



NATIONAL HEALTH INSURANCE FUND

NHIF API FOR ONLINE STUDENT REGISTRATION

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Version 4.0*

Document Revisions

Date	Version No.	Document Changes
24/09/2020	1.0	First Version
27/09/2020	2.0	Second Version
29/09/2020	2.1	<ul style="list-style-type: none"> • SourceOfFundID removed in Member Registration API • Callback APIs Added in APIs for Member Registration, Submission of Card Applications for New Student and Submission of Card Application for Continuing Student • API for retrieving payment status by Control No. added
30/09/2020	2.2	<ul style="list-style-type: none"> • FullName added in success response message in section 6.0 • CardNo and FullName added in success response message in section 7.0 • New end point (Get Payment Status from NHIF) added in the list under section 1.0
03/10/2020	3.0	Third Version
26/10/2023	4.0	Fourth Version <ul style="list-style-type: none"> • NationalID and IntakeCode columns added to endpoint (Submission of Card Application) under section 4.0 • IntakeCode and AcademicYear columns address to endpoint (Member Registration) under section 3.0 • New endpoint (Get Academic Year Intakes from NHIF) added in thelist under section 8.0. • New endpoint (Verify Students Registration from NHIF) added in the list under section 9.0. • New endpoint (Get Student ControlNo Status from NHIF) added in the list under section 10.0

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1.0 Introduction

This is a lightweight web service, (RESTFUL API), which enable agent to integrate with gateway-x for online registration of member. In this document, student and universities/colleges may be termed as Member and Agent respectively. Below are some API Endpoints (Services) by NHIF. Credentials to connect to these API will be shared separately upon request:

- Agent authentication
- Member registration
- Submission of card applications
- Verify member card status and get verification code
- Get Payment Status from NHIF
- Get registration details

2.0 Agent Authentication

This web service endpoint use Open Authentication to authenticate and authorize agents to access NHIF APIs for integration with third part agent. The agent will request token using the following endpoint:

Item	Description
URL	<i>http:// 196.13.105.15/omrs/stsidentity</i>
METHOD	POST
HEADER PARAMETERS	Content-Type = application/x-www-form-urlencoded
PAYLOAD TYPE	JSON
SAMPLE PAYLOAD	<pre>{ "grant_type":"{client_grant_type}", "client_id": "{client_id}", "client_secret": "{client_secret}", "scope": "{client_scope}" }</pre>
SAMPLE SUCCESS RESPONSE	<pre>{ "access_token": "xx", "expires_in": 3600, "token_type": "Bearer", "scope": "OMRS" }</pre>
SAMPLE ERROR RESPONSE	<pre>{ "error": "error_message", }</pre>

Note: {grant_type }, {client_id}, {scope}, and {client_secret} will be provided to each agent

NHIF is using Open Authentication for integrating with its API (OAuth2). There many client libraries that can be used to request tokens depending on the programming language, platform or framework you are using. Following are snippets of codes for authenticating by using a sample client_id of NHIF that wants to connect to API identified by OMRS.

2.1 Java Example Using OkHttpClient

```
OkHttpClient client = new OkHttpClient().newBuilder().build();

MediaType mediaType = MediaType.parse("application/x-www-form-urlencoded");

RequestBody body = RequestBody.create(mediaType,
"grant_type=client_credentials&client_id=NHIF&password=Nhif@2020&client_secret=fab035ac-25ae-967c-c3f6-b9c642d82be5 &scope=OMRS");

Request request = new Request.Builder()
    .url("196.13.105.15/omrs/stsidentity")
    .method("POST", body)
    .addHeader("Content-Type", "application/x-www-form-urlencoded")
    .build();

Response response = client.newCall(request).execute();
```

2.2 Java Example Using Unirest

```
Unirest.setTimeouts(0, 0);

HttpResponse<String> response = Unirest.post("196.13.105.15/omrs/stsidentity")
    .header("Content-Type", "application/x-www-form-urlencoded")
    .field("grant_type", "client_credentials")
    .field("client_id", "NHIF")
    .field("client_id", "Nhif@2020")
    .field("client_secret", "fab035ac-25ae-967c-c3f6-b9c642d82be5")
    .field("scope", "OMRS")
    .asString();
```

