

(Preferred method) - Automated Verification Steps executed by OAM REXX tool:

- 1) Download CATDB2CP.REXX and CATSRCHI.REXX
- 2) Download CATDB2CP tool instructions.docx and follow the instructions therein.

(Optional Method) - Manual Verification Steps:

- 1) Execute an IDCAMS print of the catalog that contains collection entries for OAM

```
//STEP1 EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//INDD DD DSN=oamcollectionentrycatalog,DISP=SHR
//SYSIN DD *
PRINT INFILE(INDD)
```

- 2) Issue a SELECT via SPUFI of all the entries in the OAM collection identifier table

```
SELECT * FROM OAMADMIN.CBR_COLLECTION_TBL;
```

- 3) Find and note all the collection entry names in the catalog, as well as the collection id for each entry. An example layout of a collection catalog entry:

[illegible]

```
Collection Name at offset x'9 (up to 44 bytes, padded right with blanks) : COLL00
Collection ID at offset x'7C (4 bytes, padded left with zeroes) : 00000001
Storage Class at offset x'3C (up to 8 bytes) : DASDSC
Management Class at offset x'46 (up to 8 bytes) : DASD30
Storage Group at offset X'82 (up to 8 bytes) : GROUP00
```

Note: The offsets indicated above are NOT fixed in each IDCAMS PRINT of a collection entry. The storage class, management class and storage group name may be located at a different offset in each entry. For this reason, we recommend using the provided tool to automatically determine the discrepancies, rather than these manual steps.

Note: The collection ID noted above is surfaced in hexadecimal. You will need to convert this to decimal before comparing to the ODCLID field in the DB2 collection identifier table as that field is stored in decimal.

- 4) With the list of each collection name/collection ID pair from the catalog, compare each catalog entry to one another, as well as to the contents of the DB2 collection identifier table (ODCLNAME, ODCLID).

Although there may be additional discrepancies, the two that have been seen and noted to affect access to object data after OA51129 is applied are when:

- a) One or more collection names exist in the catalog that are not present in the DB2 collection identifier table

- If this condition is present, take the following actions:

- 1) If the collection is no longer in use in OAM (and no objects reside in OAM that belong to this collection), no action is needed.
- 2) If the collection is still used by OAM, verify that the collection ID associated with that collection in the catalog DOES NOT exist in the DB2 collection identifier table.

a) If the collection ID does not exist in the DB2 collection identifier table, use the information in the catalog entry to re-create that collection's entry in the DB2 collection identifier table using SPUFI. For example:

```
INSERT INTO OAMADMIN.CBR_COLLECTION_TBL  
VALUES('storclas','mgmtclas','stogroup',collid,'collectionname');
```

b) If the collection ID does already exist in the DB2 collection identifier table, check to see if the next condition is present.

b) More than one collection name that exists in the catalog has the same collection id

-If this condition is present, do the following:

- 1) Check the DB2 collection identifier table to see which collection is present in the table and verify the ODCLID is correct. Note: both collections may be present in the table.
- 2) Check both of the catalog entries to determine which Object Storage Group is associated with each collection name. In the example provided in Step 3 above, the Object Storage Group is GROUP00.
- 3) Proceed to the fix action that describes the condition present. If both collections are present in the table, proceed to the fix actions in Step 4.
 - a) If the Object Storage Groups are different and OA51129 is applied, proceed to FIX#1
 - b) If the Object Storage Groups are different and OA50220 is applied, proceed to FIX#2.
 - c) If the Object Storage Groups are different and OA50220 is NOT applied, proceed to FIX#3.
 - d) If the Object Storage Groups are the same and OA51129 is applied, proceed to FIX#4
 - e) If the Object Storage Groups are the same and OA50220 is applied, proceed to FIX#5.
 - f) If the object Storage Groups are the same and OA50220 is NOT applied, proceed to FIX#6.
- 4) If both collections are present in the table, proceed to the fix action that describes the condition present.
 - g) If the Object Storage Groups are different and OA51129 is applied, proceed to FIX#7.
 - h) If the Object Storage Groups are the same and OA51129 is applied, proceed to FIX#8.

