

NBIA Search with Authentication REST API Guide

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Purpose of this Guide

The National Biomedical Imaging Archive (NBIA) REST APIs allow you to access the search and download functions used in the TCIA [radiology portal](#).

The NBIA Search with Authentication REST APIs, described on this page, allow you to perform basic queries on and download data for image analysis from public and restricted collections. This guide explains how to authenticate yourself by requesting a token and then using that token to query and download data from restricted collections.

Other NBIA REST APIs

- If you do **not** require access to restricted collections you can use the [NBIA Search REST API Guide](#), which provides the same functionality, but does not require requesting a security token.
- The [NBIA Advanced REST API Guide](#) provides **advanced features** geared towards developers seeking to integrate searching and downloading TCIA data into their own web and desktop applications.

NBIA Search with Authentication REST API Base URL, Format, and Return Values

Access to any NBIA Search with Authentication REST API requires an [access token](#). If you want to access restricted collections, the TCIA Help Desk must give your user account permission to access them.

The full API for data consists of a base URL followed by the API and query parameters, in that order. The base URL to access NBIA Advanced REST API data is <https://services.cancerimagingarchive.net/nbia-api/services/v2/>.

NBIA Search with Authentication REST API Query Structure

```
<YOUR_ACCESS_TOKEN><BaseURL><Resource><QueryEndpoint>?<QueryParameters>
```

For example, the API call below requests all modality values for the TCGA-BRCA collection.

Example NBIA Search with Authentication REST API Query

```
curl -H "Authorization:Bearer cd2b2895-85d0-49c5-bd75-804f162da942" -k
"https://services.cancerimagingarchive.net/nbia-api/services/v2/getModalityValues?
Collection=TCGA-BRCA"
```

We can break this down as follows.

Object	Example
Token	cd2b2895-85d0-49c5-bd75-804f162da942
BaseURL	https://services.cancerimagingarchive.net
Resource	/nbia-api/services/v2
Endpoint	getModalityValues
Query Parameters	Collection=TCGA-BRCA

See [Image Download APIs](#) and [Image Metadata APIs](#) for more information about each NBIA Search with Authentication REST API.

Secure Access to NBIA REST Services

Access to any NBIA Search with Authentication API requires a [token that you must request](#). This token can then be used on subsequent requests to authorize access to resources. This token will expire in two hours but you can [refresh](#) it.

The NBIA REST API supports secure access to private data in the Client Credentials authorization flow with Spring Security and OAuth2. The Client Credentials authorization flow is also known as "signed fetch" or 2-legged OAuth. The following figure illustrates the typical use case for REST API calls made on the web using 2-legged OAuth. For more information regarding the specific workflow, consult the [OAuth2 Specification](#).

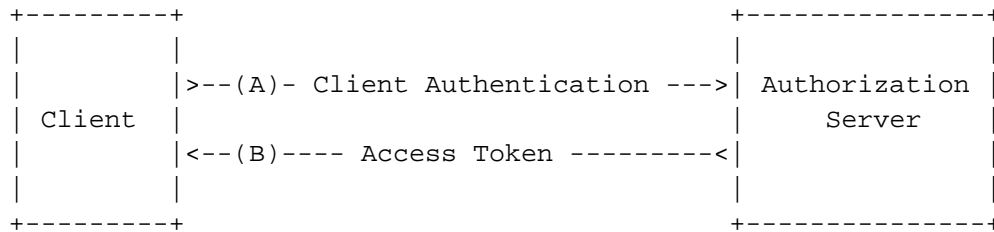


Figure 1: Client Credentials Flow

Requesting a Token

Access to any NBIA Advanced REST API requires an access token. A request for an access token takes the following structure. Note that **USERNAME** should be your TCIA username and **PASSWORD** should be your TCIA password.

Structure of a Request for a Token

```
curl -X -v -d "username=USERNAME&password=PASSWORD&client_id=NBIA&grant_type=password" -X POST -k https://services.cancerimagingarchive.net/nbia-api/oauth/token
```

If you don't have a TCIA account, you can access public data using the "nbia_guest" account with no password, as follows.

