DEVELOPER DOCUMENT

Solana Merchant Payment Plugin

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1. Introduction

1.1 Overview of the Solana Merchant Payment Plugin
The Solana Merchant Payment Plugin is a robust tool enabling merchants to accept cryptocurrency payments via the Solana blockchain. It seamlessly integrates with WordPress and WooCommerce, with plans for expansion to Shopify and BigCommerce. The plugin leverages Solana's scalability to provide fast, low-cost transactions.

1.2 Purpose and Use Cases
The plugin simplifies cryptocurrency adoption by offering:
- Cost Efficiency: Reduced fees compared to traditional payment gateways.
- Seamless Checkout: Simple processes for customers using crypto wallets.
- Versatile Payment Options: Ideal for crypto-savvy customers.

Use Cases:
- E-commerce stores selling physical or digital goods.
- Service providers accepting global payments.
- Subscription-based platforms avoiding chargebacks.

1.3 Key Features
- Fast, low-cost payments on the Solana blockchain.
- Support for SOL and customizable SPL tokens.
- WooCommerce compatibility.
- No chargebacks or reversals.
- Secure wallet integration (Phantom, Solflare).

1.4 Supported Platforms
- Current: WordPress and WooCommerce.
- Planned: Shopify and BigCommerce.

1.5 System Requirements
- Live WordPress installation with WooCommerce.
- PHP 7.4+ and MySQL 5.6+.
- Solana-compatible wallet (Phantom, Solflare).
- Access to Solana Mainnet or Devnet.

2. Getting Started

2.1 Prerequisites
- A Solana-compatible wallet.
- Network access to Mainnet (live) or Devnet (testing).
- A WordPress site with WooCommerce installed.

2.2 Installation Guide
- Download the plugin from the official website or WordPress Plugin Directory.
- Log in to the WordPress dashboard.
- Navigate to Plugins > Add New.
- Upload the plugin and click Install Now.
- Activate the plugin.

2.3 Configuration Overview
- Configure wallet connections via API keys.
- Set payment parameters (currencies, tokens).
- Enable webhooks for real-time updates.

2.4 Testing Environment Setup
- Use Solana Devnet for test transactions.
- Create test wallets to simulate payments.

3. Architecture Overview

3.1 Plugin Workflow
- Customers select cryptocurrency as a payment method at checkout.
- The plugin generates a payment request.
- Customers complete payments via their Solana wallet.
- Blockchain confirms the transaction; WooCommerce updates the order status.

3.2 Key Components
- API Connections: Wallet integrations and payment confirmations.
- Payment Gateway: Supports SOL and customizable SPL tokens.
- Webhooks: Real-time updates.

3.3 Data Flow Diagram
(Placeholder: To be added, showing the flow from checkout to blockchain confirmation and WooCommerce update.)

3.4 Security Measures
- SSL encryption for transactions.
- Secure API key storage in the WordPress database.

4. Configuration & Customization

4.1 Plugin Settings
- Default token configuration (e.g., SOL, SPL tokens).
- Optional exchange rate settings.
- Define order statuses for payment updates.

4.2 Wallet Integration
- Phantom and Solflare API-based connections.
- Test wallet integration during setup.

4.3 Managing Merchant Keys
- Generate API keys per merchant account.
- Securely store keys in the WordPress database.

4.4 Webhook Setup
- Set up webhook URLs for real-time notifications.
- Ensure accessibility and accuracy of the URLs.

4.5 Payment Interface Customization
- Customize payment buttons and branding.
- Offer design services for advanced customization.

5. Developer API Documentation

5.1 API Endpoints
- Authentication: Generate/validate API keys.
- Payments: Initiate/confirm payments.
- Status Updates: Query transaction statuses.

