

## Configuring Strimzi

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# Contents

<b>Configuring Strimzi Cluster Operator.....</b>	<b>4</b>
<b>Configuring Strimzi Cluster Operator watched namespaces.....</b>	<b>4</b>
<b>Increasing the Strimzi Cluster Operator's memory.....</b>	<b>5</b>
<b>Running the Strimzi Cluster Operator with a restricted profile.....</b>	<b>5</b>
<b>Configuring Strimzi Cluster Operator's log level.....</b>	<b>6</b>
<b>Configuring pod security providers.....</b>	<b>6</b>
<b>Updating a license.....</b>	<b>6</b>

## Configuring Strimzi Cluster Operator

Learn how to configure an existing deployment of the Strimzi Cluster Operator with helm upgrade.

The Strimzi Cluster Operator is deployed when you install Strimzi to your Kubernetes cluster. During installation you can configure the Cluster Operator. If required, you can make configuration updates following installation. This is done with helm upgrade command using the `--reuse-values` option together with the `-f` (`--values`) or `--set` options.

```
helm upgrade [***RELEASE***] [***CHART***] \
  --namespace [***NAMESPACE***] \
  (--set '[***KEY***]=[***VALUE***]' | -f [***MY-VALUES.YAML***]) \
  --reuse-values
```

- Ensure that `[***RELEASE***]` and `[***CHART***]` are the same as the ones you used during installation. You can use `helm list` to list currently installed releases and charts.
- Use `--set` if you want to update properties directly from the command line. Helm supports various `--set` options like `--set-file`, `--set-string`, and others. You can use any of these options.
- Use `-f` (`--values`) if you want to pass a file containing your configuration updates.
- The `--reuse-values` option instructs Helm to merge existing values with new ones. You use this option when you want to update an existing configuration

### Configurable properties

The Strimzi Cluster Operator accepts various configuration properties. You can find a comprehensive list of these properties in the *Helm chart configuration reference*. Alternatively, you can list available properties with `helm show readme`.

```
helm show readme [***CHART***]
```

### Related Information

[Helm chart configuration reference](#)

[Helm List | Helm](#)

[Helm Upgrade | Helm](#)

[Helm Show Readme | Helm](#)

## Configuring Strimzi Cluster Operator watched namespaces

By default, the Strimzi Cluster Operator watches and manages the Kafka clusters that are deployed in the same namespace as the Strimzi Cluster Operator. However, you can configure it to watch selected namespaces or watch all namespaces. This allows you to manage multiple Kafka clusters deployed in different namespaces using a single Strimzi Cluster Operator installation.

If you have a specific list of namespaces that you want the Strimzi Cluster Operator to watch, specify them in the `watchNamespaces` property. Delimit each namespace with a comma.

```
helm upgrade [***RELEASE***] [***CHART***] \
  --namespace [***NAMESPACE***] \
  --set 'watchNamespaces={ [***NAMESPACE A***], [***NAMESPACE B***] }' \
  --reuse-values
```



**Tip:** The namespace where the Strimzi Cluster Operator is deployed is always watched. You do not need to add it to the list in `watchNamespaces`.

If you want the Strimzi Cluster Operator to watch all namespaces in your cluster, set `watchAnyNamespace` to true.

```
helm upgrade [***RELEASE***] [***CHART***] \
  --namespace [***NAMESPACE***] \
  --set 'watchAnyNamespace=true' \
  --reuse-values
```

## Increasing the Strimzi Cluster Operator's memory

If you want a single installation of the Strimzi Cluster Operator to watch and manage more than 20 Kafka clusters, you must increase the memory and heap allocated for the Strimzi Cluster Operator. Otherwise, you will encounter out of memory and heap related errors. To do this, you configure memory-related properties.

To configure the memory allocated to the Strimzi Cluster Operator, set `-XX:MinRAMPercentage` and `-XX:MaxRAMPercentage` Java parameters. Additionally, configure `resources.limits.memory` and `resources.requests.memory` Helm properties.

The following example contains memory settings recommended by Cloudera for a deployment with more than 20 Kafka clusters. You can fine-tune your setting as needed.

```
helm upgrade [***RELEASE***] [***CHART***] \
  --namespace [***NAMESPACE***] \
  --set 'extraEnvs[0].name=JAVA_OPTS' \
  --set 'extraEnvs[0].value=-XX:MinRAMPercentage=25 -XX:MaxRAMPercentage=70' \
  --set 'resources.limits.memory=600Mi' \
  --set 'resources.requests.memory=600Mi' \
  --reuse-values
```

The default values for the properties configured in the example are as follows.

