PSYCHE SYSTEMS

BACKBONE NUCLEOLIS API

REVISION 1.3
04/26/2021
(REQUIRES BACKBONE SERVER V19 OR LATER)

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BACKBONE API

OVERVIEW – GETTING STARTED

This is a guide for using the Psyche Systems Backbone application programming interface (API).

This section of the guide covers getting started information for four essential requirements for communicating with the Backbone Server using the Backbone API:

1. Verifying/Confirming the Backbone Server Uniform Resource Locator (URL)
2. Logging in, authenticating, and establishing a session.
3. Calling API endpoints during a session.
4. Terminating a session and log out.

Appendix A provides more details about the available API commands that can be used for interacting with NucleoLIS.

Appendix B provides multiple coding examples illustrating how you can program a client side implementation to call the Backbone API.

THEORY OF OPERATION

The Backbone API is a Representational state transfer (REST) based API that is designed to run on Microsoft Internet Information Server (IIS). Typically, Psyche Systems deploys the server-side of the Backbone on IIS version 7 or later to host the Backbone Server API. The client side implementation of the API can be written in any programming language and run on any operating system as long as the client side implementation adheres to the standards outlined in this document.

To ensure Health Insurance Portability And Accountability Act (HIPAA) privacy compliance and to safeguard Protected Health Information (PHI), all requests to the Backbone Server API must use Hypertext Transfer Protocol Secure (HTTPS) over port 443.

The Backbone Server (being a REST based web server implementation) is considered to be stateless, with the exception of the "session" cookie which is passed back and forth between the client side implementation and the Backbone Server with each request after a successful logon is established.

SECURITY

To further ensure HIPAA compliance and security of PHI, the Backbone API provides session –based security as follows:

1. AUTHENTICATION.

A valid username and password is required to access the Backbone Server API. Once logged in, the API returns an access token that valid for 15 minutes and can be used to make subsequent requests. This access token is stored in a cookie which is transparently passed back and forth with each API request/response. This access token resets every time a successful API call is completed. With this approach, an application can authenticate once, make any number of API calls, and then log out, without needing to pass authentication credentials with every request.

2. SECURE TRANSPORT PROTOCOL (HTTP-S).

All API calls are made using Internet standard Hypertext Transport Protocol Secure (HTTPS) on port 443. The bidirectional encryption of communications between a client and server protects against eavesdropping and tampering of the communication. In practice, this provides a reasonable assurance that one is communicating without interference by attackers with the website that one intended to communicate with, as opposed to an impostor.

This implementation also uses the latest Transport Layer Security (TLS) encryption. This public-private key encryption overlays the symmetric AES encryption used for encrypting the payload, so essentially, the payload is double encrypted and is extremely secure.

3. SLIDING WINDOW TOKEN EXPIRY

Each time a session token is provided to a requesting client, the token is encoded so that it is only valid for 15 minutes. This provides what is known as "sliding window" expiration. By using this security method, tokens that are copy/pasted can only be used for a limited period of time. Each time a successful request is made to the Backbone Server API, the token is refreshed to provide a new 15 minute window. In the event that no request is made within 15 minutes, the token expires and can no longer be used without logging in again to obtain a new token. This is the equivalent to the "idle timeout" feature that many online systems offer.

GETTING STARTED

For each of the examples shown, this document also provides in Appendix "B", coding examples in a wide variety of programming languages so the implementers can research options for creating their custom client implementation that communicates with the API.

STEP 1 – VERIFY/CONFIRM BACKBONE URL CONNECTIVITY

When first getting started with a client side implementation, it is helpful to first ensure that you can "reach" the Backbone Server from your client location. To do this, enter the URL of the Backbone Server that you were provided into any web browser. If you are able to connect using that URL, you will see a page that looks like this:

If you don't see this page, please contact Psyche Systems support for assistance. If you do see this page, then this is the URL that you will use when making all API requests. This URL will be referred to as "https://www.SomeServer.com/api/" in the rest of this document.

STEP 2 – LOGGING INTO THE BACKBONE NUCLEOLIS API

Logging in, authenticates the requesting client as a valid user, and upon successful login, returns an authorization token that is stored in a session cookie. This cookie must be passed after each subsequent request.

This is accomplished by calling the "logon" endpoint with username and password information that is POSTED to the Backbone Server with the following settings:

URI	<API URL>/api/authenticate/logon
Host	Provide the hostname of the web server you are connecting with.
Authorization Method	No Auth
Content-Type	`application/x-www-form-urlencoded`
Content-Length	The length of the body payload in bytes. For example, if you are posting: `username=LAB&password=123456` Then, the Content-Length parameter would be set to 28. (Because there are 28 characters in the payload).

User-Agent	Set this to a unique name for your client application.
Accept	`*/*`
Posted Data	`username=<username>&password=<password>` Here, <username> and <password> are the username and password you were provided to access the API. If you do not have these credentials, please contact Psyche Systems support.

When the called API command succeeds, the response will look like this:

Status	`200 OK`
Body	`<?xml version="1.0" encoding="UTF-8" ?><login>Success</login>`
Set-Cookie	`session=session-id=qAuOpF9tIBeBR8SIGLmDVRQGUFJ%2ftxLUbELwr8HtNxo%3d&username=346650&epoch=1604331210&timelimit=900; expires=Mon, 02 Nov 2020 15:48:30 GMT; domain=SomeServer.com; path=/; secure; httponly`
Content-Type	`Text/plain; charset=utf-8`
Server	`Microsoft-IIS/8.0`

If the username or password is invalid, the response will look like this:

Status	`401`
Body	`<?xml version="1.0" encoding="UTF-8" ?><login>username or password invalid</login`
Set- Cookie	`(No cookie returned)`
Content-Type	`Text/plain; charset=utf-8`

Server	`Microsoft-IIS/8.0`

Other error messages can sometimes be shown as well. If you don't receive the word "Success" within the xml return message, then you should assume that the login failed, and the message returned is the error message.

Note: On initial login, there no cookie specified yet. The cookie gets created by the Backbone Server, and is returned to the client only after a successful logon request is executed. This "session" cookie will contain the authentication token and will look similar to this:

Cookie: `session=session-id=qAuOpF9tIBeBR8SIGLmDVRQGUFJ%2ftxLUbELwr8HtNxo%3d&username=346650&epoch=1604331210&timelimit=900; expires=Mon, 02 Nov 2020 15:48:30 GMT; domain=SomeServer.com; path=/; secure; httponly`

This cookie will be updated after each successful request, and must be passed back to the server on each subsequent request. The session token contained within the cookie is only valid for 15 minutes. If a subsequent API endpoint request is not made within the session "timeout" limit of 15 minutes, then the session token becomes invalid, and the client will need to login again to get a new session token by calling the "logon" API endpoint again.

See Appendix "B" for programming examples that call this endpoint.

STEP 3- CALLING API ENDPOINTS WITHIN A SESSION

Once you are logged in, the next step is to call an API Endpoint using GET. In this example we will show how to call the NucleoLIS api/N/GetHeartbeat API endpoint. This API endpoint returns a heartbeat message so you can determine if the API is able to communicate with NucleoLIS.

URI	<API URL>/ api/N/GetHeartbeat
Host	Provide the hostname of the web server you are connecting with.
Authorization Method	No Auth
Cookie	Pass in the cookie you received in the response from the logon API call. It should look similar to this:

	`session=session-id=H38%2fAImLMVMNssLZsY%2fx7mWkfNsHIM4m1CVO%2bFDc9aU%3d&username=346650&epoch=1604330631&timelimit=900`
User-Agent	Set this to a unique name for your client application.
Accept	`*/*`

When the called API command succeeds, the response will look like this:

Status	`200 OK`
Body	`<?xml version="1.0" encoding="UTF-8" ?><Result>OK</Result>`
Set-Cookie	`session=session-id=xjxAnqMxbu9D%2fbYakV5nRMeKxLlEVnADTiMJqUJycp0%3d&username=346650&epoch=1604330884&timelimit=900; expires=Mon, 02 Nov 2020 15:43:04 GMT; domain=SomeServer.com; path=/; secure; httponly`
Content-Type	`Text/plain; charset=utf-8`
Server	`Microsoft-IIS/8.0`

See Appendix "B" for programming examples that call this endpoint.

STEP 4- TERMINATE A SESSION AND LOG OUT

When you are done communicating with the Backbone Server API, there are two choices on how to end the session.

1. Do nothing – the cookie containing the latest session token will expire after 15 minutes.
2. Call the Logout API endpoint to destroy the cookie and immediately terminate the session:

URI	<API URL>/ api/authenticate/logout
Host	Provide the hostname of the web server you are connecting with.

Authorization Method	No Auth
Cookie	Pass in the cookie you received in the response from the logon API call. It should look similar to this: `session=session-id=H38%2fAImLMVMNssLZsY%2fx7mWkfNsHIM4m1CVO%2bFDc9aU%3d&username=346650&epoch=1604330631&timelimit=900`
User-Agent	Set this to a unique name for your client application.
Accept	`*/*`

When the called API command succeeds, the response will look like this:

Status	`200 OK`
Body	`<?xml version="1.0" encoding="UTF-8" ?><logout>Success</logout>`
Cookie	`(The cookie no longer exists)`
Content-Type	`Text/plain; charset=utf-8`

APPENDIX A – NUCLEOLIS API ENDPOINTS

API CALLS SPECIFICATIONS

In addition to the logon and logoff API endpoints covered in section 1, the endpoints in this appendix are all of the available API endpoints for NucleoLIS Interaction.

GET HEARTBEAT

Endpoint api/N/GetHeartbeat

Purpose Returns a NucleoLIS heartbeat message so you can determine if the API is able to communicate with NucleoLIS system.

Request Type GET

Parameters {None}

Example `https://www.SomeServer.com/api/N/GetHeartbeat`

Returns If the heartbeat succeeds, returns:

```
<?xml version="1.0"
encoding="UTF8" ?><Result>OK</Result>
```

GET PATIENT

Endpoint api/N/GetPatient

Purpose Returns a single, full NucleoLIS patient record based on a patient unique identifier.

Request Type GET

Parameters

`patient_id={patient_id}`

`user_id={user_id}`

`return_format={return_format}`

Where:

patient_id is the objectID of the requested Patient record.

user_id is the user code for the user in the NucleoLIS user table that is requesting the record.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

https://www.SomeServer.com/api/N/GetPatient?patient_id=518535440&user_id=245654&return_format=0

Returns

If the request succeeds, returns a patient record in the following XML format:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <PatientTable>
    <Patient_ObjectID>518535440</Patient_ObjectID>
    <Patient_CreationDate>2020-11-02T11:23:31.247-
05:00</Patient_CreationDate>
    <Patient_UpdateTime>2020-11-02T11:23:31.247-
05:00</Patient_UpdateTime>
    <Patient_Name>Boop, Betty</Patient_Name>
    <Patient_Sex>F</Patient_Sex>
    <Patient_Street />
    <Patient_City />
    <Patient_State />
    <Patient_Zip />
    <Patient_Phone />
    <Patient_Fax />
    <Patient_Code>518535440</Patient_Code>
    <Patient_Soundex>BOPBTY</Patient_Soundex>
    <Patient_Dob>1965-03-23</Patient_Dob>
    <Patient_Ssn>011-22-3333</Patient_Ssn>
    <Patient_MedicareNumber />
    <Patient_Status>I</Patient_Status>
    <Patient_CREATOR>LAB</Patient_CREATOR>
    <Patient_RACE>White</Patient_RACE>
    <Patient_STREET2 />
```

```
      <Patient_USER1 />
      <Patient_USER2 />
      <Patient_USER3 />
      <Patient_USER4 />
      <Patient_MODIFIER>LAB</Patient_MODIFIER>
      <Patient_LastName>Boop</Patient_LastName>
      <Patient_FirstName>Betty</Patient_FirstName>
      <Patient_MiddleName />
      <Case_Status>I</Case_Status>
   </PatientTable>

</NewDataSet>
```

GET PATIENTS

Endpoint api/N/GetPatients

Purpose Returns a collection of NucleoLIS patient records based on filter parameters passed.

Request Type GET

Parameters

```
last_name = {last_name} (use * for wildcard)

first_name = {first_name} (use * for wildcard)

activesOnly = {activesOnly} (true, or  false)

filter_expression = {filter_expression}

user_id = {user_id}

return_format = {return_format}
```

Where:

last_name is the last name of the patient(s) to search for. Wildcards are supported. (Example S* will return all patients with a last name beginning with 'S'.)

first_name is the first name of the patient(s) to search for. Wildcards are supported. (Example L* will return all patients with a first name beginning with 'L'.)

activesOnly is a true or false parameter. If true, only active patients will be returned. If false, all patients (both active and inactive) will be returned.

filter_expression is used as a secondary custom filtering criteria applied to the result set . Wildcards are supported. It can be used with any column returned in the result set. Any valid SQL WHERE clause is accepted.

Multiple columns can be used when separated with 'AND'. Example: Patient_State='MA' AND Patient_City='W*' will return all patients that live in MA in a city that begins with 'W'.

user_id is the user code for the user in the NucleoLIS user table that is requesting the record.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/GetPatients?last_name=S*&first_name=*&activesOnly=true&filter_expression=Patient_Sex='Male'&user_id=245654&return_format=0
```

Returns

If the request succeeds, returns a collection of 1..n patient records matching the filtering criteria in the following XML format:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <PatientTable>
    <Patient_ObjectID>433016111</Patient_ObjectID>
    <Patient_Name>Claus, Santa</Patient_Name>
    <Patient_Code>433016111</Patient_Code>
```

```
    <Patient_Street />
    <Patient_STREET2 />
    <Patient_City />
    <Patient_State />
    <Patient_Zip />
    <Patient_Sex>Male</Patient_Sex>
    <Patient_Dob>1900-12-25</Patient_Dob>
    <Patient_Ssn />
  </PatientTable>
  <PatientTable>
    <Patient_ObjectID>503609702</Patient_ObjectID>
    <Patient_Name>Claus, Santa</Patient_Name>
    <Patient_Code>503609702</Patient_Code>
    <Patient_Street />
    <Patient_STREET2 />
    <Patient_City />
    <Patient_State />
    <Patient_Zip />
    <Patient_Sex>Male</Patient_Sex>
    <Patient_Dob>1900-12-25</Patient_Dob>
    <Patient_Ssn />
  </PatientTable>
  <PatientTable>
    <Patient_ObjectID>504251809</Patient_ObjectID>
    <Patient_Name>Claus, Santa</Patient_Name>
    <Patient_Code>504251809</Patient_Code>
    <Patient_Street />
    <Patient_STREET2 />
    <Patient_City />
    <Patient_State />
    <Patient_Zip />
    <Patient_Sex>Male</Patient_Sex>
    <Patient_Dob>1900-12-25</Patient_Dob>
    <Patient_Ssn />
  </PatientTable>
  <PatientTable>
    <Patient_ObjectID>4550996</Patient_ObjectID>
    <Patient_Name>Sanding, Sammie</Patient_Name>
    <Patient_Code>4550996</Patient_Code>
    <Patient_Street />
    <Patient_STREET2 />
    <Patient_City />
    <Patient_State />
    <Patient_Zip />
    <Patient_Sex>Male</Patient_Sex>
    <Patient_Dob>1980-04-22</Patient_Dob>
    <Patient_Ssn />
```

```
    </PatientTable>
    <PatientTable>
      <Patient_ObjectID>507538376</Patient_ObjectID>
      <Patient_Name>Sanding, Sammie</Patient_Name>
      <Patient_Code>507538376</Patient_Code>
      <Patient_Street />
      <Patient_STREET2 />
      <Patient_City />
      <Patient_State />
      <Patient_Zip />
      <Patient_Sex>Male</Patient_Sex>
      <Patient_Dob>1980-04-22</Patient_Dob>
      <Patient_Ssn />
    </PatientTable>

</NewDataSet>
```

GET CASE

Endpoint api/N/GetCase

Purpose Return a single, full NucleoLIS case record based on case number. The full case record inclusive of all data elements associated with patient, case, specimen, test order and test result records are returned.

Request Type GET

Parameters

```
case_number={case_number}

user_id={user_id}

return_format={return_format}
```

Where:

case_number is the number of the case.

user_id is the user code for the user in the NucleoLIS user table that is requesting the record.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https:// www.SomeServer.com
/api/N/GetCase?case_number=M2020-
000032&user_id=245654&return_format=0
```

Returns

If the request succeeds, returns the requested case record in the following XML format:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <CaseTable>
    <Patient_ObjectID>163307929</Patient_ObjectID>
    <Patient_CreationDate>2016-11-10T16:11:29.84-
05:00</Patient_CreationDate>
    <Patient_UpdateTime>2019-05-22T10:51:15.137-
04:00</Patient_UpdateTime>
    <Patient_Name>O'Hara, Jaime</Patient_Name>
    <Patient_Sex>Female</Patient_Sex>
    <Patient_Street />
    <Patient_City />
    <Patient_State />
    <Patient_Zip />
    <Patient_Phone />
    <Patient_Fax />
    <Patient_Code>163307929</Patient_Code>
    <Patient_Soundex>O'HRJM</Patient_Soundex>
    <Patient_Dob>2018-05-16</Patient_Dob>
    <Patient_Ssn />
    <Patient_MedicareNumber />
    <Patient_Status>I</Patient_Status>
    <Patient_CREATOR>LAB</Patient_CREATOR>
    <Patient_RACE />
    <Patient_STREET2 />
    <Patient_USER1 />
    <Patient_USER2 />
    <Patient_USER3 />
    <Patient_USER4 />
    <Patient_Modifier>Scaron</Patient_Modifier>
```

```
    <Patient_LastName>O'Hara</Patient_LastName>
    <Patient_FirstName>Jaime</Patient_FirstName>
    <Visit_ObjectID>498604164</Visit_ObjectID>
    <Visit_CreationDate>2019-05-22T10:51:34.293-
04:00</Visit_CreationDate>
    <Visit_UpdateTime>2019-05-22T10:51:34.293-
04:00</Visit_UpdateTime>

<Visit_SuperobjectID>163307929</Visit_SuperobjectID>
    <Visit_Patient>163307929</Visit_Patient>
    <Visit_Code>498604164</Visit_Code>
    <Visit_Location />
    <Visit_Type>OP</Visit_Type>
    <Visit_VisitDate>2019-05-22</Visit_VisitDate>
    <Visit_Status>I</Visit_Status>
    <Visit_DischargeDate />
    <Visit_ExtraField1 />
    <Visit_ExtraField2 />
    <Visit_CREATOR>Scaron</Visit_CREATOR>
    <Visit_USER1 />
    <Visit_USER2 />
    <Visit_USER3 />
    <Visit_USER4 />
    <Visit_comment />
    <Case_ObjectID>506873424</Case_ObjectID>
    <Case_CreationDate>2020-03-09T14:50:06.023-
04:00</Case_CreationDate>
    <Case_UpdateTime>2020-05-11T14:03:15.34-
04:00</Case_UpdateTime>
    <Case_SuperobjectID>498604164</Case_SuperobjectID>
    <Case_User1 />
    <Case_User2 />
    <Case_User3 />
    <Case_User4 />
    <Case_CREATOR>Scaron</Case_CREATOR>
    <Case_MODIFIER>Bishop</Case_MODIFIER>
    <Case_Number>M2020-000032</Case_Number>
    <Case_ReqNumber />
    <Case_ReportedFlag>False</Case_ReportedFlag>

<Case_SubmitterLocation>258012099</Case_SubmitterLocat
ion>
    <Case_OrderID />
    <Case_Status>I</Case_Status>
    <Case_ReportStatus>FINAL</Case_ReportStatus>
    <Case_CaseType>14662557</Case_CaseType>
    <Case_CorrectedComment />
```

```
    <Case_AmendedComment />
    <Case_ReportedBy>Bishop</Case_ReportedBy>
    <Case_CanceledBy />
    <Case_CanceledDate />
    <Case_ReviewFlag>2020-03-09</Case_ReviewFlag>
    <Case_ReviewedBy />
    <Case_ReviewedDate />
    <Case_ReviewedComment />
    <Case_ReviewedTime />
    <Case_StatusStep />
    <Case_CanceledFor />
    <Case_Signer>370583063</Case_Signer>
    <Case_SignerDate>2020-03-09</Case_SignerDate>
    <Case_ICDs />
    <Case_ClinicalInformation />
    <Case_Images><?xml version="1.0" encoding="utf-
16"?>
<ChrysalisImgDats
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
/></Case_Images>
    <Case_DocumentID />
    <Case_OrderDate>2020-03-09</Case_OrderDate>
    <Case_OrderTime />
    <Case_ExternalID />
    <Case_ExternalPatientID />
    <Case_ReopenReason />
    <Case_ReopenDate />
    <Case_Signatures><?xml version="1.0"
encoding="utf-16"?>
<CaseSignatureHistory
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Sigs>
    <CaseSignature>
      <Signer>370583063</Signer>
      <SignerDate>2020-03-09T15:08:36</SignerDate>
      <ReOpenReason />
      <ReOpener>0</ReOpener>
      <ReOpenedDate>0001-01-01T00:00:00</ReOpenedDate>
      <UnSign>false</UnSign>
    </CaseSignature>
    <CaseSignature>
      <Signer>370583063</Signer>
      <SignerDate>2020-03-09T15:10:42</SignerDate>
      <ReOpenReason />
      <ReOpener>0</ReOpener>
```

```
      <ReOpenedDate>0001-01-01T00:00:00</ReOpenedDate>
      <UnSign>true</UnSign>
    </CaseSignature>
    <CaseSignature>
      <Signer>370583063</Signer>
      <SignerDate>2020-03-09T15:11:09</SignerDate>
      <ReOpenReason />
      <ReOpener>0</ReOpener>
      <ReOpenedDate>0001-01-01T00:00:00</ReOpenedDate>
      <UnSign>false</UnSign>
    </CaseSignature>
  </Sigs>
</CaseSignatureHistory></Case_Signatures>
    <Case_NeedsCorrectedF>False</Case_NeedsCorrectedF>
    <Case_PrescriptionDrugs><?xml version="1.0"
encoding="utf-16"?>
<PrescribedDrugs
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
/></Case_PrescriptionDrugs>
    <Case_DataCollect />
    <Case_ReportIX>1</Case_ReportIX>
    <Case_OInitStatus>I</Case_OInitStatus>

<Case_RequireSignature>True</Case_RequireSignature>
    <Case_SignerTime>15:11</Case_SignerTime>
    <Case_CorrectionRequest />
    <Case_CorrectionRequestDate />
    <Case_CorrectionRequestTime />

<Case_SignerLocation>246584261</Case_SignerLocation>
    <Case_ClearCorrectedReason />
    <Case_QuestionsStash><?xml version="1.0"
encoding="utf-16"?>
<AAOEStasherBase
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Responses>
    <AAOEItemBase>
      <QObjectID>302726734</QObjectID>
      <Question>Additional Information</Question>
      <AllowOther>true</AllowOther>
      <SingleSelect>false</SingleSelect>
      <Required>true</Required>
      <FullResponse />
      <GridQuestion>false</GridQuestion>
      <GridQuestions />
```

```
      <Answers>
        <string>none</string>
      </Answers>
    </AAOEItemBase>
    <AAOEItemBase>
      <QObjectID>481211124</QObjectID>
      <Question>General Health</Question>
      <AllowOther>true</AllowOther>
      <SingleSelect>true</SingleSelect>
      <Required>false</Required>
      <FullResponse />
      <GridQuestion>false</GridQuestion>
      <GridQuestions />
      <Answers>
        <string>Good</string>
      </Answers>
    </AAOEItemBase>
    <AAOEItemBase>
      <QObjectID>481215687</QObjectID>
      <Question>Fasting</Question>
      <AllowOther>false</AllowOther>
      <SingleSelect>true</SingleSelect>
      <Required>true</Required>
      <FullResponse />
      <GridQuestion>false</GridQuestion>
      <GridQuestions />
      <Answers>
        <string>Yes</string>
      </Answers>
    </AAOEItemBase>
  </Responses>
</AAOEStasherBase></Case_QuestionsStash>
    <Case_Questions>Additional Information:none
General Health:Good
Fasting:Yes</Case_Questions>

<Case_QuestionsComplete>True</Case_QuestionsComplete>
    <Specimen_ObjectID>506873435</Specimen_ObjectID>
    <Specimen_CreationDate>2020-03-09T14:50:41.513-
04:00</Specimen_CreationDate>
    <Specimen_UpdateTime>2020-03-09T14:51:10.153-
04:00</Specimen_UpdateTime>

<Specimen_SuperobjectID>506873424</Specimen_Superobjec
tID>
    <Specimen_User1 />
    <Specimen_User2 />
```

