

BÀI THỰC HÀNH 5: MOM

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1. Cài đặt và cấu hình máy

- Đầu tiên phải đảm bảo 3 máy phải tắt tường lửa và kết nối cùng một mạng

1.1. Cài đặt và cấu hình activemq

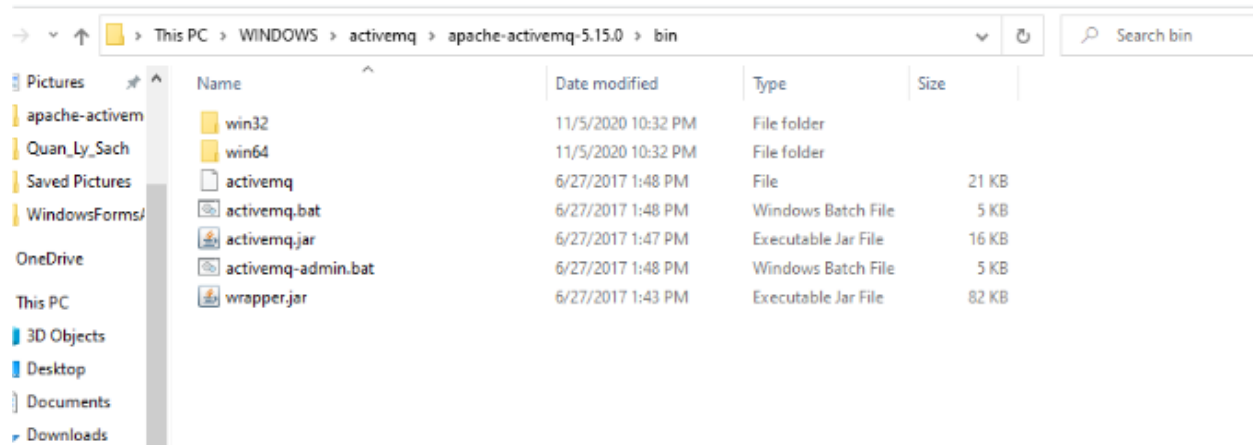
- Vào trình duyệt gõ: <https://activemq.apache.org/components/classic/> và tải activemq về

ActiveMQ Classic 6.1.2 (Apr 15th, 2024)

[Release Notes](#) | [Release Page](#) | [Documentation](#) | Java compatibility: **17+**

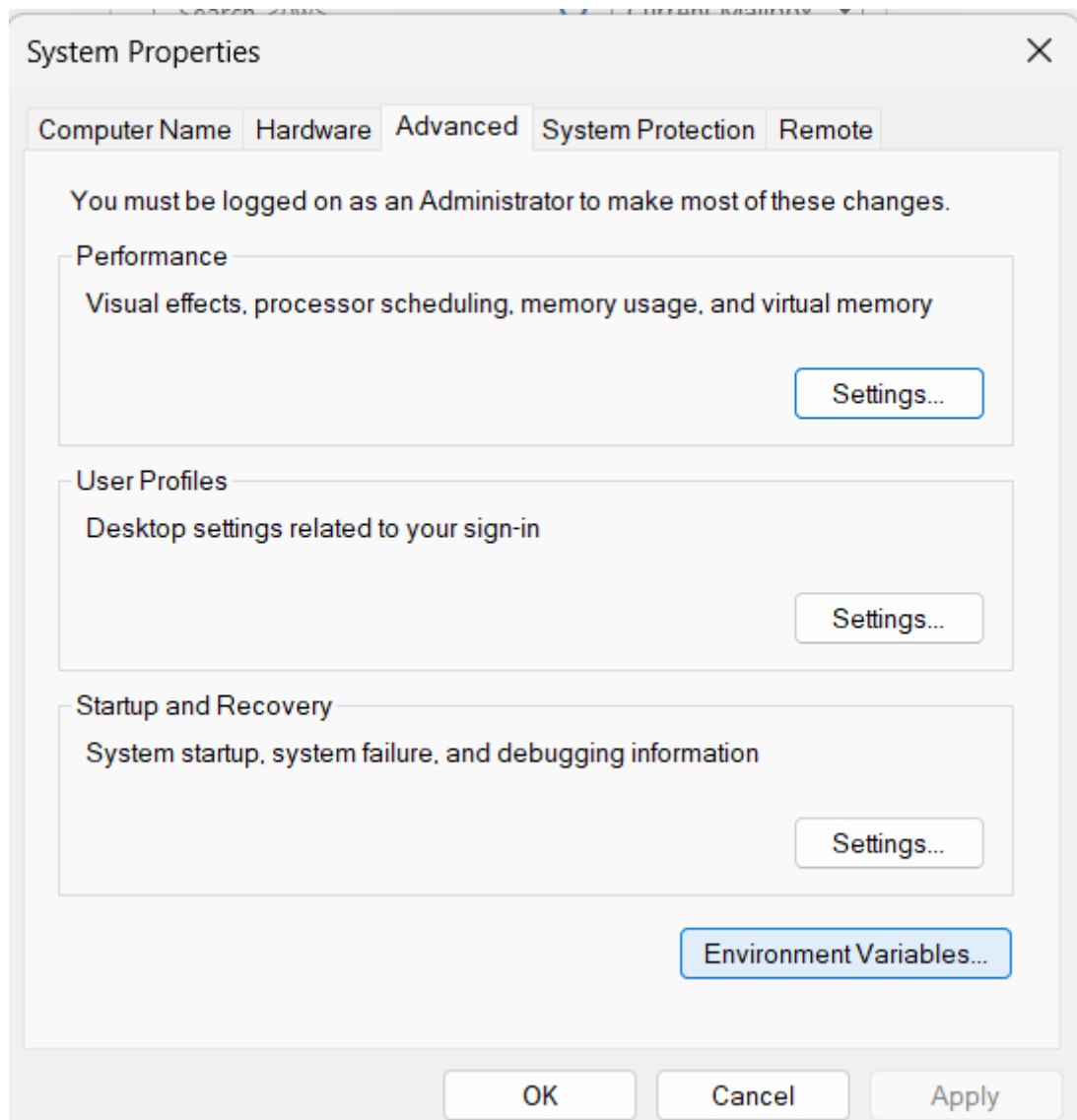
Windows	apache-activemq-6.1.2-bin.zip	SHA512	GPG Signature
Unix/Linux/Cygwin	apache-activemq-6.1.2-bin.tar.gz	SHA512	GPG Signature
Source Code Distribution:	activemq-parent-6.1.2-source-release.zip	SHA512	GPG Signature