Request a Token to Use with Public Data

```
curl -X -v -d "username=nbia_guest&password=&client_id=NBIA&grant_type=password" -X POST -k https://services.cancerimagingarchive.net/nbia-api/oauth/token
```

How a Token is Returned/Granted/Given

A successful token request returns a standard access token in JSON format. The value after "access_token" will be longer than this example.

Sample Token Return Value

```
{"access_token":"cd2b2895-85d0-49c5-bd75-804f162da942","expires_in":7200,"refresh_expires_in":7200,"refresh_token":"eyJhbGciOiJIUzI1NiIsInR5cCI6IkpzZW50L3N1bWU6ImlnZm94IiwiaWF0Ijoi1461234567890","not-before-policy":0,"session_state":"92a199c6-84ed-48aa-a0d2-059bbb99bc90","scope":"openid profile email"}
```

Make a note of the access token you received and pass it with the REST service call.

Sample NBIA Advanced REST API Call

Request for modality values and counts

```
curl -H "Authorization:Bearer cd2b2895-85d0-49c5-bd75-804f162da942" -k "https://services.cancerimagingarchive.net/nbia-api/services/getModalityValuesAndCounts?Collection=LIDC-IDRI"
```

A successful service request returns the value in a defined format.

Refreshing the Token

You can refresh your access token for an additional two hours by passing the refresh token from your original token request.

Sample Request for Refreshing the Token

```
# Request for refreshing the token
```

```
curl -X -v -d "client_id=nbia&grant_type=refresh_token&refresh_token=YOUR_REFRESH_TOKEN"
-X POST -k https://nbia.cancerimagingarchive.net/nbia-api/oauth/token
```

In the following result, 7200 is the seconds before the token expires.

Sample Return Value

```
{"access_token":"YOUR_ACCESS_TOKEN","expires_in":7200,"refresh_expires_in":7200,"
refresh_token":"YOUR_REFRESH_TOKEN","token_type":"Bearer","id_token":"YOUR_ID_TOKEN","not-
before-policy":0,"session_state":"531425b6-425d-44f8-bc74-41200d6803c0","scope":"openid
profile email"}
```

Logging Out

The following is an example request to log out. Logging out invalidates the token you previously requested.

Sample Request to Logout

Request for logout

```
curl -X -v -d "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/logout"
```

The request does not return any values.

Accessing the National Lung Screening Trial (NLST) collection

Due to its size, the [National Lung Screening Trial \(NLST\)](https://nlst.cancerimagingarchive.net/nbia-api/oauth/token) collection lives on a separate NBIA server. Since this server only holds the public NLST collection, there is no reason to create an API token with your own credentials. To access these data via the Advanced REST API, you must change the URL to obtain the authentication token from <https://nlst.cancerimagingarchive.net/nbia-api/oauth/token>. You can then use <https://nlst.cancerimagingarchive.net/nbia-api/services/> to make REST API calls. In both cases, the beginning of the URL is changed from "services" to "nlst." Examples of requesting a token and performing an API query are shown below:

Request a Token to Use with Public Data

```
curl -X -v -d "username=nbia_guest&password=&client_id=NBIA&grant_type=password" -X POST -k https://nlst.cancerimagingarchive.net/nbia-api/oauth/token
```

