MAGENSA
A MAGTEK COMPANY

Magensa DAF Web Services

Decrypt and Forward 4.0
DAFv4 Programmers Manual

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Table 1-1 - Revisions

Rev Number	Date	Notes
10		Initial Release
20	12/06/2017	Initial Release includes template functions.
30	04/22/2020	Masked information
40	08/04/2020	Updated document with changes suggested

Table of Contents

1   Purpose of the document

The purpose of this document is to provide a description of how to call operations of the Magensa Decrypt and Forward 4.0 Web Services.

Effective use of the Decrypt and Forward Web Services enables users to easily integrate encrypted card swipe data into a payment application where the payment application traditionally transmits unencrypted card swipe data when calling web services for a third-party (or 'target') service provider.

Users can send Magensa the encapsulated XML (SOAP) or key-value pairs for the third-party service provider, along with encrypted card swipe data from a MagTek MagneSafe reader, and Magensa will decrypt the card swipe data and insert the relevant data, including the unencrypted card data, into the target XML or key-value pairs and call the third-party service provider on behalf of the user. This process will allow a user to support encrypted card swipe data in their payment application without the third-party service provider supporting a decryption service.
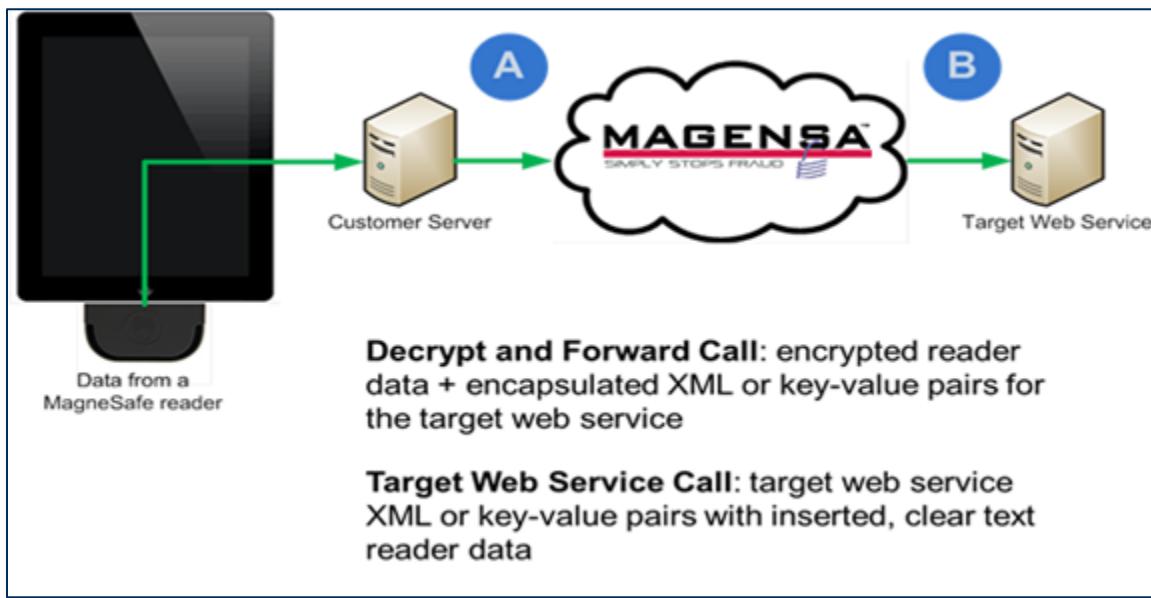
Figure 1 - Decrypt and Forward

Examples of third parties service providers to use with Decrypt and Forward:

- Payment processors
- Tokenization services
- Card fraud alert services
- Gift card processors
- Credit check services
- Special-purpose gateways (EBT, procurement card, etc)

The Decrypt and Forward web service works by decrypting data from a MagneSafe encrypted card swipe and placing the appropriate decrypted data into the target XML or key-value pairs. This is accomplished

by using "field replacement variables" that are inserted in-line into the payload. For instance, a target web service might accept a card Primary Account Number (PAN) as an input using the following tag: <PAN></PAN>

To instruct Magensa to place the decrypted PAN from the card swipe into this tag, the field replacement variable '{CCNum}'would be used as follows: <PAN>{CCNum}</PAN>

Variables

1) {DecryptedData}
2) {CCName}
3) {CCNum}
4) {CCTrack1}
5) {CCTrack1Length}
6) {CCTrack2}
7) {CCTrack2Length}
8) {CCardType}
9) {KSN}
10) {MMYYCCExpdt}
11) {MM_YYCCExpdt}
12) {DD}
13) {MM}
14) {YY}
15) {YYYY}
16) {DecryptedBlob}

Additional variables will be added from time-to-time. If a particular card data element is required for the target web service you wish to use, please contact support@magensa.net to submit a request to have it added to the service.

A unique, new feature introduced in Decrypt and Forward 4.0 is the ability to send a "batch" of requests in a single call to the service. As a result, all Decrypt and Forward 4.0 service operations take in an array of requests and return an array of responses. The service processes these input requests serially and a specific index/element of response corresponds to the specific index/element of request. All responses have a DecryptForwardFaultException element and in the case of an error or exception raised for that particular request, the details will be available in the corresponding DecryptForwardFaultException element. When successful, the value of this DecryptForwardFaultException element will be null.

The Decrypt and Forward Web Services do not rely on a pre-existing integration between Magensa and the third-party service provider. As long as the third-party service provider uses web services, and Magensa can call those web services on behalf of the user, the third-party service can be used.
In the case where the user has never integrated to the third-party service provider before, it is recommended for the user to integrate to the Decrypt and Forward Web services first, and then certify to the target third-party service provider with Decrypt and Forward in-place.

In order for Magensa to call the third-party service provider, consideration must be given to the following:

- Whether Magensa's IP addresses and domain names must be whitelisted with the third-party

- Whether client and/or server-side certificates are required.

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2 Decrypt and Forward Version 4.0 Operations

2.1 ProcessCardSwipe

A command used to decrypt and forward a processed card swipe.

2.1.1 Input Properties

Property(*)	Value	Value Description
AdditionalRequestData	Array of key / value	Contains custom request data required by the target service provider. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See sample request.
CustomerCode *	String	Customer code for credential assigned by Magensa
Password *	String	Password for credential assigned by Magensa
Username *	String	Username for credential assigned by Magensa
BillingLabel	String	Billing label
CustomerTransactionId	String	Client-assigned transaction ID for easy cross-reference
EncryptedCardSwipe	String	Container for magnetic stripe card data. This container is optional. EncryptedCardSwipe and all the following properties within shall be omitted if an encrypted card swipe is not available: IsReturnCardID, DeviceSN, KSN, MagnePrint, MagnePrintStatus, Track1, Track2, and Track3.
IsReturnCardID	Boolean	Flag indicating whether the value of CardID is returned from Magensa 0 = (false) 1 = (true)
DeviceSN	String	Device serial number
KSN *	String	Key serial number of the device
MagnePrint *	String	Encrypted MagnePrint
MagnePrintStatus *	String	MagnePrint status
Track1	String	Encrypted track1 data
Track2 *	String	Encrypted track2 data
Track3	String	Encrypted track3 data
AdditionalPayloadInfoData	Array of key / value	Contains custom request data required by the target service provider. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring> See sample request.

Property(*)	Value	Value Description
Base64ClientCert	String	Client certificate to accessing the targeted web service formatted in base64
ClientCertPassword	String	Client certificate password
AdditionalHTTPInfoData	Array of key / value	Contains custom request data required by the target service provider. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See sample request.
Headers	Array of key / value	Contains custom HTTP headers required by the target web service. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See examples.
NetworkProtocolType	String	Network protocol to use when forwarding the payload to the processor: HTTP TCPIP
Payload *	String	Payload data Example: <![CDATA[payload]]>
AccessEngineHeaderHex	String	Access engine header in base64 format
AdditionalTCPIPInfoData	Array of key / value	Contains custom request data required by the target service provider. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See sample request.
NumberOfBytesToAddForLength *	Integer	This field may be required by some processors. If it is not 0, the defined number of bytes are added in front of the TCPIP message. Then the total length of the TCPIP binary message is calculated and written into those bytes. The value should be defined in the processor documentation, usually should be 2. Set to 0 when NetworkProtocolType is HTTP.
Port *	Integer	This is the TCPIP port number. Set to 0 when NetworkProtocolType is HTTP.
Uri *	String	Address to forward the payload

Note: * = Required

2.1.2 Output Properties

Property	Value	Value Description
AdditionalOutputData	Array of key / value	Contains additional output data returned by the target web service. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See examples.
CardID	String	Card ID from Magensa
IsReplay	String	Boolean value indicating prior use of KSN from Magensa
MagnePrintScore	String	MagnePrint score
CustomerTransactionId	String	Client-assigned transaction ID for easy cross-reference
DecryptForwardFaultException	String	Contains a fault exception returned by the target web service. Elements are expressed as Code and Message.
MagTranId	String	Magensa assigned unique transaction ID in GUID form.
PayloadResponse	String	Response from the Uri input
PayloadToken	String	Payload token
TransactionUTCTimestamp	String	Transaction timestamp from Magensa

The Web Services Description Language URL for consuming this web service may be located at:
https://daf.magensa.net/v4/Service.svc?singleWsdl

