

FINDABILITY PLATFORM

FPPredict+

Deployment and Configuration ICP4D

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Version History

Version	Date	Nature of Amendment
1.0	25 th May, 2020	First Version
1.1	23 rd June, 2020	Added Specs, Configuration Parameter details

Definitions, Abbreviations and Acronyms

SL	Term	Description
1	FP	Findability Platform
2	FS	Findability Sciences
3	CSV	Comma Separated Values
4	Training File	A CSV file containing the historical dataset required to train the system and create the models.
5	Target Variable	The variable present in the Training file for which the system is being trained.
6	Prediction File	A CSV file containing the dataset where the values of target variables are to be predicted. Values of the target variable may or may not be known beforehand.
7	Id variable	The variable which is used to uniquely identify the records in the dataset.
8	Models file	System generated models file, which may be used to run prediction only jobs. This file is generated for Modeling only and Modeling and Prediction Jobs.
9	Decile	10 th part of the Results
10	Hits Percent	Percentage of hits for a given decile
11	Random Probability	Probability of finding the hits in the whole data set
12	Lift	Hits Percent / Random Probability
13	Outlier	An outlier is an observation that lies outside the overall pattern of a distribution
14	Binary target variable	Only two unique values present in the target variable.
15	Discrete target variable Case (DTV)	Case where the predicted value must be one of the values present in target variable in training file.
16	Continuous Target variable Case (CTV)	Case where the predicted value can be beyond the values present in target variable in training file.
17	PV	Persistent Volume
18	PVC	Persistent Volume Claim
19	CPD	Cloud Pak for Data

1. Overview

1.1 Intended Audience

This document is intended to cover the configuration for deployment of FP-Predict+ on OpenShift using Operator.

2. System Information

Table 1 - System Information

SNo	Requirement	Value
1	Service / Application Name	FP Predict+
2	Service Version	APR 2020
3	Docker Repo Details	Repo: us.icr.io/findability-sciences/platform-ubi:latest Username: iamapikey Password: qiTtR7cKyDucUZNj7xDh1Cthq2b5uhrntXL5G6EEemN8U

3. System Requirements

Table 2 - System Requirements

SNo	Requirement	Value	Comment
1	Openshift version	3.11+ or 4.3+	
2	CPU (Worker)	4 Cores	May need to be tweaked based on jobs
3	RAM (Worker)	8 Gb	May need to be tweaked based on jobs
4	Storage	50 GB	May need to be tweaked based on jobs
5	Storage Types Supported	NFS and Portworx	These are the storages with which the system. Please note PV must be created before deployment.
6	Number of Replicas	1	System will create only one copy of the container for one deployment.
7	Min Number of Workers	1	Since only one replica will be available for single deployment
8	Cloud Pak for Data Versions Supported	2.5 and 3.0	

4. Deployment prerequisites

Please ensure that you have following utilities install from the machine using which you access and manage the OpenShift cluster

1. oc
2. helm
3. Admin access to the cluster.

Please confirm if all 3 are available, before starting the deployment.

5. Deployment Steps (Using Helm)

1. Add helm repository <https://helmcharts.findabilityplatform.com:4433> with name "fscharts"

- helm repo add fscharts https://helmcharts.findabilityplatform.com:4433
"fscharts" has been added to your repositories

Add charts

2. After adding the charts, change to the project in which CPD is installed.

- oc project zen
Now using project "zen" on server "https://xxx.example.com:6443".

Change project

In the above example, zen is the project where CPD is installed.

3. After adding charts, install chart using "helm", overriding properties based on your deployment of OpenShift and Cloud Pak for Data.

- helm install <instance-name> <chart-name> --set variable=<value1>

Here

1. instance name: fp-predict-plus
2. chart-names: Based on Openshift version, use one of the following:
 - a. "fscharts/fppredict-plus-v1" : In case you have OpenShift 3.11+
 - b. fscharts/fppredict-plus-v2: In case you have OpenShift 4.3+
3. The values that can be overridden, are as follows. In case you don't override, the chart will be deployed using default values.

