EMV Extensions for SLIM CD

# Introduction

This document is designed to help developers that wish to connect directly to SLIM CD’s servers and process their own EMV transactions. Please refer to: <http://developer.slimcd.com> for full documentation on our web services. Samples of our existing software and libraries can be found here: <http://www.slimcd.com/developers/downloads/>

# Overview

EMV / Chip Cards are coming to America and SLIM CD is working hard to support them. We have a few basic guidelines that will help you implement EMV in your environment.

1. EMV requires specialized hardware. There are no “keyboard emulation” devices to provide the EMV tags because there’s more data than before which is required to perform EMV. This gives you two choices:

USB/Serial or LAN/Networked.

* 1. For USB:
     1. This means you’ll need USB devices that plug into the PC and appear as “Serial Ports” on your PC.
     2. The device manufacturers supply “drivers” that allow these devices to appear in your Device Manager, and allows the ports to be “locked” so that plugging and unplugging the devices does not cause a new PORT number to be assigned.
     3. Browser-based applications cannot access these devices without custom downloads and modifications to the browser (such as an ActiveX control or a custom toolbar). We recommend against these choices.
  2. For Networking:
     1. We recommend local LAN configurations.
     2. There may be future options that allow a hardware box which acts as a VPN to SLIM CD.
     3. The easiest LAN choice to implement, but least secure, is to give the pinpad a public-facing IP address so that it is accessible by anyone on the Internet. (We discourage this approach).
     4. Future hardware/software (to be announced) will allow developers to access the pinpad as a webserver, giving it the ability to run transactions.

1. New Fields have been added to SLIM CD’s web services for processing transactions. We’ve extended our web services and libraries to accept and return additional data for EMV.
   1. Web service requests (transact.asmx) or library processing objects (ProcessTransactionRequest) have the following new tags/properties:
      1. EMVMode – Defines the current mode of EMV, and can be any of the following:

FallbackMSR

FallbackTech

OfflineChip

OfflineStandIn

OfflineStoreAndForward

(Note that if this is a normal EMV transaction, EMVMode is empty or not present. EMVMode is only used for the “special case” handling of swiped due to Fallback, Chip declines, or some sort of Deferred or merchant stand-in processing.)

* + 1. EMVTags – HEX representation of TLV values for the EMV tags.
       1. If Tag 5A or Tag 57 is included, you need not send “trackdata” or “cardnumber”
       2. If Tag 99 is included, you need not send “pinblockdata”
       3. If Tag 9C is included, you need not send “transtype”
       4. If Tag 9F02 is included, you need not send “amount”
       5. If Tag 9F03 is included, you need not send “cashback”
       6. If Tag 9F27 indicates the CHIP approved the transaction, then EMVMode will be set to OfflineChip and the transaction will be batched as APPROVED.
       7. If Tag 9F27 indicates the CHIP declined the transaction then the DECLINED transaction will be stored for EMV reporting purposes.
    2. DeviceMake – Manufacturer’s name (IDTech, Ingenico, Verifone, RedOaK, etc)
    3. DeviceModel – Model of the device (MX915, etc)
    4. DeviceSerialNo – The full serial number. Note that the devices that return serial numbers programmatically may truncate the number, and the entire serial number should be sent in this field.
    5. EMVKernel – The EMV Kernel number matching the EMVCo website. Note that the Kernel number from the tags or device queries does not seem to match the numbers on the EMVCo website’s letters to vendors.
  1. Reply XML and objects have the following new tags
     1. EMVReplyTags – Hex representation of the reply tags and scripts to be sent to the terminal or pinpad/chip reader.

1. CVM Reply – How to tell what to do
   1. The CVMReply tag (9F34) will contain bits that indicate when a signature is required, when the PINPAD and CHIP approve a PIN, or when a PIN is transmitted online. A PIN entry no longer means PIN DEBIT. CHIP & PIN means that credit cards can have PINs as well as DEBIT cards.
2. EMV Receipts – New Web Services
   1. Normal SLIM CD receipts will display EMV tags if they are available.
   2. GetEMVReceiptData is a web services that allows developers to retrieve the tags needed for a receipt as either PLAIN TEXT or as XML. Documentation is here: <http://developer.slimcd.com/?page_id=3819>
3. EMV Reports – New Details
   1. In the “RAWLOGS”, you can click on a transaction. If EMV details are available, you’ll be able to drill down and see all of the EMV tags parsed for your convenience.
   2. Fallback and other reports are not yet available (as of 5/6/2015)
4. TEST ENVIRONMENT: See the DOCUMENT on TEST ACCOUNTS.