

Veritas InfoScale for Kubernetes using Operator Lifecycle Manager in RedHat Openshift Container Platform

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Executive Summary

Operator Lifecycle Manager (OLM) based deployment method provides simple way to configure Veritas Infoscale Enterprise cluster on RedHat Openshift platform. In a typical customer environment , it will provide the mechanism by which anyone can configure the Infoscale Enterprise product on REDHAT Openshift container platform smoothly without complexity or having prior knowledge of Infoscale configuration.

If the user or admin has access to Web Console UI of Openshift cluster, and the worker nodes have internet connectivity, Then you can configure Infoscale using OLM based deployment method.

The Infoscale operator is a published and certified Image by Veritas which will be available on RedHat Openshift Web console. The image is available at the OperatorHub. It is recommended to use latest version of published image available on the operatorHub.

This document will provide the technical procedure to configure Infoscale Enterprise Cluster on Openshift container platform using OLM . It will guide for various parameters and best practices required in Infoscale Enterprise configuration on Openshift container platform.

To know more about OLM please refer,

[Concepts and resources - Understanding Operators | Operators | OpenShift Container Platform 4.11](#)

About Veritas InfoScale Enterprise

One of our highly demanding Enterprise products, Veritas InfoScale™, is designed to provide High Availability (HA) and Disaster Recovery (DR) for applications and various databases . Veritas InfoScale™ enables customers to combine their distributed, high performance, and highly available file systems with the latest storage and networking technologies with its Flexible Storage Sharing (FSS) feature.

Interface Enterprise has various components such as Cluster Server which has its own responsibility for providing High Availability To the applications along with resiliency. It provides faster failover for the Applications to protect them from failures. The failover will be automatic and fast and end users will not be aware of it.

Veritas Volume manager component provides easy-to-use online disk storage management for computing environments and Storage Area Network (SAN) environments. Volume manager can be configured to protect against disk and hardware failure, and to increase I/O throughput. Additionally, Volume Manager provides features that enhance fault tolerance and fast recovery from disk failure or storage array failure.

Veritas File System component is designed for use in operating environments that require high performance and availability and deal with large amounts of data.

FSS is built into the core components of InfoScale Enterprise and seamlessly combines shared and direct-attached storage under a common storage virtualization solution.

FSS allows server administrators to export any disk to any node in the cluster, providing a “shared nothing” architecture. With FSS, server administrators can quickly add storage or compute nodes, or both, to an existing Infoscale cluster.

This in turn provides ability to configure various Enterprise applications without compromising on high availability and resiliency.

In the containers environment, critical applications having resiliency and ability to provide service in case of Any failure is very important. Infoscale Enterprise, with its intelligent architecture and design ensures that applications will not get impacted at any cost. Applications can be various databases or any services running like Oracle, Mysql, Postgres and many more.

About Veritas InfoScale™ for Kubernetes Environment (VIKE)

InfoScale for Kubernetes continues to expand and serves enterprise needs on various platforms for the Kubernetes ecosystem, along with Kubernetes and Red Hat OpenShift Container Platform (OCP). Recently released VIKE 8.0.200 continues to be Red Hat certified solution for software-defined persistent storage and resiliency and is available in the Red Hat Ecosystem Catalog with a single-click deployment. This white paper is intended to understand the deployment of Infoscale Enterprise in Red Hat Openshift Container platform.

Pre-requisites for Infoscale Deployment using OLM

As OLM deployment method is operator based , there are some pre-requisites which should be met before we configure Infoscale Enterprise on OpenShift platform. Below operators should be pre-installed on the openshift cluster nodes. Otherwise the Infoscale Operator installation may fail.

Cert Manager operator

Cert manager operator is responsible for auto provisioning of certificates which are used for TLS communication between the various services or components of Infoscale. It is recommended to use latest Cert Manager operator version.

NFD operator (Node Feature Discovery)

We need this operator for extracting the cluster nodes hardware information. All the required information related to operating system, memory, CPU, architecture etc.. is extracted with this.