Table 3 - Chart Values

Sno	Name	Description	Default Value	Comments
1	imagePullConfig.useExistingSecret	Whether to use existing secret instead of creating a new pull secret	Fp-predict-plus-deployment	To be used when you are doing an airgapped deployment by using your own repository

Sno	Name	Description	Default Value	Comments
2	imagePullConfig.secretName	Name of the secret to be used to pull container image	fp-predict-plus-key	Must match the pull secret created for local repository.
3	deploymentConfig.name	Name of the deployment	Fp-predict-plus-deployment	
4	deploymentConfig.container.env.dtvEngineUrl	URL of DTV engine. Pod must be able to access the URL to run DTV jobs, else system will give error "Required component is not available."	http://169.61.73.205/predictionv9	Do not change the value
5	deploymentConfig.container.repoURL	Repository URL of container.	us.icr.io/findability-sciences/platform-ubi:latest	To be changed when deploying container from a local repository
6	deploymentConfig.resources.requests.cpu	Minimum number of cores that can be requested by the container	4	
7	deploymentConfig.resources.requests.memory	Minimum memory that can be requested by the container	8 GB	
8	deploymentConfig.resources.limits.cpu	Maximum number of cores that can be requested by the container	32	
9	deploymentConfig.resources.limits.memory	Maximum memory that can be requested by the container	64 GB	
10	pvcConfig.fsGroup	Group ID of user which has the access to the persistent storage.	5555	Change as per your setup. By default, system requires that we persistent storage should be writable by group id 5555
11	deploymentConfig.icp4dVersion	CPD version you are using	3.0.1	
12	pvcConfig.name	Name of the PVC	fp-predict-plus-pvc	Change in case you want to create a pvc first and then assign it to be used for container.
13	pvcConfig.storage	Storage size requested by the PVC	50Gi	Suggested is 50Gi. Based on your use case, should be updated. Must be less than or equal to the Persistent volume size

Sno	Name	Description	Default Value	Comments
14	pvcConfig.storageClassName	Storage class name with which the pvc is to be created	managed-nfs-storage	If kept empty, will use default storageclass. Please use your default. Make sure the PV allows non root users write privileges on the PV. Supported options are: managed-nfs-storage, portworx-shared-sc, portworx-shared-gp2, portworx-shared-gp3, portworx-shared-sc
15	pvcConfig.useExisting	Allows users to create a PVC first and then use that for the system instead of creating a new PVC during deployment	False	Helps in cases where there are storage classes which automatically provision PV with the correct Privileges. Eg: *-gid classes on IBM cloud. In that case you can create a PVC first, change this value to true and provide the PVC name (#10)
16	routeConfig.host	Host name with which the application is to accessed.	-	Leave it empty if you don't have a Domain available. In that case the URL will be generated automatically
17	routeConfig.routerCanonicalHostname	Hostname of the deployment. This setting will be used to setup the URL, in case host is empty.	<your-router-cannonical-hostname>	Must change the value corresponding to the cluster. If console URL is <u>console-openshift.example.com</u> , this value will be <u>example.com</u>

At the minimum, please update the PVC and routerCanonicalHostname to deploy the container. After changes, press Create.

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In case of air gapped environments, please pull the image in your local container repository using the credentials given in table ["Table 1 - System Information"](#) . Then during helm install override the following properties based on your new deployment:

1. imagePullConfig.useExistingSecret
2. imagePullConfig.secretName
3. deploymentConfig.container.repoURL

After running the command, login to Openshift Console and view list of Pods deployed in Project where CPD is installed.

After this, we may go to Workloads -> Pods and wait for the pod starting with the name you provided in the section above (#3) and wait for it to be ready.

