J.P.Morgan | Token ID
A Visa Solution

Network tokenization
for merchants

**Finding the balance: Creating more secure, simple
checkout experiences for the digital customer**

February 2024

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Executive summary

In 1998, the U.S. Census Bureau collected data on digital commerce transactions for the first time as part of its Annual Retail Trade Survey. The survey found that online sales totaled $5 billion. More than 20 years later, U.S. digital commerce topped 1 trillion[1].

This exponential growth speaks to the rise of digital commerce but is just one part of the story. As customers embraced the online experience, their expectations evolved to require greater convenience, security, and new ways to pay. Wherever merchants recognized opportunities to expand and innovate, fraudsters spied opportunities to scam.

Through it all, J.P. Morgan and Visa have remained at the forefront, strengthening the integrity of global payments. Today, we have reinforced our position with an innovative approach to securing digital commerce: network tokenization.

Our strategy is focused on driving performance. Network tokens strengthen digital commerce by driving higher approval rates, mitigating fraud and optimizing card-not-present experiences.

In the following pages, industry leaders J.P. Morgan and Visa demystify network tokenization and provide a roadmap for merchants to create world class digital commerce experiences. Discover new possibilities for simpler, safer and more reliable digital shopping experiences with network tokens.

> *Network tokenization underpins today's increasingly complex digital payments ecosystem and powers new commerce experiences. From digital wallets to tap to pay, network tokenization is the foundation of secure omni-channel experiences.*

Striking a balance:
The challenge and opportunity of digital commerce

Skyrocketing customer demand for digital commerce has created significant opportunities for online merchants. Remote payments for digital and physical goods are estimated to exceed $5.6 trillion by 2025[2]. Even as demand for digital payments stabilizes, total new spend for card transactions will remain high, making digital commerce essential for most merchants.

This opportunity comes with a road block. Merchants must find ways to deliver personalized and smooth shopping experiences while protecting data, money, customer relationships and their brand.

High customer expectations also mean customers have little patience when the experience lets them down. Increased friction at checkout has caused card abandonment rates to reach nearly 70% of transactions, with the average US checkout flow containing more than 14 form fields[3]. Customers expect merchants to anticipate their needs and remove friction where possible.

On the flip side, these online transactions are susceptible to increasing levels of fraud which is forecast to rise from $22.8 billion in 2023 to $54 billion in 2028[4].

> *"Network tokens are essential to the future of digital commerce. They bridge the gap between security and performance, meaning merchants don't have to compromise when enabling the latest digital experiences for customers."*
>
> **Mark Nelson**
> SVP, Applications and Services at Visa

Over	Nearly	(CNP) fraud is forecast to rise to
$5.6^T	1 out of 5	$54^B
estimated remote payments by 2025[1]	shoppers have abandoned a cart in the last quarter due to the checkout process being too long or complicated[3]	by 2028[4]

Merchants are left with a dilemma. Maintaining trust is fundamental, yet adding security often comes at the expense of a smooth checkout experience, resulting in friction and frustration. Compounding the issue, without the right measures in place, false declines have a greater likelihood of occurring. Under intense scrutiny from issuers, CNP transactions are five times more likely to be flagged as fraudulent and subsequently rejected[5].

Finding the right balance between security and convenience can be a difficulty, but merchants shouldn't have to settle for one or the other.

For decades, J.P. Morgan and Visa have addressed needs in the payments industry, working with merchants to secure transactions, establish customer trust and fine-tune card-based payments. As digital commerce dominates the global market, merchants need an innovative approach to manage, improve and better secure payments. To address the increasingly complex requirements for secure payments, J.P. Morgan's suite of security solutions help block and prevent fraudulent activity. Automatic safeguards block payments that don't adhere to client settings, while review controls help find fraudulent activity that may otherwise be overlooked. Network tokenization works in conjunction with these solutions to further secure transactions.

