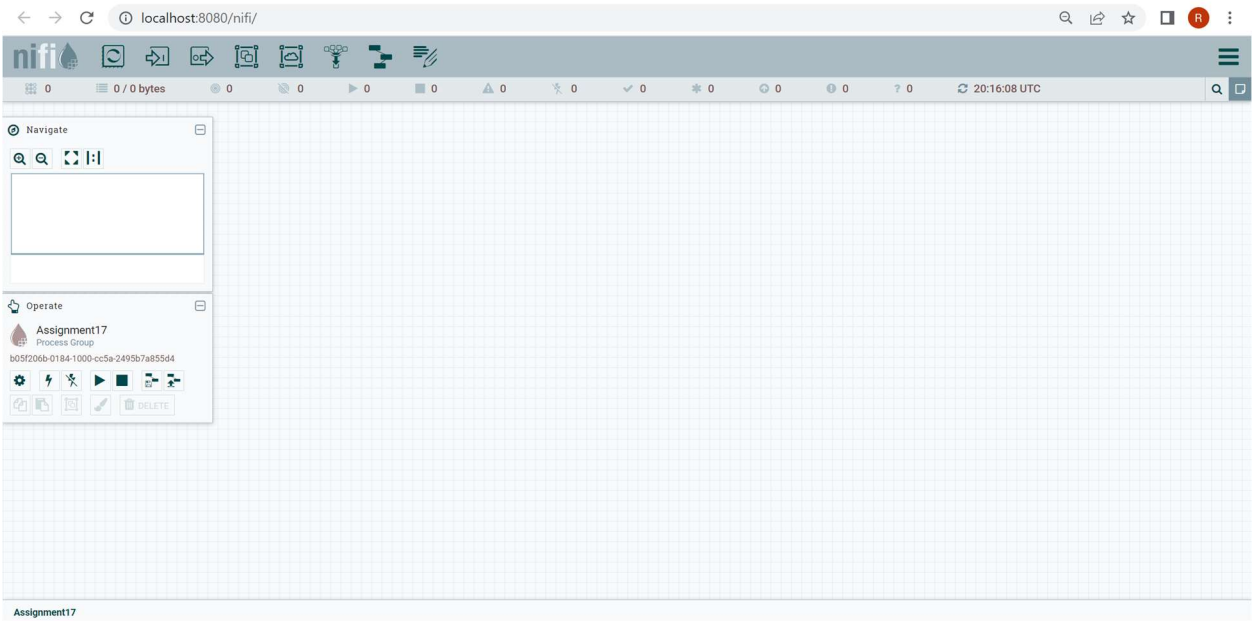
Part 1: Writing Data to an Excel File

1. Deployed NiFi in Docker. Created two folders: input and output in NiFi CLI via Docker GUI

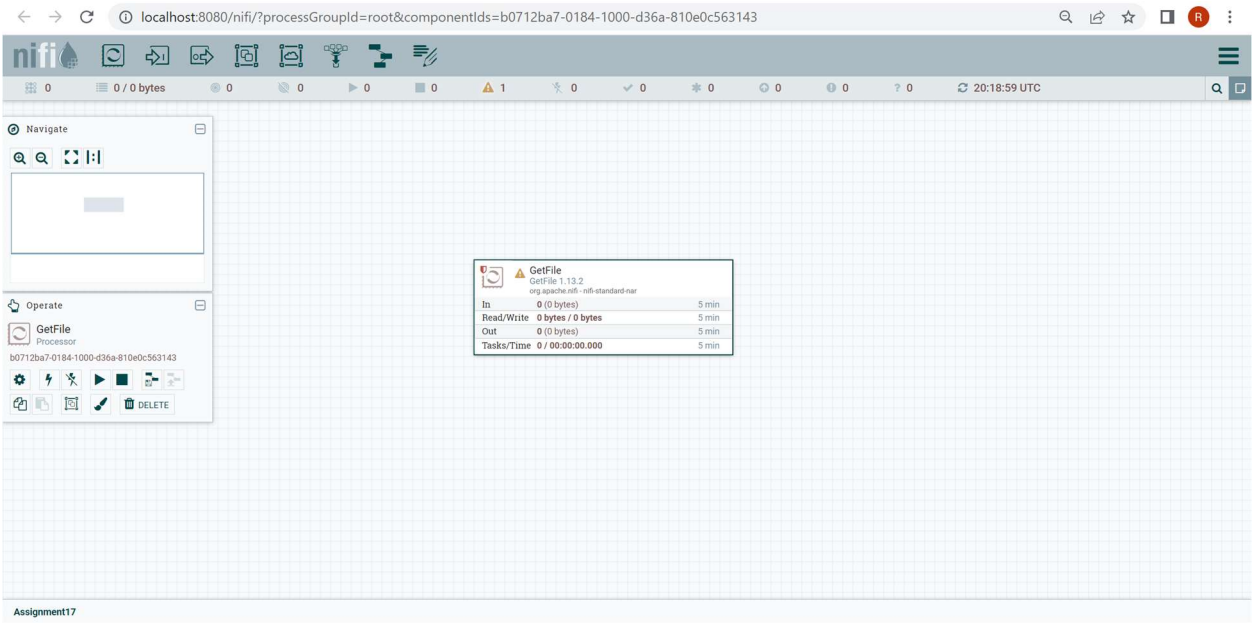
2. Copied the movies.xlsx file in the input folder.

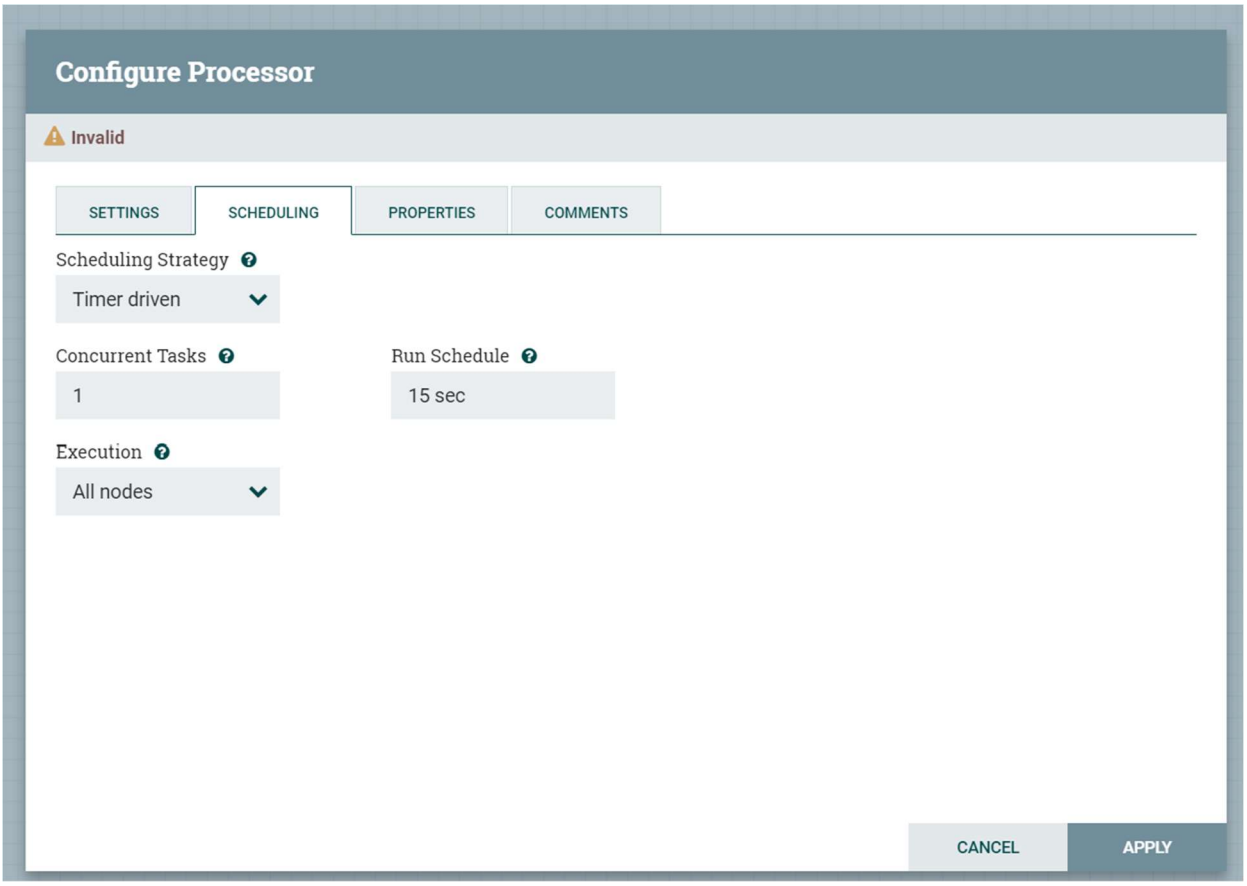


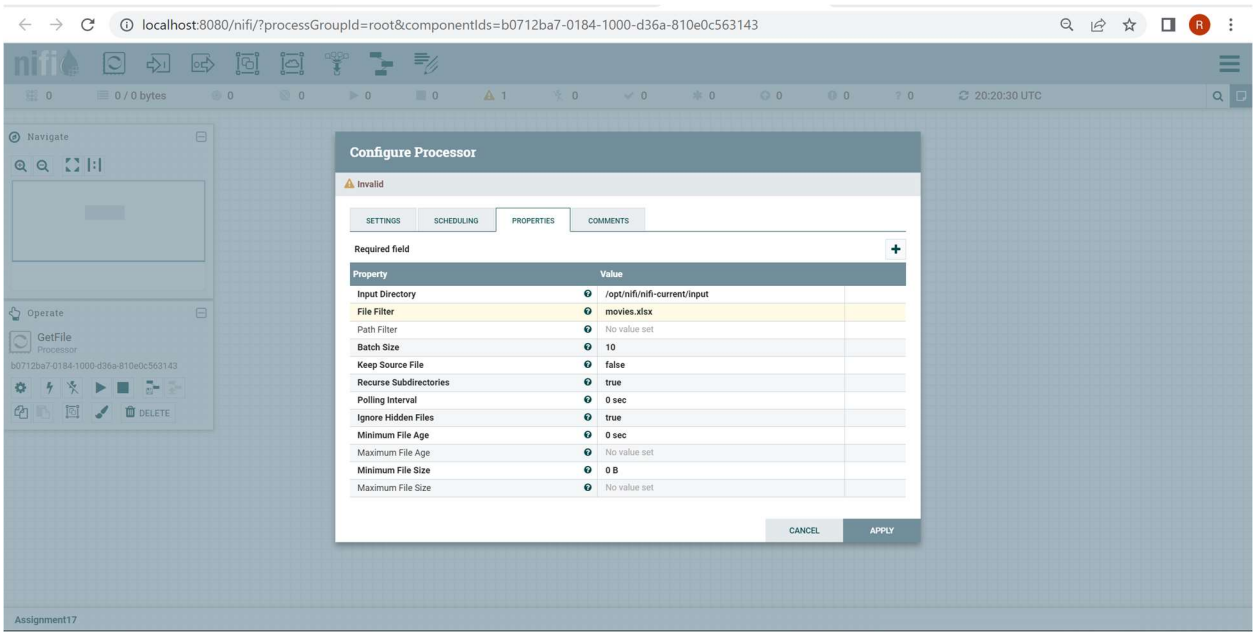
3. Navigated to http://localhost:8080/nifi/ & created the Assignment17 process group.



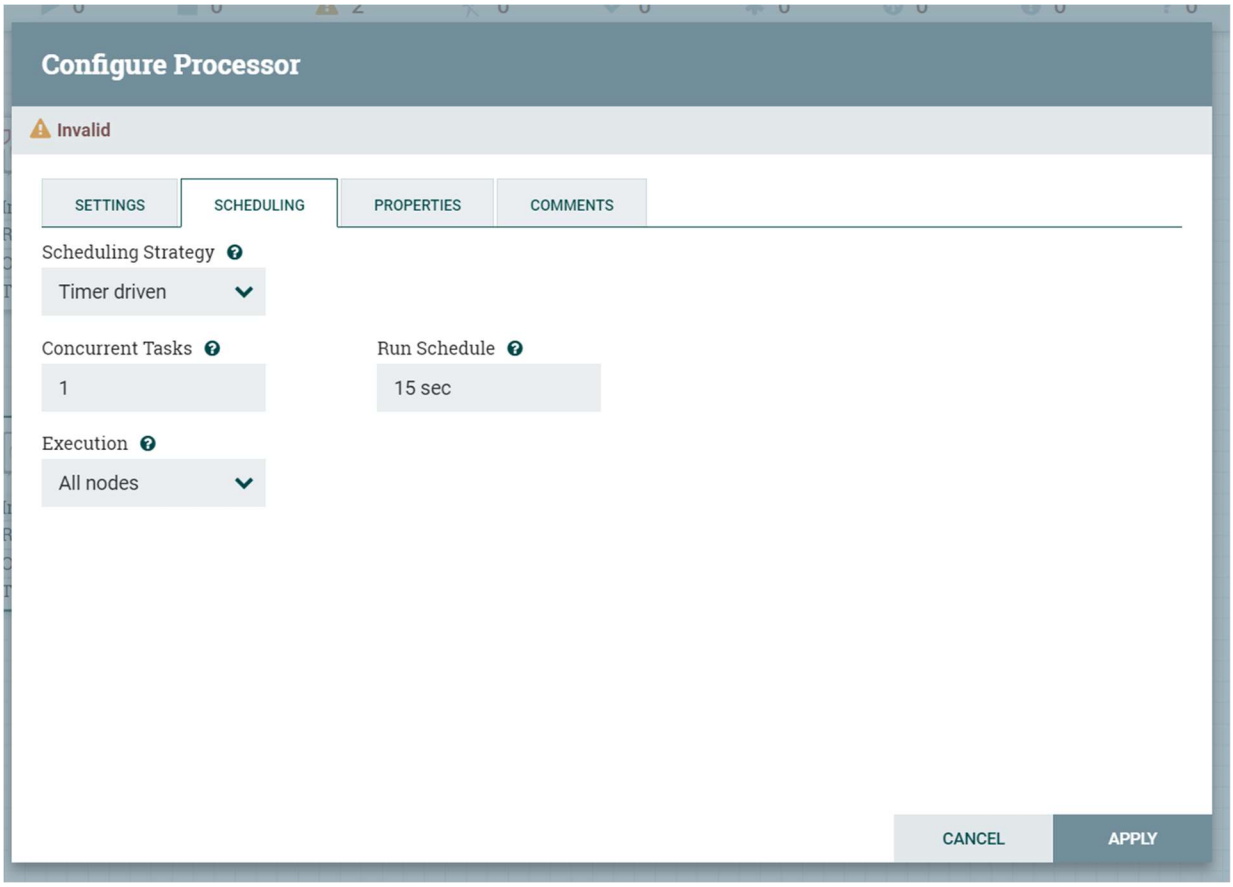
4. Configured the *properties* for the GetFile *processor*.

