

```
# Apache Kafka O'rnatish va Systemd orqali Boshqarish Qo'llanmasi
```

```
## 1. Talablar
```

- Ubuntu 20.04 / 22.04 yoki boshqa Linux distributiv
- Java 17+ o'rnatilgan bo'lishi kerak
- Administrator (sudo) huquqi

```
## 2. Kafka yuklab olish
```

```
1. Rasmiy sayt orqali Kafka'ni yuklab oling:
```

```
```bash
```

```
wget https://downloads.apache.org/kafka/4.1.1/kafka_2.13-4.1.1.tgz
```

2. Arxivni chiqarish:

```
tar -xzf kafka_2.13-4.1.1.tgz -C /opt
```

3. Kafka papkasini oson boshqarish uchun nomini o'zgartiring:

```
sudo mv /opt/kafka_2.13-4.1.1 /opt/kafka
```

### 3. Kafka konfiguratsiyasi

1. Kafka konfiguratsiya fayllari `/opt/kafka/config/` papkada joylashgan.
2. `server.properties` faylini kerak bo'lsa tahrir qiling, masalan:

```
broker.id=1
listeners=PLAINTEXT://:9092,CONTROLLER://:9093
dataDir=/opt/kafka/data
num.partitions=1
default.replication.factor=1
controller.quorum.voters=1@localhost:9093
```

3. Kafka uchun ma'lumotlar papkasini yarating:

```
sudo mkdir -p /opt/kafka/data
sudo chown -R $USER:$USER /opt/kafka/data
```

### 4. KRaft mode uchun metadata formatlash

1. Avvalo UUID yaratish:

```
/opt/kafka/bin/kafka-storage.sh random-uuid
```

Bu sizga UUID beradi, masalan: `vLV-b0sgSZG6Tx2sFe26sQ`

2. Metadata papkasini formatlash:

```
/opt/kafka/bin/kafka-storage.sh format -t vLV-b0sgSZG6Tx2sFe26sQ -c /
opt/kafka/config/server.properties
```

## 5. Kafka serverini ishga tushurish

```
/opt/kafka/bin/kafka-server-start.sh /opt/kafka/config/server.properties
```

- Agar server muvaffaqiyatli ishlasa, logda `Started NetworkTrafficServer` kabi xabarlarni ko'rasiz.  
- Agar xatolik bo'lsa (`Address already in use`), 9092 va 9093 portlarini tekshiring va boshqa jarayonlar ishlayotgan bo'lsa to'xtating:

```
sudo lsof -i :9092
sudo lsof -i :9093
sudo kill -9 <PID>
```

## 6. Kafka'ni systemd xizmatiga qo'shish

1. Yangi systemd unit faylini yaratish:

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

Faylga quyidagilarni yozing:

```
[Unit]
Description=Apache Kafka Server
After=network.target

[Service]
Type=simple
User=$USER
ExecStart=/opt/kafka/bin/kafka-server-start.sh /opt/kafka/config/
server.properties
ExecStop=/opt/kafka/bin/kafka-server-stop.sh
Restart=on-abnormal

[Install]
WantedBy=multi-user.target
```

2. systemd'ni yangilang:

```
sudo systemctl daemon-reload
```

3. Kafka xizmatini ishga tushiring:

```
sudo systemctl start kafka
```

4. Kafka xizmatini avtomatik ishga tushirishga sozlang:

```
sudo systemctl enable kafka
```

5. Kafka holatini tekshirish:

```
sudo systemctl status kafka
```

6. Agar `active (running)` bo'lsa, Kafka muvaffaqiyatli ishga tushgan.

## 7. Kafka bilan ishlashni boshlash

1. Topic yaratish:

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

2. Xabar yuborish:

```
/opt/kafka/bin/kafka-console-producer.sh --topic test-topic --bootstrap-server localhost:9092
```

3. Xabarlarni o'qish:

```
/opt/kafka/bin/kafka-console-consumer.sh --topic test-topic --from-beginning --bootstrap-server localhost:9092
```

---

Ushbu qo'llanma orqali siz Kafka'ni o'rnatib, KRaft mode'da ishga tushirishingiz, systemd orqali boshqarishingiz va test topic yaratib xabarlar yuborishingiz mumkin. ``