Merchant Guide to the
Visa Address Verification Service
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Merchant Guide to the Visa Address Verification Service

The Visa® Address Verification Service (AVS) is a risk management tool for merchants accepting transactions in which neither the card nor the cardholder are present (e.g., mail, telephone order, Internet transactions), or in which the card is present but its magnetic stripe cannot be read by a terminal at the point of sale. Available to merchants that accept Visa cards, AVS helps reduce the risk of accepting fraudulent transactions by facilitating verification of the cardholder’s billing address with the card issuer. This address information helps you, the merchant, determine whether to accept a particular transaction or to take further follow-up action.

By giving you more options and enhancing your ability to make more informed sales decisions, AVS supports and adds value to your efforts to reduce fraud and related operating costs. AVS has helped thousands of merchants improve their profitability.

Verifying your customer’s billing address for all your Visa card-not-present or key entered transactions makes good business sense and is one of the fastest, easiest, and most important risk management steps you can take.

Who Should Read This

The Merchant Guide to the Visa Address Verification Service is structured for two merchant audiences: those currently utilizing this significant risk management service, and those considering using it.

Introducing AVS – covers topics of interest to merchants unfamiliar with AVS and who want more information about its benefits.

Using AVS – covers topics of interest to merchants currently using or about to implement AVS who want more details.

In either case, the guide should be read by merchant staff responsible for:

- authorization request management,
- risk or fraud management, and
- customer service.

Questions

If you have questions or want more information, please contact your acquirer (the financial institution with which you signed a Visa Merchant Agreement).
Introducing AVS

Responding to the airline and direct marketing industries’ requests for help in reducing the risk associated with card-not-present transactions, such as tickets by mail and catalog orders, Visa implemented the Address Verification Service (AVS) in 1990. An on-line, real-time service, AVS enabled mail and telephone order merchants and airlines, for the first time, to verify the cardholder billing address with the card issuer quickly and simply as part of the authorization process.

Importance of Billing Address

Why is the billing address such an important factor in reducing the risk of card-not-present transactions? Because criminals using card account numbers fraudulently usually do not know the account’s related billing address. If a card is stolen or lost, or if the account number is copied from a sales receipt, a criminal could use the account number to place fraudulent merchandise orders by telephone or by personal computer—typically for items that can be “fenced” or sold for cash. Since the legitimate cardholder and card issuer might not be aware of the situation for some time, the card could be used repeatedly, leaving merchants vulnerable to unknowingly accepting fraudulent transactions.

AVS is Fast

Because AVS requests are processed through the VisaNet® Authorization System, you may process your AVS requests in a real-time mode, or in a batch mode. In either case, the response time will be as fast as it is for an authorization—just a few seconds.

AVS is Easy

You simply include the street address and ZIP Code of the cardholder’s billing address in your authorization request and Visa sends it electronically to the card issuer. The issuer compares this information with the billing address on its system for that cardholder account and returns the results of the comparison as part of the authorization process. This additional address information will help you make a more informed decision about whether or not to complete a particular transaction.

Popular with Merchants

With more consumers and businesses today opting for the convenience of shopping from their homes and offices, more merchants are taking advantage of this shopping trend to increase profits and market share by accepting mail, telephone, and Internet transactions. Having access to appropriate risk management tools thus becomes increasingly important in safeguarding the profitability of these card-not-present sales. Merchants have been quick to recognize the value of AVS, as reflected in the steady growth of AVS requests from nine million during the first year of operation in 1990, to an estimated 3.8 billion in 2007.
Transactions in which neither the card nor the cardholder are present at the point of sale tend to have a higher incidence of fraud associated with them than retail (face-to-face) transactions. Since the card is not present, many of the fraud detection and prevention devices built into Visa cards cannot be used for mail, telephone, or Internet sales. Some of these security benefits are also lost in retail sales when the card’s magnetic stripe can’t be read by a terminal at the point of sale. As a consequence, you should exercise greater care and follow good risk control procedures when handling such transactions.

**Reducing Costly Fraud and Chargebacks**

When you accept card-not-present transactions, you also accept financial liability for them in the event that they prove to be fraudulent. What this means is that the dollar value of the transaction may be “charged back” to you—and that can be expensive. Add to this your costs to process these exception items, plus the loss of merchandise, and it’s easy to see the potential financial impact to your company’s bottom line. Even if you think it’s not important to use AVS for every card-not-present transaction, you never know when a loyal customer may have lost his or her card and someone else is attempting to use it fraudulently. If AVS helps you avoid accepting that transaction, not only have you avoided the expense and frustration of a fraud loss, you also have provided exceptional service to your loyal customer—the one whose card might otherwise have been fraudulently used! The following case studies serve to illustrate the value of AVS to merchants, like you, in helping to reduce transaction risk and risk-related costs.