Network tokenization, a method of securely replacing sensitive customer PANs with randomized values during a transaction, helps provide a solution. Powered by trusted partner Token ID – a Visa Solution, J.P. Morgan merchant clients can implement modern payment solutions that can support their sustainable digital commerce growth and support the global digital commerce economy.

"Having processed the majority of card-not-present transactions in the U.S. last year, we have a unique perspective on the complexities faced by merchants when trying to streamline and secure their checkouts and payment processing. Network tokenization empowers merchants to better deliver modern payment solutions that meet the increased expectations that come from the digital commerce age."

Ayman Hammad
Head of Value Added Services -
Merchant Services, J.P. Morgan
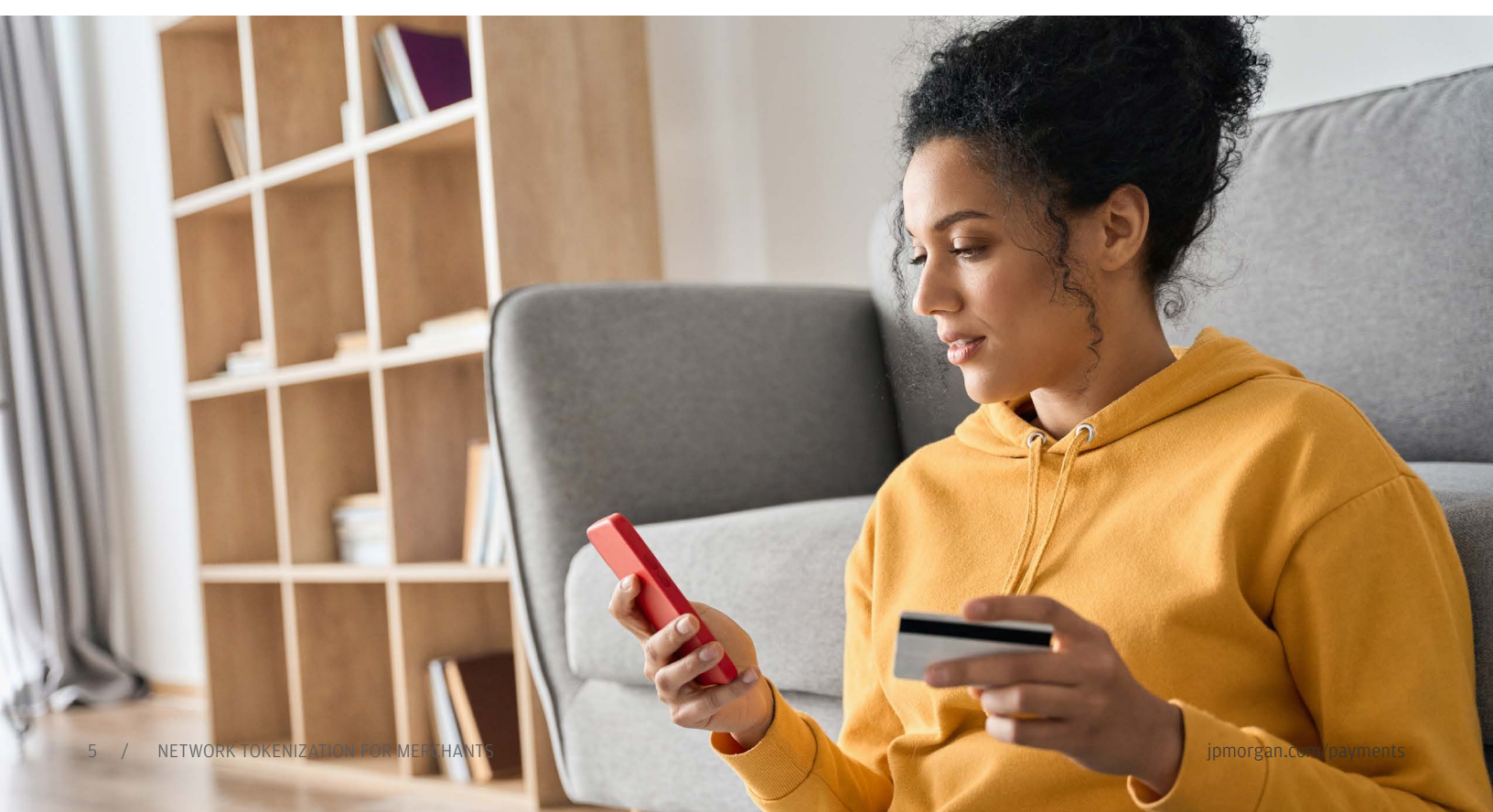
Network tokenization is already slowing down fraudsters and increasing authorizations

