Application Programming Guide

Version 9.8

June 1, 2026 | 0106261447|

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DIVA Documentation Library

For more information about DIVA, browse the DIVA Documentation Library at https://www.telestream.net/telestream-support/diva/support.htm.

Contents

Introduction 14

DIVA Installation Instructions 14
DIVA Jobs (Requests) 14
- Archive Job Terms 15
- Restore Job Terms 16
- Partial Restore Job Terms 16
- Delete Object Job Terms 16

Deleting an object implies it cannot be recovered from the storage media after deletion.Operational Boundaries 17
- Supported API 17
- Number of DIVA Connections 17
- Number of Simultaneous DIVA Jobs 17
- Number of API Tasks 17
- Case Sensitivity 17
- Special Authorized Characters 17
- Maximum Number of Allowed Characters 18
- File Path Limitations 18

DIVA REST API 19

Main DIVA REST API Calls 19
- DIVA REST APIs on Swagger 20
- DIVA REST API Main Entry Point 20
- Configuring the DIVA REST API 20
- Sample Python Program Using DIVA REST API 22
- DIVA REST API Secure Communications 23
- DIVA REST API Endpoints 24
- DIVA REST API Configuration Schema 24

DIVA Data Service API 26
- DIVA Manager Endpoints 27

DIVA Connect REST API 27
DIVA REST API Workflows 28
- Getting an Access Token 28
- Setting the Duration for Access Tokens 29

Roles 29
DIVA REST API Workflow Guidelines 30
DIVA Job Status Codes 31
Partial Restore Job Formats and Manager Responses 31

Python DIVAScript 35

Python DIVAScript 35
DIVAScript Commands Supported by DIVA REST API 35
DIVAScript Configuration File Settings 36
Running DIVAScript in Server Mode 36
DIVAScript Command-Line Mode Requirements 36
DivaScript Command Syntax 37

Introduction

This guide provides instructions for developing applications using DIVA, including information about configuring and operating DIVA for various programming architectures.

Topics

- DIVA Installation Instructions
- DIVA Jobs (Requests)
- Operational Boundaries

DIVA Installation Instructions

For instructions on installing DIVA, see the *DIVA Installation and Administration Guide* on the Telestream website, here: https://www.telestream.net/telestream-support/diva/support.htm.

DIVA Jobs (Requests)

Archive, *Restore*, and *Delete* are the basic DIVA jobs. The core concept of DIVA is data preservation.

Note: In DIVA programming, we now use the term *job* instead of *request*. *Job* also is the official term used in programming for the DIVA Web App and all DIVA documentation. However, documentation for earlier versions of DIVA, which use *request*, still uses the term *request*.

Note: Telestream has deprecated the DIVA C++ API and the DIVA Java API. Use DIVA REST API. DIVA REST API supports improved DIVA functionality and the latest features. For documentation of the deprecated APIs, see the *DIVA Application Programming Guide*, versions 9.3 and earlier.

Archive Job Terms

Object

DIVA stores objects. An object is a set of files referring to an asset or a clip. An object can be made of one file--typically an MXF file--or with several files such as reference MOV format (one video file, several audio files), or DPX format.

Identify an object by a Name and a Collection (category). Choose names for Object Name and Collection as desired. DIVA checks only that the Object Name + Collection combination is unique.

Note: Object Name must not begin with a dollar sign ($).

Collection

In DIVA, a Collection is like a name extension, not to be confused with a Tape Group. Any name can be used for a Collection. Telestream recommends using the application or company name to make it easy to identify who has sent a job. Should the same Object Name be used for different clips (typically hi-res and low-res), use a different Collection to distinguish those clips.

Files

The Files parameter provides the names of the files of the object to be archived; each name can contain a relative path to the file location.

Media Name

Media Name is the DIVA device used for storing the object. The device can be a disk, a tape or cloud storage. Each of these devices can have multiple names based on partitioning, for example, `DIVAGRID`, `NAS-STORAGE`, `TAPE_SPORTS_MAIN`, `TAPE_SPORTS_BKP`, `CLOUD_PROGRAM`, and `CLOUD_PROMOS`.

You can retrieve the list of all Arrays and Tape Groups from DIVA, without necessarily exposing these to the end user. Check with the customer and the DIVA Project Manager about which Media to expose to the end user.

You can also use a Storage Plan as a storage device. For details, see the *DIVA Storage Policy Manager* guide.

Unmanaged Storage Repository Name

The Unmanaged Storage Repository Name is the name of the content server from which DIVA archives. It must be the same name as in the DIVA configuration. Confirm this with the customer or DIVA Project Manager for this list.

Source Path Root

The Source Path Root is the File Path Root where the content objects are located. By default, DIVA uses the default File Path Root configured for that source in the DIVA configuration.

Note: You can obtain the source list using the `GET /servers` API call.

Quality of Service

You can leave the Quality of Service parameter at the default setting.

Priority

You can leave the Priority at the default, or a you can specify a value between 1 and 100.

Delete From Source

If the Delete From Source option check box is selected, then that parameter will delete the asset just archived from the Source Server, but only if the archive was successful.

Restore Job Terms

You must specify the following terms for a Restore Job:

- Object Name
- Object Collection
- Unmanaged Storage Repository Server Name
- The File Path Root; if empty, DIVA will take the File Path Root used during the Archive job and will overwrite the object if it already exists, unless the Do Not Overwrite option is specified.

Partial Restore Job Terms

The Partial Restore terms are the same as the Restore terms with the following additional options:

- Offset or Timecodes (In/Out) or File List
- Partial Restore will create a new clip name because it generates a new clip created with a portion of the original clip.

Delete Object Job Terms

A Delete Object Job deletes all copies of that object whether they are on disk, tape (in the tape library or external), or in the cloud. The Object Name and Object Collection must be specified.

Deleting an object implies it cannot be recovered from the storage media after deletion.

Operational Boundaries

Supported API

Telestream has deprecated the DIVA C++ API and the DIVA Java API. Use DIVA REST API. DIVA REST API supports improved DIVA functionality and the latest features.

For documentation of the deprecated APIs, see the *DIVA Application Programming Guide*, versions 9.3 and earlier.

Number of DIVA Connections

The number of connections to DIVA is limited by DIVA and set in the DIVA configuration file. The default configuration limit is 200. This includes connections to GUIs, Actors and all API clients. When the configured limit is reached, the API doesn't create additional connections.

