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

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1. Two-node cluster upgrade stuck after the first node is pre-drained

:::info important

Shut down all workload VMs before upgrading **two-node clusters** to prevent data loss.

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The worker node can falsely transition to a not-ready state when RKE2 is upgraded on the management node. Consequently, the existing pods on the worker node are evicted and new pods cannot be scheduled on any nodes. These ultimately cause a chained failure in the whole cluster and prevent completion of the upgrade process.

Check the cluster status when the following occur:

- The upgrade process becomes stuck for some time.
- You are unable to access the Harvester UI and receive an HTTP 503 error.

1. Check the conditions and node statuses of the latest `Upgrade` custom resource.

   Proceed to the next step if the following conditions are met:

   - `SystemServicesUpgraded` is set to `True`, indicating that the system services upgrade is completed.
   - In `nodeStatuses`, the state of the management node is either `Pre-drained` or `Waiting Reboot`.
   - In `nodeStatuses`, the state of the worker node is `Images preloaded`.

   Example:

```
# Find out the latest Upgrade custom resource
$ kubectl -n harvester-system get upgrades.harvesterhci -l
harvesterhci.io/latestUpgrade=true
NAME                 AGE
hvst-upgrade-szlg8   48m

# Check the conditions and node statuses
$ kubectl -n harvester-system get upgrades hvst-upgrade-szlg8 -o yaml
apiVersion: harvesterhci.io/v1beta1
kind: Upgrade
metadata:
  ...
  labels:
    harvesterhci.io/latestUpgrade: "true"
    harvesterhci.io/upgradeState: UpgradingNodes
```

```
  name: hvst-upgrade-szlg8
  namespace: harvester-system
  ...
spec:
  image: ""
  logEnabled: false
  version: v1.3.2-rc2
status:
  conditions:
  - status: Unknown
    type: Completed
  - lastUpdateTime: "2024-09-02T11:57:04Z"
    message: Upgrade observability is administratively disabled
    reason: Disabled
    status: "False"
    type: LogReady
  - lastUpdateTime: "2024-09-02T11:58:01Z"
    status: "True"
    type: ImageReady
  - lastUpdateTime: "2024-09-02T12:02:31Z"
    status: "True"
    type: RepoReady
  - lastUpdateTime: "2024-09-02T12:18:44Z"
    status: "True"
    type: NodesPrepared
  - lastUpdateTime: "2024-09-02T12:31:25Z"
    status: "True"
    type: SystemServicesUpgraded
  - status: Unknown
    type: NodesUpgraded
  imageID: harvester-system/hvst-upgrade-szlg8
  nodeStatuses:
    harvester-c6phd:
      state: Pre-drained
    harvester-jkqhq:
      state: Images preloaded
  previousVersion: v1.3.1
  ...
```

2. Check the node status.

   Proceed to the next step if the following conditions are met:

   - The status of the worker node is `NotReady`.
   - The status of the management node is `Ready,SchedulingDisabled`.

   Example:

```
$ kubectl get nodes
NAME              STATUS                     ROLES                       AGE
VERSION
harvester-c6phd   Ready,SchedulingDisabled   control-plane,etcd,master   174m
v1.28.12+rke2r1
```

```
harvester-jkqhq   NotReady                    <none>                         166m
v1.27.13+rke2r1
```

3. Check the pods on the worker node.

   The issue exists in the cluster if the status of most pods is `Terminating`.