- Sau đó giải nén ta được

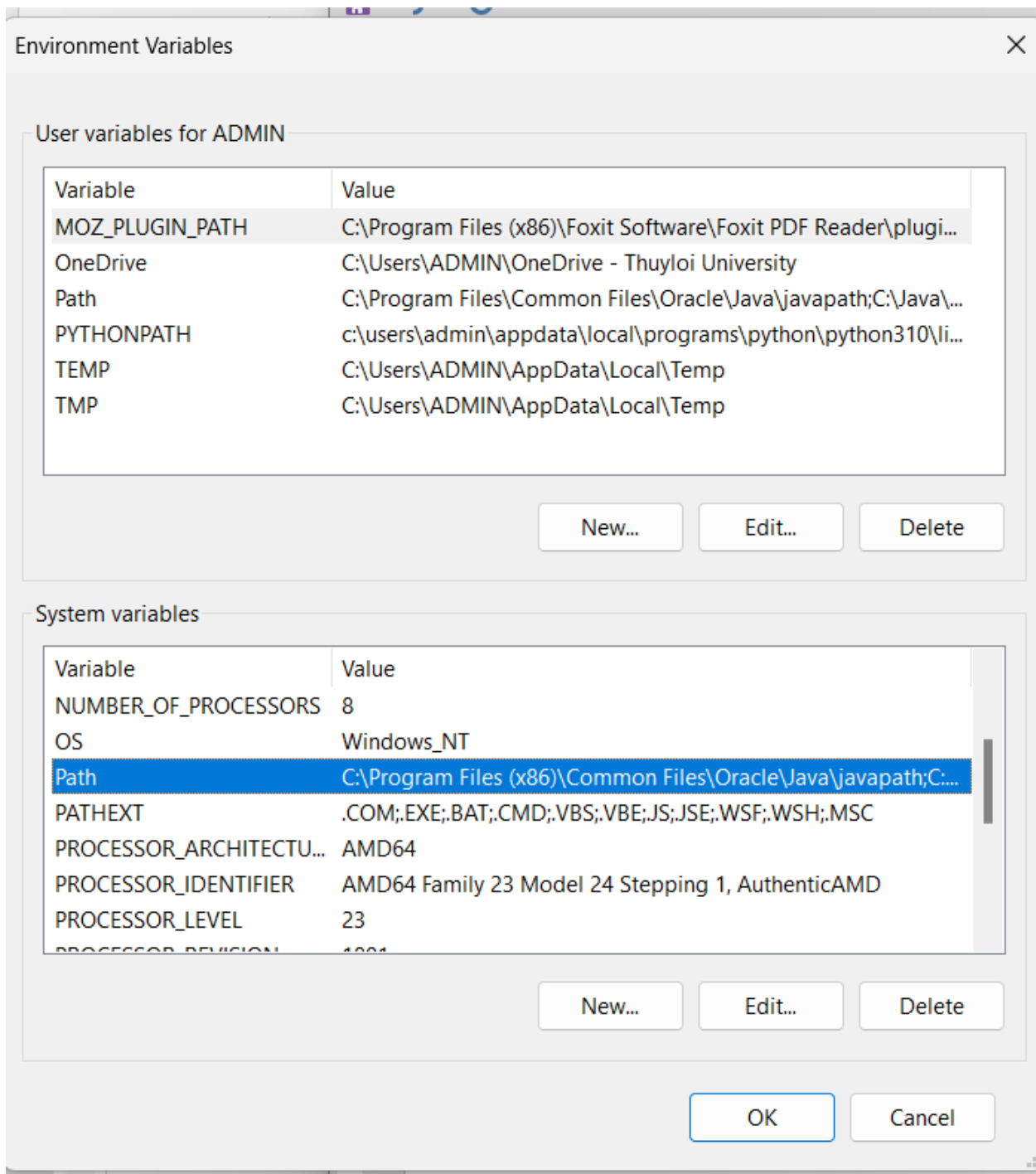


- Tiếp theo cài đặt biến môi trường cho activemq bằng cách lấy