IPG Integration guide for Network Tokens

Network Token Overview

Network tokens are surrogate values that replace Primary Account Numbers (PANs) stored electronically throughout the payments system. Network Tokens can be used to conduct payment transactions securely and can provide improved protection against misuse, because network tokens can require cryptogram validation or be limited to use in a specific domain or circumstance, such as token requestor, device, or channel (e.g., proximity or e-commerce). These underlying usage controls are a key benefit of payment tokens. Tokens are intended to be higher-quality, long-lived credentials with active lifecycle management so that active tokens will not be declined for typical reasons such as account expired or account number changed.

Merchants and cardholders may potentially benefit from new and more secure ways to pay, improved transaction approval levels, and reduced risk of subsequent fraud in the event of a data breach in which payment tokens are exposed instead of the underlying PANs.

Acquirers and merchants may experience a reduced threat of online attacks and data breaches, as payment token databases may become less appealing targets for fraudsters, given their limitation to a specific domain. Merchants may potentially benefit from higher authorization rates and lower fraud rates.

In order to facilitate network tokens for merchants, Fiserv offers HostedDataID as the medium through which merchants can provision network tokens and cryptograms for a safe and secure end to end transaction flow.

The Process to generate and use Network tokens for transactions is as follows:

1. Merchants need to be enabled for Network Token service.
2. In India, **compliance mandates customer consent and Additional Factor Authentication** prior to saving a customer's card which eventually gets mapped to a Network Token.
3. **Customer Consent needs to be captured by merchants before initiating requests to save customer's card**.
4. Additional Factor Authentication is obtained by executing an authentication through 3DSecure request followed by an authorization request for the first order of the customer which thereby provides permission for the merchant to request provisioning for a network token to be mapped to the customer's saved card.
5. Merchant can store payment information as Network Tokens from an approved transaction by passing the OrderID of the transaction in which the customer consent was captured. A Network Token is provisioned for the card data used in that Order and linked to a HostedDataID which is returned back to the merchant.
6. Merchant can use the HostedDataID linked to a Network Token for further processing like retrieving the network token and cryptogram for subsequent requests.
7. To perform a transaction, Merchant can retrieve the network token and generate a cryptogram by calling the GetCryptogram function using the HostedDataID that was assigned for the saved card.
8. Merchant can then initiate a SALE using the Network Token data and Network Token Cryptogram

Store payment information from an approved transaction

Payment information be stored referring to a previously approved transaction.
This action stores the payment information of the transaction with the order id. The transaction must be an approved transaction, otherwise this action fails.

```xml
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmln
s:ipg="http://ipg-online.com/ipgapi/schemas/ipgapi" xmlns:a1="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:v1="http://ipg-
online.com/ipgapi/schemas/v1">
    <soapenv:Header/>
    <soapenv:Body>
<ns4:IPGApiActionRequest
xmlns:ns4="http://ipg-online.com/ipgapi/schemas/ipgapi" xmlns:ns2="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:ns3="http://ipg-
online.com/ipgapi/schemas/v1">
        <ns2:Action>
            <ns2:StoreHostedData>
                <ns2:StoreId>330115006</ns2:StoreId>
                <ns2:DataStorageItem>
                 <ns2:OrderId>
                    C-bd4e8baa-6dc3-45d1-ad61-b2310cc20eb0
                    </ns2:OrderId>
                  <ns2:HostedDataID>test123</ns2:HostedDataID>
                </ns2:DataStorageItem>
            </ns2:StoreHostedData>
        </ns2:Action>
    </ns4:IPGApiActionRequest>
    </soapenv:Body>
</soapenv:Envelope>


<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
    <SOAP-ENV:Header/>
    <SOAP-ENV:Body>
        <ipgapi:IPGApiActionResponse xmlns:a1="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:ipgapi="http://ipg-
online.com/ipgapi/schemas/ipgapi" xmlns:v1="http://ipg-
online.com/ipgapi/schemas/v1">
            <ipgapi:successfully>true</ipgapi:successfully>
        </ipgapi:IPGApiActionResponse>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

In case the HostedDataID is not provided in the above request, IPG will generate a HostedDataID in the response as below:

```xml
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmln
s:ipg="http://ipg-online.com/ipgapi/schemas/ipgapi" xmlns:a1="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:v1="http://ipg-
online.com/ipgapi/schemas/v1">
    <soapenv:Header/>
    <soapenv:Body>
<ns4:IPGApiActionRequest
xmlns:ns4="http://ipg-online.com/ipgapi/schemas/ipgapi" xmlns:ns2="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:ns3="http://ipg-
online.com/ipgapi/schemas/v1">
        <ns2:Action>
            <ns2:StoreHostedData>
                <ns2:StoreId>330115006</ns2:StoreId>
                <ns2:DataStorageItem>
                 <ns2:OrderId>
                    C-bd4e8baa-6dc3-45d1-ad61-b2310cc20eb0
                   </ns2:OrderId>
                  <ns2:AssignToken>true</ns2:AssignToken>
```

```
                    </ns2:DataStorageItem>
                </ns2:StoreHostedData>
            </ns2:Action>
        </ns4:IPGApiActionRequest>
    </soapenv:Body>
</soapenv:Envelope>


<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
    <SOAP-ENV:Header/>
    <SOAP-ENV:Body>
        <ipgapi:IPGApiActionResponse xmlns:a1="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:ipgapi="http://ipg-
online.com/ipgapi/schemas/ipgapi" xmlns:v1="http://ipg-
online.com/ipgapi/schemas/v1">
            <ipgapi:successfully>true</ipgapi:successfully>
            <ipgapi:DataStorageItem>
                <a1:CreditCardData>
                    <v1:CardNumber>3006</v1:CardNumber>
                    <v1:ExpMonth>12</v1:ExpMonth>
                    <v1:ExpYear>25</v1:ExpYear>
                    <v1:Brand>MASTERCARD</v1:Brand>
                </a1:CreditCardData>
                <a1:HostedDataID>
                        CD0A6414-B78C-40B0-9D1F-90F16C32952F
                 </a1:HostedDataID>
            </ipgapi:DataStorageItem>
        </ipgapi:IPGApiActionResponse>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Store payment information without performing a Transaction

Merchant has the option to generate a HostedDataID with card data. **Merchant is expected to obtain customer consent and perform additional factor authentication before using this request**.

```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
    <SOAP-ENV:Header/>
    <SOAP-ENV:Body>
        <ns4:IPGApiActionRequest xmlns:ns2="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:ns3="http://ipg-
online.com/ipgapi/schemas/v1" xmlns:ns4="http://ipg-
online.com/ipgapi/schemas/ipgapi">
            <ns2:Action>
                <ns2:StoreHostedData>
                    <ns2:StoreId>330115006</ns2:StoreId>
                    <ns2:DataStorageItem>
                        <ns2:CreditCardData>
                            <ns3:CardNumber>5204736190003006</ns3:CardNumber>
                            <ns3:ExpMonth>12</ns3:ExpMonth>
                            <ns3:ExpYear>24</ns3:ExpYear>
                            <ns3:CardCodeValue>006</ns3:CardCodeValue>
                        </ns2:CreditCardData>
                        <ns2:AssignToken>true</ns2:AssignToken>
                    </ns2:DataStorageItem>
                </ns2:StoreHostedData>
            </ns2:Action>
        </ns4:IPGApiActionRequest>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
    <SOAP-ENV:Header/>
    <SOAP-ENV:Body>
```

```xml
        <ipgapi:IPGApiActionResponse xmlns:a1="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:ipgapi="http://ipg-
online.com/ipgapi/schemas/ipgapi" xmlns:v1="http://ipg-
online.com/ipgapi/schemas/v1">
            <ipgapi:successfully>true</ipgapi:successfully>
            <ipgapi:DataStorageItem>
                <a1:CreditCardData>
                    <v1:CardNumber>3006</v1:CardNumber>
                    <v1:ExpMonth>12</v1:ExpMonth>
                    <v1:ExpYear>24</v1:ExpYear>
                    <v1:Brand>MASTERCARD</v1:Brand>
                </a1:CreditCardData>
                <a1:HostedDataID>
                 A03D6777-D729-4C35-A556-8D6B285E440D
                </a1:HostedDataID>
            </ipgapi:DataStorageItem>
        </ipgapi:IPGApiActionResponse>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Retrieve Network Token and generate Cryptogram

Merchant can request for Cryptogram by passing the StoreID and HostedDataID as input