You need to create NFD instance once the operator is installed. This will create the nfd-master and worker pods automatically. Before infoscale deployment you need to make sure that nfd master and worker pods are in running state.

Above both operators can be installed from operatorHub of Openshift web console.

Understanding Catalog Source

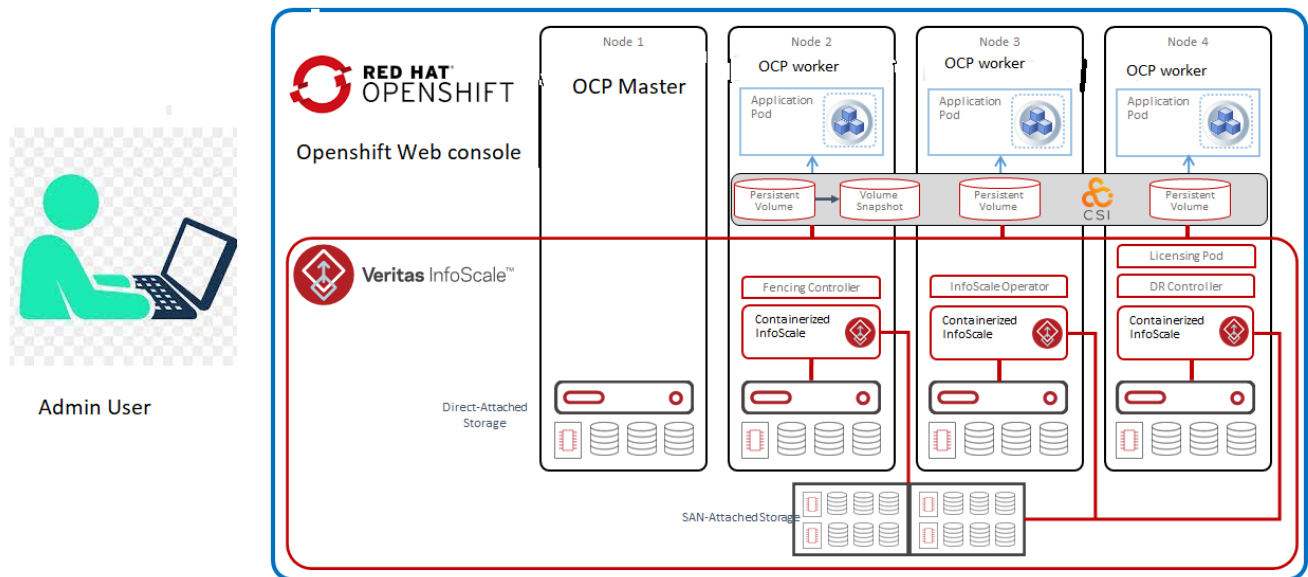
Catalog source is the source which will be used for pulling all the required Infoscale operator and other dependent images. As the Infoscale operator is already published operator, the images are pulled from RedHat Catalog or registry. Therefore it is mandatory to have access to RedHat Registry before deploying infoscale images for published Infoscale operator.

Deployment of Infoscale with Web Console

Infoscale Operator published image is available at OperatorHub on RedHat Openshift Web Console.