   Example:

```
# Assume harvester-jkqhq is the worker node
$ kubectl get pods -A --field-selector spec.nodeName=harvester-jkqhq
NAMESPACE                         NAME
READY   STATUS        RESTARTS       AGE
cattle-fleet-local-system         fleet-agent-6779fb5dd9-dkpjz
1/1     Terminating   0              18m
cattle-fleet-system               fleet-agent-86db8d9954-qgcpq
1/1     Terminating   2 (18m ago)    61m
cattle-fleet-system               fleet-controller-696d4b8878-ddctd
1/1     Terminating   1 (19m ago)    29m
cattle-fleet-system               gitjob-694dd97686-s4z68
1/1     Terminating   1 (19m ago)    29m
cattle-provisioning-capi-system   capi-controller-manager-6f497d5574-wkrnf
1/1     Terminating   0              20m
cattle-system                     cattle-cluster-agent-76db9cf9fc-5hhsx
1/1     Terminating   0              20m
cattle-system                     cattle-cluster-agent-76db9cf9fc-dnr6m
1/1     Terminating   0              20m
cattle-system                     harvester-cluster-repo-7458c7c69d-p982g
1/1     Terminating   0              27m
cattle-system                     rancher-7d65df9bd4-77n7w
1/1     Terminating   0              31m
cattle-system                     rancher-webhook-cfc66d5d7-fd6gm
1/1     Terminating   0              28m
harvester-system                  harvester-85ff674986-wxkl4
1/1     Terminating   0              26m
harvester-system                  harvester-load-balancer-54cd9754dc-cwtxg
1/1     Terminating   0              20m
harvester-system                  harvester-load-balancer-webhook-c8699b786-
x6clw         1/1     Terminating   0              20m
harvester-system                  harvester-network-controller-manager-
b69bf6b69-9f99x    1/1     Terminating   0              178m
harvester-system                  harvester-network-controller-vs4jg
1/1     Running       0              178m
harvester-system                  harvester-network-webhook-7b98f8cd98-gjl8b
1/1     Terminating   0              20m
harvester-system                  harvester-node-disk-manager-tbh4b
1/1     Running       0              26m
harvester-system                  harvester-node-manager-7pqcp
1/1     Running       0              178m
harvester-system                  harvester-node-manager-webhook-9cfccc84c-
68tgp          1/1     Running       0              20m
harvester-system                  harvester-node-manager-webhook-9cfccc84c-
6bbvg          1/1     Running       0              20m
```

```
harvester-system                  harvester-webhook-565dc698b6-np89r
1/1     Terminating   0              26m
harvester-system                  hvst-upgrade-szlg8-apply-manifests-4rmjw
0/1     Completed     0              33m
harvester-system                  virt-api-6fb7d97b68-cbc5m
1/1     Terminating   0              20m
harvester-system                  virt-api-6fb7d97b68-gqg5c
1/1     Terminating   0              23m
harvester-system                  virt-controller-67d8b4c75c-5qz9x
1/1     Terminating   0              24m
harvester-system                  virt-controller-67d8b4c75c-bdf8w
1/1     Terminating   2 (18m ago)    23m
harvester-system                  virt-handler-xw98h
1/1     Running       0              24m
harvester-system                  virt-operator-6c98db546-brgnx
1/1     Terminating   2 (18m ago)    26m
kube-system                       harvester-snapshot-validation-webhook-
b75f94bcb-95zlb   1/1     Terminating   0              20m
kube-system                       harvester-snapshot-validation-webhook-
b75f94bcb-xfrmf   1/1     Terminating   0              20m
kube-system                       harvester-whereabouts-tdr5g
1/1     Running       1 (178m ago)   178m
kube-system                       helm-install-rke2-ingress-nginx-4wt4j
0/1     Terminating   0              15m
kube-system                       helm-install-rke2-metrics-server-jn58m
0/1     Terminating   0              15m
kube-system                       kube-proxy-harvester-jkqhq
1/1     Running       0              178m
kube-system                       rke2-canal-wfpch
2/2     Running       0              178m
kube-system                       rke2-coredns-rke2-coredns-864fbd7785-t7k6t
1/1     Terminating   0              178m
kube-system                       rke2-coredns-rke2-coredns-autoscaler-
6c87968579-rg6g4   1/1     Terminating   0              20m
kube-system                       rke2-ingress-nginx-controller-d4h25
1/1     Running       0              178m
kube-system                       rke2-metrics-server-7f745dbddf-2mp5j
1/1     Terminating   0              20m
kube-system                       rke2-multus-fsp94
1/1     Running       0              178m
kube-system                       snapshot-controller-65d5f465d9-5b2sb
1/1     Terminating   0              20m
kube-system                       snapshot-controller-65d5f465d9-c264r
1/1     Terminating   0              20m
longhorn-system                   backing-image-manager-c16a-7c90
1/1     Terminating   0              54m
longhorn-system                   csi-attacher-5fbd66cf8-674vc
1/1     Terminating   0              20m
longhorn-system                   csi-attacher-5fbd66cf8-725mn
1/1     Terminating   0              20m
longhorn-system                   csi-attacher-5fbd66cf8-85k5d
1/1     Terminating   0              20m
```

```
longhorn-system                   csi-provisioner-5b6ff8f4d4-97wsf
1/1     Terminating   0             20m
longhorn-system                   csi-provisioner-5b6ff8f4d4-cbpm9
1/1     Terminating   0             20m
longhorn-system                   csi-provisioner-5b6ff8f4d4-q7z58
1/1     Terminating   0             19m
longhorn-system                   csi-resizer-74c5555748-6rmbf
1/1     Terminating   0             20m
longhorn-system                   csi-resizer-74c5555748-fw2cw
1/1     Terminating   0             20m
longhorn-system                   csi-resizer-74c5555748-p4nph
1/1     Terminating   0             20m
longhorn-system                   csi-snapshotter-6bc4bcf4c5-6858b
1/1     Terminating   0             20m
longhorn-system                   csi-snapshotter-6bc4bcf4c5-cqkbw
1/1     Terminating   0             20m
longhorn-system                   csi-snapshotter-6bc4bcf4c5-mkqtg
1/1     Terminating   0             20m
longhorn-system                   engine-image-ei-b0369a5d-2t4k4
1/1     Running       0             178m
longhorn-system                   instance-manager-
a5bd20597b82bcf3ba9d314620b7e670       1/1     Terminating   0
178m
longhorn-system                   longhorn-csi-plugin-x6bdg
3/3     Running       0             178m
longhorn-system                   longhorn-driver-deployer-85cf4b4849-5lc52
1/1     Terminating   0             20m
longhorn-system                   longhorn-loop-device-cleaner-hhvgv
1/1     Running       0             178m
longhorn-system                   longhorn-manager-5h2zw
1/1     Running       0             178m
longhorn-system                   longhorn-ui-6b677889f8-hrg8j
1/1     Terminating   0             20m
longhorn-system                   longhorn-ui-6b677889f8-w5hng
1/1     Terminating   0             20m
```