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://nlst.cancerimagingarchive.net/nbia-api/services/getBodyPartValuesAndCounts?Modality=PT"
```

Image Download APIs

Use the APIs in the following table to download images from TCIA.

Query Name	Return Values	Output Format	Query Parameters	Usage
getImage	<p>An object that represents a set of images in a ZIP file based on <i>SeriesInstanceUID</i>.</p> <p>The naming scheme for the NewFileNames parameter changes from sequential numbers to acquisition number - instance number (in correct order).</p> <p>API example and return values for getImage</p>	ZIP	<p>SeriesInstance UID (R)</p> <p>NewFileNames (O) - Accepted values are Yes and No.</p>	Used for bulk transfer of all images in a series.
getImageWithMD5Hash	<p>All images in the series and MD5 hash values</p> <p>API example and return values for getImageWithMD5Hash</p>	ZIP	SeriesInstance UID (R)	Used for bulk transfer of images with the ability to check MD5Hash.
getSingleImage	<p>A single DICOM Object that is identified by its SeriesInstanceUID and SOPInstanceUID. This API will always be used following the getSOPInstanceUIDs.</p> <p>API example and return values for getSingleImage</p>	Raw DICOM Object	<p>SeriesInstance UID (R)</p> <p>SOPInstanceUID (R)</p>	Used to retrieve a single image.

Image Metadata APIs

Use the APIs in the following table to explore the metadata of objects in the TCIA database. Queries return a file in one of these data formats: CSV, HTML, XML, and JSON. **JSON** is the default return format if no format parameter is specified.

Query Name	Return Values	Query Parameters
getBodyPartValues	Set of all body part names filtered by query keys API example and return values for getBodyPartValues	Collection (O) Modality (O)
getCollectionValues	Set of all collection names API example and return values for getCollectionValues	None
getContentsByName	Return the contents of your cart. To get the name of the cart contents, you must add data to your cart in the TCIA Radiology Portal, and then select Share My Cart . An example of the URL that appears is https://nbia.cancerimagingarchive.net/nbia-search/?saved-cart=nbia-54241629300063058 . The cart name is what follows the equal sign, so in this example, the cart name is nbia-54241629300063058 . API example and return values for getContentsByName	name (R)
getManufacturerValues	Set of all manufacturer names filtered by query keys API example and return values for getManufacturerValues	Collection (O) BodyPartExamined (O) Modality (O)
getModalityValues	Set of all modality values (CT, MR, ...) filtered by query keys API example and return values for getModalityValues	Collection (O) BodyPartExamined (O)
NewPatientsInCollection	Set of patients, in a specified collection, since a specified date API example and return values for NewPatientsInCollection	Collection (R) Date (R)
NewStudiesInPatientCollection	Set of new studies for given patient and collection since a specified date API example and return values for NewStudiesInPatientCollection	Collection (R) Date (R) PatientID (R)

getPatient	Set of patient objects filtered by query keys API example and return values for getPatient	Collection (O)
getPatientByCollectionAndModality	Returns a list of PatientIDs, given a specific Collection Name and Modality API example and return values for getPatientByCollectionAndModality	Collection (R) Modality (R)
getPatientStudy	Set of patient/study objects filtered by query keys API example and return values for getPatientStudy	Collection (R) PatientID (O) StudyInstanceUID (O)
getSeries	Set of series objects filtered by query keys API example and return values for getSeries	Collection (O) PatientID (O) StudyInstanceUID (O) Modality (O) SeriesInstanceUID (O) BodyPartExamined (O) ManufacturerModelName (O) Manufacturer (O) SeriesInstanceUID (O)
getSeriesMetadata	All of the metadata for a given SeriesInstanceUID API example and return values for getSeriesMetadata	SeriesInstanceUID (R)
getSeriesSize	Set of total byte size and object count filtered by query key API example and return values for getSeriesSize	SeriesInstanceUID (R)
getSOPInstanceUIDs	A list of SOPInstanceUIDs for a given series using the SeriesInstanceUID API example and return values for getSOPInstanceUIDs	SeriesInstanceUID (R)

getUpdatedSeries	Set of series updated since a specified date API example and return values for getUpdatedSeries	fromDate (R)
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Return Values

This section lists and explains the return values of the APIs included in both tables above.



If the value for an attribute is not populated in the specified collection, it will not appear in the returned values.

- [getBodyPartValues](#)
- [getCollectionValues](#)
- [getContentsByName](#)
- [getImage](#)
- [getImageWithMD5Hash](#)
- [getManufacturerValues](#)
- [getModalityValues](#)
- [getNewPatientsInCollection](#)
- [getNewStudiesInPatientCollection](#)
- [getPatientByCollectionAndModality](#)
- [getPatientStudy](#)
- [getSeries](#)
- [getSeriesMetaData](#)
- [getSeriesSize](#)
- [getSingleImage](#)
- [getSOPInstanceUIDs](#)
- [getUpdatedSeries](#)

getBodyPartValues

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getBodyPartValues"
```