See the `diva.conf` and `manager.conf` configuration files for more information.

Number of Simultaneous DIVA Jobs

The maximum number of simultaneous jobs processed by DIVA is configurable in the diva.conf file as the value of the `DIVA_MAX_SIMULTANEOUS_REQUESTS` parameter. The default value has been raised from two hundred to five hundred. The maximum number has been verified up to two thousand. Additional simultaneous jobs beyond the value set in this parameter are rejected by DIVA.

Number of API Tasks

The number of API tasks that will be accepted to the API Processing Queue is configurable in the diva.conf file as the value of the `DIVA_API_TASK_QUEUE_SIZE` parameter. The default value is two thousand and DIVA has been verified at this value. If the queue is full, subsequent commands are rejected.

Case Sensitivity

DIVA, and the DIVA REST API, are case sensitive. For example, the DIVA REST API recognizes `video001` as a different object name than `Video001`. You can't disable case sensitivity in DIVA or in the DIVA REST API.

Special Authorized Characters

Many jobs require alpha-numeric text terms. You can use special characters in these fields. If you use an invalid special character, the job is rejected. See the topic, *List of Authorized Special Characters* on this Swagger page: Manager API. The URL is https://127.0.0.1:8765/webjars/swagger-ui/index.html?urls.primaryName=manager.

In a Windows. environment, file and folder names can't consist of one or more spaces, and can't contain a double-quotation mark.

Maximum Number of Allowed Characters

There is a maximum number of characters you can use for each job term. If these limits are exceeded, the job is rejected. See the table of maximum number of characters on this Swagger API page: Manager API. The URL is https://127.0.0.1:8765/webjars/swagger-ui/index.html?urls.primaryName=manager.

File Path Limitations

DIVA supports absolute path names on both Windows up to a maximum of 4000 characters. Relative path names are limited to 32676 characters on Windows systems (only).

A DIVA Windows local path is structured in the following order and terminated with a NUL character:

```
Drive_Letter:\Component_Name\Component_Name\File_Name.Extension
```

Here are example paths used in DIVA in Windows. The <NUL> character used in the example represents the invisible terminating null character for the current system code page and need not be entered. (The < and > characters are used to identify the NUL character by name, and must not be part of a path string.

Generic Path:

```
D:\Some_32676-Character_Path_String<NUL>
```

Actor Executable:

```
D:\diva\diva\Program\Actor\bin\diva.exe
```

DIVA Configuration File:

```
D:\diva\10\Program\conf\diva\diva.conf
```

DIVA REST API

This chapter provides details about programming the DIVA REST API.

Topics

- Main DIVA REST API Calls
- DIVA Data Service API
- DIVA Connect REST API
- DIVA REST API Workflows

Main DIVA REST API Calls

The following are the main DIVA REST API calls available. These are the minimum required to implement the basic DIVA REST API workflows.

- `POST /users/logins`
- `POST /users/logout`
- `GET /groups`
- `GET /arrays`
- `GET /object/info`
- `GET /objects/list`
- `GET /requests`
- `POST /requests/archive`
- `POST /requests/cancel`
- `POST /requests/delete`
- `POST /requests/partialRestore`
- `POST /requests/restore`
- `GET /requests/{requestId}`
- `GET /versions`

The Swagger definitions for these endpoints are located here:

https://127.0.0.1:8765/webjars/swagger-ui/index.html?urls.primaryName=data

https://127.0.0.1:8765/webjars/swagger-ui/index.html?urls.primaryName=manager

DIVA REST APIs on Swagger

The REST API Swagger page is home to all DIVA REST APIs. You can find other APIs using the Definition drop-down menu on the Swagger page.

The Swagger documentation for the REST API services is accessible at the following URL:
https://127.0.0.1:8765/webjars/swagger-ui/index.html

Important: Be sure to check the details in the Swagger API comments.

This document is focused on the data and manager service required to login and submit jobs, respectively.

DIVA REST API Main Entry Point

To access DIVA REST API, use the following URL in your application:

```
https://<IP address of DIVA server running DIVA Gateway
service>:8765/dataservice/users/login
```

Note: The default port used to access DIVA REST API Gateway is 8765. Refer to *DIVA Installation and Administration Guide* to modify this default port.

Configuring the DIVA REST API

To configure the DIVA REST API, do the following:

1. Obtain all automations and DIVA REST API calls that use these credentials from the person who created the user.

   During installation, a user is created by either the DIVA Installer, or manually by an administrator.

2. Call the `POST users/login` endpoint.

   DIVA opens the *`POST users/login`* dialog.

3. In the *userLogin* field, specify the login and password.

   For example:

   ```
   "emailAddress": "a@abc.com",
   "password": "password",
   ```

4. Click the *Execute* button.

   DIVA sends you a token.
5. In the *Responses* window, copy the contents of the bearer token (everything in quotes after `"Token":`)
6. To create a user, enter the token in the *Authorization* field.
7. In the *userReg* field, enter the user name, password, and role of the user.

   For example:

   ```
   "emailAddress": "a@abc.com",
   "password": "password",
   "role": "operator",
   ```
8. (Optional) Set a timeout value between 0 and 10080 minutes. Default: 1440 minutes.

   For example:

   ```
   "sessionTimeout": 99999999
   ```

   The session timeout is the number of minutes the user remains logged into DIVA.

Note: Call `GET /roles` to obtain a list of possible roles.

- All DIVA `GET` jobs require at least the `user` role.
- `archive`, `restore` (including N-Restore and Partial Restore) and `copy` jobs require at least the `operator` role.
- Change Priority, Transfer, Eject, Insert, Export and Import jobs require at least the `advoperator` role.
- All other jobs require the *administrator* role.

You can now use the DIVA REST API to retrieve information from DIVA. Switch to the Manager endpoints to start using the DIVA REST API.

Retrieving All Configured Actors

To retrieve all configured Actors, do the following:

1. To get a list of all actors in the configuration, call `GET/actors`.

   DIVA opens the `GET/actors` dialog.
2. Click the *Execute* button.

   DIVA displays a list of actor settings in a *Responses* dialog.

Submitting a Job

To submit a job (for example, an `archive` job, do the following:

1. Submit `POST /requests/archive`.

   DIVA opens the `POST /requests/archive` dialog.