Managing fraud successfully while navigating the shift to digital has left some merchants feeling like they need to compromise user experience for fraud management.

False declines can be a big problem for retailers: 40% of customers say they won't return to a merchant if they receive a false decline[6]. By working behind the scenes to improve security and increase approval rates, network tokenization can improve security and increase approval rates, network tokenization can improve customer loyalty, and drive increased revenue as a result.

Network tokenization plays an important role in securing transactions and addressing fraud challenges for merchants, while optimizing authorization rates and enhancing user experiences.

How does network tokenization work?

Network tokenization replaces sensitive information, such as the Personal Account Number (PAN), with randomized values known as tokens. A network token uses the same format as the number it replaces to enable smooth integration into existing transaction processes.

These network tokens cannot be altered to reveal the underlying credentials, making them an effective tool to secure digital data. Rules can be applied to network tokens to define how, where and/or when they can be used.

Network tokens can be used immediately to make a payment or can be stored by a merchant or digital wallet for future use. When a payment is made using a network token, it passes through the approval process, just as a card or account number would.

Network tokenization is already making an impact on the U.S. digital commerce industry

Visa network tokens are delivering:

18%

fraud reduction[7]

4.3%

authorization rate lift[8]

The opportunity for merchants is clear

Over **95%**

U.S. based payment volume is already token enabled by their issuing bank[9]

Acquirer tokens vs. network tokens: What's the difference?

You may already be familiar with acquirer tokens, as J.P. Morgan Merchant Services can provide an acquirer token for each transaction. When your customer enters their payment information at checkout, instead of receiving their personal details directly, J.P. Morgan converts this information into an acquirer token which can be securely stored on your systems or passed on for processing.

Acquirer tokens protect the first part of the payment process between the acquirer and the merchant. Then, the network token secures credentials as they move the rest of the way through the ecosystem to the issuer. The more visibility and control that issuers have on the credential, the more confidence they are likely to have in approving a transaction.
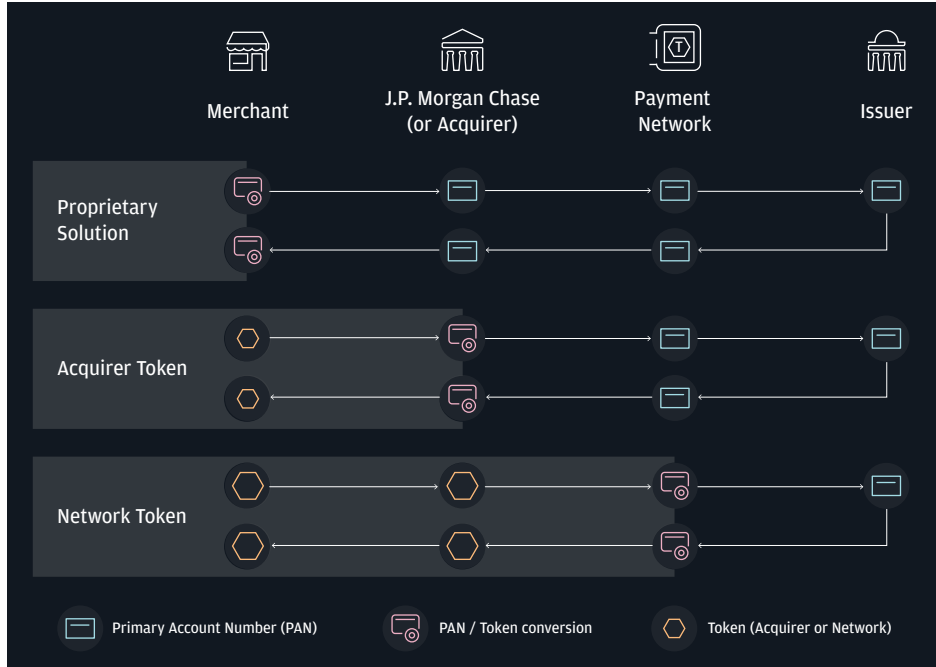
Network tokens are built to EMVCo[10] global standards and work in tandem with acquirer tokens to help provide security across every stage of the payment process. When network tokens and acquirer tokens work together, they can help improve security, decrease chargebacks, and increase approval rates.

