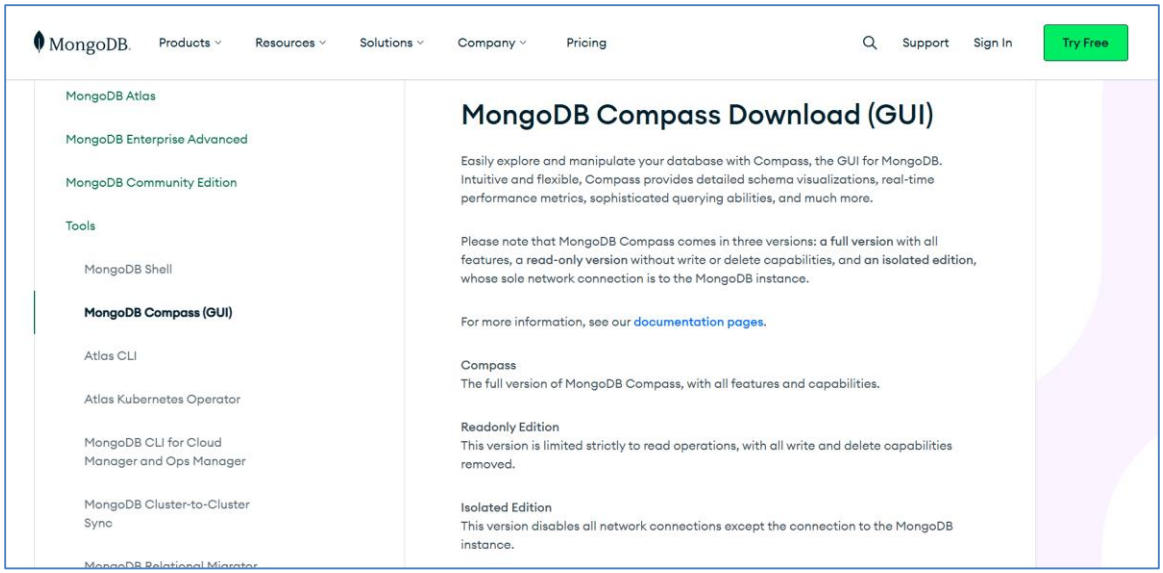
MongoDB to Power BI Connection - Step-by-Step Guide

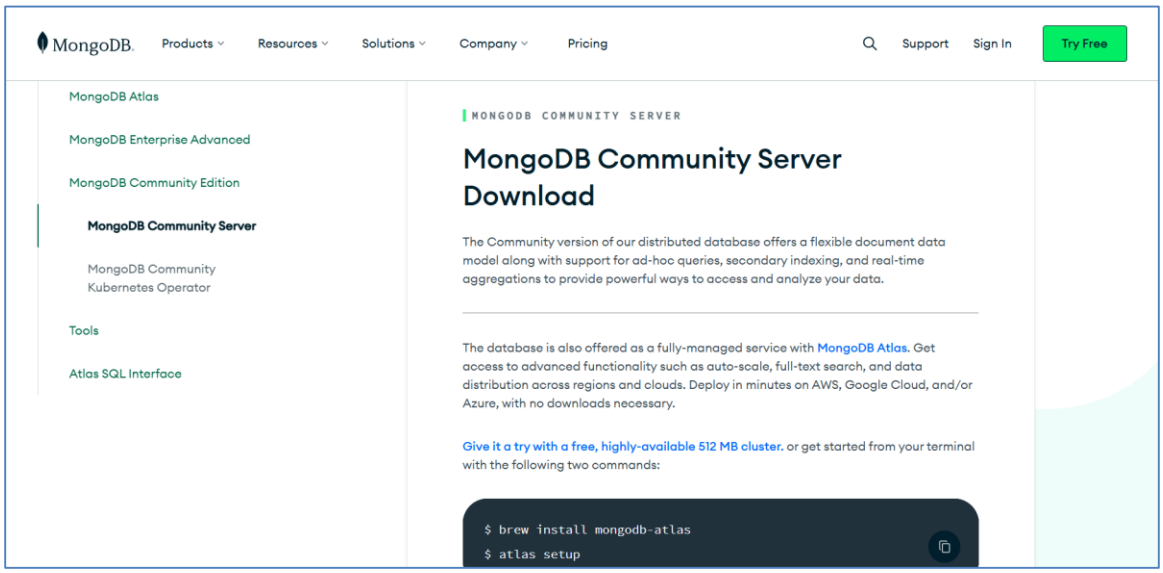
1. Install and Configure MongoDB (Compass) and MongoDB Server

Download and install MongoDB Compass and MongoDB Server from the links below:

- MongoDB Compass: https://www.mongodb.com/try/download/compass



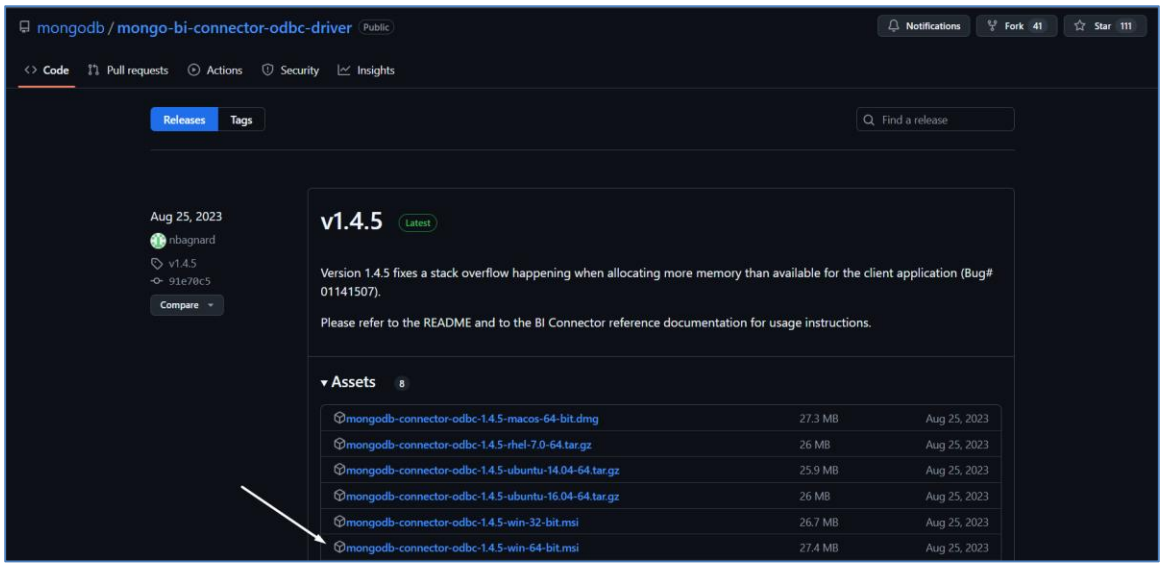
- MongoDB Community Server: https://www.mongodb.com/try/download/community



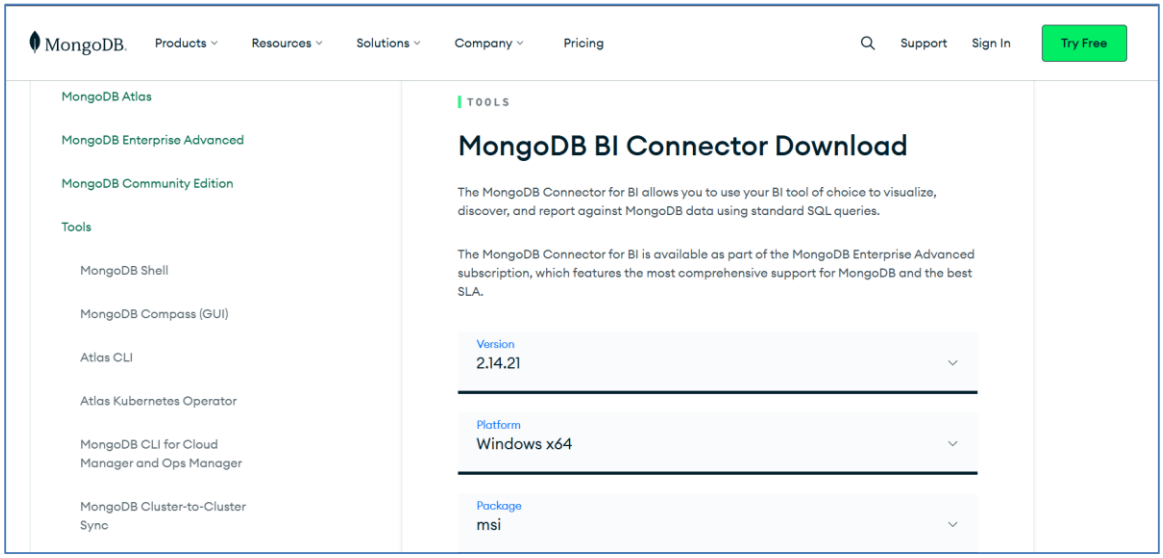
2. Download and Install MongoDB ODBC Driver & BI Connector

Download and install the required drivers and connectors from the following links:

- MongoDB ODBC Driver: https://github.com/mongodb/mongo-bi-connector-odbc-driver/releases/