```xml
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
<SOAP-ENV:Header/>
<SOAP-ENV:Body>
<ns4:IPGApiActionRequest xmlns:ns4="http://ipg-
online.com/ipgapi/schemas/ipgapi" xmlns:ns2="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:ns3="http://ipg-
online.com/ipgapi/schemas/v1">
    <ns2:Action>
        <ns2:GetNetworkTokenCryptogram>
            <ns2:StoreId>330115006</ns2:StoreId>
            <ns2:HostedDataID>
                A03D6777-D729-4C35-A556-8D6B285E440D
            </ns2:HostedDataID>
        </ns2:GetNetworkTokenCryptogram>
    </ns2:Action>
</ns4:IPGApiActionRequest>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>


<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
    <SOAP-ENV:Header/>
    <SOAP-ENV:Body>
        <ipgapi:IPGApiActionResponse xmlns:a1="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:ipgapi="http://ipg-
online.com/ipgapi/schemas/ipgapi" xmlns:v1="http://ipg-
online.com/ipgapi/schemas/v1">
            <ipgapi:successfully>true</ipgapi:successfully>
            <ipgapi:NetworkTokenData>
                <v1:NetworkTokenNumber>5204736200180216</v1:NetworkTokenNumber>
                <v1:ExpMonth>12</v1:ExpMonth>
                <v1:ExpYear>24</v1:ExpYear>
                <v1:CardLast4>3006</v1:CardLast4>
                <v1:Brand>MASTERCARD</v1:Brand>
                <v1:TokenCryptogram>
                        AJ0BWvQntOkiAAHFcQ42GgADFA==
                 </v1:TokenCryptogram>
            </ipgapi:NetworkTokenData>
        </ipgapi:IPGApiActionResponse>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Display Stored Network Token Details

Merchant can perform Display function by passing the StoreID and HostedDataID as input and retrieve the network token details.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmln
s:ipg="http://ipg-online.com/ipgapi/schemas/ipgapi" xmlns:a1="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:v1="http://ipg-
online.com/ipgapi/schemas/v1">
    <soapenv:Header/>
    <soapenv:Body>
<ns4:IPGApiActionRequest
xmlns:ns4="http://ipg-online.com/ipgapi/schemas/ipgapi" xmlns:ns2="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:ns3="http://ipg-
online.com/ipgapi/schemas/v1">
        <ns2:Action>
            <ns2:StoreHostedData>
                <ns2:StoreId>330115006</ns2:StoreId>
                <ns2:DataStorageItem>
                     <ns2:Function>display</ns2:Function>
                    <ns2:HostedDataID>
                        A03D6777-D729-4C35-A556-8D6B285E440D
                    </ns2:HostedDataID>
                </ns2:DataStorageItem>
            </ns2:StoreHostedData>
        </ns2:Action>
    </ns4:IPGApiActionRequest>
    </soapenv:Body>
</soapenv:Envelope>


<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
    <SOAP-ENV:Header/>
    <SOAP-ENV:Body>
        <ipgapi:IPGApiActionResponse xmlns:a1="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:ipgapi="http://ipg-
online.com/ipgapi/schemas/ipgapi" xmlns:v1="http://ipg-
online.com/ipgapi/schemas/v1">
            <ipgapi:successfully>true</ipgapi:successfully>
            <ipgapi:DataStorageItem>
                <a1:NetworkTokenData>
                    <v1:NetworkTokenNumber>
                        5204736200180216
                    </v1:NetworkTokenNumber>
                    <v1:ExpMonth>12</v1:ExpMonth>
                    <v1:ExpYear>24</v1:ExpYear>
                    <v1:Brand>MASTERCARD</v1:Brand>
                </a1:NetworkTokenData>
                <a1:HostedDataID>
                        A03D6777-D729-4C35-A556-8D6B285E440D
                 </a1:HostedDataID>
            </ipgapi:DataStorageItem>
        </ipgapi:IPGApiActionResponse>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Initiate payment transactions using Network Token and Cryptogram

