

QShelter Mortgage Flow - Complete API Documentation

Version: 2.0

Last Updated: January 26, 2026

Environment: AWS Staging

Executive Summary

This document describes the complete end-to-end mortgage application flow for the QShelter platform. It follows the journey of **Chidi Nnamdi**, a 40-year-old first-time homebuyer purchasing a ₦85,000,000 3-bedroom flat at **Lekki Gardens Estate** in Lagos, Nigeria.

Key Changes in v2.0

- **Organization Types:** Replaced hardcoded `reviewParty` enum with dynamic `organizationTypeCode` (PLATFORM, BANK, DEVELOPER, etc.)
- **Stage-Based Reviews:** Each approval stage is responsible for reviewing documents from specific uploaders
- **Auto-Approval:** Documents uploaded by the party responsible for that stage are automatically approved

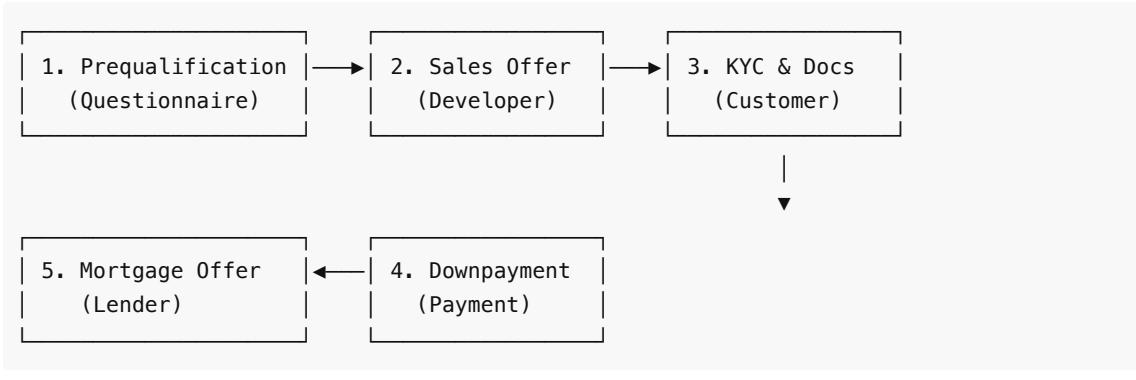
Key Actors

Actor	Role	Organization	Email
Adaeze Okonkwo	Mortgage Operations Officer	QShelter	adaeze@mailsac.com
Chidi Nnamdi	Customer (Buyer)	—	chidi@mailsac.com
Emeka Okafor	Developer Rep	Lekki Gardens	emeka@mailsac.com
Nkechi Adebayo	Loan Officer	Access Bank	nkechi@mailsac.com

Property Details

Field	Value
Property	Lekki Gardens Estate, Phase 3
Unit	14B (Block B, Floor 14)
Type	3-Bedroom Flat
Size	150 sqm
Price	₦85,000,000
Downpayment	10% (₦8,500,000)
Mortgage	90% (₦76,500,000)

Application Phases



Service Endpoints

Service	Base URL
User Service	https://[user-api-id].execute-api.us-east-1.amazonaws.com
Property Service	https://[property-api-id].execute-api.us-east-1.amazonaws.com
Mortgage Service	https://[mortgage-api-id].execute-api.us-east-1.amazonaws.com

Phase 1: System Bootstrap

Step 1.1: Bootstrap Tenant

Creates the tenant, default roles, and admin user.

Endpoint: POST /admin/bootstrap-tenant

Service: User Service

Authentication: Bootstrap Secret Header

Request Headers

```
x-bootstrap-secret: {{bootstrapSecret}}
Content-Type: application/json
```

Request Body

```
{
  "tenant": {
    "name": "QShelter Real Estate",
    "subdomain": "qshelter"
  },
  "admin": {
    "email": "adaeze@mailsac.com",
    "password": "SecureAdmin123!",
    "firstName": "Adaeze",
    "lastName": "Okonkwo"
  }
}
```

