Bu bölümde Rabbitmq server üzerine işlemler yapacağız.

Open Source olan bir mesaj kuyruk sistemidir. Yani bir uygulamadan bir mesajı alıp bir başka uygulamaya sırası geldiğinde ileten sistemdir.

Genelde mesajlaşma sistemlerinde kullanılmaya başlansa da zaman içerisinde değişen ihtiyaçlardan dolayı projelerin ölçeklerinin büyümesi, yoğun istek(request) almaları , gelen isteklere cevap (response) zamanı uzaması gibi durumlardan dolayı kullanıcı kitlelerinin kaybedilmemesi, hizmetlerin aksamasının ve ihtiyaçlardan dolayı kullanım alanları gitgide genişledi. Bankaların kullandığı EFT vb. işlemlerde, yoğun istek (request) alan e-ticaret sistemlerinin olmazsa olmazı haline geldi.

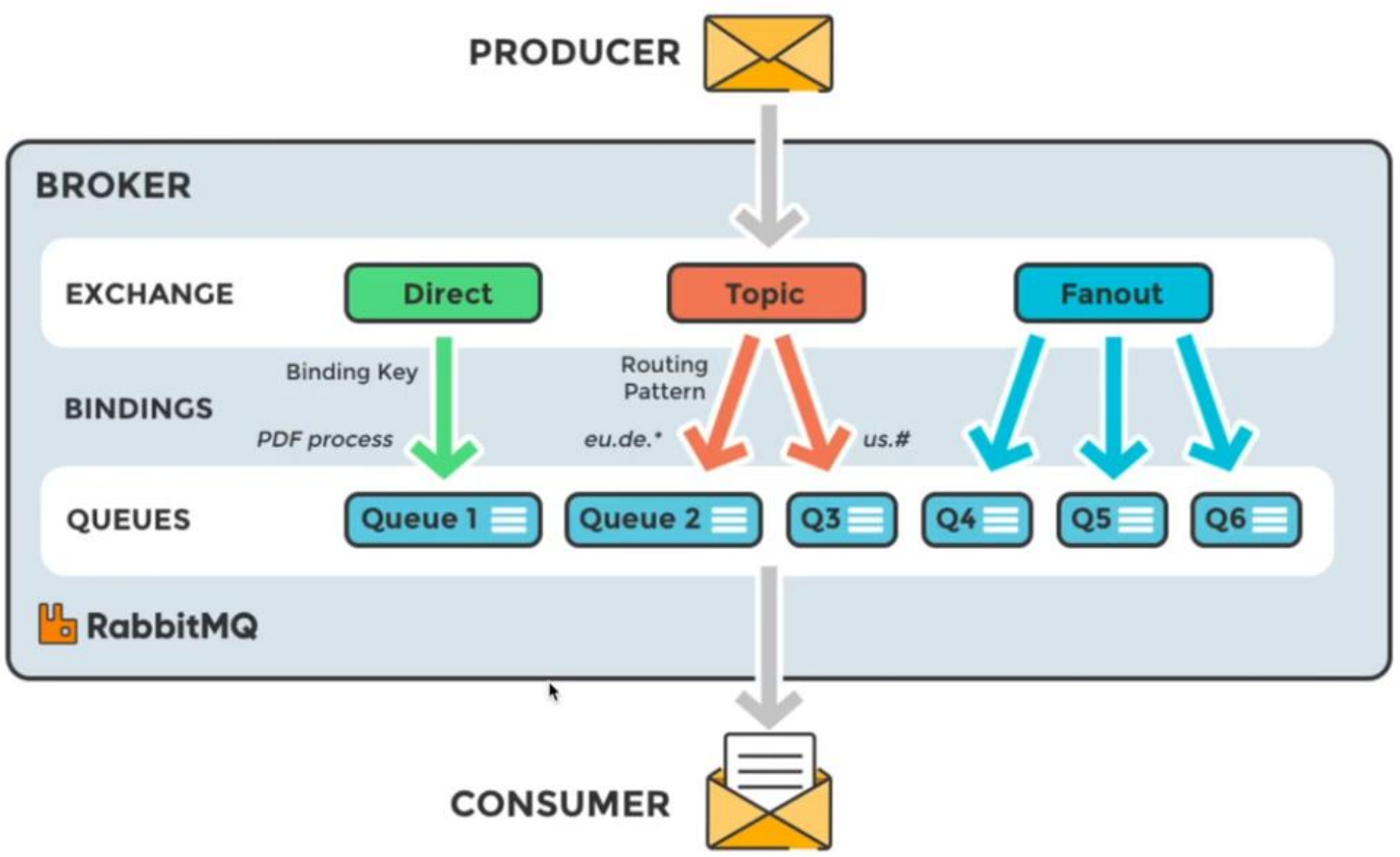
RabbitMQ asenkron şekilde çalışan bir yapıdır. Erlang programlama dili ile geliştirilmiştir.

RabbitMQ dışında Apache Kafka, MSMQ, ActiveMQ gibi farklı message queue araçları da günümüzde sıkça kullanılmaktadır.

RabbitMQ'nun çalışma prensibine bir örnek üzerinden bakalım. Herhangi bir kişi mektubunu postaneye teslim eder ve mektubun alıcıya ulaşacağını bilir. Burada RabbitMQ yapısı postane gibi düşünülebilir.