đường dẫn: C:\apache-activemq-6.1.2\bin\win64

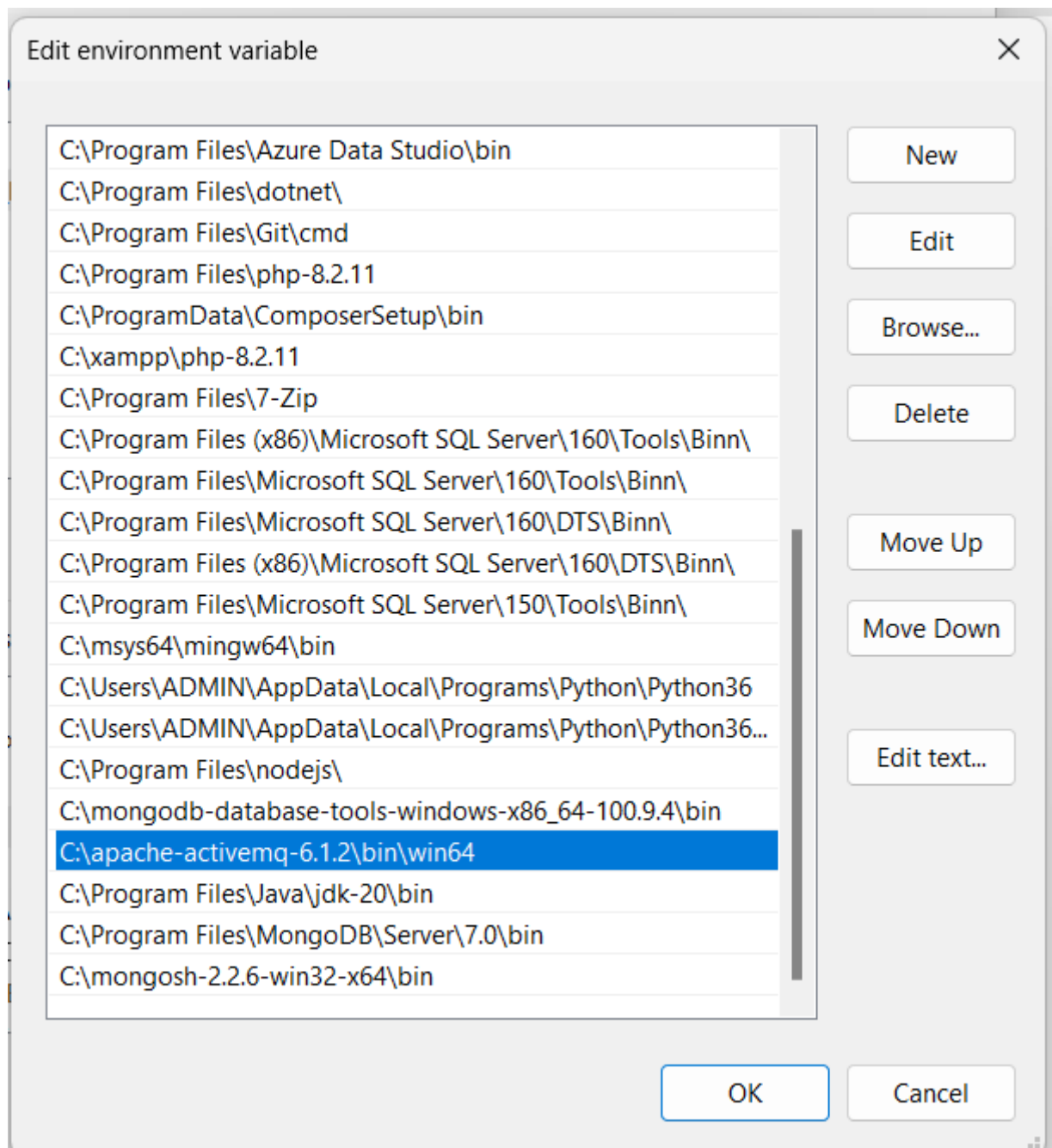
- Mở Edit the System environment variable