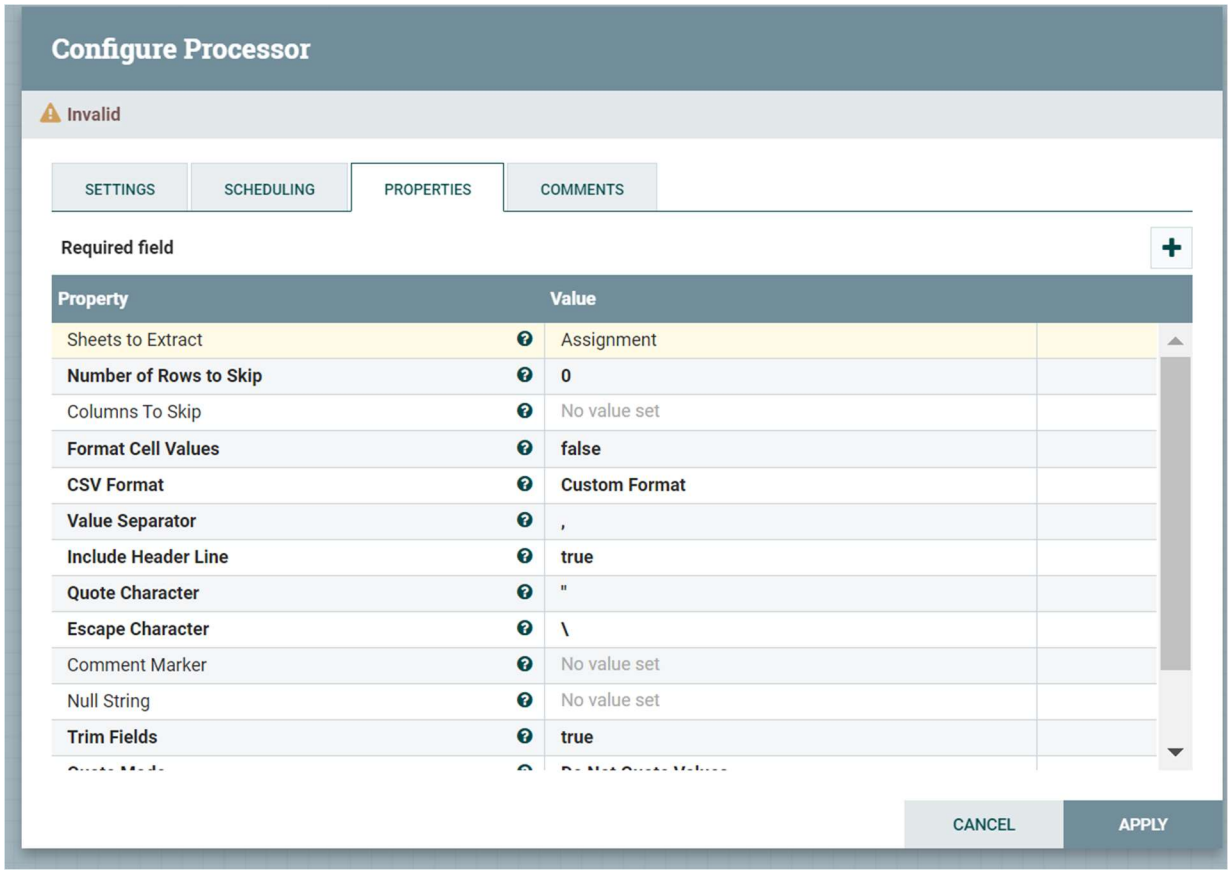



Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Scheduling Strategy
Timer driven
Concurrent Tasks
1
Run Schedule
15 sec
Execution
All nodes
CANCEL
APPLY

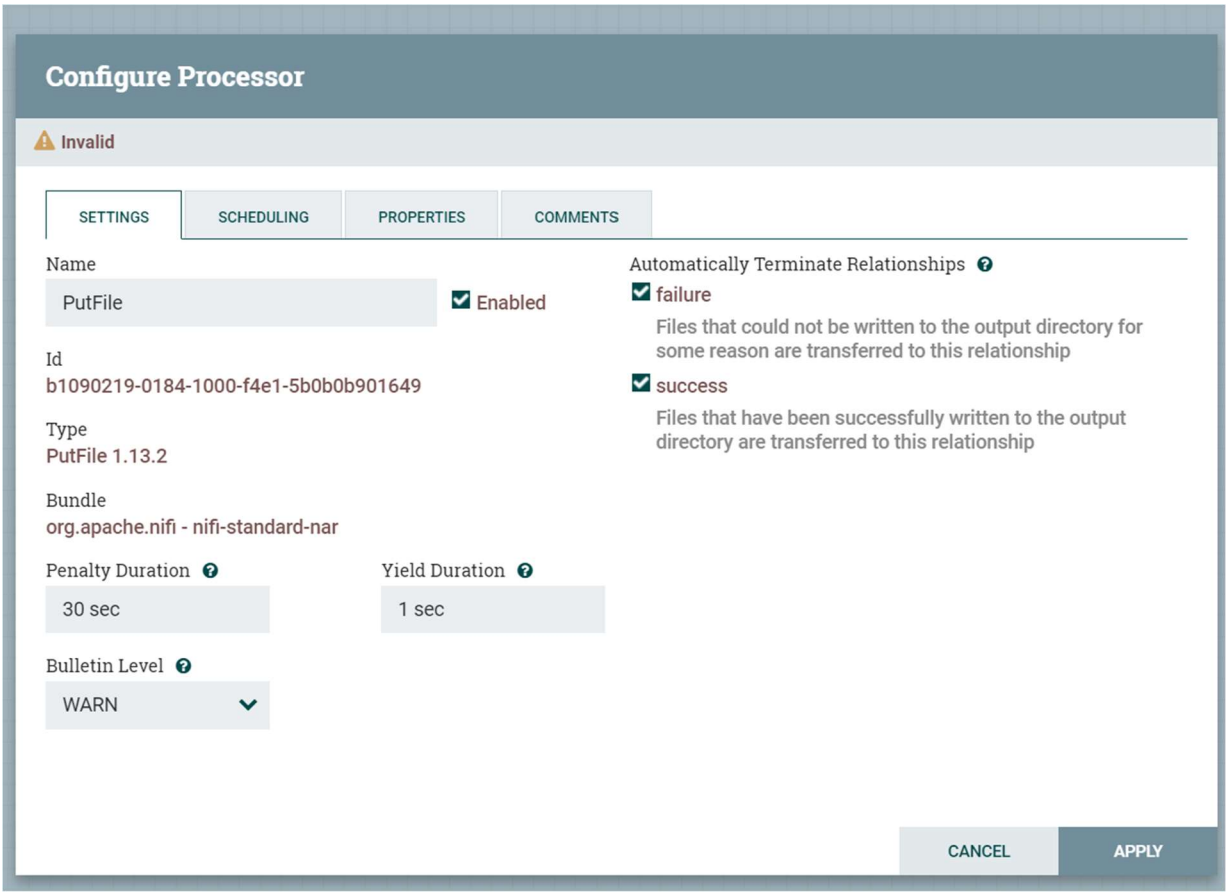

localhost:8080/nifi/?processGroupId=root&componentIds=b0712ba7-0184-1000-d36a-810e0c563143
Navigate
Operate
GetFile
Processor
b0712ba7-0184-1000-d36a-810e0c563143
DELETE
Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Required field
Property
Value
Input Directory
/opt/nifi/nifi-current/input
File Filter
movies.xlsx
Path Filter
No value set
Batch Size
10
Keep Source File
false
Recurse Subdirectories
true
Polling Interval
0 sec
Ignore Hidden Files
true
Minimum File Age
0 sec
Maximum File Age
No value set
Minimum File Size
0 B
Maximum File Size
No value set
CANCEL
APPLY
Assignment17

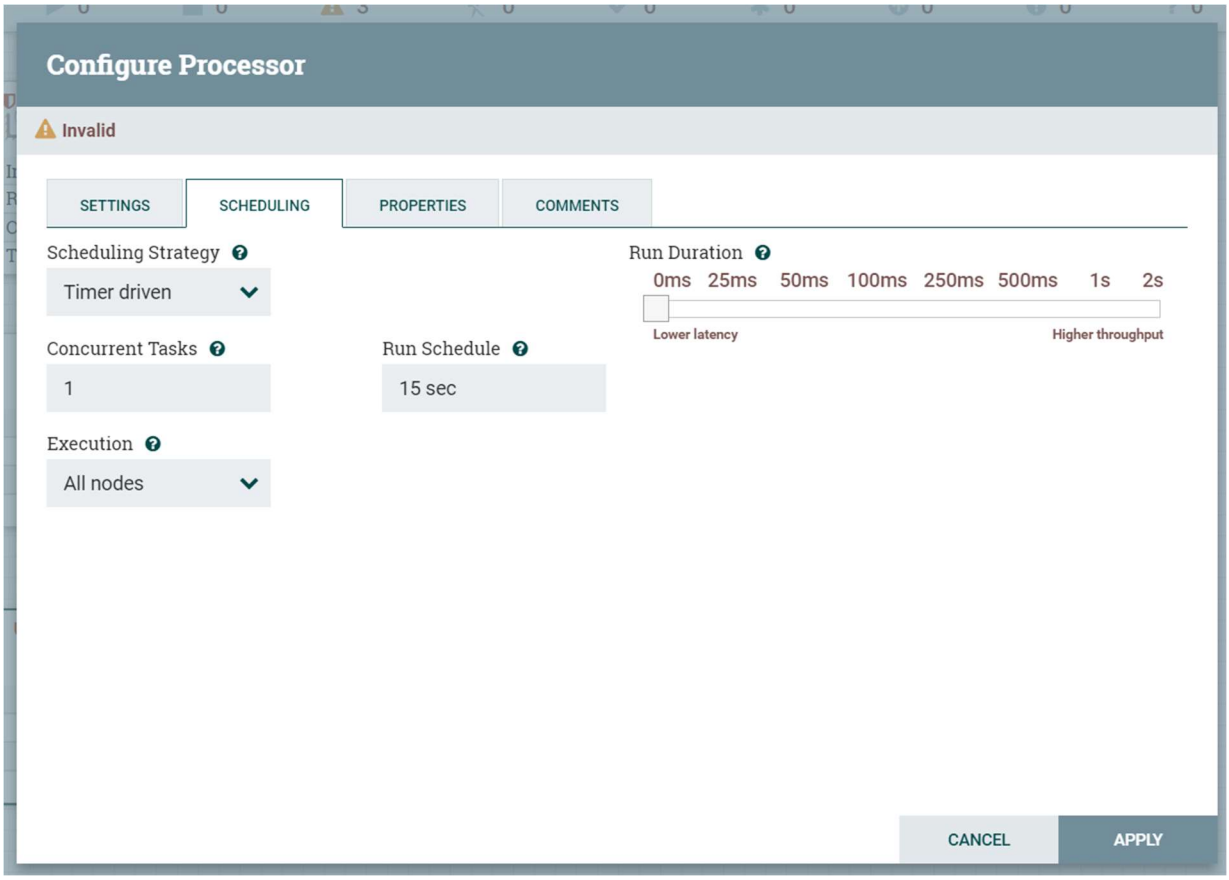
5. Configured the *properties* for the ConvertExcelToCSVProcessor *processor*.