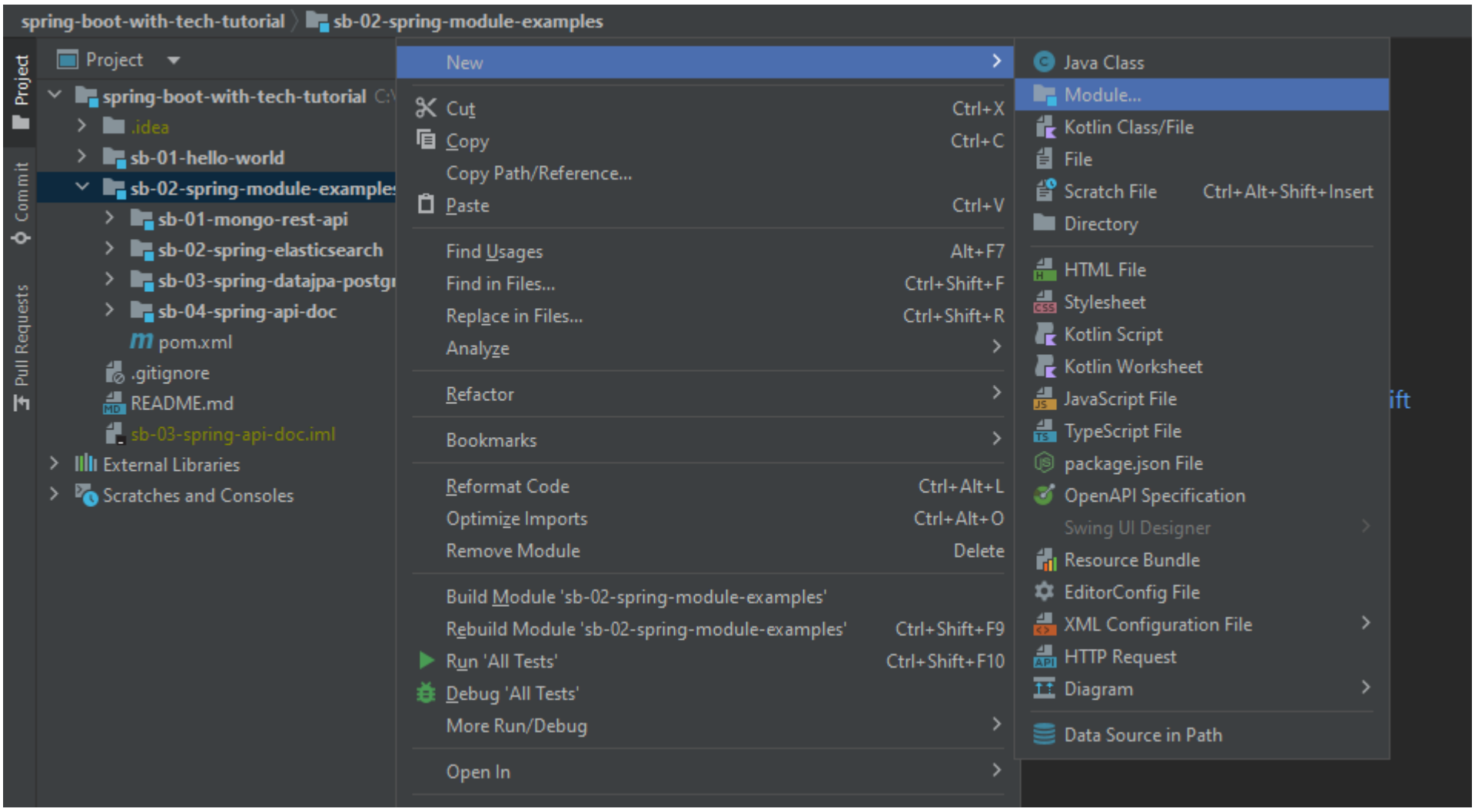
Yapıya özel bazı terimler vardır.

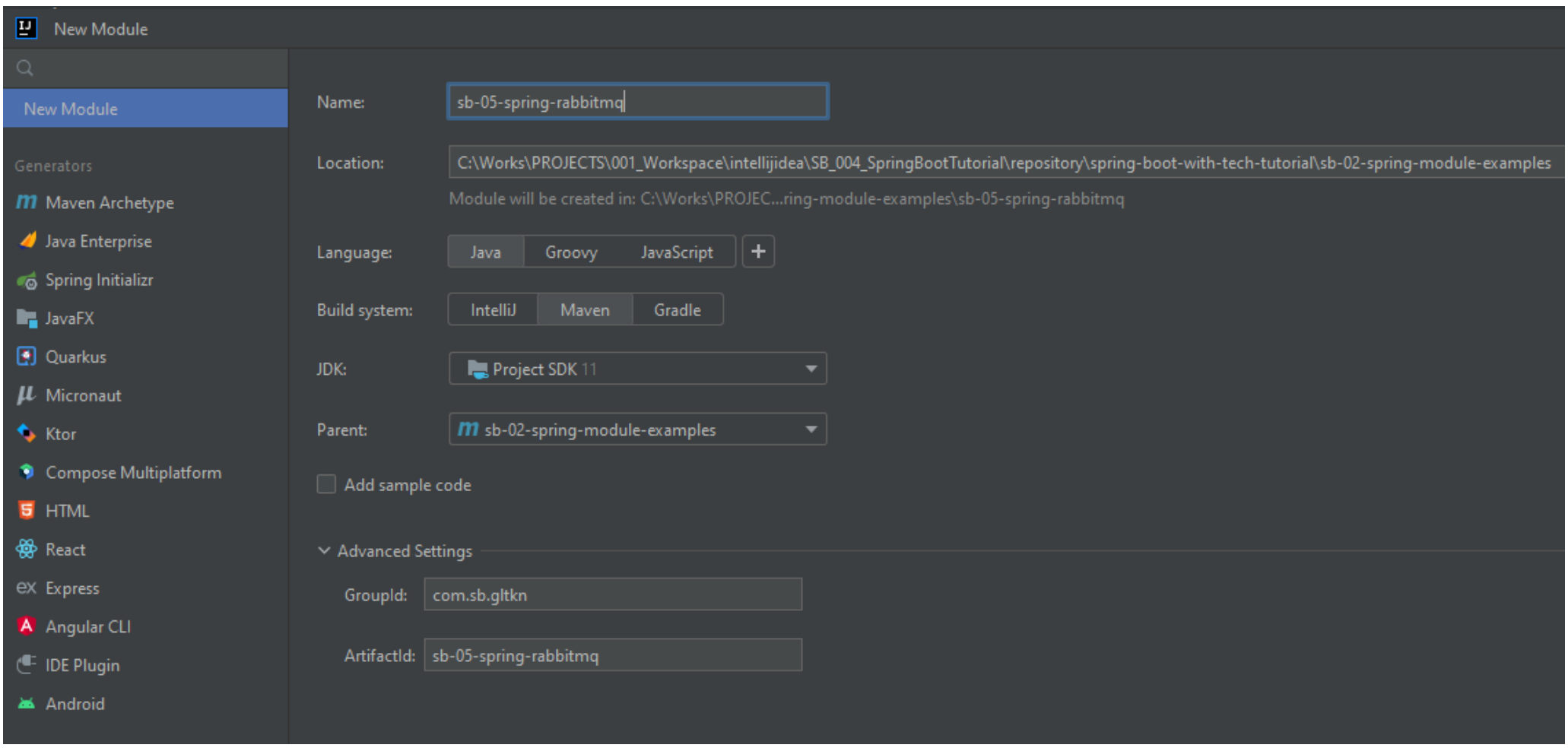
- **Producer:** Mektubu gönderecek olan kişi
- **Queue:** Mektupların konulduğu posta kutusu
- **Consumer**: Mektubu alıp okuyacak olan kişi



Queue denen kısım mesajların tutulduğu bölgedir ve boyutu disk kapasitesine bağlıdır. Mesajların depolandığı kalıcı bir yedek bölümü gibi düşünülebilir.

