

Virtual Credit Card numbers

Best practices for purchasing on the Web

Presented by John Krout
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Recent Big Changes in the credit card arena

- **Change #1:** Consumers make **online purchases**. These are called “**cardless**” purchases because the *retailer never sees the credit card*. Telephonic purchases are also cardless.
- **Change #2:** Many big retailers have suffered **massive data breaches** exposing millions of credit card accounts used for past purchases. The publicity for such events is widespread. The breaches often enable widespread fraudulent use of credit card info by bad apples.
- **Change #3:** Credit card security teams are increasingly adept at **automatic recognition of fraudulent uses of credit cards**. This is a rather important self preservation move. But it is *not perfect*.

Credit card security trends

- The integrated circuit chip built into credit cards has severely reduced purchase fraud during in-person purchases at brick & mortar retailer storefronts.
- Cardless purchase fraud via online and telephone purchases now accounts for the *majority of card fraud*.
- Innovations are mostly aimed at addressing Cardless purchase frauds.

Citibank Virtual Card Numbers

- Citibank card holders can generate *Virtual Card Numbers* on the Citibank web site.
- Each generated virtual card number includes:
 - A card number
 - Your name as the card holder
 - A CVC number
 - An expiration date: the month following the current month
- You have the option to set a **dollar ceiling** on each virtual card number
- Each virtual card number is **single-use**. After one charge to that number, that number is disabled permanently for purchases.
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Citibank Virtual Card Numbers

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- At the moment, the web-based generator display system uses **Adobe Flash**. Since both Chrome and Firefox aim to eliminate support for Flash soon, the use of Adobe Flash by Citibank may change.
- Citibank card holders can also download a Virtual Card number generator application to run on their personal computers. That application may continue to use Adobe Flash.

Citibank Virtual Card Numbers

- The retailer can keep each virtual card number in their database forever, but the card number is not at risk of a hacking attack because it is already used once and therefore no longer valid for purchases.
- The two key security features for online purchases are single use and optional dollar ceiling.
- **Refunds** can be made by the online retailer through the virtual card number.
- All purchases and refund transactions are reported on your real credit card account statement.

Other banks offering virtual card numbers

- **Bank of America:** their version is called **ShopSafe**
- **CapitalOne:** virtual card numbers are **not single-use**, but can be limited to one retailer. Any hacking theft will likely use the virtual card number at a different retailer, and that use will be rejected by CapitalOne. You can cancel any virtual card number at any time. This is primarily aimed at monthly subscription fee retailers like EasyPass, Netflix, Adobe, et cetera.
- **American Express:** use is limited to *participating retailers*. Their web site lists 21 participating retailers, only one of which I have ever used.
- **JP Morgan Chase:** also limited to *participating retailers*.
- **Discover** ceased issuing virtual card numbers in 2014 in favor of other security measures.

Other services aimed at secure online purchasing

- **Masterpass:** offered by Mastercard but not limited to that brand of charge account cards. The Masterpass web site says they are overhauling the system Real Soon Now to eliminate passwords. ***Requires retailer participation.*** An online review indicates that Masterpass sends to retailers tokens instead of real card numbers, like Google Pay and Apple Pay. Limited to online purchases.
- **Visa Checkout:** offered by Visa but not limited to that brand of charge account cards. The real card number of the purchaser is definitely provided to the retailer. ***Requires retailer participation.***
- **Paypal:** does not provide the real card number of the purchaser to retailers.

Other services aimed at secure online purchasing

Privacy.com is a special case.

- This site does provide virtual card numbers, but tied to your **savings or checking account**, *not to your credit card*. This is possibly useful for those who do not own any credit card.
- Since only virtual credit card numbers are involved, your bank account are not at risk for a hacking attack on any retailer where you a privacy.com virtual card number.
- Privacy.com does charge the retailer a service fee, just like credit card companies.
- Privacy.com might also be working the float: pulling money from your bank account immediately, and paying the retailer in 30 days.

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The Amazon Checkout side effect

- **Amazon checkout lists cards used for prior purchases** so you can conveniently use one again by clicking on a radio button.
- Make 20 Amazon purchases using virtual card numbers within a month, and when you make your next Amazon purchase, the prior card list at checkout will include all 20 prior virtual numbers, *none of which can be used again by you.*
- Amazon does eventually roll expired cards out of the list of prior cards. They keep them visible for a while in case you get a renewed card, assuming you can simply update the expiration date.
- **Amazon provides you with a method to purge cards** manually from the displayed list of prior cards.

Recommended Best Practices for cardless purchasing

#1: Always use virtual card numbers for online and telephone purchases.

This minimizes the risk that a retailer hacking theft will enable bad apples to use your credit card number.

Recommended Best Practices for cardless purchasing

#2: Use email or texting or smart phone app notification to receive optional confirmation of every use of your card.

This ensures you find out about fraudulent uses immediately.

Text notification options available: United Bank Visa debit card, Citibank Mastercard, USAA Visa credit card, American Express credit card, and possibly others. Some require you to set a minimum dollar amount for notifications, and all set a rock-bottom minimum on what you can configure: Amex minimum is \$10. USAA minimum is \$1. Citibank minimum is \$0.

If you elect to use any of these, make sure your phone carrier does not charge you extra for the data usage.

Recommended Best Practices for cardless purchasing

#3. Keep a master list for each card used by a smart phone app or a subscription. If your card is replaced due to fraud, then you can use the list to delete the old card number add the new card number to each account.

Examples of apps:

- Hertz Gold
- Google Play Store
- ExxonMobil Speedpass+
- Google Pay
- Apple Pay
- Samsung Pay

Debit card apps:

- Western Union
- Venmo
- Cash

Examples of subscriptions:

- Adobe Creative Cloud
- Netflix
- Amazon Prime
- Norton antivirus
- EZpass

Prioritizing updates when a credit card number is replaced

1. Delete all real card numbers from Amazon's list
2. Update *as-needed uses* like EZPass, Hertz Gold, ExxonMobil Speedpass+, GooglePay, Apple Pay
3. Update Monthly subscriptions like Netflix, Adobe CC
4. Yearly subscriptions like Norton antivirus, Amazon Prime - can wait until autopay fails.