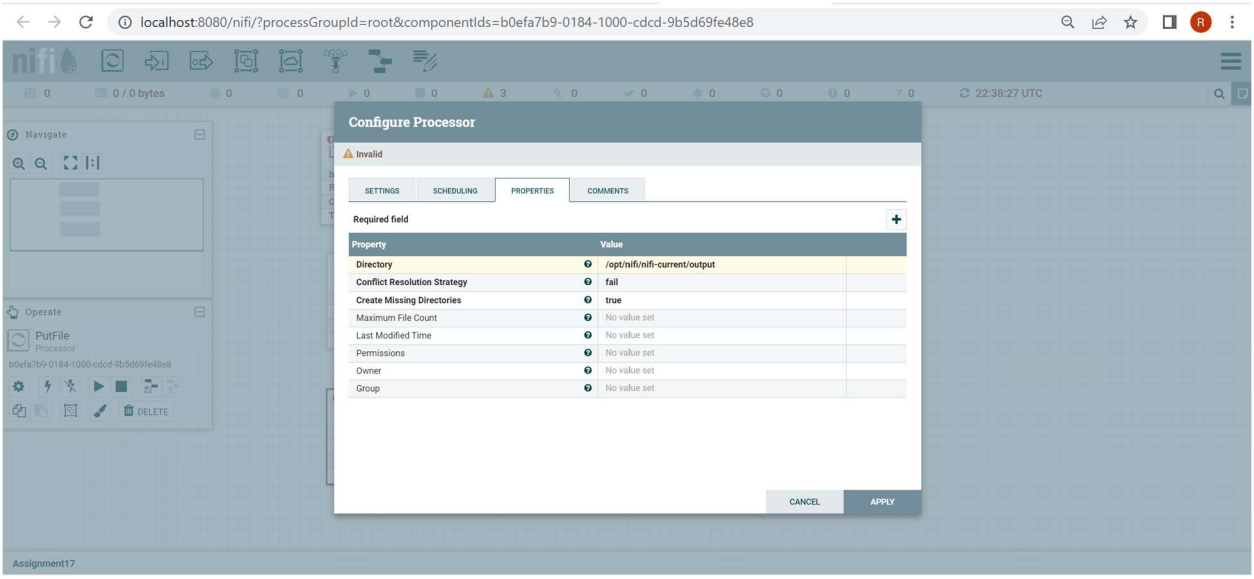



Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Required field
Property
Value
Sheets to Extract
Assignment
Number of Rows to Skip
0
Columns To Skip
No value set
Format Cell Values
false
CSV Format
Custom Format
Value Separator
,
Include Header Line
true
Quote Character
"
Escape Character
\
Comment Marker
No value set
Null String
No value set
Trim Fields
true
CANCEL
APPLY

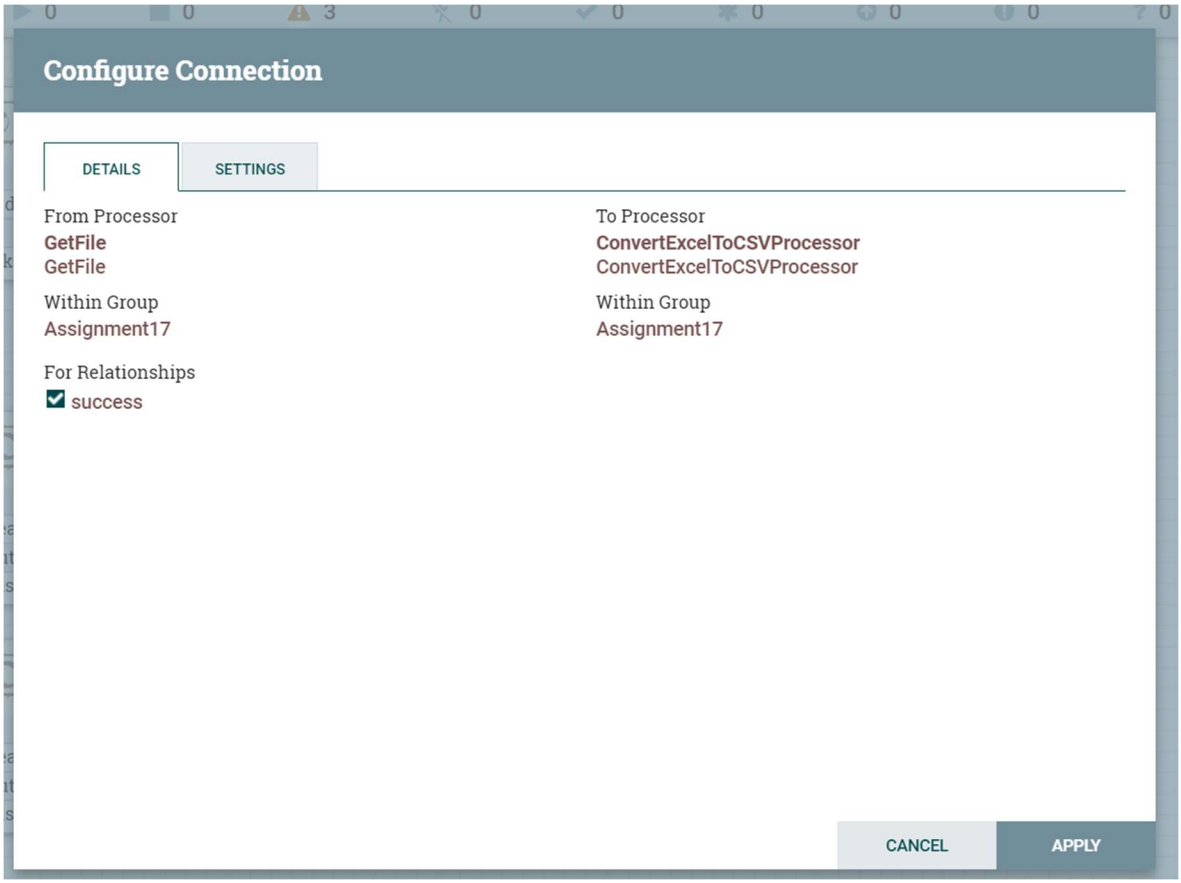
6. Configured the *properties* for the PutFile *processor*.

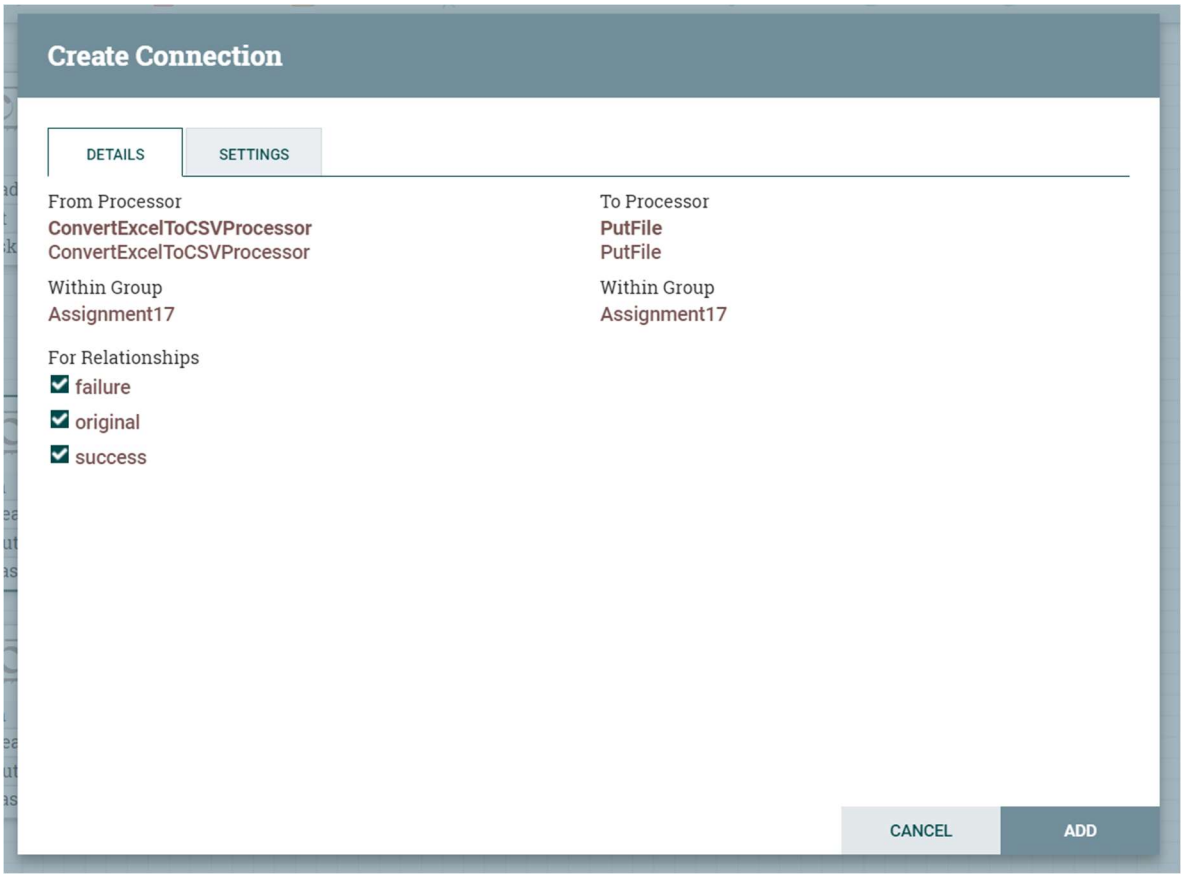


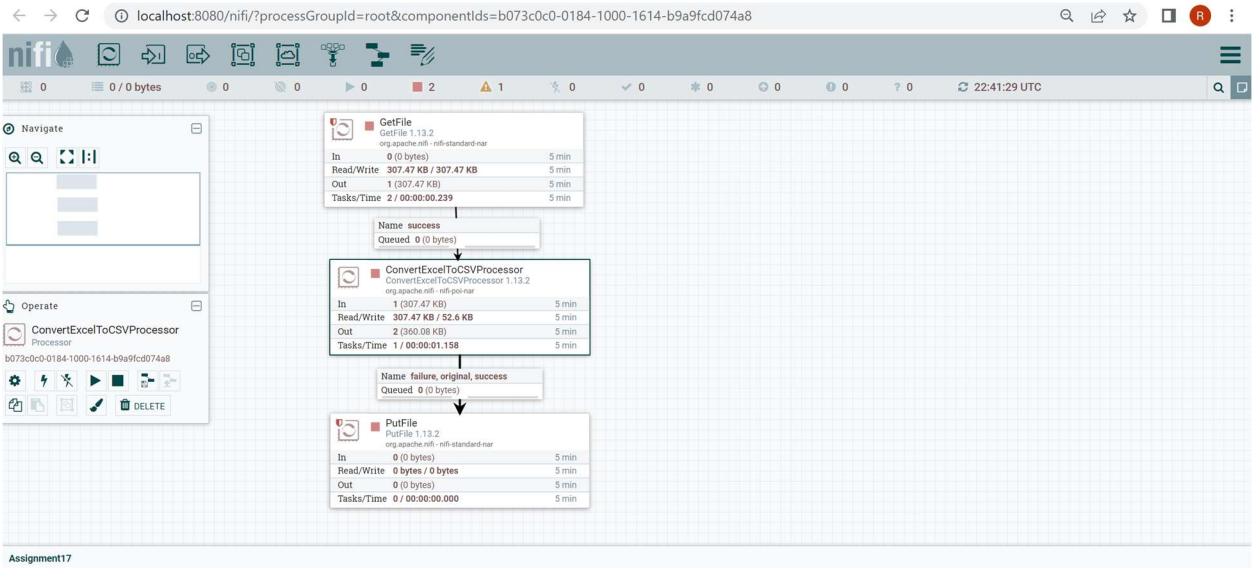

Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Scheduling Strategy
Timer driven
Concurrent Tasks
1
Run Schedule
15 sec
Execution
All nodes
Run Duration
0ms 25ms 50ms 100ms 250ms 500ms 1s 2s
Lower latency
Higher throughput
CANCEL
APPLY


localhost:8080/nifi/?processGroupId=root&componentIds=b0efa7b9-0184-1000-cdcd-9b5d69fe48e8
Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Required field
Property
Value
Directory
/opt/nifi/nifi-current/output
Conflict Resolution Strategy
fail
Create Missing Directories
true
Maximum File Count
No value set
Last Modified Time
No value set
Permissions
No value set
Owner
No value set
Group
No value set
CANCEL
APPLY
Navigate
Operate
PutFile
Processor
DELETE
Assignment17

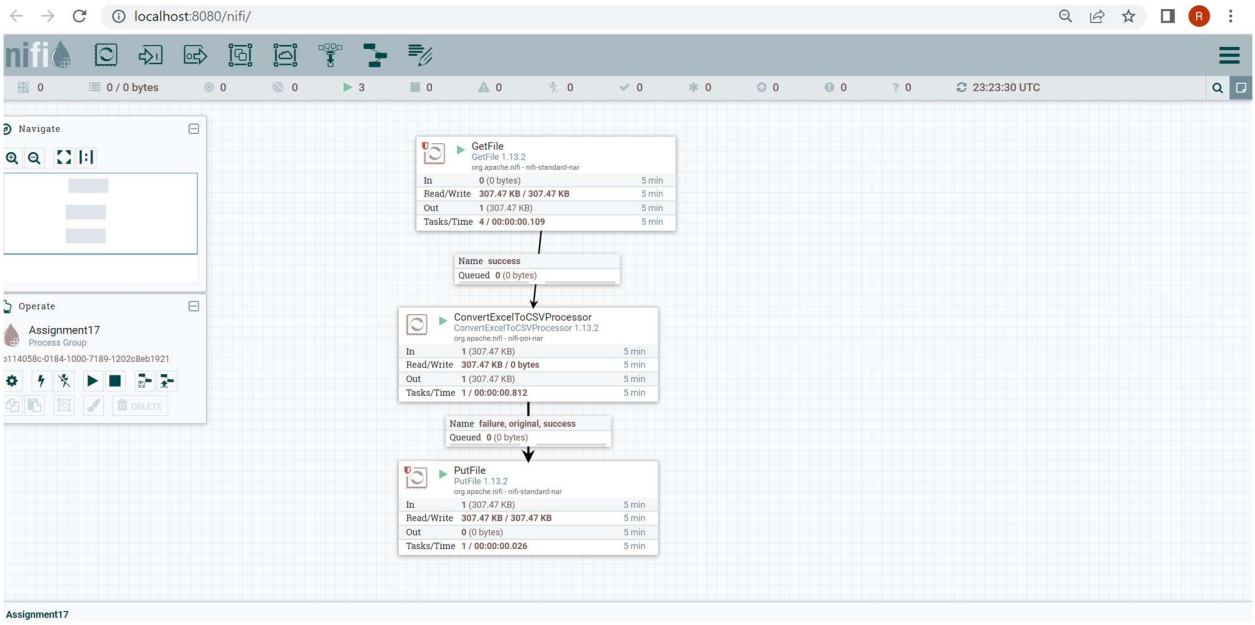
7. Successfully connected all the *processors* with the correct relationships.




