micros

Restaurant Enterprise Series

NaBANCO NB Driver for 3700 POS Version 4.5

November 1, 2007

MD0003-080

Declarations

Warranties

Although the best efforts are made to ensure that the information in this document is complete and correct, MICROS Systems, Inc. makes no warranty of any kind with regard to this material, including but not limited to the implied warranties of marketability and fitness for a particular purpose.

Information in this document is subject to change without notice.

MICROS Systems, Inc. shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this document.

Trademarks

Installation and Setup

This section contains installation and setup instructions for the Version 4.5 release of the NaBANCO NB Credit Card Driver, which interfaces with the (FDMS) South Host Platform.

This version of the driver may be used on RES systems running Version 3.0 or higher. Please note, however, that use of the Debit Card feature requires RES 3.2 sp6 or higher.

In This Section...

Installation

Site Requirements

Before installing the NaBANCO NB Credit Card Driver on the RES system, the following configuration items should be considered:

- The installed version of 3700 POS should be Version 3.1 or higher.
- A dedicated modem and phone line are required for dial-up connectivity.
- To run debit cards, you must have the following installed:
  - RES Version 3.2 SP6 or higher.

Files Included

The NaBANCO NB driver is divided into an authorization driver and a settlement driver. The following lists the files installed for each:

Authorization

\Micros\RES\POS\Bin\CaNnba.dll
\Micros\RES\POS\etc\CaNnba.cfg
\Micros\RES\POS\Bin\CaNnba.hlp
\Micros\RES\POS\Bin\CaNnba.cnt

Settlement

\Micros\RES\POS\Bin\CaNnbs.dll
\Micros\RES\POS\Etc\CaNnbs.cfg
\Micros\RES\POS\Bin\CaNnbs.hlp
\Micros\RES\POS\Bin\CaNnbs.cnt

Installation Instructions

The installation of the credit card drivers are now separate from the RES software. After each installation of RES software — whether it is a general release, service pack, or hotfix — you MUST re-install the site's requisite credit card drivers.

1. Make sure all current batches have been settled. MICROS recommends installing a new driver before the site opens for the day. This will ensure that all CA/EDC transactions have been settled to their current version.
2. Download the **NAB45191661.zip** file from the MICROS web site. Copy this file to your RES Server's temp folder and unzip the files. The zip file includes the following:
   - NaBANCO Credit Card Driver Installation Documentation (**NabancoNB.pdf**).
   - NaBANCO Driver Dynamic Link Library (**CaNnba.dll, CaNnbs,dll**)
   - NaBANCO Driver Site Configuration File (**CaNnba.cfg, CaNnbs.cfg**)
   - NaBANCO Driver POS Configurator Help Files (**CaNnba.hlp, CaNnba.cnt, CaNnbs.hlp, CaNnbs.cnt**)
3. Shutdown all MICROS applications from the MICROS Control Panel.
4. Copy the following files to the correct folder locations listed below:
   - **CaNnba.dll** to **\Micros\Res\Pos\bin**
   - **CaNnbs.dll** to **\Micros\Res\Pos\bin**
   - **CaNnba.cfg** to **\Micros\Res\Pos\etc**
   - **CaNnbs.cfg** to **\Micros\Res\Pos\etc**
   - **CaNnba.hlp** to **\Micros\Res\Pos\bin**
   - **CaNnbs.hlp** to **\Micros\Res\Pos\bin**
   - **CaNnba.cnt** to **\Micros\Res\Pos\bin**
   - **CaNnbs.cnt** to **\Micros\Res\Pos\bin**
5. Turn on the res3000 system from the MICROS Control Panel.

CA/EDC should be operational. A few test transactions should be done to ensure all is working correctly.

Setup

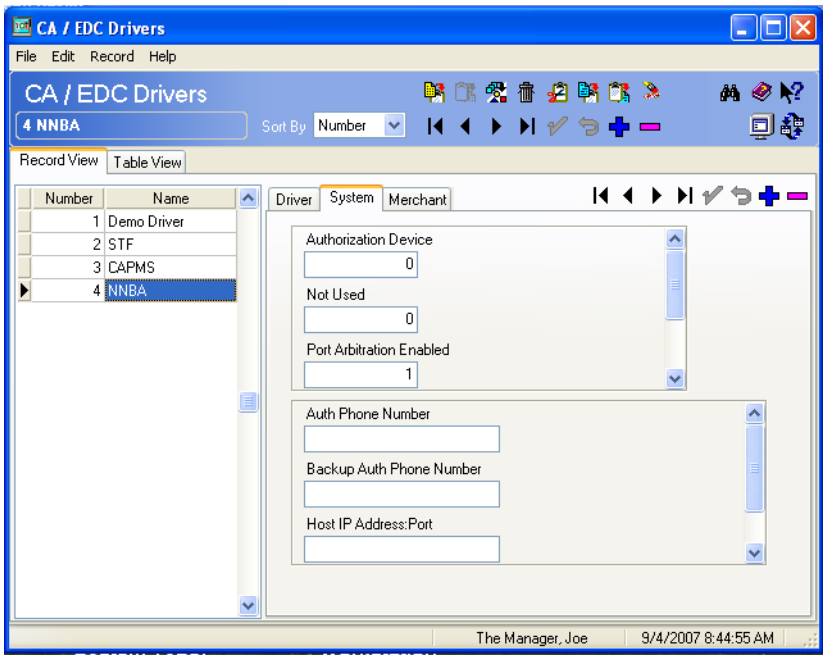
Configuring the Drivers

Credit card drivers are setup through the *POS Configurator | Devices | CA/EDC Drivers*. A separate record should be added for each of the following, using the specified **Driver Codes**:

- **NNBA** — CaBANCO NB Authorization (both credit and debit cards)
- **NNBS** — CaBANCO NB Settlement (both credit and debit cards).
- **STF** — Settle-to-File (optional with debit cards only).

Configuring the CaNNBA and CaNNBS Drivers

1. Go to *POS Configurator | Devices | CA/EDC Drivers* and select the blue plus sign to add a record.
2. Enter a **Name** (e.g., **CaNNB-Auth**) and a value of the **Driver Code** field (e.g., **NNBA**) and save the record.
3. Go to the *System* tab and configure the following settings:



- **Authorization Device** – Complete this step if you are using a modem for primary or fallback authorizations. If you are unsure of the device number, go

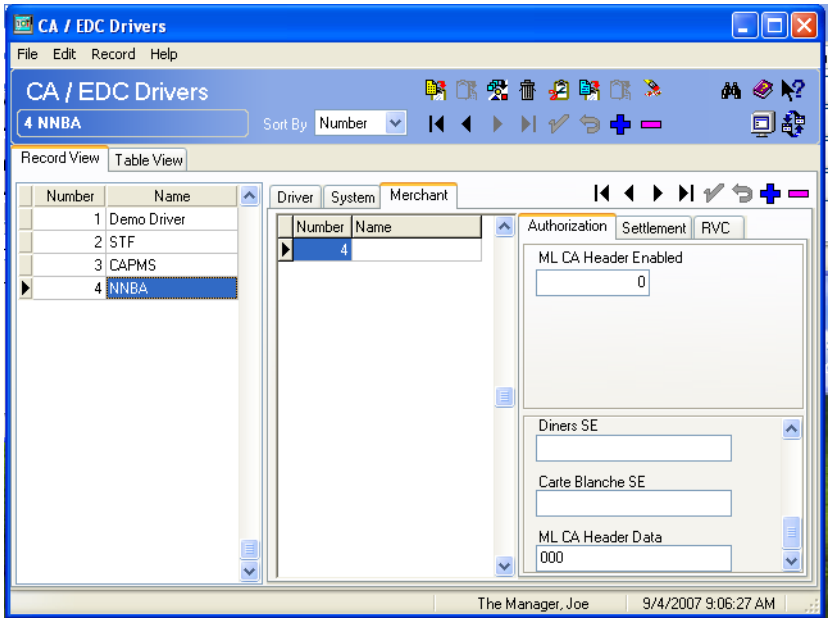
to the command prompt in the *\POS\bin* directory and enter settle –m for a Version 3.2 RES Server or go to the command prompt in the *\Common\Bin* directory for a Version 4.1 RES Server. The following sample message will display:

```
Device [1]: Boca 28.8 Kbps V.34 MV.34E
Device [2]: Standard 1200bps Modem
Device [3]: Standard 2400 bps Modem
Select the appropriate device number.
```

