

Cloud Director Object Storage Extension 3.0.0

Tech Preview Troubleshooting Guide

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VCD Object Storage Extension has components in these places:

- UI plugin in VCD portal
- RDE (Runtime Defined Entities) schemas and instances in VCD database
- OSE Operator in Kubernetes cluster
- OSE Server in the Kubernetes cluster

The troubleshooting guide follows the timeline of day0 install, day1 configure and day2 operate.

Some errors are evident and can be resolved easily. Others are sophisticated and should be passed to OSE engineers with collected information.

Failed to create add-on instance

OSE 3.0.0 introduces a new installation approach. It leverages VCD Solution Add-on Framework to initialize RDE in VCD and provision OSE Kubernetes Operator in a Kubernetes cluster.

Errors may happen when creating an OSE add-on instance. Sometimes, the add-on instance creation can be recovered just by retry. If it still fails, you can check the detailed tasks and find the error message.

The screenshot shows the VMware Cloud Director interface. On the left, the 'Object Storage' section is expanded, showing 'General' and 'Instances'. The 'Instances' tab is selected, displaying a table with columns: Name, Status, Start Time, and Completion Time. A red arrow points to the 'us-east-1' instance, with a text box stating: "when add-on instance creation fails, find the retry action and click".

The 'Instance Details - us-east-1' modal is open, showing the 'Tasks' tab. A red arrow points to the 'Tasks' tab, with a text box stating: "tasks of the creation are listed". The table lists tasks for the 'Create' operation. A red arrow points to a failed task, with a text box stating: "click to view the error message of failed task". The error message is: "operation completed with error 1 vcd-external/instance: 0:35:55 AM 0:33:52 AM". A red arrow points to the 'Create' button, with a text box stating: "click to get task details".

OSE Operator fails to start up

If the error message of the add-on instance creation task complains that the OSE operator cannot be provisioned or fails to start up, there are probably configuration errors for the operator. Check the Operator status and dump the configuration for analysis.

```
kubectl -n vcd-ose get deployments.apps vcd-ose-controller-manager
```

```
kubectl -n vcd-ose get secrets ose-operator-values -o json | jq -r '.data'
```

OSE Server configuration errors

The OSE Operator ensures the configuration submitted by the administrator is correct before applying the configuration. The configuration errors can be found in the UI. They should be resolved so that the OSE Server with the configuration can be provisioned.

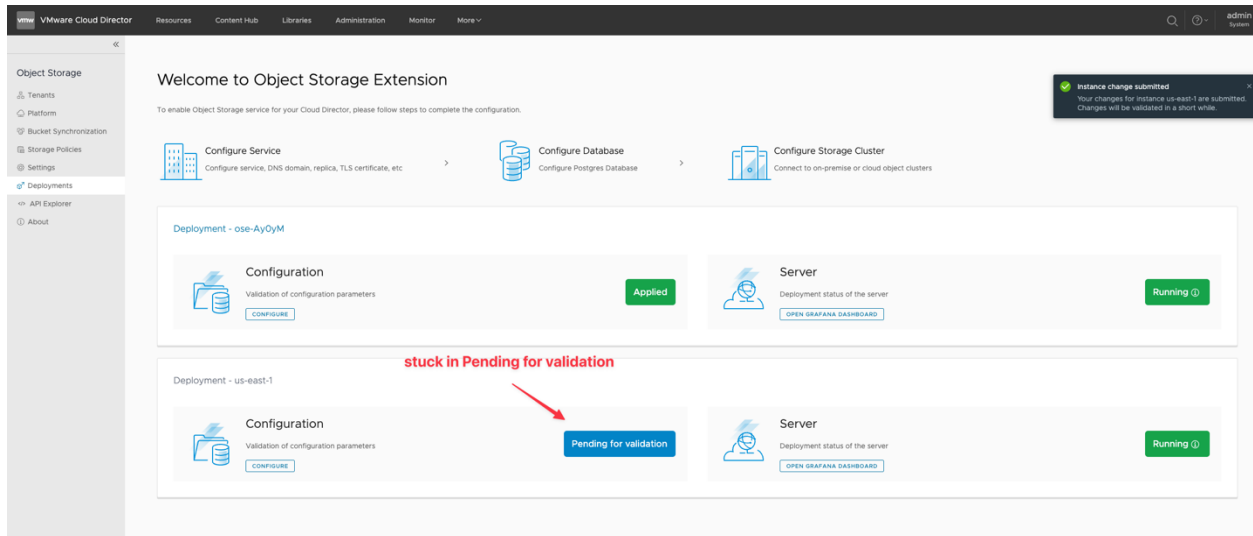
The screenshot shows the VMware Cloud Director interface for 'Object Storage Extension'. The 'Welcome to Object Storage Extension' page is displayed, with a message: "To enable Object Storage service for your Cloud Director, please follow steps to complete the configuration." The steps are: Configure Service, Configure Database, and Configure Storage Cluster.