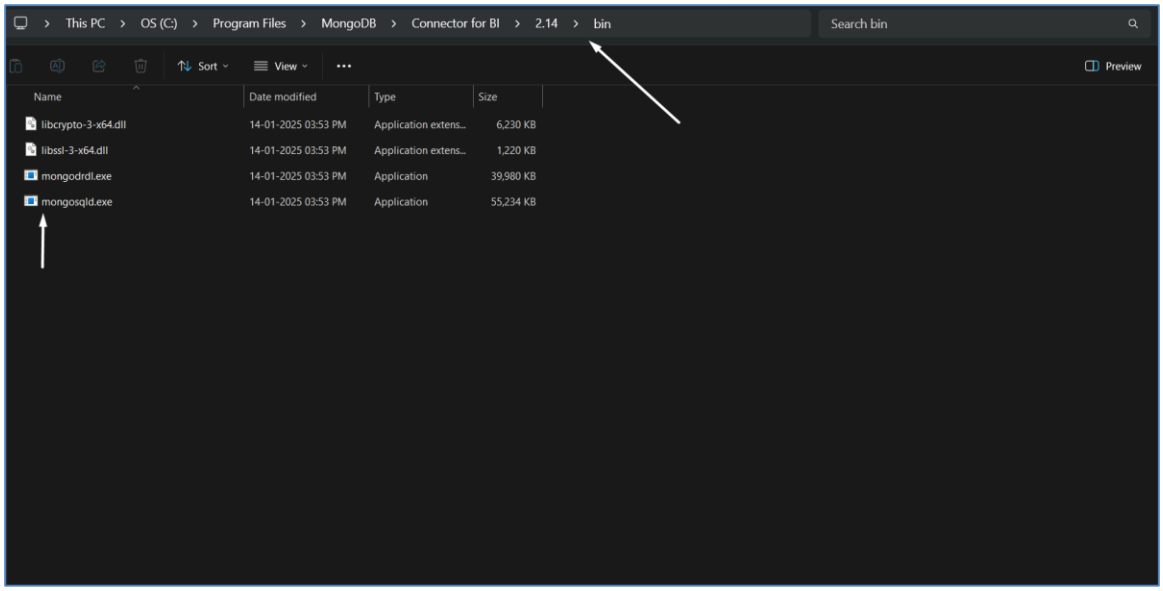
- MongoDB BI Connector: https://www.mongodb.com/try/download/bi-connector

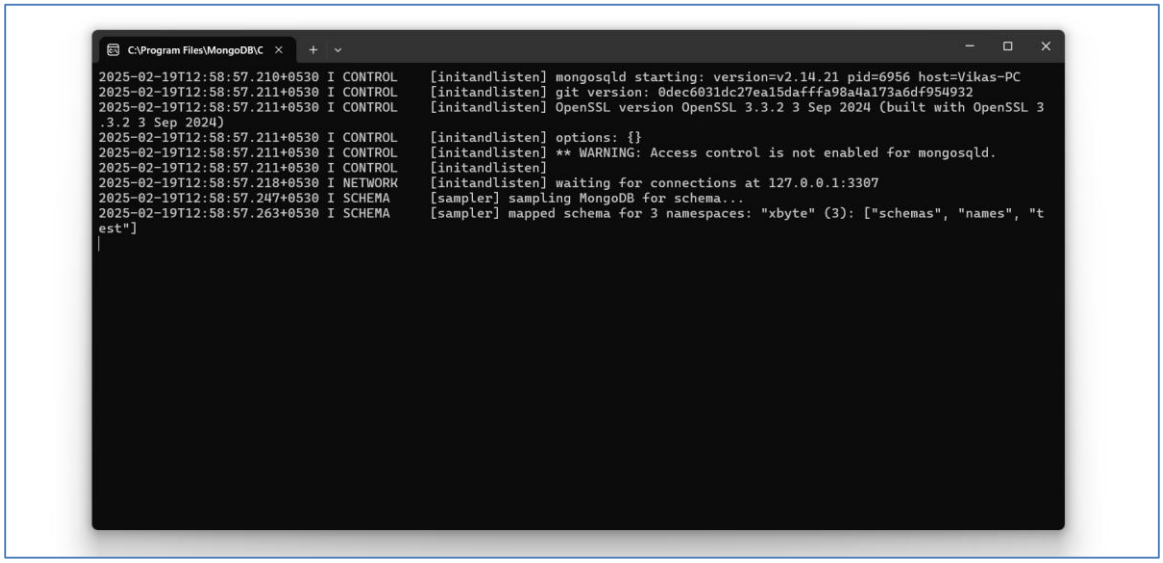


3. Ensure MongoDB BI Connector is Running

Before configuring the DSN, ensure that **mongosqld.exe** is running. It is typically located at:

C:\Program Files\MongoDB\Connector for BI\2.14\bin





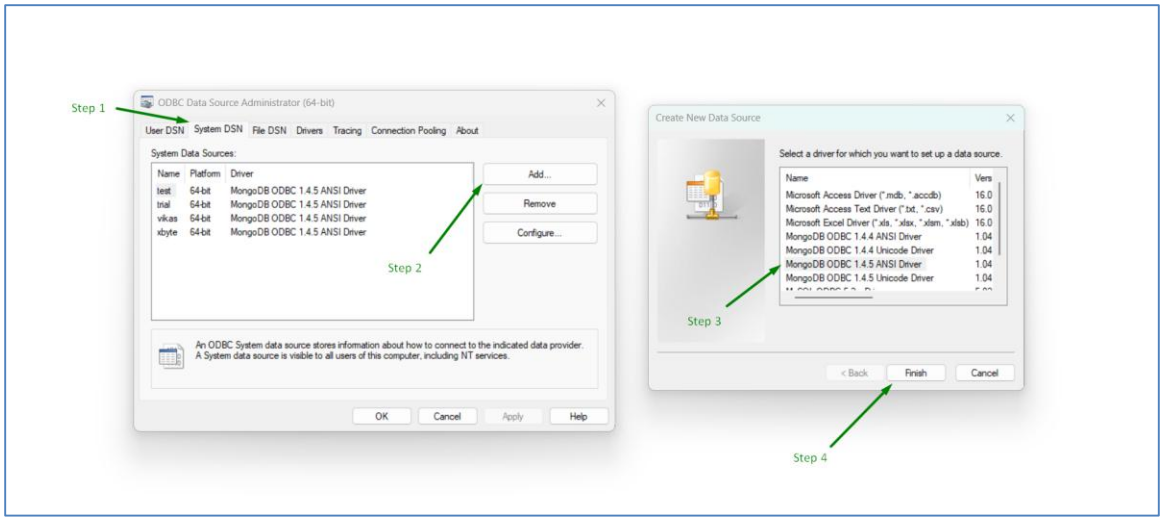
4. Create and Configure System DSN Driver (Localhost Connection)

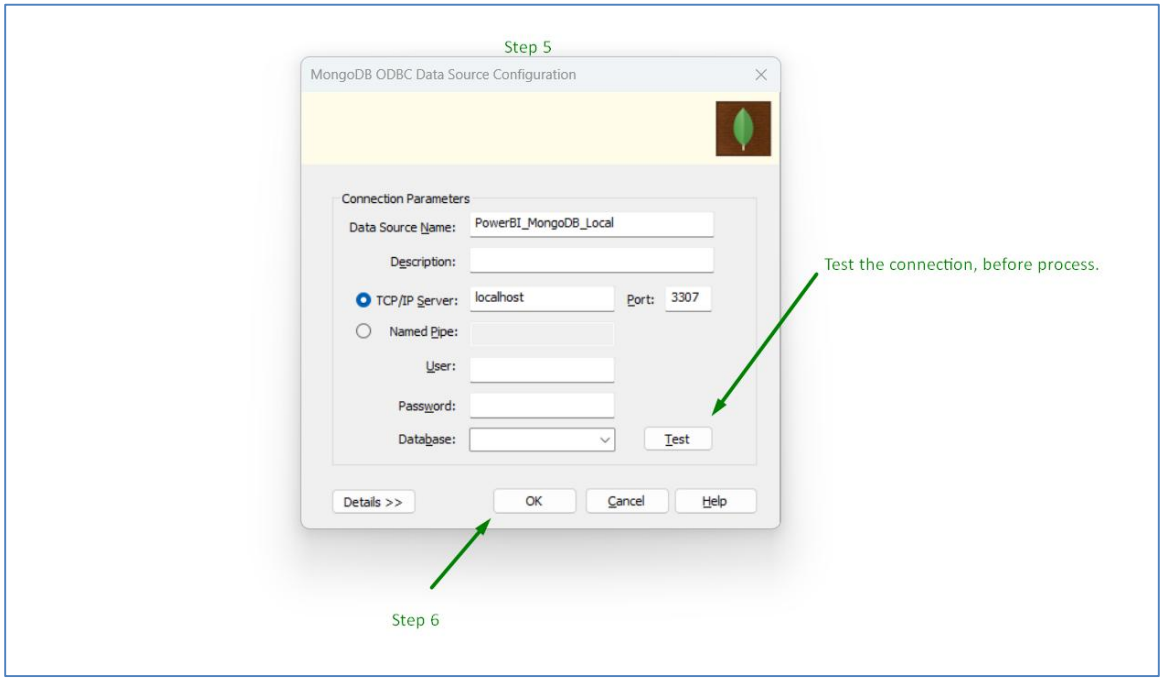
For a localhost connection, follow these steps:

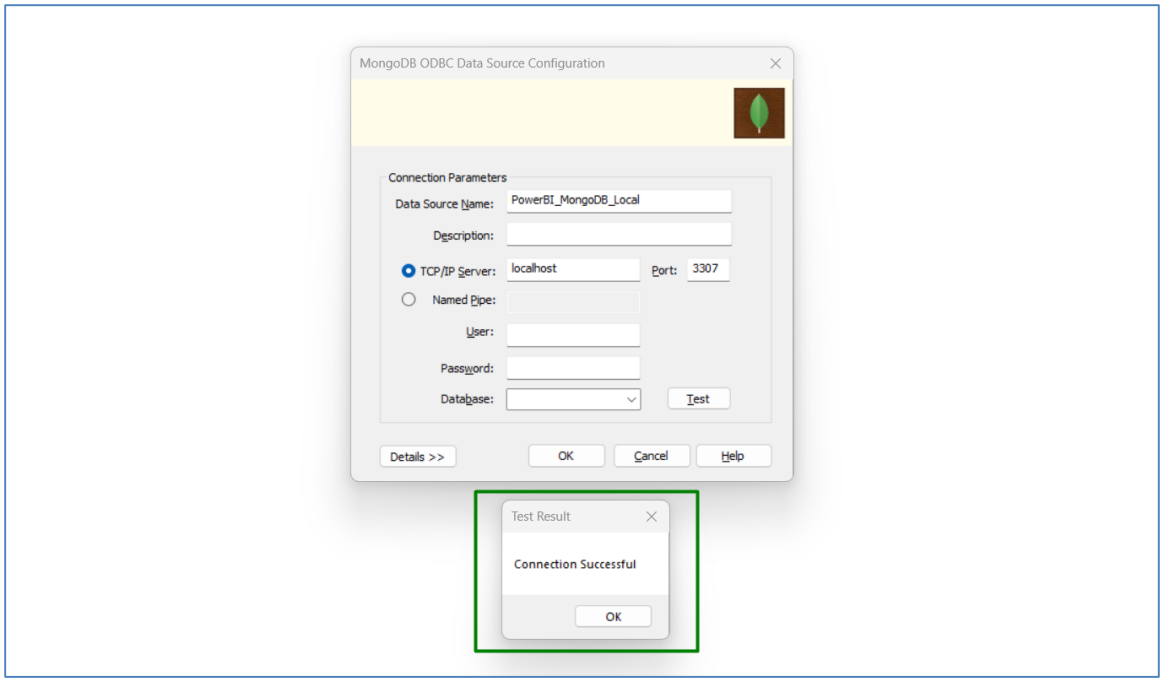
1. Open ODBC Data Source Administrator.

2. Go to the System DSN tab.

3. Click Add, select MongoDB ODBC Driver, and configure it accordingly.


Step 1
ODBC Data Source Administrator (64-bit)
User DSN
System DSN
File DSN
Drivers
Tracing
Connection Pooling
About
System Data Sources:
Name
Platform
Driver
test
64-bit
MongoDB ODBC 1.4.5 ANSI Driver
trial
64-bit
MongoDB ODBC 1.4.5 ANSI Driver
vikas
64-bit
MongoDB ODBC 1.4.5 ANSI Driver
xbyte
64-bit
MongoDB ODBC 1.4.5 ANSI Driver
Add...
Remove
Configure...
Step 2
An ODBC System data source stores information about how to connect to the indicated data provider.
A System data source is visible to all users of this computer, including NT services.
OK
Cancel
Apply
Help
Create New Data Source
Select a driver for which you want to set up a data source.
Name
Vers
Microsoft Access Driver (*.mdb, *.accdb) 16.0
Microsoft Access Text Driver (*.txt, *.csv) 16.0
Microsoft Excel Driver (*.xls, *.xlsx, *.xlsm, *.xlsb) 16.0
MongoDB ODBC 1.4.4 ANSI Driver 1.04
MongoDB ODBC 1.4.4 Unicode Driver 1.04
MongoDB ODBC 1.4.5 ANSI Driver 1.04
MongoDB ODBC 1.4.5 Unicode Driver 1.04
Step 3
< Back
Finish
Cancel
Step 4


Step 5
MongoDB ODBC Data Source Configuration
Connection Parameters
Data Source Name:
PowerBI_MongoDB_Local
Description:
TCP/IP Server:
localhost
Port:
3307
Named Pipe:
User:
Password:
Database:
Test
Test the connection, before process.
Details >>
OK
Cancel
Help
Step 6



4. Save the configuration.

5. Configure Remote Connection

Step 1: Modify **mongod.cfg** for Remote MongoDB Connection

The configuration file is located at:

C:\Program Files\MongoDB\Server\7.0\bin

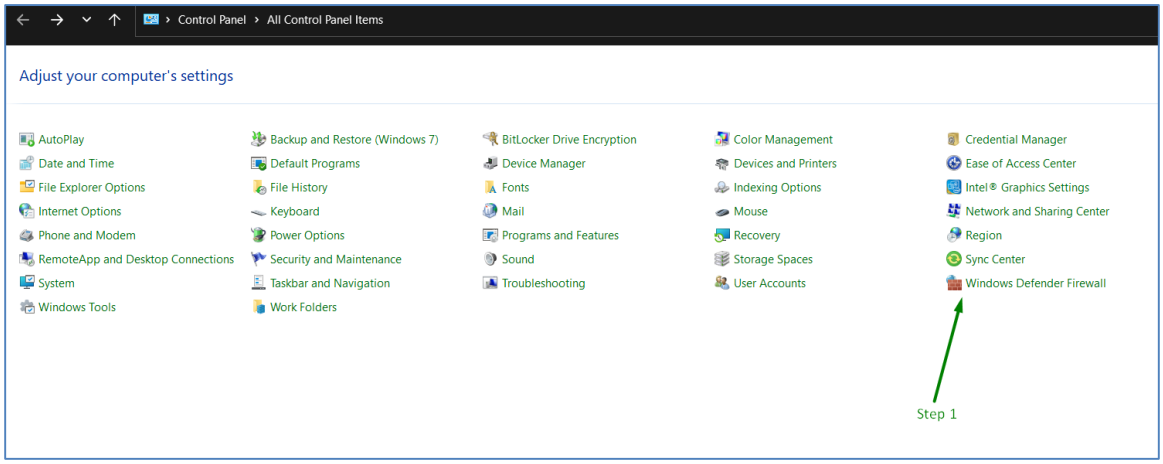
Modify it to allow remote connections.

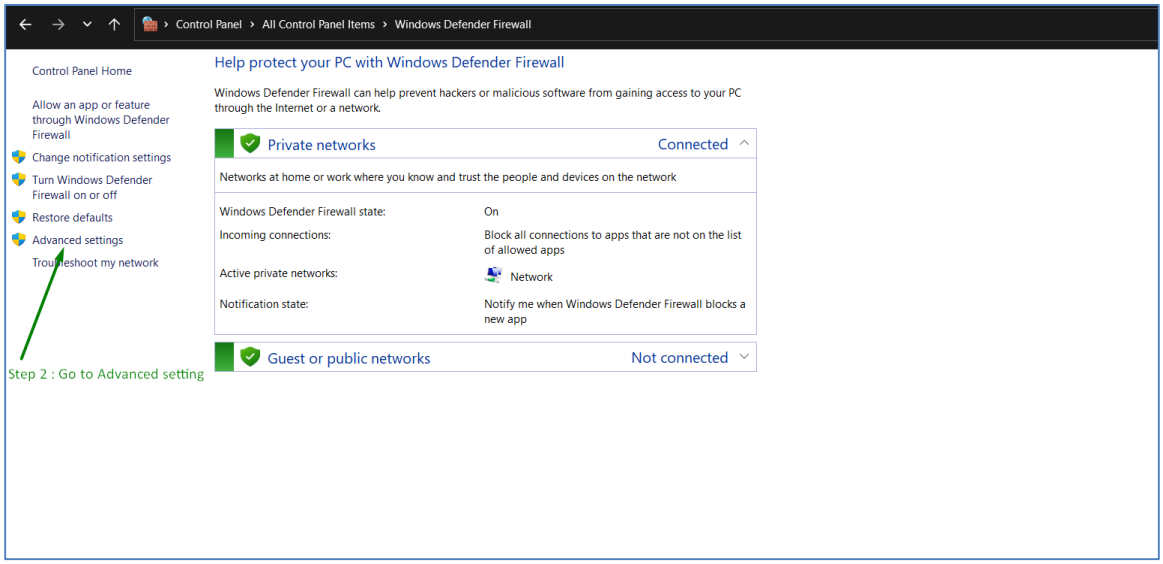
```
# mongod.conf

# for documentation of all options, see:
#   http://docs.mongodb.org/manual/reference/configuration-options/

# Where and how to store data.
storage:
  dbPath: C:\Program Files\MongoDB\Server\7.0\data

# where to write logging data.
systemLog:
  destination: file
  logAppend: true
  path:  C:\Program Files\MongoDB\Server\7.0\log\mongod.log

# network interfaces
net:
  port: 27017
  bindIp: 0.0.0.0          Change the bindIp to 0.0.0.0


#processManagement:

#security:

#operationProfiling:

#replication:

#sharding:

## Enterprise-Only Options:

#auditLog:
```

