

# Running Microservices

- IntelliJ IDEA
- Exported JAR file
- Docker Container



**IntelliJ IDEA**  
+  
**Local**

**JAR file**  
+  
**Local**

**Docker**  
+  
**Local**

**Docker**  
+  
**AWS EC2**

**Docker**  
+  
**Docker Swarm Mode**  
+  
**AWS EC2**

**Docker**  
+  
**Kubernetes**  
+  
**AWS EC2**

# Running Microservices in Local



**Kafka**

**Zipkin**

**Prometheus**

**Grafana**



**Users**  
*Microservice*



**Catalogs**  
*Microservice*



**Orders**  
*Microservice*

**MariaDB**



**Eureka**



**API Gateway**



**Configuration**

**RabbitMQ**

# Create Bridge Network

## ▪ **Bridge network**

- \$ docker network create --driver bridge [브릿지 이름]

## ▪ **Host network**

- 네트워크를 호스트로 설정하면 호스트의 네트워크 환경을 그대로 사용
- 포트 포워딩 없이 내부 어플리케이션 사용

## ▪ **None network**

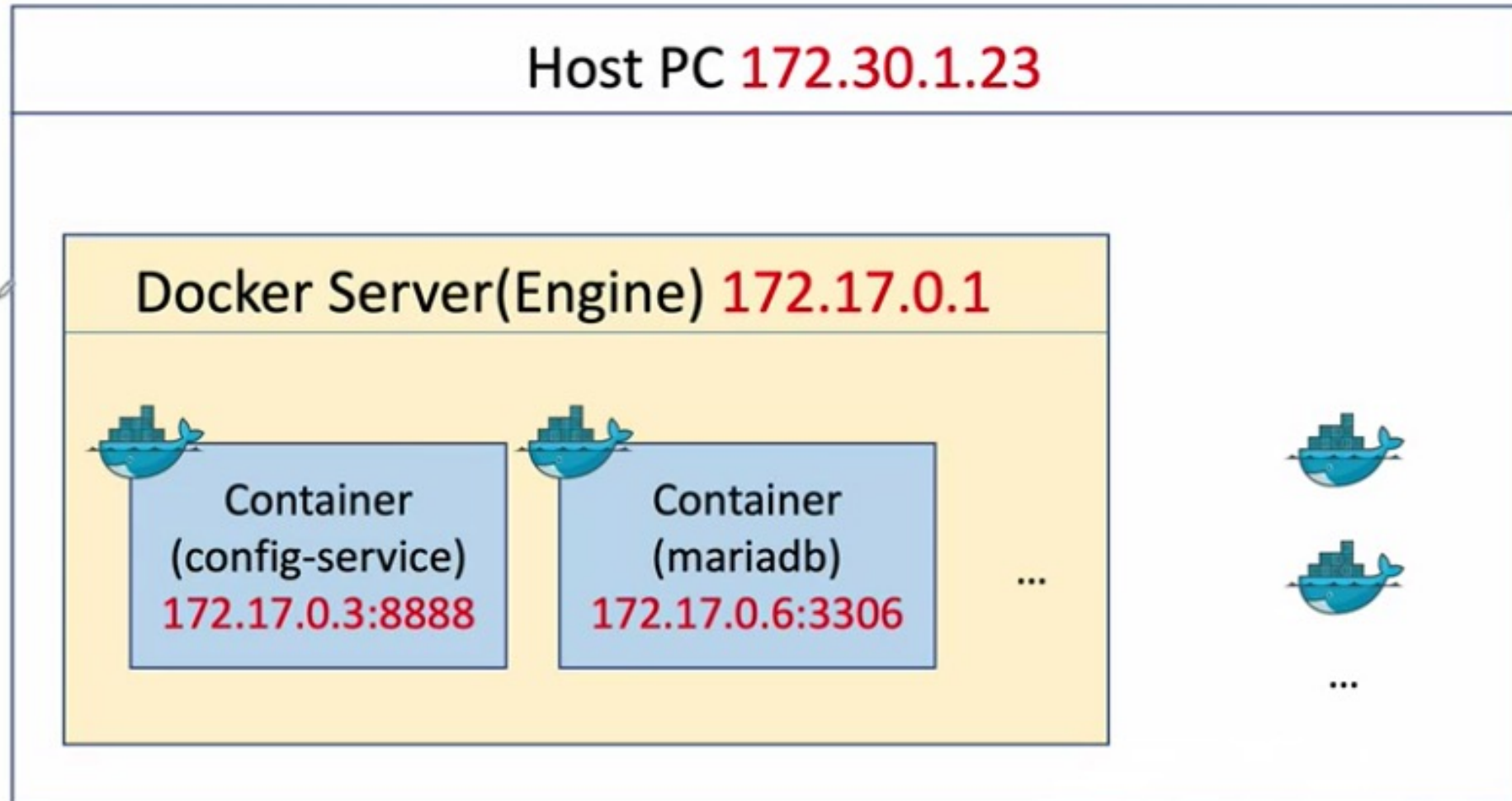
- 네트워크를 사용하지 않음
- lo 네트워크만 사용, 외부와 단절

```
$ docker network create ecommerce-network
```

```
$ docker network ls
```

```
▶ docker network ls
NETWORK ID      NAME                DRIVER             SCOPE
2879c2a94c9f    bridge             bridge             local
22e70794e399    ecommerce-network   bridge             local
de014ae20e46    host               host               local
2624444d0133    none               null               local
```

