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Payment Fundamentals 201

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PaymentsEd Forum

Agenda Topics

- Orchestration: an overview
- Tokenizing for recurring billing
- e-wallet tokenization lifecycle

Payment Orchestration

Payment orchestration layer is the core of the payment system, providing flexibility and efficiency

Ecomm platform, marketplaces, etc…

Payment orchestration API

Payment Orchestration Layer
Trans routing
Billing
Reporting

Processing Connection:

- Payment service providers (gateway)
- Acquirer

Flexible Features:

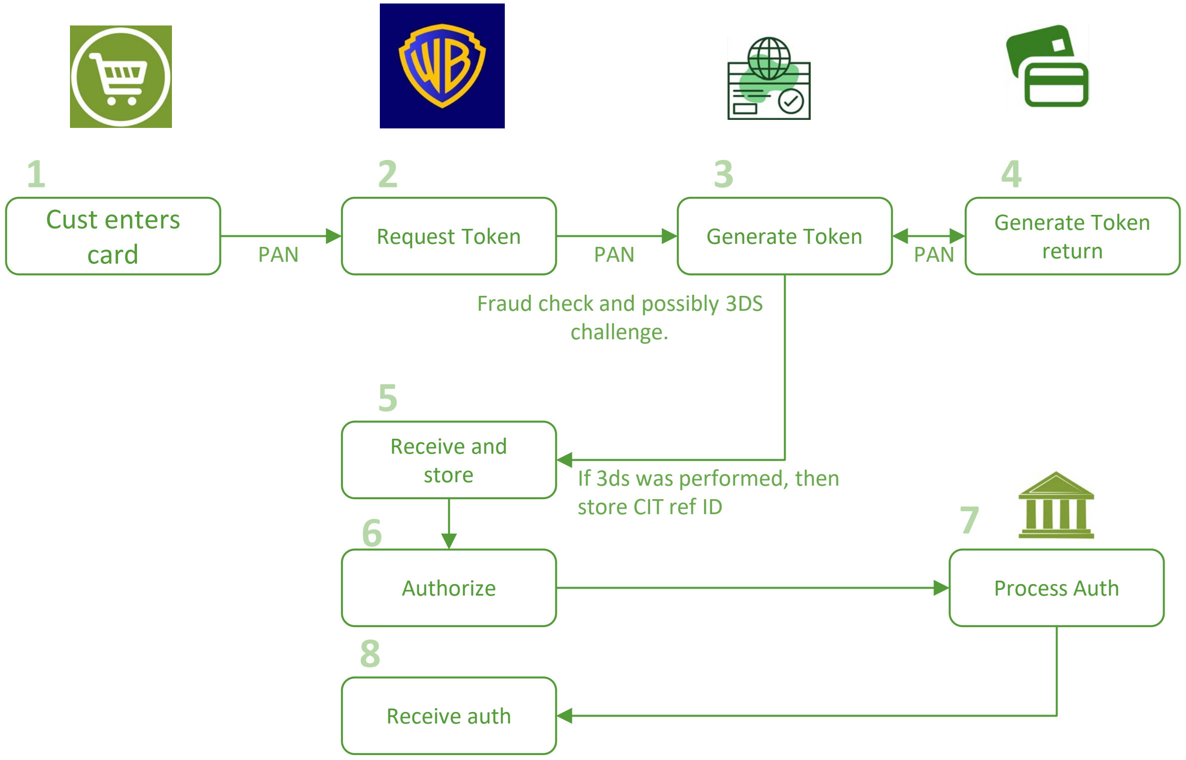
- Vault /Updater technology
- Fraud solutions
- 3DS
- Subscription management
- Currency mgmt / optimization

Considerations:

- **Flexibility:** Along with a robust feature set, pay attention to flexibility. Some payment methods require additional data that needs to be conveyed in the requests/responses.
- **Integration capabilities:** In addition to processing systems, ensure that you focus on other systems (ERP, CRM, etc..)
- **Security and compliance:** Ensure the system is secure and meets your corp standards (SAQ-A (simple), SAQ-D (complex)
- **Support:** If you outsource, ensure that you receive the right level of support for outages, enhancements, etc. It's good to ensure their existing feature set and roadmap align with yours.

