**CRM Microservices API Specification**

**1. Overview**

The CRM microservices provide RESTful APIs for handling customer service requests submitted by bank staff via Call Center or Branch. This API allows for:

* Creating requests from Call Center or
* Retrieving existing requests from Kafka to determine department
* Updating request statuses
* Sending and receiving events via Kafka

**In this Project Source code , I would like to consolidate the Services because we are facing authentication issues. Therefore, I would like permission to combine the Services first. The design was planned according to these Services:**

* **com.bank.request**
* **com.bank.Workflow**
* **com.bank.backend**
* **com.bank.status**

**2. Base URL**

http://{host}:{port}/api/requests

in project use port : 8089

**3. Authentication**

* Authentication via **Spring Security**
* All endpoints require Basic Authentication.
* Username and password must be sent in the request header.

Regular User:

* Username: user
* Password: password
* Roles: USER
  1. **Headers:**
* - Authorization: Basic {base64-encoded-credentials}
* - Content-Type: application/json

A close up of a check

AI-generated content may be incorrect.

**5. API Endpoints**

**5.1 Create Service Request**

**Endpoint:**

POST /api/v1/requests

**Authentication**: Required

**Description:** Creates a new service request.

**Request Body:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Filed | Data Type | Required | Description | Example Data |
| customerId | String | Y | รหัสลูกค้า | CUST121 |
| type | String | Y | ประเภทของปัญหา | PAYMENT\_ISSUE, ACCOUNT\_ISSUE, CREDIT\_CARD\_ISSUE, FRAUD\_ALERT |
| description | String | Y | รายละเอียด |  |
| priority | String | Y | ความสำคัญ | LOW, MEDIUM, HIGH, URGENT |
| assignedDepartment | String | N | กลุ่มงานที่รับเรื่อง | PAYMENTS\_DEPT |
| metadata |  |  |  |  |
| transactionId | String | Y | รหัส Transaction | TRX780 |
| amount | Decimal(2) | Y | จำนวนเงิน | 10000.00 |
| currency | String | Y | สกุลเงิน | THB, USD |
| paymentMethod | String | Y | วิธิการชำระเงิน | CREDIT\_CARD |
| errorCode | String | Y | รหัสผิดพลาด | PAY\_001 |

{

"customerId": "CUST100",

"type": "CREDIT\_CARD\_ISSUE",

"description": "Customer reported failed CREDIT\_CARD\_ISSUE transaction",

"priority": "HIGH",

"assignedDepartment": "PAYMENTS\_DEPT",

"metadata": {

"transactionId": "TRX780",

"amount": 100000.00,

"currency": "THB",

"paymentMethod": "CREDIT\_CARD",

"errorCode": "PAY\_001"

}

}

Response :**:**

* **200 OK: Returns the list of requests.**
* **401 Unauthorized** The request is unauthenticated.

**Response Body:**

{

    "id": 24,

    "customerId": "CUST100",

    "type": "CREDIT\_CARD\_ISSUE",

    "description": "Customer reported failed CREDIT\_CARD\_ISSUE transaction",

    "status": "NEW",

    "priority": "HIGH",

    "assignedDepartment": **null**,

    "createdAt": "2025-02-17T16:01:03.0961365",

    "updatedAt": **null**,

    "metadata": {

        "transactionId": "TRX780",

        "amount": 100000.0,

        "currency": "THB",

        "paymentMethod": "CREDIT\_CARD",

        "errorCode": "PAY\_001"

    }

}

**5.2 Retrieve Requests By ID**

**Endpoint:**

GET /api/v1/requests/{ requestId }

**Authentication**: Required.

**Description:** Retrieves details of a specific service request

**Response:**

* **200 OK**: Returns the list of requests.

**Response Body:**

{

    "id": 1,

    "customerId": "CUST123",

    "type": "PAYMENT\_ISSUE",

    "description": "Customer reported failed payment transaction",

    "status": "IN\_PROGRESS",

    "priority": "HIGH",

    "assignedDepartment": "PAYMENTS\_DEPT",

    "createdAt": "2025-02-16T08:36:21.862756",

    "updatedAt": "2025-02-17T15:43:11.089459",

    "metadata": {

        "transactionId": "TRX789",

        "amount": 1500.0,

        "currency": "USD",

        "paymentMethod": "CREDIT\_CARD",

        "errorCode": "PAY\_001"

    }

}

**5.3 Update Request Status**

**Endpoint:**

PATCH /api/v1/requests/{requestId}/status

**Authentication**: Required.

**Description:** Updates the status of an existing service request.

**Path Parameter:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Type** | **Required** | **Description** |
| requestId | Long | Yes | The unique ID of the request |

**Query Parameter:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Type** | **Required** | **Description** |
| status | String | Yes | Description of function |

**Request Body:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Filed | Data Type | Required | Description | Example Data |
| newStatus | String | Y | สถานะใหม่ | IN\_PROGRESS |
| Comment | String | Y | หมายเหตุ | Processing by payments team |
| updatedBy | String | Y | แก้ไขโดย | AGENT007 |

{

"newStatus": "IN\_PROGRESS",

"comment": "Processing by payments team",

"updatedBy": "AGENT007"

}

**Response:**

* **200 OK**: Request status successfully updated.
* **404 Not Found**: Request not found.