```
    <Specimen_User3 />
    <Specimen_User4 />
    <Specimen_CREATOR>Scaron</Specimen_CREATOR>
    <Specimen_MODIFIER>Scaron</Specimen_MODIFIER>
    <Specimen_CollectionDate>2020-03-
09</Specimen_CollectionDate>

<Specimen_CollectionTime>09:00</Specimen_CollectionTim
e>
    <Specimen_ReceivedDate>2020-03-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>14:51:10</Specimen_ReceivedTime
>
    <Specimen_Receiver>Scaron</Specimen_Receiver>
    <Specimen_Number>506873435</Specimen_Number>
    <Specimen_Status>A</Specimen_Status>
    <Specimen_Comment />
    <Specimen_Description />

<Specimen_SourceDefinition>4348467</Specimen_SourceDef
inition>
    <Specimen_Interpretation />
    <Specimen_StatusStep />
    <Specimen_SuperOrders />
    <Specimen_UnInlabDate />
    <Specimen_DataCollect />
    <Specimen_Priority>Routine</Specimen_Priority>
    <Specimen_Site />
    <Specimen_Gross />
    <Specimen_AddOnDate />
    <Specimen_AddOnTime />
    <Specimen_AddOn>False</Specimen_AddOn>
    <Specimen_MultipleCountID />
    <Specimen_MergeComments />
    <Specimen_MergeIntoComments />
    <Specimen_QuestionsStash />
    <Specimen_Questions />

<Specimen_QuestionsComplete>True</Specimen_QuestionsCo
mplete>
    <Specimen_FastingStatus />
    <Profile_TYPE>IMMUNO</Profile_TYPE>
    <Profile_ObjectID>506873438</Profile_ObjectID>
    <Profile_CreationDate>2020-03-09T14:50:49.687-
04:00</Profile_CreationDate>
```

```
    <Profile_UpdateTime>2020-03-09T15:07:50.84-
04:00</Profile_UpdateTime>

<Profile_SuperobjectID>506873435</Profile_SuperobjectI
D>
    <Profile_User1 />
    <Profile_User2 />
    <Profile_User3 />
    <Profile_User4 />
    <Profile_CREATOR>Scaron</Profile_CREATOR>
    <Profile_MODIFIER>Suec</Profile_MODIFIER>
    <Profile_Description />
    <Profile_OrderDate>2020-03-09</Profile_OrderDate>
    <Profile_OrderTime>14:50</Profile_OrderTime>
    <Profile_OrderedBy>Scaron</Profile_OrderedBy>

<Profile_PanelDefinition>416976655</Profile_PanelDefin
ition>
    <Profile_R1 />
    <Profile_R2 />
    <Profile_R3 />
    <Profile_R4 />
    <Profile_R5 />
    <Profile_R6 />
    <Profile_Result />
    <Profile_Reportable>False</Profile_Reportable>

<Profile_DatumEntryDefinition>478882298</Profile_Datum
EntryDefinition>
    <Profile_Images><?xml version="1.0" encoding="utf-
16"?>
<ChrysalisImgDats
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
/></Profile_Images>
    <Profile_Abnormal>False</Profile_Abnormal>
    <Profile_AOV>False</Profile_AOV>
    <Profile_StatusStep />
    <Profile_Range />
    <Profile_RangeComment />
    <Profile_CanceledDate />
    <Profile_CanceledBy />
    <Profile_CanceledFor />
    <Profile_ReflexedBy />
    <Profile_Signer>270861542</Profile_Signer>
    <Profile_SignerDate>2020-03-
09</Profile_SignerDate>
```

```
    <Profile_IOrder />
    <Profile_IOrderDate />
    <Profile_IOrderTime />
    <Profile_Complete>True</Profile_Complete>
    <Profile_DataCollect />
    <Profile_Signatures><?xml version="1.0"
encoding="utf-16"?>
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xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Sigs>
    <ProfileSignature>
      <Signer>270861542</Signer>
      <SignerDate>2020-03-09T15:07:50</SignerDate>
      <UnSign>false</UnSign>
    </ProfileSignature>
  </Sigs>
</ProfileSignatureHistory></Profile_Signatures>

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re>
    <Profile_Approver>162355184</Profile_Approver>
    <Profile_ApproveDate>2020-03-
09</Profile_ApproveDate>
    <Profile_Approvals><?xml version="1.0"
encoding="utf-16"?>
<ProfileApprovalHistory
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Sigs>
    <ProfileApproval>
      <Signer>162355184</Signer>
      <SignerDate>2020-03-09T14:56:31</SignerDate>
      <UnSign>false</UnSign>
    </ProfileApproval>
  </Sigs>
</ProfileApprovalHistory></Profile_Approvals>

<Profile_RequireApproval>True</Profile_RequireApproval
>
    <Profile_SignerTime>15:07</Profile_SignerTime>
    <Profile_ApproveTime>14:56</Profile_ApproveTime>
    <Profile_WPDLink />
    <Profile_CompleteDate />
    <Profile_CompleteTime />
```

<Profile_SignerLocation>246584261</Profile_SignerLocat
ion>

<Profile_PendingReagent>False</Profile_PendingReagent>
    <Profile_ORDLink />
    <Profile_QuestionsStash><?xml version="1.0"
encoding="utf-16"?>
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xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
/></Profile_QuestionsStash>
    <Profile_Questions />

<Profile_QuestionsComplete>True</Profile_QuestionsComp
lete>
    <Profile_ROrder>I</Profile_ROrder>
    <Profile_ROrderDate>2020-03-
09</Profile_ROrderDate>
    <Profile_ROrderTime>14:50</Profile_ROrderTime>
    <Profile_ROrderLab>111200992</Profile_ROrderLab>
    <Profile_Interpretation />

<Profile_ProfileDefinitionObjectID>416976655</Profile_
ProfileDefinitionObjectID>
    <Profile_ProfileDefinitionCreationDate>2018-10-
31T10:16:34.31-
04:00</Profile_ProfileDefinitionCreationDate>
    <Profile_ProfileDefinitionUpdateTime>2020-03-
09T14:48:48.757-
04:00</Profile_ProfileDefinitionUpdateTime>
    <Profile_ProfileDefinitionUser1 />
    <Profile_ProfileDefinitionUser2 />
    <Profile_ProfileDefinitionUser3 />
    <Profile_ProfileDefinitionUser4 />

<Profile_ProfileDefinitionCREATOR>debbieb</Profile_Pro
fileDefinitionCREATOR>

<Profile_ProfileDefinitionMODIFIER>Scaron</Profile_Pro
fileDefinitionMODIFIER>

<Profile_ProfileDefinitionCode>AMPH</Profile_ProfileDe
finitionCode>

<Profile_ProfileDefinitionDescription>Amphetamine</Pro
file_ProfileDefinitionDescription>

<Profile_ProfileDefinitionRETIRED>False</Profile_Profi
leDefinitionRETIRED>

<Profile_ProfileDefinitionDatumEntryDefinition>4788822
98</Profile_ProfileDefinitionDatumEntryDefinition>
    <Profile_ProfileDefinitionAlwaysReportMessage />
    <Profile_ProfileDefinitionMethodology />

<Profile_ProfileDefinitionRequireSignature>True</Profi
le_ProfileDefinitionRequireSignature>
    <Profile_ProfileDefinitionCodeMap />

<Profile_ProfileDefinitionLabelCount>1</Profile_Profil
eDefinitionLabelCount>

<Profile_ProfileDefinitionAutoComplete>False</Profile_
ProfileDefinitionAutoComplete>
    <Profile_ProfileDefinitionConstituentPanels><?xml
version="1.0" encoding="utf-16"?>
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xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
/></Profile_ProfileDefinitionConstituentPanels>

<Profile_ProfileDefinitionAllowDuplicate>False</Profil
e_ProfileDefinitionAllowDuplicate>
    <Profile_ProfileDefinitionPendingMessage />

<Profile_ProfileDefinitionWPLink>False</Profile_Profil
eDefinitionWPLink>

<Profile_ProfileDefinitionWPDiscrete>False</Profile_Pr
ofileDefinitionWPDiscrete>

<Profile_ProfileDefinitionWPCyto>False</Profile_Profil
eDefinitionWPCyto>

<Profile_ProfileDefinitionApprovalSignature>True</Prof
ile_ProfileDefinitionApprovalSignature>

<Profile_ProfileDefinitionLabelDefinition>318256</Prof
ile_ProfileDefinitionLabelDefinition>

<Profile_ProfileDefinitionWPDiscreteAdvanceOnly>False<
/Profile_ProfileDefinitionWPDiscreteAdvanceOnly>

<Profile_ProfileDefinitionRequireLocation>False</Profile_ProfileDefinitionRequireLocation>

<Profile_ProfileDefinitionUseDataCSort>False</Profile_ProfileDefinitionUseDataCSort>

<Profile_ProfileDefinitionAllowBatchResult>True</Profile_ProfileDefinitionAllowBatchResult>

<Profile_ProfileDefinitionIsToxicology>True</Profile_ProfileDefinitionIsToxicology>

<Profile_ProfileDefinitionIsClinical>False</Profile_ProfileDefinitionIsClinical>

<Profile_ProfileDefinitionSuppressOverlap>False</Profile_ProfileDefinitionSuppressOverlap>

<Profile_ProfileDefinitionOutreachCode>AMPH</Profile_ProfileDefinitionOutreachCode>

<Profile_ProfileDefinitionOutreachDescription>Amphetamine</Profile_ProfileDefinitionOutreachDescription>

<Profile_ProfileDefinitionAllowReferenceLab>True</Profile_ProfileDefinitionAllowReferenceLab>

<SourceDefinition_ObjectID>4348467</SourceDefinition_ObjectID>
    <SourceDefinition_CreationDate>2015-04-23T09:31:01.957-04:00</SourceDefinition_CreationDate>
    <SourceDefinition_UpdateTime>2020-09-18T16:59:13.113-04:00</SourceDefinition_UpdateTime>
    <SourceDefinition_User1 />
    <SourceDefinition_User2 />
    <SourceDefinition_User3 />
    <SourceDefinition_User4 />

<SourceDefinition_CREATOR>deannac</SourceDefinition_CREATOR>

<SourceDefinition_MODIFIER>Scaron</SourceDefinition_MODIFIER>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition_Description>

<SourceDefinition_RETIRED>False</SourceDefinition_RETIRED>

<SourceDefinition_LabelCount>1</SourceDefinition_LabelCount>

<SourceDefinition_WPLink>False</SourceDefinition_WPLink>

<SourceDefinition_WPRequireProfiles>False</SourceDefinition_WPRequireProfiles>

<SourceDefinition_WPAllowNOrdering>False</SourceDefinition_WPAllowNOrdering>

<SourceDefinition_ForeignAllowNOrdering>False</SourceDefinition_ForeignAllowNOrdering>

<SourceDefinition_WPAddDiagnosis>False</SourceDefinition_WPAddDiagnosis>

<SourceDefinition_LabelDefinition>280272780</SourceDefinition_LabelDefinition>
    <SourceDefinition_Sites><?xml version="1.0" encoding="utf-16"?>
<XStrings xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" /></SourceDefinition_Sites>

<SourceDefinition_OverdueDefault>8</SourceDefinition_OverdueDefault>

<SourceDefinition_Multiples>2</SourceDefinition_Multiples>

<SourceDefinition_AutoMultiples>False</SourceDefinition_AutoMultiples>

<SourceDefinition_GrossReceived>False</SourceDefinition_GrossReceived>

<SourceDefinition_AAOESet>485355213</SourceDefinition_AAOESet>

```
<SourceDefinition_IgnoreLabelDefault>False</SourceDefi
nition_IgnoreLabelDefault>

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ion_ObjectID>
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04:00</CaseTypeDefinition_CreationDate>
    <CaseTypeDefinition_UpdateTime>2020-10-
27T11:57:35.247-04:00</CaseTypeDefinition_UpdateTime>
    <CaseTypeDefinition_User1 />
    <CaseTypeDefinition_User2 />
    <CaseTypeDefinition_User3 />
    <CaseTypeDefinition_User4 />

<CaseTypeDefinition_CREATOR>0</CaseTypeDefinition_CREA
TOR>

<CaseTypeDefinition_MODIFIER>Scaron</CaseTypeDefinitio
n_MODIFIER>

<CaseTypeDefinition_Code>MOLC</CaseTypeDefinition_Code
>

<CaseTypeDefinition_Description>Molecular</CaseTypeDef
inition_Description>

<CaseTypeDefinition_RETIRED>False</CaseTypeDefinition_
RETIRED>

<CaseTypeDefinition_ReportDefinition>217397414</CaseTy
peDefinition_ReportDefinition>

<CaseTypeDefinition_OverdueDays>1</CaseTypeDefinition_
OverdueDays>

<CaseTypeDefinition_RequirePreliminary>False</CaseType
Definition_RequirePreliminary>

<CaseTypeDefinition_StepDefinition>245594</CaseTypeDef
inition_StepDefinition>

<CaseTypeDefinition_RequireSignature>False</CaseTypeDe
finition_RequireSignature>
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<CaseTypeDefinition_AccessionLetter>M</CaseTypeDefinit
ion_AccessionLetter>

<CaseTypeDefinition_UseProfileReports>False</CaseTypeD
efinition_UseProfileReports>

<CaseTypeDefinition_PrelimReportDefinition>217397414</
CaseTypeDefinition_PrelimReportDefinition>

<CaseTypeDefinition_WPLink>False</CaseTypeDefinition_W
PLink>

<CaseTypeDefinition_WPSignOnReport>False</CaseTypeDefi
nition_WPSignOnReport>

<CaseTypeDefinition_WPLoadReport>False</CaseTypeDefini
tion_WPLoadReport>

<CaseTypeDefinition_WPAllowSupplemental>False</CaseTyp
eDefinition_WPAllowSupplemental>

<CaseTypeDefinition_LabelDefinition>348382382</CaseTyp
eDefinition_LabelDefinition>
    <CaseTypeDefinition_WPSignSuppress><?xml
version="1.0" encoding="utf-16"?>
<XStrings xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
/></CaseTypeDefinition_WPSignSuppress>

<CaseTypeDefinition_WPSignSuppressSupplemental><?xml
version="1.0" encoding="utf-16"?>
<XStrings xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
/></CaseTypeDefinition_WPSignSuppressSupplemental>

<CaseTypeDefinition_NeverPreliminary>False</CaseTypeDe
finition_NeverPreliminary>

<CaseTypeDefinition_AbnormalSpecialFlag>348386126</Cas
eTypeDefinition_AbnormalSpecialFlag>

<CaseTypeDefinition_WPSetSpecialFlag>True</CaseTypeDef
inition_WPSetSpecialFlag>

<CaseTypeDefinition_IgnoreLabelDefault>False</CaseType
Definition_IgnoreLabelDefault>

```
    <Constituent_TYPE>IMMUNO</Constituent_TYPE>

<Constituent_ObjectID>506873439</Constituent_ObjectID>
    <Constituent_CreationDate>2020-03-09T14:50:50.123-
04:00</Constituent_CreationDate>
    <Constituent_UpdateTime>2020-03-09T14:52:49.107-
04:00</Constituent_UpdateTime>

<Constituent_SuperobjectID>506873438</Constituent_Supe
robjectID>
    <Constituent_User1 />
    <Constituent_User2 />
    <Constituent_User3 />
    <Constituent_User4 />
    <Constituent_CREATOR>Scaron</Constituent_CREATOR>

<Constituent_MODIFIER>Scaron</Constituent_MODIFIER>

<Constituent_Reportable>True</Constituent_Reportable>
    <Constituent_Description />

<Constituent_Definition>414331635</Constituent_Definit
ion>
    <Constituent_Result>Negative</Constituent_Result>
    <Constituent_R1 />
    <Constituent_R2 />
    <Constituent_R3 />
    <Constituent_R4 />
    <Constituent_R5 />
    <Constituent_R6 />
    <Constituent_Abnormal>False</Constituent_Abnormal>
    <Constituent_AOV>False</Constituent_AOV>
    <Constituent_Range />
    <Constituent_RangeComment />

<Constituent_IsConfirm>False</Constituent_IsConfirm>

<Constituent_ConstituentDefinitionObjectID>414331635</
Constituent_ConstituentDefinitionObjectID>

<Constituent_ConstituentDefinitionCreationDate>2018-
10-26T11:55:05.557-
04:00</Constituent_ConstituentDefinitionCreationDate>
    <Constituent_ConstituentDefinitionUpdateTime>2020-
11-03T10:33:26.493-
05:00</Constituent_ConstituentDefinitionUpdateTime>
```

```
<Constituent_ConstituentDefinitionCREATOR>Import</Cons
tituent_ConstituentDefinitionCREATOR>

<Constituent_ConstituentDefinitionMODIFIER>Scaron</Con
stituent_ConstituentDefinitionMODIFIER>

<Constituent_ConstituentDefinitionCode>AMPH</Constitue
nt_ConstituentDefinitionCode>

<Constituent_ConstituentDefinitionDescription>Amphetam
ine</Constituent_ConstituentDefinitionDescription>

<Constituent_ConstituentDefinitionRETIRED>False</Const
ituent_ConstituentDefinitionRETIRED>
    <Constituent_ConstituentDefinitionCutOffValue>250
ng/dl</Constituent_ConstituentDefinitionCutOffValue>

<Constituent_ConstituentDefinitionDetectedString>DETEC
TED</Constituent_ConstituentDefinitionDetectedString>

<Constituent_ConstituentDefinitionUndetectedString>NOT
DETECTED</Constituent_ConstituentDefinitionUndetectedS
tring>

<Constituent_ConstituentDefinitionIllicit>False</Const
ituent_ConstituentDefinitionIllicit>

<Constituent_ConstituentDefinitionDetectionWindow>1-2
days</Constituent_ConstituentDefinitionDetectionWindow
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<Constituent_ConstituentDefinitionOrderConfirmationWhe
n>Detected</Constituent_ConstituentDefinitionOrderConf
irmationWhen>

<Constituent_ConstituentDefinitionConfirmation>4788675
97</Constituent_ConstituentDefinitionConfirmation>

<Constituent_ConstituentDefinitionConfirmationCharge>2
59621897</Constituent_ConstituentDefinitionConfirmatio
nCharge>

<Constituent_ConstituentDefinitionIsTextual>False</Con
stituent_ConstituentDefinitionIsTextual>
  </CaseTable>
```

```
</NewDataSet>
```

GET CASES

Endpoint	api/N/GetCases
Purpose	Returns a collection of NucleoLIS case records based on filter parameters passed.
Request Type	GET
Parameters	case_number={case_number} activesOnly={activesOnly} order_date_from={order_date_from} order_date_to={order_date_to} submitting_physicians={submitting_physicians} submitting_groups={submitting_groups} filter_expression={filter_expression} user_ID={user_ID} return_format={return_format} Where: **case_number** is the requested NucleoLIS case_number. (Wildcards are supported) **activesOnly** is a true or false value. If true, only active cases will be returned. If false, all cases will be returned. **order_date_from** is the order from date for filtering cases. Dates must be in the format YYYY-MM-DD.

order_date_to is the order to date for filtering cases. Dates must be in the format YYYY-MM-DD.

submitting_physicians is a list of submitting physicians.

submitting_groups is a list of submitting groups.

filter_expression is used as a secondary custom filtering criteria applied to the result set . Wildcards are supported. Any valid SQL WHERE clause is accepted. It can be used with any column returned in the result set. Multiple columns can be used when separated with 'AND'. Filtering criteria supported include: Patient_ObjectID, Patient_Name, Patient_Code, Patient_Dob, Patient_Sex, Case_Number, Case_OrderDate, Case_CreationDate, Case_ReportStatus, Case_Status, Case_ObjectID.

user_id is the user code for the user in the NucleoLIS user table that is requesting the record.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://SomeServer.com/api/N/GetCases?case_number=CL2020*&actives
Only=true&return_format=0&user_id=245654&order_date_from=2020-09-
01&order_date_to=2020-11-02&filter_expression=case_status='A' AND
patient_sex='Female'&submitting_physicians=*&submitting_groups=*
```

Returns

If the request succeeds, returns a collection of 1..n case records matching the filtering criteria in the following XML format:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
 <CaseTable>
  <Patient_ObjectID>506408213</Patient_ObjectID>
  <Patient_Name>Boop, Betty</Patient_Name>
  <Patient_Code>506408213</Patient_Code>
  <Patient_Dob>1965-03-23</Patient_Dob>
```

<Patient_Sex>Female</Patient_Sex>
<Case_Number>CL2020-000080</Case_Number>
<Case_OrderDate>2020-09-17</Case_OrderDate>
<Case_CreationDate>2020-09-17T17:27:27.473-04:00</Case_CreationDate>
<Case_ReportStatus>PENDING</Case_ReportStatus>
<Case_Status>A</Case_Status>
<Case_ObjectID>514638163</Case_ObjectID>
</CaseTable>
<CaseTable>
<Patient_ObjectID>503799913</Patient_ObjectID>
<Patient_Name>Bell, Tinker</Patient_Name>
<Patient_Code>503799913</Patient_Code>
<Patient_Dob>1950-01-01</Patient_Dob>
<Patient_Sex>Female</Patient_Sex>
<Case_Number>CL2020-000082</Case_Number>
<Case_OrderDate>2020-09-18</Case_OrderDate>
<Case_CreationDate>2020-09-18T14:53:08.89-04:00</Case_CreationDate>
<Case_ReportStatus>PENDING</Case_ReportStatus>
<Case_Status>A</Case_Status>
<Case_ObjectID>514704625</Case_ObjectID>
</CaseTable>
<CaseTable>
<Patient_ObjectID>503799913</Patient_ObjectID>
<Patient_Name>Bell, Tinker</Patient_Name>
<Patient_Code>503799913</Patient_Code>
<Patient_Dob>1950-01-01</Patient_Dob>
<Patient_Sex>Female</Patient_Sex>
<Case_Number>CL2020-000084</Case_Number>
<Case_OrderDate>2020-09-28</Case_OrderDate>
<Case_CreationDate>2020-09-28T13:43:54.22-04:00</Case_CreationDate>
<Case_ReportStatus>PENDING</Case_ReportStatus>
<Case_Status>A</Case_Status>
<Case_ObjectID>515443274</Case_ObjectID>
</CaseTable>
<CaseTable>
<Patient_ObjectID>503625913</Patient_ObjectID>
<Patient_Name>Accession, Annie</Patient_Name>
<Patient_Code>503625913</Patient_Code>
<Patient_Dob>2018-12-11</Patient_Dob>
<Patient_Sex>Female</Patient_Sex>
<Case_Number>CL2020-000089</Case_Number>
<Case_OrderDate>2020-09-30</Case_OrderDate>
<Case_CreationDate>2020-09-30T13:32:44.8-04:00</Case_CreationDate>

<Case_ReportStatus>PENDING</Case_ReportStatus>
<Case_Status>A</Case_Status>
<Case_ObjectID>515593040</Case_ObjectID>
</CaseTable>
<CaseTable>
<Patient_ObjectID>433509601</Patient_ObjectID>
<Patient_Name>Friday, Girl</Patient_Name>
<Patient_Code>433509601</Patient_Code>
<Patient_Dob>2009-03-13</Patient_Dob>
<Patient_Sex>Female</Patient_Sex>
<Case_Number>CL2020-000091</Case_Number>
<Case_OrderDate>2020-10-05</Case_OrderDate>
<Case_CreationDate>2020-10-05T15:56:57.673-04:00</Case_CreationDate>
<Case_ReportStatus>PENDING</Case_ReportStatus>
<Case_Status>A</Case_Status>
<Case_ObjectID>515975948</Case_ObjectID>
</CaseTable>
<CaseTable>
<Patient_ObjectID>516131995</Patient_ObjectID>
<Patient_Name>Boop, Betty</Patient_Name>
<Patient_Code>516131995</Patient_Code>
<Patient_Dob>1965-03-23</Patient_Dob>
<Patient_Sex>Female</Patient_Sex>
<Case_Number>CL2020-000105</Case_Number>
<Case_OrderDate>2020-10-07</Case_OrderDate>
<Case_CreationDate>2020-10-07T14:49:44.863-04:00</Case_CreationDate>
<Case_ReportStatus>PENDING</Case_ReportStatus>
<Case_Status>A</Case_Status>
<Case_ObjectID>516132019</Case_ObjectID>
</CaseTable>
<CaseTable>
<Patient_ObjectID>516207223</Patient_ObjectID>
<Patient_Name>Bell, Tinker</Patient_Name>
<Patient_Code>516207223</Patient_Code>
<Patient_Dob>1950-01-01</Patient_Dob>
<Patient_Sex>Female</Patient_Sex>
<Case_Number>CL2020-000107</Case_Number>
<Case_OrderDate>2020-10-08</Case_OrderDate>
<Case_CreationDate>2020-10-08T13:26:04.687-04:00</Case_CreationDate>
<Case_ReportStatus>PRELIMINARY</Case_ReportStatus>
<Case_Status>A</Case_Status>
<Case_ObjectID>516207240</Case_ObjectID>
</CaseTable>

```
  <CaseTable>
   <Patient_ObjectID>514701722</Patient_ObjectID>
   <Patient_Name>Boop, Betty</Patient_Name>
   <Patient_Code>514701722</Patient_Code>
   <Patient_Dob>1965-03-23</Patient_Dob>
   <Patient_Sex>Female</Patient_Sex>
   <Case_Number>CL2020-000109</Case_Number>
   <Case_OrderDate>2020-09-18</Case_OrderDate>
   <Case_CreationDate>2020-09-25T11:56:06.06-04:00</Case_CreationDate>
   <Case_ReportStatus>PRELIMINARY</Case_ReportStatus>
   <Case_Status>A</Case_Status>
   <Case_ObjectID>515221990</Case_ObjectID>
  </CaseTable>

</NewDataSet>
```

GET SPECIMEN

Endpoint api/N/GetSpecimen

Purpose Return a single, full NucleoLIS specimen record based on specimen unique identifier. Note: The full specimen record is inclusive of all specimen level data elements.

