Scope Document

Bulk Bill Payment

GrameenPhone

Version 1.5

Table of Contents

1 Introduction

This document describes scope of work for Bulk BillPayment UI requirement for GrameenPhone

1.1 Purpose

It is the scope of work document for the changes needed in current Bulk BillPayment module of Grameenphone to integrate with upgraded mobiquity PayX Solution. This will give flexibility to admin users to fetch bill details of account holders in bulk and then pay all pending bills in bulk.

1.2 Scope

Grameenphone has already shared their code of existing Bulk BillPayment UI from old version and want same to be implemented in PayX solution provided by comviva in Phase B.

On existing feature, below are changes that need to be done:

- While fetching pending bill details of all bill account selected on UI : Change in existing integration logic and update to Mobiquity Integration API
- For Bill payment : Change in existing integration logic and update to Mobiquity Integration API
- Ambiguous payment handling scenarios(for enquiry and not reversal or refund) request will be routed to Mobiquity , for any dispute management
- Email and SMS handling should be there as per current setup : integration with Email server and SMSGW
- Login page to be created on WEB to enable user login with credentials. In old system, login page was from IDP. But in latest deployment Login feature should be created in Bulk UI itself.
- Password management (change and forgot password) feature has to be implemented on Bulk UI : Integration with Mobiquity for backend logic

Note : There are 2 UI for Bulk Bill Payment and Reporting. Current scope is just to give feature of Bulk Billpayment UI . Reporting UI requirements will be fulfilled from Pentaho which is part of Mobiquity solution.

1.3 Audience

Comviva technical teams, partner teams

2 Bulk BillPayment Portal

Admin user would be able to access Bulk BillPayment portal. Each of them will have their specific userId and password
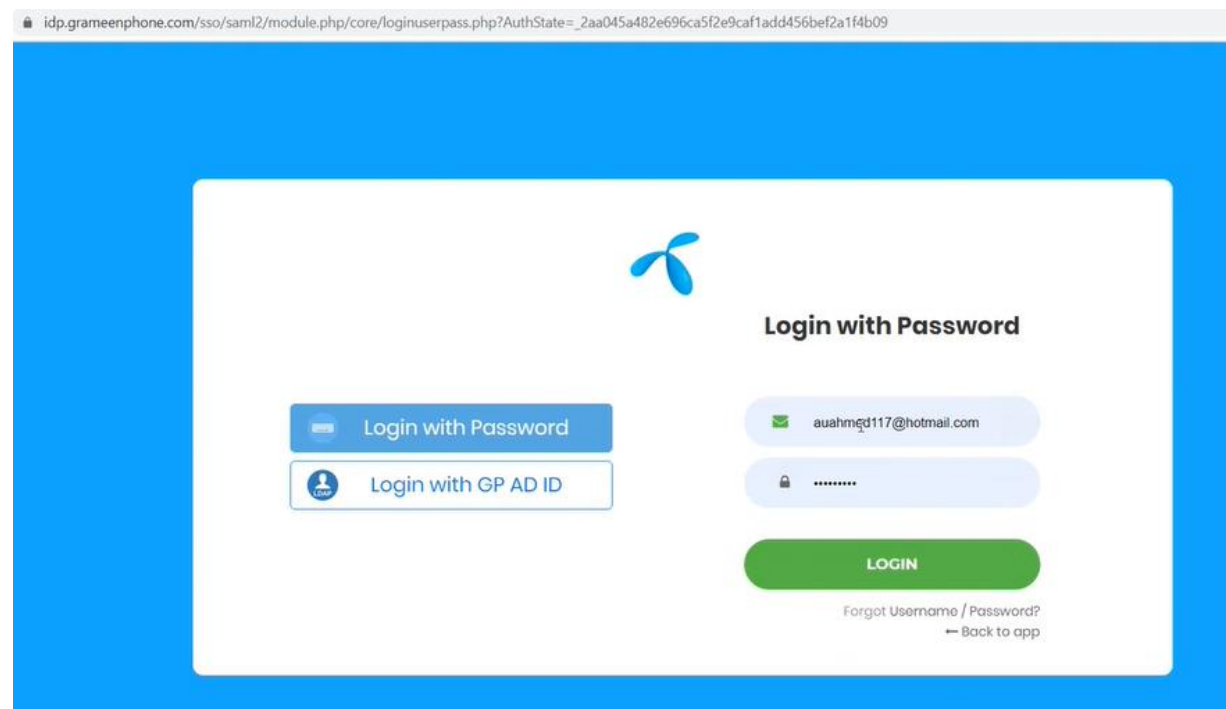
2.1 Login Flow:

Current Flow:

In old architecture, User authentication while Login is maintained by IDP. So whenever user is logging into the system, application routes user to login page of IDP. Where userid and password is asked from user.
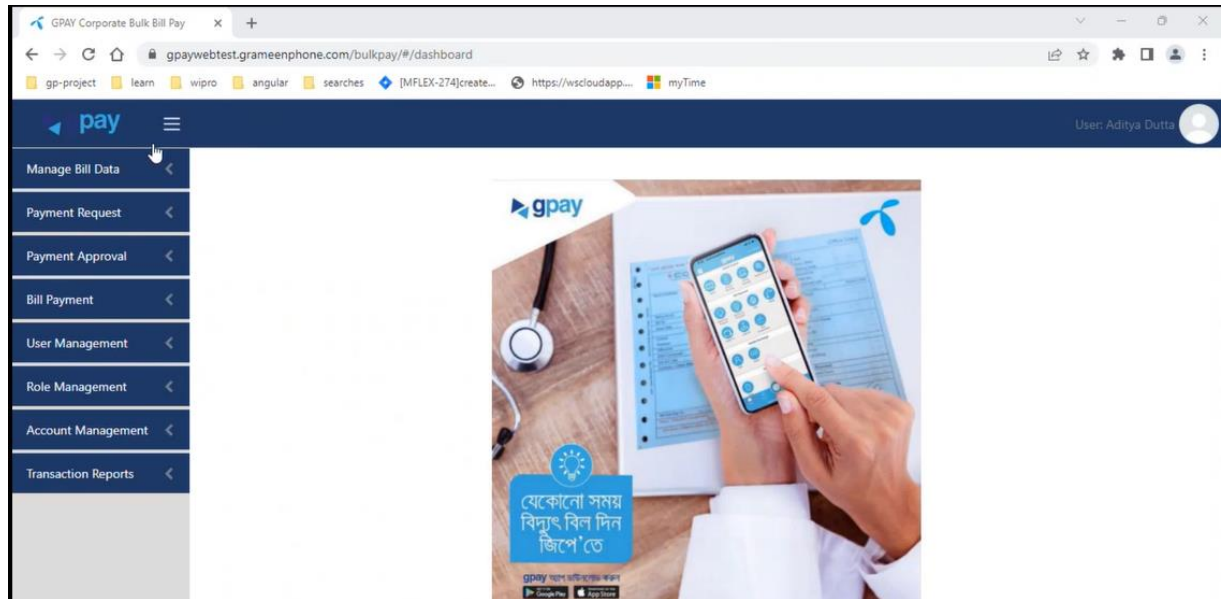
IDP validated credentials, on success it calls Billpay Dashboard page and give access to admin user.

Login Page of IDP :

BillPay Dashboard snapshot is below:

New Flow:

Partner need to create this Login page into Bulk UI code itself. And w.r.t. authentication, hit is send to Mobiquity for user validation. Since there is no password storage in Bulk Bill mflex DB. Only userId and email id of users are stored. If user is verified by Mobiquity, then dashboard will be shown.

In order to support this approach, we must ensure that admin users who are present in mobiquity systems can only access bulk billpay dashboard. And they must need mobiquity login id and credentials only to login after registration in Bulk Billpay application. When any mobiquity user want access on Bulk Pay dashboard, then they have to get registered in BulkPay UI also with same login ID.
So login ID of user in mobiquity and BulkUI DB should match.

BulkUI application will send request to generate system token at time of login, once system token is fetched, login request will be sent with system token and login credentials and in return if user is valid in mobiquity system then userToken is sent in response to Login API along with refresh Token.

On receiving successful login, Bulk UI dashboard must be made visible to user.

Expections from Partner:

- Create Login page
- Integrate with mobiquity to fetch system token and Login validation
- Basis mobiquity Login API response, route request to already existing Bulk dashboard in system.

2.1.1   API Details:

2.1.1.1 Fetching System Token

Action: GET
Endpoint: /ums/v1/user/auth/web/system-token
Description
This API is used by the DFS container to generate grant type credentials for the user to login/access mobile or web application. By default, one grant type (system token) is associated with the system. This API helps in creating multiple grant types based on requirement.

Request:
curl --location 'https://mfsbaastest.grameenphone.com/mobiquitypay/oauth/token' \
--header 'Content-Type: application/x-www-form-urlencoded' \
--header 'Authorization: Basic Q29yZVdlbYjphZGF5ZmNTV2NJ' \
--data-urlencode 'grant_type=client_credentials'

Response Body
Code: 200
Get System Token for Web Application.

```
{
    "access_token": "eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcHVibGljLTEifQ.eyJzY29wZSI6WyJHRVRfVVNFUl9BTkRfQUNDT1VOVF9ERVRBSUxTIiwiU0VMRlNFVEFVVEhGQUNUT1IiLCJGRVRDSF9VU0VSX1FVRVNUSU9OIiwiVFhOIiwiQ09SUkVDVCIsIkFUTUNBU0hPVVQiLCJBVE1DQVNIT1VUX1Y0IiwiQURNVFhOUkVGSUQiXSwiZXhwIjoxNjk2OTk4ODM3LCJhdXRob3JpdGllcyI6WyJST0xFX0NMSUVOVCJdLCJqdGkiOiJiYWIxZjY2NC01NjA1LTQ4NDItYTEyYy0zMDE0NWRjNjY2ZGYiLCJjbGllbnRfaWQiOiJDb3JlV2ViIn0.EhFA55EfQUDTrUSz1YuPRBE1lJmZjLARClc_PAVOfPtFVcvH_Np_yluShLMrsrH1JU71yAmi3gjIDka3-5bLq-o2JSLk_mc39QlBsXaZGYxR2CMpbxDkWrlNX8E1FF8RWPiW7Mk6xQI0rA6IJvD8y8JrFhvTyROhyuOzm1py3CG0ihM5kR4z_0KnA6ptzYJPVYbLzqVNQ9dFxxsEfQS0JQCZWMRbKEGuEOzbkCrmEGi1F7WTZ0SGm3speYqvRQMv_Cd5xo37q0YnPyp3boGkJq8wlgG3dFAv73fnAHzSm2ZwXM-nO19WKZhQNmqLpj64TZKAVJBplQeLwdCU2d6cAQ",
    "token_type": "bearer",
    "expires_in": 299,
    "scope": "GET_USER_AND_ACCOUNT_DETAILS SELFSETAUTHFACTOR FETCH_USER_QUESTION TXN CORRECT ATMCASHOUT ATMCASHOUT_V4 ADMTXNREFID",
    "jti": "bab1f664-5605-4842-a12c-30145dc66e4f"
}
```

Fields	Type	Description	Example/Allowed Values
LoginWithOTPResponseModel	Login response model with token		
language	String	Preferred language of the user. By default, system supports 3 languages English/French/Arabic.	En, ar, fr
lastLoginTime	String	Time stamp of last login of the user.	2020-10-13T02:47:56
message*	String	The API response message that	OTP validation is required.

Fields	Type	Description	Example/Allowed Values
		shows the type of information returned. No Specific length	Please enter OTP to continue
serviceFlow	String	A unique code that is internal to Comviva and identifies the business process flow associated to the API.	OTPLOGIN
serviceRequestId*	String	Whenever an API is called, Comviva generates an unique service request ID for the API request. This unique ID traverses' components in the business process flow. It is useful when the process flow is paused for the user input and needs to be resumed when user has provided the input. Length-36 characters (System generated)	f491f6b1-aa9b-43de-93b0-c85eda706a2c
status*	String	The status to show whether the API call is a success, failure, in progress, or paused.	SUCCEEDED, FAILED, INPROGRESS, or PAUSED
token	String	TokenData | Fields	Type	Description	Example
access_token *	String	Access token is used for token based authentication to allow an application to access an API. The application receives an Access Token after a user successfully authenticates and authorizes access. User can then pass this access token as a credential to perform any transactions in the application.	asdfqwrtwy		

Fields	Type	Description		Example/Allowed Values
			Access tokens are short-lived tokens.	
		`expires_in`	Integer ($int32)	Validity period (in seconds) for accessing the token.	299
		`refresh_token`	String	Once the access token expires, you can use the refresh token to get the new access token. Refresh tokens also expire but they are supposed to live much longer than the access token. Max Length- 256 characters	asdfqwrtwy
transactionId*	String	The unique id generated by the Comviva platform for the transaction. Length-21 character	XX220316.0959.A15026	
txnStatus	String	Defines the five different statuses of the transaction. Not Applicable for Non-Financial APIs TI – Transaction Initiated TS – Transaction Succeeded TF – Transaction Failure TP – Transaction Paused TA – Transaction Ambiguous	Success	
userId	String	Unique ID generated by the system after successful user registration. Length-20 characters	US.k6GH1579603850092	

Sample Response Body

```
{
    "access_token": "eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcHVibGl
jLTEifQ.eyJzY29wZSI6WyJHRVRfVVNFUl9BTkRfQUNDT1VOVF9ERVRBSUxTIiwiU0VMRlNFVEFVVEhGQUNU
T1IiLCJGRVRDSF9VU0VSX1FVRVNUSU9OIiwiVFhOQ09SUkVDVCIsIkFUTUNBU0hPVVQiLCJBVE1DQVNIT1VU
X1Y0IiwiQURNVFhOUkVGSUQiXSwiZXhwIjoxNjk2NTcwODAwLCJhdXRob3JpdGllcyI6WyJST0xFX0NMSUVO
VCJdLCJqdGkiOiIyY2ExYzlhYS1kYWE5LTRlNDEtOGI2OS1hNWY4OTdjNmUxMzAiLCJjbGllbnRfaWQiOiJD
b3JlV2ViIn0.RXzx1CT19gAma-PuFUzR8zzq2pK-
ezjY71sLdN_lx7nEodc8jz58m6QKTfqXHx2k9SUv5uCkZhJxF-
OU7ChOkkMCdq3YiZcTxqvNs31LjTyxOMiT_c2s0x9H2WvSCEUUoXFx5c1RUfwuCYblBAsak4NfpAILvZZfaS
7sUp4xjuwmz1CvGcL2rUAedxBSJBmHhYHPu4-9lGBEc9FLPXSKJz14fnX5wMBK37JbadIy4C-
7C6XwRhYPyHG73RuPgnSG_-
RbrlDkRoM9DS9h03V3Q35HesXXRTk7L5x5i9piMCwyM3dQJat8yzAZVAch9SaVZ2URjVF4MNyr49cg6XRbjw
",
    "token_type": "bearer",
    "expires_in": 179,
    "scope": "GET_USER_AND_ACCOUNT_DETAILS SELFSETAUTHFACTOR FETCH_USER_QUESTION TXN
CORRECT ATMCASHOUT ATMCASHOUT_V4 ADMTXNREFID",
    "jti": "2ca1c9aa-daa9-4e41-8b69-a5f897c6e130"
}
```

Error Codes

Error Code	Description
400	Bad request
500	Internal Server Error

2.1.1.2 Validating User Credential and Generate Token for Web

Action: POST

Endpoint: /ums/v3/user/auth/web/login

Description
This API is used to validate user login credentials based on login policy and generates token to access web application.