The 'Deployment - ose-AyOyM' section shows the 'Configuration' and 'Server' status. The 'Configuration' status is 'Failed' (indicated by a red circle with an exclamation mark). A red arrow points to the 'Failed' status, with a text box stating: "click to show configuration errors and reconfigure to resolve them". The error message is: "Region us-south-1 doesn't match any CLOUDIAN region(s): [us-east-1 us-north-1 us-west-1]". The 'Server' status is 'Running' (indicated by a green circle with a checkmark).

The 'Deployment - us-east-1' section shows the 'Configuration' and 'Server' status. The 'Configuration' status is 'Applied' (indicated by a green circle with a checkmark). The 'Server' status is 'Running' (indicated by a green circle with a checkmark).

Stuck on Pending for validation

This happens mostly when the operator is broken. Also check the operator logs to decide if there is any runtime error during validating configuration.



Check if the operator is running

```
kubectl -n vcd-ose get deployments.apps | grep -B 2 manager
```

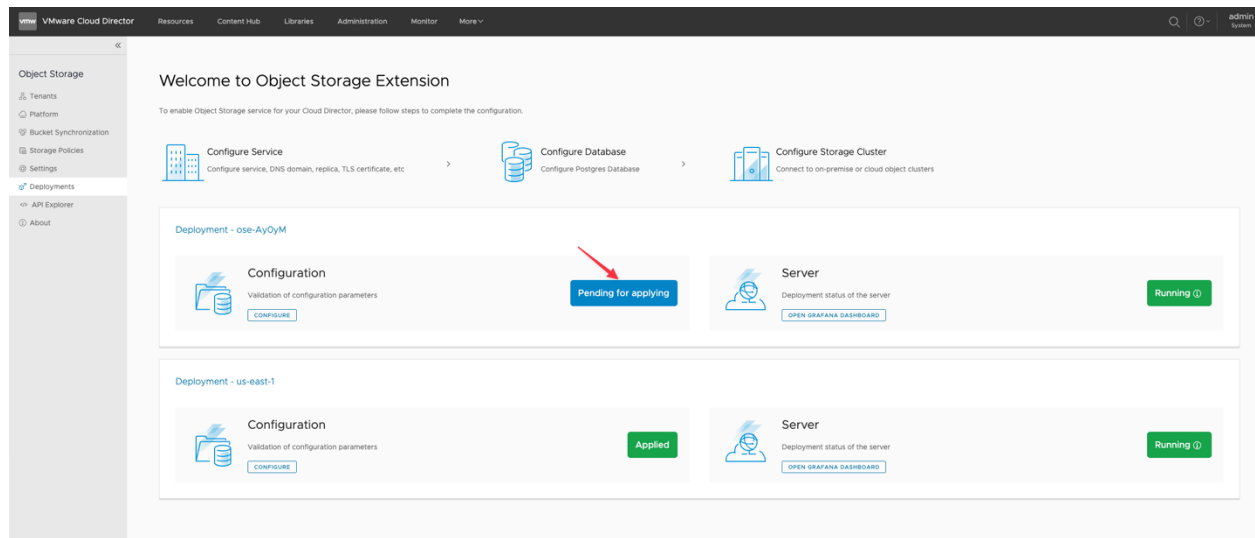
Check the logs of the operator

Due to leader election ; you may have to find the one which is reconciling

```
kubectl -n vcd-ose logs -f pods/vcd-ose-controller-manager-xxxxxxx-yyyyy
```

Stuck on Pending for applying

If the configuration is stuck on the status for more than 5 minutes, check the operator logs to find the root cause.



Check the logs of the operator

Due to leader election ; you may have to find the one which is reconciling

```
kubectl -n vcd-ose logs -f pods/vcd-ose-controller-manager-xxxxxxx-yyyyy
```

OSE Server stuck on Installing

Valid configuration is applied but the OSE server is stuck on the status of Installing. We can check the cluster resources of the OSE server.

get OSE server deployment

```
kubectl -n vcd-ose get deployments.apps vcd-ose-0fc77e92-e8d0-4dcb-a942-6f00e6eb53a3
```

