

XdagJ Node 0.8.0 Run Document

System Environment

```
JDK : v21  
GCC : Above v13.1.0  
Maven : v3.9.1  
MySQL : Above v8.0
```

1. Check if the current JDK version is JDK 21

```
$ java -version
```

2. Check if the current GCC version is v13.1.0 or above

```
$ gcc --version
```

- **Upgrade GCC version to v13.1.0 or above:**
 - *Take Debian/Ubuntu as an example*
 - Add the official GCC toolchain PPA

```
$ sudo add-apt-repository ppa:ubuntu-toolchain-r/test  
$ sudo apt update
```

- Install gcc-13 and g++-13

```
$ sudo apt install gcc-13 g++-13
```

- Set gcc-13 as the default version

After the installation is complete, in order to make the `gcc` and `g++` commands point to gcc-13 and g++-13 by default, you need to configure alternatives:

```
$ sudo update-alternatives --install /usr/bin/gcc gcc /usr/bin/gcc-13 60  
$ sudo update-alternatives --install /usr/bin/g++ g++ /usr/bin/g++-13 60
```

Then execute the following command to select which version to use by default (if you have multiple versions on your machine):

```
$ sudo update-alternatives --config gcc
```

You will be prompted to select a serial number, select the one that points to `/usr/bin/gcc-13`.

- Verify Installation

```
$ gcc --version  
$ g++ --version
```

You should see the output:

```
gcc (Ubuntu 13.x.x...) ...  
g++ (Ubuntu 13.x.x...) ...
```

3. Check if the current Maven version is v3.9.1 or above

```
$ mvn -v
```

4. Check if the current MySQL version is v8.0 or above

```
$ mysql -v
```

Operation Steps

1. Clone Code

- *If the XdagJ project does not exist:*

```
$ git clone https://github.com/XDagger/xdagj.git
```

- *If the XdagJ project already exists:*

```
$ cd xdagj  
$ git pull
```

- *Make sure the XdagJ project is in the master branch:*

- *View the current branch*

```
$ git branch
```

- *Perform this operation when the current branch is not master*

```
$ git checkout master
```

2. Configure MySQL

- *If you are configuring MySQL for the first time:*

- *Install MySQL*

```
# install MySQL.  
$ sudo apt install mysql-server
```

- *Change password*

- *Log in to the MySQL database as the root user*

```
$ sudo mysql -u root
```

- *Change password*

```
mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY  
'your_new_password';  
mysql> FLUSH PRIVILEGES;  
mysql> EXIT;
```

- *Create a database for saving transaction history*

- Log in to MySQL as the root user, using the password you just set

```
$ mysql -u root -p
```

- Create a database named `your_store_transaction_history_database_name`

```
mysql> CREATE DATABASE your_store_transaction_history_database_name;
```

- Check if the database was created successfully

```
mysql> SHOW DATABASES;
```

- *Create a table*

- Select the database you just created

```
mysql> USE your_store_transaction_history_database_name;
```

- Locate the `mysql_create_table.sql` script in the `xdagj/script` folder. Create table `t_transaction_history` under this database

```
mysql> source absolute_path_of_your mysql_create_table.sql script;  
  
# For example: "source /home/ubuntu/xdagj/script/mysql_create_table.sql;"
```

- Check whether the table is created successfully

```
mysql> SHOW TABLES;
```

- ***If you have already configured MySQL and have run nodes before, please perform the following steps:***

- *Login to MySQL*

```
$ mysql -u root -p
```

- *Back up previous versions of transaction history*

- Select the database where you previously stored transaction history

```
mysql> USE your_store_transaction_history_database_name;
```

- Back up previous versions of transaction history data

```
mysql> RENAME TABLE t_transaction_history TO transaction_history_v_0_7_2;
```

- *Re-create an empty `t_transaction_history` table*

- Select the database where you previously stored transaction history

```
mysql> USE your_store_transaction_history_database_name;
```

- Locate the `mysql_create_table.sql` script in the `xdagj/script` folder. Create table `t_transaction_history` under this database

```
mysql> source absolute_path_of_your mysql_create_table.sql script;  
  
# For example: "source /home/ubuntu/xdagj/script/mysql_create_table.sql;"
```