Create Connection
DETAILS
SETTINGS
From Processor
ConvertExcelToCSVProcessor
ConvertExcelToCSVProcessor
Within Group
Assignment17
For Relationships
failure
original
success
To Processor
PutFile
PutFile
Within Group
Assignment17
CANCEL
ADD


localhost:8080/nifi/?processGroupId=root&componentIds=b073c0c0-0184-1000-1614-b9a9fcd074a8
nifi
0 / 0 bytes
22:41:29 UTC
Navigate
Operate
ConvertExcelToCSVProcessor
Processor
b073c0c0-0184-1000-1614-b9a9fcd074a8
DELETE
GetFile
GetFile 1.13.2
org.apache.nifi - nifi-standard-nar
In 0 (0 bytes) 5 min
Read/Write 307.47 KB / 307.47 KB 5 min
Out 1 (307.47 KB) 5 min
Tasks/Time 2 / 00:00:00.239 5 min
Name success
Queued 0 (0 bytes)
ConvertExcelToCSVProcessor
ConvertExcelToCSVProcessor 1.13.2
org.apache.nifi - nifi-poi-nar
In 1 (307.47 KB) 5 min
Read/Write 307.47 KB / 52.6 KB 5 min
Out 2 (360.08 KB) 5 min
Tasks/Time 1 / 00:00:01.158 5 min
Name failure, original, success
Queued 0 (0 bytes)
PutFile
PutFile 1.13.2
org.apache.nifi - nifi-standard-nar
In 0 (0 bytes) 5 min
Read/Write 0 bytes / 0 bytes 5 min
Out 0 (0 bytes) 5 min
Tasks/Time 0 / 00:00:00.000 5 min
Assignment17

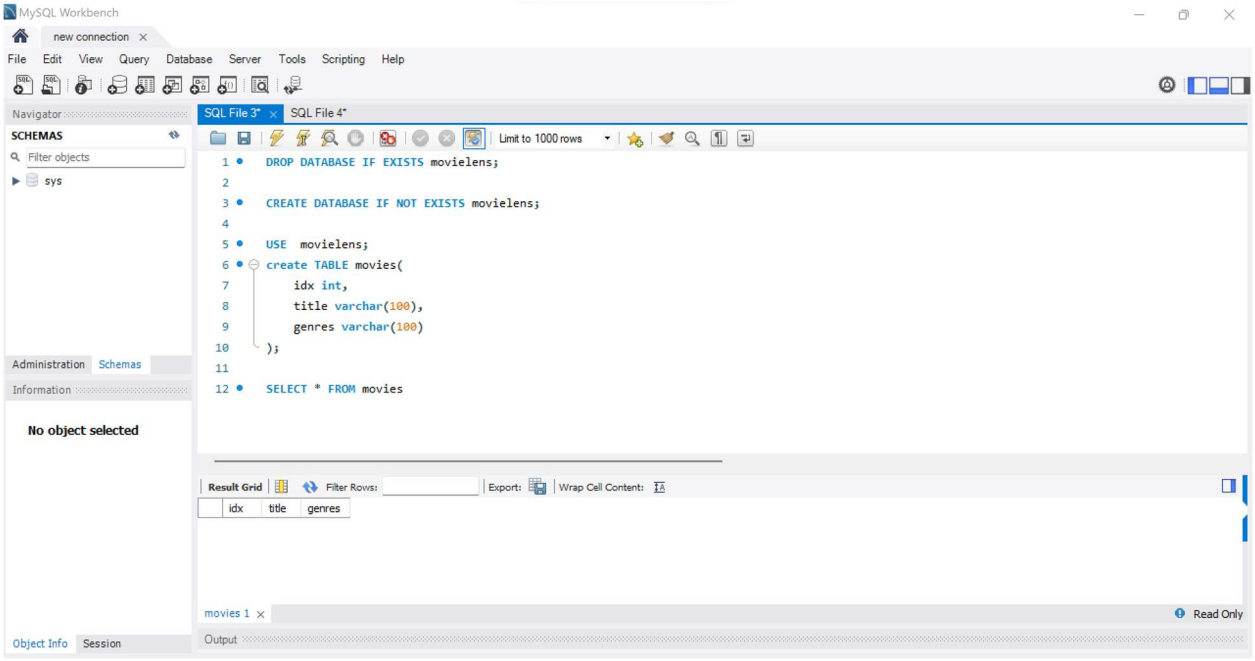
8. Below screenshot shows that all the *processors* are running (as indicated by a green arrow).



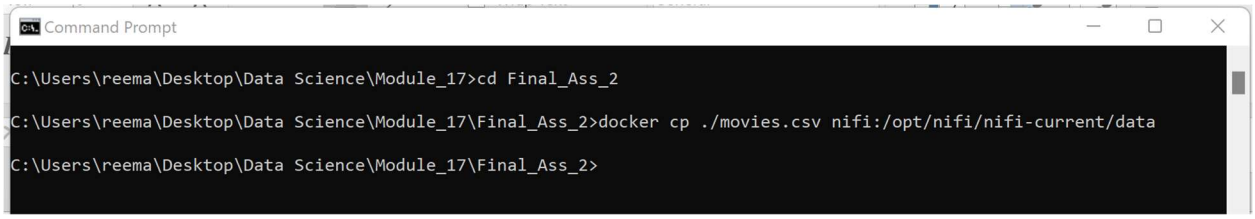
9. Below screenshot shows that the movies_Assignment.csv file has been created.

Part 2: Writing Data to an SQL Database

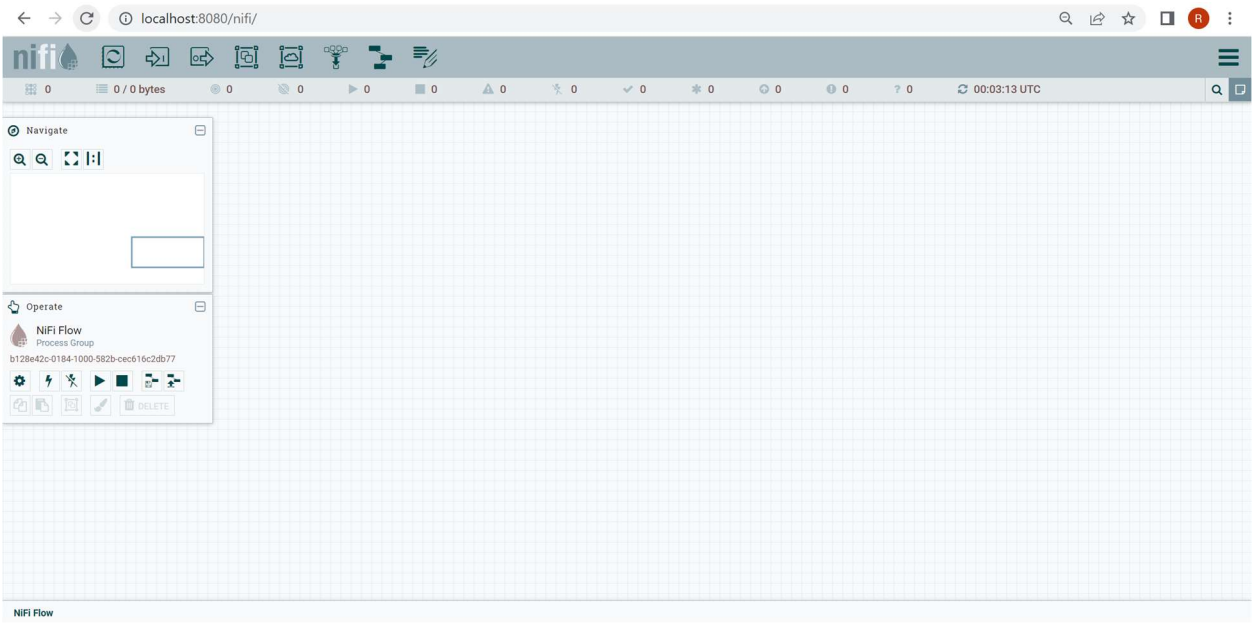
1. Initialized an empty movies table in the movielens database on MySQL Workbench.



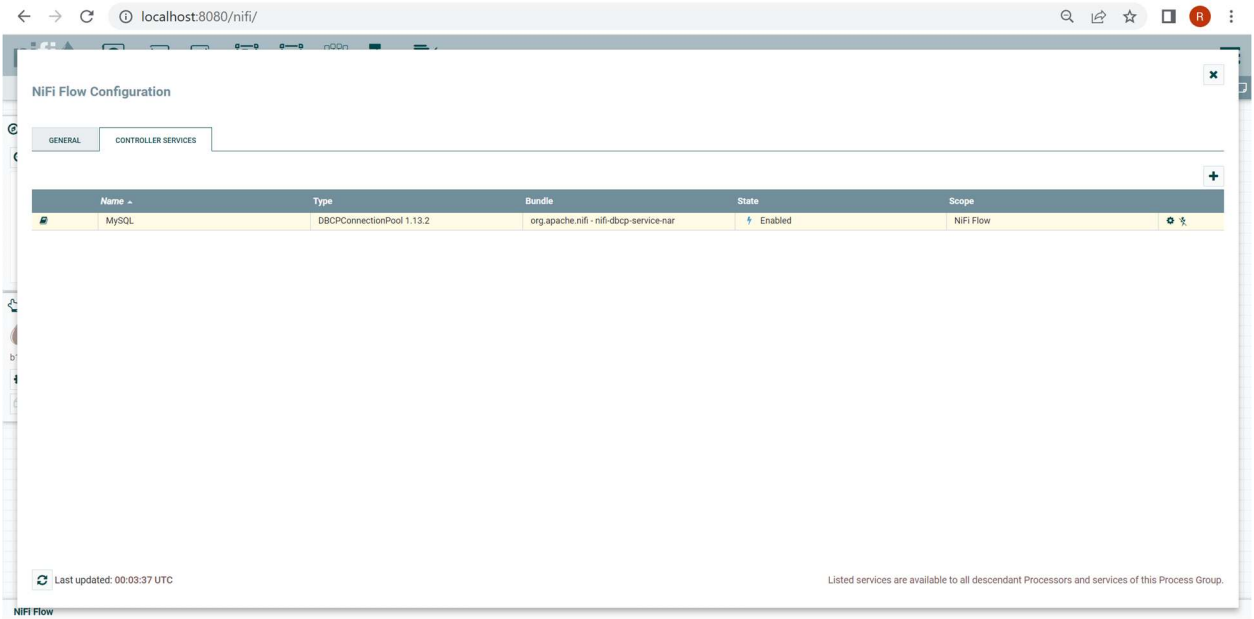
2. Copied movies.csv from local machine to Nifi CLI & verified that the movies.csv file is on the NiFi *server* under data folder.



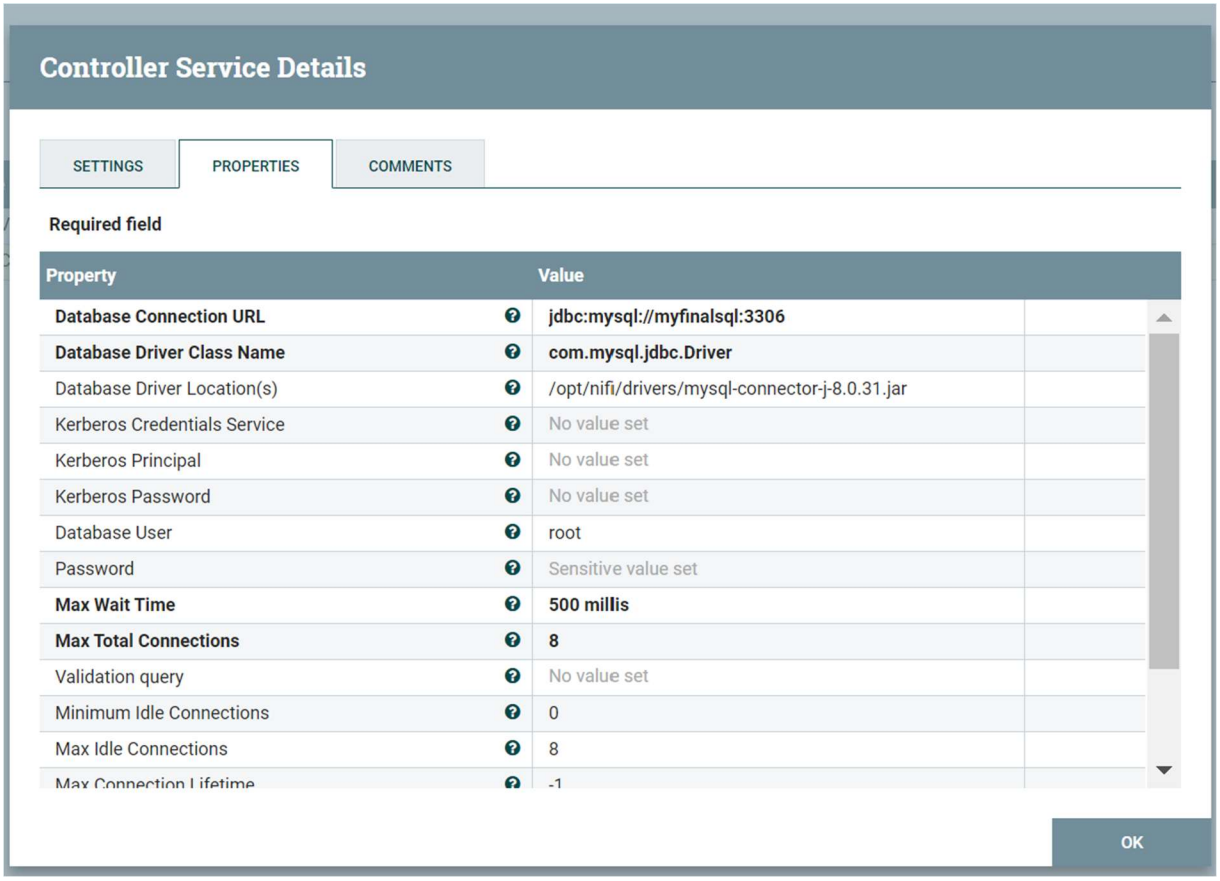
3. Navigated to http://localhost:8080/nifi/ & opened the NiFi UI.