2. Enter an authorization key into the `Authorization string` field with the bearer token as the value, as depicted in this job:

```
curl -X POST --header 'Content-Type: application/json' --header
'Accept: application/json' --header 'Authorization: Bearer
eyJhbGciOiJIUzUx-
MiJ9.eyJhdWQiOiI1MjM5YTcxOS1iYjAwLTQ5MWQtOGYxZi01ZjcxM2YxZWZiMj
MiLCJleHAiOjE2MjEzNTY0MDcsImlhdCI6MTYyMTI3MDAwNywiYXV0aG9yaXRpZ
XMiOlsic3lzYWRtaW4iXSwidXNlcm5hbWUiOiJzeXNhZG1pbiJ9.zZiKvEe-
3JjuOsJ-CDpW_32JKRefy54-wGwra_LABmUeuIhpWGEpHnT-Se5PXTFxv-
jDf2g9mgezKQIvIJzObzQ' -d '{ \
   "collectionName": "a", \
   "comments": "this is object a2", \
   "components": [ \
     "1.txt" \
   ], \
   "filePathRoot": "", \
   "media": "default", \
   "objectName": "a2", \
   "options": "", \
   "priority": 50, \
   "qos": 2, \
   "sourceServer": "wfm_ftp_sd_for_diva_test" \
 }' 'http://xxx.xx.xx.xx:xxxx/manager/requests/archive'
```

3. Go to the Swagger page for the job and click on the Example Value.

   Swagger opens the `POST/requests/archive` dialog, displaying the fields that must be specified for any job.

4. Specify the values for the *Authorization string* and *body* fields.

5. To submit the job, click *Execute*.

   DIVA opens the `POST /requests/archive` dialog.

6. To view a description of each field and a list possible values, click *Model* (next to the *Example Value* tab).

   DIVA opens the *Model* dialog.

For example, DIVA displays the list of possible QOS values and their meaning. A value of 2 signifies a QOS value of Direct-only.

Sample Python Program Using DIVA REST API

Here is a sample program to obtain all Actors from DIVA using Python:

```
import requests

url = https://127.0.0.1:8765/dataservice/users/login

headers = {
        "Content-Type": "application/json; utf-8",
```

```
        "Accept": "application/json"
}

json = {
  "username": "enter_the_username_here",
  "password": "enter_the_password_here"
}

response = requests.post(url, headers=headers, json=json,
verify=False)

token = response.json()["token"]

print(token)

url = https://127.0.0.1:8765/manager/actors?page=1&size=5

headers = {
        "Accept": "application/json",
        "Authorization": token
}

response = requests.get(url, headers=headers, verify=False)

print(response.json())
```

DIVA REST API Secure Communications

All DIVA REST API services communicate securely via HTTPS using certificates from the `DIVA\program\security` folder.

The DIVA security tool (`DIVA\Program\security\bin\DIVASecurityTool.bat`) generates certificates signed by the DIVA certificate authority (`DIVA_CA`).

The second security tool option automatically adds the IP address and the hostname of the server to the `alt_names` section at the end of the `DIVA\Program\DIVA_CA\DIVA_CA.cnf` file. Then, the security tool generates new certificates allowing IP addresses in the `alt_names` section.

After generating new certificates, you must restart all the DIVA services.

Clients using the REST APIs can communicate with the secure API Gateway on port 8765.

Note: Starting from DIVA 9.6, you can use `DIVA\Program\Utilities\bin\ChangeDivaPort.bat` to update the secure API Gateway port. For more details, refer to the *DIVA Installation and Administration Guide*.

To see all services available on the Gateway, browse to `https://IP_Address:8765/swagger-ui.html`. To securely access the Swagger page and all child pages, the IP address must be in the `alt_names` section of `DIVA\Program\DIVA_CA\DIVA_CA.cnf`.

For assistance, contact Telestream Technical Support.

DIVA REST API Endpoints

Two endpoints manage the global resource schedule configuration, as described in the following table:

Method	Path	Description
`GET`	`/migrationTasks/config/globalResourceSchedule`	Returns the current configuration. Returns an empty object (all fields null) if no configuration has been saved.
`PUT`	`/migrationTasks/config/globalResourceSchedule`	Saves and immediately activates a new configuration. Returns the saved configuration. Sends an empty object `{}` to clear all constraints.

DIVA REST API Configuration Schema

The fields for the DIVA REST API configuration schema are described in the following tables:

`GlobalResourceScheduleConfig`

Field	Type	Description
`readDrives`	`string[]`	Drives allowed for tape-read operations. Empty or null = no restriction (all drives).
`writeDrives`	`string[]`	Drives allowed for tape-write operations. Empty or null = no restriction (all drives).
`actors`	`string[]`	Actors allowed for all migration requests. Empty or null = no restriction (all actors).

cacheDisks	string[]	Cache disks allowed for tape-to-tape staging. Empty or null = no restriction (all cache disks).
defaultWindowPolicy	WindowPolicy	Concurrency limits applied at all times outside any defined schedule window. Null = no concurrency limit.
scheduleWindows	ScheduleWindow[]	Optional list of time-based windows. Each window overrides defaultWindowPolicy for its matching time range.

`WindowPolicy`

Field	Type	Description
`maxReadDrives`	integer	Maximum number of read drives MGS selects from the pool per request. 0 or null = all configured drives.
`maxWriteDrives`	integer	Maximum number of write drives MGS selects from the pool per request. 0 or null = all configured drives.
`maxActors`	integer	Maximum number of actors MGS selects from the pool per request. 0 or null = all configured actors.
`maxCacheDisks`	integer	Maximum number of cache disks MGS selects from the pool per request. 0 or null = all configured cache disks.

