

Electronic Clearing House, Inc.

NCN VLOG Guide for ECC

November 28, 2007



730 Paseo Camarillo
Camarillo, CA 93010
(800) 280-7677

About this document...

Purpose

This document describes the VLOG format available from NCN and identifies best practices for using these logs.

Audience

The primary audience and users of this document are customers that want to clear and settle VISA non-participating ECC transactions based on NCN VLOG files.

Comments

- This document is limited in scope to the VLOG format only.

Copyright Notice

Copyright © 2007 Electronic Clearing House, Inc (ECHO)., 730 Paseo Camarillo, Camarillo, California 93010 U.S.A. All rights reserved.

Electronic Clearing House, Inc. has intellectual property rights relating to implementations of the technology described in this publication. In particular, and without limitation, these intellectual property rights may include one or more U.S. patents, foreign patents, or pending applications.

The information in this publication is confidential and proprietary to Electronic Clearing House, Inc. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, without the express written permission of Electronic Clearing House, Inc. Any unauthorized duplication is in violation of U.S. copyright and other laws, and can result in severe monetary and criminal damages.

THIS PUBLICATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

THIS PUBLICATION COULD INCLUDE TECHNICAL INACCURACIES OR TYPOGRAPHICAL ERRORS. CHANGES ARE PERIODICALLY ADDED TO THE INFORMATION HEREIN; THESE CHANGES WILL BE INCORPORATED IN NEW EDITIONS OF THE PUBLICATION. ELECTRONIC CLEARING HOUSE, INC. MAY MAKE IMPROVEMENTS AND/OR CHANGES IN THE PRODUCT(S) AND/OR PROGRAM(S) DESCRIBED IN THIS PUBLICATION AT ANY TIME.

Table of Contents

1.	Introduction	1
1.1	Revision History	1
1.2	Data Types Used In This Document	1
1.3	Data Values Used In This Document	2
2.	NCN Transaction Logs.....	3
2.1	VLOG Format	3
3.	Transaction Log ACH Filtering Guidelines.....	7
3.1	VLOG Filtering	7

1. Introduction

This section contains the document's revision history and a list of other documents included by reference.

1.1 Revision History

Rev	Date	Author	Reason
1.0	28 Nov 2007	Sean Eskins	Initial release

1.2 Data Types Used In This Document

The following table defines the abbreviations used to define data types:

Modifier	Definition
a	Alpha characters, [a-z, A-Z]
n	Numeric digits, [0-9]
p	Pad character, space
h	Hexadecimal characters, [a-f, A-F, 0-9]
s	Special characters, [-_!@&+##\$/'=~^]
an	Alphabetic and numeric characters
as	Alphabetic and special characters
ns	Numeric and special characters
ans	Alphabetic, numeric and special characters
YY	Year, 00 through 99
CCYY	Same as "YY" but including century
CCYMM	Same as "CCYY" but including month
MM	Month, 01 through 12
DD	Day, 01 through 31
hh	Hour, 00 through 23
mm	Minute, 00 through 59
ss	Second, 00 through 59
n	Fixed length of <i>n</i> characters
..n	Variable length up to <i>n</i> characters

Modifier	Definition
{ }	An empty field entry
	An "OR" symbol used to separate elements on an enumerated list. Only one element of the enumerated list may be used at a time.

Examples

- a1 One alphabetic ASCII character
- n..19 Up to 19 numeric ASCII characters
- s1 One binary special character
- ansp..26 Up to 26 alpha, numeric, binary special, or ASCII <space> characters

1.3 Data Values Used In This Document

The following table defines the abbreviations used to define various standard ASCII data values:

Name	Value	Definition
<FS>	28d 1Ch	A File Separator character is the primary method used to separate data fields.
<GS>	29d 1Dh	The Group Separator is a secondary method used to separate data within a field.
<RS>	30d 1Eh	The Record Separator is a secondary method used to separate data within a field.
<US>	31d 1Fh	The Unit Separator character is a secondary method used to separate data within a field.
<LF>	10d 0Ah	The Line Feed character is used to separate records.

2. NCN Transaction Logs

NCN Transaction Logs contain transactional information on check verification, electronic check conversion, batch results, and other requests from the POS device. This section will document the current NCN transaction log format known as VLOG.

2.1 VLOG Format

Description

Logs all transaction requests arriving at NCN in the Visa SMS format from the VAP that are processed by the NCIS database. Any authorized transactions in this log should be submitted for ECC clearing and settlement.

The VLOG includes immediate reversals or voids by the merchant at the point of sale. Voids are available per VisaNet standards.