Attribute	DICOM Tag	Description
BodyPartExamined	0018, 0015	Standard DICOM definition

getCollectionValues

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getCollectionValues"
```

Attribute	DICOM Tag	Description
Collection	N/A	A label used to name a set of images collected for a specific trial or other reason. Assigned during the process of curating the data.

getContentsByName

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getContentsByName?name=TCIA_TCGA-PRAD_08-09-2016-v3"
```

Attribute	DICOM Tag	Description
SeriesInstanceUID	0020, 000E	Has been de-identified as part of submission process
StudyInstanceUID	0020, 000D	Has been de-identified as part of submission process.
Modality	0008, 0060	Standard DICOM definition
ProtocolName	0018, 1030	Standard DICOM definition. Has been inspected and cleaned of any PHI.
SeriesDate	0008, 0021	Standard DICOM definition
SeriesDescription	0008, 103E	Standard DICOM definition. Has been inspected and cleaned of any PHI.
BodyPartExamined	0018, 0015	Standard DICOM definition
SeriesNumber	0020, 0011	Standard DICOM definition
Collection	N/A	A label used to name a set of images collected for a specific trial or other reason. Assigned during the process of curating the data.
PatientID	0010, 0020	Has been de-identified as part of submission process.
Manufacturer	0008, 0070	Standard DICOM definition
ManufacturerModelName	0008, 1090	Standard DICOM definition
SoftwareVersions	0018, 1020	Standard DICOM definition
ImageCount	N/A	Number of images in the specified series

getImage

The license file, which includes the data usage agreement, is included in the returned ZIP file.

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getImage?SeriesInstanceUID=1.3.6.1.4.1.9590.100.1.2.374115997511889073021386151921807063992"
```

Attribute	DICOM Tag	Description
N/A	N/A	Set of images in a ZIP file

getImageWithMD5Hash

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getImageWithMD5Hash?SeriesInstanceUID=1.3.6.1.4.1.14519.5.2.1.6919.4624.313514201353787659031503464798"
```

Attribute	DICOM Tag	Description
N/A	N/A	Set of images in a ZIP file

getManufacturerValues

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getManufacturerValues"
```

Attribute	DICOM Tag	Description
Manufacturer	0008, 0070	Standard DICOM definition

getModalityValues

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getModalityValues"
```

Attribute	DICOM Tag	Description
Modality	0008, 0060	Standard DICOM definition

getNewPatientsInCollection

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/NewPatientsInCollection?Collection=CBIS-DDSM&Date=2010/08/16"
```

Attribute	DICOM Tag	Description
PatientID	0010, 0020	Has been de-identified as part of submission process.
PatientName	0010, 0010	Has been de-identified as part of submission process.
Collection	N/A	A label used to name a set of images collected for a specific trial or other reason. Assigned during the process of curating the data.
Phantom	0010, 0200	Indicates whether or not the subject is a quality control phantom.
SpeciesCode	0010,2202	The taxonomic rank value (e.g., genus, subgenus, species or subspecies) of the Patient.
SpeciesDescription	0010,2201	The taxonomic rank value (e.g., genus, subgenus, species or subspecies) of the Patient.

getNewStudiesInPatientCollection

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/NewStudiesInPatientCollection?Collection=CBIS-DDSM&Date=2010/08/16"
```

Attribute	DICOM Tag	Description
StudyInstanceUID	0020, 000D	Has been de-identified as part of submission process.
StudyDate	0008, 0020	Has been de-identified as part of submission process. Longitudinal information is preserved.
StudyDescription	0008, 1030	Standard DICOM definition. Has been inspected and cleaned of any PHI.
AdmittingDiagnosesDescription	0008, 1080	Standard DICOM definition. Has been inspected and cleaned of any PHI.
StudyID	0020, 0010	Has been de-identified as part of submission process.
PatientAge	0010, 1010	Standard DICOM definition
PatientID	0010, 0020	Has been de-identified as part of submission process.
PatientName	0010, 0010	Has been de-identified as part of submission process.
PatientBirthDate	0010, 0030	Has been de-identified as part of submission process.
PatientSex	0010, 0040	Standard DICOM definition
EthnicGroup	0010, 2160	Standard DICOM definition
Collection	N/A	A label used to name a set of images collected for a specific trial or other reason. Assigned during the process of curating the data.
SeriesCount	N/A	Computed number of series
LongitudinalTemporalEventType	0012, 0053	The type of event to which Longitudinal Temporal Offset from Event (0012,0052) is relative.