**Case Study #1—AVS Reduces Chargebacks**

To understand the impact of AVS on chargeback rates, Visa analyzed the activities of two comparable, major direct marketing merchants. Each processed several million Visa transactions annually, and each had sophisticated risk management systems in place, but with one key difference: one merchant had been using AVS for a year, the other had not. The chargeback rate for the merchant using AVS was six times lower than the merchant not using AVS and more than eight times lower than the industry average.

**Financial Impact**

Additional studies were conducted with the merchant using AVS to determine the specific financial impact of the service. Analysis of the merchant’s fraud and chargeback performance before and after AVS revealed that, as a result of AVS, the merchant’s fraud losses were cut by more than half, its fraud-related chargebacks dropped by over 60 percent, and its chargeback processing costs declined by more than 80 percent. First-year savings from using AVS totaled more than $2 million—a major plus for that merchant’s bottom line.
**Case Study #2—AVS Reduces Fraud**

The value of AVS as an indicator of potential fraud was amply demonstrated in a study conducted with a major Visa card issuer. Since the person using a card fraudulently is not likely to know the cardholder’s billing address for that card account, a “no match” AVS result was thought to be a key predictor of potential fraud. Results of the study proved the theory correct.

Fraudulent transactions were analyzed both by type of fraud and by AVS response. Of the total fraudulent transactions studied, 85 percent had received an AVS “no match” response. Within that 85 percent, the AVS “no match” rate was extremely high for each of the three major types of fraud, as shown below.

<table>
<thead>
<tr>
<th>TYPE OF FRAUD</th>
<th>AVS “NO MATCH” RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counterfeit cards</td>
<td>100%</td>
</tr>
<tr>
<td>Cards stolen from mail</td>
<td>90%</td>
</tr>
<tr>
<td>Lost and stolen cards</td>
<td>65%</td>
</tr>
</tbody>
</table>

These statistics make a powerful and compelling argument for using AVS.

### Connecting to AVS

Several options are available to you for connecting to AVS, depending on your card-not-present transaction volume. **Contact your Visa acquirer for more information and to determine which approach best meets your business needs.**

**Direct Connection to Visa**

With a direct connection to Visa, transactions are processed directly from your establishment to Visa via Visa Merchant Direct Exchange (MDEX). If your Visa transaction volumes are high, you may want to consider a direct connection to Visa for both authorization and AVS.
**Acquirer Connection**

Transactions are processed directly from your establishment to your acquirer and then on to Visa. If your transaction volumes do not warrant a direct connection to Visa, you may access AVS through your acquirer.

![Diagram of Acquirer Connection]

**Telephone Connection**

The Visa Merchant Direct Access Service (MDAS) connects to AVS via a toll-free telephone number and touch-tone telephone. If your card-not-present transaction volume is small or infrequent, if electronic access to AVS is not otherwise available, or if you want to access AVS for transactions that are key-entered when the card’s magnetic stripe cannot be read, you may want to enroll in MDAS. Contact your acquirer.

![Diagram of Telephone Connection]
Using AVS

Requesting an address verification is a simple, fast, and very effective way to help you reduce the potential for unknowingly accepting fraudulent card-not-present transactions or retail transactions that are key-entered because the card’s magnetic stripe cannot be read by the point-of-sale terminal. This chapter guides you through the basics and provides the foundation for utilizing AVS to its fullest.

AVS Transaction Flow

To help you understand how AVS works, the following illustrates the flow of an AVS transaction from the point at which the customer places a card-not-present order.

You may request an address verification in one of two ways: (1) by itself, or (2) as part of an authorization request. Both approaches are discussed below.

AVS With an Authorization Request

You may process AVS requests the same way you process authorizations, that is, either on a real-time basis or in a batch mode using an electronic terminal or personal computer. Real-time requests typically are used for transactions during which the customer waits on-line for a response. The batch mode is geared more toward low-cost processing in which no immediate response is required as is usually the case with mail orders.

The authorization and address verification process is as follows:

- Customer contacts you to place an order.
- You confirm the usual order information including the merchandise description, price, the Visa account number, card expiration date, and shipping address.
- Then, you ask your customer for one new piece of information: the billing address (street address and ZIP Code) for the card being used. (The billing address is where the customer’s monthly Visa statement is sent for the card being used.)
• You enter the cardholder’s billing address and the transaction information into your authorization request system and process both requests at the same time.