Step 2: Create Inbound Rules for Remote Access

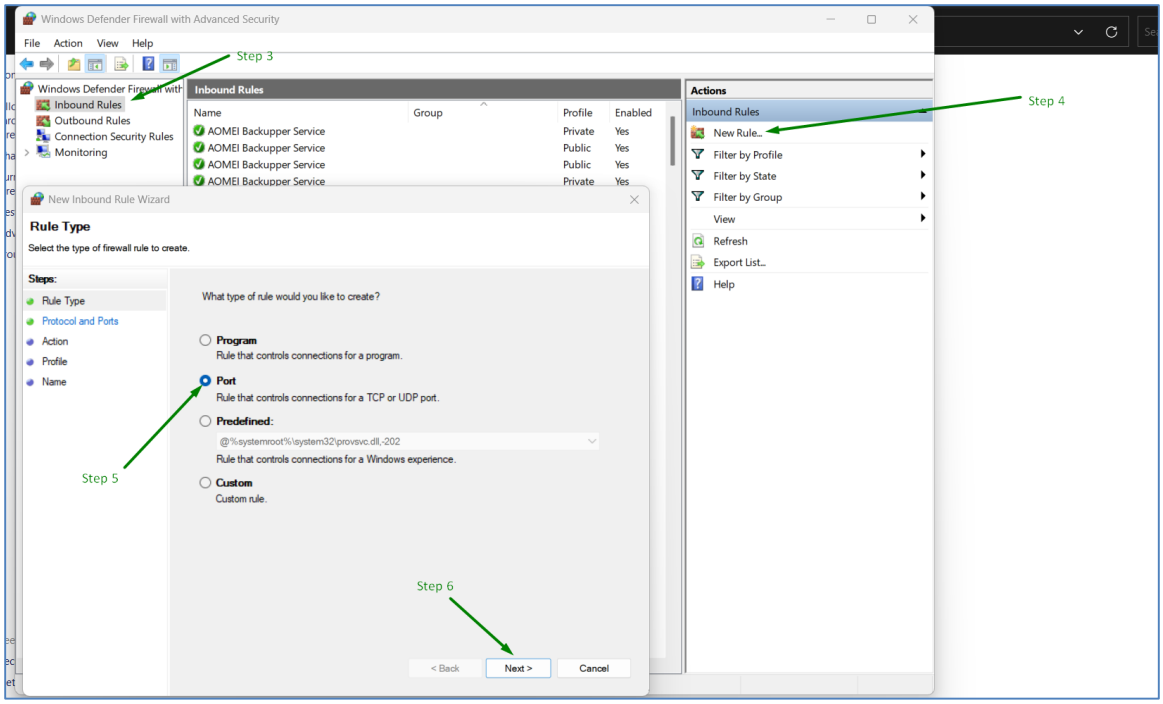
To allow remote access, configure Windows Firewall:

1. Open Windows Defender Firewall with Advanced Security.

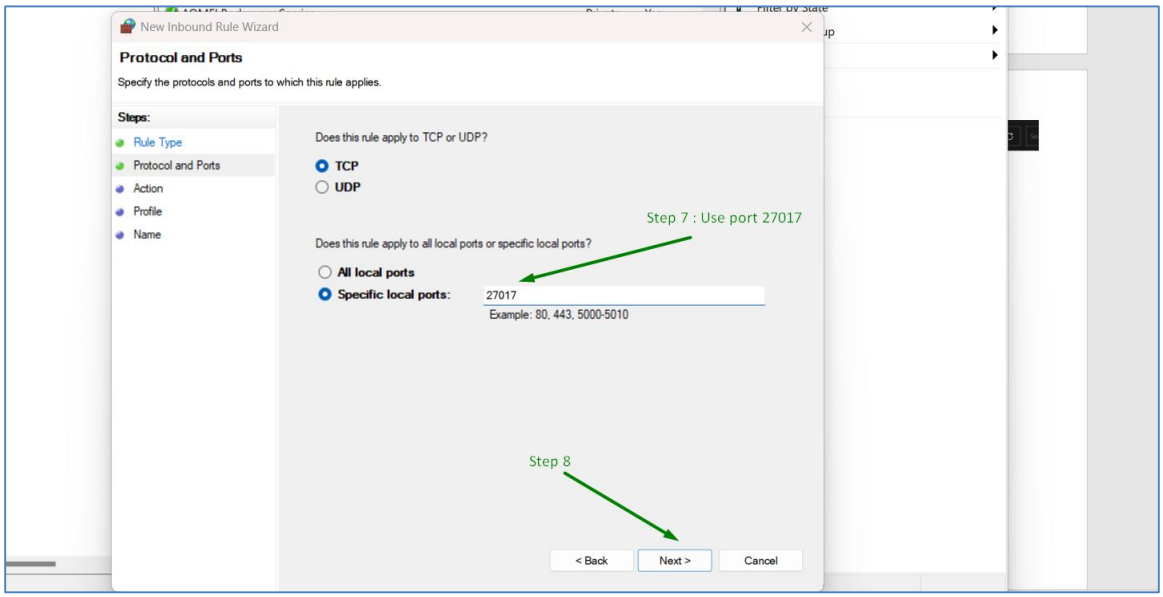


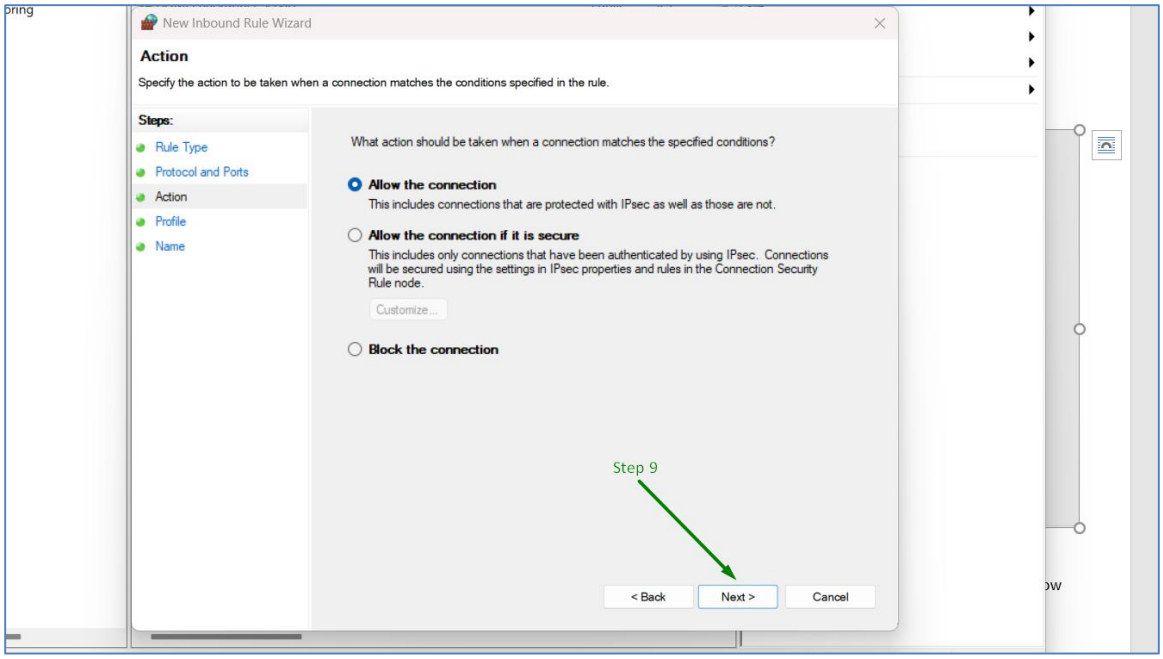


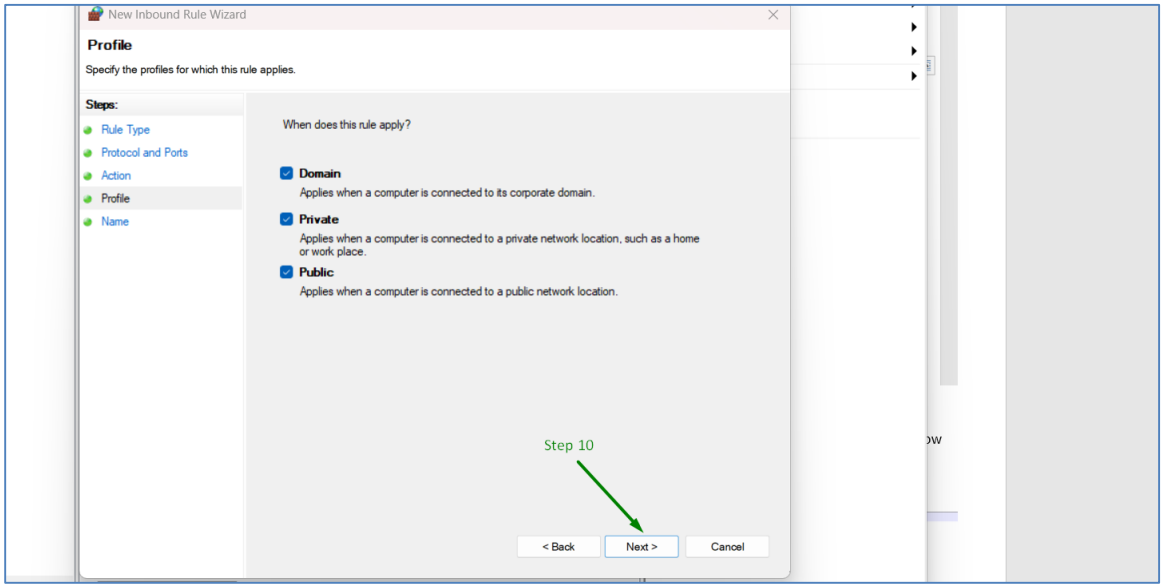
2. Create a new Inbound Rule.