LongitudinalTemporalOffsetFromEvent	0012, 0052	An offset in days from a particular event of significance. May be fractional. In the context of a clinical trial, this is often the days since enrollment, or the baseline imaging Study.
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getPatient

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getPatient"
```

Attribute	DICOM Tag	Description
PatientID	0010, 0020	Has been de-identified as part of submission process.
PatientName	0010, 0010	Has been de-identified as part of submission process.
PatientBirth Date	0010, 0030	Has been de-identified as part of submission process.
PatientSex	0010, 0040	Standard DICOM definition
EthnicGroup	0010, 2160	Standard DICOM definition
Collection	N/A	A label used to name a set of images collected for a specific trial or other reason. Assigned during the process of curating the data.
Phantom	0010, 0200	Indicates whether or not the subject is a quality control phantom.
SpeciesCode	0010,2202	The taxonomic rank value (e.g., genus, subgenus, species or subspecies) of the Patient.
SpeciesDescription	0010,2201	The taxonomic rank value (e.g., genus, subgenus, species or subspecies) of the Patient.

getPatientByCollectionAndModality

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getPatientByCollectionAndModality?Collection=VICTRE&Modality=MG"
```

Attribute	DICOM Tag	Description
PatientId	0010, 0020	A list of patient IDs for a specified collection and modality

getPatientStudy

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getPatientStudy"
```

Attribute	DICOM Tag	Description
StudyInstanceUID	0020, 000D	Has been de-identified as part of submission process.
StudyDate	0008, 0020	Has been de-identified as part of submission process. Longitudinal information is preserved.
StudyDescription	0008, 1030	Standard DICOM definition. Has been inspected and cleaned of any PHI.
AdmittingDiagnosesDescription	0008, 1080	Standard DICOM definition. Has been inspected and cleaned of any PHI.
StudyID	0020, 0010	Has been de-identified as part of submission process.
PatientAge	0010, 1010	Standard DICOM definition
PatientID	0010, 0020	Has been de-identified as part of submission process.
PatientName	0010, 0010	Has been de-identified as part of submission process.
PatientBirthDate	0010, 0030	Has been de-identified (emptied) as part of submission process.
PatientSex	0010, 0040	Standard DICOM definition
EthnicGroup	0010, 2160	Standard DICOM definition
Collection	N/A	A label used to name a set of images collected for a specific trial or other reason. Assigned during the process of curating the data.
SeriesCount	N/A	Computed number of series
LongitudinalTemporalEventType	0012, 0053	The type of event to which Longitudinal Temporal Offset from Event (0012,0052) is relative.
LongitudinalTemporalOffsetFromEvent	0012, 0052	An offset in days from a particular event of significance. May be fractional. In the context of a clinical trial, this is often the days since enrollment, or the baseline imaging Study.

getSeries

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getSeries"
```

Attribute	DICOM Tag	Description
SeriesInstanceUID	0020, 000E	Has been de-identified as part of submission process
StudyInstanceUID	0020, 000D	Has been de-identified as part of submission process
Modality	0008, 0060	Standard DICOM definition
ProtocolName	0018, 1030	Standard DICOM definition. Has been inspected and cleaned of any PHI.
SeriesDate	0008, 0021	Standard DICOM definition
SeriesDescription	0008, 103E	Standard DICOM definition. Has been inspected and cleaned of any PHI.
BodyPartExamined	0018, 0015	Entered on a per collection basis using relevant SNOMED terms
SeriesNumber	0020, 0011	Standard DICOM definition
AnnotationsFlag	N/A	Indicates if there are annotations for a collection
Collection	N/A	A label used to name a set of images collected for a specific trial or other reason. Assigned during the process of curating the data.
PatientID	0010, 0020	Has been de-identified as part of submission process
Manufacturer	0008, 0070	Standard DICOM definition
ManufacturerModelName	0008, 1090	Standard DICOM definition
SoftwareVersions	0018, 1020	Standard DICOM definition
ImageCount	N/A	Computed number of images in this series
TimeStamp	N/A	Date the series was released