Sample Request Payload using key/value, XML, and Client Certificate:

```
POST https://daf.magensa.net/v4/Service.svc HTTP/1.1
Accept-Encoding: gzip,deflate
Content-Type: text/xml;charset=UTF-8
SOAPAction: "http://tempuri.org/IDecryptAndForward/ProcessCardSwipe"
Content-Length: 7573
Host: daf.magensa.net
Connection: Keep-Alive
User-Agent: Apache-HttpClient/4.1.1 (java 1.5)

<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:tem="http://tempuri.org/"
xmlns:dec="http://schemas.datacontract.org/2004/07/DecryptAndForwardCo
reNSV4"
xmlns:sys="http://schemas.datacontract.org/2004/07/System.Collections.
Generic">
   <soapenv:Header/>
   <soapenv:Body>
      <tem:ProcessCardSwipe>
         <tem:ProcessCardSwipeRequest>
            <dec:AdditionalProcessCardSwipeRequestData>
               <sys:KeyValuePairOfstringstring>
                  <sys:key></sys:key>
                  <sys:value></sys:value>
               </sys:KeyValuePairOfstringstring>
            </dec:AdditionalProcessCardSwipeRequestData>
            <dec:Authentication>
               <dec:CustomerCode>custcode</dec:CustomerCode>
               <dec:Password>Password</dec:Password>
               <dec:Username>Username</dec:Username>
            </dec:Authentication>
            <dec:CustomerTransactionID>123</dec:CustomerTransactionID>
            <dec:ProcessCardSwipeInputs>
               <dec:ProcessCardSwipeInput>
                  <dec:AdditionalRequestData>
                     <sys:KeyValuePairOfstringstring>
                        <sys:key></sys:key>
                        <sys:value></sys:value>
                     </sys:KeyValuePairOfstringstring>
                  </dec:AdditionalRequestData>
               <dec:Authentication>
                  <dec:CustomerCode>custcode</dec:CustomerCode>
                  <dec:Password>Password</dec:Password>
                  <dec:Username>Username</dec:Username>
               </dec:Authentication>
                     <dec:BillingLabel>billing</dec:BillingLabel>
```

```
<dec:CustomerTransactionID>123</dec:CustomerTransactionID>
                    <dec:EncryptedCardSwipe>
                  <dec:IsReturnCardID>0</dec:IsReturnCardID>
                        <dec:DeviceSN>B00CB7B</dec:DeviceSN>
                        <dec:KSN>950003000000012000D5</dec:KSN>
                        <dec:MagnePrint>C3477786...</dec:MagnePrint>

<dec:MagnePrintStatus>00002200</dec:MagnePrintStatus>
                        <dec:Track1>1EBFCC94...</dec:Track1>
                        <dec:Track2>22B6D05B...</dec:Track2>
                        <dec:Track3/>
                    </dec:EncryptedCardSwipe>
                    <dec:PayloadInfo>
                        <dec:AdditionalPayloadInfoData>
                            <sys:KeyValuePairOfstringstring>
                                <sys:key></sys:key>
                                <sys:value></sys:value>
                            </sys:KeyValuePairOfstringstring>
                        </dec:AdditionalPayloadInfoData>
                        <dec:Base64ClientCert></dec:Base64ClientCert>
                        <dec:ClientCertPassword></dec:ClientCertPassword>
                        <dec:HTTPInfo>
                            <dec:AdditionalHTTPInfoData>
                                <sys:KeyValuePairOfstringstring>
                                    <sys:key></sys:key>
                                    <sys:value></sys:value>
                                </sys:KeyValuePairOfstringstring>
                            </dec:AdditionalHTTPInfoData>
                            <dec:Headers>
                                <sys:KeyValuePairOfstringstring>
                                    <sys:key>Content-Type</sys:key>
                                    <sys:value>text/xml; charset=utf-
8</sys:value>
                                </sys:KeyValuePairOfstringstring>
                            </dec:Headers>
                        </dec:HTTPInfo>

<dec:NetworkProtocolType>HTTP</dec:NetworkProtocolType>

<dec:Payload><![CDATA[TRXTYPE=A&TENDER=C&USER=YourUserName&PWD=YourPas
sword&PARTNER={YourPartner}&EXECUTOR={Executor}&VENDOR={vendor}&ACCT={
CCNum}&EXPDATE={MM}{YY}&AMT=0.10]]></dec:Payload>
                        <dec:TCPIPInfo>

<dec:AccessEngineHeaderHex></dec:AccessEngineHeaderHex>
                            <dec:AdditionalTCPIPInfoData>
                                <sys:KeyValuePairOfstringstring>
                                    <sys:key></sys:key>
                                    <sys:value></sys:value>
                                </sys:KeyValuePairOfstringstring>
                            </dec:AdditionalTCPIPInfoData>
```

```
<dec:NumberOfBytesToAddForLength>0</dec:NumberOfBytesToAddForLength>
                        <dec:Port>0</dec:Port>
                    </dec:TCPIPInfo>
                    <dec:Uri>https://pilot-
payflowpro.paypal.com</dec:Uri>
                </dec:PayloadInfo>
            </dec:ProcessCardSwipeInput>
            <dec:ProcessCardSwipeInput>
                <dec:AdditionalRequestData>
                    <sys:KeyValuePairOfstringstring>
                        <sys:key></sys:key>
                        <sys:value></sys:value>
                    </sys:KeyValuePairOfstringstring>
                </dec:AdditionalRequestData>
            <dec:Authentication>
                <dec:CustomerCode>custcode</dec:CustomerCode>
                <dec:Password>Password</dec:Password>
                <dec:Username>Username</dec:Username>
            </dec:Authentication>
                    <dec:BillingLabel>billing</dec:BillingLabel>

<dec:CustomerTransactionID>123</dec:CustomerTransactionID>
                    <dec:EncryptedCardSwipe
                        <dec:IsReturnCardID>0</dec:IsReturnCardID>
                        <dec:DeviceSN>B30E86A092916AA</dec:DeviceSN>
                        <dec:KSN>9010010B30E86A0002A5</dec:KSN>
                        <dec:MagnePrint>6D3A7B8D...</dec:MagnePrint>

<dec:MagnePrintStatus>61403000</dec:MagnePrintStatus>
                        <dec:Track1>D9FBA7F8...</dec:Track1>
                        <dec:Track2>204B0419...</dec:Track2>
                        <dec:Track3/>
                    </dec:EncryptedCardSwipe>
                    <dec:PayloadInfo>
                        <dec:AdditionalPayloadInfoData>
                            <sys:KeyValuePairOfstringstring>
                                <sys:key></sys:key>
                                <sys:value></sys:value>
                            </sys:KeyValuePairOfstringstring>
                        </dec:AdditionalPayloadInfoData>

<dec:Base64ClientCert>MIIDujCC...</dec:Base64ClientCert>

<dec:ClientCertPassword>Password</dec:ClientCertPassword>
                    <dec:HTTPInfo>
                        <dec:AdditionalHTTPInfoData>
                            <sys:KeyValuePairOfstringstring>
                                <sys:key></sys:key>
                                <sys:value></sys:value>
                            </sys:KeyValuePairOfstringstring>
                        </dec:AdditionalHTTPInfoData>
```

```
                                <dec:Headers>
                                    <sys:KeyValuePairOfstringstring>
                                        <sys:key>Content-Type</sys:key>
                                        <sys:value>text/xml; charset=utf-
8</sys:value>
                                    </sys:KeyValuePairOfstringstring>
                                </dec:Headers>
                            </dec:HTTPInfo>

<dec:NetworkProtocolType>HTTP</dec:NetworkProtocolType>
                            <dec:Payload><![CDATA[<JetPay
Version="2.0"><Application
Version="2.0.0">MAGNEFLEX</Application><Billing><Address>{BillingAddre
ss}</Address><City>{BillingCity}</City><Country>{BillingCountry}</Coun
try><Email>{BillingEmail}</Email><Phone>{BillingPhone}</Phone><PostalC
ode>99999
</PostalCode><StateProv>{BillingState}</StateProv></Billing><CardExpMo
nth>{MM}</CardExpMonth><CardExpYear>{YY}</CardExpYear><CardName>{CCNam
e}</CardName><CardNum
CardPresent="true">{CCNum}</CardNum><CVV2>{CVV}</CVV2><DeveloperID>{De
veloperId}</DeveloperID><Device>{DeviceID}</Device><Gateway>JetPay</Ga
teway><IndustryInfo
Type="RETAIL"><BaseAmount>{SubtotalAmount}</BaseAmount><TipAmount>{Tip
Amount}</TipAmount></IndustryInfo><Origin>POS</Origin><Password>{Passw
ord}</Password><ReaderUsed>MAGNETIC
STRIPE</ReaderUsed><Shipping><Address>{ShippingAddress}</Address><City
>{ShippingCity}</City><Country>{ShippingCountry}</Country><CustomerPO>
{PurchaseOrder}</CustomerPO><Email>{ShippingEmail}</Email><Name>{Shipp
ingName}</Name><Phone>{ShippingPhone}</Phone><PostalCode>{ShippingZIP}
</PostalCode><ShippingMethod>{ShippingMethod}</ShippingMethod><StatePr
ov>{ShippingState}</StateProv></Shipping><TaxAmount>{TaxAmount}</TaxAm
ount><TerminalID>TESTMCC5111X</TerminalID><TotalAmount>100</TotalAmoun
t><Track1>%{CCTrack1}?</Track1><Track2>;{CCTrack2}?</Track2><Transacti
onID>GHC3XO9P72YZP-
KB49</TransactionID><TransactionType>SALE</TransactionType></JetPay>]]
></dec:Payload>
                        <dec:TCPIPInfo>

<dec:AccessEngineHeaderHex></dec:AccessEngineHeaderHex>
                            <dec:AdditionalTCPIPInfoData>
                                <sys:KeyValuePairOfstringstring>
                                    <sys:key></sys:key>
                                    <sys:value></sys:value>
                                </sys:KeyValuePairOfstringstring>
                            </dec:AdditionalTCPIPInfoData>

<dec:NumberOfBytesToAddForLength>0</dec:NumberOfBytesToAddForLength>
                            <dec:Port>0</dec:Port>
                        </dec:TCPIPInfo>

<dec:Uri>https://test1.jetpay.com/jetpay</dec:Uri>
                </dec:PayloadInfo>
```

```
                    </dec:ProcessCardSwipeInput>
                </dec:ProcessCardSwipeInputs>
            </tem:ProcessCardSwipeRequest>
        </tem:ProcessCardSwipe>
    </soapenv:Body>
</soapenv:Envelope>
```