Request Type GET

Parameters

```
specimen_ID={specimen_ID}

user_ID={user_ID}

return_format={return_format}
```

Where:

specimen_id is the specimen id number of the specimen to return.

user_id is the user code for the user in the NucleoLIS user table that is requesting the record.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

https://www.SomeServer.com/api/N/GetSpecimen?specimen_id=467291&user_id=245654&return_format=0

Returns

If the request succeeds, returns a specimen record matching the filtering criteria in the following XML format:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <SpecimenTable>
    <Patient_ObjectID>347631</Patient_ObjectID>
    <Patient_Name>Farrell, Ivy</Patient_Name>
    <Patient_Code>347631</Patient_Code>
    <Patient_Sex>F</Patient_Sex>
    <Patient_Dob>1970-01-01</Patient_Dob>
    <Case_Number>2</Case_Number>
    <Case_Status>I</Case_Status>
    <Specimen_ObjectID>467291</Specimen_ObjectID>
    <Specimen_CreationDate>2015-03-27T15:56:44.83-
04:00</Specimen_CreationDate>
    <Specimen_UpdateTime>2015-03-30T07:07:02.71-
04:00</Specimen_UpdateTime>

<Specimen_SuperobjectID>467290</Specimen_SuperobjectI
D>
    <Specimen_CREATOR>HIS</Specimen_CREATOR>
    <Specimen_MODIFIER>0</Specimen_MODIFIER>
    <Specimen_CollectionDate>2015-03-
13</Specimen_CollectionDate>

<Specimen_CollectionTime>16:14</Specimen_CollectionTi
me>
    <Specimen_ReceivedDate>2015-03-
30</Specimen_ReceivedDate>

<Specimen_ReceivedTime>07:07:02</Specimen_ReceivedTim
e>
    <Specimen_Number>467291</Specimen_Number>
    <Specimen_Status>A</Specimen_Status>
    <Specimen_Receiver>0</Specimen_Receiver>
```

```
    </SpecimenTable>
</NewDataSet>
```

GET SPECIMENS

Endpoint api/N/GetSpecimens

Purpose Returns a collection of NucleoLIS Patient, Case and Specimen level data.

Request Type GET

Parameters

```
received_date_from={received_date_from}
received_date_to={received_date_to}
activesOnly={activesOnly}
specimen_status_steps={specimen_status_steps}
specimen_sources={specimen_sources}
filter_expression={filter_expression}
user_ID={user_ID}
return_format={return_format}
```

Where:

received_date_from is the "from" date for received specimens. Dates must by in YYYY-MM-DD format.

received_date_to is the"to" date for received specimens. Dates must by in YYYY-MM-DD format.

activesOnly is a true or false value. If true, only active cases are returned. If false, all cases are returned.

specimen_status_steps is a pipe delimited list of specimen status steps.

specimen_sources is a pipe delimited list of specimen sources

filter_expression is used as a secondary custom filtering criteria applied to the result set . Wildcards are supported. It can be used with any column returned in the result set. Any valid SQL WHERE clause is accepted. Multiple columns can be used when separated with 'AND'. Filtering criteria supported include: Patient_ObjectID, Patient_Name, Patient_Code, Patient_Dob, Patient_Sex, Case_Number, Specimen_ObjectID, Specimen_Received date, Specimen_Received time, Specimen_CollectionDate, Specimen_CollectionTime, Specimen_StatusStep, SourceDefinition_Code, and SourceDefinition_Description.

user_id is the user code for the user in the NucleoLIS user table that is requesting the record.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/GetSpecimens?received_date_from=2020-10-01&received_date_to=2020-11-02&activesOnly=true&specimen_status_steps=&specimen_sources=Blood|Serum&filter_expression=Patient_Sex='Male'&user_id=245654&return_format=0
```

Returns

If the request succeeds, returns a collection of 1..n specimen records matching the filtering criteria in the following XML format:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <SpecimenTable>
    <Patient_ObjectID>507179564</Patient_ObjectID>
    <Patient_Name>Bishop, Tom</Patient_Name>
    <Patient_Code>507179564</Patient_Code>
```

```
    <Patient_Dob>1963-08-02</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>507179566OR</Case_Number>
    <Specimen_ReceivedDate>2020-10-
13</Specimen_ReceivedDate>

<Specimen_ReceivedTime>14:07:31</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-10-
13</Specimen_CollectionDate>
    <Specimen_CollectionTime />
    <Specimen_StatusStep />

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>516628021</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>514700814</Patient_ObjectID>
    <Patient_Name>Barksalot, Bruno</Patient_Name>
    <Patient_Code>514700814</Patient_Code>
    <Patient_Dob>2016-03-30</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CL2020-000086</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:15:58</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-09-
18</Specimen_CollectionDate>

<Specimen_CollectionTime>13:38</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>515221988</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>503782367</Patient_ObjectID>
    <Patient_Name>Bishop, Tom</Patient_Name>
    <Patient_Code>503782367</Patient_Code>
```

```
    <Patient_Dob>1963-08-02</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CL2020-000093</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:15:34</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-10-
06</Specimen_CollectionDate>
    <Specimen_CollectionTime />
    <Specimen_StatusStep />

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>516056679</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>511955302</Patient_ObjectID>
    <Patient_Name>Cricket, Jimimy</Patient_Name>
    <Patient_Code>511955302</Patient_Code>
    <Patient_Dob>2018-11-13</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CL2020-000110</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:16:15</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-07-
21</Specimen_CollectionDate>

<Specimen_CollectionTime>17:28</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>511968657</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>510788319</Patient_ObjectID>
    <Patient_Name>Caron, Jack</Patient_Name>
    <Patient_Code>510788319</Patient_Code>
```

```
    <Patient_Dob>2019-06-15</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CL2020-000111</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:16:18</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-06-
08</Specimen_CollectionDate>

<Specimen_CollectionTime>16:20</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>510788325</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>506987816</Patient_ObjectID>
    <Patient_Name>Duck, Daffy</Patient_Name>
    <Patient_Code>506987816</Patient_Code>
    <Patient_Dob>1950-03-03</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CL2020-000113</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:16:20</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-03-
12</Specimen_CollectionDate>

<Specimen_CollectionTime>14:40</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>506987822</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>506407748</Patient_ObjectID>
    <Patient_Name>Cricket, Jimimy</Patient_Name>
```

```
    <Patient_Code>506407748</Patient_Code>
    <Patient_Dob>2018-11-13</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CL2020-000115</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:16:24</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-02-
28</Specimen_CollectionDate>

<Specimen_CollectionTime>14:57</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>506407755</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>298771370</Patient_ObjectID>
    <Patient_Name>Jones, Tom</Patient_Name>
    <Patient_Code>298771370</Patient_Code>
    <Patient_Dob>1944-01-01</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CL2020-000155</Case_Number>
    <Specimen_ReceivedDate>2020-10-
21</Specimen_ReceivedDate>

<Specimen_ReceivedTime>17:10:05</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-10-
21</Specimen_CollectionDate>
    <Specimen_CollectionTime />
    <Specimen_StatusStep />

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>517413942</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>517962619</Patient_ObjectID>
    <Patient_Name>Caron, Jack</Patient_Name>
```

```
    <Patient_Code>517962619</Patient_Code>
    <Patient_Dob>2019-06-15</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CL2020-000156</Case_Number>
    <Specimen_ReceivedDate>2020-10-
27</Specimen_ReceivedDate>

<Specimen_ReceivedTime>10:50:07</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-10-
27</Specimen_CollectionDate>

<Specimen_CollectionTime>10:46</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>517962628</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>518533883</Patient_ObjectID>
    <Patient_Name>Caron, Jack</Patient_Name>
    <Patient_Code>518533883</Patient_Code>
    <Patient_Dob>2019-06-15</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CL2020-000160</Case_Number>
    <Specimen_ReceivedDate>2020-11-
02</Specimen_ReceivedDate>

<Specimen_ReceivedTime>11:05:39</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-11-
02</Specimen_CollectionDate>

<Specimen_CollectionTime>10:59</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>518533891</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>516213756</Patient_ObjectID>
```

```
    <Patient_Name>Caron, Jack</Patient_Name>
    <Patient_Code>516213756</Patient_Code>
    <Patient_Dob>2019-06-15</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CLI2020-000002</Case_Number>
    <Specimen_ReceivedDate>2020-10-
08</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:15:11</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-10-
08</Specimen_CollectionDate>

<Specimen_CollectionTime>18:10</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>516213763</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>516287111</Patient_ObjectID>
    <Patient_Name>Caron, Jack</Patient_Name>
    <Patient_Code>516287111</Patient_Code>
    <Patient_Dob>2019-06-15</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CLI2020-000005</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>14:45:44</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-10-
09</Specimen_CollectionDate>

<Specimen_CollectionTime>14:43</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>516287120</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
```

```
    <Patient_ObjectID>516287344</Patient_ObjectID>
    <Patient_Name>Cricket, Jimimy</Patient_Name>
    <Patient_Code>516287344</Patient_Code>
    <Patient_Dob>2018-11-13</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CLI2020-000006</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>15:44:18</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-10-
09</Specimen_CollectionDate>

<Specimen_CollectionTime>14:46</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>516287379</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>516291416</Patient_ObjectID>
    <Patient_Name>Duck, Daffy</Patient_Name>
    <Patient_Code>516291416</Patient_Code>
    <Patient_Dob>1950-03-03</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CLI2020-000009</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:11:49</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-10-
09</Specimen_CollectionDate>

<Specimen_CollectionTime>15:54</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>516291421</Specimen_ObjectID>
  </SpecimenTable>
```

```
  <SpecimenTable>
    <Patient_ObjectID>516276481</Patient_ObjectID>
    <Patient_Name>Duck, Daffy</Patient_Name>
    <Patient_Code>516276481</Patient_Code>
    <Patient_Dob>1950-03-03</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CLI2020-000010</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:12:16</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-10-
09</Specimen_CollectionDate>

<Specimen_CollectionTime>11:46</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>516276511</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>516298160</Patient_ObjectID>
    <Patient_Name>QA, Final</Patient_Name>
    <Patient_Code>516298160</Patient_Code>
    <Patient_Dob>2019-10-23</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CLI2020-000013</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:13:24</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-10-
09</Specimen_CollectionDate>

<Specimen_CollectionTime>17:45</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>516298169</Specimen_ObjectID>
```

```
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>518078029</Patient_ObjectID>
    <Patient_Name>QA, Final</Patient_Name>
    <Patient_Code>518078029</Patient_Code>
    <Patient_Dob>2019-10-23</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>CLI2020-000016</Case_Number>
    <Specimen_ReceivedDate>2020-10-
28</Specimen_ReceivedDate>

<Specimen_ReceivedTime>15:48:59</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-10-
28</Specimen_CollectionDate>

<Specimen_CollectionTime>15:44</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>518078227</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>510676219</Patient_ObjectID>
    <Patient_Name>Cricket, Jiminy</Patient_Name>
    <Patient_Code>510676219</Patient_Code>
    <Patient_Dob>2011-07-01</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>FC2020-000002</Case_Number>
    <Specimen_ReceivedDate>2020-10-
13</Specimen_ReceivedDate>

<Specimen_ReceivedTime>08:30:47</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-06-
04</Specimen_CollectionDate>

<Specimen_CollectionTime>15:26</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
```

```
    <Specimen_ObjectID>510676225</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>516298310</Patient_ObjectID>
    <Patient_Name>QA, Final</Patient_Name>
    <Patient_Code>516298310</Patient_Code>
    <Patient_Dob>2019-10-23</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>HE2020-000003</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:14:16</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-10-
09</Specimen_CollectionDate>

<Specimen_CollectionTime>17:49</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>516298330</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>506647493</Patient_ObjectID>
    <Patient_Name>Mouse, Mickey</Patient_Name>
    <Patient_Code>506647493</Patient_Code>
    <Patient_Dob>2000-07-08</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>M2020-000030</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:16:21</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-03-
04</Specimen_CollectionDate>

<Specimen_CollectionTime>16:09</Specimen_CollectionTi
me>

<SourceDefinition_Code>Blood</SourceDefinition_Code>
```

```
<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>506647513</Specimen_ObjectID>
  </SpecimenTable>
  <SpecimenTable>
    <Patient_ObjectID>510588219</Patient_ObjectID>
    <Patient_Name>Covid, Charlie</Patient_Name>
    <Patient_Code>510588219</Patient_Code>
    <Patient_Dob>2019-12-15</Patient_Dob>
    <Patient_Sex>Male</Patient_Sex>
    <Case_Number>M2020-000059</Case_Number>
    <Specimen_ReceivedDate>2020-10-
09</Specimen_ReceivedDate>

<Specimen_ReceivedTime>18:36:05</Specimen_ReceivedTim
e>
    <Specimen_CollectionDate>2020-06-
01</Specimen_CollectionDate>

<Specimen_CollectionTime>10:00</Specimen_CollectionTi
me>
    <Specimen_StatusStep />

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Specimen_ObjectID>510589737</Specimen_ObjectID>
  </SpecimenTable>

</NewDataSet>
```

GET TEST ORDER

Endpoint	api/N/GetTestOrder
Purpose	Returns a single, full test record and available results based on test order unique identifier.

Request Type GET

Parameters

```
test_order_ID={test_order_ID}

user_ID={user_ID}

return_format={return_format}
```

Where:

test_order_id is the id of the test order to return.

user_id is the user code for the user in the NucleoLIS user table that is requesting the record.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/GetTestOrder?test_order_id=8606534&user_id=245654&return_format=0
```

Returns If the request succeeds, it returns the requested full profile test order record inclusive of all test order and available test result data in the following XML format:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <ProfileTable>
    <Patient_ObjectID>4180414</Patient_ObjectID>
    <Patient_Name>Wednesday, Wendy</Patient_Name>
    <Patient_Code>4180414</Patient_Code>
    <Patient_Sex />
    <Patient_Dob />
    <Case_Number>PSY2015-000042</Case_Number>
    <Case_Status>I</Case_Status>
    <Specimen_ObjectID>8606398</Specimen_ObjectID>
```

```
    <Specimen_CollectionDate />
    <Specimen_CollectionTime />
    <Specimen_ReceivedDate>2015-05-
19</Specimen_ReceivedDate>

<Specimen_ReceivedTime>15:37:45</Specimen_ReceivedTim
e>
    <Specimen_StatusStep />

<SourceDefinition_Code>Blood</SourceDefinition_Code>

<SourceDefinition_Description>Blood</SourceDefinition
_Description>
    <Profile_TYPE>FISH</Profile_TYPE>
    <Profile_ObjectID>8606534</Profile_ObjectID>
    <Profile_CreationDate>2015-05-19T15:37:18.65-
04:00</Profile_CreationDate>
    <Profile_UpdateTime>2015-05-19T15:42:05.01-
04:00</Profile_UpdateTime>

<Profile_SuperobjectID>8606398</Profile_SuperobjectID
>
    <Profile_User1 />
    <Profile_User2 />
    <Profile_User3 />
    <Profile_User4 />
    <Profile_CREATOR>deannac</Profile_CREATOR>
    <Profile_MODIFIER>deannac</Profile_MODIFIER>
    <Profile_Description />
    <Profile_OrderDate>2015-05-19</Profile_OrderDate>
    <Profile_OrderTime>15:37</Profile_OrderTime>
    <Profile_OrderedBy>deannac</Profile_OrderedBy>

<Profile_PanelDefinition>249815</Profile_PanelDefinit
ion>
    <Profile_R1>Clinical Significance: ROS1 gene
rearrangements are found in 1-2% of non-small cell
lung carcinoma (NSCLC). Pre-clinical and early
clinical evidence suggests ROS1-rearranged tumors may
be sensitive to the dual ALK/MET inhibitor
crizotinib.</Profile_R1>
    <Profile_R2 />
    <Profile_R3 />
    <Profile_R4 />
    <Profile_R5 />
    <Profile_R6 />
    <Profile_Result>Present</Profile_Result>
```

```
    <Profile_Reportable>True</Profile_Reportable>
    <Profile_DatumDef>245550</Profile_DatumDef>

<Profile_DatumEntryDefinition>4380952</Profile_DatumE
ntryDefinition>
    <Profile_Images><?xml version="1.0"
encoding="utf-16"?>
<ChrysalisImgDats
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <ImgDat />
</ChrysalisImgDats></Profile_Images>
    <Profile_Abnormal>False</Profile_Abnormal>
    <Profile_AOV>False</Profile_AOV>
    <Profile_StatusStep />
    <Profile_Range />
    <Profile_RangeComment />
    <Profile_CanceledDate />
    <Profile_CanceledBy />
    <Profile_CanceledFor />
    <Profile_ReflexedBy />
    <Profile_IOrder />
    <Profile_IOrderDate />
    <Profile_IOrderTime />
    <Profile_Complete>True</Profile_Complete>

<Profile_RequireSignature>false</Profile_RequireSigna
ture>

<Profile_RequireApproval>false</Profile_RequireApprov
al>

<Profile_ProfileDefinitionObjectID>249815</Profile_Pr
ofileDefinitionObjectID>
    <Profile_ProfileDefinitionCreationDate>2014-12-
31T10:55:34.78-
05:00</Profile_ProfileDefinitionCreationDate>
    <Profile_ProfileDefinitionUpdateTime>2015-10-
01T15:08:20.637-
04:00</Profile_ProfileDefinitionUpdateTime>
    <Profile_ProfileDefinitionUser1 />
    <Profile_ProfileDefinitionUser2 />
    <Profile_ProfileDefinitionUser3 />
    <Profile_ProfileDefinitionUser4 />

<Profile_ProfileDefinitionCREATOR>0</Profile_ProfileD
efinitionCREATOR>
```

<Profile_ProfileDefinitionMODIFIER>deannac</Profile_ProfileDefinitionMODIFIER>

<Profile_ProfileDefinitionCode>NSmCCA</Profile_ProfileDefinitionCode>
<Profile_ProfileDefinitionDescription>Non-Small Cell Carcinoma, Lung</Profile_ProfileDefinitionDescription>

<Profile_ProfileDefinitionRETIRED>False</Profile_ProfileDefinitionRETIRED>

<Profile_ProfileDefinitionDatumLink>245550</Profile_ProfileDefinitionDatumLink>

<Profile_ProfileDefinitionConstituentDatumLink>34247712</Profile_ProfileDefinitionConstituentDatumLink>

<Profile_ProfileDefinitionDatumEntryDefinition>34714941</Profile_ProfileDefinitionDatumEntryDefinition>

<Profile_ProfileDefinitionAlwaysReportMessage>ROS1 FISH uses a dual-color break-apart probe which produces single green, red, and yellow or fusion signals in rearranged cells.

References:
Kwak EL et al. New Engl J Med. 2010;363(18):1693-1703.
Vysis ALK Break Apart FISH Probe Kit package insert. Vysis ALK United States website. Accessed 12-31-2012.
Bergethon K, Shaw AT, Ignatius Ou S, et al. J Clin Oncol. 2012;30(8):863-870.
Takeuchi K, Soda M, Togashi Y, et al. Nature Med. 2012;18(3):378-381.
Davies KD, Le AT, Theodoro MF, et al. Clin Cancer Res. 2012;18(17):4570-4579.
Shaw AT, Camidge DR, Engelman JA, et al. J Clin Oncol. 2012;30 (suppl): abstract 7508.
Bang YJ. Arch Pathol Lab Med. 2012;136:1201-1204.
NCCN Guidelines, Non-Small Cell Lung Cancer, version 1.2013. National Comprehensive Cancer Network website. Accessed 12-31-2012.

ALK page. Atlas of Genetics and Cytogenetics in Oncology and Haematology. Accessed 12-31-2012; last updated 2-2010.
Stumpfova M, Janne PA. Clin Cancer Res. 2012;18(16):4222-4224.
Sasaki T et al. Eur J Cancer. 2010;46:1773-1780.
</Profile_ProfileDefinitionAlwaysReportMessage>

<Profile_ProfileDefinitionMethodology>FISH</Profile_ProfileDefinitionMethodology>
<Profile_ProfileDefinitionCodeMap />

<Profile_ProfileDefinitionLabelCount>1</Profile_ProfileDefinitionLabelCount>

<Profile_ProfileDefinitionAutoComplete>False</Profile_ProfileDefinitionAutoComplete>

<Profile_ProfileDefinitionWPDiscreteAdvanceOnly>false</Profile_ProfileDefinitionWPDiscreteAdvanceOnly>

<Profile_DatumDefinitionObjectID>245550</Profile_DatumDefinitionObjectID>
<Profile_DatumDefinitionCreationDate>2014-12-31T10:54:49.03-05:00</Profile_DatumDefinitionCreationDate>
<Profile_DatumDefinitionUpdateTime>2019-04-09T15:17:02.137-04:00</Profile_DatumDefinitionUpdateTime>
<Profile_DatumDefinitionUser1 />
<Profile_DatumDefinitionUser2 />
<Profile_DatumDefinitionUser3 />
<Profile_DatumDefinitionUser4 />

<Profile_DatumDefinitionCREATOR>0</Profile_DatumDefinitionCREATOR>

<Profile_DatumDefinitionMODIFIER>0</Profile_DatumDefinitionMODIFIER>

<Profile_DatumDefinitionCode>416980</Profile_DatumDefinitionCode>
<Profile_DatumDefinitionDescription />

<Profile_DatumDefinitionRETIRED>False</Profile_DatumDefinitionRETIRED>

```
<Profile_DatumDefinitionR1>Comment</Profile_DatumDefi
nitionR1>
    <Profile_DatumDefinitionR2 />
    <Profile_DatumDefinitionR3 />
    <Profile_DatumDefinitionR4 />
    <Profile_DatumDefinitionR5 />
    <Profile_DatumDefinitionR6 />

<Profile_DatumDefinitionHideResult>False</Profile_Dat
umDefinitionHideResult>
    <Profile_DatumDefinitionRange />
    <Profile_DatumDefinitionRangeComment />
    <Profile_DatumDefinitionExtensions><?xml
version="1.0" encoding="utf-16"?>
<DatumExtensionDefinition
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Items>
    <DatumExtensionItemDefinition>
      <FieldName>Result</FieldName>
      <IsReadOnly>false</IsReadOnly>
    </DatumExtensionItemDefinition>
    <DatumExtensionItemDefinition>
      <FieldName>R1</FieldName>
      <IsReadOnly>false</IsReadOnly>
    </DatumExtensionItemDefinition>
    <DatumExtensionItemDefinition>
      <FieldName>R2</FieldName>
      <IsReadOnly>false</IsReadOnly>
    </DatumExtensionItemDefinition>
    <DatumExtensionItemDefinition>
      <FieldName>R3</FieldName>
      <IsReadOnly>false</IsReadOnly>
    </DatumExtensionItemDefinition>
    <DatumExtensionItemDefinition>
      <FieldName>R4</FieldName>
      <IsReadOnly>false</IsReadOnly>
    </DatumExtensionItemDefinition>
    <DatumExtensionItemDefinition>
      <FieldName>R5</FieldName>
      <IsReadOnly>false</IsReadOnly>
    </DatumExtensionItemDefinition>
    <DatumExtensionItemDefinition>
      <FieldName>R6</FieldName>
      <IsReadOnly>false</IsReadOnly>
    </DatumExtensionItemDefinition>
```