• The issuer makes an authorization decision separately from the AVS request. At the same time, it compares the cardholder billing address you sent with the billing address it has for that account. It then returns both the authorization response and a single character alphabetic code indicating the address verification results. Your acquirer may modify these AVS codes to make them more self-explanatory. We’ll talk more about the AVS responses later.

**AVS Without an Authorization Request**

You may also send an address verification request without an accompanying authorization request if, for example:

• you want to verify the customer’s billing address before you request an authorization, or

• you sent an AVS and an authorization request earlier and received an authorization approval but an AVS “try again later” response.

**Entering Address Information When Card is Not Present**

To request an address verification in a card-not-present situation, follow these steps:

1. Enter the street address, including apartment numbers.
   *For example:*
   
   549 Jones St Apt 3
   enter as: **549 Jones St Apt 3**

   • If the address had no numbers in it, just enter the street name.
     *For example:*
     
     Park Plaza Central
     enter as: **Park Plaza Central**

   • If the address is a P.O. Box, enter the P.O. Box information.
     *For example:*
     
     P.O. Box 912
     enter as: **P.O. Box 912**

2. Enter the 5- or 9-digit ZIP Code.
   *For example:*
   
   94109
   or **941092133**

3. Follow your terminal or computer instructions to enter and send this information.
Entering Address Information When Card is Present

Retailers can use AVS to verify the ZIP Code of the card being used when the card’s magnetic stripe can’t be read by the point-of-sale terminal. Here’s what to do:

1. Key-enter the card’s account number and expiration date.
2. Key-enter the 5-or 9-digit ZIP Code of the card’s billing address.
3. Follow your terminal or computer instructions to enter and send this information.
4. Obtain an imprint of the card’s embossed information on the face of the sales receipt to indicate that the card was present.
5. Obtain the cardholder’s signature on the sales receipt.

AVS Result Codes

One of the following AVS result codes will be returned to you, indicating the issuer’s response to your address verification request. Your acquirer may modify these single character alpha AVS codes to make them more self-explanatory—for example, a “Y” response may be shown as an “exact match” or as a “full match,” while an “N” response may be shown as a “no match.”

U.S. AVS Result Code Definitions

<table>
<thead>
<tr>
<th>CODE</th>
<th>DEFINITION</th>
<th>EXPLANATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Exact Match</td>
<td>Street address and 5- or 9-digit ZIP Code match</td>
</tr>
<tr>
<td>A</td>
<td>Partial Match</td>
<td>Street address matches, ZIP Code does not</td>
</tr>
<tr>
<td>Z</td>
<td>Partial Match</td>
<td>Zip Code matches, street address does not</td>
</tr>
<tr>
<td>N</td>
<td>No Match</td>
<td>Street address and ZIP Code do not match</td>
</tr>
<tr>
<td>U</td>
<td>Unavailable</td>
<td>Address information is unavailable for that account number, or the card issuer does not support AVS</td>
</tr>
<tr>
<td>*G</td>
<td>Global</td>
<td>Address information not verified for International transaction</td>
</tr>
<tr>
<td>R</td>
<td>Retry</td>
<td>Issuer authorization system is unavailable, retry later</td>
</tr>
</tbody>
</table>

* U.S. merchants use the “G” result code to identify internationally-issued cards.
### International AVS Result Code Definitions

<table>
<thead>
<tr>
<th>CODE</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Street addresses match. The street addresses match; the postal codes do not match or the request does not include the postal code.</td>
</tr>
<tr>
<td>B</td>
<td>Street addresses match. Postal code not verified due to incompatible formats. (Acquirer sent both street address and postal code.)</td>
</tr>
<tr>
<td>C</td>
<td>Street address and postal code not verified due to incompatible formats. (Acquirer sent both street address and postal code.)</td>
</tr>
<tr>
<td>D</td>
<td>Street address and postal codes match.</td>
</tr>
<tr>
<td>G</td>
<td>Address information not verified for International transaction.</td>
</tr>
<tr>
<td>I*</td>
<td>Address information not verified for International transaction.</td>
</tr>
<tr>
<td>M*</td>
<td>Street addresses and postal codes match.</td>
</tr>
<tr>
<td>N</td>
<td>No match. Neither the street addresses nor the postal codes match.</td>
</tr>
<tr>
<td>P</td>
<td>Postal codes match. Street address not verified due to incompatible formats. (Acquirer sent both street address and postal code.)</td>
</tr>
<tr>
<td>U</td>
<td>Address information is unavailable for that account number, or the card issuer does not support AVS.</td>
</tr>
</tbody>
</table>

*These codes are currently reserved, in anticipation of Operating Regulations changes.*
**Guidelines for Using AVS Result Codes**

While Visa cannot recommend any particular approach, the following general guidelines are drawn from card-not-present industry practices and may be helpful to you. You should establish your own policy regarding the handling of transactions based on AVS result codes.