A payment transaction using network token can be initiated by sending the Network Token Number in place of credit card number and the expiry of the credit card replaced by the network token expiry. Additionally for Cardholder initiated transactions, the network token cryptogram is essential and to be passed in the token cryptogram field of the order request.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmln
s:ipg="http://ipg-online.com/ipgapi/schemas/ipgapi" xmlns:v1="http://ipg-
online.com/ipgapi/schemas/v1" xmlns:pay="http://api.clickandbuy.com/webservices/
pay_1_0_0/">
    <soapenv:Header/>
    <soapenv:Body>
        <ipg:IPGApiOrderRequest>
            <v1:Transaction>
                <v1:CreditCardTxType>
                    <v1:StoreId>330115006</v1:StoreId>
                    <v1:Type>sale</v1:Type>
                </v1:CreditCardTxType>
                <v1:CreditCardData>
                    <v1:CardNumber>5204736200180216</v1:CardNumber>
                    <v1:ExpMonth>12</v1:ExpMonth>
                    <v1:ExpYear>24</v1:ExpYear>
                    <v1:CardCodeValue>977</v1:CardCodeValue>
                    <v1:Brand>MASTERCARD</v1:Brand>
                </v1:CreditCardData>
                <v1:TokenCryptogram>
                 AJ0BWvQntOkiAAHFcQ42GgADFA==
                </v1:TokenCryptogram>
                <v1:Payment>
                    <v1:ChargeTotal>15</v1:ChargeTotal>
                    <v1:Currency>INR</v1:Currency>
                </v1:Payment>

            </v1:Transaction>
        </ipg:IPGApiOrderRequest>
    </soapenv:Body>
</soapenv:Envelope>

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
    <SOAP-ENV:Header/>
    <SOAP-ENV:Body>
        <ipgapi:IPGApiOrderResponse xmlns:a1="http://ipg-
online.com/ipgapi/schemas/a1" xmlns:ipgapi="http://ipg-
online.com/ipgapi/schemas/ipgapi" xmlns:v1="http://ipg-
online.com/ipgapi/schemas/v1">
            <ipgapi:ApprovalCode>
                    Y:006953:4381648535:PPX :113009626785
             </ipgapi:ApprovalCode>
            <ipgapi:AVSResponse>PPX</ipgapi:AVSResponse>
            <ipgapi:Brand>MASTERCARD</ipgapi:Brand>
            <ipgapi:CommercialServiceProvider>
                IMS
             </ipgapi:CommercialServiceProvider>
            <ipgapi:OrderId>
                A-d47b2da7-f64d-475f-8d1f-75be94d1419b
             </ipgapi:OrderId>
            <ipgapi:IpgTransactionId>84381648535</ipgapi:IpgTransactionId>
            <ipgapi:PaymentType>CREDITCARD</ipgapi:PaymentType>
            <ipgapi:ProcessorApprovalCode>006953</ipgapi:ProcessorApprovalCode>
            <ipgapi:ProcessorReferenceNumber>
                113009626785
             </ipgapi:ProcessorReferenceNumber>
            <ipgapi:ProcessorResponseCode>00</ipgapi:ProcessorResponseCode>
            <ipgapi:ProcessorResponseMessage>
                Function performed error-free
             </ipgapi:ProcessorResponseMessage>
            <ipgapi:TDate>1638266046</ipgapi:TDate>
            <ipgapi:TDateFormatted>
                2021.11.30 10:54:06 (CET)
             </ipgapi:TDateFormatted>
            <ipgapi:TerminalID>12345678</ipgapi:TerminalID>
            <ipgapi:TransactionResult>APPROVED</ipgapi:TransactionResult>
            <ipgapi:TransactionTime>1638266046</ipgapi:TransactionTime>
        </ipgapi:IPGApiOrderResponse>
```

```
        </SOAP-ENV:Body>
    </SOAP-ENV:Envelope>
```

All uses cases around 3dsecure, MPI VIA API should work as is without changes just by replacing card number and card expiry date with Network Token and Network token expiry date respectively and additionally passing TokenCryptogram as applicable.