```
    <DatumExtensionItemDefinition>
      <FieldName>Range</FieldName>
      <IsReadOnly>true</IsReadOnly>
    </DatumExtensionItemDefinition>
    <DatumExtensionItemDefinition>
      <FieldName>RangeComment</FieldName>
      <IsReadOnly>true</IsReadOnly>
    </DatumExtensionItemDefinition>
  </Items>
</DatumExtensionDefinition></Profile_DatumDefinitionE
xtensions>
    <Profile_DatumDefinitionTableDisplayDefinition />
    <Profile_DatumDefinitionResultFieldMap />
    <Profile_DatumDefinitionInstrumentAutoOrder />
    <Constituent_TYPE>FISH</Constituent_TYPE>

<Constituent_ObjectID>8606535</Constituent_ObjectID>
    <Constituent_CreationDate>2015-05-
19T15:37:18.843-04:00</Constituent_CreationDate>
    <Constituent_UpdateTime>2015-05-19T15:39:04.96-
04:00</Constituent_UpdateTime>

<Constituent_SuperobjectID>8606534</Constituent_Super
objectID>
    <Constituent_User1 />
    <Constituent_User2 />
    <Constituent_User3 />
    <Constituent_User4 />

<Constituent_CREATOR>deannac</Constituent_CREATOR>

<Constituent_MODIFIER>deannac</Constituent_MODIFIER>

<Constituent_Reportable>True</Constituent_Reportable>
    <Constituent_Description />

<Constituent_Definition>249789</Constituent_Definitio
n>
    <Constituent_Result>Present</Constituent_Result>
    <Constituent_R1 />
    <Constituent_R2 />
    <Constituent_R3 />
    <Constituent_R4 />
    <Constituent_R5 />
    <Constituent_R6 />

<Constituent_Abnormal>False</Constituent_Abnormal>
```

```
    <Constituent_AOV>False</Constituent_AOV>
    <Constituent_Range />
    <Constituent_RangeComment />

<Constituent_ConstituentDefinitionObjectID>249789</Co
nstituent_ConstituentDefinitionObjectID>

<Constituent_ConstituentDefinitionCreationDate>2014-
12-31T10:55:34.527-
05:00</Constituent_ConstituentDefinitionCreationDate>

<Constituent_ConstituentDefinitionUpdateTime>2014-12-
31T10:55:34.527-
05:00</Constituent_ConstituentDefinitionUpdateTime>
    <Constituent_ConstituentDefinitionUser1 />
    <Constituent_ConstituentDefinitionUser2 />
    <Constituent_ConstituentDefinitionUser3 />
    <Constituent_ConstituentDefinitionUser4 />

<Constituent_ConstituentDefinitionCREATOR>0</Constitu
ent_ConstituentDefinitionCREATOR>

<Constituent_ConstituentDefinitionMODIFIER>0</Constit
uent_ConstituentDefinitionMODIFIER>

<Constituent_ConstituentDefinitionCode>ROS1</Constitu
ent_ConstituentDefinitionCode>

<Constituent_ConstituentDefinitionDescription>break-
apart probe at
(6q22)</Constituent_ConstituentDefinitionDescription>

<Constituent_ConstituentDefinitionRETIRED>False</Cons
tituent_ConstituentDefinitionRETIRED>
    <Constituent_ConstituentDefinitionCodeMap />
  </ProfileTable>

</NewDataSet>
```

GET TEST ORDERS

Endpoint api/N/GetTestOrders

Purpose

Returns a collection of Patient, Case, Specimen and Test level data including Patient_ObjectID, Patient_Name, Patient_Code, Patient_Dob, Patient_Sex, Case_Number, Specimen_ObjectID, Specimen_Received date, Specimen_Received time, Specimen_CollectionDate, Specimen_CollectionTime, Specimen_StatusStep, SourceDefinition_Code, SourceDefinition_Description, Test order date, status, completion status, test code and unique identifier of all ordered tests records meeting filtering requirements.

.

Request Type

GET

Parameters

```
order_date_from={order_date_from}

order_date_to={order_date_to}

activesOnly={activesOnly}

order_status_steps={order_status_steps}

order_codes={order_codes}

filter_expression={filter_expression}

user_ID={user_ID}

return_format={return_format}
```

Where:

order_date_from is the "from" order date. Dates must be in YYYY-MM-DD format.

order_date_to is the "to" order date. Dates must be in YYYY-MM-DD format.

activesOnly is a true or false value. If set to true, only active orders records are returned if false, all order records are returned.

order_status_steps is pipe delimited list of order status steps

order_codes is a pipe delimited list of order codes

filter_expression is used as a secondary custom filtering criteria applied to the result set . Wildcards are supported. It can be used with any column returned in the result set. Any valid SQL WHERE clause is accepted. Multiple columns can be used when separated with 'AND'. Filtering criteria supported include: Patient_ObjectID, Patient_Name, Patient_Code, Patient_DOB, Patient_Sex, Case_Number, Specimen_ObjectID, Specimen_RetreivalDate, Specimen_RetreivalTime, Specimen_CollectionDate, Specimen_CollectionTime, Specimen_StatusStep, SourceDefinition_Code, SourceDefinition_Description, Profile_ObjectID, Profile_OrderDate, Profile_OrderTime, Profile_ProfileDefinitionCode, Profile_ProfileDefinitionDescription, Profile_Complete, Profile_CompleteDate, Profile_SignerDate, and Profile_StatusStep.

user_id is the user code for the user in the NucleoLIS user table that is requesting the record.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/GetTestOrders?order_date_from=2020-09-17&order_date_to=2020-09-18&activesOnly=true&order_status_steps=*&order_codes=CDCI&filter_expression=Patient_DOB like '1960%'&user_ID=245654&return_format=0
```

Returns

If the request succeeds, returns a collection of 1..n test order profile records matching the filtering criteria in the following XML format:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
 <ProfileTable>
  <Patient_ObjectID>506646654</Patient_ObjectID>
  <Patient_Name>Buckley, Betty Sue Joe</Patient_Name>
  <Patient_Code>506646654</Patient_Code>
```

<Patient_Dob>1960-07-14</Patient_Dob>
<Patient_Sex>Female</Patient_Sex>
<Case_Number>CL2020-000013</Case_Number>
<Specimen_ObjectID>506686900</Specimen_ObjectID>
<Specimen_ReceivedDate>2020-03-04</Specimen_ReceivedDate>
<Specimen_ReceivedTime>15:49:27</Specimen_ReceivedTime>
<Specimen_CollectionDate>2020-03-04</Specimen_CollectionDate>
<Specimen_CollectionTime>15:46</Specimen_CollectionTime>
<Specimen_StatusStep />
<SourceDefinition_Code>Blood</SourceDefinition_Code>
<SourceDefinition_Description>Blood</SourceDefinition_Description>
<Profile_ObjectID>514633950</Profile_ObjectID>
<Profile_OrderDate>2020-09-17</Profile_OrderDate>
<Profile_OrderTime>16:05</Profile_OrderTime>
<Profile_ProfileDefinitionCode>CDCI</Profile_ProfileDefinitionCode>

<Profile_ProfileDefinitionDescription>CDCI</Profile_ProfileDefinitionDescription>
<Profile_Complete>False</Profile_Complete>
<Profile_CompleteDate />
<Profile_SignerDate />
<Profile_StatusStep />
</ProfileTable>
<ProfileTable>
<Patient_ObjectID>29121728o</Patient_ObjectID>
<Patient_Name>Ashbey, Clywd</Patient_Name>
<Patient_Code>29121728o</Patient_Code>
<Patient_Dob>1960-07-07</Patient_Dob>
<Patient_Sex>Male</Patient_Sex>
<Case_Number>CL2020-000068</Case_Number>
<Specimen_ObjectID>511969438</Specimen_ObjectID>
<Specimen_ReceivedDate>2020-08-06</Specimen_ReceivedDate>
<Specimen_ReceivedTime>08:22:09</Specimen_ReceivedTime>
<Specimen_CollectionDate>2020-08-06</Specimen_CollectionDate>
<Specimen_CollectionTime />
<Specimen_StatusStep />
<SourceDefinition_Code>Blood</SourceDefinition_Code>
<SourceDefinition_Description>Blood</SourceDefinition_Description>
<Profile_ObjectID>514715461</Profile_ObjectID>
<Profile_OrderDate>2020-09-18</Profile_OrderDate>
<Profile_OrderTime>18:21</Profile_OrderTime>
<Profile_ProfileDefinitionCode>CDCI</Profile_ProfileDefinitionCode>

<Profile_ProfileDefinitionDescription>CDCI</Profile_ProfileDefinitionDescription>
<Profile_Complete>False</Profile_Complete>
<Profile_CompleteDate />
<Profile_SignerDate />
<Profile_StatusStep />
</ProfileTable>
<ProfileTable>
<Patient_ObjectID>132099125</Patient_ObjectID>
<Patient_Name>Miller, Leonard</Patient_Name>
<Patient_Code>132099125</Patient_Code>
<Patient_Dob>1960-12-12</Patient_Dob>
<Patient_Sex>Male</Patient_Sex>
<Case_Number>CL2020-000079</Case_Number>
<Specimen_ObjectID>514704804</Specimen_ObjectID>
<Specimen_ReceivedDate>2020-09-18</Specimen_ReceivedDate>
<Specimen_ReceivedTime>16:57:21</Specimen_ReceivedTime>
<Specimen_CollectionDate>2020-09-18</Specimen_CollectionDate>
<Specimen_CollectionTime />
<Specimen_StatusStep />
<SourceDefinition_Code>Blood</SourceDefinition_Code>
<SourceDefinition_Description>Blood</SourceDefinition_Description>
<Profile_ObjectID>514704809</Profile_ObjectID>
<Profile_OrderDate>2020-09-18</Profile_OrderDate>
<Profile_OrderTime>14:56</Profile_OrderTime>
<Profile_ProfileDefinitionCode>CDCI</Profile_ProfileDefinitionCode>

<Profile_ProfileDefinitionDescription>CDCI</Profile_ProfileDefinitionDescription>
<Profile_Complete>False</Profile_Complete>
<Profile_CompleteDate />
<Profile_SignerDate />
<Profile_StatusStep />
</ProfileTable>
<ProfileTable>
<Patient_ObjectID>376500</Patient_ObjectID>
<Patient_Name>Farrell, Tiffany</Patient_Name>
<Patient_Code>376500</Patient_Code>
<Patient_Dob>1960-07-01</Patient_Dob>
<Patient_Sex>Female</Patient_Sex>
<Case_Number>PSY2015-000029</Case_Number>
<Specimen_ObjectID>4350748</Specimen_ObjectID>

```
   <Specimen_ReceivedDate>2015-06-02</Specimen_ReceivedDate>
   <Specimen_ReceivedTime>07:40:06</Specimen_ReceivedTime>
   <Specimen_CollectionDate>2015-04-22</Specimen_CollectionDate>
   <Specimen_CollectionTime>10:00</Specimen_CollectionTime>
   <Specimen_StatusStep />
   <SourceDefinition_Code>Blood</SourceDefinition_Code>
   <SourceDefinition_Description>Blood</SourceDefinition_Description>
   <Profile_ObjectID>514703397</Profile_ObjectID>
   <Profile_OrderDate>2020-09-18</Profile_OrderDate>
   <Profile_OrderTime>14:30</Profile_OrderTime>
   <Profile_ProfileDefinitionCode>CDCI</Profile_ProfileDefinitionCode>

<Profile_ProfileDefinitionDescription>CDCI</Profile_ProfileDefinitionDescript
ion>
   <Profile_Complete>False</Profile_Complete>
   <Profile_CompleteDate />
   <Profile_SignerDate />
   <Profile_StatusStep />
  </ProfileTable>
</NewDataSet>
```


GET PHYSICIAN

Endpoint api/N/GetPhysician

Purpose Returns a single, full physician record based on a unique code.

Request Type GET

Parameters

```
physician_code={physician_code}

user_ID={user_ID}

return_format={return_format}
```

Where:

physician_code is the unique identifier for the requested physician.

user_id is the user code for the user in the NucleoLIS user table that is requesting the record.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/
api/N/GetPhysician?physician_code=381596&user_ID=24565
4&return_format=0
```

Returns

If the request succeeds, returns the requested physician record in the following format:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <PhysicianTable>
    <Physician_ObjectID>230022</Physician_ObjectID>
    <Physician_CreationDate>2004-07-30T12:14:57.687-
04:00</Physician_CreationDate>
    <Physician_UpdateTime>2020-01-21T11:25:23.293-
05:00</Physician_UpdateTime>
    <Physician_Name>test, physician</Physician_Name>
    <Physician_Sex />
    <Physician_Street />
    <Physician_City />
    <Physician_State />
    <Physician_Zip />
    <Physician_Phone />
    <Physician_Code>TEST1</Physician_Code>
    <Physician_Soundex>TESTPHYSCN</Physician_Soundex>
    <Physician_UPIN />
    <Physician_STOP />
    <Physician_STREET2 />
    <Physician_RETIRED>False</Physician_RETIRED>
    <Physician_GROUP>False</Physician_GROUP>
    <Physician_STREET3 />
```

```
    <Physician_MODIFIER>0</Physician_MODIFIER>
    <Physician_NPI />
    <Physician_WebPathStartDate />

<Physician_WithholdGroupResults>False</Physician_With
holdGroupResults>
    <Physician_WebPathReturnAs />
    <Physician_WebCopyTo>False</Physician_WebCopyTo>
    <Physician_Instructions />

<Physician_WebPathSupP>False</Physician_WebPathSupP>

<Physician_WebPathALL>False</Physician_WebPathALL>
    <Physician_WebPathReturnCC><ALL MY
GROUPS></Physician_WebPathReturnCC>

<Physician_UsePreliminaryDistribution>False</Physicia
n_UsePreliminaryDistribution>
    <Physician_PreliminaryReportDistribution><?xml
version="1.0" encoding="utf-16"?>
<DistributionDefinition
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <AsSubmtterDistribution>
    <PrintEnabled>false</PrintEnabled>
    <FaxEnabled>false</FaxEnabled>
    <SecureMailEnabled>false</SecureMailEnabled>
  </AsSubmtterDistribution>
  <AsOtherDistribution>
    <PrintEnabled>false</PrintEnabled>
    <FaxEnabled>false</FaxEnabled>
    <SecureMailEnabled>false</SecureMailEnabled>
  </AsOtherDistribution>
</DistributionDefinition></Physician_PreliminaryRepor
tDistribution>
  </PhysicianTable>

</NewDataSet>
```

GET PHYSICIANS

Endpoint api/N/GetPhysicians

Purpose Returns a collection of 1..n physician records based on filter parameters passed.

Request Type GET

Parameters

last_name={last_name}

first_name={first_name}

filter_expression={filter_expression}

user_id={user_id}

return_format={return_format}

Where:

last_name is the last name of the Physician. Wildcards are supported.

first_name is the first name of the physician. Wildcards are supported.

filter_expression is is used as a secondary custom filtering criteria applied to the result set . Wildcards are supported. Any valid SQL WHERE clause is accepted. It can be used with any column returned in the result set. Multiple columns can be used when separated with 'AND'.

user_id is the user code for the user in the NucleoLIS user table that is requesting the record.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/
api/N/GetPhysicians?last_name=*&first_name=T*&filter_e
xpression=Physician_GROUP='false'&user_id=245654&retur
n_format=0
```

Returns

If the request succeeds, returns the requested physician records in the following format:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <PhysicianTable>
    <Physician_ObjectID>15460945</Physician_ObjectID>
    <Physician_Name>Jones, Tim</Physician_Name>
    <Physician_Street>This physician has a single
"none" location called Office</Physician_Street>
    <Physician_STREET2 />
    <Physician_STREET3 />
    <Physician_City />
    <Physician_State />
    <Physician_Zip />
    <Physician_Code>JONES</Physician_Code>
    <Physician_GROUP>False</Physician_GROUP>
  </PhysicianTable>
  <PhysicianTable>

<Physician_ObjectID>503790496</Physician_ObjectID>
    <Physician_Name>New physician, testing
roles</Physician_Name>
    <Physician_Street />
    <Physician_STREET2 />
    <Physician_STREET3 />
    <Physician_City />
    <Physician_State />
    <Physician_Zip />
    <Physician_Code>NP1</Physician_Code>
    <Physician_GROUP>False</Physician_GROUP>
  </PhysicianTable>
  <PhysicianTable>

<Physician_ObjectID>503612491</Physician_ObjectID>
    <Physician_Name>Sig, Text Only</Physician_Name>
    <Physician_Street />
    <Physician_STREET2 />
    <Physician_STREET3 />
    <Physician_City />
    <Physician_State />
    <Physician_Zip />
```

```
    <Physician_Code>Phy01</Physician_Code>
    <Physician_GROUP>False</Physician_GROUP>
  </PhysicianTable>
  <PhysicianTable>
    <Physician_ObjectID>390657</Physician_ObjectID>
    <Physician_Name>Physician, Test</Physician_Name>
    <Physician_Street />
    <Physician_STREET2 />
    <Physician_STREET3 />
    <Physician_City />
    <Physician_State />
    <Physician_Zip />
    <Physician_Code>PHY2</Physician_Code>
    <Physician_GROUP>False</Physician_GROUP>
  </PhysicianTable>
  <PhysicianTable>
    <Physician_ObjectID>14661001</Physician_ObjectID>
    <Physician_Name>Physician, Test</Physician_Name>
    <Physician_Street />
    <Physician_STREET2 />
    <Physician_STREET3 />
    <Physician_City />
    <Physician_State />
    <Physician_Zip />
    <Physician_Code>PHY3</Physician_Code>
    <Physician_GROUP>False</Physician_GROUP>
  </PhysicianTable>
  <PhysicianTable>
    <Physician_ObjectID>16932034</Physician_ObjectID>
    <Physician_Name>Physician,
TestAgain</Physician_Name>
    <Physician_Street />
    <Physician_STREET2 />
    <Physician_STREET3 />
    <Physician_City />
    <Physician_State />
    <Physician_Zip />
    <Physician_Code>PHY5</Physician_Code>
    <Physician_GROUP>False</Physician_GROUP>
  </PhysicianTable>
  <PhysicianTable>

<Physician_ObjectID>135677272</Physician_ObjectID>
    <Physician_Name>Robins, Tim</Physician_Name>
    <Physician_Street />
    <Physician_STREET2 />
    <Physician_STREET3 />
```

```
    <Physician_City />
    <Physician_State />
    <Physician_Zip />
    <Physician_Code>ROBINS</Physician_Code>
    <Physician_GROUP>False</Physician_GROUP>
  </PhysicianTable>
  <PhysicianTable>

<Physician_ObjectID>232073067</Physician_ObjectID>
    <Physician_Name>Robins, Tim Psy</Physician_Name>
    <Physician_Street />
    <Physician_STREET2 />
    <Physician_STREET3 />
    <Physician_City />
    <Physician_State />
    <Physician_Zip />
    <Physician_Code>ROBINS/PSY</Physician_Code>
    <Physician_GROUP>False</Physician_GROUP>
  </PhysicianTable>
  <PhysicianTable>

<Physician_ObjectID>135676995</Physician_ObjectID>
    <Physician_Name>Smith, Tim</Physician_Name>
    <Physician_Street />
    <Physician_STREET2 />
    <Physician_STREET3 />
    <Physician_City />
    <Physician_State />
    <Physician_Zip />
    <Physician_Code>SMITH</Physician_Code>
    <Physician_GROUP>False</Physician_GROUP>
  </PhysicianTable>
  <PhysicianTable>

<Physician_ObjectID>232073138</Physician_ObjectID>
    <Physician_Name>Smith, Tim Psy</Physician_Name>
    <Physician_Street />
    <Physician_STREET2 />
    <Physician_STREET3 />
    <Physician_City />
    <Physician_State />
    <Physician_Zip />
    <Physician_Code>SMITH/PSY</Physician_Code>
    <Physician_GROUP>False</Physician_GROUP>
  </PhysicianTable>
  <PhysicianTable>
```

```
 <Physician_ObjectID>119430985</Physician_ObjectID>
    <Physician_Name>Doctor, Thursday</Physician_Name>
    <Physician_Street />
    <Physician_STREET2 />
    <Physician_STREET3 />
    <Physician_City />
    <Physician_State />
    <Physician_Zip />
    <Physician_Code>THURS</Physician_Code>
    <Physician_GROUP>False</Physician_GROUP>
  </PhysicianTable>

</NewDataSet>
```

SET STATUS STEP

Endpoint api/N/ SetStatusStep

Purpose Set a processing status of a single case, specimen or test order record.

Request Type GET

Parameters

```
object_id={object_id}

status_set={status_set}

status_advance={status_advance}

user_ID={user_ID}

return_format={return_format}
```

Where:

object_id is the objectId of the record to update.

status_set is the new status setting.

status_advance is a true or false value. If true, the status of the record to update will be advanced to the next defined step. When false, the status_advance argument is ignored.

user_id is the user code for the user in the NucleoLIS user table that is requesting the status change.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/SetStatusStep?object_id=503766463&status_set=&status_advance=true&user_ID=200001&return_format=0
```

Returns

If the request succeeds, returns the results of processing the status update:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <StatusStepUpdateTable>
    <object_id>503766463</object_id>
    <object_type>PCR</object_type>
    <status_set>Purification</status_set>
    <original_status>Accessioned</original_status>
    <message>success</message>
  </StatusStepUpdateTable>

</NewDataSet>
```

SET STATUS STEPS

Endpoint

api/N/SetStatusSteps

Purpose

Set a processing status of a multiple case, specimen or test order records.

Request Type

GET

Parameters

```
object_ids={object_ids}

status_set={status_set}

status_advance={status_advance}

user_ID={user_ID}

return_format={return_format}
```

Where:

object_ids is a pipe delimited list of object ids that specifies which cases should be updated.

status_set is the new processing status used to update the specified cases.

status_advance is a true or false value. If true, the specified cases will be advanced. If false the specified cases will not be advanced.

user_id is the user code for the user in the NucleoLIS user table that is requesting the status change(s).

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/SetStatusSteps?object
_ids=504252001|504165951&status_set=Amplify&status_adv
ance=false&user_ID=200001&return_format=0
```

Returns

If the request succeeds, returns the results of processing the status updates:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
```

```
  <StatusStepUpdateTable>
    <object_id>504252001</object_id>
    <object_type>PCR</object_type>
    <status_set>Amplify</status_set>
    <original_status>Accessioned</original_status>
    <message>success</message>
  </StatusStepUpdateTable>
  <StatusStepUpdateTable>
    <object_id>504165951</object_id>
    <object_type>PCR</object_type>
    <status_set>Amplify</status_set>
    <original_status>Accessioned</original_status>
    <message>success</message>
  </StatusStepUpdateTable>
</NewDataSet>
```

GET PHYSICIAN LOCATIONS

Endpoint	api/N/GetPhysicianLocations
Purpose	Returns all physician location records for the specified physician, based on a unique physician code.
Request Type	GET

Parameters	`physician_code={physician_code}`
	`user_ID={user_ID}`
	`return_format={return_format}`

Where:

Physician_code is the code of the physician record to return.

user_id is the user code for the user in the NucleoLIS user table that is uploading the text.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/
GetPhysicianLocations?physician_code=00002&user_ID=154
92125&return_format=0
```

Returns

If the request succeeds, returns the status of the text that was parsed and processed.:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <PhysicianLocationTable>
    <Location_ObjectID>2291844</Location_ObjectID>
    <Location_CreationDate>2012-10-08T09:58:17.373-
04:00</Location_CreationDate>
    <Location_UpdateTime>2016-08-02T08:47:04.33-
04:00</Location_UpdateTime>
    <Location_Location>191919-
GROUP</Location_Location>
    <Location_Phone />
    <Location_Fax />
    <Location_CODE>00002-2291844</Location_CODE>
    <Location_USER1 />
    <Location_USER2 />
    <Location_USER3 />
    <Location_USER4 />
    <Location_EMAIL />
    <Location_Retired>True</Location_Retired>
    <Group_ObjectID>1709111</Group_ObjectID>
    <Group_CreationDate>2007-05-29T16:17:29-
04:00</Group_CreationDate>
```