Sample Response Payload of key/value and XML

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
   <s:Body>
      <ProcessCardSwipeResponse xmlns="http://tempuri.org/">
         <ProcessCardSwipeResult
xmlns:a="http://schemas.datacontract.org/2004/07/DecryptAndForwardCore
NSV4" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
            <a:AdditionalProcessCardSwipeResponseData i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>
            <a:CustomerTransactionID>123</a:CustomerTransactionID>
            <a:ProcessCardSwipeOutputs>
               <a:ProcessCardSwipeOutput>
                  <a:AdditionalProcessCardSwipeResponseData
i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>
                  <a:CardSwipeOutput>
                     <a:AdditionalOutputData i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>
                     <a:CardID/>
                     <a:IsReplay>true</a:IsReplay>
                     <a:MagnePrintScore>3.0</a:MagnePrintScore>
                  </a:CardSwipeOutput>

<a:CustomerTransactionID>123</a:CustomerTransactionID>
                  <a:DecryptForwardFaultException i:nil="true"/>
                  <a:MagTranID>707a2beb-7f85-460b-b715-
3c6f811c9584</a:MagTranID>
                  <a:PayloadResponse>HTTP/1.1 200 OKConnection: close
Content-Length: 67
Content-Type: text/namevalue
Date: Fri, 13 Oct 2017 15:28:07 GMT
Server: VPS-3.033.00

&amp;RESULT=0&amp;PNREF=A70NA5B5300F&amp;RESPMSG=Approved&amp;AUTHCODE
=000803&amp;IAVS=X</a:PayloadResponse>

<a:PayloadToken>943153A5AB2D464CB5E14778B1219D0C7CC0EF3B5A066E99DF5288
8951C81045</a:PayloadToken>
                  <a:TransactionUTCTimestamp>2017-10-13
15:28:07Z</a:TransactionUTCTimestamp>
               </a:ProcessCardSwipeOutput>
               <a:ProcessCardSwipeOutput>
                  <a:AdditionalProcessCardSwipeResponseData
i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>
                  <a:CardSwipeOutput>
```

```
                              <a:AdditionalOutputData i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>
                              <a:CardID/>
                              <a:IsReplay>true</a:IsReplay>
                              <a:MagnePrintScore>0.8860195</a:MagnePrintScore>
                       </a:CardSwipeOutput>

<a:CustomerTransactionID>123</a:CustomerTransactionID>
                       <a:DecryptForwardFaultException i:nil="true"/>
                       <a:MagTranID>8858a08f-aaa7-470c-ba00-
08c2482a57e0</a:MagTranID>
                       <a:PayloadResponse><![CDATA[HTTP/1.1 200 OKVary:
Accept-Encoding
Transfer-Encoding: chunked
Content-Type: text/plain; charset=UTF-8
Date: Fri, 13 Oct 2017 15:28:07 GMT
Server: Apache
&<JetPayResponse Version="2.0">
  <TransactionID>GHC3XO9P72YZP-KB49</TransactionID>
  <ActionCode>000</ActionCode>
  <Approval>TEST86</Approval>
  <ResponseText>APPROVED</ResponseText>
  <UniqueID>QnThQjPhQlQkQhQnRcPlQmPn</UniqueID>
  <RRN>728615001338</RRN>
  <RawResponseCode>00</RawResponseCode>
  <AddressMatch>Y</AddressMatch>
  <ZipMatch>Y</ZipMatch>
  <AVS>Y</AVS>
</JetPayResponse>]]></a:PayloadResponse>

<a:PayloadToken>C49587D6FCA40054F4433C1056A4FED5980C13C339DBCC27BA48F5
74E729A4B5</a:PayloadToken>
                       <a:TransactionUTCTimestamp>2017-10-13
15:28:08Z</a:TransactionUTCTimestamp>
                   </a:ProcessCardSwipeOutput>
               </a:ProcessCardSwipeOutputs>
           </ProcessCardSwipeResult>
       </ProcessCardSwipeResponse>
   </s:Body>
</s:Envelope>
```

2.2 ProcessData

A command used to process and forward a transaction. The transaction may be encrypted, non-encrypted, TLV encoded, or not TLV encoded based on the input properties.

2.2.1 Input Properties

Property(*)	Value	Value Description
AdditionalRequestData	Array of key / value	Contains custom request data required by the target service provider. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See sample request.
CustomerCode *	String	Customer code for credential assigned by Magensa
Password *	String	Password for credential assigned by Magensa
Username *	String	Username for credential assigned by Magensa
BillingLabel	String	Billing label
CustomerTransactionId	String	Client-assigned transaction ID for easy cross-reference
Data *	String	Transaction data to be sent to the processor
DataFormatType	String	Format for Data: TLV NONE
EncryptionType *	String	Encryption type used for Data when Data is encrypted: 80 = (DUKPT Key Data Variant) 81 = (DUKPT Key PIN Variant)
KSN *	String	Key serial number of the device.
NumberOfPaddedBytes *	Integer	Number of bytes padded to the end of the decrypted EMVSREDData to make a multiple of 8 bytes.
IsEncrypted	Boolean	Flag indicating whether Data is encrypted: 0 = (false and default if not present) 1 = (true)
AdditionalPayloadInfoData	Array of key / value	Contains custom request data required by the target service provider. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See sample request.
Base64ClientCert	String	Client certificate to accessing the targeted web service formatted in base64
ClientCertPassword	String	Client certificate password
AdditionalHTTPInfoData	Array of key / value	Contains custom request data required by the target service provider. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See sample request.

Property(*)	Value	Value Description
Headers	Array of key / value	Contains custom HTTP headers required by the target web service. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See examples.
NetworkProtocolType	String	Network protocol to use when forwarding the payload to the processor: HTTP TCPIP
Payload *	String	Payload data **Example:** `<![CDATA[payload]]>`
AccessEngineHeaderHex	String	Access engine header in base64 format
AdditionalTCPIPInfoData	Array of key / value	Contains custom request data required by the target service provider. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See sample request.
NumberOfBytesToAddForLength *	Integer	This field may be required by some processors. If it is not 0, the defined number of bytes are added in front of the TCPIP message. Then the total length of the TCPIP binary message is calculated and written into those bytes. The value should be defined in the processor documentation, usually should be 2. Set to 0 when NetworkProtocolType is HTTP.
Port *	Integer	This is the TCPIP port number. Set to 0 when NetworkProtocolType is HTTP.
Uri *	String	Address to forward the payload

Note: * = Required

2.2.2 Output Properties

Property	Value	Value Description
CustomerTransactionId	String	Client-assigned transaction ID for easy cross-reference
AdditionalOutputData	Array of key / value	Contains additional output data returned by the target web service. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See examples.
CardID	String	Card ID from Magensa
IsReplay	Boolean	Boolean value indicating prior use of KSN from Magensa
DecryptForwardFaultException	String	Contains a fault exception returned by the target web service. Elements are expressed as Code and Message.
MagTranId	String	Magensa assigned unique transaction ID in GUID form.
PayloadResponse	String	Response from the Uri input
PayloadToken	String	Payload token
TransactionUTCTimestamp	String	Transaction timestamp from Magensa

The Web Services Description Language URL for consuming this web service may be located at:
https://daf.magensa.net/v4/Service.svc?singleWsdl

```
Sample Request Payload using key/value, XML, and Client Certificate
POST https://daf.magensa.net/v4/Service.svc HTTP/1.1
Accept-Encoding: gzip,deflate
Content-Type: text/xml;charset=UTF-8
SOAPAction: "http://tempuri.org/IDecryptAndForward/ProcessData"
Content-Length: 8422
Host: daf.magensa.net
Connection: Keep-Alive
User-Agent: Apache-HttpClient/4.1.1 (java 1.5)