- Check whether the table is created successfully

```
mysql> SHOW TABLES;
```

3. Execute mvn

```
$ cd xdagj
$ mvn clean package -Dmaven.test.skip=true
```

4. Create "run" Folder and Modify the Configuration Files

- *The path to the configuration file to be used:*

- "xdag-mainnet.conf", "druid.properties", "log4j2.xml" are located in the xdagj/src/main/resources
- "xdag.sh" is located in the xdagj/script
- "xdagj-0.8.0-executable.jar" is located in the xdagj/target

- *If you have not created a "run" folder before, please follow the steps below:*

- Create a "run" folder:

```
# Create a run folder, which is usually in the same directory as the xdagj.
$ mkdir run
```

- Copy the necessary files to the "run" folder:

Copy `xdag-mainnet.conf`, `druid.properties`, `log4j2.xml`, `xdag.sh`, `xdagj-0.8.0-executable.jar` to "run" folder.

- Modify the configuration files:

- Modify druid.properties

- Modify the "url" to:

```
url=jdbc:mysql://localhost:3306/your_store_transaction_history_database_name?
autoReconnect=true&useUnicode=true&characterEncoding=utf-8&serverTimezone=UTC
(Replace "your_store_transaction_history_database_name" with the correct database name)
```

- Modify the "username" to: `root`

- Modify the "password" to: Your new password set in the mysql configuration before.

- Modify xdag-mainnet.conf

- "pool.whitelPs": If set `pool.whiteIPs = ["0.0.0.0"]`, any pool can access the node. Otherwise, only specified IPs are allowed.

- "node.whitelPs": Please ask the community if `node.whiteIPs` needs to be updated, added or deleted (*Must be set up before starting the node*).

- "node.generate.block.enable":

1. Set `node.generate.block.enable = true` for mining nodes.

2. Set `node.generate.block.enable = false` for exchanges.

- "node.reject.transaction.address": Please ask the community to modify the content of `node.reject.transaction.address`.

- "node.ration": The ratios of block node reward.

- "fund.address": Set `fund.address = "PKCBtHWDsnAwfZntqWPBledqBShuKSTzS"` (*Without this address, miner rewards cannot be distributed*).

- "fund.ration": The ratios of foundation reward.

- Make sure the RPC switch is configured as `rpc.http.enabled = true` instead of `rpc.enabled = true`.

- "randomx.flags.fullmem": Please set `randomx.flags.fullmem = false`.

- Modify xdag.sh

- Modify `XDAG_VERSION="${project.version}"` to `XDAG_VERSION="0.8.0"`

- **If you have already created the "run" folder and run the node before, follow these steps:**

- Copy `xdagj-0.8.0-executable.jar` to the run folder.
- Modify `xdag.sh`:
 1. Copy `xdagj.sh` to the run folder.
 2. Modify `XDAG_VERSION="${project.version}"` to `XDAG_VERSION="0.8.0"`
- Modify `xdag-mainnet.conf`:
 1. Please ask the community if `node.whiteIPS` needs to be updated, added or deleted (*Must be set up before starting the node*).
 2. Make sure the RPC switch is configured as `rpc.http.enabled = true` instead of `rpc.enabled = true`.
 3. Set `randomx.flags.fullmem = false`.

5. Download the SNAPSHOT File

1. Create the `/mainnet/rocksdb/xdagdb` directory under the run folder.
2. SNAPSHOT download address: <https://storage.xdagpool.com/> (Or ask the community to [get](#) the latest SNAPSHOT).
3. Unzip the compressed package to [get](#) a SNAPSHOT folder.
4. Delete all files except SNAPSHOT files [in](#) the `/run/mainnet/rocksdb/xdagdb` directory.
5. Copy the unzipped SNAPSHOT file to `/mainnet/rocksdb/xdagdb` [in](#) the root directory, overwriting the existing SNAPSHOT folder.