(Note: If you would like assistance in correcting this synchronization issue, you may open a CASE)

FIX SCENARIOS

FIX#1 (Each collection with identical ids belongs to a different Object Storage Group and OA51129 is applied)

Two collections in the catalog that have identical collection ids belong to different Object Storage Groups. For example, if collections COLL00 and COLL01 have the same collection id (1) but COLL00 belongs to GROUP00 and COLL01 belongs to GROUP01, the following steps should be taken to resolve the issue:

a) Use SPUFI to create an entry in the DB2 collection name identifier table for COLL00 using the storage class, management class, and storage group information from the COLL00 catalog entry and assign a new ODCLID, where the new ODCLID is the new largest ODCLID in the DB2 collection name identifier table.

For example:

```
INSERT INTO OAMADMIN.CBR_COLLECTION_TBL  
VALUES('DASDSC','DASD30','GROUP00',2,'COLL00');
```

Note: in this sample, collection id 2 is used as it is the largest, unused id in the DB2 collection identifier table

b) Use SPUFI to update the DB2 object directory table, 4k, 32k, and LOB tables, updating all entries in the Object Storage Group associated with COLL00 where ODCLID/OTCLID = 1 to ODCLID/OTCLID =2.

Example directory update

```
UPDATE GROUP00.OSM_OBJ_DIR  
SET ODCLID = 2  
WHERE ODCLID = 1;
```

Example of update for 4k table:

```
UPDATE GROUP00.OSM_04K_OBJ_TBL  
SET OTCLID = 2  
WHERE OTCLID = 1;
```

Example of update for 32k table:

```
UPDATE GROUP00.OSM_32K_OBJ_TBL  
SET OTCLID = 2  
WHERE OTCLID = 1;
```

Example of update for LOB table:

```
UPDATE GROUP00.OSM_LOB_BASE_TBL  
SET OTCLID = 2  
WHERE OTCLID = 1;
```

c) The objects in collection COLL00 should now be accessible.

FIX#2 (Each collection with identical ids belongs to a different Object Storage Group and OA50220 is applied)

Two collections in the catalog that have identical collection ids belong to different Object Storage Groups. For example, if collections COLL00 and COLL01 have the same collection id (1) but COLL00 belongs to GROUP00 and COLL01 belongs to GROUP01, the following steps should be taken to resolve the issue:

a) Use SPUFI to create an entry in the DB2 collection name identifier table for COLL00 using the storage class, management class, and storage group information from the COLL00 catalog entry and assign a new ODCLID, where the new ODCLID is the new largest ODCLID in the DB2 collection name identifier table.

For example:

```
INSERT INTO OAMADMIN.CBR_COLLECTION_TBL  
VALUES('DASDSC','DASD30','GROUP00',2,'COLL00');
```

Note: in this sample, collection id 2 is used as it is the largest, unused id in the DB2 collection identifier table

b) Use IDCAMS to delete the catalog entry for COLL00.

```
//STEP1      EXEC PGM=IDCAMS  
//SYSPRINT DD  SYSOUT=*  
//SYSIN      DD  *  
              DELETE -  
              COLL00 -  
              PURGE -  
              NOSCRATCH
```

Note: after this is done, the objects in collection COLL00 will not be accessible until all the steps are completed

c) Use SPUFI to update the DB2 object directory table, 4k, 32k, and LOB tables, updating all entries in the Object Storage Group associated with COLL00 where ODCLID/OTCLID = 1 to ODCLID/OTCLID =2.