Response (201 Created)

```
{  
  "tenant": {  
    "id": "cm...",  
    "name": "QShelter Real Estate",  
    "subdomain": "qshelter",  
    "isNew": true  
  },  
  "admin": {  
    "id": "cm...",  
    "email": "adaeze@mailsac.com",  
    "isNew": true  
  },  
  "roles": [  
    { "id": "...", "name": "admin", "isNew": true, "permissionsCount": 1 },  
    { "id": "...", "name": "user", "isNew": true, "permissionsCount": 6 },  
    { "id": "...", "name": "DEVELOPER", "isNew": true, "permissionsCount": 6 },  
    { "id": "...", "name": "LENDER", "isNew": true, "permissionsCount": 6 }  
  ],  
  "syncTriggered": true  
}
```

Step 1.2: Admin Login

Endpoint: POST /auth/login

Service: User Service

Authentication: None

Request Body

```
{  
  "email": "adaeze@mailsac.com",  
  "password": "SecureAdmin123!"  
}
```

Response (200 OK)

```
{  
  "success": true,  
  "data": {  
    "accessToken": "eyJhbGciOiJIUzI1NiIs...",  
    "refreshToken": "...",  
    "user": {  
      "id": "cm...",  
      "email": "adaeze@mailsac.com",  
      "firstName": "Adaeze",  
      "lastName": "Okonkwo"  
    }  
  }  
}
```

```
    }  
}
```

Phase 2: Customer Registration

Step 2.1: Customer Signup

Chidi creates his account on the platform.

Endpoint: POST /auth/signup

Service: User Service

Authentication: None

Request Body

```
{  
  "email": "chidi@mailsac.com",  
  "password": "CustomerPass123!",  
  "firstName": "Chidi",  
  "lastName": "Nnamdi",  
  "tenantId": "{{tenantId}}"  
}
```

Response (201 Created)

```
{  
  "success": true,  
  "data": {  
    "accessToken": "eyJhbGciOiJIUzI1NiIs...",  
    "user": {  
      "id": "cm...",  
      "email": "chidi@mailsac.com",  
      "firstName": "Chidi",  
      "lastName": "Nnamdi"  
    }  
  }  
}
```

Phase 2.5: Partner Setup

Step 2.5.1: Create Developer Organization (Lekki Gardens)

Endpoint: POST /organizations

Service: User Service

Authentication: Bearer Token (Admin)

Request Headers

```
Authorization: Bearer {{adminAccessToken}}
Content-Type: application/json
x-idempotency-key: create-lekki-gardens
```

Request Body

```
{
  "name": "Lekki Gardens Development Company",
  "type": "DEVELOPER",
  "email": "lekkigardens@mailsac.com",
  "phone": "+234-1-453-0000",
  "address": "Lekki-Epe Expressway, Lekki, Lagos",
  "city": "Lekki",
  "state": "Lagos",
  "country": "Nigeria",
  "cacNumber": "RC-123456",
  "description": "Premium property developer in Lagos"
}
```

Response (201 Created)

```
{
  "success": true,
  "data": {
    "id": "cm...",
    "name": "Lekki Gardens Development Company",
    "type": "DEVELOPER",
    "status": "ACTIVE"
  }
}
```

Step 2.5.2: Create Developer User (Emeka)

Endpoint: POST /auth/signup

Service: User Service

Request Body

```
{
  "email": "emeka@mailsac.com",
  "password": "DeveloperPass123!",
  "firstName": "Emeka",
  "lastName": "Okafor",
  "tenantId": "{{tenantId}}"
}
```

Step 2.5.3: Add Emeka to Lekki Gardens

Endpoint: POST /organizations/{{lekkiGardensOrgId}}/members

Service: User Service

Authentication: Bearer Token (Admin)

Request Body

```
{  
  "userId": "{{emekaId}}",  
  "role": "OFFICER",  
  "title": "Sales Manager",  
  "department": "Sales",  
  "canApprove": true  
}
```

Step 2.5.4: Create Bank Organization (Access Bank)

Endpoint: POST /organizations

Service: User Service

Authentication: Bearer Token (Admin)

Request Body

```
{  
  "name": "Access Bank PLC",  
  "type": "BANK",  
  "email": "mortgages@mailsac.com",  
  "phone": "+234-1-280-2800",  
  "address": "999c Danmole Street, Victoria Island, Lagos",  
  "bankCode": "044",  
  "swiftCode": "ABNGNGLA",  
  "description": "Leading Nigerian commercial bank"  
}
```