Request body

curl --location
'https://mfsbaastest.grameenphone.com/mobiquitypay/ums/v3/user/auth/web/login' \

--header 'Content-Type: application/json' \

--header 'Authorization: Bearer
eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcHVibGljLTEifQ.eyJzY

29wZSI6WyJHRVRfVVNFUl9BTkRfQUNDT1VOVF9ERVRBSUxTIiwiU0VMRlNFVEF
VVEhGQUNUT1IiLCJGRVRDSF9VU0VSX1FVRVNUSU9OIiwiVFhOQ09SUkVDVCIsIk
FUTUNBU0hPVVQiLCJBVE1DQVNIT1VUX1Y0IiwiQURNVFhOUkVGSUQiXSwiZXhw
IjoxNjk2OTk5MjAzLCJhdXRob3JpdGllcyI6WyJST0xFX0NMSUVOVCJdLCJqdGkiOiJiM
mU1YzY5MC05ODhhLTQyNjUtYmQ0Mi05ZNhNTkxNGQyOGIiLCJjbGllbnRfaWQiOi
JDb3JlV2ViIn0.guCwI3T5L6MEtqVyuBKHjy12KEy01FvdK4JpYxO53GL2a3RUwwLjzM0
89QNNS1pzqrnlqoJZjjosNC54-
Uqzn4QQxhvZe7Lcr41yaysFUkdOlkUgowv7bm0eiclxMgohfE5MZAC7l0sCL2YEc8ArRHL
e6qOY8vcOfr-fXN1qD4Gl4RSo3EAPbNS2gmCwc7crm-
F9vh2ctxqCTW28eBjpUtuY70ByXxR44trS7g7IIeeNg5fzBb7hOrxvKGRIBq5fiVdK35ldXH
VBjBSQdYpyqTADhd38Q1TVxU3M4H3McVrReNK76ODFNQaur_KeHs2kDcN2S6MSqZ
ozGZiTa6X6GQ' \

--data-raw '{

  "bearerCode": "WEB",

  "language": "en",

  "workspaceId": "ADMIN",

  "identifierType": "LOGINID",

  "identifierValue": "Aman01",

  "authenticationValue": "Com@1357",

  "isTokenRequired": "Y",

  "deviceInfo": {

    "appName": "mobilePay",

    "appVersion": "V X.9",

    "deviceId": "ffed2d4608c5191f5086b2f2cf160afd",

    "browser": "Google Chrome",

    "isPublicDevice": "N",

    "latitude": "",

    "longitude": "",

    "mac": "",

    "model": "Desktop - Windows 10",

"networkOperator": "",

"networkType": "",

"os": "",

"providerIpAddress": "136.226.255.14"

}

}'

Fields	Type	Description	Example/Allowed Values
LoginCriteriaRequest	String	Validate user login credential based on the criteria.	
AuthenticationValue*	String	PIN/Password of the user

Default length of pin is 4

Min password length is 5 & Max password length is 10 | 2468 |
| **bearerCode *** | String | Access bearer channel of user which includes Web, USSD, Core Web, Mobile App | Web, USSD, Core Web, Mobile App |
| **deviceInfo *** | DeviceDetailDTO

Description: Representing the device details from where request raised. | | |

Fields	Type	Description	Example/Allowed Values
appName	String	Application name

Length-40 character | mobiquity |
| **appVersion** | String | Version of the app that the user accessing.

Length-20 character | 10.2 |
| **browser** | String | Browser compatibility of the application.

Max Length-50 character | Chrome |
| **deviceId *** | String | Unique ID of the device from which the user is | excs-233-daca-312 |

Fields	Type	Description	Example/Allowed Values
		accessing the app. Max Length-50 character	
isPublicDevice *	String	Is the device public, Y/N	Y
latitude	String	Latitude geography of the device. Max Length-30 character	12.971599
longitude	String	Longitude geography of the device. Max Length-30 character	77.594566
mac	String	MAC address of the device. Max Length-30 character	00:1B:44:11:3A:B7
model	String	Model number of the device. Max Length-150 character	Oneplus10
networkOperator	String	Network operator of the device. Max Length-30 character	Orange
networkType	String	Network type of the device which includes 3G, 4G, 5G, etc. Max Length-30 character	4G
os	String	Operating system of the device. Max Length-20 character	Android10
providerIpAddress	String	IP address of the service provider.	172.56.76.89

Fields	Type	Description	Example/Allowed Values
			Max Length-50 character
identifierType *	String	Access identifier type of the user/transactor	mobileNumber
identifierValue	String	Access identifier value associated with the identifier type selected. Mobile Number:8-15 Email: Max length-40 characters LOGINID-min length is 3 & max length is 20	777XXXXXX
isTokenRequired *	String	If token is required to access the app, select Y else select N	Y
language *	String	Preferred language of the user. By default, system supports 3 languages English/French/Arabic.	En, ar, fr
workspaceId *	String	Workspace is the classification of all users at high level. All users are clubbed together under three workspaces SUBSCRIBER/BUSINESS/ADMIN	SUBSCRIBER/BUSINESS/ADMIN

Sample Request

curl --location
'https://mfsbaastest.grameenphone.com/mobiquitypay/ums/v3/user/auth/web/login' \

--header 'Content-Type: application/json' \

--header 'Authorization: Bearer
eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcHVibGljLTEifQ.eyJzY29wZSI6WyJHRVRfVVNFUl9BTkRfQUNDT1VOVF9ERVRBSUxTIiwiU0VMRlNFUVEVhGQUNUT1IiLCJGRVRDSF9VU0VSX1FVRVNUSU9OSiwiVFhOQ09SSUVDVCIsIkFUUUNBU0hPVVQiLCJBVE1DQVNIT1VUX1Y0IiwiQURNVFhOOUkVGSUQiXSwiZXhwIjoxNjk2NTcwODDAwLCJhdXRob3JpdGllcyI6WyJST0xFX0NMSUVOVCJdLCJqdGki
OiIyY2ExYzlhYS1kYWE5LTRlNDEtOGI2OS1hNWY4OTdjNmUxMzAiLCJjbGllbnRfaWQiOiJDb3JlV2ViIn0.RXzx1CT19gAma-PuFUzR8zzq2pK-
ezjY71sLdN_lx7nEodc8jz58m6QKTfqXHx2k9SUv5uCkZhJxF-
OU7ChOkkMCdq3YiZcTxqvNs31LjTyxOMiT_c2s0x9H2WvSCEUuoXFx5c1RUfwuCYbl
BAsak4NfpAILvZZfaS7sUp4xjuwmz1CvGcL2rUAedxBSJBmHhYHPu4-
9lGBEc9FLPXSKJz14fnX5wMBK37JbadIy4C-7C6XwRhYPyHG73RuPgnSG_-
RbrlDkRoM9DS9h03V3Q35HesXXRTk7L5x5i9piMCwyM3dQJat8yzAZVAch9SaVZ2URj
VF4MNyr49cg6XRbjw' \

--data-raw
'{"bearerCode":"WEB","language":"en","workspaceId":"ADMIN","identifierType":"LOGINI
D","identifierValue":"System01","authenticationValue":"Com@1357","isTokenRequired":"Y
","deviceInfo":{"appName":"mobilePay","appVersion":"V
X.9","deviceId":"ffed2d4608c5191f5086b2f2cf160afd","browser":"Google
Chrome","isPublicDevice":"N","latitude":"","longitude":"","mac":"","model":"Desktop -
Windows
10","networkOperator":"","networkType":"","os":"","providerIpAddress":"136.226.255.14"}}
'

Response Body

Code: 200

Validates credentials based on the login policy and generate token if request came from existing mapped device.

Fields	Type	Description	Example/Allowed Values
LoginWithOTPResponseModel		Login response model with token	
language	String	Preferred language of the user. By default, system supports 3 languages English/French/Arabic.	En, ar, fr
lastLoginTime	String	Time stamp of last login of the user.	2020-10-13T02:47:56
message *	String	The API response message that shows the type of information returned.	OTP validation is required. Please enter OTP to continue
serviceFlow	String	A unique code that is internal to Comviva and identifies the business process flow associated to the API.	OTPLOGIN
serviceRequestId *	String	Whenever an API is called, Comviva generates a unique service request ID for the API request. This unique ID traverses' components in the business process flow. It is useful when the process flow is paused for the user input and needs to be resumed when user has provided the input.	f491f6b1-aa9b-43de-93b0-c85eda706a2c
status *	String	The status to show whether the API call is a success, failure, in progress, or paused.	SUCCEEDED, FAILED, INPROGRESS, or PAUSED
token	String	TokenData	

Fields	Type	Description			Example/Allowed Values

		Fields	Type	Description	Example/Allowed Values
		access_token *	String	Access token is used for token based authentication to allow an application to access an API. The application receives an Access Token after a user successfully authenticates and authorizes access. User can then pass this access token as a credential to perform any transactions in the application. Access tokens are short-lived tokens.	asdfqwrtwy
		expires_in	Integer ($int32)	Validity period (in seconds) for accessing the token.	299
		refresh_token	String	Once the access token expires, you can use the refresh token to get the new access token. Refresh tokens also expire but they are supposed to live much longer than the access token.	asdfqwrtwy

Fields	Type	Description		Example/Allowed Values	
				Length-256 characters	
transactionId *	String	The unique id generated by the Comviva platform for the transaction. Length-20 character		XX220316.0959.A15026	
txnStatus	String	Defines the five different statuses of the transaction. Not Applicable for Non-Financial APIs TI – Transaction Initiated TS – Transaction Succeeded TF – Transaction Failure TP – Transaction Paused TA – Transaction Ambiguous		Transaction Success	
userId	String	Unique ID generated by the system after successful user registration. Length-20 character		US.k6GH1579603850092	

Sample Response Body

Below is the response body when two factor authentication is disabled:

```
{
    "serviceRequestId": "eff0d701-df67-4e77-b0ac-d11b6b0d36da",
    "message": "Login Successfully",
    "transactionId": null,
    "txnStatus": null,
    "serviceFlow": "LOGIN_POLICY",
    "status": "SUCCEEDED",
    "language": "en",
    "token": {
        "access_token": "eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcHV
ibGljLTEifQ.eyJzZXJ2aWNlUmVxdWVzdElkIjoiZWZmMGQ3MDEtZGY2Ny00ZTc3LWIwYWMtZDExYjZiMGQz
NmRhIiwidXNlcl9uYW1lIjoiZWZmMGQ3MDEtZGY2Ny00ZTc3LWIwYWMtZDExYjZiMGQzNmRhIiwiYXV0aG9y
aXphdGlvbiByb2ZpbGVDb2RlIjoiTmV0YWRtaW5EZWZhdWx0IiwiaWRlbnRpZmllclZhbHVlIjoiU3lzdGVt
MDEiLCJpZGVudGlmaWVyVHlwZSI6IkxPQlOSUQiLCJjYXRlZ29yeUNvZGUiOiJOV0FETSIsInVzZXJJJCI6
IlVTLjI5MjExNjg5MTQ1NTc1NzQyIiwiZGV2aWNlSWQiOm51bGwsImF1dGhvcml0aWVzIjpbIlJPTEVfVVNF
UiJdLCJjbGllbnRfaWQiOiJDb3JlV2ViIiwic2NvcGUiOlsiR1VUX1VTRVJfQU5EX0FDQ09VTlRfREVUQUlM
UyIsIlNFTEZTRVRBVVRIRkFDVE9SIiwiRkVUQ0hfVVNFUl9RVUVTVElPTiIsIlRYTkPUlJFQ1QiLCJBVE1D
QVNIT1VUIiwiQVRNQ0FTSE9VVF9WNCIsIkFETVRYTlJFRklEIl0sIm5hbWUiOiJTeXN0ZW0gQWRtaW4iLCJi
```