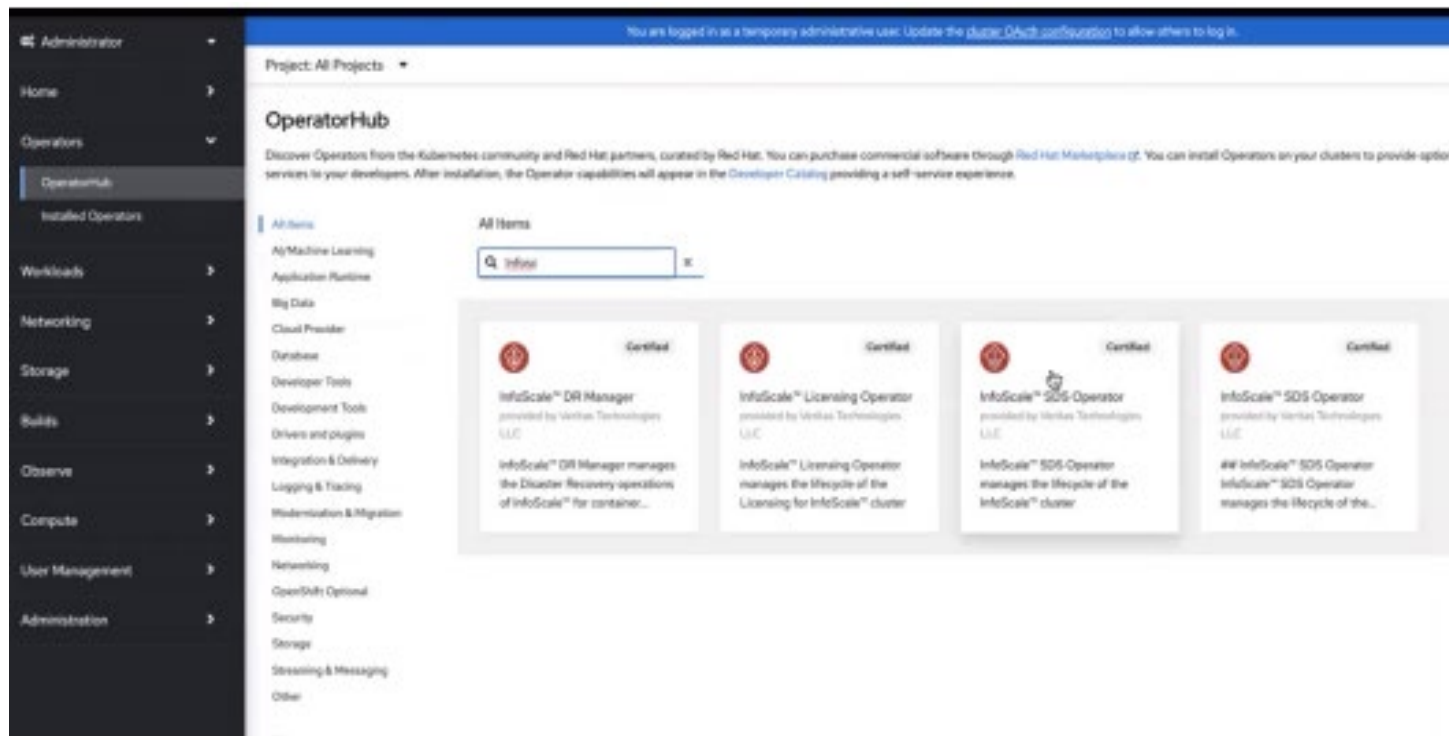
The operator can be installed by searching for it in OperatorHub.

Below diagram briefs about the overall architecture of OLM deployment for infoscale:

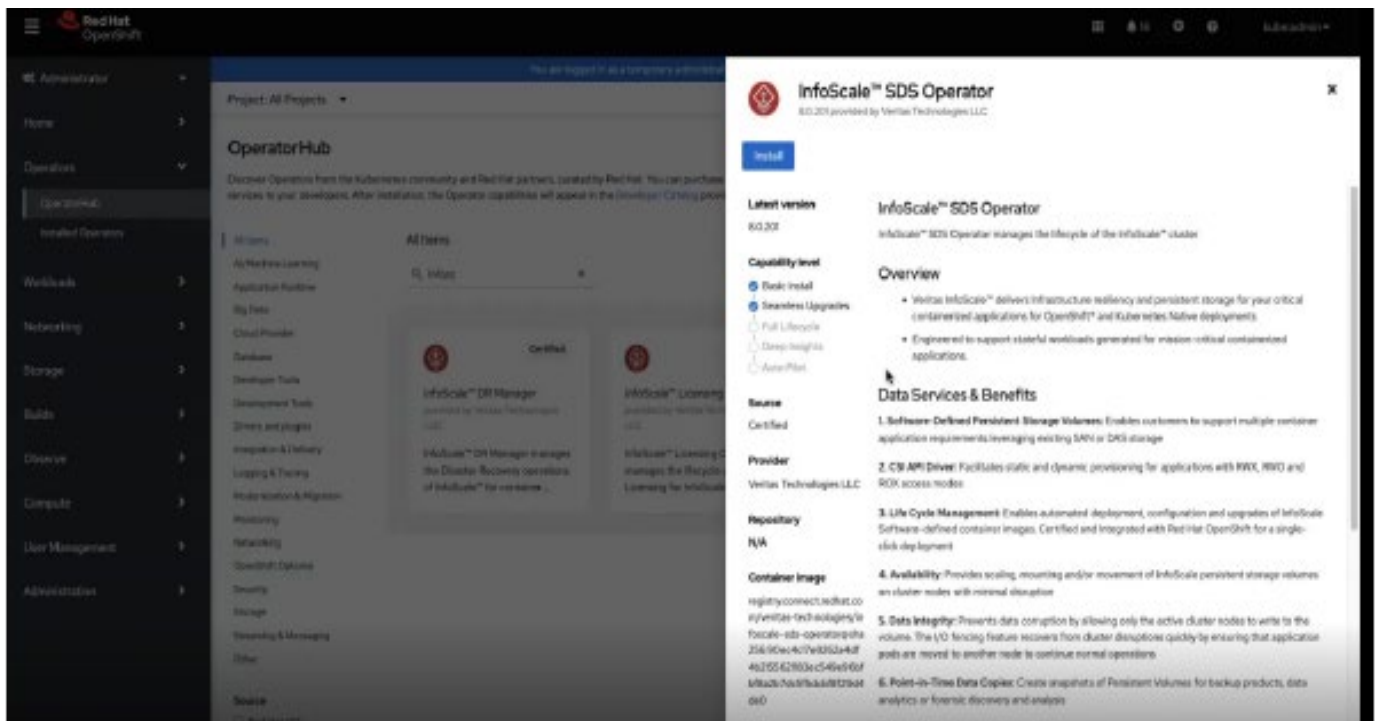


The operator should be installed in recommended namespace by Veritas. By default it will get installed in veritas recommended name space.

It is recommended to install latest Infoscale operator published image for getting up-to-date features and vulnerability fixes. Click on the searched operator and proceed with installation.

