

🔷 🛛 Manta Knowledge Base

Manta Knowledge Base / Installation and Upgrade / MANTA Flow Container / MANTA Flow OpenShift Guides

# MANTA Flow on OpenShift Using the Operator (39.x)

## **Overview**

For architecture details on MANTA Flow in Kubernetes, please read MANTA Flow Container Architecture (39.x).

Please note that as of version 39.x.x MANTA Flow container images are now based on RedHat UBI images and are hosted at repo.getmanta.com/manta-ubi8/.

## Prerequisites

- OpenShift CLI (oc) installed: Getting started with the OpenShift CLI OpenShift CLI (oc) | CLI tools | OpenShift Container Platform 4.10
- Valid credentials for the OpenShift cluster
- Valid credentials for the MANTA Docker repository repo.getmanta.com [view link]
- Valid License.key for MANTA Flow

# Log In to the OpenShift Cluster

Log in to http://cloud.ibm.com and go to OpenShift Clusters https://cloud.ibm.com/kubernetes/clusters?platformType=openshift.



Click on the three dots to the right of the cluster that you want to connect, and click *OpenShift Web Console*.

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The OpenShift console will open in a new tab. Click on your account in the upper-right corner, and select *Copy Login Command*.

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A new tab will open. Click on the *Display Token* link, and you should get the following page with the login commands.

← → C 🙃 https://c113-e.eu-de.containers.cloud.ibm.com:30953/oauth/token/display	£'≡	¢	(Not syncing	1) …
Your API token is				
sha256~//TM				
Log in with this token				
oc logintoken-sha256-A lyTNserver+https://ci13-e.eu-de.containers.cloud.ibm.com:31818				
Use this token directly against the API				
curl -H "Authorization: Bearer sha256-Mq-( "https://cll3-e.eu-de.containers.cloud.ibm.com:31818/apis/user.openshift.io/vi/users/~"				
Request another triven				

Copy and paste the oc login .... command to the console.

CODE	Сору
1 oc login	

#### Output:

COD	)E	Сору
1	Logged into "https://c100-e.eu-de.containers.cloud.ibm.com:32625" a	s "IAM#
2		
3	You have access to 64 projects, the list has been suppressed. You c	an list

Now you are logged in to the cluster with the oc CLI.

# Namespace Preparation

Create your own namespace to avoid any collisions with other users/testers.

	CODE	Сору
	<pre>1 oc new-project <namespace></namespace></pre>	
01	use a namespace that has already been created.	
	CODE	Сору
	<pre>1 oc project <namespace></namespace></pre>	

#### Creating Pull Secrets to Pull Container Images from MANTA Repo

Create the secret for pulling images from the MANTA registry.

COD	Е					Сору
1	oc	create	secret	docker-registry	manta-registry-credentials	docker-serve

The secrets above are used to pull all MANTA Flow container images.

#### **Creating Secrets for MANTA Flow**

Create a MANTA Flow secret using the MANTA Flow license.key.

CODE Сору 1 oc create secret generic manta-keys --from-file=<path>/license.key Create a secret with the initial MANTA Flow admin credentials and the MANTA MASTERPASSWORD for the encryption of sensitive data in persistent storage. Use the passwords of your choice. CODE

1 oc create secret generic manta-credentials --from-literal=MANTA\_USER=<mant

Copy

You can verify that the credentials were successfully created.

C	CODE	Сору
:	1 oc get secret	

#### Output:

COD	E	Сору
1	NAME	TYPE
2		
3	manta-credentials	Opaque
4	manta-keys	Opaque
5		
6	manta-registry-credentials	kubernetes.io/dock
7		

Please note that the names of the credentials are different from those in previous versions of MANTA.

# **MANTA Flow Operator Installation**

MANTA provides its operators through an Operator Lifecycle Manager (OLM). Create a catalog source listing the current operator. Create a file with the catalog source and save it as manta-operator-catalog.yaml.

Сору

Сору

CODE

- 1 apiVersion: operators.coreos.com/v1alpha1
- 2 kind: CatalogSource
- 3 metadata:
- 4 name: manta-operator-catalog
- 5 spec:
- 6 displayName: MANTA Operator Catalog
- 7 publisher: MANTA Software
- 8 sourceType: grpc
- 9 image: repo.getmanta.com/manta-ubi8/mantaflow-operator-catalog:v39.0.0
- 10 secrets:
- 11 manta-registry-credentials
- 12 updateStrategy:
- 13 registryPoll:
- 14 interval: 45m

Apply the file.