Name ↑	Namespace ↓	Owner ↓	Node ↓	Status ↓	Readiness ↓
fp-predict-plus-operator-bbb6df9fb-k9sq4	test-24-05-2020	fp-predict-plus-operator-bbb6df9fb	10.190.51.158	Running	Ready
platform-deployment-56b59b5796-rd7k7	test-24-05-2020	platform-deployment-56b59b5796	10.190.51.174	Running	ContainersNotReady

Figure 1 - Pod Not Ready

Name ↑	Namespace ↓	Owner ↓	Node ↓	Status ↓	Readiness ↓
fp-predict-plus-operator-bbb6df9fb-k9sq4	test-24-05-2020	fp-predict-plus-operator-bbb6df9fb	10.190.51.158	Running	Ready
platform-deployment-56b59b5796-rd7k7	test-24-05-2020	platform-deployment-56b59b5796	10.190.51.174	Running	Ready

Figure 2 - Pod Ready

After Pod is ready, you can access the application by navigating to the URL present in the route. Make sure you are using the same route that we provided in the previous section (#17).

Name ↑	Namespace ↓	Location ↓	Service ↓	Status
fp-predict-plus-route	test-24-05-2020	https://fp-predict-plus-route-test-24-05-2020.openshift-platform-5fc468809245cf1363c9989f10ab9bfc-0000.us-east.containers.appdomain.cloud/	fp-predict-plus-service	Accepted

Figure 3 - Route and Application URL

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The deployment using helm does create following resources:

1. Kubernetes Deployment
2. Route
3. PVC
4. Service

6. Post Deployment Steps

1. Login into the system with following default credentials:

- URL: <URL got from the route in the previous section>
- Username: admin@findabilityplatform.com
- Password: fppr3dictpLu5

2. Accept the End User License Agreement:

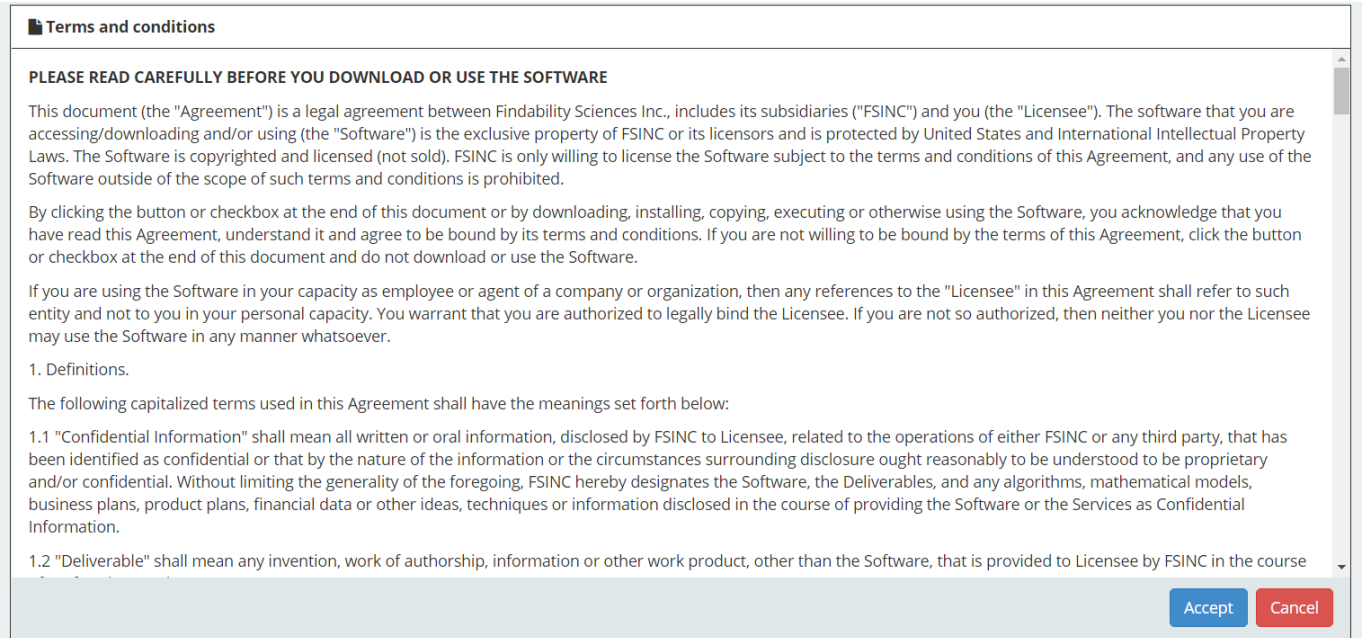


Figure 4 - EULA

3. On the Register instance Page, download and share the system information file with support@findabilitysciences.zendesk.com for getting a license.