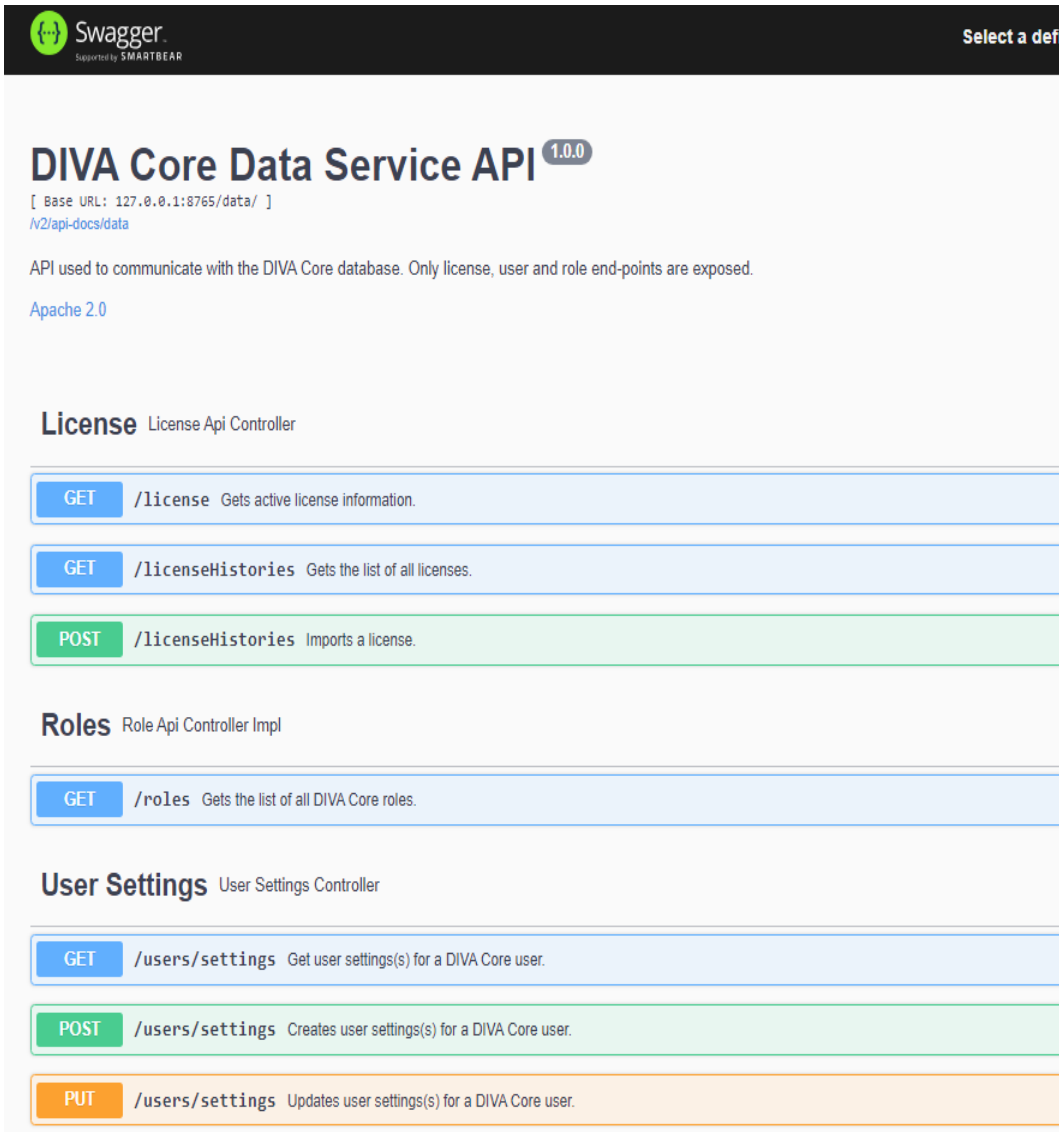
`ScheduleWindow`

Field	Type	Allowed values	Description
`fromDay`	string	MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY, SUNDAY	Start day of the window (inclusive).
`toDay`	string	Same as `fromDay`	End day of the window (inclusive).
`fromTime`	string	HH:mm (24-hour)	Start time of the window (inclusive).
`toTime`	string	HH:mm (24-hour)	End time of the window (inclusive).
`policy`	WindowPolicy	—	Concurrency limits applied during this window. Overrides `defaultWindowPolicy`.

DIVA Data Service API

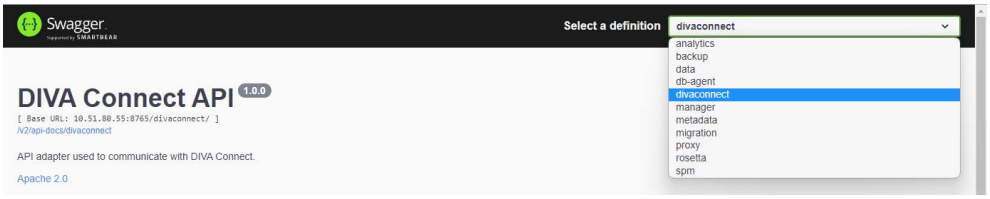
The DATA Service API communicates with the database. Only user, profile, and endpoints are exposed.

Use the DIVA Core Data Service Swagger page to manage users, roles and profiles. After a user is created through `POST /users`, that user can obtain an access token through `POST /users/login` that will be needed for all future communication; including accessing all DIVA resources available in the Manager Endpoints.

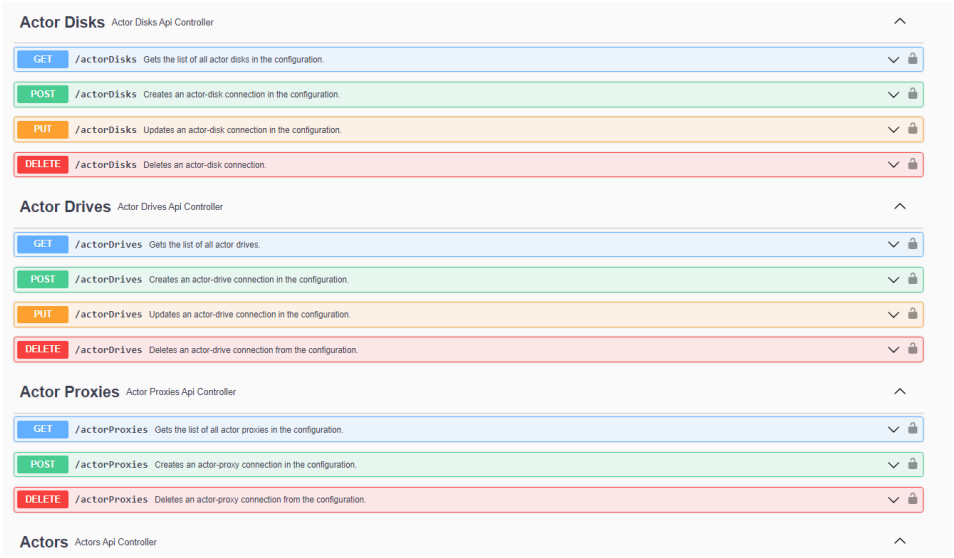


DIVA Manager Endpoints

The Data Service endpoints can be switched to other endpoints using the menu at the top of the page:



You use the API to communicate with DIVA. Use these endpoints to submit jobs and obtain information on DIVA resources and jobs.



