Quickstart for Configuring a Vendi for Apple VAS Transaction

Much of the following is outlined in Section 14 of the NEO IDG. This document is intended to serve as a quick start guide for Apple VAS (Value Added Services Protocol). For this guide, all commands SENT to the reader will be in Blue. All Responses will be in RED.

Note: If you are sending commands via the "Send NEO Command" in the UDemo, or using "Send Command" through the SDK, only the command, subcommand, and data fields are needed. The Header, Data length and CRC are calculated and inserted into the command automatically, by the SDK.

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1. Set Merchant Records (04-11)

In order to process an ApplePay VAS transaction, the terminal's merchant records must first be set. More information on the merchant records and ApplePay can be found in section 14, "ApplePay Functions," of the NEO IDG. For this example, I am setting my Merchant 1 to be the test prod, with merchant ID Pass.com.apple.wallet.vas.prodtest.

The data for the merchant ID is a derived value. It is a SHA-256 hashing of the hex equivalent of the pass name.

For this example:

"pass.com.apple.wallet.vas.prodtest" in hex = 70 61 73 73 2e 63 6f 6d 2e 61 70 70 6c 65 2e 77 61 6c 6c 65 74 2e 76 61 73 2e 70 72 6f 64 74 65 73 74

The SHA-256 of that hex = 3C C7 0E D8 9A 9D 43 54 BE 98 30 AB 58 D8 9C 6F E7 E6 2B AC A9 39 D2 A6 85 1D FC 60 2E A7 98 F7

Set Merchant command using the SDK:

Set Merchant 1 command via raw commands:

Breakdown of command sent:

- 56 69 56 4F 74 65 63 68 32 00 ViVOtech2 header
- 04 Set Merchant Command
- 11 Set Merchant Sub Command
- 00 63 Data Length
- 01 Merchant Index number
- 01 Merchant ID is enabled
- 3C C7 0E D8 9A 9D 43 54 BE 98 30 AB 58 D8 9C 6F E7 E6 2B AC A9 39 D2 A6 85 1D FC 60 2E A7 98 F7 - Merchant ID (this is the SHA-256 of the IDTech Pass)
- 00 Length of VAS URI. In this example, none was provided.
- 25 B1 CRC

Vendi Response:

56 69 56 4F 74 65 63 68 32 00 04 00 00 00 AE 16

Breakdown of Vendi Response:

- 56 69 56 4F 74 65 63 68 32 00 ViVOtech2 Header
- 04 Command
- 00 Status (breakdown of status in table "Status Codes For Protocol 2")
- 00 00 data
- AE 16 CRC

2. Start Vas only transaction (02-40)

Command sent using the SDK:

dtVendi.ctls_startTransaction(10,0,0,60,Common.getByteArray("FFEE06189F220201009F26040 00000039F2B05010000000DF010101"));

Raw Command Sent:

56 69 56 4F 74 65 63 68 32 00 02 40 00 29 30 9F 02 06 00 00 00 00 00 01 9C 01 00 FF EE 06 18 9F 22 02 01 00 9F 26 04 00 00 00 02 9F 2B 05 01 00 00 00 0D DF 01 01 01 33 FE

Command Sent Breakdown:

A breakdown of the data can be found in the NEO IDG, Table 32.

- 56 69 56 4F 74 65 63 68 32 00 ViVOTech2 header
- 02 40 Start transaction command
- 00 29 Data Length
- 30 Time out
- 9F 02 06 00 00 00 00 00 01 Transaction amount
- 9C 01 00 Transaction Type
- FF EE 06 ApplePay VAS Collective
- 18 length of ApplePay VAS collective
- 9F 22 02 01 00 ApplePay Terminal AVN
- 9F 26 04 00 00 00 02 ApplePay terminal Capabilities 02 = VAS only
- 9F 2B 05 01 00 00 00 00 AppplePay VAS Filter (optional)
- DF 01 01 01 -
- 33 FE CRC

Vendi Response:

56 69 56 4F 74 65 63 68 32 00 02 57 00 FF D1 FF EE 12 0A 62 99 49 01 2C 00 04 60 01 AC FF EE 06 82 00 D9 9A 03 14 08 15 9F 21 03 17 32 53 9F 25 20 3C C7 0E D8 9A 9D 43 54 BE 98 30 AB 58 D8 9C 6F E7 E6 2B AC A9 39 D2 A6 85 1D FC 60 2E A7 98 F7 9F 2A 00 9F 27 3E 93 1C 1A 60 4A 46 09 9E 21 EC 88 6D EF CC 8C B8 8B CA 03 CC 4B C6 62 0C C1 8F 8C 10 5A 7A F1 4F 9B 3C D9 E3 36 4E 9C 8C BF E0 90 34 10 B1 58 3C 3D 63 AC 9F CC 48 9C A8 76 AE 8C B3 E5 62 9F 25 20 3C C7 0E D8 9A 9D 43 54 BE 98 30 AB 58 D8 9C 43 54 BE 98 30 AB 58 D8 9C 6F E7 E6 2B AC A9 39 D2 A6 85 1D FC 60 2E A7 98 F7 9F 2A 00 9F 27 3E 93 1C 1A 60 4A 46 09 9E 21 EC 88 6D EF CC 8C B8 8B CA 03 CC 4B C6 62 0C C1 8F 8C 10 5A 7A F1 4F 9B 3C D9 E3 36 4E 9C 8C BF E0 93 30 AB 58 D8 9C 6F E7 E6 2B AC A9 39 D2 A6 85 1D FC 60 2E A7 98 F7 9F 2A 00 9F 27 3E 93 1C 1A 60 4A 46 09 9E 21 EC 88 6D EF CC 8C B8 8B CA 03 CC 4B C6 62 0C C1 8F 8C 10 5A 7A F1 4F 9B 3C D9 E3 36 4E 9C 8C BF E0 90 34 10 B1 58 3C 3D 63 AC 9F CC 48 9C A8 76 AE 8C B3 E5 62 9F 39 01 07 FF EE 01 04 DF 30 01 00 DF EE 26 01 D1 ED CA

Vendi Response Breakdown:

- 56 69 56 4F 74 65 63 68 32 00 ViVOTech2 header
- 02 Act Command returned
- 57 Status. 57 = no payment occurred
- 00 FF D1 Data length
- FF EE 12 0A 62 99 49 01 2C 00 04 60 01 12 KSN and length (because reader is encrypted)
- FF EE 06 Apple Pay Vas container
- 00 82 Data length
- D9 9A 03 14 08 15 9F 21 03 17 32 53 9F 25 20 3C C7 0E D8 9A 9D 43 54 BE 98 30 AB 58 D8 9C 6F E7 E6 2B AC A9 39 D2 A6 85 1D FC 60 2E A7 98 F7 9F 2A 00 9F 27 3E 93 1C 1A 60 4A 46 09 9E 21 EC 88 6D EF CC 8C B8 8B CA 03 CC 4B C6 62 0C C1 8F 8C 10 5A 7A F1 4F 9B 3C D9 E3 36 4E 9C 8C BF E0 90 34 10 B1 58 3C 3D 63 AC 9F CC 48 9C A8 76 AE 8C B3 E5 62 9F 25 20 3C C7 0E D8 9A 9D 43 54 BE 98 30 AB 58 D8 9C 6F E7 E6 2B AC A9 39 D2 A6 85 1D FC 60 2E A7 98 F7 9F 2A 00 9F CC 48 9C A8 76 AE 8C B3 E5 62 9F 25 20 3C C7 0E D8 9A 9D 43 54 BE 98 30 AB 58 D8 9C 6F E7 E6 2B AC A9 39 D2 A6 85 1D FC 60 2E A7 98 F7 9F 2A 00 9F 27 3E 93 1C 1A 60 4A 46 09 9E 21 EC 88 6D EF CC 8C B8 8B CA 03 CC 4B C6 62 0C C1 8F 8C 10 5A 7A F1 4F 9B 3C D9 E3 36 4E 9C 8C BF E0 90 34 10 B1 58 3C 3D 63 AC 9F CC 48 9C A8 76 AE 8C B3 E5 62 9F 39 01 07 FF EE 01 04 DF 30 01 00 DF EE 26 01 D1 –

Apple VAS data returned(a breakdown of this data can be found in the NEO IDG, section 14, "transaction Response." **Note:** Data returned may vary depending on which ACT command was sent.