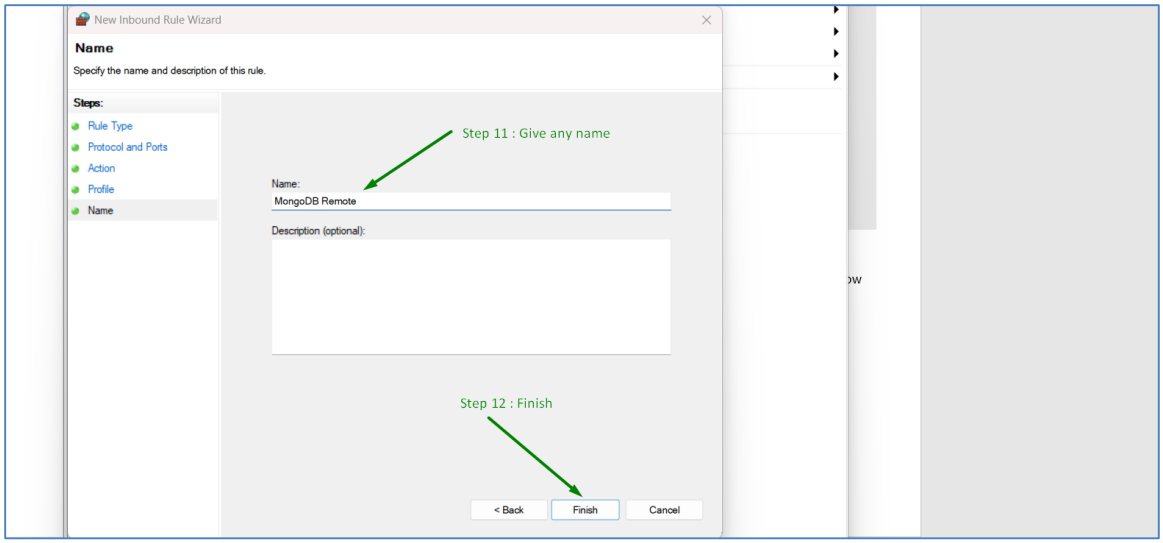


3. Allow the necessary ports for MongoDB.




New Inbound Rule Wizard
Action
Specify the action to be taken when a connection matches the conditions specified in the rule.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
What action should be taken when a connection matches the specified conditions?
Allow the connection
This includes connections that are protected with IPsec as well as those are not.
Allow the connection if it is secure
This includes only connections that have been authenticated by using IPsec. Connections will be secured using the settings in IPsec properties and rules in the Connection Security Rule node.
Customize...
Block the connection
Step 9
< Back
Next >
Cancel


New Inbound Rule Wizard
Profile
Specify the profiles for which this rule applies.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
When does this rule apply?
Domain
Applies when a computer is connected to its corporate domain.
Private
Applies when a computer is connected to a private network location, such as a home or work place.
Public
Applies when a computer is connected to a public network location.
Step 10
< Back
Next >
Cancel



Step 3: Modify **example-mongosqld-config.yml**

The configuration file is located at:

C:\Program Files\MongoDB\Connector for BI\2.14

Modify it to support remote connections.

```
## This is a example configuration file for mongosqld.

## The full documentation is available at:
## https://docs.mongodb.com/bi-connector/master/reference/mongosqld/#configuration-file

## Network options - configure how mongosqld should accept connections.
## https://docs.mongodb.com/bi-connector/master/reference/mongosqld/#network-options
net:
  bindIp: 0.0.0.0 # To bind to multiple IP addresses, enter a list of comma separated values.
  port: 3307
  # unixDomainSocket:
  #   enabled: false
  #   pathPrefix: "/var"
  #   filePermissions: "0600"
  ssl:
    mode: "disabled"
    # allowInvalidCertificates: false
    # PEMKeyFile: <string>
    # PEMKeyPassword: <string>
    # CAFile: <string>
    # minimumTLSVersion: TLS1_1

## MongoDB options - configure how mongosqld should connect to your MongoDB cluster.
## https://docs.mongodb.com/bi-connector/master/reference/mongosqld/#mongodb-host-options
mongodb:
  # versionCompatibility: <string>
  net:
    uri: "mongodb://localhost:27017" # https://docs.mongodb.com/manual/reference/connection-string/#mongodb-uri
    ssl:
      enabled: false
    ## https://docs.mongodb.com/bi-connector/master/reference/mongosqld/#mongodb-tls-ssl-options
    #   allowInvalidCertificates: false
    #   allowInvalidHostnames: false
    #   PEMKeyFile: <string>
    #   PEMKeyPassword: <string>
    #   CAFile: <string>
    #   CRLFile: <string>
    #   FIPSMode: false
    #   minimumTLSVersion: TLSv1_1
    # auth:
    #   username: <string>
```

bind Ip :127.0.0.1 change to 0.0.0.0
port : 27017 change to 3307

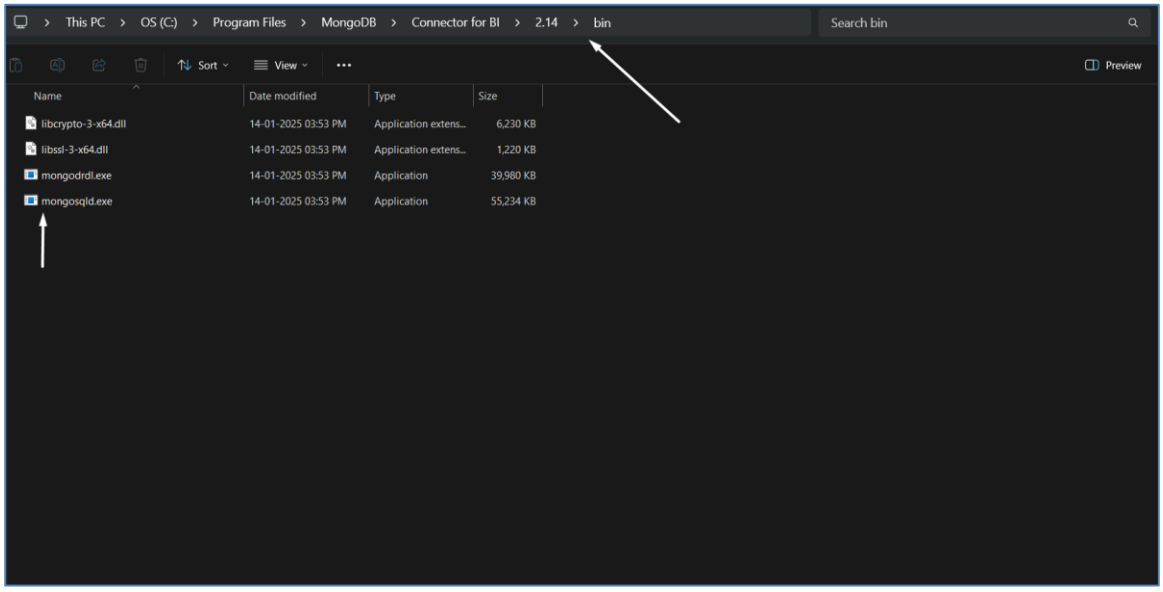
```
## Schema options
## These configuration options define how the mongosqld should sample your MongoDB
## data so that it can be used by the relational application.
## https://docs.mongodb.com/bi-connector/master/reference/mongosqld/#data-sampling-options
schema:
  ## If you've generated a DRDL schema file using mongodrdl, you can supply the
  ## path for mongosqld to use that schema DRDL file.
  # path: <string>
  # maxVarcharLength: <integer>
  ## Use the `refreshIntervalSecs` option to specify an interval in seconds for
  ## mongosqld to update its schema, either by resampling or by re-reading from
  ## the schema source. The default value for this option is 0, which means that
  ## mongosqld does not automatically refresh the schema after it is
  ## initialized.
  refreshIntervalSecs: 0
  stored:
    mode: "auto" # "auto"|"custom"
    source: "xbyte" # the database where schemas are stored in stored-schema modes
    name: "test" # the named schema to read/write to in stored-schema modes
  sample:
    size: 1000 # The amount of random documents we sample from each collection.
    namespaces: ["*.*"]
    # prejoin: false
    # uuidSubtype3Encoding: "old" # <[old|csharp|java]>

## Process management options
## https://docs.mongodb.com/bi-connector/master/reference/mongosqld/#process-management-options
processManagement:
  service:
    name: "mongosql"
    displayName: "MongoSQL Service"
    description: "MongoSQL accesses MongoDB data with SQL"

## Runtime options
## https://docs.mongodb.com/bi-connector/master/reference/mongosqld/#runtime-options
# runtime:
#   memory:
#     ## A value of `0` indicates there is no enforced maximum.
#     maxPerStage: 0
#     maxPerServer: 0
#     maxPerConnection: 0
```

mode : "custom" to "auto"