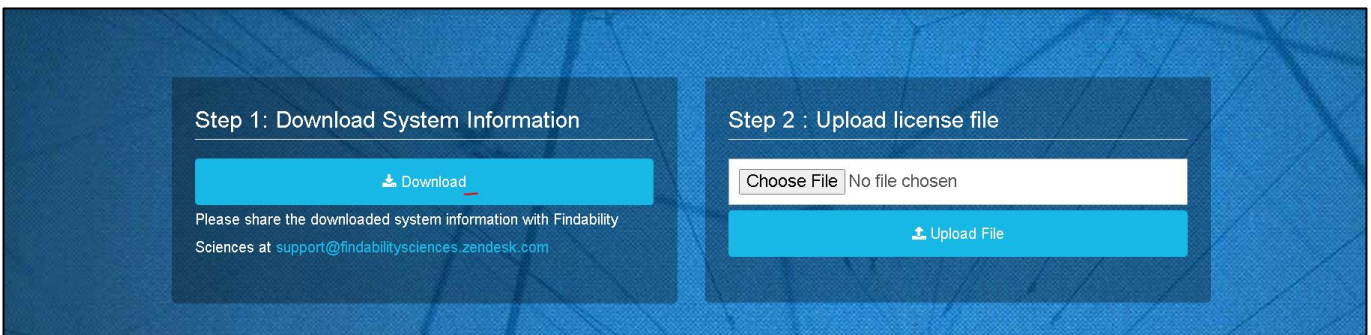


Figure 5 - Download System Information

The Support team will share a license file with you, based on the system information collected, specific to this instance. Apply the license by using the upload license button.

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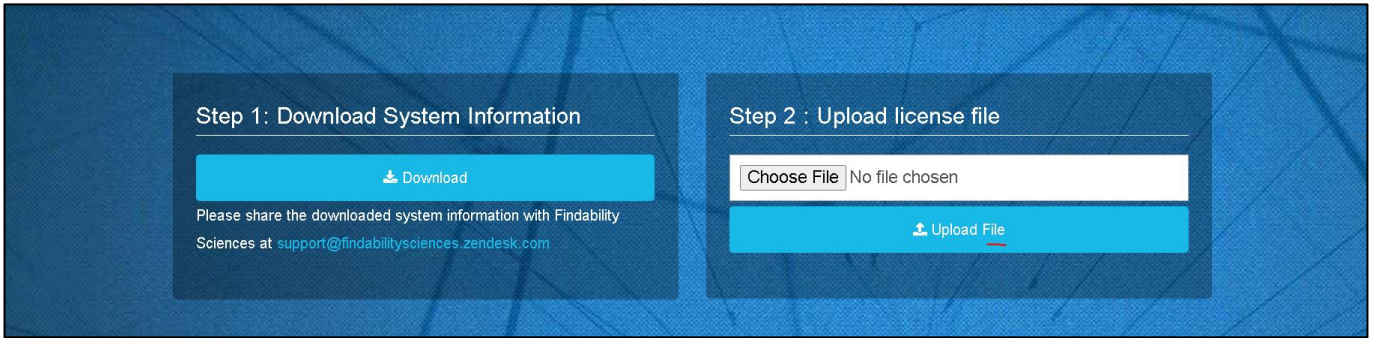


Figure 6 - Upload license

After the license is successfully, applied system will redirect you to the license information page.