LicenseName	N/A	License that applies to this series
LicenseURI	N/A	URL of license source
CollectionURI	N/A	URI of collection
FileSize	N/A	File size

getSeriesMetaData

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getSeriesMetaData?SeriesInstanceUID=1.3.6.1.4.1.9590.100.1.2.374115997511889073021386151921807063992"
```

Attribute	DICOM Tag	Description
Series UID	0020, 000E	Standard DICOM definition
Collection	N/A	A label used to name a set of images collected for a specific trial or other reason. Assigned during the process of curating the data.
3rd Party Analysis	N/A	Data from third-party analysis results
Data Description URI	N/A	Location of the data description
Subject ID	N/A	Unique identifier for the subject
Study UID	0020, 000D	Standard DICOM definition
Study Description	0008, 1030	Institution-generated description or classification of the Study (component) performed
Study Date	0008, 0020	Has been de-identified as part of submission process. Longitudinal information is preserved.
Series Description	0020, 0011	Standard DICOM definition. Has been inspected and cleaned of any PHI.
Manufacturer	0008, 0070	Standard DICOM definition
Modality	0008, 0060	Standard DICOM definition
SOP Class UID	N/A	Unique identifier of the SOP Class
Number of Images	N/A	Number of images in this series
File Size	N/A	File size in bytes
File Location	N/A	Location of the file in the file system

Series Number	0020,0011	Standard DICOM definition
License Name	N/A	License that applies to this series
License URL	N/A	URL of license source
Annotation Size	N/A	Size of annotation files in bytes

getSeriesSize

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getSeriesSize?SeriesInstanceUID=1.3.6.1.4.1.9590.100.1.2.374115997511889073021386151921807063992"
```

Attribute	DICOM Tag	Description
TotalSizeInBytes	N/A	Byte size of the specified series
ObjectCount	N/A	Number of objects in the specified series

getSingleImage

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getSingleImage?SeriesInstanceUID=1.3.6.1.4.1.9590.100.1.2.374115997511889073021386151921807063992&SOPInstanceUID:1.3.6.1.4.1.9590.100.1.2.289923739312470966435676008311959891294"
```

Attribute	DICOM Tag	Description
N/A	N/A	Single image in DICOM format

getSOPInstanceUIDs

Sample Call

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getSOPInstanceUIDs?SeriesInstanceUID=1.3.6.1.4.1.9590.100.1.2.374115997511889073021386151921807063992"
```

Attribute	DICOM Tag	Description
SOPInstanceUID	0008, 0018	Uniquely identifies the SOP Instance

getUpdatedSeries

```
curl -H "Authorization:Bearer YOUR_ACCESS_TOKEN" -k "https://services.cancerimagingarchive.net/nbia-api/services/v2/getUpdatedSeries?fromDate=01/01/2020"
```

Attribute	DICOM Tag	Description
SeriesInstanceUID	0020, 000E	Has been de-identified as part of submission process
StudyInstanceUID	0020, 000D	Has been de-identified as part of submission process
Modality	0008, 0060	Standard DICOM definition
ProtocolName	0018, 1030	Standard DICOM definition. Has been inspected and cleaned of any PHI.
SeriesDate	0008, 0021	Standard DICOM definition
SeriesDescription	0008, 103E	Standard DICOM definition. Has been inspected and cleaned of any PHI.
BodyPartExamined	0018, 0015	Entered on a per collection basis using relevant SNOMED terms
SeriesNumber	0020, 0011	Standard DICOM definition
AnnotationsFlag	N/A	Indicates if there are annotations for a collection
Collection	N/A	A label used to name a set of images collected for a specific trial or other reason. Assigned during the process of curating the data.
PatientID	0010, 0020	Has been de-identified as part of submission process.
Manufacturer	0008, 0070	Standard DICOM definition
ManufacturerModelName	0008, 1090	Standard DICOM definition
SoftwareVersions	0018, 1020	Standard DICOM definition
ImageCount	N/A	Number of images in the specified series