CODE

1 oc apply -f manta-operator-catalog.yaml

The MANTA Flow operator will appear in OperatorHub.

	Project subject		
	OperatorHub		
	Discover Operators from the K	deemstes community and Perd Hat partners, surabed by Red Hat. 5	ba can purchase commercial software
penetora 👻	through Red Hat Marketplaced developers, After installation 1	Pau can install Operators on your clusters to provide sptional ad the Operator capabilities will appear in the Developer Catalog and it	d-ons and shared services to your drig a set-service experience.
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You might see multiple MANTA operators listed. Please be sure to use the one for the current version. Select the operator and click *Install*.

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		MANTA	Flow Operator *
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		Latest version	MANTA Flow
		0.046	MWOK is a Unified Lineage Platform for Data Lineage MWOR performs code scanning for lineage that
		Capability level	is illustrated to the detailed attribute level with transformations. Ditrame color coding and Fibering to make Ineage consumable. Also includes time-stoing for historical lineage analysis.
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		Seamieus Upgrades	Features
			<ul> <li>Create/Destroy: Launch NAVITA Flow Container deployment.</li> </ul>
		C Deep Insights	<ul> <li>Scaling to serve Scale down the deployment (turn off the container).</li> </ul>
		<ul> <li>Auto Pilot</li> </ul>	
		lource	Prerequisites and Requirements
		MANTA Operator Catalog	MANTA Flow Namespace
		Provider	MANTO, shaulid be installed into its own namespace.
		MANTA Software	For additional installation documentation see a NAVES Flow Container documentation in the NAVES.
		Repository	
		N/A.	MANTA Flow Operator
Paulo		Container Image	The MMNTA Flow Operator is responsible for deployment and management of MMNTA Flow container deployment.

Select the installation mode A Specific Namespace on the Cluster, choose the namespace created for the operator, and click Install.

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C Administrator	Install Operator					
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Wait until MANTA Flow Operator is installed and ready to be used.

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# MANTA Flow Installation by MANTA Flow Operator

#### MANTA Auth

Go to Installed Operators, choose MANTA Flow Operator, then the Manta Auth tab, and click on the button Create MantaAuth. Leave the values as the defaults provided.

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When you click on *Create*, MANTA Auth will be deployed. You will then see your MANTA Auth deployment listed under the *Manta Auth* tab in MANTA Flow Operator. You will see the status *Installing* until the MANTA Auth service is installed.

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## MANTA Flow

Go to Installed Operators, choose MANTA Flow Operator, then the Manta Flow tab, and click on the button Create MantaFlow. Leave the values as the defaults provided.

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	Project adapth •			
	Storoge Class Name			
	brobbs-saten			
	The name of the storage class to be used for persistent volumes.			
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	The version of MANTA Flow to be installed.			
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When you click on *Create*, MANTA Flow will be deployed. You will then see your MANTA Flow deployment listed under the *Manta Flow* tab in MANTA Flow Operator.

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## **Resources Created by MANTA Flow Operator**

Click on the created MANTA Flow deployment (*mantaflow-sample* in this guide), and then select the *Resources* tab. The resources created for MANTA Flow deployment are listed here. Please note that the PVCs and route objects are not listed.

You will see that the pod's status is Pending.

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The pod is waiting for the PVCs to be instantiated. You can check the status of PVCs under Storage | PersistentVolumeClaims. You will get a list of pending PVCs.

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Once all the PVCs are ready, their status will be Bound.

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When you go back to the MANTA Flow resources, you will see that the pod's status is still *Pending.* After few minutes, the pod's status should change to *Running.* This means the MANTA Flow deployment is ready.

You can also check the overall status of MANTA Auth and MANTA Flow under the *All Instances* tab in MANTA Flow Operator.

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# Accessing the MANTA Flow Deployment

MANTA Flow Services – Admin UI, Server, and Keycloak – are exposed through an ingress. You can see the routes defined in the *Routes* section.

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The Location column shows the URLs of the services where you can access MANTA Flow.

Note: You need to append app/# to the Admin GUI URL.

# **Storage Options**

MANTA Flow Operator uses the storage classes provided. Those currently tested are:

- ibmc-block-custom (default)
- ibmc-block-gold
- ibmc-block-silver

All persistent volumes require the access mode RWO-ReadWriteOnce.

Please note that the operator sets IOPS annotations of storage classes to 2000 IOPS. This only works with the ibmc-block-custom storage class. For the other storage classes, the respective IOPS defined by the storage class are set.