describe OSE server deployment

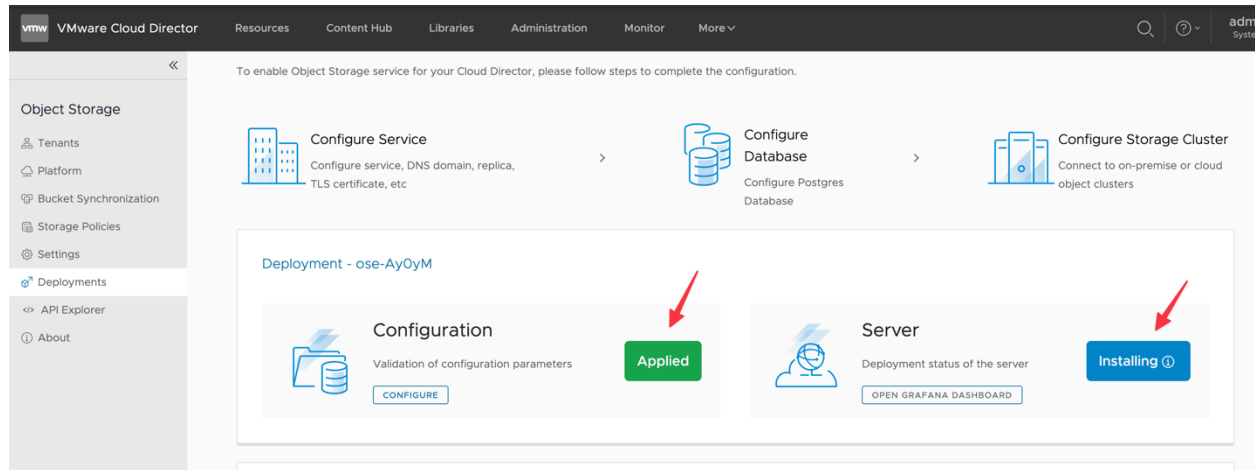
```
kubectl -n vcd-ose describe deployments.apps vcd-ose-0fc77e92-e8d0-4dcb-a942-6f00e6eb53a3
```

describe OSE server pod

```
kubectl -n vcd-ose describe pods vcd-ose-0fc77e92-e8d0-4dcb-a942-6f00e6eb53a3-77c5f6575d-fldfq
```

check OSE server logs

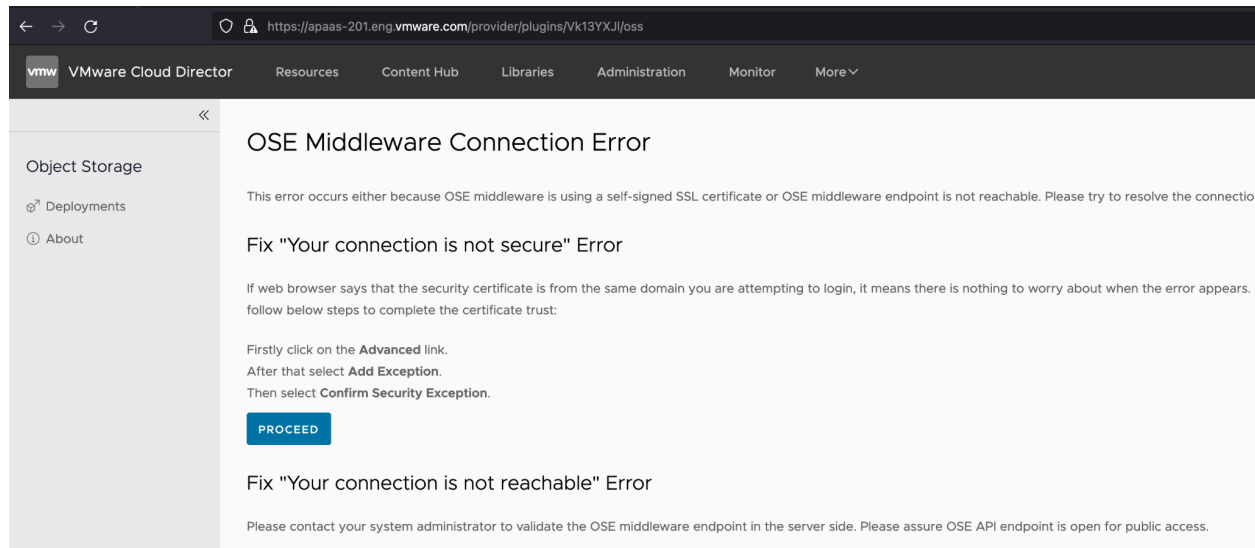
```
kubectl -n vcd-ose logs -f pods/vcd-ose-0fc77e92-e8d0-4dcb-a942-6f00e6eb53a3-77c5f6575d-fldfq
```



Pods in good condition but OSE service is not accessible

If the Server status is shown as Running on UI but it fails to land on the provider management portal and always show the page below, there could be something wrong with the ingress.

1. Make sure ingress controller like contour is installed
2. Check ingress status with the command `kubectl -n vcd-ose describe ing vcd-ose-s3`



Remove OSE Operator and provisioned resources manually

If the provisioned OSE resources in TKGm cluster cannot be removed (E.G., add-on instance fails to be removed in the UI of Solution Add-on Management), the cluster resources can be cleaned up with the commands below.

```
kubectl -n vcd-ose delete packageinstalls.packaging.carvel.dev vcd-ose-operator
```

```
kubectl -n vcd-ose delete packagerepositories.packaging.carvel.dev vcd-ose-package-repo
```

```
kubectl delete ns vcd-ose
```