Tokenization

Tokening the PAN (raw card details)

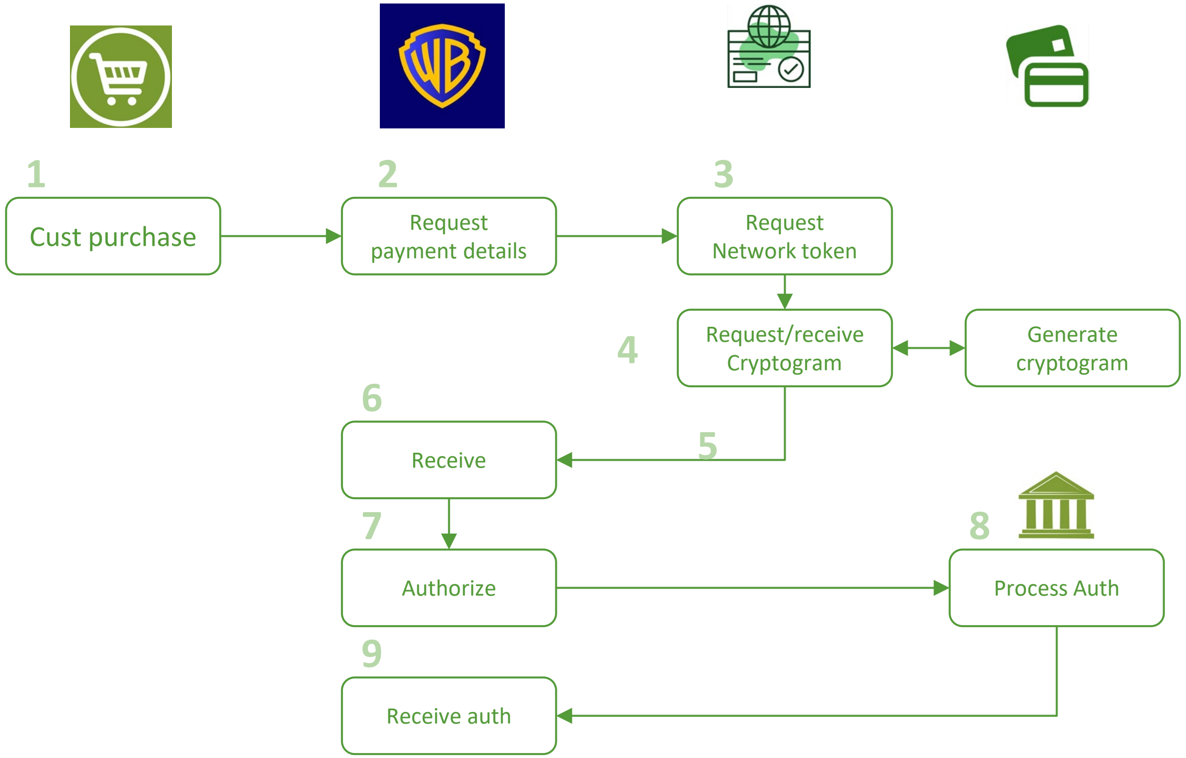


Steps

1. Customer enters card
2. Merch sends PAN to gateway
3. Gateway generates token and provisions NT from the card brands
4. Schemes generate NT
5. Merchant receives token ID and stores, along with NT indicator (flag)
6. Authorization request sent
7. Acquirer processes
8. Merchant receives authorization

Tokenization

Processing a transaction with card on file



Tokenization using a network token:

1. Customer purchase
2. Merch sends purchase request to PSP
3. PSP checks (looks up) to see if NT is available
4. PSP requests the cryptogram
5. PSP sends the NT and the cryptogram to the merchant
6. Merchant receives payload
7. Merchant begins authorizations- sending NT, crypto, and any other info (3DS data) to process auth
8. Acquiring bank processes the authorization
9. Merchant receives authorization

Tokenization Approaches

The industry offers various tokenization approaches, which is right for you?

	In-house	Orchestration service	PSP
Who manages?	**Merchant**	**Vaulting specialists**	**PSP**
How it works	Build and maintain an orchestration system	Card data sent to OS who returns token	Card data stored by PSP
Pros	• Full control • Multi-PSP routing • Unified CS (Omnichannel, loyalty)	• Offload PCI • Flexible routing • Speed to market	• Low PCI • Simple to implement (e.g. checkout) • Often includes add-on services
Cons	• Regulatory burden • Expensive • Greater security risk	• Dependency on 3rd party • Additional fees • Less control	• Limited flexibility and scale

Forward API technology- where PSPs are acting as pure orchestration services, allowing merchants to integrate and route to multiple PSPs