5.2 Request/Response Structures
Detailed JSON examples for all API calls:
- Initiate Payment:
- {
- "type": "CONNECT"
}
- Transaction Success Response:
- {
- "success": true,
- "data": {
- "type": "SUCCESS",
- "signature": "transaction_signature_here"
- }
}

5.3 Error Codes and Resolutions
Comprehensive list included, e.g., INVALID_REQUEST, RATE_LIMIT_EXCEEDED, TRANSACTION_NOT_FOUND.

5.4 Usage Examples
- Initiate Payment: POST request with payment details.
- Query Status: Use GET requests to fetch transaction updates.

6. Integration Guide

Detailed WooCommerce integration steps completed. Previews for Shopify and BigCommerce integrations planned.

7. Security Best Practices

- Assign unique API keys to each merchant.
- Regularly update the plugin.
- Encrypt sensitive data securely.

8. Testing and Troubleshooting

- Enable Devnet for test transactions.
- Monitor logs for debugging errors.
- Display clear error messages for payment failures.

9. Deployment and Updates

- Conduct thorough testing before production deployment.
- Use WordPress mechanisms for plugin updates.
- Maintain backward compatibility.

10. Support & Community

- Support through the official website and GitHub.
- Community forums and Discord for discussions.
- Use WordPress support for plugin issues (when listed).

11. Appendices

- Glossary (e.g., SPL tokens, API keys).
- References: Solana blockchain docs.
- Change Log: Record of plugin updates.

FAQ

Installation Issues
Q: Why is the plugin not appearing in my WordPress dashboard after installation?
A: Ensure that the plugin was uploaded correctly and that your WordPress and WooCommerce installations meet the system requirements (PHP 7.4+ and MySQL 5.6+).

API Key Configuration
Q: How do I generate and configure API keys for my merchant account?
A: API keys can be generated within the plugin settings. Refer to the configuration guide for detailed steps.

Wallet Integration Problems
Q: Why is my Phantom or Solflare wallet not connecting?
A: Check that the wallet extension is installed and active in your browser. Ensure you're using a compatible wallet and that your browser settings allow the connection.

Payment Confirmation Delays
Q: Why are payments not confirming instantly?
A: Delays can occur if the Solana blockchain network is congested. Check the network status or use the plugin's debug logs for troubleshooting.

Webhooks Configuration
Q: How do I configure webhooks to receive real-time payment updates?
A: Webhooks can be set up in the plugin settings. Make sure the webhook URL is correct and accessible.

Currency Support
Q: Can I add custom SPL tokens as payment options?
A: Yes, the plugin supports SOL and customizable SPL tokens. Follow the customization guide to add new tokens.

Order Status Updates
Q: Why is the WooCommerce order status not updating after payment?
A: Verify that the webhook URL is correctly configured and that your WordPress site can communicate with the Solana blockchain.

Testing Issues
Q: How do I test the plugin without using real money?
A: Switch to the Solana Devnet in the plugin settings and use test wallets to simulate payments.

Troubleshooting Errors
Q: What do error codes like 401 or 404 mean?
A: Refer to the error codes section in the documentation for detailed explanations and solutions.

Customization Limitations
Q: Can I customize the appearance of the payment interface?
A: Yes, you can adjust the payment button's design and branding in the plugin settings.

Version Updates
Q: Will plugin updates affect my current settings?
A: Plugin updates are designed to maintain backward compatibility. However, backing up your settings before updating is recommended.

Security Concerns
Q: How does the plugin ensure transaction security?
A: Transactions are encrypted with SSL, and sensitive data, like API keys, is securely stored.

Refunds and Chargebacks
Q: Can I issue refunds or handle chargebacks?
A: Refunds can be processed manually by sending equivalent SOL or SPL tokens back to the customer. Cryptocurrency transactions are irreversible, so chargebacks are not supported.

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Multi-Platform Expansion
Q: When will Shopify and BigCommerce integrations be available?
A: Shopify and BigCommerce integrations are planned for future releases. Stay updated through our website or community channels.

Support and Resources
Q: Where can I get help if I encounter an issue?
A: Support is available through our official website, community forums, and GitHub repository.