ZWFyZXJDb2RlIjoiV0VCIiwiZXhwIjoxNjk2NTcwOTY0LCJqdGkiOiJjNGY5MTk5My1iZmQ3LTRhMmEtYjY0
OS0zZjBmNmRlMjYwMWIifQ.yGxiN_4qhQDPAiuyzM-
BsSPhuEZM3Tpd71G_cPduiD8dWd11b0sj3vXSKSBidwrup8pGO6t0DCIZQkK6RRtoOJPoiVlNCDcI78Jopno
hxvzYAuBMXU-
zCCx8N5C084oWDAIq8_InxezRmN0KbbNCdUCd8M0vnDToXi6O6A9EYugRmCAcpgrQe__28qIUUyUtB8RJS5Q
WRftJTA-N_UqYUJr_5xMGowtdFG8qhLyVJNF4xBp2CAqUpTDBGn39Z0ZYU-
RVveMrS_IYZD39wufaNChU9Q17jOVIgRtmJ2SzHzjTGjgy2he8NSlpstVoWAhrVGeSmXlY3tp1rBbSOQvlYA
",
        "expires_in": 299,
        "refresh_token": "eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXXktcH
VibGljLTEifQ.eyJzZXJ2aWNlUmVxdWVzdElkIjoiZWZmMGQ3MDEtZGY2Ny00ZTc3LWIwYWMtZDExYjZiMGQ
zNmRhIiwidXNlcl9uYW1lIjoiZWZmMGQ3MDEtZGY2Ny00ZTc3LWIwYWMtZDExYjZiMGQzNmRhIiwiYXV0aG9
yaXphdGlvblByb2ZpbGVDb2RlIjoiTmV0YWRtaW5EZWZhdWx0IiwiaWRlbnRpZmllclZhbHVlIjoiU3lzdGV
tMDEiLCJpZGVudGlmaWVyVHlwZSI6IkxPR0lOSUQiLCJjYXRlZ29yeUNvZGUiOiJOV0FETSISInVzZXXJJZCI
6IlVTLjI5MjExNjg5MTQ1NTc1NzQyIiwiZGV2aWNlSWQiOm51bGwsImF1dGhvcml0aWVzIjpbIlJPTEVfVVN
FUiJdLCJjbGllbnRfaWQiOiJDb3JlV2ViIiwic2NvcGUiOlsiR0VUX1VTRVJfQU5EX0FDQ09VTlRfREVUQUl
MUyIsIlNFTEZTRVRVRBVVRIRkFDVE9SIiwiRkVUQ0hfVVNFUl9RVUVTVElPTiIsIlRYTkPUlJFQ1QiLCJBVE1
DQVNIT1VUIiwiQVRNQ0FTSE9VVF9WNCIsIkFETVRVYTlJFRklFII0sImF0aSI6ImM0ZjkxOTkzLWJmZDctNGE
yYS1iNjQ5LTNmGY2ZGUyNjAxYiIsIm5hbWUiOiJTeXN0ZW0gQWRtaW4iLCJiZWFyZXJDb2RlIjoiV0VCIiw
iZXhwIjoxNjk2NjAwNjY0LCJqdGkiOiI5YzZiNDg4Zi0wOWNiLTRiMTYtOGNhZS0xNzI3ZTNmOGZlNmYifQ.
cniKvyqMjBLe5ez-j-K0y9Ytfs1_37pe50AnTmCBS-fM-eSK0wPiV9FjdBUbxYR_0Y4vz6k8B-
D7RbIHGWQ81krWX_OqNEwpw3ZRwghTl1Nhj8erf9QHWyU8xp7bIP1Yir6MIaOu_u4flXRNjv82q1sUZjSOJa
asfA9qsYtzCY1Qqb0A0GeCqAywnMg7NfUtmQNnTqwL6pMsCemOvoL0JB0dsJ5a-
fWbugVU8EImNuEldoXA6BbV8NVyMEwug-
ryC1da37LRBzTeajQZzSpt6Ls5Ymi26yc1a3XD_jkXzcA2Qbtb8kSv7rmSrmsySPSbU8f57BcNnZcCHLxSt6
3w1w"
    },
    "lastLoginTime": "2023-10-04T10:31:28",
    "userId": "US.29211689145575742",
    "sessionIdList": [
        "fd4e5489-3280-4aa7-b1d0-596570277b2f"
    ]
}

Below is the response body when two factor authentication is enabled:

```
{
    "serviceRequestId": "d8b7d414-b4d0-4d02-9f42-d1c3edb6459b",
    "message": "OTP validation is required. Please enter OTP to continue",
    "transactionId": null,
    "txnStatus": null,
    "serviceFlow": "LOGIN_POLICY",
    "status": "PAUSED",
    "language": "en",
    "code": "otp.validation.required",
    "mfsTenantId": "mfsPrimaryTenant",
    "transactionTimeStamp": "2023-02-09T10:18:56"
}
```

Error Codes

Error Code	Description
400	Bad request
500	Internal Server Error

Error scenario:

Http error code: 400.
Error Code: Authen01- Invalid credentials.

Response:

```
{"txnStatus":"TF","status":"FAILED","language":"en","mfsTenantId":"mfsPrima
ryTenant","errors":[{"code":"AUTH_06","message":"Invalid login credentials.
Please try again.","componentName":"user-
authentication"}],"transactionTimeStamp":"2023-07-
06T20:30:00","errorCode":"Authen01","traceId":"19422597-1711-4bc6-bcab-
baf6734549a8","step":"get.userid.service","errorUserMsg":"Invalid
credentials.","httpErrorCode":"400"}
```

2.1.1.3 Confirm OTP and Generate Token

Action: POST
Endpoint : /ums/v3/user/auth/login-confirm
Description
This API is used to confirm OTP and mapped device information and then generate token.
This is used when the user login authentication requires OTP to access Web Application.

Request body
curl --location
'https://mfsbaastest.grameenphone.com/mobiquitypay/ums/v3/user/auth/web/login-confirm' \
--header 'Accept: application/json, text/plain, */*' \
--header 'Accept-Language: en-US,en;q=0.9,hi;q=0.8' \
--header 'Connection: keep-alive' \
--header 'Content-Type: application/json;charset=UTF-8' \
--header 'Cookie: unq=c4dPpSLPIgO9yPZM;

refresh_token=eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcHVibGlj
LTEifQ.eyJzZXJ2aWNlUmVxdWVzdElkIjoiNjQzNjZmYWEtZTFlYy00YmU4LTg0YzEtM
zVmZmM4ZWU5ZTIxIiwidXNlcl9uYW1lIjoiNjQzNjZmYWEtZTFlYy00YmU4LTg0YzEt
MzVmZmM4ZWU5ZTIxIiwiYXV0aG9yaXphdGlvblByb2ZpbGVDb2RlIjoiTmV0YWRtaW
5EZWZhdWx0IiwiaWRlbnRpZmllclZhbHVlIjoiU3lzdGVtMDEiLCJpZGVudGlmaWVyVHl
wZSI6IkxPR0lOUUQiLCJjYXRlZ29yeUNvZGUiOiJOV0FETSIsInVzZXJJZCI6IlVTLjI5Mj
ExNjg5MTQ1NTc1NzQyIiwiZGV2aWNlSWQiOm51bGwsImF1dGhvcml0aWVzIjpbIlJPTE
VfVVNFUiJdLCJjbGllbnRfaWQiOiJDb3JlV2ViIiwic2NvcGUiOlsiR0VUX1VTRVJfQU5E
X0FDQ09VTlRfREVUQUlMUyIsIlNFTEZTRVRBVVRISkFDVE9SIiwiRkVUQ0hfVVNF
Ul9RUUVTVElPTiIsIlRYTkPUlJFQ1QiLCJBVE1DQVNIT1VUIiwiQVRNQ0FTSE9VVF

9WNCIsIkFETVRYTlJFRklEIl0sImF0aSI6IjVmY2UxYzIwLTc2ZGMtNDYwOS04YzljLT
RmNTgxOWIyYjI4NyIsIm5hWUiOiJTeXN0ZW0gQWRtaW4iLCJiZWFyZXJDb2RlIjoiIi
wiZXhwIjoxNjk3MTI0NjYwLCJqdGGkiOiJjYTgxM2U4My03YTBlLTQ0MTctODMyZC0zO
TFhNTA2OGFjZDUifQ.vHZkp9nDpybGdUnn1wnnv2x0XWcpYpr34ggGY0oC2P9voWEK
0Bqh59b4zcvrz2S-
ImycNL8RwesvTVsRWrLRs9QIVJcPdqo6b3zVH5AN3zNeOwsfGJsROY7m3VQZ-
8prfD_1GAC6cC--B6B1GnmScJ9dxaRDsYfOImXbQtieG-
sVGq2SRfWyRemJD2PBH3s4UZCgQDkTMDsImPvnKDkqmatHGwCjYWLJJk9ajG6G-
k1CLlSkBXtUyaL29x16SJGBhRR6owoweQ54OY12wXccnUDOGQ0QFCaH32Ocfh6rE5v
M_HusBvP2o6ILuu-2ciAyCYGiMgQDkE5sMOLVOERiCw;
TS01e8828b=01f85cdc3cd65aade26503bb357b0fc85a8faa097255d642a34a905953db6030a1
5d9e297f47e18dea0ea8d6548b527164ba3d8426f964e35115b2f556c7b0230681e273b902423
e76e1f61c7374644fb29562bd0756dc0ec47fd9e4860f67109e14ee50b4927689e34f8b6c7a5e9
3bd9d2f84e091;
TS33367916027=085664378eab20005f6d552a0e3dcb6ab482c61a4463475d56d440134d92d1
7e2c4ff95db0e1c46708fb9cec231130007c72543bf19e84e4e91c371dad89deff56eeb5d037ea6
a02e0b398369e567544b5f10c16fc6c5651a3e6352f28ef26be;
TS01e8828b=01f85cdc3cff0747976a3b309e1e7297735cdc6cc36e3b6f955ff1e6cbeb69ded4b5
85246362c3f44bded9c9fc0812471342b42029;
TS33367916027=085664378eab2000517ad57c223838ab294f8bf5ed07f3dfe99ad6cbf024479
3433db33afaec416b085438d37b1130005ef5407a7073e9db4193aface6a2ece13b06a1342a44b
ad1429f720d7014b7dc125ab80cf95559e7efa777608bf8fc05' \
--header 'Nonce: d17f187090ede6ab' \
--header 'Origin: https://mfsbaastest.grameenphone.com' \
--header 'Referer: https://mfsbaastest.grameenphone.com/dfscontainer/app.html' \
--header 'Sec-Fetch-Dest: empty' \
--header 'Sec-Fetch-Mode: cors' \
--header 'Sec-Fetch-Site: same-origin' \
--header 'User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36
(KHTML, like Gecko) Chrome/117.0.0.0 Safari/537.36' \
--header 'sec-ch-ua: "Google Chrome";v="117", "Not;A=Brand";v="8",
"Chromium";v="117"' \
--header 'sec-ch-ua-mobile: ?0' \
--header 'sec-ch-ua-platform: "Windows"' \
--data '{"resumeServiceRequestId":"0a24aaa1-3e71-4468-a7a7-
e7bc8aef6d31","otp":"560727","serviceCode":"LOGIN_POLICY"}'

Fields	Type	Description		Example/Allowed Values	
loginValidateRequest	API to validate OTP and generate token for device login.				
		Fields	**Type**	**Description**	**Example/Allowed Values**
		otp *	String	OTP received on registered mobile number. Length-6 digit	213131
		resumeService	String	Whenever an API is called,	9ee59b43-46ac-

Fields	Type	Description		Example/Allowed Values
		RequestId *		Comviva generates a unique service request ID for the API request. This unique ID traverses' components in the business process flow. It is useful when the process flow is paused for the user input and needs to be resumed when user has provided the input. Length-36 characters	4d75-b1c0-b1b10b187abd

Sample Request Body

```
{"resumeServiceRequestId":"0a24aaa1-3e71-4468-a7a7-
e7bc8aef6d31","otp":"560727","serviceCode":"LOGIN_POLICY"}
```

Response Body

Code: 200

Access token generated successfully.

Fields	Type	Description	Example/Allowed Values
LoginWithOTPResponseModel		Login response model with token	
language	String	Preferred language of the user. By default, system supports 3 languages English/French/Arabic.	En, ar, fr
lastLoginTime	String	Time stamp of last login of the user.	2020-10-13T02:47:56
message *	String	The API response message that shows the type of information returned.	OTP validation is required. Please enter OTP to continue
serviceFlow	String	A unique code that is internal to Comviva and identifies the business process flow associated to the API.	OTPLOGIN
serviceRequestId *	String	Whenever an API is called, Comviva generates a unique service request ID for the API request. This unique ID traverses' components in the business process flow. It is useful when the process flow is paused for the user input and needs to be resumed when user has provided the input. Length-36 characters	f491f6b1-aa9b-43de-93b0-c85eda706a2c
status *	String	The status to show whether the	SUCCEEDED, FAILED,

Fields	Type	Description	Example/Allowed Values
		API call is a success, failure, in progress, or paused.	INPROGRESS, or PAUSED
token	String	TokenData	

Fields	Type	Description	Example/Allowed Values
access_token *	String	Access token is used for token based authentication to allow an application to access an API. The application receives an Access Token after a user successfully authenticates and authorizes access. User can then pass this access token as a credential to perform any transactions in the application. Access tokens are short-lived tokens.	asdfqwrtwy
expires_in	Integer ($int32)	Validity period (in seconds) for accessing the token.	299
refresh_token	String	Once the access token expires, you can use the refresh token to get the new access token. Refresh tokens also expire but they are supposed to live much	asdfqwrtwy

Fields	Type	Description		Example/Allowed Values	
				longer than the access token. Max Length-256 characters	
transactionId *	String	The unique id generated by the Comviva platform for the transaction. Length-20 characters		XX220316.0959.A15026	
txnStatus	String	Defines the five different statuses of the transaction. Not Applicable for Non-Financial APIs TI – Transaction Initiated TS – Transaction Succeeded TF – Transaction Failure TP – Transaction Paused TA – Transaction Ambiguous		Transaction Success	
userId	String	Unique ID generated by the system after successful user registration. Length-20 characters		US.k6GH1579603850092	

Sample Response Body

```
{
        "serviceRequestId": "8dd2d378-21d2-4bf8-a363-f023792e15bb",
        "message": "Login Successfully",
        "transactionId": null,
        "txnStatus": null,
        "serviceFlow": "LOGIN_POLICY",
        "status": "SUCCEEDED",
        "language": "en",
        "token": {
            "access_token":
"eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcHVibGljLTEifQ.
eyJzZXJ2aWNlUmVxdWVzdElkIjoiOGY5NmRiYzQtZWRkMS00NWNiLWI2YjEtMWUzYTc2ZjQy
ZTBjIiwidXNlcl9uYW1lIjoiOGY5NmRiYzQtZWRkMS00NWNiLWI2YjEtMWUzYTc2ZjQyZTBj
IiwiYXV0aG9yaXphdGlvblByb2ZpbGVDb2RlIjoiU3Vic0tlZmF1bHQiLCJpZGVudGlmaWVy
VmFsdWUiOiI3Nzc0Njg0MzU5IiwiaWRlbnRpZmllclR5cGUiOiJNU0lTRE4iLCJjYXRlZ29y
eUNvZGUiOiJTVUJTIiwidXNlcklkIjoiVVMuNTMwMTY3NTM5OTE5ODU5NCIsImRldmljZUlk
IjpudWxsLCJhdXRob3JpdGllcyI6WyJST0xFX1VTRVIiXSwiY2xpZW50X2lkIjoiQ29yZVdl
YiIsInNjb3BlIjpbIkdFVF9VU0VSX0FORF9BQ0NPVU5UX0RFVEFJTFMiLCJTRUxGU0VUQVVU
```