- **Not Used** – Leave this field blank.
- **Port Arbitration Enabled** – Enter a value of 1 to enable this driver.
- **Communications Channel** – Indicate the communication type enabled at the store (0= Dial-up, 1 = TCP, 2 = Internet).
- **Interface Mode** – Do not change the default value of 0 unless otherwise instructed by a MICROS representative. In certain situations, this value may be changed to 1 to alter the communications protocol.
- **Auth Phone Number** – Enter the phone number that will be used for authorizations, if necessary. This number will be provided by the credit card processor.
- **Backup Auth Phone Number** – Enter the secondary phone number that will be used for authorizations, if necessary. This number will be provided by the credit card processor.
- **Host IP Address: Port** – Enter the IP address and port of the primary host connection. This field is only applicable if a TCP or an Internet connection is enabled.
- **Backup IP Address: Port –** Enter the IP address and port of the secondary host connection. This field is only applicable if a TCP or an Internet connection is enabled.

4. Go to the *Merchant* tab and configure the following settings:

- Go to the *Merchant* | *Authorization* tab and configure the following settings:



- **ML CA Header Enabled**. Enter 1 to enable a Merchant Link Inc. (ML) credit authorization header. Enter 0 if no ML CA Header will be used.

  If this field is enabled, enter the three-character code for authorizations in the ML CA Header Data (Authorization) field.

- The following fields should be completed using the instructions provided by the bank. The following information is needed:

  – Acquirer BIN

  – Merchant ID Number

- The following service establishment (SE) numbers are assigned by the card issuer to the merchant. Enter this information where it is appropriate:

  – AMEX SE

  – Discover SE

  – JCD SE

  – JAL SE

  – Diners SE

  – Carte Blanche SE

- Go to the *Merchant* | *RVC* tab and use the blue plus arrow to add all Revenue Centers that will use this driver.

5. Go to *POS Configurator* | *Devices* | *CA/EDC Drivers* and select the blue plus sign to add a record.

6. Enter a **Name** (e.g., **CaNNB-Settle**) and a value of the **Driver Code** field (e.g., **NNBS**) and save the record.

7. Go to the *System* tab and configure the following settings:

   - **Not Used** – Leave this field blank.

   - **Settlement Device** – Complete this step if you are using a modem for primary or fallback settlements. If you are unsure of the device number, go to the command prompt in the *\POS\bin* directory and enter settle –m for a Version 3.2 RES Server or go to the command prompt in the *\Common\Bin* directory for a Version 4.1 RES Server. The following sample message will display:

     ```
     Device [1]: Boca 28.8 Kbps V.34 MV.34E
     Device [2]: Standard 1200bps Modem
     Device [3]: Standard 2400 bps Modem
     Select the appropriate device number.
     ```

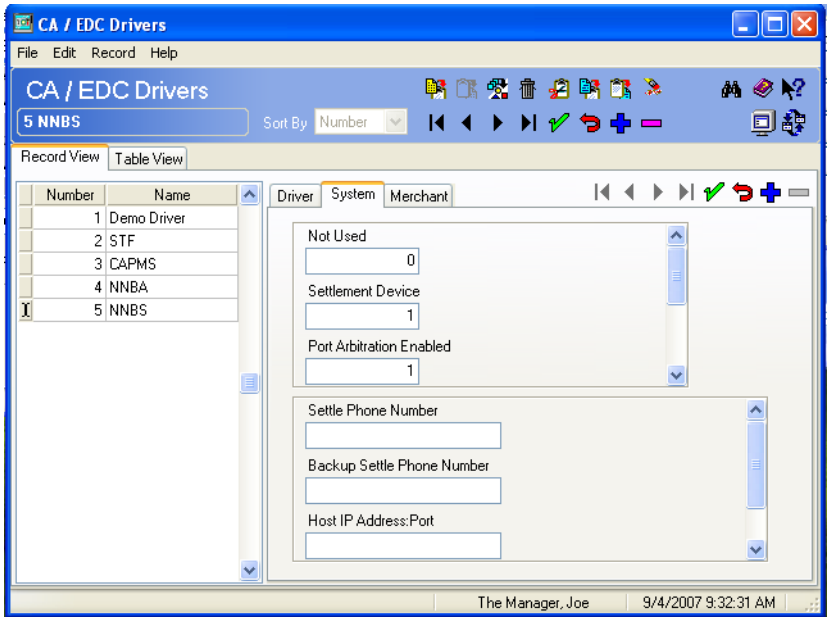
   - **Port Arbitration Enabled –** Enter a value of 1 to enable this driver.

   - **Communications Channel –** Indicate the communication type being used at the store (0= Dial-up, 1 = TCP, 2 = Internet).

- **Interface Mode** – Do not change the default value of 0 unless otherwise instructed by a MICROS representative. In certain situations, this value may be changed to 1 to alter the communications protocol.
- **Max Records Per Block.** Do not change the default value of 8 unless otherwise instructed by a MICROS representative. This option is used to limit the number of detail records that are sent in a settlement message and is required in certain network environments.
- **Settle Phone Number** – Enter the phone number that will be used for settlement, if necessary. This number will be provided by the credit card processor.
- **Backup Settle Phone Number** – Enter the secondary phone number that will be used for settlement, if necessary. This number will be provided by the credit card processor.
- **Host IP Address: Port** – Enter the IP address and port of the primary host connection. This field is only applicable if a TCP or an Internet connection is enabled.
- **Backup IP Address: Port –** Enter the IP address and port of the secondary host connection. This field is only applicable if a TCP or an Internet connection is enabled.

8. Go to the *Merchant* tab and configure the following settings:

   - Go to the *Merchant* | *Settlement* tab and configure the following settings:



- **ML EDC Header Enabled**. Enter 1 to enable a Merchant Link Inc. (ML) credit settlement header. Enter 0 if no ML EDC Header will be used.

  If this field is enabled, enter the three-character code for authorizations in the ML EDC Header Data (Settlement) field.

- **Retail Record Format Enabled**. Enter 0 to disabled Retail Record Formatting, and enter 1 to format American Express transactions for Retail Establishments (e.g., without tips).