# **MANTA Flow Scaling**

#### Horizontal Scaling

Currently, only scaling to zero is supported.

Scaling to zero means that no MANTA Flow containers are running (replicas=0). In such cases, the MANTA Flow container is stopped and deleted and only the persistent volumes hold MANTA Flow deployment data.

To scale down MANTA Flow to zero replicas, please go to the *Manta Flow* tab in MANTA Flow Operator.

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	New • Institutes.			
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Click on your instance of MANTA Flow (mantaflow-sample in our case) and switch to the YAML tab.

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1 replicas: 0

Then, click Save below the code listing.

You can make sure that the MANTA Flow pod has been removed under the Resources tab.

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45 Administrator -	Project marts-dataflaw-sale	jeh2 •		
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Scale MANTA Flow back using a similar approach by setting:

CODE

1 replicas: 1

Once saved, MANTA Flow Operator initiates the creation of a new MANTA Flow container. However, it might take a while.

#### Vertical Scaling

Default resource specifications are provided for all pods when you deploy a CR.

The values can be overridden in the CR for each pod by providing .spec.resources. <container> sections with the respective resource requirements. Please see the examples below containing the default values.

For MantaAuth:

CODE

apiVersion: manta.getmanta.com/v1alpha1 kind: MantaAuth metadata: name: mantaauth-sample spec:

https://knowledgebase.manta.io/kb/manta-flow-on-openshift-using-the-operator-39-x

Сору

6	
7	replicas: 1
8	
9	resources:
10	manta-kevcloak:
11	requests:
12	сри: "500m"
13	memory: "512Mi"
14	limits:
15	cpu: "1"
16	memory: "2Gi"
	memory: Ler

#### For MantaFlow:

## CODE

1	apiVersion: manta.getmanta.com/v1alpha1
2	kind: MantaFlow
3	metadata:
4	name: mantaflow-sample
5	spec:
6	
7	replicas: 1
8	
9	resources:
10	manta-artemis:
11	requests:
12	cpu: "500m"
13	memory: "2Gi"
14	limits:
15	cpu: "1"
16	memory: "4Gi"
17	manta-dataflow:
18	requests:
19	cpu: "3.5"
20	memory: "4Gi"
21	limits:
22	cpu: "7"
23	memory: "16Gi"
24	manta-admin-gui:
25	requests:
26	cpu: "0.1"
27	memory: "512Mi"
28	limits:
29	cpu: "2"
30	memory: "4Gi"
31	manta-configuration-service:
32	requests:
33	cpu: "0.1"
34	memory: "350Mi"
35	limits:
36	cpu: "0.5"
37	memory: "1Gi"
38	manta-flow-agent:
39	requests:
40	memory: "500Mi"
41	cpu: "0.1"
42	limits:
43	memory: "750Mi"
44	cpu: "0.5"

Сору

The snippets above show the internal default values provided by operator when no overrides are present in the CR.

It is possible to override only some of the pods. The default values will be used for the pods that do not have overrides.

When providing overrides, all 4 values requests.cpu, requests.memory, limits.cpu, and limits.memory must be provided for the given pod. There is no merging of the default values and the overrides per pod.

You can either update the values in the OpenShift web interface or by using the oc apply -f ... command.

Copy

# MANTA Flow Upgrade

The upgrades for MANTA Auth and MANTA Flow are done separately. First, upgrade MANTA Auth, then MANTA Flow. (See the instructions below.)

Please note that downgrading to a previous version is not permitted. If you enter a version that is older than the one currently being deployed, the operator will fail to work.

Please back up all persistent volumes before the upgrade.

#### Secret Names

In previous versions of MANTA, the secrets had different names.

Please create the secrets for manta-keys and manta-credentials as described in the section Secret Initialization.

#### MANTA Operator Upgrade

Before upgrading to the new version, it is necessary to upgrade the operator. Go to *Installed Operators*, click on the dot menu for MANTA Flow Operator on the right, and choose *Uninstall Operator*.

Remove the operator catalog for the old version.

#### CODE

1 oc delete catalogsource manta-operator-catalog

Then, install the new catalog and new operator as described in the section MANTA Flow Operator Installation.

## Removal of OpenShift Routes When Upgrading from Version 37.x.x

OpenShift routes were used in previous versions of MANTA Flow. As of 38.x.x, MANTA Flow Operator no longer has access to OpenShift routes and, therefore, the routes have to be removed manually.