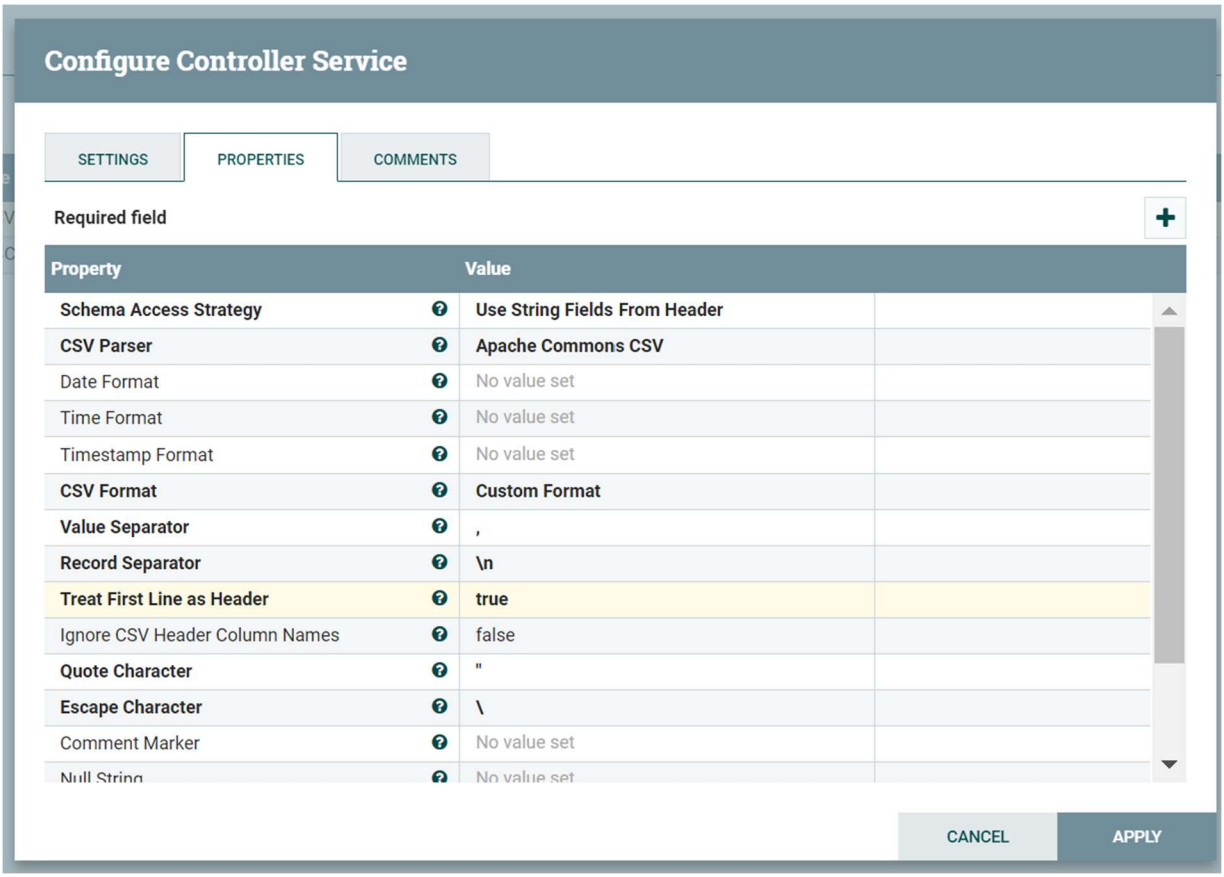


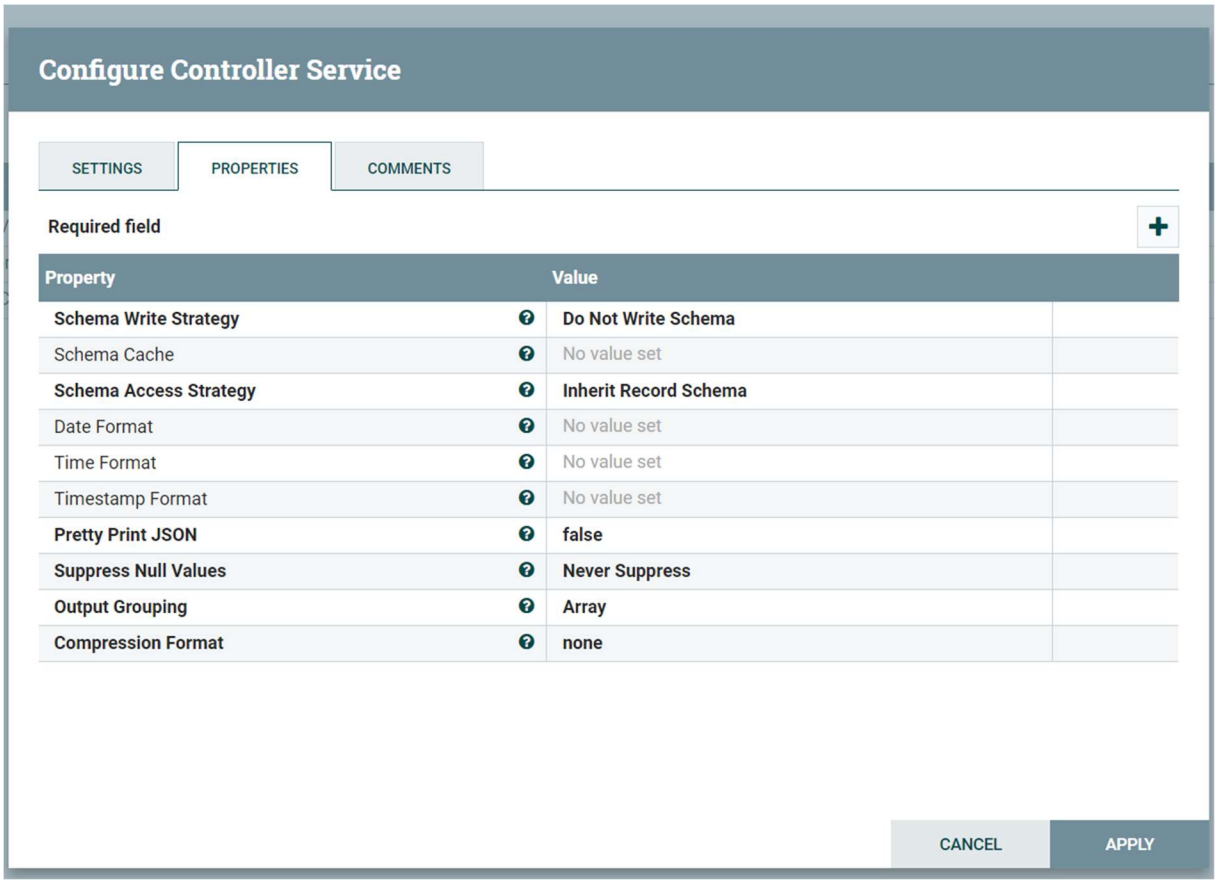
4. Successfully created and enabled the MySQL *controller* service.

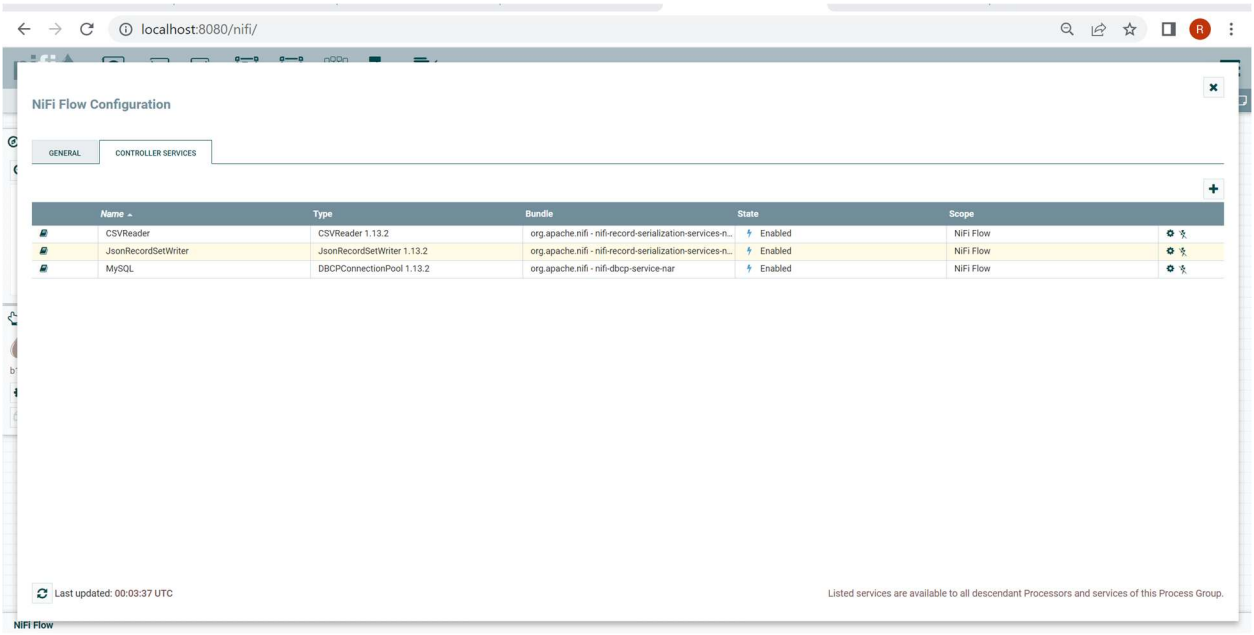


5. Screenshot of the *controller* screen showing that the three *controller* services (*reader*, *writer*, and MySQL) are enabled.

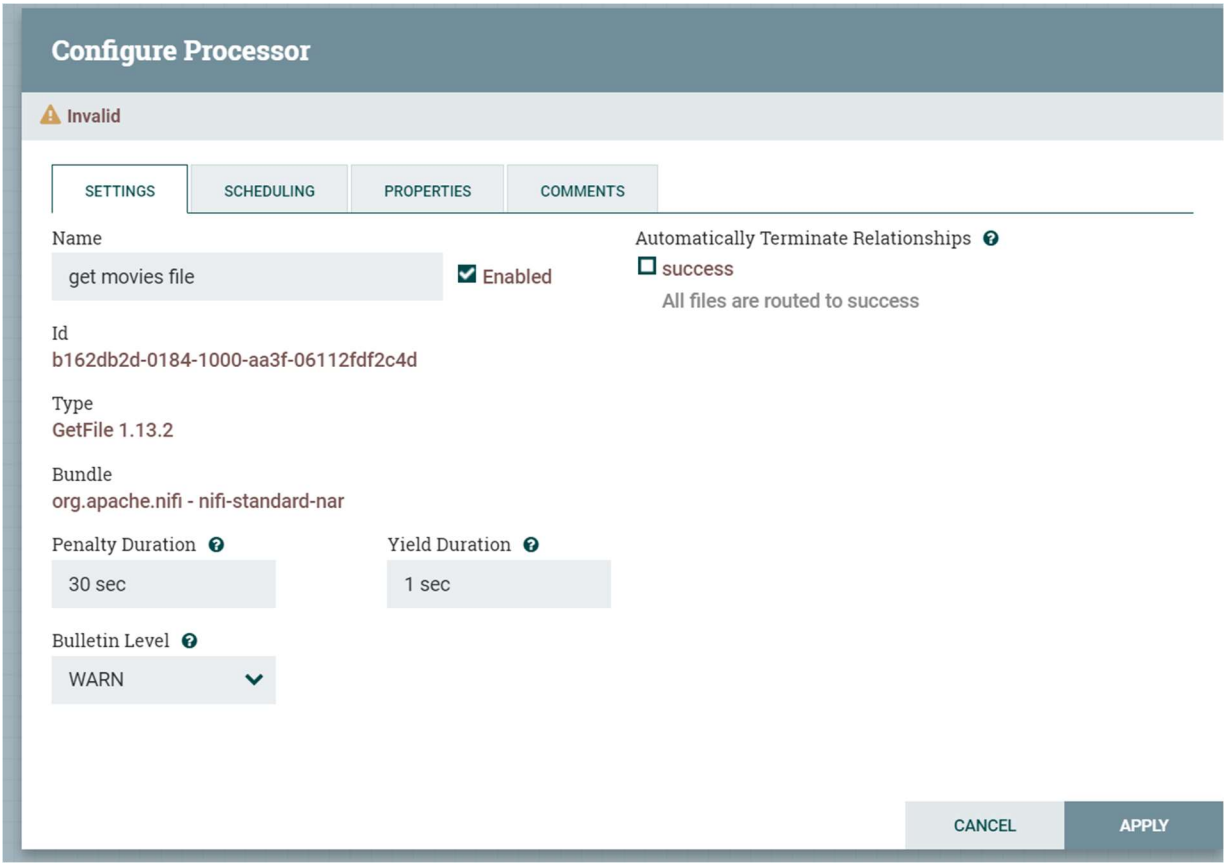


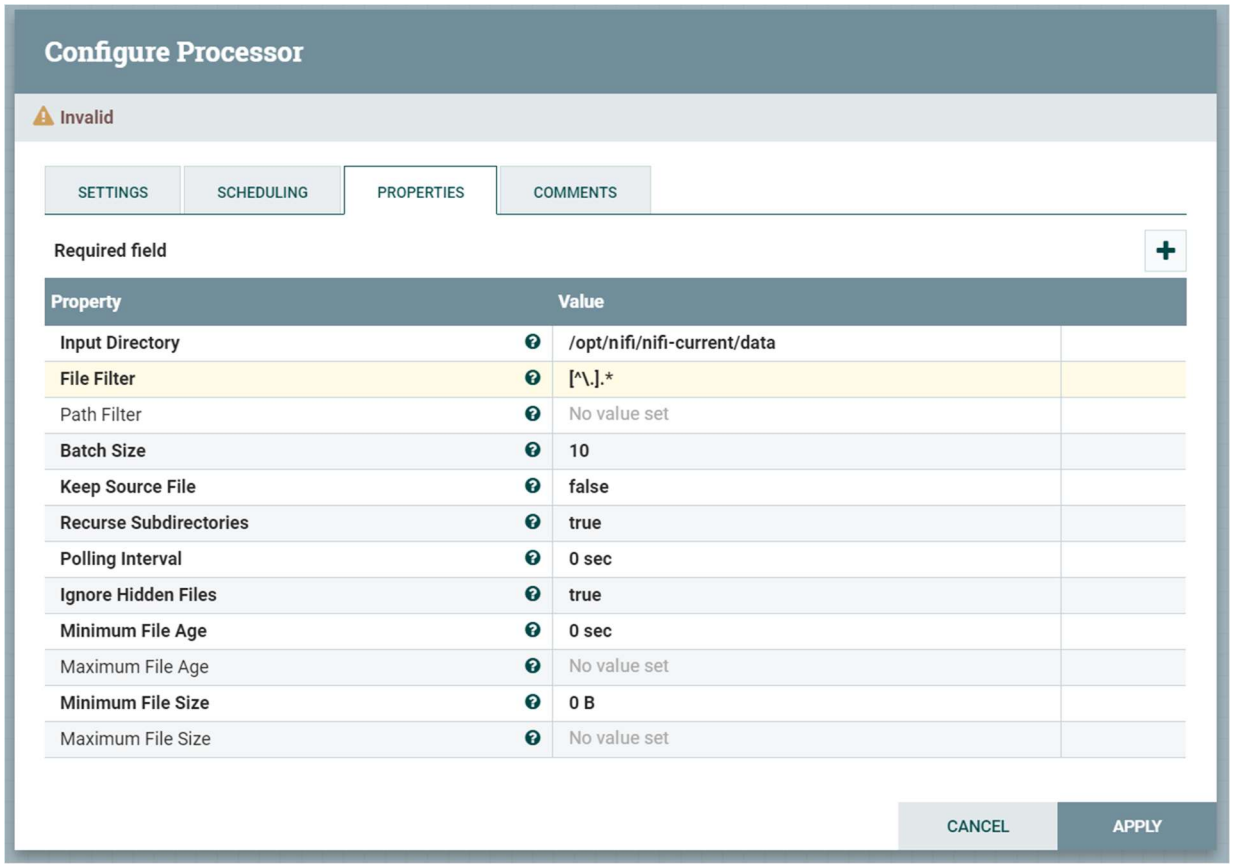

Configure Controller Service
SETTINGS
PROPERTIES
COMMENTS
Required field
Property
Value
Schema Access Strategy
Use String Fields From Header
CSV Parser
Apache Commons CSV
Date Format
No value set
Time Format
No value set
Timestamp Format
No value set
CSV Format
Custom Format
Value Separator
,
Record Separator
\n
Treat First Line as Header
true
Ignore CSV Header Column Names
false
Quote Character
"
Escape Character
\
Comment Marker
No value set
Null String
No value set
CANCEL
APPLY