- Mở Enviroment Variable, chọn Path



- Sau đó chọn Edit, chọn New và paste đường dẫn C:\apache-activemq-6.1.2\bin\win64 vào



- Nhấn ok để hoàn tất
- Sau đó mở cmd và dùng lệnh `cd C:\apache-activemq-6.1.2\bin\win64` để di chuyển tới thư mục chứa activemq

```
Command Prompt
Microsoft Windows [Version 10.0.22631.3672]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ADMIN> cd C:\apache-activemq-6.1.2\bin\win64

C:\apache-activemq-6.1.2\bin\win64>
```

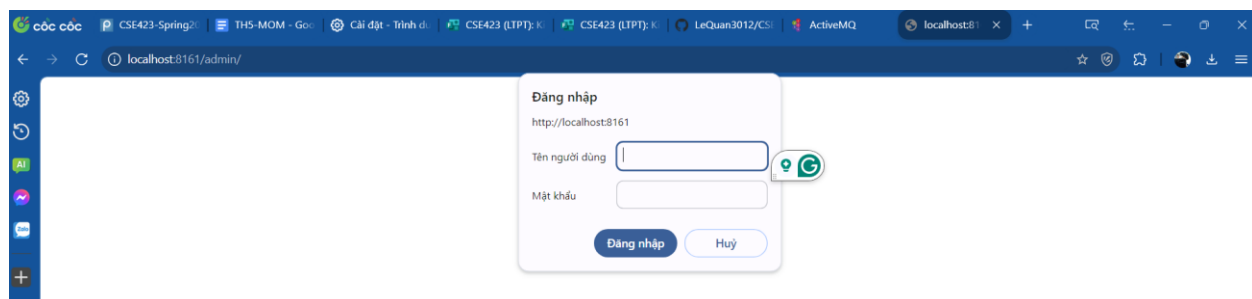
- gõ activemq.bat

```
Microsoft Windows [Version 10.0.22631.3672]
(c) Microsoft Corporation. All rights reserved.

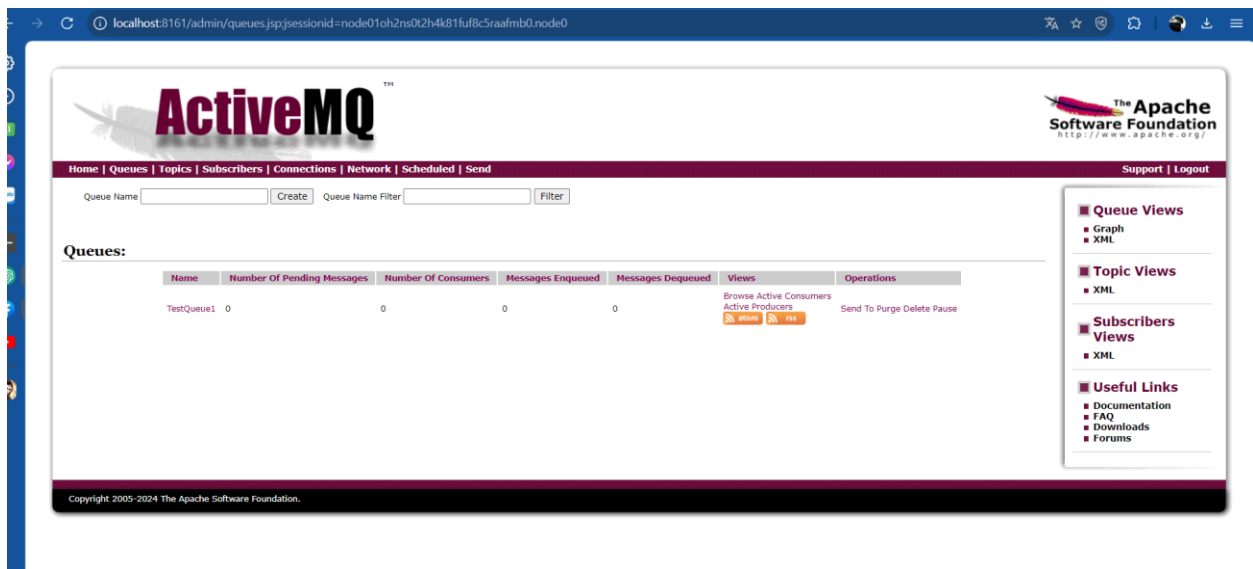
C:\Users\ADMIN> cd C:\apache-activemq-6.1.2\bin\win64

C:\apache-activemq-6.1.2\bin\win64>activemq.bat
wrapper | --> Wrapper Started as Console
wrapper | Launching a JVM...
jvm 1 | NOTE: Picked up JDK_JAVA_OPTIONS: --add-reads=java.xml=java.logging --add-opens java.base/java.security=ALL-UNNAMED --add-opens java.base/java.ne
t=ALL-UNNAMED --add-opens java.base/java.lang=ALL-UNNAMED --add-opens java.base/java.util=ALL-UNNAMED --add-opens java.base/java.util.concurrent=ALL-UNNAMED
--add-opens java.base/java.util.concurrent.atomic=ALL-UNNAMED --add-opens java.naming/javax.naming.spi=ALL-UNNAMED --add-opens java.rmi/sun.rmi.transport.t
cp=ALL-UNNAMED --add-opens java.base/sun.nio.ch=ALL-UNNAMED --add-exports=java.base/sun.net.www.protocol.http=ALL-UNNAMED --add-exports=java.base/sun.net.ww
w.protocol.https=ALL-UNNAMED --add-exports=java.base/sun.net.www.protocol.jar=ALL-UNNAMED --add-exports=jdk.xml.dom/org.w3c.dom.html=ALL-UNNAMED --add-expor
ts=jdk.naming.rmi/com.sun.jndi.url.rmi=ALL-UNNAMED
jvm 1 | Wrapper (Version 3.2.3) http://wrapper.tanukisoftware.org
jvm 1 | Copyright 1999-2006 Tanuki Software, Inc. All Rights Reserved.
jvm 1 |
jvm 1 | Java Runtime: Oracle Corporation 20.0.2 C:\Program Files\Java\jdk-20