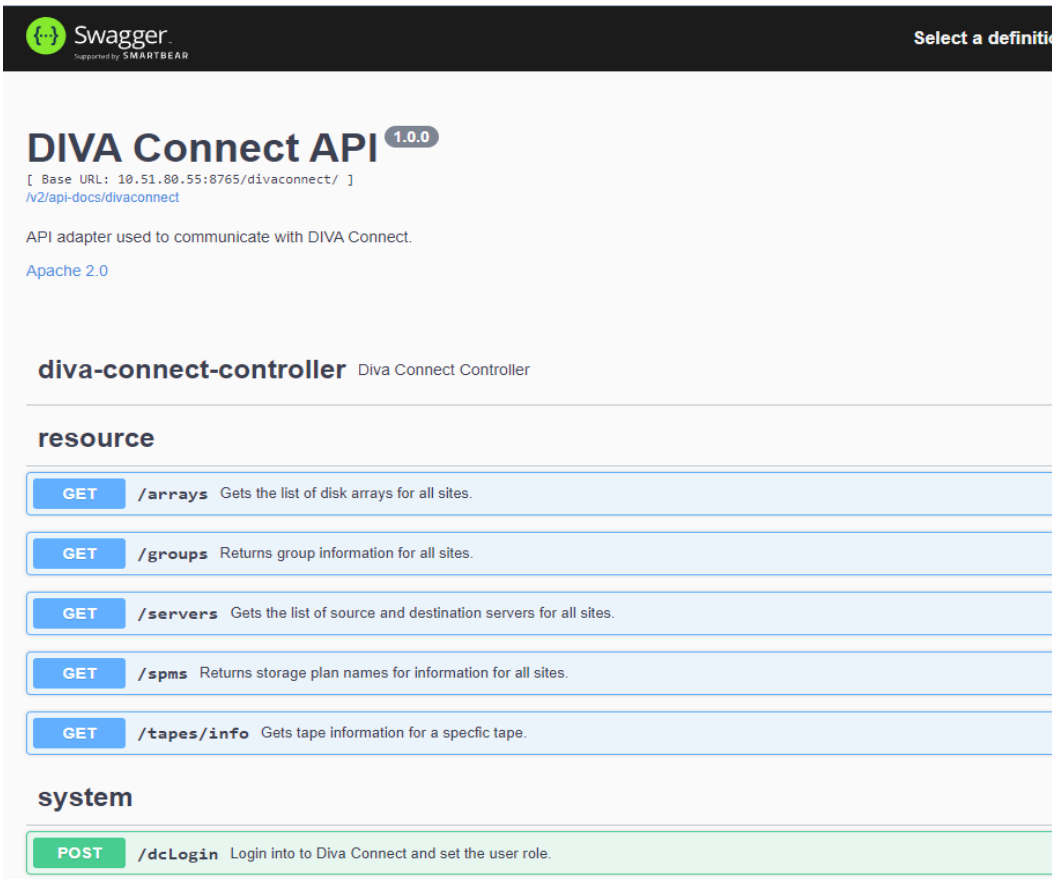
DIVA Connect REST API

You can use the DIVA REST API to send jobs and commands to DIVA Connect. The same port used for the Client Web Connections is used for this API. The DIVA REST API supports only MultiDIVA Mode.

During installation, a user is created either by the DIVA Installer, or manually by an administrator. Obtain all automations and API calls that use these credentials, from the person who created the user. Go to the POST users/login.

For detailed information, see the DIVA Connect documentation on the DIVA Support Portal at https://www.telestream.net/telestream-support/diva/support.htm

Swagger contains DIVA Connect REST API endpoints as shown here:



DIVA REST API Workflows

This topic describes the DIVA REST API and Authentication Token Workflows. The DIVA REST API uses JWT (JSON Web Token) authentication specified in the authorization header of all jobs. To obtain the token, `POST to /users/login` on the data service; passing in the user name and password. There is a specific endpoint to get a authentication token. All the functions of the DIVA REST API require this token.

Getting an Access Token

Telestream requires user authentication before delivering an access token that is usable for any following API call. Telestream recommends you authenticate one time at the start of your application, before the first call to a DIVA REST API. Then, use that token as long as it is valid. Any HTTP job using an invalid or expired token fails with HTTP error code 403 (access denied).

The authentication workflow runs as follows:

1. Upon login the user receives an authentication token.

2. An access token must be used to access secured endpoints. The access token expires automatically after the default value of 24 hours. Alternatively, a user may delete an access token by calling `/users/logout`.
3. When an access token expires or is deleted, the client is considered as logged out and must log in again.

Setting the Duration for Access Tokens

By default, an access token remains valid for 1440 minutes (24 hours), but you can configure the token validity to a maximum of 10080 minutes (7 days). To define the duration of access-token validity, do the following:

1. In the DIVA Web App, browse to *Configuration* > *User Accounts* > *User Management*.
2. Click the *Edit* button.

   DIVA opens the *EDIT USER* dialog.
3. Enter the desired value, in minutes, into the *Session Timeout* field, to a maximum of 10080.
4. Click *Save*.

Roles

A user may belong to one of five roles; `sysadmin`, `admin`, `advoperator`, `operator`, or `user`.