Filename

VlogCCYYMMDD.csv

File Format

Individual transaction records are delimited with a trailing <LF>.

Fields within a record are comma-separated.

File Contents

Field	Field Name	Data Type	Value	Description
1	Date	an10	MM/DD/CCYY	Transaction Date (Mandatory). Leading zeroes in month and day omitted. <i>Visa ISO-8583 de13</i>
2	Time	an8	hh:mm:ss	Transaction Time (Mandatory) <i>Visa ISO-8583 de12</i>
3	Acquirer ID	n6	nnnnnn	Varies according to Acquirer (Mandatory) <i>Visa ISO-8583 de32</i>
4	Merchant Number	n15	"nnnnnnnnnnnnnnnn"	Varies according to Acquirer (Mandatory) <i>Visa ISO-8583 de42</i>
5	Preferred Customer ID	n10..15	nnnnnnnnnnnnnnnn	Varies according to Acquirer and merchant (Mandatory) Derived from the merchant number in accordance with documented acquirer setup guidelines. <i>Derived from Visa ISO-8583 de32 and de42</i>
6	Store/Terminal ID	n8	"aaaaaaaa"	Varies according to Acquirer (Mandatory) <i>Visa ISO-8583 de41</i>

Field	Field Name	Data Type	Value	Description												
7	Site# - Loc#.Lane#	an21	nnnnn-nnnnnn.nn	<p>Complete NCN ID. (Mandatory)</p> <p>An ASCII "-" follows Site# and precedes Rule#. If Lane# is present, it is separated from Loc# by an ASCII "."</p> <table border="1"> <thead> <tr> <th>Element</th> <th>Format</th> <th>Comments</th> </tr> </thead> <tbody> <tr> <td>Site#</td> <td>n..5</td> <td></td> </tr> <tr> <td>Loc#</td> <td>n..6</td> <td></td> </tr> <tr> <td>Lane#</td> <td>n..3</td> <td>Optional, present only for multi-lane</td> </tr> </tbody> </table>	Element	Format	Comments	Site#	n..5		Loc#	n..6		Lane#	n..3	Optional, present only for multi-lane
Element	Format	Comments														
Site#	n..5															
Loc#	n..6															
Lane#	n..3	Optional, present only for multi-lane														
8	Service	an5	cccc	<p>Responsible Service (Mandatory)</p> <p>Indicates the service responsible for the response. Valid entries include:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>V3PPE</td> <td>Visa Third Party Error</td> </tr> <tr> <td>V3PPC</td> <td>Visa Third Party transaction, Conversion Only</td> </tr> <tr> <td>NCISC</td> <td>Non-participating transaction, Conversion Only</td> </tr> <tr> <td>NCISV</td> <td>Non-participating transaction, Conversion with Verification</td> </tr> <tr> <td>NCISG</td> <td>Non-participating transaction, Conversion with Guarantee</td> </tr> </tbody> </table>	Value	Description	V3PPE	Visa Third Party Error	V3PPC	Visa Third Party transaction, Conversion Only	NCISC	Non-participating transaction, Conversion Only	NCISV	Non-participating transaction, Conversion with Verification	NCISG	Non-participating transaction, Conversion with Guarantee
Value	Description															
V3PPE	Visa Third Party Error															
V3PPC	Visa Third Party transaction, Conversion Only															
NCISC	Non-participating transaction, Conversion Only															
NCISV	Non-participating transaction, Conversion with Verification															
NCISG	Non-participating transaction, Conversion with Guarantee															
9	Reason code	{ } an4	{ } cccc	<p>Reason Code (Optional)</p> <p>Identifies unusual actions taken by the responsible service.</p> <p><i>Visa ISO-8583 de63.3</i></p>												
10	Retrieval reference #	n12	"nnnnnnnnnnnn"	<p>NCN Retrieval Reference Number (Mandatory)</p> <p><i>Visa ISO-8583 de37</i></p>												
11	Visa tracking #	{ } n15	{ } "nnnnnnnnnnnnnnnn"	<p>Visa Tracking Number (Optional)</p> <p><i>Visa ISO-8583 de62.2</i></p>												
12	Amount	{ } n..10.2	{ } \$nnnnnn.nn	<p>Total Transaction Amount (Conditional, required for AUTH and VOID, optional on all other actions).</p> <p><i>Visa ISO-8583 de4</i></p>												

