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## INSTALLATION PROCEDURE

### KAFKA CONNECT

	Name / Project Role	Signature	Date (dd/mm/yyyy)
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1.0	See GeodIS	Initial Version

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## 1. INTRODUCTION

The objective of the Installation Procedure is to provide detailed step by step instructions for installing Kafka Connect on OpenShift cluster.

## 2. PREREQUISITES

To be able to properly install Kafka Connect on OpenShift cluster, you would need to fulfill the following conditions:

- Have knowledge about the OpenShift environment, architecture and CLI
- Have **admin** access to **tibco-test** namespace on **e11** OpenShift cluster
- Have **oc** installed on your local machine
- Know the location and all the configuration data for Kafka you want to connect with

## 3. INSTALLATION ACTIVITIES

### 3.1. Configuration

#### 3.1.1. Create config map

To provide Kafka connect with your configuration, you will need to create a config map on OpenShift cluster. To do so, you will need to login to tibco-test namespace on e11 cluster and go to Resources -> Config Maps page.

Click on 'Create Config Map' button in the upper right corner and provide all the required data:

- Name – should fall into pattern 'cp-kafka-connect-config-<<environment\_name>>'
- Key – should fall into pattern 'connect-distributed.<<environment\_name>>.properties'
- Value – fill the text area below with correctly filled kafka connect configuration file

Filled data should look like this:

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Config Maps > Create Config Map

## Create Config Map

Config maps hold key-value pairs that can be used in pods to read application configuration.

**\* Name**

A unique name for the config-map within the project.

**\* Key**

A unique key for this config-map entry.

**Value**

Enter a value for the config-map entry or use the contents of a file.

[Clear Value](#)

```

1 bootstrap.servers=SASL_SSL://aws-kafka01d.pharma.aventis.com:9093,SASL_SSL://
2 group.id=aws-kafka-dev
3 key.converter=org.apache.kafka.connect.storage.StringConverter
4 value.converter=org.apache.kafka.connect.storage.StringConverter
5 key.converter.schemas.enable=false
6 value.converter.schemas.enable=false
7 offset.storage.topic=dev-splunk-connect-offsets
8 offset.storage.replication.factor=2
9 offset.storage.partitions=3
10 config.storage.topic=dev-splunk-connect-configs
11 config.storage.replication.factor=2
12 status.storage.topic=dev-splunk-connect-status
13 status.storage.replication.factor=2
14 offset.flush.interval.ms=10000
  
```

[Remove Item](#) | [Add Item](#)

Click on 'Create' button afterwards.

### 3.1.2. Import Kafka certificate

If your Kafka uses SSL, you will need to import its certificate. To do so, you will need to login to OpenShift tibco-test cluster via oc CLI and invoke this command:

```
oc create cm cp-kafka-connect-<<envrionment_name>>-cert --from-file=<<jks_certificate>> -n tibco-test
```

### 3.1.3. Create kafka-client\_jaas.conf config map

Create another config map (just like in [3.1.1.](#)) for kafka-client\_jaas.conf with provided login credentials

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for Kafka and external system you want to connect with. File should look similar to the one below:

```
KafkaClient {
  org.apache.kafka.common.security.plain.PlainLoginModule required
  username="admin"
  password="password";
};

Client {
  org.apache.kafka.common.security.plain.PlainLoginModule required
  username="admin"
  password="password";
};
```

## 3.2. Deployment

### 3.2.1. Create deployment YAML

Fill up the deployment yaml from this template:

```
apiVersion: apps.openshift.io/v1
kind: DeploymentConfig
metadata:
  labels:
    app: kafka-connect
  name: <<ENVIRONMENT>>-kafka-connect
  namespace: tibco-test
spec:
  replicas: 1
  revisionHistoryLimit: 10
  selector:
    app: <<ENVIRONMENT>>-kafka-connect
    deploymentconfig: <<ENVIRONMENT>>-kafka-connect
  strategy:
    activeDeadlineSeconds: 21600
    resources: {}
    rollingParams:
      intervalSeconds: 1
      maxSurge: 25%
      maxUnavailable: 25%
      timeoutSeconds: 600
      updatePeriodSeconds: 1
    type: Rolling
  template:
    metadata:
      annotations:
```