To resolve the issue, you must restart the `rke2-agent` service on the worker node.

```
# On the worker node
sudo systemctl restart rke2-agent.service
```

The upgrade should resume after the `rke2-agent` service is fully restarted.

:::note

This issue occurs because the agent load balancer on the worker node is unable to connect to the API server on the management node after the `rke2-server` service is restarted. Because the `rke2-server` service can be restarted multiple times when nodes are upgraded, the upgrade process is likely to become stuck again. You may need to restart the `rke2-agent` service multiple times.

To determine if the agent load balancer is functioning, run the following commands:

```
# On the management node, check if the `rke2-server` service is running.
sudo systemctl status rke2-server.service

# On the worker node, check if the agent load balancer is functioning.
sudo /var/lib/rancher/rke2/bin/kubectl --
kubeconfig=/var/lib/rancher/rke2/agent/kubelet.kubeconfig get nodes
```

If the kubectl command does not return a response, the kubelet is unable to access the API server via the agent load balancer. You must restart the `rke2-agent` service.

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For more information, see Issue #6432.

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2. Automatic image cleanup is not functioning

Because the published Harvester ISO contains an incomplete image list, automatic image cleanup cannot be performed during an upgrade from v1.3.1 to v1.3.2. This issue does not block the upgrade, and you can use this script to manually clean up container images after the upgrade is completed. For more information, see issue #6620.

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3. The upgrade process becomes stuck in the "Pre-draining" state.

A virtual machine with a container disk cannot be migrated because of a limitation of the Live Migration feature. This causes the upgrade process to become stuck in the "Pre-draining" state.

:::tip

Manually stop the virtual machines to continue the upgrade process.

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For more information, see Issue #7005.