2.3 C# Using RestSharp

```
var client = new RestClient("196.13.105.15/omrs/stsidentity");
client.Timeout = -1;
var request = new RestRequest(Method.POST);
request.AddHeader("Content-Type", "application/x-www-form-urlencoded");
request.AddParameter("grant_type", "client_credentials");
request.AddParameter("client_id", "NHIF");
request.AddParameter("password", "Nhif@2020");
request.AddParameter("client_secret", "fab035ac-25ae-967c-c3f6-b9c642d82be5");
request.AddParameter("scope", "OMRS");
IRestResponse response = client.Execute(request);
Console.WriteLine(response.Content);
```

2.4 C# using IdentityModel.Client;

```
var client = new HttpClient();
var disco = await client.GetDiscoveryDocumentAsync("196.13.105.15/omrs/stsidentity");
var tokenResponse = await client.RequestClientCredentialsTokenAsync(new
ClientCredentialsTokenRequest
{
    Address = disco.TokenEndpoint,
    ClientId = "NHIF ",
    ClientSecret = "fab035ac-25ae-967c-c3f6-b9c642d82be5",
    Password = "Nhif@2020",
    Scope = "OMRS"
});
```

2.5 JavaScript using Fetch

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

```

var urlencoded = new URLSearchParams();
urlencoded.append("grant_type", "client_credentials");
urlencoded.append("client_id", "NHIF");
urlencoded.append("password", "Nhif@2020");
urlencoded.append("client_secret", "fab035ac-25ae-967c-c3f6-b9c642d82be5");
urlencoded.append("scope", "OMRS");
var requestOptions = {
  method: 'POST',
  headers: myHeaders,
  body: urlencoded,
  redirect: 'follow'
};
fetch("196.13.105.15/omrs/stsidentity", requestOptions)
  .then(response => response.text())
  .then(result => console.log(result))
  .catch(error => console.log('error', error));

```

2.6 PHP Using cURL

```

<?php
$curl = curl_init();
curl_setopt_array($curl, array(
  CURLOPT_URL => "196.13.105.15/omrs/stsidentity",
  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 =>
"grant_type=client_credentials&client_id=NHIF&password=Nhif@2020&client_secret=
fab035ac-25ae-967c-c3f6-b9c642d82be5&scope=OMRS",

CURLOPT_HTTPHEADER => array(
    "Content-Type: application/x-www-form-urlencoded"
),
));

$response = curl_exec($curl);

curl_close($curl);

echo $response;

```

3.0 Member Registration

This web service endpoint enables agent to upload list of new members for registration.

Item	Description
URL	http://196.13.105.15/OMRS/api/v1/Verification/StudentRegistration
METHOD	POST
HEADER PARAMETERS	Content-Type = application/json
AUTHORIZATION	Type Bearer Token
	Token eyJhbGciOiJSUzI1NiIsImtpZCI6IjlyM3FoYWxtUjZ5VH Y1XzRhS29ONHciLCJ0eXAiOiJhdCtqd3QifQ.
PAYLOAD TYPE	JSON
SAMPLE PAYLOAD	[{ "FormFourIndexNo": "S3490-0065-2010", "FirstName": "Ethan", "MiddleName": "Thomas", "Surname": "Nusukoti", "AdmissionNo": "1502424523560", "CollageFaculty": "COET", "MobileNo": "0766762626", "ProgrammeOfStudy": "Computer Engineering", "CourseDuration": 4, "MaritalStatus": "Single", "DateJoiningEmployer": "2019-05-24", "DateOfBirth": "1998-06-14", "IntakeCode": "202210", }]