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```

    openshift.io/generated-by: OpenShiftWebConsole
    creationTimestamp: null
    labels:
      app: <<ENVIRONMENT>>-kafka-connect
      deploymentconfig: <<ENVIRONMENT>>-kafka-connect
  spec:
    containers:
      - args:
          - /etc/kafka-connect/config/connect-distributed.properties
        command:
          - /usr/bin/connect-distributed
        env:
          - name: KAFKA_ENV
            value: <<ENVIRONMENT>>
          - name: EXTRA_ARGS
            value: >-
              -Djava.security.auth.login.config=/etc/kafka-
connect/config/kafka-client_jaas.conf
              -Djavax.net.ssl.keyStore=/etc/kafka-connect/certs/aws-kafka-
<<ENVIRONMENT>>.jks
              -Djavax.net.ssl.trustStore=/etc/kafka-connect/certs/aws-kafka-
<<ENVIRONMENT>>.jks
              -Djavax.net.ssl.keyStorePassword=PgNfcw3z0ddcvoFT0SDI
              -Djavax.net.ssl.trustStorePassword=PgNfcw3z0ddcvoFT0SDI
        image: >-
          docker-registry.default.svc:5000/tibco-test/cp-kafka-connect-
imagestream
        imagePullPolicy: IfNotPresent
        name: <<ENVIRONMENT>>-kafka-connect
        ports:
          - containerPort: 8083
            protocol: TCP
          - containerPort: 9092
            protocol: TCP
        resources:
          limits:
            cpu: '1'
            memory: 2Gi
          requests:
            cpu: 1m
            memory: 1Gi
        securityContext:
          runAsGroup: 1000
          runAsUser: 1000
        terminationMessagePath: /dev/termination-log

```

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```

    terminationMessagePolicy: File
    volumeMounts:
      - mountPath: /etc/kafka-connect/config/connect-
distributed.properties
        name: cp-kafka-connect-config
        subPath: connect-distributed.properties
      - mountPath: /etc/kafka-connect/config/kafka-client_jaas.conf
        name: cp-kafka-connect-config
        subPath: kafka-client_jaas.conf
      - mountPath: /etc/kafka-connect/certs/<<CERTIFICATE_NAME>>
        name: cp-kafka-connect-<<ENVIRONMENT>>-cert
        subPath: <<CERTIFICATE_NAME>>
      - mountPath: /etc/kafka-connect/log4j.properties
        name: connect-log4j
        subPath: log4j.properties
    dnsPolicy: ClusterFirst
    restartPolicy: Always
    schedulerName: default-scheduler
    securityContext: {}
    terminationGracePeriodSeconds: 30
    volumes:
      - configMap:
          defaultMode: 420
          items:
            - key: kafka-client_jaas.conf
              path: kafka-client_jaas.conf
            - key: connect-distributed.<<ENVIRONMENT>>.properties
              path: connect-distributed.properties
          name: cp-kafka-connect-config
        name: cp-kafka-connect-config
      - configMap:
          defaultMode: 420
          items:
            - key: <<CERTIFICATE_NAME>>
              path: <<CERTIFICATE_NAME>>
          name: cp-kafka-connect-<<ENVIRONMENT>>-cert
        name: cp-kafka-connect-<<ENVIRONMENT>>-cert
      - configMap:
          defaultMode: 420
          items:
            - key: connect-log4j.properties
              path: log4j.properties
          name: cp-kafka-connect-config
        name: connect-log4j
    test: false

```

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```
triggers:
  - type: ConfigChange
  - imageChangeParams:
      automatic: true
      containerNames:
        - <<ENVIRONMENT>>-kafka-connect
      from:
        kind: ImageStreamTag
        name: 'cp-kafka-connect-imagestream:latest'
        namespace: tibco-test
      lastTriggeredImage: >-
        docker-registry.default.svc:5000/tibco-test/cp-kafka-connect-
        imagestream@sha256:d11051ab63d19ea8793437fcf89b58c74570712d521eb0ac09239686c38
        ac0e9
      type: ImageChange
```

Each occurrence of <<ENVIRONMENT>> string should be changed to your environment name (e.g. 'dev', 'prod') and <<CERTIFICATE\_NAME>> to the imported jks name.

After updating the template, go back to OpenShift and find 'Add to Project' button in the upper right corner. Click on it, choose 'Import YAML / JSON'. New dialog box should appear, where you should paste your template and click 'Create'

If everything went fine, you will be redirected to deployment page and kafka connect will be starting up.

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