SEZBQ1RPUiIsIkZFVENIX1VTRVJfUVVFU1RJT04iLCJUWE5DT1JSRUNUIiwiQVRNQ0FTSE9V
VCIsIkFUTUNBU0hPVVRfVjQiLCJBRE1UWE5SRUZIRCJdLCJuYW1lIjoiU3Vic2NyaWJlciBI
YWdlbmVzIiwiYmVhcmVyQ29kZSI6IldFQiIsImV4cCI6MTY3NTkyMTU2NiwianRpIjoiMzM5
ODRmYTYtNzFhYi00MmVmLTgyZDYtMTY1ZWUwZDRlMmZlIn0.WFcZiMSapOAMdouIKj2bKkmU
dtWST78bY71-
gN8OIpGIFmJXFJMx9AwwhEPtB6vsqJ5RQebVyn26OlMopD_IzRKdSxx4V5hfaFgx1kcIQocv
lvgmGx14aW-
QcUJxcqVoIU3hPddj0iZ1Hz0Tlab8czJ5edOkk0qIDTh8BvutwVKLAOYHl6dpKwxn6_PHSzF
poH9qi9jb6fgEFXBDIKhDbj9CqPUUl7iAvbEBD42wkJQyemqu4-
9eETbsbugX5PVjol2_CYUdbLAJgmGwwlEYlFOQ2GTk6bPdfzG5ImhNRigv9P9kK5aeCdb2rM
3qZcqQ2GI_FvLFlUQS0zDVhNKWnA",
            "expires_in": 2999,
            "refresh_token":
"eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcHVibGljLTEifQ.
eyJzZXJ2aWNlUmVxdWVzdElkIjoiOGY5NmRiYzQtZWRkMS00NWNiLWI2YjEtMWUzYTc2ZjQy
ZTBjIiwidXNlcl9uYW1lIjoiOGY5NmRiYzQtZWRkMS00NWNiLWI2YjEtMWUzYTc2ZjQyZTBj
IiwiYXV0aG9yaXphdGlvbiByb2ZpbGVDb2RlIjoiU3Vic0RlZmF1bHQiLCJpZGVudGlmaWVy
VmFsdWUiOiI3Nzc0Njg0MzU5IiwiaWRlbnRpZmllclR5cGUiOiJNU0lTRE4iLCJjYXRlZ29y
eUNvZGUiOiJTVUJTIiwidXNlcklkIjoiVVMuNTMwMTY3NTM5OTE5ODU5NCIsImRldmljZUlk
IjpudWxsLCJhdXRob3JpdGllcyI6WyJST0xFX1VTRVIiXSwiY2xpZW50X2lkIjoiQ29yZVdl
YiIsInNjb3BlIjpbIkdFVF9VU0VSX0FORF9BQ0NPVU5UX0RFVEFJTFMiLCJTRTUxGU0VUQVVU
SEZBQ1RPUiIsIkZFVENIX1VTRVJfUVVFU1RJT04iLCJUWE5DT1JSRUNUIiwiQVRNQ0FTSE9V
VCIsIkFUTUNBU0hPVVRfVjQiLCJBRE1UWE5SRUZIRCJdLCJhdGkiOiIzMzk4NGGhNi03MWFi
LTQyZWYtODJkNi0xNjVlZTBkNGUyZmUiLCJuYW1lIjoiU3Vic2NyaWJlciBIYWdlbmVzIiwi
YmVhcmVyQ29kZSI6IldFQiIsImV4cCI6MTY3NTk0ODU2NiwianRpIjoiZmUzNDFlYmItN2Nl
YS00MTBjLWFkZmItZmJmYjA2MmI0NjFlIn0.UrYcUPmNEjr78tegJ6nGt897SVPF1_MRz5as
J-
1Epj62SqV3djq97fgivov5tvcSWxbDFNeT4cXINKHnIuI6rZUuu5G6q2E_fFI3DH4b4PIifv
TJ58BQnvGlDlL6XD14I3y4YQ3n4Cm4WkmMzRFTyDiyvzSC2Yg31qx9bqLW4G7_w80A6vn0SY
ZqFd2jEPt7WQCTspceK952vp9OWg6JFzVMZaZ49YuounMBLgBEBwxQaMrnfGSbI4_0DBwrb2
9buS0I4EG_SMroyrZMjkX-
lqkVISXKZJjPdu3ZvULniY54wxjN2uUUeYr1MKlR7X6qXkE11rO5lBeCaPzCQzuKNg"
        },
        "lastLoginTime": null,
        "userId": "US.5301675399198594",
        "sessionIdList": null
}

Error Codes

Error Code	Description
400	Bad request
500	Internal Server Error

Error scenario:
Http error code: 400.
Error Code: Generic06- Invalid input.

Response:
```
{
  "status": "FAILED",
  "errors": [
    {
      "code": "sfm.errors.invalid.resume.service.request.id",
      "message": "resume request id mandatory cannot have null or empty
value",
      "componentName": "SFM"
    }
```

```
  ],
  "errorCode": "Generic06",
  "errorUserMsg": "Invalid input.",
  "httpErrorCode": "400"
}
```

2.2 BillPayment Flow:

Current Flow:

- On UI (named as CBP / web-portal-application) : to fetch bill details of accounts and to pay pending bills in bulk, request is initiated from UI and it is stored in CBP DB for further processing. At this point request is just queued, no fetching or processing has take place.
- Second component scheduler will then pick these request from DB on timely basis and communicates with communicator component which will make hit to backend financial system(mobiquity) for Payment and third party system(Biller platform) for actual processing

New Flow:

Process flow will be similar to existing approach , but only change in integration.

- On UI (named as CBP / web-portal-application) : to fetch bill details of accounts and to pay pending bills in bulk, request is initiated from UI and it is stored in CBP DB for further processing. At this point request is just queued, no fetching or processing has take place.
- Second component scheduler will then pick these request from DB on timely basis and communicates with communicator component which will make hit to backend financial system(mobiquity) to fetch bill details or Payment request instead of Biller Platform.

   Refer section 2.2.1.1 for API to fetch bill details

- In fetch bill details it is simple API hit to mobiquity to fetch bill details instead of biller platform.
- For Payment also, communicator will send payment hit to just mobiquity. Not to biller. Mobiquity will in turn send hit to biller platform for any kind of third party integration. Communicator will not interact with biller platform.

   Refer section 2.2.1.2 for API to pay for Bill

- While sending hit to mobiquity, CBP has to ensure a unique reference ID is created, stored in mflex DB corresponding to each bill request and is sent to mobiquity to manage for any disputes in future.
- Communicator will just wait for Mobiquity response of Payment API. Response handling is mentioned below:
  - If it is Failed, then payment is also marked failed in mflex DB.
  - If success/pending or fulfilment initiated : then it is assumed that request is properly posted in mobiquity and now to check status of payment etc. mobiquity DB/ reports has to be inspected. All mobiquity reports will show corresponding unique ID created by CBP so as to track the transaction in mobiquity.
  - If no response from mobiquity for payment request, then all such transactions will be enquired in mobiquity with unique reference ID created at time of payment.
  - If success/fail response of enquiry then status is cleared in mFlex DB.
  - But if no response of enquiry, for a predefined configurable retries, then those are left uncleared in mflex DB, and all such transactions can be checked in Mobiquity reports.

Note :

Scheduler will pick only those records for enquiry for which they didn't get response back from mobiquity platform. No retry feature will be available in this scenario. If scheduler gets response back for payment API, then also any reference to the payments and third party response should be from mobiquity reports. It should not be checked from Bulk Billpay UI.

Expectations from partner :

- Communicator code need to be updated so it can now integrate with new mobiquity platform with updated API specifications to fetch bill details and for payment. These will be routed to mobiquity instead of direct biller integration.
- Logic of unique ID creation to be sent in mobiquity payment APIs
- Mobiquity response handling and Ambiguous payments settlement logic (enquiry , **not refund**) need to be updated accordingly in BillPay code.
- Email and SMS handling should be there as per current setup : integration with Email server and SMSGW

2.2.1   API Details:

2.2.1.1   Fetch Bill Details:

Request

```
curl --location --
request POST 'https://mfsbaastest.grameenphone.com/extensibility/fetchPendingBillsFormAggregator' \
--header 'Content-Type: application/json' \
--data-raw '{
"utility": "DSCO",
"consumer_id": "17021270" ,
"thirdParty" : "aggregator",
"params":{
  "MOB_NO":"9810036587"
  }
}'
```

Response

Case1: When multiple bills are pending

```
{
  "message": "OK",
  "code": 200,
  "utility": "DSCO",
  "account_no": "17021270",
  "bill_list": [
    {
      "bill_number": "012331291314",
      "due_date": "2023-08-14",
      "amount": 110.0,
      "service_charge": 0.0,
      "detail": {
        "accountNo": "31291311",
        "billNo": "012331291314",
```

```json
        "billMonth": "07",
        "billYear": "2023",
        "totalKwh": "333",
        "amount": "100.0",
        "lpc": "10.0",
        "vat": "10.0",
        "issueDate": "14-07-2023",
        "dueDate": "14-08-2023",
        "paymentStatus": "UNPAID"
      }
    },
    {
      "bill_number": "022331291311",
      "due_date": "2023-03-16",
      "amount": 220.0,
      "service_charge": 0.0,
      "detail": {
        "accountNo": "31291311",
        "billNo": "022331291311",
        "billMonth": "2",
        "billYear": "2023",
        "totalKwh": "262",
        "amount": "200.0",
        "lpc": "20.0",
        "vat": "20.0",
        "issueDate": "15-02-2023",
        "dueDate": "16-03-2023",
        "paymentStatus": "UNPAID"
      }
    },
    {
      "bill_number": "032331291311",
      "due_date": "2023-04-12",
      "amount": 330.0,
      "service_charge": 0.0,
      "detail": {
        "accountNo": "31291311",
        "billNo": "032331291311",
        "billMonth": "3",
        "billYear": "2023",
        "totalKwh": "31",
        "amount": "300.0",
        "lpc": "30.0",
        "vat": "30.0",
        "issueDate": "14-03-2023",
```

```
          "dueDate": "12-04-2023",
          "paymentStatus": "UNPAID"
        }
      }
    ]
}
```

Case2: When single bill is pending
```
{
 "message": "OK",
   "code": 200,
   "utility": "JGDCL",
   "account_no": "1233",
   "bill_list": [
     {
        "bill_number": "3265725864641415",
        "due_date": null,
        "amount": 430.0,
        "service_charge": 0.0,
        "detail": null
     }
   ]

}
```

Case3: When no bills are pending
```
{
   "message": "OK",
   "code": 200,
   "utility": "JGDCL",
   "account_no": "601130401",
   "bill_list": []
}
```

Case4: When mandatory field consumer ID is missing
```
{
   "message": "Consumer Id can not be empty",
   "code": 422
}
```

Case5: Invalid Utility
```
{
   "message": "This API is not applicable for the specific utility",
   "timestamp": 1695725748098,
   "status": 403
```

}

2.2.1.2 Pay Bill:

Request:

curl --location 'https://mfsbaastest.grameenphone.com/jigsaw/v1/order/billpay' \
--header 'Content-Type: application/json' \
--header 'Cookie: TS01e8828b=01f85cdc3c45009be88b8dc2907cb422c9dbc891322e3041a5eaaddab62191ca99 3f8f9770073e7f762285741e428429f81081c459' \
--data '{

```
  "bearerCode": "MOBILE",
  "currency": 101,
  "deviceInfo": {
    "appVersion": 10.2,
    "deviceId": 990000862471854,
    "lattitude": 12.971599,
    "logitude": 77.594566,
    "mac": "00:1B:44:11:3A:B7",
    "model": "Oneplus10",
    "networkOperator": "Orange",
    "networkType": "4G",
    "os": "Android10",
    "providerIpAddress": "172.56.76.89"
  },
  "initiator": "sender",
  "language": "en",
  "partnerData":
{"billAccountNumber":"12345","billNumber":"12345","surcharge":"surcharge1","vat":"vat1"
,"other1":"other1","other2":"other2","billerName":"TTAS","billerCode":"TTAS"},
  "receiver": {
    "idType": "mobileNumber",
    "idValue": "01788886666",
    "productId": 12
  },
  "remarks": "remarks",
  "sender": {
    "idType": "mobileNumber",
    "idValue": "01755555555",
    "mpin": 13579,
```

```
        "paymentInstruments": [
            {
                "instrumentType": "WALLET",
                "amount": 1,
                "productId": 12
            }
        ],
        "userRole": "Channel"
    },
    "serviceFlowId": "BILLPAYOAP"
}'
```

Response:

Successfully initiated payment:

```
{
    "code": "process.fulfilment",
    "message": "Order is placed successfully",
    "orderId": "169647-825021-446643",
    "orderStatus": "PENDING",
    "serviceRequestId": "96c7bed5-e9bf-4f5e-96a4-3eaed32bddd3",
    "transactionTimeStamp": "2023-10-05T09:57:31"
}
```

Failed Response:

```
{
    "status": "FAILED",
    "language": "en",
    "mfsTenantId": "mfsPrimaryTenant",
    "errors": [
        {
            "code": "AUTH03",
            "message": "Provided Password Authentication is invalid. Remaining attem
pts: 3",
            "componentName": "user-authentication"
        }
    ],
    "transactionTimeStamp": "2023-10-05T09:58:43",
    "errorCode": "Authen01",
    "traceId": "79f0dc48-3ecb-441e-b70c-4adaab4d722c",
    "step": "validate.initiator:E.update.order.initiator.authentication.failed",
    "errorUserMsg": "Invalid credentials.",
    "orderId": "169647-832294-424111",
    "orderStatus": "FAILED",
    "orderState": "VALIDATION_FAILED",
    "httpErrorCode": "400"
}
```

2.3   Password Management Flow:

When any user forgets his password then user should have flexibility to get these reset via forget password feature on login page. Also once he login, then user can change his password on his own.