### Guidelines for Using U.S. and International AVS Result Codes

<table>
<thead>
<tr>
<th>U.S. CODE</th>
<th>INT'L CODE</th>
<th>DEFINITION</th>
<th>EXPLANATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>D</td>
<td>Exact Match</td>
<td>Both street address and ZIP Code match. Generally speaking, you will want to proceed with transactions for which you have received an authorization approval and an “exact match.”</td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>Partial Match</td>
<td>Street address matches, but ZIP Code does not. You may want to follow up before shipping merchandise. The issuer might have the wrong ZIP Code in its file; merchant staff may have entered the ZIP Code incorrectly; or this response may indicate a potentially fraudulent situation.</td>
</tr>
<tr>
<td>Z</td>
<td>P</td>
<td>Partial Match</td>
<td>ZIP Code matches, but street address does not. Unless you sent only a ZIP Code AVS request and it matched, you may want to follow up before shipping merchandise. The issuer may have the wrong address in its file or have the same address information in a different format; the cardholder may have recently moved; merchant staff may have entered the address incorrectly; or this response may indicate a potentially fraudulent situation.</td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>No Match</td>
<td>Street address and ZIP Code do not match. You will probably want to follow up with the cardholder before shipping merchandise. The cardholder may have moved recently and not yet notified the issuer; the cardholder may have given you the shipping address instead of the billing address; or the person may be attempting to execute a fraudulent transaction. “No match” responses clearly warrant further investigation.</td>
</tr>
</tbody>
</table>

Caution: When you receive a “partial match” or “no match” AVS response, you should take appropriate steps to assure yourself that the customer is not acting fraudulently. Simply asking the customer for another card will not reduce your risk if the card is being used fraudulently.
Guidelines for Using U.S. and International AVS Result Codes

<table>
<thead>
<tr>
<th>U.S. CODE</th>
<th>INT’L CODE</th>
<th>DEFINITION</th>
<th>EXPLANATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>G</td>
<td>Unavailable</td>
<td>Address information is unavailable. The address information for this account is not available; as a result, address verification cannot be performed. You will also receive this response when an issuer does not support AVS. Since you now have no way to verify the address, you must decide whether to investigate further, proceed, or cancel the transaction. <strong>Note:</strong> If you complete a transaction for which you received an authorization approval and an “unavailable” AVS response, and the transaction is subsequently charged back to you as fraudulent, you may re-present the item. U.S. Visa card issuers must support AVS or lose their right to chargeback card-not-present transactions as fraudulent.</td>
</tr>
<tr>
<td>R</td>
<td>R</td>
<td>Retry</td>
<td>Issuer authorization system is unavailable, try again later. The issuer’s authorization system may be down (not working).</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>Non-Compatible</td>
<td>Street address and postal codes not verified due to incompatible format.</td>
</tr>
</tbody>
</table>

This discussion of AVS result codes is meant to give you enough information to make your own determination of what works best for you—how you treat these codes may be different than the way another merchant may choose to interpret them. Remember, the choice is always yours—whether to use the Visa Address Verification Service, when to use it, and what procedures you wish to follow for each of the AVS result codes.
Tips for Reducing Copy Requests and Chargebacks

In addition to reducing fraud, you also want to minimize exception items—requests for copies of transaction receipts and chargebacks.

**Copy Requests**—“Copy requests” typically occur when cardholders do not recognize a transaction appearing on their Visa statement and contact their card issuer for more information. If the issuer is not able to clarify the customer’s question, the issuer will “request a copy” of the transaction receipt from your acquirer. Depending on where transaction receipts are stored (at your establishment or at your acquirer), your merchant processor may request a copy from you. Once the copy is retrieved, your acquirer sends it to the card issuer who forwards the copy to the cardholder to review. Generally, the cardholder’s question can be resolved through this approach.

**Chargebacks**—“Chargebacks” typically occur when cardholders dispute a transaction appearing on their Visa statement and contact their card issuer for resolution. If the issuer is not able to resolve the disputed item, the issuer will charge it back to the acquirer. This means that the dollar value (the financial liability) for the transaction is charged back to the acquirer—and, usually, by the acquirer to the merchant.