6. Make Snapshot (Developer node steps: Ignore if not relevant)

```
###
Notice:
  1. Please make sure to update file "xdagj-0.8.0-executable.jar" before performing this step.
  2. Snapshot file "SNAPSHOT" will be generated in directory mainnet/rocksdb/xdagdb.
###

# Run the following command to make the snapshot.
$ cd run
$ sh xdag.sh --makesnapshot
```

7. Verify the Version of xdag.sh

```
# Run this command in the /run path to verify the version.
$ sh xdag.sh --version // return: 0.8.0
```

8. Start Xdagj

Note:

1. If there is no wallet folder under the current mainnet directory, it will be created automatically when the node starts.
2. The node and pool wallet addresses must be different; otherwise, rewards will not be issued.

```
# Run the following command to start the xdagj node.
$ cd run
$ sh xdag.sh --enablesnapshot true [Snapshot Height] [Timestamp] // Check with the community for the correct command.

# For example: "$ sh xdag.sh --enablesnapshot true 3140605 19a15630000" (Check with the community for the correct command).
```

Note: If an exception occurs when starting the snapshot, delete the loaded data from `t_transaction_history` in MySQL. Ensure the table is empty before restarting. Also, delete all non-SNAPSHOT files in `rocksdb/xdagdb`.

9. Verify MySQL Data

- **Verify whether the data is successfully written to MySQL:**

```
# Login to MySQL.  
$ mysql -u root -p
```

```
###  
1. Run the following command to verify whether the data is successfully written to MySQL.  
2. If the data amount is greater than 0, it means that it has been successfully written to MySQL.  
###  
mysql> USE your_database_name;  
mysql> SELECT COUNT(*) FROM t_transaction_history;
```

10. Verify SNAPSHOT Data and Check the Node State

- **Verify SNAPSHOT data:**

- This is an example of a successful node startup result:

```
ubuntu@xxx-xxx-xxx-xxx:~/XdagNode/run$ sh xdag.sh --enablesnapshot true 3140605 19a15630000  
xdag.sh: 3: ulimit: error setting limit (Operation not permitted)  
enable snapshot:true  
Please Enter Wallet Password:  
init snapshot...  
amount in address: 631490160.480122105  
amount in blocks: 615276623.519882021  
init snapshot done  
time: 169531ms  
Our balance: 0.000000000  
All amount: 1246766784.000004126 ### All amount in SNAPSHOT ###  
telnetd is running on 127.0.0.1:6001  
Mar 09, 2025 3:10:05 AM org.jline.builtins.telnet.PortListener run  
INFO: Listening to Port 6,001 with a connectivity queue size of 10.
```

- This is an example of the output of the "stats" command right after the snapshot has been loaded:

```
xdag> stats  
Statistics for ours and maximum known parameters:  
  hosts: 0 of 1  
  blocks: 1 of 1  
  main blocks: 3140605 of 3140605  
  extra blocks: 0  
  orphan blocks: 1  
  wait sync blocks: 0  
  chain difficulty: cdf6e16f95bfcdeae82021ceec of cdf6e16f95bfcdeae82021ceec  
  X DAG supply: 1246736960.000000000 of 1246736960.000000000 ### All supply in stats ###  
  X DAG in address: 631490160.480122089  
  4 hr hashrate KHz: 0.000000000 of 0.000000000  
  Number of Address: 5957
```

- Verify SNAPSHOT all balance:

```
x: All amount in SNAPSHOT, printed out after the snapshot is loaded  
  
y: All supply in stats  
  
y = x - 466 * 64  
  
###  
example:  
  x (All amount) = 1246766784.000004126  
  
  y (X DAG supply) = 1246736960.000000000  
  
  y = x - 466 * 64 => 1246736960 = 1246766784 - 466 * 64  
  
###
```

- **Check the node status by using the telnet:**

- Start telnet:

- Run the following command to use telnet

```
$ telnet 127.0.0.1 6001
```

- Enter the password, the password is admin.telnet.password in xdag-mainnet.conf

```
Enter Admin password>[Your password]
```

- *List all methods in telnet:*

```
xdag> help
```

- *Check the state of the node:*

```
xdag> state
```

Note: If the returned result is `Synchronized with the main network. Normal operation.`, it indicates that synchronization is complete and block generation is functioning normally. At this point, your node has been successfully set up and synchronized with the mainnet.

- *View the statistics of the node:*

```
xdag> stats
```