They complement acquirer tokens by extending the security practices used by the merchant and their acquirer. This requires no change to current merchant processes.

> *"J.P. Morgan and Visa put our clients at the forefront, and our flexible, scaled services mirror that commitment. Together we take the leg work out of mitigating fraud and optimizing authorizations for your business so you can focus on innovation and driving revenues."*
>
> **Brian O'Connor**
> Head of Embedded Finance & Hosted Services

	Merchant	J.P. Morgan Chase (or Acquirer)	Payment Network	Issuer

Legend:
- ⬜ Primary Account Number (PAN)
- ▢ PAN / Token conversion
- ⬡ Token (Acquirer or Network)

Network tokens are a win-win-win for all players in the ecosystem. With network tokenization, customers can get a secure payment experience; issuers can receive additional data, helping to mitigate fraud and authorize more good transactions and merchants can streamline payments, helping to increase authorization rates.

Enabling tokenization across multiple payment networks

J.P. Morgan uses Token ID's platform to expedite network tokenization for merchants. This interface empowers J.P. Morgan to manage network tokenization across major EMV®[10] network tokenization services globally.
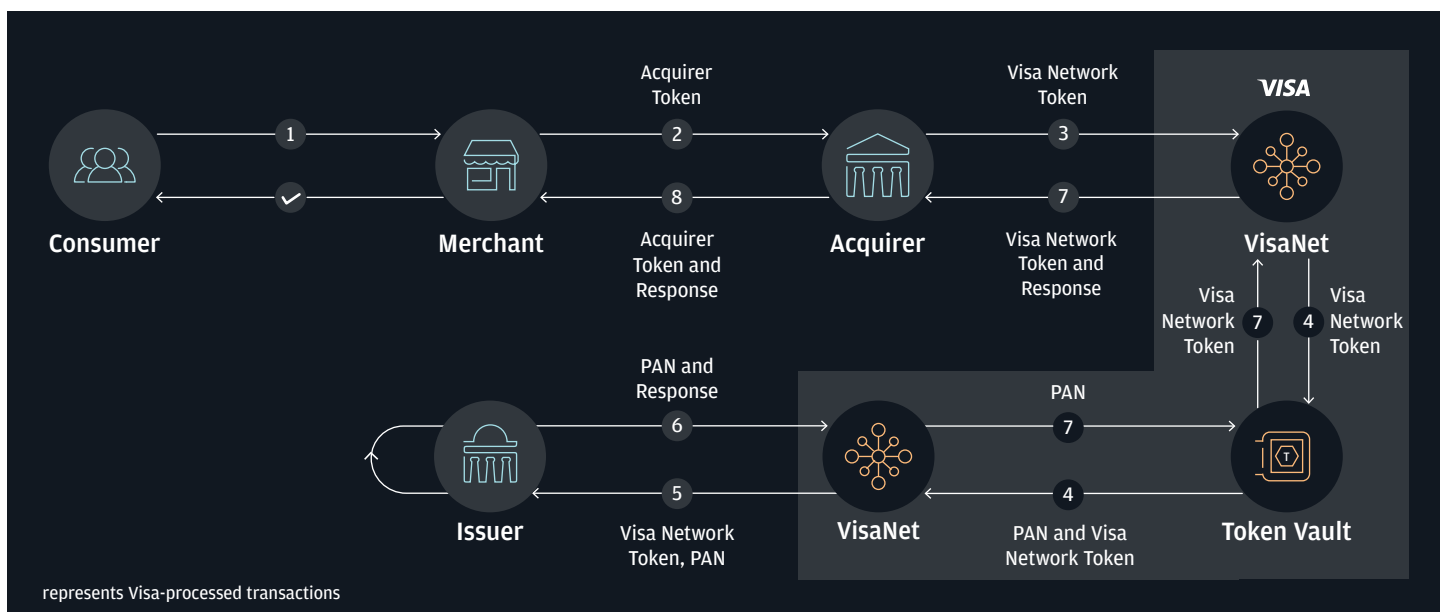
Network tokens in action