	<p>"AcademicYear": "2020/2021", "NationalID": "19930620141292100",</p>
--	--

	<pre> "Gender": "Male" }, { "FormFourIndexNo": "S4619-0285-2013", "FirstName": "Salmini", "MiddleName": "Selemani", "Surname": "Sembazi", "AdmissionNo": "1502424523349", "CollageFaculty": "Coet", "MobileNo": "07663434507", "ProgrammeOfStudy": "Civil Engineering", "CourseDuration": 4, "MaritalStatus": "Single", "DateJoiningEmployer": "2019-05-14", "DateOfBirth": "1975-04-24", "IntakeCode": "202210", "AcademicYear": "2020/2021", "NationalID": "19930620141299000", "Gender": "Male" }] } </pre>
SAMPLE SUCCESS RESPONSE	<pre> { "statusCode": 200, "message": "Application Received Successfully" } </pre>
SAMPLE ERROR RESPONSE	<pre> { "statusCode": 400, "reasonPhrase": "Failed Submission", "message": "Application with Admission No 12344 is already submitted" } </pre>

The JSON Document should contain the following information:

Field Name	Description, Data Format and Possible Values	Data Type (Length)	Constraint
FormFourIndexNo	Student Form Four Index Number, Format - SXXXX-XXXX-XXXX, e.g. S0300-0009-1999	String (15)	<ul style="list-style-type: none"> • Unique • Mandatory
FirstName	Student First Name	String (20)	Mandatory
Middle Name	Student Middle Name	String (20)	Mandatory
Surname	Student Surname	String (20)	Mandatory
AdmissionNo	Student Admission Number	String (30)	Mandatory
CollegeFaculty	Name of College/Faculty	String (50)	Mandatory
MobileNo	Mobile number in the following format: {0XXYYYYYY}	String (10)	Mandatory

ProgrammeOfStudy	Program of Study	String (100)	Mandatory
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CourseDuration	Course Duration (in Years)	Integer	Mandatory
MaritalStatus	Student Marital Status. Possible value are "Single" and "Married"	String (7)	Mandatory
DateJoiningEmployer	Student Admission Date in the following format {yyyy-mm-dd}	Date	Mandatory
DateOfBirth	Student Date of Birth in the following format {yyyy-mm-dd}	Date	Mandatory
NationalID	NIDA Number	String (20)	<ul style="list-style-type: none"> • Unique • Optional
Gender	Student Gender. Possible values are "Male" and "Female"	String (6)	Mandatory
PhotoImage	Student picture	Base 64 String	Mandatory

This endpoint should have call back API with the following data fields:

Field Name	Description, Data Format and Possible Values	Data Type (Length)	Constraint
FormFourIndexNo	Student Form Four Index Number, Format - SXXXX-XXXX-XXXX, e.g. S0300-0009-1999	String (15)	Mandatory
Remarks	Response message	String (50)	Mandatory

4.0 Submission of Card Applications

This web service endpoint enables agent to submit card applications

Item	Description
URL	http://196.13.105.15/OMRS/api/v1/Verification/SubmitCardApplications
METHOD	POST
HEADER PARAMETERS	Content-Type = application/json
AUTHORIZATION	Type Bearer Token
	Token eyJhbGciOiJSUzI1NiIsImtpZCI6IjY3MzFoYWxtUjZ5VH Y1XzRhS29ONHciLCJ0eXAiOiJhdCtqd3QifQ.
PAYLOAD TYPE	JSON
SAMPLE PAYLOAD	<pre>{ "BatchNo": "1230007/2020/2021/001", "Description": "Batch submitted on March 3, 2020", "CardApplications": [{ "CorrelationID": "S3490-0065-2010", "CardNo": "101201953291", }] }</pre>

	<pre> "MobileNo": "0775678123", "IntakeCode": "202210", "NationalID": "19916464646" "AcademicYear": "2020/2021", "YearOfStudy": 1, "Category": 1 }, { "CorrelationID": "S3490-0065-2009", "CardNo": "101201953291", "IntakeCode": "202210", "NationalID": "19916464646" "MobileNo": "0770078123", "AcademicYear": "2020/2021", "YearOfStudy": 3, "Category": 2 } } </pre>
SAMPLE SUCCESS RESPONSE	<pre> { "statusCode": 200, "message": "Application Received Successfully" } </pre>
SAMPLE ERROR RESPONSE	<pre> { "statusCode": 400, "reasonPhrase": "Failed Submission", "message": "Application with Admission No 12344 is already submitted" } </pre>