- The following fields should be completed using the instructions provided by the bank. The following information is needed:

  – Merchant Number

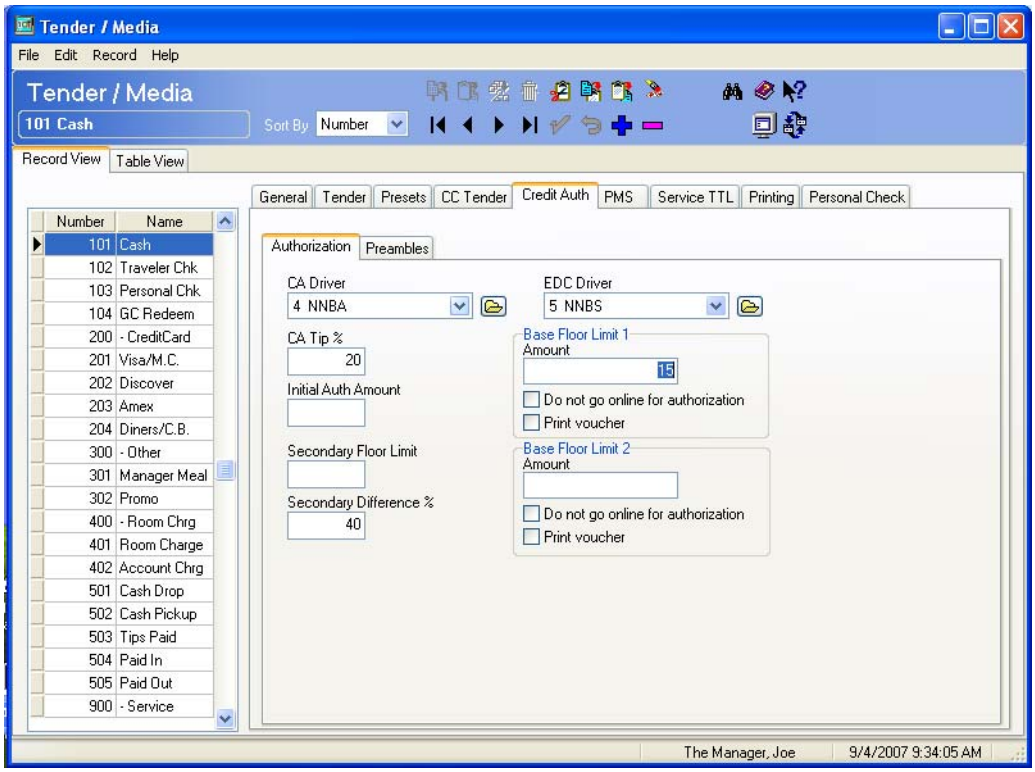
  – Terminal Serial Number

  – Quality Code

  – ML EDC Header Data

- Go to the *Merchant* | *RVC* tab and use the blue plus arrow to add all Revenue Centers that will use this driver.

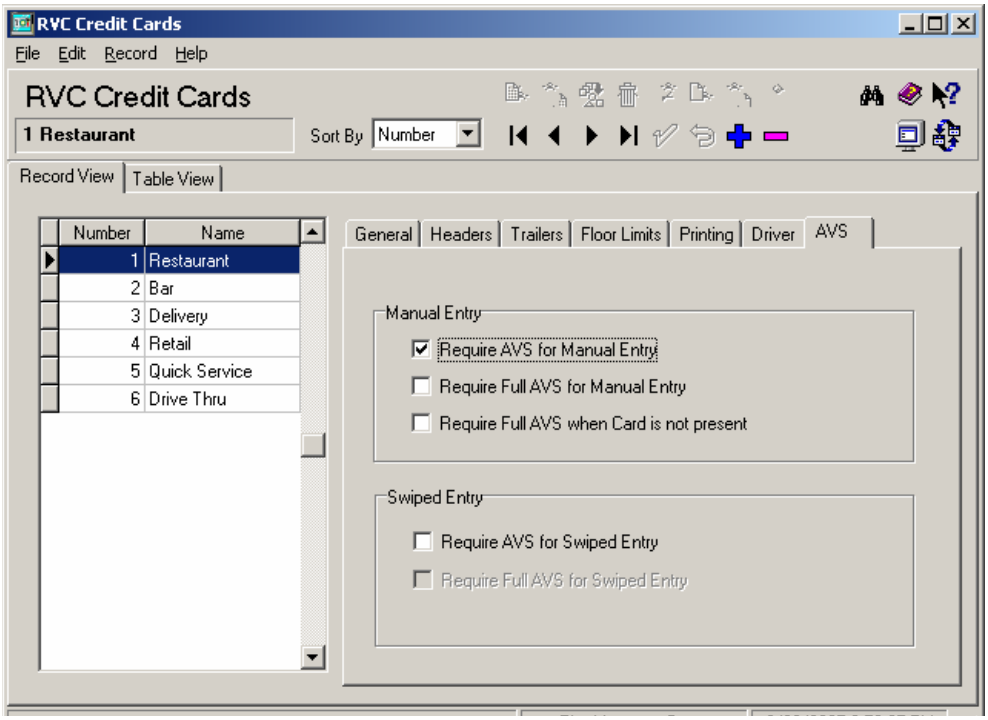
9. Go to *POS Configurator* | *Sales* | *Tender Media* | *Credit Auth* form. Link the all of the appropriate credit card tenders (e.g., Visa/Mastercard) to the TV drivers by configuring the following fields:



- **CA Driver** – Use the drop down box to select the NNBA driver.
- **EDC Driver** – Use the drop down box to select the NNBS driver.

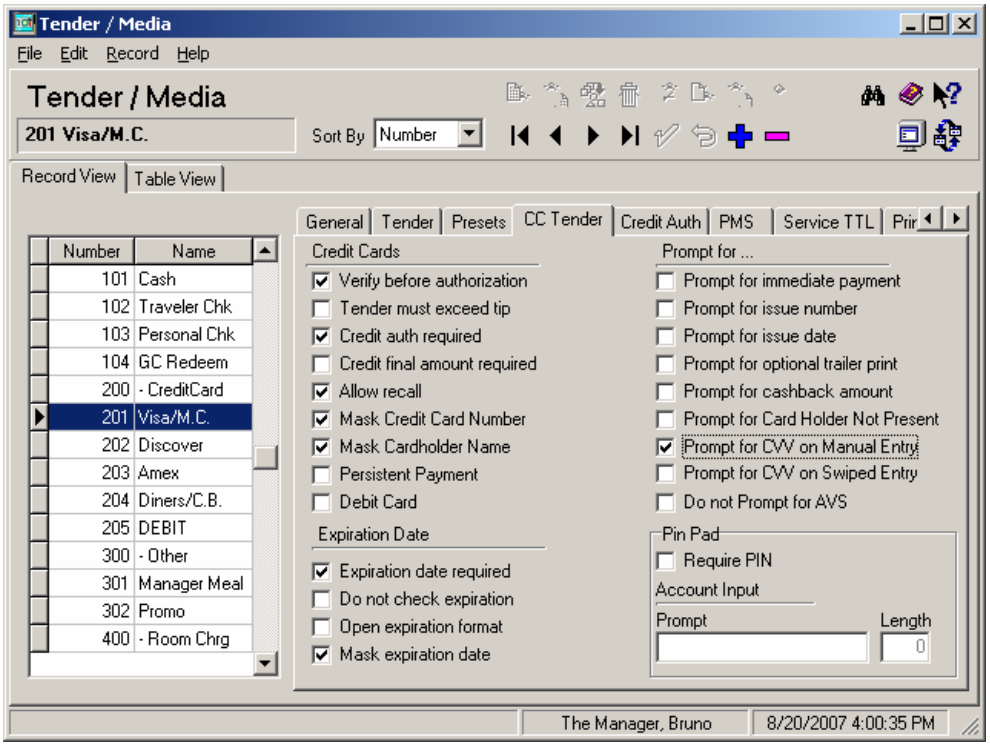
10. If AVS and CVV are enabled at the site complete step 10. If not go to step 11.