• ED CA - CRC

3. Command reference:

Set Merchant Settings (04-11):

For setting merchant setting blank: Cmd: 04, Sub: 11 Data:

XX is the merchant number. To set Merchant 1 to blank, XX = 01; to Set merchant 6 to blank, XX = 06

Setting Merchant 1 to Prodtest:

Cmd: 04, Sub: 11

Data:

Setting Merchant 2 to Hello test card:

Cmd: 04, Sub: 11

Data:

Setting Merchant 3 to Starbucks:

Cmd: 04, Sub: 11

Data:

 Setting Merchant 4 to Panera

Cmd: 04, Sub: 11

Data:

Setting Merchant 5 to My Coke Rewards:

Cmd: 04, Sub: 11

Data:

Start Transaction (02-40) :

Note: The Start Transaction command in the NEO IDG, as of Rev. 92, uses "02-01". This is a legacy command, intended for unencrypted readers. For an encrypted reader, please use the "02-40" command. The following examples use the same transaction settings as the NEO IDG.

Pay-only transaction:

Cmd: 02, Sub: 40 Data: 30 9F 02 06 00 00 00 00 00 01 9C 01 00 FF EE 06 18 9F 22 02 01 00 9F 26 04 00 00 00 03 9F 2B 05 01 00 00 00 0D DF 01 01 01

Tags ctls_startTransaction in SKD: FFEE06189F220201009F260400000039F2B05010000000DF010101

VAS or Pay Transaction: Cmd: 02, Sub: 40 Data: 30 9F 02 06 00 00 00 00 00 01 9C 01 00 FF EE 06 18 9F 22 02 01 00 9F 26 04 00 00 00 09 9F 2B 05 01 00 00 00 00 DF 01 01 01

Tags ctls_startTransaction in SKD: FFEE06189F220201009F260400000009F2B05010000000DF010101 VAS AND Pay transaction: Cmd: 02, Sub: 40 Data: 30 9F 02 06 00 00 00 00 00 01 9C 01 00 FF EE 06 18 9F 22 02 01 00 9F 26 04 00 00 00 01 9F 2B 05 01 00 00 00 00 DF 01 01 01

Tags ctls_startTransaction in SKD: FFEE06189F220201009F2604000000019F2B05010000000DF010101

VAS-only transaction: Cmd: 02, Sub: 40 Data: 30 9F 02 06 00 00 00 00 00 01 9C 01 00 FF EE 06 18 9F 22 02 01 00 9F 26 04 00 00 00 02 9F 2B 05 01 00 00 00 0D DF 01 01 01

Tags ctls_startTransaction in SKD: FFEE06189F220201009F260400000029F2B05010000000DF010101

4. Notes on VAS Auto Select

In order for the autoselect feature for the apple vas cards to work, the specific card must be configured for auto selection. This option can be found in the options for the card (found by clicking the "i" icon on the bottom right of the card).



The way APVAS works is that the reader will ask the iPhone for data for every Merchant ID it has been configured with. Which of the iPhone passes will respond depends on a number of factors:

- 1. Is there a pass that matches the Merchant ID?
- 2. If the pass supports auto select, is it enabled?
- 3. Is the pass access authorized?
- 4. Even if not authorized the iPhone may request authorization (i.e. finger scan).

Depending on the pass programming, the iPhone may transparently initiate another transaction which provides for missed authorization. Or it may audibly and visually request the try again.

It is entirely possible that if the iPhone supports all of the Merchant ID's configured in the reader that it might provide all of the data required for each. It is also possible that the pass would dictate what passes might be allowed. This is all driven by the passes on the iPhone.