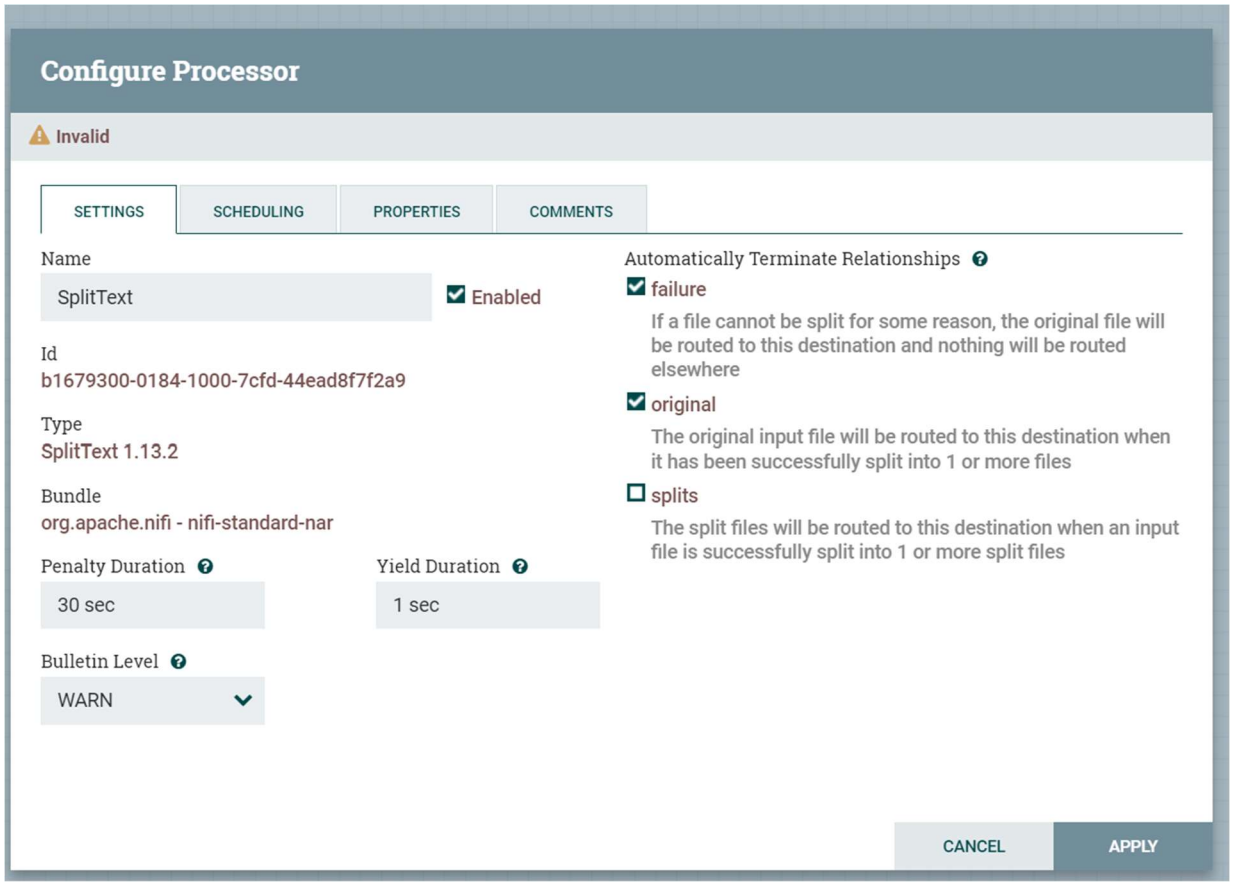

Configure Controller Service
SETTINGS
PROPERTIES
COMMENTS
Required field
Property
Value
Schema Write Strategy
Do Not Write Schema
Schema Cache
No value set
Schema Access Strategy
Inherit Record Schema
Date Format
No value set
Time Format
No value set
Timestamp Format
No value set
Pretty Print JSON
false
Suppress Null Values
Never Suppress
Output Grouping
Array
Compression Format
none
CANCEL
APPLY

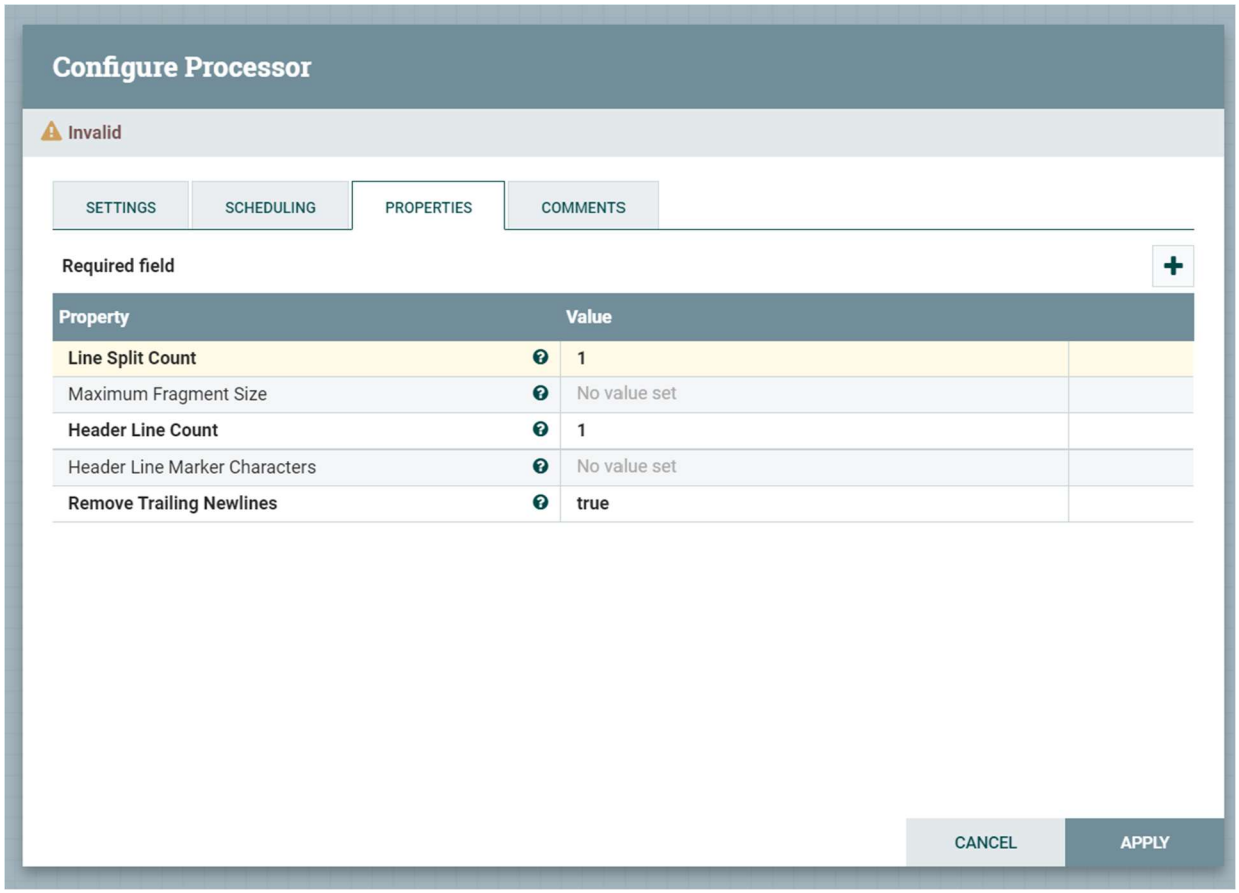

localhost:8080/nifi/
NiFi Flow Configuration
GENERAL
CONTROLLER SERVICES
Name
Type
Bundle
State
Scope
CSVReader
CSVReader 1.13.2
org.apache.nifi - nifi-record-serialization-services-n...
Enabled
NiFi Flow
JsonRecordSetWriter
JsonRecordSetWriter 1.13.2
org.apache.nifi - nifi-record-serialization-services-n...
Enabled
NiFi Flow
MySQL
DBCPConnectionPool 1.13.2
org.apache.nifi - nifi-dbcp-service-nar
Enabled
NiFi Flow
Last updated: 00:03:37 UTC
Listed services are available to all descendant Processors and services of this Process Group.
NiFi Flow

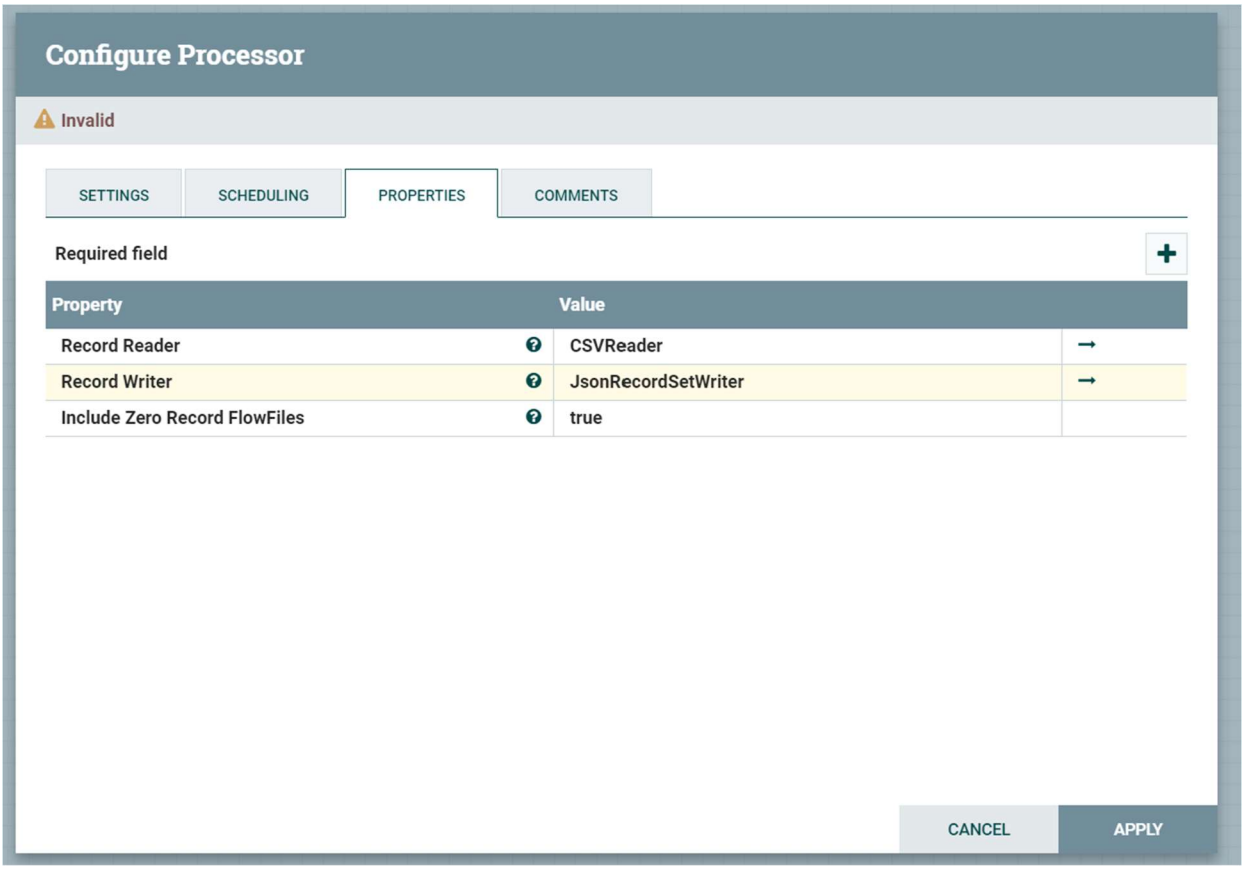
6. Screenshot showing complete data pipeline, including all five *processors*: GetFile, SplitText, ConvertRecord, ConvertJSONToSQL, and PutSQL.