Example directory update

```
UPDATE GROUP00.OSM_OBJ_DIR  
SET ODCLID = 2  
WHERE ODCLID = 1;
```

Example of update for 4k table:

```
UPDATE GROUP00.OSM_04K_OBJ_TBL  
SET OTCLID = 2  
WHERE OTCLID = 1;
```

Example of update for 32k table:

```
UPDATE GROUP00.OSM_32K_OBJ_TBL  
SET OTCLID = 2  
WHERE OTCLID = 1;
```

Example of update for LOB table:

```
UPDATE GROUP00.OSM_LOB_BASE_TBL
SET OTCLID = 2
WHERE OTCLID = 1;
```

d) Issue an OSREQ RETRIEVE for one of the objects in collection COLL00

Note: this should cause OAM to create a catalog entry for COLL00 with the new information from the DB2 collection identifier table (storage class, management class, storage group, collection id)

e) The objects in collection COLL00 should now be accessible after OA51129 is applied.

FIX#3 (Each collection with identical ids belong to a different Object Storage Group and OA50220 is NOT applied)

Two collections in the catalog that have identical collection ids belong to different Object Storage Groups and OA50220 is NOT applied. For example, if collections COLL00 and COLL01 have the same collection id (1) but COLL00 belongs to GROUP00 and COLL01 belongs to GROUP01, the following steps should be taken to resolve the issue:

a) Use SPUFI to create an entry in the DB2 collection name identifier table for COLL00 using the storage class, management class, and storage group information from the COLL00 catalog entry and assign a new ODCLID, where the new ODCLID is the new largest ODCLID in the DB2 collection name identifier table. For example:

```
INSERT INTO OAMADMIN.CBR_COLLECTION_TBL
VALUES('DASDSC','DASD30','GROUP00',2,'COLL00');
```

Note: in this sample, collection id 2 is used as it is the new largest id in the DB2 collection identifier table

b) Use IDCAMS to delete the catalog entry for COLL00.

```
//STEP1      EXEC PGM=IDCAMS
//SYSPRINT DD  SYSOUT=*
//SYSIN      DD  *
DELETE -
COLL00 -
PURGE -
NOSCRATCH
```

Note: after this is done, the objects in collection COLL00 will not be accessible until all the steps are completed

c) Use IDCAMS to create a NULL catalog entry

```
//STEP1      EXEC PGM=IDCAMS
//SYSPRINT DD  SYSOUT=*
//SYSIN      DD  *
DEFINE NONVSAM -
(RECATALOG -
```

COLLECTION -
NAME(COLL00))

d) Use SPUFI to update the DB2 object directory table, 4k, 32k, and LOB tables, updating all entries in the Object Storage Group associated with COLL00 where ODCLID/OTCLID = 1 to ODCLID/OTCLID = 2.

Example directory update

```
UPDATE GROUP00.OSM_OBJ_DIR
SET ODCLID = 2
WHERE ODCLID = 1;
```

Example of update for 4k table:

```
UPDATE GROUP00.OSM_04K_OBJ_TBL
SET OTCLID = 2
WHERE OTCLID = 1;
```

Example of update for 32k table:

```
UPDATE GROUP00.OSM_32K_OBJ_TBL
SET OTCLID = 2
WHERE OTCLID = 1;
```

Example of update for LOB table:

```
UPDATE GROUP00.OSM_LOB_BASE_TBL
SET OTCLID = 2
WHERE OTCLID = 1;
```

e) Issue an OSREQ RETRIEVE for one of the objects in collection COLL00.

Note: this should cause OAM to populate the catalog entry for COLL00 with the new information from the DB2 collection identifier table (storage class, management class, storage group, collection id).

f) The objects in collection COLL00 should now be accessible after OA51129 is applied.

FIX#4 (Each collection with identical ids belong to the same Object Storage Group and OA51129 is applied)

Two collection entries in the catalog that have the same collection id belong to the same Object Storage Group. For example, if collections COLL00 and COLL01 have the same collection id (1) and both collections belong to GROUP00, the following steps should be taken to resolve the issue:

a) Use SPUFI to create an entry in the DB2 collection name identifier table for COLL00 using the storage class, management class, and storage group information from the COLL00 catalog entry and assign a new ODCLID, where the new ODCLID is the new largest ODCLID in the DB2 collection name identifier table.