A user may perform all basic GET operations including the following:

- `POST /users/login`
- `POST /users/logout`
- `PUT /users/{userName}/password`
- `GET /profile`
- `PUT /profile`
- `GET /users`
- `GET /roles`
- `GET ANY RESOURCE (for example, GET /actors)`

An Operator may perform all the operations of a user and the following additional operations:

- `POST /requests/archive`
- `POST /requests/restore`
- `POST /requests/copy`

An Advanced Operator (`advoperator`) may perform all the operations of an operator and the following additional operations:

- `PUT /requests`
- `POST /requests/transferFiles`
- `POST /requests/insertTape`
- `POST /requests/ejectTape`
- `POST /requests/repackTape`
- `POST /requests/exportTape`
- `POST /requests/importTape`

An Administrator (`admin`) may perform all operations of an `advoperator` and the following additional operations:

- `POST /requests/delete`
- `POST /requests/serverDelete`

A System Administrator (`sysadmin`) may perform all operations of an administrator and the following additional operations:

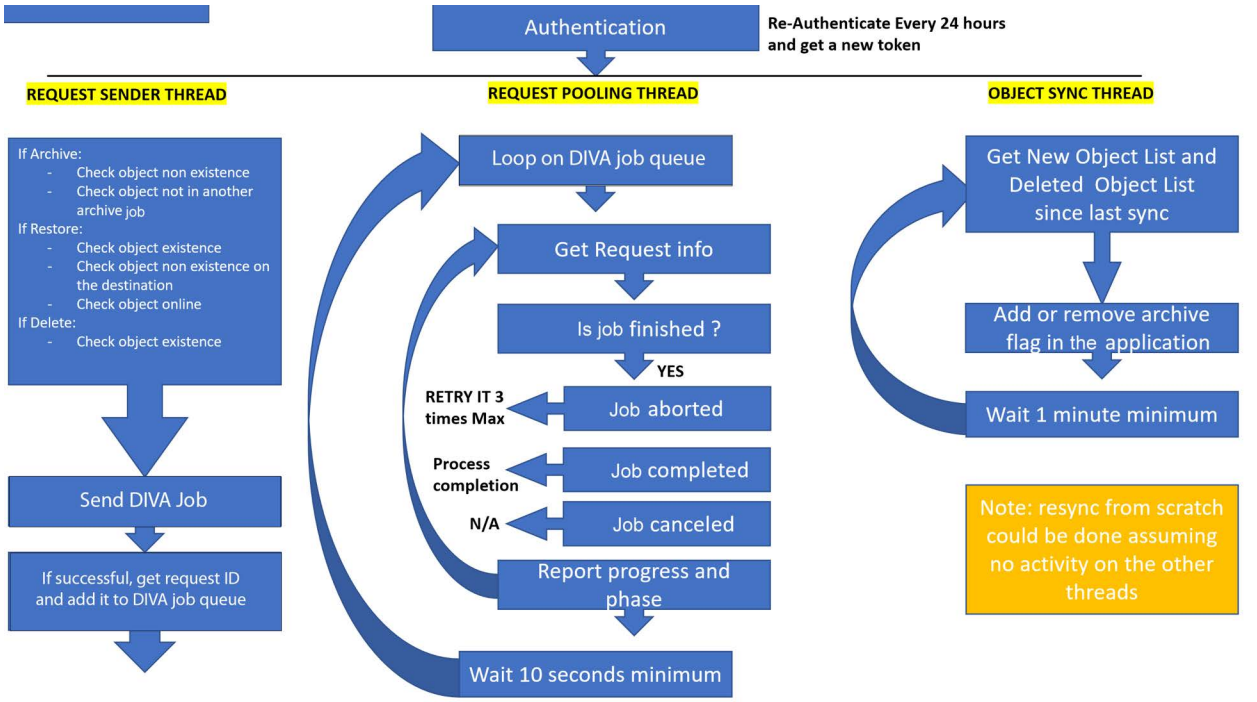
- `POST /users`
- `DELETE /users`
- `GET /users`
- `GET /roles`

DIVA REST API Workflow Guidelines

Use the following guidelines to develop workflows using the DIVA REST API:

- First authentication: if possible use only one authentication to DIVA at the start of the application. Use the token returned for further API calls. Don't authenticate multiple times, in particular not before each DIVA job.
- Send the DIVA job, such as `archive` or `restore`, using the token from the last step and get the Request ID. Add the Request ID to the DIVA job queue.
- Pool every `n` seconds on the DIVA job queue list using `getRequestInfo`. Wait a minimum of 10 seconds between each pooling phase.
- You can obtain the progress and phase for each running job.
- Any running job can be canceled.
- You can remove a finished job from the DIVA job queue. A finished job will be `COMPLETED`, `PARTIALLY_COMPLETED`, `ABORTED`, or `CANCELLED`.
- Avoid retrying too many times if a job fails.
- Before restoring an object, use `divaGetObjectInfo` to be informed whether the object is online; there is no need to try to restore an offline object because it will fail.
- Try to develop a sync (or resync) mechanism to sync the application with DIVA objects using the Since Date option to discover new and deleted objects.

After authenticated, three different threads could be created to manage the DIVA workflows as shown in the following figure:



DIVA Job Status Codes

For descriptions of DIVA job status codes:, see *API Static Constant Values* on this Swagger page: Manager API. The URL is https://127.0.0.1:8765/webjars/swagger-ui/index.html?urls.primaryName=manager.

Partial Restore Job Formats and Manager Responses

The following formats—each identified by an INT value in *format*—are used when issuing jobs to DIVA Manager:

- 0—Bytes (range)
- 1—Not Used
- 2—Video GXF (timecode)
- 3—Video SEA (timecode)
- 4—Video AVI MATROX (timecode)
- 5—Video MPEG2 TS (timecode)
- 6—Video MXF (timecode)
- 7—Video Pinnacle (timecode)

- 8—Video Omneon (timecode)
- 9—Video Leitch (timecode)
- 10—Video Quantel (timecode)
- 11—Autodetect which video format (timecode)
- 12—File/Folder Based
- 13—DPX (range)

Job and Response Sample

Here are Partial Restore jobs and Manager responses. Take note of the differences in offsets and formats.

Sample 1: Body for Bytes Partial Restore

```
{
  "destinationServer": "sourcedest",
  "minRequestPriority": -1,
  "instance": -1,
  "qos": 0,
  "offsets": [
    {
    "destinationFile": "DNxHD-mxf-wrap-conf.mov",
    "offsetPairs": [
      {
        "bytesEnd": 1,
        "bytesBegin": 0,
        "timeCode": false
      },
      {
        "bytesEnd": 2,
        "bytesBegin": 1,
        "timeCode": false
      }
    ],
    "sourceFile": "DNxHD-mxf-wrap-conf.mov"
    }
  ],
  "format": 0,
  "options": " ",
  "objectName": "Partial File",
  "maxRequestPriority": 100,
  "priority": -1,
  "filePathRoot": "restore",
  "collectionName": "Restore All Basic PFR",
  "destinationServer": "sourcedest",
  "minRequestPriority": -1,
  "instance": -1,
  "qos": 0,
  "offsets": [
    {
"offsets": [
  {
    "destinationFile": "DNxHD-mxf-wrap-conf.mov",
```

```
    "offsetPairs": [
      {
        "bytesEnd": 1,
        "bytesBegin": 0,
          "timeCode": false
      },
      {
        "bytesEnd": 2,
        "bytesBegin": 1,
        "timeCode": false
      }
    ],
    "sourceFile": "DNxHD-mxf-wrap-conf.mov"
  }
],
  "format": 0,
  "options": " ",
  "objectName": "Partial File",
  "maxRequestPriority": 100,
  "priority": -1,
  "filePathRoot": "restore",
  "collectionName": "Restore All Basic PFR"
  }
}
```

