Apache Kafka Installation and Configuration

2020 INTRO. TO NETWORK PROGRAMMING

Outline

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Target environment

- This tutorial is running on the **Ubuntu 18.04** within AWS EC2
- Use **t2.medium** (with 4GB RAM) as EC2 instance type

Install Java JDK

- Install the Java JDK
  1. **$ sudo apt-get install default-jdk –y**
- Create the environment variable named **JAVA_HOME**
  1. **$ sudo vi /etc/profile.d/java.sh**
     - And then add the following content:

#/bin/bash

export JAVA_HOME=/usr/lib/jvm/java-11-openjdk-amd64

Install Java JDK (cont.)

- Apply changes immediately in current shell
  1. **$ source /etc/profile.d/java.sh**

- Check the JAVA_HOME variable and Java's version
  1. **$ env | grep JAVA_HOME**

```
JAVA_HOME=/usr/lib/jvm/java-11-openjdk-amd64
```

  2. **$ java --version**

```
openjdk 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)
```

Install Zookeeper

- Install the **Zookeeperd** package
  1. **$ sudo apt-get install zookeeperd -y**
- Verify if the Zookeeperd service is running
  1. **$ systemctl status zookeeper**
- Configure Zookeeperd to start automatically during boot time
  1. **$ sudo systemctl enable zookeeper**

Install Apache Kafka

- Download the Apache Kafka package in ~/downloads

1. **$ mkdir ~/downloads**
2. **$ cd ~/downloads**
3. **$ wget http://mirror.nbtelecom.com.br/apache/kafka/2.3.1/kafka_2.12-2.3.1.tgz**
4. **$ tar zxvf kafka_2.12-2.3.1.tgz**

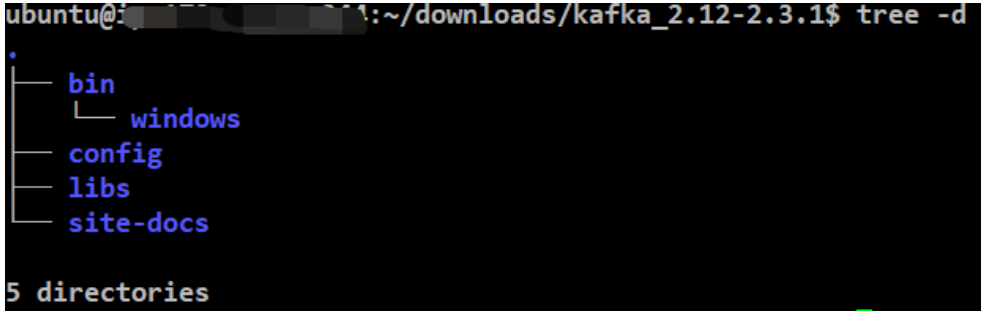
Install Apache Kafka (cont.)

- Create a file to automate the environment variables configuration
  1. **$ sudo vi /etc/profile.d/kafka.sh**
  2. **$ source /etc/profile.d/kafka.sh**

- Verify the KAFKA_HOME variable
  1. **$ env | grep -i kafka**

Apache Kafka Command Examples

- cd /path-to-kafka-uncompress-directory/



- Start the Apache Kafka service

1. **$ sudo ./bin/kafka-server-start.sh ./config/server.properties**

- Stop the Apache Kafka service

1. **$ sudo ./bin/kafka-server-stop.sh**

Apache Kafka Command Examples (cont.)

- Show the records from the specified Topic

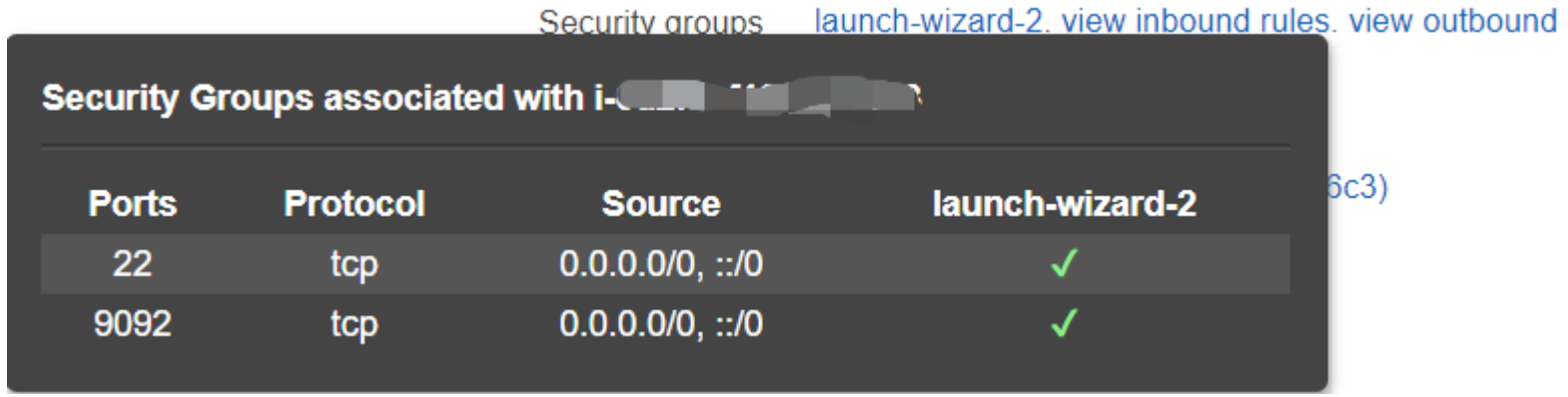
1. **$ ./bin/kafka-console-consumer.sh --bootstrap-server localhost:9092 --topic *topic_name* --from-beginning**

Configuration of Kafka Server

- We should setup the server configure (in **config/server.properties**) before start running it
- There are two properties with listener settings:
  1. **#listeners=PLAINTEXT://:9092**
     - For the internal communication
  2. **#advertised.listeners=PLAINTEXT://*public.host.name.or.ip*:9092**
     - Communicate with the external network

Note – Security Groups setup on EC2

- We should set up the Security Groups on the instance to allow **inbound connections on port 9092** from your machine



References

- https://techexpert.tips/apache-kafka/apache-kafka-installation-on-the-cloud-aws-ec2/
- https://medium.com/@iamsuraj/what-is-advertised-listeners-in-kafka-72e6fae7d68e