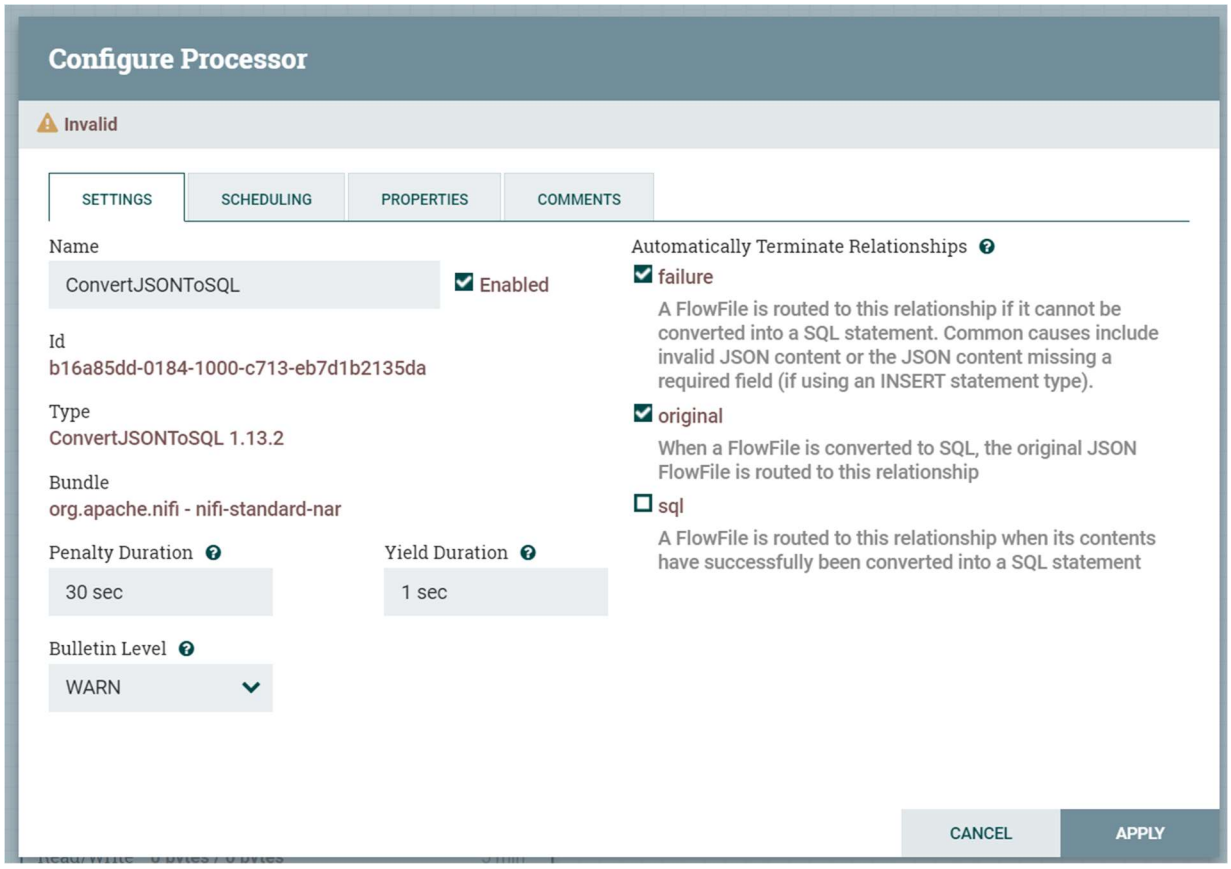


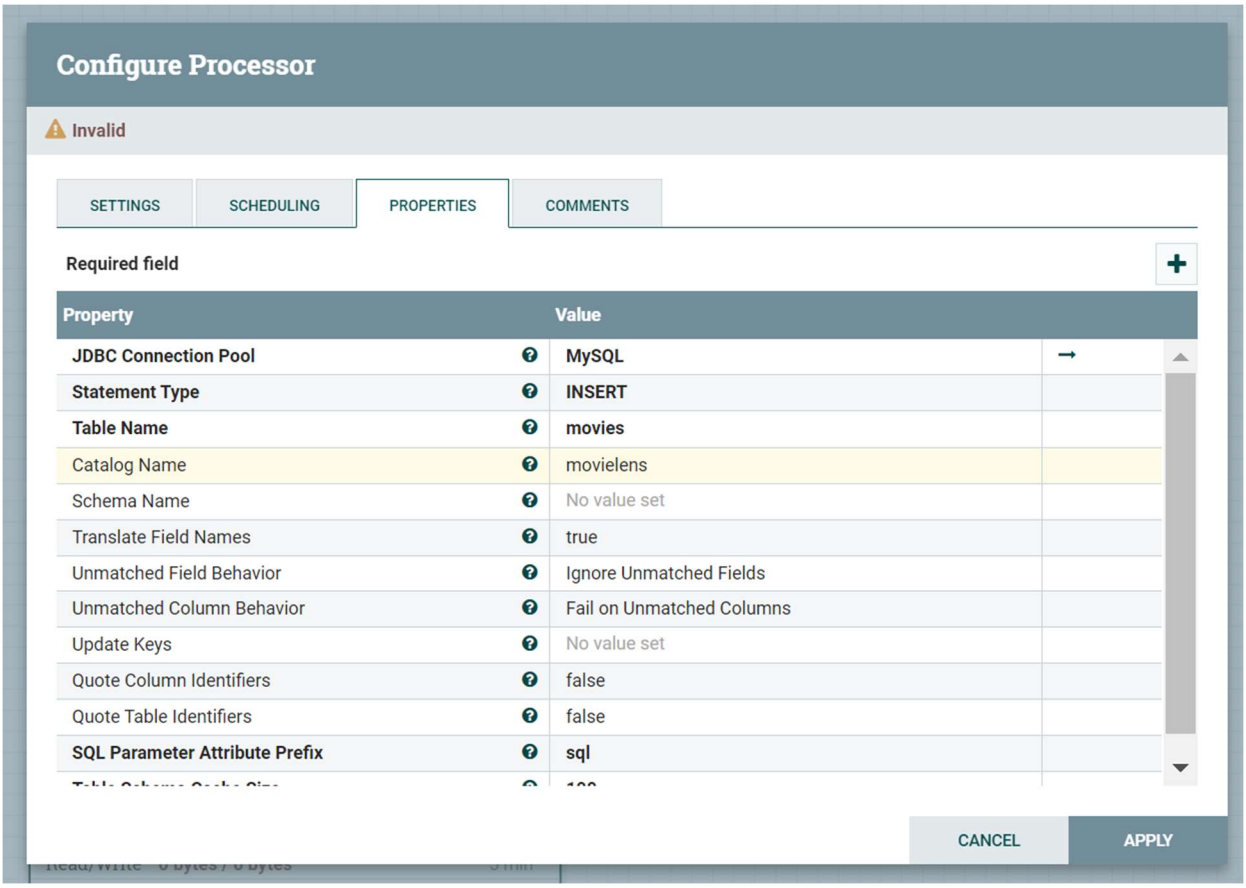

Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Required field
Property
Value
Input Directory
/opt/nifi/nifi-current/data
File Filter
[^\.].*
Path Filter
No value set
Batch Size
10
Keep Source File
false
Recurse Subdirectories
true
Polling Interval
0 sec
Ignore Hidden Files
true
Minimum File Age
0 sec
Maximum File Age
No value set
Minimum File Size
0 B
Maximum File Size
No value set
CANCEL
APPLY

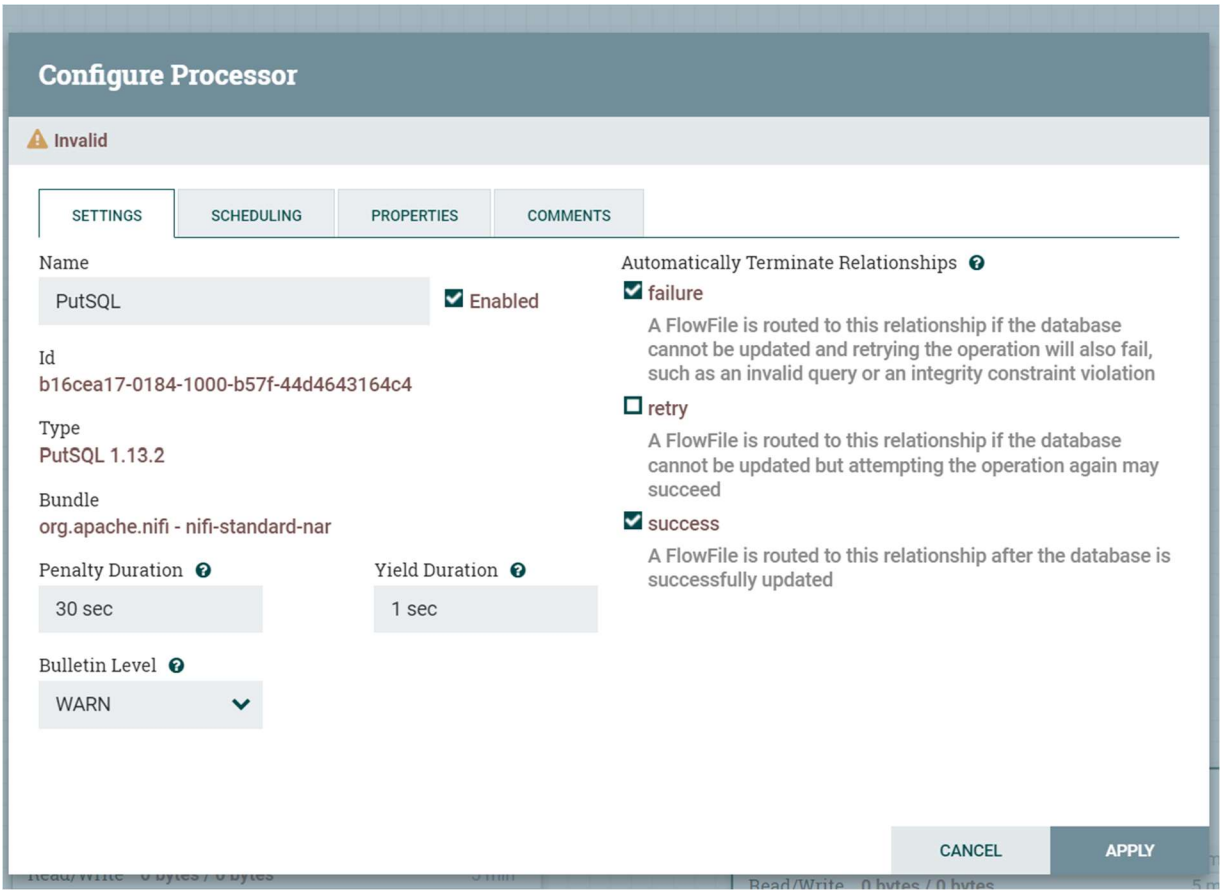

Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Name
SplitText
Enabled
Id
b1679300-0184-1000-7cfd-44ead8f7f2a9
Type
SplitText 1.13.2
Bundle
org.apache.nifi - nifi-standard-nar
Penalty Duration
30 sec
Yield Duration
1 sec
Bulletin Level
WARN
Automatically Terminate Relationships
failure
If a file cannot be split for some reason, the original file will be routed to this destination and nothing will be routed elsewhere
original
The original input file will be routed to this destination when it has been successfully split into 1 or more files
splits
The split files will be routed to this destination when an input file is successfully split into 1 or more split files
CANCEL
APPLY

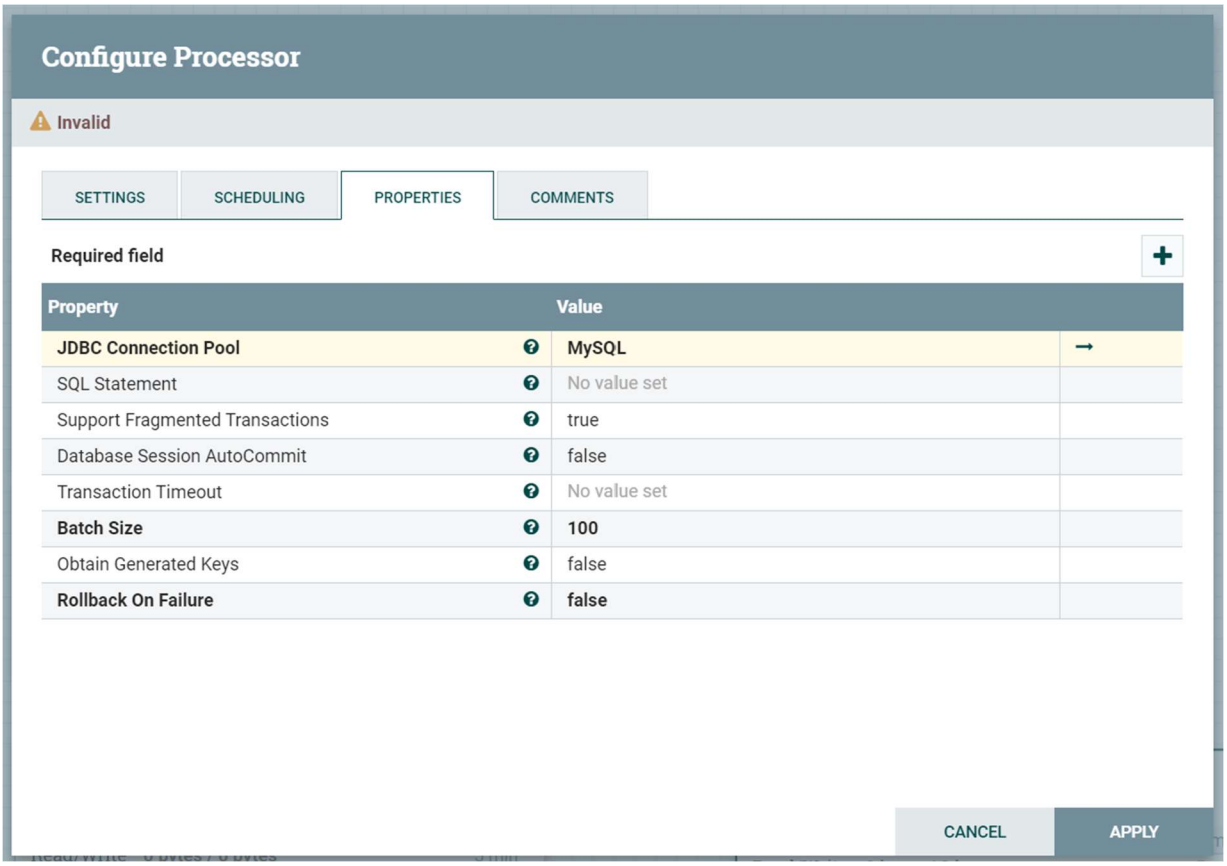

Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Required field
Property
Value
Line Split Count
1
Maximum Fragment Size
No value set
Header Line Count
1
Header Line Marker Characters
No value set
Remove Trailing Newlines
true
CANCEL
APPLY