Sample 2: Body for Video GXF (timecode) Partial Restore

```
{
  "destinationServer": "sourcedest",
  "minRequestPriority": -1,
  "instance": -1,
  "qos": 0,
  "offsets": [
    {
      "destinationFile": "Profile.gxf",
      "offsetPairs": [
        {
          "timeCodeBegin": "00:00:00:00",
          "timeCodeEnd": "00:00:00:01",
          "bytesEnd": 0,
          "bytesBegin": 0,
          "timeCode": true
        }
      ],
      "sourceFile": "Profile.gxf"
    }
  ],
  "format": 2,
  "options": " ",
  "objectName": "Partial File",
  "maxRequestPriority": 100,
  "priority": -1,
  "filePathRoot": "restore",
  "collectionName": "Restore All Basic PFR"
}
```

Sample 3: Body for File-Folder based Partial Restore

```
{
```

```
  "destinationServer": "sourcedest",
  "minRequestPriority": -1,
  "instance": -1,
  "qos": 0,
  "offsets": [
    {
      "fileFolder": {
        "name": "DNxHD_mxf_wrap_conf.mov",
        "option": ""
      }
    },
    {
      "fileFolder": {
        "name": "test.mov",
        "option": ""
      }
    }
  ],
  "format": 12,
  "options": " ",
  "objectName": "Partial File",
  "maxRequestPriority": 100,
  "priority": -1,
  "filePathRoot": "restore",
  "collectionName": "Restore All Basic PFR"
}
```

Sample 4: Body for DPX (Range) PR

```
{
  "destinationServer": "sourcedest",
  "minRequestPriority": -1,
  "instance": -1,
  "qos": 0,
  "offsets": [
    {
      "range": {
        "end": 2,
        "begin": 1
      }
    },
    {
      "range": {
        "end": 4,
        "begin": 3
      }
    }
  ],
  "format": 13,
  "options": " ",
  "objectName": "Partial File",
  "maxRequestPriority": 100,
  "priority": -1,
  "filePathRoot": "restore",
  "collectionName": "Restore All Basic PFR"
```

Python DIVAScript

This chapter describes DIVAScript for Python via the DIVA REST API.

Topics

- Python DIVAScript
- Running DIVAScript in Server Mode
- DIVAScript Command-Line Mode Requirements

Python DIVAScript

DIVAScript was developed in python. DIVAScript supports sending commands via the DIVA REST API. DIVAScript helps develop and execute automated functional tests via the DIVA REST API.

DivaScript supports most DIVA commands that are available via the DIVA REST API.

DIVAScript Commands Supported by DIVA REST API

- `logIn`
- `logOut`
- `addgroup`
- `objectinfo`
- `objlist`
- `reqinfo`
- `version`
- `archive`
- `restore`
- `partialrestore`
- `copy`

- `copyas`
- `delete`
- `trarchive`
- `scan`
- `stage`

DIVAScript Configuration File Settings

`diva_serv:` `serve_ip`

`diva_port:` `8765`

`diva_user:` `diva_user`

`diva_pass:` `diva_pass`

`protocol:` `https`

`diva_version:` `9`

Running DIVAScript in Server Mode

To run DIVAScript in server mode, do the following:

1. Open the Windows command-line interface.
2. Type `DIVAScript.exe` and press Enter.

   DIVAScript displays the list of valid DIVAScript terms. DIVAScript doesn't require a parameter.

DIVAScript Command-Line Mode Requirements

The requirements for running DIVAScript in Command-Line Mode follow:

You must first call the logIn with correct credentials so that the token is saved and used for the next commands.

If a parameter value contains spaces or other special characters, place the value inside " "

Use the pipe (|) delimiter for terms that allow a list of values (e.g: `filelist` from `archive` or `in / out` from `partialRestore`).

Command line syntax is `DivaScript.exe` followed by one of the recognized command names, such as `archive` or `delete`.

Other terms: depending on the command, additional terms may be required.

The command name must be the first parameter. All other terms can be placed anywhere in the command line.

DivaScript Command Syntax

logIn

Logs a user in, and returns a created token

Synopsis

```
DivaScriptPy.exe logIn -u USERNAME -p PASSWORD
```

logOut

Logs a user out, and returns the status.

Synopsis

```
DivaScriptPy.exe logOut -u USERNAME
```

addgroup

Creates a tape group in the configuration.

Synopsis

```
DivaScriptPy.exe addgroup [-aqos ARCHIVEQOS] [-cpr COMPRES-
SIONENABLED] [-cmt DESCRIPTION] [-en ENCRYPTIONENABLED] [-fmt
FORMAT] -grp NAME
   [-nrt NUMBEROFTAPESUSEDFORREPACK] [-prio PRIORITY] [-rqos
RESTOREQOS] [-set SET] [-repk USEDFORREPACK] [-vw VERIFYWRITE]
[-wf WORSTFITENABLED]
```

objinfo

Gets object information for a specific object.

Synopsis

```
DivaScriptPy.exe objinfo -obj OBJECT -col COLLECTION
```

objectsList

Gets object information for all objects based on filter criteria. Returns a list of objects. On success, prints one line for each matching object (name@category).

Synopsis

```
DivaScriptPy.exe objlist [-time INITIALTIME] [-lt LISTTYPE] [-
objlt OBJECTSLISTTYPE] [-maxs MAXLISTSIZE] -obj OBJECTNAME -col
COLLECTIONNAME [-grp MEDIANAME] [-lod LEVELOFDETAIL]
```

reqinfo

Gets request by ID. Returns the current status of a DIVA request.

On success, prints the current status of the request (first line is the numerical status; second line is the text status in capital letters).

If this command is issued with the *wait* parameter, the `getRequestInfo` command continues running until the request related to the entered Request ID is completed.