jvm 1 | Heap sizes: current=1048576k free=1034750k max=1048576k
jvm 1 | JVM args: --add-reads=java.xml=java.logging --add-opens=java.base/java.security=ALL-UNNAMED --add-opens=java.base/java.net=ALL-UNNAMED --add-
opens=java.base/java.lang=ALL-UNNAMED --add-opens=java.base/java.util=ALL-UNNAMED --add-opens=java.base/java.util.concurrent=ALL-UNNAMED --add-opens=java.ba
se/java.util.concurrent.atomic=ALL-UNNAMED --add-opens=java.naming/javax.naming.spi=ALL-UNNAMED --add-opens=java.rmi/sun.rmi.transport.tcp=ALL-UNNAMED --add
-opens=java.base/sun.nio.ch=ALL-UNNAMED --add-exports=java.base/sun.net.www.protocol.http=ALL-UNNAMED --add-exports=java.base/sun.net.www.protocol.https=ALL
-UNNAMED --add-exports=java.base/sun.net.www.protocol.jar=ALL-UNNAMED --add-exports=jdk.xml.dom/org.w3c.dom.html=ALL-UNNAMED --add-exports=jdk.naming.rmi/co
m.sun.jndi.url.rmi=ALL-UNNAMED -Dactivemq.homes=../ -Dactivemq.base=../ -Djavax.net.ssl.keyStorePassword=password -Djavax.net.ssl.trustStorePassword=pass
word -Djavax.net.ssl.keyStore=../conf/broker.ke -Djavax.net.ssl.trustStore=../conf/broker.ts -Dcom.sun.management.jmxremote -Dorg.apache.activemq.UseD
edicatedTaskRunner=false -Djava.util.logging.config.file=logging.properties -Dactivemq.conf=../conf -Dactivemq.data=../data -Djava.security.auth.login
.config=../conf/login.config -Djolokia.conf=file:../../../../conf\jolokia-access.xml -Xms1024m -Xmx1024m -Djava.library.path=../bin/win64 -Dwrapper.key=Q
WhkLXhnF16jljcv -Dwrapper.port=32000 -Dwrapper.jvm.port.min=31000 -Dwrapper.jvm.port.max=31999 -Dwrapper.pid=17036 -Dwrapper.version=3.2.3 -Dwrapper.native_
library=wrapper -Dwrapper.cpu.timeout=10 -Dwrapper.jvmid=1
jvm 1 | Extensions classpath:
jvm 1 | [../../../../lib/../../../../lib/camel,../../../../lib/optional,../../../../lib/web,../../../../lib/extra]
jvm 1 | ACTIVEMQ_HOME: ../
jvm 1 | ACTIVEMQ_BASE: ../
jvm 1 | ACTIVEMQ_CONF: ../../conf
jvm 1 | ACTIVEMQ_DATA: ../../data
```