Let's take a look at how network tokens work in action for card-not-present transactions, using Visa network tokens as an example:

1. First, the customer initiates a purchase on their mobile device, tablet or computer using a card-on-file.

2. The merchant submits the PAN or token to J.P. Morgan. The token looks and feels like a PAN, but the PAN is not involved.

3. J.P. Morgan, the acquirer, switches out the acquirer token or PAN for the Visa network token and passes the Visa network token to the global Visa payment network.

4. Visa exchanges the token with the PAN which is stored in the Visa Token Vault.

5. Visa passes the PAN and the Visa network token to the issuer for authorization.

6. The issuer (or their processor) authorizes or declines the transaction and returns the result to Visa.

7. Visa forwards the response back to the acquirer, including the Network Token and Issuer response.

8. J.P. Morgan sends the response to the merchant.

Token ID's network inclusive approach removes the need to manage potentially time-consuming and expensive connections to multiple networks. With just one API, users can start their tokenization journey and enable the benefits of network tokens across multiple major networks.

Chakib Bouda
Head of Token ID

represents Visa-processed transactions

Features of network tokens

Cryptograms

These dynamically-generated values are tied to individual network tokens and restrict their use through domain controls, enabling greater security for customer-initiated transactions.

Digital credential management

Digital credential updates keep network tokens up to date with the cardholder's latest credentials. So even if an old card is reissued, the token remains active and transaction-ready.

Additional verification

Methods such as device binding or step-up authentication make card-on-file transactions more secure by binding the network token to a specific, approved device.

Card art

With a visual representation of their card-on-file, customers can easily recognize their card, helping to instill more trust in the transaction.

Cardholder verification

Unique, verifiable data is passed to the issuer as part of the transaction to build greater trust with the issuer.

> *Network tokens have many features built in that help to optimize authorization rates and mitigate fraud.*

Network tokenization
for merchants

Leveraging network tokenization for your business can build greater trust and loyalty with your customers. Let's look at some of the ways network tokens can make an impact for your business.

Potential benefits for your business

Mitigate fraud

Network tokens provide peace of mind by eliminating the burden of handling and storing customer payment data and can help reduce exposure in the event of a data breach. Since network tokenization helps safeguard the entire payment process, it aims to significantly reduce the chance of payment data being intercepted mid transaction by hackers and fraudsters. Transactions using Visa network tokens have seen an 18% reduction in fraud compared to PAN-based transactions online[7].

Help increase sales

Enhanced security and strengthened credentials enabled by network tokens results in issuers receiving more data so they are able to trust and approve transactions. Transactions secured with Visa network tokens have seen an average of a 4.3% authorization uplift[8]. A boost in authorization rates for merchants helps grow sales and revenue, by reducing rates of false declines and subsequent loss in sales, and by building and maintaining loyal relationships with customers.

Long term efficiency

Minimize ongoing complexity and reduce costs as tokenization services handle the tricky task of managing evolving tokenization specifications and requirements. By safeguarding customer data and reducing interaction with sensitive information, merchants can also reduce the scope of PCI DSS (The Payment Card Industry Data Security Standard) compliance processes.