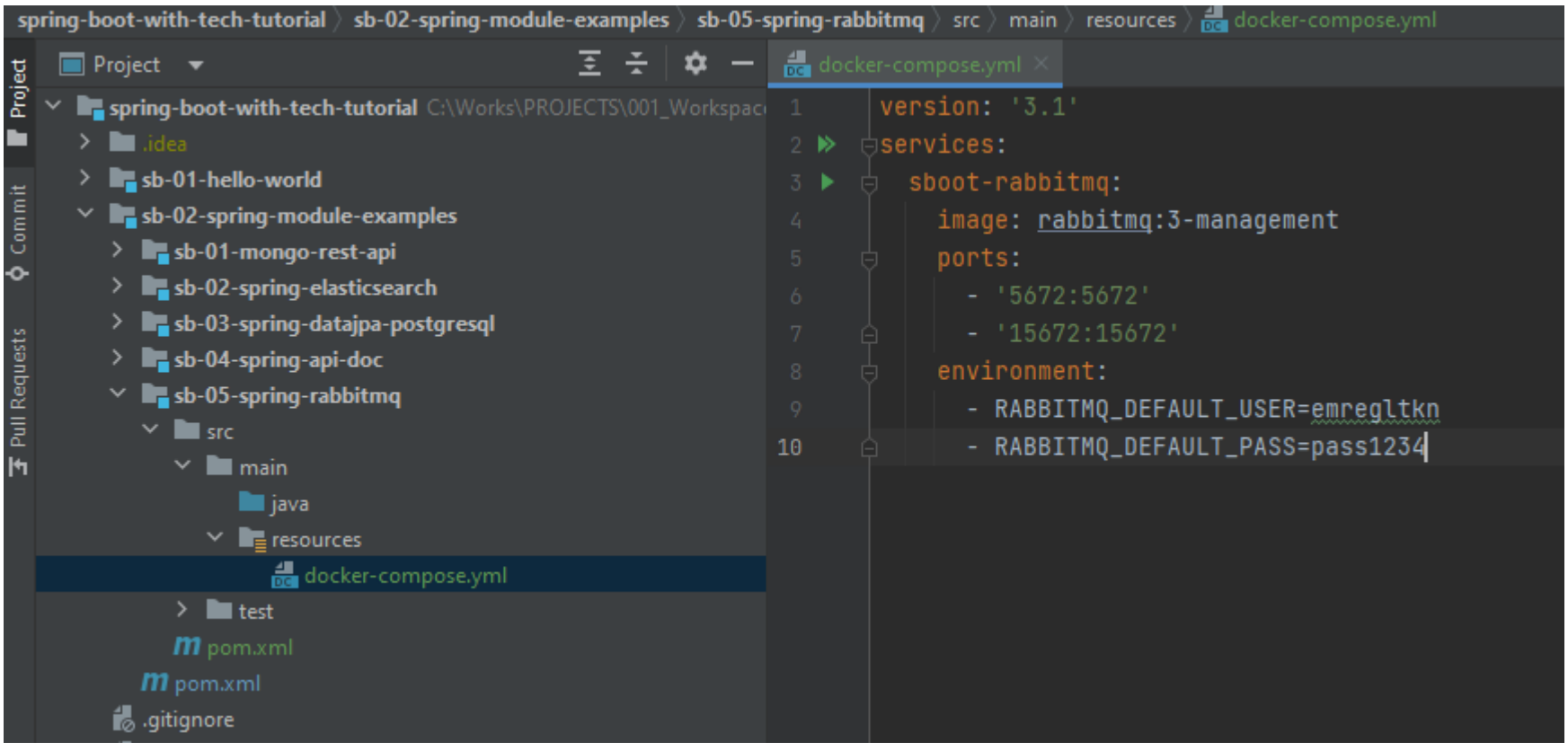
Projemizi aşağıdaki gibi oluşturalım.





Docker compose yml dosyasımızı oluşturduk.
User ve password bilgisini de girdik. Eğer eklemeseydik default olarak **user:** guest ve **password:** guest olacaktı.

https://hub.docker.com/_/rabbitmq



Docker machine'ı çalıştıralım.

```
EmreGltkn@DESKTOP-DN9PH1A MINGW64 ~
$ docker-machine env default
export DOCKER_TLS_VERIFY="1"
export DOCKER_HOST="tcp://192.168.99.102:2376"
export DOCKER_CERT_PATH="C:\Users\EmreGltkn\.docker\machine\machines\default"
export DOCKER_MACHINE_NAME="default"
export COMPOSE_CONVERT_WINDOWS_PATHS="true"
# Run this command to configure your shell:
# eval $("C:\Users\EmreGltkn\bin\docker-machine.exe" env default)
```

```
EmreGltkn@DESKTOP-DN9PH1A MINGW64 ~
$ docker-machine ls
NAME      ACTIVE   DRIVER       STATE     URL   SWARM   DOCKER    ERRORS

EmreGltkn@DESKTOP-DN9PH1A MINGW64 ~
$ docker-machine start default
Starting "default"...
(default) Check network to re-create if needed...
(default) Windows might ask for the permission to configure a dhcp server. Sometimes, such confirmation window is minimized in the taskbar.
(default) Waiting for an IP...
```

docker-compose -f /c/Works/PROJECTS/001_Workspace/intellijidea/SB_004_SpringBootTutorial/repository/spring-boot-with-tech-tutorial/sb-02-spring-module-examples/sb-05-spring-rabbitmq/src/main/resources/docker-compose.yml up -d

```
EmreGltkn@DESKTOP-DN9PH1A MINGW64 ~
$ docker-compose -f /c/Works/PROJECTS/001_Workspace/intellijidea/SB_004_SpringBootTutorial/repository/spring-boot-with-tech-tutorial/sb-02-spring-module-e
rabbitmq/src/main/resources/docker-compose.yml up -d
Found orphan containers (resources_db_1, resources_adminer_1, resources_elasticsearch_1) for this project. If you removed or renamed this service in your
 run this command with the --remove-orphans flag to clean it up.
Pulling sboot-rabbitmq (rabbitmq:3-management)...
3-management: Pulling from library/rabbitmq
```

