**Kafka-Zookeeper Setup**

1. **Update the system**:

bash

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sudo apt update && sudo apt upgrade -y

1. **Install Java**: Kafka requires Java to run.

bash

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sudo apt install openjdk-11-jdk -y

java -version

**Download and Configure Kafka**

1. **Download Kafka 2.13-3.4.0**:

wget https://downloads.apache.org/kafka/3.4.0/kafka\_2.13-3.4.0.tgz

1. **Extract and move Kafka to /opt**:

tar -xvzf kafka\_2.13-3.4.0.tgz

sudo mv kafka\_2.13-3.4.0 /opt/kafka

1. **Set up environment variables**: Add Kafka's binaries to your PATH:

echo "export KAFKA\_HOME=/opt/kafka" | sudo tee -a /etc/environment

echo "export PATH=\$PATH:\$KAFKA\_HOME/bin" | sudo tee -a /etc/environment

source /etc/environment

**3. Create Systemd Service Files**

Create systemd service files to run Kafka and ZooKeeper as services:

**Zookeeper Service**

1. Create the ZooKeeper service file:

sudo nano /etc/systemd/system/zookeeper.service

1. Add the following content:

[Unit]

Description=Apache ZooKeeper

After=network.target

[Service]

User=root

Group=root

ExecStart=/opt/kafka/bin/zookeeper-server-start.sh /opt/kafka/config/zookeeper.properties

ExecStop=/opt/kafka/bin/zookeeper-server-stop.sh

Restart=always

RestartSec=5

[Install]

WantedBy=multi-user.target

1. Reload and start ZooKeeper:

sudo systemctl daemon-reload

sudo systemctl enable zookeeper

sudo systemctl start zookeeper

sudo systemctl status zookeeper

**Kafka Service**

1. Create the Kafka service file:

sudo nano /etc/systemd/system/kafka.service

1. Add the following content:

[Unit]

Description=Apache Kafka

After=zookeeper.service

[Service]

User=root

Group=root

ExecStart=/opt/kafka/bin/kafka-server-start.sh /opt/kafka/config/server.properties

ExecStop=/opt/kafka/bin/kafka-server-stop.sh

Restart=always

RestartSec=5

[Install]

WantedBy=multi-user.target

1. Reload and start Kafka:

bash

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sudo systemctl daemon-reload

sudo systemctl enable kafka

sudo systemctl start kafka

sudo systemctl status kafka

**4. Install Offset Explorer (Formerly Kafka Tool)**

1. **Download Offset Explorer**: Visit the official website and download the latest version for your OS: [Offset Explorer](https://www.kafkatool.com/).
2. **Install Offset Explorer**:
   * If using Windows, run the installer.
   * If using Linux, download the .tar.gz or .deb package, and follow the instructions.
3. **Connect Offset Explorer to Kafka**:
   * Add your Kafka broker(s) (e.g., EC2-PUBLIC-IP:9092) in the Offset Explorer interface.
   * Explore topics, messages, and Kafka settings through the UI.

**5. Test Kafka**

1. **Create a topic**:

kafka-topics.sh --create --topic test-topic --bootstrap-server localhost:9092 --partitions 1 --replication-factor 1

1. **List topics**:

kafka-topics.sh --list --bootstrap-server localhost:9092

1. **Produce messages**:

kafka-console-producer.sh --topic test-topic --bootstrap-server localhost:9092

1. **Consume messages**:

kafka-console-consumer.sh --topic test-topic --bootstrap-server localhost:9092 --from-beginning