Please go to Networking | Routes and delete the following routes.

- manta-auth
- manta-server
- manta-admin

After the upgrade is finished, an ingress controller is created for exposing MANTA Flow services.

Now, you can upgrade MANTA Auth and MANTA Flow.

#### MANTA Auth Upgrade

Please go to Installed Operators and click on MANTA Auth in the Provided APIs column.



You will see the MANTA Auth instance listing.

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Click on *mantaauth-sample* and switch to the *YAML* tab. Change the version to the target version 39.0.0.

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Click Save. MANTA Flow operator will recreate the deployment on the newer version. Switch to the *Events* tab to see the event stating "Upgrading version from x.y.z to 39.0.0".

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#### MANTA Flow Upgrade

Please repeat the steps above for the MANTA Flow resource.

Wait until the upgrades are finished and the MANTA Auth and MANTA Flow resources are back in the *Completed* state.

# **Troubleshooting MANTA Flow Deployment**

To check the logs of a running pod, please use the following command. You have to provide the correct pod ID from the list of oc get pods.

CODE	Сору
1 oc logs <pod id=""></pod>	
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To troubleshoot problems, it is possible to connect to the pod using the command below. You have to provide the correct pod ID from the list of oc get pods.

CODE Copy 1 oc exec -it <pod ID> -- /bin/bash

Then, you are in the container bash and you can check whatever you need to.

#### Troubleshooting Information to Be Provided in MANTA Helpdesk Tickets

If you open a troubleshooting ticket in MANTA Helpdesk, please provide the following.

- 1. Output of oc get pods, pvc, svc, ingress
- 2. Output of oc get pods -o yaml
- 3. Output of oc describe pod <pod> for pods whose state is not Running
- 4. Output of oc logs <pod> for all the pods, with each log provided as a separate file
- 5. MANTA Flow Server logs, which can be obtained by running oc cp mantadataflow:server/logs ./server-logs; the copied directory can be sent as a ZIP or TAR
- 6. MANTA Admin GUI logs, which can be obtained by running oc cp manta-admingui:serviceutility/log ./admin-gui-logs; the copied directory can be sent as a ZIP or TAR

# MANTA Flow Deletion by MANTA Flow Operator

#### Deletion of MANTA Flow

If you need to delete the MANTA Flow deployment, go to the section *Installed Operators* | *MANTA Flow Operator* under the tab *MANTA Flow*, click on the dot menu to the right of the MANTA Flow resource, and choose *Delete MantaFlow*.

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You will be asked for confirmation. Please be careful. Deleting MANTA Flow will also delete volumes with persistent data.



Once you confirm by clicking on Delete, the MANTA Flow resources will be deleted.

## **Deletion of MANTA Auth**

Delete MANTA Auth the same way you deleted MANTA Flow.

# Uninstalling MANTA Flow Operator

To uninstall MANTA Flow Operator, go to *Installed Operators*, click the menu to the right of *MANTA Flow Operator*, and select *Uninstall Operator*.



## Migration from Non-Operator MANTA Deployment

It is possible to migrate MANTA Flow installed by OpenShift manifests to operator deployment. Before doing so, please:

- 1. Make sure you have MANTA Flow version 35.1.0.
- 2. Try to install a new MANTA Flow deployment in a new namespace by operator.
- 3. Make sure you have just one MANTA Flow installed in the namespace.
- 4. Make sure you have made a backup of all persistent storage volumes (PVs).
- When installing MANTA Flow by operator, endpoints are exposed through OpenShift routes and ingress controller is not supported by the operator. Make sure you will not be limited by this.

Then, please do the following.

- Delete OpenShift MANTA Flow resources deployments, services, routes, and ingresses. Do not delete PVCs and PVs.
- Install the operator in the namespace where you had MANTA Flow installed. This namespace should contain the PVCs and PVs.
- 3. Then, install MANTA Flow according to MANTA Flow on OpenShift Using the Operator (35.x).
  - a. Make sure you specify version 35.1.0 for the MANTA Auth and MANTA Flow CRs. The version of MANTA Flow must match the version of the persistent data you have from the non-operator deployment!
  - b. The operator will detect the existing PVs and PVCs and use them when deploying pods; hence, the data from the MANTA Flow deployment you had will be used.

MANTA Flow should be migrated to the operator deployment.

Please note that if you migrate to operator deployment from non-operator deployment, the PVCs and PVs will not be deleted by the operator automatically when deleting the MANTA Flow CRs.

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