- Vào trình duyệt gõ localhost:8161/admin/

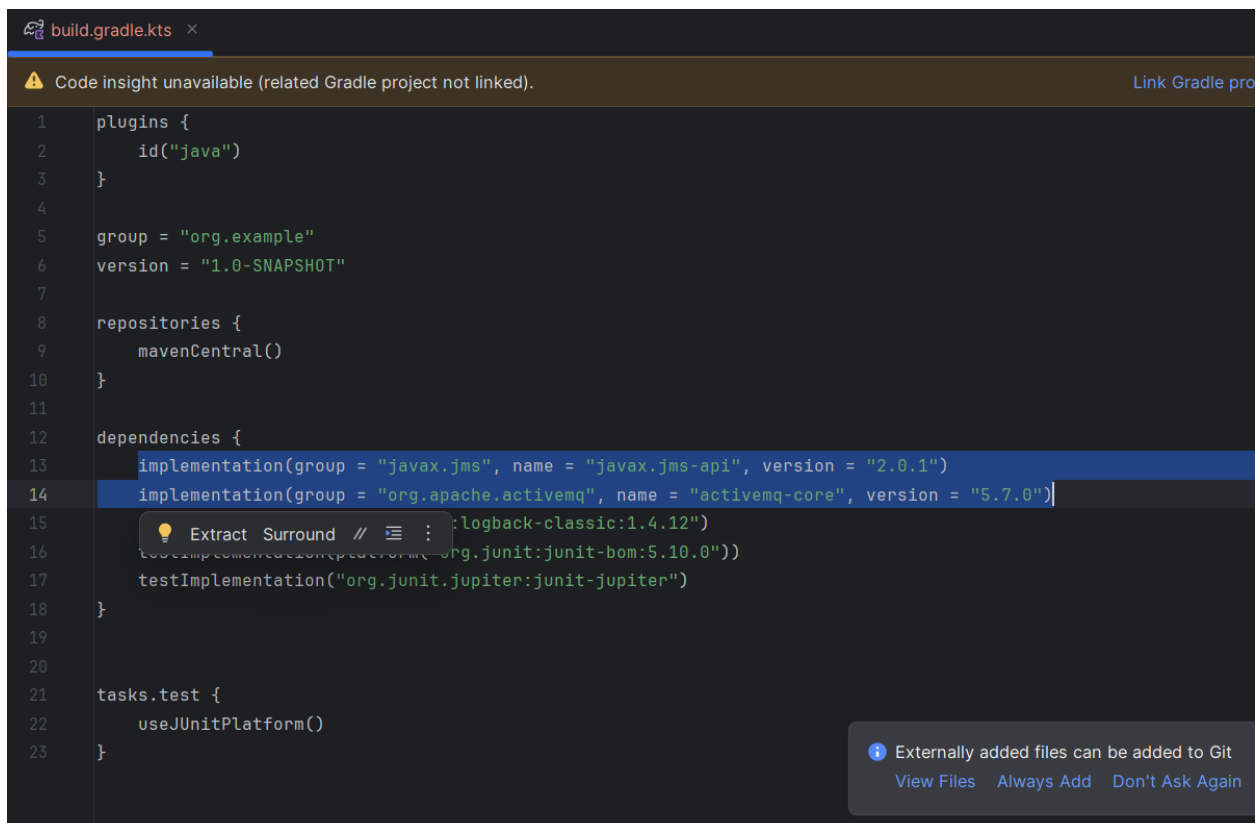


- Tên người dùng: admin, pass: admin



1.2. Tạo Producer

- Tiếp theo tạo project cho Producer, trong code mình để project ActiveMQ_Grade
- Mở build.gradle.kts, gõ và sau đó Gradle về