Step 2.5.5: Create Lender User (Nkechi)

Endpoint: POST /auth/signup

Service: User Service

Request Body

```
{  
  "email": "nkechi@mailsac.com",  
  "password": "LenderPass123!",  
  "firstName": "Nkechi",  
  "lastName": "Adebayo",  
  "tenantId": "{{tenantId}}"  
}
```

Step 2.5.6: Add Nkechi to Access Bank

Endpoint: POST /organizations/{{accessBankOrgId}}/members

Service: User Service

Authentication: Bearer Token (Admin)

Request Body

```
{  
  "userId": "{{nkechiId}}",  
  "role": "MANAGER",  
  "title": "Mortgage Loan Officer",  
  "department": "Retail Banking",  
  "canApprove": true,  
  "approvalLimit": 500000000  
}
```

Phase 3: Property Setup

Step 3.1: Create Property

Endpoint: POST /property/properties

Service: Property Service

Authentication: Bearer Token (Admin)

Request Body

```
{  
  "title": "Lekki Gardens Estate",  
  "description": "Premium residential estate in Lekki Phase 1",  
  "category": "SALE",  
  "propertyType": "APARTMENT",  
  "country": "Nigeria",  
  "currency": "NGN",  
  "city": "Lagos",  
  "district": "Lekki"  
}
```

Response (201 Created)

```
{  
  "success": true,  
  "data": {  
    "id": "cm...",  
    "title": "Lekki Gardens Estate",  
    "status": "DRAFT"  
  }  
}
```

Step 3.2: Create Property Variant

Endpoint: POST /property/properties/{{propertyId}}/variants

Service: Property Service

Authentication: Bearer Token (Admin)

Request Body

```
{  
  "name": "3-Bedroom Flat",  
  "nBedrooms": 3,  
  "nBathrooms": 3,  
  "nParkingSpots": 1,  
  "area": 150,  
  "price": 8500000,  
  "totalUnits": 20,  
  "availableUnits": 15  
}
```

Step 3.3: Create Property Unit

Endpoint: POST /property/properties/{{propertyId}}/variants/{{variantId}}/units

Service: Property Service

Authentication: Bearer Token (Admin)

Request Body

```
{  
  "unitNumber": "14B",  
  "floorNumber": 14,  
  "blockName": "Block B"  
}
```

Step 3.4: Publish Property

Endpoint: PATCH /property/properties/{{propertyId}}/publish

Service: Property Service

Authentication: Bearer Token (Admin)

Response (200 OK)

```
{  
  "success": true,  
  "data": {  
    "id": "cm...",  
    "status": "PUBLISHED"  
  }  
}
```

Phase 4: Payment Configuration

Step 4.1: Create Downpayment Plan

Endpoint: POST /payment-plans

Service: Mortgage Service

Authentication: Bearer Token (Admin)

Request Body

```
{  
  "name": "10% One-Off Downpayment",  
  "description": "Single payment for 10% downpayment",  
  "frequency": "ONE_TIME",  
  "numberOfInstallments": 1,  
  "interestRate": 0,  
  "gracePeriodDays": 0  
}
```

Step 4.2: Create Prequalification Questionnaire Plan

Endpoint: POST /questionnaire-plans

Service: Mortgage Service

Authentication: Bearer Token (Admin)