Current Flow:

In current platform, all password management is done at IDP page.
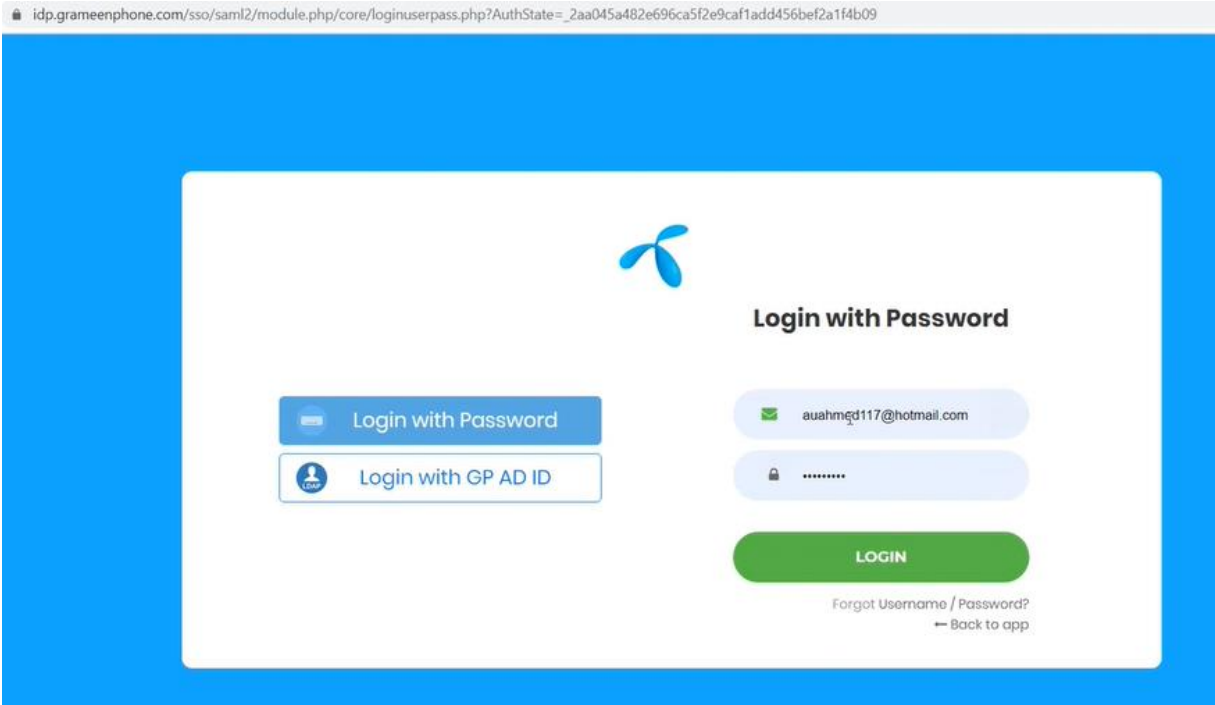
New Flow and Expectations from Partners:

Password management to be incorporated on Bulk UI portal in 2 ways:

1.   Give forgot password option on login page.
2.   User himself once logged in, can be given with Change password option

All 2 APIs need to have direct integration with Mobiquity for forgot password and change password.

Mobiquity will share APIs to achieve same. Partner can design pages.

Forgot password option may come like below:

Change Own password or reset password pages are new.

2.3.1   API Details:

2.3.1.1   Change Authentication Factor

Action: POST
Endpoint: /ums/v2/user/auth/change-credential
Description
Self-initiated change authentication (Pin/Password). User can change his old password to new password without answering security questions. This API is usually called for changing the default password given by mobiquity system for the first login after successful user registration.
Request body

Fields	Type	Description	Example/Allowed Values
Authorization	String	Authorization Token to pass header	eyJhbGciOiJSUzI1NiIsInR5 cCI6IkpXVCIsImtpZCI6Imp3cy1r
changeAuthentication FactorModel	String	Change Authentication service body. Cannot be empty.	
ChangeAuthentication FactorModel	String	Change Authentication Request Model	
requestedBy*	String	SELF for self request else unique ID of Requestor from Mobiquity System.	SELF
workspaceId*	String	Workspace is the classification of all users at high level. All users are clubbed together under three workspaces SUBSCRIBER/BUSINESS/ADMIN	SUBSCRIBER/BUSINESS/ADMIN
identifierType*	String	Access identifier type of the user like MSISDN/EMAIL/LOGINID/OTHE RID to perform reset.	MSISDN/EMAIL/LOGINID/OTHE RID
identifierValue*	String	Access identifier value associated with the identifier type selected. Mobile Number:8-15 Email: Max length-40 characters LOGINID-min length is 3 & max length is 20	7766990546
language	String	Preferred language of the user. By default, system supports 3 languages	En, Fr, Ar

Fields	Type	Description	Example/Allowed Values
		English/French/Arabic.	
oldauthenticationValue*	String	Old authentication value (PIN/Password) Of the user. Default length of pin is 4 Min password length is 5 & Max password length is 10 Pin/password also can be configured using security profile	4568
newauthenticationValue*	String	New authentication value (PIN/Password) Of the user. Default length of pin is 4 Min password length is 5 & Max password length is 10 Pin/password also can be configured using security profile	1357
confirmedauthenticationValue*	String	Re-Enter new authentication value to confirm. Default length of pin is 4 Min password length is 5 & Max password length is 10 Pin/password also can be configured using security profile	1357

Sample Request Body

```
curl --location
   'https://mfsbaastest.grameenphone.com/jigsaw/ums/v2/user/auth/change-
   credential' \

--header 'Accept: application/json, text/plain, */*' \

--header 'Accept-Language: en-US,en;q=0.9,hi;q=0.8' \

--header 'Connection: keep-alive' \

--header 'Content-Type: application/json;charset=UTF-8' \

--header 'Cookie: unq=c4dPpSLPIgO9yPZM;
   refresh_token=eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcH
   VibGljLTEifQ.eyJzZXJ2aWNlUmVxdWVzdElkIjoiMzM5YWM4ZTgtNGI3MS00NmM4LWIwOTY
   tNzE0MjMzNWZhZTNhIiwidXNlcl9uYW1lIjoiMzM5YWM4ZTgtNGI3MS00NmM4LWIwOTYtNzE
```

0MjMzNWZhZTNhIiwiYXV0aG9yaXphdGlvblByb2ZpbGVDb2RlIjoiTmV0YWRtaW5EZWZhdWx
0IiwiaWRlbnRpZmllclZhbHVlIjoiQW1hbjAxIiwiaWRlbnRpZmllclR5cGUiOiJMT0dJTkl
EIiwiY2F0ZWdvcnlDb2RlIjoiTldBRE0iLCJ1c2VySWQiOiJVUy4zMzU2NTI0OTM0NjM4MzE
1IiwiZGV2aWNlSWQiOim51bGwsImF1dGhvcml0aWVzIjpbIlJPTEVfVVNFUiJdLCJjbGllbnR
faWQiOiJDb3JlV2ViIiwic2NvcGUiOlsiR0VUX1VTRVJfQU5EX0FDQ09VTlRfREVUQUlMUyI
sIlNFTEZTRVRVBVVVRIRkDVE9SIiwiRkVUQ0hfVVNFUl9RVUVTTElPTiIsIlRYTkNPUlJFQ1Q
iLCJBVE1DQVNIT1VUIiwiQVRNQ0FTSE9VVF9XNCIsIkFETVRYTlJFRklEIl0sImF0aSI6IjV
iN2FlMWU4LWMxZTMtNDRjMS05MmFjLWRjY2OTE4MmM4YiIsIm5hbWUiOiJBbWFuIEFtYW4
iLCJiZWFyZXJDb2RlIjoiIiwiZXhwIjoxNjk3MjIxMDQ3LCJqdGkiOiIzZDRjNWQ2OS02N2N
iLTQzYzQtYjNhYy01MWI3MTQ1ZTA2MmYifQ.RvvCz02WwzcYyU92deafO3D9kkVvkXs6sNGa
rN_H4ItQMdxi2UHZrtuM4HgavZj5ybwudhnkx23Ur-
tkegluYo9600Fbc3on5JVyGvDCRf_n3IEzPzP_Xv1wQxpqYeGgp-xBIqsltej-
2lQsk565jV5fma9SIKYPKBbdjVRWrfZR64XkrxTfpG66xL3153xTzsQNpKSMJaX-
oqxL67vpfB9zmkbnf49mEip9codyDOqyAnMF5ziF8oxxiC_HDh6QOF2Hitc6BX_ugdm0236B
JNcpYO352aPnlgHs5kAmfFehYTnklshIwtjtG1YHwpluczGawEZ254x_i5lT-u61CA;
TS01e8828b=01f85cdc3c4193144a5196e34f94886729188b50dbcd9ec0d5d08bd867791
82ec116b1db77c6ddc5d76348eb13924f6240cdba354cd1deeecf9f2ccac165cd22d4e81
869d850cd9be48aa3275c1409b087a17ff8b5f4cb35d6eddcc53ce38b63df121247f267f
f06bcfe074a2dd498e13632799080;
TS33367916027=085664378eab2000fece8b7e6a08c8882c2e810760347737e490a304a7
d3574cf1c41f4082f0ad3008f1616e6c1130000450cd062c9ac8b5daedca2182a5c7012d
b2a7e432503b71294fa52c3223d20c6ae44ffa7dcdb4eb65611d3c32bb4b98;
TS01e8828b=01f85cdc3cb66a0320431ff33def6c6f15239030a5f4308df07469cb2c115
9d161c56ad0de44cc0bc2af109d59d22822de5da01e3c;
TS33367916027=085664378eab2000429722169bda1acba71172edfb2be1771ab6943a3e
a22507d34364023cd87fb408edfa74ce113000fafde979033332c3b37bcf3f686fc1b43e
2625b196d9b583c860fc23197fabbb2e148ffb5bb827a709eb1b7280e36750' \

--header 'Nonce: 490ded18fa1b019b' \

--header 'Origin: https://mfsbaastest.grameenphone.com' \

--header 'Referer:
   https://mfsbaastest.grameenphone.com/dfscontainer/app.html' \

--header 'Sec-Fetch-Dest: empty' \

--header 'Sec-Fetch-Mode: cors' \

--header 'Sec-Fetch-Site: same-origin' \

--header 'Signature:
   958a3a3bef29cd787973abd32fbbf4e716a5eebf763d6dead65ed4d1ff6c09b7' \

--header 'User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
   AppleWebKit/537.36 (KHTML, like Gecko) Chrome/117.0.0.0 Safari/537.36' \

--header 'sec-ch-ua: "Google Chrome";v="117", "Not;A=Brand";v="8",
   "Chromium";v="117"' \

--header 'sec-ch-ua-mobile: ?0' \

--header 'sec-ch-ua-platform: "Windows"' \

--data-raw '{

    "requestedBy": "SELF",

```
    "oldAuthenticationValue": "Com@8989",

    "newAuthenticationValue": "Com@4545",

    "confirmedAuthenticationValue": "Com@4545",

    "language": "en",

    "workspaceId": "ADMIN",

    "identifierType": "LOGINID",

    "identifierValue": "OTP01"

}'
```

Response Body

```
{

    "serviceRequestId": "79143bb4-9be3-4315-8cd8-33ee63703911",

    "message": "Authentication factor is successfully changed",

    "serviceFlow": "CHANGEAUTHFACTOR",

    "status": "SUCCEEDED",

    "userId": "US.462873139693364",

    "userName": null,

    "workspaceId": "ADMIN",

    "identifierType": "LOGINID",

    "identifierValue": "OTP01",

    "sessionIdList": [

      "dcbccb29-4aad-407d-a8b1-4738e53f478b"

    ]

}
```

Fields	Type	Description	Example/Allowed Values

Fields	Type	Description	Example/Allowed Values
AuthenticationRespons e	Strin g	User Authentication Response Model	
identifierType*	Strin g	Access identifier type of the user like MSISDN/EMAIL/LOGINID/OTHERI D to perform reset.	MSISDN/EMAIL/LOGINID/OTHERI D
identifierValue*	Strin g	Access identifier value associated with the identifier type selected. Mobile Number:8-15 characters Email: Max length-40 characters LOGINID-min length is 3 & max length is 20	7766990546
message*	Strin g	The API response message that shows the type of information returned. *No Specific length*	Your password is changed successfully.
serviceFlow	Strin g	A unique code that is internal to Comviva and identifies the business process flow associated to the API.	CHANGEAUTHFACTOR/ RESETAUTHFACTOR/ RESETAUTHBYADMIN
serviceRequestId*	Strin g	Whenever an API is called, Comviva generates a unique service request ID for the API request. This unique ID traverses' components in the business process flow. It is useful when the process flow is paused for the user input and needs to be resumed when user has provided the input. *Length-36 charachters*	f491f6b1-aa9b-43de-93b0-c85eda706a2c
status*	Strin g	The status to show whether the API call is a success, failure, in progress, or paused.	SUCCEEDED, FAILED, INPROGRESS, or PAUSED
workspaceId*	Strin g	Workspace is the classification of all users at high level. All users are clubbed together under three workspaces SUBSCRIBER/BUSINESS/ADMIN	SUBSCRIBER/BUSINESS/ADMIN

Fields	Type	Description	Example/Allowed Values
userId*	String	Unique ID generated by the system after successful user registration. Length-20(System generated)	US.k6GH1579603850092
userName	String	Name of the user.	Not set in response
language	String	Preferred language of the user. By default, system supports 3 languages English/French/Arabic.	En, Fr, Ar