<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:tem="http://tempuri.org/"
xmlns:dec="http://schemas.datacontract.org/2004/07/DecryptAndForwardCo
reNSV4"
xmlns:sys="http://schemas.datacontract.org/2004/07/System.Collections.
Generic">
    <soapenv:Header/>
    <soapenv:Body>
      <tem:ProcessData>
        <tem:ProcessDataRequest>
          <dec:AdditionalProcessDataRequestData>
            <sys:KeyValuePairOfstringstring>
                <sys:key/>
                <sys:value/>
            </sys:KeyValuePairOfstringstring>
          </dec:AdditionalProcessDataRequestData>
          <dec:Authentication>
            <dec:CustomerCode>custcode</dec:CustomerCode>
            <dec:Password>password</dec:Password>
            <dec:Username>username</dec:Username>
          </dec:Authentication>
          <dec:CustomerTransactionID>123</dec:CustomerTransactionID>
          <dec:ProcessDataInputs>
            <dec:ProcessDataInput>
                <dec:AdditionalRequestData>
                  <sys:KeyValuePairOfstringstring>
                      <sys:key/>
                      <sys:value/>
                  </sys:KeyValuePairOfstringstring>
                </dec:AdditionalRequestData>
                <dec:Authentication>
                  <dec:CustomerCode>custcode</dec:CustomerCode>
                  <dec:Password>password</dec:Password>
                  <dec:Username>username</dec:Username>
                </dec:Authentication>
                <dec:BillingLabel>billing</dec:BillingLabel>
```

```
<dec:CustomerTransactionID>123</dec:CustomerTransactionID>
                    <dec:DataInput>
                        <dec:Data>B0007B77...</dec:Data>
                        <dec:DataFormatType>TLV</dec:DataFormatType>
                        <dec:EncryptionInfo>
                            <dec:EncryptionType>80</dec:EncryptionType>
                            <dec:KSN>9500030000000120014B</dec:KSN>

<dec:NumberOfPaddedBytes>4</dec:NumberOfPaddedBytes>
                        </dec:EncryptionInfo>
                        <dec:IsEncrypted>1</dec:IsEncrypted>
                    </dec:DataInput>
                    <dec:PayloadInfo>
                        <dec:AdditionalPayloadInfoData>
                            <sys:KeyValuePairOfstringstring>
                                <sys:key/>
                                <sys:value/>
                            </sys:KeyValuePairOfstringstring>
                        </dec:AdditionalPayloadInfoData>
                        <dec:Base64ClientCert/>
                        <dec:ClientCertPassword/>
                        <dec:HTTPInfo>
                            <dec:AdditionalHTTPInfoData>
                                <sys:KeyValuePairOfstringstring>
                                    <sys:key/>
                                    <sys:value/>
                                </sys:KeyValuePairOfstringstring>
                            </dec:AdditionalHTTPInfoData>
                            <dec:Headers>
                                <sys:KeyValuePairOfstringstring>
                                    <sys:key>Content-Type</sys:key>
                                    <sys:value>text/xml; charset=utf-
8</sys:value>
                                </sys:KeyValuePairOfstringstring>
                            </dec:Headers>
                        </dec:HTTPInfo>

<dec:NetworkProtocolType>HTTP</dec:NetworkProtocolType>

<dec:Payload><![CDATA[TRXTYPE=S&TENDER=C&USER=YourUserName&PWD=YourPas
sword&PARTNER={YourPartner}&EXECUTOR={Executor}&VENDOR={vendor}&ACCT={
5A}&EXPDATE=$SubString({5F24},2,2)$SubString({5F24},0,2)&AMT=0.10]]></
dec:Payload>
                        <dec:TCPIPInfo>
                            <dec:AccessEngineHeaderHex/>
                            <dec:AdditionalTCPIPInfoData>
                                <sys:KeyValuePairOfstringstring>
                                    <sys:key/>
                                    <sys:value/>
                                </sys:KeyValuePairOfstringstring>
                            </dec:AdditionalTCPIPInfoData>
```

```
<dec:NumberOfBytesToAddForLength>0</dec:NumberOfBytesToAddForLength>
                      <dec:Port>0</dec:Port>
                  </dec:TCPIPInfo>
                  <dec:Uri>https://pilot-
payflowpro.paypal.com</dec:Uri>
                  </dec:PayloadInfo>
              </dec:ProcessDataInput>
              <dec:ProcessDataInput>
                  <dec:AdditionalRequestData>
                      <sys:KeyValuePairOfstringstring>
                          <sys:key/>
                          <sys:value/>
                      </sys:KeyValuePairOfstringstring>
                  </dec:AdditionalRequestData>
                  <dec:Authentication>
                      <dec:CustomerCode>custcode</dec:CustomerCode>
                      <dec:Password>password</dec:Password>
                      <dec:Username>username</dec:Username>
                  </dec:Authentication>
                  <dec:BillingLabel>billing</dec:BillingLabel>

<dec:CustomerTransactionID>123</dec:CustomerTransactionID>
                  <dec:DataInput>
                      <dec:Data>76BB43E6...</dec:Data>
                      <dec:DataFormatType>TLV</dec:DataFormatType>
                      <dec:EncryptionInfo>
                          <dec:EncryptionType>80</dec:EncryptionType>
                          <dec:KSN>9500030000000012000D6</dec:KSN>

<dec:NumberOfPaddedBytes>7</dec:NumberOfPaddedBytes>
                      </dec:EncryptionInfo>
                      <dec:IsEncrypted>1</dec:IsEncrypted>
                  </dec:DataInput>
                  <dec:PayloadInfo>
                      <dec:AdditionalPayloadInfoData>
                          <sys:KeyValuePairOfstringstring>
                              <sys:key/>
                              <sys:value/>
                          </sys:KeyValuePairOfstringstring>
                      </dec:AdditionalPayloadInfoData>

<dec:Base64ClientCert>MIIDujCC...</dec:Base64ClientCert>

<dec:ClientCertPassword>password</dec:ClientCertPassword>
                      <dec:HTTPInfo>
                          <dec:AdditionalHTTPInfoData>
                              <sys:KeyValuePairOfstringstring>
                                  <sys:key/>
                                  <sys:value/>
                              </sys:KeyValuePairOfstringstring>
                          </dec:AdditionalHTTPInfoData>
```

```
                            <dec:Headers>
                                <sys:KeyValuePairOfstringstring>
                                    <sys:key>Content-Type</sys:key>
                                    <sys:value>text/xml; charset=utf-
8</sys:value>
                                </sys:KeyValuePairOfstringstring>
                            </dec:Headers>
                        </dec:HTTPInfo>

<dec:NetworkProtocolType>HTTP</dec:NetworkProtocolType>
                        <dec:Payload><![CDATA[<JetPay Version="2.0">
        <Application Version="2.0.0">MAGNEFLEX</Application>
        <DeveloperID>>{DeveloperId}</DeveloperID>
        <Device>{DeviceID}</Device>
        <EMVKernel Version="1.0">30050877</EMVKernel>
        <Gateway>JetPay</Gateway>
        <IndustryInfo Type="RETAIL">
            <BaseAmount>{SubtotalAmount}</BaseAmount>
            <TipAmount>{TipAmount}</TipAmount>
        </IndustryInfo>
        <Origin>POS</Origin>
        <Password>{Password}</Password>
        <ReaderUsed>CHIP</ReaderUsed>
        <Shipping>
            <Address>{ShippingAddress}</Address>
            <City>{ShippingCity}</City>
            <Country>{ShippingCountry}</Country>
            <CustomerPO>{PurchaseOrder}</CustomerPO>
            <Email>{ShippingEmail}</Email><Name>{ShippingName}</Name>

        <Phone>{ShippingPhone}</Phone><PostalCode>{ShippingZIP}</PostalCo
de>
            <ShippingMethod>{ShippingMethod}</ShippingMethod>
            <StateProv>{ShippingState}</StateProv>
        </Shipping>
        <TaxAmount>{TaxAmount}</TaxAmount>
        <TerminalID>TESTMCC5111X</TerminalID>
        <TotalAmount>100</TotalAmount>
        <Track1></Track1>
        <Track2>;$Replace({57},D,=)?</Track2>
        <TransactionID>287819374556795520</TransactionID>
        <TransactionType>SALE</TransactionType>
        <Verification>
            <ICC>
                <AID>{9F06}</AID>
                <AIP>{82}</AIP>
                <ARQC>{9F26}</ARQC>
                <ATC>{9F36}</ATC>
                <AppUsageControl>{9F07}</AppUsageControl>
                <AuthorizedAmount>{9F02}</AuthorizedAmount>
                <CVMResult>{9F34}</CVMResult>
                <CardSeqNum>{5F34}</CardSeqNum>
```

```
                        <CryptInfoData>{9F27}</CryptInfoData>
                        <CurrencyCode>{5F2A}</CurrencyCode>
                        <CustomerExclusiveData>{9F7C}</CustomerExclusiveData>
                        <DFName>{84}</DFName>
                        <FormFactor>{9F6E}</FormFactor>
                        <IFDSerialNum>{9F1E}</IFDSerialNum>
                        <IssuerAppData>{9F10}</IssuerAppData>
                        <IssuerAuthData>{91}</IssuerAuthData>
                        <IssuerScript1>{71}</IssuerScript1>
                        <IssuerScript2>{72}</IssuerScript2>
                        <IssuerScriptResults>{9F5B}</IssuerScriptResults>
                        <OtherAmount>{9F03}</OtherAmount>
                        <TVR>{95}</TVR>
                        <TermAppVer>{9F09}</TermAppVer>
                        <TermCapCode>{9F33}</TermCapCode>
                        <TermCountryCode>{9F1A}</TermCountryCode>
                        <TermType>{9F35}</TermType>
                        <TransCategoryCode>{9F53}</TransCategoryCode>
                        <TransDate>{9A}</TransDate>
                        <TransSeqNum>{9F41}</TransSeqNum>
                        <TransType>{9C}</TransType>
                        <UnpredictableNumber>{9F37}</UnpredictableNumber>
                </ICC>
            </Verification>
</JetPay>]]></dec:Payload>
                    <dec:TCPIPInfo>
                        <dec:AccessEngineHeaderHex/>
                        <dec:AdditionalTCPIPInfoData>
                            <sys:KeyValuePairOfstringstring>
                                <sys:key/>
                                <sys:value/>
                            </sys:KeyValuePairOfstringstring>
                        </dec:AdditionalTCPIPInfoData>