Request Body

```
{  
  "name": "Mortgage Prequalification",  
  "description": "Collects applicant age and income to validate mortgage  
eligibility",  
  "isActive": true,  
  "passingScore": 100,  
  "scoringStrategy": "MIN_ALL",  
  "autoDecisionEnabled": false,  
  "estimatedMinutes": 5,  
  "category": "PREQUALIFICATION",  
  "questions": [  
    {  
      "questionKey": "applicant_age",  
      "questionText": "What is your current age?",  
      "questionType": "NUMBER",  
      "order": 1,  
      "isRequired": true,  
      "validationRules": { "min": 18, "max": 59 },  
      "scoringRules": [  
        { "operator": "LESS_THAN_OR_EQUAL", "value": 55, "score": 100 },  
        { "operator": "GREATER_THAN", "value": 55, "score": 0 }  
      ],  
      "scoreWeight": 1,  
    }  
  ]  
}
```

```

        "category": "ELIGIBILITY"
    },
    {
        "questionKey": "monthly_income",
        "questionText": "What is your monthly gross income?",
        "questionType": "CURRENCY",
        "order": 4,
        "isRequired": true,
        "scoringRules": [
            { "operator": "GREATER_THAN_OR_EQUAL", "value": 500000, "score": 100 },
            { "operator": "LESS_THAN", "value": 500000, "score": 0 }
        ],
        "scoreWeight": 1,
        "category": "AFFORDABILITY"
    }
]
}

```

Step 4.3: Create Sales Offer Documentation Plan

Endpoint: POST /documentation-plans

Service: Mortgage Service

Authentication: Bearer Token (Admin)

Request Body

```
{
    "name": "Sales Offer Documentation",
    "description": "Developer uploads sales offer letter",
    "isActive": true,
    "documentDefinitions": [
        {
            "documentType": "SALES_OFFER_LETTER",
            "documentName": "Sales Offer Letter",
            "uploadedBy": "DEVELOPER",
            "order": 1,
            "isRequired": true,
            "description": "Sales offer letter prepared by the property developer",
            "maxSizeBytes": 10485760,
            "allowedMimeTypes": ["application/pdf"]
        }
    ],
    "approvalStages": [
        {
            "name": "Developer Document Verification",
            "order": 1,
            "reviewParty": "DEVELOPER",
            "autoTransition": true,
            "waitForAllDocuments": true,
            "onRejection": "CASCADE_BACK"
        }
    ]
}
```

```
]  
}
```

Step 4.4: Create KYC Documentation Plan

Endpoint: POST /documentation-plans

Service: Mortgage Service

Authentication: Bearer Token (Admin)

Note: Approval stages now use `organizationTypeCode` instead of `reviewParty`. The organization type codes are dynamically created at bootstrap and include: `PLATFORM`, `BANK`, `DEVELOPER`, `LEGAL`, `INSURER`, `GOVERNMENT`.

Request Body

```
{
  "name": "Mortgage KYC Documentation",
  "description": "Standard KYC documentation workflow",
  "isActive": true,
  "documentDefinitions": [
    {
      "documentType": "ID_CARD",
      "documentName": "Valid ID Card",
      "uploadedBy": "CUSTOMER",
      "order": 1,
      "isRequired": true
    },
    {
      "documentType": "BANK_STATEMENT",
      "documentName": "Bank Statements",
      "uploadedBy": "CUSTOMER",
      "order": 2,
      "isRequired": true
    },
    {
      "documentType": "EMPLOYMENT_LETTER",
      "documentName": "Employment Letter",
      "uploadedBy": "CUSTOMER",
      "order": 3,
      "isRequired": true
    },
    {
      "documentType": "PREAPPROVAL_LETTER",
      "documentName": "Preapproval Letter",
      "uploadedBy": "LENDER",
      "order": 4,
      "isRequired": true
    }
  ],
  "approvalStages": [
    {

```

```

        "name": "QShelter Staff Review",
        "order": 1,
        "organizationTypeCode": "PLATFORM",
        "autoTransition": false,
        "waitForAllDocuments": true,
        "onRejection": "CASCADE_BACK",
        "slaHours": 24
    },
    {
        "name": "Bank Review",
        "order": 2,
        "organizationTypeCode": "BANK",
        "autoTransition": true,
        "waitForAllDocuments": true,
        "onRejection": "CASCADE_BACK",
        "slaHours": 48
    }
]
}

```

Stage Responsibilities:

- **PLATFORM stage** reviews documents with `uploadedBy: CUSTOMER` or `uploadedBy: PLATFORM`
- **BANK stage** reviews documents with `uploadedBy: LENDER` (auto-approved when lender uploads)

Step 4.5: Create Mortgage Offer Documentation Plan

Endpoint: POST /documentation-plans

Service: Mortgage Service

Authentication: Bearer Token (Admin)