Field	Field Name	Data Type	Value	Description																		
13	Action (Note 2)	a4	cccc	<p>Overall Action or Result (Mandatory)</p> <p>Indicates the overall action taken by the responsible service. Valid entries include:</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>AUTH</td> <td>Transaction authorized.</td> </tr> <tr> <td>DECL</td> <td>Transaction declined.</td> </tr> <tr> <td>VOID</td> <td>Reversal of previously authorized transaction.</td> </tr> <tr> <td>AREV</td> <td>Automatic reversal due to system error</td> </tr> <tr> <td>MISC</td> <td>Error in packet or error in specific field such as MICR or ID.</td> </tr> <tr> <td>ADJM</td> <td>Settlement adjustment</td> </tr> <tr> <td>VNOT</td> <td>Reversal request refused by Visa.</td> </tr> <tr> <td>RJCT</td> <td>Packet rejected by Visa.</td> </tr> </tbody> </table>	Value	Description	AUTH	Transaction authorized.	DECL	Transaction declined.	VOID	Reversal of previously authorized transaction.	AREV	Automatic reversal due to system error	MISC	Error in packet or error in specific field such as MICR or ID.	ADJM	Settlement adjustment	VNOT	Reversal request refused by Visa.	RJCT	Packet rejected by Visa.
Value	Description																					
AUTH	Transaction authorized.																					
DECL	Transaction declined.																					
VOID	Reversal of previously authorized transaction.																					
AREV	Automatic reversal due to system error																					
MISC	Error in packet or error in specific field such as MICR or ID.																					
ADJM	Settlement adjustment																					
VNOT	Reversal request refused by Visa.																					
RJCT	Packet rejected by Visa.																					
14	ABA field	{ } n9	{ } nnnnnnnnn	<p>Bank routing number (Conditional, required for AUTH and Void, optional for all other actions).</p> <p>Parsed from MICR data.</p>																		
15	Account number	{ } n5..19	{ } nnnnnnnnnnnnn	<p>Customer's Account Number (Conditional, required for AUTH and Void, optional for all other actions).</p> <p>Parsed from MICR data</p>																		
16	Check number	{ } n3..8	{ } nnnnnnnn	<p>Customer's Check Serial Number (Conditional, required for AUTH and Void, optional for all other actions).</p> <p>Parsed from MICR data, dashes removed.</p>																		
17	Raw MICR (normalized)	{ } an..65	{ } <normalized raw MICR>	<p>Normalized raw MICR (Conditional, required for AUTH and Void, optional for all other actions).</p> <ul style="list-style-type: none"> Leading and trailing blanks deleted. Multiple blanks compacted to a single blank Lower case "toa-" substitution ("-" used for dash) <p>Visa ISO-8583 de 125.9</p>																		
18	Request Packet	an..300	"request_packet"	<p>Original Visa ISO-8583 message in ASCII format (Mandatory)</p> <ul style="list-style-type: none"> Overall message enclosed with ASCII quote characters Message type enclosed with ASCII "{" and "}". Binary bitmap deleted. Data Element numbers precede element data. Subfield numbers, if present, are separated from the Data Element number by an ASCII "." Data Element field data is enclosed with ASCII "[" and "]" 																		
19	Response Packet	{ } an..300	{ } "response_packet"	<p>Visa ISO-8583 response message in ASCII format. (Optional)</p> <p>See Field 18 for details.</p>																		

Field	Field Name	Data Type	Value	Description
20	Auxiliary	{} an..64	{} "additional_information"	Various tagged fields with additional information including check writer presence, MICR entry method, Thomson results, etc.

Notes

1. Voids of a previous ACH entry are accepted after a Batch Deposit transaction has occurred. This could result in a negative batch amount if the merchant voids a transaction but does not obtain an authorized transaction to offset the void.
2. The following events will block a transaction from the ACH system:
 - Field 12, Action is not AUTH or VOID.
 - If Field 12, Action, is VOID, then the ACH system shall locate the original item in order to initiate a reversal.