```
    <Group_UpdateTime>2016-11-30T07:37:15.85-
05:00</Group_UpdateTime>
    <Group_Name>Physicians Preferred</Group_Name>
    <Group_Street>127 Plain Street</Group_Street>
    <Group_City>Milford</Group_City>
    <Group_State>MA</Group_State>
    <Group_Zip>01568</Group_Zip>
    <Group_Code>PPM</Group_Code>
    <Group_STREET2>APT 2</Group_STREET2>
    <Group_RETIRED>False</Group_RETIRED>
  </PhysicianLocationTable>
  <PhysicianLocationTable>
    <Location_ObjectID>1933150</Location_ObjectID>
    <Location_CreationDate>2010-05-27T15:11:59.63-
04:00</Location_CreationDate>
    <Location_UpdateTime>2016-08-02T08:47:02.77-
04:00</Location_UpdateTime>
    <Location_Location>OFFICE</Location_Location>
    <Location_Phone />
    <Location_CODE>1933150-OFFICE</Location_CODE>
    <Location_Retired>False</Location_Retired>
  </PhysicianLocationTable>
</NewDataSet>
```

GET REPORT

Endpoint	api/N/GetReport
Purpose	Return a single, full case reported result record based on case number and report Id.
Request Type	GET

Parameters	`case_number={case_number}`
	`report_id={report_id}`
	`user_ID={user_ID}`

return_format={return_format}

Where:

case_number is the case number of the report record to return.

report_id is the report object id of the report record to return.

user_id is the user code for the user in the NucleoLIS user table that is requesting the report.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

https://www.SomeServer.com/api/N/GetReport?case_number=184&report_id=15386635&user_ID=15492125&return_format=0

Returns

If the request succeeds, returns the full case record inclusive of all data elements associated with patient, case, specimen, test order and test result records:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <ResultReportTable>
    <Location_AdmitterCity />
    <Location_AdmitterCode />
    <Location_AdmitterName />
    <Location_AdmitterNPI />
    <Location_AdmitterPhone />
```

```
    <Location_AdmitterState />

    <Location_AdmitterStreet />

    <Location_AdmitterStreet2 />

    <Location_AdmitterStreet3 />

    <Location_AdmitterZip />

    <Case_Abnormal>False</Case_Abnormal>

    <Case_AmendedComment />

    <Case_CanceledBy />

    <Case_CanceledDate />

    <Case_CaseType>2327730</Case_CaseType>

   <Case_CaseTypeCode>Cytogenetics</Case_CaseTypeCode>


<Case_CaseTypeDescription>Cytogenetics</Case_CaseTypeD
escription>

    <Case_ChargeString>123 x 2, BCCHARGE x
2</Case_ChargeString>

    <Case_ClinicalInformation />

    <Case_Comment />

    <Case_CorrectedComment />

    <Case_CreationDate>2018-05-07
09:42:53</Case_CreationDate>

    <Case_CREATOR>johnb</Case_CREATOR>

    <Case_ExternalID />

    <Case_ExternalPatientID />

    <Case_ICDCodesDescriptions />

    <Case_ICDDescriptions />

    <Case_ICDS />

    <Case_Images />

    <Case_MODIFIER>0</Case_MODIFIER>
```

```
    <Case_Number>184</Case_Number>
    <Case_ObjectID>13767203</Case_ObjectID>
    <Case_OrderDate />
    <Case_OrderID />
    <Case_OtherPhysician1GreetingDisplay />
    <Case_OtherPhysician1Name />
    <Case_OtherPhysician2GreetingDisplay />
    <Case_OtherPhysician2Name />
    <Case_OtherPhysician3GreetingDisplay />
    <Case_OtherPhysician3Name />
    <Case_OtherPhysician4GreetingDisplay />
    <Case_OtherPhysician4Name />
    <Case_OtherPhysician5GreetingDisplay />
    <Case_OtherPhysician5Name />
    <Case_OtherPhysicianString />
    <Case_PDFs />
    <Case_PendingResultMessage />
    <Case_PrescribedMedications />
    <Case_PriorReportDate>2019-09-
24</Case_PriorReportDate>
    <Case_PriorReportTime>11:26</Case_PriorReportTime>
    <Case_PriorReportType>FINAL</Case_PriorReportType>
    <Case_Questions />
    <Case_ReportDate>2019-09-24</Case_ReportDate>
    <Case_ReportDefinition />
    <Case_ReportedBy>0</Case_ReportedBy>
    <Case_ReportedByTitle />
```

```
    <Case_ReportedFlag>False</Case_ReportedFlag>
    <Case_ReportIndex>2</Case_ReportIndex>
    <Case_ReportingComment />
    <Case_ReportStatus>FINAL</Case_ReportStatus>
    <Case_ReportTime>11:25</Case_ReportTime>
    <Case_ReportTitleModifier />
    <Case_ReportType>PRELIMINARY</Case_ReportType>
    <Case_ReqNumber />
    <Case_ReviewedBy />
    <Case_ReviewedComment />
    <Case_ReviewedDate />
    <Case_ReviewedTime />
    <Case_ReviewFlag>2019-09-24</Case_ReviewFlag>
    <Case_Signer />
    <Case_SignerDate />
    <Case_SignerLocationAddress />
    <Case_SignerLocationAddress2 />
    <Case_SignerLocationCity />
    <Case_SignerLocationDescription />
    <Case_SignerLocationName />
<Case_SignerLocationObjectID>0</Case_SignerLocationObj
ectID>
    <Case_SignerLocationState />
    <Case_SignerLocationZip />
    <Case_SignerObjectID>0</Case_SignerObjectID>
    <Case_SignerTime />
    <Case_SignerTitle />
```

```
    <Case_Status>I</Case_Status>

    <Case_StatusStep />


<Case_SubmitterLocation>1437553</Case_SubmitterLocatio
n>

    <Case_SuperobjectID>13767202</Case_SuperobjectID>

    <Case_UpdateTime>2019-09-25
05:06:39</Case_UpdateTime>

    <Case_User1 />

    <Case_User2 />

    <Case_User3 />

    <Case_User4 />

    <Constituent_Abnormal>False</Constituent_Abnormal>

    <Constituent_AlwaysReport />


<Constituent_CategorySequence>2</Constituent_CategoryS
equence>

    <Constituent_Definition>OFBUPRENORPHINE-
C</Constituent_Definition>

    <Constituent_Description>Buprenorphine
</Constituent_Description>

    <Constituent_ImageName1 />

    <Constituent_ImageName2 />

    <Constituent_IsolateLabel />

    <Constituent_IsolateOrganism />

    <Constituent_IsolateOrganismDescription />

    <Constituent_IsolateOrganismModifier />

    <Constituent_KB />

    <Constituent_MIC />
```

<Constituent_ObjectID>15382509</Constituent_ObjectID>

<Constituent_PriorAbnormal>False</Constituent_PriorAbnormal>

<Constituent_PriorR1>NEG</Constituent_PriorR1>

<Constituent_PriorR2>CONSISTENT</Constituent_PriorR2>

<Constituent_PriorR3>1.5 ng/ml</Constituent_PriorR3>

<Constituent_PriorR4>6 to 18 Hours</Constituent_PriorR4>

<Constituent_PriorR5 />

<Constituent_PriorR6 />

<Constituent_PriorRange />

<Constituent_PriorRangeComment />

<Constituent_PriorResult>0.1</Constituent_PriorResult>

<Constituent_PriorResultDescription />

<Constituent_PType>Immuno</Constituent_PType>

<Constituent_R1>NEG</Constituent_R1>

<Constituent_R1Desc>Detected</Constituent_R1Desc>

<Constituent_R2>CONSISTENT</Constituent_R2>

<Constituent_R2Desc>Consistent</Constituent_R2Desc>

<Constituent_R3>1.5 ng/ml</Constituent_R3>

<Constituent_R3Desc>Cut Off</Constituent_R3Desc>

<Constituent_R4>6 to 18 Hours</Constituent_R4>

<Constituent_R4Desc>Detection Window</Constituent_R4Desc>

<Constituent_R5 />

```
    <Constituent_R5Desc>Result
Text</Constituent_R5Desc>

    <Constituent_R6 />

    <Constituent_R6Desc />

    <Constituent_Range />

    <Constituent_RangeComment />

    <Constituent_RangeCommentDesc />

    <Constituent_RangeDesc />

    <Constituent_ReportCategory />


<Constituent_ReportCategorySequence>283</Constituent_R
eportCategorySequence>

    <Constituent_Result>0.1</Constituent_Result>

    <Constituent_ResultDate />

    <Constituent_ResultDescription />

    <Constituent_ResultTime />

    <Constituent_Sensitivity />

    <Location_ConsultorCity />

    <Location_ConsultorCode />

    <Location_ConsultorName />

    <Location_ConsultorNPI />

    <Location_ConsultorPhone />

    <Location_ConsultorState />

    <Location_ConsultorStreet />

    <Location_ConsultorStreet2 />

    <Location_ConsultorStreet3 />

    <Location_ConsultorZip />

    <Location_GroupCity />
```

```
    <Location_GroupCode>HARTM</Location_GroupCode>

    <Location_GroupCounty />

    <Location_GroupFax />

    <Location_GroupName>Last,
First</Location_GroupName>

    <Location_GroupPhone />

    <Location_GroupState />

    <Location_GroupStreet />

    <Location_GroupStreet2 />

    <Location_GroupStreet3 />

    <Location_GroupUser1 />

    <Location_GroupZip />

    <Patient_City />

    <Patient_Code>13767197</Patient_Code>

    <Patient_County />

    <Patient_CreationDate>2018-05-07
12:42:08</Patient_CreationDate>

    <Patient_CREATOR>johnb</Patient_CREATOR>

    <Patient_Dob>1970-01-01</Patient_Dob>

    <Patient_Ethnicity />

    <Patient_Fax />

    <Patient_FirstName>J</Patient_FirstName>

    <Patient_LastName>Smith</Patient_LastName>

    <Patient_MedicareNumber />

    <Patient_MiddleName />

    <Patient_MODIFIER>johnb</Patient_MODIFIER>

    <Patient_Name>Smith, J</Patient_Name>

    <Patient_ObjectID>13767197</Patient_ObjectID>
```

```
    <Patient_Phone />

    <Patient_Race />

    <Patient_Sex />

    <Patient_Soundex>SMTHJ</Patient_Soundex>

    <Patient_Ssn>111-11-1111</Patient_Ssn>

    <Patient_State />

    <Patient_Street />

    <Patient_Street2 />

    <Patient_UpdateTime>2018-05-07
09:42:08</Patient_UpdateTime>

    <Patient_USER1 />

    <Patient_USER2 />

    <Patient_USER3 />

    <Patient_USER4 />

    <Patient_Zip />

    <Profile_Abnormal>False</Profile_Abnormal>

    <Profile_AlwaysReport />

    <Profile_ApproveDate />

    <Profile_Approver />


<Profile_ApproverObjectID>0</Profile_ApproverObjectID>

    <Profile_ApproverTitle />

    <Profile_CompleteDate>2019-09-
24</Profile_CompleteDate>

    <Profile_CompletedBy>Vanger,
John</Profile_CompletedBy>


<Profile_CompleterObjectID>2325137</Profile_CompleterO
bjectID>
```

<Profile_CompleteTime />

<Profile_Definition>OFBASIC</Profile_Definition>

<Profile_DefinitionUser1 />

<Profile_DefinitionUser2 />

<Profile_DefinitionUser3 />

<Profile_Description>OFBASIC (ORAL FLUID)</Profile_Description>

<Profile_Designation />

<Profile_DNASequenceInterpretation />

<Profile_ImageName1 />

<Profile_ImageName2 />

<Profile_ImageName3 />

<Profile_ImageName4 />

<Profile_ImageName5 />

<Profile_ImageName6 />

<Profile_Images />

<Profile_Interpretation />

<Profile_KaryotypeInterpretation />

<Profile_Methodology />

<Profile_ObjectID>15382508</Profile_ObjectID>

<Profile_OrderDate />

<Profile_OrderTime />

<Profile_PDFs />

<Profile_PriorAbnormal>False</Profile_PriorAbnormal>

<Profile_PriorDNASequenceInterpretation />

<Profile_PriorInterpretation />

<Profile_PriorR1 />

<Profile_PriorR2 />

<Profile_PriorR3 />

<Profile_PriorR4 />

<Profile_PriorR5 />

<Profile_PriorR6 />

<Profile_PriorRange />

<Profile_PriorRangeComment />

<Profile_PriorResult />

<Profile_PriorResultDescription />

<Profile_PType>Immuno</Profile_PType>

<Profile_Questions />

<Profile_R1 />

<Profile_R1Desc />

<Profile_R2 />

<Profile_R2Desc />

<Profile_R3 />

<Profile_R3Desc />

<Profile_R4 />

<Profile_R4Desc />

<Profile_R5 />

<Profile_R5Desc />

<Profile_R6 />

<Profile_R6Desc />

<Profile_Range />

<Profile_RangeComment />

<Profile_RangeCommentDesc />

<Profile_RangeDesc />

```
    <Profile_ReportCategory />
    <Profile_Result />
    <Profile_ResultDate />
    <Profile_ResultDescription />
    <Profile_ResultTime />
    <Profile_Signer />
    <Profile_SignerDate />
    <Profile_SignerLocationAddress />
    <Profile_SignerLocationAddress2 />
    <Profile_SignerLocationCity />
    <Profile_SignerLocationDescription />
    <Profile_SignerLocationName />
<Profile_SignerLocationObjectID>0</Profile_SignerLocat
ionObjectID>
    <Profile_SignerLocationState />
    <Profile_SignerLocationZip />
    <Profile_SignerObjectID>0</Profile_SignerObjectID>
    <Profile_SignerTitle />
    <Profile_StartDate />
    <Profile_StartTime />
    <Profile_TestingLocationAddress />
    <Profile_TestingLocationAddress2 />
    <Profile_TestingLocationCity />
    <Profile_TestingLocationDescription />
    <Profile_TestingLocationName />
<Profile_TestingLocationObjectID>0</Profile_TestingLoc
ationObjectID>
```

```
    <Profile_TestingLocationState />

    <Profile_TestingLocationZip />

    <Specimen_CollectionDate>2018-06-
29</Specimen_CollectionDate>

    <Specimen_CollectionTime />

    <Specimen_Comment />

    <Specimen_Description />

    <Specimen_Designation />

    <Specimen_DiagnosisFull />


<Specimen_DiagnosisMalignant>False</Specimen_Diagnosis
Malignant>

    <Specimen_FastingStatus />

    <SpecimenFrozenSection_CompleteDate />

    <SpecimenFrozenSection_CompletedBy />

    <SpecimenFrozenSection_CompleteTime />

    <SpecimenFrozenSection_Diagnosis />

    <SpecimenFrozenSection_Gross />

    <SpecimenFrozenSection_ImageName1 />

    <SpecimenFrozenSection_ImageName2 />

    <SpecimenFrozenSection_Images />


<SpecimenFrozenSection_ObjectID>0</SpecimenFrozenSecti
on_ObjectID>

    <SpecimenFrozenSection_PDFs />

    <SpecimenFrozenSection_Signer />

    <SpecimenFrozenSection_SignerDate />

    <SpecimenFrozenSection_SignerTime />

    <SpecimenFrozenSection_SignerTitle />
```

```
<SpecimenFrozenSection_Specimen>0</SpecimenFrozenSecti
on_Specimen>
    <Specimen_Gross />
    <Specimen_ImageName1 />
    <Specimen_ImageName2 />
    <Specimen_Images />
    <Specimen_IndexNumber>1</Specimen_IndexNumber>
    <Specimen_Interpretation />
    <Specimen_Microscopic />
    <Specimen_Number>13770892</Specimen_Number>
    <Specimen_ObjectID>13770892</Specimen_ObjectID>
    <Specimen_OID>13770892</Specimen_OID>
    <Specimen_PatientAge>48</Specimen_PatientAge>
    <Specimen_PDFs />
    <Specimen_PendingResultMessage />
    <Specimen_Priority>ROUTINEx</Specimen_Priority>
    <Specimen_Questions />
    <Specimen_ReceivedDate>2018-06-
29</Specimen_ReceivedDate>
<Specimen_ReceivedTime>05:55:13</Specimen_ReceivedTime
>
    <Specimen_Site />
<Specimen_SourceCode>APPENDIX</Specimen_SourceCode>
<Specimen_SourceDescription>APPENDIX</Specimen_SourceD
escription>
    <Specimen_User1 />
```

```
    <Specimen_User2 />

    <Specimen_User3 />

    <Specimen_User4 />

    <Location_PhysicianCity />


<Location_PhysicianCode>T124</Location_PhysicianCode>

    <Location_PhysicianCounty />

    <Location_PhysicianDegree />

    <Location_PhysicianFax />

    <Location_PhysicianGreetingDisplay>Earl Gentry
M.D.</Location_PhysicianGreetingDisplay>

    <Location_PhysicianLocationCity />


<Location_PhysicianLocationLocation>None</Location_Phy
sicianLocationLocation>

    <Location_PhysicianLocationPhone />

    <Location_PhysicianLocationState />

    <Location_PhysicianLocationStreet />

    <Location_PhysicianLocationStreet2 />

    <Location_PhysicianLocationStreet3 />

    <Location_PhysicianLocationZip />

    <Location_PhysicianName>Gentry M.D.,
Earl</Location_PhysicianName>

    <Location_PhysicianNPI />

    <Location_PhysicianPhone />

    <Location_PhysicianState />

    <Location_PhysicianStreet />

    <Location_PhysicianStreet2 />

    <Location_PhysicianStreet3 />
```

```
    <Location_PhysicianUPIN />

    <Location_PhysicianUser1 />

    <Location_PhysicianZip />

    <Visit_ADMITTERFAX />

    <Visit_Code>13767202</Visit_Code>

    <Visit_Comment />

    <Visit_CONSULTORFAX />

    <Visit_CreationDate>2018-05-07
12:42:52</Visit_CreationDate>

    <Visit_DischargeDate />

    <Visit_Location />

    <Visit_MODIFIER>johnb</Visit_MODIFIER>

    <Visit_ObjectID>13767202</Visit_ObjectID>


<Visit_SuperObjectID>13767197</Visit_SuperObjectID>

    <Visit_Type />

    <Visit_UpdateTime>2018-05-07
09:42:52</Visit_UpdateTime>

    <Visit_USER1 />

    <Visit_USER2 />

    <Visit_USER3 />

    <Visit_USER4 />

    <Visit_VisitDate>2018-05-07</Visit_VisitDate>

  </ResultReportTable>

</NewDataSet>
```

GET REPORTS

Endpoint api/N/GetReports

Purpose Returns a collection of report records based on filter parameters passed.

Request Type GET

Parameters

```
case_number={case_number}
actives_only = {actives_only}
report_date_from = {report_date_from}
report_date_to = {report_date_to}
submitting_physicians = {submitting_physicians}
submitting_groups = {submitting_groups}
filter_expression = {filter_expression}
user_ID={user_ID}
return_format={return_format}
```

Where:

case_number is a record identifier which has the specified value in the case number. Wildcards can be embedded in the argument as "*".

actives_only if set to true, only returns active cases. If set to false, returns all cases.

report_date_from is the oldest inclusive report date in the format: (MMDDYYYY OR YYYY-MM-DD).

report_date_to is the newest inclusive report date in the format: (MMDDYYYY OR YYYY-MM-DD).

submitting_physicians is a pipe delimited string specifying the physician identifying codes.

submitting_groups is a pipe delimited string specifying the physician facility identifying codes.

filter_expression is a dynamic filter expression which may pertain to any data element returned in the dataset.

user_id is the user code for the user in the NucleoLIS user table that is requesting the reports.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

https://www.SomeServer.com/api/N/GetReports?case_number=18*&activesOnly=false&report_date_from=2000-01-01&report_date_to=2021-02-21&submitting_physicians=&submitting_groups=&filter_expression=&user_ID=15492125&return_format=0

Returns

If the request succeeds, returns a collection of Patient, Case and Report level data based on filtering parameters passed including Patient_ObjectID, Patient_Name, Patient_Code, Patient_Dob, Patient_Sex, Case_Number, Case_OrderDate, Case_CreationDate, Case_ReportStatus, Case_Status, Case_ObjectID, Report_ObjectID, Report_Type, Report_Date, Report_Time and Report_TitleModifier:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <ResultReportTable>
    <Patient_ObjectID>13767197</Patient_ObjectID>
    <Patient_Name>Smith, J</Patient_Name>
    <Patient_Code>13767197</Patient_Code>
    <Patient_Dob>1970-01-01</Patient_Dob>
    <Patient_Sex />
    <Case_Number>183</Case_Number>
```

```
    <Case_OrderDate />
    <Case_CreationDate>2018-05-07T09:42:40.91-
04:00</Case_CreationDate>
    <Case_ReportStatus>FINAL</Case_ReportStatus>
    <Case_Status>I</Case_Status>
    <Case_ObjectID>13767201</Case_ObjectID>
    <Report_ObjectID>13781492</Report_ObjectID>
    <Report_Type>FINAL</Report_Type>
    <Report_Date>2018-09-24</Report_Date>
    <Report_Time>05:57</Report_Time>
  </ResultReportTable>
  <ResultReportTable>
    <Patient_ObjectID>13767197</Patient_ObjectID>
    <Patient_Name>Smith, J</Patient_Name>
    <Patient_Code>13767197</Patient_Code>
    <Patient_Dob>1970-01-01</Patient_Dob>
    <Patient_Sex />
    <Case_Number>184</Case_Number>
    <Case_OrderDate />
    <Case_CreationDate>2018-05-07T09:42:53.527-
04:00</Case_CreationDate>
    <Case_ReportStatus>FINAL</Case_ReportStatus>
    <Case_Status>I</Case_Status>
    <Case_ObjectID>13767203</Case_ObjectID>
    <Report_ObjectID>15386635</Report_ObjectID>
    <Report_Type>PRELIMINARY</Report_Type>
    <Report_Date>2019-09-24</Report_Date>
    <Report_Time>11:25</Report_Time>
```

```
  </ResultReportTable>
 </NewDataSet>
```

GET RESULT REPORT

Endpoint api/N/GetResultReport

Purpose Return a PDF result report file based on case number and report Id.

Request Type GET

Parameters

```
case_number={case_number}
report_id={report_id}
user_ID={user_ID}
return_format={return_format}
```

Where:

case_number is the case number of the report record to return.

report_id is the report object id of the report record to return.

user_id is the user code for the user in the NucleoLIS user table that is requesting the result report.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

https://www.SomeServer.com/api/N/GetResultReport?case_number=FSH2020-000002&report_id=15498801&user_ID=15492125&return_format=0

Returns

If the request succeeds, returns a base64 encoded copy of the requested PDF result report:

```
<?xml version="1.0" encoding="UTF-8" ?><ReportRecords>
  <Reports>
    <report_id>15498801</report_id>
    <case_number>FSH2020-000002</case_number>

<base_64>JVBERi0xLjQNCiWxsrO0DQolQ3Jl....o=</base_64>
    <message />
  </Reports>
</ReportRecords>
```

GET CASE TYPE DEFINITIONS

Endpoint

api/N/GetCaseTypeDefinitions

Purpose

Returns a collection of case type definitions in the system build based on filter parameters passed.

Request Type

GET

Parameters

```
user_ID={user_ID}
return_format={return_format}
with_retired ={with_retired}
```

Where:

user_id is the user code for the user in the NucleoLIS user table that is requesting the case type definitions.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

with_retired If false, will exclude retired entries in the system build. If true, will return all entries in the system build.

Example

```
https://www.SomeServer.com/api/N/GetCaseTypeDefinitions?user_ID=15492125&return_format=0&with_retired=false
```

Returns

If the request succeeds, returns the system unique identifier, code, description and retired state for each item defined in the system build:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <CaseTypeDefinitionTable>
<CaseTypeDefinition_ObjectID>2327075</CaseTypeDefinition_ObjectID>
<CaseTypeDefinition_Code>GEN</CaseTypeDefinition_Code>
<CaseTypeDefinition_Description>GENERAL</CaseTypeDefinition_Description>
```

<CaseTypeDefinition_Retired>False</CaseTypeDefinition_Retired>

</CaseTypeDefinitionTable>

<CaseTypeDefinitionTable>

<CaseTypeDefinition_ObjectID>2327641</CaseTypeDefinition_ObjectID>

<CaseTypeDefinition_Code>Prenatal</CaseTypeDefinition_Code>

<CaseTypeDefinition_Description>Prenatal Testing</CaseTypeDefinition_Description>

<CaseTypeDefinition_Retired>False</CaseTypeDefinition_Retired>

</CaseTypeDefinitionTable>

<CaseTypeDefinitionTable>

<CaseTypeDefinition_ObjectID>2327727</CaseTypeDefinition_ObjectID>

<CaseTypeDefinition_Code>Enzyme</CaseTypeDefinition_Code>

<CaseTypeDefinition_Description>Enzyme</CaseTypeDefinition_Description>

<CaseTypeDefinition_Retired>False</CaseTypeDefinition_Retired>

</CaseTypeDefinitionTable>

<CaseTypeDefinitionTable>

<CaseTypeDefinition_ObjectID>2327728</CaseTypeDefinition_ObjectID>

```
    <CaseTypeDefinition_Code>DNA
Seq</CaseTypeDefinition_Code>

    <CaseTypeDefinition_Description>DNA
Sequence</CaseTypeDefinition_Description>


<CaseTypeDefinition_Retired>False</CaseTypeDefinition_
Retired>

  </CaseTypeDefinitionTable>

  <CaseTypeDefinitionTable>


<CaseTypeDefinition_ObjectID>2327729</CaseTypeDefiniti
on_ObjectID>


<CaseTypeDefinition_Code>Disorder</CaseTypeDefinition_
Code>

    <CaseTypeDefinition_Description>Genetic
Disorders</CaseTypeDefinition_Description>


<CaseTypeDefinition_Retired>False</CaseTypeDefinition_
Retired>

  </CaseTypeDefinitionTable>

  <CaseTypeDefinitionTable>


<CaseTypeDefinition_ObjectID>2327730</CaseTypeDefiniti
on_ObjectID>


<CaseTypeDefinition_Code>Cytogenetics</CaseTypeDefinit
ion_Code>


<CaseTypeDefinition_Description>Cytogenetics</CaseType
Definition_Description>


<CaseTypeDefinition_Retired>False</CaseTypeDefinition_
Retired>

  </CaseTypeDefinitionTable>
```

<CaseTypeDefinitionTable>

<CaseTypeDefinition_ObjectID>2327732</CaseTypeDefinition_ObjectID>

<CaseTypeDefinition_Code>Cytogenetics2</CaseTypeDefinition_Code>

<CaseTypeDefinition_Description>FISH</CaseTypeDefinition_Description>

<CaseTypeDefinition_Retired>False</CaseTypeDefinition_Retired>

</CaseTypeDefinitionTable>

<CaseTypeDefinitionTable>

<CaseTypeDefinition_ObjectID>9758103</CaseTypeDefinition_ObjectID>

<CaseTypeDefinition_Code>Cytogenetics_1</CaseTypeDefinition_Code>

<CaseTypeDefinition_Description>Karyotype_1</CaseTypeDefinition_Description>

<CaseTypeDefinition_Retired>False</CaseTypeDefinition_Retired>

</CaseTypeDefinitionTable>

<CaseTypeDefinitionTable>

<CaseTypeDefinition_ObjectID>10866436</CaseTypeDefinition_ObjectID>

<CaseTypeDefinition_Code>pGX</CaseTypeDefinition_Code>

```
    <CaseTypeDefinition_Description>TSI
Integration</CaseTypeDefinition_Description>

<CaseTypeDefinition_Retired>False</CaseTypeDefinition_
Retired>

  </CaseTypeDefinitionTable>

  <CaseTypeDefinitionTable>

<CaseTypeDefinition_ObjectID>11363917</CaseTypeDefinit
ion_ObjectID>

<CaseTypeDefinition_Code>SURG</CaseTypeDefinition_Code
>

<CaseTypeDefinition_Description>SURGICAL</CaseTypeDefi
nition_Description>

<CaseTypeDefinition_Retired>False</CaseTypeDefinition_
Retired>

  </CaseTypeDefinitionTable>

  <CaseTypeDefinitionTable>

<CaseTypeDefinition_ObjectID>13792557</CaseTypeDefinit
ion_ObjectID>

<CaseTypeDefinition_Code>Gastro</CaseTypeDefinition_Co
de>

<CaseTypeDefinition_Description>Gastro</CaseTypeDefini
tion_Description>

<CaseTypeDefinition_Retired>False</CaseTypeDefinition_
Retired>

  </CaseTypeDefinitionTable>

</NewDataSet>
```

GET SOURCE DEFINITIONS

Endpoint api/N/GetSourceDefinitions

Purpose Returns a collection of source definitions in the system build based on filter parameters passed.