Here, you can generate a license key by clicking on generate button:

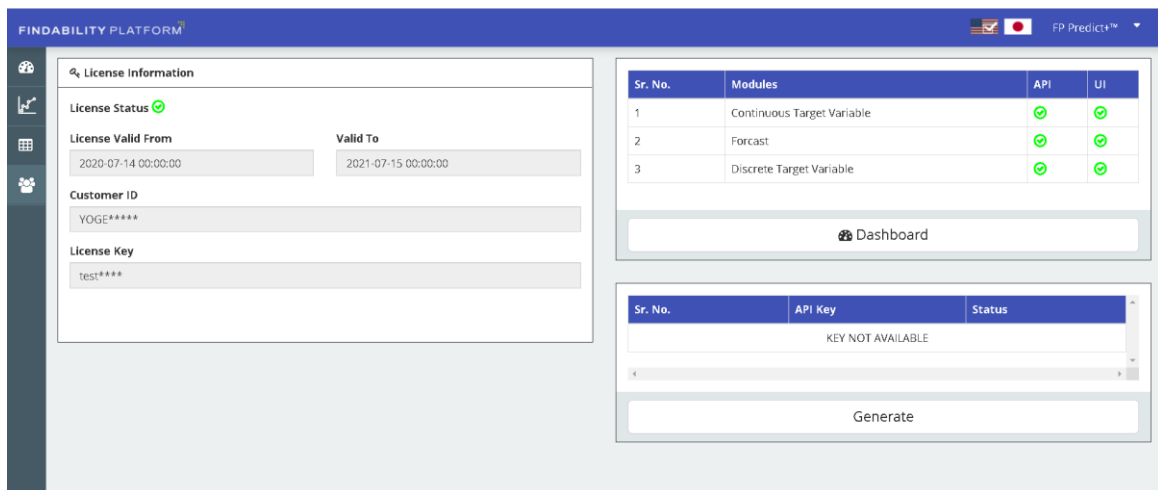


Figure 7 - License Info - Generate key

After clicking the generate button, the license key will be available as follows:

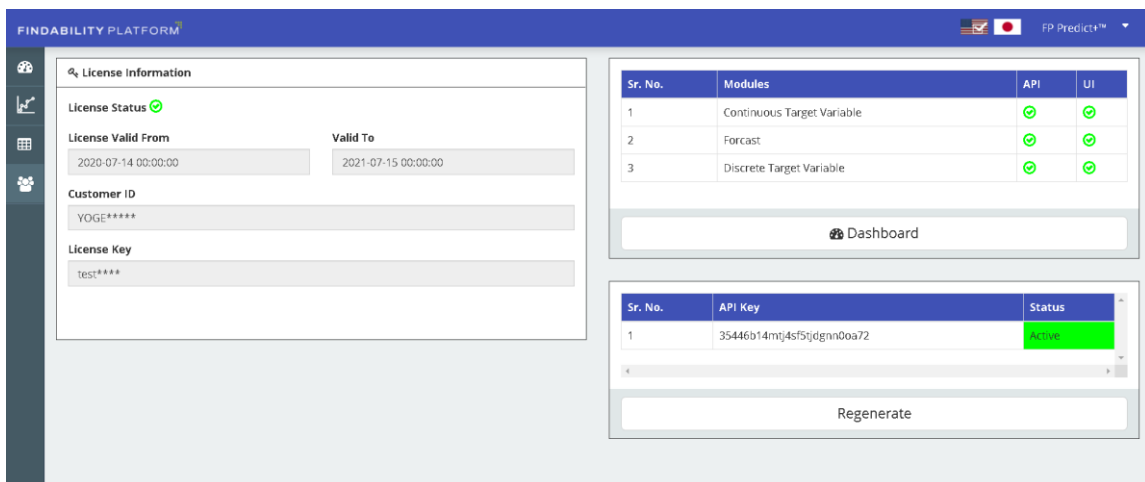


Figure 8 - License Info - View key

After install, please check section “Appendix 6 – Interaction with Cloud Pak for data” in the [User Manual](#).

7. Uninstall Service

1. Select Project in which CPD is installed, using oc

- `oc project zen`
Now using project "zen" on server "https://xxx.example.com:6443".

In the above example, CPD is installed in project "zen".

2. Delete by replacing the instance name with the same name given during deployment. This will take care of removing the resources created during install, including the tile in Cloud Pak for Data.

- `helm delete --purge <instance_name> --tls`