Request Body

```
{
    "name": "Mortgage Offer Documentation",
    "description": "Bank (lender) uploads mortgage offer letter",
    "isActive": true,
    "documentDefinitions": [
        {
            "documentType": "MORTGAGE_OFFER_LETTER",
            "documentName": "Mortgage Offer Letter",
            "uploadedBy": "LENDER",
            "order": 1,
            "isRequired": true
        }
    ],
    "approvalStages": [
        {
            "name": "Bank Document Upload",

```

```

        "order": 1,
        "organizationTypeCode": "BANK",
        "autoTransition": true,
        "waitForAllDocuments": true
    }
]
}

```

Step 4.6: Create Payment Method (5 Phases)

Endpoint: POST /payment-methods

Service: Mortgage Service

Authentication: Bearer Token (Admin)

Request Body

```
{
  "name": "10/90 Lekki Mortgage",
  "description": "Prequalification → Sales Offer → KYC → Downpayment → Mortgage Offer",
  "requiresManualApproval": true,
  "phases": [
    {
      "name": "Prequalification",
      "phaseCategory": "QUESTIONNAIRE",
      "phaseType": "PRE_APPROVAL",
      "order": 1,
      "questionnairePlanId": "{{prequalificationPlanId}}"
    },
    {
      "name": "Sales Offer",
      "phaseCategory": "DOCUMENTATION",
      "phaseType": "VERIFICATION",
      "order": 2,
      "documentationPlanId": "{{salesOfferDocPlanId}}"
    },
    {
      "name": "Preapproval Documentation",
      "phaseCategory": "DOCUMENTATION",
      "phaseType": "KYC",
      "order": 3,
      "documentationPlanId": "{{kycDocPlanId}}"
    },
    {
      "name": "10% Downpayment",
      "phaseCategory": "PAYMENT",
      "phaseType": "DOWNPAYMENT",
      "order": 4,
      "percentOfPrice": 10,
      "paymentPlanId": "{{downpaymentPlanId}}"
    }
  ]
}
```

```
{
  {
    "name": "Mortgage Offer",
    "phaseCategory": "DOCUMENTATION",
    "phaseType": "VERIFICATION",
    "order": 5,
    "documentationPlanId": "{{mortgageOfferDocPlanId}}"
  }
}
}
```

Step 4.7: Link Payment Method to Property

Endpoint: POST /payment-methods/{{paymentMethodId}}/properties

Service: Mortgage Service

Authentication: Bearer Token (Admin)

Request Body

```
{
  "propertyId": "{{propertyId}}",
  "isDefault": true
}
```

Phase 5: Customer Application

Step 5.1: Chidi Creates Application

Endpoint: POST /applications

Service: Mortgage Service

Authentication: Bearer Token (Customer - Chidi)

Request Body

```
{
  "propertyUnitId": "{{unitId}}",
  "paymentMethodId": "{{paymentMethodId}}",
  "title": "Purchase Agreement - Lekki Gardens Unit 14B",
  "applicationType": "MORTGAGE",
  "totalAmount": 85000000,
  "monthlyIncome": 2500000,
  "monthlyExpenses": 800000,
  "applicantAge": 40
}
```

Response (201 Created)

```
{
  "success": true,
  "data": {
```

```

"id": "cm...",
"title": "Purchase Agreement – Lekki Gardens Unit 14B",
"status": "PENDING",
"totalAmount": 85000000,
"phases": [
  {
    "id": "...",
    "name": "Prequalification",
    "order": 1,
    "status": "IN_PROGRESS"
  },
  { "id": "...", "name": "Sales Offer", "order": 2, "status": "PENDING" },
  {
    "id": "...",
    "name": "Preapproval Documentation",
    "order": 3,
    "status": "PENDING"
  },
  {
    "id": "...",
    "name": "10% Downpayment",
    "order": 4,
    "status": "PENDING",
    "totalAmount": 8500000
  },
  { "id": "...", "name": "Mortgage Offer", "order": 5, "status": "PENDING" }
]
}
}

```

Phase 6: Prequalification Questionnaire

Step 6.1: Chidi Submits Questionnaire Answers

Endpoint: POST

/applications/{{applicationId}}/phases/{{prequalificationPhaseId}}/questionnaire/submit