<dec:NumberOfBytesToAddForLength>0</dec:NumberOfBytesToAddForLength>
                        <dec:Port>0</dec:Port>
                    </dec:TCPIPInfo>

<dec:Uri>https://test1.jetpay.com/jetpay</dec:Uri>
                    </dec:PayloadInfo>
                </dec:ProcessDataInput>
            </dec:ProcessDataInputs>
        </tem:ProcessDataRequest>
      </tem:ProcessData>
   </soapenv:Body>
</soapenv:Envelope>
```

Sample Response Payload of key/value and XML

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
```

```
    <s:Body>
        <ProcessDataResponse xmlns="http://tempuri.org/">
            <ProcessDataResult
xmlns:a="http://schemas.datacontract.org/2004/07/DecryptAndForwardCore
NSV4" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
                <a:AdditionalProcessDataResponseData i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>
                <a:CustomerTransactionID>123</a:CustomerTransactionID>
                <a:ProcessDataOutputs>
                    <a:ProcessDataOutput>

<a:CustomerTransactionID>123</a:CustomerTransactionID>
                        <a:DataOutput>
                            <a:AdditionalOutputData
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric">
                                <b:KeyValuePairOfstringstring>
                                    <b:key>DataDataMasked</b:key>

<b:value>FC8200D8571000000000000000000000000000005A080000000000000
00082025C008E120000000000000000000000000000000000000950540400000009A031
508189B02E8009C01005F24030000005F25030905015F2A0208405F3401009F0206000
0000001009F0607A00000000310109F0702FF009F0802008C9F0902008C9F0D05F060A
C88009F0E0500100000009F0F05F068BC98009F100706010A03A4A1009F1A0208409F2
6085D28923FA304DEA29F2701809F3303E0F8C89F34034102029F3501229F360200319
F370416587CF79F40057000B0B001</b:value>
                                </b:KeyValuePairOfstringstring>
                            </a:AdditionalOutputData>
                            <a:CardID i:nil="true"/>
                            <a:IsReplay>true</a:IsReplay>
                        </a:DataOutput>
                        <a:DecryptForwardFaultException i:nil="true"/>
                        <a:MagTranID>72dccb16-ca16-4ad7-8932-
722ef71de1e0</a:MagTranID>
                        <a:PayloadResponse>HTTP/1.1 200 OKConnection: close
Content-Length: 67
Content-Type: text/namevalue
Date: Fri, 13 Oct 2017 15:47:41 GMT
Server: VPS-3.033.00

&amp;RESULT=0&amp;PNREF=A70NA5B54390&amp;RESPMSG=Approved&amp;AUTHCODE
=020954&amp;IAVS=X</a:PayloadResponse>

<a:PayloadToken>6479D61DD30D563B4A8D042C9CB5DFDAC99D55B568961DFB25D90C
CFB27F5BEE</a:PayloadToken>
                        <a:TransactionUTCTimestamp>2017-10-13
15:47:41Z</a:TransactionUTCTimestamp>
                    </a:ProcessDataOutput>
                    <a:ProcessDataOutput>

<a:CustomerTransactionID>123</a:CustomerTransactionID>
```

```
                    <a:DataOutput>
                        <a:AdditionalOutputData
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric">
                            <b:KeyValuePairOfstringstring>
                                <b:key>DataDataMasked</b:key>

<b:value>FC8200DD57130000000000000000000000000000000000000005A0A0000000
000000000000082025C008A0259318E0E000000000000000000000000000950500800
000009A031511239B02E8009C01005F24030000005F25030907015F2A0208405F34010
19F0206000000001009F0607A00000000310109F0702FF009F0802008D9F0902008C9
F0D05F0400088009F0E0500100000009F0F05F0400098009F100706010A03A099009F1
A0208409F2608292CAF79D395A8819F2701809F3303E0F8C89F34031E03009F3501229
F360200EB9F3704A0E9D3EA9F40057000B0B001</b:value>
                            </b:KeyValuePairOfstringstring>
                        </a:AdditionalOutputData>
                        <a:CardID i:nil="true"/>
                        <a:IsReplay>true</a:IsReplay>
                    </a:DataOutput>
                    <a:DecryptForwardFaultException i:nil="true"/>
                    <a:MagTranID>76bfd8a8-d170-4095-8d38-
b174ea50cd1e</a:MagTranID>
                    <a:PayloadResponse><![CDATA[HTTP/1.1 200 OKVary:
Accept-Encoding
Transfer-Encoding: chunked
Content-Type: text/plain; charset=UTF-8
Date: Fri, 13 Oct 2017 15:47:41 GMT
Server: Apache

&<JetPayResponse Version="2.0">
  <TransactionID>287819374556795520</TransactionID>
  <ActionCode>000</ActionCode>
  <Approval>TEST45</Approval>
  <ResponseText>APPROVED</ResponseText>
  <UniqueID>QnThQjPhQlQkQhQnTlTjQmQn</UniqueID>
  <RRN>728615001348</RRN>
  <RawResponseCode>00</RawResponseCode>
  <ICC>
    <ATC>0035</ATC>
    <IssuerAuthData>472AD94F9FECD47D3030</IssuerAuthData>

<IssuerScript2>9F180430303031860E04DA9F580903C0DC6EF04E9C8A09860E04DA9
F590908460C835744CE4E5C</IssuerScript2>
  </ICC>
</JetPayResponse>]]></a:PayloadResponse>

<a:PayloadToken>684FB83D55364282B4A8FC4531FDF1F3D9FD0973ED85F26F879922
E01872B066</a:PayloadToken>
                    <a:TransactionUTCTimestamp>2017-10-13
15:47:41Z</a:TransactionUTCTimestamp>
                </a:ProcessDataOutput>
            </a:ProcessDataOutputs>
```

```
            </ProcessDataResult>
        </ProcessDataResponse>
    </s:Body>
</s:Envelope>
```

2.3   ProcessToken

A command used to process a token.

2.3.1   Input Properties

Property(*)	Value	Value Description
AdditionalRequestData	Array of key / value	Contains custom request data required by the target service provider. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See sample request.
CustomerCode *	String	Customer code for credential assigned by Magensa
Password *	String	Password for credential assigned by Magensa
Username *	String	Username for credential assigned by Magensa
BillingLabel	String	Billing label
CustomerTransactionId	String	Client-assigned transaction ID for easy cross-reference
AdditionalPayloadInfoData	Array of key / value	Contains custom request data required by the target service provider. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See sample request.
Base64ClientCert	String	Client certificate to accessing the targeted web service formatted in base64
ClientCertPassword	String	Client certificate password
AdditionalHTTPInfoData	Array of key / value	Contains custom request data required by the target service provider. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See sample request.
Headers	Array of key / value	Contains custom HTTP headers required by the target web service. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See examples.
NetworkProtocolType	String	Network protocol to use when forwarding the payload to the processor: HTTP TCPIP
Payload *	String	Payload data Example: <![CDATA[payload]]>
AccessEngineHeaderHex	String	Access engine header in base64 format
AdditionalTCPIPInfoData	Array of key / value	Contains custom request data required by the target service provider. Elements are expressed as key/value pairs grouped under <KeyValuePairOfstringstring>. See sample request.

Property(*)	Value	Value Description
NumberOfBytesToAddForLength *	Integer	This field may be required by some processors. If it is not 0, the defined number of bytes are added in front of the TCPIP message. Then the total length of the TCPIP binary message is calculated and written into those bytes. The value should be defined in the processor documentation, usually should be 2. Set to 0 when NetworkProtocolType is HTTP.
Port *	Integer	This is the TCPIP port number. Set to 0 when NetworkProtocolType is HTTP.
Uri *	String	Address to forward the payload

Note: * = Required

2.3.2 Output Properties

Property	Value	Value Description
AdditionalProcessTokenResponseData	Array of key / value	A group that contains additional output data returned by the target web service. Elements are expressed as Key/Value pairs grouped under <KeyValuePairOfstringstring>. See examples.
CustomerTransactionId	String>	Client-assigned transaction ID for easy cross-reference
DecryptForwardFaultException	String	Contains a fault exception returned by the target web service. Elements are expressed as Code and Message.
MagTranId	String	Magensa assigned unique transaction ID in GUID form
PayloadResponse	String	Response from the Uri input
PayloadToken	String	Hexadecimal format
TransactionUTCTimestamp	String	Transaction timestamp from Magensa

The Web Services Description Language URL for consuming this web service may be located at:
https://daf.magensa.net/v4/Service.svc?singleWsdl