Request Type GET

Parameters

```
user_ID={user_ID}

return_format={return_format}

with_retired ={with_retired}
```

Where:

user_id is the user code for the user in the NucleoLIS user table that is requesting the source definitions.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

with_retired If false, will exclude retired entries in the system build. If true, will return all entries in the system build.

Example

```
https://www.SomeServer.com/api/N/GetSourceDefinitions?
user_ID=15492125&return_format=0&with_retired=false
```

Returns

If the request succeeds, returns the system unique identifier, code, description and retired state for each item defined in the system build:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <SourceDefinitionTable>
<SourceDefinition_ObjectID>2326047</SourceDefinition_O
bjectID>
<SourceDefinition_Code>APPENDIX</SourceDefinition_Code
>
<SourceDefinition_Description>APPENDIX</SourceDefiniti
on_Description>
<SourceDefinition_Retired>False</SourceDefinition_Reti
red>
  </SourceDefinitionTable>
  <SourceDefinitionTable>
<SourceDefinition_ObjectID>2326116</SourceDefinition_O
bjectID>
<SourceDefinition_Code>BLOOD</SourceDefinition_Code>
<SourceDefinition_Description>BLOOD</SourceDefinition_
Description>
<SourceDefinition_Retired>False</SourceDefinition_Reti
red>
  </SourceDefinitionTable>
  <SourceDefinitionTable>
```

<SourceDefinition_ObjectID>2326606</SourceDefinition_O
bjectID>

<SourceDefinition_Code>DBlood</SourceDefinition_Code>

<SourceDefinition_Description>Dried Blood
</SourceDefinition_Description>

<SourceDefinition_Retired>False</SourceDefinition_Reti
red>

</SourceDefinitionTable>

<SourceDefinitionTable>

<SourceDefinition_ObjectID>2326607</SourceDefinition_O
bjectID>

<SourceDefinition_Code>Serum</SourceDefinition_Code>

<SourceDefinition_Description>Serum</SourceDefinition_
Description>

<SourceDefinition_Retired>False</SourceDefinition_Reti
red>

</SourceDefinitionTable>

<SourceDefinitionTable>

<SourceDefinition_ObjectID>2326608</SourceDefinition_O
bjectID>

<SourceDefinition_Code>Urine</SourceDefinition_Code>

<SourceDefinition_Description>Urine</SourceDefinition_
Description>

```
<SourceDefinition_Retired>False</SourceDefinition_Reti
red>

  </SourceDefinitionTable>

  <SourceDefinitionTable>


<SourceDefinition_ObjectID>2326609</SourceDefinition_O
bjectID>


<SourceDefinition_Code>Plasma</SourceDefinition_Code>


<SourceDefinition_Description>Plasma</SourceDefinition
_Description>


<SourceDefinition_Retired>False</SourceDefinition_Reti
red>

  </SourceDefinitionTable>

  <SourceDefinitionTable>


<SourceDefinition_ObjectID>2326610</SourceDefinition_O
bjectID>


<SourceDefinition_Code>Leukocytes</SourceDefinition_Co
de>


<SourceDefinition_Description>Leukocytes</SourceDefini
tion_Description>


<SourceDefinition_Retired>False</SourceDefinition_Reti
red>

  </SourceDefinitionTable>

  <SourceDefinitionTable>


<SourceDefinition_ObjectID>2326611</SourceDefinition_O
bjectID>
```

```
<SourceDefinition_Code>Fibroblasts</SourceDefinition_C
ode>

<SourceDefinition_Description>Fibroblasts</SourceDefin
ition_Description>

<SourceDefinition_Retired>False</SourceDefinition_Reti
red>

  </SourceDefinitionTable>

</NewDataSet>
```

GET PROFILE DEFINITIONS

Endpoint api/N/GetProfileDefinitions

Purpose Returns a collection of profile definitions in the system build based on filter parameters passed.

Request Type GET

Parameters

```
user_ID={user_ID}

return_format={return_format}

with_retired ={with_retired}
```

Where:

user_id is the user code for the user in the NucleoLIS user table that is requesting the profile definitions.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

with_retired If false, will exclude retired entries in the system build. If true, will return all entries in the system build.

Example

```
https://www.SomeServer.com/api/N/GetProfileDefinitions
?user_ID=15492125&return_format=0&with_retired=false
```

Returns

If the request succeeds, returns the system unique identifier, code, description and retired state for each item defined in the system build.

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>

  <ProfileDefinitionTable>

<ProfileDefinition_ObjectID>2325220</ProfileDefinition
_ObjectID>

<ProfileDefinition_Code>BAESO</ProfileDefinition_Code>

    <ProfileDefinition_Description>Barrett's Esophagus
Progression: check for Esophageal
Adenocarcinoma</ProfileDefinition_Description>

<ProfileDefinition_Retired>False</ProfileDefinition_Re
tired>

<ProfileDefinition_LIBRARYTYPE>FISH</ProfileDefinition
_LIBRARYTYPE>

  </ProfileDefinitionTable>

  <ProfileDefinitionTable>

<ProfileDefinition_ObjectID>2335695</ProfileDefinition
_ObjectID>
```

```
    <ProfileDefinition_Code>BCL-
6</ProfileDefinition_Code>

    <ProfileDefinition_Description>Break Apart
Probe</ProfileDefinition_Description>


<ProfileDefinition_Retired>False</ProfileDefinition_Re
tired>


<ProfileDefinition_LIBRARYTYPE>FISH</ProfileDefinition
_LIBRARYTYPE>

  </ProfileDefinitionTable>

  <ProfileDefinitionTable>


<ProfileDefinition_ObjectID>2326451</ProfileDefinition
_ObjectID>


<ProfileDefinition_Code>OVCA</ProfileDefinition_Code>

    <ProfileDefinition_Description>Ovarian Cancer
Kit</ProfileDefinition_Description>


<ProfileDefinition_Retired>False</ProfileDefinition_Re
tired>


<ProfileDefinition_LIBRARYTYPE>PCR</ProfileDefinition_
LIBRARYTYPE>

  </ProfileDefinitionTable>

  <ProfileDefinitionTable>


<ProfileDefinition_ObjectID>2326532</ProfileDefinition
_ObjectID>


<ProfileDefinition_Code>RESPVIRUS</ProfileDefinition_C
ode>

    <ProfileDefinition_Description>Respiratory Virus
Panel</ProfileDefinition_Description>
```

<ProfileDefinition_Retired>False</ProfileDefinition_Retired>

<ProfileDefinition_LIBRARYTYPE>PCR</ProfileDefinition_LIBRARYTYPE>

</ProfileDefinitionTable>

<ProfileDefinitionTable>

<ProfileDefinition_ObjectID>2326565</ProfileDefinition_ObjectID>

<ProfileDefinition_Code>BL</ProfileDefinition_Code>

<ProfileDefinition_Description>Beta-Lactamase Detection Comp Gram Neg Panel</ProfileDefinition_Description>

<ProfileDefinition_Retired>False</ProfileDefinition_Retired>

<ProfileDefinition_LIBRARYTYPE>PCR</ProfileDefinition_LIBRARYTYPE>

</ProfileDefinitionTable>

<ProfileDefinitionTable>

<ProfileDefinition_ObjectID>2326570</ProfileDefinition_ObjectID>

<ProfileDefinition_Code>HPV</ProfileDefinition_Code>

<ProfileDefinition_Description>HPV Genotyping-TMA</ProfileDefinition_Description>

<ProfileDefinition_Retired>False</ProfileDefinition_Retired>

```
<ProfileDefinition_LIBRARYTYPE>PCR</ProfileDefinition_
LIBRARYTYPE>

  </ProfileDefinitionTable>

</NewDataSet>
```

GET QUESTION DEFINITIONS

Endpoint api/N/GetQuestionDefinitions

Purpose Returns a collection of profile definitions in the system build based on filter parameters passed.

Request Type GET

Parameters

```
user_ID={user_ID}

return_format={return_format}

with_retired ={with_retired}
```

Where:

user_id is the user code for the user in the NucleoLIS user table that is requesting the question definitions.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

with_retired If false, will exclude retired entries in the system build. If true, will return all entries in the system build.

Example

```
https://www.SomeServer.com/api/N/GetQuestionDefinitions?user_ID=15492125&return_format=0&with_retired=false
```

Returns

If the request succeeds, returns the system unique identifier, code, description and retired state for each item defined in the system build for each question and response defined:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>

<QuestionDefinitionTable>


<AAOEQuestionDefinition_ObjectID>1722188</AAOEQuestionDefinition_ObjectID>


<AAOEQuestionDefinition_Code>CATCH</AAOEQuestionDefinition_Code>

    <AAOEQuestionDefinition_Description>Enter catch method</AAOEQuestionDefinition_Description>


<AAOEQuestionDefinition_RETIRED>False</AAOEQuestionDefinition_RETIRED>


<AAOEQuestionDefinition_AllowOther>False</AAOEQuestionDefinition_AllowOther>


<AAOEQuestionDefinition_SingleSelect>False</AAOEQuestionDefinition_SingleSelect>


<AAOEQuestionDefinition_Required>False</AAOEQuestionDefinition_Required>
```

<AAOEResponseDefinition_Code>CLEAN</AAOEResponseDefinition_Code>

<AAOEResponseDefinition_Description>Clean Catch</AAOEResponseDefinition_Description>

<AAOEResponseDefinition_RETIRED>False</AAOEResponseDefinition_RETIRED>

</QuestionDefinitionTable>

<QuestionDefinitionTable>

<AAOEQuestionDefinition_ObjectID>1722188</AAOEQuestionDefinition_ObjectID>

<AAOEQuestionDefinition_Code>CATCH</AAOEQuestionDefinition_Code>

<AAOEQuestionDefinition_Description>Enter catch method</AAOEQuestionDefinition_Description>

<AAOEQuestionDefinition_RETIRED>False</AAOEQuestionDefinition_RETIRED>

<AAOEQuestionDefinition_AllowOther>False</AAOEQuestionDefinition_AllowOther>

<AAOEQuestionDefinition_SingleSelect>False</AAOEQuestionDefinition_SingleSelect>

<AAOEQuestionDefinition_Required>False</AAOEQuestionDefinition_Required>

<AAOEResponseDefinition_Code>RANDOM</AAOEResponseDefinition_Code>

<AAOEResponseDefinition_Description>Random</AAOEResponseDefinition_Description>

<AAOEResponseDefinition_RETIRED>False</AAOEResponseDef
inition_RETIRED>

</QuestionDefinitionTable>

<QuestionDefinitionTable>

<AAOEQuestionDefinition_ObjectID>1722191</AAOEQuestion
Definition_ObjectID>

<AAOEQuestionDefinition_Code>TEXT</AAOEQuestionDefinit
ion_Code>

<AAOEQuestionDefinition_Description>Enter
Text</AAOEQuestionDefinition_Description>

<AAOEQuestionDefinition_RETIRED>False</AAOEQuestionDef
inition_RETIRED>

</QuestionDefinitionTable>

<QuestionDefinitionTable>

<AAOEQuestionDefinition_ObjectID>1722239</AAOEQuestion
Definition_ObjectID>

<AAOEQuestionDefinition_Code>HOW</AAOEQuestionDefiniti
on_Code>

<AAOEQuestionDefinition_Description>How are you
today?</AAOEQuestionDefinition_Description>

<AAOEQuestionDefinition_RETIRED>False</AAOEQuestionDef
inition_RETIRED>

<AAOEQuestionDefinition_AllowOther>False</AAOEQuestion
Definition_AllowOther>

<AAOEQuestionDefinition_SingleSelect>True</AAOEQuestio
nDefinition_SingleSelect>

```
<AAOEQuestionDefinition_Required>True</AAOEQuestionDef
inition_Required>

<AAOEQuestionDefinition_DefaultResponse>Good</AAOEQues
tionDefinition_DefaultResponse>

<AAOEResponseDefinition_Code>GOOD</AAOEResponseDefinit
ion_Code>

<AAOEResponseDefinition_Description>Good</AAOEResponse
Definition_Description>

<AAOEResponseDefinition_RETIRED>False</AAOEResponseDef
inition_RETIRED>
  </QuestionDefinitionTable>
</NewDataSet>
```

SET INSTRUMENT TEST RESULTS

Endpoint	api/N/SetInstrumentTestResults
Purpose	Sets result values for test orders.
Request Type	GET

Parameters	`object_ids ={object_ids}`
	`at_profile={at_profile}`
	`result_value={result_value}`
	`r1_value={r1_value}`
	`r2_value={r2_value}`

r3_value={r3_value}

r4_value={r4_value}

r5_value={r5_value}

r6_value={r6_value}range_value is a (mandatory) String, the a range value to set

rangeComment_value={rangeComment_value}

abnormal_value={abnormal_value}

sent_from={sent_from}

batch_id={batch_id}

user_ID={user_ID}

return_format={return_format}

Where:

object_ids is a (mandatory) String, containing a pipe delimited list of unique identifiers of profile records.

test_code is a (mandatory) String, containing profile or constituent code to result.

at_profile is a (mandatory) Boolean, true for profile level result, false for constituent result.

result_value is a (mandatory) String, a result value to set.

r1_value is a (mandatory) String, the r1 result value to set.

r2_value is a (mandatory) String, the r2 result value to set.

r3_value is a (mandatory) String, the r3 result value to set.

r4_value is a (mandatory) String, the r4 result value to set.

r5_value is a (mandatory) String, the r5 result value to set.

r6_value is a (mandatory) String, the r6 result value to set.

range_value is a (mandatory) String, the a range value to set.

rangeComment_value is a (mandatory) String, the result comment value to set.

abnormal_value is a (mandatory) Boolean, true or false signifying if this value is abnormal.

sent_from is (mandatory), the instrument or system in which the data originated

batch_id is a (mandatory) String, the id of the batch associated with the results (if in use)

user_id is a (mandatory) String, the authorized user

return_format is the desired return format (mandatory) – Integer, 0 = XML, 1 = JSON

Example

```
https://www.SomeServer.com/api/N/SetInstrumentTestResults?object_ids=15403525|15494579|15494594&test_code=Escherichia coli O157&at_profile=false&result_value=Negative&r1_value=&r2_value=&r3_value=&r4_value=&r5_value=&r6_value=&range_value=&rangeComment_value=&abnormal_value=False&sent_from=Luminex&batch_id=Q123456&user_id=15492125&return_format=0
```

Returns

If the request succeeds, returns the results of processing the result updates:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <InstrumentResultUpdate>
    <object_id>15403525</object_id>
```

```
    <object_type>PCR</object_type>
    <message>success</message>
  </InstrumentResultUpdate>
  <InstrumentResultUpdate>
    <object_id>15494579</object_id>
    <object_type>PCR</object_type>
    <message>success</message>
  </InstrumentResultUpdate>
  <InstrumentResultUpdate>
    <object_id>15494594</object_id>
    <object_type>PCR</object_type>
    <message>success</message>
  </InstrumentResultUpdate>
</NewDataSet>
```

SET UPLOADED TEXT

Endpoint	api/N/SetUploadedText
Purpose	Sends inbound text and test processor identification for customized parsing and processing.
Request Type	GET

Parameters	`processor_id={processor_id}`
	`file_text={file_text}`
	`user_ID={user_ID}`
	`return_format={return_format}`

Where:

processor_id is the (mandatory) the id of the text processor to use.

file_text is the (mandatory) text to parse and process.

user_id is the user code for the user in the NucleoLIS user table that is uploading the text.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/SetUploadedText?processor_id=MyProcessor&file_text=MSH|&user_ID=15492125&return_format=0
```

Returns

If the request succeeds, returns the status of the text that was parsed and processed.:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <CustomTable>
    <object_type>CustomTable</object_type>
    <message>File Processed</message>
    <status>Success</status>
  </PatientTable>
</NewDataSet>
```

ADD PATIENT

Endpoint

api/N/Add Patient

Purpose Adds a patient record

Request Type GET

Parameters

```
patient_lastname={patient_lastname}
patient_firstname={patient_firstname}
patient_middlename={patient_middlename}
patient_street={patient_street}
patient_street2={patient_street2}
patient_city={patient_city}
patient_state={patient_state}
patient_zip={patient_zip}
patient_sex={patient_sex}
patient_dob={patient_dob}
patient_ssn={patient_ssn}
user_ID={user_ID}
return_format={return_format}
```

Where:

patient_lastname is the last name of the patient.

patient_firstname is the first name of the patient.

patient_middleName is the middle name of the patient.

patient_street is the street of the patient.

patient_street2 is the street of the patient.

patient_city is the city of the patient.

patient_state is the state of the patient.

patient_zip is the zip code of the patient.

patient_sex is the sex of the patient.

patient_dob is the date of birth of the patient in the format: yyyy-mm-dd.

patient_ssn is the Social Security Number of the patient.

additional_fields is not yet supported. Custom implementation, additional fields to update when in use. PipeDelimited Field^Value

user_id is the user code for the user in the NucleoLIS user table that is adding the patient.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/
Addpatient?patient_lastname=Smith&patient_firstname=Fr
ancisco&patient_middleName=John&patient_street=126
Maple Street&patient_street2=Apt
9&patient_city=Milford&patient_state=MA&patient_zip=01
757&patient_Sex=M&patient_dob=1970-01-
01&patient_ssn=123-456-
7890&additional_fields=&user_ID=15492125&return_format
=0
```

Returns

If the request succeeds, returns the status of the patient add request:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <PatientTable>
    <object_type>PatientTable</object_type>
    <message>Patient Added</message>
    <status>Success</status>
  </PatientTable>
</NewDataSet>
```

UPDATE PATIENT

Endpoint api/N/UpdatePatient

Purpose Updates an existing patient record.

Request Type GET

Parameters

```
patient_id={patient_id}
patient_lastname={patient_lastname}
patient_firstname={patient_firstname}
patient_middlename={patient_middlename}
patient_street={patient_street}
patient_street2={patient_street2}
patient_city={patient_city}
patient_state={patient_state}
patient_zip={patient_zip}
patient_sex={patient_sex}
patient_dob={patient_dob}
patient_ssn={patient_ssn}
user_ID={user_ID}
return_format={return_format}
```

Where:

patient_id is the unique system identifier of the patient to update.

patient_lastname is the last name of the patient.

patient_firstname is the first name of the patient.

patient_middleName is the middle name of the patient.

patient_street is the street of the patient.

patient_street2 is the street of the patient.

patient_city is the city of the patient.

patient_state is the state of the patient.

patient_zip is the zip code of the patient.

patient_sex is the sex of the patient.

patient_dob is the date of birth of the patient in the format: yyyy-mm-dd.

patient_ssn is the Social Security Number of the patient.

additional_fields is not yet supported. Custom implementation, additional fields to update when in use. PipeDelimited Field^Value

user_id is the user code for the user in the NucleoLIS user table that is adding the patient.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/
UpdatePatient?patient_id=15498920&patient_lastname=Smi
th&patient_firstname=John&patient_middleName=J&patient
_street=1 Pine
Street&patient_street2=&patient_city=Milford&patient_s
tate=MA&patient_zip=01757&patient_Sex=M&patient_dob=19
76-07-01&patient_ssn=123-456-
0000&additional_fields=&user_ID=15492125&return_format
=0
```

Returns

If the request succeeds, returns the updated patient identifer and status of processing:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <PatientTable>
    <object_type>PatientTable</object_type>
    <message>Patient Updated</message>
    <status>Success</status>
  </PatientTable>
```

```
</NewDataSet>
```

ADD CASE

Endpoint api/N/AddCase

Purpose Adds a case record.

Request Type GET

Parameters

```
patient_id={patient_id}
caseType_code={caseType_code}
submittingPhysician_code={submittingPhysician_code}
icds={icds}
clinical_information={clinical_information}
aoe_questions={aoe_questions}
additional_fields={additional_fields}
user_ID={user_ID}
return_format={return_format}
```

Where:

patient_id is The unique system identifier of the patient in which to create a case.

caseType_code is The unique code of the case type definition.

submittingPhysician_code is The unique code of the submitting physician.

submittingLocation is The location of the submitting physician.

icds is Pipe Delimited icd codes.

clinical_information is Clinical Information.

aoe_questions is Not yet supported - Pipe Delimited AOE questions and answers Question^Response.

additional_fields is Not yet supported - Custom implementation, Pipe delimited fields to update when in use. FieldName^FieldValue|

user_id is the user code for the user in the NucleoLIS user table that is adding the case.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/
AddCase?patient_id=15498920&caseType_code=GEN&submitti
ngPhysician_code=000000&submittingLocation=OFFICE&icds
=001.0|001.1|001.9|002.0&clinical_information=assorted
ailments&aoe_questions=&additional_fields=&user_ID=154
92125&return_format=0
```

Returns

If the request succeeds, returns the system generated case identifer and status of processing:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <CaseTable>
    <object_type>CaseTable</object_type>
    <message>Case Added</message>
    <status>Success</status>
  </CaseTable>
</NewDataSet>
```

UPDATE CASE

Endpoint api/N/UpdateCase

Purpose Updates a case record.