    Go to the *Revenue Center* | *RVC Credit Cards* | *AVS* tab and enable the following options. Select the options as they are appropriate for the site.



- **Require AVS for Manual Entry**. Select this option to prompt for the cardholder's zip code before submitting a manual credit card authorization,
- **Require Full AVS for Manual Entry**. Select this option to prompt for the cardholder's address AND zip code before submitting a manual credit card authorization. This option is only enabled if the **Require AVS for Manual Entry** and the **Require Full AVS when Card is not present** options are also enabled.
- **Require Full AVS when Card is not Present.** Select this option to determine whether the credit card is present before proceeding. If it is, the system will prompt for the zip code only. If it is not, the system will prompt for the cardholder's complete address and zip code. This option is only enabled with the **Require AVS for Manual Entry** option is also enabled.
- **Require AVS for Swiped Entry.** Select this option to prompt for the cardholder's zip code before proceeding with a swiped credit card transaction.
- **Require Full AVS for Swiped Entry**. Select this option to prompt for the cardholder's address AND zip code before proceeding with a swiped credit card authorization. This option is only enabled with the **Require AVS for Swiped Entry** option is also enabled.

Go to the *Sales* | *Tender/Media* | *CC Tender* tab and enabling the following options. Select the options as they are appropriate for the site.



- **Prompt for CVV on Manual Entry**. Select this option to display the following menu of options when a credit card is manually entered. To proceed, the user must select one of these options and respond accordingly.

  – Intentionally not provided

  – Present and will be provided

  – Present but is illegible

  – Not present.

- **Prompt for CVV on Swiped Entry**. Select this option to display the following menu of options when a credit card is manually entered. To proceed, the user must select one of these options and respond accordingly.

  – Intentionally not provided

  – Present and will be provided

  – Present but is illegible

  – Not present.

11. Go to *Start* | *Programs* | *Micros Applications* | *POS* | *Credit Card Batch*. Click on the Diagnostic tab and select the **Test Auth Connection** and the **Test Settlement Connection** buttons to verify that the drivers are up and running. A few test transactions can also be done to ensure all is working correctly.

Debit Card Tenders

Sites can accept debit cards in payment by adding a debit tender to the POS Operations payment screen. For information and step-by-step instructions, refer to the **Debit Card** section in the *RES 3700 POS Online Reference Manual* (3700.chm).

During operations, debit tenders may not be used for the following transactions:

- Voids
- Edit Closed Check
- Split Tender Void of a Debit Card

Split Tender combinations that are allowed with debit cards are:

- Cash and Debit
- Debit and Debit
- Credit and Debit
- Cash, Credit, and Debit

Voiding a Debit Tender

If a mistake is made on a debit tender, the operator will need to reverse the transaction (Void). For example, if the customer mistakenly hands the server a Debit Card but wants to tender the transaction to a Credit Card, the server will need to:

1. Reverse the transaction and void all transaction items.
2. Pay the transaction with a negative balance to Cash and hand the money to the customer.

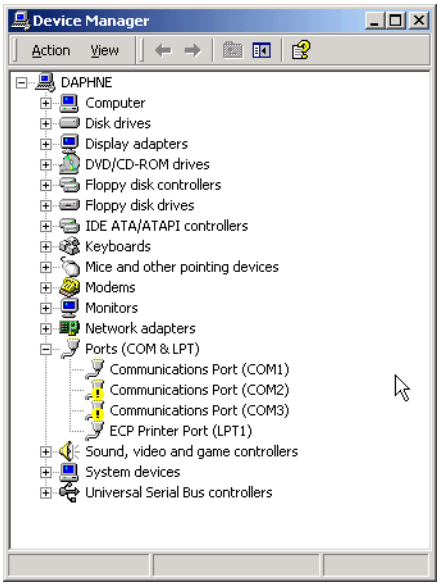
   NOTE: Operators cannot void or use the **[Return]** key and tender a negative balance to a debit card. Any attempt to do so will cause the error “Not Allowed with a Debit Tender.” to display.
3. Re-ring the check and tender to the Credit Card.

PinPad Device Setup

The following configuration options are required to link a VeriFone PinPad 1000SE device to a user workstation:

For Win32 Clients

1. From the Windows Start menu, right-click the My Computer icon and select **Properties | Hardware**. Click the **Device Manager** button to open the form (right).

   Select **Ports | Communication Port 1 | Port Settings** and set the following options:

   - **Bits per second** — 1200
   - **Data bits** — 7
   - **Parity** — Even
   - **Stop bits** — 1
   - **Flow control** — None

2. In POS Configurator, select **Devices | Devices | Network Nodes**. Go to the **Com Port** tab and set the following options:

   - **Comm 1** — 1200
   - **Parity** — Even
   - **Num Data Bits** — 7
   - **Num Stop Bits** — 1

3. Go to **Devices | User Workstations | Peripherals** and configure the PinPad device.

For WS4 Clients

1. In POS Configurator, select **Devices | Devices | Network Nodes**. Go to the Comm Port tab and set the following options:

   - **Comm 1** — 1200
   - **Parity** — Even
   - **Num Data Bits** — 7
   - **Num Stop Bits** — 1

Debit Card Setup

Debit card setup will vary depending on whether the Nabanco NB (NNBS) Driver or the Settle-To-File (STF) Driver is used:

- **Debit Settlement using the Nabanco NB (NNBS) Driver:**

  If you elect to settle using the Nabanco NB Driver (NNBS), this will send a batch header record only to the bank during End-of-Day settlement. This is to notify First Data that this is the time that you want your Debit transactions cut-off for the day. The bank will then pull all Debit transactions for the day, up to this settlement time, and begin a new business day for Debit.

- **Debit Settlement using the Settle-To-File (STF) Driver:**

  If you elect to have the bank close out all Debit transactions for the day, at a prearranged time with First Data, then you would use the Settle-To-File Driver to close out and mark all debit transactions as settled in the RES database. The STF driver is also used to provide a comma-delimited file of all debit transactions, so that these can be sent remotely and closed out at your Corporate Headquarters.

The difference between Option 1 (NNBS Driver) and Option 2 (STF Driver) is whether or not you want to setup an auto-close time for all Debit transactions with the bank, or not. If you elect to use auto-close for debit, then you need to choose Option 2 and link 'STF' for the EDC Driver in *POSCfg* | *SALES* | *Tender/ Media* | *Credit Auth* | *EDC Driver*. If you want to let Debit settlement occur either through the End-of-Day autosequence or manually settle via the Credit Card Batch application, then you would choose Option 1 and link the NNBS for the EDC Driver.

Confidence Testing

Once the device is configured, test the PinPad hardware using the Micros Confidence Test (**MicrosCfdTest.exe**). Keep in mind that:

- A small keyboard and mouse will be needed to test the WS4.
- Before running the confidence test, close POS Operations by right-clicking the mouse and selecting the **Close** option.

  NOTE: When starting the Micros Confidence Test, if the error message "PinPad.dll is currently in use or unavailable." displays, wait 30 seconds and try again.

ReadMe First – V. 4.5.19.1661

This section contains a comprehensive guide to the new features, enhancements, and revisions included in the Version 4.5 release of the NaBANCO Credit Card Driver.

In This Section...

What's New

A new feature is defined as one that provides capabilities that were not available in previous versions of the application.

New Features Summarized

The following table summarizes the new features included in this version:

Feature	Page
AMEX Values Authorized for Amounts Below $1.00 Will be Authorized for the Exact Amount	19
AVS and CVV Supported	19

New Features Detailed

AMEX Values Authorized for Amounts Below $1.00 Will be Authorized for the Exact Amount

In the past the CaNNBA driver would round authorization amounts for AMEX that were less than $1.00 up to the value of $1.00. For example, an authorization for $0.01 would be transmitted as an authorization for $1.00.

