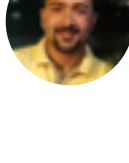




EMV Application Specification :: Initiate Application Process



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+ Folgen

After selecting the desired application on the card, terminal needs to know how to process this application and how to read its data.

Please refer to the previous article about application selection:

In this step, the terminal will ask the card to get the processing options [GPO] where the card will inform the terminal with 2 important pieces of information:

- **Application Interchange Profile [AIP]** which is in summary the supported functions by the card that the terminal needs to perform along the transaction flow.

- **Application File Locator [AFL]** which is the list of files and records that the terminal shall read from the card.

Before going into how the GPO command is constructed and send to the card, lets talk about an important concept in our journey:

DATA OBJECT LISTs or [DOL]

In several steps along the transaction journey, the card will require pieces of information from the terminal and it may vary depending on the card and the scenario.

Terminal will get a DOL [data object list] from the card to identify,process, and construct the information required by the card.

DOL is a sequence of [TAGs+Lengths] populated by the card so that the terminal can later on send the values of those tags whenever requested.

For example:-

- When an application is selected, the card may optionally return a PDOL [processing options data object list] [tag 9F38].

- This PDOL will be something like:[9F33035F2A029F1A02]
- Terminal will identify:
 1. tag [9F33] [Terminal Capabilities] with length [03]
 2. tag [5F2A] [Transaction Currency Code] with length [02]
 3. tag [9F1A] [terminal country code] with length [02].
- Terminal will collect and process the values for tag [9F33], tag [5F2A] and tag [9F1A].
- When requested by the card [in this case the GPO command], the terminal will send "the values" of these tags to the card.

Back to Get processing options, terminal will send GPO command to the card [optionally with PDOL values] to retrieve AIP and ALF, this is done as follows:

If card didn't return PDOL:

CMD:80 A8 00 00 02 8000 00 [8000 indicate no PDOL]

where:-

80 A8 -> cls and ins of the command

00 00 -> P1 & P2

02 -> [lc] length of PDOL data template

8000 -> PDOL data is empty [80+len+PDOL values]

If PDOL returned by the card was something like [9F33035F2A029F1A02]:

CMD:80 A8 00 00 09 8007E0F8C808180818 00

where:-

80 A8 -> cls and ins of the command

00 00 -> P1 & P2

09 -> [lc] length of PDOL data template

8007E0F8C808180818 -> PDOL data template [80+len+PDOL values]

Card shall respond with AIP & AFL using one of 2 formats:

Format 1: TAG 80 [where AIP & AFL are concatenated without delimiters]

RSP:800E7C00080101001001030018010201 9000

where:-

80 0E -> tag 80 + length

7C00 -> AIP value

080101001001030018010201 -> AFL value

Format 2: TAG 77 [constructed TLVs]

RSP:771282027C00940C080101001001030018010201 9000

where:-

77 12 -> response template tag + length

82027C00 -> TLV for AIP [tag 82]

940C080101001001030018010201 -> TLV for AFL [tag 94]

When parsing the AIP, the terminal will get the functions that is supported by the card and whether a risk management shall be performed.

In our example:-

82 (AIP - Application Interchange Profile) 7C00

(Byte 1 Bit 7) SDA supported

(Byte 1 Bit 6) DDA supported

(Byte 1 Bit 5) Cardholder verification is supported

(Byte 1 Bit 4) Terminal risk management is to be performed

(Byte 1 Bit 3) Issuer authentication is supported

>> refer to emv book 3 Table 37: Application Interchange Profile

When parsing the AFL, the terminal will know the files and record that it needs to read from the card.

In our example:-

94 (AFL - Application File Locator) 080101001001030018010201

SFI 1 record 1

SFI 2 records 1-3

SFI 3 records 1-2

>> refer to the next article where we will talk about how to interpret the ALF and read the application data.

Next article will be on how to read the application data based on the collected AFL.

<https://www.linkedin.com/pulse/emv-application-specification-read-data-ahmed-hemdan-farghaly/>

34 · 3 Kommentare

Gefällt mir

Kommentieren

Teilen

Khaled Sallam

2 Jahre

Good job Ahmed, keep it up

Gefällt mir · Antworten

Ahmed Hemdan Farghaly

2 Jahre

Thanks alot my friends, your opinion means a lot to me 🙌

Gefällt mir · Antworten

Nileshkumar Madhudia

6 Monate

I am delighted to understand GPO, PDOL, AIP and AFL in a very simple way. I admit that you have articulated very clearly that people can digest it. Simply awesome, Ahmed. Will follow you now.

Gefällt mir · Antworten · 1 Gefällt mir

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