- `-XX:MinRAMPercentage=15`
- `-XX:MaxRAMPercentage=20`
- `resources.limits.memory=384Mi`
- `resources.requests.memory=384Mi`

## Running the Strimzi Cluster Operator with a restricted profile

You run the Strimzi Cluster Operator with a restricted profile by configuring the `securityContext` Helm properties.

By default, the Strimzi Cluster Operator runs with the baseline profile. However, the Helm templates allow customizing the security context of the Strimzi Cluster Operator with the `securityContext` properties. You run the Strimzi Cluster Operator with a restricted profile by specifying appropriate privileges with `helm upgrade`.

```
helm upgrade [***RELEASE***] [***CHART***] --namespace [***NAMESPACE***] \
  --set watchAnyNamespace=true \
  --set securityContext.allowPrivilegeEscalation=false \
  --set securityContext.capabilities.drop={ALL} \
  --set securityContext.runAsNonRoot=true \
  --set securityContext.seccompProfile.type=RuntimeDefault
```

## Configuring Strimzi Cluster Operator's log level

The Strimzi Cluster Operator uses log4j2 configuration for logging. By default the log level is set to INFO. You can update the log level by setting the loglevel property with helm upgrade.

```
helm upgrade [***RELEASE***] [***CHART***] \
  --namespace [***NAMESPACE***] \
  --set logLevel=[***LOG LEVEL***] \
  --reuse-values
```

## Configuring pod security providers

Pod Security Providers allow you to manage the security context for all pods and containers managed by the Strimzi Cluster Operator from a single location. That is, a Security Provider defines the default security context of the pods and containers that the Strimzi Cluster Operator creates and manages.

The following two providers are available.

### Baseline

The Baseline Provider is based on the Kubernetes baseline security profile. This is a minimally restrictive profile that prevents privilege escalations and defines other standard access controls and limitations.

### Restricted

The Restricted Provider is based on the Kubernetes restricted security profile. This is a highly restrictive profile that is aimed for use in environments where high levels of security is critical.

By default, the Strimzi Cluster Operator uses the Baseline Provider. To use the Restricted Provider, set the STRIMZI\_POD\_SECURITY\_PROVIDER\_CLASS environment variable of the Strimzi Cluster Operator to restricted.

```
helm upgrade csm-operator [***HELM CHART***] --namespace [***NAMESPACE***] \
  --set extraEnvs[0].name=STRIMZI_POD_SECURITY_PROVIDER_CLASS \
  --set extraEnvs[0].value=restricted \
  --reuse-values
```

## Updating a license

CSM Operator requires a valid license to function. You must update expired licenses, otherwise, cluster resources will break down over time.

### About this task

You register your initial license during installation by setting the clouderaLicense.fileContent Helm chart property. When this property is set, a Kubernetes secret is automatically generated that stores your license. The name of the secret is csm-op-license.

If the license expires, it must be updated. You update the license by updating the secret that stores the license with your new license. Specifically, you update the value of the data.license property in the secret with your new license.

Licenses can be updated at any point in time. If your license is already expired and you update your license, restrictions on functionality are lifted immediately after the license is updated.

Updating a license does not carry any risks and does not result in cluster downtime.

## Before you begin



**Important:** Ensure that the start date of your new license is the current or a past date. Licenses become valid on their start date. Updating your old license with a new license that is not yet valid is the equivalent of registering an expired license. The start date of a license is specified in the `startDate` property of the license.

## Procedure

1. Create a manifest in YAML format that defines the license secret.

Add your new license to `stringData.license`. Ensure that you add the full contents of the license as it is in the license file you received from Cloudera.

```
apiVersion: v1
kind: Secret
metadata:
  name: csm-op-license
type: Opaque
stringData:
  license: |
    [***YOUR LICENSE***]
```

2. Replace your old secret with the new one.

```
kubectl replace --namespace [***NAMESPACE***] -filename [***LICENSE SECRET
YAML***]
```

3. Verify that the license is updated.

```
kubectl get secret csm-op-license \
  --namespace [***NAMESPACE***] \
  --output jsonpath="{.data.license}" \
  | base64 --decode
```

The output of this command should be identical with the contents of the license file you received from Cloudera.

## Related Information

[Licensing](#)