Sample Request Payload using key/value, XML, and Client Certificate

```
POST https://daf.magensa.net/v4/Service.svc HTTP/1.1
Accept-Encoding: gzip,deflate
Content-Type: text/xml;charset=UTF-8
SOAPAction: "http://tempuri.org/IDecryptAndForward/ProcessToken"
Content-Length: 12411
Host: daf.magensa.net
Connection: Keep-Alive
User-Agent: Apache-HttpClient/4.1.1 (java 1.5)

<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:tem="http://tempuri.org/"
xmlns:dec="http://schemas.datacontract.org/2004/07/DecryptAndForwardCo
reNSV4"
xmlns:sys="http://schemas.datacontract.org/2004/07/System.Collections.
Generic">
   <soapenv:Header/>
   <soapenv:Body>
      <tem:ProcessToken>
         <tem:httpPostInput>
            <dec:AdditionalProcessTokenRequestData>
               <sys:KeyValuePairOfstringstring>
                  <sys:key/>
                  <sys:value/>
               </sys:KeyValuePairOfstringstring>
            </dec:AdditionalProcessTokenRequestData>
            <dec:Authentication>
               <dec:CustomerCode>custcode</dec:CustomerCode>
               <dec:Password>password</dec:Password>
               <dec:Username>username</dec:Username>
            </dec:Authentication>
            <dec:CustomerTransactionID>123</dec:CustomerTransactionID>
            <dec:ProcessTokenInputs>
               <dec:ProcessTokenInput>
                  <dec:AdditionalRequestData>
                     <sys:KeyValuePairOfstringstring>
                        <sys:key>TokenCustomerCode</sys:key>
                        <sys:value>0001</sys:value>
                     </sys:KeyValuePairOfstringstring>
                     <sys:KeyValuePairOfstringstring>
                        <sys:key>TokenUsername</sys:key>
                        <sys:value>username</sys:value>
                     </sys:KeyValuePairOfstringstring>
                     <sys:KeyValuePairOfstringstring>
                        <sys:key>TokenPassword</sys:key>
                        <sys:value>password</sys:value>
```

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```xml
                        </sys:KeyValuePairOfstringstring>
                    </dec:AdditionalRequestData>
                    <dec:Authentication>
                        <dec:CustomerCode>custcode</dec:CustomerCode>
                        <dec:Password>password</dec:Password>
                        <dec:Username>username</dec:Username>
                    </dec:Authentication>
                    <dec:BillingLabel>billing</dec:BillingLabel>

<dec:CustomerTransactionID>123</dec:CustomerTransactionID>
                    <dec:PayloadInfo>
                        <dec:AdditionalPayloadInfoData>
                            <sys:KeyValuePairOfstringstring>
                                <sys:key/>
                                <sys:value/>
                            </sys:KeyValuePairOfstringstring>
                        </dec:AdditionalPayloadInfoData>
                        <dec:Base64ClientCert/>
                        <dec:ClientCertPassword/>
                        <dec:HTTPInfo>
                            <dec:AdditionalHTTPInfoData>
                                <sys:KeyValuePairOfstringstring>
                                    <sys:key/>
                                    <sys:value/>
                                </sys:KeyValuePairOfstringstring>
                            </dec:AdditionalHTTPInfoData>
                            <dec:Headers>
                                <sys:KeyValuePairOfstringstring>
                                    <sys:key>Content-Type</sys:key>
                                    <sys:value>text/xml; charset=utf-
8</sys:value>
                                </sys:KeyValuePairOfstringstring>
                            </dec:Headers>
                        </dec:HTTPInfo>

<dec:NetworkProtocolType>HTTP</dec:NetworkProtocolType>

<dec:Payload><![CDATA[TRXTYPE=S&TENDER=C&USER=YourUserName&PWD=YourPas
sword&PARTNER={YourPartner}&EXECUTOR={Executor}&VENDOR={vendor}&EXPDAT
E=$SubString({5F24},2,2)$SubString({5F24},0,2)&AMT=0.10]]></dec:Payloa
d>
                        <dec:TCPIPInfo>
                            <dec:AccessEngineHeaderHex/>
                            <dec:AdditionalTCPIPInfoData>
                                <sys:KeyValuePairOfstringstring>
                                    <sys:key/>
                                    <sys:value/>
                                </sys:KeyValuePairOfstringstring>
                            </dec:AdditionalTCPIPInfoData>

<dec:NumberOfBytesToAddForLength>0</dec:NumberOfBytesToAddForLength>
                        <dec:Port>0</dec:Port>
```

```
                        </dec:TCPIPInfo>
                        <dec:Uri>https://pilot-
payflowpro.paypal.com</dec:Uri>
                    </dec:PayloadInfo>
                    <dec:Token>FA820119...</dec:Token>
                </dec:ProcessTokenInput>
                <dec:ProcessTokenInput>
                    <dec:AdditionalRequestData>
                        <sys:KeyValuePairOfstringstring>
                            <sys:key>TokenCustomerCode</sys:key>
                            <sys:value>0001</sys:value>
                        </sys:KeyValuePairOfstringstring>
                        <sys:KeyValuePairOfstringstring>
                            <sys:key>TokenUsername</sys:key>
                            <sys:value>username</sys:value>
                        </sys:KeyValuePairOfstringstring>
                        <sys:KeyValuePairOfstringstring>
                            <sys:key>TokenPassword</sys:key>
                            <sys:value>password</sys:value>
                        </sys:KeyValuePairOfstringstring>
                    </dec:AdditionalRequestData>
                    <dec:Authentication>
                        <dec:CustomerCode>custcode</dec:CustomerCode>
                        <dec:Password>password</dec:Password>
                        <dec:Username>username</dec:Username>
                    </dec:Authentication>
                    <dec:BillingLabel>billing</dec:BillingLabel>

<dec:CustomerTransactionID>123</dec:CustomerTransactionID>
                    <dec:PayloadInfo>
                        <dec:AdditionalPayloadInfoData>
                            <sys:KeyValuePairOfstringstring>
                                <sys:key/>
                                <sys:value/>
                            </sys:KeyValuePairOfstringstring>
                        </dec:AdditionalPayloadInfoData>

<dec:Base64ClientCert/>MIIDujCC...</dec:Base64ClientCert>

<dec:ClientCertPassword>password</dec:ClientCertPassword>
                    <dec:HTTPInfo>
                        <dec:AdditionalHTTPInfoData>
                            <sys:KeyValuePairOfstringstring>
                                <sys:key/>
                                <sys:value/>
                            </sys:KeyValuePairOfstringstring>
                        </dec:AdditionalHTTPInfoData>
                        <dec:Headers>
                            <sys:KeyValuePairOfstringstring>
                                <sys:key>Content-Type</sys:key>
                                <sys:value>text/xml; charset=utf-
8</sys:value>
```

```
                        </sys:KeyValuePairOfstringstring>
                      </dec:Headers>
                  </dec:HTTPInfo>

<dec:NetworkProtocolType>HTTP</dec:NetworkProtocolType>
                  <dec:Payload><![CDATA[<JetPay Version="2.0">
     <Application Version="2.0.0">MAGNEFLEX</Application>
     <DeveloperID>>{DeveloperId}</DeveloperID>
     <Device>{DeviceID}</Device>
     <EMVKernel Version="1.0">30050877</EMVKernel>
     <Gateway>JetPay</Gateway>
     <IndustryInfo Type="RETAIL">
          <BaseAmount>{SubtotalAmount}</BaseAmount>
          <TipAmount>{TipAmount}</TipAmount>
     </IndustryInfo>
     <Origin>POS</Origin>
     <Password>{Password}</Password>
     <ReaderUsed>CHIP</ReaderUsed>
     <Shipping>
          <Address>{ShippingAddress}</Address>
          <City>{ShippingCity}</City>
          <Country>{ShippingCountry}</Country>
          <CustomerPO>{PurchaseOrder}</CustomerPO>
          <Email>{ShippingEmail}</Email><Name>{ShippingName}</Name>

     <Phone>{ShippingPhone}</Phone><PostalCode>{ShippingZIP}</PostalCo
de>
          <ShippingMethod>{ShippingMethod}</ShippingMethod>
          <StateProv>{ShippingState}</StateProv>
     </Shipping>
     <TaxAmount>{TaxAmount}</TaxAmount>
     <TerminalID>TESTMCC5111X</TerminalID>
     <TotalAmount>100</TotalAmount>
     <Track1></Track1>
     <Track2>;$Replace({57},D,=)?</Track2>
     <TransactionID>948272757229368448</TransactionID>
     <TransactionType>SALE</TransactionType>
     <Verification>
          <ICC>
               <AID>{9F06}</AID>
               <AIP>{82}</AIP>
               <ARQC>{9F26}</ARQC>
               <ATC>{9F36}</ATC>
               <AppUsageControl>{9F07}</AppUsageControl>
               <AuthorizedAmount>{9F02}</AuthorizedAmount>
               <CVMResult>{9F34}</CVMResult>
               <CardSeqNum>{5F34}</CardSeqNum>
               <CryptInfoData>{9F27}</CryptInfoData>
               <CurrencyCode>{5F2A}</CurrencyCode>
               <CustomerExclusiveData>{9F7C}</CustomerExclusiveData>
               <DFName>{84}</DFName>
               <FormFactor>{9F6E}</FormFactor>
```