Streamlined customer experiences

Tokenization services enable automatic updates of stored credentials, so customers don't need to update their accounts when cards are reissued, lost, or stolen. This helps protect recurring transactions and repeat purchases.
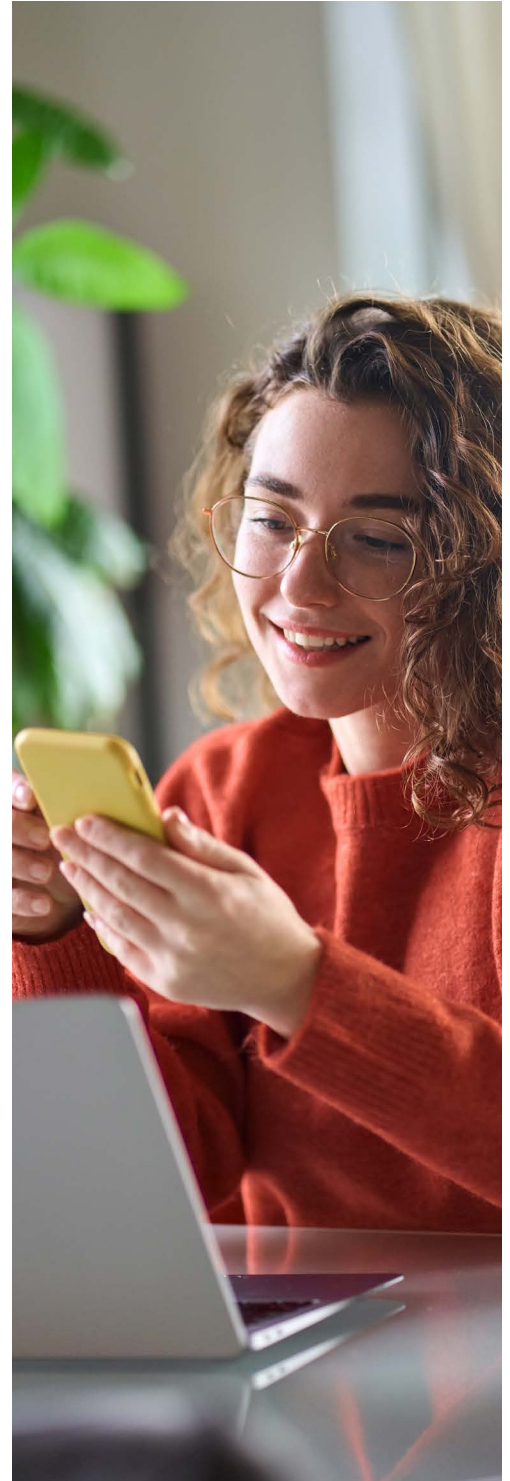
Powering innovative use cases

Network tokens support the delivery of the latest checkout experiences for your customers with confidence. Here are just a few potential experiences you can enable with tokenization:

In-app purchases

payments directly into your apps so customers can browse, checkout and complete a transaction without leaving the app.

Recurring billing

Network tokens support regular payments for goods and services, from subscriptions to incremental payment plans.

Click to Pay

Help improve customer conversions and satisfaction levels by enabling Click to Pay, which can remove the need for customers to input details manually.

Tap to Pay

Secure contactless payments made via cards, phones, watches and other devices with network tokens to make transactions swift and easy.

Streamlined enrollment

Visa's Card Enrollment Hub (VCEH) enables push provisioning of Visa credentials to help customers to securely enroll with selected merchants without having to reshare credentials, helping to increase loyalty and repeat customers.

6. Getting started

How to enable network tokens

Ready to start using network tokens to protect and optimize transactions while enabling innovative experiences? We're here to help.

1. Merchants can get started by completing an initial questionnaire and sharing a request with J.P. Morgan to activate network tokens.

2. J.P. Morgan and Token ID remove the technical requirements for merchants behind the scenes. Token ID provides a unified interface that enables J.P. Morgan to connect to multiple networks to provide a network inclusive token solution. In addition, J.P. Morgan interfaces directly with the merchant to turn on network tokens smoothly, enabling an easy merchant onboarding.

