# DME Move API to support migration – Design Document

## Background

DME provides APIs to move (rename) data objects and collections in the data management system (iRODs). The as-is implementation of these APIs **doesn’t** make any changes to the physical files in the archive, but only to the paths in iRODS.

DME also provides APIs to migrate (move) data objects and collections from one physical S3 archive to another. The as-is implementation of these APIs **doesn’t** make any changes to the path of the files in the data management system (iRODS), but only move the physical files from one S3 archive to another. These APIs apply only to S3 archives, and not POSIX.

The ask is to enhance the APIs to enable the users requesting a move of files and collections in both data management (iRODS) **and** the physical Archive (S3) in a single API call.

## As-is APIs overview

The 3 as-is move APIs (iRODS) are the following. Note that these APIs are executed synchronously, and upon successful response to the caller, the file was moved in iRODS.

1. **Move a single data object**

Request: POST /dataObject/{path}/move/{destinationPath}  
{

}

Response 200

{

}

1. **Move a single collection**

POST /collection/{path}/move/{destinationPath}  
{  
}

Response 200

{

}

1. **Move a list of data objects and collections – note the list can mix data objects and paths**

Request POST /move  
{

"moveRequests": [

{

"sourcePath" : "/base/collection",

"destinationPath" : "/base/collection-new"

},

{

"sourcePath" : "/base/collection/file",

"destinationPath" : "/base/collection-new/file-new"

}

]

}

Response 200

{

"result": false,

"moveResponses": [

{

"request": {

"sourcePath" : "/base/collection",

"destinationPath" : "/base/collection-new"

},

"result": true

},

{

"request": {

"sourcePath" : "/base/collection/file",

"destinationPath" : "/base/collection-new/file-new" },

"result": false,

"message": "Source path doesn't exist"

}

]

}

The 3 as-is migration APIs (S3 archive) are the following. Note that migration is performed asynchronously. The APIs return a task ID for the migration request. There is currently no API to get migration task status.

1. **Migrate a single data object**

Request POST /dataObject/{path}/migrate **{**

"s3ArchiveConfigurationId": "90020ee7-175b-4d20-bced-f39f3f637064"

}

Response 200  
{

"taskId": "58443ac8-7007-42f2-b19d-3db806c98bb5"

}

1. **Migrate a single collection**

Request POST /collection/{path}/migrate

**{**

"s3ArchiveConfigurationId": "90020ee7-175b-4d20-bced-f39f3f637064"

}

Response 200  
{

"taskId": "58443ac8-7007-42f2-b19d-3db806c98bb5"

}

1. **Migrate a list of collections or data objects – note the list can’t mix data objects and collections**

Request POST /migrate

**{**

**"s3ArchiveConfigurationId": "65168f06-4bdf-418f",**

**"dataObjectPaths" : [**

**"/base/collection/ file-1",**

**"/base/collection/file-2”**

**]**

**}**

Request POST /migrate

**{**

**"s3ArchiveConfigurationId": "65168f06-4bdf-418f",**

**"collectionPaths" : [**

**"/base/collection",**

**"/base/collection-2”**

**]**

**}**

Response 200  
{

"taskId": "58443ac8-7007-42f2-b19d-3db806c98bb5"

}

## Solution & Design

The proposed solution is to enhance 2 of the 3 move APIs, with an optional input to perform an archive file move to match the file path in the archive with the new logical path. Note that the migration business service will be modified and used to ‘migrate’ a file within the same archive to accomplish the archive move. This option will remain not allowed via the migration API.

We will develop new APIs to return progress/status/completion result of archive migration tasks

1. **Move a single data object w/ optional archive migration**

Request: POST /dataObject/{path}/move/{destinationPath}  
{

"alignArchivePath": true

}

Response 200

{

"taskId": "58443ac8-7007-42f2-b19d-3db806c98bb5"

}

The implementation of this API the following

* 1. The logical file move is performed first. Same code as of today.
     1. If the logical migration failed, an error is returned and no physical file move is attempted. Only if the logical file move completed successfully, the physical file move if requested will be performed.
     2. By default ‘alignArchivePath’ is true ( i.e. not sent by the caller).
  2. HpcDataMigrationBusService::migrateDataObject() will be enhanced to accept an indicator to ‘alignArchivePath’. With this indicator set to true, the implementation will migrate a file within the same archive, using the new logical file in calculating the archive path.
  3. The migration API will call the HpcDataMigrationBusService::migrateDataObject() with ‘alignArchivePath’ set to false as this is not allowed via the migration API
  4. The HpcDataManagementBusService::movePath() will call HpcDataMigrationBusService::migrateDataObject() with the ‘alignArchivePath’ set to true if the caller requested it.
  5. If an archive file move requested, a task ID will be returned, otherwise nothing will be returned with the 200 response which maintains backwards compatibility

1. **Move a single collection**

POST /collection/{path}/move/{destinationPath}  
{

"alignArchivePath": true

}

Response 200

{

"taskId": "58443ac8-7007-42f2-b19d-3db806c98bb5"

}

1. HpcDataMigrationBusService::migrateCollection() will be enhanced to accept an indicator to ‘alignArchivePath’. With this indicator set to true, the implementation will migrate a collection within the same archive, using the new logical file in calculating the archive path.
2. The migration API will call the HpcDataMigrationBusService::migrateCollection() with ‘alignArchivePath’ set to false as this is not allowed via the migration API
3. The HpcManagementBusService::movePath() will call HpcDataMigrationBusService::migrateCollection() with the ‘alignArchivePath’ set to true if the caller requested it.
4. If an archive file move requested, a task ID will be returned, otherwise nothing will be returned with the 200 response which maintains backwards compatibility
5. **Move a list of data objects and collections – note the list can mix data objects and paths**

This API will not support ‘alignArchivePath’. An error response will be returned if the user attempts to use the new indicator on this API.