```xml
                    <IFDSerialNum>{9F1E}</IFDSerialNum>
                    <IssuerAppData>{9F10}</IssuerAppData>
                    <IssuerAuthData>{91}</IssuerAuthData>
                    <IssuerScript1>{71}</IssuerScript1>
                    <IssuerScript2>{72}</IssuerScript2>
                    <IssuerScriptResults>{9F5B}</IssuerScriptResults>
                    <OtherAmount>{9F03}</OtherAmount>
                    <TVR>{95}</TVR>
                    <TermAppVer>{9F09}</TermAppVer>
                    <TermCapCode>{9F33}</TermCapCode>
                    <TermCountryCode>{9F1A}</TermCountryCode>
                    <TermType>{9F35}</TermType>
                    <TransCategoryCode>{9F53}</TransCategoryCode>
                    <TransDate>{9A}</TransDate>
                    <TransSeqNum>{9F41}</TransSeqNum>
                    <TransType>{9C}</TransType>
                    <UnpredictableNumber>{9F37}</UnpredictableNumber>
                </ICC>
            </Verification>
</JetPay>]]></dec:Payload>
                        <dec:TCPIPInfo>
                            <dec:AccessEngineHeaderHex/>
                            <dec:AdditionalTCPIPInfoData>
                                <sys:KeyValuePairOfstringstring>
                                    <sys:key/>
                                    <sys:value/>
                                </sys:KeyValuePairOfstringstring>
                            </dec:AdditionalTCPIPInfoData>

<dec:NumberOfBytesToAddForLength>0</dec:NumberOfBytesToAddForLength>
                            <dec:Port>0</dec:Port>
                        </dec:TCPIPInfo>

<dec:Uri>https://test1.jetpay.com/jetpay</dec:Uri>
                    </dec:PayloadInfo>
                    <dec:Token>FA820119...</dec:Token>
                </dec:ProcessTokenInput>
            </dec:ProcessTokenInputs>
        </tem:httpPostInput>
      </tem:ProcessToken>
   </soapenv:Body>
</soapenv:Envelope>
```

Sample Response Payload of key/value and XML

```xml
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
   <s:Body>
      <ProcessEMVResponse xmlns="http://tempuri.org/">
         <ProcessEMVResult
xmlns:a="http://schemas.datacontract.org/2004/07/DecryptAndForwardCore
NSV3" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
```

```
               <a:AdditionalProcessEMVResponseData i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>
             <a:CustomerTransactionID>123</a:CustomerTransactionID>
             <a:ProcessEMVOutputs>
                <a:ProcessEMVOutput>
                   <a:AdditionalOutputData i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>

<a:CustomerTransactionID>123</a:CustomerTransactionID>
                   <a:DecryptForwardFaultException i:nil="true"/>
                   <a:MagTranID>36743cec-7069-47d3-a3a3-
e79296abac84</a:MagTranID>
                   <a:PayloadResponse>HTTP/1.1 200 OKConnection: close
Content-Length: 67
Content-Type: text/namevalue
Date: Thu, 21 Sep 2017 16:02:51 GMT
Server: VPS-3.033.00
&amp;RESULT=0&amp;PNREF=A10NA6D8215C&amp;RESPMSG=Approved&amp;AUTHCODE
=011837&amp;IAVS=X</a:PayloadResponse>

<a:PayloadToken>6479D61DD30D563B4A8D042C9CB5DFDAC99D55B568961DFB25D90C
CFB27F5BEE</a:PayloadToken>
                   <a:TransactionUTCTimestamp>2017-09-21
16:02:51Z</a:TransactionUTCTimestamp>
                </a:ProcessEMVOutput>
                <a:ProcessEMVOutput>
                   <a:AdditionalOutputData i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>

<a:CustomerTransactionID>123</a:CustomerTransactionID>
                   <a:DecryptForwardFaultException i:nil="true"/>
                   <a:MagTranID>28667fd2-5af7-4d03-bf4a-
97764aecbffd</a:MagTranID>
                   <a:PayloadResponse><![CDATA[HTTP/1.1 200 OKVary:
Accept-Encoding
Keep-Alive: timeout=5, max=1000
Connection: Keep-Alive
Transfer-Encoding: chunked
Content-Type: text/plain; charset=UTF-8
Date: Thu, 21 Sep 2017 16:02:52 GMT
Server: Apache
&<JetPayResponse Version="2.0">
  <TransactionID>130307464504997872</TransactionID>
  <ActionCode>000</ActionCode>
  <Approval>TEST19</Approval>
  <ResponseText>APPROVED</ResponseText>
  <UniqueID>QnTkWkQhQlPbRjQmPiUiTmRj</UniqueID>
  <RRN>726416046820</RRN>
  <RawResponseCode>00</RawResponseCode>
```

```xml
  <ICC>
    <ATC>0035</ATC>
    <IssuerAuthData>472AD94F9FECD47D3030</IssuerAuthData>

<IssuerScript2>9F180430303031860E04DA9F580903C0DC6EF04E9C8A09860E04DA9
F590908460C835744CE4E5C</IssuerScript2>
  </ICC>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
   <s:Body>
      <ProcessTokenResponse xmlns="http://tempuri.org/">
         <ProcessTokenResult
xmlns:a="http://schemas.datacontract.org/2004/07/DecryptAndForwardCore
NSV4" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
            <a:AdditionalProcessTokenResponseData i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>
            <a:CustomerTransactionID>123</a:CustomerTransactionID>
            <a:ProcessTokenOutputs>
               <a:ProcessTokenOutput>
                  <a:AdditionalProcessTokenResponseData i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>

<a:CustomerTransactionID>123</a:CustomerTransactionID>
                  <a:DecryptForwardFaultException i:nil="true"/>
                  <a:MagTranID>24329819-cfb0-4028-b2b1-
9819f439b599</a:MagTranID>
                  <a:PayloadResponse>HTTP/1.1 200 OKConnection: close
Content-Length: 59
Content-Type: text/namevalue
Date: Fri, 13 Oct 2017 15:59:19 GMT
Server: VPS-3.033.00
&amp;RESULT=0&amp;PNREF=A10NA6D8215C&amp;RESPMSG=Approved&amp;AUTHCODE
=011837&amp;IAVS=X </a:PayloadResponse>

<a:PayloadToken>6479D61DD30D563B4A8D042C9CB5DFDAC99D55B568961DFB25D90C
CFB27F5BEE</a:PayloadToken>
                  <a:TokenOutput>
                     <a:AdditionalOutputData i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>
                  </a:TokenOutput>
                  <a:TransactionUTCTimestamp>2017-10-13
15:59:19Z</a:TransactionUTCTimestamp>
               </a:ProcessTokenOutput>
               <a:ProcessTokenOutput>
                  <a:AdditionalProcessTokenResponseData i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>

<a:CustomerTransactionID>123</a:CustomerTransactionID>
                  <a:DecryptForwardFaultException i:nil="true"/>
```

```
                    <a:MagTranID>e01ef8f6-cbae-4752-b4c3-
c56547c9ea5a</a:MagTranID>
                    <a:PayloadResponse><![CDATA[HTTP/1.1 200 OKVary:
Accept-Encoding
Transfer-Encoding: chunked
Content-Type: text/plain; charset=UTF-8
Date: Fri, 13 Oct 2017 15:59:19 GMT
Server: Apache

&<JetPayResponse Version="2.0">
  <TransactionID>130307464504997872</TransactionID>
  <ActionCode>000</ActionCode>
  <Approval>TEST19</Approval>
  <ResponseText>APPROVED</ResponseText>
  <UniqueID>QnTkWkQhQlPbRjQmPiUiTmRj</UniqueID>
  <RRN>726416046820</RRN>
  <RawResponseCode>00</RawResponseCode>
  <ICC>
    <ATC>0035</ATC>
    <IssuerAuthData>472AD94F9FECD47D3030</IssuerAuthData>

<IssuerScript2>9F180430303031860E04DA9F580903C0DC6EF04E9C8A09860E04DA9
F590908460C835744CE4E5C</IssuerScript2>
  </ICC>
</JetPayResponse>]]></a:PayloadResponse>

<a:PayloadToken>DF2D27243075B9603B15684419A0B10584D90FC3B9C1781447E9B6
6AED8424B0</a:PayloadToken>
                    <a:TokenOutput>
                        <a:AdditionalOutputData i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/System.Collections.Ge
neric"/>
                    </a:TokenOutput>
                    <a:TransactionUTCTimestamp>2017-10-13
15:59:20Z</a:TransactionUTCTimestamp>
                </a:ProcessTokenOutput>
            </a:ProcessTokenOutputs>
        </ProcessTokenResult>
      </ProcessTokenResponse>
   </s:Body>
</s:Envelope>
```

3   Status Codes and Messages

Status Codes and Messages returned by Magensa for Decrypt and Forward 4.0 web service operations.

Internal errors

Code	Message
5000	Unknown Error

Input Validation errors

Code	Message
602	KSN is required
603	CustomerCode is required
604	Username is required
605	Password is required
607	KSN is not valid
610	EncryptedTrack2 is required
611	MagnePrint is required
614	MagnePrint status is required
673	ProcessCardSwipe Inputs is required
674	ProcessDataInputs is required
675	ProcessToken Inputs is required
676	HTTP Info is required when NetworkProtocolTypes is HTTP
677	Invalid Network Protocol Type
701	Access Denied
707	Payload is required
708	EncryptionType is required
711	GetResponse FaultException
712	Decrypt web service failed
714	Decrypt web service exception
715	Decrypt web service failed. DecryptCardSwipeResponse is null
716	Invalid Track data after Decryption
721	Payload post failed
722	URI is not authorized
733	Error parsing TLVData
738	Invalid EMVSREDData
754	Error in Base64-Client-Cert

Code	Message
755	TCP Info is required
756	EncryptionInfo is required

4   Template Functions

The following functions can be used in conjunction with field variables in order to build processor payloads request. A space is not needed between commas which delimit the parameters, unless specifically need as part of the parameter. All parameters shall not be enclosed in quotations ("").

4.1 $Add()

This function adds two numbers.

