

FISCO BCOS 体验报告

2020年7月2日

1. 用脚本安装 FISCO BCOS

```
OpenJDK Runtime Environment (build 11.0.7+10-post-Ubuntu-2ubuntu218.04)
OpenJDK 64-Bit Server VM (build 11.0.7+10-post-Ubuntu-2ubuntu218.04, mixed mode, sharing)
to@toddzhang-NB01:~/fisco/console$ cd ~/fisco && curl -LO https://github.com/FISCO-BCOS/releases/download/v1.0.9/download_console.sh && bash down
load_console.sh
% Total    % Received % Xferd Average Speed      Time     Time       Time Current
Dload Upload   Total   Spent    Left   Speed
100 632 100 632 0 0 902 0 --:--:-- --:--:-- --:--:-- 901
100 1101 100 1101 0 0 398 0 0:00:02 0:00:02 --:--:-- 1372
Downloading console 1.0.9
% Total    % Received % Xferd Average Speed      Time     Time       Time Current
Dload Upload   Total   Spent    Left   Speed
100 627 100 627 0 0 562 0 0:00:01 0:00:01 --:--:~ 562
0 37.7M 0 271K 0 0 8557 0 1:17:07 0:00:32 1:16:35 7850
curl: (28) Operation too slow. Less than 102400 bytes/sec transferred the last 30 seconds
Download speed is too low, try https://www.fisco.com.cn/cdn/console/releases/download/v1.0.9/console.tar.gz
% Total    % Received % Xferd Average Speed      Time     Time       Time Current
Dload Upload   Total   Spent    Left   Speed
100 37.7M 100 37.7M 0 0 1719k 0 0:00:22 0:00:22 --:--:~ 1747k
to@toddzhang-NB01:~/fisco$ cp -n console/conf/applicationContext-sample.xml console/conf/applicationContext.xml
to@toddzhang-NB01:~/fisco$ cp nodes/127.0.0.1/sdk/* console/conf/
to@toddzhang-NB01:~/fisco$ cd ~/fisco/console && bash start.sh

=====
Welcome to FISCO BCOS console(1.0.9)!
Type 'help' or 'h' for help. Type 'quit' or 'q' to quit console.


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[group:1]>
```

成功用脚本部署区块链并启动 iavasd

```

    "Agency": "agency",
    "IPAndPort": "127.0.0.1:52730",
    "Node": "node3",
    "NodeID": "9c26b0733228011b97e91aaa528ce8f3d2e3a5ec6d6fccc41ede3eaf388860fca1897ae97caddcb320cce6a5f28647ceefa5108af81af538cd93e4d32c553a74",
    "Topic": [

    ]
  }
]

[group:1]> ls
Undefined command: "ls". Try "help".

[group:1]> deploy HelloWorld
contract address: 0x989a83cde872c810becc6427361b9b6758f835ec

[group:1]> getBlockNumber
1

[group:1]> call HelloWorld 0x989a83cde872c810becc6427361b9b6758f835ec
> get
Try 'call -h or --help' for more information.

[group:1]> call HelloWorld 0x989a83cde872c810becc6427361b9b6758f835ec get
Hello, World!

[group:1]> call HelloWorld 0x989a83cde872c810becc6427361b9b6758f835ec set "Hello webank"
transaction hash: 0xb30332f35843c16a082c083cb84a2242e7bf962d192d21090dd412a928ea175c

[group:1]> getBlockNumber
2

[group:1]> call HelloWorld 0x989a83cde872c810becc6427361b9b6758f835ec get
Hello webank

[group:1]> █