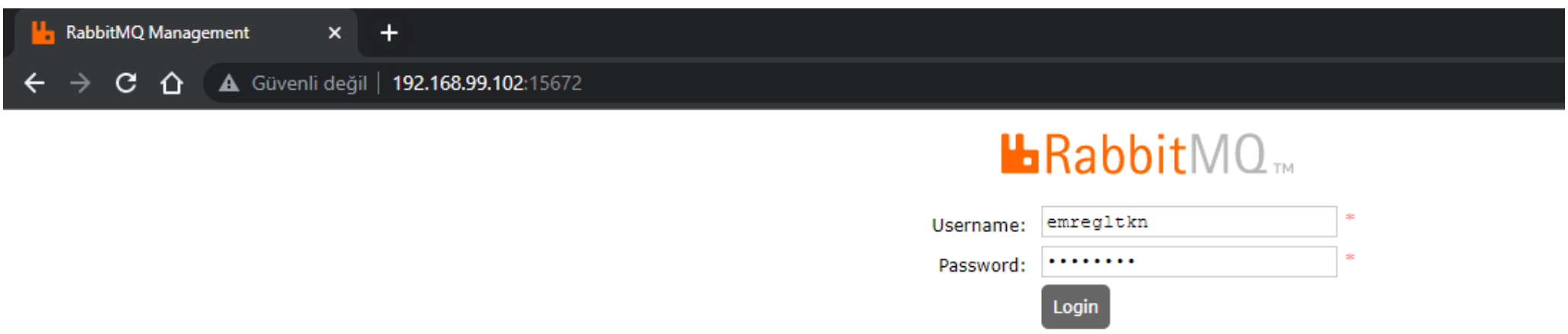
Tüm container'ları durduralım.

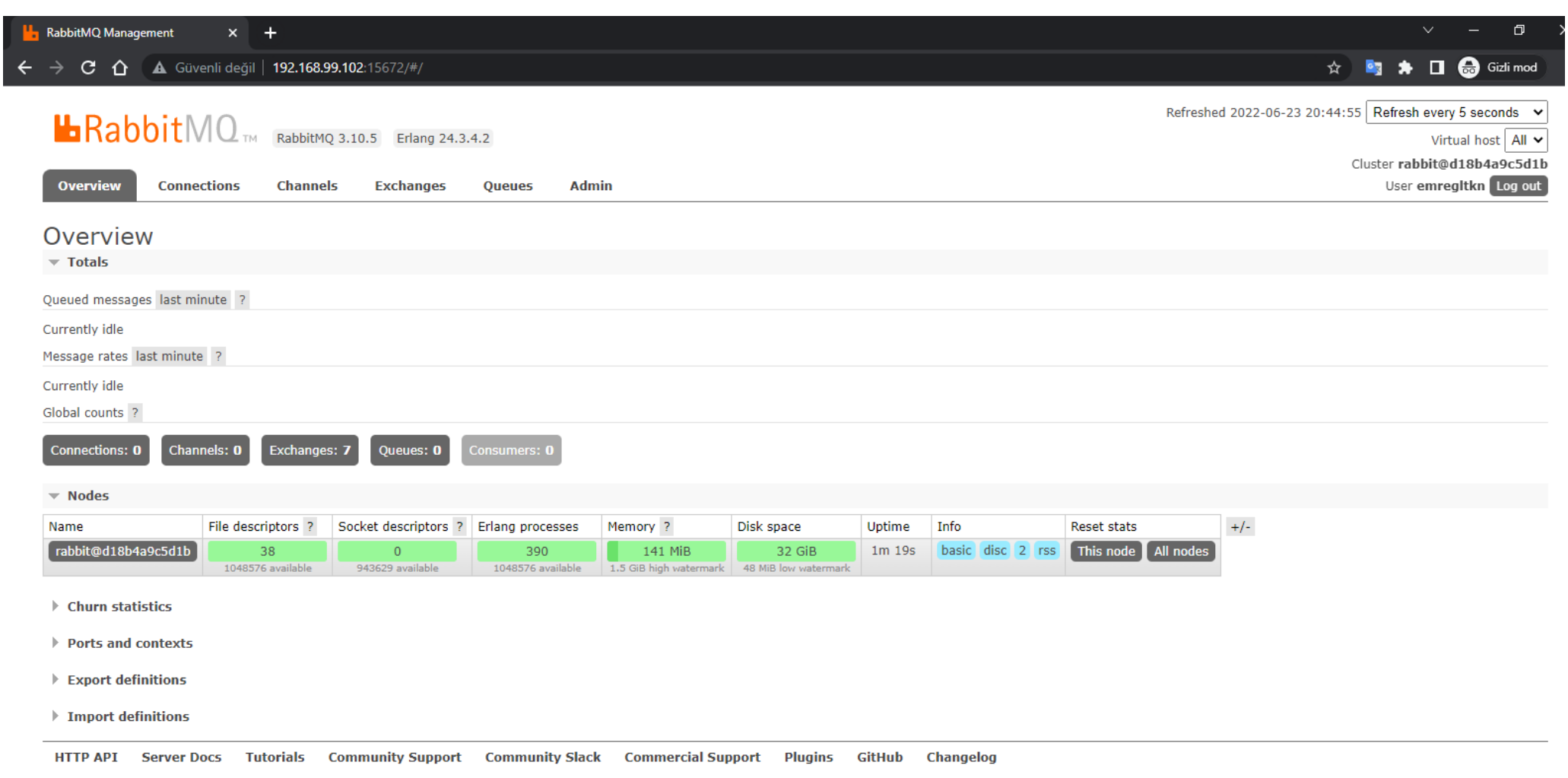
```
EmreGltkn@DESKTOP-DN9PH1A MINGW64 ~
$ docker stop $(docker ps -qa)
d18b4a9c5d1b
b8b3b9a2c43a
6d4ecef30df5
e064e995b68b

EmreGltkn@DESKTOP-DN9PH1A MINGW64 ~
$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES

EmreGltkn@DESKTOP-DN9PH1A MINGW64 ~
$ docker-compose -f /c/Works/PROJECTS/001_Workspace/intellijidea/SB_004_SpringBootTutorial
rabbitmq/src/main/resources/docker-compose.yml up -d
Found orphan containers (resources_elasticsearch_1, resources_adminer_1, resources_db_1) f
 run this command with the --remove-orphans flag to clean it up.
Starting resources_sboot-rabbitmq_1 ...
Starting resources_sboot-rabbitmq_1 ... done
```

```
EmreGltkn@DESKTOP-DN9PH1A MINGW64 ~
$ docker ps
CONTAINER ID   IMAGE                  COMMAND                  CREATED         STATUS         PORTS
                    NAMES
d18b4a9c5d1b   rabbitmq:3-management   "docker-entrypoint.s…"   2 minutes ago   Up 2 seconds   4369/tcp, 5671/tcp, 0.0.0.0:5672->5672/tcp, 15671/tcp, 15691-15692/tcp, 25672/tcp, 0.
0.0.0:15672->15672/tcp   resources_sboot-rabbitmq_1
```

```
EmreGltkn@DESKTOP-DN9PH1A MINGW64 ~
$ docker-machine ip
192.168.99.102
```

