Installing Cloud Pak for Data add-on modules from **OpenShift Client**

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- IBM Cloud Pak for Data add-on modules require master node access to deploy the add-ons.
- Most of the organizations running a OpenShift cluster platform has restriction to log into master node or worker nodes directly. Users are given access only via “oc client” from client machine.
- Here is process for deploying add-on modules via OpenShift client(oc) without logging into master nodes.

Setup OpenShift Client

1. You need mac OS or Linux client machine to install OpenShift CLI

   Go to https://www.okd.io/download.html

   Example download the https://github.com/openshift/origin/releases/download/v3.11.0/openshift-origin-client-tools-v3.11.0-0cbc58b-mac.zipCal

2. Configure OC Client for the OpenShift server

```
$ oc login https://opcluster.demo.ibmcloudpack.com:8443 --token=EFADOOXeiCEqimqFSUFsv5RWxftdqI_uBO8hH7eMGQXnAY

$ oc get nodes

$ oc get pods –all-namespaces
```

The above commands should work and return results

Helm Client Install

1. Download helm tool

$ curl -s https://storage.googleapis.com/kubernetes-helm/helm-v2.9.1-linux-amd64.tar.gz | tar xz

2. Copy the helm too to /bin directory

$ cp -f ./linux-amd64/helm /usr/local/bin/ /usr/bin/

3. Check "helm" version

$ helm version

4. Configure "helm" with OpenShift server

$ oc whoami - find the logged in user (1)

$ oc whoami –t - To find password (2)

$ oc get routes –n default → Find the docker registry url (3)

$ docker login –u openshift –u <password> https://<url from the command 3>

5. List the deployed helm charts in the server

$ oc get pods –all-namespacs | grep tiller

$ export TILLER_NAMESPACE=<namespace> --> Namespace of the tiller running in Server

$ helm list

Example: Screenshot

```
[root@cloudpak-node-4 boa]# oc whoami
ocadmin
[root@cloudpak-node-4 boa]# oc whoami -t
xSRAQCTwOR31xz8-qqjSITA-wGMwwoIxNZI1pIHYOnc
[root@cloudpak-node-4 boa]# oc  get routes -n default
NAME               HOST/PORT                                                PATH      SERVICES           PORT      TERMINATION   WILDCARD
docker-registry    docker-registry-default.apps.boa2102.demo.ibmcloudpack.com             docker-registry    <all>     passthrough   None
registry-console   registry-console-default.apps.boa2102.demo.ibmcloudpack.com            registry-console   <all>     passthrough   None
[root@cloudpak-node-4 boa]# docker login -u openshift -p xSRAQCTwOR31xz8-qqjSITA-wGMwwoIxNZI1pIHYOnc https://docker-registry-default.apps.boa2102.demo.ibmcloudpack.com
WARNING! Using --password via the CLI is insecure. Use --password-stdin.
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
[root@cloudpak-node-4 boa]# oc get project
NAME                              DISPLAY NAME          STATUS
ai-lax                            Laxman's AI Project   Active
artifactory-oss                                         Active
cp4d-lax                                                Active
default                                                 Active
glusterfs                                               Active
kube-public                                             Active
kube-service-catalog                                    Active
kube-system                                             Active
lax-ai                                                  Active
management-infra                                        Active
openshift                                               Active
openshift-ansible-service-broker                        Active
openshift-console                                       Active
openshift-infra                                         Active
openshift-logging                                       Active
openshift-monitoring                                    Active
openshift-node                                          Active
openshift-sdn                                           Active
openshift-template-service-broker                       Active
openshift-web-console                                   Active
[root@cloudpak-node-4 boa]# oc get pods --all-namespaces | grep tiller
cp4d-lax                          tiller-deploy-f6c55b6fc-8p7h6                    1/1       Running     0          4d
[root@cloudpak-node-4 boa]# export TILLER_NAMESPACE=cp4d-lax
[root@cloudpak-node-4 boa]#
```

```
[root@cloudpak-node-4 boa]# helm list
NAME                    REVISION        UPDATED                         STATUS          CHART                   NAMESPACE
cp4d-lax-0005-boot      2               Wed Sep 11 21:00:40 2019        DEPLOYED        0005-boot-0.0.3         cp4d-lax
cp4d-lax-0010-infra     2               Wed Sep 11 21:00:43 2019        DEPLOYED        0010-infra-0.0.3        cp4d-lax
cp4d-lax-0015-setup     2               Wed Sep 11 21:00:47 2019        DEPLOYED        0015-setup-0.0.3        cp4d-lax
cp4d-lax-0020-zenbase   2               Wed Sep 11 21:00:57 2019        DEPLOYED        zen-base-0.0.3          cp4d-lax
cp4d-lax-0040-dsxbase   2               Wed Sep 11 21:01:07 2019        DEPLOYED        0040-dsx-base-0.0.3     cp4d-lax
cp4d-lax-0050-jupyter   2               Wed Sep 11 21:01:55 2019        DEPLOYED        ibm-jupyter-py36-0.0.3  cp4d-lax
cp4d-lax-0190-shaper    1               Fri Sep 13 14:18:40 2019        DEPLOYED        ibm-ws-shaper-0.0.1     cp4d-lax
cp4d-lax-dv-addon       1               Fri Sep 13 15:39:25 2019        DEPLOYED        dv-addon-0.1.0          cp4d-lax
cp4d-lax-ibm-daas       2               Wed Sep 11 21:01:59 2019        DEPLOYED        daas-0.13.19            cp4d-lax
cp4d-lax-ibm-iisee      1               Wed Sep 11 21:02:08 2019        DEPLOYED        ibm-iisee-zen-1.0.1     cp4d-lax
cp4d-lax-wml            1               Fri Sep 13 14:35:11 2019        DEPLOYED        ibm-wml-prod-1.4.0      cp4d-lax
[root@cloudpak-node-4 boa]#
```