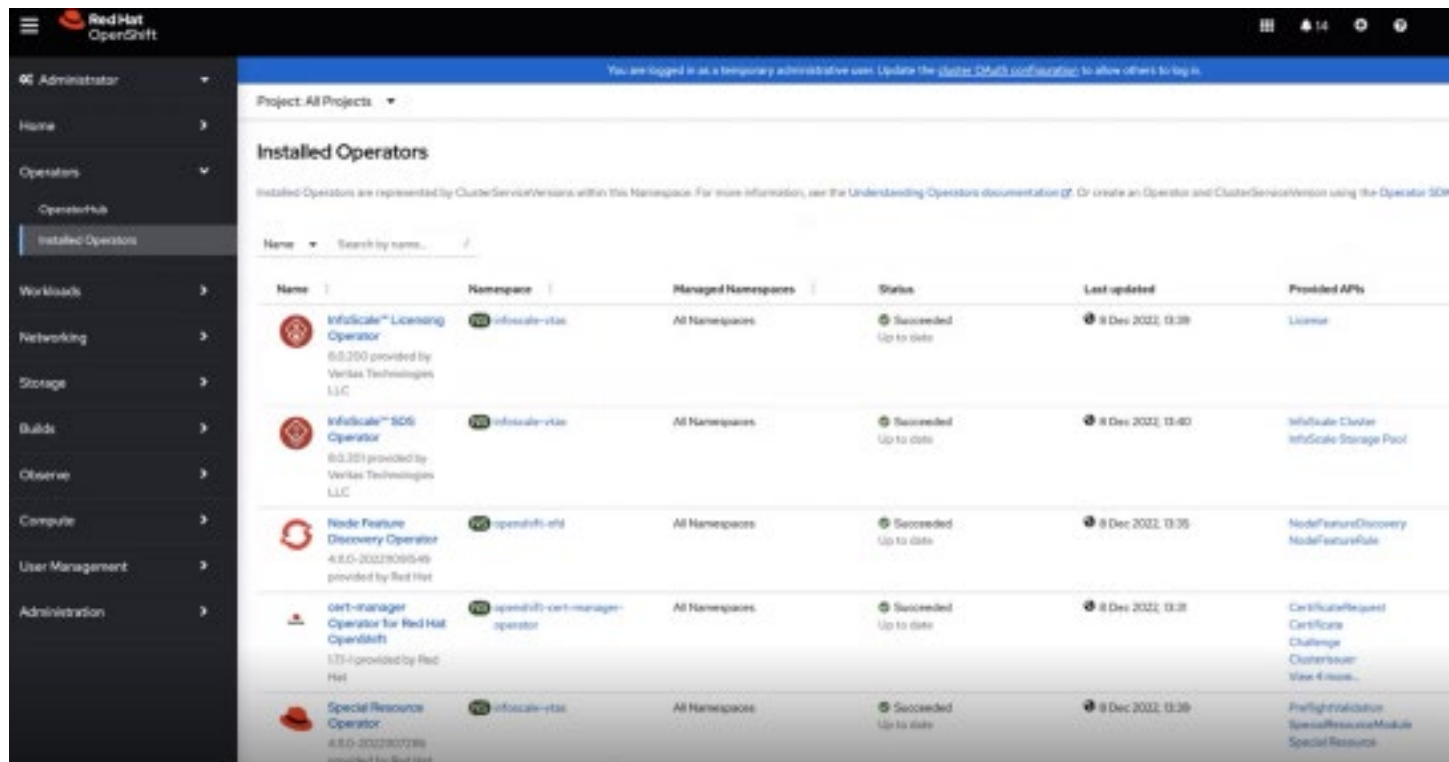


Follow all the steps of installation. Choose manual upgrade plan rather than automatic upgrade. This will avoid automatic upgrade of the operator.



Wait till Operator installation is complete. Special Resource Operator (SRO) ,InfoScale Licensing Operator along with Infoscale operator get installed automatically in the namespace you provide .

Check in the Installed operators, once the Infoscale Operator installation is complete. Infoscale operator should be displayed along with the Special Resource and Infoscale Licensing Operator in the Installed operators.



Create license instance after the infoscale operator installation is complete.

For all the detailed steps ,please refer to the Veritas Infoscale Documentation below,

[Veritas InfoScale™ for Kubernetes Environments 8.0.200 – Linux](#)