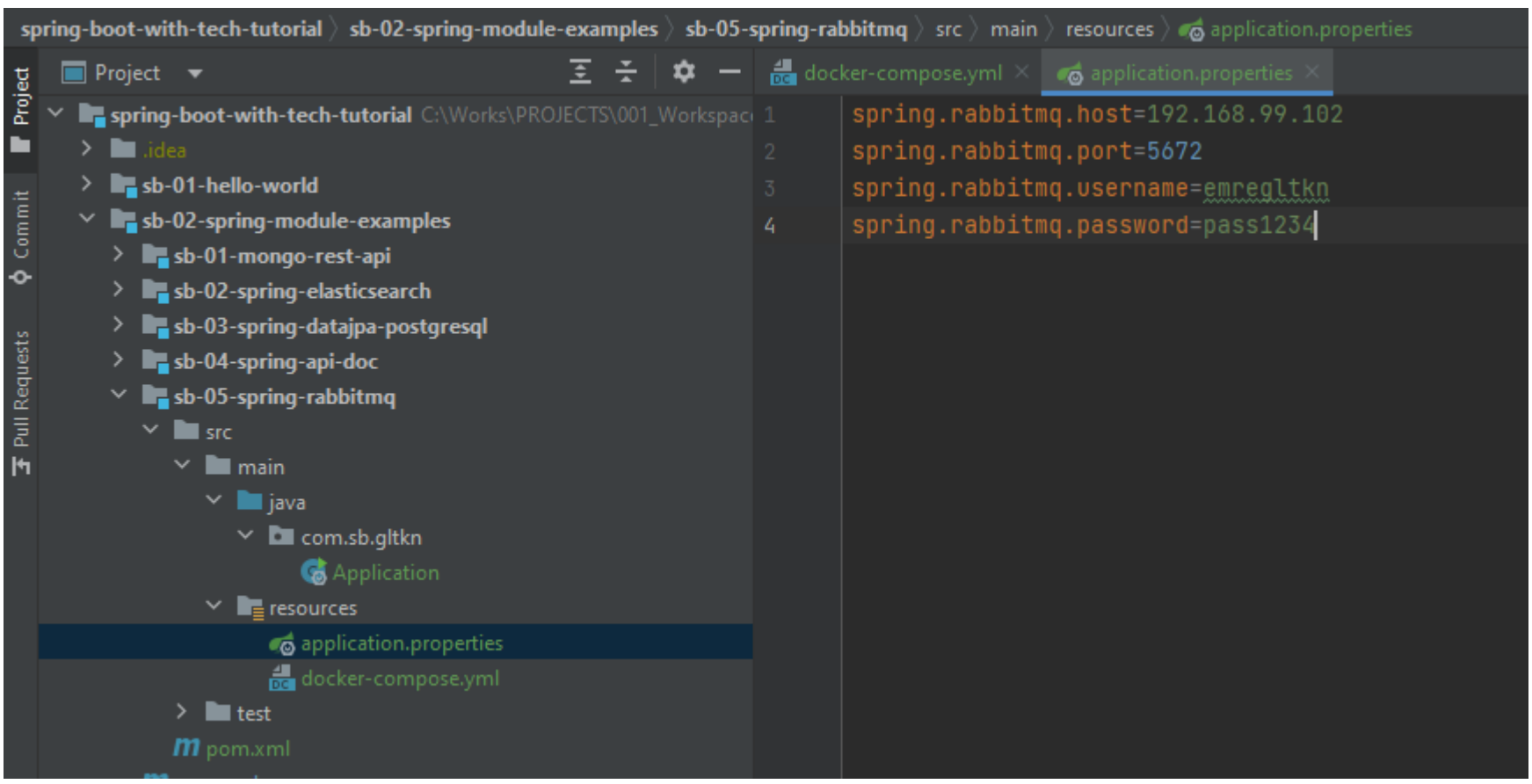
http://192.168.99.102:15672/



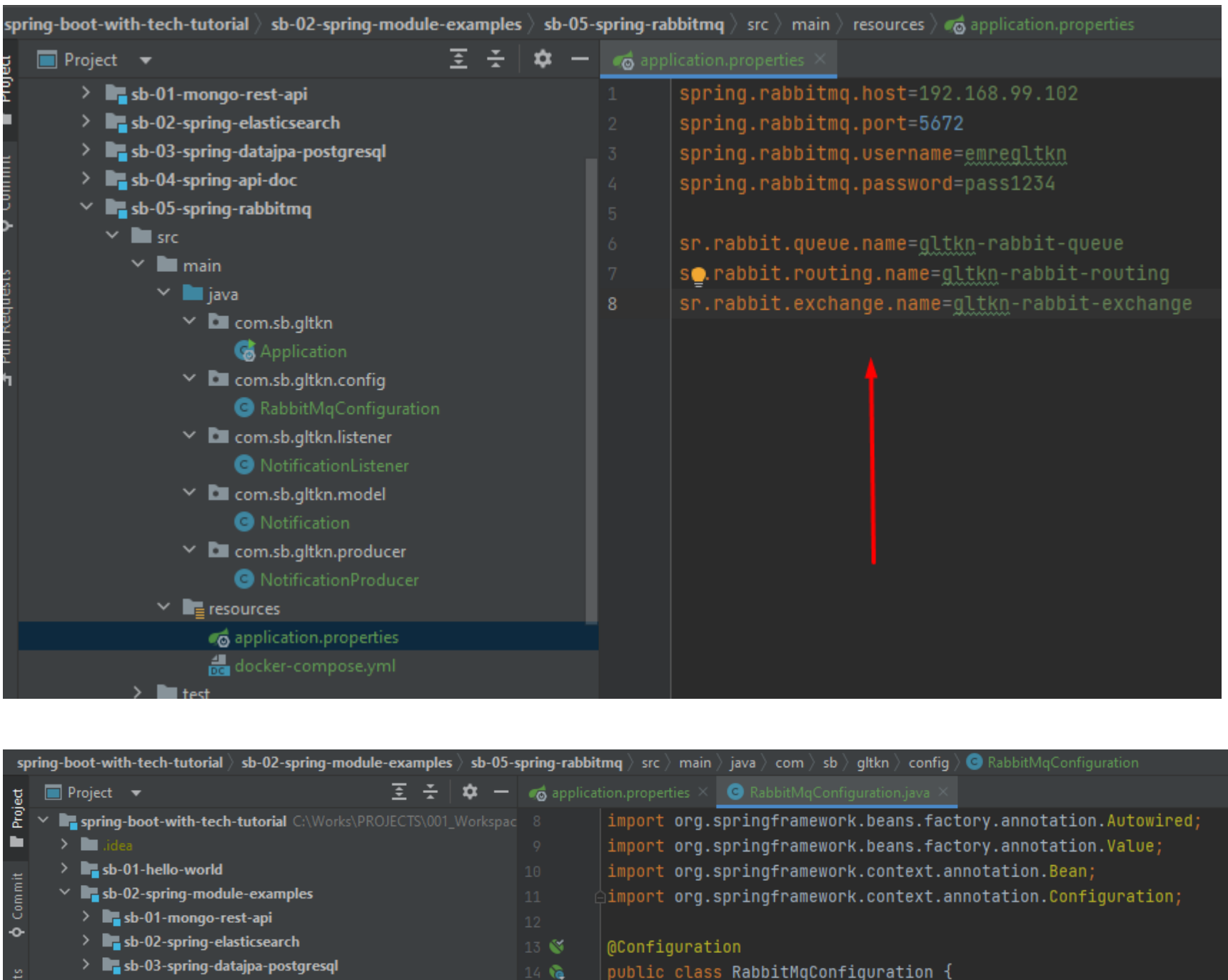


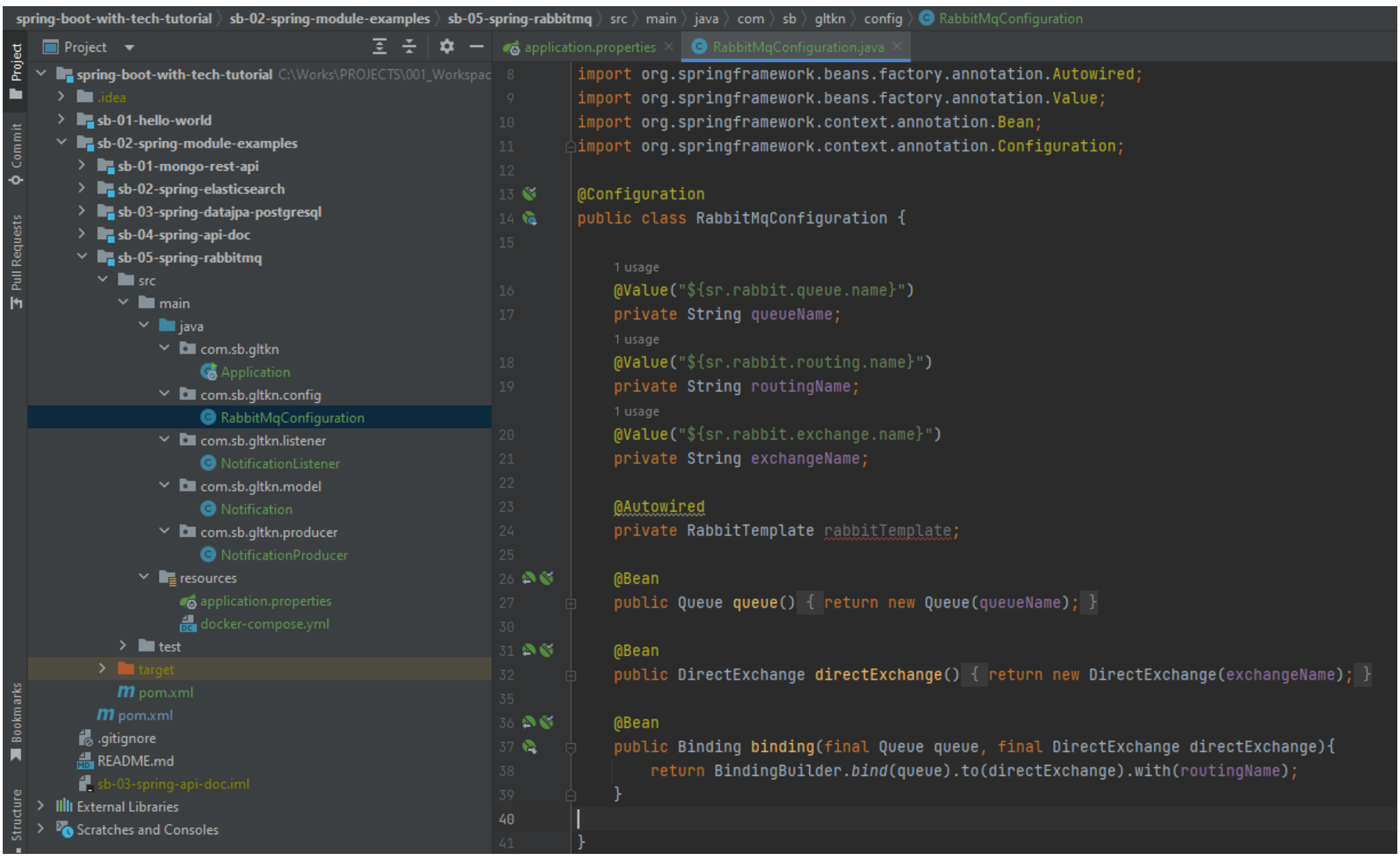
docker-compose.yml | pom.xml (sb-05-spring-rabbitmq)

```xml
    <parent>
        <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-starter-parent</artifactId>
        <version>2.7.0</version>
        <relativePath/> <!-- lookup parent from repository -->
    </parent>
    <modelVersion>4.0.0</modelVersion>

    <artifactId>sb-05-spring-rabbitmq</artifactId>

    <properties>
        <maven.compiler.source>11</maven.compiler.source>
        <maven.compiler.target>11</maven.compiler.target>
    </properties>

    <dependencies>
        <!-- spring-boot starter-amqp -->
        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-amqp</artifactId>
        </dependency>
        <dependency>
            <groupId>org.springframework.amqp</groupId>
            <artifactId>spring-rabbit-test</artifactId>
            <scope>test</scope>
        </dependency>
    </dependencies>
    <build>
        <plugins>
            <plugin>
                <groupId>org.springframework.boot</groupId>
                <artifactId>spring-boot-maven-plugin</artifactId>
            </plugin>
```