Service: Mortgage Service

Authentication: Bearer Token (Customer - Chidi)

Request Body

```
{
  "answers": [
    { "fieldName": "applicant_age", "value": "40" },
    { "fieldName": "mortgage_type", "value": "SINGLE" },
    { "fieldName": "employment_status", "value": "EMPLOYED" },
    { "fieldName": "monthly_income", "value": "2500000" },
    { "fieldName": "monthly_expenses", "value": "800000" },
    { "fieldName": "desired_term_years", "value": "20" }
  ]
}
```

```
]  
}
```

Response (200 OK)

```
{  
  "success": true,  
  "data": {  
    "phaseId": "...",  
    "status": "AWAITING_APPROVAL",  
    "score": 100,  
    "passingScore": 100,  
    "passed": true  
  }  
}
```

Step 6.2: Admin Approves Prequalification

Endpoint: POST

/applications/{{applicationId}}/phases/{{prequalificationPhaseId}}/questionnaire/review

Service: Mortgage Service

Authentication: Bearer Token (Admin)

Request Body

```
{  
  "decision": "APPROVE",  
  "notes": "Chidi meets all eligibility criteria. Approved for mortgage."  
}
```

Response (200 OK)

```
{  
  "success": true,  
  "data": {  
    "phaseId": "...",  
    "status": "COMPLETED"  
  }  
}
```

Phase 7: Sales Offer

Step 7.1: Developer Uploads Sales Offer Letter

Endpoint: POST /applications/{{applicationId}}/phases/{{salesOfferPhaseId}}/documents

Service: Mortgage Service

Authentication: Bearer Token (Developer - Emeka)

Request Body

```
{  
  "documentType": "SALES_OFFER_LETTER",  
  "url": "https://s3.amazonaws.com/qshelter/developer/sales-offer-chidi.pdf",  
  "fileName": "sales-offer-letter.pdf"  
}
```

Response (201 Created)

```
{  
  "success": true,  
  "data": {  
    "id": "...",  
    "documentType": "SALES_OFFER_LETTER",  
    "status": "UPLOADED"  
  }  
}
```

Note: Phase auto-completes when developer uploads the required document.

Phase 8: KYC Documentation (Two-Stage Review)

Important: KYC documents go through a **two-stage approval workflow**:

1. **Stage 1 (PLATFORM):** Adaeze (Mortgage Operations Officer) reviews documents uploaded by CUSTOMER
2. **Stage 2 (BANK):** Lender documents (preapproval letter) are **auto-approved** when uploaded by the lender

Each stage is responsible for reviewing documents from specific uploaders:

- **PLATFORM stage** → reviews CUSTOMER and PLATFORM uploads
- **BANK stage** → reviews LENDER uploads (auto-approved when lender uploads their own documents)

The phase completes when both stages have approved all their respective documents.

Step 8.1: Chidi Uploads KYC Documents

Customer uploads three documents.

Endpoint: POST /applications/{{applicationId}}/phases/{{kycPhaseId}}/documents

Service: Mortgage Service

Authentication: Bearer Token (Customer - Chidi)

Document 1: ID Card

```
{  
  "documentType": "ID_CARD",  
  "url": "https://s3.amazonaws.com/qshelter/chidi/id.pdf",  
}
```

```
    "fileName": "id.pdf"
}
```

Document 2: Bank Statements

```
{
  "documentType": "BANK_STATEMENT",
  "url": "https://s3.amazonaws.com/qshelter/chidi/bank.pdf",
  "fileName": "bank.pdf"
}
```

Document 3: Employment Letter

```
{
  "documentType": "EMPLOYMENT_LETTER",
  "url": "https://s3.amazonaws.com/qshelter/chidi/employment.pdf",
  "fileName": "employment.pdf"
}
```

Step 8.2: Stage 1 - Adaeze (QShelter) Reviews Documents

QShelter Mortgage Operations Officer performs platform verification of CUSTOMER-uploaded documents.