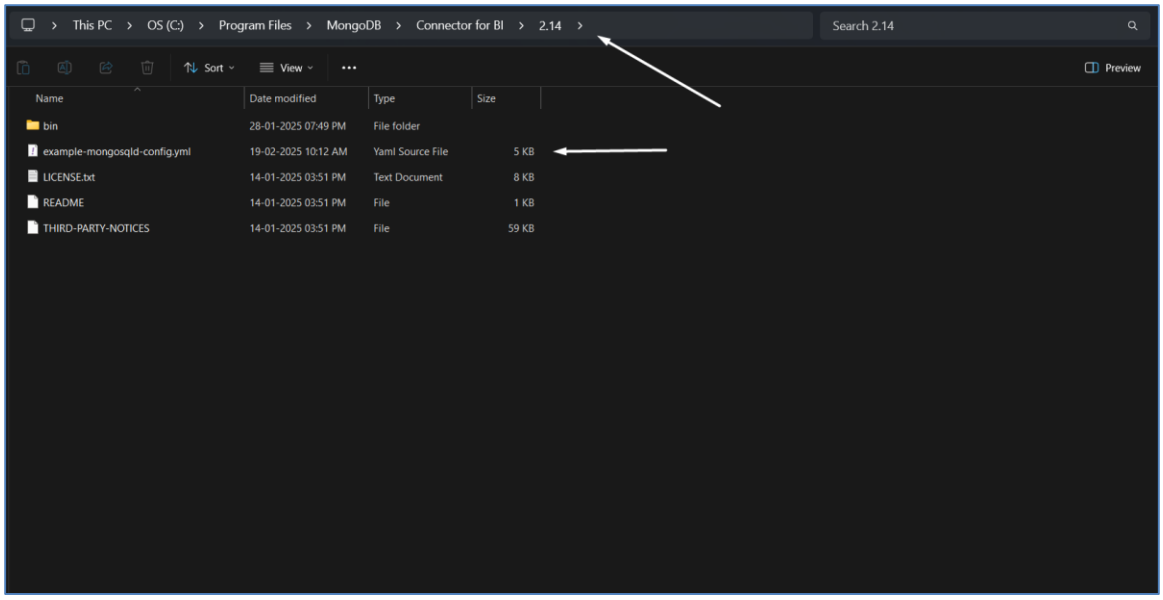
Step 4: Ensure mongosqld.exe and example-mongosqld-config.yml are Running

Run the following files on both local and remote **both systems**:

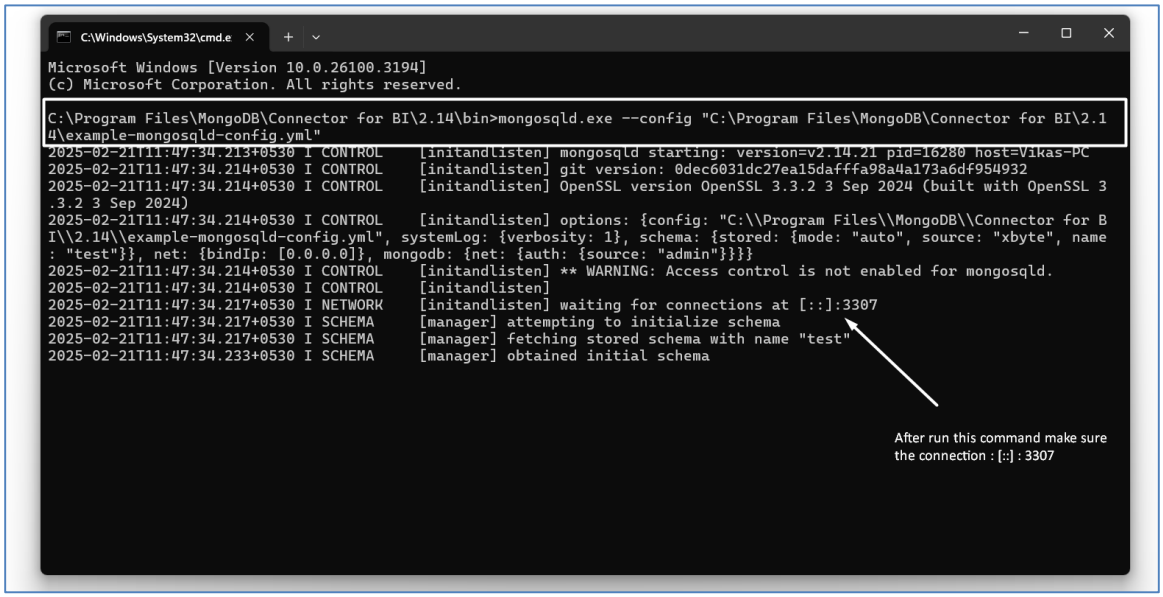
- mongosqld.exe: C:\Program Files\MongoDB\Connector for BI\2.14\bin



- example-mongosqld-config.yml: C:\Program Files\MongoDB\Connector for BI\2.14

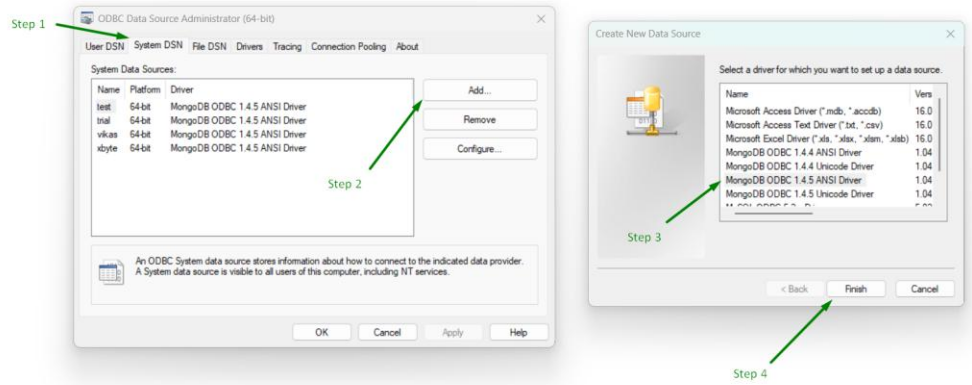


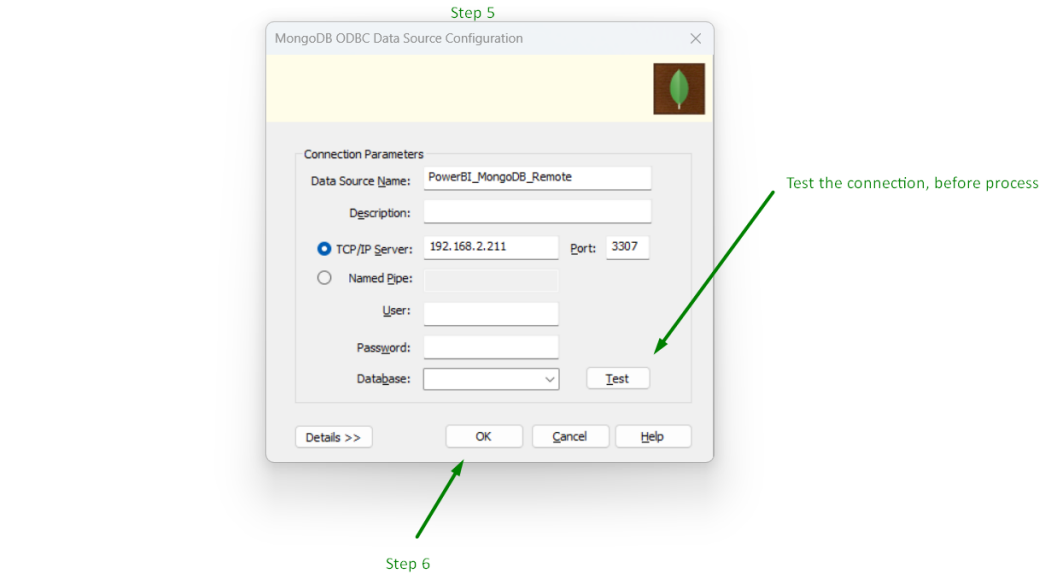
Now go to cmd and run the below command for the remote connection:

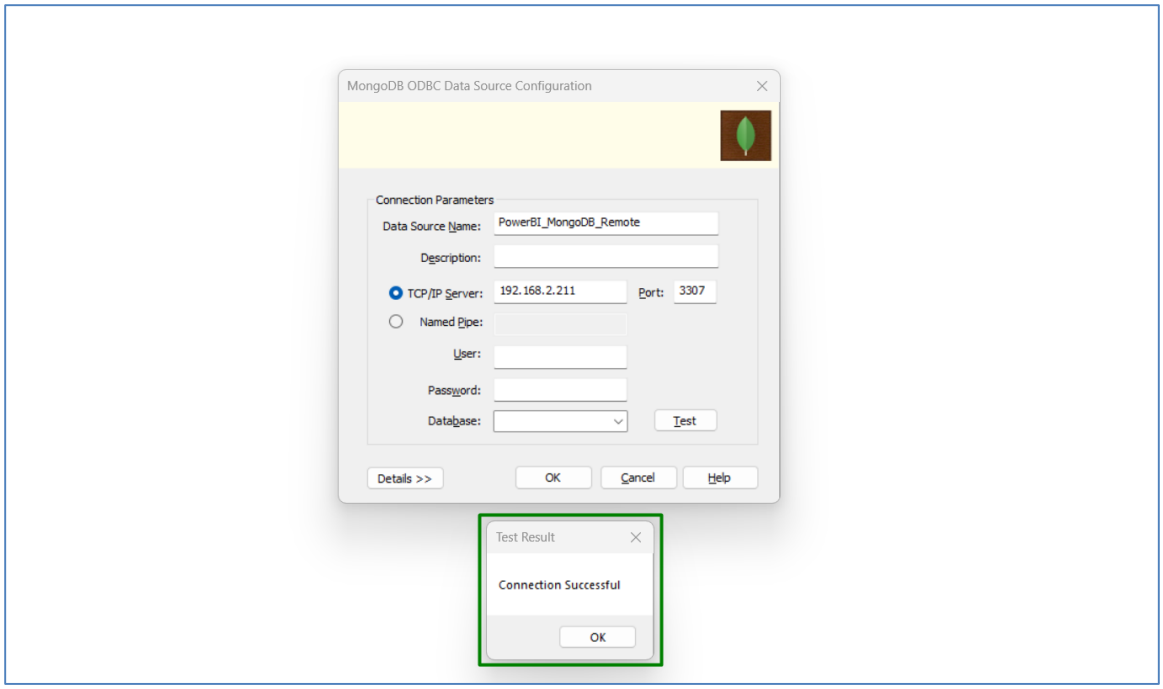


6. Create and Configure System DSN Driver (Remote Connection)

Follow the same steps as for the localhost connection but configure it for the remote data source.


Step 1
ODBC Data Source Administrator (64-bit)
User DSN
System DSN
File DSN
Drivers
Tracing
Connection Pooling
About
System Data Sources:
Name
Platform
Driver
test
64-bit
MongoDB ODBC 1.4.5 ANSI Driver
trial
64-bit
MongoDB ODBC 1.4.5 ANSI Driver
vikas
64-bit
MongoDB ODBC 1.4.5 ANSI Driver
xbyte
64-bit
MongoDB ODBC 1.4.5 ANSI Driver
Add...
Remove
Configure...
Step 2
An ODBC System data source stores information about how to connect to the indicated data provider.
A System data source is visible to all users of this computer, including NT services.
OK
Cancel
Apply
Help
Create New Data Source
Select a driver for which you want to set up a data source.
Name
Vers
Microsoft Access Driver (*.mdb, *.accdb) 16.0
Microsoft Access Text Driver (*.txt, *.csv) 16.0
Microsoft Excel Driver (*.xls, *.xlsx, *.xlsm, *.xlsb) 16.0
MongoDB ODBC 1.4.4 ANSI Driver 1.04
MongoDB ODBC 1.4.4 Unicode Driver 1.04
MongoDB ODBC 1.4.5 ANSI Driver 1.04
MongoDB ODBC 1.4.5 Unicode Driver 1.04
Step 3
< Back
Finish
Cancel
Step 4


Step 5
MongoDB ODBC Data Source Configuration
Connection Parameters
Data Source Name:
PowerBI_MongoDB_Remote
Description:
TCP/IP Server:
192.168.2.211
Port:
3307
Named Pipe:
User:
Password:
Database:
Test
Test the connection, before process
Details >>
OK
Cancel
Help
Step 6



7. Connect MongoDB to Power BI

1. Open Power BI Desktop.

2. Go to Get Data and search for ODBC.

3. Select ODBC, then choose the Data Source Name (DSN) configured earlier (e.g., PowerBI_MongoDB_Remote).

4. Load the data and start building reports.

Part 2 : Automate the MongoDB cmd command process.

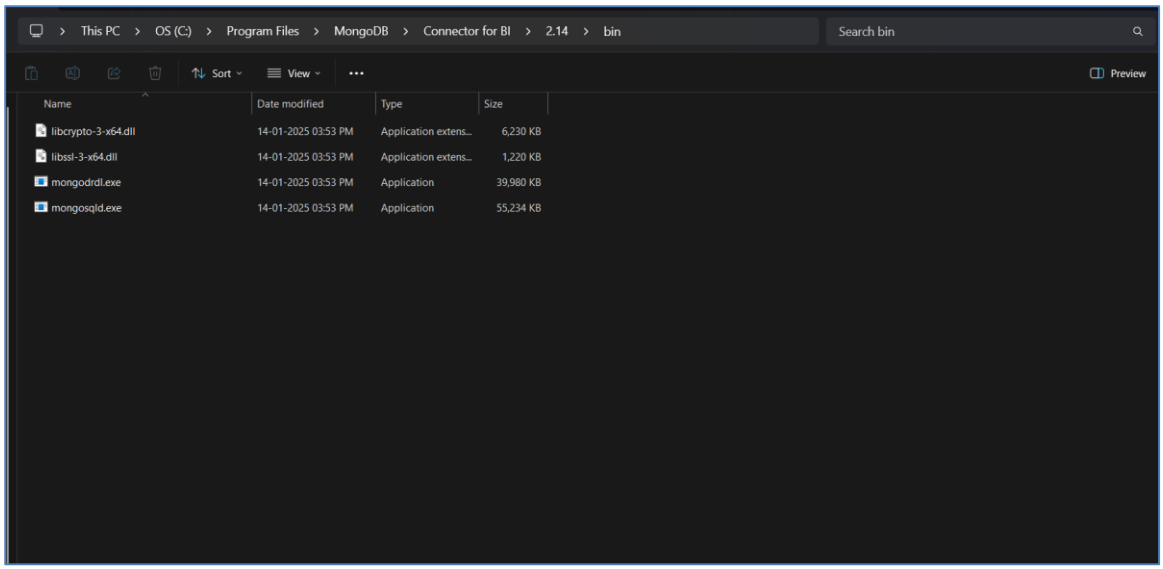
How to automate the mongosqld.exe and example-mongosqld-config.yml running process:

1. Create a Notepad++ file.

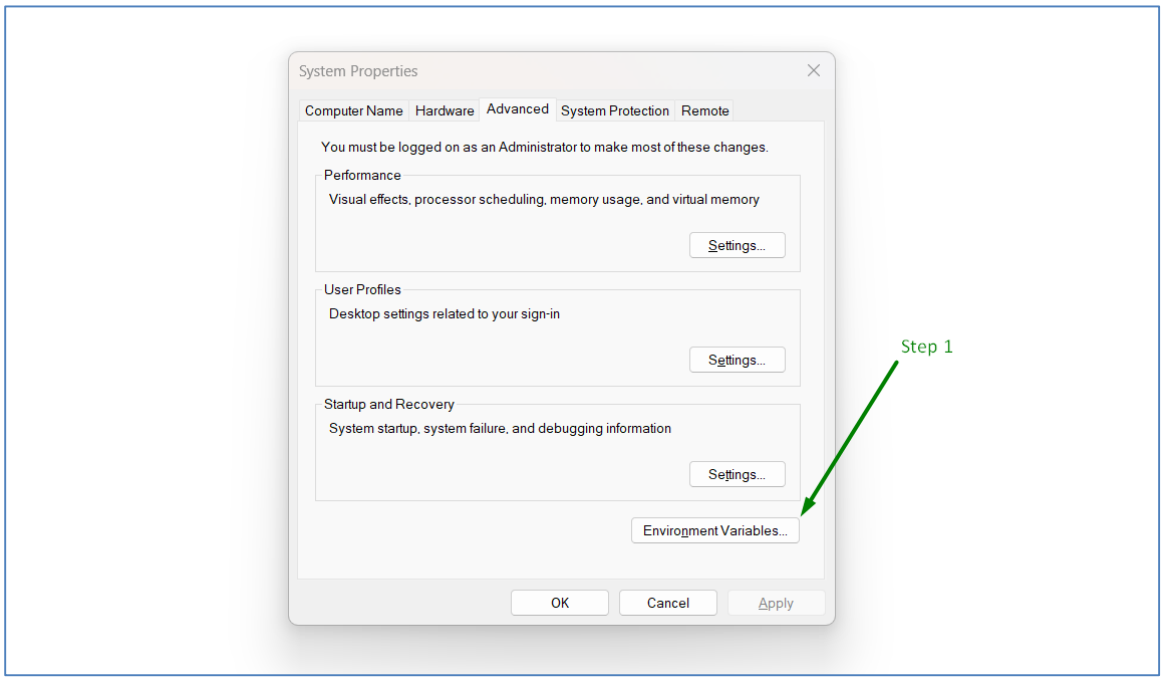
2. Save the below code with **.vbs** format.

```
Set objShell = CreateObject("WScript.Shell")

' Command to run
command = "mongosqld.exe --config ""C:\Program Files\MongoDB\Connector for BI\2.14\example-mongosqld-config.yml"""

' Run the command in the background
objShell.Run command, 0, False

' Check process status
processName = "mongosqld.exe"
  WScript.Echo processName & " is running."
```