- Trong main của ActiveMQ_Gradle

```

package org.example;

> import ...

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String url = "tcp://192.168.62.22:61616";
        String queueName = "
        ItemProducer.initialize(sc, queueName);

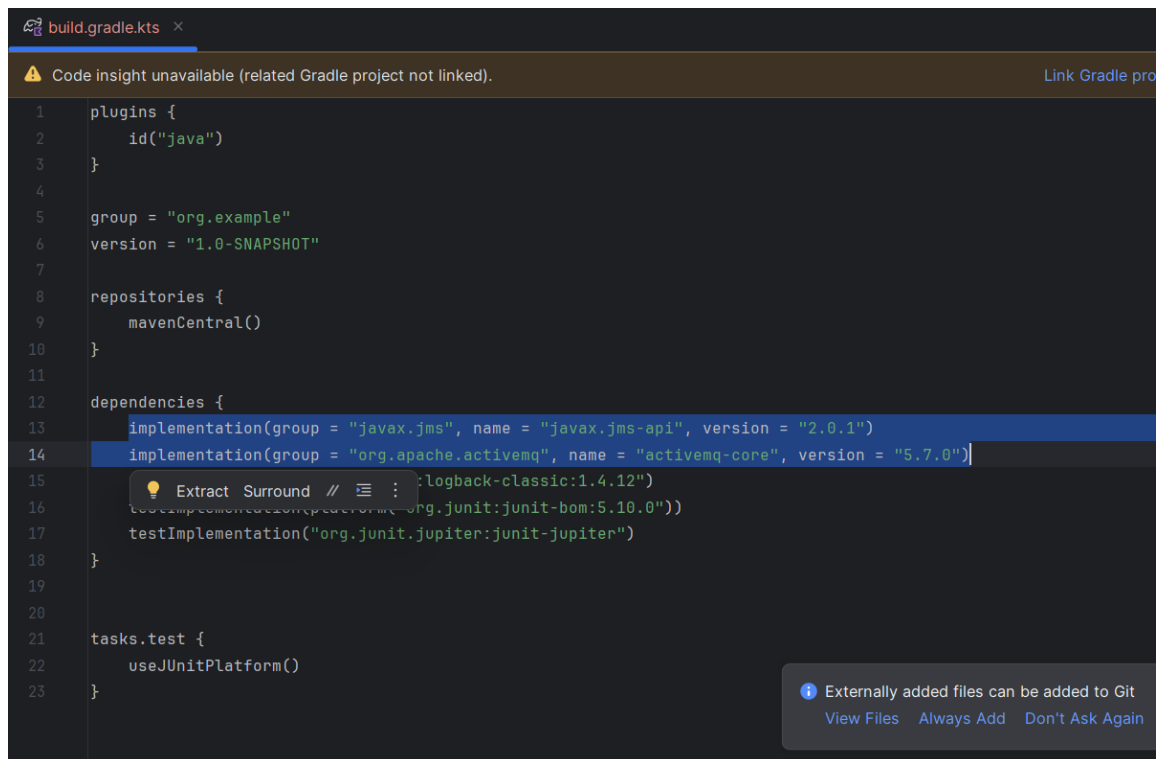
        Item item = new Item("Some items");
        if (ItemProducer.inError()){
            System.out.println(ItemProducer.Error());
        }else {
            ItemProducer.add(item);
            System.out.println("Item added to queue");
            if (ItemProducer.inError()){
                System.out.println(ItemProducer.Error());
            }
        }
    }
}

```

- Trong String url lấy địa chỉ của máy chạy activemq

1.3. Tạo Consumer

- Tiếp tục tạo project cho Consumer, trong code tên project mình để Consumer
- Mở build.gradle.kts, gõ và sau đó Gradle về



```
1 plugins {
2     id("java")
3 }
4
5 group = "org.example"
6 version = "1.0-SNAPSHOT"
7
8 repositories {
9     mavenCentral()
10 }
11
12 dependencies {
13     implementation(group = "javax.jms", name = "javax.jms-api", version = "2.0.1")
14     implementation(group = "org.apache.activemq", name = "activemq-core", version = "5.7.0")
15     implementation(group = "ch.qos.logback", name = "logback-classic", version = "1.4.12")
16     testImplementation(group = "org.junit.jupiter", name = "junit-jupiter-bom", version = "5.10.0")
17     testImplementation("org.junit.jupiter:junit-jupiter")
18 }
19
20
21 tasks.test {
22     useJUnitPlatform()
23 }
```

Code insight unavailable (related Gradle project not linked). [Link Gradle project](#)

Extract Surround //

Externally added files can be added to Git
[View Files](#) [Always Add](#) [Don't Ask Again](#)

- Trong main của Consumer địa chỉ IP của String url chính là địa chỉ IP máy chạy activemq

```
package org.example;

> import ...

public class Main {
    public static void main(String[] args) {
        String url = "tcp://192.168.62.22:61616";
        String queueName = "LeQuan";
        ItemConsumer.initialize(url, queueName );

        int c;
        try {
            c = System.in.read();
            //System.out.println(c);
        } catch (IOException e) {
        }

        ItemConsumer.terminate();
    }
}
```