The JSON Document should contain the following information:

Field Name	Description, Data Format and Possible Values	Data Type (Length)	Constraint
BatchNo	<p>Unique number generated for each application batch in the format: PPPPPPP/XXXX/YYYY/ZZZ where</p> <ul style="list-style-type: none"> • PPPPPPP is EmployerNo uniquely issued by NHIF to each university/college, • XXXX/YYYY is AcademicYear e.g. 2020/2021 • ZZZ is a serially generated number e.g. 001, 002 etc. 	String (21)	<ul style="list-style-type: none"> • Unique • Mandatory

Description	Summary of the purpose of generated application batch	String (50)	Mandatory
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CorrelationID	Student Form Four Index Number, Format - SXXXX-XXXX-XXXX, e.g. S0300-0009-1999	String (15)	<ul style="list-style-type: none"> • Unique • Mandatory
CardNo	Student NHIF CardNo. It is optional for new member but mandatory for existing member	String (12)	Optional
MobileNo	Mobile number in the following format: {0XXXXYYYYYY}	String (10)	Mandatory
AcademicYear	Academic year of registration in the format XXXX/YYYY	String (9)	Mandatory
YearOfStudy	Year of study. Possible values are 1 for new student and 2, 3, 4.... for continuing students	Integer	Mandatory
Category	Application category. Possible value are 1 for new member and 2 for existing member	Integer	Mandatory

This endpoint should have call back API with the following data fields:

Field Name	Description, Data Format and Possible Values	Data Type (Length)	Constraint
BatchNo	Unique number generated for each application batch in the format: PPPPPPP/XXXX/YYYY/ZZZ where <ul style="list-style-type: none"> • PPPPPPP is EmployerNo uniquely issued by NHIF to each university/college, • XXXX/YYYY is AcademicYear e.g. 2020/2021 • ZZZ is a serially generated number e.g. 001, 002 etc. 	String (21)	<ul style="list-style-type: none"> • Unique • Mandatory
FormFourIndexNo	Student Form Four Index Number, Format - SXXXX-XXXX-XXXX, e.g. S0300-0009-1999	String (15)	Optional
IdentificationNo	NHIF membership Number (if contribution payment is to be made by student) or NHIF Employer	String (9)	Mandatory

	Number (if contribution payment has to made by the University/College		
ControlNo	GePG payment reference number	String (20)	Mandatory
InvoiceAmount	Contribution amount that has to be paid by student University/College	Decimal	Mandatory

5.0 Verify Member Card Status and Get Verification Code

This web service endpoint enable agent to check card status.

Item	Description	
URL	http://196.13.105.15/OMRS/api/v1/Verification/GetStudentsCardStatus	
METHOD	GET	
HEADER PARAMETERS	Content-Type = application/json	
AUTHORIZATION	Type	Bearer Token
	Token	eyJhbGciOiJSUzI1NiIsImtpZCI6IjlyM3FoYWxtUjZ5VH Y1XzRhS29ONHciLCJ0eXAiOiJhdCtqd3QifQ.
URL PARAMETERS	CardNo	
SAMPLE URL PAYLOAD	http://196.13.105.15/OMRS/api/v1/Verification/GetStudentsCardStatus?CardNo=101502255519	
SAMPLE SUCCESS RESPONSE	<pre>{ "CardNo": "101502255519", "verificationCode": "601725403DF0A", "FullName": "Mwajabu B. Ally", "Remarks": "CARD IS ACTIVE" }</pre>	
SAMPLE UNSUCCESSFUL RESPONSE	<pre>{ "statusCode": 406, "reasonPhrase": "Failed Application Submission", "message": " Application with CardNo 1023015712578 does not exist" }</pre>	

The JSON Document should contain the following information:

Field Name	Description, Data Format and Possible Values	Data Type (Length)	Constraint
CardNo	Student NHIF CardNo	String (12)	Mandatory

6.0 Get Payment Status from NHIF

This web service endpoint enables agent to get status of payment from NHIF by Control No.