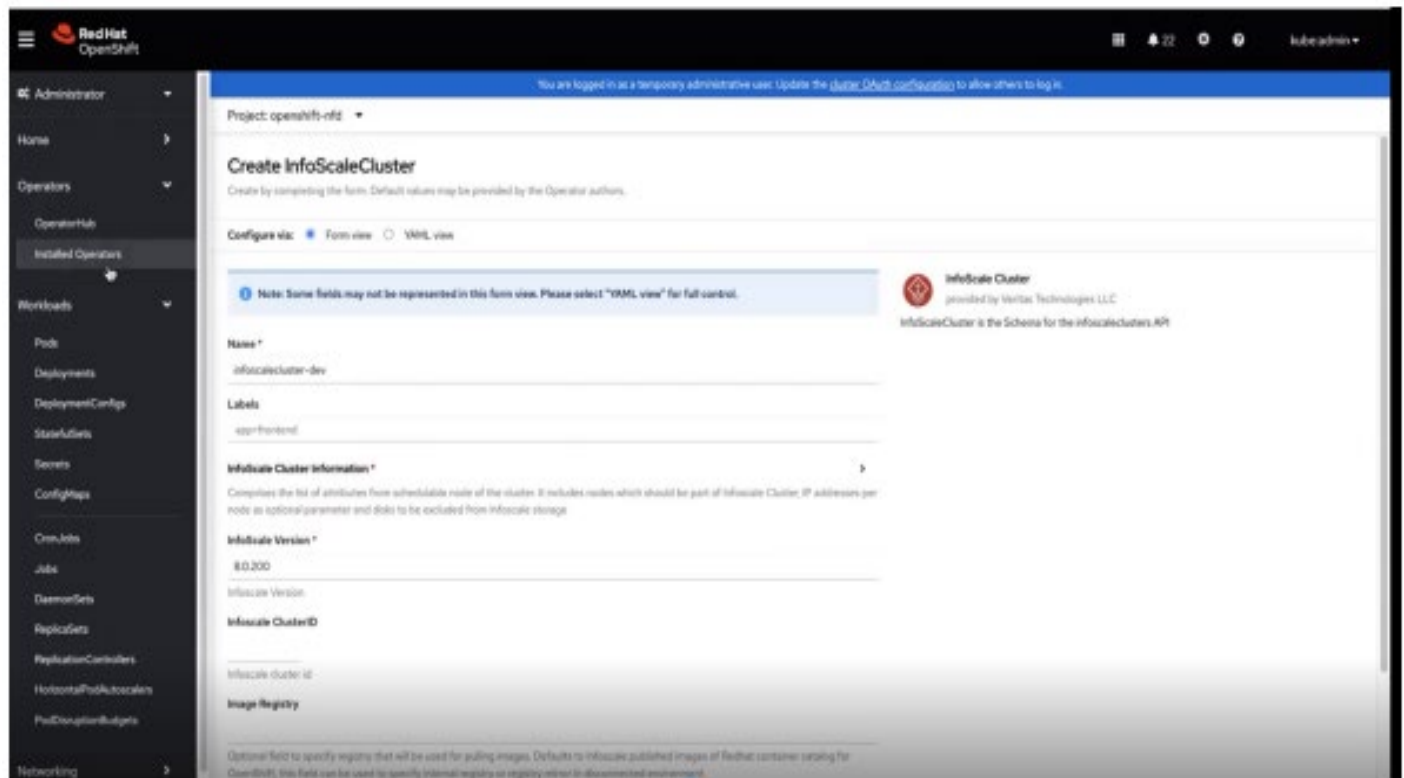
Providing Infoscale Cluster Deployment information:

Once you install the Infoscale operator, you need to create Infoscale Cluster for availing all the Infoscale Enterprise features and services it offers.

When you click on Infoscale Operator from the Installed Operators ,you will get option to create Infoscale Cluster.

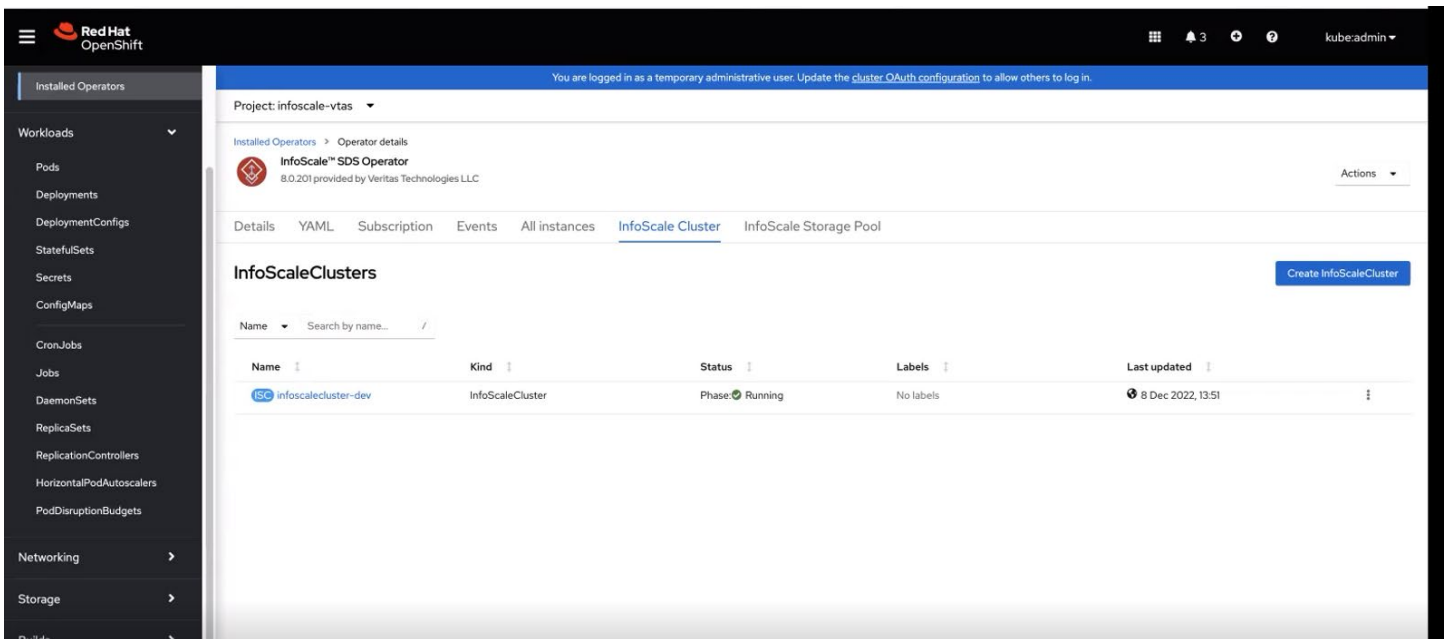
In the Form View, of an Infoscale Operator, provide all the required information to configure the Infoscale Cluster. To know more about how to configure the cluster and provide its information please refer To below documentation,