2. Chạy code

2.1. Chạy Producer

```
ActiveMQ_Gra [Main.main()] x
9:50:54 PM: Executing ':Main.main()'...

> Task :compileJava
> Task :processResources NO-SOURCE
> Task :classes


> Task :Main.main()
21:50:56.481 [main] DEBUG org.apache.activemq.transport.WireFormatNegotiator -- Sending: WireFormatInfo { version=9, properties={TcpNoDelayEnabl
21:50:56.522 [ActiveMQ Transport: tcp://192.168.0.103:61616@51788] DEBUG org.apache.activemq.transport.InactivityMonitor -- Using min of local:
21:50:56.523 [ActiveMQ Transport: tcp://192.168.0.103:61616@51788] DEBUG org.apache.activemq.transport.WireFormatNegotiator -- Received WireForm
21:50:56.524 [ActiveMQ Transport: tcp://192.168.0.103:61616@51788] DEBUG org.apache.activemq.transport.WireFormatNegotiator -- tcp://192.168.0
21:50:56.524 [ActiveMQ Transport: tcp://192.168.0.103:61616@51788] DEBUG org.apache.activemq.transport.WireFormatNegotiator -- tcp://192.168.0
Item added to queue
Nhap so: 10
Nhap so: 9
21:51:09.021 [main] DEBUG org.apache.activemq.util.ThreadPoolUtils -- Shutdown of ExecutorService: java.util.concurrent.ThreadPoolExecutor@57855
21:51:09.022 [ActiveMQ Transport: tcp://192.168.0.103:61616@51788] DEBUG org.apache.activemq.util.ThreadPoolUtils -- Shutdown of ExecutorService
21:51:09.024 [main] DEBUG org.apache.activemq.transport.tcp.TcpTransport -- Stopping transport tcp://192.168.0.103:61616@51788
21:51:09.027 [main] DEBUG org.apache.activemq.thread.TaskRunnerFactory -- Initialized TaskRunnerFactory[ActiveMQ Task] using ExecutorService: ja
21:51:09.028 [ActiveMQ Task-1] DEBUG org.apache.activemq.transport.tcp.TcpTransport -- Closed socket Socket[addr=/192.168.0.103,port=61616,local
21:51:09.028 [main] DEBUG org.apache.activemq.util.ThreadPoolUtils -- Forcing shutdown of ExecutorService: java.util.concurrent.ThreadPoolExecu

Deprecated Gradle features were used in this build, making it incompatible with Gradle 9.0.

You can use '--warning-mode all' to show the individual deprecation warnings and determine if they come from your own scripts or plugins.

For more on this, please refer to https://docs.gradle.org/8.5/userguide/command\_line\_interface.html#sec:command\_line\_warnings in the Gradle docum
BUILD SUCCESSFUL in 11s
```

2.2. Máy chạy activemq sẽ nhận được



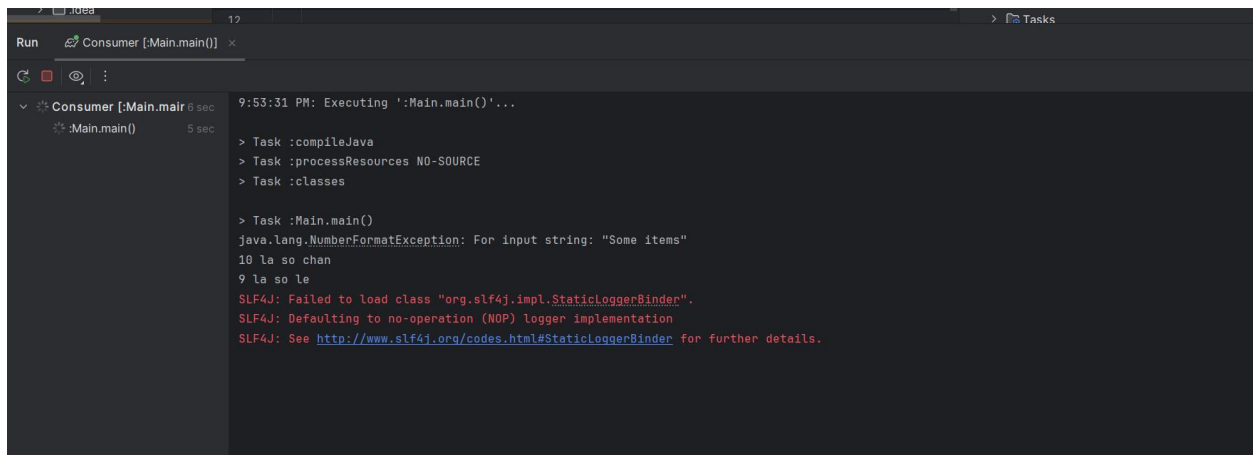
Home | Queues | Topics | Subscribers | Connections | Network | Scheduled | Send

Queue Name Create Queue Name Filter Filter

Queues:

Name ↑	Number Of Pending Messages	Number Of Consumers	Messages Enqueued	Messages Dequeued	Views	Operations
LeQuan2	3	0	3	0	Browse Active Consumers Active Producers	Send To Purge Delete Pause
TestQueue1	0	0	0	0	Browse Active Consumers Active Producers	Send To Purge Delete Pause

2.3. Máy chạy consumer sẽ nhận được



```
Run Consumer [Main.main()] x
9:53:31 PM: Executing 'Main.main()'...
> Task :compileJava
> Task :processResources NO-SOURCE
> Task :classes

> Task :Main.main()
java.lang.NumberFormatException: For input string: "Some items"
10 la so chan
9 la so le
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.
```

--THE END--