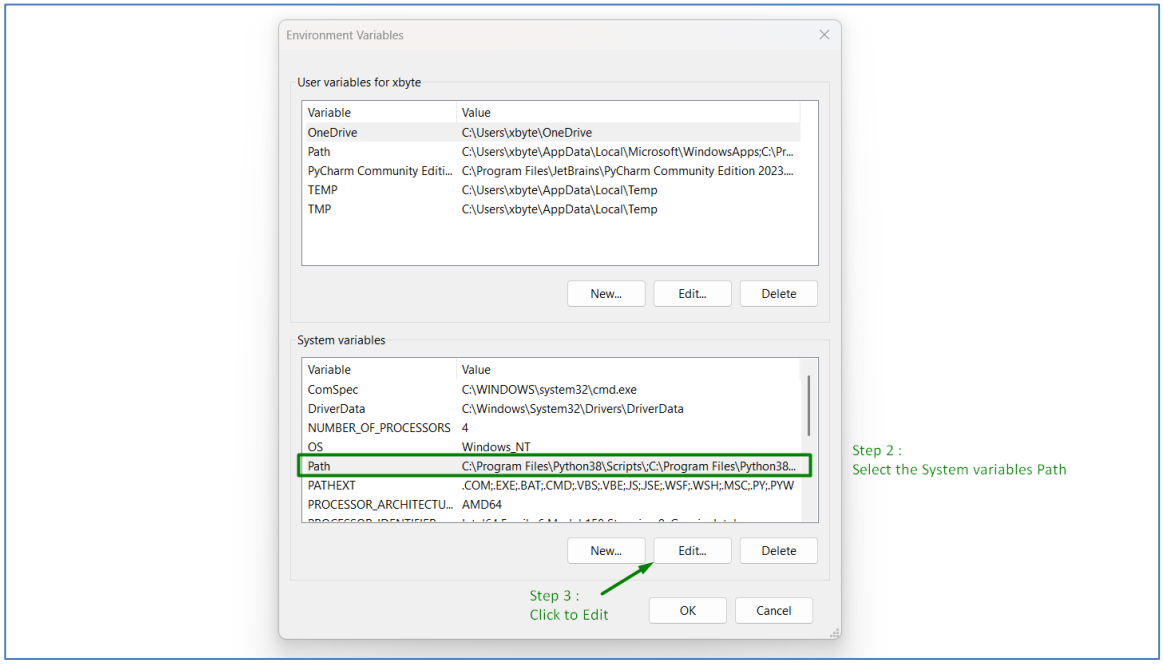
3. Copy the path is located at :
C:\Program Files\MongoDB\Connector for BI\2.14\bin

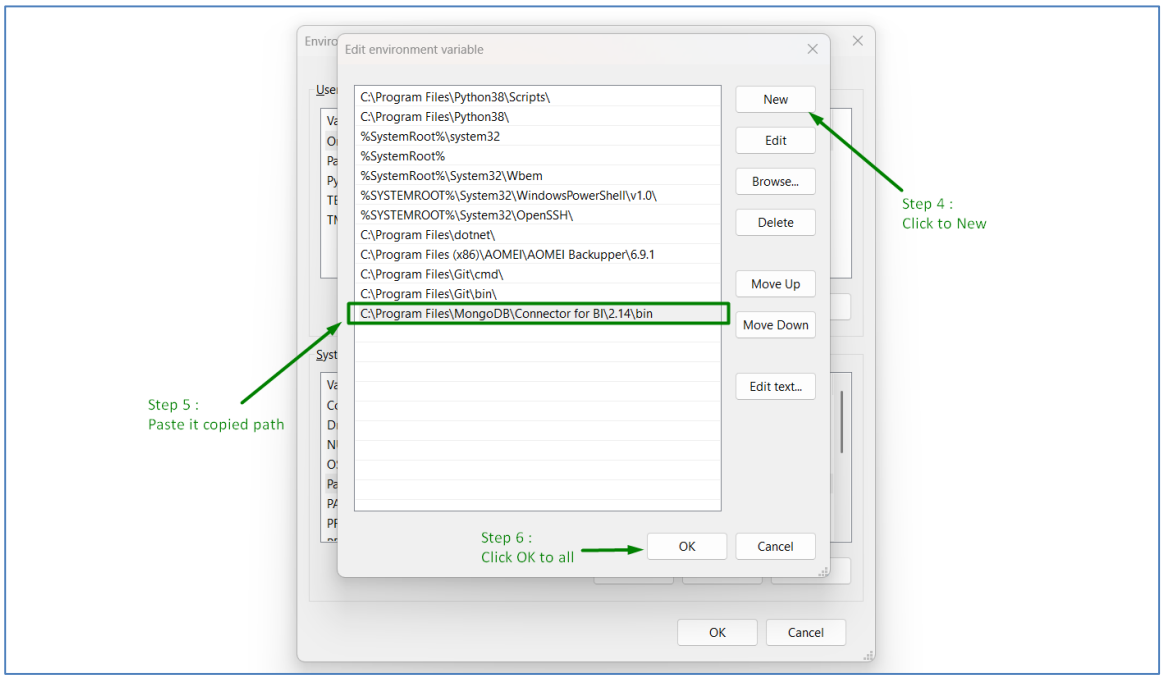


4.Add Environment Variables.

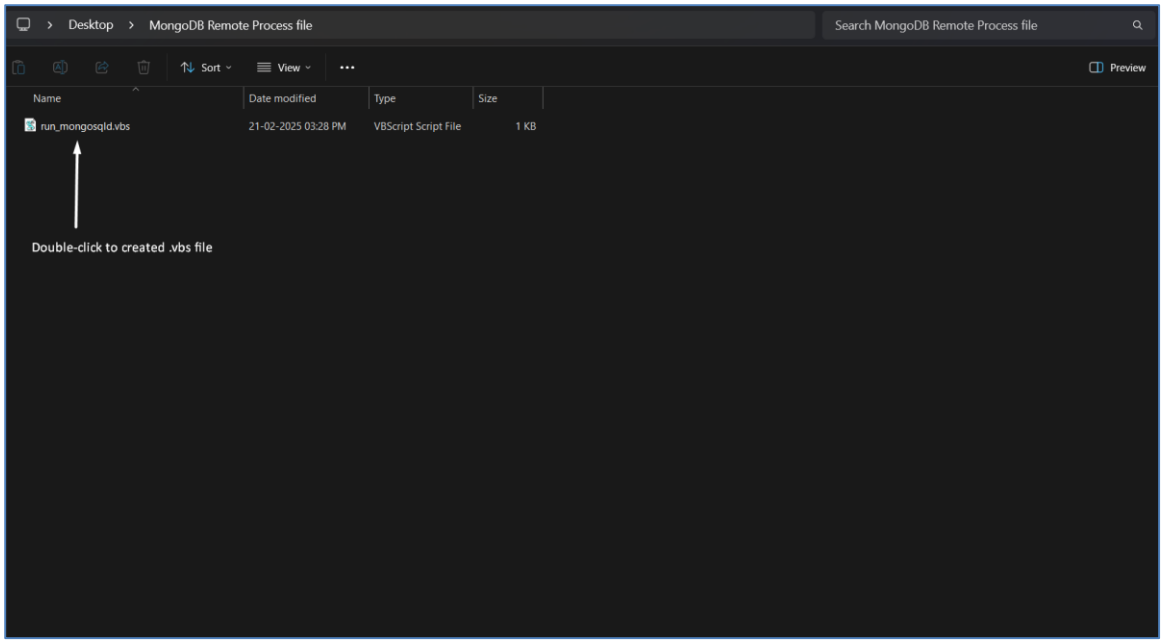


5. Edit new system variable path.

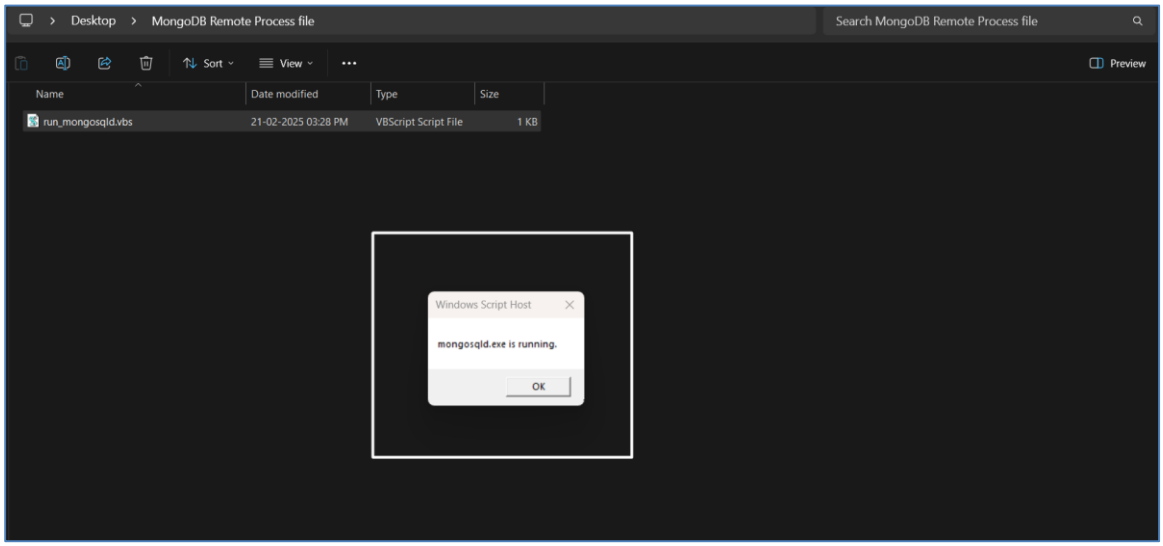




6. Run the created .vbs file



7. File status updated and Running.



(Note: Above all automate running process steps need to configure on both local and remote systems.)

Thank you!