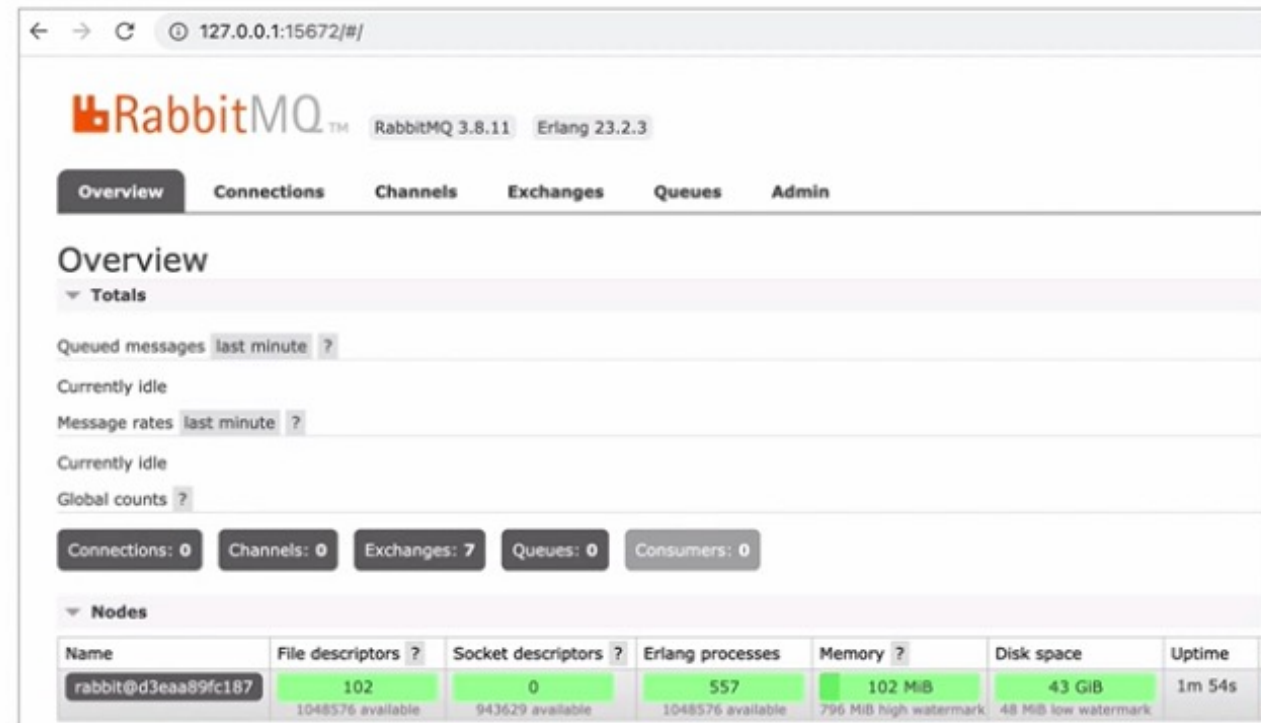
# Create Bridge Network



# Run RabbitMQ

```
$ docker run -d --name rabbitmq --network ecommerce-network \  
-p 15672:15672 -p 5672:5672 -p 15671:15671 -p 5671:5671 -p 4369:4369 \  
-e RABBITMQ_DEFAULT_USER=guest \  
-e RABBITMQ_DEFAULT_PASS=guest rabbitmq:management
```

```
Starting RabbitMQ 3.8.11 on Erlang 23.2.3  
Copyright (c) 2007-2020 VMware, Inc. or its affiliates.  
Licensed under the MPL 2.0. Website: https://rabbitmq.com  
  
## ##      RabbitMQ 3.8.11  
## ##  
##### Copyright (c) 2007-2020 VMware, Inc. or its affiliates.  
#####  
##### Licensed under the MPL 2.0. Website: https://rabbitmq.com  
  
Doc guides: https://rabbitmq.com/documentation.html  
Support:    https://rabbitmq.com/contact.html  
Tutorials:  https://rabbitmq.com/getstarted.html  
Monitoring: https://rabbitmq.com/monitoring.html
```



The screenshot shows the RabbitMQ management interface in a web browser. The address bar displays the URL `127.0.0.1:15672/#/`. The interface includes a navigation bar with tabs for Overview, Connections, Channels, Exchanges, Queues, and Admin. The Overview page is active, showing a summary of the system's status. It includes a 'Totals' section with various metrics and a 'Nodes' table.