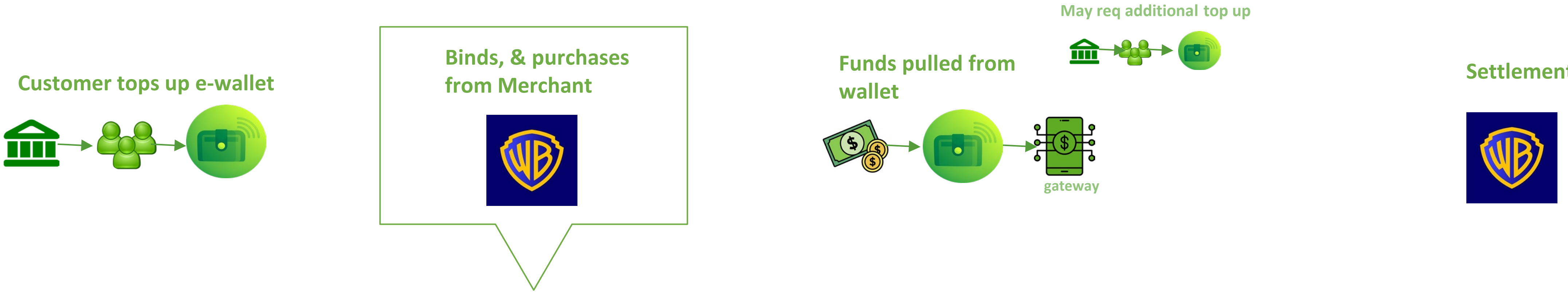
Wallet Tokenization

Each wallet has a different tokenization approach.

Wallet	Tokenization	Other….
AliPay	AliPay SDK + partner ID	Merchant must register
PayPal	`billing_agreement_id`, `token` via Smart Buttons or Vault API	PayPal has a BAID cancel API
Google Pay	Encrypted `paymentData`, often used once, can be stored via gateway	Developing a cancel API
Apple Pay	Encrypted blob, decrypted on merchant backend	Requires merchant certificate, signed sessions, and verified domains
WeChat Pay	`openid` + access token or partner API for tokenization	

Tokenizing With an E-wallet (binding types)

Binding is a common practice, supporting authentication, faster checkout, recurring billing, & loyalty programs.

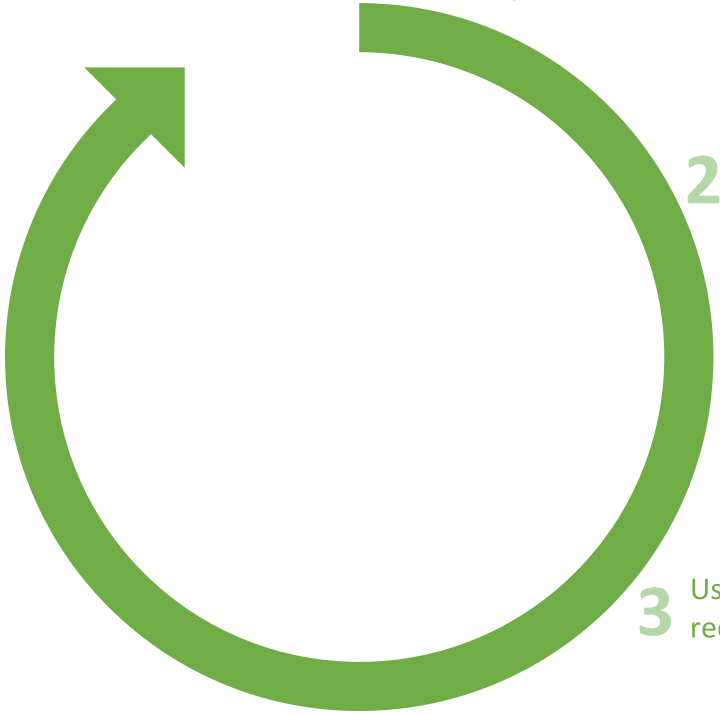


Scenario	How binding works
Customer initiated transactions (POS/Ecommerce)	Wallet is tied to an app or a merchant to support future purchases
Subscriptions	Authorizes payments (MIT) to a merchant
Close loop	Only allowed to be used within the merchant ecosystem

Tokenizing With an E-wallet (binding lifecycle)

5 step process, allowing for customer initiated and recurring charges

1 Register- merchant registers with the wallet
- KYC process
- MID
- API keys



2 Bind/verify with merchant- generating a token (**NO PCI/PII) and validate token (recurring)**

3 Use- customer initiates new purchases / merchant initiates recurring payments

4 Rebing/rotate- funding source updates/ token expiration

5 Unbind/ revoke- customer revokes consent and token is invalidated

Thank you

- Don’t forget to submit your session evaluation!