Item	Description
URL	http://196.13.105.15/OMRS/api/v1/Verification/GetPaymentStatus
METHOD	GET
HEADER PARAMETERS	Content-Type = application/json
AUTHORIZATION	Type Bearer Token
	Token eyJhbGciOiJSUzI1NiIsImtpZCI6IjY1XzRhS29ONHciLCJ0eXAiOiJhdCtqd3QifQ.
URL PARAMETERS	ControlNo
SAMPLE URL PAYLOAD	http://196.13.105.15/OMRS/api/v1/Verification/GetPaymentStatus?ControlNo=994342313775
SAMPLE SUCCESS RESPONSE	{ "ControlNo": "994342313775", "Status": "Paid" }
SAMPLE UNSUCCESSFUL RESPONSE	{ "statusCode": 406, "reasonPhrase": "Failed Searching Control No.", "message": " Control No. Does Not Exist " }

The JSON Document should contain the following information:

Field Name	Description, Data Format and Possible Values	Data Type (Length)	Constraint
ControlNo	GePG payment reference number	String (20)	Mandatory
Status	Payment status of Control No. Possible value are Paid, Pending, Cancelled	String (10)	Mandatory

7.0 Get Registrations Details

This web service endpoint returns list of submitted registration applications with their status.

Item	Description
URL	http://196.13.105.15/OMRS/api/v1/Verification/GetRegistrationList
METHOD	GET
HEADER PARAMETERS	Content-Type = application/json

AUTHORIZATION	Type	Bearer Token
	Token	eyJhbGciOiJSUzI1NiIsImtpZCI6IjlyM3FoYWxtUjZ5VHY1XzRhS29ONHciLCJ0eXAiOiJhdCtqd3QifQ.
URL PARAMETERS	Year, Gender, admissionNo, formFourIndexNo (Passing 0 in any of the parameter will retrieve all possible value in that particular parameter)	
SAMPLE URL PAYLOAD	http://196.13.105.15/OMRS/api/v1/Verification/GetRegistrationList?Year=2020& Gender =Male& admissionNo=12344& formFourIndexNo= S0300-0009-1999	
SAMPLE SUCCESS RESPONSE	<pre>[{ "status": "Approved", "year": 2020, "gender": "Male", "firstName": "Hamad", "middleName": "Juma", "lastName": "Ali", "formFourIndexNo": "S0300-0009-1999", "admissionNo": "12344" }, { "status": "Approved", "year": 2020, "gender": "Male", "firstName": "Salmini", "middleName": "Selemani", "lastName": "Sembazi", "formFourIndexNo": "S4629-0285-2087", "admissionNo": "15024213172121" }, { "status": "Accepted", "year": 2020, "gender": "Male", "firstName": "Salmini", "middleName": "Selemani", "lastName": "Sembazi", "formFourIndexNo": "S4629-0285-2085", "admissionNo": "15024214032965" }, { "status": "Pending", "year": 2020, "gender": "Male", "firstName": "Ethan", "middleName": "Thomas", "lastName": "Nusukoti",</pre>	

	<pre> "formFourIndexNo": "S3430-0065-2082", "admissionNo": "15024214248176" }, { "status": "Pending", "year": 2020, "gender": "Male", "firstName": "Salmini", "middleName": "Selemani", "lastName": "Sembazi", "formFourIndexNo": "S4629-0285-2084", "admissionNo": "15024214463387" }] </pre>
SAMPLE UNSUCCESSFUL RESPONSE	<pre> { "statusCode": 406, "reasonPhrase": "Failed Application Submission", "message": "Year must be specified " } </pre>

The JSON Document should contain the following information:

Field Name	Description, Data Format and Possible Values	Data Type (Length)	Constraint
Year	Student Year of Admission	Integer	Mandatory
Gender	Student Gender. Possible values are "Male" and "Female"	String (6)	Mandatory
AdmissionNo	Student Admission Number	String (30)	Mandatory
FormFourIndexNo	Student Form Four Index Number, Format - SXXXX-XXXX-XXXX, e.g. S0300-0009-1999	String (15)	Mandatory

8. Academic Year Intakes.

This web service endpoint returns list of intakes based on current academic year and tied to specific employer.

