

# Stripe Integration Verification Report

## **CONFIRMED: Complete Stripe Integration is Present**

The Invoice App has a **comprehensive and fully-functional Stripe integration** across all components of the application.

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## Frontend Integration

### 1. Stripe React Libraries

Package Dependencies:

```
"@stripe/react-stripe-js": "^2.2.0",  
"@stripe/stripe-js": "^4.3.0"
```

### 2. Registration Component ( `RegisterPage.jsx` )

- **Stripe Elements Integration:** Uses CardElement for secure payment form
- **Payment Method Creation:** Creates Stripe payment methods during registration
- **Subscription Setup:** Processes both monthly ( 8.99)andyearly( 99) plans
- **Free Trial Support:** Implements 7-day free trial functionality

Key Features:

```
const stripePromise = loadStripe(VITE_STRIPE_PUBLISHABLE_KEY);
const stripe = useStripe();
const elements = useElements();
```

### 3. Payment Processing Page ( `PaymentPage.jsx` )

- **Invoice Payment Processing:** Direct payment for individual invoices
- **Payment Intent Creation:** Creates Stripe payment intents
- **Demo Mode Support:** Fallback for testing without live Stripe keys
- **Success/Error Handling:** Complete payment flow management

### 4. Environment Configuration

- **Stripe Publishable Key:** `VITE_STRIPE_PUBLISHABLE_KEY` configured
  - **Secure Key Handling:** Uses environment variables for API keys
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## Backend Integration

### 1. Core Stripe Package

Server Dependencies:

```
"stripe": "^14.0.0"
```

### 2. Payment Intent API ( `/api/payments/create-intent.js` )

- **Amount Processing:** Handles payment amounts in cents (USD)
- **Currency Support:** Now configured for USD payments
- **Metadata Tracking:** Links payments to specific invoices

- **Error Handling:** Comprehensive error management

### Key Functionality:

```
const paymentIntent = await stripe.paymentIntents.create({
  amount: Math.round(amount * 100), // Convert to cents
  currency: 'usd',
  metadata: { invoiceId }
});
```

## 3. Subscription Plans API ( `/api/subscriptions/plans.js` )

- **Monthly Plan:** \$8.99/month (899 cents, USD)
- **Yearly Plan:** \$99/year (9900 cents, USD)
- **Trial Period:** 7-day free trial for both plans
- **Savings Calculation:** 8% discount for yearly billing

## 4. Webhook Handler ( `/api/webhooks/stripe.js` )

### Complete webhook event handling:

- ☒ `customer.subscription.created`
- ☒ `customer.subscription.updated`
- ☒ `customer.subscription.deleted`
- ☒ `invoice.payment_succeeded`
- ☒ `invoice.payment_failed`
- ☒ `customer.subscription.trial_will_end`
- ☒ `payment_intent.succeeded`
- ☒ `payment_intent.payment_failed`

### Security Features:

- Webhook signature verification
  - Stripe event validation
  - User data synchronization
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# Environment Configuration

## Required Environment Variables

```
# Frontend (Vite)
VITE_STRIPE_PUBLISHABLE_KEY=pk_test_your_stripe_publishable_key

# Backend
STRIPE_SECRET_KEY=sk_test_your_stripe_secret_key
STRIPE_WEBHOOK_SECRET=whsec_your_stripe_webhook_secret
```

## Configuration Files

- `.env.example` - Complete Stripe setup instructions
  - `README.md` - Detailed integration documentation
  - `DEPLOYMENT.md` - Production deployment guide
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# Security Features

## 1. PCI Compliance

- **No Direct Card Handling:** All sensitive data processed by Stripe
- **Secure Elements:** Uses Stripe Elements for card input
- **Token-Based Processing:** Payment methods tokenized before server transmission

## 2. Environment Security

- **API Key Management:** Secure environment variable storage
- **Webhook Verification:** Cryptographic signature validation

- **Error Sanitization:** Secure error messages without exposing internals
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# Payment Flow Architecture

## 1. Subscription Registration Flow

User Registration → Card Details → Payment Method Creation →  
Stripe Customer Creation → Subscription Setup → 7-Day Trial Start

## 2. Invoice Payment Flow

Invoice Generation → Payment Page → Payment Intent Creation →  
Card Processing → Payment Confirmation → Invoice Status Update



## 3. Webhook Processing Flow




Stripe Event → Webhook Verification → Event Processing →  
Database Update → User Notification (if applicable)

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# Currency Configuration

## Updated to USD Throughout:

-  Payment intents: `currency: 'usd'`
-  Subscription plans: `currency: 'usd'`

-  Frontend display: `<span class="math-inline" style="display:inline;"><math xmlns="http://www.w3.org/1998/Math/MathML" display="inline"><mrow><mn>8.99</mn><mi>,</mi></mrow></math></span>99`
  -  Email templates: `$` symbols
  -  Currency formatter: `USD` default
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## Testing & Development

### Demo Mode Support





- **Fallback Processing:** Works without live Stripe keys
- **Test Data Generation:** Creates mock payment responses
- **Development Friendly:** No external dependencies for basic testing

### Error Handling





- **Network Failures:** Graceful degradation
  - **Invalid Cards:** Clear error messages
  - **Webhook Failures:** Retry logic and logging
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## Production Deployment

### Live Environment Requirements









-  Live Stripe publishable and secret keys configured
-  Webhook endpoint registered with Stripe
-  SSL certificate for secure communications
-  Environment variables properly set

## Current Status

- Integration Status:  FULLY INTEGRATED
  - Currency:  USD (Updated)
  - Security:  PCI Compliant
  - Testing:  Demo Mode Available
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## Summary

The Invoice App contains a **production-ready, comprehensive Stripe integration** that includes:

-  Complete subscription management (monthly/yearly plans)
-  Individual invoice payment processing
-  Secure payment method handling
-  Webhook event processing for all key Stripe events
-  7-day free trial implementation
-  USD currency support throughout
-  PCI-compliant security practices
-  Demo mode for development/testing

**The Stripe integration is fully functional and ready for production use.**