Request Type GET

Parameters

```
patient_id={patient_id}

case_id={case_id}

caseType_code={caseType_code}

submittingPhysician_code={submittingPhysician_code}

icds={icds}

clinical_information={clinical_information}

aoe_questions={aoe_questions}

additional_fields={additional_fields}

user_ID={user_ID}

return_format={return_format}
```

Where:

patient_id is the unique system identifier of the patient in which to create a case.

case_id is the unique system identifier of the case to update.

caseType_code is the unique code of the case type definition.

submittingPhysician_code is the unique code of the submitting physician.

submittingLocation is the location of the submitting physician.

icds is a list of pipe delimited icd codes.

clinical_information is Clinical Information.

aoe_questions is not yet supported - Pipe Delimited AOE questions and answers Question^Response.

additional_fields is not yet supported - Custom implementation, Pipe delimited fields to update when in use. FieldName^FieldValue|

user_id is the user code for the user in the NucleoLIS user table that is updating the case.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/
UpdateCase?patient_id=15498920&case_id=15498922&caseTy
pe_code=GEN&submittingPhysician_code=000000&submitting
Location=000000&icds=001.0&clinical_information=&aoe_q
uestions=&additional_fields=&user_ID=15492125&return_f
ormat=0
```

Returns

If the request succeeds, returns the system generated case identifer and status of processing. Note: Case updates may be disallowed depending on the state of case processing:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <CaseTable>
    <object_type>CaseTable</object_type>
    <message>Case Updated</message>
    <status>Success</status>
  </CaseTable>
</NewDataSet>
```

ADD SPECIMEN

Endpoint

api/N/AddSpecimen

Purpose Add a specimen record.

Request Type GET

Parameters

```
patient_id={patient_id}

case_id={case_id}

sourceDefinition_code={sourceDefinition_code}

collection_date={collection_date}

collection_time={collection_time}

test_orders={test_orders}

aoe_questions={aoe_questions}

additional_fields={additional_fields}

user_ID={user_ID}

return_format={return_format}
```

Where:

patient_id is the unique system identifier of the patient in which to add a specimen.

case_id is the unique system identifier of the case in which to add a specimen.

sourceDefinition_code is the unique system code of the source of the specimen.

collection_date is the collection date in yyyy-mm-dd format.

collection_time is the collection time in hh:mm format.

test_orders is a list of pipe delimited Test Codes to order on the specimen.

aoe_questions is Pipe Delimited AOE questions and answers Question^Response.

additional_fields is Not yet supported - Custom implementation, Pipe delimited fields to update when in use. FieldName^FieldValue|

user_id is the user code for the user in the NucleoLIS user table that is updating the case.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/
AddSpecimen?patient_id=15498920&case_id=15498922&sourc
eDefinition_code=BLOOD&collection_date=2021-04-
19&collection_time=11:25&test_Orders=ZIKA|xTAG|RPR&aoe
_questions=&additional_fields=&user_ID=15492125&return
_format=0
```

Returns

If the request succeeds, returns the system generated case identifer and status of processing. Note: Case updates may be disallowed depending on the state of processing:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <SpecimenTable>
    <object_type>SpecimenTable</object_type>
    <message>Specimen Added</message>
    <status>Success</status>
  </SpecimenTable>
</NewDataSet>
```

UPDATE SPECIMEN

Endpoint

api/N/UpdateSpecimen

Purpose

Updates a specimen record.

Request Type GET

Parameters

patient_id={patient_id}

case_id={case_id}

specimen_id = {specimen_id}

sourceDefinition_code={sourceDefinition_code}

collection_date={collection_date}

collection_time={collection_time}

aoe_questions={aoe_questions}

additional_fields={additional_fields}

user_ID={user_ID}

return_format={return_format}

Where:

patient_id is the unique system identifier of the patient in which to add a specimen.

case_id is the unique system identifier of the case in which to add a specimen.

specimen_id is the unique system identifier of the specimen in which to update.

sourceDefinition_code is the unique system code of the source of the specimen.

collection_date is the collection date in yyyy-mm-dd format.

collection_time is the collection time in hh:mm format.

aoe_questions is Pipe Delimited AOE questions and answers Question^Response.

additional_fields is Not yet supported - Custom implementation, Pipe delimited fields to update when in use. FieldName^FieldValue|

user_id is the user code for the user in the NucleoLIS user table that is updating the specimen.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/UpdateSpecimen?patient_id=15498920&case_id=15498922&specimen_id=15498927&sourceDefinition_code=BLOOD&collection_date=2021-04-20&collection_time=11:00&aoe_questions=Last Dose^15 mg|Last Does Date^2021-03-19&additional_fields=&user_ID=15492125&return_format=0
```

Returns

If the request succeeds, returns the system generated specimen identifer and status of processing:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <SpecimenTable>
    <object_type>SpecimenTable</object_type>
    <message>Specimen Updated</message>
    <status>Success</status>
  </SpecimenTable>
</NewDataSet>
```

ADD TEST ORDER

Endpoint api/N/AddTestOrder

Purpose Adds a test order.

Request Type GET

Parameters patient_id={patient_id}

case_id={case_id}

specimen_id = {specimen_id}

profileDefinition_code={profileDefinition_code}

user_ID={user_ID}

return_format={return_format}

Where:

patient_id is the unique system identifier of the patient in which to add a specimen.

case_id is the unique system identifier of the case in which to add a test.

specimen_id is the unique system identifier of the specimen in which to add to a test.

profileDefinition_code is the unique system code of the profile to order.

user_id is the user code for the user in the NucleoLIS user table that is adding the test order.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

https://www.SomeServer.com/api/N/AddTestOrder?patient_id=15498920&case_id=15498948&specimen_id=15498949&profileDefinition_code=CLL&user_ID=15492125&return_format=0

Returns

If the request succeeds, returns the status of processing:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <SpecimenTable>
    <object_type>SpecimenTable</object_type>
    <message>Test Added</message>
    <status>Success</status>
```

```
  </SpecimenTable>
</NewDataSet>
```

CANCEL CASE

Endpoint api/N/CancelCase

Purpose Cancels a case record.

Request Type GET

Parameters

`patient_id={patient_id}`

`case_id={case_id}`

`user_ID={user_ID}`

`return_format={return_format}`

Where:

`patient_id` is the unique system identifier of the patient in which to cancel the case.

`case_id` is the unique system identifier of the case to cancel.

`user_id` is the user code for the user in the NucleoLIS user table that is canceling the case.

`return_format` is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/
CancelCase?patient_id=15498977&case_id=15498979&user_I
D=15492125&return_format=0
```

Returns

If the request succeeds, returns the status of processing:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <CaseTable>
    <object_type>CaseTable</object_type>
    <message>Case Canceled</message>
    <status>Success</status>
  </CaseTable>
</NewDataSet>
```

CANCEL SPECIMEN

Endpoint

api/N/CancelSpecimen

Purpose

Cancels a specimen record.

Request Type

GET

Parameters

```
patient_id={patient_id}

case_id={case_id}

specimen_id={specimen_id}

user_ID={user_ID}

return_format={return_format}
```

Where:

patient_id is the unique system identifier of the patient in which to cancel a specimen.

case_id is the unique system identifier of the case of the specimen to cancel.

specimen_id is the unique system identifier of the specimen to cancel.

user_id is the user code for the user in the NucleoLIS user table that is canceling the specimen.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/
CancelSpecimen?patient_id=15498977&case_id=15498979&sp
ecimen_id=15498980&user_ID=15492125&return_format=0
```

Returns

If the request succeeds, returns the status of processing:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <SpecimenTable>
    <object_type>SpecimenTable</object_type>
    <message>Specimen Canceled</message>
    <status>Success</status>
  </SpecimenTable>
</NewDataSet>
```

CANCEL TEST ORDER

Endpoint api/N/CancelTestOrder

Purpose Cancels a test order.

Request Type GET

Parameters patient_id={patient_id}

case_id={case_id}

specimen_id={specimen_id}

profileDefinition_Code={ profileDefinition_Code}

user_ID={user_ID}

return_format={return_format}

Where:

patient_id is the unique system identifier of the patient in which to cancel a test.

case_id is the unique system identifier of the case in which to cancel a test.

specimen_id is the unique system identifier of the specimen to cancel a test.

profileDefinition_Code is the unique system code of the profile to cancel.

user_id is the user code for the user in the NucleoLIS user table that is canceling the specimen.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

https://www.SomeServer.com/api/N/CancelTestOrder?patient_id=15498977&case_id=15498979&specimen_id=15498980&profileDefinition_Code=ZIKA&user_ID=15492125&return_format=0

Returns

If the request succeeds, returns the status of processing:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <SpecimenTable>
    <object_type>SpecimenTable</object_type>
    <message>Test Canceled</message>
    <status>Success</status>
```

```
  </SpecimenTable>
</NewDataSet>
```

GET PLATE MAP DEFINITIONS

Endpoint api/N/GetPlateMapDefinitions

Purpose Returns a collection of worksheet templates defined as plate maps.

Request Type GET

Parameters

`user_ID={user_ID}`

`return_format={return_format}`

`with_retired={with_retired}`

Where:

user_id is the user code for the user in the NucleoLIS user table that is requesting the plate map definitions.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

with_retired if false will exclude retired entries in the system build. If true, all entries will be returned.

Example

```
https://www.SomeServer.com/api/N/
GetPlateMapDefinitions?user_ID=15492125&return_format=
0&with_retired=false
```

Returns

If the request succeeds, returns the system unique identifier, and other descriptive information:

```
<PlateMapDefinitionTable>

<WorksheetTemplate_ObjectID>15394236</WorksheetTemplate_ObjectID>
    <WorksheetTemplate_CreationDate>2019-12-03T06:05:40.123-05:00</WorksheetTemplate_CreationDate>
    <WorksheetTemplate_UpdateTime>2021-04-23T07:06:39.687-04:00</WorksheetTemplate_UpdateTime>
    <WorksheetTemplate_User1 />
    <WorksheetTemplate_User2 />
    <WorksheetTemplate_User3 />
    <WorksheetTemplate_User4 />

<WorksheetTemplate_CREATOR>johnb</WorksheetTemplate_CREATOR>

<WorksheetTemplate_MODIFIER>johnb</WorksheetTemplate_MODIFIER>

<WorksheetTemplate_Code>Extraction</WorksheetTemplate_Code>

<WorksheetTemplate_Description>Extraction</WorksheetTemplate_Description>

<WorksheetTemplate_RETIRED>False</WorksheetTemplate_RETIRED>

<WorksheetTemplate_CurrentVersion>8</WorksheetTemplate_CurrentVersion>

<WorksheetTemplate_Locked>False</WorksheetTemplate_Locked>
    <WorksheetTemplate_LockedBy />
    <WorksheetTemplate_LockedDate />
    <WorksheetTemplate_LockedTime />

<WorksheetTemplate_IsVariant>False</WorksheetTemplate_IsVariant>
    <WorksheetTemplate_VariantMap />
```

<WorksheetTemplate_HasPlateMap>True</WorksheetTemplat
e_HasPlateMap>

<WorksheetTemplate_PlateMapTabID>Extraction</Workshee
tTemplate_PlateMapTabID>

<WorksheetTemplate_PlateMapStartRow>2</WorksheetTempl
ate_PlateMapStartRow>

<WorksheetTemplate_PlateMapEndRow>25</WorksheetTempla
te_PlateMapEndRow>

<WorksheetTemplate_PlateMapPositionColumn>A</Workshee
tTemplate_PlateMapPositionColumn>

<WorksheetTemplate_PlateMapIDColumn>B</WorksheetTempl
ate_PlateMapIDColumn>

<WorksheetTemplate_PlateMapTypeColumn>C</WorksheetTem
plate_PlateMapTypeColumn>
  </PlateMapDefinitionTable>
  <PlateMapDefinitionTable>

<WorksheetTemplate_ObjectID>15398875</WorksheetTempla
te_ObjectID>
    <WorksheetTemplate_CreationDate>2020-05-
06T10:07:53.493-
04:00</WorksheetTemplate_CreationDate>
    <WorksheetTemplate_UpdateTime>2021-04-
23T07:15:00.657-04:00</WorksheetTemplate_UpdateTime>
    <WorksheetTemplate_User1 />
    <WorksheetTemplate_User2 />
    <WorksheetTemplate_User3 />
    <WorksheetTemplate_User4 />

<WorksheetTemplate_CREATOR>johnb</WorksheetTemplate_C
REATOR>

<WorksheetTemplate_MODIFIER>johnb</WorksheetTemplate_
MODIFIER>

<WorksheetTemplate_Code>PCRFILL</WorksheetTemplate_Co
de>

<WorksheetTemplate_Description>PCRFILL</WorksheetTemp
late_Description>

```
<WorksheetTemplate_RETIRED>False</WorksheetTemplate_R
ETIRED>

<WorksheetTemplate_CurrentVersion>3</WorksheetTemplat
e_CurrentVersion>

<WorksheetTemplate_Locked>False</WorksheetTemplate_Lo
cked>
    <WorksheetTemplate_LockedBy />
    <WorksheetTemplate_LockedDate />
    <WorksheetTemplate_LockedTime />

<WorksheetTemplate_IsVariant>False</WorksheetTemplate
_IsVariant>
    <WorksheetTemplate_VariantMap />

<WorksheetTemplate_HasPlateMap>True</WorksheetTemplat
e_HasPlateMap>

<WorksheetTemplate_PlateMapTabID>Sheet1</WorksheetTem
plate_PlateMapTabID>

<WorksheetTemplate_PlateMapStartRow>2</WorksheetTempl
ate_PlateMapStartRow>

<WorksheetTemplate_PlateMapEndRow>97</WorksheetTempla
te_PlateMapEndRow>

<WorksheetTemplate_PlateMapPositionColumn>F</Workshee
tTemplate_PlateMapPositionColumn>

<WorksheetTemplate_PlateMapIDColumn>C</WorksheetTempl
ate_PlateMapIDColumn>

<WorksheetTemplate_PlateMapTypeColumn>D</WorksheetTem
plate_PlateMapTypeColumn>
  </PlateMapDefinitionTable>
</NewDataSet>
```

GET PLATES

Endpoint api/N/GetPlates

Purpose Returns a collection of committed plate maps.

Request Type GET

Parameters

```
template_code={template_code}

min_date={min_date}

max_date={max_date}

user_ID={user_ID}

return_format={return_format}
```

Where:

template_code is the system unique code value for the plate map query.

min_date is the earliest commit date to include in the result set, inclusive in the format YYYY-MM-DD.

max_date is the latest commit date to include in the result set, inclusive in the format YYYY-MM-DD.

profileDefinition_Code is the unique system code of the profile to cancel.

user_id is the user code for the user in the NucleoLIS user table that is making the plate map request.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/
GetPlates?template_code=PCRFILL&min_date=2021-04-
```

```
23&max_date=2021-04-
26&user_ID=15492125&return_format=0
```

Returns

If the request succeeds, returns the system unique plate identifier, commited date and time, notes and template definition code for plate matching the criteria:

```
<PlateMapTable>
    <Worksheet_ObjectID>15499389</Worksheet_ObjectID>

<Worksheet_WorksheetName>15499389</Worksheet_Workshee
tName>

<Worksheet_CommittedBy>johnb</Worksheet_CommittedBy>
    <Worksheet_CommittedDate>2021-04-
23</Worksheet_CommittedDate>

<Worksheet_CommittedTime>07:24</Worksheet_CommittedTi
me>
    <Worksheet_Notes />

<WorksheetTemplate_Code>PCRFILL</WorksheetTemplate_Co
de>

<WorksheetTemplate_ObjectID>15398875</WorksheetTempla
te_ObjectID>
  </PlateMapTable>
</NewDataSet>
```

GET PLATE MAP

Endpoint

api/N/GetPlateMap

Purpose

Returns the map for the unique identifier passed.

Request Type

GET

Parameters

```
platemap_id={platemap_id}

user_ID={user_ID}
```

```
return_format={return_format}
```

Where:

platemap_id is the unique identifier of the plate.

user_id is the user code for the user in the NucleoLIS user table that is requesting the specified plate map.

return_format is the format for returning the data. Where:

0 = XML Format

1 = JSON Format

Example

```
https://www.SomeServer.com/api/N/
GetPlateMap?platemad_id=15499389&user_ID=15492125&retu
rn_format=0
```

Returns

If the request succeeds, returns the plate map including plate position, specimen identifier, and additional configured plate map related information:

```
<?xml version="1.0" encoding="UTF-8" ?><NewDataSet>
  <PlateMapTable>
    <plate_map_position>A1</plate_map_position>
    <plate_map_id>GEN2020-1000185</plate_map_id>
    <plate_map_type>sample</plate_map_type>
  </PlateMapTable>
  <PlateMapTable>
    <plate_map_position>A2</plate_map_position>
    <plate_map_id>GEN2020-1000185</plate_map_id>
    <plate_map_type>sample</plate_map_type>
  </PlateMapTable>
  <PlateMapTable>
    <plate_map_position>A3</plate_map_position>
    <plate_map_id>GEN2020-1000188</plate_map_id>
    <plate_map_type>sample</plate_map_type>
  </PlateMapTable>
  <PlateMapTable>
    <plate_map_position>A4</plate_map_position>
    <plate_map_id>GEN2020-1000188</plate_map_id>
    <plate_map_type>sample</plate_map_type>
  </PlateMapTable>
```

```
<PlateMapTable>
  <plate_map_position>A5</plate_map_position>
  <plate_map_id>GEN2020-1000187</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>A6</plate_map_position>
  <plate_map_id>GEN2020-1000187</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>A7</plate_map_position>
  <plate_map_id>GEN2020-1000191</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>A8</plate_map_position>
  <plate_map_id>GEN2020-1000191</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>B1</plate_map_position>
  <plate_map_id>GEN2020-1000200</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>B2</plate_map_position>
  <plate_map_id>GEN2020-1000200</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>B3</plate_map_position>
  <plate_map_id>GEN2020-1000195</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>B4</plate_map_position>
  <plate_map_id>GEN2020-1000195</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>B5</plate_map_position>
  <plate_map_id>GEN2020-1000201</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>B6</plate_map_position>
```

```
  <plate_map_id>GEN2020-1000201</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>B7</plate_map_position>
  <plate_map_id>GEN2020-1000202</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>B8</plate_map_position>
  <plate_map_id>GEN2020-1000202</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>C1</plate_map_position>
  <plate_map_id>GEN2020-1000193</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>C2</plate_map_position>
  <plate_map_id>GEN2020-1000193</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>C3</plate_map_position>
  <plate_map_id>GEN2020-1000203</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>C4</plate_map_position>
  <plate_map_id>GEN2020-1000203</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>C5</plate_map_position>
  <plate_map_id>GEN2020-1000196</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>C6</plate_map_position>
  <plate_map_id>GEN2020-1000196</plate_map_id>
  <plate_map_type>sample</plate_map_type>
</PlateMapTable>
<PlateMapTable>
  <plate_map_position>C7</plate_map_position>
  <plate_map_id>GEN2020-1000190</plate_map_id>
  <plate_map_type>sample</plate_map_type>
```

```
    </PlateMapTable>
    <PlateMapTable>
      <plate_map_position>C8</plate_map_position>
      <plate_map_id>GEN2020-1000190</plate_map_id>
      <plate_map_type>sample</plate_map_type>
    </PlateMapTable>
  </NewDataSet>
```

APPENDIX B – CODING EXAMPLES

CODING EXAMPLES INTRODUCTION

Note: The coding examples in this appendix assume that the URL being connected to is https://www.SomeServer.com, and the username = LAB, and the password = 123456. These examples show how to connect to the Backbone API using a variety of programming languages and techniques. These examples are solely to help you get started communicating with the API, and are not intended to be used as production code.

For more information on the various frameworks mentioned in the code examples, please refer to the links below:

Language	Framework
C	https://curl.haxx.se/libcurl/c/
C#	http://restsharp.org/
cURL	https://curl.haxx.se/
Go	https://golang.org/pkg/net/http/
HTTP	None (Raw HTTP request)
Java OkHTTP	https://github.com/square/okhttp
Java UniREST	https://github.com/Kong/unirest-java
JavaScript Fetch	https://developer.mozilla.org/en-US/docs/Web/API/Fetch_API

JavaScript jQuery	http://api.jquery.com/jquery.ajax/
JavaScript XHR	https://developer.mozilla.org/en-US/docs/Web/API/XMLHttpRequest
NodeJS Axios	https://github.com/axios/axios
NodeJS Http	https://nodejs.org/api/http.html
NodeJS Request	https://github.com/request/request
NodeJS UniRest	https://github.com/Kong/unirest-nodejs
Objective-C	https://developer.apple.com/library/ios/documentation/Foundation/Reference/NSURLSession_class/
OCaml	https://github.com/mirage/ocaml-cohttp
PHP CUrl	http://php.net/manual/en/ref.curl.php
PHP HttpRequest	https://www.php.net/manual/en/reserved.variables.request.php
PHP pecl_http	https://mdref.m6w6.name/http
PowerShell RestMethod	https://docs.microsoft.com/en-us/powershell/module/microsoft.powershell.utility/invoke-restmethod?view=powershell-7
Python Built-in http.client (Python 3)	https://docs.python.org/3/library/http.client.html
Python Requests	https://requests.readthedocs.io/en/master/
Ruby Built-in NET::Http	http://docs.ruby-lang.org/en/2.0.0/Net/HTTP.html
Shell HTTPie	https://github.com/jkbrzt/httpie
Shell wget	https://www.gnu.org/software/wget/
Shell cURL	https://curl.haxx.se/

Swift	Built-in NSURLSession	https://developer.apple.com/documentation/foundation/urlsession
VB.NET	RestSharp	http://restsharp.org/

LOGON CODING EXAMPLES

Note: The Logon endpoint is a POST command. Any API call that uses POST would follow a similar pattern.

C – LIBCURL

```
CURL *curl;
CURLcode res;
curl = curl_easy_init();
if(curl) {
  curl_easy_setopt(curl, CURLOPT_CUSTOMREQUEST, "POST");
  curl_easy_setopt(curl, CURLOPT_URL, "https://Www.SomeServer.com/api/authenticate/logon");
  curl_easy_setopt(curl, CURLOPT_FOLLOWLOCATION, 1L);
  curl_easy_setopt(curl, CURLOPT_DEFAULT_PROTOCOL, "https");
  struct curl_slist *headers = NULL;
  headers = curl_slist_append(headers, "Content-Type: application/x-www-form-urlencoded");
  curl_easy_setopt(curl, CURLOPT_HTTPHEADER, headers);
  const char *data = "username=LAB&password=123456";
  curl_easy_setopt(curl, CURLOPT_POSTFIELDS, data);
  res = curl_easy_perform(curl);
}
curl_easy_cleanup(curl);
```

C# - RESTSHARP

```
var client = new RestClient("https://Www.SomeServer.com/api/authenticate/logon");
client.Timeout = -1;
var request = new RestRequest(Method.POST);
request.AddHeader("Content-Type", "application/x-www-form-urlencoded");
request.AddParameter("username", "LAB");
request.AddParameter("password", "123456");
IRestResponse response = client.Execute(request);
Console.WriteLine(response.Content);
```

CURL

```
curl --location --request POST 'https://Www.SomeServer.com/api/authenticate/logon' \
--header 'Content-Type: application/x-www-form-urlencoded' \
--data-urlencode 'username=LAB' \
--data-urlencode 'password=123456'
```

GO - NATIVE

```
package main

import (
  "fmt"
  "strings"
  "net/http"
  "io/ioutil"
)

func main() {

  url := "https://Www.SomeServer.com/api/authenticate/logon"
  method := "POST"

  payload := strings.NewReader("username=LAB&password=123456")

  client := &http.Client {
  }
  req, err := http.NewRequest(method, url, payload)

  if err != nil {
    fmt.Println(err)
    return
  }
  req.Header.Add("Content-Type", "application/x-www-form-urlencoded")

  res, err := client.Do(req)
  if err != nil {
    fmt.Println(err)
    return
  }
  defer res.Body.Close()

  body, err := ioutil.ReadAll(res.Body)
  if err != nil {
    fmt.Println(err)
    return
```

```
  }
  fmt.Println(string(body))
}
```

HTTP

```
POST /WebApiBackboneQA/api/authenticate/logon? HTTP/1.1

Host: SomeServer.com

Content-Type: application/x-www-form-urlencoded

Content-Length: 28

username=LAB&password=123456
```

JAVA - OKHTTP

```
OkHttpClient client = new OkHttpClient().newBuilder()
  .build();
MediaType mediaType = MediaType.parse("application/x-www-form-urlencoded");
RequestBody body = RequestBody.create(mediaType, "username=LAB&password=123456");
Request request = new Request.Builder()
  .url("https://Www.SomeServer.com/api/authenticate/logon")
  .method("POST", body)
  .addHeader("Content-Type", "application/x-www-form-urlencoded")
  .build();
Response response = client.newCall(request).execute();
```

JAVA – UNIREST