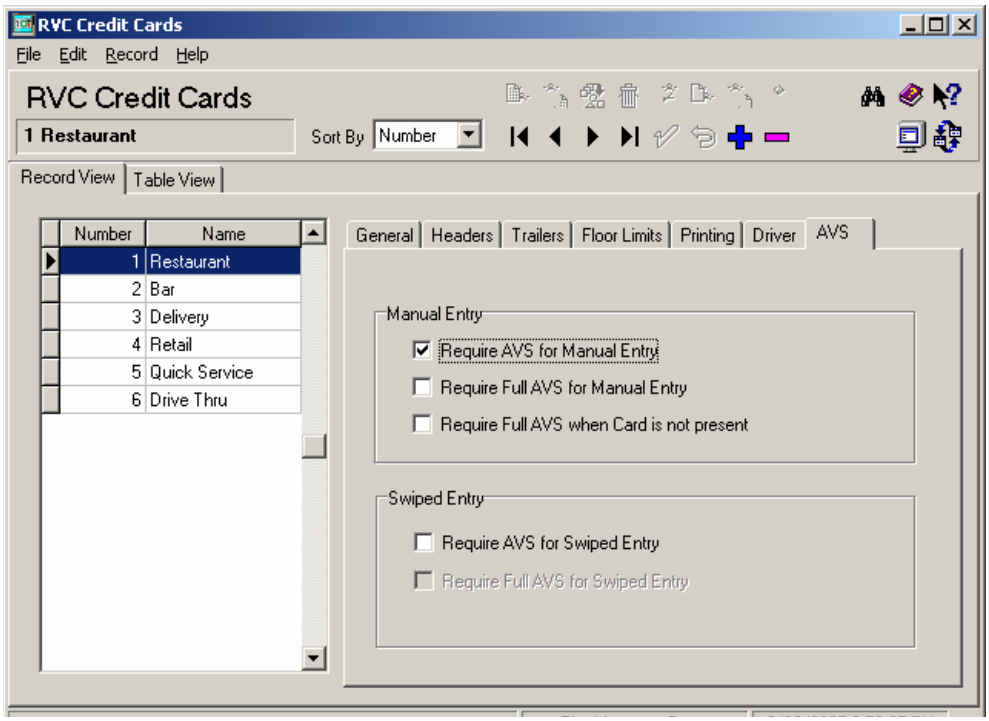
Now, if an authorization is submitted for a value below $1.00, the authorization will be transmitted for the exact amount requested.

AVS and CVV Supported

The NNBA has been enhanced to include Address Verification (AVS) and Card Verification Value (CVV) as part of the authorization request.

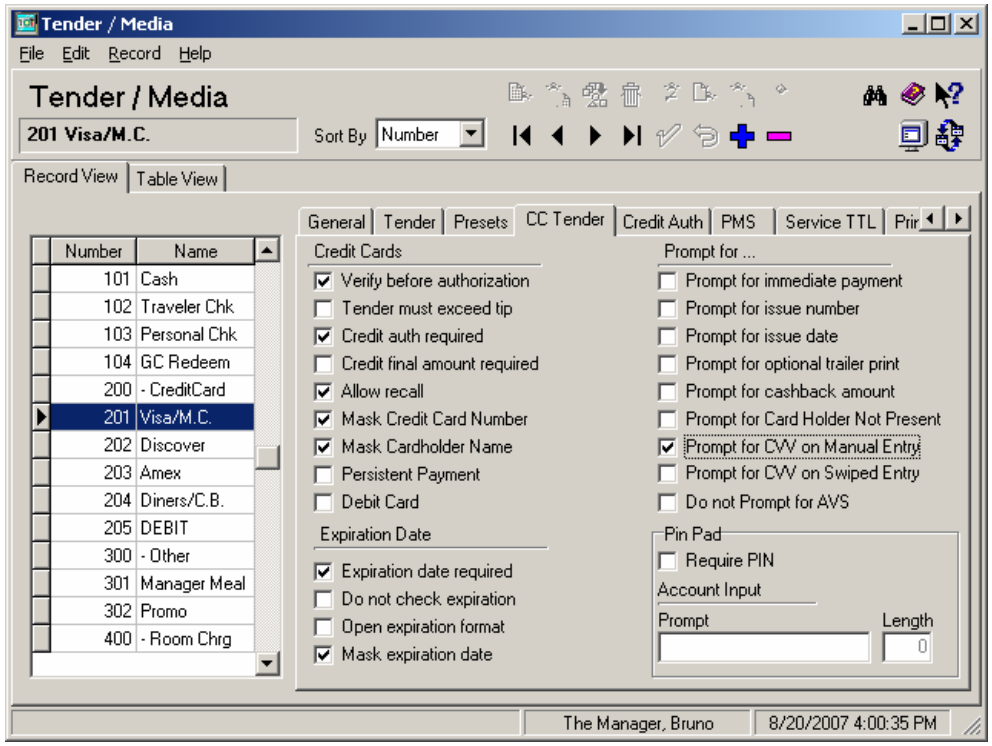
AVS is a system check that matches the address provided in the transaction to the address on file with the bank. CVV is the three or four-digit number listed on the back of the card that provides an additional level of security for the user. AVS and CVV data is transmitted in the Cardholder Identification Code field of the authorization request.

The AVS feature can be enabled by going to the *Revenue Center* | *RVC Credit Cards* | *AVS* tab and enabling the following options. Select the options as they are appropriate for the site.



- **Require AVS for Manual Entry**. Select this option to prompt for the cardholder's zip code before submitting a manual credit card authorization,
- **Require Full AVS for Manual Entry**. Select this option to prompt for the cardholder's address AND zip code before submitting a manual credit card authorization. This option is only enabled if the **Require AVS for Manual Entry** and the **Require Full AVS when Card is not present** options are also enabled.
- **Require Full AVS when Card is not Present.** Select this option to determine whether the credit card is present before proceeding. If it is, the system will prompt for the zip code only. If it is not, the system will prompt for the cardholder's complete address and zip code. This option is only enabled with the **Require AVS for Manual Entry** option is also enabled.
- **Require AVS for Swiped Entry.** Select this option to prompt for the cardholder's zip code before proceeding with a swiped credit card transaction.
- **Require Full AVS for Swiped Entry**. Select this option to prompt for the cardholder's address AND zip code before proceeding with a swiped credit card authorization. This option is only enabled with the **Require AVS for Swiped Entry** option is also enabled.

The CVV feature can be enabled by going to the *Sales* | *Tender/Media* | *CC Tender* tab and enabling the following options. Select the options as they are appropriate for the site.



- **Prompt for CVV on Manual Entry**. Select this option to display the following menu of options when a credit card is manually entered. To proceed, the user must select one of these options and respond accordingly.
    - Intentionally not provided
    - Present and will be provided
    - Present but is illegible
    - Not present.
- **Prompt for CVV on Swiped Entry**. Select this option to display the following menu of options when a credit card is manually entered. To proceed, the user must select one of these options and respond accordingly.
    - Intentionally not provided
    - Present and will be provided
    - Present but is illegible
    - Not present.

What's Enhanced

An enhancement is defined as a change made to improve or extend the current functionality. To qualify as an enhancement, the change must satisfy the following criteria:

- The basic feature or functionality already exists in the previous release of the software.
- The change adds to or extends the current process. This differs from a revision (i.e., a bug fix) which corrects a problem not caught in previous versions.