Sample Response Body

```
curl --location
'https://mfsbaastest.grameenphone.com/jigsaw/ums/v2/user/auth/change-
credential' \
--header 'Accept: application/json, text/plain, */*' \
--header 'Accept-Language: en-US,en;q=0.9,hi;q=0.8' \
--header 'Connection: keep-alive' \
--header 'Content-Type: application/json;charset=UTF-8' \
--header 'Cookie: unq=c4dPpSLPIgO9yPZM;
refresh_token=eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcHVib
GljLTEifQ.eyJzZXJ2aWNlUmVxdWVzdElkIjoiMzM5YWM4ZTgtNGI3MS00NmM4LWIwOTYtNzE0M
jMzNWZhZTNhIiwidXNlcl9uYW1lIjoiMzM5YWM4ZTgtNGI3MS00NmM4LWIwOTYtNzE0MjMzNWZh
ZTNhIiwiYXV0aG9yaXphdGlvblByb2ZpbGVDb2RlIjoiTmV0YWRtaW5EZWZhdWx0IiwiaWRlbnR
pZmllclZhbHVlIjoiQW1hbnMxIiwiaWRlbnRpZmllclR5cGUiOiJNC0dJTklEIiwiY2F0ZWdvcn
lDb2RlIjoiTldBRE0iLCJ1c2VySWQiOiJVUy4zMzU2NTI0OTM0Nm4MzE1IiwiZGV2aWNlSWQiO
m51bGwsImF1dGhvcml0aWVzIjpbIlJPTEVfVVNFUiJdLCJjbGllbnRfaWQiOiJDb3JlV2ViIiwi
c2NvcGUiOlsiR0VUX1VTRVJfQU5EX0FDQ09VTlRfREVUQUlMUyIsIlNFTEZTRVJWRBVVRIRkFDVE9
SIiwiRkVUQ0hfVVNFFU5RUVVTVElPTiIsIlRYFkNPUlJQ1QiLCJBVE1DQVNIIIUVUIiwiQVRNQ0
FTSE9VVF9WNCIsIkFFTVRYTlJFRklEIl0sImF0aSI6IjViN2FlMWU4LWMxZTMtNDRjMS05MmFjL
WRjYzY2OTE4MmM4YiIsIm5hbWUiOiJBBmFuIEFtYW4iLCJiZWFyZXJDb2RlIjoiIiwiZXhwIjox
Njk3MjIxMDQ3LCJqdGkiOiIzZDRjNWQ2OS02N2NiLTQzYzQtYjNhYy01MWI3MTQ1ZTA2MmYifQ.
RvvCz02WwzcYyU92deafO3D9kkVvkXs6sNGarN_H4ItQMdxi2UHZrtuM4HgavZj5ybwudhnkx23
Ur-tkegluYo9600Fbc3on5JVyGvDCRf_n3IEzPzP_Xv1wQxpqYeGgp-xBIqsltej-
2lQsk565jV5fma9SIKYPKBbdjVRWrfZR64XkrxTfpG66xL3153xTzsQNpKSMJaX-
oqxL67vpfB9zmkbnf49mEip9codyDOqyAnMF5ziF8oxxiC_HDh6QOF2Hitc6BX_ugdm0236BJNc
pYO352aPnlgHs5kAmfFehYTnklshIwtjtG1YHwpluczGawEZ254x_i5lT-u61CA;
TS01e8828b=01f85cdc3c4193144a5196e34f94886729188b50dbcd9ec0d5d08bd86779182e
c116b1db77c6ddc5d76348eb13924f6240cdba354cd1deeecf9f2ccac165cd22d4e81869d85
0cd9be48aa3275c1409b087a17ff8b5f4cb35d6eddcc53ce38b63df121247f267ff06bcfe07
4a2dd498e13632799080;
TS33367916027=085664378eab2000fece8b7e6a08c8882c2e810760347737e490a304a7d35
74cf1c41f4082f0ad3008f1616e6c1130000450cd062c9ac8b5daedca2182a5c7012db2a7e4
32503b71294fa52c3223d20c6ae44ffa7dcdb4eb65611d3c32bb4b98;
TS01e8828b=01f85cdc3cb66a0320431ff33def6c6f15239030a5f4308df07469cb2c1159d1
61c56ad0de44cc0bc2af109d59d22822de5da01e3c;
TS33367916027=085664378eab2000429722169bda1acba71172edfb2be1771ab6943a3ea22
507d34364023cd87fb408edfa74ce113000fafde979033332c3b37bcf3f686fc1b43e2625b1
96d9b583c860fc23197fabbb2e148ffb5bb827a709eb1b7280e36750' \
--header 'Nonce: 490ded18fa1b019b' \
--header 'Origin: https://mfsbaastest.grameenphone.com' \
--header 'Referer:
https://mfsbaastest.grameenphone.com/dfscontainer/app.html' \
--header 'Sec-Fetch-Dest: empty' \
--header 'Sec-Fetch-Mode: cors' \
```

```
--header 'Sec-Fetch-Site: same-origin' \
--header 'Signature:
958a3a3bef29cd787973abd32fbbf4e716a5eebf763d6dead65ed4d1ff6c09b7' \
--header 'User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/117.0.0.0 Safari/537.36' \
--header 'sec-ch-ua: "Google Chrome";v="117", "Not;A=Brand";v="8",
"Chromium";v="117"' \
--header 'sec-ch-ua-mobile: ?0' \
--header 'sec-ch-ua-platform: "Windows"' \
--data-raw '{
    "requestedBy": "SELF",
    "oldAuthenticationValue": "Com@8989",
    "newAuthenticationValue": "Com@4545",
    "confirmedAuthenticationValue": "Com@4545",
    "language": "en",
    "workspaceId": "ADMIN",
    "identifierType": "LOGINID",
    "identifierValue": "OTP01"
}'
```

Error Codes

Error Code	Description
400	Bad request
500	Internal Server Error

Error scenario:

Http error code: 400

Error Code: Generic04- Mandatory field can't be empty.

Response:

```
o {
  "txnStatus": "TF",
  "status": "FAILED",
  "language": "en",
  "mfsTenantId": "mfsPrimaryTenant",
  "errors": [
    {
      "code": "WORK02",
      "message": "Workspace is mandatory",
      "componentName": "user-authentication"
    }
  ],
  "transactionTimeStamp": "2023-03-30T01:23:13",
  "errorCode": "Generic04",
  "traceId": "352e62e0-7053-497d-8f2d-0ce13d1ac446",
  "step": "get.userid.service",
  "errorUserMsg": "Mandatory field can't be empty",
  "httpErrorCode": "400"
}
```

2.3.1.2 Forget Authentication API

This section will tell you all APIs to be called in sequence to reset login credentials

1. Initiate reset authentication via OTP
2. Validate OTP

3. Confirm new authentication values

2.3.1.2.1 Validate Self-Set Authentication Value with OTP

Action: POST
Endpoint: /v2/ums/user/auth/self-set-auth/initiate
Description
This API is used to initiate change authentication value (Pin/Password) with two factor authentication (OTP).
Request body

Fields	Type	Description	Example/Allowed Values
Authorization	String	Authorization Token to pass header	eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1r
adminResetAuthenticationFactorModel	String	Self-initiated change authentication with otp service body. Cannot be empty.	
SelfSetAuthenticationFactorWithOtpModel	String	Self-Set Authentication with OTP Request Model	
bearerCode *	String	Access bearer channel from which the request is raised.	Web, USSD, Core Web, Mobile App
identifierType*	String	Access identifier type of the user like MSISDN/EMAIL/LOGINID/ OTHERID to perform reset.	MSISDN/EMAIL/LOGINID/ OTHERID
identifierValue*	String	Access identifier value associated with the identifier type selected. Mobile Number:8-15 Email: Max length-40 characters LOGINID-min length is 3 & max length is 20	7766990546
language	String	Preferred language of the user. By default, system supports 3 languages English/French/Arabic.	En, Fr, Ar
workspaceId*	String	Workspace is the classification of all users at	SUBSCRIBER/BUSINESS/ADMIN

Fields	Type	Description	Example/Allowed Values
		high level. All users are clubbed together under three workspaces SUBSCRIBER/BUSINESS/ADMIN	

Sample Request Body

```
curl --location
'https://mfsbaastest.grameenphone.com/mobiquitypay/v2/ums/user/auth/self-
set-auth/initiate' \
--header 'Content-Type: application/json' \
--header 'Authorization: Bearer
eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcHVibGljLTEifQ.eyJz
Y29wZSI6WyJHRVRfVVNFUl9BTkRfQUNDT1VOVF9ERVRBSUxTIiwiU0VMRlNFVEFVVEhGQUNUT1I
iLCJGRVRDSF9VU0VSX1FVRVNUUSU9OIiwiVFhOQ09SUkVDVDVCIsIkFUTUNBU0hPVVQiLCJBVE1DQV
NIT1VUX1Y0IiwiQURNVFhOUkVWGVSUQiXSwiZXhwIjoxNjk3MTkwMzI3LCJhdXRob3JpdGllcyI6W
yJST0xFX0NNSUVOVCJdLCJqdGkiOiI4NzMzMmUxMy1iMzBhLTQxNTgtOWYyMi1hMWZhOGZkYWY1
ZDQiLCJjbGllbnRfaWQiOiJDb3JlV2ViIn0.D4uTGHwmziIVbZgUPa85BR2wQzcU6DbcAc_oMyj
wAUPOVXt4N2ti91EotTI6GpApAtwCXbIjhpPlk8HipPXq1me5Ui6zKu7kZAlkEUqZT8R5iEkVth
PKxXKhHvH2XYOU3Iq9ol1o8XGFM5L12Hc_wb5iUfn7Sl4IFro-8Kt4muun0L-ai4o8Eqh7-
ZKBAyKVdRQqKD_1M-
D7oYIJXlkRBUmjHwwAVJSf5kFybVVlpV8U6ldYrUqt_uyTbVf8PzGkm5GvQq4MNlDaVvyJZ-
SmSNBLJQSGGoanYerpCUG73kp_bOYlAHKVO7afHLN67mYu8Ck59S8l-ycv3XIgxLqh4g' \
--header 'Cookie:
TS01e8828b=01f85cdc3c457214bcde5852bf9c955be3074eb2238e8122302b6b9ebb50a15e
56d81e8a03cd979693acc4df7bb0b5dd63081d0822;
TS33367916027=085664378eab20002075bddbba8e81e1840f3ebc2f3cd2aea7bdbf72cffe2
d381dd6ee61ce92fcf708e57e2907113000fd0d73614c37dfc97541eb8291406460f5dcb46f
08728a412e5d86bb95d6364d63eec9acad2e5ae8b2fd7c35f938da39' \
--data
'{"requestedBy":"SELF","workspaceId":"ADMIN","identifierType":"LOGINID","id
entifierValue":"OTP01","language":"en","bearerCode":"WEB","deviceInfo":{"ap
pName":"MobiquityPayChannel","appVersion":"10.03.0.01","deviceId":"17cf27d2
-871b-42d2-aa4c-2930bed0f5e6","isPublicDevice":"N","model":"Google
sdk_gphone_x86","os":"ANDROID"}} Response'
```

Response Body

```
{
    "serviceRequestId": "cfd43988-7adf-4168-bdcd-0523ce0a8634",
    "mfsTenantId": "mfsPrimaryTenant",
    "language": "en",
    "serviceFlow": "SELFSETAUTHMFA",
    "transactionTimeStamp": "2023-10-13T15:42:03",
    "originalServiceRequestId": "cfd43988-7adf-4168-bdcd-0523ce0a8634",
    "code": "otp.validation.required",
    "message": "OTP validation is required. Please enter OTP to continue",
    "status": "PAUSED"
}
```

Fields	Type	Description	Example/Allowed Values

Fields	Type	Description	Example/Allowed Values
SelfSetAuthenticationFactor WithOtpResponse	String	Self-Set Authentication with OTP Response model.	
Code	String	Step code where the request is paused for user input.	otp.validation.required OR security.answer.required
language	String	Preferred language of the user. By default, system supports 3 languages English/French/Arabic.	En, Fr, Ar
message*	String	The API response message that shows the type of information returned.	OTP validation is required. Please enter "OTP" to continue OR "Answer" for security question is required. Please enter the correct answer to continue.
mfsTenantId	String	MFS Tenant ID of the user	mfsPrimaryTenant
originalService RequestId *	String	The Original Service Request ID Length-36 charachters	da371e6e-db02-472b-94c3-2ad2f79dfd09
serviceFlow	String	A unique code that is internal to Comviva and identifies the business process flow associated to the API.	SELFSETAUTHMFA
serviceRequestId*	String	Whenever an API is called, Comviva generates a unique service request ID for the API request. This unique ID traverses' components in the business process flow. It is useful when the process flow is paused for the user input and needs to be resumed when user has provided the input. Length-36 charachters	f491f6b1-aa9b-43de-93b0-c85eda706a2c
status*	String	The status to show whether the API call is a success, failure, in progress, or paused.	SUCCEEDED, FAILED, INPROGRESS, or PAUSED
transactionTimeStamp *	String	The date and time of transaction in the format YYYY-MM-DD and HH:MM:SS respectively.	2023-01-31T15:49:45

Sample Response Body

```
{
    "serviceRequestId": "cfd43988-7adf-4168-bdcd-0523ce0a8634",
    "mfsTenantId": "mfsPrimaryTenant",
    "language": "en",
```

```
    "serviceFlow": "SELFSETAUTHMFA",
    "transactionTimeStamp": "2023-10-13T15:42:03",
    "originalServiceRequestId": "cfd43988-7adf-4168-bdcd-0523ce0a8634",
    "code": "otp.validation.required",
    "message": "OTP validation is required. Please enter OTP to continue",
    "status": "PAUSED"
}
```

Error Codes

Error Code	Description
400	Bad request
500	Internal Server Error

Error scenario:

Http error code: 400.

Error Code: invalid.value- Unexpected value 'QR_CODE_TYPE_DYNAMIC'.

Response:

```
{"traceId":null,"errorUserMsg":"Bad
Request","errors":[{"code":"invalid.value","message":"Unexpected value
'LOGINI'"}],"step":null,"referenceId":null,"status":"FAILED","httpErrorCode
":"400"}
```

2.3.1.2.2   Validate OTP for Self-Set Authentication Value

Action: POST
Endpoint: /v2/ums/user/auth/self-set-auth/validate-otp
Description
This API is used to validate the OTP entered for self-initiated change authentication value (Pin/Password).