```

部署及调用 HelloWorld

2. 构建一个区块链应用

```
to@toddzhang-NB01:~/asset-app$ ls
build build.gradle dist gradle gradlew gradlew.bat src tool
to@toddzhang-NB01:~/asset-app$ java -version
openjdk version "11.0.7" 2020-04-14
OpenJDK Runtime Environment (build 11.0.7+10-post-Ubuntu-2ubuntu218.04)
OpenJDK 64-Bit Server VM (build 11.0.7+10-post-Ubuntu-2ubuntu218.04, mixed mode, sharing)
to@toddzhang-NB01:~/asset-app$ cd dist/
to@toddzhang-NB01:~/asset-app/dist$ bash asset_run.sh deploy
deploy Asset success, contract address is 0x6b42b3d80b4186f4f9b2b6a9c55409f77e617f1b
to@toddzhang-NB01:~/asset-app/dist$ bash asset_run.sh register Alice 100000
register asset account success => asset: Alice, value: 100000
to@toddzhang-NB01:~/asset-app/dist$ bash asset_run.sh register Bob 100000
register asset account success => asset: Bob, value: 100000
to@toddzhang-NB01:~/asset-app/dist$ ^C
to@toddzhang-NB01:~/asset-app/dist$ bash asset_run.sh query Alice
asset account Alice, value 100000
to@toddzhang-NB01:~/asset-app/dist$ bash asset_run.sh query Bob
asset account Bob, value 100000
to@toddzhang-NB01:~/asset-app/dist$ bash asset_run.sh transfer Alice Bob 50000
transfer success => from_asset: Alice, to_asset: Bob, amount: 50000
to@toddzhang-NB01:~/asset-app/dist$ bash asset_run.sh query Alice
asset account Alice, value 50000
to@toddzhang-NB01:~/asset-app/dist$ bash asset_run.sh query Bob
asset account Bob, value 150000
to@toddzhang-NB01:~/asset-app/dist$
```

成功运行项目，完成合约开发，合约编译，SDK 配置与业务开发构建

遇到问题与解决办法：

- 无法部署 Asset.sol 合约问题

```
to@toddzhang-NB01:~/asset-app/dist$ bash asset_run.sh deploy
Exception in thread "main" java.lang.Exception: Can not connect to nodes success, please checkout the node
config!
    at org.fisco.bcos.channel.client.Service.run(Service.java:340)
    at org.fisco.bcos.asset.client.AssetClient.initialize(AssetClient.java:80)
    at org.fisco.bcos.asset.client.AssetClient.main(AssetClient.java:203)
^Z
[1]+  Stopped                  bash asset_run.sh deploy
to@toddzhang-NB01:~/asset-app/dist$ bash asset_run.sh deploy
Exception in thread "main" java.lang.Exception: Can not connect to nodes success, please checkout the node
config!
    at org.fisco.bcos.channel.client.Service.run(Service.java:340)
    at org.fisco.bcos.asset.client.AssetClient.initialize(AssetClient.java:80)
    at org.fisco.bcos.asset.client.AssetClient.main(AssetClient.java:203)
```

问题原因：sdk 没有正确配置连接区块链的信息。

解决办法：确认 IP 端口和证书信息。结果证书不一致，重新复制替换，解决该问题。

3. 使用源码编译的方式搭建 FISCOBCOS 区块链

```
Scanning dependencies of target initializer
[ 92%] Building CXX object libinitializer/CMakeFiles/initializer.dir/GlobalConfigureInitializer.cpp.o
[ 92%] Linking CXX static library libinitializer.a
[ 93%] Built target initializer
Scanning dependencies of target rpc
[ 93%] Building CXX object librpc/CMakeFiles/rpc.dir/Rpc.cpp.o
[ 94%] Linking CXX static library librpc.a
[ 95%] Built target rpc
Scanning dependencies of target ledger
[ 95%] Building CXX object libledger/CMakeFiles/ledger.dir/DBInitializer.cpp.o
[ 96%] Building CXX object libledger/CMakeFiles/ledger.dir/Ledger.cpp.o
[ 96%] Building CXX object libledger/CMakeFiles/ledger.dir/LedgerManager.cpp.o
[ 96%] Building CXX object libledger/CMakeFiles/ledger.dir/LedgerParam.cpp.o
[ 97%] Linking CXX static library libledger.a
[ 97%] Built target ledger
Scanning dependencies of target channelserver
[ 98%] Building CXX object libchannelserver/CMakeFiles/channelserver.dir/ChannelRPCServer.cpp.o
[ 98%] Building CXX object libchannelserver/CMakeFiles/channelserver.dir/ChannelSession.cpp.o
[ 98%] Building CXX object libchannelserver/CMakeFiles/channelserver.dir/ChannelServer.cpp.o
[ 99%] Linking CXX static library libchannelserver.a
[ 99%] Built target channelserver
Scanning dependencies of target fisco-bcos
[100%] Building CXX object fisco-bcos/main/CMakeFiles/fisco-bcos.dir/main.cpp.o
[100%] Linking CXX executable ../../bin/fisco-bcos
[100%] Built target fisco-bcos
to@toddzhang-NB01:~/FISCO-BCOS/build$
```