Enhancements Summarized

The following table summarizes the enhancements included in this version:

Feature	Page
CaNNBA Driver Supports New Discover Credit Card Numbers	23
Retry Failed Debit Transaction Reversals a Maximum of 3 Times Before Dropping the Transaction	23
Settlement Process Enhanced to Send Detail Records for Credit but not for Debit to the Credit Card Processor	24

Enhancements Detailed

CaNNBA Driver Supports New Discover Credit Card Numbers

This release of the CaNNBA driver supports the following new Discover credit card number ranges:

Start	End
62212600	62292599
644000	644999
650000	659999

Retry Failed Debit Transaction Reversals a Maximum of 4 Times Before Dropping the Transaction

The CaNNBA driver will now retry debit card reversal transactions a maximum of 4 times before dropping the transaction. Previously, the driver would attempt to re-transmit continuously, interrupting any future transactions.

Now, after the first failure to communicate to the host processor occurs, the driver will attempt to re-connect every 50 seconds. After the fourth try, the driver will cease attempting to connect. At settlement, the reversal information will be written to a text file (e.g., **NNBAFailedReversal.txt)** in the *\Micros\Res\Pos\Etc* directory. If this occurs, the following message will appear at the end of the Batch Transfer Status report:

```
One or more Debit Card Transactions Failed to Process
```

With RES versions 4.3 and higher, this message will print in bold face type.

The text file will display the following information about the transaction:

An attempt to reverse one or more incomplete debit transactions has failed. The details of the transaction(s) are:

```
Transaction Date and Time: 09/13/07 22:03:49
Account Number: ************1111
Revenue Center: 1
Check Number: 1069
Check Employee: 101 Server 1
Transaction amount: 22.23
```

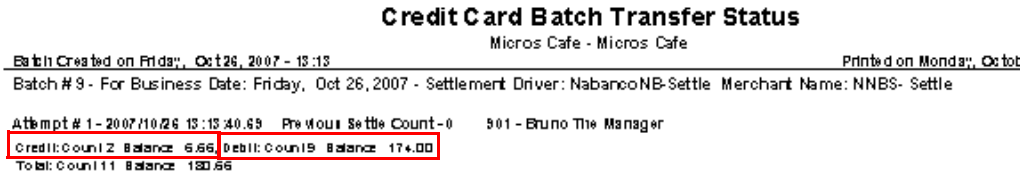
The user should print out the **NNBAFailedReversal.txt** and contact the bank, so that the customer may be credited for the reversal amount on the check.

It is the responsibility of the user to delete the **NNBAFailedReversal.txt** file. Otherwise, the Batch Transfer Status report will continue to reference this file.

Settlement Process Enhanced to Send Detail Records for Credit but not for Debit to the Credit Card Processor

In order to provide an additional safeguard against the creation of duplicate Debit batches, the detail records for debit transactions will not be sent to the Credit Card Processor; however, the credit transaction detail will continue to be sent. Debit transactional counts and amounts are tabulated separately from credit transactions, and sent to the processor.

To support this enhancement, the Batch Transfer Report will now list the Credit and Debit amounts separately. As demonstrated in the graphic below, the count and amounts for Credit and Debit transactions will be listed separately.


Credit Card Batch Transfer Status
Micros Cafe - Micros Cafe
Batch Created on Friday, Oct 26, 2007 - 13:13 Printed on Monday, Octot
Batch # 9 - For Business Date: Friday, Oct 26, 2007 - Settlement Driver: NabancoNB-Settle Merchant Name: NNBS- Settle
Attempt # 1 - 2007/10/26 13:13:40.69 Previous Settle Count - 0 901 - Bruno The Manager
Credit: Count 2 Balance 6.66 Debit: Count 9 Balance 174.00
Total: Count 11 Balance 180.66

As in the past, the Credit Card Detail Report will show all Credit and Debit amounts broken out by tender.

What's Revised

A revision is defined as a correction made to any existing form, feature, or function currently resident in the NaBANCO driver. To qualify as a revision, the change must satisfy the following criteria:

- The basic form, feature, or functionality must be a part of the previous version of the software.
- The change must replace or repair the current item or remove it from the application.

Revisions Summarized

The table below summarizes the revisions included in this release:

Feature	CR ID #	Page
CaNNBA Driver Returned an Improper Response When a Debit Tender was Declined	N/A	25
CaNNBA Driver Would Not Send Leading Zeroes When Present in Authorization Request Message to Host for AVS Zip Code Entry	N/A	25

Revisions Detailed

CaNNBA Driver Returned an Improper Response When a Debit Tender was Declined

CR ID # : N/A

Previously, when the CaNNBA driver declined a debit transaction, it would return the response of Referral rather than that of Declined. This has been corrected.

CaNNBA Driver Would Not Send Leading Zeroes When Present in Authorization Request Message to Host for AVS Zip Code Entry

CR ID#: N/A

Previously, if the address verification (AVS) option was enabled, the CaNNBA Driver would not send leading zeroes for the zip code entry. For example, a zip code entry of 00123 would be recorded as 123. The driver has been corrected to properly format leading zeroes in a zip code.

At this time POS Operations does not support they entry of non-numeric digits as a postal code. For this reason, only US zip codes are supported with the AVS feature.

ReadMe First – V. 4.2.13.809

This section contains a comprehensive guide to the new features, enhancements, and revisions included in the Version 4.2 release of the NaBANCO Credit Card Driver.

In This Section...

What's New

A new feature is defined as one that provides capabilities that were not available in previous versions of the application.

New Features Summarized

The following table summarizes the new features included in this version:

Feature	Page
TCP Communications Channel	27
Duplicate Batch Prevention	29
Support for Debit Cards	37

New Features Detailed

TCP Communications Channel

The NaBANCO NB credit card drivers (authorization and settlement) have added a TCP communications option with fallback capabilities to handle connection failures. The ability to support multiple merchant configurations was also added.

The TCP option does not support persistent connections, so each authorization (or multiple authorizations before a session is completed) will:

1. Establish a TCP connection,
2. Send the authorization message(s) to the Host,
3. Wait for the Host response(s), and
4. Close the TCP connection.

In the event of a TCP failure, the NaBANCO NB driver will attempt to establish a Dial-Up connection to complete the authorization or settlement, while trying to reconnect (in the background) to the TCP Host at 30-seconds intervals.

Once a connection is re-established with the Host, the driver switches back to TCP mode and will either reconnect on the next authorization attempt or return to the beginning of the last batch settled.

Driver Options

To support this feature, the following changes were made to the authorization (NNBA) and settlement (NNBS) drivers in POS Configurator (*Devices* | *Devices* | *CA/EDC Drivers* | *System*):

- **Communications Channel** — Indicates the type of interface connection used between the merchant and the credit card processor. The options are:

  0 – dial-up (phone/modem)

  1 – TCP

- **Host IP Address: Port** — Specifies the IP address and port of the primary host connection.
- **Backup IP Address: Port** — Specifies the IP address and port of the backup host connection. Backup connections are triggered when the system cannot establish communication via the primary host address.

  NOTE: The Host and Backup IP addresses are only valid if the TCP option is enabled.

- **Retail Record Format** — Specifies whether or not the retail record format will be used, based on the type of establishment. the options are:

  0 — Disables the retail format. This option is used for Restaurant merchants that are required to enter tips.

  1 — Enables the retail format. This option is used for Retail merchants who are not required to enter tips.