Example VLOG Transactions

Filename: Vlog20071115.csv

```
11/15/2007,07:16:58,425196,000005017302173,0005017302,17300003,2061-13497-400,NCISV
,,731906773200,587319514183544,$47.73,AUTH,231372691,0251015246,9960,t231372691t
0251015246o 9960,"{0200}3[040000]4[000000004773]7[1115061341]11[773200]12[061340]
13[1115]15[1116]18[5999]19[840]22[8400]25[52]32[425196]37[731906773200]41[17300003]
42[000005017302173]43[GAP OUTLET USA QUEENSTOWN US]48[$VPH0107175757247
IC010PA15082008]49[840]59[2400021658]60[460000000001]62.2 [587319514183544]63.1
[0002]63.6[ ]63.8[10000057]63.11[0]100[763060]125 [$VRM030T231372691T
0251015246O 9960"]," {0210}3[040000]4[000000004773]7 [1115061341]11[773200]15[1116]
19[840]25[52]32[425196]37[731906773200]38[776962]39 [00]41[17300003]42
[000005017302173]48[$VRP032GAP AUTH NUM 776-962FX005NCISV]49[840]
62.2[587319514183544]63.1[0002]63.6[ ]63.8[10000057]63.11[0]100[763060]125
[$VAB009231372691AN0100251015246CK0049960"],"POS[661101S6510010105]THOM[1]THOMFULL
[231372691,0251015246,1,,,,,B]DL[PA-15082008] TLOG[11/15/07,07:16:59,776962,2061,
13497,400,13,47.73,,AUTH A,2313726910251015246,NF,9960,DL=PA-15082008,, 't231372691t
0251015246o 9960']"
```

Filename: Vlog20071115.csv

```
11/15/2007,19:54:44,469588,220743240000287,2870220743240000,28700001,2121-10790-
1473,NCISG,,732002756772,307320104847058,$75.00,AUTH,062005690,2508419589,3003,
t062005690t 25 0841 9589o 3003,"{0200}3[030000]4[000000007500]7[1116025444]11
[756772]12 [205444]13[1115]15[1116]18[5462]19[840]22[8400]25[52]32[469588]37
[732002756772]41 [28700001]42[220743240000287]43[J'S PASTRY SHOP PENSACOLA US]
48 [$VDT002@TIC009011653987DB00809161953PH0102519285082]49[840]59[1200032503]60[40]
62.2[307320104847058]63.1[0002]63.6[ ]63.8[10000088]63.11[0]100[763060]125
[$VRM030T062005690T 25 0841 9589O 3003"]," {0210}3[030000]4[000000007500]
7[1116025444] 11[756772]15[1116]19[840]25[52]32[469588]37[732002756772]38[566483]
39[00]41[28700001]42[220743240000287]48[$VRP032COMPASS BANK AUTH NUM 566-
483FX005NCISG]49[840]62.2[307320104847058]63.1[0002]63.6[ ]63.8[10000088]
63.11[0]100[763060]125[$VAB009062005690AN0102508419589CK0043003"],"POS[661101S65100
10105]THOM[1]THOMFULL[062005690,2508419589,1,,,,,B]DL[AL-1653987] TLOG[11/15/07,
19:54:44,566483,2121,10790,1473,0,75.00,,AUTH A,0620056902508419589,NF,3003,DL=AL-
1653987,, 't062005690t 25 0841 9589o 3003']"
```

3. Transaction Log ACH Filtering Guidelines

The following sections document VLOG filtering guidelines for ECC clearing and settlement.

3.1 VLOG Filtering

Data contained in a VLOG requires filtering prior to ECC settlement.

Voids can be matched and processed for next day or same day settlement based on a moving void window, typically 10 minutes. The following describes void matching/removal for next day settlement, please contact **ECHO** Customer Service for information or instruction regarding same day void matching techniques:

The following algorithm is used to select records from the VLOG Transaction Log:

Settle only those transactions with an "AUTH" response not followed by a "VOID" or "AREV" response. Do not settle any other transactions.

Because merchants may void transactions from the previous day up to the first 10 minutes of next day, process two days of transaction data as follows:

1. DAY1 transactions processing:
 - a) Obtain the previous day's transactions from 00:00:00 to 23:59:59.
 - b) Remove transactions without the following action codes:
 - i) "AUTH" MICR swiped personal check, First Presentation.
 - ii) "VOID" Merchant reversal of previous "AUTH".
 - iii) "AREV" Automatic reversal of previous "AUTH".
2. DAY2 transactions processing:
 - a) Obtain the current day's transactions from 00:00:00 to 00:10:00.
 - b) Remove transactions without the following transaction codes:
 - i) "VOID" Merchant reversal of previous "AUTH".
 - ii) "AREV" Automatic reversal of previous "AUTH".
3. Concatenate filtered DAY1 and DAY2 transactions.
4. Sort the concatenated file by site #, merchant #, route, account, sequence, and date/time to group all transactions against a single check item into date/time order.
5. Settle only if the last transaction on an item (i.e., the site, merchant, route, account, and sequence number of the check are identical) does not have the following action codes:
 - a) "VOID" Merchant reversal of previous "AUTH".
 - b) "AREV" Automatic reversal of previous "AUTH".