*Generate Bill API*

# Introduction

This article covers the specification of the REST API for generateBill. The generateBill API provides a standardized mechanism to generate Bill on demand by passing either BillingAccount / MSISDN or both can be passed together as well to the Billing System with all of the necessary details. The below sections will cover details on business functionality and design which need to be implemented to build the Fuse API.

***NOTE:*** This API is used to generate Bill by passing either BillingAccount / MSISDN or both can be passed together as well to the **B** API.

* In case Subordinate (Non Paying Responsible) MSISDN is passed as input, generate Bill will be generated on the Paying Responsible Billing account and will contain amounts specific to that MSISDN only.
* When Billing Account (Paying Responsible) is passed as input generateBill will contain charges from BA and all its NPR subordinate accounts.
* When MSISDN and Account number both are provided as input, the generate Bill Now will be generated for MSISDN account.
* Invoice will be generated as part of the Generate Bill Now API call.

# Service Description

Service **A** generate customer bill using HTTP POST Operation to accept REST web service calls, where channels can generate Bill by passing either BillingAccount / MSISDN or both can be passed together as well to the Billing System API. The request is first validated upon receipt in the **A**. In case of validation failure, an error message is returned to the consumer/communication channel. On successful validation, the request is sent to the outbound system(**B**). The outbound API call returns the response from billing system against **B** API’s and the response data(json) from the **B** API’s is transformed back to JSON and replied to the consumer system/channels.

Operation - POST

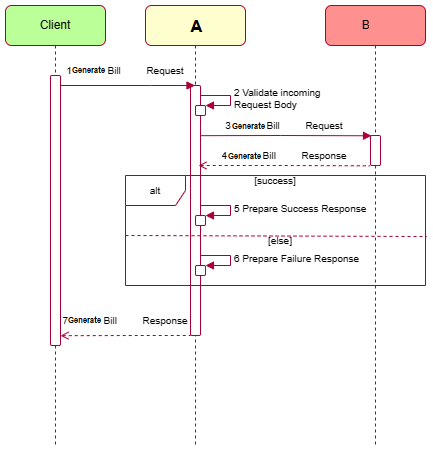
Protocol - REST/JSON

URL - /A/billingManagement/v1/generateBill

## **Service Details**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Service Name | Requester | Requester Service Interface | Provider | Provider Service Interface | Description |
| Generate Bill | Consumer/ Communication channel | REST API | B | REST based web service Interface | This API allows the consumer to Generate Customer Bill in the **B** by passing either BillingAccount / MSISDN or both can be passed together as well to the **B** API |

## **Sequence Diagram**



## **Integration Flow**

·         Rest DSL will be used for exposing services as REST. The request for the service comes to the exposed RESTConsumerRoute.

·         After receiving the request, the service will call Business Route.

·         At first it sends the request through the recipient list into requesting operation from where the message processing starts.

·         Then it validates the message and if validation fails, a corresponding error message is communicated to the consumer else data transformation takes place to convert the inbound JSON data to its corresponding outbound data format.

·        Validation failure response should be 400 - Bad Request

·        Transformation must be in POJO and not with template like xslt, velocity, thymleaf, etc.

·         Once the transformation is done, next it moves to the invocation of the target service.

·         It transforms the inbound request to its corresponding outbound.

·         It will invoke the outbound system.

·        Otherwise, it transforms the response JSON response to the outbound JSON and logs the message using the wiretap node.

·         After invoking the outbound system, based on the technical success/failure of the call, the response will be sent to the client system.

·         On successful completion of Route with proper Log Message using Logging Route

·         In case of any exception, Process Exception Route will be called which will prepare fault response and send.

·         Constant creation, properties usage is required.

·         The detailed integration mechanism is defined in the below table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Source | Target | Communication | Msg Format | Message Exchange Pattern |
| Client | A : generateBill | REST POST | JSON | Synchronous request-response |
| A : generateBill | B: generateBill | REST POST | JSON | Synchronous request-response |
| B: generateBill | A: generateBill | REST POST | JSON | Synchronous request-response |
| A: generateBill | Client | REST POST | JSON | Synchronous request-response |

## **Request Mapping Details**

### \*\* Generate Bill API Request - Body Mapping

|  |  |  |  |
| --- | --- | --- | --- |
| A Body Elements | Type - Length | Remarks | B Body Elements |
| billingAccount.id\* | String-60 | Account number to passed by the consumer system | accountNo |
| billingAccount.@referredType | String-128 | set to → billingAccount |  |
| relatedParty.msisdn\* | String-128 | MSISDN to be passed by the consumer system | msisdn |
| relatedParty.@referredType | String-128 | set to → subscriber |  |

## **Response Mapping Details**

In case of failure, the appropriate HTTP error code and JSON response with the following elements would be sent back to the client.

### \*\* GenerateBill API Response - Mapping

***Success Response:***

Generate Bill API should return ***HTTP Status Code 201*** as response when generateBill B API returns success response.

|  |  |  |  |
| --- | --- | --- | --- |
| **B Element** | **Type-size** | **Description/Mapping Remarks** | **A Response Element** |
| billNumber\* | str-60 | Bill number for the customer Bill on Demand bill. | customerBill.id**\*** |
|  |  | set to → BillOnCustomerDemand | customerBill.name |
| accountNo\*\* | str-60 | Account number passed by the consumer system | billingAccount.id**\*** |
|  |  | set to → billingAccount | billingAccount.@referredType |
| msisdn\*\* | str-128 | subscriber MSISDN | relatedParty.msisdn**\*** |
|  |  | set to → subscriber | relatedParty.@referredType |
| requestStatus\* | str-60 | 0 - Failure, 1 - Success |  |

### **Usage Samples**

#### **B Sample**

|  |  |
| --- | --- |
| \*\* Generate Bill API - Request | \*\* Generate Bill API - Response |
| POST -  B server URL(Mock url or mock)  {  "accountNo": "0.0.0.1-4176867",  "msisdn": "0049100502",  } | {  "accountNo": "0.0.0.1-4176867",  "msisdn": "0049100502",  "billNumber": "B1-01",  "requestStatus": "1" } |
|  |  |

#### **A Sample**

|  |  |
| --- | --- |
| \*\* Generate Bill API - Request | \*\* Generate Bill API- Success Response |
| POST -  /A/billingManagement/v1/generateBill  {  "billingAccount": {  "id":"0.0.0.1-4176867",  "@referredType":"billingAccount"  },  "relatedParty": {  "msisdn": "0049100502",  "@referredType":"subscriber"  }  } | 201 Success  {  "customerBill": {  "id": "B1-01",  "name":"BillOnCustomerDemand"  },  "billingAccount": {  "id":"0.0.0.1-4176867",  "@referredType":"billingAccount"  },  "relatedParty": {  "msisdn": "0049100502",  "@referredType":"subscriber"  }  } |
| \*\*Generate Bill API - Error Response |
| 400 Bad Request  {  "code": "A:00003",  "reason": "Validation error",  "message": "Either BillingAccountId or MSISDN is required cannot be null or empty, ESB:EX00003"  } |