Endpoint: POST /applications/{{applicationId}}/documents/{{documentId}}/review

Service: Mortgage Service

Authentication: Bearer Token (Adaeze - Mortgage Operations Officer)

Request Body (for each customer document)

```
{
  "status": "APPROVED",
  "organizationTypeCode": "PLATFORM",
  "comment": "QShelter review: Document verified by Mortgage Operations"
}
```

Response (200 OK)

```
{
  "success": true,
  "data": {
    "id": "...",
    "decision": "APPROVED",
    "stageProgressId": "..."
  }
}
```

Note: After all 3 customer documents are approved by PLATFORM, Stage 1 automatically completes and Stage 2 (BANK) activates.

Step 8.3: Stage 2 - Nkechi (Bank) Uploads Preapproval Letter (Auto-Approved)

When the lender uploads their preapproval letter during Stage 2 (BANK), the document is **automatically approved** because the uploader matches the stage's organization type. This is by design: uploaders don't need to review their own documents.

Endpoint: POST /applications/{{applicationId}}/phases/{{kycPhaseId}}/documents

Service: Mortgage Service

Authentication: Bearer Token (Lender - Nkechi)

Request Body

```
{  
  "documentType": "PREAPPROVAL LETTER",  
  "url": "https://s3.amazonaws.com/qshelter/lender/preapproval-chidi.pdf",  
  "fileName": "preapproval-letter.pdf"  
}
```

Response (201 Created)

```
{  
  "success": true,  
  "data": {  
    "document": {  
      "id": "...",  
      "documentType": "PREAPPROVAL LETTER",  
      "status": "APPROVED"  
    }  
  }  
}
```

Important: The document status is immediately APPROVED because:

1. Current stage is BANK (Stage 2)
2. PREAPPROVAL LETTER is defined with uploadedBy: LENDER
3. LENDER maps to BANK organization type
4. Uploaders don't review their own documents - they are auto-approved

After the auto-approval, Stage 2 completes and the entire KYC phase becomes COMPLETED.

Step 8.4: Verify KYC Phase Completed

Endpoint: GET /applications/{{applicationId}}/phases/{{kycPhaseId}}

Service: Mortgage Service

Authentication: Bearer Token (Customer - Chidi)

Response (200 OK)

```
{  
  "success": true,
```

```
"data": {  
    "id": "...",  
    "status": "COMPLETED",  
    "type": "DOCUMENTATION"  
}  
}
```

Phase 9: Downpayment

Step 9.1: Generate Downpayment Installment

Endpoint: POST

/applications/{{applicationId}}/phases/{{downpaymentPhaseId}}/installments

Service: Mortgage Service

Authentication: Bearer Token (Customer - Chidi)

Request Body

```
{  
    "startDate": "2026-01-25T00:00:00.000Z"  
}
```

Response (200 OK)

```
{  
    "success": true,  
    "data": {  
        "installments": [  
            {  
                "id": "...",  
                "amount": 8500000,  
                "dueDate": "2026-01-25T00:00:00.000Z",  
                "status": "PENDING"  
            }  
        ]  
    }  
}
```

Step 9.2: Chidi Makes Payment

Endpoint: POST /applications/{{applicationId}}/payments

Service: Mortgage Service

Authentication: Bearer Token (Customer - Chidi)

Request Body

```
{  
    "phaseId": "{{downpaymentPhaseId}}",  
    "installmentId": "{{downpaymentInstallmentId}}",  
    "amount": 8500000  
}
```

```
"amount": 8500000,  
"paymentMethod": "BANK_TRANSFER",  
"externalReference": "TRF-CHIDI-DOWNPAYMENT-001"  
}
```

Response (201 Created)

```
{  
  "success": true,  
  "data": {  
    "id": "...",  
    "reference": "PAY-...",  
    "amount": 8500000,  
    "status": "PENDING"  
  }  
}
```

Step 9.3: Process Payment Confirmation

Endpoint: POST /applications/payments/process

Service: Mortgage Service

Authentication: Bearer Token (Customer)

Request Body

```
{  
  "reference": "{{paymentReference}}",  
  "status": "COMPLETED",  
  "gatewayTransactionId": "GW-TRX-123456"  
}
```

Note: Phase completes when payment is confirmed.