Configure secrets

1. Find the secret created by docker login, ensure they are not expired

$ docker login –u openshift –p <password> https://<registry url>

$ oc get secrets

example: sa-cp4d-lax

*Note: secret **sa-<namespace>** is created when you run the "deploy.sh" first time. It might fail first time, But try again*

2. Check your secret is linked to sa default for image pull

$ oc describe sa default

3. Add "sa-cp4d-lax" under "image pull secrets"

$ oc edit sa default

```
[root@cloudpak-node-4 boa]# oc get secrets
NAME                                    TYPE                                  DATA      AGE
builder-dockercfg-nsqpb                 kubernetes.io/dockercfg               1         4d
builder-token-6ct68                     kubernetes.io/service-account-token   4         4d
builder-token-rs2m4                     kubernetes.io/service-account-token   4         4d
cloudant-secrets                        Opaque                                2         4d
cp4d-lax-ibm-daas-daas-secret           Opaque                                3         4d
cp4d-lax-ibm-daas-daas-self-signed-cert kubernetes.io/tls                     2         4d
default-dockercfg-kfpdx                 kubernetes.io/dockercfg               1         4d
default-token-n5x9p                     kubernetes.io/service-account-token   4         4d
default-token-whntj                     kubernetes.io/service-account-token   4         4d
deploy-secrets                          Opaque                                1         2d
deployer-dockercfg-9h9w4                kubernetes.io/dockercfg               1         4d
deployer-token-d2shc                    kubernetes.io/service-account-token   4         4d
deployer-token-xpv97                    kubernetes.io/service-account-token   4         4d
dsx-influxdb-auth                       Opaque                                6         4d
etcd-secret                             Opaque                                3         2d
fast-analyzer                           Opaque                                2         4d
icp4d-anyuid-docker-pull                kubernetes.io/dockerconfigjson        1         4d
icpd-anyuid-sa-dockercfg-hdmpq          kubernetes.io/dockercfg               1         4d
icpd-anyuid-sa-token-2t86r              kubernetes.io/service-account-token   4         4d
icpd-anyuid-sa-token-mhh2m              kubernetes.io/service-account-token   4         4d
online-scoring-secret                   Opaque                                2         2d
repo-secrets                            Opaque                                4         2d
sa-cp4d-lax                             kubernetes.io/dockerconfigjson        1         2d
ssl-secret                              Opaque                                3         2d
tiller-dockercfg-mg8g6                  kubernetes.io/dockercfg               1         4d
tiller-token-hqmz2                      kubernetes.io/service-account-token   4         4d
tiller-token-q7w8g                      kubernetes.io/service-account-token   4         4d
wmlproxy-icp-certs                      kubernetes.io/tls                     2         2d
zen-service-broker-secret               Opaque                                1         4d
```

```
[root@cloudpak-node-4 boa]# oc describe sa default
Name:                default
Namespace:           cp4d-lax
Labels:              <none>
Annotations:         <none>
Image pull secrets:  default-dockercfg-kfpdx
                     icp4d-anyuid-docker-pull
                     sa-cp4d-lax
Mountable secrets:   default-token-n5x9p
                     default-dockercfg-kfpdx
Tokens:              default-token-n5x9p
                     default-token-whntj
Events:              <none>
[root@cloudpak-node-4 boa]#
```

Extract Cloud Pak for Data Installer

- Download the CloudPak for Data installer to /ibm directory in your client machine (Laptop or any client machine)
- Run installer with “—extract-only” option

  $ ./installer.x86_64.520. --extract-only

  We will be using the **/ibm/InstallPackage/component/Deploy.sh** for deploying the add-on modules to Cloud Pak for Data running on OpenShift Cluster

Install Add-on modules

1. Download the modules to /ibm/modules directory in your oc client machine

   $ cd /ibm/modules

   $ wget http://ibm-open-platform.ibm.com/repos/ICP4D/v2.1.0.1/x86_64/GA/db2_zos_connector.tar

2. Run the deployment

   $ cd /ibm/InstallPackage/components

   $ ./deploy.sh –o –d /ibm/modules/<module file name>

   example: $./deploy.sh -o -d /ibm/modules/db2_zos_connector.tar

3. Now the add-module is deployed successfully, You can check the status by checking the helm chart status & pods

   $ helm list

   $ oc get pods –n <namespace>