```
$Add(Operand1_Numeric,Operand2_Numeric,ToStringFormat_Optional)
```

Parameter	Value	Value Description
Operand1_Numeric	Numeric	Number 1
Operand2_Numeric	Numeric	Number 2
ToStringFormat_Optional	String	Optional output string format specifier

Return Value:

The numeric sum of Operand1_Numeric and Operand2_Numeric.

4.2 $DateTimeNow()

This function returns the current date and time.

```
$DateTimeNow(Optional_format,Optional_0_Local_Or_1_Universal)
```

Parameter	Value	Value Description
Optional_format	String	Optional standard or custom date and time format string. Examples but not limited to: yyyyMMddhhmmss – 4 digit year in 12 hour format yyMMddHHmmss – 2 digit year in 24 hour format
Optional_0_Local_Or_1_Universal	Integer	Optional flag to return local time or global time. 0 – Local time 1 – Global time
Optional_format	String	Optional standard or custom date and time format string. Examples but not limited to: yyyyMMddhhmmss – 4 digit year in 12 hour format yyMMddHHmmss – 2 digit year in 24 hour format

Return Value:

A string of the current date and time.

4.3 $DecimalToString()

This function converts a numeric value to an equivalent string.

`$DecimalToString(Operand1_Numeric,ToStringFormat_Optional)`

Parameter	Value	Value Description
Operand1_Numeric	Numeric	Decimal number to convert
ToStringFormat_Optional	String	Optional output string format specifier

Return Value:

A string equivalent of the Operand1_Numeric.

4.4 $IndexOf()

This function finds the position of one string within another.

`$IndexOf(string,searchString,startPosition,numberOfCharacterPosition)`

Parameter	Value	Value Description
string	String	The source string
searchString	String	The string to seek.
startPosition	String	The search starting position.
numberOfCharacterPosition	String	The number of character positions to examine.

Return Value:

The zero-based index position of value from the start of the current instance if that string is found, or -1 if it is not. If string is empty, the return value is startPosition.

4.5 $IndexIgnoreCaseOf()

This function finds the position of one string within another and is case insensitive.

`$IndexIgnoreCaseOf(string,searchString,startPosition,numberOfCharacter Position)`

Parameter	Value	Value Description
string	String	The source string
searchString	String	The string to seek
startPosition	String	The search starting position
numberOfCharacterPosition	String	The number of character positions to examine

Return Value:

The zero-based index position of value from the start of the current instance if that string is found, or -1 if it is not. If string is empty, the return value is startPosition.

4.6 $Length()

This function returns the number of characters in a string.

`$Length(string)`

Parameter	Value	Value Description
string	String	String to count

Return Value:

The string length.

4.7 $Multiply()

This function multiplies two numbers.

`$Multiply(Operand1_Numeric,Operand2_Numeric,ToStringFormat_Optional)`

Parameter	Value	Value Description
Operand1_Numeric	Numeric	Number 1
Operand2_Numeric	Numeric	Number 2
ToStringFormat_Optional	String	Optional output string format specifier

Return Value:

The product of Operand1_Numeric and Operand2_Numeric.

4.8 $Replace()

This function replaces a substring within another string.

`$Replace(string,oldValue,newValue)`

Parameter	Value	Value Description
string	String	Source string
oldValue	String	String being sought
newValue	String	New value of string to replace the old value

Return Value:

A string of which all instances of an oldValue substring has been replaced with a newValue substring.

4.9 $Substring()

This function retrieves a substring of the source string.

`$Substring(string,startindex,length)`

Parameter	Value	Value Description
string	String	The source string
startindex	Integer	The zero-based starting character position of the string
length	Integer	The number of characters in the substring

Return Value:

A string that is equivalent to the substring of specified length.

4.10 $TLVLength()
This function returns the length of the data portion for a single TLV element string.

```
$TLVLength(string)
```

Parameter	Value	Value Description

string	String	Tag octet of the TLV element
		Example of full TLV:
		When Application PAN TLV=5A081234567890123456,
		$TLVLength(5A) returns 08
		
		`+--Literal----------------------------+`
		`| +--Function-----------------------|-+`
		`| |              +--Field variable----|-|-+`
		`| |              |                     | | |`
		`5A$TLVLength(5A){5A} constructs to=>`
		`5A081234567890123456`

Return Value:

The hexadecimal data length of the TLV element.

4.11 $Trim()
This function removes leading and trailing spaces from a string.

```
$Trim(string)
```

Parameter	Value	Value Description
string	String	String to trim

Return Value:

A string without leading and trailing spaces.

4.12 $RegExIsMatch()
This function evaluates a regular expression to find a match in the input string.

```
$RegExIsMatch(InputString,patternString, RegexOptionsStringOptional)
```

Parameter	Value	Value Description
InputString	String	Input string to search for a match
patternString	String	Pattern string to match
RegexOptionsStringOptional	String	Optional regular expression options

Return Value:

"True" string if the regular expression finds a match, otherwise returns "False".

4.13 $RegExReplace()

This function replaces all strings that match a regular expression with a replacement string.

`$RegExReplace(InputString,PatternString,ReplacementString,RegexOptionsStringOptional)`

Parameter	Value	Value Description
InputString	String	Input string to search for a match
PatternString	String	Pattern string to match
ReplacementString	String	String to replace a match
RegexOptionsStringOptional	String	Optional regular expression options

Return Value:

A new string that is identical to the input string, except that the replacement string takes the place of each matched string. If pattern is not matched, the input string is returned.

4.14 $RegExUnescape()

This function converts an expression into its unescaped form.

`$RegExUnescape(InputString)`

Parameter	Value	Value Description
InputString	String	String containing the text to convert

Return Value:

A string of characters with any escaped characters converted to their unescaped form.

4.15 $Iif()

This function evaluates an expression and returns either a true or false result string.

`$Iif(ConditionBool,ResultTrueString,ReturnFalseStringOptional)`

Parameter	Value	Value Description
ConditionBool	Expression	Expression to evaluate
ResultTrueString	Expression	String returned if ConditionalBool evaluates as True
ResultFalseStringOptional	Expression	Optional string returned if ConditionalBool evaluates as False

Return Value:

The True result string if the Boolean condition is true, otherwise the False result string.

4.16 $NotBool()
This function negates a Boolean value.

```
$NotBool(OperandBool)
```

Parameter	Value	Value Description
OperandBool	Boolean	Boolean to negate

Return Value:

"True" string when OperandBool is false. "False" string when OperandBool is true.

4.17 $AndBool()
This function performs an AND operation on two Boolean values.

```
$AndBool(Operand1Bool,Operand2Bool)
```

Parameter	Value	Value Description
Operand1Bool	Boolean	Boolean value 1
Operand2Bool	Boolean	Boolean value 2

Return Value:

"True" string when both Operand1Bool and Operand2Bool are true, otherwise returns "False".

4.18 $OrBool()
This function performs an OR operation on two Boolean values.

```
$OrBool(Operand1Bool,Operand2Bool)
```

Parameter	Value	Value Description
Operand1Bool	Boolean	Boolean value 1
Operand2Bool	Boolean	Boolean value 2

Return Value:

"True" string when both Operand1Bool and Operand2Bool are true,

"True" string when either Operand1Bool or Operand2Bool are true, otherwise returns "False".

4.19 $IsContains()

This function checks if the source string contains a substring.

```
$IsContains(String,ContainsString,IgnoreCaseBool)
```

Parameter	Value	Value Description
String	String	Source string sought
ContainsString	String	String to seek
IgnoreCaseBool	Boolean	Flag to make the search be case insensitive false – Search is case sensitive true – Search is case insensitive

Return Value:

"True" string when ContainsString is found, otherwise returns "False".

4.20 $IsEqualStrings()

This function compares two strings.

```
$IsEqualStrings(Operand1String,Operand2String,IgnoreCaseBool)
```

Parameter	Value	Value Description
Operand1String	String	String to compare
Operand2String	String	String to compare
IgnoreCaseBool	Boolean	Flag to make the search be case insensitive false – Search is case sensitive true – Search is case insensitive

Return Value:

"True" string when Operand1String and Operand2String match, otherwise returns "False".

4.21 $IsEqualNumbers()

This function compares for the equality of two numbers.

```
$IsEqualNumbers(Operand1Number,Operand2Number)
```

Parameter	Value	Value Description
Operand1Number	Numeric	Number to compare
Operand2Number	Numeric	Number to compare

Return Value:

"True" string when Operand1Number and Operand2Number match, otherwise returns "False".

4.22 $IsGreaterOrEqual()

This function compares for the inequality of two numbers.

```
$IsGreaterOrEqual(Operand1Number,Operand2Number)
```

Parameter	Value	Value Description
Operand1Number	Numeric	Number to compare
Operand2Number	Numeric	Number to compare

Return Value:

"True" string when Operand1Number is greater than or equal to Operand2Number, otherwise returns "False".

5 Appendix

Appendix A Reserved