Phase 10: Mortgage Offer

Step 10.1: Lender Uploads Mortgage Offer Letter

Endpoint: POST

/applications/{{applicationId}}/phases/{{mortgageOfferPhaseId}}/documents

Service: Mortgage Service

Authentication: Bearer Token (Lender - Nkechi)

Request Body

```
{  
  "documentType": "MORTGAGE_OFFER_LETTER",  
  "url": "https://s3.amazonaws.com/qshelter/lender/mortgage-offer-chidi.pdf",  
}
```

```
        "fileName": "mortgage-offer-letter.pdf"
    }
```

Note: Application completes when all phases are done.

Step 10.2: Verify Application Completion

Endpoint: GET /applications/{{applicationId}}

Service: Mortgage Service

Authentication: Bearer Token (Customer - Chidi)

Response (200 OK)

```
{
  "success": true,
  "data": {
    "id": "...",
    "title": "Purchase Agreement – Lekki Gardens Unit 14B",
    "status": "COMPLETED",
    "totalAmount": 85000000,
    "phases": [
      { "name": "Prequalification", "status": "COMPLETED" },
      { "name": "Sales Offer", "status": "COMPLETED" },
      { "name": "Preapproval Documentation", "status": "COMPLETED" },
      { "name": "10% Downpayment", "status": "COMPLETED" },
      { "name": "Mortgage Offer", "status": "COMPLETED" }
    ]
  }
}
```

Authorization & Access Control

Authentication

All authenticated endpoints require:

Authorization: Bearer {{accessToken}}

Role-Based Permissions

Role	Permissions
admin	Full access to all resources
user	View properties, manage own applications
DEVELOPER	Upload sales offer letters for properties they manage
LENDER	Upload preapproval and mortgage offer letters

Multi-Tenancy

- All data is isolated by `tenantId`
- Users from one tenant cannot access another tenant's data
- Cross-tenant access returns `403 Forbidden` or `404 Not Found`

Ownership Verification

- Customers can only view/modify their own applications
- Attempting to access another customer's application returns `403 Forbidden`

Error Responses

Standard Error Format

```
{  
  "success": false,  
  "error": {  
    "code": "ERROR_CODE",  
    "message": "Human-readable error message"  
  }  
}
```

Common Error Codes

Status	Code	Description
400	VALIDATION_ERROR	Invalid request body
401	UNAUTHORIZED	Missing or invalid token
403	FORBIDDEN	Insufficient permissions
404	NOT_FOUND	Resource not found
409	CONFLICT	Duplicate resource
500	INTERNAL_ERROR	Server error

Running the Test

```
# Navigate to test directory  
cd tests/aws  
  
# Run full E2E test  
.scripts/run-full-e2e-staging.sh  
  
# Or run specific patterns  
npm run test:full-mortgage -- --testNamePattern="Phase 1"
```

Appendix: Complete Flow Diagram

CHIDI'S HOME PURCHASE JOURNEY

SETUP (Admin – Adaeze)

- └── Bootstrap tenant & roles
- └── Create organizations (Lekki Gardens, Access Bank)
- └── Add members (Emeka, Nkechi)
- └── Create property (Lekki Gardens Estate, Unit 14B)
- └── Create questionnaire & documentation plans
- └── Create & link payment method (10/90 Mortgage)

CUSTOMER JOURNEY (Chidi)

- └── ① PREQUALIFICATION
 - └── Customer: Submit questionnaire (age, income, employment)
 - └── Admin: Review & approve
- └── ② SALES OFFER
 - └── Developer (Emeka): Upload sales offer letter
- └── ③ KYC DOCUMENTATION
 - └── Customer: Upload ID, bank statements, employment letter
 - └── Admin: Review & approve documents
 - └── Lender (Nkechi): Upload preapproval letter
- └── ④ DOWNPAYMENT
 - └── Customer: Generate installment (#8.5M)
 - └── Customer: Pay & confirm
- └── ⑤ MORTGAGE OFFER
 - └── Lender (Nkechi): Upload mortgage offer letter
- └── ✓ APPLICATION COMPLETED

Document generated from E2E test: `tests/aws/full-mortgage-flow/full-mortgage-flow.test.ts`