Because these exception items are costly and time consuming to handle, Visa as well as card issuers and acquirers have built systems to identify and reject invalid chargebacks so you never see them. In addition, you can avoid most chargeback situations by following a few simple procedures at the point of sale and in your back office. Here are some tips for your consideration.

**Retailers**

Since your transactions as a retailer normally occur in a card-present environment, that’s how card issuers expect transactions from you to appear (e.g., card’s magnetic stripe is swiped, or card information is imprinted on sales receipt and customer signs sales receipt). If you process a card-not-present transaction (e.g., a mail/telephone or Internet order) without indicating it as such, the issuer may think it is a fraudulent transaction and request a copy of the transaction receipt or charge the item back as a fraudulent transaction.

**Use Mail/Telephone or Electronic Commerce Indicator**—When requesting an authorization for a mail, telephone, or Internet order use the mail/telephone/electronic commerce order transaction indicator (also known as the “MO/TO” indicator or “ECI”) to let the issuer know this is a card-not-present transaction. If your point-of-sale terminal is programmed to allow you to identify MO/TO/Internet transactions, use the indicator; if your terminal does not have this capability, contact your Visa acquirer.
Manual Mail/Telephone Order Transactions—If you are processing a mail or telephone order transaction manually, write “MO/TO” on the customer signature line of the sales receipt.

Key-Entered Transactions—If the card is present but your point-of-sale terminal cannot read the card’s magnetic stripe, key enter the account information into your terminal and manually imprint the card’s embossed information onto the sales receipt. Be sure to get the customer’s signature on the sales receipt as well. Key-entered transactions without card imprints or customer signatures are likely to be charged back to you as they may appear to the issuer to be fraudulent.

Fulfill Copy Requests—If you receive a request from your acquirer for a copy of a transaction receipt, be sure to provide a legible copy in a timely manner. It is very important to respond to copy requests because if you don’t, the issuer could charge the transaction back to you for “requested transaction information not received,” or for another dispute reason.

Card-Not-Present Merchants

If you sell goods or services primarily through paper or electronic catalogs, via television infomercials, or the Internet, these tips should help you reduce copy requests and chargebacks.

Customer Service Telephone Number—Include your customer service telephone number (with area code) in the city field of the clearing record for your card-not-present transactions. Many card issuers will print your customer service number on customer statements, thereby enabling cardholders to contact you directly with questions. This approach could help reduce copy requests as well as potential chargebacks.

Website Information—If you conduct business over the Internet, you must include your URL or email address in the city field.

Card Verification Value 2 (CVV2)—Is a unique three digit “check number” that appears either on the signature panel or on a white box to the right of the signature panel. The number is calculated by applying an algorithm, and is used by mail order/telephone order and Internet merchants to verify the user.
Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acquirer</strong></td>
<td>A financial institution that enters into agreements with merchants to accept Visa cards as payment for goods and services.</td>
</tr>
<tr>
<td><strong>Authorization</strong></td>
<td>The numeric code given by the card issuer to the merchant when a transaction is approved. This code will be electronically displayed and printed on the sales receipt if the merchant has an electronic printer at the point of sale. For manual transactions, the code should be hand-written on the sales receipt by the sales associate.</td>
</tr>
<tr>
<td><strong>Card Issuer</strong></td>
<td>A financial institution that issues Visa cards to its customers (cardholders).</td>
</tr>
<tr>
<td><strong>Chargeback</strong></td>
<td>A transaction—and the related financial liability—that is returned by the card issuer to the merchant processor. The merchant processor may also return the charged back item to the merchant.</td>
</tr>
<tr>
<td><strong>Copy Request</strong></td>
<td>A request made by the card issuer to the merchant processor for a copy of a specific transaction receipt—usually as the result of a cardholder not recognizing a transaction on his/her Visa statement. If the merchant stores its transaction receipts, the merchant processor will forward the copy request to the merchant for fulfillment.</td>
</tr>
<tr>
<td><strong>Merchant</strong></td>
<td>The financial institution with which a merchant contracts to accept Visa cards as payment for goods and services. Usually, a merchant deposits its Visa sales and credit receipts with this financial institution.</td>
</tr>
<tr>
<td><strong>Processor</strong></td>
<td></td>
</tr>
<tr>
<td><strong>VisaNet</strong></td>
<td>The electronic system through which authorization requests are processed from the merchant to the card issuer.</td>
</tr>
</tbody>
</table>