**Exporting and importing Cloud Pak for Data**

This document describes how to migrate Cloud Pak for Data control plane metadata from one Cloud Pak for Data 2.5 cluster to another by using the cpdtool command line tool.

Requirements

You must meet the following requirements before you can export and import Cloud Pak for Data metadata.

* The persistent volume *user-home-pvc* must be available, and it must be owned by *zensys* user.
* The three metastore pods *zen-metastoredb-0*, *zen-metastoredb-1*, and *zen-metastoredb-1* must be up and running.
* The *zen* database must exist.
* The CloudantDB/Apache CouchDB pod must be up and running.
* You must have a clean target cluster.
  + In the *user-home* PVC, 1000330998 (isadmin user) and 1000330999 (admin user) must be the only two users, and they must each own their folder privileges. The remaining PVCs must be owned by the *zensys* user, including the /user-home itself.
  + For the *metastoredb/CockroachDB*, the *connection\_user\_projects*, *connection\_users*, and *connections* tables must not hold any content. Issuing SQL statements in the CockroachDB is required to confirm that this criterion is met.
* You must create a new target PV/PVC. The exported content, which includes tar files for both *user-home-pvc*, CloudantDB/CouchDB, and CockroachDB SQL insertion statements, is saved in this target.

What is exported/imported

The following Cloud Pak for Data control plane content is exported/imported:

* For *user-home-pvc*, the Cloud Pak for Data control plane exports/imports the JDBC drivers under the global libraries (the \_ global\_ folder) and encrypted key for each user.
* The Cloud Pak for Data control plane exports/imports the four connection tables *connection\_types*, *connection\_user\_projects*, *connection\_users*, and *connections* from the zen database in the metastoredb (CockroachDB).
* The Cloud Pak for Data control plane exports/imports user management profiles in the Apache CouchDB, which includes users, roles, LDAP configurations, and the *deployment\_metrics*, *privatecloud-users*, *privatecloud-config.json*, and *user\_roles* databases.

Installing cpdtool

For information about installing cpdtool, see the following IBM Knowledge Center topic: https://www.ibm.com/support/knowledgecenter/SSQNUZ\_2.5.0/cpd/admin/backup\_restore.html.

Export and import Cloud Pak for Data control plane metadata

1. Run the following commands to export:
   1. cpdtool export list –n <namespace>  
      For example, cpdtool export list -n zen
   2. cpdtool export create -n <namespace> <your\_export\_name>  
      For example, cpdtool export create -n zen myexport1
   3. cpdtool export status -n <namespace> <your\_export\_name>  
      For example, cpdtool export status -n zen myexport1
   4. cpdtool export download -n <namespace> <your\_export\_name>  
      For example, cpdtool export download -n zen myexport1
   5. ls -ltr \*.tar
   6. tar tvf cpd-exports-<your\_export\_name>-<time\_stamp>-data.tar  
      For example, tar tvf cpd-exports-myexport1-20191113002154-data.tar
2. Transfer the tar file to your target cluster.  
   For example, scp cpd-exports-myexport1-20191113002154-data.tar root@<your\_new\_cluster>:/tmp
3. Run the following commands to import:
   1. cpdtool export upload -n <namespace> -f cpd-exports-<your\_export\_name>-<time\_stamp>-data.tar  
      For example, cpdtool export upload -n zen -f cpd-exports-myexport1-20191113002154-data.tar
   2. cpdtool import list -n <namespace>  
      For example, cpdtool import list -n zen
   3. cpdtool import create -n <namespace> --from-export <your\_export\_name> <your\_import\_name>  
      For example, cpdtool import create -n zen –from-export myexport1 myimport1
   4. cpdtool import status -n <namespace> <your\_import\_name>  
      For example, cpdtool import status -n zen myimport1

\*Note that cpdtool can do only one import at a time.

1. Clean up and delete jobs:
   1. cpdtool export delete -n <namespace> <your\_export\_name>
   2. cpdtool import delete -n <namespace> <your\_import\_name>
2. Clean up and delete the exported data:

cpdtool export purge -n <namespace> --retention-time 720h  
720h is 720 hours, which is the equivalent of one month.

1. To work with a different pvc or if the CPD admin credentials have changed:
   1. cpdtool reset -n <namespace> -u <admin-username> -p <admin-password>
   2. cpdtool init -n <namespace> --pvc-name <pvc-name> -u <admin-username> -p <admin-password> --image-prefix=*docker-registry.default.svc:5000/<namespace>*

Troubleshooting

All logging information is saved in the cpdtool.log in your working directory.

1. Navigate to your working deployment directory.  
   For example, cd tmptest.
2. Open the cpdtool log file.  
   For example, vi cpdtool.log

If there is an import failure, the system admin must roll back to the previous state. Otherwise, the import will remain in failure because the system is no longer in a "clean" stage.  
For the meta-store/CockroachDb, you are required to:

1. Login the target cluster, and issue the following commands on the terminal:
   1. oc login -u ocadmin -p <ocadmin-password>
   2. oc project <namespace>
   3. oc -n <namespace> get pods | grep meta
   4. oc exec -it -n <namespace> <meta\_store\_pod> -- bash
2. Inside the meta-store/CockroachDb pod:
   1. /cockroach$ cp -r /certs/ /tmp/ ; cd /tmp/ && chmod -R 0700 certs/
   2. /cockroach$ ./cockroach sql --database=zen --certs-dir=/tmp/certs/ --host=zen-metastoredb-0.zen-metastoredb
3. Login the zen database.
4. Inside the *zen* database:
   1. /zen> SELECT COUNT(\*) FROM connections
   2. Delete any existing record(s), if the number of records in the *connections* table is not equal to zero.
   3. /zen> DELETE FROM connections WHERE id = 'to\_be\_deleted\_id'
   4. Perform the same exercise for both the *connection\_user\_projects* and *connection\_users* tables.
   5. Repeat step 4a to confirm that all the connections tables are clean.

For the Apache CouchDb, you are required to:

1. Obtain your admin password
   1. oc -n <namespace> get pods | grep couch
   2. oc exec -it -n <namespace> <your\_couchdb\_pod> -- bash
   3. echo $COUCHDDB\_PASSWORD
2. Login the CouchDb console as the admin.
3. Navigate to the privatecloud-users database.
4. Delete any user that is not an admin or isadmin.

For the user-home PVC, you are required to:

1. Login the target cluster, and issue the following commands on the terminal:
   1. oc login -u ocadmin -p <ocadmin-password>
   2. oc project <namespace>
   3. oc -n <namespace> get pods | grep user
   4. oc exec -it -n <namespace> <your\_user\_management\_pod> -- bash
2. Inside the user management pod:
   1. Navigate to the /user-home folder:  
      cd /user-home/
   2. List all the files:  
      ls -l
   3. Delete any user that is not 1000330998 (isadmin user) and 1000330999 (admin user).