

## General information

An **Upgrade** button appears on the **Dashboard** screen whenever a new Harvester version that you can upgrade to becomes available. For more information, see [Start an upgrade](#).

For air-gapped environments, see [Prepare an air-gapped upgrade](#).

## Known issues

### 1. Air-gapped upgrade stuck with `ImagePullBackOff` error in Fluentd and Fluent Bit pods

The upgrade may become stuck at the very beginning of the process, as indicated by 0% progress and items marked **Pending** in the **Upgrade** dialog of the Harvester UI.

Specifically, Fluentd and Fluent Bit pods may become stuck in the `ImagePullBackOff` status. To check the status of the pods, run the following commands:

```
$ kubectl -n harvester-system get upgrades -l harvesterhci.io/latestUpgrade=true
NAME          AGE
hvst-upgrade-x2hz8  7m14s

$ kubectl -n harvester-system get upgradelogs -l harvesterhci.io/upgrade=hvst-upgrade-x2hz8
NAME                                UPGRADE
hvst-upgrade-x2hz8-upgradelog      hvst-upgrade-x2hz8

$ kubectl -n harvester-system get pods -l harvesterhci.io/upgradelog=hvst-upgrade-x2hz8-upgradelog
NAME                                READY   STATUS
RESTARTS   AGE
hvst-upgrade-x2hz8-upgradelog-downloader-6cdb864dd9-6bw98  1/1     Running
0          7m7s
hvst-upgrade-x2hz8-upgradelog-infra-fluentbit-2nq7q         0/1     ImagePullBackOff
0          7m42s
hvst-upgrade-x2hz8-upgradelog-infra-fluentbit-697wf        0/1     ImagePullBackOff
0          7m42s
hvst-upgrade-x2hz8-upgradelog-infra-fluentbit-kd8kl        0/1     ImagePullBackOff
0          7m42s
hvst-upgrade-x2hz8-upgradelog-infra-fluentd-0              0/2     ImagePullBackOff
0          7m42s
```

This occurs because the following container images are neither preloaded in the cluster nodes nor pulled from the internet:

- ghcr.io/kube-logging/fluentd:v1.15-ruby3
- ghcr.io/kube-logging/config-reloader:v0.0.5
- fluent/fluent-bit:2.1.8

To fix the issue, perform any of the following actions:

- Update the Logging CR to use the images that are already preloaded in the cluster nodes. To do this, run the following commands against the cluster:

```
# Get the Logging CR names
OPERATOR_LOGGING_NAME=$(kubectl get loggings -l
app.kubernetes.io/name=rancher-logging -o jsonpath="
{.items[0].metadata.name}")
INFRA_LOGGING_NAME=$(kubectl get loggings -l
harvesterhci.io/upgradeLogComponent=infra -o jsonpath="
{.items[0].metadata.name}")

# Gather image info from operator's Logging CR
FLUENTD_IMAGE_REPO=$(kubectl get loggings $OPERATOR_LOGGING_NAME -o
jsonpath="{.spec.fluentd.image.repository}")
FLUENTD_IMAGE_TAG=$(kubectl get loggings $OPERATOR_LOGGING_NAME -o jsonpath="
{.spec.fluentd.image.tag}")

FLUENTBIT_IMAGE_REPO=$(kubectl get loggings $OPERATOR_LOGGING_NAME -o
jsonpath="{.spec.fluentbit.image.repository}")
FLUENTBIT_IMAGE_TAG=$(kubectl get loggings $OPERATOR_LOGGING_NAME -o
jsonpath="{.spec.fluentbit.image.tag}")

CONFIG_RELOADER_IMAGE_REPO=$(kubectl get loggings $OPERATOR_LOGGING_NAME -o
jsonpath="{.spec.fluentd.configReloaderImage.repository}")
CONFIG_RELOADER_IMAGE_TAG=$(kubectl get loggings $OPERATOR_LOGGING_NAME -o
jsonpath="{.spec.fluentd.configReloaderImage.tag}")

# Patch the Logging CR
kubectl patch logging $INFRA_LOGGING_NAME --type=json -p="
[{"op": "replace", "path": "/spec/fluentbit/image", "value":
{"repository": "$FLUENTBIT_IMAGE_REPO", "tag": "$FLUENTBIT_IMAGE_TAG"}]}"
kubectl patch logging $INFRA_LOGGING_NAME --type=json -p="
[{"op": "replace", "path": "/spec/fluentd/image", "value":
{"repository": "$FLUENTD_IMAGE_REPO", "tag": "$FLUENTD_IMAGE_TAG"}]}"
kubectl patch logging $INFRA_LOGGING_NAME --type=json -p="
[{"op": "replace", "path": "/spec/fluentd/configReloaderImage", "value":
{"repository": "$CONFIG_RELOADER_IMAGE_REPO", "tag": "$CONFIG_RELOADER_IMAGE"
```

The status of the Fluentd and Fluent Bit pods should change to `Running` in a moment and the upgrade process should continue after the Logging CR is updated. If the Fluentd pod is still in the `ImagePullBackOff` status, try deleting it with the following command to force it to restart:

```
UPGRADE_NAME=$(kubectl -n harvester-system get upgrades -l
harvesterhci.io/latestUpgrade=true -o jsonpath='{.items[0].metadata.name}')
UPGRADELOG_NAME=$(kubectl -n harvester-system get upgradelogs -l
harvesterhci.io/upgrade=$UPGRADE_NAME -o
jsonpath='{.items[0].metadata.name}')
```

```
kubectl -n harvester-system delete pods -l  
harvesterhci.io/upgradeLog=$UPGRADELOG_NAME,harvesterhci.io/upgradeLogComponent=
```

- On a computer with internet access, pull the required container images and then export them to a TAR file. Next, transfer the TAR file to the cluster nodes and then import the images by running the following commands on each node:

```
# Pull down the three container images  
docker pull ghcr.io/kube-logging/fluentd:v1.15-ruby3  
docker pull ghcr.io/kube-logging/config-reloader:v0.0.5  
docker pull fluent/fluent-bit:2.1.8  
  
# Export the images to a tar file  
docker save \  
  ghcr.io/kube-logging/fluentd:v1.15-ruby3 \  
  ghcr.io/kube-logging/config-reloader:v0.0.5 \  
  fluent/fluent-bit:2.1.8 > upgradelog-images.tar  
  
# After transferring the tar file to the cluster nodes, import the images  
(need to be run on each node)  
ctr -n k8s.io images import upgradelog-images.tar
```

The upgrade process should continue after the images are preloaded.

- (Not recommended) Restart the upgrade process with logging disabled. Ensure that the **Enable Logging** checkbox in the **Upgrade** dialog is not selected.

Related issues:

- [\[BUG\] AirGap Upgrades Seem Blocked with Fluentbit/FluentD](#)