In addition, these default options are required for use with the NNBS settlement driver::

- **Interface Mode** — 0 (zero)
- **Max Records Per Block** — 8

Note *All Merchant information and TCP connectivity settings (e.g.., Host IP: Port) must be obtained from your bank representative.*

Duplicate Batch Prevention

During credit card settlement, certain events can cause a batch to be duplicated and settled more than once. This, in turn, can result in multiple charges to the customer for the same credit card transactions. This feature was designed to prevent the creation of duplicate credit card batches.

Causes

The identified causes of a duplicate batch can be divided into two Scenarios:

- **Scenario 1** — For TCP protocols, a timeout or other communication error occurs while waiting for the Batch Close response as described below:
  - The settlement process successfully proceeds to the Batch Close request.
  - The CC Driver submits the batch to the processor.
  - The processor settles the batch and responds to the CC Driver.
  - The Close Successful (OZC) response does not get back to the CC Driver.
- **Scenario 2** — For all protocols, system is unable to get the OZC response from the CC Driver through CCS and CAEDC.dll into the MICROS database.

In both scenarios, the status of the batch is left unsettled in the MICROS database. In either case, a subsequent settlement attempt may or may not be posted as a duplicate by the credit card processor. This depends on the processor's ability to detect the incompletely settled batch.

Solution

To improve the processor's ability to detect (and thus prevent) a duplicate batch, changes were made to the way batch numbers are managed. Now, when an Open Batch request is initiated, a processor batch number (which is different from the MICROS' batch sequence number) is assigned. This number is saved in the registry and re-used for any subsequent settlement attempts of the same batch sequence number.

The change provides the Credit Card Driver with all of the information needed to prevent duplicate batches. By persisting the status of each batch settlement attempt in the registry, the driver can refuse to re-settle a batch that has either ended in a communication error after the batch close request was sent (Scenario 1 above) or was successfully settled but did not receive its good batch confirmation (Scenario 2).

Unsettled Batches

When a settlement ends without receiving a batch close response, that batch is considered unsettled. The driver will not attempt to resubmit an unsettled batch to the processor again.

In addition, any attempt to settle these types of batches (either through the Credit Card Batch Utility or as part of an autosequence) will be prohibited by the driver. The results of each attempt will be duly noted in the registry key history, as described above.

Scenario 1

For Scenario 1 settlement attempts (communication error before OZC response), the driver will fail the Batch Open request and provide a descriptive message to be included in the Batch Transfer Status Report. The batch will remain unsettled in the MICROS database. It is the site's responsibility to monitor the failure, contact a support representative, and take the appropriate corrective action.

Overriding Unsettled Batches

The CC Driver does not override an unsettled or "quarantined" batch. This must be handled manually by locating the relevant batch history record in the registry, creating the **Override** DWORD value at the root of the batch, and setting it to 1.

When an override settlement is attempted, the CC Driver resets the data in the **Override** key value to 0. This prevents multiple overrides of the same batch from generating duplicate batches.

Once an attempt fails, the user must reset the value to 1 before trying again. There are exceptions; for example, when the failure results from an inability to connect to the host. In this case, since the batch process was never actually started, the attempt terminates before the **Override** value is changed. The value will still be set at 1 when the next attempt is made.

Finally, the driver determines whether to allow a batch to be settled based on the highest numbered attempt recorded in the registry. In other words, if there are three attempts listed in the registry, the system will use the data in the last entry (Attempt03) to determine whether the settlement process will be allowed.

Scenario 2

For Scenario 2 settlement attempts (batch settled but OZC response not sent), the driver will "simulate" a successful settlement. The processor will not actually be contacted, however. Appropriate messages will appear on the Batch Transfer Status Report and the batch will be marked as settled.

Purging

By default, the CC Driver stores the most recent 100 days of batch history or the last 100 batches, whichever is greater. This can be overridden by the DWORD registry entry **HistoryAgePurgeThreshold**, located in the **Option** subkey.

Regardless of the setting, the CC Driver will only execute a purge when the number of batches in the history exceeds 100. In other words, the driver will always keep the most recent 100 batch histories, no matter how old they are. The default of 100 can be changed via the DWORD registry value **HistoryCountPurgeThreshold**, also located in the **Option** subkey.

Note *If the Batch Sequence Number is reset to 1 (e.g., by clearing totals or manually deleting batches from the database), the system will automatically delete the entire Batch History. This prevents new batches from being linked to previous Batch History records.*

Registry Changes

During batch settlement, the CC Driver records each attempt to settle a batch in the registry. The data are stored in a hierarchical format, located at:

HKLM\Software\MICROS\Common\CCS\DrvrCfg\DrvrX\History

Key values are added based on the following:

Batches

A registry key is created for each credit card batch. The key consists of a 9-character string representing the batch number. The number is formatted with leading zeros to allow batches with a variable number of digits to be sorted in the correct order.

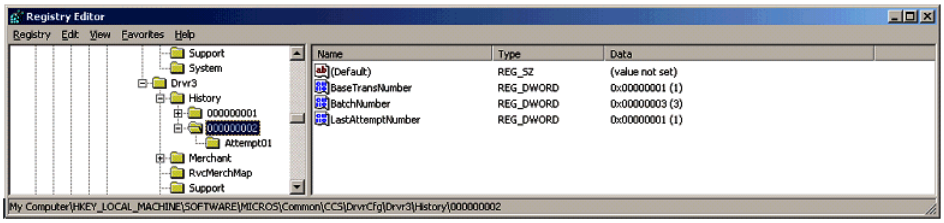
At this level, the following information is stored:

- **BaseTransNumber** — DWORD. Represents the NextTransNumber from the last successful batch plus the number of records in the current batch.

  NOTE: BaseTransNumber is needed in the event that a batch fails. This value indicates the detail record where the process should be restarted.

- **BatchNumber** — DWORD value. Assigned by the driver on the first settlement attempt and re-used for all subsequent settlement attempts.
- **Override** — DWORD value. Created manually and set to 1 to enable the driver to re-settle an otherwise quarantined batch.
- **LastAttemptNumber** — DWORD value. A convenience for the driver. Assists in creating the next Attempt subkey.

The following illustrates how the open batch request would be saved in the registry:



Settlement Attempt

A registry key is created for each batch settlement attempt. The key name is formatted as **AttemptXX**, where **XX** represents an incrementing count of the number of attempts. The format allows the system to correctly sort up to 99 separate settlement attempts.

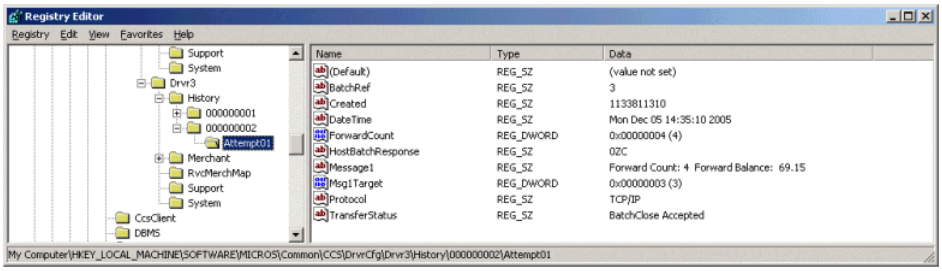
NOTE: Additional attempts are not prohibited; however, the additional digits will be included in the name, which may interfere with the sort order.