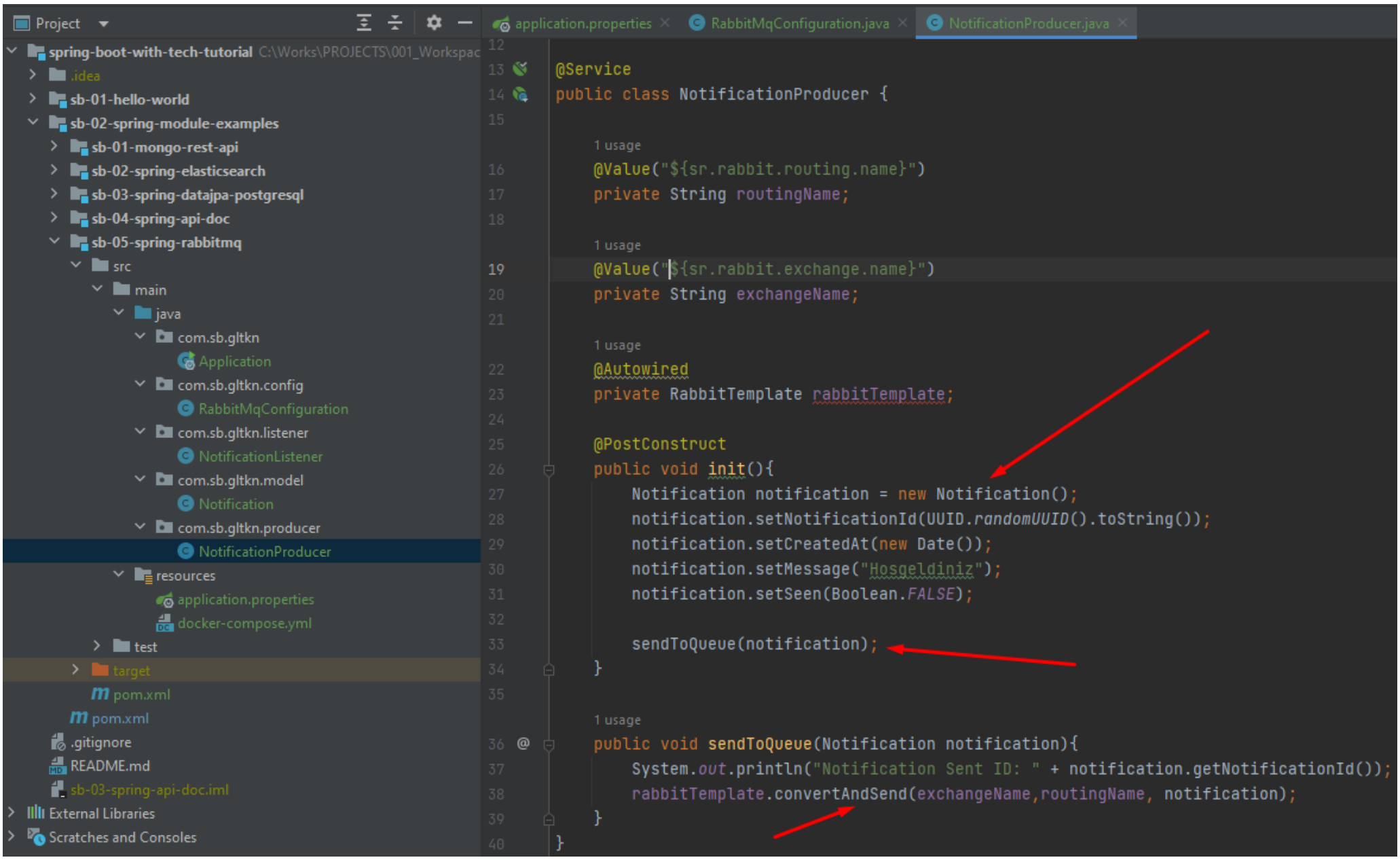


Uygulamamızı aşağıdaki gibi yazdık.

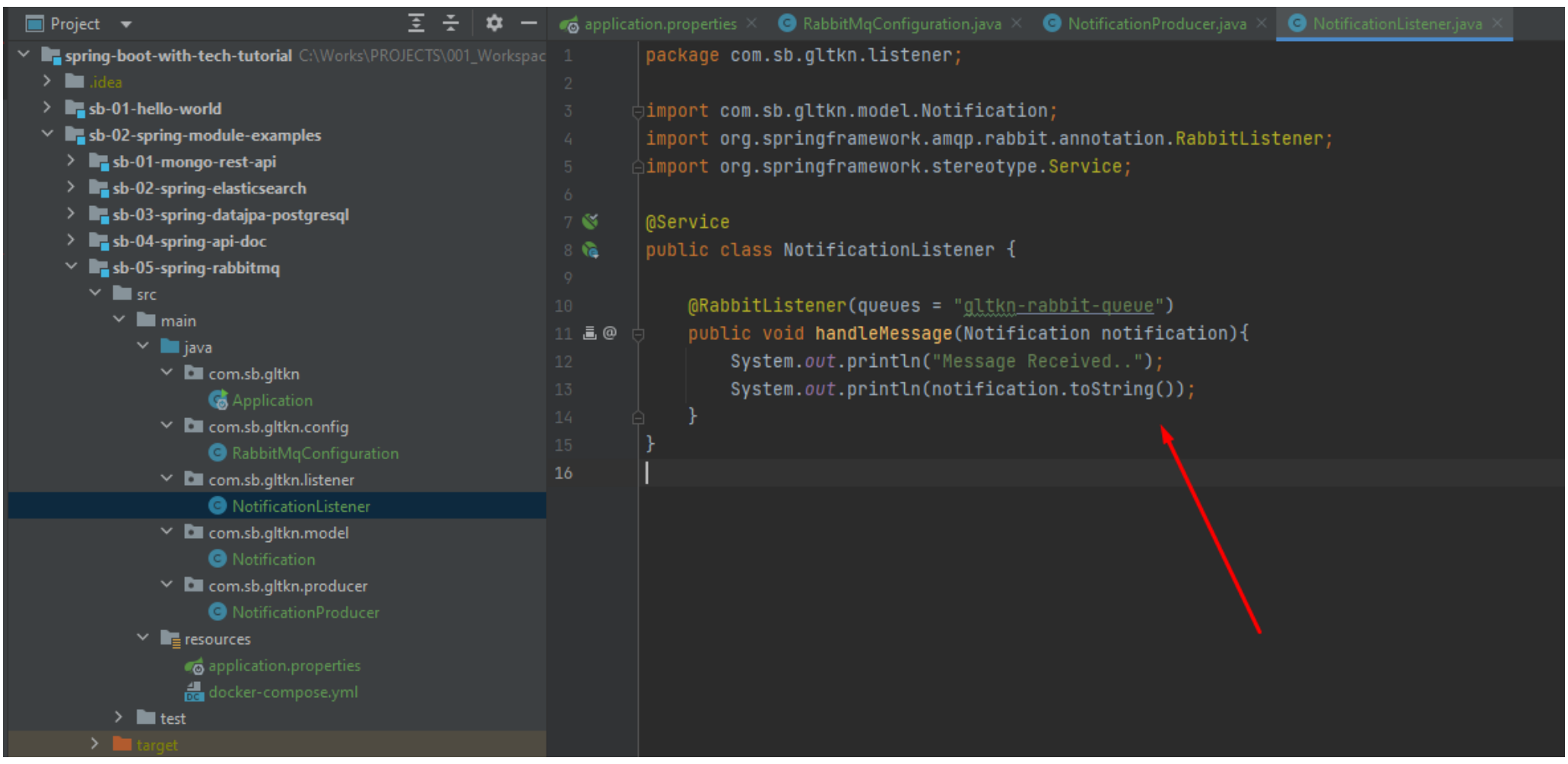




Burada mesajımızı gönderiyoruz.