[Veritas InfoScale™ for Kubernetes Environments 8.0.200 – Linux](#)



The screenshot displays the Red Hat OpenShift web console interface. On the left is a dark sidebar with navigation menus for Administrator, Home, Operators, Workloads, and Networking. The 'Operators' menu is expanded, showing 'OperatorHub' and 'Installed Operators'. The main panel is titled 'Create InfoScaleCluster' and includes a note about the form view. The form contains several fields: 'Name' (infocscalecluster-dev), 'Labels' (app=frontend), 'InfoScale Cluster Information' (a dropdown menu), 'InfoScale Version' (8.0.200), 'InfoScale ClusterID' (infocscale cluster id), and 'Image Registry' (a text field with a note about image pulling). The top of the console shows the project name 'openshift-inf' and a temporary administrative user login.

After successful Infoscale cluster deployment, the cluster state will be in Running State. You can view it On Web console under Infoscale Cluster Tab.



This can be verified with CLI also with oc commands.

oc get infoscalecluster . This will show the state and version of Infoscale Cluster. The state should be Running after successful deployment.

Addition of nodes with OLM :

After configuration of Infoscale cluster , there could be requirement for adding new openshift worker nodes to the existing infoscale cluster for scaling out.This is possible with OLM.

The pre-requisite for this is , the existing Infoscale cluster should be in Running state. To add new nodes to the existing infoscale cluster, click on the right side dropdown menu button. There you will get the option to Edit Infoscalecluster.

After adding the new node or nodes information , save the information. The cluster will get updated with this new nodes.

For more detailed information for adding nodes to existing Infoscale cluster using OLM ,please refer Below link,

[Veritas InfoScale™ for Kubernetes Environments 8.0.200 – Linux](#)

Conclusion:

This document provides the simple approach to configure Infoscale cluster on RedHat Openshift platform using Web console with Operator Lifecycle Manager. The dependencies or the pre-requisites should be checked first and make sure those are available. Other dependencies (like Special Resource Operator, Licensing operator etc..) will be handled during Infoscale operator installation.

Depending upon the need of user, he should configure the Infoscale cluster and the applications on top of it. Infoscale cluster will provide resiliency for the applications. It is suggested to configure the Infoscale in Veritas recommended namespace. The OLM based installation method will help to configure Infoscale and various applications as per enterprise need using RedHat Openshift Web console UI.

References

- [Installing a user-provisioned Red Hat OpenShift cluster on bare metal](#)
- [Veritas InfoScale™ for Kubernetes Environments 8.0.200 – Linux](#)
- [Concepts and resources - Understanding Operators | Operators | OpenShift Container Platform 4.11](#)