**Response Body:**

{

    "id": 1,

    "customerId": "CUST123",

    "type": "PAYMENT\_ISSUE",

    "description": "Customer reported failed payment transaction",

    "status": "COMPLETED",

    "priority": "HIGH",

    "assignedDepartment": "PAYMENTS\_DEPT",

    "createdAt": "2025-02-16T08:36:21.862756",

    "updatedAt": "2025-02-17T16:07:35.6939484",

    "metadata": {

        "transactionId": "TRX789",

        "amount": 1500.0,

        "currency": "USD",

        "paymentMethod": "CREDIT\_CARD",

        "errorCode": "PAY\_001"

    }

}

**5.4** Assign Request to Department

**Endpoint:**

POST /api/v1/requests/1/assign

Authentication: Required

**Description:** Assigns a request to a specific department..

**Request Body:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Filed** | **Data Type** | **Required** | **Description** | **Example Data** |
| departmentId | String | Y | ฝ่ายที่รับงาน | IN\_ PAYMENTS\_DEPT |
| assignedBy | String | Y | ผู้รับผิดชอบ | SUPERVISOR001 |
| priority | String | Y | ความสำคัญ | HIGH |
| notes | String | N | หมายเหตุ | Urgent payment issue needs immediate attention |

{

    "departmentId": "PAYMENTS\_DEPT",

    "assignedBy": "SUPERVISOR001",

    "priority": "HIGH",

    "notes": "Urgent payment issue needs immediate attention"

}

**Response:**

* **200 OK**: Event successfully sent.

{

    "id": 1,

    "customerId": "CUST123",

    "type": "PAYMENT\_ISSUE",

    "description": "Customer reported failed payment transaction",

    "status": "IN\_PROGRESS",

    "priority": "HIGH",

    "assignedDepartment": "PAYMENTS\_DEPT",

    "createdAt": "2025-02-16T08:36:21.862756",

    "updatedAt": "2025-02-17T18:40:03.1663162",

    "metadata": {

        "transactionId": "TRX789",

        "amount": 1500.0,

        "currency": "USD",

        "paymentMethod": "CREDIT\_CARD",

        "errorCode": "PAY\_001"

    }

}

**Kafka Topics and Events**

**1. Request Events Topic**

Topic Name: “request-events”

Purpose: Handles new request creation and updates

Event Types:

1. Request Created Event

json

{

"eventType": "REQUEST\_CREATED",

"requestId": 1001,

"customerId": "CUST123",

"type": "PAYMENT\_ISSUE",

"timestamp": "2024-02-16T10:30:00Z"

}

2. Request Updated Event

json

{

"eventType": "REQUEST\_UPDATED",

"requestId": 1001,

"changes": {

"status": "IN\_PROGRESS",

"assignedDepartment": "PAYMENTS\_DEPT"

},

"timestamp": "2024-02-16T10:35:00Z"

}

**2. Status Events Topic**

Topic Name: status-events

Purpose: Handles status changes and notifications

Event Example:

json

{

"eventType": "STATUS\_CHANGED",

"requestId": 1001,

"oldStatus": "NEW",

"newStatus": "IN\_PROGRESS",

"updatedBy": "AGENT007",

"timestamp": "2024-02-16T10:35:00Z"

}

**3. Assignment Events Topic**

Topic Name: assignment-events

Purpose: Handles department assignments

Event Example:

json

{

"eventType": "REQUEST\_ASSIGNED",

"requestId": 1001,

"departmentId": "DEPT001",

"assignedBy": "SUPERVISOR001",

"priority": "HIGH",

"timestamp": "2024-02-16T10:40:00Z"

}

**Enums and Constants**

* **RequestType:**

- PAYMENT\_ISSUE

- ACCOUNT\_ISSUE

- CREDIT\_CARD\_ISSUE

- FRAUD\_ALERT

- GENERAL\_INQUIRY

* **RequestStatus:**

- NEW

- IN\_PROGRESS

- PENDING

- COMPLETED

- CANCELED

* **RequestPriority:**

- LOW

- MEDIUM

- HIGH

- URGENT

**Error Responses**

* 400 Bad Request:

{

"status": 400,

"error": "Bad Request",

"message": "Invalid request parameters"

}

* 401 Unauthorized:

{

"status": 401,

"error": "Unauthorized",

"message": "Authentication credentials are required"

}

* 404 Not Found:

{

"status": 404,

"error": "Not Found",

"message": "Request not found with id: 1001"

}

**Testing Examples**

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Create Request:

curl -X POST http://localhost:8080/api/v1/requests \

-u user:password \

-H "Content-Type: application/json" \

-d '{

{

    "customerId": "CUST100",

    "type": "CREDIT\_CARD\_ISSUE",

    "description": "Customer reported failed CREDIT\_CARD\_ISSUE transaction",

    "priority": "HIGH",

    "assignedDepartment": "PAYMENTS\_DEPT",

    "metadata": {

        "transactionId": "TRX780",

        "amount": 100000.00,

        "currency": "THB",

        "paymentMethod": "CREDIT\_CARD",

        "errorCode": "PAY\_001"

    }

}'

Get Request:

curl -X GET http://localhost:8080/api/v1/requests/1001 \

-u user:password

Update Status:

curl -X PUT http://localhost:8080/api/v1/requests/1001/status \

-u user:password \

-H "Content-Type: application/json" \

-d '{

{

    "newStatus": "COMPLETED",

    "comment": "Processing payment issue",

    "updatedBy": "AGENT007"

}'