For example:

```
INSERT INTO OAMADMIN.CBR_COLLECTION_TBL
VALUES('DASDSC','DASD30','GROUP00',2,'COLL00');
```

Note: in this sample, collection id 2 is used as it is the new largest id in the collection identifier table

b) Determine which application was used to OSREQ STORE the objects in COLL00.

c) Invoke that application's L2 support to assist in generating the list of objects the application stored in OAM in COLL00.

d) For each object in the list, use SPUFI to update the DB2 object directory table, as well as the applicable 4k, 32k, or LOB table in the Object Storage Group associated with COLL00, where ODCLID/OTCLID = 1 to ODCLID/OTCLID = 2.

Note: the complexity of SPUFIs will depend on what the application determines in identifying which object names belong to the collection in question

e) The objects in collection COLL00 should now be accessible.

FIX#5 (Each collection with identical ids belong to the same Object Storage Group and OA50220 applied)

Two collection entries in the catalog that have the same collection id belong to the same Object Storage Group. For example, if collections COLL00 and COLL01 have the same collection id (1) and both collections belong to GROUP00, the following steps should be taken to resolve the issue:

a) Use SPUFI to create an entry in the DB2 collection name identifier table for COLL00 using the storage class, management class, and storage group information from the COLL00 catalog entry and assign a new ODCLID, where the new ODCLID is the new largest ODCLID in the DB2 collection name identifier table.

For example:

```
INSERT INTO OAMADMIN.CBR_COLLECTION_TBL
VALUES('DASDSC','DASD30','GROUP00',2,'COLL00');
```

Note: in this sample, collection id 2 is used as it is the new largest id in the collection identifier table

b) Determine which application was used to OSREQ STORE the objects in COLL00.

c) Invoke that application's L2 support to assist in generating the list of objects the application stored in OAM in COLL00.

d) Use IDCAMS to delete the catalog entry for COLL00

```
//STEP1      EXEC PGM=IDCAMS
//SYSPRINT DD  SYSOUT=*
//SYSIN      DD  *
DELETE -
COLL00 -
PURGE -
NOSCRATCH
```

Note: after this is done, the objects in collection COLL00 will not be accessible until all the steps are completed

e) For each object in the list, use SPUFI to update the DB2 object directory table, as well as the applicable 4k, 32k, or LOB table in the Object Storage Group associated with COLL00, where ODCLID/OTCLID = 1 to ODCLID/OTCLID = 2.

Note: the complexity of SPUFIs will depend on what the application determines in identifying which object names belong to the collection in question

f) Issue an OSREQ RETRIEVE for one of the objects in collection COLL00.

Note: this should cause OAM to create a catalog entry for COLL00 with the new information from the DB2 collection identifier table (storage class, management class, storage group, collection id).

g) The objects in collection COLL00 should now be accessible after OA51129 is applied.

FIX#6 (Each collection with identical ids belong to the same Object Storage Group and OA50220 NOT applied)

Two collection entries in the catalog that have the same collection id belong to the same Object Storage Group and OA50220 is NOT applied. For example, if collections COLL00 and COLL01 have the same collection id (1) and both collections belong to GROUP00, the following steps should be taken to resolve the issue:

a) Use SPUFI to create an entry in the DB2 collection name identifier table for COLL00 using the storage class, management class, and storage group information from the COLL00 catalog entry and assign a new ODCLID, where the new ODCLID is the new largest ODCLID in the DB2 collection name identifier table.

For example:

```
INSERT INTO OAMADMIN.CBR_COLLECTION_TBL  
VALUES('DASDSC','DASD30','GROUP00',2,'COLL00');
```

Note: in this sample, collection id 2 is used as it is the new largest id in the collection identifier table

b) Determine which application the client used to OSREQ STORE the objects in COLL00.

c) Invoke that application's L2 support to assist in generating the list of objects the application stored in OAM in COLL00.

d) Use IDCAMS to delete the catalog entry for COLL00

```
//STEP1      EXEC PGM=IDCAMS  
//SYSPRINT DD  SYSOUT=*  
//SYSIN      DD  *  
              DELETE -  
              COLL00 -  
              PURGE -  
              NOSCRATCH
```