Sample Request body :

curl --location 'https://mfsbaastest.grameenphone.com/mobiquitypay/v2/ums/user/auth/self-set-auth/validate-otp' \
--header 'Accept: application/json, text/plain, */*' \
--header 'Accept-Language: en-US,en;q=0.9,hi;q=0.8' \
--header 'Connection: keep-alive' \
--header 'Content-Type: application/json;charset=UTF-8' \
--header 'Cookie: unq=c4dPpSLPIgO9yPZM;
refresh_token=eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcHVibGlj
LTEifQ.eyJzZXJ2aWNlUmVxdWVzdElkIjoiMzM5YWM4ZTgtNGI3MS00NmM4LWIwOT
YtNzE0MjMzNWZhZTNhIiwidXNlcl9uYW1lIjoiMzM5YWM4ZTgtNGI3MS00NmM4LWI
wOTYtNzE0MjMzNWZhZTNhIiwiYXV0aG9yaXphdGlvblByb2ZpbGVDb2RlIjoiTmV0Y
WRtaW5EZWZhdWx0IiwiaWRlbnRpZmllclZhbHUiOiJQW1hbjAxIiwiaWRlbnRpZmllclR5
cGUiOiJMT0dJTklEIiwiY2F0ZWdvcnlDb2RlIjoiTldBRE0iLCJ1c2VySWQiOiJVUy4zMzU
2NTI0OTM0NjM4MzE1IiwiZGV2aWNlSWQiOm51bGwsImF1dGhvcml0aWVzIjpbIlJPTE
VfVVNFUiJdLCJjbGllbnRfaWQiOiJDb3JlV2ViIiwic2NvcGUiOlsiR0VUX1VTRVJfQU5E
X0FDQ09VTlRfREVUQUlMMyIsIlNFTEZTRVRBVVRIRkFVE9SIiwiRkVUQ0hfVVNF
Ul9RVUVTVElPTiIsIlRYTkPVlJFQ1QiLCJVE1DQVNIT1VUIiwiQVRNQ0FTSE9VVF
9WNCIsIkFETVRYTlJFRklEIl0sImF0aSI6ImQ2NGRjMDU4LWM1MjgtNGYyNy1hMDI2
LTMzZGRjZGJjZDZkZCIsIm5hbWUiOiJBbWFuIEFtYW4iLCJiZWFyZXJDb2RlIjoiIiwiZ
XhwIjoxNjk3MjE3NTg1LCJqdGkiOiJhNzA3MGM3Ni04ZDg2LTQ3MmUtYTYxOS03YW
MyMTJjYTViNmYifQ.jPBlVRKmPMl2Z_-trAWWLxajZzDRh2KjCmsX-
kwVHKXr3DPOMN17G9VW1PiY2ZaEqR3Y2H6nRxIkFXz6MOoIll30UEqljuOpB6V95l9c
NURFq06evqFwIasfs6jIzmxV7by1iNlHNR5m1KMMF42D8L9en8h0lAVf9Hb4VaX_I_GL2
GAnbUjyn7SM28njVx3Q9ZF6UDORlrAQVTbdW1uzimGXKLhoYtzE_nupf-
w2ksToC0dOKsY5fKB7U9aO-
qjXnPBBXJIrmUvM25J9fPmyNCiP0YNGeCktyIbASOAwIbV9HyEu1-
VOWnSKA1w06KeUIaS3bebf5maPznh88J1GgQ;
TS01e8828b=01f85cdc3ceaccb0e0dd4d85ebf7b7dddaea5ae0f3944a191229a40ce8bad051d54
1990c8462523f2db0fe252be3d31f3cdb37758fde55c4845375f9941e6e3d38e3141a71228d43f
32497bf609ae9f1c048bf4aeea2e051d3b0030cee573634d855d3616a3a9d7319297d1dd455fff7
d420a65643;
TS33367916027=085664378eab20003e46c7461c225006eba2cd3cb988d1c6eea59dd23027e6
27bc15326ac15e177f081689eb9c113000bbb3fc5fd604827c4e734e6887a45fbc9205a19d46fd
6b3959b0dbf2bc96af9228efe46927ad4ed0deddc47a7050ebbc;
TS01e8828b=01f85cdc3cc4c735ef2d04975ee799b43c280a5acda09245bf7e07a400768132bf9
9bd0fcf0fa6db3629c68a2c243e3fe394e2521d;
TS33367916027=085664378eab200030e7e937866eff56d79adfc2e3953b18afaa55d66c416cf3

87b180f4d11ac3a408364762be1130006bae8939e0d4fa429f87dfe7f9c417e75552f134113441
63a739081e1395ef08a0cfe5a4cf6325c271c6efd08467b62f' \
--header 'Nonce: b03c046cdf821a64' \
--header 'Origin: https://mfsbaastest.grameenphone.com' \
--header 'Referer: https://mfsbaastest.grameenphone.com/dfscontainer/app.html' \
--header 'Sec-Fetch-Dest: empty' \
--header 'Sec-Fetch-Mode: cors' \
--header 'Sec-Fetch-Site: same-origin' \
--header 'Signature:
7066ce421a0d842145c11be84e53dd5d3fdc8868c34d65d7dc8d36504fd6dba7' \
--header 'User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36
(KHTML, like Gecko) Chrome/117.0.0.0 Safari/537.36' \
--header 'sec-ch-ua: "Google Chrome";v="117", "Not;A=Brand";v="8",
"Chromium";v="117"' \
--header 'sec-ch-ua-mobile: ?0' \
--header 'sec-ch-ua-platform: "Windows"' \
--data '{
    "language": "en",
    "otp": "655336",
    "resumeServiceRequestId": "cfd43988-7adf-4168-bdcd-0523ce0a8634"
}'

Request body :

Fields	Type	Description	Example/Allowed Values
adminResetAuthenticationFactorModel	String	Validate OTP for self-initiated change authentication with OTP service body. Cannot be empty.	
ValidateOtpSelfSetAuthenticationFactorWithOtpModel	String	Self Set Authentication with OTP Request Model	
language *	String	Preferred language of the user. By default, system supports 3 languages English/French/Arabic.	En, Fr, Ar
otp *	String	OTP received on registered mobile number. Length-6	213131
resumeServiceRequestId *	String	Whenever an API is called, Comviva generates a unique service request ID for the API request. This unique ID traverses' components in the business process flow. It is useful when the process flow is paused for the user	f491f6b1-aa9b-43de-93b0-c85eda706a2c

Fields	Type	Description	Example/Allowed Values
		input and needs to be resumed when user has provided the input. Length-36 characters (System generated)	

Sample Request Body

```
{
    "language": "en",
    "otp": "655336",
    "resumeServiceRequestId": "cfd43988-7adf-4168-bdcd-0523ce0a8634"
}
```

Response Body

Code: 200

Self-set authentication with OTP response.

Fields	Type	Description	Example/Allowed Values
ValidateOtpSelfSet AuthenticationFactor WithOtpResponse	String	Self-Set Authentication with OTP Response model.	
Code	String	Step code where the request is paused for user input.	new.authentication. value.required
language	String	Preferred language of the user. By default, system supports 3 languages English/French/Arabic.	En, Fr, Ar
message*	String	The API response message that shows the type of information returned.	new authentication value is required. Please enter new & confirmation values to continue.
mfsTenantId	String	MFS Tenant ID of the user	mfsPrimaryTenant
originalService RequestId *	String	The Original Service Request ID Length-36 characters	da371e6e-db02-472b-94c3-2ad2f79dfd09
serviceFlow	String	A unique code that is internal to Comviva and identifies the business process flow associated to the API.	SELFSETAUTHMFA
serviceRequestId*	String	Whenever an API is called, Comviva generates a unique service request ID for the API request. This unique	f491f6b1-aa9b-43de-93b0-c85eda706a2c

Fields	Type	Description	Example/Allowed Values
		ID traverses' components in the business process flow. It is useful when the process flow is paused for the user input and needs to be resumed when user has provided the input. Length-36 characters	
status*	String	The status to show whether the API call is a success, failure, in progress, or paused.	SUCCEEDED, FAILED, INPROGRESS, or PAUSED
transactionTimeStamp *	String	The date and time of transaction in the format YYYY-MM-DD and HH:MM:SS respectively.	2023-01-31T15:49:45

Sample Response Body

```
{
    "serviceRequestId": "a25e5e96-4f0e-4f89-af3d-1a6244f57441",
    "mfsTenantId": "mfsPrimaryTenant",
    "language": "en",
    "serviceFlow": "SELFSETAUTHMFA",
    "transactionTimeStamp": "2023-10-13T15:46:12",
    "originalServiceRequestId": "cfd43988-7adf-4168-bdcd-0523ce0a8634",
    "code": "new.auth.value.required",
    "message": "New authentication value is required. Please enter new and confirmation values to continue",
    "status": "PAUSED"
}
```

Error Codes

Error Code	Description
400	Bad request
500	Internal Server Error

Error scenario:
Http error code: 400.
Error Code: Generic05- No data found.

Response:
```
{
  "status": "FAILED",
  "errors": [
    {
      "code": "sfm.errors.resume.service.request.id.not.found",
      "message": "resume request id not found",
      "componentName": "SFM"
    }
  ],
  "errorCode": "Generic05",
  "errorUserMsg": "No data found",
```

```
  "httpErrorCode": "400"
}
```

2.3.1.2.3   Confirm Authentication Values after OTP Validation

Action: POST
Endpoint: /v2/ums/user/auth/self-set-auth/confirm
Description
This API is used to confirm new authentication value for self-initiated change authentication
value (Pin/Password) after OTP validation.

Request body :

Fields	Type	Description	Example/Allowed Values
adminResetAuthenticationFactorModel	String	set authentication value for Self-set authentication with otp service body. Cannot be empty.	
SetAuthenticationValueWithOtpModel	String	Self-Set Authentication with OTP Request Model	
confirmedAuthenticationValue*	String	Re-enter new password for confirmation. Default length of pin is 4 Min password length is 5 & Max password length is 10 Pin/password also can be configured using security profile	1234
newAuthenticationValue*	String	Enter new password/PIN Can be configured using security profile Default length of pin is 4	1234

Fields	Type	Description	Example/Allowed Values
		Min password length is 5 & Max password length is 10 Pin/password also can be configured using security profile	
language	String	Preferred language of the user. By default, system supports 3 languages English/French/Arabic.	En, Fr, Ar
resumeServiceRequestId*	String	System Generated Unique Id which determines the service flow Length- 36 characters (System generated)	f491f6b1-aa9b-43de-93b0-c85eda706a2c

Sample Request Body

```
curl --location
    'https://mfsbaastest.grameenphone.com/mobiquitypay/v2/ums/user/auth/self
    -set-auth/confirm' \

--header 'Accept: application/json, text/plain, */*' \

--header 'Accept-Language: en-US,en;q=0.9,hi;q=0.8' \

--header 'Connection: keep-alive' \

--header 'Content-Type: application/json;charset=UTF-8' \

--header 'Cookie: unq=c4dPpSLPIgO9yPZM;
    refresh_token=eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6Imp3cy1rZXktcH
    VibGljLTEifQ.eyJzZXJ2aWNlUmVxdWVzdElkIjoiMzM5YWM4ZTgtNGI3MS00NmM4LWIwOTY
    tNzE0MjMzNWZhZTNhIiwidXNlcl9uYW1lIjoiMzM5YWM4ZTgtNGI3MS00NmM4LWIwOTYtNzE
    0MjMzNWZhZTNhIiwiYXV0aG9yaXphdGlvblByb3ZpZGVyIjoiTmV0YWRtaW5EZWhdWx
    0IiwiaWRlbnRpZmllclZhbHVlIjoiQW1bjAxIiwiaWRlbnRpZmllclR5cGUiOiJMT0dJTkl
    EIiwiY2F0ZWdvcnlDb2RlIjoiTldBRE0iLCJ1c2VySWQiOiJVUy4zMzU2NTI0OTM0NjM4MzE
    1IiwiZGV2aWNlSWQiOm51bGwsImF1dGhvcml0aWVzIjpbIlJPTEVfVVNFUiJdLCJjbGllbnR
    faWQiOiJkb3JlV2ViIiwic2NvcGUiOlsiR0VUX1VTRVJfQU5EX0FDQ09VTF9fREVUQUlMUyyI
    sIlNFTEZTRTRVRBVVRIRkFDVE9SIiwiRkVUQ0hfVVNFUl9SVUVTVElPTiIsIlRYTkPUlJFQ1Q
    iLCJBVE1DQVNIT1VUIiwiQVRNQ0FTSE9VVF9WNCIsIkFETVRYTlJFRklEIl0sImF0aSI6ImQ
    2NGRjMDU4LWM1MjgtNGYyNy1hMDI2LTMzZGRjZGJjZDZkZCIsIm5hbWUiOiJBbWluEFtYW4
    iLCJiZWFyZXJDb2RlIjoiIiwiZXhwIjoxNjk3MjE3NTg1LCJqdGkiOiJhNzA3MGM3Ni04ZDg
    2LTQ3MmUtYTYxOS03YWMyMTJjYTViNmYifQ.jPBlVRKmPMl2Z_-
    trAWWLxajZzDRh2KjCmsX-
    kwVHKXr3DPOMN17G9VW1PiY2ZaEqR3Y2H6nRxIkFXz6MOoIll30UEqljuOpB6V95l9cNURFq
```

06evqFwIasfs6jIzmxV7by1iNlHNR5m1KMMF42D8L9en8h0lAVf9Hb4VaX_I_GL2GAnbUjyn
7SM28njVx3Q9ZF6UDORlrAQVTbdW1uzimGXKLhoYtzE_nupf-w2ksToC0dOKsY5fKB7U9aO-
qjXnPBBXJIrmUvM25J9fPmyNCiP0YNGeCktyIbASOAwIbV9HyEu1-
VOWnSKA1w06KeUIaS3bebf5maPznh88J1GgQ;
TS01e8828b=01f85cdc3ceaccb0e0dd4d85ebf7b7dddaea5ae0f3944a191229a40ce8bad
051d541990c8462523f2db0fe252be3d31f3cdb37758fde55c4845375f9941e6e3d38e31
41a71228d43f32497bf609ae9f1c048bf4aeea2e051d3b0030cee573634d855d3616a3a9
d7319297d1dd455fff7d420a65643;
TS33367916027=085664378eab2000d2ee20e60cf6c69918ee90b02feaaf93e0e1ffc7b9
4c3ea9010a09a12655b26108fcaf43b211300097d606c789d778d91e619c5e775d098504
73bc9e887e877d6ba64d43ea0a5977896f8096ba5f5917dce41e3f45421521;
TS01e8828b=01f85cdc3cc4c735ef2d04975ee799b43c280a5acda09245bf7e07a400768
132bf99bd0fcf0fa6db3629c68a2c243e3fe394e2521d;
TS33367916027=085664378eab2000e2f861779ca922a47ea0f5d303868474fdb5400199
295ee2257cb0ba988681a308f3d4df8711300094fad75a80452f7924d9a853bbabc5e0f7
cebcf61d31f5fec0eb4349217b9d417c42b90b507173c5887a0750835a5c4a' \

--header 'Nonce: f086e5d8266d1303' \

--header 'Origin: https://mfsbaastest.grameenphone.com' \

--header 'Referer:
    https://mfsbaastest.grameenphone.com/dfscontainer/app.html' \

--header 'Sec-Fetch-Dest: empty' \

--header 'Sec-Fetch-Mode: cors' \

--header 'Sec-Fetch-Site: same-origin' \

--header 'Signature:
    5a86ee76514b9513d49dab829365cecdf9f5eabc7c91b026c1fc6fe34f430681' \

--header 'User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
    AppleWebKit/537.36 (KHTML, like Gecko) Chrome/117.0.0.0 Safari/537.36' \

--header 'sec-ch-ua: "Google Chrome";v="117", "Not;A=Brand";v="8",
    "Chromium";v="117"' \

--header 'sec-ch-ua-mobile: ?0' \

--header 'sec-ch-ua-platform: "Windows"' \

--data-raw '{

    "confirmedAuthenticationValue": "Com@0822",

    "language": "en",

    "newAuthenticationValue": "Com@0822",

    "resumeServiceRequestId": "a25e5e96-4f0e-4f89-af3d-1a6244f57441"

}'