成功编译源码

遇到问题与解决办法：

- 在编译代码阶段，会出现莫名的假死，无反应。
解决办法：网络问题，多 make 几次。
- 在编译代码阶段，编译出现以下错误。

```
-- Using src='https://github.com/weidai11/cryptopp/archive/bccc6443c4d4d611066c2de4c17109380cf97704.tar.gz'
-- Using src='https://raw.githubusercontent.com/FISCO-BCOS/LargeFiles/master/libs/leveldb-1.20.tar.gz'
-- Retry after 5 seconds (attempt #2) ...
-- Using src='https://raw.githubusercontent.com/FISCO-BCOS/LargeFiles/master/libs/cryptopp_bccc6443.tar.gz'
-- Retry after 15 seconds (attempt #4) ...
-- Using src='https://codeload.github.com/google/leveldb/tar.gz/v1.20'
-- Using src='https://github.com/weidai11/cryptopp/archive/bccc6443c4d4d611066c2de4c17109380cf97704.tar.gz'
-- Using src='https://raw.githubusercontent.com/FISCO-BCOS/LargeFiles/master/libs/cryptopp_bccc6443.tar.gz'
-- Retry after 60 seconds (attempt #5) ...
-- Using src='https://raw.githubusercontent.com/FISCO-BCOS/LargeFiles/master/libs/leveldb-1.20.tar.gz'
-- Retry after 5 seconds (attempt #3) ...
-- Using src='https://codeload.github.com/google/leveldb/tar.gz/v1.20'
-- Using src='https://raw.githubusercontent.com/FISCO-BCOS/LargeFiles/master/libs/leveldb-1.20.tar.gz'
-- Retry after 15 seconds (attempt #4) ...
-- Using src='https://codeload.github.com/google/leveldb/tar.gz/v1.20'
CMake Error at mpir-stamp/mpir-download-RelWithDebInfo.cmake:16 (message):
  Command failed: 1

  '/usr/bin/cmake' '-Dmake=' '-Dconfig=' '-P' '/home/to/FISCO-BCOS/build/deps/src/mpir-stamp/mpir-download-RelWithDebInfo-imp

See also

/home/to/FISCO-BCOS/build/deps/src/mpir-stamp/mpir-download-*.log

CMakeFiles/mpir.dir/build.make:89: recipe for target 'deps/src/mpir-stamp/mpir-download' failed
make[2]: *** [deps/src/mpir-stamp/mpir-download] Error 1
CMakeFiles/Makefile2:215: recipe for target 'CMakeFiles/mpir.dir/all' failed
make[1]: *** [CMakeFiles/mpir.dir/all] Error 2
make[1]: *** Waiting for unfinished jobs....
-- Using src='https://github.com/weidai11/cryptopp/archive/bccc6443c4d4d611066c2de4c17109380cf97704.tar.gz'
-- Using src='https://raw.githubusercontent.com/FISCO-BCOS/LargeFiles/master/libs/leveldb-1.20.tar.gz'
-- Retry after 60 seconds (attempt #5) ...
^Z
[12]+  Stopped                  make -j4
to@toddzhang-NB01:~/FISCO-BCOS/build$
```