Item	Description	
URL	http://196.13.105.15/omrs/api/v1/verification/GetAcademicIntake	
METHOD	GET	
HEADER PARAMETERS	Content-Type = application/json	
AUTHORIZATION	Type	Bearer Token
	Token	eyJhbGciOiJSUzI1NiIsImtpZCI6IjlyM3FoYWxtUjZ5VHY1XzRhS29ONHciLCJ0eXAiOiJhdCtqd3QifQ.
SAMPLE SUCCESS RESPONSE	<pre>{ "statusCode": 200, "intakes": [{ "intakeName": "October Intake", "intakeCode": "202310", "startDate": "2023-10-08T00:00:00", "endDate": "2024-10-08T00:00:00" }], "message": "Received successfully" }</pre>	
SAMPLE UNSUCCESSFUL RESPONSE	<pre>{ "statusCode": 406, "reasonPhrase": "Failed Get Academic Year Intake.", "message": "No any Intake(s) Available" }</pre>	

9. Verify Student Registration.

This web service endpoint verify if student is already submitted or not, If the Student has already member with Card No.

Item	Description	
URL	http://196.13.105.15/omrs/api/v1/verification/VerifyStudentRegistration	
METHOD	POST	
HEADER PARAMETERS	Content-Type = application/json	
AUTHORIZATION	Type	Bearer Token
	Token	eyJhbGciOiJIUzI1NiIsImtpZCI6IjY1XzRhS29ONHciLCJ0eXAiOiJhdCtqd3QifQ.
SAMPLE URL PAYLOAD	<pre>{ "FirstName": "Hamis", "MiddleName": "A", "LastName": "Juma", "Gender": "Male", "DateOfBirth": "2023-09-10", "FormFourIndexNo": "Sxxx-xxxx-xxxx" }</pre>	
SAMPLE SUCCESS RESPONSE	<pre>{ "statusCode": 200, "isSubmitted": true, "CardNo": "101636363636" "message": "Application with Form four No FormFourIndexNo has already been submitted with Institution (UDOMS-UNIVERSITY OF DODOMA)" }</pre>	
SAMPLE UNSUCCESSFUL RESPONSE	<pre>{ "statusCode": 406, "reasonPhrase": "Failed Application Submission", "message": " Application with FormfourIndexNo has not submitted any where" }</pre>	

10. Get Student Control No Status.

This web service endpoint return the control of the batch.

Item	Description
URL	http://196.13.105.15/omrs/api/v1/verification/GetStudentControlNoStatus
METHOD	GET
HEADER PARAMETERS	Content-Type = application/json
AUTHORIZATION	Type Bearer Token
	Token eyJhbGciOiJSUzI1NiIsImtpZCI6IjY1XzRhS29ONHciLCJ0eXAiOiJhdCtqd3QifQ.
URL PARAMETERS	BAtchNo
SAMPLE URL PAYLOAD	http://196.13.105.15/omrs/api/v1/verification/GetStudentControlNoStatus?BatchNo=25464/2023/2024/002
SAMPLE SUCCESS RESPONSE	<pre>{ "statusCode": 200, "Data": [{ "BatchNo": "25464/2023/2024/002", "ControlNo": "99400865474747", "CorrelationID": "S1023-0009-2023", "IdentificationNo": "1546464646" }], "message": "Received successfully" }</pre>
SAMPLE UNSUCCESSFUL RESPONSE	<pre>{ "statusCode": 400, "message": "No record found for batchno" }</pre>