Note: after this is done, the objects in collection COLL00 will not be accessible until all the steps are completed

e) Use IDCAMS to create a NULL catalog entry


```
//STEP1      EXEC PGM=IDCAMS
//SYSPRINT DD  SYSOUT=*
//SYSIN      DD  *
              DEFINE NONVSAM -
                  (RECATALOG -
                   COLLECTION -
                   NAME(COLL00))
```

f) For each object in the list, use SPUFI to update the DB2 object directory table, as well as the applicable 4k, 32k, or LOB table in the Object Storage Group associated with COLL00, where ODCLID/OTCLID = 1 to ODCLID/OTCLID = 2.

Note: the complexity of SPUFIs will depend on what the application determines in identifying which object names belong to the collection**

g) Issue an OSREQ RETRIEVE for one of the objects in collection COLL00.

Note: this should cause OAM to populate the catalog entry for COLL00 with the new information from the DB2 collection identifier table (storage class, management class, storage group, collection id)

h) The objects in collection COLL00 should now be accessible after OA51129 is applied.

FIX#7 (Each collection with identical ids in the catalog belongs to a different Object Storage Group and OA51129 is applied)

Two collections in the catalog that have identical collection ids belong to different Object Storage Groups. For example, if collections COLL00 and COLL01 have the same collection id (1) in the catalog and different ODCLIDs in the DB2 collection identifier table but COLL00 belongs to GROUP00 and COLL01 belongs to GROUP01, the following steps should be taken to resolve the issue:

a) Review the ODCLID of the collections in question in the DB2 collection name identifier table. Note the ODCLID that is the largest, along with its collection name. In this example, COLL00 has an ODCLID of 2 in the DB2 collection name table.

b) Use SPUFI to update the DB2 object directory table, 4k, 32k, and LOB tables, updating all entries in the Object Storage Group associated with COLL00 where ODCLID/OTCLID = 1 to ODCLID/OTCLID =2.

Example directory update

```
UPDATE GROUP00.OSM_OBJ_DIR
SET ODCLID = 2
WHERE ODCLID = 1;
```

Example of update for 4k table:

```
UPDATE GROUP00.OSM_04K_OBJ_TBL
SET OTCLID = 2
WHERE OTCLID = 1;
```

Example of update for 32k table:

```
UPDATE GROUP00.OSM_32K_OBJ_TBL
SET OTCLID = 2
```

```
WHERE OTCLID = 1;
```

Example of update for LOB table:

```
UPDATE GROUP00.OSM_LOB_BASE_TBL  
SET OTCLID = 2  
WHERE OTCLID = 1;
```

c) The objects in collection COLL00 should now be accessible. Note, the automated tool will continue to indicate a discrepancy, however, because OAM no longer uses the catalog entries, this can be ignored.

FIX#8 (Each collection with identical ids in the catalog belongs to the same Object Storage Group and OA51129 is applied)

Two collections in the catalog that have identical collection ids belong to the same Object Storage Group. For example, if collections COLL00 and COLL01 have the same collection id (1) in the catalog and different ODCLIDs in the DB2 collection identifier table and both collections belong to GROUP00, the following steps should be taken to resolve the issue:

a) Review the ODCLID of the collections in question in the DB2 collection name identifier table. Note the ODCLID that is the largest, along with its collection name. In this example, COLL00 has an ODCLID of 2 in the DB2 collection name table.

b) Determine which application the client used to OSREQ STORE the objects in COLL00.

c) Invoke that application's L2 support to assist in generating the list of objects the application stored in OAM in COLL00.

d) For each object in the list, use SPUFI to update the DB2 object directory table, as well as the applicable 4k, 32k, or LOB table in the Object Storage Group associated with COLL00, where ODCLID/OTCLID = 1 to ODCLID/OTCLID = 2.

Note: the complexity of SPUFIs will depend on what the application determines in identifying which object names belong to the collection**

e) The objects in collection COLL00 should now be accessible. Note, the automated tool will continue to indicate a discrepancy, however, because OAM no longer uses the catalog entries, this can be ignored.