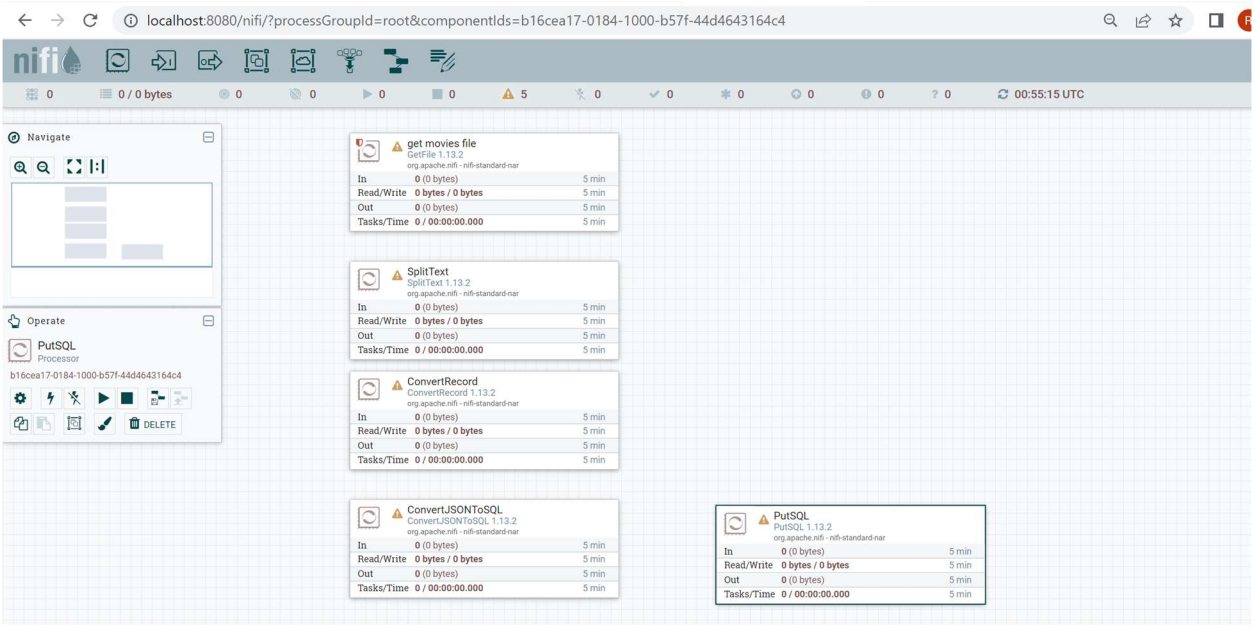

Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Required field
Property
Value
Record Reader
CSVReader
Record Writer
JsonRecordSetWriter
Include Zero Record FlowFiles
true
CANCEL
APPLY


Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Name
ConvertJSONToSQL
Enabled
Id
b16a85dd-0184-1000-c713-eb7d1b2135da
Type
ConvertJSONToSQL 1.13.2
Bundle
org.apache.nifi - nifi-standard-nar
Penalty Duration
30 sec
Yield Duration
1 sec
Bulletin Level
WARN
Automatically Terminate Relationships
failure
A FlowFile is routed to this relationship if it cannot be converted into a SQL statement. Common causes include invalid JSON content or the JSON content missing a required field (if using an INSERT statement type).
original
When a FlowFile is converted to SQL, the original JSON FlowFile is routed to this relationship
sql
A FlowFile is routed to this relationship when its contents have successfully been converted into a SQL statement
CANCEL
APPLY

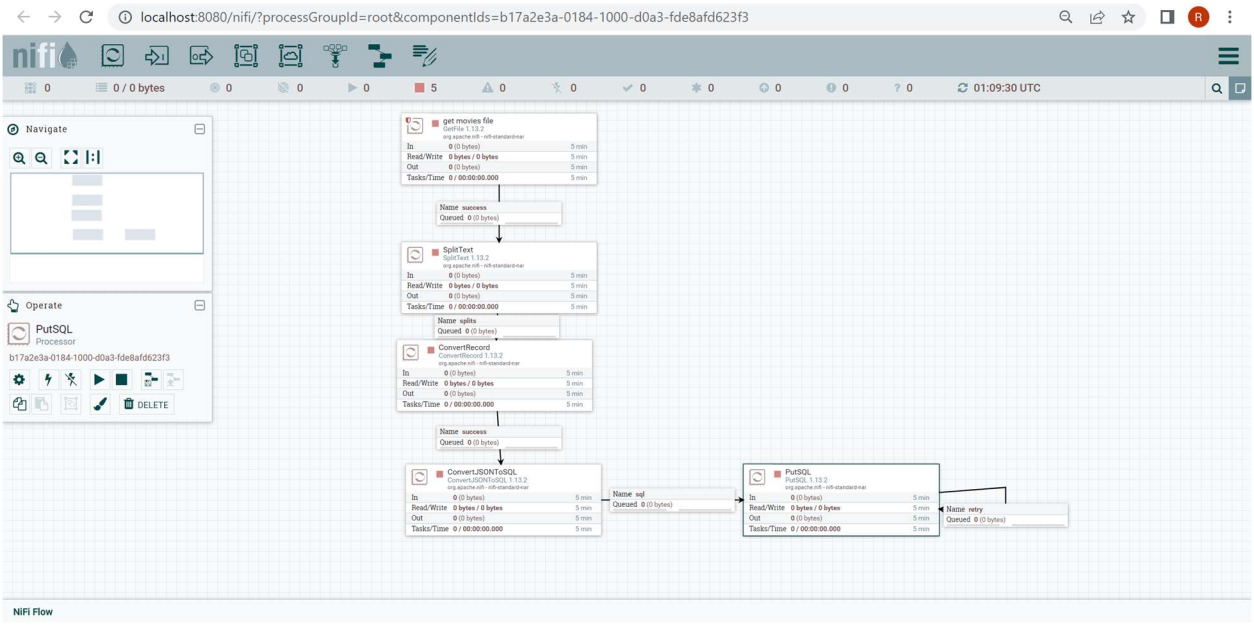

Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Required field
Property
Value
JDBC Connection Pool
MySQL
Statement Type
INSERT
Table Name
movies
Catalog Name
movielens
Schema Name
No value set
Translate Field Names
true
Unmatched Field Behavior
Ignore Unmatched Fields
Unmatched Column Behavior
Fail on Unmatched Columns
Update Keys
No value set
Quote Column Identifiers
false
Quote Table Identifiers
false
SQL Parameter Attribute Prefix
sql
CANCEL
APPLY


Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Name
PutSQL
Enabled
Id
b16cea17-0184-1000-b57f-44d4643164c4
Type
PutSQL 1.13.2
Bundle
org.apache.nifi - nifi-standard-nar
Penalty Duration
30 sec
Yield Duration
1 sec
Bulletin Level
WARN
Automatically Terminate Relationships
failure
A FlowFile is routed to this relationship if the database cannot be updated and retrying the operation will also fail, such as an invalid query or an integrity constraint violation
retry
A FlowFile is routed to this relationship if the database cannot be updated but attempting the operation again may succeed
success
A FlowFile is routed to this relationship after the database is successfully updated
CANCEL
APPLY

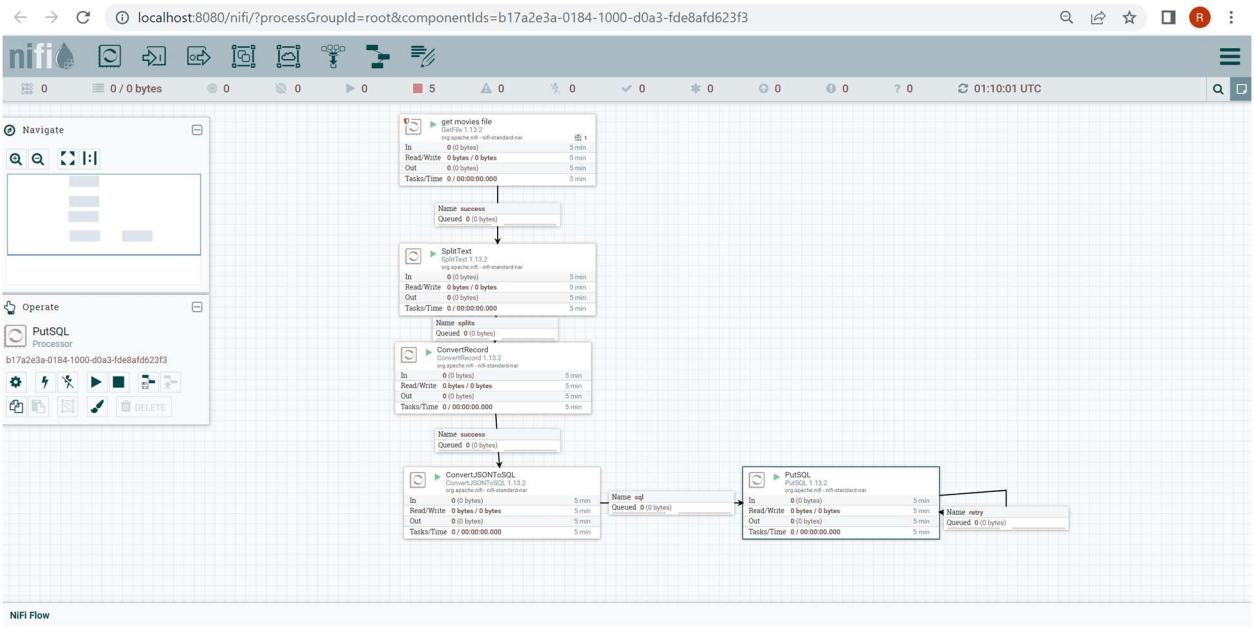

Configure Processor
Invalid
SETTINGS
SCHEDULING
PROPERTIES
COMMENTS
Required field
Property
Value
JDBC Connection Pool
MySQL
SQL Statement
No value set
Support Fragmented Transactions
true
Database Session AutoCommit
false
Transaction Timeout
No value set
Batch Size
100
Obtain Generated Keys
false
Rollback On Failure
false
CANCEL
APPLY

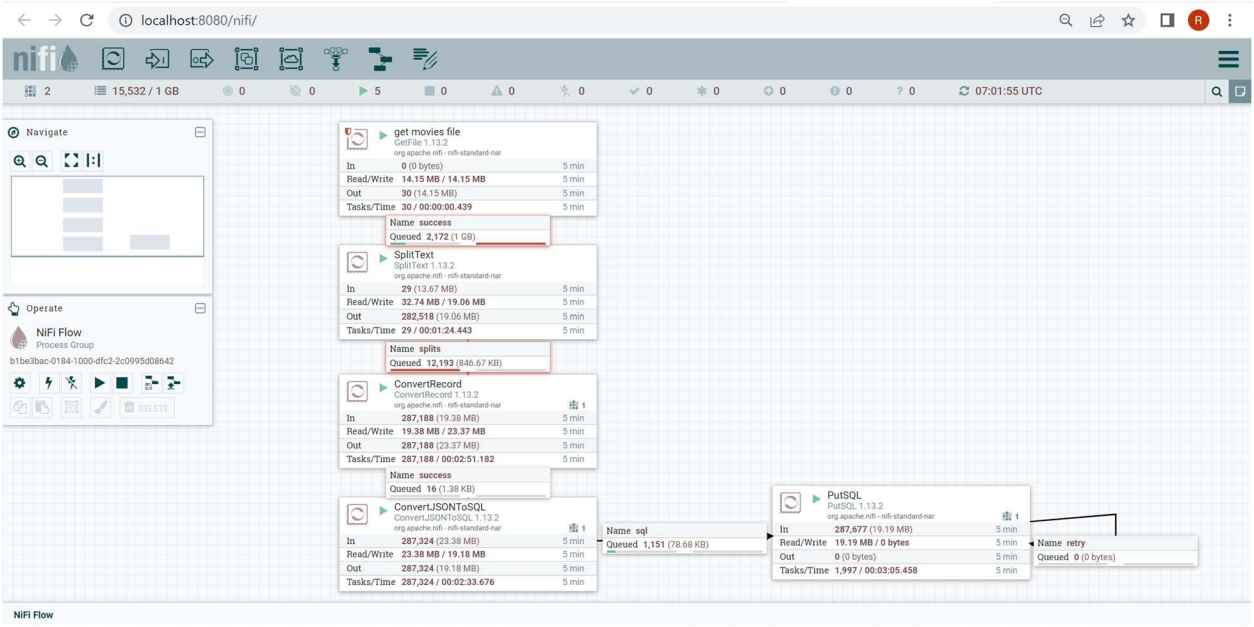

localhost:8080/nifi/?processGroupId=root&componentIds=b16cea17-0184-1000-b57f-44d4643164c4
nifi
00:55:15 UTC
Navigate
Operate
PutSQL
Processor
b16cea17-0184-1000-b57f-44d4643164c4
DELETE
get movies file
GetFile 1.13.2
org.apache.nifi - nifi-standard-nar
SplitText
SplitText 1.13.2
ConvertRecord
ConvertRecord 1.13.2
ConvertJSONToSQL
ConvertJSONToSQL 1.13.2
PutSQL
PutSQL 1.13.2
In
Read/Write
Out
Tasks/Time
0 bytes / 0 bytes
0 / 00:00:00.000
5 min

7. Screenshot of all five *processors* showing that the correct *connectors* have been added between the *processors*.



8. Screenshot showing all five *processors* are connected and running.





9. Screenshot showing the result of below *query* which shows that the movies table in the movieslens database is now saturated with data.