3. J.P. Morgan then becomes the interface for merchants to easily turn on network tokens.

4. Merchants only need to follow the payment brand rules technical specifications and best practices outlined by J.P. Morgan. J.P. Morgan and Token ID manage the entire lifecycle of network tokens, removing overhead costs and fast-tracking implementation timelines so merchants don't have to worry about ongoing updates and maintenance.

Have questions about network tokens, or payment tokenization in general?

Reach out to your Visa Account Representative to learn more.

Merchant readiness checklist

There are a range of factors to consider when defining a token strategy. Addressing these will help identify the right approach to meet your growth objectives. The most common factors to consider include:

• What are your objectives – fraud reduction, authorization uplift, data protection and/or enabling new checkout experiences?

• Are you already using tokens – i.e. acquirer tokens?

  – If yes, are they supporting your business objectives? If not, why?

• What types of payment tokens might you need to scale your business?

• In which regions do you operate?

• What network acceptance do you have?

• Are you aligned with the data requirements needed to implement network tokens?

• Who do you need to connect with to manage tokenization?

Ready to get started tokenizing your transactions through your J.P. Morgan Merchant account?

Contact your J.P. Morgan account representative to learn more.

Appendix
Glossary

API (Application Programming Interface)

A type of software which allows two applications to interact with one another.

Card-Not-Present (CNP) transactions

Occur when neither the cardholder nor the card is physically present,
e.g. online shopping.

Card-on-File

Cardholder credentials stored by a merchant, its agent, a payment facilitator or what
a staged digital wallet operator stores about a cardholder.

Click to Pay guest checkout

A process which allows customers to store payment details in one central source,
enabling one-click checkout without having to create an account with a merchant.

Digital commerce

Refers to the buying and selling of goods or services using the internet.

Domain controls

A restriction on the use of network tokens, for example, to a specific device or
merchant, to help prevent cross-channel fraud.

EMVCo

EMVCo is a global technical body that facilitates worldwide interoperability and
acceptance of secure payment transactions by managing and evolving the EMV
specifications and related testing processes.

False decline

When a customer attempts to make a legitimate purchase but it is incorrectly declined
by their card issuer.

PCI DSS (The Payment Card Industry Data Security Standard)

A set of requirements that must be met by any organization which processes, stores or
transmits card information to enable them to maintain a secure environment in which
to do so.

Primary Account Number (PAN)

The long number, usually 16 digits found on a card, that uniquely links a cardholder and
their account.

Appendix
End notes

1. U.S. Census Bureau, U.S. Department of Commerce Quarterly Retail E-Commerce Sales, 1st Quarter 2023, May 18, 2023.

2. Juniper Research, Online Payment Fraud, Deep Dive Strategy & Competition 2021–2025.

3. 48 Cart Abandonment Rate Statistics 2023, Baymard Institute.

4. Juniper Research, Online Payment Fraud report, June 2023.

5. Based on VisaNet, Fraud & OpCerts reporting data average for Q2 2019 – Q1 2021 for NA (US and CA). Excluding cash transactions and excluding collections. NA CP fraud rate – 3.95, NA CNP fraud rate – 18.77.

6. "State of Consumer Attitudes on Ecommerce, Fraud & CX 2021", ClearSale

7. Visa Risk Datamart, Global, FY22 Q1–Q4 Token Fraud Rate vs PAN Fraud Rate by PV for merchants with over 1,000 CNP token transactions per month per country. Merchant's individual results may vary.

8. VisaNet Oct–Dec 2022. Visa credit and debit card-not-present transactions for tokenized vs non-tokenized credentials in the NA region. Auth rate is defined as approved authorizations divided by total authorization attempts based upon first attempt of a unique transaction.

9. VisaNet Data, U.S. 2022

10. EMV® is a registered trademark in the U.S. and other countries and an unregistered trademark elsewhere. The EMV trademark is owned by EMVCo, LLC.

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