At this level, the following information is stored:

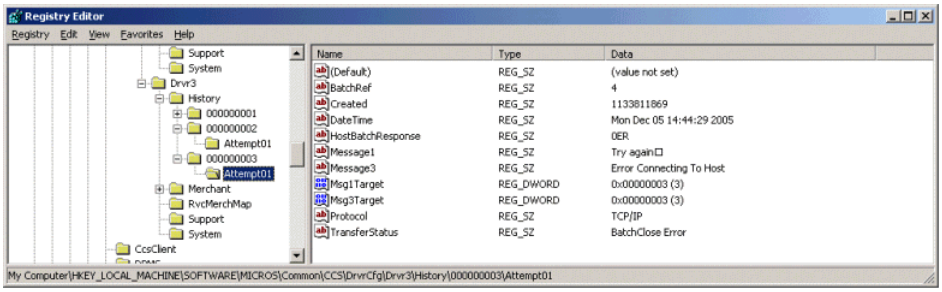
- **DateTime** — STRING value. Formatted as DOW MON HH:MM:SS:YYYY where DOW is Day of Week and MON is the abbreviated Month. For example: Fri Oct 22 13:52:30 2004
- **Created** — DWORD value. Records the system time of the attempt in the numerical format needed for comparison within the driver. Represents the same actual time as the **DateTime** value.
- **Protocol** — STRING value. Indicates the type of interface connection used for this settlement attempt. The value will be one of the following: *DIAL or TCP.*

- **HostBatchResponse** — STRING value. Used to store the response from the host along with the rest of the response message. The response could be one of the following:
  - OZC = Close Successful.
  - OZX = Send All Detail
  - OER, 6ER = Error, Display Text
- **TransferStatus** — STRING value. Used by the CC Driver to record (or "remember") how far it made it through a settlement. This value tracks the batch transfer through the various stages of the settlement, recording the progress. (Refer to the TransferStatus table beginning on page 35 for a list of possible notations.)
- **Overridden** — DWORD value. Indicates that this settlement attempt was done as an override. This value is not always present. It is only created if the **Override** value at the root of this batch was set to 1 for this attempt.
- **BatchRef** — STRING value. Needed for Local Accept of a batch. This value is recorded from the update response back to the CCS. It includes the Batch Number.
- **ForwardCount** — STRING value. Needed for Local Accept of a batch. This value is recorded from the update response back to the CCS.
- **MessageX** — STRING value. Needed for Local Accept of a batch. This value is recorded from the update response back to the CCS. Up to four messages may be present, where X represents a numeral from 1 to 4.
- **MsgXTarget** — DWORD value. Needed for Local Accept of a batch. This value is recorded from the update response back to the CCS. Up to four messages may be present, where X represents a numeral from 1 to 4. In this instance, they instruct POS Operations on how to display or print the corresponding messages.

The following illustrates how a **successfully settled batch attempt** would be saved in the registry:



In comparison, if the **settlement errored** waiting to connect to the host, the attempt would be logged in registry as follows:



To correct the problem, the user could **set the Override value to 1**:

TransferStatus Values

The TransferStatus is stored as a descriptive string to allow support personnel to troubleshoot .

TransferStatus	Description
BatchOpen Submitted	The driver received the Batch Open Request from CCS. A settlement ending in this status indicates that the CC Driver or CCS crashed while processing the request or waiting for the response.
BatchOpen Accepted	The request was accepted by the host.
BatchOpen Rejected	The request was rejected by the host. Driver successfully received a response.
BatchOpen Error	A format or transmission error occurred that prevented the request from being sent.
BatchDetailXXX Submitted	Batch detail number XXX was received from CCS. A settlement ending in this status indicates that the CC Driver or CCS crashed while processing the request.
BatchDetailXXX Accepted	Batch detail number XXX was accepted.
BatchDetailXXX Rejected	The request was rejected by the host. Driver successfully received a response.
BatchDetailXXX Error	A format or transmission error occurred that prevented the request from being sent.
BatchClose Submitted[1]	Batch close request was received from CCS. A settlement ending in this status indicates that the CC Driver or CCS crashed while processing the request.
BatchClose Accepted[2]	The request was accepted by the host.
BatchClose Rejected	The request was rejected by the host. Driver successfully received an OZX response.
BatchClose Duplicate[1]	The request was declined by the host. Driver successfully received a duplicate batch response.
BatchClose Error	A format or transmission error occurred that prevented the request from being sent.
Response Failure[1]	A timeout, host abort, or I/O error occurred, preventing the reception of a useable response.
Quarantined[1]	The settlement attempt was prevented due to the TransferStatus of the most recent attempt.
Local Accept[2]	The batch had been settled previously. The driver responded with host data from the previous settlement.

Batch Transfer Status Report Messages

The following table provides examples of the types of error messages that could be included on a Batch Transfer Report when a batch settlement is prevented to avoid duplication. The entries are not definitive, but for illustration purposes only.

Previous Transfer Status	New Transfer Status	Report Messages
None	BatchClose Submitted	Msg1: Error [-2] Waiting for Update From Credit Card Service Msg2: ODBC NOT Initialized
BatchClose Submitted	Quarantined	Msg1: Settlement prevented to avoid duplicate batches. Msg2: Please contact your support personnel for assistance.
None	BatchOpen Error	Msg1: Error Connecting to Host
BatchOpen Error	BatchClose Accepted	Msg1: Forward Count: 1 Forward Balance: 7.00 (After regaining connection.)
None	Response Failure	Msg 1: Socket IO Error
Response Failure	Quarantined	Msg1: Settlement prevented to avoid duplicate batches. Msg2: Please contact your support personnel for assistance.
None	BatchClose Rejected	Msg1: Header Record: Unknown Error Msg2: Batch Error Text from Host
BatchClose Rejected	BatchClose Rejected	Msg1: Header Record: Unknown Error Msg2: Batch Error Text from Host
None	BatchClose Duplicate	Msg1: Duplicate Batch [081] detected by Host
BatchClose Duplicate	Quarantined	Msg1: Settlement prevented to avoid duplicate batches. Msg2: Please contact your support personnel for assistance.
Quarantined	Quarantined	Msg1: Settlement prevented to avoid duplicate batches. Msg2: Please contact your support personnel for assistance.

Previous Transfer Status	New Transfer Status	Report Messages
None	BatchClose Accepted	Msg1: Forward Count: 1 Forward Balance: 7.00
BatchClose Accepted	Local Accept	Msg1: Standard Fwd Count and Balance message Msg2: Batch Accepted Locally Msg3: Previously settled by host on Tues Nov 02 15:34:00 2004
Local Accept	Local Accept	Msg1: Standard Fwd Count and Balance message Msg2: Batch Accepted Locally Msg3: Previously settled by host on Tues Nov 02 15:34:00 2004

Debit Card Support

The ability to support Debit Cards with PIN entry was added in this release. PIN entry requires the use of the Veriphone PinPad 1000 device, wired to a WS4 or Win32 Client.

For instructions on setup and configuration requirements, refer to the Debit Card Tenders section, beginning on page 15.

What's Enhanced

An enhancement is defined as a change made to improve or extend the current functionality. To qualify as an enhancement, the change must satisfy the following criteria:

- The basic feature or functionality already exists in the previous release of the software.
- The change adds to or extends the current process. This differs from a revision (i.e., a bug fix) which corrects a problem not caught in previous versions.

Enhancements Summarized

There are no enhancements in this version.

What's Revised

A revision is defined as a correction made to any existing form, feature, or function currently resident in the NaBANCO driver. To qualify as a revision, the change must satisfy the following criteria:

- The basic form, feature, or functionality must be a part of the previous version of the software.
- The change must replace or repair the current item or remove it from the application.

Revisions Summarized

There are no revision in this version.