Bu aşamada queue dinlenmektedir.



Console | Actuator

```
"C:\Program Files\Java\jdk-11.0.15\bin\java.exe" ...

  .   ____          _            __ _ _
 /\\ / ___'_ __ _ _(_)_ __  __ _ \ \ \ \
( ( )\___ | '_ | '_| | '_ \/ _` | \ \ \ \
 \\/  ___)| |_)| | | | | || (_| |  ) ) ) )
  '  |____| .__|_| |_|_| |_\__, | / / / /
 =========|_|==============|___/=/_/_/_/
 :: Spring Boot ::                (v2.7.0)

2022-06-23 22:44:24.414  INFO 19700 --- [           main] com.sb.gltkn.Application                 : Starting Application using Java 11.0.15 on DESKTOP-DN9PH1A with PID 19700
2022-06-23 22:44:24.419  INFO 19700 --- [           main] com.sb.gltkn.Application                 : No active profile set, falling back to 1 default profile: "default"
Notification Sent ID: ae01c391-f68a-43c8-9e9c-84d6c2738956
2022-06-23 22:44:25.367  INFO 19700 --- [           main] o.s.a.r.c.CachingConnectionFactory       : Attempting to connect to: [192.168.99.102:5672]
2022-06-23 22:44:25.406  INFO 19700 --- [           main] o.s.a.r.c.CachingConnectionFactory       : Created new connection: rabbitConnectionFactory#14f3c6fc:0/SimpleConnecti
2022-06-23 22:44:25.718  INFO 19700 --- [           main] com.sb.gltkn.Application                 : Started Application in 1.785 seconds (JVM running for 3.047)
Message Received..
Notification{notificationId='ae01c391-f68a-43c8-9e9c-84d6c2738956', createdAt=Thu Jun 23 22:44:25 EET 2022, seen=false, message='Hosgeldiniz'}
```

RabbitMQ Management

Güvenli değil | 192.168.99.102:15672/#/

RabbitMQ™ RabbitMQ 3.10.5 Erlang 24.3.4.2

Refreshed 2022-06-23 22:

Overview | Connections | Channels | Exchanges | Queues | Admin

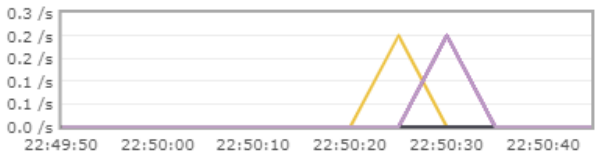
Overview

Totals

Queued messages last minute ?

Ready	0
Unacked	0
Total	0

Message rates last minute ?



Publish	0.00/s	Deliver (auto ack)	0.00/s	Get (manual ack)	0.00/s	Unroutable (return)	0.00/s
Publisher confirm	0.00/s	Consumer ack	0.00/s	Get (auto ack)	0.00/s	Unroutable (drop)	0.00/s
Deliver (manual ack)	0.00/s	Redelivered	0.00/s	Get (empty)	0.00/s	Disk read	0.00/s
						Disk write	0.00/s

Global counts ?

Connections: 1 | Channels: 1 | Exchanges: 8 | Queues: 1 | Consumers: 1

Nodes

Name	File descriptors ?	Socket descriptors ?	Erlang processes	Memory ?	Disk space	Uptime	Info	Reset stats	+/-
rabbit@d18b4a9c5d1b	38 (1048576 available)	1 (943629 available)	404 (1048576 available)	143 MiB (1.5 GiB high watermark)	32 GiB (48 MiB low watermark)	2h 7m	basic disc 2 rss	This node All nodes	

RabbitMQ Management

Güvenli değil | 192.168.99.102:15672/#/queues

RabbitMQ™ RabbitMQ 3.10.5 Erlang 24.3.4.2

Overview | Connections | Channels | Exchanges | **Queues** | Admin

Queues

All queues (1)

Pagination

Page 1 of 1 - Filter: Regex ?

Overview				Messages			Message rates			+/-
Name	**Type**	Features	**State**	**Ready**	**Unacked**	**Total**	**incoming**	**deliver / get**	**ack**	
gltkn-rabbit-queue	classic	D	idle	0	0	0	0.00/s	0.00/s	0.00/s	

Add a new queue

RabbitMQ Management

Güvenli değil | 192.168.99.102:15672/#/exchanges

RabbitMQ™ RabbitMQ 3.10.5 Erlang 24.3.4.2

Overview | Connections | Channels | **Exchanges** | Queues | Admin

Exchanges

All exchanges (8)

Pagination

Page 1 of 1 - Filter: Regex ?

Name	Type	Features	Message rate in	Message rate out	+/-
(AMQP default)	direct	D	0.00/s	0.00/s	
amq.direct	direct	D			
amq.fanout	fanout	D			
amq.headers	headers	D			
amq.match	headers	D			
amq.rabbitmq.trace	topic	D I			
amq.topic	topic	D			
gltkn-rabbit-exchange	direct	D	0.00/s	0.00/s	

Add a new exchange

RabbitMQ Management

Güvenli değil | 192.168.99.102:15672/#/connections

RabbitMQ™ RabbitMQ 3.10.5 Erlang 24.3.4.2

Overview | Connections | Channels | Exchanges | Queues | Admin

Connections

All connections (1)

Pagination

Page 1 of 1 - Filter: Regex ?

Overview			Details			Network		+/-
Name	**User name**	**State**	**SSL / TLS**	**Protocol**	**Channels**	**From client**	**To client**	
192.168.99.1:59184 rabbitConnectionFactory#1a28aef1:0	emregltkn	running	○	AMQP 0-9-1	1	2 B/s	2 B/s	