问题原因：依赖没有安装全。

解决办法：重新安装依赖。

备注：官网在 2020-06-30 给出的文档是 2.4.0 版本，而代码是 2.5.0 版本。参考 2.4.0 文档编译 2.5.0 代码会有该问题，请参考 [2.5.0 文档](#)。

该问题已反馈。



- 遇到如下编译问题

```
[ 82%] Built target security
[ 84%] Built target mptstate
[ 87%] Built target sync
[ 90%] Built target consensus
[ 91%] Built target eventfilter
Scanning dependencies of target initializer
[ 92%] Building CXX object libinitializer/CMakeFiles/initializer.dir/GlobalConfigureInitializer.cpp.o
[ 92%] Linking CXX static library libinitializer.a
[ 93%] Built target initializer
[ 93%] Building CXX object librpc/CMakeFiles/rpc.dir/Rpc.cpp.o
/home/to/FISCO-BCOS/librpc/Rpc.cpp: In member function 'virtual Json::Value dev::rpc::Rpc::startGroup(int)':
/home/to/FISCO-BCOS/librpc/Rpc.cpp:1588:12: error: catching polymorphic type 'struct dev::ledger::GroupAlreadyDe
e [-Werror=catch-value=]
    catch (GroupAlreadyDeleted)
          ^~~~~~
cc1plus: all warnings being treated as errors
librpc/CMakeFiles/rpc.dir/build.make:86: recipe for target 'librpc/CMakeFiles/rpc.dir/Rpc.cpp.o' failed
make[2]: *** [librpc/CMakeFiles/rpc.dir/Rpc.cpp.o] Error 1
CMakeFiles/Makefile2:2331: recipe for target 'librpc/CMakeFiles/rpc.dir/all' failed
make[1]: *** [librpc/CMakeFiles/rpc.dir/all] Error 2
Makefile:151: recipe for target 'all' failed
make: *** [all] Error 2
to@toddzhang-NB01:~/FISCO-BCOS/build$ gcc -v
Using built-in specs.
COLLECT_GCC=gcc
COLLECT_LTO_WRAPPER=/usr/lib/gcc/x86_64-linux-gnu/7/lto-wrapper
```

2. 修改该处代码为: `catch (GroupAlreadyDeleted const&)`

该问题已经反馈。

[illegible][illegible]

在 solidity 合约中调用预编译接口

- 遇到问题：使用编译出的二进制搭建节点后，部署控制台时遇到以下错误：

```
to@toddzhang-NB01:~/FISCO-BCOS/build$ cd ..  
to@toddzhang-NB01:~/FISCO-BCOS$ cd build/  
to@toddzhang-NB01:~/FISCO-BCOS/build$ cd console/  
to@toddzhang-NB01:~/FISCO-BCOS/build/console$ ./start.sh  
Failed to init the console! Failed to connect to nodes: [ ssl handshake failed:/127.0.0.1:20200]  
to@toddzhang-NB01:~/FISCO-BCOS/build/console$ cd ..  
to@toddzhang-NB01:~/FISCO-BCOS/build$ cd nodes/  
to@toddzhang-NB01:~/FISCO-BCOS/build/nodes$ cd 1
```

问题原因：crt 文件不一致问题

解决办法：重新替换 crt 文件，确认后解决问题

5. 总结

文档很详细，体验的时候按照流程可以学习到入门操作，还可以知道接口的作用。

体验下来最大的感受不是部署区块链有多难，而是下载依赖太难。出现了问题还可以咨询马上得到答复，而编译慢，下载依赖慢就只能默默等着，make 源码我整整 make 了一整天。

由于自己的操作不当在中间遇到一些问题反馈后，马上会得到答复与帮助，感谢密码学小分队与陈宇杰同学给与编译问题上的帮助。