```
Unirest.setTimeouts(0, 0);
HttpResponse<String> response = Unirest.post("https://Www.SomeServer.com/api/authenticate/logo
n")
  .header("Content-Type", "application/x-www-form-urlencoded")
  .field("username", "LAB")
  .field("password", "123456")
  .asString();
```

JAVASCRIPT - FETCH

```
var myHeaders = new Headers();
```

```
myHeaders.append("Content-Type", "application/x-www-form-urlencoded");

var urlencoded = new URLSearchParams();
urlencoded.append("username", "LAB");
urlencoded.append("password", "123456");

var requestOptions = {
  method: 'POST',
  headers: myHeaders,
  body: urlencoded,
  redirect: 'follow'
};

fetch("https://Www.SomeServer.com/api/authenticate/logon", requestOptions)
  .then(response => response.text())
  .then(result => console.log(result))
  .catch(error => console.log('error', error));
```

JAVASCRIPT - JQUERY

```
var settings = {
  "url": "https://Www.SomeServer.com/api/authenticate/logon",
  "method": "POST",
  "timeout": 0,
  "headers": {
    "Content-Type": "application/x-www-form-urlencoded",
      },
  "data": {
    "username": "LAB",
    "password": "123456"
  }
};

$.ajax(settings).done(function (response) {
  console.log(response);
});
```

JAVASCRIPT – XHR

```
var data = "username=LAB&password=123456";

var xhr = new XMLHttpRequest();
xhr.withCredentials = true;

xhr.addEventListener("readystatechange", function() {
  if(this.readyState === 4) {
```

```
    console.log(this.responseText);
  }
});

xhr.open("POST", "https://Www.SomeServer.com/api/authenticate/logon");
xhr.setRequestHeader("Content-Type", "application/x-www-form-urlencoded");

xhr.send(data);
```

NODEJS – AXIOS

```
var axios = require('axios');
var qs = require('qs');
var data = qs.stringify({
 'username': 'LAB',
'password': '123456'
});
var config = {
  method: 'post',
  url: 'https://Www.SomeServer.com/api/authenticate/logon',
  headers: {
    'Content-Type': 'application/x-www-form-urlencoded',
      },
  data : data
};

axios(config)
.then(function (response) {
  console.log(JSON.stringify(response.data));
})
.catch(function (error) {
  console.log(error);
});
```

NODEJS – NATIVE

```
var https = require('follow-redirects').https;
var fs = require('fs');

var qs = require('querystring');

var options = {
  'method': 'POST',
  'hostname': 'SomeServer.com',
  'path': '/WebApiBackboneQA/api/authenticate/logon?',
```

```
  'headers': {
    'Content-Type': 'application/x-www-form-urlencoded',
      },
  'maxRedirects': 20
};

var req = https.request(options, function (res) {
  var chunks = [];

  res.on("data", function (chunk) {
    chunks.push(chunk);
  });

  res.on("end", function (chunk) {
    var body = Buffer.concat(chunks);
    console.log(body.toString());
  });

  res.on("error", function (error) {
    console.error(error);
  });
});

var postData = qs.stringify({
  'username': 'LAB',
  'password': '123456'
});

req.write(postData);

req.end();
```

NODEJS – REQUEST

```
var request = require('request');
var options = {
  'method': 'POST',
  'url': 'https://Www.SomeServer.com/api/authenticate/logon',
  'headers': {
    'Content-Type': 'application/x-www-form-urlencoded',
      },
  form: {
    'username': 'LAB',
    'password': '123456'
  }
};
request(options, function (error, response) {
```

```
  if (error) throw new Error(error);
  console.log(response.body);
});
```

NODEJS – UNIREST

```
var unirest = require('unirest');
var req = unirest('POST', 'https://Www.SomeServer.com/api/authenticate/logon')
  .headers({
    'Content-Type': 'application/x-www-form-urlencoded',
      })
  .send('username=LAB')
  .send('password=123456')
  .end(function (res) {
    if (res.error) throw new Error(res.error);
    console.log(res.raw_body);
  });
```

OBJECTIVE-C NSURLSESSION

```
#import <Foundation/Foundation.h>

dispatch_semaphore_t sema = dispatch_semaphore_create(0);

NSMutableURLRequest *request = [NSMutableURLRequest requestWithURL:[NSURL URLWithString:@"http
s://Www.SomeServer.com/api/authenticate/logon"]
  cachePolicy:NSURLRequestUseProtocolCachePolicy
  timeoutInterval:10.0];
NSDictionary *headers = @{
  @"Content-Type": @"application/x-www-form-urlencoded",
  };

[request setAllHTTPHeaderFields:headers];
NSMutableData *postData = [[NSMutableData alloc] initWithData:[@"username=LAB" dataUsingEncodi
ng:NSUTF8StringEncoding]];
[postData appendData:[@"&password=123456" dataUsingEncoding:NSUTF8StringEncoding]];
[request setHTTPBody:postData];

[request setHTTPMethod:@"POST"];

NSURLSession *session = [NSURLSession sharedSession];
NSURLSessionDataTask *dataTask = [session dataTaskWithRequest:request
completionHandler:^(NSData *data, NSURLResponse *response, NSError *error) {
  if (error) {
    NSLog(@"%@", error);
```

```
  } else {
    NSHTTPURLResponse *httpResponse = (NSHTTPURLResponse *) response;
    NSError *parseError = nil;
    NSDictionary *responseDictionary = [NSJSONSerialization JSONObjectWithData:data options:0
error:&parseError];
    NSLog(@"%@",responseDictionary);
    dispatch_semaphore_signal(sema);
  }
}];
[dataTask resume];
dispatch_semaphore_wait(sema, DISPATCH_TIME_FOREVER);
```

OCAML – COHTTP

```
open Lwt
open Cohttp
open Cohttp_lwt_unix

let postData = ref "username=LAB&password=123456";;

let reqBody =
  let uri = Uri.of_string "https://Www.SomeServer.com/api/authenticate/logon" in
  let headers = Header.init ()
    |> fun h -> Header.add h "Content-Type" "application/x-www-form-urlencoded"
      in
  let body = Cohttp_lwt.Body.of_string !postData in

  Client.call ~headers ~body `POST uri >>= fun (_resp, body) ->
  body |> Cohttp_lwt.Body.to_string >|= fun body -> body

let () =
  let respBody = Lwt_main.run reqBody in
  print_endline (respBody)
```

PHP – CURL

```
<?php

$curl = curl_init();

curl_setopt_array($curl, array(
  CURLOPT_URL => "https://Www.SomeServer.com/api/authenticate/logon",
  CURLOPT_RETURNTRANSFER => true,
  CURLOPT_ENCODING => "",
  CURLOPT_MAXREDIRS => 10,
  CURLOPT_TIMEOUT => 0,
```

```
  CURLOPT_FOLLOWLOCATION => true,
  CURLOPT_HTTP_VERSION => CURL_HTTP_VERSION_1_1,
  CURLOPT_CUSTOMREQUEST => "POST",
  CURLOPT_POSTFIELDS => "username=LAB&password=123456",
  CURLOPT_HTTPHEADER => array(
    "Content-Type: application/x-www-form-urlencoded",
      ),
));

$response = curl_exec($curl);

curl_close($curl);
echo $response;
```

PHP – HTTP_REQUEST2

```
<?php
require_once 'HTTP/Request2.php';
$request = new HTTP_Request2();
$request->setUrl('https://Www.SomeServer.com/api/authenticate/logon');
$request->setMethod(HTTP_Request2::METHOD_POST);
$request->setConfig(array(
  'follow_redirects' => TRUE
));
$request->setHeader(array(
  'Content-Type' => 'application/x-www-form-urlencoded',
  ));
$request->addPostParameter(array(
  'username' => 'LAB',
  'password' => '123456'
));
try {
  $response = $request->send();
  if ($response->getStatus() == 200) {
    echo $response->getBody();
  }
  else {
    echo 'Unexpected HTTP status: ' . $response->getStatus() . ' ' .
    $response->getReasonPhrase();
  }
}
catch(HTTP_Request2_Exception $e) {
  echo 'Error: ' . $e->getMessage();
}
```

PHP – PECL_HTTP

```php
<?php
$client = new http\Client;
$request = new http\Client\Request;
$request->setRequestUrl('https://Www.SomeServer.com/api/authenticate/logon');
$request->setRequestMethod('POST');
$body = new http\Message\Body;
$body->append(new http\QueryString(array(
  'username' => 'LAB',
  'password' => '123456')));$request->setBody($body);
$request->setOptions(array());
$request->setHeaders(array(
  'Content-Type' => 'application/x-www-form-urlencoded',
  ));
$client->enqueue($request)->send();
$response = $client->getResponse();
echo $response->getBody();
```

POWERSHELL – RESTMETHOD

```powershell
$headers = New-Object "System.Collections.Generic.Dictionary[[String],[String]]"
$headers.Add("Content-Type", "application/x-www-form-urlencoded")

$body = "username=LAB&password=123456"

$response = Invoke-RestMethod 'https://Www.SomeServer.com/api/authenticate/logon' -
Method 'POST' -Headers $headers -Body $body
```

PYTHON – HTTP.CLIENT

```python
import http.client
import mimetypes
conn = http.client.HTTPSConnection("SomeServer.com")
payload = 'username=LAB&password=123456'
headers = {
  'Content-Type': 'application/x-www-form-urlencoded',
  }
conn.request("POST", "/WebApiBackboneQA/api/authenticate/logon", payload, headers)
res = conn.getresponse()
data = res.read()
print(data.decode("utf-8"))
```

PYTHON – REQUESTS

```python
import requests

url = "https://Www.SomeServer.com/api/authenticate/logon"
```

```
payload='username=LAB&password=123456'
headers = {
  'Content-Type': 'application/x-www-form-urlencoded',
  }

response = requests.request("POST", url, headers=headers, data=payload)

print(response.text)
```

Note: For an example Python integration with the API,
please go to the following link: https://github.com/marcuslehr/NucleoLIS-API

RUBY – NET::HTTP

```
require "uri"
require "net/http"

url = URI("https://Www.SomeServer.com/api/authenticate/logon")

https = Net::HTTP.new(url.host, url.port)
https.use_ssl = true

request = Net::HTTP::Post.new(url)
request["Content-Type"] = "application/x-www-form-urlencoded"
request.body = "username=LAB&password=123456"

response = https.request(request)
puts response.read_body
```

SHELL – HTTPIE

```
http --ignore-stdin --form --follow --
timeout 3600 POST https://Www.SomeServer.com/api/authenticate/logon  \
 'username'='LAB' \
 'password'='123456' \
 Content-Type:'application/x-www-form-urlencoded' \
```

SHELL – WGET

```
wget --no-check-certificate --quiet \
  --method POST \
  --timeout=0 \
  --header 'Content-Type: application/x-www-form-urlencoded' \
    --body-data 'username=LAB&password=123456' \
   'https://Www.SomeServer.com/api/authenticate/logon'
```

SWIFT - URLSESSION

```
import Foundation

var semaphore = DispatchSemaphore (value: 0)

let parameters = "username=LAB&password=123456"
let postData =  parameters.data(using: .utf8)

var request = URLRequest(url: URL(string: "https://Www.SomeServer.com/api/authenticate/logon")
!,timeoutInterval: Double.infinity)
request.addValue("application/x-www-form-urlencoded", forHTTPHeaderField: "Content-Type")

request.httpMethod = "POST"
request.httpBody = postData

let task = URLSession.shared.dataTask(with: request) { data, response, error in
  guard let data = data else {
    print(String(describing: error))
    semaphore.signal()
    return
  }
  print(String(data: data, encoding: .utf8)!)
  semaphore.signal()
}

task.resume()
semaphore.wait()
```

VB.NET - RESTSHARP

```
Dim client = New
RestClient("https://Www.SomeServer.com/api/authenticate/logon")
client.Timeout = -1
Dim request = New RestRequest(Method.POST)
request.AddHeader("Content-Type", "application/x-www-form-urlencoded")
request.AddParameter("username", "LAB")
request.AddParameter("password", "123456")
Dim response As IRestResponse = client.Execute(request)

Console.WriteLine(response.Content)
```

LOGOUT CODING EXAMPLES

Note: The Logout endpoint is a GET command. Any API call that uses GET would follow a similar pattern.

C - LIBCURL

```
CURL *curl;
CURLcode res;
curl = curl_easy_init();
if(curl) {
  curl_easy_setopt(curl, CURLOPT_CUSTOMREQUEST, "GET");
  curl_easy_setopt(curl, CURLOPT_URL, "https://Www.SomeServer.com/api/authenticate/logout");
  curl_easy_setopt(curl, CURLOPT_FOLLOWLOCATION, 1L);
  curl_easy_setopt(curl, CURLOPT_DEFAULT_PROTOCOL, "https");
  struct curl_slist *headers = NULL;
  headers = curl_slist_append(headers, "Cookie: session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900");
  curl_easy_setopt(curl, CURLOPT_HTTPHEADER, headers);
  res = curl_easy_perform(curl);
}
curl_easy_cleanup(curl);
```

C# - RESTSHARP

```
var client = new RestClient("https://Www.SomeServer.com/api/authenticate/logout");
client.Timeout = -1;
var request = new RestRequest(Method.GET);
request.AddHeader("Cookie", "session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900");
IRestResponse response = client.Execute(request);
Console.WriteLine(response.Content);
```

CURL

```
curl --location --request GET 'https://Www.SomeServer.com/api/authenticate/logout' \
--header 'Cookie: session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900'
```

GO – NATIVE

```
package main

import (
  "fmt"
  "net/http"
  "io/ioutil"
)

func main() {
```

```
  url := "https://Www.SomeServer.com/api/authenticate/logout"
  method := "GET"

  client := &http.Client {
  }
  req, err := http.NewRequest(method, url, nil)

  if err != nil {
    fmt.Println(err)
    return
  }
  req.Header.Add("Cookie", "session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900")

  res, err := client.Do(req)
  if err != nil {
    fmt.Println(err)
    return
  }
  defer res.Body.Close()

  body, err := ioutil.ReadAll(res.Body)
  if err != nil {
    fmt.Println(err)
    return
  }
  fmt.Println(string(body))
}
```

HTTP

```
GET /WebApiBackboneQA/api/authenticate/logout HTTP/1.1

Host: SomeServer.com

Cookie: session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=16043
50665&timelimit=900
```

JAVA – OKHTTP

```
OkHttpClient client = new OkHttpClient().newBuilder()
  .build();
Request request = new Request.Builder()
```

```
  .url("https://Www.SomeServer.com/api/authenticate/logout")
  .method("GET", null)
  .addHeader("Cookie", "session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900")
  .build();
Response response = client.newCall(request).execute();
```

JAVA – UNIREST

```
Unirest.setTimeouts(0, 0);
HttpResponse<String> response = Unirest.get("https://Www.SomeServer.com/api/authenticate/logou
t")
  .header("Cookie", "session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900")
  .asString();
```

JAVASCRIPT –FETCH

```
var myHeaders = new Headers();
myHeaders.append("Cookie", "session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900");

var requestOptions = {
  method: 'GET',
  headers: myHeaders,
  redirect: 'follow'
};

fetch("https://Www.SomeServer.com/api/authenticate/logout", requestOptions)
  .then(response => response.text())
  .then(result => console.log(result))
  .catch(error => console.log('error', error));
```

JAVASCRIPT – JQUERY

```
var settings = {
  "url": "https://Www.SomeServer.com/api/authenticate/logout",
  "method": "GET",
  "timeout": 0,
  "headers": {
```

```
    "Cookie": "session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900"
  },
};

$.ajax(settings).done(function (response) {
  console.log(response);
});
```

JAVASCRIPT – XHR

```
var xhr = new XMLHttpRequest();
xhr.withCredentials = true;

xhr.addEventListener("readystatechange", function() {
  if(this.readyState === 4) {
    console.log(this.responseText);
  }
});

xhr.open("GET", "https://Www.SomeServer.com/api/authenticate/logout");
xhr.setRequestHeader("Cookie", "session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900");

xhr.send();
```

NODEJS – AXIOS

```
var axios = require('axios');

var config = {
  method: 'get',
  url: 'https://Www.SomeServer.com/api/authenticate/logout',
  headers: {
    'Cookie': 'session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900'
  }
};

axios(config)
.then(function (response) {
  console.log(JSON.stringify(response.data));
```

```
})
.catch(function (error) {
  console.log(error);
});
```

NODEJS – NATIVE

```
var https = require('follow-redirects').https;
var fs = require('fs');

var options = {
  'method': 'GET',
  'hostname': 'SomeServer.com',
  'path': '/WebApiBackboneQA/api/authenticate/logout',
  'headers': {
    'Cookie': 'session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900'
  },
  'maxRedirects': 20
};

var req = https.request(options, function (res) {
  var chunks = [];

  res.on("data", function (chunk) {
    chunks.push(chunk);
  });

  res.on("end", function (chunk) {
    var body = Buffer.concat(chunks);
    console.log(body.toString());
  });

  res.on("error", function (error) {
    console.error(error);
  });
});

req.end();
```

NODEJS – REQUEST

```
var request = require('request');
var options = {
```

```
  'method': 'GET',
  'url': 'https://Www.SomeServer.com/api/authenticate/logout',
  'headers': {
    'Cookie': 'session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900'
  }
};
request(options, function (error, response) {
  if (error) throw new Error(error);
  console.log(response.body);
});
```

NODEJS – UNIREST

```
var unirest = require('unirest');
var req = unirest('GET', 'https://Www.SomeServer.com/api/authenticate/logout')
  .headers({
    'Cookie': 'session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900'
  })
  .end(function (res) {
    if (res.error) throw new Error(res.error);
    console.log(res.raw_body);
  });
```

OBJECTIVE-C – NSURLSESSION

```
#import <Foundation/Foundation.h>

dispatch_semaphore_t sema = dispatch_semaphore_create(0);

NSMutableURLRequest *request = [NSMutableURLRequest requestWithURL:[NSURL URLWithString:@"http
s://Www.SomeServer.com/api/authenticate/logout"]
  cachePolicy:NSURLRequestUseProtocolCachePolicy
  timeoutInterval:10.0];
NSDictionary *headers = @{
  @"Cookie": @"session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900"
};

[request setAllHTTPHeaderFields:headers];
```

```
[request setHTTPMethod:@"GET"];

NSURLSession *session = [NSURLSession sharedSession];
NSURLSessionDataTask *dataTask = [session dataTaskWithRequest:request
completionHandler:^(NSData *data, NSURLResponse *response, NSError *error) {
  if (error) {
    NSLog(@"%@", error);
  } else {
    NSHTTPURLResponse *httpResponse = (NSHTTPURLResponse *) response;
    NSError *parseError = nil;
    NSDictionary *responseDictionary = [NSJSONSerialization JSONObjectWithData:data options:0
error:&parseError];
    NSLog(@"%@",responseDictionary);
    dispatch_semaphore_signal(sema);
  }
}];
[dataTask resume];
dispatch_semaphore_wait(sema, DISPATCH_TIME_FOREVER);
```

OCAML – COHTTP

```
open Lwt
open Cohttp
open Cohttp_lwt_unix

let reqBody =
  let uri = Uri.of_string "https://Www.SomeServer.com/api/authenticate/logout" in
  let headers = Header.init ()
    |> fun h -> Header.add h "Cookie" "session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900"
  in
  Client.call ~headers `GET uri >>= fun (_resp, body) ->
  body |> Cohttp_lwt.Body.to_string >|= fun body -> body

let () =
  let respBody = Lwt_main.run reqBody in
  print_endline (respBody)
```

PHP – CURL

```
<?php

$curl = curl_init();

curl_setopt_array($curl, array(
```

```
  CURLOPT_URL => "https://Www.SomeServer.com/api/authenticate/logout",
  CURLOPT_RETURNTRANSFER => true,
  CURLOPT_ENCODING => "",
  CURLOPT_MAXREDIRS => 10,
  CURLOPT_TIMEOUT => 0,
  CURLOPT_FOLLOWLOCATION => true,
  CURLOPT_HTTP_VERSION => CURL_HTTP_VERSION_1_1,
  CURLOPT_CUSTOMREQUEST => "GET",
  CURLOPT_HTTPHEADER => array(
    "Cookie: session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900"
  ),
));

$response = curl_exec($curl);

curl_close($curl);
echo $response;
```

PHP – HTTP_REQUEST2

```
<?php
require_once 'HTTP/Request2.php';
$request = new HTTP_Request2();
$request->setUrl('https://Www.SomeServer.com/api/authenticate/logout');
$request->setMethod(HTTP_Request2::METHOD_GET);
$request->setConfig(array(
  'follow_redirects' => TRUE
));
$request->setHeader(array(
  'Cookie' => 'session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900'
));
try {
  $response = $request->send();
  if ($response->getStatus() == 200) {
    echo $response->getBody();
  }
  else {
    echo 'Unexpected HTTP status: ' . $response->getStatus() . ' ' .
    $response->getReasonPhrase();
  }
}
catch(HTTP_Request2_Exception $e) {
  echo 'Error: ' . $e->getMessage();
```

```
}
```

PHP – PECL_HTTP

```
<?php
$client = new http\Client;
$request = new http\Client\Request;
$request->setRequestUrl('https://Www.SomeServer.com/api/authenticate/logout');
$request->setRequestMethod('GET');
$request->setOptions(array());
$request->setHeaders(array(
  'Cookie' => 'session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900'
));
$client->enqueue($request)->send();
$response = $client->getResponse();
echo $response->getBody();
```

POWERSHELL – RESTMETHOD

```
$headers = New-Object "System.Collections.Generic.Dictionary[[String],[String]]"
$headers.Add("Cookie", "session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900")

$response = Invoke-RestMethod 'https://Www.SomeServer.com/api/authenticate/logout' -
Method 'GET' -Headers $headers -Body $body
```

PYTHON – HTTP.CLIENT

```
import http.client
import mimetypes
conn = http.client.HTTPSConnection("SomeServer.com")
payload = ''
headers = {
  'Cookie': 'session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900'
}
conn.request("GET", "/WebApiBackboneQA/api/authenticate/logout", payload, headers)
res = conn.getresponse()
data = res.read()
print(data.decode("utf-8"))
```

PYTHON – REQUESTS

```
import requests

url = "https://Www.SomeServer.com/api/authenticate/logout"

payload={}
headers = {
  'Cookie': 'session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900'
}

response = requests.request("GET", url, headers=headers, params=payload)

print(response.text)
```

RUBY – NET::HTTP

```
require "uri"
require "net/http"

url = URI("https://Www.SomeServer.com/api/authenticate/logout")

https = Net::HTTP.new(url.host, url.port)
https.use_ssl = true

request = Net::HTTP::Get.new(url)
request["Cookie"] = "session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900"

response = https.request(request)
puts response.read_body
```

SHELL – HTTPIE

```
http --follow --timeout 3600 GET https://Www.SomeServer.com/api/authenticate/logout \
 Cookie:'session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900'
```

SHELL – WGET

```
wget --no-check-certificate --quiet \
  --method GET \
```

```
  --timeout=0 \
  --header 'Cookie: session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900' \
   'https://Www.SomeServer.com/api/authenticate/logout'
```

SWIFT – URLSESSION

```
import Foundation

var semaphore = DispatchSemaphore (value: 0)

var request = URLRequest(url: URL(string: "https://Www.SomeServer.com/api/authenticate/logout"
)!,timeoutInterval: Double.infinity)
request.addValue("session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1604350665&timelim
it=900", forHTTPHeaderField: "Cookie")

request.httpMethod = "GET"

let task = URLSession.shared.dataTask(with: request) { data, response, error in
  guard let data = data else {
    print(String(describing: error))
    semaphore.signal()
    return
  }
  print(String(data: data, encoding: .utf8)!)
  semaphore.signal()
}

task.resume()
semaphore.wait()
```

VB.NET – RESTSHARP

```
Dim client = New
RestClient("https://Www.SomeServer.com/api/authenticate/logout")
client.Timeout = -1
Dim request = New RestRequest(Method.[GET])
request.AddHeader("Cookie", "session=session-
id=kUn8axg5aDzfBOuVqs2QwF2pZiaI%2fv%2fQSsQt2mFq000%3d&username=346650&epoch=1
604350665&timelimit=900")
Dim response As IRestResponse = client.Execute(request)

Console.WriteLine(response.Content)
```

FOR MORE INFORMATION

Please contact Psyche Systems technical support.