This parameter is important when it is necessary to wait for one DIVA request to complete before another is submitted via DivaScript.

Synopsis

```
DivaScriptPy.exe reqinfo -req REQUESTID  [-wait WAIT]
```

version

Gets DIVA build version and API version. Returns the DIVA build version and the API version.

Synopsis

```
DivaScriptPy.exe version
```

archive

Submits an archive request to the DIVA Core Manager. This call returns as soon as the Manager accepts the request.

Use the `reqinfo` command to be informed when the request has been executed.

On success, divascript prints the `request ID` on the output.

Synopsis

```
Divascript.exe archive -obj OBJECT -col COLLECTION -grp
MEDIA_GROUP -src SERVER -fpr FILES_PATH_ROOT -filelist FILELIST
[-com COMMENTS]
```

The following arguments are required: `-obj/--object, -col/--collection, -grp/--media_group, -src/--server, -fpr/--files_path_root, -filelist/--filelist`

When there are multiple files, use the pipe delimiter: `-filelist "test.mov|gxf-sample.gxf"`

```
DivaScriptPy.exe archive -col COLLECTIONNAME [-com COMMENTS] -
filelist COMPONENTS -fpr FILEPATHROOT -grp MEDIA -obj OBJECT-
NAME [-opt OPTIONS] [-prio PRIORITY] [-qos QOS] -src SOURCE-
SERVER archive
```

restore

Submits an Object Restore request to the Manager and the Manager chooses the appropriate instance to be restored. If the requested object is on a medium that is not available, the request fails.

Use the `reqinfo` command to be informed when the request has been executed.

On success, divascript prints the `request ID` on the output

Synopsis

```
DivaScriptPy.exe restore -col COLLECTIONNAME -src DESTINATION-
SERVER -fpr FILEPATHROOT [-inst INSTANCE] -obj OBJECTNAME [-opt
OPTIONS] [-prio PRIORITY] [-qos QOS]
```

partialrestore

Submits a Partial Object Restore request to the Manager and the Manager chooses the appropriate instance to be restored. If the request was not accepted (for example, if the requested object is on a medium not currently available) the request generates an error. The Manager uses the `instanceID` field to select the instance of the object to use for the Partial Restore operation. The Manager chooses an appropriate instance to restore if -1 is used.

Use the `reqinfo` command to be informed when the request has been executed.

On success, divascript prints the request ID on the output

Synopsis

```
DivaScriptPy.exe partialrestore -obj OBJECTNAME -col COLLEC-
TIONNAME -src DESTINATIONSERVER -fpr FILEPATHROOT -fmt {Files
and Folders,Byte Offset,Timecode,Frames,DPX} [-in SOURCEFILE]
[-out DESTINATIONFILE] [-start START] [-end END] [-inst
INSTANCE]
```

When there is a list of values, Use the pipe delimiter: `-start "10|20|30" -end "100|200|300"`

copy

Submits a New Instance Creation request on the medium specified by `mediaName` to the Manager, and the Manager chooses the appropriate instance to be created. The request fails if the requested object is on a medium that is not available.

Use the `reqinfo` command to be informed when the request has been executed.

On success, divascript prints the request ID on the output.

Synopsis

```
DivaScriptPy.exe copy -col COLLECTION [-inst INSTANCE] -grp
MEDIA -obj OBJECTNAME [-opt OPTIONS] [-prio PRIORITY]
```

copyas

Submits a request for copying an archived object to a new object, with another name or category, to the DIVA Core Manager. The Manager chooses the appropriate instance as the source of the copy. The request fails if the requested object is on an unavailable

medium. All types of transfers (disk to disk, disk to tape, tape to disk, and tape to tape) are supported.

Use the `reqinfo` command to be informed when the request has been executed.

On success, divascript prints the `request ID` on the output

Synopsis

```
DivaScriptPy.exe copyas -col COLLECTION [-com COMMENTS] [-inst
INSTANCE] [-media MEDIA] -newcol NEWCOLLECTIONNAME -newmedia
NEWMEDIA -newobj NEWOBJECTNAME -obj OBJECT [-opt OPTIONS] [-
prio PRIORITY]
```

delete

Submits an Object Delete Request to the DIVA Core Manager. The Manager deletes either the specified instance or, if the instance is -1, every instance of the object.

Use the `reqinfo` command to be informed when the request has been executed.

On success, divascript prints the `request ID` on the output

Synopsis

```
DivaScriptPy.exe delete [-col COLLECTION] [-inst INSTANCE] [-
grp MEDIA] -obj OBJECTNAME [-opt OPTIONS] [-prio PRIORITY]
```

trarchive

Submits a TranscodeArchive request to the DIVA Core Manager. The original object is restored to the local Actor cache, then transcoded to the format defined in the option field. A new object containing the transcoded clip is then archived back to DIVA Core.

Use the `reqinfo` command to be informed when the request has been executed.

On success, divascript prints the `request ID` on the output.

Synopsis

```
DivaScriptPy.exe trarchive [-delc CASCADEDELETE] [-com COM-
MENTS] -dcol DESTINATIONCOLLECTIONNAME -dobj DESTINATIONOBJECT-
NAME -media MEDIA [-opt OPTIONS] [-prio PRIORITY] [-qos QOS] -
col SOURCECOLLECTIONNAME [-inst SOURCEINSTANCEID] -obj SOURCEO-
BJECTNAME
```

scan

Submits a scan tape request to the DIVA Core Manager. This call returns as soon as the Manager accepts the request.

Use the `reqinfo` command to be informed when the request has been executed.

On success, divascript prints the request ID on the output.

Synopsis

```
DivaScriptPy.exe scan -col COLLECTION [-com COMMENTS] [-exl
EXCLUSION] [-imm IMPORTMODE] [-incl INCLUSION] [-min MINFILE-
SIZE] [-prio PRIORITY] -barcode BARCODE -grp MEDIA -trial
TRIALMODE
```

stage

Submits a Stage request to the media specified by `targetMedia`.

Use the `reqinfo` command to be informed when the request has been executed.

On success, DivaScriptPy prints the `request ID` on the output.

Synopsis

```
DivaScriptPy.exe stage -col COLLECTION -days NUMDAYS -obj
OBJECT -opt OPTIONS [-prio PRIORITY] -retier RESTORETIER -sto-
cls STORAGECLASS -target TARGETMEDIA
```