Response Body

```
{

    "serviceRequestId": "c7c35c94-6f8a-4709-8667-7ac77bf728ed",

    "mfsTenantId": "mfsPrimaryTenant",

    "language": "en",

    "serviceFlow": "SELFSETAUTHMFA",

    "transactionTimeStamp": "2023-10-13T15:48:19",

    "originalServiceRequestId": "cfd43988-7adf-4168-bdcd-0523ce0a8634",

    "code": "AUTH_04",

    "message": "Authentication factor is successfully changed",

    "status": "SUCCEEDED"

}
```

Fields	Type	Description	Example/Allowed Values
SetAuthenticationValue WithOtpResponse	String	Self Set Authentication with OTP Response model	
language	String	Preferred language of the user. By default, system supports 3 languages English/French/Arabic.	En, Fr, Ar
message*	String	The API response message that shows the type of information returned.	Authentication factor is successfully changed
mfsTenantId	String	MFS Tenant ID of the user	mfsPrimaryTenant
originalService RequestId *	String	The Original Service Request ID Length-36 characters	da371e6e-db02-472b-94c3-2ad2f79dfd09
serviceFlow	String	A unique code that is internal to Comviva and identifies the business process flow associated to the API.	SELFSETAUTHMFA
serviceRequestId*	String	Whenever an API is called, Comviva generates a unique service request	f491f6b1-aa9b-43de-93b0-c85eda706a2c

Fields	Type	Description	Example/Allowed Values
		ID for the API request. This unique ID traverses' components in the business process flow. It is useful when the process flow is paused for the user input and needs to be resumed when user has provided the input. Length-36 characters	
status*	String	The status to show whether the API call is a success, failure, in progress, or paused.	SUCCEEDED, FAILED, INPROGRESS, or PAUSED
transactionTimeStamp*	String	The date and time of transaction in the format YYYY-MM-DD and HH:MM:SS respectively.	2023-01-31T15:49:45

Sample Response Body

```
{

    "serviceRequestId": "c7c35c94-6f8a-4709-8667-7ac77bf728ed",

    "mfsTenantId": "mfsPrimaryTenant",

    "language": "en",

    "serviceFlow": "SELFSETAUTHMFA",

    "transactionTimeStamp": "2023-10-13T15:48:19",

    "originalServiceRequestId": "cfd43988-7adf-4168-bdcd-0523ce0a8634",

    "code": "AUTH_04",

    "message": "Authentication factor is successfully changed",

    "status": "SUCCEEDED"

}
```

Error Codes

Error Code	Description
400	Bad request
500	Internal Server Error

Error scenario:

Http error code: 400
Error Code: Generic05- No data found.
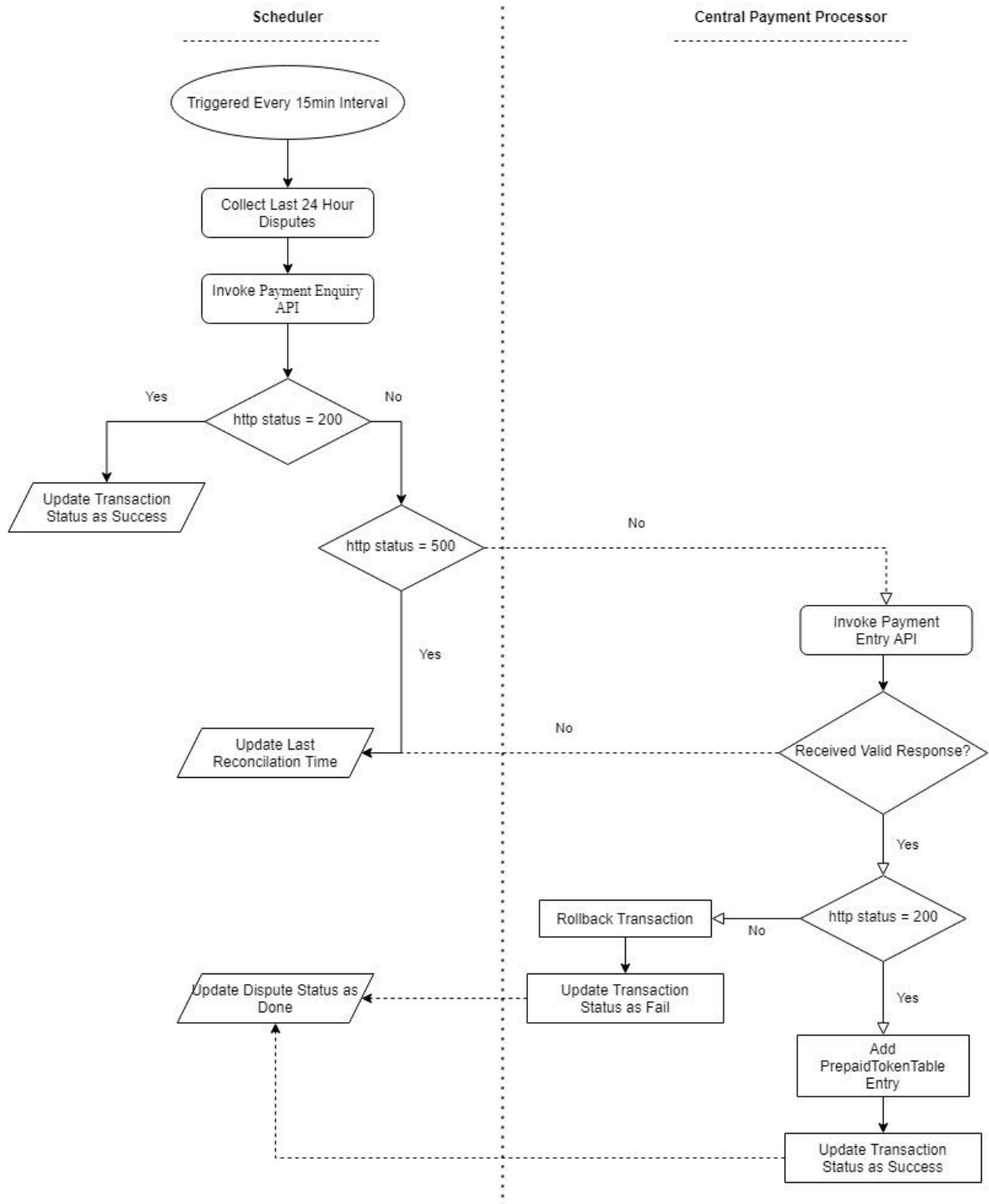
<u>Response:</u>

```
{
  "status": "FAILED",
  "errors": [
    {
      "code": "sfm.errors.resume.service.request.id.not.found",
      "message": "resume request id not found",
      "componentName": "SFM"
    }
  ],
  "errorCode": "Generic05",
  "errorUserMsg": "No data found",
  "httpErrorCode": "400"
}
```

2.4   Existing Flow Diagrams:

Flow diagram of Billpayment Request

Channel Specific Handler · · · · · **Central Payment Processor**

Request From Different Channels (USSD Subscriber, USSD Retailer, Cockpit/RMS, GPAY)

Invoke Payment API

Invoke Customer Information API

Payment API Response → Convert Response according to channel

Respond - Invalid Customer Code ← No — http status = 200 — Yes → MFS Association Check

Is Associated — No → Associate in MFS

Is Associated — Yes → Deduct amount from MFS wallet

Respond - Message from API Call ← No — Txn Status = 200? — Yes → Invoke Payment Entry API

Payment API Response

Add Dispute Entry ← No — Received Valid Response?

Update Transaction Status as Dispute

Respond - Dispute Message

Received Valid Response? — Yes → http status = 500 — Yes

http status = 500 — No → http status = 200

Rollback Transaction ← No — http status = 200 — Yes → Add PrepaidTokenTable Entry

Update Transaction Status as Fail

Respond - Fail Message

Add PrepaidTokenTable Entry → Update Transaction Status as Success → Respond - Success Message

Call flow of scheduler : to pick bulk request(fetch bill and payment) initiated from UI

Note:
- All technical training session happened with Wipro will be shared with partner that will give detailed view of current implemented request flow .
- Postman collection of existing system APIs is also shared.
- Git code link of existing system will be shared by Comviva to partner

3 Technical Solution Requirement

3.1 Solution Overview

the solution must be created using open-source technologies widely accepted and used by the industry.

3.1.1 Tech stack to be used to deploy and run existing code

Comviva suggest to use below listed technology stack for the development of the application:

Angular 9.1.1
npm 6.13.4
Node 12.16.1
tomcat 9 or above
Jdk 14
MySql

3.2 Deployment Specifications of existing module

The solution must be deployed with below steps in order.

3.2.1 DB Readiness

- Install MySql in your local system.
- Install MySql Workbench in your local system.
- execute Below all the files in MySQL Workbench for setup database in your local system.

mflex_bulk_bill.sql   mflex_core.sql   mflex_report.sql   z

3.2.2   Application readiness

- There are Four Modules which need to be deployed in same order
- 1. web application
- 2. async job
- 3. mfs-communication
- 4. gpay-C

Steps to deploy:

- (Web Application – master)
  - Go in this folder
    1. cd src/ng
    2. open command prompt or git bash
    3. npm init -y
    4. npm install
    5. npm run dev
  - Now, open the project and do some changes in .properties (DB configuration, etc…)
  - run main class which have @SpringBootAplication annotations.
  - open any Browser and hit : http://localhost:8080/

3.3   Project Specific Scope

3.3.1   Current Implemenation

All technical hands-on recording will be shared with Parner

3.3.2   Graphical User Interface

GUI should be as below:
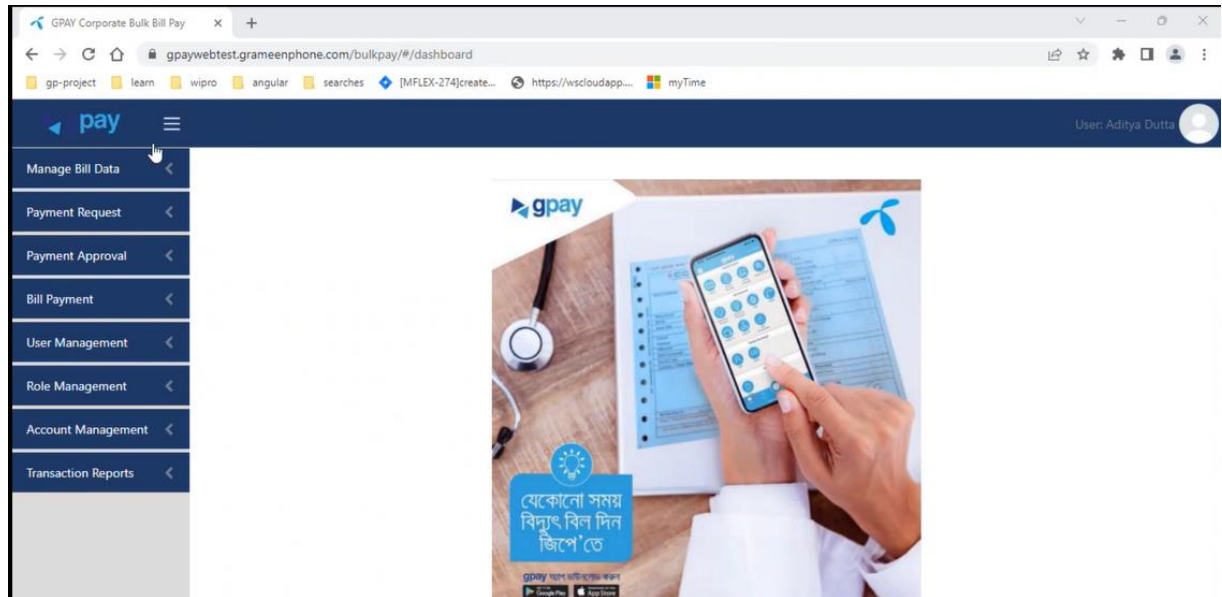
Rest can be referred from Recordings:

3.3.3 Training

Once the application is delivered on site, the partner must conduct technical training to the Comviva development team and provide necessary information and code walk through for changes made in existing Code.

3.3.4 Documentation

Flow diagram has been attached above to explain process flow of Request

3.3.5 Postman Collection

Attached is postman collection is existing system APIs to integrate within system and with biller platform

Communicator copy.postman_collection

Desco-postpaid.postman_collection.json

Note: Comviva will share it's API (Fetch bill, payment, ambiguous settlement)

3.4 Testing and Acceptance

3.4.1   System Integration Testing

Application must pass all the test cases defined by partner's internal QA. Comviva QA will audit the report and also may execute their own designed cases as per the functionalities if required, Partner must fix all issues raised by Comviva QA.

Note: Any bug identified during QA testing which is present in existing/new code must be fixed by Partner.

3.4.2   User Acceptance Procedure

Once the application in cleared by Comviva QA, it must be offered to customer for their testing and acceptance. User acceptance test cases must be shared by partner and passed in order to get user acceptance certificate. All UAT defects must be fixed by Partner.

3.5   Risks, Impact and Mitigation

Partner must identify and define all the risks and share its impact as well as mitigation plan.

3.6   Responsibility Matrix

Partner must prepare and share responsibility matrix for various tasks required to be executed during the lifecycle of this project.

3.7   Out of Scope

Third party (Biller)APIs integration would be out of scope for partner, though partner must define their own list of out of scope items and share with us.

All third party integrations will be under mobiquity scope. Partner has to just integrate with Mobiquity Payment APIs.

Reporting UI shown in demo is out of scope of partner . Mobiquity will support all report related need through existing reports present in product.

3.8   Code management

Partner must commit and update all the codes, designs, and documents into Comviva version control systems (GIT) and provide necessary access information for Comviva development team. Partner should adhere to all the Comviva software development guidelines and follow GDPR processes.

3.9 Project handover

Once the project is completed, partner must handover updated software to Comviva and conduct various workshops (technical, functional, non-functional etc.) for teams and provide them hands on experience and KT to enable them to take care of future change requests as well as bug fixes. This will be for changes done by Partner on top of existing code.

3.10 Project Timelines

This project must be completed within the defines and agreed timelines. The project is expected to be completed within 30 days.

3.11 Support and maintenance

➢　Partner will be responsible for UAT as well as production defects

➢　Partner must provide technical support and maintain the project upto 1 year after delivery.

➢　Partner must assign a dedicated team to develop and support this project

➢　Production defects must be fixed with in defined SLA.

4 Document Change History

Version	Change Type (A/M/D)	Change Description	Prepared By	Reviewer	Approved by	Date
1.0	A	Initial version	Anshika Aggarwal	Pranay Agrawal	Kamal Kishor Arya	27-July-2023

Disclaimer

Thank You

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