**RabbitMQ 3.8.11 Erlang 23.2.3**

**Overview**

**Totals**

Queued messages **last minute** ?

Currently idle

Message rates **last minute** ?

Currently idle

Global counts ?

Connections: 0 Channels: 0 Exchanges: 7 Queues: 0 Consumers: 0

**Nodes**

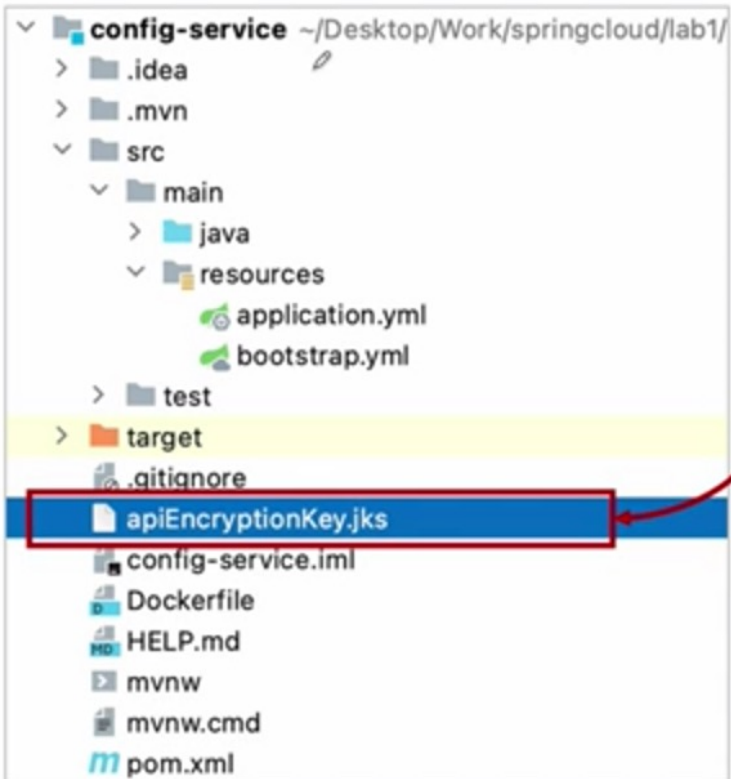
Name	File descriptors ?	Socket descriptors ?	Erlang processes	Memory ?	Disk space	Uptime
rabbit@d3eaa89fc187	102 1048576 available	0 943629 available	557 1048576 available	102 MiB 796 MiB high watermark	43 GiB 48 MiB low watermark	1m 54s



# Create Config Server Docker Image

```
FROM openjdk:17-ea-11-jdk-slim
VOLUME /tmp
COPY apiEncryptionKey.jks apiEncryptionKey.jks
COPY target/config-service-1.0.jar ConfigService.jar
ENTRYPOINT ["java", "-jar", "ConfigService.jar"]
```

```
<groupId>com.example</groupId>
<artifactId>config-service</artifactId>
<!-- <version>0.0.1-SNAPSHOT</version>-->
<version>1.0</version>
<name>config-service</name>
```



• *copy to docker container*

# Create Config Server Docker Image

```
encrypt:
# key: abcdefghijklmnopqrstuvwxyz0123456789
key-store:
# location: file://{user.home}/Desktop/Work/keystore/apiEncryptionKey.jks
location: file:/apiEncryptionKey.jks
password: test1234
alias: apiEncryptionKey
```

- *change the path*

\$ mvn clean compile package -DskipTests=true

```
[INFO] --- maven-surefire-plugin:2.22.2:test (default-test) @ config-service ---
[INFO] Tests are skipped.
[INFO]
[INFO] --- maven-jar-plugin:3.2.0:jar (default-jar) @ config-service ---
[INFO] Building jar: /Users/dowonlee/Desktop/Work/springcloud/lab1/config-service/target/config-service-1.0.jar
[INFO]
[INFO] --- spring-boot-maven-plugin:2.4.2:repackage (repackage) @ config-service ---
[INFO] Replacing main artifact with repackaged archive
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 3.616 s
[INFO] Finished at: 2021-03-08T09:05:27+09:00
[INFO] -----
```